BID DOCUMENTS & SPECIFICATIONS FOR:

PHASE 1 - FIRE SPRINKLER SYSTEM REPAIR/REPLACEMENT AT THE HIARNG, RTI, BELLOWS AIR FORCE STATION, OHAU, STATE OF HAWAII, DEPARTMENT OF DEFENSE, HAWAII ARMY NATIONAL GUARD, JOB NO. CA-202006-C (Re-BID)

ISSUED BY:
STATE OF HAWAII
DEPARTMENT OF DEFENSE
3949 DIAMOND HEAD ROAD
HONOLULU, HAWAIʻI 96816-4495
TELEPHONE: 808.369.3567

February 2023

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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 "*PHASE 1 - FIRE SPRINKLER SYSTEMS REPAIR/REPLACEMENT AT THE HAWAII ARMY NATIONAL GUARD (HIARNG), REGIONAL TRAINING INSTITUTE (RTI), BELLOWS AIR FORCE STATION, WAIMANALO, OAHU, STATE OF HAWAII, DEPARTMENT OF DEFENSE, HAWAII ARMY NATIONAL GUARD, JOB NO. CA-202006-C (Re-BID)*" 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 March 15, 2023** 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: Theasius Allen, 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 808-369-3567). 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: Demo or remove and replace existing fire risers, add new air vent into each existing bldg.'s fire sprinkler system, remove & replace corroded pipe sections (including various components & fittings) within each bldg.'s fire sprinkler system and provide & install a nitrogen inerting system onto each fire riser and complete nitrogen inerting's into each building's existing (repaired) fire sprinkler system.

The estimated cost is between $250,000.00 and $500,000.00

A site visit will be held on Tuesday, **February 21, 2023 at 10:00 A.M**. Base pass is not required, however, bidders and/or their authorized personnel shall present a current driver's license or other form of official identification (with photograph) to the Guard Gate. Contractors are to meet HIARNG FMO-Project Manager (PM) at Guard Gate entrance to Bellows Regional Training Center (RTI), 711 Tinker Road, Waimanalo, HI 96795 at 9:45 A.M. Please call K Y M, FMO-PM at 808-294-9680 before 11:00 A.M. on Friday, February 17, 2023 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.

Bona fide bidders may obtain copies of applicable specifications and bidding documents at the above-named office. Documents may also 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 to

register by sending their company name, address, telephone and facsimile number, and email address via e-mail to theasius.a.allen@hawaii.gov.

If you need an auxiliary aid/service or other accommodations due to a disability, contact Theasius Allen at 808-369-3483 or by e-mail at theasius.a.allen@hawaii.gov as soon as possible, preferably by February 24, 2023. If a response is received after February 24, 2023, we will try to obtain the auxiliary aid/service or accommodation, but we cannot guarantee that the request will be fulfilled. Upon request, this notice is available in alternate formats such as large print, Braille, or electronic copy.

All requests for substitution, clarification of bidding documents and/or specifications **must** be received in the office listed above, via e-mail, prior to **4:30 P.M. on Monday, February 27, 2023**. Questions shall be e-mailed to theasius.a.allen@hawaii.gov.

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/.

The Hawaii Products preference pursuant to ACT 175, SLH 2009 may be applicable for numerous items throughout this solicitation. Persons wishing to certify and qualify a product not currently listed as a Hawaii Product shall submit a Certification for Hawaii Product Preference (form SPO-38) by e-mail to theasius.a.allen@hawaii.gov prior to 4:30 P.M. 15 days prior to the bid opening date for this project. View the current Hawaii Products List on the State Procurement office (SPO) website at http://hawaii.gov/spo.

For each product, one form shall be completed and submitted (i.e. 3 products should have 3 separate forms completed). The form is available on the SPO webpage at http://hawaii.gov/spo.

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, General Building Contractor**

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 on their OFFER FORM possess the necessary specialty licenses to perform the work for this project.

Kenneth S. Hara
Major General
Adjutant General

Posted on: February 8, 2023

PHASE 1 - FIRE SPRINKLER SYSTEMS REPAIR/REPLACEMENT AT THE HAWAII ARMY NATIONAL GUARD (HIARNG), REGIONAL TRAINING INSTITUTE (RTI), BELLOWS AIR FORCE STATION, WAIMANALO, OAHU, STATE OF HAWAII, DEPARTMENT OF DEFENSE, HAWAII ARMY NATIONAL GUARD, JOB NO. CA-202006-C (Re-BID)

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: _____

_____

Name and Title (Please Type or Print)

Telephone No.: _____

* _____

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

Fax No.: _____

E-mail Address:

_____ _____

(*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.

(*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:

Important Notice to Bidders:

RE: Cost Tables – **Estimated Items for Repair of Corroded Pipes**

(Reference designated project plan sheets F002, FX401 and FX404)

1. **Items** in Cost Tables are exactly the same for each building. (Only estimated quantities differ.)

2. If your Unit Price for each of these items are exactly the same for ALL buildings, you may choose to enter Unit Price and Cost in only **one** table. If unit prices are listed in only **one** table, these unit prices shall be the item Unit Price recorded and used for ALL of the Bellows RTI buildings (B711 - Administration and Classrooms, B712 - Mess Hall, B713 - Auditorium and B714 - Billets).

3. If your Unit Price for each of these items differ per building, then please enter your Unit Price and Cost within each table, for each HIARNG RTI building. These Unit Prices shall be used by HIARNG for excess item quantity (overages), as detailed under Item C. (above) for each building.

The undersigned has carefully examined the attached plans and specifications and hereby proposes to furnish at Contractor's own expense all labor, materials, tools and equipment, and miscellaneous costs 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 each of the following buildings:

The undersigned hereby provides breakdowns for each Total Cost amounts.

A. Total Cost for B711 Administration and Classrooms:

_____

_____ Dollars ($_____)

(Ref. project plan sheet F002)

Items Description: **Administration B711**	Qty	Unit	Unit Price	Cost
Est. Quantities For Repair of Corroded Pipes				
Pipe, 3 inch ID, Black Steel, SCH 10	30	LF		
Pipe, 1-1/2 inch ID, Black Steel, SCH 40	30	LF		
Pipe, 1 inch ID, Black Steel, SCH 40	30	LF		
Fitting 3 inch, coupling, rubber gasketed grooved-end	5	EA		
Fitting, tee 3 x 1-1/2 inch outlet, rubber gasketed grooved-end	5	EA		
Fitting, tee 1-1/2 x 1 inch outlet, rubber gasketed grooved-end	3	EA		
Pipe Hanger 3 inch, Adjustable Swivel	5	EA		
Pipe Hanger 1-1/2 inch, Adjustable Swivel	5	EA		
Standard Pendent Sprinkler Head, Match Existing	2	EA		

(Ref. project plan sheet FX0401)

Items Description: **Classroom B711**	Qty	Unit	Unit Price	Cost
Est. Quantities For Repair of Corroded Pipes				
Pipe, 3 inch ID, Black Steel, SCH 10	150	LF		
Pipe, 1-1/2 inch ID, Black Steel, SCH 40	150	LF		
Pipe, 1 inch ID, Black Steel, SCH 40	150	LF		
Fitting 3 inch, coupling, rubber gasketed grooved-end	30	EA		
Fitting, tee 3 x 1-1/2 inch outlet, rubber gasketed grooved-end	30	EA		
Fitting, tee 1-1/2 x 1 inch outlet, rubber gasketed grooved-end	15	EA		
Pipe Hanger 3 inch, Adjustable Swivel	30	EA		
Pipe Hanger 1-1/2 inch, Adjustable Swivel	30	EA		
Standard Pendent Sprinkler Head, Match Existing	2	EA		

B. Total Cost for B712 Mess Hall:

_____

_____ Dollars ($_____)

(Ref. project plan sheet F002)

Items Description: **B712 Mess Hall**	Qty	Unit	Unit Price	Cost
Est. Quantities For Repair of Corroded Pipes				
Pipe, 3 inch ID, Black Steel, SCH 10	30	LF		
Pipe, 1-1/2 inch ID, Black Steel, SCH 40	30	LF		
Pipe, 1 inch ID, Black Steel, SCH 40	30	LF		
Fitting 3 inch, coupling, rubber gasketed grooved-end	5	EA		
Fitting, tee 3 x 1-1/2 inch outlet, rubber gasketed grooved-end	5	EA		
Fitting, tee 1-1/2 x 1 inch outlet, rubber gasketed grooved-end	3	EA		
Pipe Hanger 3 inch, Adjustable Swivel	5	EA		
Pipe Hanger 1-1/2 inch, Adjustable Swivel	5	EA		
Standard Pendent Sprinkler Head, Match Existing	2	EA		

C. Total Cost for B713 Auditorium:

_____

_____ Dollars ($_____)

(Ref. project plan sheet F002)

Items Description: **B713 Auditorium**	Qty	Unit	Unit Price	Cost
Est. Quantities For Repair of Corroded Pipes				
Pipe, 3 inch ID, Black Steel, SCH 10	30	LF		
Pipe, 1-1/2 inch ID, Black Steel, SCH 40	30	LF		
Pipe, 1 inch ID, Black Steel, SCH 40	30	LF		
Fitting 3 inch, coupling, rubber gasketed grooved-end	5	EA		
Fitting, tee 3 x 1-1/2 inch outlet, rubber gasketed grooved-end	5	EA		
Fitting, tee 1-1/2 x 1 inch outlet, rubber gasketed grooved-end	3	EA		
Pipe Hanger 3 inch, Adjustable Swivel	5	EA		
Pipe Hanger 1-1/2 inch, Adjustable Swivel	5	EA		
Standard Pendent Sprinkler Head, Match Existing	2	EA		

D. Total Cost for B714 Billets-A & B (Laundry & Physical Fitness area):

_____

_____ Dollars ($_____)

(Ref. project plan sheet FX404)

Items Description: **(B714-A) Billets**	Qty	Unit	Unit Price	Cost
Est. Quantities For Repair of Corroded Pipes				
Pipe, 3 inch ID, Black Steel, SCH 10	100	LF		
Pipe, 1-1/2 inch ID, Black Steel, SCH 40	100	LF		
Pipe, 1 inch ID, Black Steel, SCH 40	100	LF		
Fitting 3 inch, coupling, rubber gasketed grooved-end	20	EA		
Fitting, tee 3 x 1-1/2 inch outlet, rubber gasketed grooved-end	20	EA		
Fitting, tee 1-1/2 x 1 inch outlet, rubber gasketed grooved-end	10	EA		
Pipe Hanger 3 inch, Adjustable Swivel	20	EA		
Pipe Hanger 1-1/2 inch, Adjustable Swivel	20	EA		
Standard Pendent Sprinkler Head, Match Existing	2	EA		

TOTAL COST LUMP SUM (Includes Items A – D):

_____

_____ DOLLARS ($_____).

{*BIDDER'S INSTRUCTIONS: Fill in the total dollar cost in numbers and write out the total dollar in words. Prices shall be written in ink or typed.}*

(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 **180** 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 lowest total lump sum bid.

4. A mandatory site visit will be held at the Bellows Regional Training Center (RTI), Hawaii on **Tuesday, February 21, 2023 at 10:00 A.M.** Base pass is not required, however, bidders and/or their authorized personnel shall present a current driver's license or other form of official identification (with photograph) to the gate guard. Contractors are to meet HIARNG FMO-Project Manager (PM) at Guard Gate entrance to Bellows Regional Training Center (RTI) 711 Tinker Road, Waimanalo at 9:45 A.M. Please call K Y M, FMO-PM at 808-294-9680 before 11:00 A.M. on Friday, February 17, 2023 to register for the site visit. If no response, please leave message giving information of company name, name of all individuals that will attend, and contact phone number. After the call, you may assume you have been registered for the site visit. All interested bidders and subcontractors are welcome.

   All requests for substitution, clarification of bidding documents and/or specifications must be received by e-mail at theasius.a.allen@hawaii.gov prior to **4:30 P.M. on Monday, February 27, 2023**.

   If you need an auxiliary aid/service or other accommodations due to a disability, contact Theasius Allen at 808-369-3483 or by e-mail at theasius.a.allen@hawaii.gov as soon as possible, preferably by February 24, 2023. If a response is received after February 24, 2023, we will try to obtain the auxiliary aid/service or accommodation, but we cannot guarantee that the request will be fulfilled. Upon request, this notice is available in alternate formats such as large print, Braille, or electronic copy.

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 175, SLH 2009 the Hawaii Products preference is applicable to this solicitation. Hawaii products may be available for those items noted on the offer form. The Hawaii Products List is available on the State Procurement Office (SPO) website at http://spo.hawaii.gov/ search for "Hawaii Product Preferences".

Offeror offering a Hawaii Product (HP) shall identify the HP on the solicitation offer pages. Any person desiring a Hawaii product preference shall have the product(s) certified and qualified if not currently on the Hawaii Products list, prior to the deadline for receipt of offer(s) specified in the procurement notice and solicitation. The responsibility for certification and qualification shall rest upon the person requesting the preference.

Persons desiring to qualify their product(s) not currently on the Hawaii Product list shall complete form SPO-38, *Certification for Hawaii Product Preference,* and submit to the Department of Defense, Contracting Officer, and provide all additional information required by the Contracting Officer no later than 4:30pm, fifteen (15) calendar days prior to the bid opening date. For each product, one form shall be completed and submitted (i.e. 3 products should have 3 separate forms completed). The form is available on the SPO webpage at http://spo.hawaii.gov/ search for "Forms" and select form SPO-38.

Late submittals for this project will not be reviewed by the Department.

Change in Availability of Hawaii Product

In the event of any change that materially alters the offeror's ability to supply Hawaii Products, the offeror shall immediately notify the Contracting Officer in writing and the parties shall enter into discussions for the purposes of revising the contract or terminating the contract for convenience.

Offerors shall indicate in the Hawaii Product Schedule below whether the pre-approved Hawaii Products are offered. Offerors offering a Hawaii Product shall fill-in the quantity, unit measure, unit price and total price for the Hawaii Product they desire to be considered for preference. Products not pre-approved shall not be considered. Hawaii Products not meeting the requirements of the specification shall not be considered.

Offerors selecting the Hawaii Product preference may be required to submit additional information on the cost basis of their selected Hawaii Product preference items when requested after the bid opening to verify cost of the Hawaii Products, including the computations for the estimated quantities, manufacturer's or supplier's quotations, and delivered material cost Free on Board (FOB) at the jobsite. The Hawaii Product Cost shall not include installation costs.

Hawaii Products available for this project are as follows:

Product Description	Class I, II or III	Manufacturer	Cost
			$
			$
			$
			$
			$
			$
			$

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 s*hall 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 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. "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 (for example, Hawaii Products), 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 - **B**.

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 **$220.00** 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

Enclosed herewith as required by law:

Surety Bond
Certificate of Deposit
Certified Check
Cashier's Check
Share Certificate
Legal Tender
(Cross Out Those Not Applicable)

_____

_____ DOLLARS ($ _____).

_____
*Signature

Title _____

_____
Name of Company

_____
Address

_____

_____

Telephone _____

Date _____

HAWAII GENERAL EXCISE TAX

I.D. NO. _____

LICENSE CLASSIFICATION AND/OR SUBCLASSIFICATION NO.

_____

(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 1

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

I. Bidder's Identifying Information

A. Legal Business Name:

B. Project Bid Title & Reference No.:

C. Contact Person's Name:

1. Phone No.: 2. E-Mail:

II. Apprenticeable Trades To Be Employed* A. (List)	B. Apprenticeship Sponsor* (One Sponsor Per Form)	C. No. Enrolled (# of apprentices currently enrolled as of bidder's request date)	D. No. Completed (# of apprentices who completed the apprenticeship program in the 12 months prior to request date)
1.			
2.			
3.			
4.			
5.			
6.			

III. Bidder's Certification

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

IV. Apprenticeship Sponsor's Contact Information

A. Training Coordinator's Name:

B. Address:

C. Phone No.: D. E-Mail: E. Fax No:

V. Apprenticeship Program Sponsor's Certification

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.

(Rev. 08/25/2010)

(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 fore 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 Statues §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 _____ 1st Circuit

Notary Name: _____

Doc. Description: _____

_____

_____

_____
Notary Public, 1st 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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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_ COMPTROLLER - The Comptroller of the State of Hawaii, Department of Accounting and General Services.

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 calendar (or working) days, the contract requires completion by a certain date, the work shall be completed by that date.

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

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 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.

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 responsible 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 if 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 Section7.17 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 Section7.17 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 polices. 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 polices. 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 2*s 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 ay 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.

7.3*7* 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.

(l2) 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.

ITEM	SPECIFIED BRAND	SUBSTITUTE BRAND	MODIFICATION/VARIANT FEATURES

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

PHASE 1 - FIRE SPRINKLER SYSTEMS REPAIR/REPLACEMENT AT THE HAWAII ARMY NATIONAL GUARD (HIARNG), REGIONAL TRAINING INSTITUTE (RTI), BELLOWS AIR FORCE STATION, WAIMANALO, OAHU, STATE OF HAWAII, DEPARTMENT OF DEFENSE, HAWAII ARMY NATIONAL GUARD, JOB NO. CA-202006-C (RE-BID)

GENERAL DESCRIPTION:

The main objective of this project is to provide Risk Mitigation for the existing fire sprinkler systems, in each of the Bellows RTI buildings to ensure that each building's fire sprinkler system shall function properly in the event of a fire or fire emergency. All existing leaks or potential leaks within corroded piping configurations within each building's fire sprinkler system shall be repaired as required, to ensure the main objective for this project is achieved. In addition, nitrogen shall be inerted or introduced into each building's fire sprinkler system to reduce the amount of oxygen (air bubbles) in each fire sprinkler system, as part of this Risk Mitigation project. Specifically, the project work includes the demolition and replacement of all five RTI existing fire risers, installation of an automatic air vent, in each fire sprinkler system, nitrogen inerting, a pre-construction survey of each building's fire sprinkler system - to determine and identify existing corroded pipe sections within each system in need of repair, repair of the corroded pipe sections (as identified and determined) within each HIARNG Bellows RTI building and other miscellaneous project work.

Four main buildings make-up the HIARNG Bellows Regional Training Institute:

B711 - Administration and Classroom Building

B712 - Mess Hall Building

B713 - Auditorium Building

B714 - Billets A & B (Including Laundry and Physical Fitness Areas) Building

B711 - ADMINISTRATION AND CLASSROOM BUILDINGS

A. Demo & Replace Existing Wet Pipe System Alarm Check Valve Risers:

The Administration and Classrooms building has two fire sprinkler risers, one riser serving each side of B711. Install new fire sprinkler risers with water flow switch at riser (no power required in Phase I); install automatic air vent with drain line in each existing sprinkler piping system inside B711. Riser replacement work shall be from top of existing underground quarter bend elbow to top of riser assembly. Top of riser extends through existing roof overhang into concealed building ceiling space. Provide continuous Fire Watch as required in the project construction documents and in accordance with the Honolulu Fire Department.

B. Nitrogen Inerting:

Provide & Install Nitrogen Inerting System for the existing wet pipe fire sprinkler system (to include all labor, equipment, material and components as detailed in the project plans & specifications).

C. Pre-Construction Survey & Repair of Existing Wet Pipe Sprinkler System:

Prior to start of any work, the Contractor shall complete a pre-construction survey the existing fire sprinkler system, determine and identify heavily corroded pipe sections and/or fittings and pipe segments where a leak may occur when the system is refilled with water to match existing water pressure indicated at each building riser. Contractor shall submit a clearly marked-up sprinkler plan indicating the boundary of survey and clearly showing the identified corroded and/or leaking piping or pipe sections with potential to leak (including labeled photo documentation) to the HIARNG FMO-Project Manager (PM). Contractor shall include construction bid amount to replace the identified corroded and/or leaking pipe sections, including all related fittings and sprinklers, per or based upon the estimated items and quantities listed in the Cost Table(s) within OFFER FORM (and on designated project plan sheets F002 and FX401) under or for B711 Administration and Classroom fire sprinkler systems, including all labor efforts. Should the item or material quantity identified in the Contractor's pre-construction survey exceed the estimated items or quantities, estimated within Cost Tables (OFFER FORM) or construction drawings, the Contractor shall notify the HIARNG FMO-PM and submit an detailed list or estimate of the excess item(s) or quantity (overages) to the FMO-PM for necessary or required approval(s) prior to any material purchases.

D. Plant Removal and Replacement: Remove and replace existing mature Ti plants in-kind as indicated on project plan sheet FX401 adjacent to each B711 Administration and Classrooms building sprinkler risers. Remove and replace existing shrub in kind as indicated on sheet FX402 adjacent to B712 Mess Hall sprinkler riser. Include in Total Cost for **B711** - Admin. & Classrooms.

B712 - MESS HALL

A. Demo & Replace Existing Wet Pipe Alarm Check Valve Riser:

Install new fire sprinkler riser with water flow switch at riser (no power required in Phase I); install an automatic air vent with drain line in the existing fire sprinkler piping system inside B712. Riser replacement work shall be from top of existing underground quarter bend elbow to top of riser assembly. Top of riser extends through existing roof overhang into the concealed building ceiling space. Provide continuous Fire Watch as required in project construction documents and in accordance with the Honolulu Fire Department.

B. Nitrogen Inerting:

Provide & Install Nitrogen Inerting System for the existing wet pipe fire sprinkler system (to include all equipment, material and components as detailed in the project plans & specifications).

C. Pre-Construction Survey & Repair of Existing Wet Pipe Sprinkler System:

Prior to start of any work, the Contractor shall complete a pre-construction survey the existing fire sprinkler system, determine and identify heavily corroded pipe sections and/or fittings and pipe segments where a leak may occur when the system is refilled with water to match existing water pressure indicated at each building riser. Contractor shall submit a clearly marked-up sprinkler plan indicating the boundary of survey and clearly showing the identified corroded and/or leaking piping or pipe sections with potential to leak (including labeled photo documentation) to the HIARNG FMO-PM. Contractor shall include construction bid amount to replace the identified corroded and/or leaking pipe sections, including all related fittings and sprinklers, per or based upon the estimated items and quantities listed in the Cost Table(s) within OFFER FORM (and on designated project plan sheet F002) under or for B712 - Mess Hall fire sprinkler system, including all labor efforts. Should the item or material quantity identified in the Contractor's pre-construction survey exceed the estimated items or quantities, estimated within Cost Tables (OFFER FORM) or construction drawings, the Contractor shall notify the HIARNG FMO-PM and submit an detailed list or estimate of the excess item(s) or quantity (overages) to the FMO-PM for necessary or required approval(s) prior to any material purchases.

B713 - AUDITORIUM BUILDING

A. Demo & Replace Existing Wet Pipe System Alarm Check Valve Riser:

Install new fire sprinkler riser with water flow switch at riser (no power required in Phase I); install automatic air vent with drain line in the existing fire sprinkler piping system inside B713. Riser replacement work shall be from aboveground flexible coupling at base to top of riser assembly. Top of riser extends through existing roof overhang into concealed building ceiling space. Provide continuous Fire Watch as required in project construction documents and in accordance with the Honolulu Fire Department.

B. Nitrogen Inerting:

Provide & Install Nitrogen Inerting System for the existing wet pipe fire sprinkler system (to include all equipment, material and components as detailed in the project plans & specifications).

C. Pre-Construction Survey & Repair of Existing Wet Pipe Sprinkler System:

Prior to start of any work, the Contractor shall complete a pre-construction survey the existing fire sprinkler system, determine and identify heavily corroded pipe sections and/or fittings and pipe segments where a leak may occur when the system is refilled with water to match existing water pressure indicated at each building riser. Contractor shall submit a clearly marked-up sprinkler plan indicating the boundary of survey and clearly showing the identified corroded and/or leaking piping or pipe sections with potential to leak (including labeled photo documentation) to the HIARNG FMO-PM. Contractor shall include construction bid amount to replace the identified corroded and/or leaking pipe sections, including all related fittings and sprinklers, per or based upon the estimated items and quantities listed in the Cost Table(s) within OFFER FORM (and on designated project plan sheet F002) under or for B713 - Auditorium fire sprinkler system, including all labor efforts. Should the item or material quantity identified in the Contractor's pre-construction survey exceed the estimated items or quantities, estimated within Cost Tables (OFFER FORM) or construction drawings, the Contractor shall notify the HIARNG FMO-PM and submit an detailed list or estimate of the excess item(s) or quantity (overages) to the FMO-PM for necessary or required approval(s) prior to any material purchases.

B714 - BILLETS A & B (Including Laundry and Physical Fitness Areas)

A. Demo & Replace Existing Wet Pipe Sprinkler Alarm Check Valve Riser:

Install new fire sprinkler riser with water flow switch at Billets A. Billets A (B714-A) work includes 1st and 2nd floor Billets areas, including adjoining Laundry and Physical Fitness spaces. Billets A and B share common wet pipe alarm check valve fire riser assembly. All areas of Billets B (B714-B) must remain in operation during the fire sprinkler riser demolition and replacement work. Install automatic air vents with drain lines in the existing wet pipe fire sprinkler piping system(s); provide one high-point automatic air vent with drain line inside Billets A and a second high-point automatic air vent with drain line inside Billets B. Provide continuous Fire Watch as required in construction drawings and in accordance with the Honolulu Fire Department.

B. Nitrogen Inerting:

Provide & Install Nitrogen Inerting System for the existing wet pipe fire sprinkler system (to include all labor, equipment, materials and components as detailed in the project plans & specifications).

C. Pre-Construction Survey & Repair of Existing Wet Pipe Sprinkler System:

Prior to start of any work, the Contractor shall complete a pre-construction survey the existing fire sprinkler system, determine and identify heavily corroded pipe sections and/or fittings and pipe segments where a leak may occur when the system is refilled with water to match existing water pressure indicated at each building riser. Contractor shall submit a clearly marked-up sprinkler plan indicating the boundary of survey and clearly showing the identified corroded and/or leaking piping or pipe sections with potential to leak (including labeled photo documentation) to the HIARNG FMO-PM. Contractor shall include construction bid amount to replace the identified corroded and/or leaking pipe sections, including all related fittings and sprinklers, per or based upon the estimated items and quantities listed in the Cost Table(s) within OFFER FORM (and on designated project plan sheet FX404) under or for B714 – Billets A & B (including Laundry and Physical Fitness Areas) fire sprinkler system, including all labor efforts. Should the item or material quantity identified in the Contractor's pre-construction survey exceed the estimated items or quantities, estimated within Cost Tables (OFFER FORM) or construction drawings, the Contractor shall notify the HIARNG FMO-PM and submit an detailed list or estimate of the excess item(s) or quantity (overages) to the FMO-PM for necessary or required approval(s) prior to any material purchases.

Any damage inflicted on the existing facility as a result of Contractor forces or operations shall be repaired and/or restored to prior-original condition, to the satisfaction of the HIARNG FMO-PM, at no additional cost to the State or Hawaii Army National Guard. Exercise due diligence.

Project plans, specifications and all construction documents constitute basis for the complete or entire project scope of work. Contractor shall provide total costs for the Risk Mitigation work or measures detailed above for each RTI building. (Reference Items A. - D. in OFFER FORM). The project "TOTAL COST LUMP SUM" in OFFER FORM shall cover the entire project scope of work.

FINAL SUBMITTAL

REQUIREMENTS and SPECIFICATIONS
TO CONSTRUCT

HAWAII ARMY NATIONAL GUARD (HIARNG)
BELLOWS 298TH REGIONAL TRAINING INSTITUTE
PHASE I: RISK MITIGATION PROJECT, PN
15200006 STATE JOB NO: CA-202006-C (RE-BID)
TAX MAP KEY: 4-1-015:001
WAIMANALO, OAHU, HAWAIʻI

FOR THE **HAWAII ARMY NATIONAL GUARD (HIARNG)**
STATE OF HAWAIʻI

January 26, 2023

Fire Protection Engineer: **Coffman Engineers, Inc (COFFMAN)**

SECTION 00 01 00 - TABLE OF CONTENTS

END OF TABLE OF CONTENTS

DIVISION 01 - GENERAL REQUIREMENTS

SECTION 01 10 00 – SUMMARY

PART 1 GENERAL

1.01 GENERAL CONDITIONS

A. Project Identification: Replace existing building exterior wet pipe fire sprinkler risers, install NFPA 13 compliant automatic air relief valve in existing building served by each riser, survey and replace existing corroded sprinkler distribution piping and provide nitrogen inerting system when refilling wet pipe sprinkler system at various buildings. Project Location: Waimanalo, Hawaii.

B. 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.

C. The Division and Sections into which these specifications are divided must not be considered an accurate or complete segregation of work by trades. This also applies to work specified within each section.

D. Contractor must not alter the Drawings and Specification. If an error or discrepancy is found, notify the HIARNG FMO-Project Manager.

E. Specifying of interface and coordination in the various specification sections is provided for information and convenience only. These requirements in the various sections must complement the requirements of this Section.

F. All references to specific manufacturer, brand, model numbers, etc, are for reference or color selection only. All brand names and models are assumed to be followed by the statement "approved equal or better".

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 must ", “as shown on the drawings”, “a", “an", and “the" are intentional. Omitted words and phrases must be provided by inference to form complete sentences. Words and meanings must be interpreted as appropriate. Words implied, but not stated, must be inferred, as the sense requires. Singular words must be interpreted as plural, and plural words must 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 must 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 “must", “must be”, or "must 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 must 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.”.

B. Terms
   1. Directed: Terms such as “directed", “requested",” authorized", “selected", “approved", "required", and ”permitted" mean directed by HIARNG FMO-Project Manager, requested by HIARNG FMO-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”, “provide", and “prepare" and similar phrases in the context of a submittal, means to submit to the HIARNG FMO-Project Manager.

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 HIARNG FMO-Project Manager for a decision before proceeding.

1.03 CONTRACT

A. Refer to the Bidding Documents for other contract conditions.

B. HIARNG Project Contactor Requirements are attached to the end of this specification section and must be followed when applicable to the project scope of work.
   1. Contractor Requirements:

      a. Environmental Contractor Requirements

      b. Environmental Requirements

   2. Acquiring Geospatial Data

1.04 WORK SEQUENCE

A. The Work will be conducted in a single construction phase.

1.05 USE OF PREMISES AND WORK RESTRICTIONS

A. General: Contractor must have full use of construction zone for construction operations, including use of project site, during construction period, Contractor's use of premises is limited only by State's right to perform work or to retain other Contractors on portions of the project site.

B. Contractor's use of premises is restricted as follows:
   1. Construction Times and Schedule: As indicated in the Bidding Documents.

   2. Site Access and Parking:

      a. Parking: Parking for the Contractor's employees (or Subcontractors) will be limited to the available areas designated by the HIARNG FMO-Project Manager. Unauthorized vehicles parked in marked stalls and in any area outside of the designated project construction site will be subject to towing at the Contractor's expense. The Contractor must not park or stage on grassy or soil areas.

      b. Site Access: Coordinate site access with the HIARNG FMO-Project Manager.

   3. Sanitation: Coordinate access to restroom facilities with the HIARNG FMO-Project Manager.

   4. Noise and Dust Control:

      a. In adjacent locations surrounding the project site, noise, dust and other disrupting activities, resulting from construction operations, are detrimental to the conduct of the Facility activities. Therefore, Contractor must monitor its construction activities. Exercise precaution when using equipment and machinery to keep the noise and dust levels to a minimum.

      b. To reduce loud disruptive noise levels, ensure mufflers and other devices are provided on equipment, internal combustion engines and compressors.

      c. Contractor must be required to follow all Federal, State, and local noise requirements.

5. Ground Disturbance

a. Inadvertent human remains must be handled in accordance with the provisions outlined in HRS 6E-43 and HAR 13-300. In the event that human skeletal remains are inadvertently discovered, all activity in the immediate area must cease and the discovery will be reported to the SHPD, the appropriate medical examiner or coroner, and the police department. The SHPD will notify the Island Burial Council and OHA of the discovery. Within two (2) working days a medical examiner and a qualified archaeologist must examine the skeletal remains to determine jurisdiction.

b. Inadvertent non-burial finds must 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 must cease, no items must be moved and the SHPD will be notified as soon as possible. The find(s) will be secured and protected.

6. Avoidance and Minimization Measures:

a. Construction activities will be restricted to daylight hours with the exception of limited utilities work which may need to *occur* at night to avoid impacts to HIARNG operations.

b. All project related lighting will be minimized and shielded so that the bulb is not visible at or about the bulb height.

c. Night work requiring artificial illumination will be avoided during seabird fledging season between the months of September 15 to December 15.

Other Conditions:

d. Arrange for construction debris and trash to be removed from project site daily.

e. 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.

f. No on-site storage of materials is available.

g. Keep access roads to the project site free of dirt and debris. Contractors are required to remove all sediment from roadways and paved areas daily to prevent tracking off site and impact to stormwater. Provide, erect and maintain lights, barriers, signs, etc. when working on facility roads, driveways and walkways to protect pedestrians and moped/bicycle riders. Obey facility traffic and safety regulations.

PART 2 PRODUCTS

NOT USED

PART 3 EXECUTION

NOT USED

END OF SECTION 01 10 00

Attachment

HIARNG ENVIRONMENTAL CONTRACTOR REQUIREMENTS

PROJECT NAME:	
PROJECT NUMBER:	**SUBMISSION DATE:**
REVIEWER: HIARNG Environmental Compliance Office (ENV), ng.hi.hiarng.list.nghi-env-comp@mail.mil	**DATE REVIEWED:**
	DATE RECEIVED:

NO.	REQUIREMENT
1	**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.
2	**Hazardous Materials.** 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. 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. c. **Safety Data Sheets (SDSs).** SDSs for all chemical products shall be made available to ENV upon request.
3	**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: a. **Information Required Prior to Project Start**. Contractor shall provide to ENV: 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. 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 http://www.dla.mil/DispositionServices/Offers/Disposal/HazardousWaste/HazWasteDisposal.aspx 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. **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. **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). **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.

	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.
4	**Spill Prevention and Response.** 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. 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 *Oil Pollution Prevention* and shall submit a copy of the plan to ENV prior to project start. c. Contractors shall ensure adequate spill supplies are maintained on-site and readily available near areas with potential for spills or leaks. 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. 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. 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.
5	**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, and HIARNG Storm Water Management Plan.
6	**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. a. Contractor shall provide to ENV prior to project start, copies of all permit applications, permits, approvals, and associated required plans. b. 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.
7	**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 ☐ R ☐	N/A

Attachment

NATIONAL ENVIRONMENTAL POLICY ACT & HRS 343:

All federal and state undertakings must have National Environmental Policy Act (NEPA) or Hawaii Revised Statutes Chapter 343 Environmental Impact Statements (HEPA) analysis and documentation on file prior to construction commencing and funds being executed for construction projects. It is Army National Guard Policy that NEPA/HEPA analysis and documentation must be completed before or at the 30% design phase. A/E design should not proceed past 30% design without a Record of Environmental Consideration (REC) on file for federal projects or a Declaration of Exemption (DEC) for state projects. A REC or DEC can only be utilized if the project is covered by a Categorical Exclusion, as listed in Appendix B of 32 CFR Part 651 or an Exemption, as listed in the State of Hawaii, Department of Defense Exemption List. In order to complete a REC or DEC, the HIARNG Environmental Office must consult with the State Historic Preservation Division (SHPD) for projects involving ground disturbance and/or historic buildings. The HIARNG Environmental office must consult with the U.S. Fish and Wildlife Service (USFWS) for any project that may affect a threatened or endangered species.

If it is determined that the project does not meet the parameters of a CATEX or State of Hawaii, Department of Defense Exemption, the design shall not proceed past 30% without a contract for an Environmental Assessment in place.

NATIONAL HISTORIC PRESERVATION ACT:

Historic Buildings:

The contractor is to provide a project summary to the Hawaii Army National Guard (HIARNG) Cultural Resources Specialist (CRS) for a project that involves renovation, maintenance, or changes to a historic building. The project summary shall include a brief project description with any and all construction work that may alter the integrity of a historic building, including design drawings and photographs of existing conditions. All construction activities shall follow the US Department of the Interior: Secretary of the Interior's Standards for Rehabilitation (36 CFR Part 67) and Guidelines for Rehabilitating Historic Buildings. The project summary provided to the CRS will be referenced in a letter to the State Historic Preservation Division (SHPD). The SHPD will have 30 days to review the project and submit their comments to the HIARNG. The POC for the project summary is Mr. Kekapala Dye, Kekapala.dye@hawaii.gov. Contractor is to cc the Project Manager on any correspondence with the CRS regarding historic building project summaries. This correspondence follows the National Historic Preservation Act (NHPA) Section 106 guidelines for federal undertakings as well as the Hawaii Revised Statutes Chapter 6E guidelines for state actions.

Ground Disturbance:

The contractor is to provide a project summary to the Hawaii Army National Guard (HIARNG) Cultural Resources Specialist (CRS) for a project that involves ground disturbance. The project summary shall include a thorough description of the overall project, including total square footage of ground disturbance and dimensions of ground disturbance, including maximum depth/width/length. Digging can include trenching, grading, concrete foundation preparation work, bollard installation and other forms of ground disturbance. The project summary shall include DWG design & construction drawings as well as the associated geo-referenced site plan. The project summary and DWG files provided to the CRS will be referenced in a letter to the State Historic Preservation Division (SHPD). The SHPD will have 30 days to review the project and submit their comments to the HIARNG. The POC for the project summary is Mr. Kekapala Dye, Kekapala.dye@hawaii.gov. Contractor is to cc the Project Manager on any correspondence with the CRS regarding ground disturbance project summaries. This correspondence follows the National Historic Preservation Act (NHPA) Section 106 guidelines for federal undertakings as well as the Hawaii Revised Statutes Chapter 6E guidelines for state actions.

An Archaeological Monitoring Plan (AMP) may be required by the SHPD prior to the commencement of ground disturbing activities. The AMP shall follow Hawai'i Revised Statutes (HRS) Chapter 6E, and the

implementing HAR 13-279-5 requirements. A separate contract will be coordinated if an AMP is required by the SHPD.

HAWAII REVISED STATUTES 6E-43.6 & HAWAII ADMINISTRATIVE RULES 13-300

Inadvertent Discovery of Burial Sites

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 State Parks.

ENDANGERED SPECIES ACT & MIGRATORY BIRD TREATY ACT:

The contractor is to provide a project summary to the Hawaii Army National Guard (HIARNG) Natural Area Reserves Specialist Supervisor for a project that involves erecting fencing, downing of trees, installing exterior lighting, night time construction, planting of new vegetation, cutting of trees and construction activities during breeding season of the Hawaiian Nene (December-April), Hawaiian Hawk (March – September) and/or Hawaiian Hoary Bat (June - September). The project summary shall include a brief project description with any and all construction work that may affect threatened, endangered, candidate species, species of concern and/or critical habitat, including design drawings and photographs of existing conditions. The project summary provided will be referenced in a letter to the U.S. Fish and Wildlife Service (USFWS) and to the State of Hawaii, Department of Forestry and Wildlife (DOFAW). The USFWS and DOFAW will have 45 days to review the project and submit their comments to the HIARNG. The POC for the project summary is Mr. Craig Blaisdell, craig.p.blaisdell.nfg@mail.mil. Contractor is to cc the Project Manager on any correspondence with the Conservation Manager regarding project summaries. This correspondence follows the Endangered Species Act (ESA) Section 7 guidelines for federal undertakings as well as the Hawaii Administrative Rules, Chapter 124 guidelines for state actions.

GIS DELIVERABLES:

The contractor is to provide DWG files of the design plans at the 30%, 60% and 100% design phases to the HIARNG GIS Specialist. The contractor shall also include a geo-referenced site plan that defines the work area, including all staging areas, utility trenching, grading, and/or other ground disturbance. The contractor shall ensure all geospatial data layers contain comprehensive metadata (FGDC Metadata Content Standard- https://www.fgdc.gov/metadata/csdgm-standard), spatially accurate (FGDC Positional Accuracy Standard - https://www.fgdc.gov/standards/projects/accuracy), and compliant with Quality Assurance Plans. The DWG files will assist the HIARNG Environmental Office in developing site maps and diagrams for ESA and NHPA consultation letter submissions. The contractor shall provide updated DWG files that represent actual construction plans, if any changes have been made after the 100% design submittal. The POC for the DWG files submission is Ms. Alexa Jacroux-Biggs, alexa.l.jacrouxbiggs.nfg@mail.mil. The contractor is to cc the Project Manager on any correspondence with the GIS Specialist regarding DWG design & construction drawings.

APPLICABLE ENVIRONMENTAL PERMITS:

The contractor is responsible to obtain all necessary building permits for the project, including environmental permits related to the Coastal Zone Management Act, Special Management Area permit from the C&C Department of Planning and Permitting (DPP). Contractor is responsible to determine if the project is located on Conservation land, including the subzone, which can be found on the Office of Conservation and Coastal Lands (OCCL) website. Contractor is responsible to determine the correct permit required for the project and develop documentation for a permit application to the OCCL. Contractor is responsible to determine if a variance permit is required for the project, which can be determined at the Land Use Commission (LUC) website. If a variance permit is needed for the project, the contractor is responsible to obtain a land use variance use permit from the LUC. These permits may be a prerequisite for obtaining a building permit from DPP.

Attachment

Contract Language for Acquiring Geospatial Data (CADD, GIS, CAFM) System Deliverables from Architect-Engineer (A-E) Consulting Firms

Contents

APPENDIX A: SAMPLE FEDBIZOPPS (FBO) CLAUSES FOR CADD DELIVERABLES IN AUTOCAD FORMAT.

NOTE: This is the recommended default contractual language as the majority of HIARNG design/build/survey deliverables are developed in a CADD software and therefore can be delivered in DWG format with minimal additional effort from the contractor. If the contractor is designing in AutoDesk's AutoCAD, then the DWG format is the native file format. As AutoCAD is a popular CADD software, other CADD software should be compatible with the DWG format or at the least allow export to the DWG format.

A. GENERAL.

All design, construction, geotechnical, data collection and mapping services to be provided under this contract shall be accomplished and developed using computer-aided design and drafting (CADD) software and procedures conforming to the following criteria.

B. GRAPHIC FORMAT.

All CADD data shall be supplied in Autodesk's AutoCAD most recent native electronic digital format (i.e., .dwg). The contractor shall ensure that all digital files and data (e.g., model files, reference files, cell libraries) are compatible with the Government's target CADD system (i.e., basic and advanced CADD software, platform, database software), and adhere to the standards and requirements specified herein. The term "compatible" means that data can be accessed directly by the target CADD system without translation, preprocessing, or post-processing of the electronic digital data files. It is the responsibility of the contractor to ensure this level of compatibility.

If a non-graphical database is delivered with prepared drawings, it shall be in currently used Microsoft Access or Excel version. All linkages of non-graphical data with graphic elements, relationships between database tables, and report formats shall be maintained. All database tables shall conform to the structure and field-naming guidance provided by the Government. Not doing so will require the Government to recreate the linkages, a time-consuming and expensive process. Data files and tables can be transferred in various ways in order to prevent data reentry and its associated costs.

C. CADD STANDARDS.

CADD drawings shall be prepared in accordance with the applicable provisions of the "Architectural/Engineering/Construction (A/E/C) Computer-Aided Design and Drafting (CADD) Standard, current Release." Standard drawing size shall be specified by authorized project manager or stated in the project scope of work. The A/E/C CADD Standard file-naming conventions for model and sheet files shall be used.

The Contractor shall submit a written request for approval of any deviations from the Government's established CADD standard. No deviations from the Government's established CADD standard will be permitted unless prior written approval of such deviation has been received from the Government.

D. DELIVERY MEDIA AND FORMAT.

A copy of all CADD data and files developed under this contract shall be delivered to the Government on electronic digital media with each submittal as required in the Schedule of Work. For projects with electronic digital files or sets of files less than or equal to two (2) GB, the electronic digital data and files may be provided on DVDs or via secured file transfer protocol (FTP), like AMRDEC SAFE (https://safe.amrdec.army.mil/SAFE/). For projects with electronic digital files or sets of files larger than two (2) GB, the electronic digital data and files shall be provided on a portable external hard drive. The electronic digital media shall be in a format that can be read and processed by the Government's target CADD system.

The external label for each electronic digital media shall contain, as a minimum, the following information:

(1) The Contract Number (and Delivery Order Number if applicable) and date.

(2) The format and version of operating system software.

(3) The name and version of utility software used for preparation (e.g., compression/decompression) and copying files to the media.

(4) The sequence number of the digital media.

(5) A list of the filenames.

Before a CADD file is placed on the delivery electronic digital media, the following procedures shall be performed:

(1) Remove all extraneous graphics outside the border area and set the active parameters to a standard setting or those in the Government-furnished seed file.

(2) Ensure all reference files are attached without device or directory specifications.

(3) Compress and reduce all design files using file compression/decompression software currently being used by Government, or other compatible file compression/decompression software approved by the Contracting Officer.

(4) Include all files, both graphic and nongraphic, required for the project (i.e., color tables, pen tables, font libraries, blocks, user command files, plot files). All blocks not provided as Government-furnished materials must be provided to the Government as a part of the electronic digital deliverables.

(5) Ensure that all support files such as those listed above are in the same directory and that references to those files do not include device or directory specifications.

(6) Include any standard sheets (i.e., abbreviation sheets, standard symbol sheets) necessary for a complete project.

(7) Document any fonts, tables, etc., developed by the A-E or not provided among the Government furnished materials. The contractor shall obtain Government approval before using anything other than the Government's standard fonts, line types, tables, or cells.

(8) Each finished drawing (sheet) shall have its own separate plot file and in a configuration compatible with existing plotters in HIARNG-FMO.

(9) The preferred geographic coordinate system for data collection is the World Geodetic System (WGS) of 1984 (WGS84). The preferred projected coordinate system is NAD_1983_UTM_Zone_4N, WKID: 26904 Authority: EPSG or NAD_1983_UTM_Zone_5N WKID: 26905 Authority: EPSG, depending where data is collected in the State of Hawaii. The vertical datum used in Hawaii is Mean Sea Level (MSL).

(10) The location of the origin for each file should conform to the requirements of the SDS, the A/E/C CADD Standard, and should include both the colloquial name and the National Geodetic Survey Permanent Identifier (http://www.ngs.noaa.gov/datasheets/). The same origin or reference point shall be used on all files for a project, and the A-E must coordinate origins across files.

(11) When the CADD-generated data files are to be later translated and used by a GIS, the following topology guidelines in data structure should be followed:

a. The edges of all digitized maps must exactly match digitally with those of all adjacent maps.

b. The digital representation of the common boundaries for all graphic features must be exactly the same, regardless of level/layer. Each feature within a map theme must be represented by a single graphic element (e.g., polygon, line, or line string).

c. Lines and line strings which represent the same graphic element must be continuous (i.e., not broken or segmented), unless that segmentation reflects a specific visual line type (i.e., service waterline should only break at the structure being serviced and the node (junction/valve/fitting) connecting to the service line to lateral line.). Lines/strings representing the same type of data must not cross except at intersections.

d. Straight lines must be represented by only the beginning and ending x and y-coordinate points. Line strings must not cross back on themselves or be of zero length.

e. Polygons must be closed (i.e., the first x- and y-coordinates must exactly match the last x- and y-coordinates). Each polygon must have a single unique centroid to which attributes (i.e., an attribute table) can be attached. Polygons of the same coverage must not overlap and must cover the area of interest completely (i.e., have no gaps in coverage).

f. Each feature within a map theme must be represented by a single graphic element (e.g., polygons such as buildings, lines such as roads, or points such as fire hydrants). Each utility or other discrete entity should be on its own layer. Water, sanitary sewer, storm water, and irrigation should each be on their own layer, as should elevation contours, boring or sampling locations, structure footprints, paved areas, and slabs.

E. DRAWING DEVELOPMENT DOCUMENTATION.

Complete documentation concerning the development of each finished drawing shall be included in the first eight layers as described in the "A/E/C CADD Standard." Internet sources of detailed information concerning the content and format for the metadata files can be obtained from the FGDC Metadata website http://www.fgdc.gov/metadata. The following additional information for each finished drawing shall also be included in the non-plot layer, X-ANNO-NPLT:

(1) How the data were input (e.g., keyed in, downloaded from a survey total station instrument (include name and model)).

(2) Brief drawing development history (e.g., date started, modification date(s) with brief description of item(s) modified, author's name).

(3) The names of the reference files, blocks, symbols, details, tables, and schedule files required for the finished drawing.

(4) Layer assignments and lock settings.

(5) Text fonts, line styles used, and pen settings.

F. HARD COPY TRANSMITTALS.

A transmittal letter shall accompany each electronic digital media submittal to the Government. The transmittal letter shall be dated and signed by the appropriate Contractor's representative. The transmittal letter shall be provided to the Government in hard copy and electronic copy. The transmittal letter shall contain, as a minimum, the following information:

(1) The information included on the external label of each media unit (e.g., disk, tape), along with the total number being delivered, and a list of the names and descriptions of the files on each media unit.

(2) Brief instructions for transferring the files from the media.

(3) Certification that all delivery media are free of known computer viruses. A statement including the name(s) and release date(s) of the virus-scanning software used to analyze the delivery media, the date the virus scan was performed, and the operator's name shall also be included with the certification. The release or version date of the virus-scanning software shall be the current version which has detected the latest known viruses at the time of delivery of the digital media.

(4) A statement indicating that the A-E will retain a copy of all delivered electronic digital media (with all files included) for at least one year after completion of the project and, during this period of time, A-E will abide with HIARNG non-disclosure policy and take responsibility for the control of the information.

In addition, the Contractor shall provide the following "Plot File Development and Project Documentation Information" as an enclosure or attachment to the transmittal letter provided with each electronic digital media submittal. The "Plot file Development and Project Documentation Information" shall be provided to the Government in hardcopy and electronic copy in a digital media submitted to the Government.

(1) Documentation of the plot file for each drawing which will be needed to be able to duplicate the creation of the plot file by the Government at a later date. This documentation shall include the plotter configuration (e.g., name and model of plotter), pen settings, drawing orientation, drawing size, and any other special instructions.

(2) Instructions concerning how to generate plotted, or hard copy, drawings from the provided plot files.

(3) List of any deviations from the Government's standard layer scheme and file-naming conventions.

(4) List of all new symbol blocks created for the project, which were not provided to the Contractor with the Government-furnished materials.

(5) List of any non-IGES patterns used.

(6) List of all new figures, symbols, tables, schedules, details, and other blocks created for the project, which were not provided to the Contractor with the Government-furnished materials, and any associated properties.

(7) List of all database files associated with each drawing, as well as a description and documentation of the database format and schema design.

(8) Recommended modifications which will be necessary to make the data available for GIS use.

G. OWNERSHIP.

The Government, for itself and such others as it deems appropriate, will have unlimited rights under this contract to all information and materials developed under this contract and furnished to the Government and documentation thereof, reports, and listings, and all other items pertaining to the work and services pursuant to this agreement including any copyright. Unlimited rights under this contract are rights to use, duplicate, or disclose text, data, drawings, and information, in whole or in part in any manner and for any purpose whatsoever without compensation to or approval from the Contractor. The Government will at all reasonable times have the right to

inspect the work and will have access to and the right to make copies of the above-mentioned items. All text, electronic digital files, data, and other products generated under this contract shall become the property of the Government. By reference, the following DFAR clauses are included in this contract as a part of the requirements herein:

a. DFAR 252.227-7013, "Rights in Technical Data - Noncommercial Items."

b. DFAR 252.227-7017, "Identification and Assertion of Use, Release, or Disclosure Restrictions."

c. DFAR 252.227-7020, "Rights in Special Works."

d. DFAR 252.227-7028, "Technical Data or Computer Software Previously Delivered to the Government."

e. DFAR 252.227-7037, "Validation of Restrictive Markings on Technical Data."

f. DFAR 252.227-7025, "Limitations on the Use or Disclosure of Government-Furnished Information Marked with Restrictive Legends."

g. DFAR 252.227-7014, "Rights in Noncommercial Computer Software and Noncommercial Computer Software Documentation."

Appendix E: Sample Technical Contract Clauses for Surveying, Mapping, and Geographic Information System (GIS) Deliverables

NOTE TO REVIEWER: This section is intended for use with Installation Master Planning and environmental based contracts with expected GIS deliverables, like map documents, GPS collected data, or GIS developed data as a result of a master planning and environmental management plans, but may include geotechnical, boundary, or topographic surveys.

1. GENERAL.

The contractor, operating as an independent contractor and not an agent of the Government, shall provide all labor, material, and equipment necessary to perform the services as stated in this contract. The contractor shall furnish the required personnel, equipment, instruments, and transportation, as necessary to accomplish the required services and furnish to the Government all reports and other data together with supporting material developed during the work efforts. During the prosecution of the work, the contractor shall provide adequate professional supervision and quality control to assure the accuracy, quality, completeness, and progress of the work. All work shall be directed by the "Contracting Officer" or his "Authorized Representative." The term "Contracting Officer" shall be interpreted to mean "Contracting Officer" or his "Authorized Representative."

2. LOCATION OF SERVICES.

All Geographic Information System (GIS) and related geospatial services) performed under this contract may be required anywhere within the boundaries of the State of Hawaii, and shall be directed by the Contracting Officer.

3. SERVICES TO BE PERFORMED.

The general types of professional surveying, mapping, GIS, and related services to be performed under this contract include, but are not limited to, the items listed below.

3.2 BOUNDARY AND CADASTRAL SURVEYS. These services consist of, but are not limited to, locating, relocating, and/or marking Government boundaries, easements, etc. and preparing or filing/recording certified drawings, computations, deeds, and related descriptive data in accordance with local, state, and Federal requirements, regulations, and laws. Services shall also include all such deed and other research necessary to perform said services.

3.3 TOPOGRAPHIC AND ENGINEERING SURVEYS. Services include but are not limited to field acquisition and office data reduction of detailed topographic and planimetric feature data for use in engineering site planning, cost estimating, design, construction layout and alignment of roads, buildings, and other structures, installation master planning, and recording as-built conditions and GIS applications. Field data acquisition includes both conventional and other methods, such as a planetable, total station, or GPS.

3.7 CONVENTIONAL AND/OR DIGITAL MAPPING AND CHARTING SERVICES. Services include the development, implementation, acquisition, and/or generation of conventional and/or digital mapping and charting products. Services include, but are not limited to, two- and three-dimensional mapping and charting, digital terrain models, soft-copy photogrammetry, and GIS products.

3.8 GEOGRAPHIC INFORMATION SYSTEM (GIS) SERVICES. Services include, but are not limited to, the development and implementation of a GIS (hardware, software, data, personnel, approach, procedures, training, etc.) and the production of GIS products (maps, databases, etc.). A GIS consists of an automated computerized system that employs data referenced to a location on the earth, based upon absolute, relative, or assumed coordinates. The target GIS includes the following basic components, which are currently installed, or are to be installed, at the organization which will be receiving and using the geospatial data:

- The platform is a desktop PC with running Windows operating system.
- ESRI's ArcGIS for Desktop and ArcGIS Server.
- Relational database management system (RDBMS) software in Windows (TBD).
- The geodatabase schema is SDSFIE 4.0 ARNG Model which is based upon the SDSFIE 4.0 Gold Army Adaptation.

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Fax 301-394-0084
DSN 290-0081/2/3

ENGINEER MANUALS

EM 1110-1-1000 (PHOTOGRAMMETRY) [FY 92]
EM 1110-1-1002 (MONUMENTATION) [FY 91]
EM 1110-1-1003 (GPS) [JUNE 91]
EM 1110-1-1004 (DEFORMATION MONITORING) [OCT 94]
EM 1110-1-1005 (TOPOGRAPHIC AND FIELD SURVEYING [FY 94]
EM 1110-2-1003 (HYDROGRAPHIC SURVEYING) [FEB 91]
EM 1110-1-1807 (CADD VOLUMES 1-4) [JULY 90]

ENGINEER REGULATIONS

ER 1110-1-1001 (USCE STANDARD SURVEY DISK) [FY 92]
ER 1110-1-1002 (MAPS & DRAWINGS) [FY 92]
ER 1130-2-307 (DREDGING POLICIES AND PRACTICES [MAY 91]

6.2 GIS STANDARDS:

Spatial Data Standard for Facilities, Infrastructure, & Environment (SDSFIE) via the Internet: http://sdsfieonline.org

6.3 ARMY PUBLICATIONS:

6.5 OTHER PUBLICATIONS:

FIPS 173 Publication (U.S. Geological Survey Open File Report 88-105)
ASPRS Accuracy Standards

American Society for Photogrammetry and Remote Sensing
5410 Grosvernor Lane, Suite 210
Bethesda, MD 20814-2160

Phone: 301-493-0290
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7. DELIVERY MEDIA AND FORMAT.

7.1 FORMAT. A copy of all data and files developed under this contract shall be delivered to the Government in digital format with each submittal as required in the Schedule of Work. All deliverable digital files of less than or equal to two (2) GB, may be provided on DVDs or via secured file transfer protocol (FTP), like AMRDEC SAFE (https://safe.amrdec.army.mil/SAFE/). For projects with electronic digital files or sets of files larger than two (2)

GB, the electronic digital data and files shall be provided on a portable external hard drive. and compatible with the Government's Target GIS hardware. A "Readme.txt" file must be included with the delivered digital media that includes normal transmittal information. Use of the Internet to transfer files between the contractor and the Government is an option, as approved by the Government Contracting Officer. The digital media used shall be fully compatible with the Government's Target GIS.

7.2 LABEL. The external label for each digital media shall contain, as a minimum, the following information:

- Contract Number (and Delivery Order Number if applicable) and date.
- Format and version of operating system software.
- Name and version of utility software used for preparation (e.g., compression/decompression) (if applicable) and copying files to the media.
- Sequence number of digital media.
- List of file names on the digital media (as space on the label permits).

7.3 QUALITY ASSURANCE/QUALITY CONTROL: Before a file is placed on the delivery digital media, the following procedures shall be performed:

b. Check to ensure that all reference files or GIS services are attached without device or directory specifications or links with log in information are available.

c. To the maximum extent possible, all files shall be delivered to the Government uncompressed. However, where compression of files is absolutely necessary, the digital files shall be compressed and reduced using either: (1) a self-extracting archive utility, or other compatible file compression/ decompression software approved by the Contracting Officer.

d. Include all files, both graphic and nongraphic, required for the project (i.e., layer files with symbology, style files with colors, lines, markers, and shading, tools, toolboxes, map documents or templates, geoprocessing models, Python scripts, data dictionaries, waypoints, projection files, corrected and uncorrected GPS data files, reference stations, etc.).

e. Make sure that all support files such as those listed above are in the same directory and that references to those files do not include device or directory specifications. Ensure using the relative path option is turned on.

g. Document any fonts, tables, symbols, cells/blocks, line styles/types, details, reference drawings, etc., developed by the contractor, or not provided among the Government-furnished materials (GFMs). The contractor shall obtain Government approval before using anything other than the Government's standards.

h. Correct unit of measure (UOM) is used to describe area and linear features. The correct UOM can be found within the corresponding feature class' Quality Assurance Plan (QAP). The QAP is available upon request.

i. Each feature within the feature class should have a unique ID or Primary Key (PK). The naming protocol for the PK is the 5 digit SiteCode, followed by a dash, 4 digit acronym for the feature class, dash, and 5 digit sequential number.

j. Each feature has the correct siteCode for the site the feature is located within. For features outside HIARNG sites, use the siteCode "HI".

k. When applicable, verify that the correct subtype is used for each feature within a feature class.

l. As the rules apply, polygons and lines must not overlap, must not have gaps and must not self-intersect.

• Digital media containing the organization's graphic and attribute geospatial data: Relevant GIS files pertaining to the project upon submittal of a signed *HIARNG Geospatial Data Release Form* by the Government Project Manager and Contractor to the IGI&S Manager or GIS staff.

The digital media are formatted to conform to the organization's GIS standard, and installed to function as an integral part of the GIS. The database of the GIS is "populated" with attribute data. All GIS data (including geospatial data acquisition and map development for use in a GIS) shall conform to the most current release of the Spatial Data Standard for Facilities, Infrastructure, and Environment (SDSFIE) and relevant Quality Assurance Plans (QAP). The QAP define geospatial data layer content specifications, geospatial data handling procedures, validation methodology, and metadata content specifications that are applicable to all geospatial data layers. The most current release of the SDSFIE is available for download from the Spatial Data Standards for Facilities, Infrastructure, and Environment (SDSFIE) web site (http://www.sdsfieonline.org). All delivered digital GIS data files shall also be submitted in strict compliance with the SDSFIE for the target GIS software system.

4. GRAPHIC FORMAT.

All surveying, mapping, and/or GIS graphical digital data generated by the contractor and supplied to the Government shall be fully compatible with currently used Esri ArcGIS version native digital format in Windows operating system. The contractor shall ensure that all digital files and data (e.g., base files, reference files, symbol libraries, etc.) are compatible with the Government's target GIS (i.e., GIS software, operating system, RDBMS software, schema) and adhere to the standards and requirements specified herein. The term "compatible" means that data can be accessed directly by the target system without translation, preprocessing, or post-processing of the digital data files. It is the responsibility of the contractor to ensure this level of compatibility.

The contractor shall utilize a line-cleaning routine to assure that there are no overshoots or undershoots in the line work.

All data generated by the contractor shall be input into a SQL compliant, relational database management system (RDBMS) database fully compatible with the aforementioned Government platform. The database schema and structure shall comply with the most current release of the SDSFIE. All linkages of non-graphical data with graphic elements, relationships between database tables, and report formats shall be maintained.

5. MAPPING AND GIS STANDARDS.

All mapping and GIS work performed as part of this contract shall conform to the following standards for accuracy, content, and structure: All large-scale mapping projects (scales larger than 1 inch (in.) = 1,667 feet (ft.)), shall follow the Government Standards (Army, Navy, Air Force) and/or "ASPRS Accuracy Standards for Large Scale Maps" (ASPRS 1990) classification standard. Small scale mapping (scales smaller than 1:24,000) projects will follow the OMB "United States National Map Accuracy Standards" (Bureau of the Budget 1947). All spatial data generated as part of this contract will conform to the most current release of the SDSFIE. The contractor shall submit a written request for approval of any deviations from the Government's established standards. No deviations from the Government's established standards will be permitted unless prior written approval of such deviation has been issued by the Government Contracting Officer.

6. REFERENCE STANDARDS/PUBLICATIONS.

6.1 CORPS OF ENGINEERS:

Mail: Corps of Engineers

8. METADATA GENERATION.

Contractor shall provide metadata files for all geospatial and GIS data and products produced under this contract. Geospatial data are defined as information that identifies the geographic location and characteristics of natural or constructed features and boundaries on the earth. Geospatial data affected by these requirements are those generated in a: Geographic Information System (GIS); Land Information System (LIS); Remote Sensing or Image Processing system; Computer-Aided Design and Drafting (CADD) system; Automated Mapping/Facilities Management (AM/FM) system; and other computer system that employs or references data using either absolute, relative, or assumed coordinates. The metadata file shall conform to the Federal Geographic Data Committee (FGDC) standards, and the SDSFIE. The output from the metadata generator software (e.g., metadata generating software list can be found at the FGDC website: https://www.fgdc.gov/metadata/geospatial-metadata-tools.) shall be in an editable text file format for all metadata files created under this contract. The digital metadata files shall be provided to the Government along with each product deliverable, unless otherwise approved in writing by the Contracting Officer.

9. TRANSMITTALS.

9.1 TRANSMITTAL LETTER: A transmittal letter containing, as a minimum, the following information shall accompany each digital media submittal to the Government. The transmittal letter shall be dated and signed by the appropriate contractor's representative. The transmittal letter shall be provided to the Government on 8-1/2-in. by 11-in. paper. A digital copy of the transmittal letter in a PDF format shall also be provided on the digital media submitted to the Government.

a. The information included on the external label of each media unit (e.g., CD, DVD), along with the total number being delivered, and a list of the names and descriptions of the files on each one.

c. Certification that all delivery media are free of known computer viruses. A statement including the name(s) and release date(s) of the virus-scanning software used to analyze the delivery media, the date the virus scan was performed, and the operator's name shall also be included with the certification. The release or version date of the virus-scanning software shall be the current version which has detected the latest known viruses at the time of delivery of the digital media.

d. A statement indicating that the A-E will retain a copy of all delivered digital media (with all files included) for at least one year after completion of the project and, during this period of time, A-E will abide with HIARNG non-disclosure policy and take responsibility for control of the information. Afterwards, A-E shall take the appropriate steps to remove and delete the information from their data holdings, database and library.

9.2 ENCLOSURES OR ATTACHMENTS TO THE TRANSMITTAL LETTER: In addition, the following documentation information shall be provided to the Government on 8-1/2-inch by 11-inch paper as an enclosure or attachment to the transmittal letter provided with each digital media submittal. A digital copy of the documentation information in a Word format shall also be provided on the digital media submitted to the Government.

a. Description of how the data were acquired and input into the GIS (part of metadata).

b. Brief development history for each graphic and non-graphic file on the submitted digital media (e.g., content, when developed, modified, etc.).

c. Metadata files in the Government-approved format.

11.1 GEODATABASE: Digital version of SDSFIE schema used by Government, currently SDSFIE 4.0 ARNG Model. As required by Army Regulation 115-13, 3-15 CONCERNING DATA SHARING, the release of Installation geospatial data will be accompanied by a Non-Disclosure Agreement. Geospatial information must be protected using the Principle of Least Privilege, therefore, a digital version of relevant GIS files pertaining to the project will only be furnished upon submittal of a signed *HIARNG Geospatial Data Release Form* by the Government Project Manager and Contractor to the IGI&S Manager or GIS staff. If restricted data is relevant to the project, then approval from the appropriate Subject Matter Expert is also required.

11.2 QUALITY ASSURANCE PLANS: The Quality Assurance Plans (QAP) define geospatial data layer content specifications, geospatial data handling procedures, validation methodology, and metadata content specifications that are applicable to all geospatial data layers within the Spatial Data Standards for Facilities, Infrastructure, and Environments (SDSFIE) 4.0 Army Adaptation data model. (SDSFIE 4.0 ARNG Model is the Army National Guard adaptation of the Spatial Data Standards for Facilities, Infrastructure, and Environments (SDSFIE) 4.0 Army Adaptation data model and covers the majority of the same material.) The IGI&S community should utilize the QAP General Guidance in conjunction with each geospatial data layer QAP to ensure compliance with quality standards for IGI&S geospatial data. Each geospatial data layer QAP includes, but is not limited to, guidance on feature description, characterization, representation, and attribution.

Appendix G: Recommended Surveying and Mapping Criteria for Military Construction, Civil Works, Operations, Maintenance, Real Estate, and HTRW Projects
See \\nghi\HIARNG\FMO_JFHQ\GIS\PROJECTS\GIS_CONTRACT_DOCS\GIS_Deliverables\CADD-GIS ContractLanguageGuidelines_AppendixH.xlsx

d. A list of all deviations from the Government's specified or provided standards.

e. Any recommended modifications necessary to make the data available for future use with a different type of GIS or with other "life-cycle" activities.

9.3 HARD COPIES OF MAPS/DRAWINGS: The Contractor shall provide maps and drawings in hardcopy and in digital media submittal to the Government. Format and standards of maps and drawings will comply with the specifications of project deliverables.

10. OWNERSHIP.

10.1 GENERAL: The Government, for itself and such others as it deems appropriate, will have unlimited rights under this contract to all information and materials developed under this contract and furnished to the Government and documentation thereof, reports, and listings, and all other items pertaining to the work and services pursuant to this agreement including any copyright. Unlimited rights under this contract are rights to use, duplicate, or disclose text, data, drawings, and information, in whole or in part in any manner and for any purpose whatsoever without compensation to or approval from the contractor. The Government will at all reasonable times have the right to inspect the work and will have access to and the right to make copies of the above-mentioned items. All text, digital files, data, and other products generated under this contract shall become the property of the Government. By reference, the following DFAR clauses are included in this contract as a part of the requirements herein:

DFAR 252.227-7013, Rights in Technical Data – Noncommercial Items

DFAR 252.227-7028, Technical Data or Computer Software Previously Delivered to the Government

DFAR 252.227-7037, Validation of Restrictive Markings on Technical Data

DFAR 252.227-7017, Identification and Assertion of Use, Release, or Disclosure Restrictions

DFAR 252.227-7025, Limitations on the Use or Disclosure of Government- Furnished Information Marked with Restrictive Legends

DFAR 252.227-7020, Rights in Special Works

DFAR 252.227-7023, Drawings and Other Data to Become Property of Government

DFAR 252.227-7014, Rights in Noncommercial Computer Software and Noncommercial Computer Software Documentation

10.2 COPYRIGHT: Any software and computer data/information developed as a component of this contract shall have the following statement included with its documentation:

"This computer program is a work effort for the United States Government and is not protected by copyright (17 U.S. Code 105). Any person who fraudulently places a copyright notice on or does any other act contrary to the provisions of 17 U.S. Code 506(c) shall be subject to the penalties provided therein. This notice shall not be altered or removed from this software or digital media and is to be on all reproductions."

11. GOVERNMENT-FURNISHED MATERIALS.

SECTION 01 11 00 – SUMMARY OF WORK

PART 1 GENERAL

1.01 SCOPE

A. Phase I Project Description. Major work items for this project, including incidental related work, are as follows:

1. B711 Administration Building: replace existing wet pipe alarm check valve riser; install new water flow switch at riser (no power required in Phase I); install automatic vent with drain line in existing sprinkler piping system. Riser replacement work must be from top of existing underground quarter bend elbow to top of riser assembly. Top of riser extends through existing roof overhang into concealed building ceiling space.

2. B713 Auditorium: replace existing wet pipe alarm check valve riser; install new water flow switch at riser (no power required in Phase I); install automatic vent with drain line in existing sprinkler piping system. Riser replacement work must be from aboveground flexible coupling at base to top of riser assembly. Top of riser extends through existing roof overhang into concealed building ceiling space.

3. B714 Billets A: replace existing wet pipe alarm check valve riser; install new water flow switch at riser (no power required in Phase I); install automatic vent with drain line in existing sprinkler piping system. Riser replacement work must be from top of existing underground quarter bend elbow to top of riser assembly. Top of riser extends through existing roof overhang into concealed building ceiling space.

4. B714 Billets B: Install automatic vent with drain line in existing wet pipe sprinkler piping system.

5. B711 Classroom Building: replace existing wet pipe alarm check valve riser; install new water flow switch at riser (no power required in Phase I); install automatic vent with drain line in existing sprinkler piping system. Riser replacement work must be from top of existing underground quarter bend elbow to top of riser assembly. Top of riser extends through existing roof overhang into concealed building ceiling space.

6. B712 Mess Hall: replace existing wet pipe alarm check valve riser; install new water flow switch at riser (no power required in Phase I); install automatic vent with drain line in existing sprinkler piping system. Riser replacement work must be from aboveground flexible coupling at base to top of riser assembly. Top of riser extends through existing roof overhang into concealed building ceiling space.

7. Fill all building wet pipe sprinkler risers utilizing nitrogen inerting system as risk mitigation component.

8. Prior to start of any work, the contractor must complete a pre-construction survey of each existing building's fire sprinkler system to identify heavily corroded pipe sections and/or fittings and identify pipe segments where a leak may occur when the system is refilled with water to match existing water pressure indicated at each building riser. Contractor must submit a clearly marked-up sprinkler plan indicating boundary of survey and showing identified corroded and/or leaking pipe and pipe sections with potential to leak (including labeled photo documentation) to the HIARNG FMO-Project Manager. Contractor must provide a construction bid amount to replace the identified corroded and/or leaking pipe sections, including all related fittings and sprinklers per the estimated quantities shown on the designated project plan sheets for each building's fire sprinkler system including all labor efforts. Should the material quantities identified in the contractor's survey exceed the estimated quantities shown on the construction drawings, the contractor must notify the HIARNG FMO-Project Manager and submit an itemized estimate for the excess quantity (overages) to the HIARNG FMO-Project Manager, including quantity, material descriptions, and associated material and labor costs for FMO-PM approval, prior to purchasing any materials.

1.02 SUBMITTALS

A. Submit under provisions of Section 01330 – SUBMITTAL PROCEDURES. Partial submittals will not be acceptable. Submit for approval three (3) complete sets of submittals as described below. Annotate descriptive data to show the specific model, type, and size of each item the Contractor proposes to furnish. Prepare working drawings on sheets not smaller than 24 by 36 inches, in accordance with the requirements for "Working Drawings (Plans) as specified in NFPA 13 and include data essential to the proper installation of each system. Do not commence work until the design of each system and the various components have been approved. The Qualified Fire Protection Engineer (QFPE) will review and approve all submittals. Before work is commenced, submit for approval complete sets of working drawings. Working drawings must be stamped by a licensed professional engineer.

   Submit the following in accordance with Section 01330 – Submittal Procedures:

   1. Preconstruction Submittals:

      Within 36 days of contract award but no less than 14 days prior to commencing work on site, the prime contractor must submit the following for review and approval. Shop Drawings, Product Data, and Design Data submittals received prior to the review and approval of the qualifications will be returned Disapproved Without Review.

      a. Digging Permit

1.03 LOCATION

A. The work is located within the Hawaii Army National Guard Regional Training Institute, within secured area of Bellows Air Force Station, Waimanalo, east of Kalanianaole Highway as indicated on the drawings.

1.04 NOTIFICATION PRIOR TO EXCAVATION

A. Notify the Contracting Officer at least 48 hours prior to starting excavation.

PART 2 PRODUCTS

NOT USED.

PART 3 EXECUTION

NOT USED.

END OF SECTION 01 11 00

SECTION 01 31 00 – 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 Limits and must 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. In addition, all workers must 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 must be removed from the job site as directed by the HIARNG FMO-Project Manager.

C. The State will hold the Contractor liable for all the acts of Subcontractors and must 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. 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 Limits. The Contractor of this project must to the extent ordered by the HIARNG FMO-Project Manager, conduct its work so as not to interfere with or hinder the progress or completion of the work performed by the Stat 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 Limits. This Contractor must coordinate activities, sequence of work, protective barriers and any and all areas of work interfacing with other Prime Contractor's work. Contractor must 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 the Contractor (or its Subcontractor) must 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 must notify the HIARNG FMO-Project Manager in writing.

C. Subject to approval by the HIARNG FMO-Project Manager, this Contractor must 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 HIARNG FMO-Project Manager. This does relieve the Contractor of the responsibility of proper coordination of the work. If directed by the HIARNG FMO-Project Manager, leave in place any temporary barriers.

   2. Coordinate work that abuts or overlaps work of the other projects with the HIARNG FMO-Project Manager and other Prime Contractor to mutual agreement so that work is 100 percent complete with continuity of all materials, systems and finishes.

   3. When directed by the HIARNG FMO-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 must 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 HIARNG FMO-Project Manager provide a combined Contractor's constructions schedule.

D. Other Contracts: If known, they are listed in SECTION 01 10 00 – PROJECT REQUIREMENTS.

1.05 PROJECT MEETINGS AND TRAINING

A. General: Schedule and conduct meetings and conferences as directed by the HIARNG FMO-Project Manager at the Contractor's field office, unless otherwise indicated.
   1. Attendees: Inform participants and others involved, and individuals whose presence is required, of date and time of each meeting. Notify HIARNG FMO-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 HIARNG FMO-Project Manager, within 7 days of the meeting.

B. Preconstruction Conference: Contracting Officer Representative must schedule a preconstruction conference before the start of construction, at a time convenient to the Contracting Officer Representative. Conference will be held at the Project site or another convenient location. The Contracting Office Representative must conduct the meeting to review legal and contracting requirements, review responsibilities, and personnel assignments.

1. Attendees: Contracting Officer Representative; design consultants; Facility Users; Contractor and its superintendent; major Subcontractors; manufacturers; suppliers; ENV office; and other concerned parties must attend the conference. All participants at the conference must 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 constructions 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. Sustainable design requirements such as:

        1) Construction Waste Management and recycling

        2) Commissioning

        3) Recordkeeping, submittals, etc.

    m. Progress cleaning.

    n. Working hours.

    o. ENV requirements

    p. Safety.

C. Progress Meetings: Conduct progress meetings at monthly or other intervals as determined by the HIARNG FMO-Project Manager. Coordinate dates of meetings with preparation of payment requests.

1. Attendees: In addition to HIARNG FMO-Project Manager, each Contractor, Subcontractor, supplier, and other entity concerned with current progress or involved in planning, coordination, or performance of future activities must be represented at these meetings. All participants at the meeting must 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 must 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 01 31 00

SECTION 01 32 00 – 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 01 31 00 – PROJECT MANAGEMENT AND COORDINATION for preparing a combined Contractor's Construction Schedule.
   2. SECITON 01 33 00 – SUBMITTAL PROCEDURES for submitting schedules and reports.

1.02 DEFINITIONS

A. Activity: A discreet 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 measurement 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 ins tarting 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 8 sets of the list of the required submittals, by Specification Section, within 15 days after award of the contract or upon earlier written instructions from the HIARNG FMO-Project Manager.
   1. The listing must 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 ode” can be inserted.

B. Construction Schedule: Submit 7 sets of the Construction Schedule for review within 15 days after the award of the contract or upon earlier written instructions from the HIARNG FMO-Project Manager.

C. Schedule of Prices: Submit 3 sets of the Schedule of Prices integrated with the Construction Schedule for review within 15 days after the award of the contract or upon earlier written instructions from the HIARNG FMO-Project Manager.

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, include 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, product data, material safety data information, schedules of material, schedules of operations, guarantees, test reports, certifications, operating and maintenance manuals, and field posted as-built drawings.

B. Preparation: Furnish a schedule of submittal per HIARNG FMO-Project Manager.
   1. Coordinate Submittals Schedule with list of subcontracts, the Schedule of Prices, and Contractor's Construction Schedule.

   2. The schedule must accommodate a minimum of 25 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 HIARNG FMO-Project Manager at monthly intervals or as directed by the HIARNG FMO-Project Manager. The listing must reflect all approvals received since the last update.

2.02 CONTRACTOR'S CONSTRUCTION SCHEDULE – PERT CHART CRITICAL PATH METHOD (CPM)

A. The construction schedule must address the entire project, to the extent required by the Contract Documents, and must show an expedient and practical execution of work. If requested by the HIARNG FMO-Project Manager, the Contractor must participate in a preliminary meeting to discuss the proposed schedule and requirements prior to submitting the schedule.

B. The Construction Schedule must 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 sequences 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 the 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 HIARNG FMO-Project Manager’s review, the Contractor must amend the schedule to reflect the comments. If necessary, the Contractor must participate in a meeting with the HIARNG FMO-Project Manager to discuss the proposed schedule and changes required. Submit the revised schedule for review within 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 HIARNG FMO-Project Manager’s approval.

E. Should changes to the schedule be desired, submit a request in writing to the HIARNG FMO-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 must mitigate the impact of all changes by readjusting the sequence of activities, duration of time, or resources utilizing available float.
   1. A change is a major if, in the opinion of the HIARNG FMO-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 HIARNG FMO-Project Manager, the Contractor must submit 6 sets of the revised schedule within 14 calendar days.

G. Throughout the duration of the project, the HIARNG FMO-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 HIARNG FMO-Project Manager. The schedule must reflect all changes occurring since the last update include 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 HIARNG FMO-Project Manager to withhold progress payments for items noted on the schedule.

J. Contractor must prosecute the work according to the CPM schedule. The HIARNG FMO-Project Manager must rely on reviewed Contractor's CPM Schedule and regular updates for planning and coordination. The HIARNG FMO-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 allocated 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 must be processed in accordance with other relevant provisions of the contract.

K. If the HIARNG FMO-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 must 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 must 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 HIARNG FMO-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 HIARNG FMO-Project Manager determines that any critical activity has fallen behind the CPM schedule by 15 calendar days or more, the Contractor must submit a remedial plan to recapture the lost scheduled time. Include a revised schedule. Furnish the remedial plan no later than 7 calendar days from HIARNG FMO-Project Manager's notification.

N. If an accelerated schedule is proposed, refer to GENERAL CONDITIONS Section 7.22 "CONSTRUCTION SCHEDULE".

2.03 SCHDEULE OF PRICES

A. Furnish a schedule of prices per HIARNG FMO-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 must equal the Contract price.

C. Each item in the Schedule of Prices and Payment Applications must 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 must be consistent with previous applications and payment. The HIARNG FMO-Project Manager must determine the appropriateness of each payment application item.

B. Payment Application Times: The State of Hawaii Department of Defense has 30 days from date of receipt of invoice to make payment. 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 of 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 HIARNG FMO-Project Manager.

H. Application Preparation: Complete every entry on form. Execute by a person authorized to sign legal documents on behalf of the Contractor.
   1. Entries must 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, 7 copies.
   2. Monthly Progress Report, 7 copies.
   3. Statement of Contract Time, 7 copies.
   4. Updated Submittal Register, 1 copy.
   5. Update Progress Schedule, 1 copy.
   6. All Daily Reports, 1 copy.
   7. All Payroll Affidavits for work done, 1 copy.

J. Retainage: The Department will withhold retainage in compliance with the GENERAL CONDITIONS.

K. Transmittal: Submit the signed original.

2.05 CONTRACTOR DAILY PROGRESS REPORTS

A. The General Contractor and all Subcontractors must keep a daily report of report events.

B. The form of the Contractor Daily Progress Report must be as directed by the HIARNG FMO-Project Manager.

C. Submit copies of the previous week's reports on Monday morning at 10:00am.

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 a hard copy, by e-mail, or web based construction management as directed by the HIARNG FMO-Project Manager.

PART 3 EXECUTION

NOT USED.

END OF SECTION 01 32 00

SECTION 01 33 00 – SUBMITTAL PROCEDURES

PART 1 GENERAL

1.01 GENERAL CONDITIONS

A. Submittal Information

1. The Contracting Officer may request submittals in addition to those specified when deemed necessary to adequately describe the work covered in the respective sections. Each submittal is to be complete and in sufficient detail to allow ready determination of compliance with contract requirements.

2. Units of weights and measures used on all submittals are to be the same as those used in the contract drawings.

B. Project Type

1. The Contractor's Quality Control (CQC) System Manager are to check and approve all items before submittal and stamp, sign, and date indicating action taken. Proposed deviations from the contract requirements are to be clearly identified. Include within submittals items such as: Contractor's, manufacturer's, or fabricator's drawings; descriptive literature including (but not limited to) catalog cuts, diagrams, operating charts or curves; test reports; test cylinders; samples; O&M manuals (including parts list); certifications; warranties; and other such required submittals.

2. The Contractor and the Designer of Record (DOR), if applicable, are to check and approve all items before submittal and stamp, sign, and date indicating action taken. Proposed deviations from the contract requirements are to be clearly identified. Include within submittals items such as: Contractor's, manufacturer's, or fabricator's drawings; descriptive literature including (but not limited to) catalog cuts, diagrams, operating charts or curves; test reports; test cylinders; samples; O&M manuals (including parts list); certifications; warranties; and other such required submittals.

1.02 DEFINITIONS

A. Submittal Descriptions (SD): Submittal requirements are specified in the technical sections. Examples and descriptions of submittals identified by the Submittal Description (SD) numbers and titles follow:

1. SD-01 Preconstruction Submittals

2. Submittals that are required prior to or commencing with the start of work on site. Submittals that are required prior to or at the start of construction (work) or the next major phase of the construction on a multiphase contract.

3. Preconstruction Submittals include schedules and a tabular list of locations, features, and other pertinent information regarding products, materials, equipment, or components to be used in the work.

4. Surety Bonds

5. List Of Proposed Subcontractors

6. List Of Proposed Products

7. Submittal Register

8. Schedule Of Prices Or Earned Value Report

9. Accident Prevention Plan Health And Safety Plan

10. Work Plan

11. Quality Control (QC) plan

B. Approving Authority
   1. Office or designated person authorized to approve the submittal.

C. Work
   1. As used in this section, on-site and off-site construction required by contract documents, including labor necessary to produce submittals, construction, materials, products, equipment, and systems incorporated or to be incorporated in such construction. In exception, excludes work to produce SD-01 submittals.

1.03 SUBMITTALS

A. Submit under provisions of Section 01330 – SUBMITTAL PROCEDURES. Partial submittals will not be acceptable. Submit for approval three (3) complete sets of submittals as described below. Annotate descriptive data to show the specific model, type, and size of each item the Contractor proposes to furnish. Prepare working drawings on sheets not smaller than 24 by 36 inches, in accordance with the requirements for "Working Drawings (Plans) as specified in NFPA 13 and include data essential to the proper installation of each system. Do not commence work until the design of each system and the various components have been approved. The Qualified Fire Protection Engineer (QFPE) will review and approve all submittals. Before work is commenced, submit for approval complete sets of working drawings. Working drawings must be stamped by a licensed professional engineer.

   Submit the following in accordance with Section 01330 – Submittal Procedures:
   1. Preconstruction Submittals:

      Within 36 days of contract award but no less than 14 days prior to commencing work on site, the prime contractor must submit the following for review and approval. Shop Drawings, Product Data, and Design Data submittals received prior to the review and approval of the qualifications will be returned Disapproved Without Review.

      a. Submittal Register

1.04 FORWARDING SUBMITTALS REQUIRING GOVERNMENT APPROVAL

A. As soon as practicable after award of contract, and before procurement or fabrication, all submittals required in the technical sections of this specification, including shop drawings and product data must be routed to HIARNG FMO-PM, unless specifically directed by the A/E otherwise.

B. O&M Data
   1. Submit data specified for a given item within 30 calendar days after the item is delivered to the contract site.

   2. In the event the Contractor fails to deliver O&M data within the time limits specified, the Contracting Officer may withhold from progress payments 50 percent of the price of the items to which such O&M data apply.

1.05 PREPARATION

A. Transmittal Form

1. Transmit each submittal, except sample installations and sample panels to the office of the approving authority using the transmittal form prescribed by the Contracting Officer. Include all information prescribed by the transmittal form and required in paragraph IDENTIFYING SUBMITTALS.

2. Properly complete form by filling out all the heading blank spaces and identifying each item submitted. Exercise special care to ensure proper listing of the specification paragraph and sheet number of the contract drawings pertinent to the data submitted for each item.

B. Identifying Submittals

1. The Contractor's approving authority must prepare, review and stamp submittals, including those provided by a subcontractor.

2. Identify submittals, except sample installations and sample panels, with the following information permanently adhered to or noted on each separate component of each submittal and noted on transmittal form. Mark each copy of each submittal identically, with the following:

a. Project title and location

b. Construction contract number

c. Dates of the drawings and revisions

d. Name, address, and telephone number of Subcontractor, supplier, manufacturer, and any other Subcontractor associated with the submittal.

e. Section number of the specification by which submittal is required

f. Submittal description (SD) number of each component of submittal

g. . For a resubmission, add alphabetic suffix on submittal description, for example, submittal 18 would become 18A, to indicate resubmission

h. Product identification and location in project.

C. Submittal Format

1. Format of SD-01 Preconstruction Submittals

a. When the submittal includes a document that is to be used in the project, or is to become part of the project record, other than as a submittal, do not apply the Contractor's approval stamp to the document itself, but to a separate sheet accompanying the document.

b. Provide data in the unit of measure used in the contract documents.

2. Format for SD-02 Shop Drawings

a. Provide fire sprinkler riser shop drawings not less than the size of the contract drawings. Prepare drawings to accurate size, with scale indicated, unless another form is required. Ensure drawings are suitable for reproduction and of a quality to produce clear, distinct lines and letters, with dark lines on a white background.

1) Include the nameplate data, size, and capacity on drawings. Also include applicable industry, and technical society publication references.

2) Dimension drawings, except diagrams and schematic drawings. Prepare drawings demonstrating interface with other trades to scale. Use the same unit of measure for shop drawings as indicated on the contract drawings. Identify materials and products for work shown.

3) Submit an electric copy of all shop drawings in PDF format.

b. Drawing Identification

1) Include on each drawing the building name, drawing title, number, date, and revision numbers and dates, in addition to information required in paragraph IDENTIFYING SUBMITTALS.

2) Number drawings in a logical sequence. Each drawing is to bear the number of the submittal in a uniform location next to the title block. Place the contract number in the margin, immediately below the title block, for each drawing.

3. Format of SD-03 Product Data

a. Present product data submittals for each section as a complete, bound volume. Include a table of contents, listing the page and catalog item numbers for product data.

b. Indicate, by prominent notation, each product that is being submitted; indicate the specification section number and paragraph number to which it pertains.

c. Product Information

1) Supplement product data with material prepared for the project to satisfy the submittal requirements where product data does not exist. Identify this material as developed specifically for the project, with information and format as required for submission of SD-07 Certificates.

2) Provide product data in units used in the Contract documents. Where product data are included in preprinted catalogs with another unit, submit the dimensions in contract document units, on a separate sheet.

d. Standards

1) Where equipment or materials are specified to conform to industry or technical-society reference standards of such organizations as the American National Standards Institute (ANSI), ASTM International (ASTM), National Electrical Manufacturer's Association (NEMA), Underwriters Laboratories (UL), or Association of Edison Illuminating Companies (AEIC), submit proof of such compliance. The label or listing by the specified organization will be acceptable evidence of compliance. In lieu of the label or listing, submit a certificate from an independent testing organization, competent to perform testing, and approved by the Contracting Officer. State on the certificate 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.

e. Data Submission

1) Collect required data submittals for each specific material, product, unit of work, or system into a single submittal that is marked for choices, options, and portions applicable to the submittal. Mark each copy of the product data identically. Partial submittals will not be accepted for expedition of the construction effort.

2) Submit the manufacturer's instructions before installation.

4. Format of SD-05 Design Data

a. Provide design data and certificates on 8 1/2 by 11-inch paper. Provide a bound volume for submittals containing numerous pages.

5. Format of SD-06 Test Reports

a. Provide reports on 8 1/2 by 11-inch paper in a complete bound volume.

b. By prominent notation, indicate each report in the submittal. Indicate the specification number and paragraph number to which each report pertains.

6. Format of SD-07 Certificates

a. Provide design data and certificates on 8 1/2 by 11-inch paper. Provide a bound volume for submittals containing numerous pages.

7. Format of SD-08 Manufacturer's Instructions

a. Present manufacturer's instructions submittals for each section as a complete, bound volume. Include the manufacturer's name, trade name, place of manufacture, and catalog model or number on product data. Also include applicable federal, military, industry, and technical-society publication references. If supplemental information is needed to clarify the manufacturer's data, submit it as specified for SD-07 Certificates.

b. Submit the manufacturer's instructions before installation.

8. Standards

a. Where equipment or materials are specified to conform to industry or technical-society reference standards of such organizations as the American National Standards Institute (ANSI), ASTM International (ASTM), National Electrical Manufacturer's Association (NEMA), Underwriters Laboratories (UL), or Association of Edison Illuminating Companies (AEIC), submit proof of such compliance. The label or listing by the specified organization will be acceptable evidence of compliance. In lieu of the label or listing, submit a certificate from an independent testing organization, competent to perform testing, and approved by the Contracting Officer. State on the certificate 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.

9. Format of SD-10 Operation and Maintenance Data (O&M)

a. Comply with the requirements specified in Section 01 78 23 OPERATION AND MAINTENANCE DATA for O&M Data format.

10. Format of SD-11 Closeout Submittals

a. When the submittal includes a document that is to be used in the project or is to become part of the project record, other than as a submittal, do not apply the Contractor's approval stamp to the document itself, but to a separate sheet accompanying the document.

b. Provide data in the unit of measure used in the contract documents.

D. Electronic File Format

1. Provide submittals in electronic format, with the exception of material samples required for SD-04 Samples items. Compile the submittal file as a single, complete document, to include the Transmittal Form described within. Name the electronic submittal file specifically according to its contents and coordinate the file naming convention with the Contracting Officer. Electronic files must be of sufficient quality that all information is legible. Use PDF as the electronic format, unless otherwise specified or directed by the Contracting Officer. Generate PDF files from original documents with bookmarks so that the text included in the PDF file is searchable and can be copied. If documents are scanned, optical character resolution (OCR) routines are required. Index and bookmark files exceeding 30 pages to allow efficient navigation of the file. When required, the electronic file must include a valid electronic signature or a scan of a signature.

2. E-mail electronic submittal documents smaller than 10MB to an e-mail address as directed by the Contracting Officer. Provide electronic documents over 10 MB on an optical disc.

1.06 QUANTITY OF SUBMITTALS

A. Number of SD-01 Preconstruction Submittal Copies

1. Unless otherwise specified, submit two sets of administrative submittals.

B. Number of SD-02 Shop Drawing Copies

1. Submit one copy of submittals of shop drawings requiring review and approval by a QC organization. Submit six copies of shop drawings requiring review and approval by the Contracting Officer.

C. Number of SD-03 Product Data Copies
   1. Submit in compliance with quantity requirements specified for shop drawings.

D. Number of SD-05 Design Data Copies
   1. Submit in compliance with quantity requirements specified for shop drawings.

E. Number of SD-06 Test Report Copies
   1. Submit in compliance with quantity and quality requirements specified for shop drawings, other than field test results that will be submitted with QC reports.

F. Number of SD-07 Certificate Copies
   1. Submit in compliance with quantity requirements specified for shop drawings.

G. Number of SD-08 Manufacturer's Instructions Copies
   1. Submit in compliance with quantity requirements specified for shop drawings.

H. Number of SD-10 Operation and Maintenance Data Copies
   1. Submit five copies of O&M data to the Contracting Officer for review and approval.

I. Number of SD-11 Closeout Submittals Copies
   1. Unless otherwise specified, submit two sets of administrative submittals.

1.07 SCHEDULING

A. Schedule and submit concurrently product data and shop drawings covering component items forming a system or items that are interrelated. Submit pertinent certifications at the same time. No delay damages or time extensions will be allowed for time lost in late submittals.
   1. Coordinate scheduling, sequencing, preparing, and processing of submittals with performance of work so that work will not be delayed by submittal processing. The Contractor is responsible for additional time required for Government reviews resulting from required resubmittals. The review period for each resubmittal is the same as for the initial submittal.

   2. Submittals required by the contract documents are listed on the submittal register. If a submittal is listed in the submittal register but does not pertain to the contract work, the Contractor is to include the submittal in the register and annotate it "N/A" with a brief explanation. Approval by the Contracting Officer does not relieve the Contractor of supplying submittals required by the contract documents but that have been omitted from the register or marked "N/A."

   3. Resubmit the submittal register and annotate it monthly with actual submission and approval dates. When all items on the register have been fully approved, no further resubmittal is required.

   4. Except as specified otherwise, allow a review period, beginning with receipt by the approving authority, that includes at least 15 working days for submittals for QC manager approval and 20 working days for submittals where the Contracting Officer is the approving authority. The period of review for submittals with Contracting Officer approval begins when the Government receives the submittal from the QC organization.

   5. At the Preconstruction conference, provide the following schedule of submittals for approval by the Contracting Officer:

6. A schedule of shop drawings and technical submittals required by the specifications and drawings. Indicate the specification or drawing reference requiring the submittal; the material, item, or process for which the submittal is required; the "SD" number and identifying title of the submittal; the anticipated submission date, and the approval need date.

7. A separate schedule of other submittals required under the contract but not listed in the specifications or drawings. Indicate the contract requirement reference, the type or title of the submittal, the anticipated submission date, and the approval need date (if approval is required).

B. Reviewing, Certifying, and Approving Authority
   1. The QC Manager is responsible for reviewing all submittals and certifying that they are in compliance with contract requirements. The approving authority on submittals is the QC Manager unless otherwise specified.

C. Constraints
   1. Conform to provisions of this section, unless explicitly stated otherwise for submittals listed or specified in this contract.

   2. Submit complete submittals for each definable feature of the work. At the same time, submit components of definable features that are interrelated as a system.

   3. When acceptability of a submittal is dependent on conditions, items, or materials included in separate subsequent submittals, the submittal will be returned without review.

   4. Approval of a separate material, product, or component does not imply approval of the assembly in which the item functions.

D. QC Organization Responsibilities
   1. Review submittals for conformance with project design concepts and compliance with contract documents.

   2. Process submittals based on the approving authority indicated in the submittal register.

      a. When the QC manager is the approving authority, take appropriate action on the submittal from the possible actions defined in paragraph APPROVED SUBMITTALS.

      b. When the Contracting Officer is the approving authority or when variation has been proposed, forward the submittal to the Government, along with a certifying statement, or return the submittal marked "not reviewed" or "revise and resubmit" as appropriate. The QC organization's review of the submittal determines the appropriate action.

   3. Ensure that material is clearly legible.

4. Stamp each sheet of each submittal with a QC certifying statement or an approving statement, except that data submitted in a bound volume or on one sheet printed on two sides may be stamped on the front of the first sheet only.

   a. When the approving authority is the Contracting Officer, the QC organization will certify submittals forwarded to the Contracting Officer with the following certifying statement:

   "I hereby certify that the (equipment) (material) (article) shown and marked in this submittal is that proposed to be incorporated with Contract Number [_____] is in compliance with the contract drawings and specification, can be installed in the allocated spaces, and is submitted for Government approval.

   Certified by Submittal Reviewer _____, Date _____

   (Signature when applicable)

   Certified by QC Manager _____, Date _____"

   (Signature)

   b. When approving authority is the QC manager, the QC manager will use the following approval statement when returning submittals to the Contractor as "Approved" or "Approved as Noted."

   "I hereby certify that the (material) (equipment) (article) shown and marked in this submittal and proposed to be incorporated with Contract Number [_____] is in compliance with the contract drawings and specification, can be installed in the allocated spaces, and is approved for use.

   Certified by Submittal Reviewer _____, Date _____

   (Signature when applicable)

   Approved by QC Manager _____, Date _____"

   (Signature)

5. Sign the certifying statement or approval statement. The QC organization member designated in the approved QC plan is the person signing certifying statements. The use of original ink for signatures is required. Stamped signatures are not acceptable.

6. Update the submittal register as submittal actions occur, and maintain the submittal register at the project site until final acceptance of all work by the Contracting Officer.

7. Retain a copy of approved submittals and approved samples at the project site.

E. Government Reviewed Design

1. The Government will review design submittals for conformance with the technical requirements of the Solicitation. Section 01 33 00 10 SUBMITTAL PROCEDURES covers the design submittal and review process in detail. Government review is required for variations from the completed design. Review will be only for conformance with the contract requirements. Included are only those construction submittals for which the DOR's design documents do not include enough detail to ascertain contract compliance. The Government may, but is not required to, review extensions of design such as structural steel or reinforcement shop drawings.

1.08 GOVERNMENT APPROVING AUTHORITY

A. When the approving authority is the Contracting Officer, the Government will:
   1. Note the date on which the submittal was received from the QC manager.

   2. Review submittals for approval within the scheduling period specified and only for conformance with project design concepts and compliance with contract documents.

   3. Identify returned submittals with one of the actions defined in paragraph REVIEW NOTATIONS and with comments and markings appropriate for the action indicated.

B. Upon completion of review of submittals requiring Government approval, stamp and date submittals. Two copies of the submittal will be retained by the Contracting Officer and one copy of the submittal will be returned to the Contractor. If the Government performs a conformance review of other Designer of Record approved submittals, the submittals will be identified and returned, as described above.

C. Review Notations
   1. Submittals will be returned to the Contractor with the following notations:

   2. Submittals marked "no exception taken" authorize proceeding with the work covered.

   3. Submittals marked "exceptions as noted", “except as noted, resubmittal not required,” authorize proceeding with the work covered provided that the Contractor takes no exception to the corrections.

   4. Submittals marked "rejected," or "revise and resubmit" indicate incomplete submittal or noncompliance with the contract requirements or design concept. Resubmit with appropriate changes. Do not proceed with work for this item until the resubmittal is approved.

   5. Submittals marked "not reviewed" indicate that the submittal has been previously reviewed and approved, is not required, does not have evidence of being reviewed and approved by Contractor, or is not complete. A submittal marked "not reviewed" will be returned with an explanation of the reason it is not reviewed. Resubmit submittals returned for lack of review by Contractor or for being incomplete, with appropriate action, coordination, or change.

1.09 DISAPPROVED SUBMITTALS

A. Make corrections required by the Contracting Officer. If the Contractor considers any correction or notation on the returned submittals to constitute a change to the contract drawings or specifications, give notice to the Contracting Officer as required under the FAR clause titled CHANGES. The Contractor is responsible for the dimensions and design of connection details and the construction of work. Failure to point out variations may cause the Government to require rejection and removal of such work at the Contractor's expense.

B. If changes are necessary to submittals, make such revisions and resubmit in accordance with the procedures above. No item of work requiring a submittal change is to be accomplished until the changed submittals are approved.

1.10 APPROVED SUBMITTALS

A. The Contracting Officer's approval of submittals is not to be construed as a complete check, and indicates only that the general method of construction, materials, detailing, and other information are satisfactory. the design, general method of construction, materials, detailing, and other information appear to meet the Solicitation and Accepted Proposal.

B. Approval or acceptance by the Government for a submittal does not relieve the Contractor of the responsibility for meeting the contract requirements or for any error that may exist, because under the Quality Control (QC) requirements of this contract, the Contractor is responsible for ensuring information contained with in each submittal accurately conforms with the requirements of the contract documents.

C. After submittals have been approved or accepted by the Contracting Officer, no resubmittal for the purpose of substituting materials or equipment will be considered unless accompanied by an explanation of why a substitution is necessary.

1.11 WITHHOLDING OF PAYMENT

A. Payment for materials incorporated in the work will not be made if required approvals have not been obtained. No payment for materials incorporated in the work will be made unless all required DOR approvals or required Government approvals have been obtained. No payment will be made for any materials incorporated into the work for any conformance review submittals or information-only submittals found to contain errors or deviations from the Solicitation or Accepted Proposal.

1.12 CERTIFICATION OF SUBMITTAL DATA

A. Certify the submittal data as follows on Form ENG 4025: "I certify that the above submitted items had been reviewed in detail and are correct and in strict conformance with the contract drawings and specifications except as otherwise stated.

_____NAME OF CONTRACTOR _____ SIGNATURE OF CONTRACTOR

PART 2 PRODUCTS

NOT USED.

PART 3 EXECUTION

3.01 SUBMITTAL REGISTER AND TRANSMITTAL FORM

A. Contractor must use submittal register and transmittal forms as directed by the HIARNG FMO-PM.

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 HIARNG FMO-PM for review.

C. Contractor must 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 must separate all different types of data as separate line items all with the column requirements.

E. Contractor must send monthly updates and reconciled copies electronically to the HIARNG FMO-PM and the Design Consultant in MS Word or MS Excel or other format as accepted by the HIARNG FMO-PM.

	SHOP DRAWINGS & DIAGRAMS	SAMPLES	CERTIFICATES (MATERIAL, TREATMENT, APPLICATOR, ETC)	PRODUCT DATA	MSDS SHEETS	CALCULATIONS	REPORTS (TESTING, MAINTENANCE)	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 GUARANTY
01 32 00 – CONSTRUCTION PROGRESS DOCUMENTATION											●			●		
01 33 00 – SUBMITTAL PROCEDURES			●											●		
21 13 13 – WET PIPE FIRE SPRINKLER SYSTEM	●			●			●	●	●	●	●		●	●	●	●

END OF SECTION 01 33 00

SECTION 01 35 26 – GOVERNMENTAL SAFETY REQUIREMENTS

PART 1 GENERAL

1.01 DEFINITIONS

A. Competent Person (CP): The CP is a person designated in writing, who, through training, knowledge and experience, is capable of identifying, evaluating, and addressing existing and predictable hazards in the working environment or working conditions that are dangerous to personnel, and who has authorization to take prompt corrective measures with regards to such hazards.

B. Competent Person, Confined Space: The CP, Confined Space, is a person meeting the competent person requirements as defined EM 385-1-1 Appendix Q, with thorough knowledge of OSHA's Confined Space Standard, 29 CFR 1910.146, and designated in writing to be responsible for the immediate supervision, implementation and monitoring of the confined space program, who through training, knowledge and experience in confined space entry is capable of identifying, evaluating and addressing existing and potential confined space hazards and, who has the authority to take prompt corrective measures with regard to such hazards.

C. Competent Person, Cranes and Rigging: The CP, Cranes and Rigging, as defined in EM 385-1-1 Appendix Q, is a person meeting the competent person, who has been designated in writing to be responsible for the immediate supervision, implementation and monitoring of the Crane and Rigging Program, who through training, knowledge and experience in crane and rigging is capable of identifying, evaluating and addressing existing and potential hazards and, who has the authority to take prompt corrective measures with regard to such hazards.

D. Competent Person, Excavation/Trenching: A CP, Excavation/Trenching, is a person meeting the competent person requirements as defined in EM 385-1-1 Appendix Q and 29 CFR 1926, who has been designated in writing to be responsible for the immediate supervision, implementation and monitoring of the excavation/trenching program, who through training, knowledge and experience in excavation/trenching is capable of identifying, evaluating and addressing existing and potential hazards and, who has the authority to take prompt corrective measures with regard to such hazards.

E. Competent Person, Fall Protection: The CP, Fall Protection, is a person meeting the competent person requirements as defined in EM 385-1-1 Appendix Q and in accordance with ASSP Z359.0, who has been designated in writing by the employer to be responsible for immediate supervising, implementing and monitoring of the fall protection program, who through training, knowledge and experience in fall protection and rescue systems and equipment, is capable of identifying, evaluating and addressing existing and potential fall hazards and, who has the authority to take prompt corrective measures with regard to such hazards.

F. Competent Person, Scaffolding: The CP, Scaffolding is a person meeting the competent person requirements in EM 385-1-1 Appendix Q, and designated in writing by the employer to be responsible for immediate supervising, implementing and monitoring of the scaffolding program. The CP for Scaffolding has enough training, knowledge and experience in scaffolding to correctly identify, evaluate and address existing and potential hazards and also has the authority to take prompt corrective measures with regard to these hazards. CP qualifications must be documented including experience on the specific scaffolding systems/types being used, assessment of the base material that the scaffold will be erected upon, load calculations for materials and personnel, and erection and dismantling. The CP for scaffolding must have a documented minimum of 8-hours of scaffold training to include training on the specific type of scaffold being used (e.g. mast-climbing, adjustable, tubular frame), in accordance with EM 385-1-1 Section 22.B.02.

G. Competent Person (CP) Trainer: A competent person trainer as defined in EM 385-1-1 Appendix Q, who is qualified in the training material presented, and who possesses a working knowledge of applicable technical regulations, standards, equipment and systems related to the subject matter on which they are training Competent Persons. A competent person trainer must be familiar with the typical hazards and the equipment used in the industry they are instructing. The training provided by the competent person trainer must be appropriate to that specific industry. The competent person trainer must evaluate the knowledge and skills of the competent persons as part of the training process.

H. High Risk Activities: High Risk Activities are activities that involve work at heights, crane and rigging, excavations and trenching, scaffolding, electrical work, and confined space entry.

I. High Visibility Accident: A High Visibility Accident is any mishap which may generate publicity or high visibility.

J. Medical Treatment: Medical Treatment is treatment administered by a physician or by registered professional personnel under the standing orders of a physician. Medical treatment does not include first aid treatment even when provided by a physician or registered personnel.

K. Near Miss: A Near Miss is a mishap resulting in no personal injury and zero property damage, but given a shift in time or position, damage or injury may have occurred (e.g., a worker falls off a scaffold and is not injured; a crane swings around to move the load and narrowly misses a parked vehicle).

L. Qualified Person (QP): The QP is a person designated in writing, who, by possession of a recognized degree, certificate, or professional standing, or extensive knowledge, training, and experience, has successfully demonstrated their ability to solve or resolve problems related to the subject matter, the work, or the project.

M. Qualified Person, Fall Protection (QP for FP): A QP for FP is a person meeting the definition requirements of EM 385-1-1 Appendix Q, and ASSP Z359.2 standard, having a recognized degree or professional certificate and with extensive knowledge, training and experience in the fall protection and rescue field who is capable of designing, analyzing, and evaluating and specifying fall protection and rescue systems.

N. Recordable Injuries or Illnesses: Recordable Injuries or Illnesses are any work-related injury or illness that results in:
   1. Death, regardless of the time between the injury and death, or the length of the illness;

2. Days away from work (any time lost after day of injury/illness onset);

3. Restricted work;

4. Transfer to another job;

5. Medical treatment beyond first aid;

6. Loss of consciousness; or

7. A significant injury or illness diagnosed by a physician or other licensed health care professional, even if it did not result in (a) through (f) above.

O. Government Property and Equipment: Interpret "USACE" property and equipment specified in USACE EM 385-1-1 as Government property and equipment.

1.02 SUBMITTALS

A. Submit under provisions of Section 01330 – SUBMITTAL PROCEDURES. Partial submittals will not be acceptable. Submit for approval three (3) complete sets of submittals as described below. Annotate descriptive data to show the specific model, type, and size of each item the Contractor proposes to furnish. Prepare working drawings on sheets not smaller than 24 by 36 inches, in accordance with the requirements for "Working Drawings (Plans) as specified in NFPA 13 and include data essential to the proper installation of each system. Do not commence work until the design of each system and the various components have been approved. The Engineer will review and approve all submittals. Before work is commenced, submit for approval complete sets of working drawings. Working drawings must be stamped by a licensed professional engineer.

Submit the following in accordance with Section 01330 – Submittal Procedures:

1. Preconstruction Submittals:

   Within 36 days of contract award but no less than 14 days prior to commencing work on site, the prime contractor must submit the following for review and approval. Shop Drawings, Product Data, and Design Data submittals received prior to the review and approval of the qualifications will be returned Disapproved Without Review.

   a. Construction

2. Test Reports:

   a. Monthly Exposure Reports

   b. Notifications and Reports

   c. Accident Reports

   d. LHE Inspection Reports

3. Certificates:

   a. Contractor Safety Self-Evaluation Checklist Crane

   b. Operators/Riggers

   c. Standard Lift Plan

d. Critical Lift Plan

e. Activity Hazard Analysis (AHA) Confined

f. Space Entry Permit

g. Hot Work Permit

h. Certificate of Compliance License

i. Certificates

j. NAVFAC HI/FE/MAR GAMMA Radiography Operations Planning Worksheet

k. NAVFAC HI/FE/MAR X-Ray Radiography Operations Planning Worksheet

l. NAVFAC HI/FE/MAR Portable Gauge Operations Planning Worksheet

1.03 MONTHLY EXPOSURE REPORTS

A. Provide a Monthly Exposure Report and attach to the monthly billing request. This report is a compilation of employee-hours worked each month for all site workers, both Prime and subcontractor. Failure to submit the report may result in retention of up to 10 percent of the voucher.

1.04 CONTRACTOR SAFETY SELF-EVALUATION CHECKLIST

A. Contracting Officer will provide a "Contractor Safety Self-Evaluation checklist" to the Contractor at the pre-construction meeting. Complete the checklist monthly and submit with each request for payment voucher. An acceptable score of 90 or greater is required. Failure to submit the completed safety self-evaluation checklist or achieve a score of at least 90 may result in retention of up to 10 percent of the voucher. The Contractor Safety Self-Evaluation checklist can be found on the Whole Building Design Guide website at www.wbdg.org/ffc/dod/unified- facilities-guide-specifications-ufgs/ufgs-01-35-26.

1.05 REGULATORY REQUIREMENTS

A. In addition to the detailed requirements included in the provisions of this Contract, comply with the most recent edition of USACE EM 385-1-1, and the following federal, state, and local laws, ordinances, criteria, rules and regulations. Submit matters of interpretation of standards to the appropriate administrative agency for resolution before starting work. Where the requirements of this specification, applicable laws, criteria, ordinances, regulations, and referenced documents vary, the most stringent requirements govern.

B. Subcontractor Safety Requirements

1. For this Contract, neither Contractor nor any subcontractor may enter into Contract with any subcontractor that fails to meet the following requirements. The term subcontractor in this and the following paragraphs means any entity holding a Contract with the Contractor or with a subcontractor at any tier.

2. Experience Modification Rate (EMR)

a. Subcontractors on this Contract must have an effective EMR less than or equal to 1.10, as computed by the National Council on Compensation Insurance (NCCI) or if not available, as computed by the state agency's rating bureau in the state where the subcontractor is registered, when entering into a subcontract agreement with the Prime Contractor or a subcontractor at any tier. The Prime Contractor may submit a written request for additional consideration to the Contracting Officer where the specified acceptable EMR range cannot be achieved. Relaxation of the EMR range

will only be considered for approval on a case-by-case basis for special conditions and must not be anticipated as tacit approval.

b. Contractor's Site Safety and Health Officer (SSHO) must collect and maintain the certified EMR ratings for all subcontractors on the project and make them available to the Government at the Government's request.

3. OSHA Days Away from Work, Restricted Duty, or Job Transfer (DART) Rate

a. Subcontractors on this Contract must have a DART rate, calculated from the most recent, complete calendar year, less than or equal to 3.4 when entering into a subcontract agreement with the Prime Contractor or a subcontractor at any tier. The OSHA Dart Rate is calculated using the following formula:

1) (N/EH) x 200,000

2) N = number of injuries and illnesses with days away, restricted work, or job transfer

3) EH = total hours worked by all employees during most recent, complete calendar year

4) 200,000 = base for 100 full-time equivalent workers (working 40 hours per week, 50 weeks per year)

b. The Prime Contractor may submit a written request for additional consideration to the Contracting Officer where the specified acceptable OSHA Dart rate range cannot be achieved for a particular subcontractor. Relaxation of the OSHA DART rate range will only be considered for approval on a case-by-case basis for special conditions and must not be anticipated as tacit approval.

c. Contractor's Site Safety and Health Officer (SSHO) must collect and maintain self-certified OSHA DART rates for all subcontractors on the project and make them available to the Government at the Government's request.

1.06 SITE QUALIFICATIONS, DUTIES, AND MEETINGS

A. Personnel Qualifications

1. Site Safety and Health Officer (SSHO)

a. Provide an SSHO that meets the requirements of EM 385-1-1 Section 1. The SSHO must ensure that the requirements of 29 CFR 1926.16 are met for the project. Provide a Safety oversight team that includes a minimum of one person at each project site to function as the Site Safety and Health Officer (SSHO). The SSHO or an equally-qualified Alternate SSHO must be at the work site at all times to implement and administer the Contractor's safety program and Government-accepted Accident Prevention Plan. The SSHO and Alternate SSHO must have the required training, experience, and qualifications in accordance with EM 385-1-1 Section 01.A.17, and all associated sub-paragraphs. In addition, provide an SSHO that meets the following qualification requirement:

1) Level 3: The SSHO is required to have a minimum of 10 years safety work of a progressive nature with at least 5 years of experience on similar projects. 30-hour OSHA construction safety class or equivalent within the last 5 years. An average of at least 24 hours of formal safety training each year for the past 5 years with training for competent person status in at least Four (4) of the following competencies: Excavation; Scaffolding; Fall protection;

Hazardous energy; Confined space; Health hazard recognition, evaluation and control of chemical, physical and biological agents; Personal protective equipment and clothing to include selection, use and maintenance. The SSHO must have a Certified Safety Professional (CSP) and/or Certified Industrial Hygienist (CIH) certification. The CSP and/or CIH must have no other duties than safety and occupational health management, inspections, and/or industrial hygiene.

2) If the SSHO is off-site for a period longer than 24 hours, an equally-qualified alternate SSHO must be provided and must fulfill the same roles and responsibilities as the primary SSHO. The period of absence may not exceed 2 weeks at one time, and not more than 30 workdays during a calendar year. Only one Alternate SSHO will be allowed per Task Order.

3) Provide the Contracting Officer advance notification whenever the SSHO will be off-site and the Alternate SSHO will be serving as the SSHO, for any duration.

b. Additional Site Safety and Health Officer (SSHO) Requirements and Duties

1) The SSHO may not serve as the Quality Control Manager. The SSHO may not serve as the Superintendent.

2) The SSHO must have completed a 40 hour contract safety awareness course based on the content and principles of EM 385-1-1, and instructed in accordance with the guidelines of ASSP Z490.1, by a trainer meeting the qualifications of paragraph QUALIFIED TRAINER REQUIREMENTS. If the SSHO does not have a current certification, certification must be obtained within 60 days, maximum, of Contract award.

3) As a minimum this course must provide the participant with knowledge of the unique EM 385-1-1 U.S. Army Corps of Engineers Safety and Health requirements, NAVFAC P-307 Management of Weight Handling Equipment Manual, Hazard Identification, Recommending Hazard Abatement Methods, Properly preparing a site-specific Accident Prevention Plan (APP), Activity Hazard Analysis (AHA), and other skills necessary to effectively manage a safety program for contractors doing business with the US Navy, NAVFAC, US Army Corps of Engineers and other government DOD agencies.

4) The 40 Hour Construction Safety Hazard Awareness Course will include a written examination that will cover the following safety topics as it applies to the requirements identified in the 1) EM 385-1-1 U.S. Army Corps of Engineers Safety and Health requirements Manual and 2) the NAVFAC P-307 Management of Weight Handling Equipment Manual:

a) Program Management, Sanitation, Medical and First-Aid Requirements, Temporary Facilities, Personal Protective and Safety Equipment, Hazardous or Toxic Agents and Environments, Lighting, Accident Prevention Signs, Tags, Labels, Signals, Piping System Identification, and Traffic Control, Fire Prevention and Protection, Welding and Cutting, Electrical, Control of Hazardous Energy, Hand and Power Tools, Material Handling, Storage, & Disposal, Rigging, Cranes and Hoisting Equipment, Conveyors, Motor Vehicles, Machinery and Mechanized Equipment, All Terrain Vehicles, Utility Vehicles, and other Specialty Vehicles, Floating Plant and Marine Activities, Pressurized Equipment Systems, Fall Protection, Work Platforms and Scaffolding, Demolition, Safe Access,

Ladders, Floor & Wall Openings, Stairs and Railing Systems, Excavations and Trenching, Underground Construction (Tunnels), Shafts, and Caissons, Concrete, Masonry, Steel Erection and Residential Construction, Hazardous Waste Operations and Emergency Response (HAZWOPER), and Confined Space Entry.

5) This course is periodically offered by General Contractors Association of Hawaii, Hawaii Building Industry Foundation, Associated Builders and Contractors - Hawaii Chapter, and the Guam Contractors Association.

2. Contractor Quality Control (QC) Manager

a. The Contractor Quality Control Manager cannot be the SSHO on this project, even though the QC has safety inspection responsibilities as part of the QC duties.

3. Competent Person Qualifications

a. Provide Competent Persons in accordance with EM 385-1-1, Appendix Q and herein. Competent Persons for high risk activities include confined space, cranes and rigging, excavation/trenching, fall protection, and electrical work. The CP for these activities must be designated in writing, and meet the requirements for the specific activity (i.e. competent person, fall protection).

b. The Competent Person identified in the Contractor's Safety and Health Program and accepted Accident Prevention Plan, must be on-site at all times when the work that presents the hazards associated with their professional expertise is being performed. Provide the credentials of the Competent Persons(s) to the Contracting Officer for information in consultation with the Safety Office.

c. Competent Person for Confined Space Entry

1) Provide a Confined Space (CP) Competent Person who meets the requirements of EM 385-1-1, Appendix Q, and herein. The CP for Confined Space Entry must supervise the entry into each confined space in accordance with EM 385-1-1, Section 34.

2) Where work involves operations that handle combustible or hazardous materials, this person must have the ability to understand and follow through on the air sampling, Personal Protective Equipment (PPE), and instructions of a Marine Chemist, Coast Guard authorized persons, or Certified Industrial Hygienist. Confined space and enclosed space work must comply with NFPA 306, OSHA 29 CFR 1915, Subpart B, "Confined and Enclosed Spaces and Other Dangerous Atmospheres in Shipyard Employment," or as applicable, 29 CFR 1910.147 for general industry.

d. Competent Person for Scaffolding

1) Provide a Competent Person for Scaffolding who meets the requirements of EM 385-1-1, Section 22.B.02 and herein.

e. Competent Person for Fall Protection

1) Provide a Competent Person for Fall Protection who meets the requirements of EM 385-1-1, Section 21.C.04, 21.B.03, and herein.

4. Qualified Trainer Requirements

a. Individuals qualified to instruct the 40 hour contract safety awareness course, or portions thereof, must meet the definition of a Competent Person Trainer, and, at a minimum, possess a working knowledge of the following subject areas: EM 385-1-1, Electrical Standards, Lockout/Tagout, Fall Protection, Confined Space Entry for Construction; Excavation, Trenching and Soil Mechanics, and Scaffolds in accordance with 29 CFR 1926.450, Subpart L. Instructors are required to:

1) Prepare class presentations that cover construction-related safety requirements.

2) Ensure that all attendees attend all sessions by using a class roster signed daily by each attendee. Maintain copies of the roster for at least 5 years. This is a certification class and must be attended 100 percent. In cases of emergency where an attendee cannot make it to a session, the attendee can make it up in another class session for the same subject.

3) Update training course materials whenever an update of the EM 385-1-1 becomes available.

4) Provide a written exam of at least 50 questions. Students are required to answer 80 percent correctly to pass.

5) Request, review and incorporate student feedback into a continuous course improvement program.

5. Crane Operators/Riggers

a. Provide Operators, Signal Persons, and Riggers meeting the requirements in EM 385-1-1, Section 15.B for Riggers and Section 16.B for Crane Operators and Signal Persons. In addition, for mobile cranes with Original Equipment Manufacturer (OEM) rated capacities of 50,000 pounds or greater, designate crane operators qualified by a source that qualifies crane operators (i.e., union, a Government agency, or an organization that tests and qualifies crane operators). Provide proof of current qualification.

b. Crane Operators must also meet the crane operator requirements of the State of Hawaii Department of Defense for Crane certification.

6. Personnel Duties

a. Duties of the Site Safety and Health Officer (SSHO) The SSHO must:

1) Conduct daily safety and health inspections and maintain a written log which includes area/operation inspected, date of inspection, identified hazards, recommended corrective actions, estimated and actual dates of corrections. Attach safety inspection logs to the Contractors' daily production report.

2) Conduct mishap investigations and complete required accident reports. Report mishaps and near misses.

3) Use and maintain OSHA's Form 300 to log work-related injuries and illnesses occurring on the project site for Prime Contractors and subcontractors and make available to the Contracting Officer upon request. Post and maintain the Form 300A on the site Safety Bulletin Board.

4) Maintain applicable safety reference material on the job site.

5) Attend the pre-construction meeting, pre-work meetings including preparatory meetings, and periodic in-progress meetings.

6) Review the APP and AHAs for compliance with EM 385-1-1, and approve, sign, implement and enforce them.

7) Establish a Safety and Occupational Health (SOH) Deficiency Tracking System that lists and monitors outstanding deficiencies until resolution.

8) Ensure subcontractor compliance with safety and health requirements.

9) Maintain a list of hazardous chemicals on site and their material Safety Data Sheets (SDS).

10) Maintain a weekly list of high hazard activities involving energy, equipment, excavation, entry into confined space, and elevation, and be prepared to discuss details during QC Meetings.

11) Provide and keep a record of site safety orientation and indoctrination for Contractor employees, subcontractor employees, and site visitors.

b. Superintendent, QC Manager, and SSHO are subject to dismissal if the above or any other required duties are not being effectively carried out. If either the Superintendent, QC Manager, or SSHO are dismissed, project work will be stopped and will not be allowed to resume until a suitable replacement is approved and the above duties are again being effectively carried out.

7. Meetings

a. Preconstruction Meeting

1) Contractor representatives who have a responsibility or significant role in accident prevention on the project must attend the preconstruction meeting. This includes the project superintendent, Site Safety and Occupational Health Officer, quality control manager, or any other assigned safety and health professionals who participated in the development of the APP (including the Activity Hazard Analyses (AHAs) and special plans, program and procedures associated with it).

2) Discuss the details of the submitted APP to include incorporated plans, programs, procedures and a listing of anticipated AHAs that will be developed and implemented during the performance of the Contract. This list of proposed AHAs will be reviewed and an agreement will be reached between the Contractor and the Contracting Officer as to which phases will require an analysis. In addition, establish a schedule for the preparation, submittal, and Government review of AHAs to preclude project delays.

3) Deficiencies in the submitted APP, identified during the Contracting Officer's review, must be corrected, and the APP re-submitted for review prior to the start of construction. Work is not permitted to begin until an APP is established that is acceptable to the Contracting Officer.

b. Safety Meetings

1) Conduct safety meetings to review past activities, plan for new or changed operations, review pertinent aspects of appropriate AHA (by trade), establish

safe working procedures for anticipated hazards, and provide pertinent Safety and Occupational Health (SOH) training and motivation.

2) Conduct meetings at least once a month for all supervisors at the project location. The SSHO, supervisors, foremen, or CDSOs must conduct meetings at least once a week for the trade workers. Document meeting minutes to include the date, persons in attendance, subjects discussed, and names of individual(s) who conducted the meeting. Maintain documentation on-site and furnish copies to the Contracting Officer on request. Notify the Contracting Officer of all scheduled meetings 7 calendar days in advance.

1.07 ACCIDENT PREVENTION PLAN (APP)

A. APP – Construction

1. A qualified person must prepare the written site-specific APP. Prepare the APP in accordance with the format and requirements of EM 385-1-1, Appendix A, and as supplemented herein. Cover all paragraph and subparagraph elements in EM 385-1-1, Appendix A. The APP must be job-specific and address any unusual or unique aspects of the project or activity for which it is written. The APP must interface with the Contractor's overall safety and health program referenced in the APP in the applicable APP element, and made site-specific. Describe the methods to evaluate past safety performance of potential subcontractors in the selection process. Also, describe innovative methods used to ensure and monitor safe work practices of subcontractors. The Government considers the Prime Contractor to be the "controlling authority" for all work site safety and health of the subcontractors. Contractors are responsible for informing their subcontractors of the safety provisions under the terms of the Contract and the penalties for noncompliance, coordinating the work to prevent one craft from interfering with or creating hazardous working conditions for other crafts, and inspecting subcontractor operations to ensure that accident prevention responsibilities are being carried out. The APP must be signed by an officer of the firm (Prime Contractor senior person), the individual preparing the APP, the on-site superintendent, the designated SSHO, the Contractor Quality Control Manager, and any designated Certified Safety Professional (CSP) or Certified Health Physicist (CIH). The SSHO must provide and maintain the APP and a log of signatures by each subcontractor foreman, attesting that they have read and understand the APP, and make the APP and log available on-site to the Contracting Officer. If English is not the foreman's primary language, the Prime Contractor must provide an interpreter.

2. Submit the APP to the Contracting Officer within 30 calendar days of Contract award and not less than 10 calendar days prior to the date of the preconstruction conference for acceptance. Work cannot proceed without an accepted APP. Once reviewed and accepted by the Contracting Officer, the APP and attachments will be enforced as part of the Contract. Disregarding the provisions of this Contract or the accepted APP is cause for stopping of work, at the discretion of the Contracting Officer, until the matter has been rectified. Continuously review and amend the APP, as necessary, throughout the life of the Contract. Changes to the accepted APP must be made with the knowledge and concurrence of the Contracting Officer, project superintendent, SSHO and Quality Control Manager. Incorporate unusual or high-hazard activities not identified in the original APP as they are discovered. Should any severe hazard exposure (i.e. imminent danger) become evident, stop work in the area, secure the area, and develop a plan to remove the exposure and control the hazard. Notify the Contracting Officer within 24 hours of discovery. Eliminate and remove the hazard. In the interim, take all necessary action to restore and maintain safe working conditions in order to safeguard onsite personnel, visitors, the public (as defined by ASSP A10.34), and the environment.

B. Names and Qualifications

1. Provide plans in accordance with the requirements outlined in Appendix A of EM 385-1-1, including the following:

a. Names and qualifications (resumes including education, training, experience and certifications) of site safety and health personnel designated to perform work on this project to include the designated Site Safety and Health Officer and other competent and qualified personnel to be used. Specify the duties of each position.

b. Qualifications of competent and of qualified persons. As a minimum, designate and submit qualifications of competent persons for each of the following major areas: excavation; scaffolding; fall protection; hazardous energy; confined space; health hazard recognition, evaluation and control of chemical, physical and biological agents; and personal protective equipment and clothing to include selection, use and maintenance.

C. Plans

1. Provide plans in the APP in accordance with the requirements outlined in Appendix A of EM 385-1-1, including the following:

a. Confined Space Entry Plan

1) Develop a confined or enclosed space entry plan in accordance with EM 385-1-1, applicable OSHA standards 29 CFR 1910, 29 CFR 1915, and 29 CFR 1926, OSHA Directive CPL 2.100, and any other federal, state and local regulatory requirements identified in this Contract. Identify the qualified person's name and qualifications, training, and experience. Delineate the qualified person's authority to direct work stoppage in the event of hazardous conditions. Include procedure for rescue by Contractor personnel and the coordination with emergency responders. (If there is no confined space work, include a statement that no confined space work exists and none will be created.)

b. Standard Lift Plan (SLP)

1) Plan lifts to avoid situations where the operator cannot maintain safe control of the lift. Prepare a written SLP in accordance with EM 385-1-1, Section 16.A.03, using Form 16-2 for every lift or series of lifts (if duty cycle or routine lifts are being performed). The SLP must be developed, reviewed and accepted by all personnel involved in the lift in conjunction with the associated AHA. Signature on the AHA constitutes acceptance of the plan. Maintain the SLP on the LHE for the current lift(s) being made. Maintain historical SLPs for a minimum of three months.

c. Multi-Purpose Machines, Material Handling Equipment, and Construction Equipment Lift Plan

1) Multi-purpose machines, material handling equipment, and construction equipment used to lift loads that are suspended by rigging gear, require proof of authorization from the machine OEM that the machine is capable of making lifts of loads suspended by rigging equipment. Written approval from a qualified registered professional engineer, after a safety analysis is performed, is allowed in lieu of the OEM's approval. Demonstrate that the operator is properly trained and that the equipment is properly configured to make such lifts and is equipped with a load chart.

d. Fall Protection and Prevention (FP&P) Plan

1) The plan must be in accordance with the requirements of EM 385-1-1, Section 21.D and ASSP Z359.2, be site specific, and address all fall hazards in the work place and during different phases of construction. Address how to protect and prevent workers from falling to lower levels when they are exposed to fall hazards above 6 feet. A competent person or qualified person for fall protection must prepare and sign the plan documentation. Include fall protection and prevention systems, equipment and methods employed for every phase of work, roles and responsibilities, assisted rescue, self-rescue and evacuation procedures, training requirements, and monitoring methods. Review and revise, as necessary, the Fall Protection and Prevention Plan documentation as conditions change, but at a minimum every 6 months, for lengthy projects, reflecting any changes during the course of construction due to changes in personnel, equipment, systems or work habits. Keep and maintain the accepted Fall Protection and Prevention Plan documentation at the job site for the duration of the project.

2) Include the Fall Protection and Prevention Plan documentation in the Accident Prevention Plan (APP).

e. Rescue and Evacuation Plan

1) Provide a Rescue and Evacuation Plan in accordance with EM 385-1-1 Section 21.N and ASSP Z359.2, and include in the FP&P Plan and as part of the APP. Include a detailed discussion of the following: methods of rescue; methods of self-rescue; equipment used; training requirement; specialized training for the rescuers; procedures for requesting rescue and medical assistance; and transportation routes to a medical facility.

f. Hazardous Energy Control Program (HECP)

1) Develop a HECP in accordance with EM 385-1-1 Section 12, 29 CFR 1910.147, 29 CFR 1910.333, 29 CFR 1915.89, ASSP Z244.1, and ASSP A10.44. Submit this HECP as part of the Accident Prevention Plan (APP). Conduct a preparatory meeting and inspection with all effected personnel to coordinate all HECP activities. Document this meeting and inspection in accordance with EM 385-1-1, Section 12.A.02. Ensure that each employee is familiar with and complies with these procedures.

g. Excavation Plan

1) Identify the safety and health aspects of excavation and disturbance of pesticide impacted soils (PIS), and provide and prepare the plan in accordance with EM 385-1-1, Section 25.A and Section 31 23 00.00 20 EXCAVATION AND FILL.

h. Site Demolition Plan

1) Identify the safety and health aspects, and prepare in accordance with Section 02 41 00 DEMOLITION and referenced sources. Include engineering survey as applicable.

1.08 ACTIVITY HAZARD ANALYSIS (AHA)

A. Before beginning each activity, task or Definable Feature of Work (DFOW) involving a type of work presenting hazards not experienced in previous project operations, or where

a new work crew or subcontractor is to perform the work, the Contractor(s) performing that work activity must prepare an AHA. AHAs must be developed by the Prime Contractor, subcontractor, or supplier performing the work, and provided for Prime Contractor review and approval before submitting to the Contracting Officer. AHAs must be signed by the SSHO, Superintendent, QC Manager and the subcontractor Foreman performing the work. Format the AHA in accordance with EM 385-1-1, Section1 or as directed by the Contracting Officer. Submit the AHA for review at least 15 working days prior to the start of each activity task, or DFOW. The Government reserves the right to require the Contractor to revise and resubmit the AHA if it fails to effectively identify the work sequences, specific anticipated hazards, site conditions, equipment, materials, personnel and the control measures to be implemented.

B. AHAs must identify competent persons required for phases involving high risk activities, including confined entry, crane and rigging, excavations, trenching, electrical work, fall protection, and scaffolding.

C. AHA Management
   1. Review the AHA list periodically (at least monthly) at the Contractor supervisory safety meeting, and update as necessary when procedures, scheduling, or hazards change. Use the AHA during daily inspections by the SSHO to ensure the implementation and effectiveness of the required safety and health controls for that work activity.

D. AHA Signature Log
   1. Each employee performing work as part of an activity, task or DFOW must review the AHA for that work and sign a signature log specifically maintained for that AHA prior to starting work on that activity. The SSHO must maintain a signature log on site for every AHA. Provide employees whose primary language is other than English, with an interpreter to ensure a clear understanding of the AHA and its contents.

1.09 DISPLAY OF SAFETY INFORMATION

A. Safety Bulletin Board
   1. Prior to commencement of work, erect a safety bulletin board at the job site. Where size, duration, or logistics of project do not facilitate a bulletin board, an alternative method, acceptable to the Contracting Officer, that is accessible and includes all mandatory information for employee and visitor review, may be deemed as meeting the requirement for a bulletin board. Include and maintain information on safety bulletin board as required by EM 385-1-1, Section 01.A.07. Additional items required to be posted include:

      a. Confined space entry permit.

      b. Hot work permit.

B. Safety and Occupational Health (SOH) Deficiency Tracking System
   1. Establish a SOH deficiency tracking system that lists and monitors the status of SOH deficiencies in chronological order. Use the tracking system to evaluate the effectiveness of the APP. A monthly evaluation of the data must be discussed in the QC or SOH meeting with everyone on the project.

   2. The list must be posted on the project bulletin board and updated daily, and provide the following information:

      a. Date deficiency identified;

      b. Description of deficiency;

c. Name of person responsible for correcting deficiency;

d. Projected resolution date;

e. Date actually resolved.

1.10 SITE SAFETY REFERENCE MATERIALS

A. Maintain safety-related references applicable to the project, including those listed in paragraph REFERENCES. Maintain applicable equipment manufacturer's manuals.

1.11 EMERGENCY MEDICAL TREATMENT

A. Contractors must arrange for their own emergency medical treatment in accordance with EM 385-1-1. Government has no responsibility to provide emergency medical treatment.

1.12 NOTIFICATIONS AND REPORTS

A. Mishap Notification

1. Notify the Contracting Officer as soon as practical, but no more than 24 hours, after any mishaps, including recordable accidents, incidents, and near misses, as defined in EM 385-1-1 Appendix Q, any report of injury, illness, or any property damage. The Contractor is responsible for obtaining appropriate medical and emergency assistance and for notifying fire, law enforcement, and regulatory agencies. Immediate reporting is required for electrical mishaps, to include Arc Flash; shock; uncontrolled release of hazardous energy (includes electrical and non-electrical); rigging; fall from height (any level other than same surface); and underwater diving. These mishaps must be investigated in depth to identify all causes and to recommend hazard control measures.

2. Within notification include Contractor name; Contract title; type of Contract; name of activity, installation or location where accident occurred; date and time of accident; names of personnel injured; extent of property damage, if any; extent of injury, if known, and brief description of accident (for example, type of construction equipment used, and PPE used). Preserve the conditions and evidence on the accident site until the Government investigation team arrives on-site and Government investigation is conducted. Assist and cooperate fully with the Government's investigation(s) of any mishap.

B. Accident Reports

1. Conduct an accident investigation for recordable injuries and illnesses, property damage, and near misses as defined in EM 385-1-1, to establish the root cause(s) of the accident. Complete the applicable NAVFAC Contractor Incident Reporting System (CIRS), and electronically submit to the Contracting Officer. Complete and submit an accident investigation report to the Contracting Officer within 5 days for mishaps defined in EM 385-1-1 01.D.03 and 10 days for accidents defined by EM 385-1-1 01.D.05. Complete an investigation report within 30 days for those mishaps defined by EM 385-1-1 01.D.04. Mishaps defined by EM 385-1-1 01.D.04 and 01.D.05 must include a written report submitted as an attachment using the following outline:

a. Mishap summary description to include process, findings and outcomes;

b. Root Cause;

c. Direct Factors;

d. Indirect and Contributing Factors;

e. Corrective Actions;

f. And Recommendations. The Contracting Officer will provide copies of any required or special forms.

2. Near Misses: Complete the applicable documentation in NAVFAC Contractor Incident Reporting System (CIRS), and electronically submit to the Contracting Officer. Near miss reports are considered positive and proactive Contractor safety management actions.

1.13 HOT WORK

A. Permit and Personnel Requirements

1. Submit and obtain a written permit prior to performing "Hot Work" (i.e. welding or cutting) or operating other flame-producing/spark producing devices, from the Fire Prevention Office/Department (N30). A permit is required from the Explosives Safety Office for work in and around where explosives are processed, stored, or handled. CONTRACTORS ARE REQUIRED TO MEET ALL CRITERIA BEFORE A PERMIT IS ISSUED. Provide at least two 20 pound 4A:20 BC rated extinguishers for normal "Hot Work". The extinguishers must be current inspection tagged, and contain an approved safety pin and tamper resistant seal. It is also mandatory to have a designated FIRE WATCH for any "Hot Work" done at this activity. The Fire Watch must be trained in accordance with NFPA 51B and remain on-site for a minimum of 1 hour after completion of the task or as specified on the hot work permit.

2. When starting work in the facility, require personnel to familiarize themselves with the location of the nearest fire alarm boxes and place in memory the emergency Fire Prevention Office/Department (N30) phone number. REPORT ANY FIRE, NO MATTER HOW SMALL, TO THE RESPONSIBLE FIRE PREVENTION OFFICE/DEPARTMENT IMMEDIATELY.

B. Work Around Flammable Materials

1. Obtain permit approval from a NFPA Certified Marine Chemist for "HOT WORK" within or around flammable materials (such as fuel systems or welding/cutting on fuel pipes) or confined spaces (such as sewer wet wells, manholes, or vaults) that have the potential for flammable or explosive atmospheres.

2. Whenever these materials, except beryllium and chromium (VI), are encountered in indoor operations, local mechanical exhaust ventilation systems that are sufficient to reduce and maintain personal exposures to within acceptable limits must be used and maintained in accordance with manufacturer's instruction and supplemented by exceptions noted in EM 385-1-1, Section 06.

1.14 RADIATION SAFETY REQUIREMENTS

A. Submit License Certificates, employee training records, and Leak Test Reports for radiation materials and equipment to the Contracting Officer and Radiation Safety Office (RSO), and Contracting Oversight Technician (COT) for all specialized and licensed material and equipment proposed for use on the construction project (excludes portable machine sources of ionizing radiation including moisture density and X-Ray Fluorescence (XRF)). Maintain on-site records whenever licensed radiological materials or ionizing equipment are on Government property.

B. Protect workers from radiation exposure in accordance with 10 CFR 20, ensuring any personnel exposures are maintained As Low As Reasonably Achievable.

C. Radiography Operation Planning Work Sheet
   1. Submit a NAVFAC HI/FE/MAR GAMMA Radiography Operations Planning Worksheet and a NAVFAC HI/FE/MAR X-Ray Radiography Operations Planning Worksheet to the to Contracting Officer 14 days prior to commencement of operations involving radioactive materials or radiation generating devices. For portable machine sources of ionizing radiation, including moisture density and XRF, use and submit the NAVFAC HI/FE/MAR Portable Gauge Operations Planning Worksheet instead. The Contracting Officer and COT will review the submitted worksheet and provide questions and comments.

   2. Contractors must use primary dosimeters process by a National Voluntary Laboratory Accreditation Program (NVLAP) accredited laboratory.

D. Site Access and Security
   1. Coordinate site access and security requirements with the Contracting Officer and COT for all radiological materials and equipment containing ionizing radiation that are proposed for use on a government facility. For gamma radiography materials and equipment, a Government escort is required for any travels on the Installation. The Navy COT or Government authorized representative will meet the Contractor at a designated location outside the Installation, ensure safety of the materials being transported, and will escort the Contractor for gamma sources onto the Installation, to the job site, and off the Installation. For portable machine sources of ionizing radiation, including moisture density and XRF, the Navy COT or Government authorized representative will meet the Contractor at the job site.

   2. Provide a copy of all calibration records, and utilization records to the COT for radiological operations performed on the site.

E. Loss or Release and Unplanned Personnel Exposure
   1. Loss or release of radioactive materials, and unplanned personnel exposures must be reported immediately to the Contracting Officer, RSO, and Base Security Department Emergency Number.

F. Site Demarcation and Barricade
   1. Properly demark and barricade an area surrounding radiological operations to preclude personnel entrance, in accordance with EM 385-1-1, Nuclear Regulatory Commission, and Applicable State regulations and license requirements, and in accordance with requirements established in the accepted Radiography Operation Planning Work Sheet.

   2. Do not close or obstruct streets, walks, and other facilities occupied and used by the Government without written permission from the Contracting Officer.

G. Security of Material and Equipment
   1. Properly secure the radiological material and ionizing radiation equipment at all times, including keeping the devices in a properly marked and locked container, and secondarily locking the container to a secure point in the Contractor's vehicle or other approved storage location during transportation and while not in use. While in use, maintain a continuous visual observation on the radiological material and ionizing radiation equipment. In instances where radiography is scheduled near or adjacent to buildings or areas having limited access or one-way doors, make no assumptions as to building occupancy. Where necessary, the Contracting Officer will direct the Contractor to conduct an actual building entry, search, and alert. Where removal of personnel from such a building cannot be accomplished and it is otherwise safe to proceed with the radiography, position a fully instructed employee inside the building or area to prevent exiting while external radiographic operations are in process.

H. Transportation of Material
   1. Comply with 49 CFR 173 for Transportation of Regulated Amounts of Radioactive Material. Notify Local Fire authorities and the site Radiation Safety Officer (RSO) of any Radioactive Material use.

I. Schedule for Exposure or Unshielding
   1. Actual exposure of the radiographic film or unshielding the source must not be initiated until after 5 p.m. on weekdays.

J. Transmitter Requirements
   1. Adhere to the base policy concerning the use of transmitters, such as radios and cell phones. Obey Emissions control (EMCON) restrictions.

1.15 CONFINED SPACE ENTRY REQUIREMENTS

A. Confined space entry must comply with Section 34 of EM 385-1-1, OSHA 29 CFR 1926, OSHA 29 CFR 1910, OSHA 29 CFR 1910.146, and OSHA Directive CPL 2.100. Any potential for a hazard in the confined space requires a permit system to be used.

B. Entry Procedures
   1. Prohibit entry into a confined space by personnel for any purpose, including hot work, until the qualified person has conducted appropriate tests to ensure the confined or enclosed space is safe for the work intended and that all potential hazards are controlled or eliminated and documented. Comply with EM 385-1-1, Section 34 for entry procedures.

   2. Hazards pertaining to the space must be reviewed with each employee during review of the AHA.

C. Forced Air Ventilation
   1. Forced air ventilation is required for all confined space entry operations and the minimum air exchange requirements must be maintained to ensure exposure to any hazardous atmosphere is kept below its action level.

D. Sewer Wet Wells
   1. Sewer wet wells require continuous atmosphere monitoring with audible alarm for toxic gas detection.

E. Rescue Procedures and Coordination with Local Emergency Responders
   1. Develop and implement an on-site rescue and recovery plan and procedures. The rescue plan must not rely on local emergency responders for rescue from a confined space.

1.16 SEVERE STORM PLAN

A. In the event of a severe storm warning, the Contractor must comply with the applicable Storm Plan and:
   1. Secure outside equipment and materials and place materials that could be damaged in protected areas.

   2. Check surrounding area, including roof, for loose material, equipment, debris, and other objects that could be blown away or against existing facilities.

   3. Ensure that temporary erosion controls are adequate.

PART 2 PRODUCTS

2.01 CONFINED SPACE SIGNAGE

A. Provide permanent signs integral to or securely attached to access covers for new permit-required confined spaces. Signs for confined spaces must comply with NEMA Z535.2. Provide signs with wording: "DANGER--PERMIT-REQUIRED CONFINED SPACE, DO NOT ENTER" in bold letters a minimum of one inch in height and constructed to be clearly legible with all paint removed. The signal word "DANGER" must be red and readable from 5 feet.

PART 3 EXECUTION

3.01 CONSTRUCTION AND OTHER WORK

A. Comply with EM 385-1-1, NFPA 70, NFPA 70E, NFPA 241, the APP, the AHA, Federal and State OSHA regulations, and other related submittals and activity fire and safety regulations. The most stringent standard prevails.

B. PPE is governed in all areas by the nature of the work the employee is performing. Use personal hearing protection at all times in designated noise hazardous areas or when performing noise hazardous tasks. Safety glasses must be worn or carried/available on each person. Mandatory PPE includes:
   1. Hard Hat

   2. Long Pants

   3. Appropriate Safety Shoes

   4. Appropriate Class Reflective Vests

C. Worksite Communication
   1. Employees working alone in a remote location or away from other workers must be provided an effective means of emergency communications (i.e., cellular phone, two-way radios, land-line telephones or other acceptable means). The selected communication must be readily available (easily within the immediate reach) of the employee and must be tested prior to the start of work to verify that it effectively operates in the area/environment. Develop an employee check-in/check-out communication procedure to ensure employee safety.

D. Hazardous Material Use
   1. Each hazardous material must receive approval from the Contracting Office or their designated representative prior to being brought onto the job site or prior to any other use in connection with this Contract. Allow a minimum of 10 working days for processing of the request for use of a hazardous material.

E. Hazardous Material Exclusions
   1. Notwithstanding any other hazardous material used in this Contract, radioactive materials or instruments capable of producing ionizing/non-ionizing radiation (with the exception of radioactive material and devices used in accordance with EM 385-1-1 such as nuclear density meters for compaction testing and laboratory equipment with radioactive sources) as well as materials which contain asbestos, mercury or polychlorinated biphenyls, di-isocyanates, lead-based paint, and hexavalent chromium, are prohibited. The Contracting Officer, upon written request by the Contractor, may consider exceptions to the use of any of the above excluded materials. Low mercury lamps used within fluorescent lighting fixtures are allowed as an exception without further Contracting Officer approval. Notify the Radiation Safety Officer (RSO) prior to excepted items of radioactive material and devices being brought on base.

F. Unforeseen Hazardous Material
   1. Contract documents identify materials such as PCB, lead paint, and friable and non-friable asbestos and other OSHA regulated chemicals (i.e. 29 CFR Part 1910.1000). If material(s) that may be hazardous to human health upon disturbance are encountered during construction operations, stop that portion of work and notify the Contracting Officer immediately. If the unforeseen hazardous material is suspected to contain something other than asbestos or lead, within 30 calendar days the Government will determine if the material is hazardous. If material is not hazardous or poses no danger, the Government will direct the Contractor to proceed without change. If material is hazardous and handling of the material is necessary to accomplish the work, the Government will issue a modification pursuant to FAR 52.243-4 Changes and FAR 52.236-2 Differing Site Conditions.

3.02 UTILITY OUTAGE REQUIREMENTS

A. Apply for utility outages at least 25 working days in advance. At a minimum, the written request must include the location of the outage, utilities being affected, duration of outage, any necessary sketches, and a description of the means to fulfill energy isolation requirements in accordance with EM 385-1-1, Section 11.A.02 (Isolation). Some examples of energy isolation devices and procedures are highlighted in EM 385-1-1, Section 12.D. In accordance with EM 385-1-1, Section 12.A.01, where outages involve Government or Utility personnel, coordinate with the Government on all activities involving the control of hazardous energy.

B. These activities include, but are not limited to, a review of HECP and HEC procedures, as well as applicable Activity Hazard Analyses (AHAs). In accordance with EM 385-1-1, Section 11.A.02 and NFPA 70E, work on energized electrical circuits must not be performed without prior Government authorization. Government permission is considered through the permit process and submission of a detailed AHA. Energized work permits are considered only when de-energizing introduces additional or increased hazard or when de-energizing is infeasible.

3.03 OUTAGE COORDINATION MEETING

A. After the utility outage request is approved and prior to beginning work on the utility system requiring shut-down, conduct a pre-outage coordination meeting in accordance with EM 385-1-1, Section 12.A. This meeting must include the Prime Contractor, the Prime and subcontractors performing the work, the Contracting Officer, and the Public Utilities representative.

B. All parties must fully coordinate HEC activities with one another. During the coordination meeting, all parties must discuss and coordinate on the scope of work, HEC procedures (specifically, the lock-out/tag-out procedures for worker and utility protection), the AHA,

assurance of trade personnel qualifications, identification of competent persons, and compliance with HECP training in accordance with EM 385-1-1, Section 12.C. Clarify when personal protective equipment is required during switching operations, inspection, and verification.

3.04 CONTROL OF HAZARDOUS ENERGY (LOCKOUT/TAGOUT)

A. Provide and operate a Hazardous Energy Control Program (HECP) in accordance with EM 385-1-1 Section 12, 29 CFR 1910.333, 29 CFR 1915.89, ASSP A10.44, NFPA 70E, and paragraph HAZARDOUS ENERGY CONTROL PROGRAM (HECP).

B. Safety Preparatory Inspection Coordination Meeting with the Government or Utility
   1. For electrical distribution equipment that is to be operated by Government or Utility personnel, the Prime Contractor and the subcontractor performing the work must attend the safety preparatory inspection coordination meeting, which will also be attended by the Contracting Officer's Representative, and required by EM 385-1-1, Section 12.A.02. The meeting will occur immediately preceding the start of work and following the completion of the outage coordination meeting. Both the safety preparatory inspection coordination meeting and the outage coordination meeting must occur prior to conducting the outage and commencing with lockout/tagout procedures.

C. Lockout/Tagout Isolation
   1. Where the Government or Utility performs equipment isolation and lockout/tagout, the Contractor must place their own locks and tags on each energy-isolating device and proceed in accordance with the HECP. Before any work begins, both the Contractor and the Government or Utility must perform energy isolation verification testing while wearing required PPE detailed in the Contractor's AHA and required by EM 385-1-1, Sections 05.I and 11.B. Install personal protective grounds, with tags, to eliminate the potential for induced voltage in accordance with EM 385-1-1, Section 12.E.06.

D. Lockout/Tagout Removal
   1. Upon completion of work, conduct lockout/tagout removal procedure in accordance with the HECP. In accordance with EM 385-1-1, Section 12.E.08, each lock and tag must be removed from each energy isolating device by the authorized individual or systems operator who applied the device. Provide formal notification to the Government (by completing the Government form if provided by Contracting Officer's Representative), confirming that steps of de-energization and lockout/tagout removal procedure have been conducted and certified through inspection and verification. Government or Utility locks and tags used to support the Contractor's work will not be removed until the authorized Government employee receives the formal notification.

3.05 FALL PROTECTION PROGRAM

A. Establish a fall protection program, for the protection of all employees exposed to fall hazards. Within the program include company policy, identify roles and responsibilities, education and training requirements, fall hazard identification, prevention and control measures, inspection, storage, care and maintenance of fall protection equipment and rescue and evacuation procedures in accordance with ASSP Z359.2 and EM 385-1-1, Sections 21.A and 21.D.

B. Training

1. Institute a fall protection training program. As part of the Fall Protection Program, provide training for each employee who might be exposed to fall hazards and using personal fall protection equipment. Provide training by a competent person for fall protection in accordance with EM 385-1-1, Section 21.C. Document training and practical application of the competent person in accordance with EM 385-1-1, Section 21.C.04 and ASSP Z359.2 in the AHA.

C. Fall Protection Equipment and Systems

1. Enforce use of personal fall protection equipment and systems designated (to include fall arrest, restraint, and positioning) for each specific work activity in the Site Specific Fall Protection and Prevention Plan and AHA at all times when an employee is exposed to a fall hazard. Protect employees from fall hazards as specified in EM 385-1-1, Section 21.

2. Provide personal fall protection equipment, systems, subsystems, and components that comply with EM 385-1-1 Section 21.I, 29 CFR 1926.500 Subpart M,ASSP Z359.0, ASSP Z359.1, ASSP Z359.2, ASSP Z359.3, ASSP Z359.4, ASSP Z359.6, ASSP Z359.7, ASSP Z359.11, ASSP Z359.12, ASSP Z359.13, ASSP Z359.14, ASSP Z359.15, ASSP Z359.16 and ASSP Z359.18.

3. Additional Personal Fall Protection Measures

a. In addition to the required fall protection systems, other protective measures such as safety skiffs, personal floatation devices, and life rings, are required when working above or next to water in accordance with EM 385-1-1, Sections 21.O through 21.O.06. Personal fall protection systems and equipment are required when working from an articulating or extendible boom, swing stages, or suspended platform. In addition, personal fall protection systems are required when operating other equipment such as scissor lifts. The need for tying-off in such equipment is to prevent ejection of the employee from the equipment during raising, lowering, travel, or while performing work.

4. Personal Fall Protection Equipment

a. Only a full-body harness with a shock-absorbing lanyard or self-retracting lanyard is an acceptable personal fall arrest body support device. The use of body belts is not acceptable. Harnesses must have a fall arrest attachment affixed to the body support (usually a Dorsal D-ring) and specifically designated for attachment to the rest of the system. Snap hooks and carabineers must be self-closing and self-locking, capable of being opened only by at least two consecutive deliberate actions and have a minimum gate strength of 3,600 lbs in all directions. Use webbing, straps, and ropes made of synthetic fiber. The maximum free fall distance when using fall arrest equipment must not exceed 6 feet, unless the proper energy absorbing lanyard is used. Always take into consideration the total fall distance and any swinging of the worker (pendulum-like motion), that can occur during a fall, when attaching a person to a fall arrest system.

b. Equip all full body harnesses with Suspension Trauma Preventers such as stirrups, relief steps, or similar in order to provide short-term relief from the effects of orthostatic intolerance in accordance with EM 385-1-1, Section 21.I.06.

D. Fall Protection for Roofing Work

1. Implement fall protection controls based on the type of roof being constructed and work being performed. Evaluate the roof area to be accessed for its structural integrity including weight-bearing capabilities for the projected loading.

2. Low Sloped Roofs:

a. For work within 6 feet from unprotected edge of a roof having a slope less than or equal to 4:12 (vertical to horizontal), protect personnel from falling by the use of conventional fall protection systems (personal fall arrest/restraint systems, guardrails, or safety nets) in accordance with EM 385-1-1, Section 21 and 29 CFR 1926.500. A safety monitoring system is not adequate fall protection and is not authorized.

b. For work greater than 6 feet from the unprotected roof edge, addition to the use of conventional fall protection systems the use of a warning line system is also permitted, in accordance with 29 CFR 1926.500 and EM 385-1-1, Section 21.L.

3. Steep-Sloped Roofs: Work on a roof having a slope greater than 4:12 (vertical to horizontal) requires a personal fall arrest system, guardrails with toe-boards, or safety nets. This requirement also applies to residential or housing type construction.

E. Horizontal Lifelines (HLL)
1. Provide HLL in accordance with EM 385-1-1, Section 21.I.08.d.2. Commercially manufactured horizontal lifelines (HLL) must be designed, installed, certified and used, under the supervision of a qualified person, for fall protection as part of a complete fall arrest system which maintains a safety factor of 2 (29 CFR 1926.500). The competent person for fall protection may (if deemed appropriate by the qualified person) supervise the assembly, disassembly, use and inspection of the HLL system under the direction of the qualified person. Locally manufactured HLLs are not acceptable unless they are custom designed for limited or site-specific applications by a Registered Professional Engineer who is qualified in designing HLL systems.

F. Guardrails and Safety Nets
1. Design, install and use guardrails and safety nets in accordance with EM 385-1-1, Section 21.F.01 and 29 CFR 1926 Subpart M.

G. Rescue and Evacuation Plan and Procedures
1. When personal fall arrest systems are used, ensure that the mishap victim can self-rescue or can be rescued promptly should a fall occur. Prepare a Rescue and Evacuation Plan and include a detailed discussion of the following: methods of rescue; methods of self-rescue or assisted-rescue; equipment used; training requirement; specialized training for the rescuers; procedures for requesting rescue and medical assistance; and transportation routes to a medical facility. Include the Rescue and Evacuation Plan within the Activity Hazard Analysis (AHA) for the phase of work, in the Fall Protection and Prevention (FP&P) Plan, and the Accident Prevention Plan (APP). The plan must be in accordance with the requirements of EM 385-1-1, ASSP Z359.2, and ASSP Z359.4.

3.06 WORK PLATFORMS

A. Scaffolding
1. Provide employees with a safe means of access to the work area on the scaffold. Climbing of any scaffold braces or supports not specifically designed for access is prohibited. Comply with the following requirements:

a. Scaffold platforms greater than 20 feet in height must be accessed by use of a scaffold stair system.

b. Ladders commonly provided by scaffold system manufacturers are prohibited for accessing scaffold platforms greater than 20 feet maximum in height.

c. An adequate gate is required.

d. Employees performing scaffold erection and dismantling must be qualified.

e. Scaffold must be capable of supporting at least four times the maximum intended load and provide appropriate fall protection as delineated in the accepted fall protection and prevention plan.

f. Stationary scaffolds must be attached to structural building components to safeguard against tipping forward or backward.

g. Special care must be given to ensure scaffold systems are not overloaded.

h. Side brackets used to extend scaffold platforms on self-supported scaffold systems for the storage of material are prohibited. The first tie-in must be at the height equal to 4 times the width of the smallest dimension of the scaffold base.

i. Scaffolding other than suspended types must bear on base plates upon wood mudsills (2 in x 10 in x 8 in minimum) or other adequate firm foundation.

j. Scaffold or work platform erectors must have fall protection during the erection and dismantling of scaffolding or work platforms that are more than 6 feet.

k. Delineate fall protection requirements when working above 6 feet or above dangerous operations in the Fall Protection and Prevention (FP&P) Plan and Activity Hazard Analysis (AHA) for the phase of work.

B. Elevated Aerial Work Platforms (AWPs)
1. Workers must be anchored to the basket or bucket in accordance with manufacturer's specifications and instructions (anchoring to the boom may only be used when allowed by the manufacturer and permitted by the CP).

2. Lanyards used must be sufficiently short to prohibit worker from climbing out of basket. The climbing of rails is prohibited. Lanyards with built-in shock absorbers are acceptable. Self-retracting devices are not acceptable. Tying off to an adjacent pole or structure is not permitted unless a safe device for 100 percent tie-off is used for the transfer.

3. Use of AWPs must be operated, inspected, and maintained as specified in the operating manual for the equipment and delineated in the AHA. Operators of AWPs must be designated as qualified operators by the Prime Contractor.

4. Maintain proof of qualifications on site for review and include in the AHA.

3.07 EQUIPMENT
A. Material Handling Equipment (MHE)
1. Material handling equipment such as forklifts must not be modified with work platform attachments for supporting employees unless specifically delineated in the manufacturer's printed operating instructions. Material handling equipment fitted with personnel work platform attachments are prohibited from traveling or positioning while personnel are working on the platform.

2. The use of hooks on equipment for lifting of material must be in accordance with manufacturer's printed instructions. Material Handling Equipment Operators must be trained in accordance with OSHA 29 CFR 1910, Subpart N.

3. Operators of forklifts or power industrial trucks must be licensed in accordance with OSHA.

B. Machinery and Mechanized Equipment
   1. Proof of qualifications for operator must be kept on the project site for review.

   2. Manufacture specifications or owner's manual for the equipment must be on-site and reviewed for additional safety precautions or requirements that are sometimes not identified by OSHA or USACE EM 385-1-1. Incorporate such additional safety precautions or requirements into the AHAs.

C. Base Mounted Drum Hoists
   1. Operation of base mounted drum hoists must be in accordance with EM 385-1-1 and ASSP A10.22.

   2. Rigging gear must be in accordance with applicable ASME/OSHA standards.

   3. When used on telecommunication towers, base mounted drum hoists must be in accordance with TIA-1019, TIA-222, ASME B30.7, 29 CFR 1926.552, and 29 CFR 1926.553.

   4. When used to hoist personnel, the AHA must include a written standard operating procedure. Operators must have a physical examination in accordance with EM 385-1-1 Section 16.B.05 and trained, at a minimum, in accordance with EM 385-1-1 Section 16.U and 16.T. The base mounted drum hoist must also comply with OSHA Instruction CPL 02-01-056 and ASME B30.23.

   5. Material and personnel must not be hoisted simultaneously.

   6. Personnel cage must be marked with the capacity (in number of persons) and load limit in pounds.

   7. Construction equipment must not be used for hoisting material or personnel or with trolley/tag lines. Construction equipment may be used for towing and assisting with anchoring guy lines.

D. Use of Explosives
   1. Explosives must not be used or brought to the project site without prior written approval from the Contracting Officer. Such approval does not relieve the Contractor of responsibility for injury to persons or for damage to property due to blasting operations.

   2. Storage of explosives, when permitted on Government property, must be only where directed and in approved storage facilities. These facilities must be kept locked at all times except for inspection, delivery, and withdrawal of explosives.

3.08 EXCAVATIONS

A. Soil classification must be performed by a competent person in accordance with 29 CFR 1926 and EM 385-1-1.

B. Utility Locations
   1. Provide a third party, independent, private utility locating company to positively identify underground utilities and utilities within existing concrete, in the work area in addition to any station locating service and coordinated with the station utility department.

C. Utility Location Verification

1. Physically verify underground utility locations, including utility depth, by hand digging using wood or fiberglass handled tools when any adjacent construction work is expected to come within 3 feet of the underground system.

D. Utilities Within and Under Concrete, Bituminous Asphalt, and Other Impervious Surfaces
   1. Utilities located within and under concrete slabs or pier structures, bridges, parking areas, and the like, are extremely difficult to identify. Whenever Contract work involves chipping, saw cutting, or core drilling through concrete, bituminous asphalt or other impervious surfaces, the existing utility location and depth must be verified by a third party, independent, private locating company hired by the Contractor. The third party, independent, private locating company must locate utility depth and location by use of Ground Penetrating Radar (GPR), X-ray, bore scope, or ultrasound prior to the start of demolition and construction. Outages to isolate utility systems must be used in circumstances where utilities are unable to be positively identified. The use of historical drawings does not alleviate the Contractor from meeting this requirement.

3.09 ELECTRICAL

A. Perform electrical work in accordance with EM 385-1-1, Sections 11 and 12.

B. Conduct of Electrical Work
   1. As delineated in EM 385-1-1, electrical work is to be conducted in a de-energized state unless there is no alternative method for accomplishing the work. In those cases obtain an energized work permit from the Contracting Officer. The energized work permit application must be accompanied by the AHA and a summary of why the equipment/circuit needs to be worked energized. Underground electrical spaces must be certified safe for entry before entering to conduct work. Cables that will be cut must be positively identified and de-energized prior to performing each cut.

   2. Attach temporary grounds in accordance with ASTM F855 and IEEE 1048. Perform all high voltage cable cutting remotely using hydraulic cutting tool. When racking in or live switching of circuit breakers, no additional person other than the switch operator is allowed in the space during the actual operation. Plan so that work near energized parts is minimized to the fullest extent possible. Use of electrical outages clear of any energized electrical sources is the preferred method.

   3. When working in energized substations, only qualified electrical workers are permitted to enter. When work requires work near energized circuits as defined by NFPA 70, high voltage personnel must use personal protective equipment that includes, as a minimum, electrical hard hat, safety shoes, insulating gloves and electrical arc flash protection for personnel as required by NFPA 70E. Insulating blankets, hearing protection, and switching suits may also be required, depending on the specific job and as delineated in the Contractor's AHA. Ensure that each employee is familiar with and complies with these procedures and 29 CFR 1910.147.

C. Qualifications
   1. Electrical work must be performed by QP with verifiable credentials who are familiar with applicable code requirements. Verifiable credentials consist of State, National and Local Certifications or Licenses that a Master or Journeyman Electrician may hold, depending on work being performed, and must be identified in the appropriate AHA. Journeyman/Apprentice ratio must be in accordance with State and Local requirements applicable to where work is being performed.

D. Arc Flash

1. Conduct a hazard analysis/arc flash hazard analysis whenever work on or near energized parts greater than 50 volts is necessary, in accordance with NFPA 70E.

2. All personnel entering the identified arc flash protection boundary must be QPs and properly trained in NFPA 70E requirements and procedures. Unless permitted by NFPA 70E, no Unqualified Person is permitted to approach nearer than the Limited Approach Boundary of energized conductors and circuit parts. Training must be administered by an electrically qualified source and documented.

E. Grounding
   1. Ground electrical circuits, equipment, and enclosures in accordance with NFPA 70 and IEEE C2 to provide a permanent, continuous, and effective path to ground unless otherwise noted by EM 385-1-1.

   2. Check grounding circuits to ensure that the circuit between the ground and a grounded power conductor has a resistance low enough to permit sufficient current flow to allow the fuse or circuit breaker to interrupt the current.

F. Testing
   1. Temporary electrical distribution systems and devices must be inspected, tested, and found acceptable for Ground-Fault Circuit Interrupter (GFCI) protection, polarity, ground continuity, and ground resistance before initial use, before use after modification and at least monthly. Monthly inspections and tests must be maintained for each temporary electrical distribution system and signed by the electrical CP or QP.

END OF SECTION 01 35 26

SECTION 01 42 00 – REFERENCES

PART 1 GENERAL

1.01 REFERENCES

A. Various publications are referenced in other sections of the specifications to establish requirements for the work. These references are identified in each section by document number, date and title. The document number used in the citation is the number assigned by the standards producing organization (e.g., ASTM B564 Standard Specification for Nickel Alloy Forgings). However, when the standards producing organization has not assigned a number to a document, an identifying number has been assigned for reference purposes.

1.02 ORDERING INFORMATION

A. The addresses of the standards publishing organizations whose documents are referenced in other sections of these specifications are listed below, and if the source of the publications is different from the address of the sponsoring organization, that information is also provided.

1. AIR BARRIER ASSOCIATION OF AMERICA (ABAA)
   1600 Boston-Providence Hwy
   Walpole, MA 02081
   Ph: 1-866-956-5888
   Fax: 1-866-956-5819
   Internet: https://www.airbarrier.org/

2. AIR MOVEMENT AND CONTROL ASSOCIATION INTERNATIONAL, INC. (AMCA)
   30 West University Drive Arlington Heights, IL 60004-1893
   Ph: 847-394-0150
   Fax: 847-253-0088
   E-mail: communications@amca.org Internet:http://www.amca.org

3. AIR-CONDITIONING, HEATING AND REFRIGERATION INSTITUTE (AHRI)
   2111 Wilson Blvd, Suite 400
   Arlington, VA 22201
   Ph: 703-524-8800
   Internet: http://www.ahrinet.org

4. ALLIANCE FOR TELECOMMUNICATIONS INDUSTRY SOLUTIONS (ATIS)
   1200 G Street, NW, Suite 500
   Washington, D.C. 20005
   Ph: 202-628-6380
   E-mail: nbutler@atis.org
   Internet: http://www.atis.org

5. AMERICAN ARCHITECTURAL MANUFACTURERS ASSOCIATION (AAMA)
   1900 E Golf Rd, Suite 1250
   Schaumburg, IL 60173
   Ph: 847-303-5664
   E-mail: customerservice@aamanet.org
   Internet: https://aamanet.org/

6. AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS (AASHTO)
   444 North Capital Street, NW, Suite 249 Washington, DC 20001
   Ph: 202-624-5800
   Fax: 202-624-5806
   E-Mail: info@aashto.org
   Internet: https://www.transportation.org/

7. AMERICAN BEARING MANUFACTURERS ASSOCIATION (ABMA)
   330 N. Wabash Ave., Suite 2000 Chicago, IL 60611
   Ph: 202-367-1155
   E-mail: info@americanbearings.org
   Internet: https://www.americanbearings.org/

8. AMERICAN CONCRETE INSTITUTE (ACI)
   38800 Country Club Drive Farmington Hills, MI 48331-3439
   Ph: 248-848-3700
   Fax: 248-848-3701
   Internet: https://www.concrete.org/

9. AMERICAN CONFERENCE OF GOVERNMENTAL INDUSTRIAL HYGIENISTS (ACGIH)
   1330 Kemper Meadow Drive Cincinnati, OH 45240
   Ph: 513-742-2020
   Fax: 513-742-3355
   Internet: https://www.acgih.org/

10. AMERICAN FOREST FOUNDATION (AFF)
    American Tree Farm System 2000 M Street, NW, Suite 550
    Washington, DC 20036
    Ph: 202-765-3660
    Fax: 202-827-7924
    Email: info@forestfoundation.org
    Internet: https://www.treefarmsystem.org

11. AMERICAN HARDBOARD ASSOCIATION (AHA)
    1210 West Northwest Highway Palatine, IL 60067
    Ph: 847-934-8800
    Fax: 847-934-8803
    E-mail: aha@hardboard.org
    Internet: http://domensino.com/AHA/

12. AMERICAN INSTITUTE OF STEEL CONSTRUCTION (AISC)
    130 East Randolph, Suite 2000 Chicago, IL 60601
    Ph: 312-670-5444
    Fax: 312-670-5403
    Steel Solutions Center: 866-275-2472
    E-mail: solutions@aisc.org
    Internet: https://www.aisc.org/

13. AMERICAN IRON AND STEEL INSTITUTE (AISI)
    25 Massachusetts Avenue, NW Suite 800 Washington, DC 20001
    Ph: 202-452-7100
    Internet: https://www.steel.org/

14. AMERICAN NATIONAL STANDARDS INSTITUTE (ANSI)
    1899 L Street, NW,11th Floor Washington, DC 20036
    Ph: 202-293-8020
    Fax: 202-293-9287
    E-mail: storemanager@ansi.org
    Internet: https://www.ansi.org/

15. AMERICAN SOCIETY FOR NONDESTRUCTIVE TESTING (ASNT)
    P.O. Box 28518
    1711 Arlingate Lane
    Columbus, OH 43228-0518
    Ph: 800-222-2768 or 614-274-6003
    Fax: 614-274-6899
    E-mail: tjones@asnt.org
    Internet: https://www.asnt.org/

16. AMERICAN SOCIETY OF CIVIL ENGINEERS (ASCE)
    1801 Alexander Bell Drive Reston, VA 20191
    Ph: 800-548-2723; 703-295-6300
    Internet: https://www.asce.org/

17. AMERICAN SOCIETY OF HEATING, REFRIGERATING AND AIR-CONDITIONING ENGINEERS (ASHRAE)
    1791 Tullie Circle, NE Atlanta, GA 30329
    Ph: 404-636-8400 or 800-527-4723
    Fax: 404-321-5478
    E-mail: ashrae@ashrae.org
    Internet: https://www.ashrae.org/

18. AMERICAN SOCIETY OF MECHANICAL ENGINEERS (ASME)
    Two Park Avenue New York, NY 10016-5990
    Ph: 800-843-2763
    Fax: 973-882-1717
    E-mail: customercare@asme.org Internet: https://www.asme.org/

19. AMERICAN SOCIETY OF SAFETY PROFESSIONALS (ASSP)
    520 N. Northwest Highway Park Ridge, IL 60068
    Ph: 847-699-2929
    E-mail: customerservice@assp.org
    Internet: https://www.assp.org/

20. AMERICAN SOCIETY OF SANITARY ENGINEERING (ASSE)
    18927 Hickory Creek Drive, Suite 220 Mokena, IL 60448
    Ph: 708-995-3019
    Fax: 708-479-6139
    Internet: http://www.asse-plumbing.org

21. AMERICAN WATER WORKS ASSOCIATION (AWWA)
    6666 W. Quincy Avenue Denver, CO 80235 USA
    Ph: 303-794-7711 or 800-926-7337
    Fax: 303-347-0804
    Internet: https://www.awwa.org/

22. AMERICAN WELDING SOCIETY (AWS)
    8669 NW 36 Street, #130 Miami, FL 33166-6672
    Ph: 800-443-9353
    Internet: https://www.aws.org/

23. AMERICAN WOOD PROTECTION ASSOCIATION (AWPA)
    P.O. Box 361784 Birmingham, AL 35236-1784
    Ph: 205-733-4077
    Fax: 205-733-4075
    Internet: http://www.awpa.com

24. APA - THE ENGINEERED WOOD ASSOCIATION (APA)
    7011 South 19th St. Tacoma, WA 98466-5333
    Ph: 253-565-6600
    Fax: 253-565-7265
    Internet: https://www.apawood.org/

25. ASPHALT INSTITUTE (AI)
    2696 Research Park Drive Lexington, KY 40511-8480
    Ph: 859-288-4960
    Fax: 859-288-4999
    E-mail: info@asphaltinstitute.org
    Internet: http://www.asphaltinstitute.org

26. ASSOCIATED AIR BALANCE COUNCIL (AABC)
    1220 19th St NW, Suite 410 Washington, DC 20036
    Ph: 202-737-0202
    Fax: 202-315-0285
    E-mail: info@aabc.com
    Internet: https://www.aabc.com/

27. ASSOCIATION OF EDISON ILLUMINATING COMPANIES (AEIC)
    600 North 18th Street P.O. Box 2641 Birmingham, AL 35291
    Ph: 205-257-3839
    Fax: 205-257-2540
    Internet: https://aeic.org/

28. ASTM INTERNATIONAL (ASTM)
    100 Barr Harbor Drive, P.O. Box C700 West Conshohocken, PA 19428-2959
    Ph: 610-832-9500
    Fax: 610-832-9555
    E-mail: service@astm.org
    Internet: https://www.astm.org/

29. BACNET INTERNATIONAL (BTL)
    BACnet Testing Laboratories 1827 Powers Ferry Road Building 14, Suite 100
    Atlanta, GA 30339
    Ph: 770-971-6003
    Fax: 678-229-2777
    E-mail: info@bacnetinternational.org
    Internet: https://www.bacnetlabs.org/

30. BUILDERS HARDWARE MANUFACTURERS ASSOCIATION (BHMA)
    355 Lexington Avenue, 15th Floor New York, NY 10017
    Ph: 212-297-2122
    Fax: 212-370-9047

Internet: https://www.buildershardware.com/

31. CALIFORNIA AIR RESOURCES BOARD (CARB)
    1001 I Street Sacramento, CA 95814
    Ph: 800-242-4450
    Email: helpline@arb.ca.gov Internet: https://ww2.arb.ca.gov/

32. CALIFORNIA DEPARTMENT OF PUBLIC HEALTH (CDPH)
    PO Box 997377, MS 0500 Sacramento, CA 95899-7377
    Ph: 916-558-1784
    Internet: https://www.cdph.ca.gov/

33. CAST IRON SOIL PIPE INSTITUTE (CISPI)
    2401 Fieldcrest Drive, Mundelein, IL 60060
    Ph: 224-864-2910
    Internet: https://www.cispi.org/

34. CENTERS FOR DISEASE CONTROL AND PREVENTION (CDC)
    1600 Clifton Road, Atlanta, GA 30329-4027
    Ph: 800-232-4636
    TTY: 888-232-6348
    Internet: https://www.cdc.gov

35. COMPOSITE PANEL ASSOCIATION (CPA)
    19465 Deerfield Avenue, Suite 306, Leesburg, VA 20176
    Ph: 703-724-1128
    Fax: 703-724-1588
    Internet: https://www.compositepanel.org/

36. CONCRETE REINFORCING STEEL INSTITUTE (CRSI)
    933 North Plum Grove Road Schaumburg, IL 60173-4758
    Ph: 847-517-1200
    Fax: 847-517-1206
    Internet: http://www.crsi.org/

37. COPPER DEVELOPMENT ASSOCIATION (CDA)
    Internet: https://www.copper.org/

38. COUNCIL ON ENVIRONMENTAL QUALITY (CEQ) (WHITE HOUSE)
    722 Jackson Place, Washington DC 20506
    Internet: https://www.whitehouse.gov/administration/eop/ceq

39. CSA GROUP (CSA)
    178 Rexdale Blvd.
    Toronto, ON, Canada M9W 1R3
    Ph: 416-747-4044
    Fax: 416-747-2510
    E-mail: member@csagroup.org
    Internet: https://www.csagroup.org/

40. DEPARTMENT OF DEFENSE EXPLOSIVES SAFETY BOARD (DDESB)
    Internet: https://denix.osd.mil/ddes/home/

41. DOOR AND ACCESS SYSTEM MANUFACTURERS ASSOCIATION (DASMA)
    1300 Sumner Avenue
    Cleveland, OH 44115-2851
    Ph: 216-241-7333
    Fax: 216-241-0105
    Internet: https://www.dasma.com/

42. ELECTRONIC COMPONENTS INDUSTRY ASSOCIATION (ECIA)
    310 Maxwell Road, Suite 200 Alpharetta, GA 30009
    Ph: 678-393-9990
    Fax: 678-393-9998
    E-mail: emikoski@ecianow.org
    Internet: https://www.ecianow.org

43. EUROPEAN COMMITTEE FOR STANDARDIZATION (CEN/CENELEC)
    CEN-CENELEC Management Centre Rue de la Science 23
    B - 1040 Brussels, Belgium
    Ph: 32-2-550-08-11
    Fax: 32-2-550-08-19
    Internet: https://www.cen.eu/

44. EUROPEAN UNION (EU)
    European Commission Rue de la Loi 200 1000 Bruxelle Belgium
    Ph: +32 2 299 96 96
    Internet: https://ec.europa.eu/info/index_en

45. FM GLOBAL (FM)
    270 Central Avenue Johnston, RI02919-4949
    Ph: 401-275-3000
    Fax: 401-275-3029
    Internet: https://www.fmglobal.com/

46. FOREST STEWARDSHIP COUNCIL (FSC)
    708 First Street North, Suite 235
    Minneapolis, MN 55401
    Ph: 612-353-4511
    E-mail: info@us.fcs.org
    Internet: https://us.fsc.org/

47. FOUNDATION FOR CROSS-CONNECTION CONTROL AND HYDRAULIC RESEARCH (FCCCHR)
    USC Foundation Office Research Annex 219
    Los Angeles, CA 90089-7700
    Ph: 866-545-6340
    Fax: 213-740-8399
    E-mail: fccchr@usc.edu
    Internet: https://fccchr.usc.edu/

48. GREEN SEAL (GS)
    1001 Connecticut Avenue, NW Suite 827
    Washington, DC 20036-5525
    Ph: 202-872-6400
    Fax: 202-872-4324
    E-mail: greenseal@greenseal.org
    Internet: https://www.greenseal.org/

49. GYPSUM ASSOCIATION (GA)
    962 Wayne Ave., Suite 620 Silver Spring, MD 20910
    Ph: 301-277-8686
    Fax: 301-277-8747
    E-mail: info@gypsum.org
    Internet: https://www.gypsum.org/

50. ILLUMINATING ENGINEERING SOCIETY (IES)
    120 Wall Street, Floor 17 New York, NY 10005-4001
    Ph: 212-248-5000
    Fax: 212-248-5018
    E-mail: membership@ies.org
    Internet: https://www.ies.org/

51. INSTITUTE OF ELECTRICAL AND ELECTRONICS ENGINEERS (IEEE)
    445 and 501 Hoes Lane Piscataway, NJ 08854-4141
    Ph: 732-981-0060 or 800-701-4333
    Fax: 732-981-9667
    E-mail: onlinesupport@ieee.org
    Internet: https://www.ieee.org/

52. INSULATED CABLE ENGINEERS ASSOCIATION (ICEA)
    P.O. Box 493
    Miamitown, OH 45041-9998
    E-mail: info@icea.net
    Internet: https://www.icea.net/

53. INTELLIGENCE COMMUNITY STANDARD (ICS)
    Homeland Security Digital Library
    Ph: 831-272-2437
    E-mail: hsdl@nps.edu
    Internet: https://www.hsdl.org/c/

54. INTERNATIONAL CAST POLYMER ASSOCIATION (ICPA)
    4949 Old Brownsboro Rd, Ste. 232
    Louisville, KY 40222
    Ph: 470-219-8139
    Internet: https://theicpa.com/

55. INTERNATIONAL CODE COUNCIL (ICC)
    500 New Jersey Avenue, NW
    6th Floor, Washington, DC 20001
    Ph: 800-786-4452 or 888-422-7233
    Fax: 202-783-2348
    E-mail: order@iccsafe.org
    Internet: https://www.iccsafe.org/

56. INTERNATIONAL CONCRETE REPAIR INSTITUTE (ICRI)
    1000 Westgate Drive, Suite 252 St. Paul, MN 55114
    Ph: 651-366-6095
    Fax: 651-290-2266
    E-mail: info@icri.org
    Internet: https://www.icri.org/

57. INTERNATIONAL ELECTRICAL TESTING ASSOCIATION (NETA)
    3050 Old Centre Ave. Suite 101
    Portage, MI 49024
    Ph: 269-488-6382
    Fax: 269-488-6383
    Internet: https://www.netaworld.org/

58. INTERNATIONAL ELECTROTECHNICAL COMMISSION (IEC)
    3, rue de Varembe, 1st floor
    P.O. Box 131
    CH-1211 Geneva 20, Switzerland
    Ph: 41-22-919-02-11
    Fax: 41-22-919-03-00
    E-mail: info@iec.ch
    Internet: https://www.iec.ch/

59. INTERNATIONAL ORGANIZATION FOR STANDARDIZATION (ISO)
    ISO Central Secretariat BIBC II
    Chemin de Blandonnet 8
    CP 401 - 1214 Vernier, Geneva Switzerland
    Ph: 41-22-749-01-11
    E-mail: central@iso.ch Internet: https://www.iso.org

60. INTERNATIONAL SAFETY EQUIPMENT ASSOCIATION (ISEA)
    1901 North Moore Street Arlington, VA 22209-1762
    Ph: 703-525-1695
    Fax: 703-528-2148
    Internet: https://safetyequipment.org/

61. INTERNET ENGINEERING TASK FORCE (IETF)
    c/o Association Management Solutions, LLC (AMS) 5177 Brandin Court
    Fremont, California 94538
    Ph: 510-492-4080
    Fax: 510-492-4001
    E-mail: ietf-info@ietf.org
    Internet: https://www.ietf.org/

62. MANUFACTURERS STANDARDIZATION SOCIETY OF THE VALVE AND FITTINGS INDUSTRY (MSS)
    127 Park Street, NE Vienna, VA 22180-4602
    Ph: 703-281-6613
    E-mail: info@msshq.org
    Internet: http://msshq.org

63. MASTER PAINTERS INSTITUTE (MPI)
    2800 Ingleton Avenue Burnaby, BC CANADA V5C 6G7
    Ph: 1-888-674-8937
    Fax: 1-888-211-8708
    E-mail: info@paintinfo.com or techservices@mpi.net
    Internet: http://www.mpi.net/

64. METAL BUILDING MANUFACTURERS ASSOCIATION (MBMA)
    1300 Sumner Avenue
    Cleveland, OH 44115-2851
    Ph: 216-241-7333
    Fax: 216-241-0105
    Internet: https://www.mbma.com/

65. MIDWEST INSULATION CONTRACTORS ASSOCIATION (MICA)
    16712 Elm Circle
    Omaha, NE 68130
    Ph: 402-342-3463 or 800-747-6422
    Fax: 402-330-9702
    Internet: https://www.micainsulation.org/

66. MODBUS ORGANIZATION, INC (MODBUS) PO Box 628
    Hopkinton, MA 01748
    Ph: 508-435-7170
    Fax: 508-435-7172
    Internet: http://www.modbus.org

67. NATIONAL ASSOCIATION OF ARCHITECTURAL METAL MANUFACTURERS (NAAMM)
    800 Roosevelt Road, Bldg C, Suite 312 Glen Ellyn, IL 60137
    Ph: 630-942-6591
    Fax: 630-790-3095
    E-mail: info@naamm.org
    Internet: http://www.naamm.org

68. NATIONAL ELECTRICAL CONTRACTORS ASSOCIATION (NECA)
    3 Bethesda Metro Center, Suite 1100 Bethesda, MD 20814
    Ph: 301-657-3110
    Fax: 301-215-4500
    Internet: https://www.necanet.org/

69. NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION (NEMA)
    1300 North 17th Street, Suite 900
    Arlington, VA 22209
    Ph: 703-841-3200
    Internet: https://www.nema.org

70. NATIONAL ENVIRONMENTAL BALANCING BUREAU (NEBB)
    8575 Grovemont Circle
    Gaithersburg, MD 20877
    Ph: 301-977-3698
    Fax: 301-977-9589
    Internet: http://www.nebb.org

71. NATIONAL FIRE PROTECTION ASSOCIATION (NFPA)
    1 Batterymarch Park Quincy, MA 02169-7471
    Ph: 800-344-3555
    Fax: 800-593-6372
    Internet: https://www.nfpa.org

72. NATIONAL INSTITUTE FOR CERTIFICATION IN ENGINEERING TECHNOLOGIES (NICET)
    1420 King Street
    Alexandria, VA 22314-2794
    Ph: 888-476-4238 (1-888 IS-NICET)
    E-mail: tech@nicet.org
    Internet: https://www.nicet.org/

73. NATIONAL READY MIXED CONCRETE ASSOCIATION (NRMCA)
    Manager, Customer Service 900 Spring Street
    Silver Spring, MD 20910
    Ph: 240-485-1165
    E-mail: jjenkins@nrmca.org (Jacques Jenkins)
    Internet: https://www.nrmca.org/

74. NATIONAL ROOFING CONTRACTORS ASSOCIATION (NRCA)
    10255 West Higgins Road, Suite 600
    Rosemont, IL 60018-5607
    Ph: 847-299-9070
    Fax: 847-299-1183
    Internet: http://www.nrca.net

75. NSF INTERNATIONAL (NSF)
    789 North Dixboro Road
    P.O. Box 130140
    Ann Arbor, MI 48105
    Ph: 734-769-8010 or 800-NSF-MARK
    Fax: 734-769-0109
    E-mail: info@nsf.org
    Internet: http://www.nsf.org

76. ORGANISATION FOR ECONOMIC CO-OPERATION AND DEVELOPMENT (OECD)
    2, rue Andre Pascal
    75775 Paris Cedex 16, France
    Ph: + 33 1 45 24 82 00
    Fax: 33 1 45 24 85 00
    Internet: http://www.oecd.org

77. U.S. Contact Center
    OECD Washington Center
    1776 I Street, NW, Suite 450
    Washington, DC 20006
    Ph: 202-785-6323
    E-mail: washington.contact@oecd.org

78. PLASTIC PIPE AND FITTINGS ASSOCIATION (PPFA)
    800 Roosevelt Road Building C, Suite 312 Glen Ellyn, IL 60137
    Ph: 630-858-6540
    Fax: 630-790-3095
    Internet: https://www.ppfahome.org/

79. PLUMBING AND DRAINAGE INSTITUTE (PDI)
    800 Turnpike Street, Suite 300 North Andover, MA 01845
    Ph: 978-557-0720 or 800-589-8956
    E-Mail: pdi@PDIonline.org
    Internet: http://www.pdionline.org

80. PRECAST/PRESTRESSED CONCRETE INSTITUTE (PCI)
    200 West Adams St., 2100 Chicago, IL 60606
    Ph: 312-786-0300
    Bookstore: 312-428-4946
    Internet: https://www.pci.org/

81. PROGRAMME FOR ENDORSEMENT OF FOREST CERTIFICATION (PEFC)
    10, Route de l'Aeroport Case Postale 638
    1215 Geneva - Switzerland
    Ph: +41 (22) 799-4540
    Fax: +41 (22) 799-4550
    Internet: https://www.pefc.org/

82. SCIENTIFIC CERTIFICATION SYSTEMS (SCS)
    2000 Powell Street, Suite 600
    Emeryville, CA 94608
    Ph: 510-452-8000
    Fax: 510-452-8001
    E-mail: info@SCSglobalservices.com
    Internet: https://www.scsglobalservices.com/

83. SHEET METAL AND AIR CONDITIONING CONTRACTORS' NATIONAL ASSOCIATION (SMACNA)
    4201 Lafayette Center Drive Chantilly, VA 20151-1219
    Ph: 703-803-2980
    Fax: 703-803-3732
    Internet: https://www.smacna.org/

84. SOCIETY FOR PROTECTIVE COATINGS (SSPC)
    800 Trumbull Drive
    Pittsburgh, PA 15205
    Ph: 877-281-7772 or 412-281-2331
    Fax: 412-444-3591
    E-mail: customerservice@sspc.org
    Internet: http://www.sspc.org

85. SOCIETY OF AUTOMOTIVE ENGINEERS INTERNATIONAL (SAE)
    400 Commonwealth Drive Warrendale, PA 15096
    Ph: 877-606-7323 or 724-776-4841
    Fax: 724-776-0790
    E-mail: customerservice@sae.org
    Internet: https://www.sae.org/

86. SOCIETY OF CABLE TELECOMMUNICATIONS ENGINEERS (SCTE)
    140 Philips Road Exton, PA 19341-1318
    Ph: 800-542-5040 or 610-363-6888
    Fax: 610-884-7237
    E-Mail: info@scte.org
    Internet: https://www.scte.org/

87. SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT (SCAQMD)
    21865 Copley Drive Diamond Bar, CA 91765
    Ph: 909-396-2000
    E-mail: webinquiry@aqmd.gov
    Internet: http://www.aqmd.gov

88. STATE OF HAWAII, DEPARTMENT OF HEALTH, HAWAII ADMINISTRATIVE RULES (DOH HAR)
    1250 Punchbowl Street
    Honolulu, Hawaii 96813
    Ph: 808-586-4400
    Internet: https://health.hawaii.gov/opppd/administrative-rules/

89. STATE OF HAWAII, HAWAII ADMINISTRATIVE RULES (HAR)
    1250 Punchbowl Street
    Honolulu, Hawaii 96813
    Ph: 808-586-4400
    Internet: https://health.hawaii.gov/opppd/administrative-rules/

90. STEEL DOOR INSTITUTE (SDI/DOOR)
    30200 Detroit Road
    Westlake, OH 44145
    Ph: 440-899-0010
    Fax: 440-892-1404
    E-mail: info@steeldoor.org
    Internet: https://www.steeldoor.org/

91. SUSTAINABLE FOREST INITIATIVE (SFI)
    2121 K Street NW Suite 750
    Washington, DC 20037
    Ph: 202-596-3450
    Fax: 202-596-3451
    E-mail: info@sfiprogram.org
    Internet: http://www.sfiprogram.org

92. TELECOMMUNICATIONS INDUSTRY ASSOCIATION (TIA)
    1320 North Courthouse Road, Suite 200
    Arlington, VA 22201
    Ph: 703-907-7700
    Fax: 703-907-7727
    E-mail: marketing@tiaonline.org
    Internet: https://www.tiaonline.org/

93. THE MASONRY SOCIETY (TMS)
    105 South Sunset Street, Suite Q Longmont, CO 80501-6172
    Ph: 303-939-9700
    Fax: 303-541-9215
    E-mail: info@masonrysociety.org
    Internet: https://masonrysociety.org/

94. TILE COUNCIL OF NORTH AMERICA (TCNA)
    100 Clemson Research Boulevard Anderson, SC 29625
    Ph: 864-646-8453
    Fax: 864-646-2821
    E-mail: info@tileusa.com
    Internet: https://www.tcnatile.com/

95. U.S. ARMY CORPS OF ENGINEERS (USACE) CRD-C DOCUMENTS available on Internet:
    http://www.wbdg.org/ffc/army-coe/standards Order Other Documents from:
    Official Publications of the Headquarters, USACE E-mail
    hqpublications@usace.army.mil
    Internet: http://www.publications.usace.army.mil/ or
    https://www.hnc.usace.army.mil/Missions/Engineering-Directorate/TECHINFO/

96. U.S. DEFENSE LOGISTICS AGENCY (DLA) Andrew T. McNamara Building
    8725 John J. Kingman Road Fort Belvoir, VA22060-6221
    Ph: 877-352-2255
    E-mail: dlacontactcenter@dla.mil
    Internet: http://www.dla.mil

97. U.S. DEPARTMENT OF AGRICULTURE (USDA) Order AMS Publications from:
    AGRICULTURAL MARKETING SERVICE (AMS) Seed Regulatory and Testing Branch 801 Summit Crossing Place, Suite C Gastonia, NC 28054-2193
    Ph: 704-810-8884
    E-mail: PA@ams.usda.gov
    Internet: https://www.ams.usda.gov/
    Order Other Publications from:
    USDA Rural Development Rural Utilities Service STOP 1510, Rm 5135
    1400 Independence Avenue SW Washington, DC 20250-1510
    Phone: (202) 720-9540
    Internet:
    https://www.rd.usda.gov/about-rd/agencies/rural-utilities-service

98. U.S. DEPARTMENT OF DEFENSE (DOD) Order DOD Documents from:
    Room 3A750-The Pentagon
    1400 Defense Pentagon
    Washington, DC 20301-1400
    Ph: 703-571-3343
    Fax: 215-697-1462
    E-mail: customerservice@ntis.gov
    Internet: https://www.ntis.gov/

99. Obtain Military Specifications, Standards and Related Publications from:
    Acquisition Streamlining and Standardization Information System (ASSIST)
    Department of Defense Single Stock Point (DODSSP) Document Automation and Production Service (DAPS) Building 4/D
    700 Robbins Avenue
    Philadelphia, PA 19111-5094
    Ph: 215-697-6396 - for account/password issues Internet:
    https://assist.dla.mil/online/start/; account registration required

100. Obtain Unified Facilities Criteria (UFC) from: Whole Building Design Guide (WBDG)
National Institute of Building Sciences (NIBS) 1090 Vermont Avenue NW, Suite 700
Washington, DC 20005
Ph: 202-289-7800
Fax: 202-289-1092
Internet:
https://www.wbdg.org/ffc/dod/unified-facilities-criteria-ufc

101. U.S. DEPARTMENT OF ENERGY (DOE) 1000 Independence Avenue Southwest Washington, D.C. 20585
Ph: 202-586-5000
Fax: 202-586-4403
E-mail: The.Secretary@hq.doe.gov
Internet: https://www.energy.gov/

102. U.S. ENVIRONMENTAL PROTECTION AGENCY (EPA) 1200 Pennsylvania Avenue, N.W.
Washington, DC 20004
Ph: 202-564-4700
Internet: https://www.epa.gov

103. --- Some EPA documents are available only from: National Technical Information Service (NTIS) 5301 Shawnee Road
Alexandria, VA 22312
Ph: 703-605-6060 or 1-800-363-2068
Fax: 703-605-6880
TDD: 703-487-4639
E-mail: info@ntis.gov
Internet: https://www.ntis.gov/

104. U.S. FEDERAL AVIATION ADMINISTRATION (FAA) Order for sale documents from: Superintendent of Documents
U.S. Government Publishing Office (GPO) 732 N. Capitol Street, NW
Washington, DC 20401
Ph: 202-512-1800 or 866-512-1800
Bookstore: 202-512-0132
Internet: https://www.gpo.gov/

105. Order free documents from:
U.S. Department of Transportation Federal Aviation Administration 800 Independence Avenue, SW Washington, DC 20591
Ph: 866-835-5322
Internet: https://www.faa.gov/

106. U.S. FEDERAL COMMUNICATIONS COMMISSION (FCC)
445 12th Street SW Washington, DC 20554
Ph: 888-225-5322 TTY: 888-835-5322
Fax: 866-418-0232
Internet: https://www.fcc.gov/

107. Order Publications From: Superintendent of Documents
U.S. Government Publishing Office (GPO) 732 N. Capitol Street, NW
Washington, DC 20401
Ph: 202-512-1800 or 866-512-1800
Bookstore: 202-512-0132
Internet: https://www.gpo.gov/

108. U.S. FEDERAL HIGHWAY ADMINISTRATION (FHWA) 1200 New Jersey Ave., SE
Washington, DC 20590
Ph: 202-366-4000
E-mail: ExecSecretariat.FHWA@dot.gov
Internet: https://www.fhwa.dot.gov/

109. Order from:
Superintendent of Documents
U.S. Government Publishing Office (GPO) 732 N. Capitol Street, NW
Washington, DC 20401
Ph: 202-512-1800 or 866-512-1800
Bookstore: 202-512-0132
Internet: https://www.gpo.gov/

110. U.S. GENERAL SERVICES ADMINISTRATION (GSA) General Services Administration
1800 F Street, NW Washington, DC 20405
Ph: 1-844-472-4111
Internet: https://www.gsaelibrary.gsa.gov/ElibMain/home.do
Obtain documents from:
Acquisition Streamlining and Standardization Information System (ASSIST)
Internet: https://assist.dla.mil/online/start/; account registration required

111. U. S. GREEN BUILDING COUNCIL (USGBC) 2101 L St NW, Suite 500
Washington, DC 20037
Ph: 202-828-7422
Internet: https://new.usgbc.org/

112. U.S. NATIONAL ARCHIVES AND RECORDS ADMINISTRATION (NARA) 8601 Adelphi Road
College Park, MD 20740-6001
Ph: 866-272-6272
Internet: https://www.archives.gov/ Order documents from:
Superintendent of Documents
U.S. Government Publishing Office (GPO) 732 N. Capitol Street, NW
Washington, DC 20401
Ph: 202-512-1800 or 866-512-1800
Bookstore: 202-512-0132 Internet: https://www.gpo.gov/

113. UL ENVIRONMENT (ULE)
2211 Newmarket Parkway, Suite 106
Marietta, GA 30067
Ph: 888-485-4733
E-mail: environment@ul.com
Internet: https://industries.ul.com/environment/

114. UNDERWRITERS LABORATORIES (UL)
2600 N.W. Lake Road Camas, WA 98607-8542
Ph: 877-854-3577 or 360-817-5500
E-mail: CustomerExperienceCenter@ul.com Internet: https://www.ul.com/
UL Directories available through IHS at https://ihsmarkit.com/

115. UNI-BELL PVC PIPE ASSOCIATION (UBPPA)
Corporate Headquarters
2711 LBJ Freeway, Suite 1000
Dallas, TX 75234
Ph: 972-243-3902
Fax: 972-243-3907
E-mail: info@uni-bell.org
Internet: https://www.uni-bell.org/

116. WINDOW AND DOOR MANUFACTURERS ASSOCIATION (WDMA)
2025 M Street, NW, Suite 800
Washington, DC 20036-3309
Ph: 202-367-1157
or
330 N Wabash Avenue, Suite 2000 Chicago, IL 60611
Ph: 312-321-6802
E-mail: membersupport@wdma.com Internet: https://www.wdma.com/

117. WOODWORK INSTITUTE (WI)
3188 Industrial Blvd.
West Sacramento, CA 95691
Ph: 916-372-9943
Fax: 916-372-9950
E-mail: info@woodinst.com
Internet: https://woodworkinstitute.com

PART 2 PRODUCTS

NOT USED.

PART 3 EXECUTION

NOT USED.

END OF SECTION 01 42 00

SECTION 01 45 00 – QUALITY CONTROL

PART 1 GENERAL

1.01 SUBMITTALS

A. Submit under provisions of Section 01330 – SUBMITTAL PROCEDURES. Partial submittals will not be acceptable. Submit for approval three (3) complete sets of submittals as described below. Annotate descriptive data to show the specific model, type, and size of each item the Contractor proposes to furnish. Prepare working drawings on sheets not smaller than 24 by 36 inches, in accordance with the requirements for "Working Drawings (Plans) as specified in NFPA 13 and include data essential to the proper installation of each system. Do not commence work until the design of each system and the various components have been approved. The Engineer will review and approve all submittals. Before work is commenced, submit for approval complete sets of working drawings. Working drawings must be stamped by a licensed professional engineer.

Submit the following in accordance with Section 01330 – Submittal Procedures:

1. Preconstruction Submittals:

   Within 36 days of contract award but no less than 14 days prior to commencing work on site, the prime contractor must submit the following for review and approval. Shop Drawings, Product Data, and Design Data submittals received prior to the review and approval of the qualifications will be returned Disapproved Without Review.

   a. Construction Quality Control (QC) Plan

   b. QFPE Qualifications

2. Certificates:

   a. Fire Protection Construction Surveillance Field Visit Reports

   b. Fire Protection and Life Safety Preliminary Test Report/Request for Final Acceptance Testing

1.02 INFORMATION FOR THE CONTRACTING OFFICER

A. Prior to commencing work on construction, the Contractor can obtain a single copy set of the current report forms from the Contracting Officer. The report forms will consist of the Contractor Production Report, Contractor Production Report (Continuation Sheet), Contractor Quality Control (CQC) Report, CQC Report (Continuation Sheet), Preparatory Phase Checklist, Initial Phase Checklist, Rework Items List, and Testing Plan and Log.

B. Deliver the following to the Contracting Officer during Construction:

1. CQC Report: Submit the report electronically by 12:00 PM the next working day after each day that work is performed and for every 7 consecutive calendar days of no-work.

2. Contractor Production Report: Submit the report electronically by the end of the next working day after each day that work is performed and for every 7 consecutive calendar days of no-work.

3. Preparatory Phase Checklist: Submit the report electronically in the same manner as the CQC Report for each Preparatory Phase held.

4. Initial Phase Checklist: Submit the report electronically in the same manner as the CQC Report for each Initial Phase held.

5. QC Specialist Reports: Submit the report electronically by 12:00 PM the next working day after each day that work is performed.

6. Field Test Reports: Within 2 working days after the test is performed, submit the report as an electronic attachment to the CQC Report.

7. Monthly Summary Report of Tests: Submit the report as an electronic attachment to the CQC Report at the end of each month.

8. Testing Plan and Log: Submit the report as an electronic attachment to the CQC Report, at the end of each month. Provide a copy of the final Testing Plan and Log to the preparer of the Operation & Maintenance (O&M) documentation.

9. Rework Items List: Submit lists containing new entries daily, in the same manner as the CQC Report.

10. CQC Meeting Minutes: Within 2 working days after the meeting is held, submit the report as an electronic attachment to the CQC Report.

11. QC Certifications: As required by the paragraph QC CERTIFICATIONS.

12. Special Inspection Report: Submit the Special Inspection reports, in the same manner as the CQC Report.

1.03 QC PROGRAM REQUIREMENTS

A. Establish and maintain a QC program as described in this section. The QC program consists of a QC Plan, QC Plan Meeting(s), a Coordination and Mutual Understanding Meeting, QC meetings, three phases of control, submittal review and approval, testing, completion inspections, QC certifications, independent Special Inspections in accordance with Section 01 45 35 SPECIAL INSPECTIONS, and documentation necessary to provide materials, equipment, workmanship, fabrication, construction and operations which comply with the requirements of this Contract. The QC program must cover on-site and off-site work and be keyed to the work sequence. No construction work or testing may be performed unless the QC Manager is on the work site. The QC Manager must report to an officer of the firm and not be subordinate to the Project Superintendent or the HIARNG FMO-Project Manager. The QC Manager, Project Superintendent and Project Manager must work together effectively. Although the QC Manager is the primary individual responsible for quality control, all individuals will be held responsible for the quality of work on the job.

B. Acceptance of the Construction Quality Control (QC) Plan

1. Acceptance of the QC Plan is required prior to the start of construction. The Contracting Officer reserves the right to require changes in the QC Plan and operations as necessary, including removal of personnel, to ensure the specified quality of work. The Contracting Officer reserves the right to interview any member of the QC organization at any time in order to verify the submitted qualifications. All QC organization personnel are subject to acceptance by the Contracting Officer. The Contracting Officer may require the removal of any individual for non-compliance with quality requirements specified in the Contract.

C. Preliminary Construction Work Authorized Prior to Acceptance
   1. The only construction work that is authorized to proceed prior to the acceptance of the QC Plan is mobilization of storage and office trailers, temporary utilities, and surveying.

D. Notification of Changes
   1. Notify the Contracting Officer, in writing, of any proposed changes in the QC Plan or changes to the QC organization personnel, a minimum of 10 work days prior to a proposed change. Proposed changes are subject to acceptance by the Contracting Officer.

E. Special Inspections
   1. Perform all required Special Inspections per Section 01 45 35 SPECIAL INSPECTIONS, the statement of Special Inspections and the Schedule of Special Inspections.

1.04 QC ORGANIZATION

A. QC Manager
   1. Duties

      a. Provide a QC Manager at the work site to implement and manage the QC program. The only duties and responsibilities of the QC Manager are to manage and implement the QC program on this Contract. The QC Manager is required to attend the partnering meetings, QC Plan Meetings, Coordination and Mutual Understanding Meeting, conduct the QC meetings, perform the three phases of control, perform submittal review and approval, ensure testing is performed and provide QC certifications and documentation required in this Contract. The QC Manager is responsible for managing and coordinating the three phases of control and documentation performed by the QC Specialists, testing laboratory personnel and any other inspection and testing personnel required by this Contract. The QC Manager is the manager of all QC activities. The QC manager is responsible for notifying the Special Inspector of activities which require their review. The QC manager is responsible for coordinating the Special Inspection activities, see paragraph QUALITY CONTROL MANAGER, in Section 01 45 35 SPECIAL INSPECTIONS.

   2. Qualifications

      a. A graduate of a 4-year accredited college or university program in one of the following disciplines: Engineering, Architecture, Construction Management, Engineering Technology, Building Construction, or Building Science, with a minimum of 10 year’s experience as a Project Superintendent, QC Manager, Project Manager, Project Engineer or Construction Manager on similar size and type construction contracts which included the major trades that are part of this Contract. The individual must have at least 2 year’s experience as a QC Manager. The individual must be familiar with the requirements of EM 385-1-1, and have experience in the areas of hazard identification, safety compliance, and sustainability.

B. Construction Quality Management Training
   1. In addition to the above experience and education requirements, the QC Manager must have completed the course entitled "Construction Quality Management (CQM) for Contractors." If the QC Manager does not have a current certification, they must obtain the CQM for Contractors course certification within 90 days of award. This course is periodically offered by the Naval Facilities Engineering Systems Command

and the Army Corps of Engineers. Contact the Contracting Officer for information on the next scheduled class.

C. Special Inspector

1. The Special Inspector (SI) must be an independent third party hired directly by the Prime Contractor. The SI must not be a company employee of the Contractor or any Sub-Contractor performing the work to be inspected.

2. The qualifications of the SI are defined in Section 01 45 35 SPECIAL INSPECTION.

Qualification/Experience in Area of Responsibility	Area of Responsibility	Frequency
Registered Civil Engineer or Registered Geotechnical Engineer/ten years minimum licensed experience of which eight years must be in responsible charge involving geotechnical engineering design and construction in alluvial and coral reef deposits. Responsible charge is defined as being in direct control or personnel supervision of geotechnical engineering work.	Section 31 23 00.00 20 EXCAVATION AND FILL: Proof rolling, probing and grouting, and foundation subgrade preparation. Earthwork, excavation, filling and backfilling, pavement construction, and utility installation.	 Full time. Minimum once a week.

D. Qualified Fire Protection Engineer/Fire Protection Quality Control Specialist

1. The Qualified Fire Protection Engineer (QFPE) must be an integral part of the Prime Contractor's Quality Control Organization. The QFPE must have no business relationships (e.g. owner, partner, operating officer, distributor, salesman, or technical representative) with any fire protection equipment device manufacturers, suppliers or installers for any such equipment provided as part of this project. The QFPE may also be referred to as the Fire Protection Quality Control (FPQC) Specialist and Quality Control Fire Protection Engineer (QCFPE) elsewhere in the specifications.

2. QFPE Qualifications

a. The QFPE must be a registered professional engineer (P.E.) who has passed the fire protection engineering examination administered by the National Council of Examiners for Engineering and Surveying (NCEES) and has relevant fire protection engineering experience. The QFPE must have a minimum of 5 years of full time experience in every aspect of facility design and construction as it relates to fire protection, which includes but is not limited to: building code analysis, life safety code analysis, design of automatic detection, design of suppression systems, passive fire protection design, water supply analysis, multi-discipline coordination reviews, and construction surveillance.

3. Area of Responsibility

a. The QFPE is responsible for assuring that life safety features and fire protection systems as part of Phase I are properly constructed and installed in accordance with the design documents, applicable codes and standards, approved construction submittals, manufacturer's installation instructions, and industry standards.

b. For inspections of fire-resistant penetrations and joints, in addition to QFPE qualifications requirements the individual must also meet the qualification requirements of Section 01 45 35 SPECIAL INSPECTIONS and the following:

1) Passed the UL Firestop Exam with 1 year of related experience, or

2) Passed the FM Firestop Exam with 1 year of related experience, or

3) Registered Professional Engineer with related experience.

4. Fire Protection Information Only Submittals

a. The FMD delegates the authority for review and approval of fire protection construction submittals to the QFPE. The QFPE is not authorized to deviate from the contract requirements or approve variations. Variations must comply with Section 01 33 00 SUBMITTAL PROCEDURES. Submit all approved construction submittals and drawings within 14 calendar days. Each life safety feature and fire protection construction submittal must be individually stamped with the QFPE review/approval stamp (not the PE stamp). All QFPE submittal review comments must accompany the respective submittal to the Government. Final Acceptance Testing of fire protection systems must not be scheduled until all approved fire protection construction submittals, with comments, have been received by the FMD.

5. Construction Surveillance

a. The QFPE must visit the construction site periodically to ensure the life safety features and fire protection systems are being properly constructed, applied, and installed. The QFPE must determine the frequency and duration of the field visits based upon their professional knowledge of particular system components, system complexity, and phase of construction. At a minimum, construction surveillance field visits are required:

1) Prior to installation of features that will conceal portions of the life safety features or fire protection systems

2) Approximately halfway through the installation of life safety features and fire protection systems

3) Approximately 90 percent through the installation of life safety features and fire protection systems

4) Prior to the backfilling of trenches for underground fire suppression piping within 5 feet of the building

b. The construction surveillance site visits must not be combined with the Preliminary or Final Acceptance Testing. The QFPE must prepare a written report summarizing the construction surveillance site visits as described below.

6. Preliminary Acceptance Testing

   a. The QFPE of Record must personally witness all Preliminary Acceptance Testing of fire protection systems to verify the quality of installation and operation of the systems. Once Preliminary Acceptance Testing has been completed and all corrective actions have been completed, the QFPE, via the QC Manager, must submit a Request for Final Acceptance Testing to the FMD, via the Contracting Officer. The Request for Final Acceptance Testing will also count as the Preliminary Test Report and must be submitted as described in the paragraph "QC Documentation and Certifications". Preliminary Acceptance Testing is also referred to as Preliminary Testing elsewhere in this specification.

7. Final Acceptance Testing

   a. The QFPE of Record, who performed the Preliminary Testing, must personally witness Final Acceptance Testing and repeat any tests requested by the FMD. The FMD will witness formal tests and provide a recommendation for approval or disapproval to the Contracting Officer. The QC Manager must submit the request for Final Acceptance Testing, at least 15 calendar days prior to the date the inspection is to take place. Any retesting or punchlist completion verification must be witnessed by the QFPE and the FMD at the discretion of the Contracting Officer. Retesting or punchlist completion verification must be scheduled at least 15 calendar days prior to the date the testing or verification is to take place. Ensure Final Acceptance Testing is scheduled to allow adequate time for retesting or punchlist verification. Under no circumstances must beneficial occupancy be established while there are known life safety deficiencies.

8. QC Documentation and Certifications

   a. The following documentation and certification must be prepared by the QFPE. Submit two copies of each document to the Contracting Officer within 7 calendar days after the field visit, inspection, or testing.

   b. Fire Protection Construction Surveillance Field Visit Reports: Provide a written report summarizing the results of all observations and tests and detail all discrepancies discovered. Submit a copy to the Contracting Officer for information only. Provide photos of construction work that will be concealed (e.g. buried pipe/valves, fire stopping, sprinkler pipe hangers and seismic bracing, etc.). If photography is not permitted at the site, contact the NAVFAC Hawaii DFPE via the Contracting Officer to schedule a site visit at least 15 days prior to the visit is to take place.

   c. Fire Protection and Life Safety Preliminary Test Report/Request for Final Acceptance Testing: Provide a written report summarizing observations and detail all discrepancies discovered. Submit to the Contracting Officer for approval. Include photos of testing performed, where permitted, and copies of NFPA Records of Completion and Records of Inspection and Testing that are signed by the installing contractor and the QFPE. After all corrective actions have been verified by the QFPE, provide a signed letter indicating that all fire protection systems are complete and ready to request for Final Acceptance Testing.

d. The signed letter must certify that all life safety features and fire protection systems have been inspected by the QFPE and in the QFPE's professional judgment, have been installed in accordance with the contract documents, approved submittals, manufacturer's requirements, and applicable codes and standards. This certification must summarize all life safety and fire protection features, and must bear the professional engineering seal of the fire protection engineer.

9. Submittal Reviewer Duties and Qualifications

a. Provide a Submittal Reviewer, other than the QC Manager, qualified in the disciplines being reviewed, to review and certify that the submittals meet the requirements of this Contract prior to certification or approval by the QC Manager.

b. Each submittal must be reviewed by an individual with 10 years of construction experience.

c. Each submittal must be reviewed by a registered professional engineer.

1.05 QUALITY CONTROL (QC) PLAN

A. Construction Quality Control (QC) Plan

1. Submit a Construction QC Plan within 30 calendar days of Contract Award. The Accepted QC plan is required prior to start of construction.

2. Requirements

a. Provide a Construction QC Plan, prior to start of construction, that includes a table of contents, with major sections identified, with pages numbered sequentially, and that documents the proposed methods and responsibilities for accomplishing quality control during the construction of the project:

1) QC ORGANIZATION: A chart showing the QC organizational structure.

2) NAMES AND QUALIFICATIONS: Names and qualifications, in resume format, for each person in the QC organization. Include the CQM for Contractors course certifications for the QC Manager and Alternate QC Manager as required by the paragraphs CONSTRUCTION QUALITY MANAGEMENT TRAINING and ALTERNATE QC MANAGER DUTIES AND QUALIFICATIONS.

3) DUTIES, RESPONSIBILITY AND AUTHORITY OF QC PERSONNEL: Duties, responsibilities, and authorities of each person in the QC organization.

4) OUTSIDE ORGANIZATIONS: A listing of outside organizations, such as architectural and consulting engineering firms, that will be employed by the Contractor and a description of the services these firms will provide.

5) APPOINTMENT LETTERS: Letters signed by an officer of the firm appointing the QC Manager and Alternate QC Manager and stating that they are responsible for implementing and managing the QC program as described in this Contract. Include in this letter the responsibility of the QC Manager and Alternate QC Manager to implement and manage the three phases of control, and their authority to stop work which is not in compliance with the Contract. Letters of direction are to be issued by the QC Manager to all other QC Specialists outlining their duties, authorities, and responsibilities. Include copies of the letters in the QC Plan.

6) SUBMITTAL PROCEDURES AND INITIAL SUBMITTAL REGISTER: Procedures for reviewing, approving, and managing submittals. Provide the name(s) of the person(s) in the QC organization authorized to review and certify submittals prior to approval. Provide the initial submittal of the Submittal Register as specified in Section 01 33 00 SUBMITTAL PROCEDURES.

7) TESTING LABORATORY INFORMATION: Testing laboratory information required by the paragraphs ACCREDITATION REQUIREMENTS, as applicable.

8) TESTING PLAN AND LOG: A Testing Plan and Log that includes the tests required, referenced by the specification paragraph number requiring the test, the frequency, and the person responsible for each test.

9) PROCEDURES TO COMPLETE REWORK ITEMS: Procedures to identify, record, track, and complete rework items.

10) LIST OF DEFINABLE FEATURES: A Definable Feature of Work (DFOW) is a task that is separate and distinct from other tasks and has control requirements and work crews unique to that task. A DFOW is identified by different trades or disciplines and is an item or activity on the construction schedule. Include in the list of DFOWs, but not be limited to, all critical path activities on the NAS. Include all activities for which this specification requires specialty inspection personnel.

11) PROCEDURES FOR PERFORMING THE THREE PHASES OF CONTROL: Identify procedures used to ensure the three phases of control to manage the quality on this project. For each DFOW, a Preparatory and Initial phase checklist will be filled out during the Preparatory and Initial phase meetings. Conduct the Preparatory and Initial Phases and meetings with a view towards obtaining quality construction by planning ahead and identifying potential problems for each DFOW.

12) PERSONNEL MATRIX: A personnel matrix showing for each section of the specification who will review and approve submittals, who will perform and document the three phases of control, and who will perform and document the testing.

13) PROCEDURES FOR COMPLETION INSPECTION: Procedures for identifying and documenting the completion inspection process. Include in these procedures the responsible party for punch out inspection, pre-final inspection, and final acceptance inspection.

14) TRAINING PROCEDURES AND TRAINING LOG: Procedures for coordinating and documenting the training of personnel required by the Contract.

15) ORGANIZATION AND PERSONNEL CERTIFICATIONS LOG: Procedures for coordinating, tracking and documenting all certifications on subcontractors, testing laboratories, suppliers, personnel, etc. QC Manager will ensure that certifications are current, appropriate for the work being performed, and will not lapse during any period of the contract that the work is being performed.

1.06 COORDINATION AND MUTUAL UNDERSTANDING MEETING

A. After submission of the QC Plan, and prior to Government approval and the start of construction, the QC Manager will meet with the Contracting Officer to present the QC program required by this Contract. When a new QC Manager is appointed, the coordination and mutual understanding meeting must be repeated.

B. Purpose

1. The purpose of this meeting is to develop a mutual understanding of the QC details, including the roles and responsibilities of the QFPE (see Section 21 13 13 Wet-Pipe Sprinkler Systems), documentation, administration for on-site and off-site work, design intent, coordination of activities to be performed, Special Inspections, and the coordination of the Contractor's management, production, and QC personnel. At the meeting, the Contractor will be required to explain in detail how three phases of control will be implemented for each DFOW, as well as how each DFOW will be affected by each management plan or requirement as listed below:

    a. Waste Management Plan.

    b. IAQ Management Plan.

    c. Procedures for noise and acoustics management.

    d. Special Inspections, including 21 13 13 Wet-Pipe Sprinkler Systems Field Testing and Flushing and Formal Inspection and Tests, performed prior to final FMO-PM system acceptance.

C. Coordination of Activities

1. Coordinate activities included in various sections to assure efficient and orderly installation of each component. Coordinate operations included under different sections that are dependent on each other for proper installation and operation. Coordinate special inspections.

D. Attendees

1. As a minimum, the Contractor's personnel required to attend include the Project Manager, Project Superintendent/QC Manager, and subcontractor representatives. Each subcontractor who will be assigned QC responsibilities must have a principal of the firm at the meeting. Minutes of the meeting will be prepared by the QC Manager and signed by the Contractor and the FMO-PM. Provide a copy of the signed minutes to all attendees and include in the QC Plan.

1.07 QC MEETINGS

A. After the start of construction, conduct bi-weekly QC meetings by the QC Manager at the work site with the Project Superintendent and the foremen who are performing the work of the DFOWs. The QC Manager is to prepare the minutes of the meeting and provide a copy to the Contracting Officer within two working days after the meeting.The Contracting Officer may attend these meetings. As a minimum, accomplish the following at each meeting:

1. Review the minutes of the previous meeting.

2. Review the schedule and the status of work and rework.

3. Review the status of submittals.

4. Review the work to be accomplished in the next two weeks and documentation required.

5. Resolve QC and production problems (RFI, etc.).

6. Address items that may require revising the QC Plan.

7. Review Accident Prevention Plan (APP).

8. Review environmental requirements and procedures.

9. Review Waste Management Plan.

10. Review IAQ Management Plan.

11. Review Environmental Management Plan.

12. Review the status of training completion.

1.08 THREE PHASES OF CONTROL

A. Adequately cover both on-site and off-site work with the Three Phases of Control and include the following for each DFOW.

B. Preparatory Phase

1. Notify the Contracting Officer at least 2 workdays in advance of each preparatory phase meeting. The meeting will be conducted by the QC Manager and attended by the Project Superintendent, the CxC, the Special Inspector, and the foreman responsible for the DFOW. When the DFOW will be accomplished by a subcontractor, that subcontractor's foreman must attend the preparatory phase meeting. Document the results of the preparatory phase actions in the daily Contractor Quality Control Report and in the Preparatory Phase Checklist. Perform the following prior to beginning work on each DFOW:

a. Review each paragraph of the applicable specification sections.

b. Review the Contract drawings.

c. Verify that field measurements are as indicated on construction and/or shop drawings before confirming product orders, in order to minimize waste due to excessive materials.

d. Verify that appropriate shop drawings and submittals for materials and equipment have been submitted and approved. Verify receipt of approved factory test results, when required.

e. Review the testing plan and ensure that provisions have been made to provide the required QC testing.

f. Review special inspections required by Section 01 45 35 SPECIAL INSPECTION, the statement of special inspections and the schedule of special inspections.

g. Examine the work area to ensure that the required preliminary work has been completed.

h. Coordinate the schedule of product delivery to designated prepared areas in order to minimize site storage time and potential damage to stored materials.

i. Arrange for the return of shipping/packaging materials, such as wood pallets, where economically feasible.

j. Examine the required materials, equipment, and sample work to ensure that they are on hand and conform to the approved shop drawings and submitted data and are properly stored.

k. Discuss specific controls used and construction methods, construction tolerances, workmanship standards, and the approach that will be used to provide quality construction by planning ahead and identifying potential problems for each DFOW.

l. Review the APP and appropriate Activity Hazard Analysis (AHA) to ensure that applicable safety requirements are met, and that required Safety Data Sheets (SDS) are submitted.

C. Initial Phase

1. Notify the Contracting Officer at least 2 workdays in advance of each initial phase. When construction crews are ready to start work on a DFOW, conduct the initial phase with the Project Superintendent and the foreman responsible for that DFOW. Observe the initial segment of the DFOW to ensure that the work complies with Contract requirements. Document the results of the initial phase in the daily CQC Report and in the Initial Phase Checklist. Repeat the initial phase for each new crew to work on-site, or when acceptable levels of specified quality are not being met. Perform the following for each DFOW:

a. Establish level of workmanship and verify that it meets the minimum acceptable workmanship standards. Compare with required sample panels as appropriate.

b. Resolve any workmanship issues.

c. Ensure that testing is performed by the approved laboratory.

d. Check work procedures for compliance with the APP and the appropriate AHA to ensure that applicable safety requirements are met.

e. Review project specific work plans (i.e. Cx, HAZMAT Abatement, Stormwater Management) to ensure all preparatory work items have been completed and documented.

f. Coordinate scheduled work with special inspections required by Section 01 45 35 SPECIAL INSPECTIONS, the statement of special inspections and the schedule of special inspections.

D. Follow-Up Phase

1. Perform the following for on-going work daily, or more frequently as necessary, until the completion of each DFOW and document in the daily CQC Report:

a. Ensure the work is in compliance with Contract requirements.

b. Maintain the quality of workmanship required.

c. Ensure that testing is performed by the approved laboratory.

d. Ensure that rework items are being corrected.

e. Assure manufacturers representatives have performed necessary inspections if required and perform safety inspections.

f. Coordinate scheduled work with special inspections required by Section 01 45 35 SPECIAL INSPECTIONS, the statement of special inspections and the schedule of special inspections.

E. Additional Preparatory and Initial Phases
1. Conduct additional preparatory and initial phases on the same DFOW if the quality of on-going work is unacceptable, if there are changes in the applicable QC organization, if there are changes in the on-site production supervision or work crew, if work on a DFOW is resumed after substantial period of inactivity, or if other problems develop.

F. Notification of Three Phases of Control for Off-Site Work
1. Notify the Contracting Officer at least 2 weeks prior to the start of the preparatory and initial phases.

1.09 SUBMITTAL REVIEW AND APPROVAL

A. Procedures for submission, review and approval of submittals are described in Section 01 33 00 SUBMITTAL PROCEDURES.

1.10 TESTING

A. Except as stated otherwise in the specification sections, perform sampling and testing required under this Contract.

B. Accreditation Requirements
1. Construction materials testing laboratories must be accredited by a laboratory accreditation authority and will be required to submit a copy of the Certificate of Accreditation and Scope of Accreditation. The laboratory's scope of accreditation must include the appropriate ASTM standards (E 329, C 1077, D 3666, D 3740, E 543) listed in the technical sections of the specifications. Laboratories engaged in Hazardous Materials Testing must meet the requirements of OSHA and EPA. The policy applies to the specific laboratory performing the actual testing, not just the Corporate Office.

C. Laboratory Accreditation Authorities
1. Laboratory Accreditation Authorities include the National Voluntary Laboratory Accreditation Program (NVLAP) administered by the National Institute of Standards and Technology at https://www.nist.gov/nvlap, the American Association of State Highway and Transportation Officials (AASHTO) Accreditation Program at http://www.aashtoresource.org/aap/overview, International Accreditation Services, Inc. (IAS) at http://www.iasonline.org, U.S. Army Corps of Engineers Materials Testing Center (MTC) at http://www.erdc.usace.army.mil/Media/FactSheets/FactSheetArticleView/tabid/9254/Article/476661/materials-testing-center.aspx, the American Association for Laboratory Accreditation (A2LA) program at http://www.a2la.org/, the Washington Association of Building Officials (WABO) at http://www.wabo.org/ (Approval authority for WABO is limited to projects within Washington State), and the Washington Area Council of Engineering Laboratories (WACEL) at https://www.wacel.org/lab-accreditation-and-insp ection-agency-audit- programs/laboratory-accreditation-program/(Approval authority by WACEL is limited to projects within Facilities Engineering Command (FEC) Washington geographical area).

D. Capability Check
1. The Contracting Officer retains the right to check laboratory equipment in the proposed laboratory and the laboratory technician's testing procedures, techniques,

and other items pertinent to testing, for compliance with the standards set forth in this Contract.

E. Test Results
   1. Cite applicable Contract requirements, tests or analytical procedures used. Provide actual results and include a statement that the item tested or analyzed conforms or fails to conform to specified requirements. If the item fails to conform, notify the Contracting Officer immediately. Conspicuously stamp the cover sheet for each report in large red letters "CONFORMS" or "DOES NOT CONFORM" to the specification requirements, whichever is applicable. Test results must be signed by a testing laboratory representative authorized to sign certified test reports. Furnish the signed reports, certifications, and other documentation to the Contracting Officer via the QC Manager. Furnish a summary report of field tests at the end of each month, in accordance with paragraph INFORMATION FOR THE CONTRACTING OFFICER.

F. Test Reports and Monthly Summary Report of Tests
   1. Furnish the signed reports, certifications, and a summary report of field tests at the end of each month to the Contracting Officer. Attach a copy of the summary report to the last daily Contractor Quality Control Report of each month. Provide a copy of the signed test reports and certifications to the OMSI preparer for inclusion into the OMSI documentation, in accordance with Sections 01 78 23 OPERATION AND MAINTENANCE DATA.

1.11 QC CERTIFICATIONS

A. CQC Report Certification
   1. Contain the following statement within the CQC Report: "On behalf of the Contractor, I certify that this report is complete and correct and equipment and material used and work performed during this reporting period is in compliance with the contract drawings and specifications to the best of my knowledge, except as noted in this report."

B. Invoice Certification
   1. Furnish a certificate to the Contracting Officer with each payment request, signed by the QC Manager, attesting that as-built drawings are current, coordinated and attesting that the work for which payment is requested, including stored material, is in compliance with Contract requirements.

C. Completion Certification
   1. Upon completion of work under this Contract, the QC Manager must furnish a certificate to the Contracting Officer attesting that "the work has been completed, inspected, tested and is in compliance with the Contract." Provide a copy of this final QC Certification for completion to the preparer of the Operation & Maintenance (O&M) documentation.

1.12 COMPLETION INSPECTIONS

A. Punch-Out Inspection

1. Near the completion of all work or any increment thereof, established by a completion time stated in the Contract Clause entitled "Commencement, Prosecution, and Completion of Work," or stated elsewhere in the specifications, the QC Manager must conduct an inspection of the work and develop a "punch list" of items which do not conform to the approved drawings, specifications and Contract. Include in the punch list any remaining items on the "Rework Items List", which were not corrected prior to the Punch-Out Inspection. Include within the punch list the estimated date by which the deficiencies will be corrected. Provide a copy of the punch list to the Contracting Officer. The QC Manager, or staff, must make follow-on inspections to ascertain that all deficiencies have been corrected. Once this is accomplished, notify the Government that the facility is ready for the Government "Pre-Final Inspection".

B. Pre-Final Inspection

1. The Government and QC Manager will perform this inspection to verify that the facility is complete and ready to be occupied. A Government "Pre-Final Punch List" will be documented by the QC Manager as a result of this inspection. The QC Manager will ensure that all items on this list are corrected prior to notifying the Government that a "Final" inspection with the Client can be scheduled. Any items noted on the "Pre-Final" inspection must be corrected in a timely manner and be accomplished before the contract completion date for the work,or any particular increment thereof, if the project is divided into increments by separate completion dates.

C. Final Acceptance Inspection

1. Notify the Contracting Officer at least 14 calendar days prior to the date a final acceptance inspection can be held. State within the notice that all items previously identified on the pre-final punch list will be corrected and acceptable, along with any other unfinished Contract work, by the date of the final acceptance inspection. The Contractor must be represented by the QC Manager, the Project Superintendent and others deemed necessary. Attendees for the Government will include the Contracting Officer, other FEAD/ROICC personnel, and personnel representing the Client. Failure of the Contractor to have all contract work acceptably complete for this inspection will be cause for the Contracting Officer to bill the Contractor for the Government's additional inspection cost in accordance

1.13 DOCUMENTATION

A. Maintain current and complete records of on-site and off-site QC program operations and activities.

B. Construction Documentation

1. Reports are required for each day that work is performed and must be attached to the Contractor Quality Control Report prepared for the same day. Maintain current and complete records of on-site and off-site QC program operations and activities. The forms identified under the paragraph "INFORMATION FOR THE CONTRACTING OFFICER" will be used. Reports are required for each day work is performed. Account for each calendar day throughout the life of the Contract. Every space on the forms must be filled in. Use N/A if nothing can be reported in one of the spaces. The Project Superintendent and the QC Manager must prepare and sign the Contractor Production and CQC Reports, respectively. The reporting of work must be identified by terminology consistent with the construction schedule. In the "remarks" sections of the reports, enter pertinent information including directions received, problems encountered during construction, work progress and delays, conflicts or errors in the drawings or specifications, field changes, safety hazards encountered, instructions given, and corrective actions taken, delays encountered and a record of visitors to the work site, quality control problem areas, deviations from the QC Plan, construction deficiencies encountered, meetings held. For each entry in the report(s), identify the Schedule Activity No. that is associated with the entered remark.

C. Quality Control Validation

1. Establish and maintain the following in an electronic folder. Divide folder into a series of tabbed sections as shown below. Ensure folder is updated at each required progress meeting.

   a. All completed Preparatory and Initial Phase Checklists, arranged by specification section.

   b. All milestone inspections, arranged by Activity Number.

   c. An up-to-date copy of the Testing Plan and Log with supporting field test reports, arranged by specification section.

   d. Copies of all contract modifications, arranged in numerical order. Also include documentation that modified work was accomplished.

   e. An up-to-date copy of the Rework Items List.

   f. Maintain up-to-date copies of all punch lists issued by the QC staff to the Contractor and Sub-Contractors and all punch lists issued by the Government.

   g. Special inspection reports.

D. Testing Plan and Log

1. As tests are performed and the QC Manager will record on the "Testing Plan and Log" the date the test was performed and the date the test results were forwarded to the Contracting Officer. Attach a copy of the updated "Testing Plan and Log" to the last daily CQC Report of each month, per the paragraph "INFORMATION FOR THE CONTRACTING OFFICER". Provide a copy of the final "Testing Plan and Log" to the preparer of the Operation & Maintenance (O&M) documentation.

E. Rework Items List
   1. The QC Manager must maintain a list of work that does not comply with the Contract, identifying what items need to be reworked, the date the item was originally discovered, the date the item will be corrected by, and the date the item was corrected. There is no requirement to report a rework item that is corrected the same day it is discovered. Attach a copy of the "Rework Items List" to the last daily CQC Report of each month. The Contractor is responsible for including those items identified by the Contracting Officer.

F. As-Built Drawings
   1. The QC Manager is required to ensure the as-built drawings, required by Section 01 78 00 CLOSEOUT SUBMITTALS are kept current on a daily basis and marked to show deviations which have been made from the Contract drawings. Ensure each deviation has been identified with the appropriate modifying documentation (e.g. PC No., Modification No., Request for Information No., etc.). The QC Manager must initial each revision. Upon completion of work, the QC Manager will furnish a certificate attesting to the accuracy of the as-built drawings prior to submission to the Contracting Officer.

1.14 NOTIFICATION ON NON-COMPLIANCE

A. The Contracting Officer will notify the Contractor of any detected non-compliance with the Contract. Take immediate corrective action after receipt of such notice. Such notice, when delivered to the Contractor at the work site, is deemed sufficient for the purpose of notification. If the Contractor fails or refuses to comply promptly, the Contracting Officer may issue an order stopping all or part of the work until satisfactory corrective action has been taken. No part of the time lost due to such stop orders will be made the subject of claim for extension of time for excess costs or damages by the Contractor.

PART 2 PRODUCTS

NOT USED.

PART 3 EXECUTION

3.01 PREPARATION

A. Designate receiving/storage areas for incoming material to be delivered according to installation schedule and to be placed convenient to work area in order to minimize waste due to excessive materials handling and misapplication. Store and handle materials in a manner as to prevent loss from weather and other damage. Keep materials, products, and accessories covered and off the ground, and store in a dry, secure area. Prevent contact with material that may cause corrosion, discoloration, or staining. Protect all materials and installations from damage by the activities of other trades.

END OF SECTION 01 45 00

SECTION 01 45 35 – SPECIAL INSPECTIONS

PART 1 GENERAL

1.01 GENERAL CONDITIONS

A. Perform Special Inspections in accordance with the Statement of Special Inspections, Schedule of Special Inspections and Chapter 17 of ICC IBC. The Statement of Special Inspections and Schedule of Special Inspections are included as an attachment to this specification. Special Inspections are to be performed by an independent third party and are intended to ensure that the work of the Prime Contractor is in accordance with the Contract Documents and applicable building codes. Special inspections do not take the place of the three phases of control inspections performed by the Contractor's QC Manager or any testing and inspections required by other sections of the specifications.

1.02 DEFINITIONS

A. Continuous Special Inspections: Continuous Special Inspections is the constant monitoring of specific tasks by a special inspector. These inspections must be carried out continuously over the duration of the particular tasks.

B. Perform: Perform these Special Inspections tasks for each welded joint or member.

C. Observe: Observe these Special Inspections items on a periodic daily basis. Operations need not be delayed pending these inspections.

D. Special Inspector (SI): A qualified person retained by the Contractor and approved by the Contracting Officer as having the competence necessary to inspect a particular type of construction requiring Special Inspections. The SI must be an independent third party hired directly by the Prime Contractor.

E. Special Inspector of Record (SIOR): A licensed engineer in responsible charge of supervision of all special inspectors for the project and approved by the Contracting Officer. The SIOR must be an independent third-party entity hired directly by the Prime Contractor.

F. Contracting Officer: The Government official having overall authority for administrative contracting actions. Certain contracting actions may be delegated to the Contracting Officer's Representative (COR).

G. Contractor’s Quality Control (QC) Manager: An individual retained by the Prime Contractor and qualified in accordance with the Section 01 45 00.00 20 QUALITY CONTROL having the overall responsibility for the Contractor's QC organization.

H. Schedule of Special Inspections (SSI): A schedule which lists each of the required Special Inspections, the extent to which each Special Inspection is to be performed, and the required frequency for each in accordance with ICC IBC Chapter 17. This schedule is included at the end of this specification.

I. Designated Seismic Systems (DSS): Those nonstructural components that require design in accordance with ASCE 7-16 Chapter 13 and for which the component importance factor, Ip, is greater than 1.0. This designation applies to systems that are required to be operational following the Design Earthquake for RC I - IV structures and following the MCER for RC V structures. All systems in RC V facilities designated as MC-1 in accordance with UFC 3-301-02 are considered part of the Designated Seismic Systems. Designated Seismic Systems will have an Importance Factor Ip = 1.5.

1.03 SUBMITTALS

A. Submit under provisions of Section 01330 – SUBMITTAL PROCEDURES. Partial submittals will not be acceptable. Submit for approval three (3) complete sets of submittals as described below. Annotate descriptive data to show the specific model, type, and size of each item the Contractor proposes to furnish. Prepare working drawings on sheets not smaller than 24 by 36 inches, in accordance with the requirements for "Working Drawings (Plans) as specified in NFPA 13 and include data essential to the proper installation of each system. Do not commence work until the design of each system and the various components have been approved. The Engineer will review and approve all submittals. Before work is commenced, submit for approval complete sets of working drawings. Working drawings must be stamped by a licensed professional engineer.

Submit the following in accordance with Section 01330 – Submittal Procedures:

1. Preconstruction Submittals:

Within 36 days of contract award but no less than 14 days prior to commencing work on site, the prime contractor must submit the following for review and approval. Shop Drawings, Product Data, and Design Data submittals received prior to the review and approval of the qualifications will be returned Disapproved Without Review.

a. SIOR Letter of Acceptance

b. Special Inspections Project Manual

c. Special Inspections Agency's Written NDT Practices with method and evidence of regular equipment calibration where applicable

2. Test Reports:

a. Special Inspections Daily Reports

1.04 SPECIAL INSPECTOR QUALIFICATIONS

A. Submit qualifications for each special inspector and the special inspector of record.

B. Verification of Site Soil Condition, Fill Placement and Load-Bearing Requirements

1. Special Inspector

a. ICC Soils Special Inspector Certificate with one year of related experience, or

b. NICET Soils Technician Level II Certificate in Construction Material Testing, or

c. Geologist-In-Training with three years of related experience, or

d. Registered Professional Engineer with three years of related experience

2. Associate Special Inspector

a. NICET Soils Technician Level I Certificate in Construction Material Testing with one year of related experience, or

b. Engineer-In-Training with one year of related experience

3. Fire-Resistant Penetrations and Joints

    a. Special Inspector

        1) Passed the UL Firestop Exam with one year of related experience, or

        2) Passed the FM Firestop Exam with one year of related experience, or

        3) Registered Professional Engineer with related experience

    b. Associate Special Inspector

        1) Engineer-In-Training with one year of related experience.

4. Special Inspector of Record (SIOR)

    a. Registered Professional Engineer with five years of related experience.

PART 2 PRODUCTS

NOT USED.

PART 3 EXECUTION

3.01 RESPONSIBILITES

A. Special Inspector of Record

1. Supervise all Special Inspectors required by the Contract Documents and the IBC.

2. Submit a SIOR Letter of Acceptance to the Contracting Officer attesting to acceptance of the duties of SIOR, signed and sealed by the SIOR.

3. Verify the qualifications of all the Special Inspectors.

4. Verify the qualifications of fabricators.

5. Submit Special Inspections agency's written NDT practices for the monitoring and control of the agency's operations to include the following:

    a. The agency's procedures for the selection and administration of inspection personnel, describing the training, experience and examination requirements for qualifications and certification of inspection personnel.

    b. The agency's inspection procedures, including general inspection, material controls, and visual welding inspection.

6. Submit qualification records for nondestructive testing (NDT) technicians designated for the project.

7. Submit NDT procedures and equipment calibration records for NDT to be performed and equipment to be used for the project.

B. Quality Control Manager

1. Supervise all Special Inspectors required by the Contract Documents and the IBC.

2. Verify the qualifications of all of the Special Inspectors.

3. Verify the qualifications of fabricators.

4. Maintain a 3-ring binder for the Special Inspector's daily and biweekly reports. This file must be located in a conspicuous place in the project trailer/office to allow review by the Contracting Officer and the SER.

5. Maintain a rework items list that includes discrepancies noted on the Special Inspectors daily report.

C. Special Inspectors
   1. Inspect all elements of the project for which the special inspector is qualified to inspect and are identified in the Schedule of Special Inspections.

   2. Attend preparatory phase meetings related to the Definable Feature of Work (DFOW) for which the special inspector is qualified to inspect.

   3. Submit Special Inspections agency's written NDT practices for the monitoring and control of the agency's operations to include the following:

   4. The agency's procedures for the selection and administration of inspection personnel, describing the training, experience and examination requirements for qualifications and certification of inspection personnel.

   5. The agency's inspection procedures, including general inspection, material controls, and visual welding inspection.

   6. Submit qualification records for nondestructive testing (NDT) technicians designated for the project.

   7. Submit NDT procedures and equipment calibration records for NDT to be performed and equipment to be used for the project.

   8. Report discrepancies that are observed during Special Inspections to the QC Manager for correction. If discrepancies are not corrected before the special inspector leaves the site, the observed discrepancies must be documented in the daily report.

   9. Submit a Special Inspection Report until all inspections are complete. A report is required for each biweekly period in which Special Inspections activity occurs, and must include the following:

      a. A brief summary of the work performed during the reporting time frame.

      b. Changes and discrepancies with the drawings, specifications and mechanical or electrical component certification, that were observed during the reporting period.

      c. Discrepancies which were resolved or corrected.

      d. A list of nonconforming items requiring resolution.

      e. All applicable test result including nondestructive testing reports.

   10. At the completion of the project submit a comprehensive final report of Special Inspections that documents the Special Inspections completed for the project and corrections of all discrepancies noted in the reports. The comprehensive final report of Special Inspections must be signed, dated and indicate the certification of the special inspector qualifying them to conduct the inspection.

3.02 DEFECTIVE WORK

A. Check work as it progresses, but failure to detect any defective work or materials must in no way prevent later rejection if defective work or materials are discovered, nor obligate the Contracting Officer to accept such work.

END OF SECTION 01 45 35

SECTION 01 78 00 – CLOSEOUT SUBMITTALS

PART 1 GENERAL

1.01 DEFINITIONS

A. As-Built Drawings: As-built drawings are the marked-up drawings, maintained by the Contractor on-site, that depict actual conditions and deviations from the Contract Documents. These deviations and additions may result from coordination required by, but not limited to: contract modifications; official responses to submitted Requests for Information (RFI's); direction from the Contracting Officer; design that is the responsibility of the Contractor, and differing site conditions. Maintain the as-builts throughout construction as red-lined hard copies on site. These files serve as the basis for the creation of the record drawings.

B. Record Drawings: The record drawings are the final compilation of actual conditions reflected in the as-built drawings.

1.02 SUBMITTALS

A. Submit under provisions of Section 01330 – SUBMITTAL PROCEDURES. Partial submittals will not be acceptable. Submit for approval three (3) complete sets of submittals as described below. Annotate descriptive data to show the specific model, type, and size of each item the Contractor proposes to furnish. Prepare working drawings on sheets not smaller than 24 by 36 inches, in accordance with the requirements for "Working Drawings (Plans) as specified in NFPA 13 and include data essential to the proper installation of each system. Do not commence work until the design of each system and the various components have been approved. The QFPE will review and approve all submittals. Before work is commenced, submit for approval complete sets of working drawings. Working drawings must be stamped by a licensed professional engineer.

Submit the following in accordance with Section 01330 – Submittal Procedures:

1. Product Data
    a. Warranty Management Plan
    b. Warranty Tags
    c. Final Cleaning Spare
    d. Parts Data
2. Manufacturer’s Instructions Posted
    a. Instructions
3. Operation and Maintenance Data Operation
    a. Maintenance Manuals
4. Closeout Submittals
    a. As-Built Drawings
    b. Record Drawings
    c. As-Built Record of Equipment and Materials

d. Certification of EPA Designated Items

e. Certification Of USDA Designated Items

f. Interim DD FORM 1354

g. Checklist for DD FORM 1354

h. High Performance and Sustainable Building (HPSB) Checklist

1.03 SOURCE DRAWING FILES

A. Request the full set of electronic drawings, in the source format, for Record Drawing preparation, after award and at least 30 days prior to required use.

B. Terms and Conditions

1. Data contained on these electronic files must not be used for any purpose other than as a convenience in the preparation of construction data for the referenced project. Any other use or reuse must be at the sole risk of the Contractor and without liability or legal exposure to the Government.

2. The Contractor must make no claim and waives to the fullest extent permitted by law, any claim or cause of action of any nature against the Government, its agents or sub consultants that may arise out of or in connection with the use of these electronic files. The Contractor must, to the fullest extent permitted by law, indemnify and hold the Government harmless against all damages, liabilities or costs, including reasonable attorney's fees and defense costs, arising out of or resulting from the use of these electronic files.

3. These electronic CAD drawing files are not construction documents. Differences may exist between the CAD files and the corresponding construction documents. The Government makes no representation regarding the accuracy or completeness of the electronic CAD files, nor does it make representation to the compatibility of these files with the Contractor hardware or software. In the event that a conflict arises between the signed and sealed construction documents prepared by the Government and the furnished Source drawing files, the signed and sealed construction documents govern. The Contractor is responsible for determining if any conflict exists. Use of these Source Drawing files does not relieve the Contractor of duty to fully comply with the contract documents, including and without limitation, the need to check, confirm and coordinate the work of all contractors for the project. If the Contractor uses, duplicates or modifies these electronic source drawing files for use in producing construction data related to this contract, remove all previous indicia of ownership (seals, logos, signatures, initials and dates).

1.04 SPARE PARTS DATA

A. Submit two copies of the Spare Parts Data list.

1. Indicate manufacturer's name, part number, and stock level required for test and balance, pre-commissioning, maintenance, and repair activities. List those items that may be standard to the normal maintenance of the system.

1.05 WARRANTY MANAGEMENT

A. Warranty Management Plan

1. Develop a warranty management plan which contains information relevant to FAR 52.246-21 Warranty of Construction. At least 30 days before the planned pre-warranty conference, submit one set of the warranty management plan. Include within the warranty management plan all required actions and documents to assure that the Government receives all warranties to which it is entitled. The plan narrative must contain sufficient detail to render it suitable for use by future maintenance and repair personnel, whether tradesmen, or of engineering background, not necessarily familiar with this contract. The term "status" as indicated below must include due date and whether item has been submitted or was accomplished. Submit warranty information, made available during the construction phase, to the Contracting Officer for approval prior to each monthly pay estimate.

2. Assemble approved information in a binder and turn over to the Government upon acceptance of the work. The construction warranty period must begin on the date of project acceptance and continue for the full product warranty period. Conduct a joint 4 month and 9 month warranty inspection, measured from time of acceptance; with the Contractor, Contracting Officer and the Customer Representative. The warranty management plan must include, but is not limited to, the following:

   a. Roles and responsibilities of personnel associated with the warranty process, including points of contact and telephone numbers within the organizations of the Contractors, subcontractors, manufacturers or suppliers involved.

   b. For each warranty, the name, address, telephone number, and e-mail of each of the guarantor's representatives nearest to the project location.

   c. A list and status of delivery of Certificates of Warranty for extended warranty items, including roofs, HVAC balancing, pumps, motors, transformers, and for commissioned systems, such as fire protection and alarm systems, sprinkler systems, and lightning protection systems.

   d. As-Built Record of Equipment and Materials list for each warranted equipment, item, feature of construction or system indicating:

      1) Name of item.

      2) Model and serial numbers.

      3) Location where installed.

      4) Name and phone numbers of manufacturers or suppliers.

      5) Names, addresses and telephone numbers of sources of spare parts.

      6) Warranties and terms of warranty. Include 1-year overall warranty of construction, including the starting date of warranty of construction. Items which have warranties longer than one year must be indicated with separate warranty expiration dates.

      7) Cross-reference to warranty certificates as applicable.

      8) Starting point and duration of warranty period.

9) Summary of maintenance procedures required to continue the warranty in force.

10) Cross-reference to specific pertinent Operation and Maintenance manuals.

11) Organization, names and phone numbers of persons to call for warranty service.

12) Typical response time and repair time expected for various warranted equipment.

e. The plans for attendance at the 4 and 9 month post-construction warranty inspections conducted by the Government.

f. Procedure and status of tagging of equipment covered by warranties longer than one year.

g. Copies of instructions to be posted near selected pieces of equipment where operation is critical for warranty or safety reasons.

B. Performance Bond

1. The Performance Bond must remain effective throughout the construction and warranty period.

a. In the event the Contractor fails to commence and diligently pursue any construction warranty work required, the Contracting Officer will have the work performed by others, and after completion of the work, will charge the remaining construction warranty funds of expenses incurred by the Government while performing the work, including, but not limited to administrative expenses.

b. In the event sufficient funds are not available to cover the construction warranty work performed by the Government at the Contractor's expense, the Contracting Officer will have the right to recoup expenses from the bonding company.

c. Following oral or written notification of required construction warranty repair work, respond in a timely manner. Written verification will follow oral instructions. Failure to respond will be cause for the Contracting Officer to proceed against the Contractor.

C. Pre-Warranty Conference

1. Prior to contract completion, and at a time designated by the Contracting Officer, meet with the Contracting Officer to develop a mutual understanding with respect to the requirements of this section. At this meeting, establish and review communication procedures for Contractor notification of construction warranty defects, priorities with respect to the type of defect, reasonable time required for Contractor response, and other details deemed necessary by the Contracting Officer for the execution of the construction warranty In connection with these requirements and at the time of the Contractor's quality control completion inspection, furnish the name, telephone number and address of a licensed and bonded company which is authorized to initiate and pursue construction warranty work action on behalf of the Contractor. This point of contact must be located within the local service area of the warranted construction, be continuously available, and be responsive to Government inquiry on warranty work action and status. This requirement does not relieve the Contractor of any of its responsibilities in connection with other portions of this provision.

D. Warranty Tags
   1. At the time of installation, tag each warranted item with a durable, oil and water resistant tag approved by the Contracting Officer. Attach each tag with a copper wire and spray with a silicone waterproof coating. Also, submit two record copies of the warranty tags showing the layout and design. The date of acceptance and the QC signature must remain blank until the project is accepted for beneficial occupancy. Show the following information on the tag.

Type of product/material	
Model number	
Serial number	
Contract number	
Warranty period from/to	
Inspector's signature	
Construction Contractor	
Address	
Telephone number	
Warranty contact	
Address	
Telephone number	
Warranty response time priority code	
WARNING - PROJECT PERSONNEL TO PERFORM ONLY OPERATIONAL MAINTENANCE DURING THE WARRANTY PERIOD.	

PART 2 PRODUCTS

2.01 CERTIFICATION OF EPA DESIGNATED ITEMS

A. Submit the Certification of EPA Designated Items as required by FAR 52.223-9 Estimate of Percentage of Recovered Material Content for EPA Designated Items and FAR 52-223-17 Affirmative Procurement of EPA designated items in Service and Construction Contracts. Include on the certification form the following information: project name, project number, Contractor name, license number, Contractor address, and certification. The certification will read as follows and be signed and dated by the Contractor. "I hereby certify the information provided herein is accurate and that the requisition/procurement of all materials listed on this form comply with current EPA standards for recycled/recovered materials content. The following exemptions may apply to the non-procurement of recycled/recovered content materials:

1. The product does not meet appropriate performance standards;

2. The product is not available within a reasonable time frame;

3. The product is not available competitively (from two or more sources);

4. The product is only available at an unreasonable price (compared with a comparable non-recycled content product)."

2.02 CERTIFICATION OF USDA DESIGNATED ITEMS

A. Submit the Certification of USDA Designated Items as required by FAR 52-223-1 Bio-based Product Certifications and FAR 52.223-2 Affirmative Procurement of Biobased Products Under Service and Construction Contracts. Include on the certification form the following information: project name, project number, Contractor name, license number, Contractor address, and certification. The certification will read as follows and be signed and dated by the Contractor. "I hereby certify the information provided herein is accurate and that the requisition/procurement of all materials listed on this form comply with current USDA standards for biobased materials content. The following exemptions may apply to the non-procurement of biobased content materials:

1. The product does not meet appropriate performance standards;

2. The product is not available within a reasonable time frame;

3. The product is not available competitively (from two or more sources);

4. The product is only available at an unreasonable price (compared with a comparable bio-based content product)."

PART 3 EXECUTION

3.01 AS-BUILT DRAWINGS

A. Provide and maintain two black line print copies of the PDF contract drawings for As-Built Drawings. Maintain the as-builts throughout construction as red-lined hard copies on site and red-lined PDF files. Certify both sets of As-Built Drawings as correct, sign, and submit the As-Built Drawings to the Contracting Officer 30 calendar days prior to Beneficial Occupancy Date (BOD).

B. Markup Guidelines

1. Make comments and markup the drawings complete without reference to letters, memos, or materials that are not part of the As-Built drawing. Show what was changed, how it was changed, where item(s) were relocated and change related details.These working as-built markup prints must be neat, legible and accurate as follows:

   a. Use base colors of red, green, and blue. Color code for changes as follows:

      1) Special (Blue) - Items requiring special information, coordination, or special detailing or detailing notes.

      2) Deletions (Red) - Over-strike deleted graphic items (lines), lettering in notes and leaders.

      3) Additions (Green) - Added items, lettering in notes and leaders.

   b. Provide a legend if colors other than the "base" colors of red, green, and blue are used.

   c. Add and denote any additional equipment or material facilities, service lines, incorporated under As-Built Revisions if not already shown in legend.

   d. Use frequent written explanations on markup drawings to describe changes. Do not totally rely on graphic means to convey the revision.

   e. Use legible lettering and precise and clear digital values when marking prints. Clarify ambiguities concerning the nature and application of change involved.

   f. Wherever a revision is made, also make changes to related section views, details, legend, profiles, plans and elevation views, schedules, notes and call out designations, and mark accordingly to avoid conflicting data on all other sheets.

   g. For deletions, cross out all features, data and captions that relate to that revision.

   h. For changes on small-scale drawings and in restricted areas, provide large-scale inserts, with leaders to the applicable location.

   i. Indicate one of the following when attaching a print or sketch to a markup print:

      1) Add an entire drawing to contract drawings

      2) Change the contract drawing to show

      3) Provided for reference only to further detail the initial design.

   j. Incorporate all shop and fabrication drawings into the markup drawings.

C. As-Built Drawings Content

1. Show on the as-built drawings, but not limited to, the following information:

a. The actual location, kinds and sizes of all sub-surface utility lines. In order that the location of these lines and appurtenances may be determined in the event the surface openings or indicators become covered over or obscured, show by offset dimensions to two permanently fixed surface features the end of each run including each change in direction on the record drawings. Locate valves, splice boxes and similar appurtenances by dimensioning along the utility run from a reference point. Also record the average depth below the surface of each run.

b. The location and dimensions of any changes within the building structure.

c. Layout and schematic drawings of electrical circuits and piping.

d. Correct grade, elevations, cross section, or alignment of roads, earthwork, structures or utilities if any changes were made from contract plans.

e. Changes in details of design or additional information obtained from working drawings specified to be prepared or furnished by the Contractor; including but not limited to shop drawings, fabrication, erection, installation plans and placing details, pipe sizes, insulation material, dimensions of equipment, and foundations.

f. The topography, invert elevations and grades of drainage installed or affected as part of the project construction.

g. Changes or Revisions which result from the final inspection.

h. Where contract drawings or specifications present options, show only the option selected for construction on the working as-built markup drawings.

i. If borrow material for this project is from sources on Government property, or if Government property is used as a spoil area, furnish a contour map of the final borrow pit/spoil area elevations.

j. Systems designed or enhanced by the Contractor, such as HVAC controls, fire alarm, fire sprinkler, and irrigation systems.

k. Changes in location of equipment and architectural features.

l. Modifications and compliance with FC 1-300-09N procedures.

m. Actual location of anchors, construction and control joints, etc., in concrete.

n. Unusual or uncharted obstructions that are encountered in the contract work area during construction.

o. Location, extent, thickness, and size of stone protection particularly where it will be normally submerged by water.

3.02 RECORD DRAWINGS

A. Prepare and provide Record Drawings and Source Documents in accordance with FC 1-300-09N. Provide two copies of Record Drawings and Documents on separate CDs or DVDs 30 calendar days after BOD.

3.03 OPERATION AND MAINTENANCE MANUALS

A. Provide project operation and maintenance manuals as specified in Section 01 78 23 OPERATION AND MAINTENANCE MANUALS DATA. Provide three electronic copies of the Operation and Maintenance Manual files. Submit to the Contracting Officer for approval within 90 calendar days prior to the Beneficial Occupancy Date (BOD). Update and resubmit files for final approval at BOD.

3.04 CLEANUP

A. Provide final cleaning in accordance with ASTM E1971 and submit two copies of the listing of completed final clean-up items. Leave premises "broom clean." Comply with GS-37 for general purpose cleaning and bathroom cleaning. Use only nonhazardous cleaning materials, including natural cleaning materials, in the final cleanup. Clean interior and exterior glass surfaces exposed to view; remove temporary labels, stains and foreign substances; polish transparent and glossy surfaces; vacuum carpeted and soft surfaces. Clean equipment and fixtures to a sanitary condition.

B. Replace filters of operating equipment. Clean debris from roofs, gutters, downspouts and drainage systems. Sweep paved areas and rake clean landscaped areas. Remove waste and surplus materials, rubbish and construction facilities from the site.

3.05 REAL PROPERTY RECORD

A. Refer to UFC 1-300-08 for instruction on completing the DD FORM 1354. Contact the Contracting Officer for any project specific information necessary to complete the DD FORM 1354.

B. Interim DD FORM 1354

1. Near the completion of Project, but a minimum of 60 days prior to final

2. acceptance of the work, complete and submit an accounting of all installed property with Interim DD FORM 1354. Include any additional assets, improvements, and alterations from the Draft DD FORM 1354.

C. Completed DD FORM 1354

1. Submit the completed Checklist for DD FORM 1354 of Installed Building Equipment items. Attach this list to the updated DD FORM 1354.

END OF SECTION 01 78 00

SECTION 01 78 23 – OPERATION AND MAINTENANCE DATA

PART 1 GENERAL

1.01 SUBMITTALS

A. Submit under provisions of Section 01330 – SUBMITTAL PROCEDURES. Partial submittals will not be acceptable. Submit for approval three (3) complete sets of submittals as described below. Annotate descriptive data to show the specific model, type, and size of each item the Contractor proposes to furnish. Prepare working drawings on sheets not smaller than 24 by 36 inches, in accordance with the requirements for "Working Drawings (Plans) as specified in NFPA 13 and include data essential to the proper installation of each system. Do not commence work until the design of each system and the various components have been approved. The QFPE will review and approve all submittals. Before work is commenced, submit for approval complete sets of working drawings. Working drawings must be stamped by a licensed professional engineer.

Submit the following in accordance with Section 01330 – Submittal Procedures:

1. Operation and Maintenance Data O&M:

    a. Database

    b. Training Plan

    c. Training Outline

    d. Training Content

2. Closeout Submittals:

    a. Validation of Training Completion

1.02 OPERATION AND MAINTENANCE DATA

A. Submit Operation and Maintenance (O&M) Data for the provided equipment, product, or system, defining the importance of system interactions, troubleshooting, and long-term preventive operation and maintenance. Compile, prepare, and aggregate O&M data to include clarifying and updating the original sequences of operation to as-built conditions. Organize and present information in sufficient detail to clearly explain O&M requirements at the system, equipment, component, and subassembly level. Include an index preceding each submittal. Submit in accordance with this section and Section 01 33 00 SUBMITTAL PROCEDURES.

B. Package Quality

1. Documents must be fully legible. Operation and Maintenance data must be consistent with the manufacturer's standard brochures, schematics, printed instructions, general operating procedures, and safety precautions.

C. Package Content

1. Provide data package content in accordance with paragraph SCHEDULE OF OPERATION AND MAINTENANCE DATA PACKAGES. Comply with the data package requirements specified in the individual technical sections, including the content of the packages and addressing each product, component, and system designated for data package submission. Use Data Package 5 for commissioned items without a specified data package requirement in the individual technical sections.

D. Changes to Submittals
   1. Provide manufacturer-originated changes or revisions to submitted data if a component of an item is so affected subsequent to acceptance of the O&M Data. Submit changes, additions, or revisions required by the Contracting Officer for final acceptance of submitted data within 30 calendar days of the notification of this change requirement.

E. Lead Commissioning Specialist Review and Approval
   1. Submit the commissioned systems and equipment submittals to the Lead Commissioning Specialist (CxC) to review for completeness and applicability. Obtain validation from the CxC that the systems and equipment provided meet the requirements of the Contract documents and design intent, particularly as they relate to functionality, energy performance, water performance, maintainability, sustainability, system cost, indoor environmental quality, and local environmental impacts.The CxC communicates deficiencies to the Contracting Officer. Submit the O&M manuals to the Contracting Officer upon a successful review of the corrections, and with the CxC recommendation for approval and acceptance of these O&M manuals. This work is in addition to the normal review procedures for O&M data.

1.03 O&M DATABASE

A. Develop an editable, electronic spreadsheet based on the equipment in the Operation and Maintenance Manuals that contains the information required to start a preventive maintenance program. As a minimum, provide list of system equipment, location installed, warranty expiration date, manufacturer, model, and serial number.

1.04 OPERATION AND MAINTENANCE MANUAL FILE FORMAT

A. Assemble data packages into electronic Operation and Maintenance Manuals. Assemble each manual into a composite electronically indexed file using the most current version of Adobe Acrobat or similar software capable of producing PDF file format. Provide compact disks (CD) or data digital versatile disk (DVD) as appropriate, so that each one contains operation, maintenance and record files, and project record documents. Include a complete electronically linked operation and maintenance directory.

B. Organization
   1. Bookmark Product and Drawing Information documents using the current version of CSI MasterFormat numbering system, and arrange submittals using the specification sections as a structure. Use CSI MasterFormat and UFGS numbers along with descriptive bookmarked titles that explain the content of the information that is being bookmarked.

C. CD or DVD Label and Disk Holder or Case
   1. Provide the following information on the disk label and disk holder or case:

      a. Building Number

      b. Project Title

      c. Activity and Location

      d. Construction Contract Number

      e. Prepared For: (Contracting Agency)

      f. Prepared By: (Name, title, phone number and email address)

      g. Include the disk content on the disk label

h. Date

i. Virus scanning program used

1.05 TYPES OF INFORMATION REQUIRED IN O&M DATA PACKAGES

A. The following are a detailed description of the data package items listed in paragraph SCHEDULE OF OPERATION AND MAINTENANCE DATA PACKAGES.

B. Operating Instructions

1. Provide specific instructions, procedures, and illustrations for the following phases of operation for the installed model and features of each system:

2. Safety Precautions and Hazards

a. List personnel hazards and equipment or product safety precautions for operating conditions. List all residual hazards identified in the Activity Hazard Analysis provided under Section 01 35 26 GOVERNMENT SAFETY REQUIREMENTS. Provide recommended safeguards for each identified hazard.

3. Operator Prestart

a. Provide procedures required to install, set up, and prepare each system for use.

4. Startup, Shutdown, and Post-Shutdown Procedures

a. Provide narrative description for Startup, Shutdown and Post-shutdown operating procedures including the control sequence for each procedure.

5. Normal Operations

a. Provide Control Diagrams with data to explain operation and control of systems and specific equipment. Provide narrative description of Normal Operating Procedures.

6. Emergency Operations

a. Provide Emergency Procedures for equipment malfunctions to permit a short period of continued operation or to shut down the equipment to prevent further damage to systems and equipment. Provide Emergency Shutdown Instructions for fire, explosion, spills, or other foreseeable contingencies. Provide guidance and procedures for emergency operation of utility systems including required valve positions, valve locations and zones or portions of systems controlled.

7. Operator Service Requirements

a. Provide instructions for services to be performed by the operator such as lubrication, adjustment, inspection, and recording gauge readings.

8. Environmental Conditions

a. Provide a list of Environmental Conditions (temperature, humidity, and other relevant data) that are best suited for the operation of each product, component or system. Describe conditions under which the item equipment should not be allowed to run.

9. Operating Log

    a. Provide forms, sample logs, and instructions for maintaining necessary operating records.

C. Preventive Maintenance

1. Provide the following information for preventive and scheduled maintenance to minimize repairs for the installed model and features of each system.Include potential environmental and indoor air quality impacts of recommended maintenance procedures and materials.

2. Lubrication Data

    a. Include the following preventive maintenance lubrication data, in addition to instructions for lubrication required under paragraph OPERATOR SERVICE REQUIREMENTS:

        1) A table showing recommended lubricants for specific temperature ranges and applications.

        2) Charts with a schematic diagram of the equipment showing lubrication points, recommended types and grades of lubricants, and capacities.

        3) A Lubrication Schedule showing service interval frequency.

3. Preventive Maintenance Plan, Schedule, and Procedures

    a. Provide manufacturer's schedule for routine preventive maintenance, inspections, condition monitoring (predictive tests) and adjustments required to ensure proper and economical operation and to minimize repairs. Provide instructions stating when the systems should be retested. Provide manufacturer's projection of preventive maintenance work-hours on a daily, weekly, monthly, and annual basis including craft requirements by type of craft. For periodic calibrations, provide manufacturer's specified frequency and procedures for each separate operation.

        1) Define the anticipated time required to perform each of each test (work-hours), test apparatus, number of personnel identified by responsibility, and a testing validation procedure permitting the record operation capability requirements within the schedule. Provide a remarks column for the testing validation procedure referencing operating limits of time, pressure, temperature, volume, voltage, current, acceleration, velocity, alignment, calibration, adjustments, cleaning, or special system notes. Delineate procedures for preventive maintenance, inspection, adjustment, lubrication and cleaning necessary to minimize repairs.

        2) Repair requirements must inform operators how to check out, troubleshoot, repair, and replace components of the system. Include electrical and mechanical schematics and diagrams and diagnostic techniques necessary to enable operation and troubleshooting of the system after acceptance.

4. Cleaning Recommendations

    a. Provide environmentally preferable cleaning recommendations in accordance with ASTM E1971.

D. Repair

1. Provide manufacturer's recommended procedures and instructions for correcting problems and making repairs for the installed model and features of each system. Include potential environmental and indoor air quality impacts of recommended maintenance procedures and materials.

2. Troubleshooting Guides and Diagnostic Techniques

   a. Provide step-by-step procedures to promptly isolate the cause of typical malfunctions. Describe clearly why the checkout is performed and what conditions are to be sought. Identify tests or inspections and test equipment required to determine whether parts and equipment may be reused or require replacement.

3. Wiring Diagrams and Control Diagrams

   a. Provide point-to-point drawings of wiring and control circuits including factory-field interfaces. Provide a complete and accurate depiction of the actual job specific wiring and control work. On diagrams, number electrical and electronic wiring and pneumatic control tubing and the terminals for each type, identically to actual installation configuration and numbering.

4. Repair Procedures

   a. Provide instructions and a list of tools required to repair or restore the product or equipment to proper condition or operating standards.

5. Removal and Replacement Instructions

   a. Provide step-by-step procedures and a list of required tools and supplies for removal, replacement, disassembly, and assembly of components, assemblies, subassemblies, accessories, and attachments. Provide tolerances, dimensions, settings and adjustments required. Use a combination of text and illustrations.

6. Spare Parts and Supply Lists

   a. Provide lists of spare parts and supplies required for repair to ensure continued service or operation without unreasonable delays. Special consideration is required for facilities at remote locations. List spare parts and supplies that have a long lead-time to obtain.

7. Repair Work-Hours

   a. Provide manufacturer's projection of repair work-hours including requirements by type of craft. Identify, and tabulate separately, repair that requires the equipment manufacturer to complete or to participate.

E. Appendices

1. Provide information required below and information not specified in the preceding paragraphs but pertinent to the maintenance or operation of the product or equipment. Include the following:

2. Product Submittal Data

   a. Provide a copy of SD-03 Product Data submittals documented with the required approval.

3. Certificates

   a. Provide a copy of SD-07 Certificates submittals documented with the required approval.

4. Manufacturer's Instructions

   a. Provide a copy of SD-08 Manufacturer's Instructions submittals documented with the required approval.

5. O&M Submittal Data

   a. Provide a copy of SD-10 Operation and Maintenance Data submittals documented with the required approval.

6. Parts Identification

   a. Provide identification and coverage for the parts of each component, assembly, subassembly, and accessory of the end items subject to replacement. Include special hardware requirements, such as requirement to use high-strength bolts and nuts. Identify parts by make, model, serial number, and source of supply to allow reordering without further identification. Provide clear and legible illustrations, drawings, and exploded views to enable easy identification of the items. When illustrations omit the part numbers and description, both the illustrations and separate listing must show the index, reference, or key number that will cross-reference the illustrated part to the listed part. Group the parts shown in the listings by components, assemblies, and subassemblies in accordance with the manufacturer's standard practice. Parts data may cover more than one model or series of equipment, components, assemblies, subassemblies, attachments, or accessories, such as typically shown in a master parts catalog.

7. Warranty Information

   a. List and explain the various warranties and clearly identify the servicing and technical precautions prescribed by the manufacturers or contract documents in order to keep warranties in force. Include warranty information for primary components of the system. Provide copies of warranties required by Section 01 78 00 CLOSEOUT SUBMITTALS.

8. Extended Warranty Information

   a. List all warranties for products, equipment, components, and sub-components whose duration exceeds one year. For each warranty listed, indicate the applicable specification section, duration, start date, end date, and the point of contact for warranty fulfillment. Also, list or reference the specific operation and maintenance procedures that must be performed to keep the warranty valid. Provide copies of warranties required by Section 01 78 00 CLOSEOUT SUBMITTALS.

9. Personnel Training Requirements

   a. Provide information available from the manufacturers that is needed for use in training designated personnel to properly operate and maintain the equipment and systems.

10. Testing Equipment and Special Tool Information

    a. Include information on test equipment required to perform specified tests and on special tools needed for the operation, maintenance, and repair of components. Provide final set points.

11. Testing and Performance Data

    a. Include completed prefunctional checklists, functional performance test forms, and monitoring reports. Include recommended schedule for retesting and blank test forms. Provide final set points.

12. Field Test Reports and Manufacturer's Field Reports

    a. Provide a copy of Field Test Reports (SD-06) and Manufacturer's Field Reports (SD-09) submittals documented with the required approval.

13. Contractor Information

    a. Provide a list that includes the name, address, and telephone number of the General Contractor and each Subcontractor who installed the product or equipment, or system. For each item, also provide the name address and telephone number of the manufacturer's representative and service organization that can provide replacements most convenient to the project site.Provide the name, address, and telephone number of the product, equipment, and system manufacturers.

1.06 SCHEDULE OF OPERATION AND MAINTENANCE DATA PACKAGES

A. Provide the O&M data packages specified in individual technical sections. The information required in each type of data package follows:

B. Data Package 1
   1. Safety precautions and hazards
   2. Cleaning recommendations
   3. Maintenance and repair procedures
   4. Warranty information
   5. Extended warranty information
   6. Contractor information
   7. Spare parts and supply list

C. Data Package 2
   1. Safety precautions and hazards
   2. Normal operations
   3. Environmental conditions
   4. Lubrication data
   5. Preventive maintenance plan, schedule, and procedures
   6. Cleaning recommendations

7. Maintenance and repair procedures
8. Removal and replacement instructions
9. Spare parts and supply list
10. Parts identification
11. Warranty information
12. Extended warranty information
13. Contractor information

D. Data Package 3
1. Safety precautions and hazards
2. Operator prestart
3. Startup, shutdown, and post-shutdown procedures
4. Normal operations
5. Emergency operations
6. Environmental conditions
7. Operating log
8. Lubrication data
9. Preventive maintenance plan, schedule, and procedures
10. Cleaning recommendations
11. Troubleshooting guides and diagnostic techniques
12. Wiring diagrams and control diagrams
13. Maintenance and repair procedures
14. Removal and replacement instructions
15. Spare parts and supply list
16. Product submittal data
17. O&M submittal data
18. Parts identification
19. Warranty information
20. Extended warranty information
21. Testing equipment and special tool information
22. Testing and performance data

23. Contractor information

24. Field test reports

E. Data Package 4
    1. Safety precautions and hazards

    2. Operator prestart

    3. Startup, shutdown, and post-shutdown procedures

    4. Normal operations

    5. Emergency operations

    6. Operator service requirements

    7. Environmental conditions

    8. Operating log

    9. Lubrication data

    10. Preventive maintenance plan, schedule, and procedures

    11. Cleaning recommendations

    12. Troubleshooting guides and diagnostic techniques

    13. Wiring diagrams and control diagrams

    14. Repair procedures

    15. Removal and replacement instructions

    16. Spare parts and supply list

    17. Repair work-hours

    18. Product submittal data

    19. O&M submittal data

    20. Parts identification

    21. Warranty information

    22. Extended warranty information

    23. Personnel training requirements

    24. Testing equipment and special tool information

    25. Testing and performance data

    26. Contractor information

    27. Field test reports

F. Data Package 5
   1. Safety precautions and hazards
   2. Operator prestart
   3. Start-up, shutdown, and post-shutdown procedures
   4. Normal operations
   5. Environmental conditions
   6. Preventive maintenance plan, schedule, and procedures
   7. Troubleshooting guides and diagnostic techniques
   8. Wiring and control diagrams
   9. Maintenance and repair procedures
   10. Removal and replacement instructions
   11. Spare parts and supply list
   12. Product submittal data
   13. Manufacturer's instructions
   14. O&M submittal data
   15. Parts identification
   16. Testing equipment and special tool information
   17. Warranty information
   18. Extended warranty information
   19. Testing and performance data
   20. Contractor information
   21. Field test reports
   22. Additional requirements for HVAC control systems

PART 2 PRODUCTS

NOT USED.

PART 3 EXECUTION

3.01 TRAINING

A. Prior to acceptance of the facility by the Contracting Officer for Beneficial Occupancy, provide comprehensive training for the systems and equipment specified in the technical specifications. The training must be targeted for the Facilities Management Specialist, building maintenance personnel, and applicable building occupants. Instructors must be well-versed in the particular systems that they are presenting. Address aspects of the Operation and Maintenance Manual submitted in accordance with Section 01 78 00 CLOSEOUT SUBMITTALS. Training must include classroom or field lectures based on the system operating requirements. The location of classroom training requires approval by the Contracting Officer.

B. Training Plan

1. Submit a written training plan to the Contracting Officer for approval at least 60 calendar days prior to the scheduled training. Training plan must be approved by the Quality Control Manager (QC) prior to forwarding to the Contracting Officer. Also, coordinate the training schedule with the Contracting Officer and QC. Include within the plan the following elements:

   a. Equipment included in training

   b. Intended audience

   c. Location of training

   d. Dates of training

   e. Objectives

   f. Outline of the information to be presented and subjects covered including description

   g. Start and finish times and duration of training on each subject

   h. Methods (e.g. classroom lecture, video, site walk-through, actual operational demonstrations, written handouts)

   i. Instructor names and instructor qualifications for each subject

   j. List of texts and other materials to be furnished by the Contractor that are required to support training

C. Training Content

1. The core of this training must be based on manufacturer's recommendations and the operation and maintenance information. The QC is responsible for overseeing and approving the content and adequacy of the training. Provide a brief summary of the FACILITY INFORMATION manual, and a more detailed presentation of the PRODUCT AND DRAWING MANUAL. Spend 95 percent of the instruction time during the presentation on the OPERATION AND MAINTENANCE DATA. Include the following for each system training presentation:

   a. Start-up, normal operation, shutdown, unoccupied operation, seasonal changeover, manual operation, controls set-up and programming, troubleshooting, and alarms.

b. Relevant health and safety issues.

c. Discussion of how the feature or system is environmentally responsive. Advise adjustments and optimizing methods for energy conservation.

d. Design intent.

e. Use of O&M Manual Files.

f. Review of control drawings and schematics.

g. Interactions with other systems.

h. Special maintenance and replacement sources.

i. Tenant interaction issues.

D. Training Outline
1. Provide the Operation and Maintenance Manual Files (Bookmarked PDF) and a written course outline listing the major and minor topics to be discussed by the instructor on each day of the course to each trainee in the course. Provide the course outline 14 calendar days prior to the training.

E. Unresolved Questions from Attendees
1. If, at the end of the training course, there are questions from attendees that remain unresolved, the instructor must send the answers, in writing, to the Contracting Officer for transmittal to the attendees, and the training video must be modified to include the appropriate clarifications.

F. Validation of Training Completion
1. Ensure that each attendee at each training session signs a class roster daily to confirm Government participation in the training. At the completion of training, submit a signed validation letter that includes a sample record of training for reporting what systems were included in the training, who provided the training, when and where the training was performed, and copies of the signed class rosters. Provide two copies of the validation to the Contracting Officer, and one copy to the Operation and Maintenance Manual Preparer for inclusion into the Manual's documentation.

G. Quality Control Coordination
1. Coordinate this training with the QC in accordance with Section 01 45 00.00 20 QUALITY CONTROL.

END OF SECTION 01 78 23

DIVISION 21 – FIRE SUPPRESSION

SECTION 21 13 13 - WET-PIPE SPRINKLER SYSTEMS

PART 1 GENERAL

1.01 PAYMENT PROCEDURES

A. Obtain and pay for all fees, licenses, assessments, and inspections required for this work as necessary. Schedule and coordinate required tests and inspections to accomplish the work in conformance with these specifications and drawings.

1.02 SCOPE

A. Phase I Project Description. Major work items for this project, including incidental related work, are as follows:

1. B711 Administration Building: replace existing wet pipe alarm check valve riser; install new water flow switch at riser (no power required in Phase I); install automatic vent with drain line in existing sprinkler piping system. Riser replacement work must be from top of existing underground quarter bend elbow to top of riser assembly. Top of riser extends through existing roof overhang into concealed building ceiling space.

2. B713 Auditorium: replace existing wet pipe alarm check valve riser; install new water flow switch at riser (no power required in Phase I); install automatic vent with drain line in existing sprinkler piping system. Riser replacement work must be from aboveground flexible coupling at base to top of riser assembly. Top of riser extends through existing roof overhang into concealed building ceiling space.

3. B714 Billets A: replace existing wet pipe alarm check valve riser; install new water flow switch at riser (no power required in Phase I); install automatic vent with drain line in existing sprinkler piping system. Riser replacement work must be from top of existing underground quarter bend elbow to top of riser assembly. Top of riser extends through existing roof overhang into concealed building ceiling space.

4. B714 Billets B: Install automatic vent with drain line in existing wet pipe sprinkler piping system.

5. B711 Classroom Building: replace existing wet pipe alarm check valve riser; install new water flow switch at riser (no power required in Phase I); install automatic vent with drain line in existing sprinkler piping system. Riser replacement work must be from top of existing underground quarter bend elbow to top of riser assembly. Top of riser extends through existing roof overhang into concealed building ceiling space.

6. B712 Mess Hall: replace existing wet pipe alarm check valve riser; install new water flow switch at riser (no power required in Phase I); install automatic vent with drain line in existing sprinkler piping system. Riser replacement work must be from aboveground flexible coupling at base to top of riser assembly. Top of riser extends through existing roof overhang into concealed building ceiling space.

7. Fill all building wet pipe sprinkler risers utilizing nitrogen inerting system as risk mitigation component.

8. Prior to start of any work, the contractor must complete a pre-construction survey of each existing building's fire sprinkler system to identify heavily corroded pipe sections and/or fittings and identify pipe segments where a leak may occur when the system is refilled with water to match existing water pressure indicated at each building riser. Contractor must submit a clearly marked-up sprinkler plan indicating boundary of survey and showing identified corroded and/or leaking pipe and pipe sections with potential to leak (including labeled photo documentation) to the HIARNG FMO-Project Manager. Contractor must provide a construction bid amount to replace the identified corroded and/or leaking pipe sections, including all related fittings and sprinklers per the estimated quantities shown on the designated project plan sheets for each building's fire sprinkler system including all labor efforts. Should the material quantities identified in the contractor's survey exceed the estimated quantities shown on the construction drawings, the contractor must notify the HIARNG FMO-Project Manager and submit an itemized estimate for the excess quantity (overages) to the HIARNG FMO-Project Manager, including quantity, material descriptions, and associated material and labor costs for FMO-PM approval, prior to purchasing any materials.

B. Design and install each automatic air vent and associated drain line to consider blind spaces, piping, electrical equipment, ductwork, and all other construction and equipment. Devices and equipment for fire protection service must be listed by the Underwriters' Laboratories, Inc. or approved by Factory Mutual System. In the NFPA publications referred to herein, the advisory provisions must be considered to be mandatory, as though the word "must" had been substituted for "should" wherever it appears; reference to the "authority having jurisdiction" must be interpreted to mean the Hawaii Insurance Bureau and the Building and Fire Departments. The work must begin at the point indicated.

C. Each system must be provided with earthquake protection and must include all materials, accessories, and equipment necessary to provide each system complete and ready for use. Design and install each system to give full consideration to blind spaces, piping, electrical equipment, ductwork, and all other construction and equipment to afford complete coverage in accordance with detailed drawings to be submitted for approval. Devices and equipment for fire protection service must be listed by the Underwriters' Laboratories, Inc. or approved by Factory Mutual System. In the NFPA publications referred to herein, the advisory provisions must be considered to be mandatory, as though the word "must" had been substituted for "should" wherever it appears; reference to the "authority having jurisdiction" must be interpreted to mean the Hawaii Insurance Bureau and the Building and Fire Departments. The work must begin at the point indicated.

1.03 APPLICABLE PUBLICATIONS

A. The publications listed below form a part of this specification to the extent referenced. The publications are referred to in the text by designation only.
   1. International Building Code (IBC), 2012 Edition with State Amendments

   2. International Building Code (IBC) with 2012 with City and County of Honolulu Amendments

   3. NFPA 1, Hawaii State Fire Code, 2012 Edition with City and County of Honolulu Amendments

4. American Society for Testing and Materials (ASTM) Publications

    a. A 53 95 Pipe, Steel, Black and Hot-Dipped, Zinc-Coated Welded, and Seamless

5. American Water Works (AWWA) Publications

    a. C104 90 Cement-Mortar Lining for Ductile-Iron Pipe and Fittings

    b. C104/A21.4 Cement-Mortar Lining for Ductile-Iron Pipe and Fittings

    c. C110/A21.10 Ductile-Iron and Gray-Iron Fittings for Water

    d. C111/A21.11 Rubber-Gasket Joints for Ductile-Iron Pressure Pipe and Fittings

    e. C151 86 Ductile-Iron Pipe, Centrifugally Cast

    f. C601 86 Disinfecting Water Mains

6. American Welding Society, Inc. (AWS)

    a. A 5.8 81 Brazing Filler Metal

7. Copper Development Association Standards (CDA)

    a. CDA 1.0 Flux

8. Factory Mutual (FM) Publication

    a. Approval Guide, 2021 Edition

9. Master Painters Institute (MPI)

    a. MPI 9 2016 Alkyd, Exterior Gloss (MPI Gloss Level 6)

    b. MPI 23 2015 Primer, Metal, Surface Tolerant

    c. MPI 94 2016 Alkyd, Exterior, Semi-Gloss (MPI Gloss Level 5)

10. National Fire Protection Association (NFPA) Publications

    a. NFPA 13 2010 Installation of Sprinkler Systems

    b. NFPA 24 2010 Installation of Private Fire Service Mains and Their Appurtenances

    c. NFPA 25 2011 Inspection, Testing, & Maintenance of Water Based Fire Protection Systems

    d. NFPA 70 2011 National Electrical Code

    e. NFPA 72 2010 National Fire Alarm Code

11. Society for Protective Coatings (SSPC)

    a. SSPC SP2 (2018) Hand Tool Cleaning

    b. SSPC SP3 (2018) Power Tool Cleaning

12. Underwriters' Laboratories, Inc. (UL) Publications

    a. Fire Protection Equipment Directory, 2021 Edition

1.04 QUALIFIED FIRE PROTECTION ENGINEER (QFPE)

A. The Qualified Fire Protection Engineer (QFPE) for this project is employed by Coffman Engineers, Inc. Honolulu Office who has taken and passed the written examination administered by the National Council of Examiners for Engineering and Surveyors (NCEES) as required by UFC 3-600-01. The QFPE assigned to this project is Robert T. Bigtas, P.E.. Mr. Bigtas has worked for Coffman/S.S. Dannaway Associates, Inc. since May of 1992 and has taken the written fire protection engineering examination administered by NCEES in October 1997 and received notice of passing in February 1998 as required by UFC 3-600-01. Mr. Bigtas has more than 27-years of fire protection engineering experience and is registered as an FPE in California, Washington, Guam and Commonwealth of Northern Mariana Islands as well as a registered ME in Hawaii, Guam and Commonwealth of Northern Mariana Islands. Since 2015 Mr. Bigtas has completed more than 500 projects for DoD agencies including NAVFAC, USACE and USAF.

1.05 SUBMITTALS

A. Submit under provisions of Section 01330 – SUBMITTAL PROCEDURES. Partial submittals will not be acceptable. Submit for approval three (3) complete sets of submittals as described below. Annotate descriptive data to show the specific model, type, and size of each item the Contractor proposes to furnish. Prepare working drawings on sheets not smaller than 24 by 36 inches, in accordance with the requirements for "Working Drawings (Plans) as specified in NFPA 13 and include data essential to the proper installation of each system. Do not commence work until the design of each system and the various components have been approved. The Qualified Fire Protection Engineer (QFPE) will review and approve all submittals. Before work is commenced, submit for approval complete sets of working drawings. Working drawings must be stamped by a licensed professional engineer.

   Submit the following in accordance with Section 01330 – Submittal Procedures:

   1. Preconstruction Submittals:

      Within 36 days of contract award but no less than 14 days prior to commencing work on site, the prime contractor must submit the following for review and approval. Shop Drawings, Product Data, and Design Data submittals received prior to the review and approval of the qualifications will be returned Disapproved Without Review.

      a. Sprinkler System Designer

      b. Sprinkler System Installer

   2. Product Data: For each type of product.

   3. One copy of annotated catalog data to show the specific model, type, and size of each item. Catalog cuts must also indicate the NRTL listing. The data must be highlighted to show model, size, options, and other pertinent information, that are intended for consideration. Data must be adequate to demonstrate compliance with all contract requirements. Product data for all equipment must be combined into a single submittal.

      a. Steel and pipe fittings.

      b. Valves.

c. Air vent

d. Sprinkler piping specialties.

e. Alarm devices.

f. Fire Department Connection.

g. Pipe hangers and supports.

h. Waterflow Switch

i. Earthquake sway bracing and seismic restraint.

j. Wet pipe nitrogen inerting system.

k. Paint for riser piping system.

4. Shop Drawings: For wet-pipe sprinkler systems.

   One copy of the shop drawings, no later than 28 days prior to the start of system installation. Working drawings conforming to the requirements prescribed in NFPA 13 and must be the same size as the Contract Drawings. Working shop drawings must be reviewed and approved by the QFPE. The QFPE must affix their professional engineering stamp with signature to the shop drawings and material data sheets, indicating approval of the shop drawings. Each set of drawings must include the following:

   a. A descriptive index with drawings listed in sequence by number. A legend sheet identifying device symbols, nomenclature, and conventions used in the package.

   b. Floor plan drawn to a scale not less than 1/8-inch equals 1-foot clearly showing locations of devices, equipment, risers, and other details required to clearly describe the proposed arrangement.

   c. Plan and elevation views which establish that the equipment will fit the allotted spaces with clearances for installation and maintenance.

   d. Riser layout drawings drawn to a scale of not less than ½-inch equals 1-foot to show details of each system component, clearances between each other and from other equipment and construction.

   e. Details of each type of pipe hanger, seismic bracing/restraint, and related components.

   f. Contractor must record static pressure at each building riser prior to start of any work. The building static pressure must be shown in the riser assembly shop drawing submittal in accordance with Specification Section 13930.

   g. Contractor must submit shop drawings that indicate the limits of survey showing identified corroded, leaking piping and pipe sections with potential to leak.

5. Design Data

   a. Sprinkler piping drawings: working plans, prepared according to NFPA 13.

6. Certificates of Compliance

    a. Contractor's material and test certificate per NFPA 13

7. Guaranty

    a. The one (1) year guaranty must start at the end of thirty (30) consecutive days of trouble-free operation after certification by the Fire Department and acceptance by the Owner whichever date is the latest.

8. Operation and Maintenance Manuals: Provide five (5) bound copies of the Operations and Maintenance Manuals in three (3) hole binders with hard covers. Submit one (1) electronic copy in portable document format (PDF). Electronic copy must be exact copy of the hard copy. The manuals must be submitted to the Contracting Officer a minimum of two (2) weeks prior to the final test and must be approved by the Contracting Officer and consultant. For wet-pipe fire sprinkler riser system and components and specialties to include in emergency, operation, and maintenance materials.

    a. Alarm check valve

    b. Alarm pressure and water flow switches

    c. Valve tamper switch

    d. Wet pipe nitrogen inerting system

    Furnish extra materials that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.

        1) Publications: NPFA 25, Standard for the Inspection, Testing, and Maintenance of Water-Based Fire Protection Systems.

9. Test Plan: A minimum of fifteen (15) days prior to the Preliminary Testing, the contractor must submit a "Test Plan" which must describe how the system will be tested. This must include a step-by-step description of all tests and must indicate type and location of test apparatus to be employed. Tests must not be conducted until the test plan is approved by the Engineer.

10. Field Test Reports: Indicate and interpret test results for compliance with performance requirements and as described in NFPA 13. Include "Contractor's Material and Test Certificate for Aboveground Piping."

11. As-Built Drawings: Submit in accordance with Section 01330 – SUBMITTAL PROCEDURES. Upon completion and before final acceptance of the work, submit complete set of as-built drawings of the system for record purposes. The Contractor must submit as-built drawings that indicate the limits of survey showing identified corroded, leaking piping and pipe sections with potential to leak. Submit one (1) electronic copy in portable document format (PDF).

1.06 FIRE EXTINGUISHING SPRINKLER SYSTEMS

A. Clean, pretreat, prime and paint new fire extinguishing sprinkler systems including valves, piping, conduit, hangars, supports, miscellaneous metal work and accessories. Apply coating to clean, dry surfaces using clean brushes.

1.07 QUALITY ASSURANCE

A. Qualifications of Installer: Prior to submission of bid, submit data for approval by the QFPE, showing that the Contractor is a licensed fire protection contractor (C-20) and has successfully installed automatic fire extinguishing sprinkler systems of the same type and design as specified herein, or that he has a firm contractual agreement with a subcontractor having such required licensed experience. The data must include the names and locations of at least two installations where the Contractor, or the subcontractor referred to above, has installed such systems. The Contractor must indicate the type and design of each system and certify that each system has performed satisfactorily in the manner intended for a period of not less than 18 months.

B. Qualifications of System Technician: Shop drawings and material submittals must be prepared, by or under the supervision of, an individual who is experienced with the types of works specified herein and is currently certified by the National Institute for Certification in Engineering Technologies (NICET) as an engineering technician with minimum Level-III certification in the Fire Protection/Automatic Sprinkler System program. Contractor must submit data for approval showing the name and certification of all involved individuals with such qualifications at or prior to submittal of drawings.

C. Sprinkler System Designer: The sprinkler system designer must be certified as a Level III Technician by National Institute for Certification in Engineering Technologies (NICET) in the Water-Based Systems Layout subfield Fire Protection Engineering Technology in accordance with NICET 1014-7.

D. Sprinkler System Installer: The sprinkler system installer must be regularly engaged in the installation of the type and complexity of system specified in the contract documents and must have served in a similar capacity for at least three systems that have performed in the manner intended for a period of not less than 6 months.

   Commissioning technician of wet pipe nitrogen inerting system must have one of the following qualifications. Qualifications must be provided prior to preliminary inspection and tests.

   1. Commissioning of wet pipe nitrogen inerting system must be carried out by technician employed by and certified by the wet pipe nitrogen inerting system manufacturer.

   2. In lieu of manufacturer’s commissioning technician, the fire sprinkler contractor must provide proof their commissioning technician has manufacturer’s certified training for the equipment being installed and proof of at least five previous installations of manufacturer’s equipment where the contractor’s commissioning technician has successfully conducted commissioning under the direct supervision of the manufacturer’s commissioning representative. Contractor must provide proof the five supervised commissioning occurred after contractor’s commissioning agent has obtained the certified training. Commissioning carried out prior to factory training, or without supervision of manufacturer’s technician or commissioning of other manufacturer’s equipment does not qualify as applicable experience. Conduct preliminary inspections and testing does not quality as applicable experience.

E. Requirements for Fire Protection Service: Equipment and material must have been listed for fire protection service by Underwriters Laboratories, Inc. or approved by the Factory Mutual System or listed by other nationally recognized testing laboratories. The omission of these terms under the description of any item of equipment described must not be construed as waiving this requirement. All listings or approvals by testing laboratories must be from an existing ANSI or UL published standard. The recommended practices stated in the manufacturer's literature or documentation are mandatory requirements.

F. Modifications of References: In NFPA publications referred to herein, consider advisory provisions to be mandatory, as though the word “must” had been substituted for “should” wherever it appears. Interpret reference to “authority having jurisdiction” to mean the County Building and Fire Departments.

1.08 GUARANTY AND CERTIFICATE

A. The Contractor must guarantee and certify in writing all work in this section for period of one (1) year. Should any equipment or material fail due to defective equipment, material or workmanship within this period, the Contractor must replace the item at no cost to the Owner.

B. The one (1) year guaranty must start at the end of thirty (30) consecutive days of trouble-free operation after certification by the Fire Department and acceptance by the Owner whichever date is the latest.

1.09 INSPECTION, MAINTENANCE, AND TESTING SERVICE AGREEMENT

A. The Contractor must include two (2) year inspection, maintenance, and testing service agreement in the bid. The two (2) year period must begin at the end of thirty (30) consecutive days of trouble-free operation after certification by the Fire Department and acceptance by the State whichever is the latest. The agreement must cover all labor, parts, insurance taxes, fees, and other incidental costs to inspect and test the system in accordance with NFPA 25 and the Hawaii State Fire Code with Honolulu Amendments. Inspection and testing of the system must be conducted based on the frequencies in NFPA 25.

1.10 OPERATING AND MAINTENANCE (O&M) INSTRUCTIONS

A. Submit in accordance with Section 01 78 23 Operation and Maintenance Data as supplemented and modified by this specification section.

B. Provide two manuals and one PDF version on electronic media. The manuals must include the manufacturer's name, model number, parts list, list of parts and tools that should be kept in stock by the owner for routine maintenance, troubleshooting guide, and recommend service organization (including address and telephone number) for each item of equipment.

C. Submit spare parts data for each different item of material and equipment specified. The data must include a complete list of parts and supplies, and a list of parts recommended by the manufacturer to be replaced after 1-year and 3 years of service. Include a list of special tools and test equipment required for maintenance and testing of the products supplied.

PART 2 PRODUCTS

2.01 EQUIPMENT

A. Alarm Check Valve: Provide variable pressure type alarm valve complete with retarding chamber, water motor alarm, alarm test valve, alarm shutoff valve, drain valve, pressure gauges, accessories, and appurtenances for the proper operation of the system.

B. Sprinkler Supervisory Devices: Provide as indicated. The devices must be electrically supervised and consist of single-pole, double-throw switch with normally closed contacts.
   1. Alarm Pressure and Water Flow Switches: UL-listed or FM-approved. Water flow switches must be vane-type switches with mechanical diaphragm-controlled retard device, field adjustable from a minimum of 0 to 90 seconds. The water flow switch must remain electrically disconnected and unsupervised for this project phase. The

flow switch components must consist of single-pole, double-throw switches with normally closed contacts.

2. Valve Tamper Switch: Provide each control valve with a listed or approved tamper switch for the automatic transmittal of a trouble signal where required by NFPA 13 and as indicated on the contract drawings. Tamper switches must be UL-listed or FM-approved. Valve tamper switches which are integral to the control valve will be acceptable.

2.02 UNDERGROUND PIPING SYSTEMS

A. Pipe and Fittings

1. Pipe must comply with NFPA 24. Minimum pipe size is 6 inches. Piping more than 5 feet outside the building walls must comply with Section 33 11 00 Water Utility Distribution Piping. A continuous section of welded stainless steel fire water service piping from a point outside the building perimeter to a flanged fitting at least 1-foot above the finished floor within the building is acceptable.

2. Fittings must be ductile-iron conforming to AWWA C110/A21.10 with cement mortar lining conforming to AWWA C104/A21.4. Gaskets must be suitable in design and size for the pipe with which such gaskets are to be used. Gaskets for ductile-iron pipe joints must conform to AWWA C11/A21.11.

3. Provide transition coupling as required when connecting new underground pipe to existing to remain underground fitting or pipe.

2.03 ABOVE GROUND PIPING SYSTEMS

A. Pipe and Fittings

1. Provide in accordance with NFPA 13. All piping and fittings must be black steel ASTM A53/A53M. Pipe sizes less than 2.5 inches must be Schedule 40; black steel all other piping must be minimum Schedule 10 black steel.

2. Fittings into which sprinkler heads, sprinkler head riser nipples, or drop nipples are threaded must be welded, threaded, or grooved-end type. Use of plain-end fittings with mechanical couplings which utilize steel gripping devices to bite into pipe when pressure is applied will not be permitted. “Mechanical T”, “Clamp T” or any other bolted branch outlet tees will not be permitted. Rubber gasketed grooved-end pipe and fittings with mechanical couplings must be permitted in pipe sizes 1.25 inches and larger; fittings must be UL listed or FM approved for use in sprinkler systems.

B. Pipe Hangers, Supports, and Earthquake Sway Bracing: Provide in accordance with NFPA 13. Include load rating for each restraint fitting and assembly. Illustrate and indicate style, material, strength, fastening provision, and finish for each type and size of seismic-restraint component. Indicate fabrication and arrangement. Detail attachments of restraints to restrained items and to the structure. Show attachment locations, methods, and spacings. Identify components, list their strengths, and indicate directions and values of forces transmitted to the structure during seismic events. Annotate types and sizes of seismic restraints and accessories, complete with listing markings or report numbers and load rating in tension and compression as evaluated by ICC-ES product listing, UL product listing, or FM Approvals. Perform seismic calculations to obtain force information necessary to properly select seismic-restraint devices, fasteners, and anchorage. Perform calculations using methods as presented in NFPA 13.

C. Valves: All valves must be listed in UL's "Fire Protection Equipment Directory" or FM Global's "Approval Guide." Standard-pressure piping specialty valves must have a minimum working pressure rating of 175 psig. Provide valves as required by NFPA 13, and of types approved for fire service. Gate valves must open by counterclockwise rotation. Check valves must be clear opening swing check type. Provide OS&Y valves as indicated. Provide an approved pressure relief valve at the riser in accordance with NFPA 13. Provide an alarm valve, pressure gauges, and main drain for each fire sprinkler riser. Provide a variable pressure type alarm check valve, standard trim piping, pressure gauges, retarding chamber, testing valves, and main drain, and other components as required for a fully operational system.

D. Identification Signs: Attach properly lettered approved metal signs conforming to NFPA 13 to each valve and alarm device. Permanently affix hydraulic design data nameplates to the riser of each system.

E. Inspector's Test Connection: Provide test connections about 6 feet above the floor for each sprinkler system or portion of each sprinkler system equipped with an alarm device.

F. Main and Auxiliary Drains: Provide drain piping to discharge at safe points outside each building or to sight cones attached to drains of adequate size to readily receive the full flow from each drain under maximum pressure. Provide auxiliary drains required by NFPA 13. Provide a splash block below each exterior drain discharge.

G. Air Venting Valve: Provide automatic air venting valve on each system. Provide the valve at or near the high point of the system to allow air to be removed in accordance with NFPA 13. The air venting valve must be UL-listed or FM Global approved for use in wet-pipe sprinkler systems. The valve must vent air continuously from the system and must have a minimum water working pressure rating of 175 psig.

H. Fire Department Connection: Provide connection approximately 3 feet above finish grade, of the approved polished brass four-way type with 2.5-inch National Standard female hose threads with plug and chain. The function of the connection must be clearly indicated as AUTO SPRINKLER. Fire department connections must be located on a street front as indicated on the drawings.

I. Nitrogen Inerting System: Provide a wet pipe nitrogen inerting injection manifold, nitrogen cylinders, and all other applicable appurtenances for each fire sprinkler riser.

PART 3 EXECUTION

3.01 INSTALLATION

A. Equipment, material, installation, and workmanship: Provide in accordance with NFPA 13 except as modified herein. Install piping straight and true to bear evenly on hangers. Keep the interior of new and existing piping affected by the Contractor's operations thoroughly cleaned of water and foreign matter. Keep piping systems clean during installation by means of plugs or other approved methods. When work is not in progress, securely close open ends of piping and fittings so that water and foreign matter will not enter the pipes or fittings. Inspect piping before placing into position. Inspect, test, and approve piping before burying, covering, or concealing. Provide listed fittings for changes in direction of piping and for all connections including branch takeoffs from mains and reductions in pipe sizes. Make changes in piping sizes through tapered reducing pipe fittings; do not use bushings. Install seismic restraints on piping. Comply with NFPA 13 requirements for seismic-restraint device materials and installation.

B. Locations and Arrangements: Drawings plans, schematics, and diagrams indicate general location and arrangement of piping. Install piping as indicated on approved working plans.
   1. Deviations from approved working plans for piping require written approval from authorities having jurisdiction. File written approval with Architect before deviating from approved working plans.

   2. Coordinate layout and installation of fire riser and drain line piping with other construction that penetrates ceilings, including light fixtures, HVAC equipment, and partition assemblies.

C. Verifying actual field conditions: Before commencing work, examine all adjoining work on which the contractor's work that is dependent for perfect workmanship according to the intent of this specification section, and report to the Contracting Officer's Representative a condition that prevents performance of first-class work. No "waiver of responsibility" for incomplete, inadequate, or defective adjoining work will be considered unless notice has been filed before submittal of a proposal.

D. Installation: The installation must be in accordance with the applicable provisions of NFPA 13, NFPA 24 and publications referenced therein.
   1. Piping offsets, fittings, and other accessories required must be furnished to provide a complete installation and to eliminate interference with other construction.

   2. Wherever the contractor's work interconnects with work of other trades the Contractor must coordinate with other Contractors to ensure all Contractors have the information necessary so that they may properly install all necessary connections and equipment. Identity all work items needing access (dampers and similar equipment) that are concealed above hung ceilings by permanent color-coded pins/tabs in the ceiling directly below the item.

   3. Provide required supports and hangers for piping, conduit, and equipment so that loading will not exceed allowable loadings of structure. Submittal of a bid must be a deemed representation that the contractor submitting such bid has ascertained allowable loadings and has included in his estimates the costs associated in furnishing required supports.

E. Waste Removal: At the conclusion of each day's work, clean up and stockpile on site all waste, debris, and trash which may have accumulated during the day as a result of work by the contractor and of his presence on the job. Sidewalks and streets adjoining the property must be kept broom clean and free of waste, debris, trash, and obstructions caused by work of the contractor, which will affect the condition and safety of streets, walks, utilities, and property.

F. Underground Piping Installation: The fire protection water main must be laid, and joints anchored, in accordance with NFPA 24. Minimum depth of cover must be 3 feet or the frost line, whichever is deeper. The supply line must terminate inside the building with a flanged piece, the bottom of which must be set not less than 1-foot above the finished floor. A blind flange must be installed temporarily on top of the flanged piece to prevent the entrance of foreign matter into the supply line. A concrete thrust block must be provided at the elbow where the pipe turns up toward the floor. In addition, joints must be anchored in accordance with NFPA 24. Buried steel components must be provided with a corrosion protective coating in accordance with AWWA C203. Piping more than 5 feet outside the building walls must meet the requirements of Section 33 11 00 Water Utility Distribution Piping.

G. Aboveground Piping Installation: The methods of fabrication and installation of the aboveground piping must fully comply with the requirements and recommended practices of NFPA 13 and this specification section.

H. Protection of Piping Against Earthquake Damage: Seismic restraint is required.

I. Pipe Hangers (Supports): Install hangers and supports for sprinkler system piping according to NFPA 13. Comply with requirements for hanger materials in NFPA 13.

J. Pipe Penetrations: Install sleeves for piping penetrations of walls, ceilings, and floors. Install escutcheons for piping penetrations of walls, ceilings, and floors.

K. Backflow Preventer Test Connection: Provide downstream of the backflow prevention assembly 2.5-inch National Standard male hose threads valve(s) with cap and chain. Provide a permanent sign which reads “Test Valve”.

L. Install flanges, flange adapters, or couplings for grooved-end piping on valves, apparatus, and equipment having NPS 2-1/2 and larger end connections.

M. Install "Inspector's Test Connections" in sprinkler system piping, complete with shutoff valve, and sized and located according to NFPA 13.

N. Install automatic air vent with associated drain for system drainage. Drains must be piped to the exterior and discharge at a safe place or as indicated on the contract drawings.

O. Install automatic (ball drip) drain valve at each check valve for fire-department connection, to drain piping between fire-department connection and check valve. Install drain piping to and spill over floor drain or to outside building.

P. Install pressure gauges on fire riser. Include pressure gauges with connection not less than NPS 1/4 and with soft metal seated globe valve, arranged for draining pipe between gauge and valve. Install gauges to permit removal and install where they are not subject to freezing.

3.02 JOINT CONSTRUCTION

A. Install couplings, flanges, flanged fittings, unions, nipples, and transition and special fittings that have finish and pressure ratings same as or higher than system's pressure rating for aboveground applications unless otherwise indicated.

B. Install flanges, flange adapters, or couplings for grooved-end piping on valves, apparatus, and equipment having NPS 2-1/2 and larger end connections.

C. Ream ends of pipes and tubes and remove burrs. Bevel plain ends of steel pipe.

D. Remove scale, slag, dirt, and debris from inside and outside of pipes, tubes, and fittings before assembly.

E. Flanged Joints: Select appropriate gasket material in size, type, and thickness suitable for water service. Join flanges with gasket and bolts according to ASME B31.9.

F. Threaded Joints: Thread pipe with tapered pipe threads according to ASME B1.20.1. Cut threads full and clean using sharp dies. Ream threaded pipe ends to remove burrs and restore full ID. Join pipe fittings and valves as follows:
   1. Apply appropriate tape or thread compound to external pipe threads.

2. Damaged Threads: Do not use pipe or pipe fittings with threads that are corroded or damaged.

G. Steel-Piping, Roll-Grooved Joints: Roll rounded-edge groove in end of pipe according to AWWA C606. Assemble coupling with housing, gasket, lubricant, and bolts. Join steel pipe and grooved-end fittings according to AWWA C606 for steel-pipe grooved joints.

H. Dissimilar-Material Piping Joints: Make joints using adapters compatible with materials of both piping systems where applicable.

3.03 INSTALLATION OF VALVES AND SPECIALTIES

A. Install listed fire-protection valves, trim and drain valves, specialty valves and trim, controls, and specialties according to NFPA 13.

B. Install listed fire-protection shutoff valves supervised open, located to control sources of water supply except from fire-department connections. Install permanent identification signs indicating portion of system controlled by each valve.

3.04 ELECTRICAL INSTALLATION

A. Comply with local ordinances and regulations of the City and County of Honolulu as well as NFPA 70 and NFPA 72. Workmanship is subject to the approval of the Contracting Officer.

B. The fire sprinkler system's components that are connected to the building's fire alarm system must be tested to ensure that equipment and components function as intended.

3.05 FIELD PAINTING

A. Painting: Clean, pretreat, prime, and paint new sprinkler systems including valves, piping, conduit, hangers, miscellaneous metalwork, and accessories. Apply coatings to clean dry surfaces using clean brushes. Clean the surfaces to remove dust, dirt, rust and loose mill scale. Immediately after cleaning, provide the metal surfaces with one coat of pretreatment primer applied to a minimum dry film thickness of 0.3 mil, and one coat of primer applied to a minimum dry film thickness of one mil. Primer type must be epoxy, silicon or inorganic zinc-rich type, appropriate for exterior application. Exercise care to avoid painting of sprinkler heads or protective devices. Remove materials which are used to protect sprinkler heads, while painting is in process, upon the completion of painting. Remove sprinkler heads which are painted and provide new clean sprinkler heads of the proper type. Provide primed surfaces with the following:

1. Sprinkler Systems in Unfinished Areas: Unfinished areas are defined as attic spaces, spaces above suspended ceilings, crawl spaces, pipe chases, and spaces where walls or ceiling are not painted or not constructed of prefinished material. Provide primed surfaces with two coats of paint to match adjacent surfaces.

2. Sprinkler Systems in All Other Areas: Provide primed surfaces with two coats of paint to match adjacent surfaces, except provide valves and operating accessories with one coat of red enamel.

B. Gypsum Board, Plaster and Stucco Areas: Verify that plaster and stucco surfaces are free from loose matter and gypsum board is dry. Remove loose dirt and dust by brushing with a soft brush, rubbing with a dry cloth or vacuum-cleaning prior to application of the first coat material. Prior to painting, repair joints, cracks, holes, surface irregularities and other minor defects with patching plater or spackling compound and sand smooth. Latex coating may be applied to damp surfaces, but no surfaces with droplets of water. Do not apply epoxies Application: Apply paint to new fire extinguishing sprinkler systems including valves, piping, conduit, hangers, supports, miscellaneous metal work and accessories.

1. Piping in Unfinished Areas: Provide primed surfaces with one coat of red alkyd gloss enamel MPI 9 applied to minimum dry film thickness of 1.0 mil.

2. Exterior Metal, Steel / Ferrous Surfaces: new steel that has been hand or power toll cleaned to SSPC SP 2 or SSPC SP3.

    a. Alkyd

        1) New Semigloss: MPI EXT 5.1Q-G5

            a) Primer: MPI 23

            b) Intermediate and Topcoat: MPI 94

            c) System DFT: 5.25 mils

        2) New Gloss: MPI EXT 5.1Q-G6

            a) Primer: MPI 23

            b) Intermediate and Topcoat: MPI 9

            c) System DFT: 5.25 mils

3.06 IDENTIFICATION

A. Install labeling and pipe markers on equipment and piping according to requirements in NFPA 13.

3.07 FIELD TESTING AND FLUSHING

A. Preliminary Tests: Perform the following tests and inspections and any additional tests required by the inspector:

1. Hydrostatically test the sprinkler system at system pressure and observe for leaks for 1-hour.

2. Flush sprinkler piping in accordance with NFPA 13. Continue flushing operations until water is clear, but for not less than 10 minutes.

3. Test the fire alarm devices associated with the fire sprinkler system and other devices as applicable. Test the water flow alarms by flowing water through the inspector's test connection. Test the tamper switches.

4. Flush, test, and inspect sprinkler systems according to NFPA 13, "Systems Acceptance" Chapter.

5. Energize circuits to electrical equipment and devices.

6. Coordinate with fire-alarm tests. Operate as required.

7. Verify that equipment hose threads are same as local fire department equipment.

B. Formal Inspection and Tests
   1. Engineer of record will witness formal tests and approve all systems before they are accepted. Submit the request for formal inspection at least 15 days prior to the date for formal inspection is to take place. An experienced technician regularly employed by the sprinkler installer must be present during the inspection. At this inspection, repeat any or all of the required tests as directed. Correct defects in the work provided by the Contractor and make additional tests until it has been demonstrated that the systems comply with all contract requirements. Furnish appliances, equipment, electricity, instruments, connecting devices, and personnel for the tests. All necessary tests encompassing all aspects of system operation must be made including the test listed in the previous section, and any deficiency found must be corrected and the system retested at no cost to the owner.

   2. Sprinkler piping system will be considered defective if it does not pass tests and inspections.

   3. Prepare test and inspection reports. Contractor to record all values and results of inspections and testing.

3.08 CLEANING
A. Clean dirt and debris from sprinkler system.

B. Only sprinklers with their original factory finish are acceptable. Remove and replace any sprinklers that are painted or have any other finish than their original factory finish.

3.09 INSTRUCTING OPERATING PERSONNEL
A. Upon completion of the work and at a time designated by the State, provide for a period of not less than 4 hours the services of experienced technicians regularly employed by the manufacturer of the sprinkler system to instruct the operating staff in the proper operation and maintenance of the equipment.

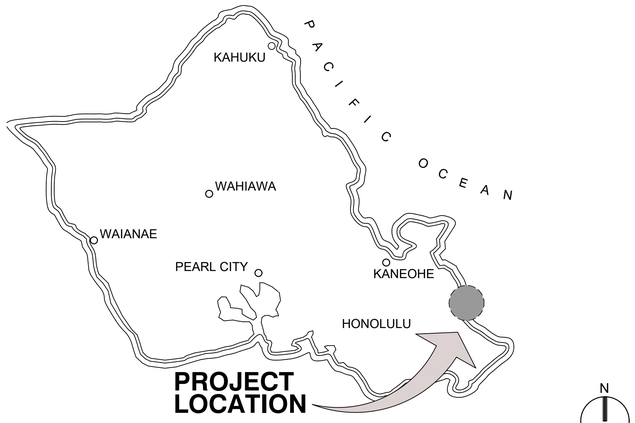
3.10 INSPECTION, MAINTENANCE, AND TESTING SERVICE AGREEMENT
A. The contractor must include one year inspection, maintenance, and testing service agreement in the bid. The one-year period must begin at the date of acceptance. The agreement must cover all labor, parts, insurance taxes, fees, and other incidental costs to inspect and test the system in accordance with NFPA 25 and the City and County of Honolulu, Fire Code. Inspection and testing of the system must be conducted on a quarterly basis for a total of four (4) visits during the one-year period.

END OF SECTION 21 13 13

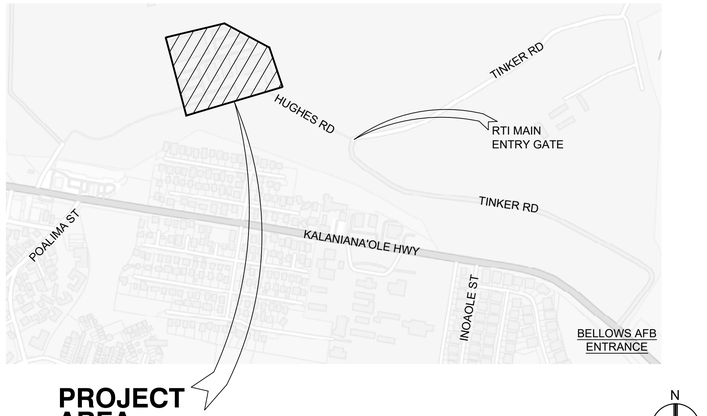
BELLOWS 298TH
REGIONAL TRAINING INSTITUTE
PHASE I - RISK MITIGATION
TMK 4-1-015:001

WAIMANALO — **OAHU, HAWAII**

LOCATION MAP



VICINITY MAP



PROJECT INFORMATION

LOCATION:	711 TINKER RD, WAIMANALO, HI, 96795
TMK:	4-1-015:001
SITE:	WAIMANALO, OAHU, HAWAII

	OCCUPANCY GROUP	STORIES/HEIGHT OF BUILDING
B711 ADMINISTRATION	B - BUSINESS	1 STORY/29'-9"
B711 CLASSROOM	B - BUSINESS	1 STORY/27'-5"
B712 MESS HALL	A2 - ASSEMBLY	1 STORY/22'-3"
B713 AUDITORIUM	A1- ASSEMBLY	1 STORY/21'-6"
B714 BILLETS A & B (INCLUDES PHYSICAL FITNESS AND LAUNDRY AREA)	R3 - RESIDENTIAL	2 STORIES/32'-5"

	IS BUILDING SPRINKLERED	TYPE OF CONSTRUCTION
B711 ADMINISTRATION	YES	TYPE II-B
B711 CLASSROOM	YES	TYPE II-B
B712 MESS HALL	YES	TYPE II-B
B713 AUDITORIUM	YES	TYPE II-B
B714 BILLETS A & B (INCLUDES PHYSICAL FITNESS AND LAUNDRY AREA)	YES	TYPE II-B

REFERENCE CODES

NFPA 1	FIRE CODE, 2018 EDITION WITH CITY AND COUNTY OF HONOLULU AMENDMENTS
NFPA 13	STANDARD FOR THE INSTALLATION OF SPRINKLER SYSTEMS, 2016

INDEX OF DRAWINGS

PROJECT SCOPE AND PURPOSE:

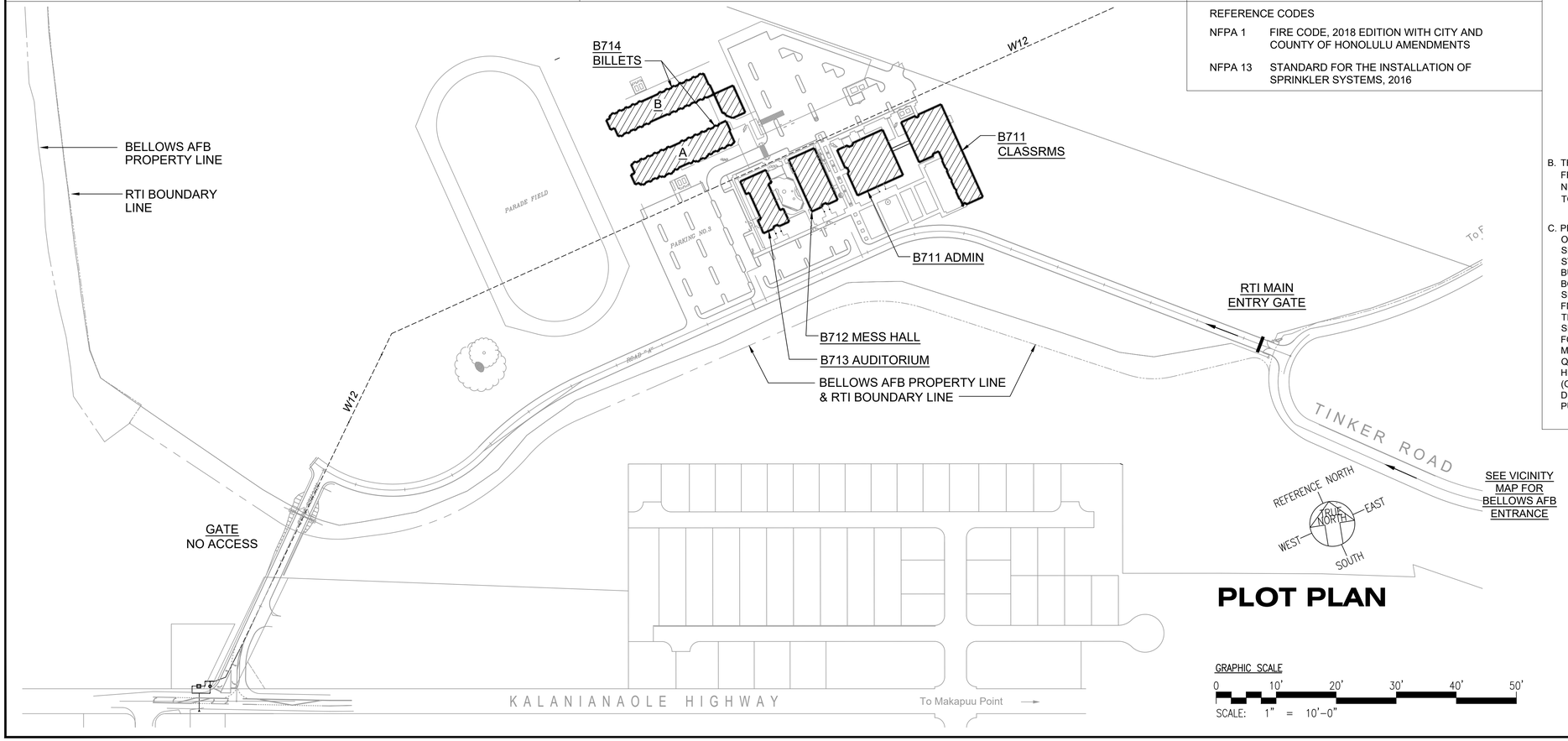
PHASE I WORK INCLUDES WORK INDICATED IN THESE CONSTRUCTION DRAWINGS AND PROJECT SPECIFICATIONS:

A. ONE-FOR-ONE REPLACEMENT OF FIVE (5) EXISTING WET PIPE FIRE SPRINKLER RISERS, INSTALLATION OF ONE (1) AUTOMATIC AIR VENT ONTO THE EXISTING INTERIOR FIRE SPRINKLER DISTRIBUTION PIPING SYSTEM WITH A NITROGEN INERTING SYSTEM AT THE FOLLOWING BUILDINGS:
   1. B711 ADMINISTRATION AND CLASSROOM (2 RISERS, ONE PER BUILDING)
   2. B712 MESS HALL (1 RISER)
   3. B713 AUDITORIUM (1 RISER)
   4. B714 BILLETS A AND B, INCLUDING PHYSICAL FITNESS AND LAUNDRY AREA. (1 RISER SERVING BOTH BILLETS)

   FOR ALL BUILDINGS, PROVIDE CONTINUOUS FIRE WATCH AS REQUIRED IN CONSTRUCTION DRAWINGS AND IN ACCORDANCE WITH THE HONOLULU FIRE DEPARTMENT.

B. THE NITROGEN INERTING SYSTEM IS A RISK MITIGATION COMPONENT USED TO LIMIT AIR BUBBLES FROM BECOMING ENTRAPPED IN THE EXISTING INTERIOR SPRINKLER DISTRIBUTION PIPING SYSTEM. NITROGEN WILL BE INTRODUCED INTO THE EMPTY FIRE SPRINKLER RISER AND PIPING SYSTEM PRIOR TO BEING FILLED WITH WATER.

C. PRIOR TO START OF ANY WORK, THE CONTRACTOR MUST COMPLETE A PRE-CONSTRUCTION SURVEY OF EACH EXISTING BUILDING'S FIRE SPRINKLER SYSTEM TO IDENTIFY HEAVILY CORRODED PIPE SECTIONS AND/OR FITTINGS AND IDENTIFY PIPE SEGMENTS WHERE A LEAK MAY OCCUR WHEN THE SYSTEM IS REFILLED WITH WATER TO MATCH EXISTING WATER PRESSURE INDICATED AT EACH BUILDING RISER. CONTRACTOR SHALL SUBMIT A CLEARLY MARKED-UP SPRINKLER PLAN INDICATING BOUNDARY OF SURVEY AND SHOWING IDENTIFIED CORRODED AND/OR LEAKING PIPING AND PIPE SECTIONS WITH POTENTIAL TO LEAK (INCLUDING LABELED PHOTO DOCUMENTATION) TO THE HIARNG FMO-PROJECT MANAGER. CONTRACTOR MUST PROVIDE A CONSTRUCTION BID AMOUNT TO REPLACE THE IDENTIFIED CORRODED AND/OR LEAKING PIPE SECTIONS, INCLUDING ALL RELATED FITTINGS AND SPRINKLERS PER THE ESTIMATED QUANTITIES SHOWN ON THE DESIGNATED PROJECT PLAN SHEETS FOR EACH BUILDING'S FIRE SPRINKLER SYSTEM INCLUDING ALL LABOR EFFORTS. SHOULD THE MATERIAL QUANTITIES IDENTIFIED IN THE CONTRACTOR'S SURVEY EXCEED THE ESTIMATED QUANTITIES SHOWN ON THE CONSTRUCTION DRAWINGS, THE CONTRACTOR MUST NOTIFY THE HIARNG FMO-PROJECT MANAGER AND SUBMIT AN ITEMIZED ESTIMATE FOR THE EXCESS QUANTITY (OVERAGES) TO THE HIARNG FMO-PROJECT MANAGER, INCLUDING QUANTITY, MATERIAL DESCRIPTIONS, AND ASSOCIATED MATERIAL AND LABOR COSTS FOR FMO-PM APPROVAL, PRIOR TO PURCHASING ANY MATERIALS.



PLOT PLAN

GRAPHIC SCALE

0 10' 20' 30' 40' 50'

SCALE: 1" = 10'-0"

REV NO.	SYM.	DESCRIPTION	SHT__ OF___	DATE	APPROVED: DOD ADMINISTRATOR

ROBERT T. BIGLAS LICENSED PROFESSIONAL ENGINEER No. 10292-M HAWAII, U.S.A.

This work was prepared by me or under my supervision, and construction of this project will be under my observation.

License Exp: 04/30/2024

DEPARTMENT OF DEFENSE
STATE OF HAWAII

PHASE I:
RISK MITIGATION PROJECT

WAIMANALO, OAHU, HAWAII

TITLE SHEET, LOCATION MAP, VICINITY MAP, AND INDEX OF DRAWINGS

COFFMAN ENGINEERS		JOB NO.	DRAWING NO.
DESIGNED BY: TW	CHECKED BY: RTB	CA-202006-C	G001
DRAWN BY: TW	APPROVED BY: JTH	DATE	SHEET
SCALE: AS NOTED		JUL 2022	01 OF 17 SHEETS

FILE_____ DRAWER_____ FOLDER_____

GENERAL NOTES

1. PHASE I MUST CONSIST OF THE DEMOLITION AND REPLACEMENT IN KIND OF THE FIVE EXISTING FIRE RISERS FOR THE B711 ADMINISTRATION-CLASSROOM, B712 MESS HALL, B713 AUDITORIUM AND B714 BILLETS (A & B) BUILDINGS.
   A. EACH NEW FIRE RISER MUST BE EQUIPPED WITH A NITROGEN INERTING SYSTEM TO MITIGATE THE ONSET OF INTERNAL SYSTEM CORROSION.
   B. REMOVE EXISTING RISER AND INITIATING DEVICES AS INDICATED ON BUILDING ELEVATION PLANS.
   C. PROVIDE NEW RISER ASSEMBLY, OS&Y, ALARM CHECK VALVE WITH TRIM, WATER MOTOR GONG, RETARD CHAMBER, TAMPER SWITCH, FLOW SWITCH AND FIRE DEPARTMENT CONNECTION WITH CHECK VALVE.
   D. INSTALL HIGH POINT AUTOMATIC AIR VENT WITH DRAIN LINE ON EACH BUILDING SYSTEM AS INDICATED ON BUILDING FIRE SPRINKLER FLOOR PLAN. ALL DRAIN LINES MUST BE ROUTED TO BUILDING EXTERIOR TO CLEAR EXISTING OBSTRUCTIONS. DRAIN LINES MUST NOT OBSTRUCT EXISTING BUILDING SIGNAGE AND WALL FRESCOES. ALL DRAIN LINES MUST BE PAINTED TO MATCH THE EXISTING EXTERIOR WALL CONDITIONS ACCORDINGLY.
2. THE CONTRACTOR MUST BE RESPONSIBLE FOR COORDINATING THE WORK OF ALL TRADES ON THE JOB. EACH TRADE MUST REVIEW AND COORDINATE THE CONTRACT PLANS AND SPECIFICATIONS WITH THE OTHER TRADES TO COMPLETE THE WORK AS INTENDED BY THE FINAL CONSTRUCTION DOCUMENTS.
3. SHOULD ANY DISCREPANCY IN THE PLANS OR SPECIFICATIONS BE DISCOVERED, THE GENERAL CONTRACTOR MUST NOTIFY THE FMO-PM BEFORE PROCEEDING WITH ANY FURTHER WORK. OTHERWISE, THE GENERAL CONTRACTOR AND SUBCONTRACTOR MUST BE HELD RESPONSIBLE FOR ANY COST INVOLVED IN CORRECTION OF WORK PLACED DUE TO SUCH DISCREPANCY.
4. THE CONTRACTOR MUST BE RESPONSIBLE FOR VERIFYING ALL FIELD CONDITIONS AND DEVICE LOCATIONS PRIOR TO START OF DEMOLITION.
5. ALL WORK MUST BE PERFORMED IN ACCORDANCE WITH REGIONAL TRAINING INSTITUTE (RTI) FACILITIES AND MAINTENANCE CONSTRUCTION WORK GUIDELINES INCLUDING HIARNG ENVIRONMENTAL CONTRACTOR REQUIREMENTS AND CONTRACT LANGUAGE FOR ACQUIRING GEOSPATIAL DATA (CADD, GIS, CAFM) SYSTEM DELIVERABLES FROM ARCHITECT-ENGINEER (A-E) CONSULTING FIRMS.
6. COORDINATE THE LANDSCAPING EFFORT IN THE IMMEDIATE AREA AROUND EACH BUILDING WET PIPE SPRINKLER RISER BEING REPLACED AS PART OF PHASE I WORK WITH THE HIARNG FMO-PM.
7. CONTRACTOR MUST RECORD STATIC PRESSURE AT EACH BUILDING RISER PRIOR TO START OF ANY WORK. THE BUILDING STATIC PRESSURE MUST BE SHOWN IN THE RISER ASSEMBLY SHOP DRAWING SUBMITTAL IN ACCORDANCE WITH SPECIFICATION SECTION 13930.
8. CONTRACTOR MUST FIELD VERIFY EXISTING CONDITIONS AT EACH BUILDING IN THE PROJECT SCOPE PRIOR TO START OF ANY WORK. EXISTING BUILDING FIRE SPRINKLER PLANS ARE BASED ON AVAILABLE REFERENCE DRAWINGS PROVIDED BY THE HAWAII ARMY NATIONAL GUARD.

AUTOMATIC SPRINKLER SYSTEM NOTES

1. PHASE I PROJECT SCOPE OF WORK INCLUDES THE FOLLOWING:
   A. MAINTENANCE REPAIR AND REPLACEMENT OF EXISTING WET PIPE FIRE SPRINKLER RISERS
   B. INSTALLATION OF NITROGEN INERTING SYSTEM FOR WET PIPE FIRE SPRINKLER SYSTEMS
   C. INSTALLATION OF AUTOMATIC AIR VENTS ON EXST WET PIPE SPRINKLER SYSTEM IN ACCORDANCE WITH NFPA 13
2. FIRE PROTECTION CONTRACTOR MUST SUBMIT FIRE SPRINKLER SHOP DRAWINGS TO THE ENGINEER FOR REVIEW AND APPROVAL. TWO (2) SETS OF COMPLETED WORKING PLANS STAMPED AND SIGNED BY A HAWAII LICENSED MECHANICAL ENGINEER MUST BE SUBMITTED.
3. THE SPRINKLER SYSTEM MUST COMPLY WITH SPECIFICATION 13930. PIPING AND SPRINKLER LOCATIONS SHOWN ARE CONCEPTUAL. THE CONTRACTOR MUST VERIFY THE LOCATION OF ALL SPRINKLER SYSTEM COMPONENTS AND COORDINATE WITH THE VARIOUS TRADES.
4. ALL DEVICES AND EQUIPMENT MUST BE UL LISTED OR FM APPROVED.
5. SPRINKLER PIPING MUST COMPLY WITH NFPA 13. EXISTING FIRE SPRINKLERS MUST NOT BE REUSED OR REINSTALLED.
6. SPRINKLER PIPING 2" OR SMALLER MUST BE SCHEDULE 40. SPRINKLER PIPING LARGER THAN 2" MUST BE MINIMUM SCHEDULE 10. EXISTING SPRINKLER PIPING IS BLACK STEEL. CONTRACTOR MUST FIELD CONFIRM PRIOR TO START OF CONSTRUCTION AND NOTIFY THE PROJECT MANAGER OF ANY DISCREPANCIES. GALVANIZED PIPING IS PROHIBITED.
7. AUTOMATIC AIR VENT LOCATIONS ARE BASED ON LIMITED FIELD INVESTIGATION AND EXISTING AVAILABLE REFERENCE DRAWINGS. HARD CEILING AREAS IN THE WORK SCOPE AREAS WERE NOT ACCESSIBLE AT TIME OF FIELD INVESTIGATION. CONTRACTOR MUST FIELD VERIFY EXISTING CONDITIONS ABOVE EXISTING HARD CEILING AREAS PRIOR TO THE START OF CONSTRUCTION.
8. THE CONTRACTOR MUST EXERCISE CARE WHEN INSTALLING AUTOMATIC AIR VENTS FOR THE EXISTING FIRE SPRINKLER SYSTEM. EXISTING SPRINKLER SYSTEMS ARE APPROXIMATELY 20 YEARS OLD.
9. FIRE SAFETY:
   NFPA 1, 16.1.1: STRUCTURES UNDERGOING CONSTRUCTION, ALTERATION, OR DEMOLITION OPERATIONS, INCLUDING THOSE IN UNDERGROUND LOCATIONS, MUST COMPLY WITH NFPA 241, STANDARD FOR SAFEGUARDING CONSTRUCTION, ALTERATION, AND DEMOLITION OPERATIONS, AND THIS CHAPTER.
10. PRE-TESTING AND FINAL ACCEPTANCE TESTING:
    A. CONSTRUCTION DOCUMENTS AND SHOP DRAWINGS FOR ALL WET PIPE FIRE SPRINKLER SYSTEMS MUST BE SUBMITTED FOR REVIEW AND APPROVAL BY THE ENGINEER PRIOR TO THE INSTALLATION, REHABILITATION, OR MODIFICATION. FURTHER, PRELIMINARY INSPECTION AND TESTING, AND ACCEPTANCE TESTS OF THE SYSTEMS MUST BE PERFORMED IN THE ENGINEER'S PRESENCE PRIOR TO FINAL SYSTEM CERTIFICATION.
    B. LOCATION AND INSTALLATION OF SYSTEM DEVICES AND APPURTENANCES REQUIRED BY PHASE I WORK MUST BE APPROVED BY THE ENGINEER AND MUST BE SUBJECT TO ACCEPTANCE TESTS REQUIRED BY THE ENGINEER.
    C. THE ENGINEER AND HIARNG CONSTRUCTION OFFICER MUST WITNESS AND APPROVE PHASE I WORK AND PRIOR TO FINAL SYSTEM CERTIFICATION.
11. THE CONTRACTOR MUST PROVIDE A FILTER SOCK AT THE MAIN FIRE RISER DRAIN TO PREVENT EROSION AND RUN OFF OF TOP SOIL IN GRASS AREAS ADJACENT TO THE FIRE RISERS.

NITROGEN FILLING PROCEDURE NOTES

NOTES BELOW ARE SUGGESTED ONLY. CONTRACTOR WILL PROVIDE NITROGEN FILLING PROCEDURES IN ACCORDANCE WITH EQUIPMENT MANUFACTURER'S RECOMMENDED INSTALLATION METHODS.

1. GO TO THE FIRE SPRINKLER RISER WHERE THE NITROGEN INJECTION MANIFOLD (NIM) IS LOCATED.
2. ATTACH THE NITROGEN CYLINDER PRESSURE REGULATOR TO THE NITROGEN CYLINDER.
3. OPEN NITROGEN CYLINDER FULLY.
4. ADJUST THE NITROGEN CYLINDER PRESSURE REGULATOR TO 40 PSI.
5. CONNECT THE NITROGEN CYLINDER TO THE NIM USING A HOSE CONNECTION.
6. OPEN BALL VALVE ON THE NIM. NITROGEN SHOULD NOW BE ENTERING THE FIRE SPRINKLER SYSTEM.
7. AFTER NITROGEN HAS FULLY ENTERED THE SYSTEM, GO TO THE EXHAUST MANIFOLD THAT IS INSTALLED AT A REMOTE PART OF THE SYSTEM.
8. CHECK PRESSURE GAUGE ON THE EXHAUST MANIFOLD. THE PRESSURE IN THE SYSTEM SHOULD BE RISING. IT MAY TAKE A FEW MINUTES TO SEE ANY CHANGE IN THE SYSTEM PRESSURE.
9. ONCE PRESSURE GAUGE HAS REACHED 40 PSI, OPEN BALL VALVE ON THE EXHAUST MANIFOLD. NITROGEN GAS WILL BE ESCAPING THROUGH THE MUFFLER ON THE EXHAUST MANIFOLD. FOR LARGE MULTIPLE THOUSAND GALLON SYSTEMS, IT CAN TAKE UP TO SEVERAL HOURS FOR THE SYSTEM TO REACH 40 PSI.
10. WHEN THE PRESSURE GAUGE DROPS BELOW 5 PSI, CLOSE BALL VALVE ON THE EXHAUST MANIFOLD.
11. ALLOW PRESSURE TO REACH 40 PSI IN THE FIRE SPRINKLER SYSTEM AGAIN.
12. ONCE PRESSURE REACHES 40 PSI, OPEN THE EXHAUST MANIFOLD.
13. ONCE THE PRESSURE GAUGE DROPS BELOW 5 PSI, CLOSE THE BALL VALVE ON THE EXHAUST MANIFOLD.
14. RETURN TO THE FIRE SPRINKLER RISER AND CLOSE THE NIM BALL VALVE.
15. FULLY CLOSE AND DISCONNECT THE NITROGEN CYLINDER.
16. THE SYSTEM IS NOW FULL OF NITROGEN.
17. RETURN THE SYSTEM TO OPERATION BY FILLING THE SYSTEM WITH WATER.
18. THE AUTOMATIC AIR VENT WILL AUTOMATICALLY EXHAUST THE MAJORITY OF GAS IN THE SYSTEM TO MINIMIZE TRAPPED GAS. ANY RESIDUAL TRAPPED GAS POCKETS ARE NOW NITROGEN.
19. CONTRACTOR TO DETERMINE AND PROVIDE SUFFICIENT QUANTITY OF NITROGEN GAS TO COMPLETE INERTING PROCESS AT EACH BUILDING.

DRAINING AND TESTING OF A WET PIPE NITROGEN INERTED SYSTEM

1. TO DRAIN THE FIRE SPRINKLER SYSTEM, ATTACH A NITROGEN CYLINDER TO THE NIM.
2. FULLY OPEN THE NITROGEN CYLINDER.
3. ADJUST THE PRESSURE TO 40 PSI ON THE NITROGEN CYLINDER PRESSURE REGULATOR.
4. OPEN THE BALL VALVE ON THE NIM.
5. DRAIN THE SYSTEM OF WATER THROUGH THE MAIN DRAIN AT THE FIRE SPRINKLER RISER.
6. ONCE ALL THE WATER HAS BEEN DRAINED, CLOSE THE NIM AND NITROGEN CYLINDER AND DISCONNECT THE NITROGEN CYLINDER.
7. THE SYSTEM RETAINS APPROXIMATELY 98% NITROGEN. WHEN PUTTING THE SYSTEM BACK INTO OPERATION, PERFORM THE NORMAL WATER FILLING PROCEDURE.

NOTE: IF PIPING IS REPLACED OR SPRINKLER HEADS ARE MOVED IT IS RECOMMENDED TO REFILL THE SYSTEM WITH NITROGEN.

LIST OF SYMBOLS AND ABBREVIATIONS

EXISTING	NEW	DESCRIPTION
⊖		PENDENT SPRINKLER, EXISTING TO REMAIN
▽		SIDEWALL SPRINKLER, EXISTING TO REMAIN
⊗		WET PIPE FIRE SPRINKLER RISER, EXISTING TO REMAIN
⊓		PIPE CAP, EXISTING TO REMAIN
⊖---		PIPE ELBOW UP, AS NOTED
⊖---	⊂—	PIPE ELBOW DOWN, AS NOTED
---⊕---		PIPE TEE DOWN, AS NOTED
---⊕---		PIPE TEE UP, AS NOTED
		FIRE DEPARTMENT CONNECTION
WF	WF	WATER FLOW SWITCH
VS	VS	TAMPER SWITCH
PS	PS	PRESSURE SWITCH
	AV	AUTOMATIC AIR VENT
AFF		ABOVE FINISHED FLOOR
DEFS		DIRECT-APPLIED EXTERIOR FINISH SYSTEM
DI		DUCTILE IRON
EIFS		EXTERIOR INSULATION AND FINISH SYSTEM
TYP		TYPICAL
POC		POINT OF CONNECTION
EXST		EXISTING
CTR		CONTRACTOR
HIARNG		HAWAII ARMY NATIONAL GUARD
FMO		FACILITIES MAINTENANCE OFFICER
FPE		FIRE PROTECTION ENGINEER
QCFPE		QUALITY CONTROL FIRE PROTECTION ENGINEER
NIM		NITROGEN INJECTION MANIFOLD

REV NO.	SYM.	DESCRIPTION	SHT__ OF___	DATE	APPROVED: DOD ADMINISTRATOR

ROBERT T. BIGLAS
LICENSED PROFESSIONAL ENGINEER
No. 10292-M
HAWAII, U.S.A.

This work was prepared by me or under my supervision, and construction of this project will be under my observation.

License Exp: 04/30/2024

DEPARTMENT OF DEFENSE
STATE OF HAWAII

PHASE I:
RISK MITIGATION PROJECT

WAIMANALO, OAHU, HAWAII

FIRE ALARM NOTES, SYMBOLS, AND ABBREVIATIONS

COFFMAN ENGINEERS		JOB NO.	DRAWING NO.
DESIGNED BY: TW	CHECKED BY: RTB	CA-202006-C	F001
DRAWN BY: TW	APPROVED BY: JTH	DATE	SHEET 02
SCALE: AS NOTED		JUL 2022	OF 17 SHEETS

FILE_____ DRAWER_____ FOLDER_____

EXISTING UNDERGROUND FIRE WATER SUPPLY SYSTEM AND RELATED NEW WORK

1. EXISTING UNDERGROUND FIRE WATER SUPPLY PIPING SIZE, ALIGNMENT AND BOTTOM OF PIPE DEPTH TAKEN FROM BEST AVAILABLE REFERENCE DRAWINGS PROVIDED BY HAWAII ARMY NATIONAL GUARD, FY00 298TH REGIONAL TRAINING INSTITUTE PHASE I 150036 PROJECT DRAWINGS, DATED 3-28-2000.

2. NO AS-BUILT REFERENCE DRAWINGS WERE AVAILABLE DURING CURRENT PROJECT DESIGN DEVELOPMENT.

3. ALL EXISTING UNDERGROUND FIRE WATER SUPPLY AND DISTRIBUTION SYSTEM ARE ASSUMED TO BE IN COMPLIANCE WITH THE FOLLOWING STANDARDS IN FORCE AT TIME OF PROJECT DESIGN DEVELOPMENT NAMED IN NOTE 1, ABOVE.

   NFPA 13 STANDARD FOR THE INSTALLATION OF SPRINKLER SYSTEMS

   NFPA 24 STANDARD FOR THE INSTALLATION OF PRIVATE FIRE SERVICE MAINS AND THEIR APPURTENANCES

4. CONTRACTOR MUST TAKE NECESSARY PRECAUTIONS DURING CONSTRUCTION, DEWATERING AND EXCAVATION TO PREVENT DAMAGE TO EXISTING UTILITIES AND WILL BE RESPONSIBLE IN THE EVENT OF ANY DAMAGE AND HELD RESPONSIBLE FOR MAINTENANCE AND PROTECTION OF ALL EXISTING UTILITIES AND STRUCTURES SHOWN ON THE DRAWINGS AND/OR MADE KNOWN PRIOR TO START AND DURING CONSTRUCTION.

5. THE CONTRACTOR MUST REPAIR DAMAGE TO UTILITIES OR STRUCTURES WITH THE CONCURRENCE OF THE CONTRACTING OFFICER OR STATE'S REPRESENTATIVE.

BID ITEMS BY BUILDING

1. CONTRACTOR WILL INCLUDE A LINE ITEM FOR EACH BUILDING FOR WORK TO CONDUCT PRE-CONSTRUCTION SURVEY TO IDENTIFY EXISTING POTENTIAL OR OBVIOUS LEAKS AT HEAVILY CORRODED PIPE SECTIONS AND/OR FITTINGS IN THE EXISTING INTERIOR WET PIPE SPRINKLER DISTRIBUTION PIPING SYSTEM PRIOR TO THE START OF ANY WORK.

2. CONTRACTOR MUST INCLUDE A LINE ITEM FOR EACH OF THE LISTED BUILDINGS FOR THE COST OF MATERIALS AND INSTALLATION OF THE FOLLOWING ITEMS.
   A. B711 ADMINISTRATION, SEE NOTE D BELOW.
   B. B712 MESS HALL
   C. B713 AUDITORIUM

DESCRIPTION	QTY	UNIT
PIPE 3-INCH ID, BLACK STEEL, SCH 10	30	LF
PIPE, 1-1/2 INCH ID, BLACK STEEL, SCH 40	30	LF
PIPE, 1-INCH ID, BLACK STEEL, SCH 40	30	LF
FITTING 3-INCH , COUPLING, RUBBER GASKETED GROOVED-END	5	EA
FITTING, TEE, 3-INCH X 1-1/2 INCH OUTLET, RUBBER GASKETED GROOVED-END	5	EA
FITTING TEE, 1-1/2 x 1 INCH OUTLET, RUBBER GASKETED GROOVED-END	3	EA
PIPE HANGAR 3-INCH, ADJUSTABLE SWIVEL	5	EA
PIPE HANGAR 1-1/2 INCH, ADJUSTABLE SWIVEL	5	EA
STANDARD PENDENT SPRINKLER HEAD, MATCH EXST.	2	EA

D. B711 CLASSROOM: SEE SHT FX401 FOR LIST OF BID ITEM MATERIALS.
E. B714 BILLETS A: SEE SHT FX404 FOR LIST OF BID ITEM MATERIALS.

FIRE WATCH AND HONOLULU FIRE DEPARTMENT NOTES

JOB SITE PLANS
ONE SET OF APPROVED PLANS AND SPECIFICATIONS SHALL BE KEPT ON THE SITE OF THE BUILDING OR WORK AT ALL TIMES DURING THE WORK AUTHORIZED THEREBY IS IN PROGRESS.

THE FACILITY FIRE ALARM SYSTEM IS MONITORED BY ALERT ALARM HAWAII, (808) 521-5000. CONTRACTOR MUST PROVIDE 48-HOUR ADVANCE NOTICE TO ALERT ALARM HAWAII BEFORE THE FIRE SPRINKLER SYSTEM IS TAKEN OUT OF SERVICE.

13.4.1.6.4.1 SERVICE PERSONNEL
SERVICE PERSONNEL SHALL BE QUALIFIED IN THE MAINTENANCE AND SERVICING OF SYSTEMS ADDRESSED WITHIN THE SCOPE OF THE CODE. QUALIFIED PERSONNEL SHALL INCLUDE, BUT NOT BE LIMITED TO, ONE OR MORE OF THE FOLLOWING:
1) PERSONNEL WHO ARE FACTORY TRAINED AND CERTIFIED FOR THE SPECIFIC TYPE AND BRAND OF SYSTEM BEING SERVICED
2) PERSONNEL WHO ARE CERTIFIED BY A NATIONALLY RECOGNIZED CERTIFIED BY A NATIONALLY RECOGNIZED CERTIFICATION ORGANIZATION ACCEPTABLE TO THE AUTHORITY HAVING JURISDICTION
3) PERSONNEL, EITHER INDIVIDUALLY OR THROUGH THEIR AFFILIATION WITH AN ORGANIZATION THAT IS REGISTERED, LICENSED, OR CERTIFIED BY A STATE OR LOCAL AUTHORITY TO PERFORM SERVICE ON SYSTEMS ADDRESSED WITHIN THE SCOPE OF THIS CODE.
4) PERSONNEL WHO ARE EMPLOYED AND QUALIFIED BY AN ORGANIZATION LISTED BY NATIONALLY RECOGNIZED TESTING LABORATORY FOR THE SERVICING OF SYSTEMS WITHIN THE SCOPE OF THIS CODE.

FIRE SAFETY NOTE
16.1.1 STRUCTURES UNDERGOING CONSTRUCTION, ALTERATION, OR DEMOLITION OPERATIONS, INCLUDING THOSE IN UNDERGROUND LOCATIONS, SHALL COMPLY WITH NFPA 241, STANDARD FOR SAFEGUARDING CONSTRUCTION, ALTERATION, AND DEMOLITION OPERATIONS, AND THIS CHAPTER IN 2018 NFPA 1.

ALTERATION OF BUILDINGS
16.4.4.1 WHERE THE BUILDING IS PROTECTED BY FIRE PROTECTION SYSTEMS, SUCH SYSTEMS SHALL BE MAINTAINED OPERATIONAL AT ALL TIMES DURING ALTERATION.

16.4.4.2 WHERE ALTERATION REQUIRES MODIFICATION OF A PORTION OF THE FIRE PROTECTION SYSTEM, THE REMAINDER OF THE SYSTEM SHALL BE KEPT IN SERVICE AND THE FIRE DEPARTMENT SHALL BE NOTIFIED.

16.4.4.3 WHEN IT IS NECESSARY TO SHUT DOWN THE SYSTEM, THE HIARNG'S REPRESENTATIVE SHALL HAVE THE AUTHORITY TO REQUIRE ALTERNATE MEASURES OF PROTECTION UNTIL THE SYSTEM IS RETURNED TO SERVICE.

16.4.4.4 THE FIRE DEPARTMENT SHALL BE NOTIFIED WHEN THE SYSTEM IS SHUT DOWN AND WHEN THE SYSTEM IS RETURNED TO SERVICE.

10.8.1.1 AS NECESSARY DURING EMERGENCIES, MAINTENANCE, DRILLS, PRESCRIBED TESTING, ALTERATIONS, OR RENOVATIONS, PORTABLE OR FIXED FIRE-EXTINGUISHING SYSTEMS OR DEVICES OR ANY FIRE-WARNING SYSTEM SHALL BE PERMITTED TO BE MADE INOPERATIVE OR INACCESSIBLE.

13.1.9 WHEN A FIRE PROTECTION SYSTEM IS OUT OF SERVICE FOR MORE THAN 4 HOURS IN A 24-HOUR PERIOD, THE HIARNG FMO-PROJECT MANAGER WILL REQUIRE AN APPROVED, CONTINUOUS FIRE WATCH TO BE PROVIDED FOR ALL PORTIONS LEFT UNPROTECTED BY THE FIRE PROTECTION SYSTEM SHUTDOWN UNTIL THE FIRE PROTECTION SYSTEM HAS BEEN RETURNED TO SERVICE.

HIARNG'S REPRESENTATIVE APPROVAL:
1. THE HIARNG'S REPRESENTATIVE SHALL HAVE THE AUTHORITY TO REQUIRE THAT CONSTRUCTION DOCUMENTS FOR ALL FIRE PROTECTION SYSTEMS BE SUBMITTED FOR REVIEW AND APPROVAL. FURTHER, THE HIARNG'S REPRESENTATIVE SHALL HAVE THE AUTHORITY TO REQUIRE THAT FULL ACCEPTANCE TESTS OF THE SYSTEMS BE PERFORMED IN THE HIARNG'S REPRESENTATIVE'S PRESENCE PRIOR TO FINAL SYSTEM CERTIFICATION.

2. FIRE ALARM SYSTEMS; FIRE HYDRANT SYSTEMS; FIRE-EXTINGUISHING SYSTEMS; STANDPIPES; AND OTHER FIRE-PROTECTION SYSTEMS AND APPURTENANCES REQUIRED BY THIS CODE SHALL BE APPROVED BY THE HIARNG'S REPRESENTATIVE AS TO INSTALLATION AND LOCATION AND SHALL BE SUBJECT TO ACCEPTANCE TESTS REQUIRED BY THE APPROPRIATE COUNTY AGENCY.

3. A COPY OF A SYSTEM'S UNSATISFACTORY INSPECTION AND MAINTENANCE TEST REPORT SHALL BE SUBMITTED TO THE HIARNG'S REPRESENTATIVE BY THE TESTING COMPANY WITHIN FIVE (5) WORKING DAYS AFTER THE COMPLETION OF THE TEST. 2018 NFPA 1, CHAPTER 13 AS AMENDED.

REV NO.	SYM.	DESCRIPTION	SHT__ OF__	DATE	APPROVED: DOD ADMINISTRATOR

ROBERT T. BIGLAS
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DEPARTMENT OF DEFENSE
STATE OF HAWAII

PHASE I:
RISK MITIGATION PROJECT

WAIMANALO, OAHU, HAWAII

FIRE ALARM NOTES, SYMBOLS, AND ABBREVIATIONS CONT

COFFMAN ENGINEERS		JOB NO.	DRAWING NO.
DESIGNED BY: TW	CHECKED BY: RTB	CA-202006-C	F002
DRAWN BY: TW	APPROVED BY: JTH	DATE	SHEET 03
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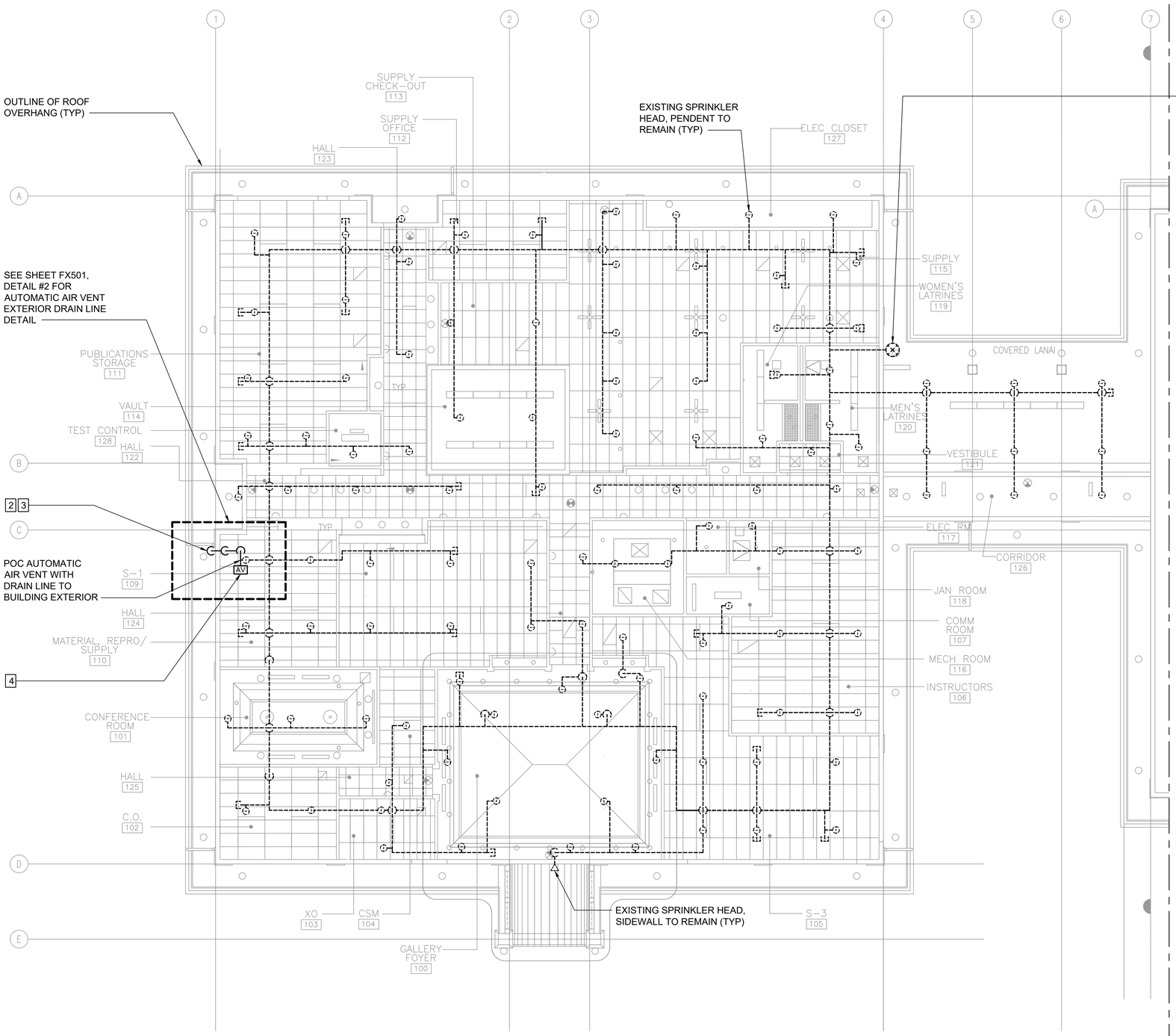
FILE_____ DRAWER_____ FOLDER_____



FIRE PROTECTION SYMBOLS & ABBREVIATIONS

EXISTING	NEW	DESCRIPTION
		PENDENT SPRINKLER, EXISTING TO REMAIN
		SIDEWALL SPRINKLER, EXISTING TO REMAIN
		WET PIPE FIRE SPRINKLER RISER, EXISTING TO REMAIN
		PIPE CAP, EXISTING TO REMAIN
		PIPE ELBOW UP, AS NOTED
		PIPE ELBOW DOWN, AS NOTED
		PIPE TEE DOWN, AS NOTED
		PIPE TEE UP, AS NOTED
	AV	AUTOMATIC AIR VENT

NEW WORK KEYED NOTES

REFER TO SHEETS F001 AND F002 FOR WORK SCOPE NOTES AND BID ITEMS BY BUILDING.

1 FIRE RISER: REPLACE EXISTING 4" FIRE SPRINKLER RISER INCLUDING BUT NOT LIMITED TO WATER MOTOR GONG, RETARD CHAMBER, FIRE DEPARTMENT CONNECTION, OS&Y VALVE, ALARM CHECK VALVE, TRIM PIPING, MAIN DRAIN, INSPECTORS TEST, AND TAMPER SWITCH. SEE SHEET FX401 FOR EXTENT OF DEMOLITION AND NEW INSTALLATION WORK POC. REPLACE SEISMIC RESTRAINTS. INSTALL NEW WATER FLOW SWITCH AND A NITROGEN FILLING CONNECTION. SEE DETAIL 1, WET PIPE SPRINKLER RISER, SHEET FX501.

2 DRAIN PENETRATION: PENETRATE EXISTING EXTERIOR DEFS CMU WALL. PROVIDE ESCUTCHEON AT PENETRATION WITH WATERPROOF CAULKING ALL AROUND AND ELASTOMERIC SEAL AROUND DRAIN PIPE. DO NOT PENETRATE EXISTING EIFS BAND AND FALSE COLUMNS. ROUTE DRAIN TO CLEAR EXISTING METAL DOWNSPOUT, WINDOW, AND OBSTRUCTIONS.

3 AUTOMATIC AIR VENT DRAIN: ROUTE DRAIN LINE TO CLEAR MINIMUM 2" FROM FACE OF EIFS BAND. TERMINATE DRAIN LINE 12" ABOVE FINISH GRADE.

4 AUTOMATIC AIR VENT: LOCATE AND CONNECT AUTOMATIC AIR VENT VALVE ASSEMBLY NEAR HIGH POINT IN THE EXISTING FIRE SPRINKLER PIPING SYSTEM IN ACCORDANCE WITH NFPA 13, 16.7. CONTRACTOR MUST FIELD VERIFY PROPOSED LOCATION OF AIR VENT VALVE ASSEMBLY AND ASSOCIATED DRAIN PIPING TO CLEAR ALL OBSTRUCTIONS. PROVIDE FITTINGS AND HANGARS AS REQUIRED. SEE DETAIL 2, AUTOMATIC AIR VENT EXTERIOR DRAIN LINE, SHEET FX501.

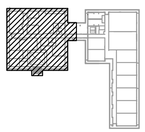
1 B711 ADMINISTRATION - FIRE SPRINKLER FLOOR PLAN

SCALE: 1/8" = 1'-0"

MATCHLINE SHEET FX102

PLAN NORTH

0 2' 4' 8' 16'
SCALE: 1/8" = 1'-0"



KEY PLAN - ADMINISTRATION

REV NO.	SYM.	DESCRIPTION	SHT__ OF__	DATE	APPROVED: DOD ADMINISTRATOR

ROBERT T. BIGTAS LICENSED PROFESSIONAL ENGINEER No. 10292-M HAWAII, U.S.A.

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DEPARTMENT OF DEFENSE
STATE OF HAWAII

PHASE I:
RISK MITIGATION PROJECT

WAIMANALO, OAHU, HAWAII

B711 ADMINISTRATION – FIRE SPRINKLER FLOOR PLAN

COFFMAN ENGINEERS		JOB NO.	DRAWING NO.
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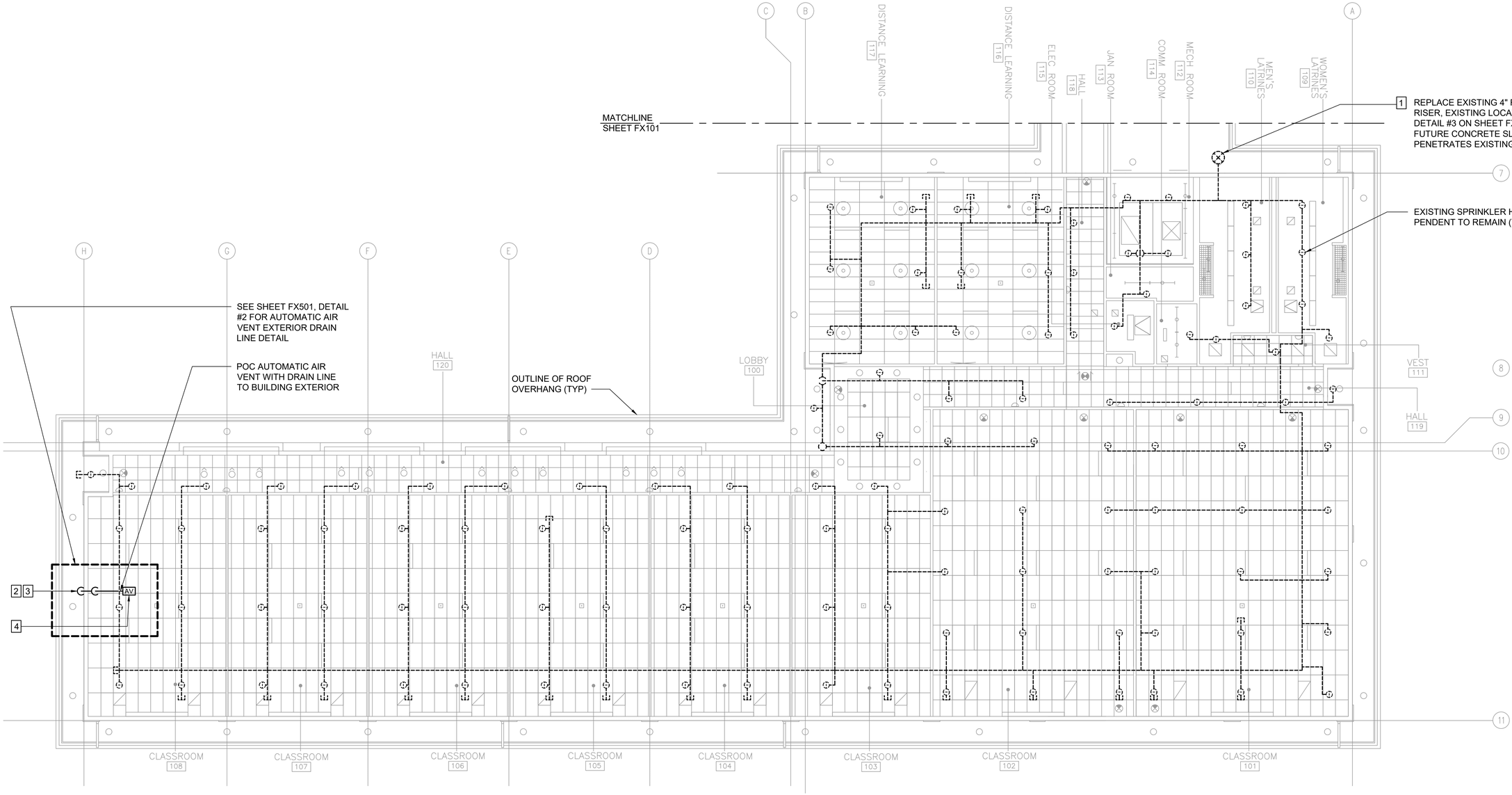


1 B711 CLASSROOM - FIRE SPRINKLER FLOOR PLAN

SCALE: 1/8" = 1'-0"

(FLOOR PLAN SHOWN IS ROTATED 90 DEGREES CLOCKWISE)

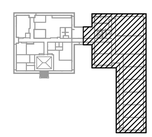
NEW WORK KEYED NOTES

REFER TO SHEETS F001 AND F002 FOR WORK SCOPE NOTES AND BID ITEMS BY BUILDING.

1. FIRE RISER: REPLACE EXISTING 4" FIRE SPRINKLER RISER INCLUDING BUT NOT LIMITED TO WATER MOTOR GONG, RETARD CHAMBER, FIRE DEPARTMENT CONNECTION, OS&Y VALVE, ALARM CHECK VALVE, TRIM PIPING, MAIN DRAIN, INSPECTORS TEST, AND TAMPER SWITCH. SEE SHEET FX401 FOR EXTENT OF DEMOLITION AND NEW INSTALLATION WORK POC. REPLACE SEISMIC RESTRAINTS. INSTALL NEW WATER FLOW SWITCH AND A NITROGEN FILLING CONNECTION. SEE DETAIL 1, WET PIPE SPRINKLER RISER, SHEET FX501.
2. DRAIN PENETRATION: PENETRATE EXISTING EXTERIOR DEFS CMU WALL. PROVIDE ESCUTCHEON AT PENETRATION WITH WATERPROOF CAULKING ALL AROUND AND ELASTOMERIC SEAL AROUND DRAIN PIPE. DO NOT PENETRATE EXISTING EIFS BAND AND FALSE COLUMNS. ROUTE DRAIN LINE TO CLEAR EXISTING OUTDOOR TRANSFORMER AND ABOVE GROUND ELECTRICAL BOX.
3. AUTOMATIC AIR VENT DRAIN: ROUTE DRAIN LINE TO CLEAR MINIMUM 2" FROM FACE OF EIFS BAND. TERMINATE DRAIN LINE 12" ABOVE FINISH GRADE.
4. AUTOMATIC AIR VENT: LOCATE AND CONNECT AUTOMATIC AIR VENT VALVE ASSEMBLY NEAR HIGH POINT IN THE EXISTING FIRE SPRINKLER PIPING SYSTEM IN ACCORDANCE WITH NFPA 13, 16.7. CONTRACTOR MUST FIELD VERIFY PROPOSED LOCATION OF AIR VENT VALVE ASSEMBLY AND ASSOCIATED DRAIN PIPING TO CLEAR ALL OBSTRUCTIONS. PROVIDE FITTINGS AND HANGARS AS REQUIRED. SEE DETAIL 2, AUTOMATIC AIR VENT EXTERIOR DRAIN LINE, SHEET FX501.

FIRE PROTECTION SYMBOLS & ABBREVIATIONS

EXISTING	NEW	DESCRIPTION
⊖		PENDENT SPRINKLER, EXISTING TO REMAIN
⊗		WET PIPE FIRE SPRINKLER RISER, EXISTING TO REMAIN
⊓		PIPE CAP, EXISTING TO REMAIN
○---		PIPE ELBOW UP, AS NOTED
C---	C—	PIPE ELBOW DOWN, AS NOTED
---⊕---		PIPE TEE DOWN, AS NOTED
---○---		PIPE TEE UP, AS NOTED
EIFS		EXTERIOR INSULATION AND FINISH SYSTEM
DEFS		DIRECT-APPLIED EXTERIOR FINISH SYSTEM
	AV	AUTOMATIC HIGH POINT AIR VENT



KEY PLAN - CLASSROOM

PLAN NORTH

0 2' 4' 8' 16'

SCALE: 1/8" = 1'-0"

REV NO.	SYM.	DESCRIPTION	SHT__ OF__	DATE	APPROVED: DOD ADMINISTRATOR

ROBERT T. BIGAS LICENSED PROFESSIONAL ENGINEER No. 10292-M HAWAII, U.S.A.

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DEPARTMENT OF DEFENSE
STATE OF HAWAII

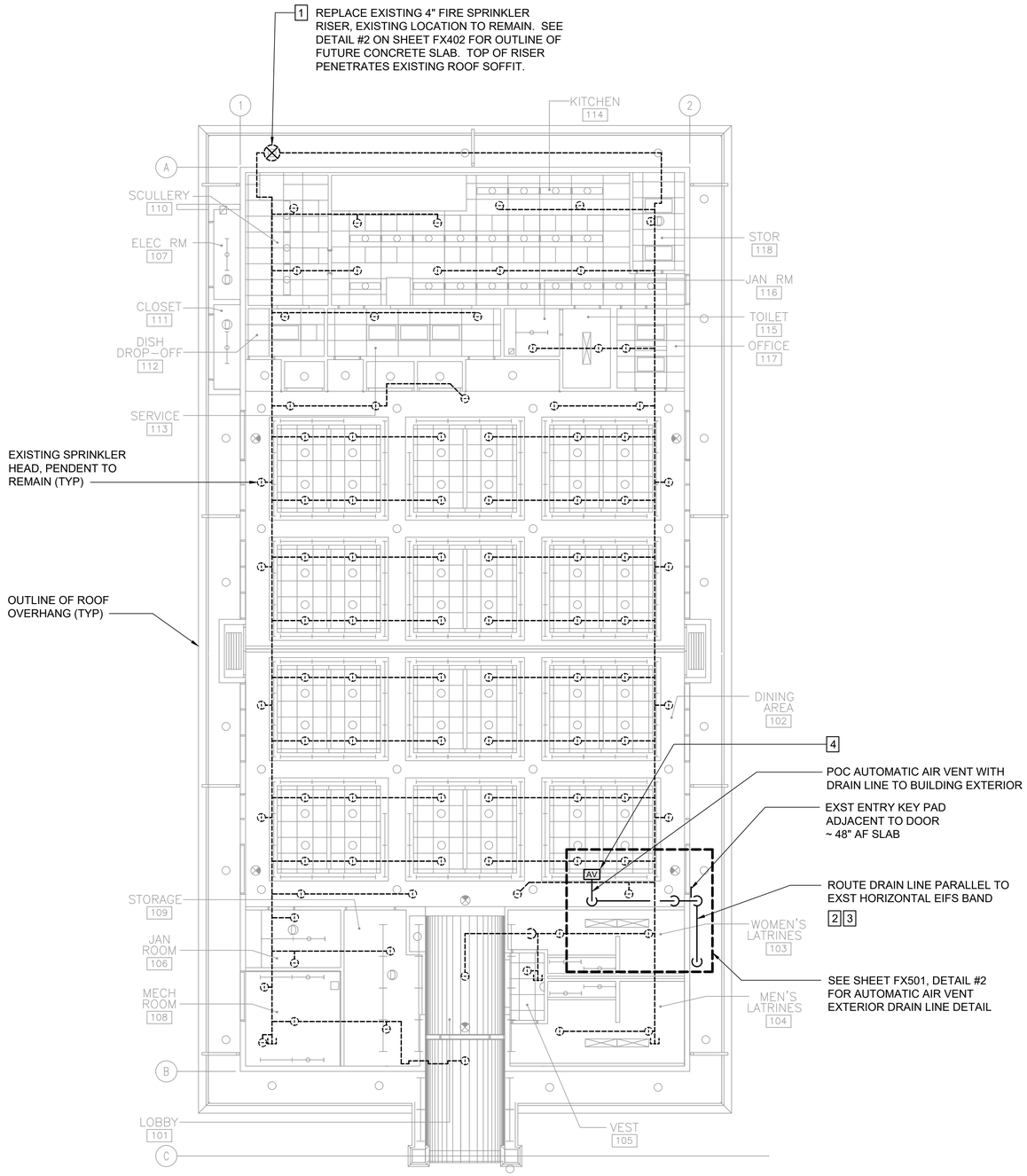
PHASE I:
RISK MITIGATION PROJECT

WAIMANALO, OAHU, HAWAII

B711 CLASSROOM – FIRE SPRINKLER FLOOR PLAN

COFFMAN ENGINEERS		JOB NO.	DRAWING NO.
DESIGNED BY: TW	CHECKED BY: RTB	CA-202006-C	FX102
DRAWN BY: TW	APPROVED BY: JTH	DATE	SHEET 05
SCALE: AS NOTED		JUL 2022	OF 17 SHEETS

FILE_____ DRAWER_____ FOLDER_____



1 B712 MESS HALL - FIRE SPRINKLER PLAN

SCALE: 1/8" = 1'-0"

FIRE PROTECTION SYMBOLS & ABBREVIATIONS		
EXISTING	NEW	DESCRIPTION
		PENDENT SPRINKLER, EXISTING TO REMAIN
		SIDEWALL SPRINKLER, EXISTING TO REMAIN
		WET PIPE FIRE SPRINKLER RISER, EXISTING TO REMAIN
		PIPE CAP, EXISTING TO REMAIN
		PIPE ELBOW UP, AS NOTED
		PIPE ELBOW DOWN, AS NOTED
		PIPE TEE DOWN, AS NOTED
		PIPE TEE UP, AS NOTED

NEW WORK KEYED NOTES

REFER TO SHEETS F001 AND F002 FOR WORK SCOPE NOTES AND BID ITEMS BY BUILDING.

1 FIRE RISER: REPLACE EXISTING 4" FIRE SPRINKLER RISER INCLUDING BUT NOT LIMITED TO WATER MOTOR GONG, RETARD CHAMBER, FIRE DEPARTMENT CONNECTION, OS&Y VALVE, ALARM CHECK VALVE, TRIM PIPING, MAIN DRAIN, INSPECTORS TEST, AND TAMPER SWITCH. SEE SHEET FX402 FOR EXTENT OF DEMOLITION AND NEW INSTALLATION WORK POC. REPLACE SEISMIC RESTRAINTS. INSTALL NEW WATER FLOW SWITCH AND A NITROGEN FILLING CONNECTION. SEE DETAIL 1, WET PIPE SPRINKLER RISER, SHEET FX501.

2 DRAIN PENETRATION: PENETRATE EXISTING EXTERIOR DEFS CMU WALL. PROVIDE ESCUTCHEON AT PENETRATION WITH WATERPROOF CAULKING ALL AROUND AND ELASTOMERIC SEAL AROUND DRAIN PIPE. DO NOT PENETRATE EXISTING EIFS BAND AND FALSE COLUMNS. ROUTE DRAIN TO CLEAR EXISTING METAL DOWNSPOUT, WINDOW, AND OBSTRUCTIONS.

3 AUTOMATIC AIR VENT DRAIN: ROUTE DRAIN LINE TO CLEAR MINIMUM 2" FROM FACE OF EIFS BAND. TERMINATE DRAIN LINE 12" ABOVE FINISH GRADE.

4 AUTOMATIC AIR VENT: LOCATE AND CONNECT AUTOMATIC AIR VENT VALVE ASSEMBLY NEAR HIGH POINT IN THE EXISTING FIRE SPRINKLER PIPING SYSTEM IN ACCORDANCE WITH NFPA 13, 16.7. CONTRACTOR MUST FIELD VERIFY PROPOSED LOCATION OF AIR VENT VALVE ASSEMBLY AND ASSOCIATED DRAIN PIPING TO CLEAR ALL OBSTRUCTIONS. PROVIDE FITTINGS AND HANGARS AS REQUIRED. SEE DETAIL 2, AUTOMATIC AIR VENT EXTERIOR DRAIN LINE, SHEET FX501.

PLAN NORTH

0 2' 4' 8' 16'
SCALE: 1/8" = 1'-0"

REV NO.	SYM.	DESCRIPTION	SHT__ OF__	DATE	APPROVED: DOD ADMINISTRATOR

ROBERT T. BIGHAM LICENSED PROFESSIONAL ENGINEER No. 10292-M HAWAII, U.S.A.

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DEPARTMENT OF DEFENSE
STATE OF HAWAII

PHASE I:
RISK MITIGATION PROJECT

WAIMANALO, OAHU, HAWAII

B712 MESS HALL – FIRE SPRINKLER FLOOR PLAN

COFFMAN ENGINEERS		JOB NO.	DRAWING NO.
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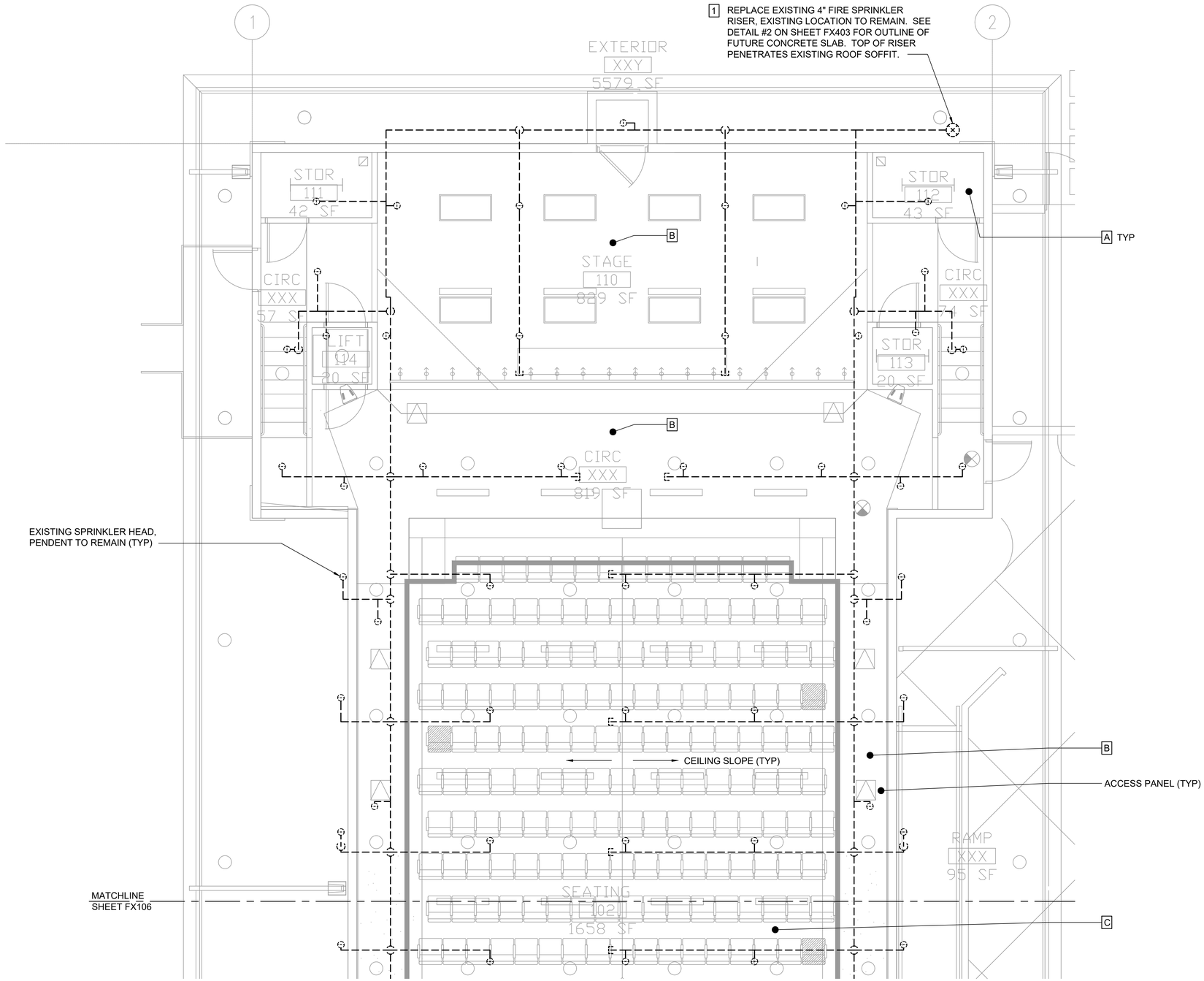
DRAWN BY: TW	APPROVED BY: JTH	DATE	SHEET 06
SCALE: AS NOTED		JUL 2022	OF 17 SHEETS

FILE_____ DRAWER_____ FOLDER_____



1 B713 AUDITORIUM - FIRE SPRINKLER PLAN
SCALE: 1/4" = 1'-0"

FIRE PROTECTION SYMBOLS & ABBREVIATIONS		
EXISTING	NEW	DESCRIPTION
⊖		PENDENT SPRINKLER, EXISTING TO REMAIN
▽		SIDEWALL SPRINKLER, EXISTING TO REMAIN
⊗		WET PIPE FIRE SPRINKLER RISER, EXISTING TO REMAIN
⊓		PIPE CAP, EXISTING TO REMAIN
⊖---		PIPE ELBOW UP, AS NOTED
⊖---	⊖—	PIPE ELBOW DOWN, AS NOTED
---⊖---		PIPE TEE DOWN, AS NOTED
---⊕---		PIPE TEE UP, AS NOTED

NEW WORK KEYED NOTES

REFER TO SHEETS F001 AND F002 FOR WORK SCOPE NOTES AND BID ITEMS BY BUILDING.

1 FIRE RISER: REPLACE EXISTING 4" FIRE SPRINKLER RISER INCLUDING BUT NOT LIMITED TO WATER MOTOR GONG, RETARD CHAMBER, FIRE DEPARTMENT CONNECTION, OS&Y VALVE, ALARM CHECK VALVE, TRIM PIPING, MAIN DRAIN, INSPECTORS TEST, AND TAMPER SWITCH. SEE SHEET FX403 FOR EXTENT OF DEMOLITION AND NEW INSTALLATION WORK POC. REPLACE SEISMIC RESTRAINTS. INSTALL NEW WATER FLOW SWITCH AND A NITROGEN FILLING CONNECTION. SEE DETAIL 1, WET PIPE SPRINKLER RISER, SHEET FX501.

EXISTING CEILING NOTES

A FLAT HARD CEILING WITH SURFACE MOUNTED LIGHT FIXTURES

B FLAT HARD CEILING WITH IN-LAY TYPE LIGHT FIXTURES

C HARD CEILING WITH IN-LAY TYPE LIGHT FIXTURES; SLOPED TO MATCH ROOF LINE ABOVE. SLOPED CEILING HAS DECORATIVE WALL PAPER. REFER TO ARCHITECTURAL DRAWINGS.

KEY PLAN - AUDITORIUM

PLAN NORTH

0 2' 4' 8' 16'
SCALE: 1/8" = 1'-0"

REV NO.	SYM.	DESCRIPTION	SHT__ OF___	DATE	APPROVED: DOD ADMINISTRATOR

ROBERT T. BIGLAS
LICENSED PROFESSIONAL ENGINEER
No. 10292-M
HAWAII, U.S.A.

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DEPARTMENT OF DEFENSE
STATE OF HAWAII

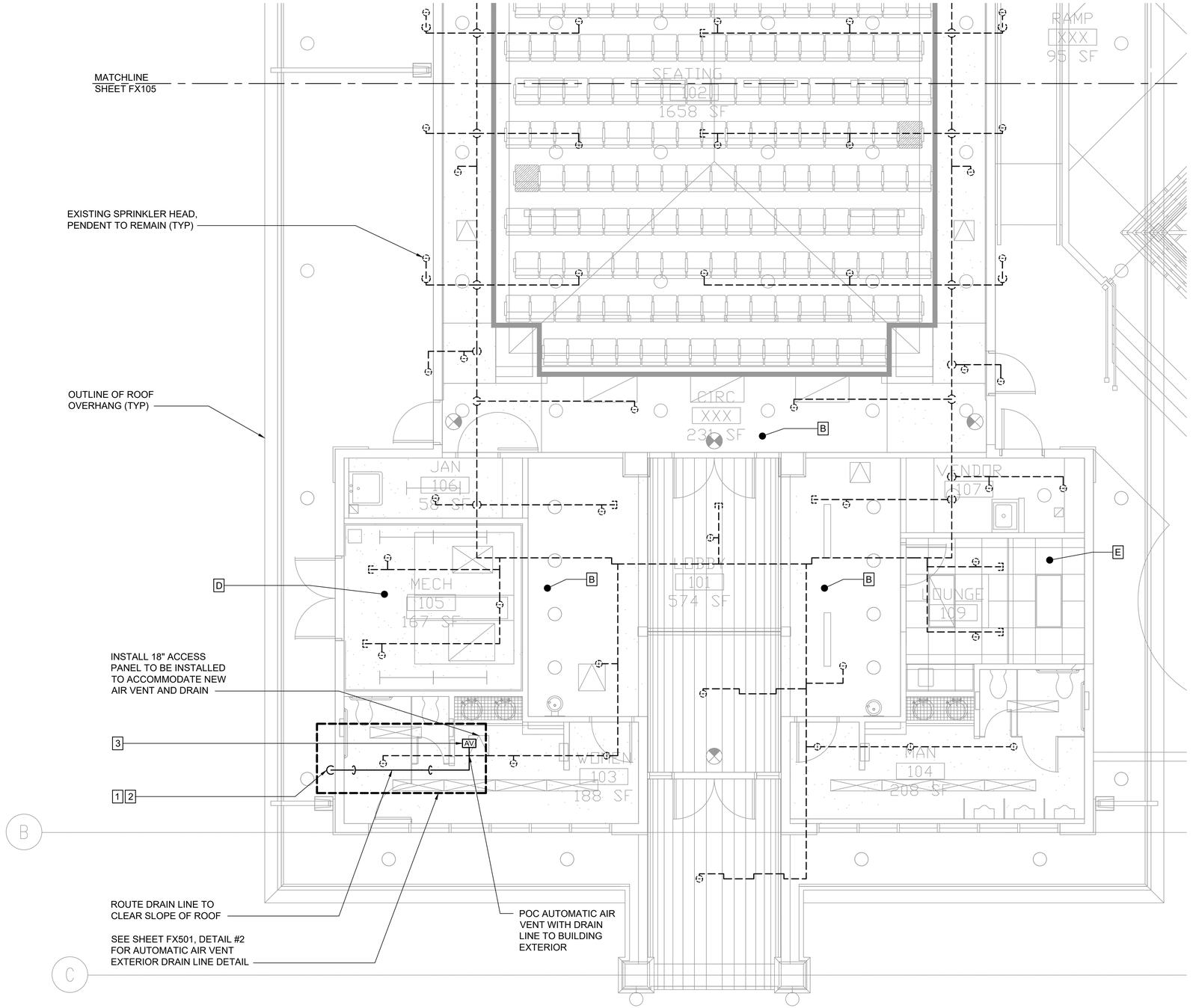
PHASE I:
RISK MITIGATION PROJECT

WAIMANALO, OAHU, HAWAII

B713 AUDITORIUM – FIRE SPRINKLER FLOOR PLAN

COFFMAN ENGINEERS		JOB NO.	DRAWING NO.
DESIGNED BY: TW	CHECKED BY: RTB	CA-202006-C	FX104
DRAWN BY: TW	APPROVED BY: JTH	DATE	SHEET 07
SCALE: AS NOTED		JUL 2022	OF 17 SHEETS

FILE_____ DRAWER_____ FOLDER_____



1 B713 AUDITORIUM - FIRE SPRINKLER PLAN

SCALE: 1/4" = 1'-0"

KEY PLAN - AUDITORIUM

PLAN NORTH

0 2' 4' 8' 16'

SCALE: 1/8" = 1'-0"

FIRE PROTECTION SYMBOLS & ABBREVIATIONS

EXISTING	NEW	DESCRIPTION
		PENDENT SPRINKLER, EXISTING TO REMAIN
		SIDEWALL SPRINKLER, EXISTING TO REMAIN
		WET PIPE FIRE SPRINKLER RISER, EXISTING TO REMAIN
		PIPE CAP, EXISTING TO REMAIN
		PIPE ELBOW UP, AS NOTED
		PIPE ELBOW DOWN, AS NOTED
		PIPE TEE DOWN, AS NOTED
		PIPE TEE UP, AS NOTED
	AV	AUTOMATIC AIR VENT

NEW WORK KEYED NOTES

REFER TO SHEETS F001 AND F002 FOR WORK SCOPE NOTES AND BID ITEMS BY BUILDING.

1 FIRE RISER: REPLACE EXISTING 4" FIRE SPRINKLER RISER INCLUDING BUT NOT LIMITED TO WATER MOTOR GONG, RETARD CHAMBER, FIRE DEPARTMENT CONNECTION, OS&Y VALVE, ALARM CHECK VALVE, TRIM PIPING, MAIN DRAIN, INSPECTORS TEST, AND TAMPER SWITCH. SEE SHEET FX403 FOR EXTENT OF DEMOLITION AND NEW INSTALLATION WORK POC. REPLACE SEISMIC RESTRAINTS. INSTALL NEW WATER FLOW SWITCH AND A NITROGEN FILLING CONNECTION. SEE DETAIL 1, WET PIPE SPRINKLER RISER, SHEET FX501.

2 AUTOMATIC AIR VENT DRAIN: ROUTE DRAIN LINE TO CLEAR MINIMUM 2" FROM FACE OF EIFS BAND. TERMINATE DRAIN LINE 12" ABOVE FINISH GRADE.

3 AUTOMATIC AIR VENT: LOCATE AND CONNECT AUTOMATIC AIR VENT VALVE ASSEMBLY NEAR HIGH POINT IN THE EXISTING FIRE SPRINKLER PIPING SYSTEM IN ACCORDANCE WITH NFPA 13, 16.7. CONTRACTOR MUST FIELD VERIFY PROPOSED LOCATION OF AIR VENT VALVE ASSEMBLY AND ASSOCIATED DRAIN PIPING TO CLEAR ALL OBSTRUCTIONS. PROVIDE FITTINGS AND HANGARS AS REQUIRED. SEE DETAIL 2, AUTOMATIC AIR VENT EXTERIOR DRAIN LINE, SHEET FX501.

EXISTING CEILING NOTES

B FLAT HARD CEILING WITH IN-LAY TYPE LIGHT FIXTURES

D ACOUSTICAL FOAM CEILING

E SUSPENDED CEILING WITH IN-LAY TYPE LIGHT FIXTURES

REV NO.	SYM.	DESCRIPTION	SHT__ OF___	DATE	APPROVED: DOD ADMINISTRATOR

ROBERT T. BIGTAS
LICENSED PROFESSIONAL ENGINEER
No. 10292-M
HAWAII, U.S.A.

This work was prepared by me or under my supervision, and construction of this project will be under my observation.

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DEPARTMENT OF DEFENSE
STATE OF HAWAII

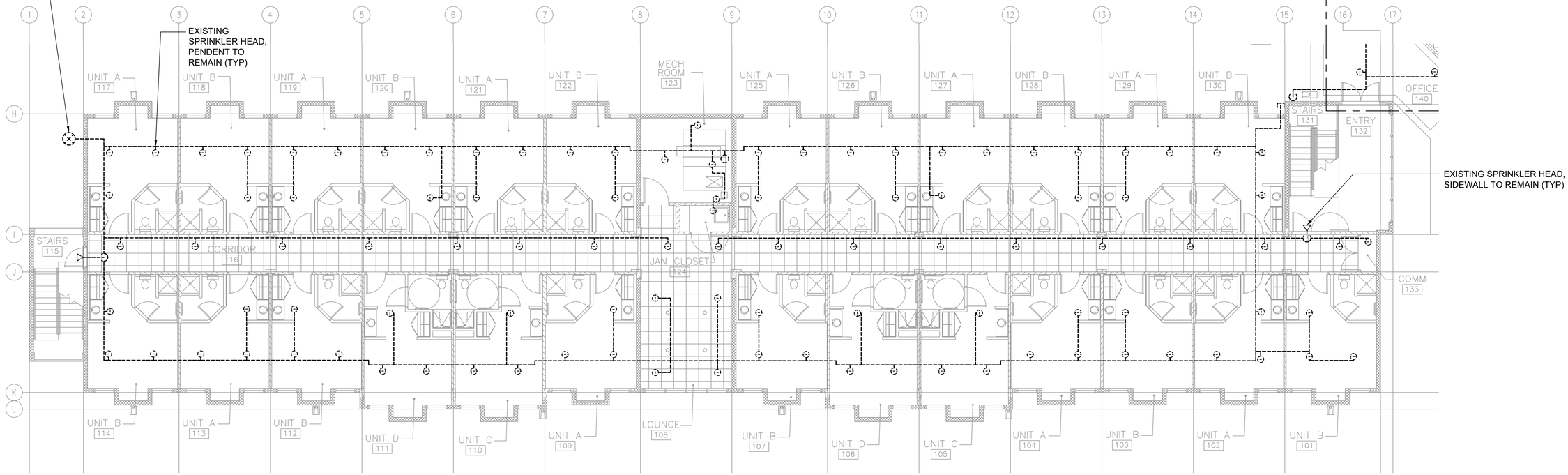
PHASE I:
RISK MITIGATION PROJECT

WAIMANALO, OAHU, HAWAII

B713 AUDITORIUM – FIRE SPRINKLER FLOOR PLAN

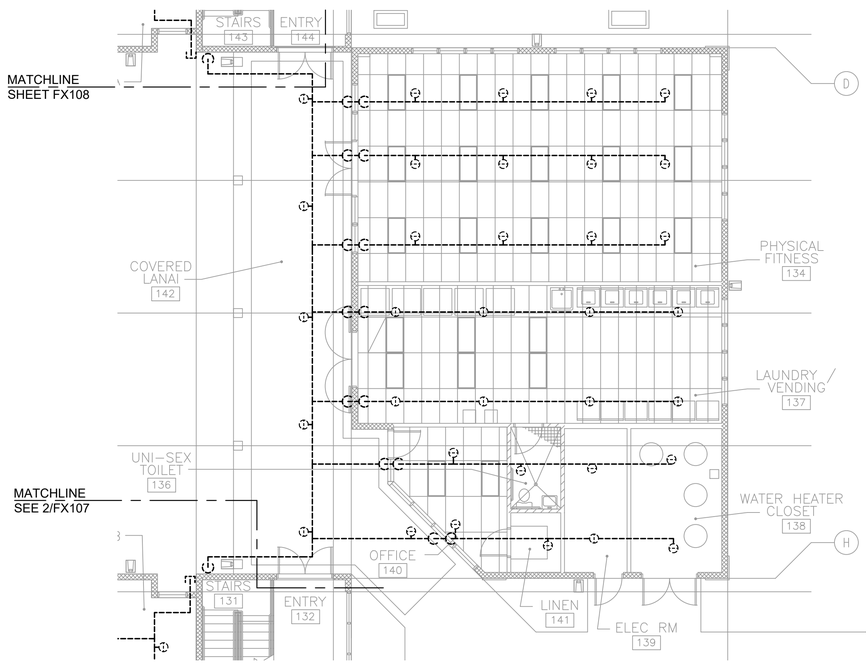
COFFMAN ENGINEERS		JOB NO.	DRAWING NO.
DESIGNED BY: TW	CHECKED BY: RTB	CA-202006-C	FX105
DRAWN BY: TW	APPROVED BY: JTH	DATE	SHEET 08
SCALE: AS NOTED		JUL 2022	OF 17 SHEETS

FILE_____ DRAWER_____ FOLDER_____



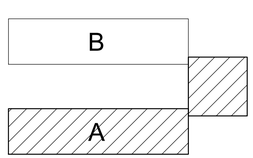
1 B714 BILLETS A FIRST FLOOR - FIRE SPRINKLER PLAN

SCALE: 1/8" = 1'-0"



2 B714 BILLETS A&B BREEZEWAY (PHYSICAL FITNESS AND LAUNDRY AREA) - FIRE SPRINKLER PLAN

SCALE: 1/8" = 1'-0"



KEY PLAN - BILLETS A&B FIRST FLOOR

PLAN NORTH

0 2' 4' 8' 16'

SCALE: 1/8" = 1'-0"

NEW WORK KEYED NOTES

REFER TO SHEETS F001 AND F002 FOR WORK SCOPE NOTES AND BID ITEMS BY BUILDING.

[1] FIRE RISER: REPLACE EXISTING 4" FIRE SPRINKLER RISER INCLUDING BUT NOT LIMITED TO WATER MOTOR GONG, RETARD CHAMBER, FIRE DEPARTMENT CONNECTION, OS&Y VALVE, ALARM CHECK VALVE, TRIM PIPING, MAIN DRAIN, INSPECTORS TEST, AND TAMPER SWITCH. SEE SHEET FX404 FOR EXTENT OF DEMOLITION AND NEW INSTALLATION WORK POC. REPLACE SEISMIC RESTRAINTS. INSTALL NEW WATER FLOW SWITCH AND A NITROGEN FILLING CONNECTION. SEE DETAIL 1, WET PIPE SPRINKLER RISER, SHEET FX501.

FIRE PROTECTION SYMBOLS & ABBREVIATIONS

EXISTING	NEW	DESCRIPTION
⊖		PENDENT SPRINKLER, EXISTING TO REMAIN
▽		SIDEWALL SPRINKLER, EXISTING TO REMAIN
⊗		WET PIPE FIRE SPRINKLER RISER, EXISTING TO REMAIN
⊓		PIPE CAP, EXISTING TO REMAIN
⊖---		PIPE ELBOW UP, AS NOTED
⊖---	⊂—	PIPE ELBOW DOWN, AS NOTED
--⊖--		PIPE TEE DOWN, AS NOTED
--⊕--		PIPE TEE UP, AS NOTED

REV NO.	SYM.	DESCRIPTION	SHT__ OF___	DATE	APPROVED: DOD ADMINISTRATOR

ROBERT T. BIGRAS LICENSED PROFESSIONAL ENGINEER No. 10292-M HAWAII, U.S.A.

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DEPARTMENT OF DEFENSE
STATE OF HAWAII

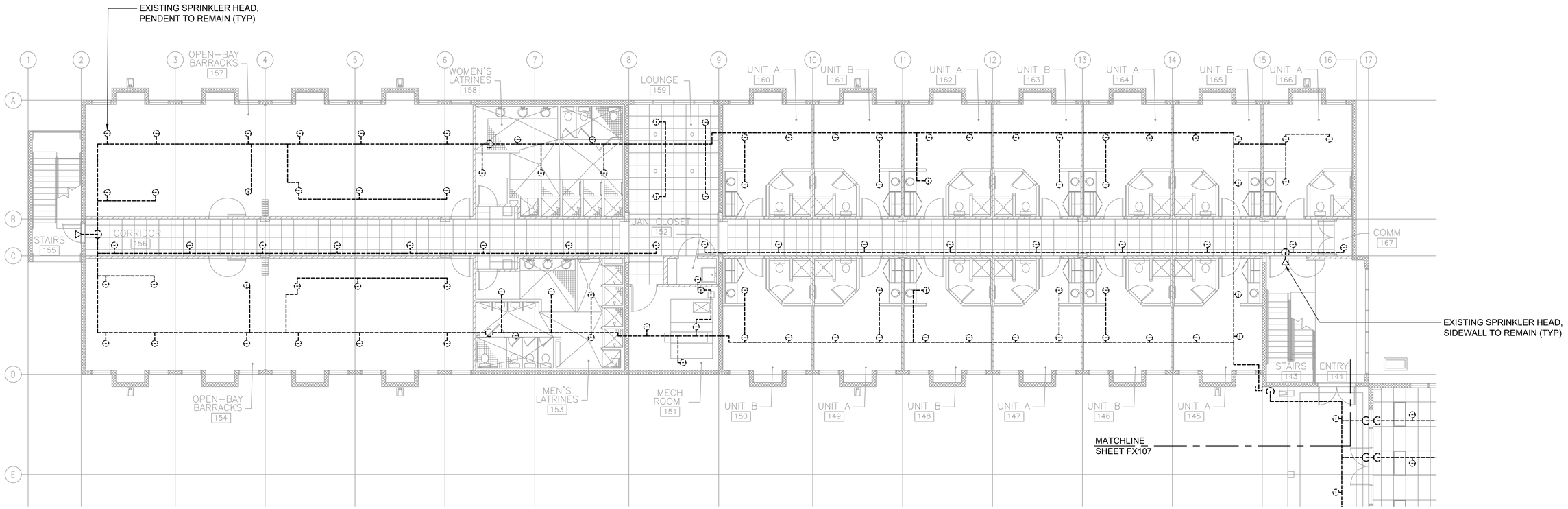
PHASE I:
RISK MITIGATION PROJECT

WAIMANALO, OAHU, HAWAII

B714 BILLETS A FIRST FLOOR AND BILLETS A&B BREEZEWAY FIRE SPRINKLER PLAN

COFFMAN ENGINEERS		JOB NO.	DRAWING NO.
DESIGNED BY: TW	CHECKED BY: RTB	CA-202006-C	FX106
DRAWN BY: TW	APPROVED BY: JTH	DATE	SHEET 09
SCALE: AS NOTED		JUL 2022	OF 17 SHEETS

FILE_____ DRAWER_____ FOLDER_____



1 B714 BILLETS B FIRST FLOOR - FIRE SPRINKLER PLAN

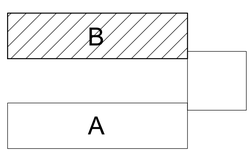
SCALE: 1/8" = 1'-0"

FIRE PROTECTION SYMBOLS & ABBREVIATIONS		
EXISTING	NEW	DESCRIPTION
⊖		PENDENT SPRINKLER, EXISTING TO REMAIN
▽		SIDEWALL SPRINKLER, EXISTING TO REMAIN
⌐		PIPE CAP, EXISTING TO REMAIN
⊖---		PIPE ELBOW UP, AS NOTED
⊖---	⊖—	PIPE ELBOW DOWN, AS NOTED
--⊖--		PIPE TEE DOWN, AS NOTED
--⊖--		PIPE TEE UP, AS NOTED

NEW WORK KEYED NOTES

REFER TO SHEETS F001 AND F002 FOR WORK SCOPE NOTES AND BID ITEMS BY BUILDING.

BILLETS B NEW WORK NOTES:
NO NEW WORK AT BILLETS B 1ST FLOOR IN PHASE I. THIS PLAN INCLUDED IN PROJECT DRAWINGS FOR REFERENCE INFORMATION ONLY. EXISTING RISER AT BILLETS A TO BE REPLACED. THIS RISER SERVES BILLETS A AND B. SEE SHEET FX106 FOR RISER LOCATION.



KEY PLAN - BILLETS A&B FIRST FLOOR

PLAN NORTH

0 2' 4' 8' 16'
SCALE: 1/8" = 1'-0"

REV NO.	SYM.	DESCRIPTION	SHT__ OF___	DATE	APPROVED: DOD ADMINISTRATOR

ROBERT T. BIGHAM LICENSED PROFESSIONAL ENGINEER No. 10292-M HAWAII, U.S.A.

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DEPARTMENT OF DEFENSE
STATE OF HAWAII

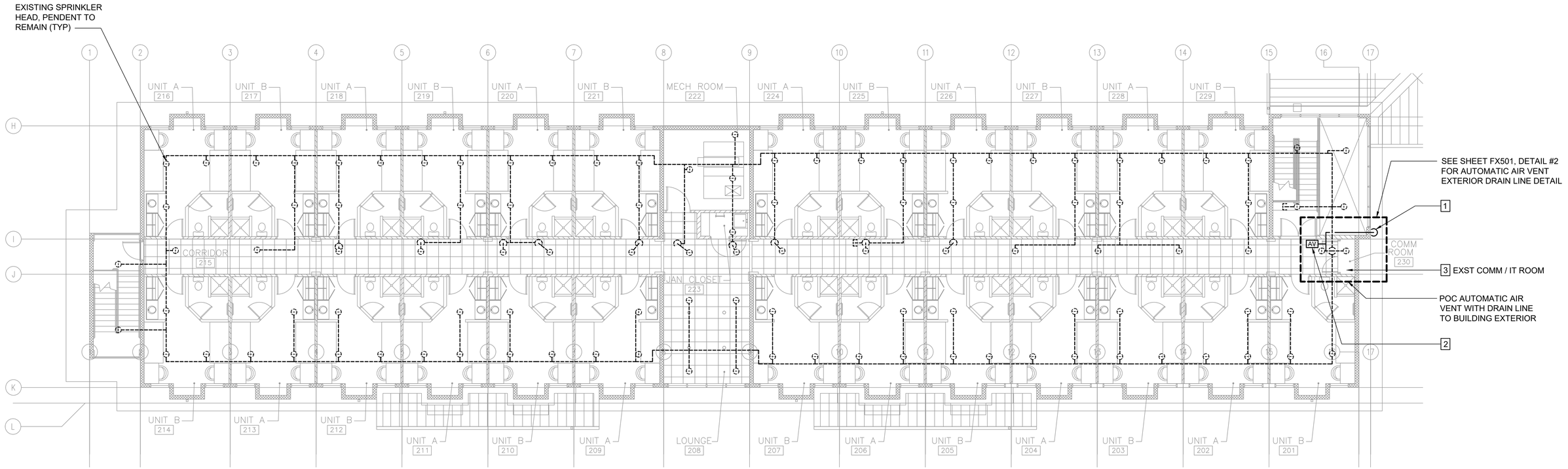
PHASE I:
RISK MITIGATION PROJECT

WAIMANALO, OAHU, HAWAII

B714 BILLETS B FIRST FLOOR – FIRE SPRINKLER PLAN

COFFMAN ENGINEERS		JOB NO.	DRAWING NO.
DESIGNED BY: TW	CHECKED BY: RTB	CA-202006-C	FX107
DRAWN BY: TW	APPROVED BY: JTH	DATE	SHEET 10
SCALE: AS NOTED		JUL 2022	OF 17 SHEETS

FILE_____ DRAWER_____ FOLDER_____



1 B714 BILLETS A SECOND FLOOR - FIRE SPRINKLER PLAN

SCALE: 1/8" = 1'-0"

NEW WORK KEYED NOTES

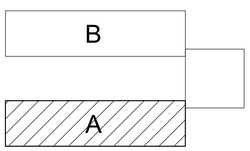
REFER TO SHEETS F001 AND F002 FOR WORK SCOPE NOTES AND BID ITEMS BY BUILDING.

1 AUTOMATIC AIR VENT DRAIN: ROUTE DRAIN LINE TO CLEAR MINIMUM 2" FROM FACE OF EIFS BAND. TERMINATE DRAIN LINE 12" ABOVE FINISH GRADE.

2 AUTOMATIC AIR VENT: LOCATE AND CONNECT AUTOMATIC AIR VENT VALVE ASSEMBLY NEAR HIGH POINT IN THE EXISTING FIRE SPRINKLER PIPING SYSTEM IN ACCORDANCE WITH NFPA 13, 16.7. CONTRACTOR MUST FIELD VERIFY PROPOSED LOCATION OF AIR VENT VALVE ASSEMBLY AND ASSOCIATED DRAIN PIPING TO CLEAR ALL OBSTRUCTIONS. PROVIDE FITTINGS AND HANGARS AS REQUIRED. SEE DETAIL 2, AUTOMATIC AIR VENT EXTERIOR DRAIN LINE, SHEET FX501.

3 EXST COMM / IT ROOM: DO NOT ROUTE DRAIN LINE THROUGH THIS SPACE.

FIRE PROTECTION SYMBOLS & ABBREVIATIONS		
EXISTING	NEW	DESCRIPTION
		PENDENT SPRINKLER, EXISTING TO REMAIN
		SIDEWALL SPRINKLER, EXISTING TO REMAIN
		PIPE CAP, EXISTING TO REMAIN
		PIPE ELBOW UP, AS NOTED
		PIPE ELBOW DOWN, AS NOTED
		PIPE TEE DOWN, AS NOTED
		PIPE TEE UP, AS NOTED
	AV	AUTOMATIC AIR VENT



KEY PLAN - BILLETS A&B
FIRST FLOOR

PLAN NORTH

0 2' 4' 8' 16'
SCALE: 1/8" = 1'-0"

NOTES:

EXISTING RISER AT BILLETS A TO BE REPLACED. THIS RISER SERVES BILLETS A AND B. SEE SHEET FX106 FOR RISER LOCATION.

BILLETS A, 2ND FLOOR: LIMITED WORK TO INSTALL AUTOMATIC AIR VENT WITH DRAIN LINE.

REV NO.	SYM.	DESCRIPTION	SHT__ OF__	DATE	APPROVED: DOD ADMINISTRATOR

ROBERT T. BIGTAS LICENSED PROFESSIONAL ENGINEER No. 10292-M HAWAII, U.S.A.

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DEPARTMENT OF DEFENSE
STATE OF HAWAII

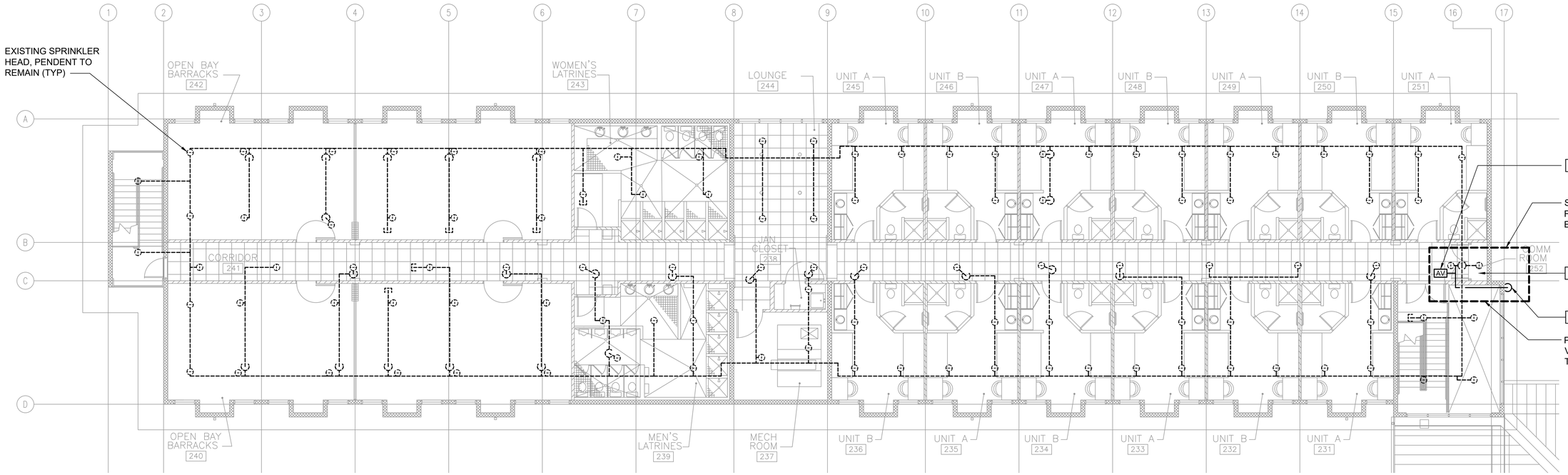
PHASE I:
RISK MITIGATION PROJECT

WAIMANALO, OAHU, HAWAII

B714 BILLETS A SECOND FLOOR – FIRE SPRINKLER PLAN

COFFMAN ENGINEERS		JOB NO.	DRAWING NO.
DESIGNED BY: TW	CHECKED BY: RTB	CA-202006-C	FX108
DRAWN BY: TW	APPROVED BY: JTH	DATE JUL 2022	SHEET 11 OF 17 SHEETS
SCALE: AS NOTED			

FILE_____ DRAWER_____ FOLDER_____



1 B714 BILLETS B SECOND FLOOR - FIRE SPRINKLER PLAN

SCALE: 1/8" = 1'-0"

NEW WORK KEYED NOTES

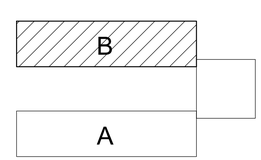
REFER TO SHEETS F001 AND F002 FOR WORK SCOPE NOTES AND BID ITEMS BY BUILDING.

1 AUTOMATIC AIR VENT DRAIN: ROUTE DRAIN LINE TO CLEAR MINIMUM 2" FROM FACE OF EIFS BAND. TERMINATE DRAIN LINE 12" ABOVE FINISH GRADE.

2 AUTOMATIC AIR VENT: LOCATE AND CONNECT AUTOMATIC AIR VENT VALVE ASSEMBLY NEAR HIGH POINT IN THE EXISTING FIRE SPRINKLER PIPING SYSTEM IN ACCORDANCE WITH NFPA 13, 16.7. CONTRACTOR MUST FIELD VERIFY PROPOSED LOCATION OF AIR VENT VALVE ASSEMBLY AND ASSOCIATED DRAIN PIPING TO CLEAR ALL OBSTRUCTIONS. PROVIDE FITTINGS AND HANGARS AS REQUIRED. SEE DETAIL 2, AUTOMATIC AIR VENT EXTERIOR DRAIN LINE, SHEET FX501.

3 EXST COMM / IT ROOM: DO NOT ROUTE DRAIN LINE THROUGH THIS SPACE.

FIRE PROTECTION SYMBOLS & ABBREVIATIONS		
EXISTING	NEW	DESCRIPTION
		PENDENT SPRINKLER, EXISTING TO REMAIN
		SIDEWALL SPRINKLER, EXISTING TO REMAIN
		PIPE CAP, EXISTING TO REMAIN
		PIPE ELBOW UP, AS NOTED
		PIPE ELBOW DOWN, AS NOTED
		PIPE TEE DOWN, AS NOTED
		PIPE TEE UP, AS NOTED
	AV	AUTOMATIC AIR VENT



KEY PLAN - BILLETS A&B FIRST FLOOR

PLAN NORTH

0 2' 4' 8' 16'

SCALE: 1/8" = 1'-0"

NOTES:

EXISTING RISER AT BILLETS A TO BE REPLACED. THIS RISER SERVES BILLETS A AND B. SEE SHEET FX106 FOR RISER LOCATION.

BILLETS B, 2ND FLOOR: LIMITED WORK TO INSTALL AUTOMATIC AIR VENT WITH DRAIN LINE.

REV NO.	SYM.	DESCRIPTION	SHT__ OF___	DATE	APPROVED: DOD ADMINISTRATOR

ROBERT T. BIGRAS LICENSED PROFESSIONAL ENGINEER No. 10292-M HAWAII, U.S.A.

This work was prepared by me or under my supervision, and construction of this project will be under my observation.

License Exp: 04/30/2024

DEPARTMENT OF DEFENSE
STATE OF HAWAII

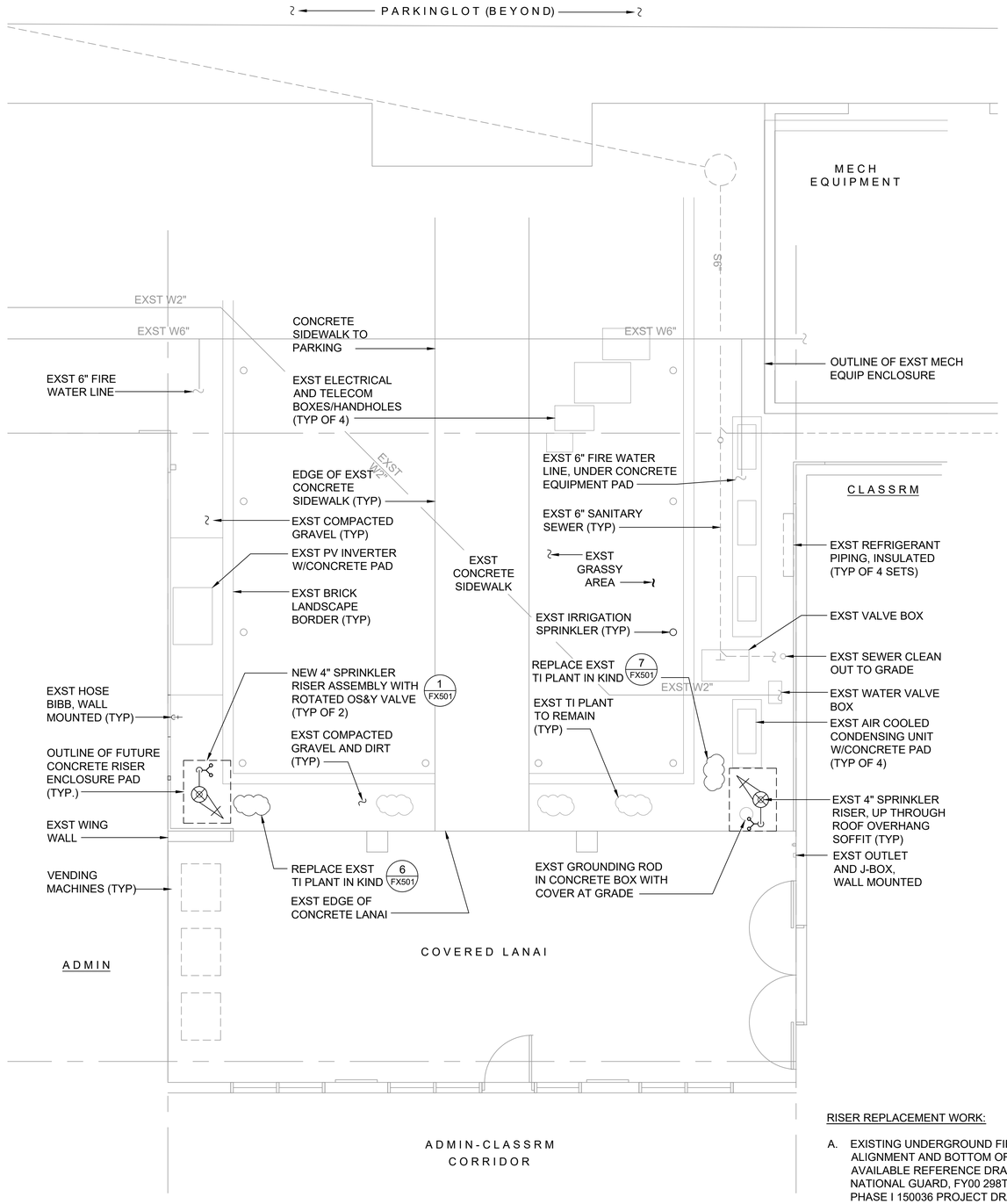
PHASE I:
RISK MITIGATION PROJECT

WAIMANALO, OAHU, HAWAII

B714 BILLETS B SECOND FLOOR – FIRE SPRINKLER PLAN

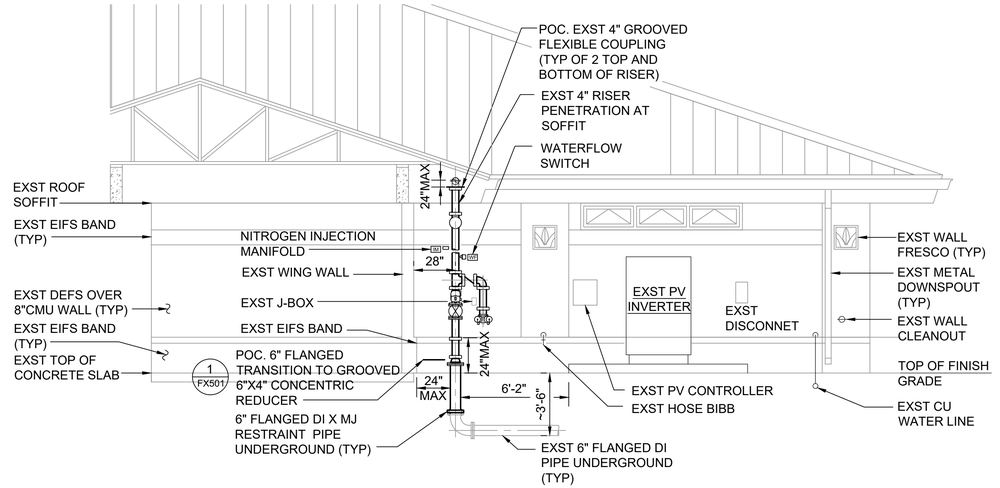
COFFMAN ENGINEERS		JOB NO.	DRAWING NO.
DESIGNED BY: TW	CHECKED BY: RTB	CA-202006-C	FX109
DRAWN BY: TW	APPROVED BY: JTH	DATE	SHEET 12
SCALE: AS NOTED		JUL 2022	OF 17 SHEETS

FILE_____ DRAWER_____ FOLDER_____



1 B711 ADMINISTRATION - CLASSROOM - NEW WORK PLAN

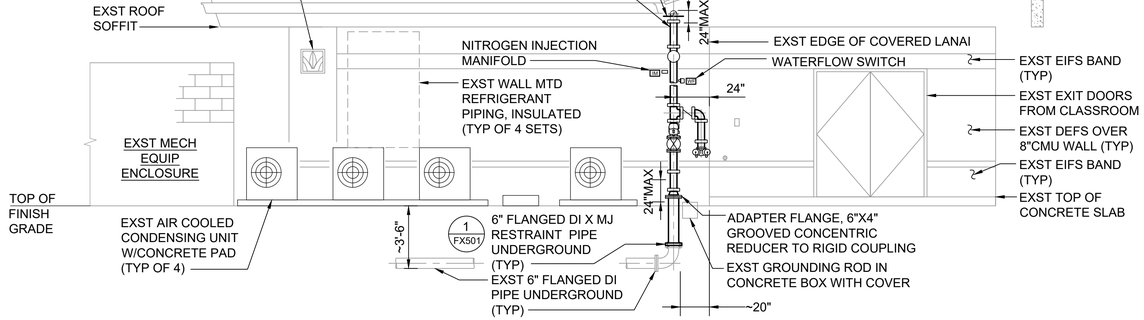
SCALE: 1/4" = 1'-0"



2 B711 ADMINISTRATION - ELEVATION

SCALE: 1/4" = 1'-0"

NOTES:
1. SEE RISER REPLACEMENT WORK NOTES BELOW.
2. REFER TO WET PIPE SPRINKLER RISER NOTES ON DETAIL 1, SHEET FX501 RELATED TO CONDITIONS AT ADMINISTRATION BUILDING.
3. REFER TO SHEET F001 FOR BID ITEM NOTES FOR ADMINISTRATIVE BUILDING.



3 B711 CLASSROOM - ELEVATION

SCALE: 1/4" = 1'-0"

NOTES:
1. SEE RISER REPLACEMENT WORK NOTES BELOW.
2. REFER TO WET PIPE SPRINKLER RISER NOTES ON DETAIL 1, SHEET FX501 RELATED TO CONDITIONS AT CLASSROOM BUILDING.

RISER REPLACEMENT WORK:

A. EXISTING UNDERGROUND FIRE WATER SUPPLY PIPING SIZE, ALIGNMENT AND BOTTOM OF PIPE DEPTH TAKEN FROM BEST AVAILABLE REFERENCE DRAWINGS PROVIDED BY HAWAII ARMY NATIONAL GUARD, FY00 298TH REGIONAL TRAINING INSTITUTE PHASE I 150036 PROJECT DRAWINGS, DATED 3-28-2000.
B. ALL UNDERGROUND RISER REPLACEMENT WORK MUST BE COORDINATED WITH THE STATE'S REPRESENTATIVE PRIOR TO START OF NEW WORK. CONTRACTOR MUST CAREFULLY EXCAVATE BY HAND TO VERIFY EXISTING FIRE WATER LINE PIPE MATERIAL, LOCATION, ALIGNMENT AND DEPTH.
C. VERIFY THAT NEW WORK CAN BE INSTALLED AS SHOWN OR NOTIFY THE STATE'S REPRESENTATIVE OF ANY DISCREPANCIES PRIOR TO START OF NEW WORK.

BID ITEMS FOR CLASSRM BUILDING:

CONTRACTOR WILL INCLUDE A LINE ITEM FOR THE COST OF MATERIALS AND INSTALLATION OF THE FOLLOWING ITEMS.

DESCRIPTION	QTY	UNIT
PIPE 3-INCH ID, BLACK STEEL, SCH 10	150	LF
PIPE, 1-1/2 INCH ID, BLACK STEEL, SCH 40	150	LF
PIPE, 1-INCH ID, BLACK STEEL, SCH 40	150	LF
FITTING 3-INCH , COUPLING, RUBBER GASKETED GROOVED-END	30	EA
FITTING, TEE, 3-INCH X 1-1/2 INCH OUTLET, RUBBER GASKETED GROOVED-END	30	EA
FITTING TEE, 1-1/2 x 1 INCH OUTLET, RUBBER GASKETED GROOVED-END	15	EA
PIPE HANGAR 3-INCH, ADJUSTABLE SWIVEL	30	EA
PIPE HANGAR 1-1/2 INCH, ADJUSTABLE SWIVEL	30	EA
STANDARD PENDENT SPRINKLER HEAD, MATCH EXST.	2	EA

PLAN NORTH

0 2' 4' 6'

SCALE: 1/4" = 1'-0"

REV NO.	SYM.	DESCRIPTION	SHT__ OF__	DATE	APPROVED: DOD ADMINISTRATOR

ROBERT T. BIGTAS LICENSED PROFESSIONAL ENGINEER No. 10292-M HAWAII, U.S.A.

This work was prepared by me or under my supervision, and construction of this project will be under my observation.

License Exp: 04/30/2024

DEPARTMENT OF DEFENSE
STATE OF HAWAII

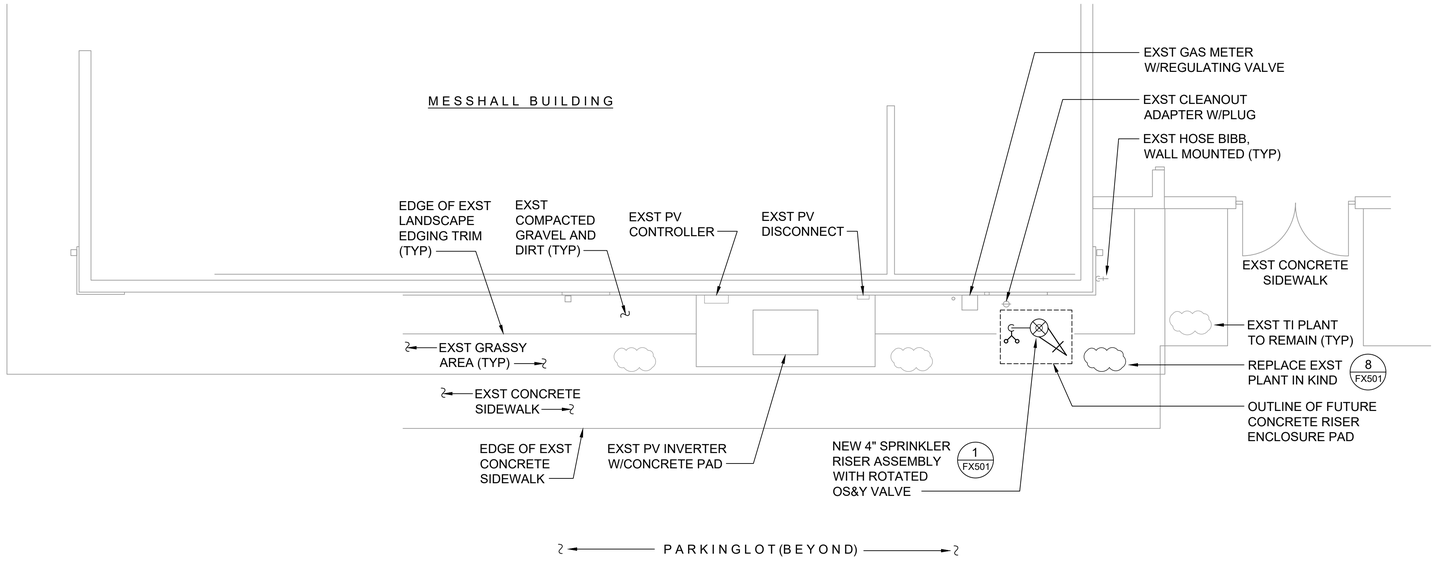
PHASE I:
RISK MITIGATION PROJECT

WAIMANALO, OAHU, HAWAII

B711 ADMINISTRATION & CLASSROOM
FIRE SPRINKLER FLOOR PLAN

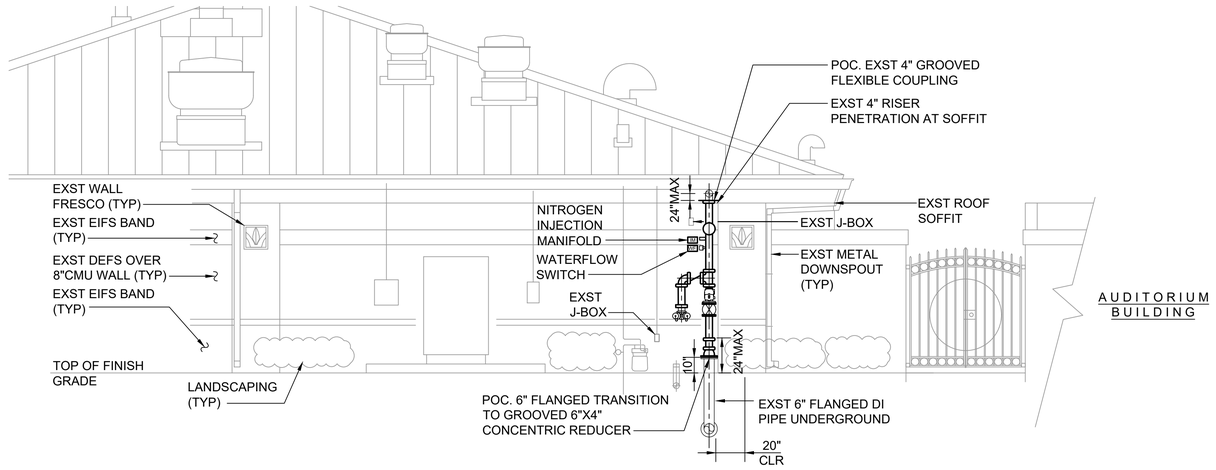
COFFMAN ENGINEERS		JOB NO.	DRAWING NO.
DESIGNED BY: TW	CHECKED BY: RTB	CA-202006-C	FX401
DRAWN BY: TW	APPROVED BY: JTH	DATE	SHEET 13
SCALE: AS NOTED		JUL 2022	OF 17 SHEETS

FILE_____ DRAWER_____ FOLDER_____



1 B712 MESS HALL - NEW WORK PLAN

SCALE: 1/4" = 1'-0"



2 B712 MESS HALL - ELEVATION

SCALE: 1/4" = 1'-0"

PLAN NORTH

0 2' 4' 6'

SCALE: 1/4" = 1'-0"

REV NO.	SYM.	DESCRIPTION	SHT__ OF__	DATE	APPROVED: DOD ADMINISTRATOR

ROBERT T. BIGTAS
LICENSED PROFESSIONAL ENGINEER
No. 10292-M
HAWAII, U.S.A.

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License Exp: 04/30/2024

DEPARTMENT OF DEFENSE
STATE OF HAWAII

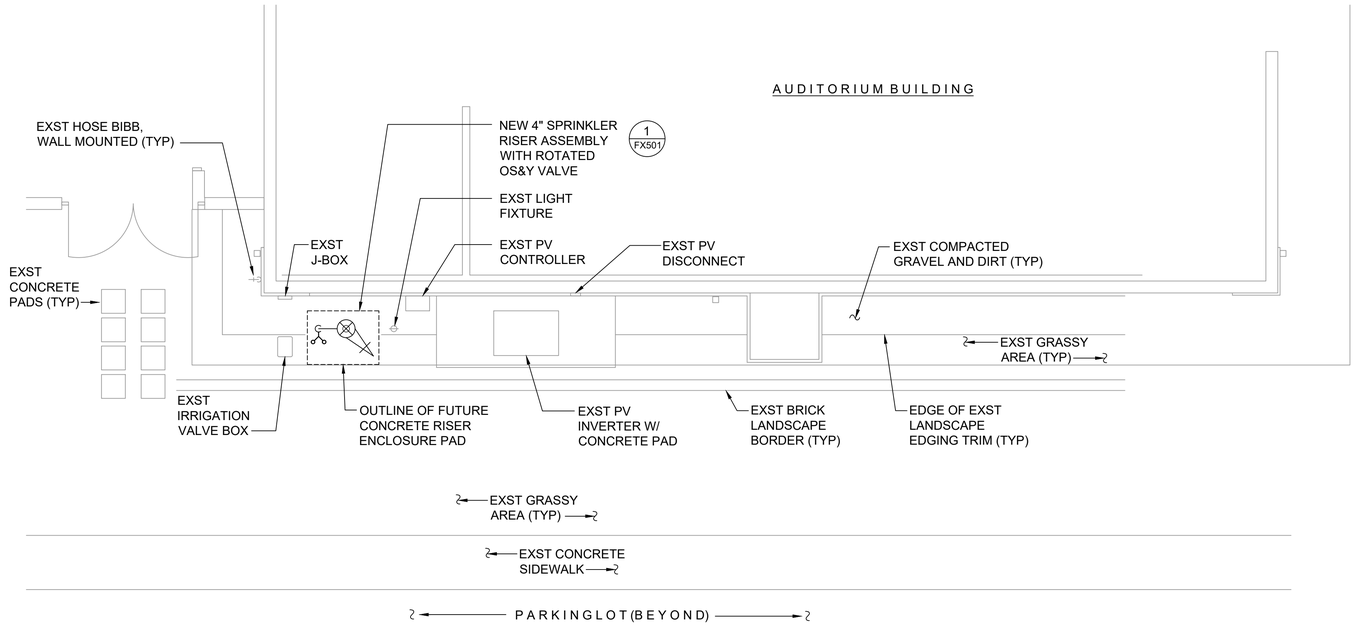
PHASE I:
RISK MITIGATION PROJECT

WAIMANALO, OAHU, HAWAII

B712 ENLARGED FLOOR PLAN AND EXTERIOR ELEVATION
MESS HALL

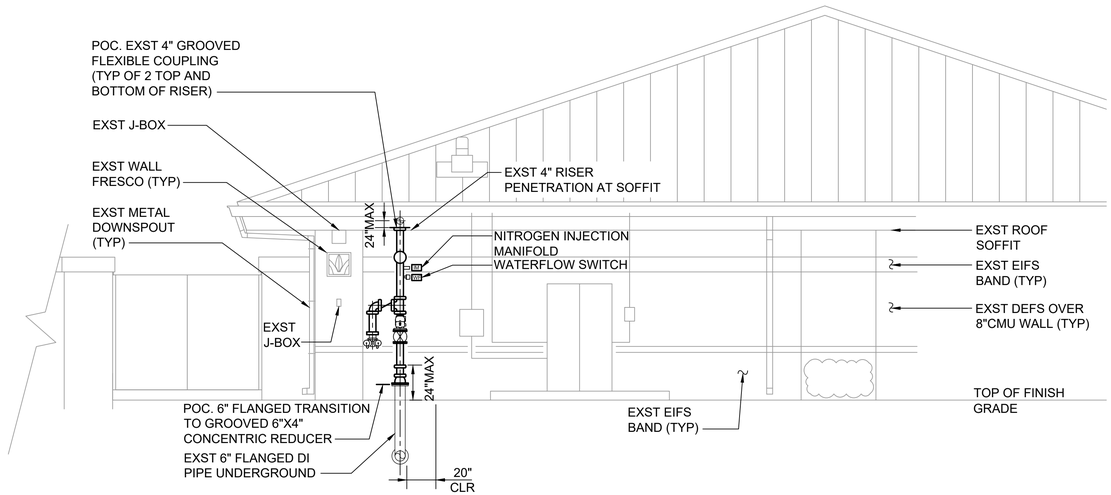
COFFMAN ENGINEERS		JOB NO.	DRAWING NO.
DESIGNED BY: TW	CHECKED BY: RTB	CA-202006-C	FX402
DRAWN BY: TW	APPROVED BY: JTH	DATE	SHEET 14
SCALE: AS NOTED		JUL 2022	OF 17 SHEETS

FILE_____ DRAWER_____ FOLDER_____



1 B713 AUDITORIUM - NEW WORK PLAN

SCALE: 1/4" = 1'-0"



2 B713 AUDITORIUM - ELEVATION

SCALE: 1/4" = 1'-0"

PLAN NORTH

0 2' 4' 6'

SCALE: 1/4" = 1'-0"

REV NO.	SYM.	DESCRIPTION	SHT__ OF__	DATE	APPROVED: DOD ADMINISTRATOR

ROBERT T. BIGTAS
LICENSED PROFESSIONAL ENGINEER
No. 10292-M
HAWAII, U.S.A.

This work was prepared by me or under my supervision, and construction of this project will be under my observation.

License Exp: 04/30/2024

DEPARTMENT OF DEFENSE
STATE OF HAWAII

PHASE I:
RISK MITIGATION PROJECT

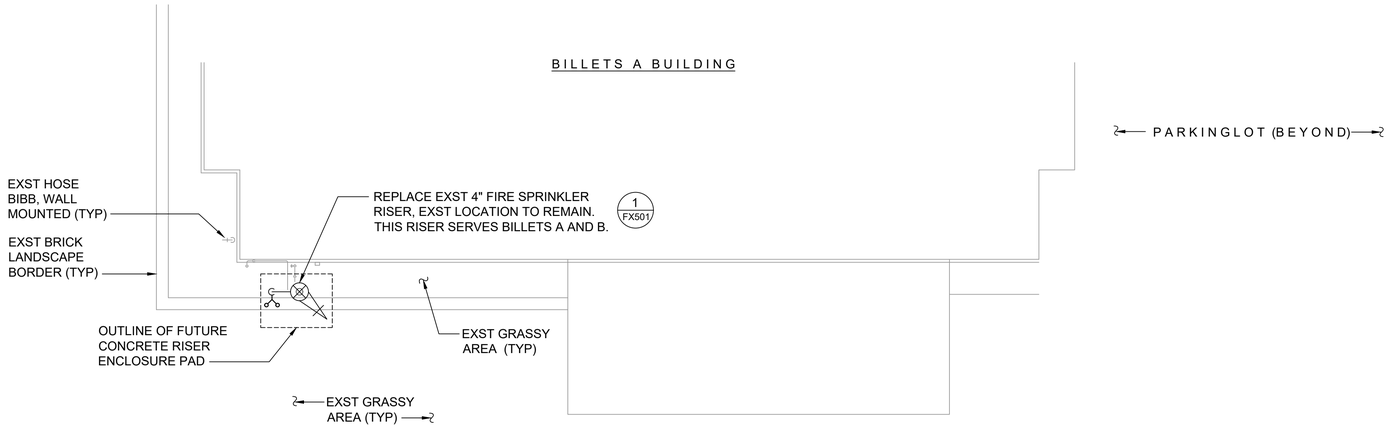
WAIMANALO, OAHU, HAWAII

B713 ENLARGED FLOOR PLAN AND EXTERIOR ELEVATION AUDITORIUM

COFFMAN ENGINEERS

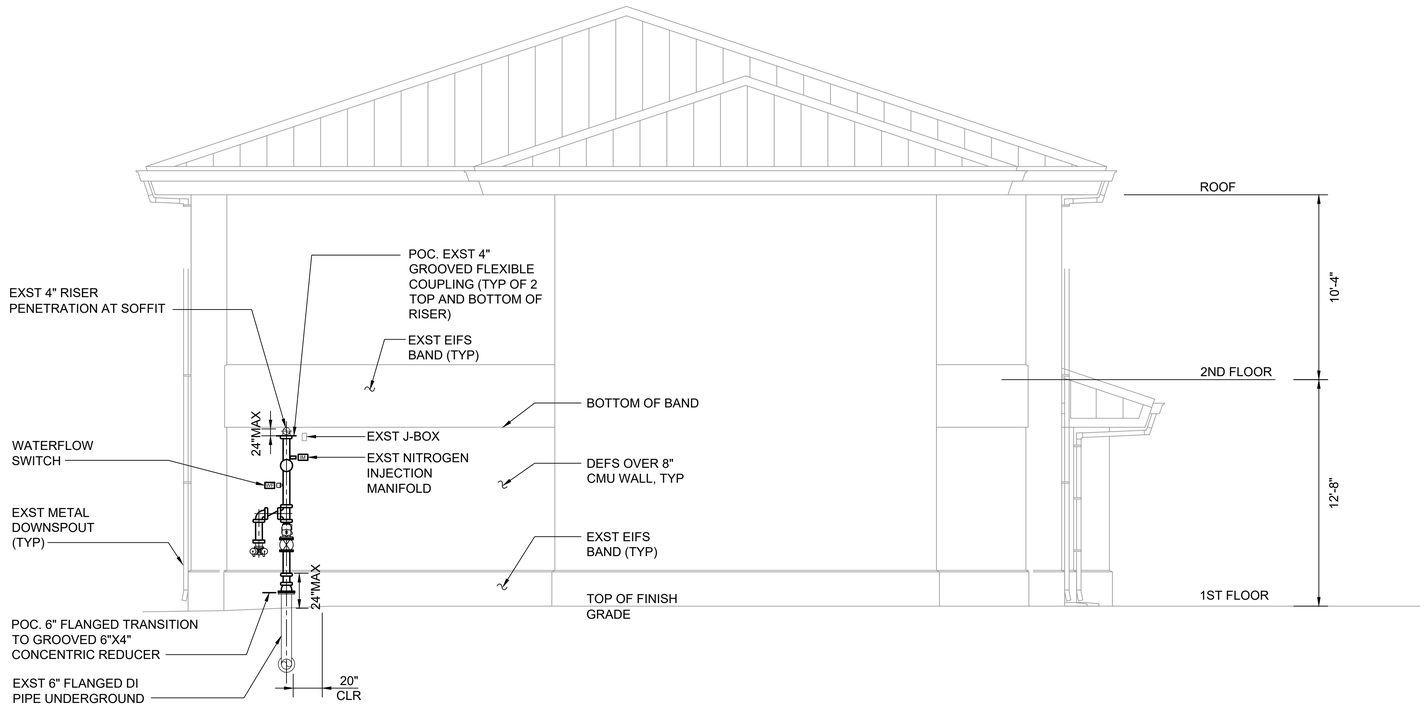
DESIGNED BY:	CHECKED BY:	JOB NO.	DRAWING NO.
TW	RTB	CA-202006-C	FX403
DRAWN BY: TW	APPROVED BY: JTH	DATE	SHEET 15
SCALE: AS NOTED		JUL 2022	OF 17 SHEETS

FILE_____ DRAWER_____ FOLDER_____



1 B714 BILLETS A&B - NEW WORK PLAN

SCALE: 1/4" = 1'-0"



2 B714 BILLETS A&B - ELEVATION

SCALE: 1/4" = 1'-0"

PLAN NORTH

0 2' 4' 6'

SCALE: 1/4" = 1'-0"

GENERAL NOTES FOR BILLETS (WING A, WING B, LAUNDRY & PHYSICAL FITNESS) BUILDING:

1. FIRE SPRINKLER RISER SHOWN SERVES BILLET WING 'A', BILLET WING 'B', AND ADJOINING LAUNDRY & PHYSICAL FITNESS SPACES

BID ITEMS FOR BILLETS A BUILDING, LAUNDRY AND PHYSICAL FITNESS AREAS:

CONTRACTOR WILL INCLUDE A LINE ITEM FOR THE COST OF MATERIALS AND INSTALLATION OF THE FOLLOWING ITEMS.

DESCRIPTION	QTY	UNIT
PIPE 3-INCH ID, BLACK STEEL, SCH 10	100	LF
PIPE, 1-1/2 INCH ID, BLACK STEEL, SCH 40	100	LF
PIPE, 1-INCH ID, BLACK STEEL, SCH 40	100	LF
FITTING 3-INCH , COUPLING, RUBBER GASKETED GROOVED-END	20	EA
FITTING, TEE, 3-INCH X 1-1/2 INCH OUTLET, RUBBER GASKETED GROOVED-END	20	EA
FITTING TEE, 1-1/2 x 1 INCH OUTLET, RUBBER GASKETED GROOVED-END	10	EA
PIPE HANGAR 3-INCH, ADJUSTABLE SWIVEL	20	EA
PIPE HANGAR 1-1/2 INCH, ADJUSTABLE SWIVEL	20	EA
STANDARD PENDENT SPRINKLER HEAD, MATCH EXST.	2	EA

REV NO.	SYM.	DESCRIPTION	SHT__ OF___	DATE	APPROVED: DOD ADMINISTRATOR

ROBERT T. BIGTAS
LICENSED PROFESSIONAL ENGINEER
No. 10292-M
HAWAII, U.S.A.

This work was prepared by me or under my supervision, and construction of this project will be under my observation.

License Exp: 04/30/2024

DEPARTMENT OF DEFENSE
STATE OF HAWAII

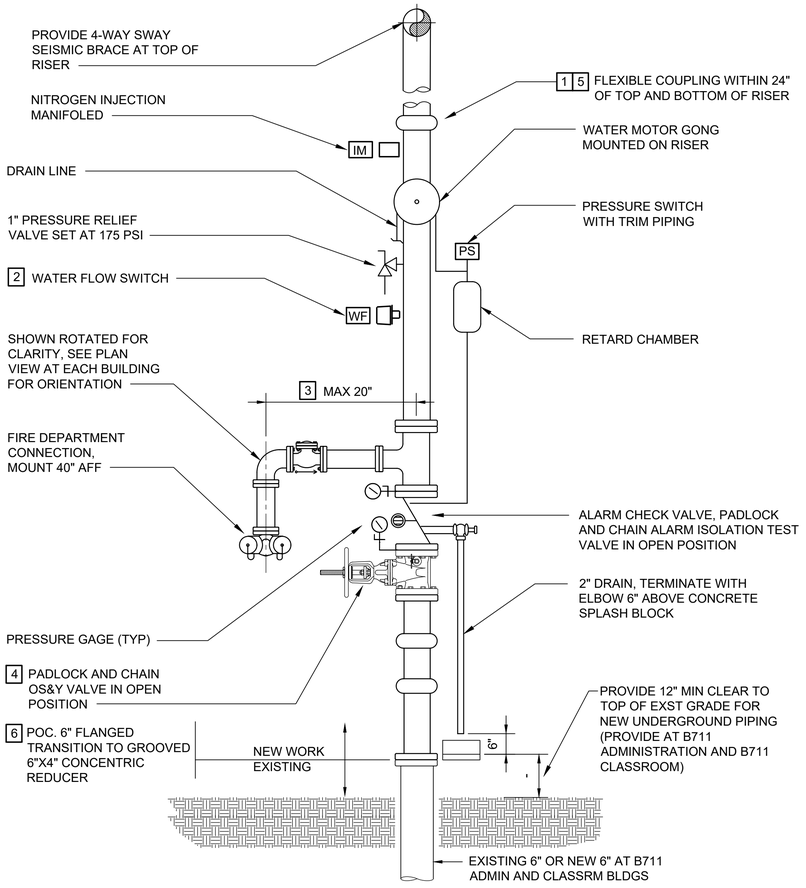
PHASE I:
RISK MITIGATION PROJECT

WAIMANALO, OAHU, HAWAII

B714 ENLARGED FLOOR PLAN AND EXTERIOR ELEVATION
BILLETS A & B

COFFMAN ENGINEERS		JOB NO.	DRAWING NO.
DESIGNED BY: TW	CHECKED BY: RTB	CA-202006-C	FX404
DRAWN BY: TW	APPROVED BY: JTH	DATE	SHEET 16
SCALE: AS NOTED		JUL 2022	OF 17 SHEETS

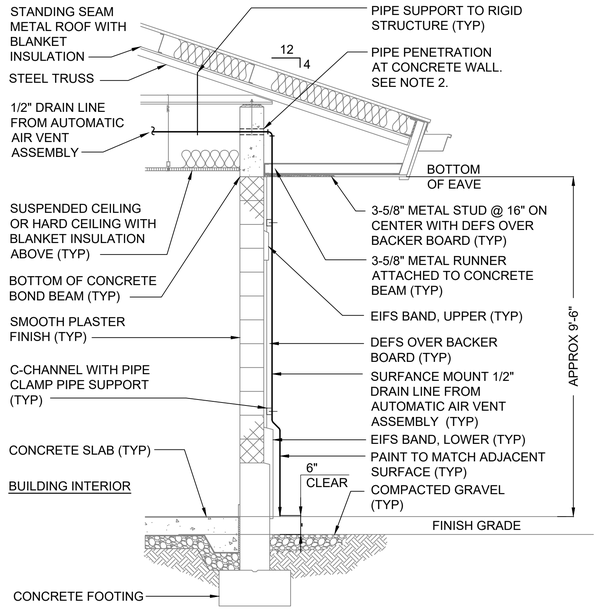
FILE_____ DRAWER_____ FOLDER_____



1 WET PIPE FIRE SPRINKLER RISER DETAIL
SCALE: NTS

WET PIPE FIRE SPRINKLER RISER NOTES: TYPICAL AT EACH BUILDING

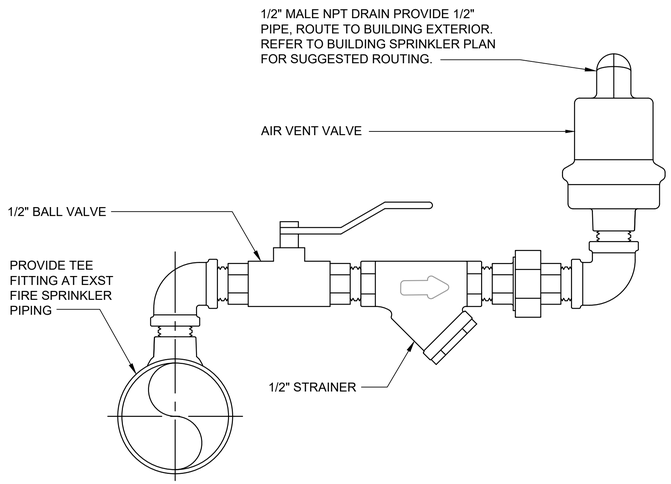
1. PHASE I: CONTRACTOR MUST FIELD VERIFY CONFIGURATION OF EXST TOP OF RISER TO FLEXIBLE CONNECTION PRIOR TO START OF ANY WORK.
2. PHASE I WORK INCLUDES DEVICE AND INSTALLATION ON RISER ONLY. DEVICE WILL NOT BE ENERGIZED.
3. CONTRACTOR MUST LIMIT DISTANCE FROM CENTER LINE OF FIRE DEPARTMENT CONNECTION TO CENTER LINE OF RISER TO 20-INCHES.
4. CONTRACTOR MUST CLEARLY SHOW ORIENTATION AND DISTANCE TO END STEM OF PROPOSED OS&Y IN SHOP DRAWINGS.
5. TOP OF RISER MAY BE ABOVE ROOF OVERHANG OR SOFFIT. CONTRACTOR MUST FIELD VERIFY CONDITION AT EACH BUILDING RISER. FLEXIBLE COUPLING MUST BE INSTALLED WITHIN 24-INCHES OF TOP OF RISER.
6. CONTRACTOR MUST FIELD VERIFY EXISTING AND NEW WORK POINT OF CONNECTION AT EACH RISER. SEE NOTE 7 (DETAIL 4) AND NOTE 8 (DETAIL 5) FOR ADMINISTRATION AND CLASSROOM BUILDING RISER CONDITIONS.
7. B711 ADMINISTRATION BUILDING: TOP OF 6-INCH FLANGE FOR UNDERGROUND PORTION OF RISER IS LESS THAN 8-INCHES ABOVE EXISTING FINISH GRADE. CONTRACTOR MUST REPLACE EXISTING UNDERGROUND PORTION OF RISER TO TOP OF EXISTING TOP OF FLANGED 1/4 BEND ELBOW AT BASE OF RISER. SEE PHOTO 4 BELOW.
8. B711 CLASSROOM BUILDING: 4-INCH RISER EXPOSED AT GRADE APPEARS TO CONTINUE DOWN TO TOP OF EXISTING FLANGED 1/4 BEND AT BASE OF RISER. CONTRACTOR MUST REPLACE EXISTING UNDERGROUND PORTION OF RISER TO TOP OF EXISTING TOP OF FLANGED 1/4 BEND ELBOW AT BASE OF RISER. SEE PHOTO 5 BELOW.
9. B714 BILLETS A: EXISTING RISER TO BE REPLACED, EXISTING LOCATION TO REMAIN. THIS RISER SERVES BILLETS A AND B.
10. B711 ADMINISTRATION BUILDING: COUPLING AT UNDERGROUND AND ABOVEGROUND PIPE INTERFACE IS LESS THAN 12-INCHES ABOVE EXISTING FINISH GRADE. REPLACE EXISTING UNDERGROUND PIPING OF RISER TO TOP OF EXISTING TOP FLANGED 1/4 BEND ELBOW AT BASE OF RISER. SEE PHOTO 4.
11. B711 CLASSROOM BUILDING: COUPLING AT UNDERGROUND AND ABOVEGROUND PIPE INTERFACE IS LESS THAN 12-INCHES ABOVE EXISTING FINISH GRADE. REPLACE EXISTING UNDERGROUND PIPING OF RISER TO TOP OF EXISTING TOP FLANGED 1/4 BEND ELBOW AT BASE OF RISER. SEE PHOTO 5.



2 AUTOMATIC AIR VENT EXTERIOR DRAIN LINE
SCALE: 1/2"=1'-0"

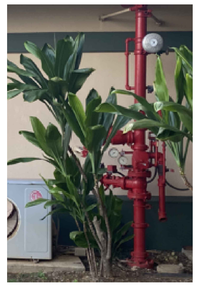
AUTOMATIC AIR VENT DRAIN LINE NOTES

1. COORDINATE PIPE PENETRATION WORK WITH BUILDING MANAGER. COMPLY WITH FACILITY REQUIREMENTS FOR LOUD WORK.
2. PIPE PENETRATION MUST BE IN ACCORDANCE WITH NFPA 13. FIRESTOP PIPE PENETRATION, PROVIDE STAINLESS STEEL ESCUTCHEON AT PIPE PENETRATION ON EXTERIOR SIDE OF BUILDING, PROVIDE CONTINUOUS ELASTOMERIC SEAL AROUND ESCUTCHEON.
3. ROUTE DRAIN LINE TO CLEAR EXISTING OBSTRUCTIONS BOTH INSIDE CEILING SPACE AND ALONG BUILDING EXTERIOR WALL SURFACES INCLUDING, BUT NOT LIMITED TO UPPER AND LOWER EIFS BANDS, SURFACE MOUNTED CONDUITS OR PIPES, AND STRUCTURAL FRAMING MEMBERS.
4. ROUTE DRAIN LINE TO CLEAR EXTERIOR WINDOW OR DOOR OPENINGS AND BUILDING SIGNAGE.
5. DISCHARGE DRAIN MUST TERMINATE A MINIMUM OF 6-INCHES ABOVE EXISTING COMPACTED GRAVEL BED OR GRASSY AREA.
6. PROVIDE PIPE SUPPORTS IN ACCORDANCE WITH NFPA 13.
7. PROVIDE PIPE SUPPORT FOR DRAIN LINE INCLUDING C-CHANNEL TO OFFSET PIPE FROM EXTERIOR WALL FACE TO CLEAR OBSTRUCTIONS. ATTACH DRAIN LINE WITH PIPE CLAMP TO C-CHANNEL. SECURE DRAIN LINE TO DEFS SURFACE ONLY. DO NOT ATTACH PIPE SUPPORT TO UPPER OR LOWER EIFS BANDS. PAINT PIPE AND PIPE SUPPORT TO MATCH ADJACENT AND ADJOINING SURFACE. STACK C-CHANNELS AS REQUIRED TO CLEAR EIFS BANDS. (TYP)



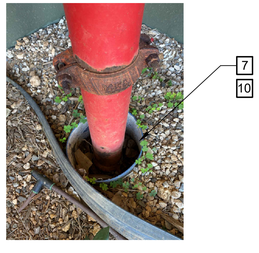
3 AUTOMATIC AIR VENT DETAIL
SCALE: NTS

6 B711 ADMINISTRATION EXST TI PLANT
SCALE: NONE



7 B711 CLASSROOM EXST TI PLANT
SCALE: NONE

8 B712 MESS HALL EXST PLANT
SCALE: NONE



4 B711 ADMIN BLDG - EXST RISER CONDITION AT GRADE
SCALE: NONE

5 B711 CLASSROOM - EXST RISER CONDITION AT GRADE
SCALE: NONE

REV NO.	SYM.	DESCRIPTION	SHT__ OF___	DATE	APPROVED: DOD ADMINISTRATOR

ROBERT T. BIGRAS LICENSED PROFESSIONAL ENGINEER No. 10292-M HAWAII, U.S.A.

This work was prepared by me or under my supervision, and construction of this project will be under my observation.

License Exp: 04/30/2024

DEPARTMENT OF DEFENSE
STATE OF HAWAII

PHASE I:
RISK MITIGATION PROJECT

WAIMANALO, OAHU, HAWAII

FIRE SPRINKLER DETAILS

COFFMAN ENGINEERS		JOB NO.	DRAWING NO.
DESIGNED BY: TW	CHECKED BY: RTB	CA-202006-C	FX501
DRAWN BY: TW	APPROVED BY: JTH	DATE: JUL 2022	SHEET 17 OF 17 SHEETS
SCALE: AS NOTED			

FILE_____ DRAWER_____ FOLDER_____