

STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
AIRPORTS

SPECIFICATIONS AND PROPOSAL  
FOR  
LIGHTNING WARNING SYSTEM  
DANIEL K. INOUE INTERNATIONAL AIRPORT  
HONOLULU, OAHU, HAWAII  
STATE PROJECT NO. CO1335-53

2023

**NOTICE TO BIDDERS**  
(Chapter 103D, HRS)

SEALED BIDS for LIGHTNING WARNING SYSTEM, DANIEL K. INOUE INTERNATIONAL AIRPORT, HONOLULU, OAHU, HAWAII, STATE PROJECT NO. CO1335-53, will begin as advertised on May 17, 2023, in HiePRO. Bidders are to register and submit bids through HiePRO only. See the following HiePRO link for important information on registering: <https://hiepro.ehawaii.gov/welcome.html>.

Deadline to submit bids is June 15, 2023, 2:00 P.M., Hawaii Standard Time (HST). The complete bid Proposal Schedule shall be uploaded into HiePRO prior to bid opening date and time. All other confidential and proprietary documents shall be uploaded separately. Failure to upload the bid Proposal Schedule into HiePRO shall be grounds for rejection of the bid. Bids received after said due date and time shall not be considered.

The scope of work consists of furnishing and installing a lightning warning system at Daniel K. Inouye International Airport, and related incidental work in accordance with the specifications. The estimated cost of construction is between \$900,000 and \$1,100,000.

To be eligible for award, bidders must possess a valid State of Hawaii Specialty Contractor's "C-13" License at the time of bidding.

The GENERAL PROVISIONS dated 2016 applicable to this project are available on the internet at <http://hidot.hawaii.gov/administration/con/>.

A pre-bid conference is scheduled for May 22, 2023, 10:00 A.M. HST, via Microsoft Teams. All prospective bidders or their representatives (employees) are encouraged to attend, but attendance is not mandatory. All bidders that wish to attend must send an email indicating their interest to Mr. Shaun Yamaki, our Airports State Project Manager, at

shaun.k.yamaki@hawaii.gov. They will be added to the Microsoft Teams attendance list and will be sent an invitation email with a Microsoft Teams web link and teleconference call-in number. This will allow each person to attend the pre-bid conference via the internet or they may call in. The deadline to sign up for the pre-bid conference is two (2) working days prior to the date of the pre-bid conference.

ALL requests for information shall be received in writing via HIEPRO prior to the Question Due Date in the General Information of the HIEPRO solicitation. Questions received after the deadline will not be addressed. Verbal requests for information will not receive a response.

Apprenticeship Preference. A 5% bid adjustment for bidders that are parties to apprenticeship agreements pursuant to §103-55.6, HRS, is applicable to this project.

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

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

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

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

The U.S. Department of Transportation Regulation entitled “Nondiscrimination in Federally-Assisted Programs of the U.S. Department of Transportation,” Title 49, Code of Federal Regulations (CFR), Part 21 is applicable to this project. Bidders are hereby notified that the Department of Transportation will affirmatively ensure that the contract entered into pursuant to this advertisement will be awarded to the lowest responsible bidder without discrimination on the grounds of race, color, national origin or sex (as directed by 23 CFR Part 200).

For additional information, contact Mr. Shaun Yamaki, our Airports State Project Manager at (808) 838-8713 or by email at [shaun.k.yamaki@hawaii.gov](mailto:shaun.k.yamaki@hawaii.gov).

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



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EDWIN H. SNIFFEN  
Director of Transportation

TABLE OF CONTENTS

	<u>Page</u>
Notice to Bidders.....	NTB 1 to NTB 3
Instructions for Contractor’s Licensing.....	HAI
Special Provisions.....	SP-1 to SP-12
Wage Rate Schedule (Not Physically included in the Bid Documents)	

SPECIFICATIONS

PART I - GENERAL PROVISIONS

General Provisions for Construction Projects, 2016 (Not physically included)

PART II – TECHNICAL PROVISIONS

DIVISION 1 - GENERAL REQUIREMENTS

SECTION 01010	DESCRIPTION OF WORK.....	01010-1 to 01010-8
SECTION 01300	SUBMITTALS .....	01300-1 to 01300-9
SECTION 01400	CONTRACTOR QUALITY CONTROL PROGRAM.....	01400-1 to 01400-9
SECTION 01524	CONSTRUCTION WASTE MANAGEMENT.....	01524-1 to 01524-8
	APPENDIX A.....	Tables 1, 2, and 3
SECTION 01533	BARRICADES.....	01533-1
SECTION 01560	ENVIRONMENTAL CONTROLS.....	01560-1 to 01560-6
SECTION 01561	CONSTRUCTION SITE RUNOFF CONTROL PROGRAM.....	01561-1 to 01561-21
SECTION 01562	MANAGEMENT OF CONTAMINATED MEDIAS .....	01562-1 to 01562-17
SECTION 01565	SECURITY MEASURES .....	01565-1 to 01565-3
SECTION 01580	TEMPORARY FACILITIES AND UTILITIES.....	01580-1 to 01580-2
SECTION 01700	MOBILIZATION, DEMOBILIZATION.....	01700-1 to 01700-2

DIVISION 2 – SITE WORK

SECTION 01715	EXISTING CONDITIONS – ASBESTOS /LEAD/HAZARDOUS MATERIAL SURVEY .....	01715-1 to 01715-3
---------------	---	--------------------

DIVISION 3 - CONCRETE

SECTION 03300	STRUCTURAL CONCRETE .....	03300-1 to 03300-15
---------------	---------------------------	---------------------

DIVISION 4 (NOT USED)

DIVISION 5 - METALS

SECTION 03300 STRUCTURAL STEEL ..... 05120-1 to 05120-13

DIVISION 6 to 12 (NOT USED)

DIVISION 13 – SPECIAL CONSTRUCTION

SECTION 13281 ASBESTOS ABATEMENT ..... 13281-1 to 13281-32

SECTION 13282 LEAD-CONTAINING PAINT  
CONTROL MEASURES ..... 13282-1 to 13282-14

SECTION 13286 ARSENIC CONTROL MEASURES ..... 13286-1 to 13286-10

SECTION 13287 PCB BALLASTS AND MERCURY  
CONTAINING LAMPS ABATEMENT ..... 13287-1 to 13287-15

SECTION 13288 TESTING AND AIR MONITORING ..... 13288-1 to 13288-5

DIVISION 14 to 15 (NOT USED)

DIVISION 16 – ELECTRICAL

SECTION 16010 GENERAL ELECTRICAL  
REQUIREMENTS ..... 16010-1 to 16010-12

SECTION 16050 ELECTRICAL BASIC  
MATERIALS AND METHODS ..... 16050-1 to 16050-14

Requirements of Chapter 104, HRS (eH104-3, Rev 04/21) ..... 1 to 2

Proposal ..... P-1 to P-6

Proposal Schedule ..... P-7 to P-8

Surety Bid Bond (r11/17/98)

FORMS

Performance Bond (Surety)

Performance Bond

Labor and Material Payment Bond (Surety)

Labor and Material Payment Bond

Chapter 104, HRS Compliance Certification

Certification of Compliance for State Resident (ACT 192, SLH 2011)  
Provisions to be Included in Construction Procurement Solicitation

## **INSTRUCTIONS FOR CONTRACTOR'S LICENSING**

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

STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
AIRPORTS

SPECIAL PROVISIONS

## SPECIAL PROVISIONS

The following additional amendments to the General Provisions are applicable to this project:

### 1.3 DEFINITIONS is amended as follows:

The following definition shall be deleted in its entirety and replaced with the following:

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

Add the following to 1.3 Definitions:

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

### 2.7 REQUEST FOR SUBSTITUTION OF SPECIFIED MATERIALS AND EQUIPMENT BEFORE BIG OPENING is amended as follows:

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

“Where a bidder intends to use a material or equipment of an unspecified brand, make, or model, the bidder must submit a request to the Department for review and approval at the earliest date possible. Requests shall be submitted via email to the Contact person listed in HIePRO for the solicitation and also posted as a question in HIePRO under the question/answer tab referencing the email with the request. The request must be posted in HIePRO no later than seventeen (17) calendar days before the bid opening date, not including the bid opening date.”

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

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

### 2.8 PREPARATION AND DELIVERY OF BID is amended as follows:

Last Paragraph (line 189 to 192) shall be replaced with the following:

“The bidder shall submit the proposal in HIePRO. The

proposal shall be UPLOADED to HIePRO prior to the bid opening date and time. Proposals received after said due date and time shall not be considered. Original (wet ink) proposal documents are not required to be submitted. The award will be made based on proposals uploaded in HIePRO. Any and all other additional documents explicitly designated and labeled as CONFIDENTIAL OR PROPRIETARY shall be UPLOADED SEPARATELY to HIePRO. If there is a conflict between this specification and its HIePRO solicitation, the specifications shall govern and control unless otherwise specified."

2.11 BID SECURITY is amended as follows:

Delete (a) in its entirety and replace with the following:

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

- (1) A deposit of legal tender;
- (2) A valid surety bid bond, underwritten by a company licensed to issue bonds in the State of Hawaii; or
- (3) A certificate of deposit; credit union share certificate; or cashier's, treasurer's, teller's, or official check drawn by or a certified check accepted by a bank, savings institution, or credit union insured by the Federal Deposit Insurance Corporation (FDIC) or the National Credit Union Administration (NCUA) and payable at sight or unconditionally assigned to the Department. These instruments may be utilized only to a maximum of one hundred thousand dollars (\$100,000.00). If the required amount totals over one hundred thousand dollars (\$100,000.00), more than one instrument not exceeding one hundred thousand dollars (\$100,000.00) each and issued by different financial institutions shall be accepted.

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

uploaded to HIePRO.

2.12 PRE-OPENING MODIFICATION OR WITHDRAWAL OF BIDS is amended as follows:

Delete 2.12 PRE-OPENING MODIFICATION OR WITHDRAWAL OF BIDS in its entirety and replace with the following:

"2.12 PRE-OPENING MODIFICATION OF WITHDRAWAL OF BIDS. A bidder may withdraw or modify a proposal after the bidder submits the proposal in HIePRO. Withdrawal or modification of proposal must be completed before the time set for the receiving of bids."

2.14 PUBLIC OPENING OF BIDS is amended by deleting 2.14 PUBLIC OPENING OF BIDS in its entirety.

4.12 UTILITIES AND SERVICES is amended as follows:

Add the following after the last paragraph:

"(e) Repairs and Outages.

- (1) The Contractor shall have available on 24-hour call sufficient specialty contractors, such as electrical and plumbing contractors, to repair any damage to existing facilities that might occur as a result of construction operations regardless of when the damage might occur.
- (2) Outage: Written requests for power outage, communication changes, and water and sewer connection outages shall be submitted to the Engineer at least seven (7) days in advance or as specified in other sections of these specifications. Outages will be restricted to non-peak operational hours between midnight and 6:00 a.m."

7.21 PUBLIC CONVENIENCE AND SAFETY - is hereby added to the General Provisions:

"It shall be especially noted by the Contractor that the area directly adjacent to the existing in use runways and taxiways, is an extremely hazardous area and that very strict controls will apply throughout the entire period required to complete all work within 500 feet from the edge of an in use runway and 180 feet from the edge of an in use taxiway.

The Contractor shall familiarize himself with the Airport Certification Manual available for review at the Airport Manager's Office and shall comply with its requirements.

The Contractor is responsible for the security of access points to the Airport Operational Area that are located within

the limits of construction and will be fined \$1,000 per incident for any breach of security at these locations. All gates leading into the AOA shall be kept locked and if required to be open, the Contractor shall provide professional security guards to attend gates. The guards must be approved by the Director and shall be required to attend a training session conducted by the Airport Manager prior to gate assignment."

8.20 LIMITATION OF OPERATIONS: is hereby added to the General Provisions:

"The following limitations shall be observed by the Contractor when operating within 75 feet from the edge of any taxiway.

General - The Contractor shall schedule his operations to minimize interference with the movement of aircraft or passengers as may be required by the Engineer. The Contractor shall be responsible to alert all of his personnel to the location of power and signal cables installed for the operation of the airport. The Contractor shall control his operations in a manner to preclude any possible damage to those cables. Utility companies shall be notified by the Contractor one week before commencement of work. The Contractor shall give notice to the Engineer in writing, at least 168 hours before operating within 75 feet from the edge of any taxiway and the Engineer will assure himself that the Airport Management personnel are notified in sufficient time to publish the warning (NOTAM). The Contractor shall immediately repair any damages to the existing perimeter fence to prevent inadvertent entry to the Airport Operation Area (AOA).

Work in Vicinity of Runways and Taxiways in Use - Under the terms of this contract, it is intended that work shall be completed without disturbing the paved surface of existing runways and taxiways, unless shown otherwise on the plans. Aircraft traffic shall not be interrupted. The Contractor shall schedule to work within 75 feet of the taxiway as directed by the Airport Management. No ruts, holes, or open trenches of 3 inches or more in depth and no objects or material 3 inches or more in height shall be permitted within the safety area when the airfield is in operation in conformance to Federal Aviation Regulation Part 139. The Contractor is also informed that Airport Zoning Regulations dictate that a 'clear zone' be maintained 500 feet on each side of an active runway, to be known as a hazardous area. The Contractor shall comply with all regulations governing ground operations within hazardous areas. The following FAA Advisory Circulars or later versions and FAA Regulations specify these requirements:

AC 150/5210-5C Painting, Marking, and Lighting Vehicles  
Used on an Airport, dated August 2007

AC 150/5340-1J Standards for Airport Markings

AC 150/5370-2E Operational Safety on Airports During  
Construction, dated 1/17/03

FAA Regulations Objects Affecting Navigable Airspace Part  
77

The Contractor shall keep all personnel and equipment off the areas not specifically designated for work under this Contract. At all times when the Contractor's equipment is not in use, the equipment shall be moved outside the hazardous areas to an area designated by the Engineer. Under no condition shall equipment be parked or material stored within the hazardous areas.

Failure on the part of the Contractor to abide by the above will result in suspension of work.

Authority of Control Tower Personnel - With the exception of actual construction methods, the airport control tower personnel will have full authority to control the Contractor's movements within the existing taxiway. When required, the Contractor shall maintain a constant radio vigil within all work areas and in addition shall keep at least one flagman on duty with the radio man. When notified by the control tower to temporarily halt operations, it shall be the duty of the flagman, through the use of appropriate methods (lighted flares shall not be used under any circumstances), to notify all operators of equipment and other personnel to cease work and move men and equipment off of hazardous areas.

Contractor shall provide, at his own expense, the necessary radio and equipment including a radio equipped mobile vehicle to maintain contact with control tower personnel at all times during job performance. A transceiver operating at a frequency designated by the Engineer to communicate with the Control Tower.

Marking of Hazardous Areas - The Engineer will designate areas that are hazardous for aircraft. The Contractor shall provide red blinker lights spaced not more than 50 feet apart around all hazardous areas and areas of work within 75 feet of any taxiway. Such systems shall be subject to approval by the Engineer. The Contractor shall have personnel on call 24 hours per day for the emergency maintenance of hazard markings.

The Contractor shall provide red flags not less than 20 inches square in addition to the red blinker lights. When danger flags are made of fabric, a wire stiffener shall be used to hold the flags in an extended position. Flags shall be so mounted that they do not produce a hazard. The red danger flags shall be

spaced not more than 50 feet apart around all areas of work within 75 feet of any taxiway.

All systems proposed by the Contractor for lighting and barricading shall be submitted to the Engineer for review prior to installation. The Contractor shall install all flags, lighting and barricades as required by the Engineer. Such systems shall be subject to approval by the Engineer.

Storage of Equipment and Materials - At the end of each working shift, all of the Contractor's equipment shall be withdrawn to an area designated by the Engineer. The Contractor shall park all equipment in an orderly fashion and place a sufficient number of red flasher lights to identify these areas.

Materials stored within the airport shall be so placed and the work shall, at all times, be so conducted as to cause no greater obstruction to the air and ground traffic than is considered necessary by the Engineer. No runways, taxiways or roadways shall be closed or opened, except by permission of the Engineer.

Blasting Operations - The Contractor shall notify the Engineer at least three (3) days before performing blasting operations as to the extent and timing of such operations, so that the Control Tower and other concerned parties can be informed.

Utilities - The Contractor shall provide for the protection of all utilities from damages in areas to be traversed by his vehicles and equipment. If required, buried cables and utility lines shall be protected by mounding earth over the cables or by any other method approved by the Engineer.

The Contractor shall notify representatives of the owner, agencies, and other affected organizations at least 48 hours prior to working in any area containing the facilities of these organizations.

Failure to notify the owning organization will prevent authorization to work in a specific area.

Archaeological Features - Any archaeological features such as petroglyphs, burial sites, and artifacts discovered or unearthed during the performance of the work shall immediately be brought to the attention of the Engineer and all work that would damage or destroy these features shall be discontinued. The Engineer will decide, after proper investigation, to salvage or abandon such artifacts."

8.21 OPERATION OF CONTRACTOR'S MOTOR VEHICLE AND PERSONNEL IN RESTRICTED AIR OPERATIONS AND MOVEMENT AREAS is hereby added to the General Provisions:

"The Contractor shall conform with the all sections of the "State of Hawaii, Department of Transportation, Airports Division, Contractor's Training Guide" pertaining to access and operation in the Airport Operation Area (AOA) hereinafter described as follows:

"A. Motor Vehicles in Airport Operation Area

For safety reasons, the operation of motor vehicles in the AOA must conform with all applicable State Airport rules and regulations."

B. Motor Vehicle Access Permit

Each motor vehicle operated in the AOA is required to:

1. Meet all State licensing registration and safety requirements and be specifically licensed for operation in the AOA.
2. Meet all insurance requirements.
3. Be restricted to operation by those persons qualified to drive the vehicle and in possession of a current Ramp Driver's License and applicable Motor Vehicle Operator's License.

C. The operators of motor vehicles in the AOA shall be responsible for meeting the following insurance requirements.

1. Licensed Vehicles

As a condition for authorization to enter the AOA, the Contractor shall provide evidence of vehicle liability insurance in the form of a Certificate of Insurance issued by an authorized insurance carrier. Automobile Liability and general Liability (combined single limit, Bodily Injury and Property Damage, per occurrence) shall be required in the applicable minimum limits specified below:

a. Daniel K. Inouye International Airport

- (1) Standard AOA clearance.... \$5,000,000
- (2) Limited AOA clearance..... \$1,000,000  
Limited AOA clearance is defined as operations restricted to Diamond head and Ewa Concourses second level roadways and connecting third level main terminal roadway

only, with entry and exit via Security Access Point "C" (Primary) and Access Point "A" (Secondary)

b. Other Airports

Standard AOA clearance.....\$1,000,000

Standard AOA clearance is defined as any portion of a public Airport from which the public is restricted by fences or appropriate signs and not leased or demised to anyone for exclusive use and shall include runways, taxiways, all ramp and apron areas, aircraft parking and storage areas, fuel storage areas, maintenance areas, and any other area of a public Airport used or intended to be used for landing, takeoff, or surface maneuvering of aircraft or used for embarkation or debarkation of passengers.

2. Unlicensed Vehicles

Airport Liability (or General Liability) shall be required in the applicable minimum limits specified below:

a. Daniel K. Inouye International Airport, Kahului Airport and Ellison Onizuka Kona International Airport at Keahole

AOA clearance..... \$5,000,000

b. All other Airports

AOA clearance..... \$1,000,000

3. Specifically name the State of Hawaii as additionally insured.

4. Indicate that the Airport Engineer will be provided with a 30-day written prior notice of policy cancellation or material change in coverage or conditions.

D. Operator's Permit

1. No person shall operate a motor vehicle on the AOA unless he holds and carries on his person a current Airport Motor Vehicle operator's permit issued by the State of Hawaii, Department of Transportation, Airports Division.

2. Operator's permits will only be issued to persons who apply through the Airport District Security Office and pass a written exam covering those portions of the Airport Rules and Regulation relating to the operation of vehicles in Airport Operations Areas.

E. Authorized Vehicles

1. Only vehicles considered operationally safe and necessary for the performance of this contract may be allowed to operate in the AOA.
2. All motor vehicles must be painted in such a manner so as to be easily identifiable and must carry the Contractor's name on each side. These signs may be of a temporary nature applied to the side windows or doors.

The lettering shall be in bold characters of a minimum of four (4) inches in height and one and one-half (1-1/2) inches in widths, the height of logos should be a minimum of six (6) inches.

3. The Contractor's operations on, over, across, and/or immediately adjacent to any runway and/or taxiway at a towered airport shall require the use of two-way radio communication. The Contractor shall obtain the necessary equipment at his own expense.
4. No person shall operate a motor vehicle on the AOA unless he holds and carries on his person a current Motor Vehicle Operator's Permit issued by the Airport Manager.
  - a. The Motor Vehicle Operator's Permit will be issued only to persons who apply through the Airport Security Section and pass a written exam covering those portions of the Airport Rules and Regulations relating to the operation of vehicles in the AOA.
  - b. Permits issued may be suspended or revoked for cause at any time by the Airports Division.

F. Airport Operation Area Construction Pass

1. Issuance of Airport Operation Area (AOA) Construction Passes shall be limited to contractors, subcontractors, companies, organizations, individuals engaged in authorized and approved construction activity which requires a continuing need for entry into the AOA or Airfield Movement Areas. Request letters for such passes must be made

to the Airport District Manager's Office in accordance with the Contractors Training Guide or applicable District requirements.

2. As a condition for security area clearance, applicants must comply with Transportation Security Regulation 1542 which requires a ten-year background Criminal History Records Check for those individuals employed under this contract.

G. Access to Movement Areas

1. Movement areas shall mean all of the runways and taxiways of the Airport which are utilized for taxiing, takeoff, and landing of aircraft.
  - a. Any vehicle which requires access to the movement area shall be equipped with operational radio equipment capable of positive two-way contact with Tower/Ground Control.
  - b. Operators of vehicles in movement areas must possess knowledge and familiarity with restricted and airfield movement areas, operational rules, regulations, and procedures, or be under direct escort by individuals meeting all of the above requirements.
2. Vehicle Operations on Movement Areas
  - a. No vehicle shall proceed across any runway unless specifically cleared by Tower/Ground Control.
  - b. The operator of a vehicle in the movement area shall not leave his vehicle unless continuous radio contact is maintained with the Tower/Ground Control while he is away from his vehicle.
  - c. Any vehicle proceeding onto the movement area between the hours of sunset and sunrise shall be equipped with an overhead flashing light which is visible for one (1) mile, unless such vehicle is being escorted by another vehicle so equipped.
  - d. All vehicles operated on the movement area between sunrise and sunset except those being escorted, shall operate an overhead amber or red flashing beacon visible for at least one (1) mile; or display a flag at least three (3) feet square with orange and white checkered squares

of not less than one (1) foot on each side.

H. Runway and Taxiway Closure

1. Requests for runway or taxiway closures, or for any work which affect operational conditions at the airport must be made in writing through the Airport Engineering Branch.
2. Temporarily closed runways require placement of yellow "X" markings (constructed of material such as fabric or plywood or other acceptable material) on top of the runway identification numerals at both ends of the closed runway.
3. Taxiway closures require placement of barricades with alternate orange and white markings at each end of the closed taxiway segment. Barricades must be supplemented with flashing red lights. The intensity of the lights and spacing for barricades, and lights must adequately define and delineate the hazardous area.

I. Gate Guards Furnished by Contractors

1. If a contractor is permitted by the airport to maintain operational control of an AOA Access Gate, entry through such gate shall be controlled by the posting of a gate guard.
  - a. Written instruction will be provided, outlining the guard's duties to enforce those requirements and provisions prescribed by the airport's security program to include all personnel and vehicle entry and access requirements.
  - b. Procedures will be established to identify the actions which will be undertaken by the guard in calling for assistance.
  - c. An approved emergency communications procedure will be established.

J. Compliance

1. The contractor shall comply with all regulations and rules governing the Air Operations Areas during construction, as specified in the following or later versions:
  - a. Hawaii Revised Statutes, Title 19, Administrative Rules for Public Airports.

- b. Federal Aviation Administration Advisory Circular AC 150/5340 1J
- j, Marking of Paved Areas on Airport; AC 150/5370-2E, Operational Safety on Airports During Constructions.

K. Enforcement Authorization

Act 21, Section 1, Section 261-17(a), HRS; Federal Aviation Administration Regulations, Part 139, Part 107.

L. Right of Rejection or Revocation

The State of Hawaii, Airports Division, reserves the right to withhold, deny or revoke any airport security clearance, licenses or permits to any individual or organization who fails to meet the prescribed or required access area clearance criteria to include background investigation information, or fails to observe or comply with established rules, regulations, and directives.

It should be clearly understood that such denial or revocation is based solely on airport security or safety considerations and does not in any way constitute a determination by the State with regard to private employment by any individual or organization."

- END OF SECTION -

STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
AIRPORTS

SPECIFICATIONS

STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HONOLULU, HAWAII

**SPECIFICATIONS**

**PART I**

**GENERAL PROVISIONS**

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

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

STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HONOLULU, HAWAII

**SPECIFICATIONS**

**PART II**

**TECHNICAL PROVISIONS**

DIVISION 1 – GENERAL REQUIREMENTS

SECTION 01010 – DESCRIPTION OF WORK

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

The General Provisions for Construction Projects (2016), Special Provisions and General Requirements of the Specifications, apply to the work specified in this section.

1.02 SCOPE OF WORK

- A. The work to be performed under this Contract consists of furnishing and paying for all machinery, tools, equipment, labor and materials necessary for a lightning warning system at Daniel K. Inouye International Airport (HNL) including all related work as indicated on the plans and herein in these specifications, complete, in place and ready for use.
- B. The work to be performed under this Contract shall also include preparing and obtaining all permits required to complete this project and other related works as called for on the plans and these specifications.

1.03 PERMITS

- A. The Contractor is responsible for any permits, if required, before starting the construction. DOTA anticipates that the following permits will be required for this project.

- 1. None at this time.

If any of these permits are found to be unnecessary, the Contractor shall provide documentation from the appropriate permitting agency showing that the permit is not required for this project before any construction operations take place.

- B. The Contractor is responsible for the preparing and submittal of application document(s) to the appropriate permitting agency, payment of application fee(s), and all other work necessary to obtain all required permit(s) prior to starting construction operations at the project site. Construction operations shall not start until all required permits are approved by the appropriate permitting agencies and copies submitted to the Engineer for the record.
  - C. Bidders are responsible for researching and confirming which permits are and are not necessary for this project. Bidders shall exercise due diligence in researching what permits, if any, are required beyond those mentioned in Part 1.03.A above. If a permit beyond those mentioned in

Part 1.03.A above is found to be necessary for this project, then bidders shall factor the additional cost of obtaining this permit into their bid. Permits that are found to be required after bid opening shall be obtained at no additional cost to the State.

- D. All fines levied against this project as a result of failing to apply for a required permit prior to starting work shall be borne entirely by the Contractor.
- E. All work necessary for researching permits, determining their necessity for this project, preparation and submittal of permit application document(s), payment of application fee(s), etc. up to the issuance of the approved permit(s) are considered incidental to the Contract.

#### 1.04 ALLOWANCE

- A. Allowance includes, but not limited to, works required for environmental measures, when required by the regulation(s); unforeseen conditions and other measures, such as temporary traffic controls, temporary safety measures, security measures, and material short supply when approved by the Engineer.
- B. Use the allowances only as directed by the Engineer for the airport's purposes and only be Change Orders that indicate amounts to be charged to the allowance.
- C. Contractor's overhead, profit, and related costs for products and equipment ordered by the Airport under the contingency allowance are included in the allowance and are not a part of the Contract Sum. These costs include delivery, installation, taxes, insurance, equipment rental, and similar costs.
- D. Change Orders authorizing use of funds from the contingency allowance will include Contractor's related costs and reasonable overhead and profit margins.
- E. At project closeout, any unused amounts remaining in the Allowance will be credited back to the State.

#### 1.05 HOURS OF WORK FOR CONSTRUCTION

- A. Work hours for construction are subject to the following:
  - 1. Normal work hours for are between 8:00 AM to 4:00 PM Monday to Friday. Bidders shall not assume that they will be given work windows during these hours. The Airport reserves the right to adjust work hours in order to provide minimum interruption to Airport Operations with no additional cost to the State.

2. Work hours shall be coordinated with the Airport Manager to provide minimum interruption to facility operations while performing work.
  3. The Contractor will be required to shift to night work, at no additional cost to the State, for any work that negatively impacts airport operations especially passenger movement and or comfort. Night work hours may be from Sunday night to Friday morning 10:00 PM to 6:00 AM the following day. However, starting and ending times as well as duration may be adjusted by the Airport Manager depending on the actual flight schedules and airport operational considerations. Contractor vehicles and equipment are not allowed on the aircraft apron fronting the terminal from midnight to 6:00 AM.
  4. Work hours shall be coordinated with the Airport Manager in order to protect the general public and airport employees from excessive dust and noise levels unless protective measures are taken by the Contractor (e.g. noise and/or dust control) to reduce the impact to a level acceptable to the Airport Manager.
- B. The Contractor shall work continuously throughout the project duration. The Contractor shall apply and receive approval from the Engineer in writing of all work occurring outside of normal work hours. The Contractor shall coordinate their schedule with the Engineer if rescheduling of work or intermittent work is required, such work shall be performed at no extra cost to the State. If the Contractor elects to work overtime, compensation for State employees and for State representatives, as authorized by the State, shall be in accordance with Article VII, Section 7.5 of the General Provisions.

1.06 SITE VISIT

- A. The Contractor shall visit the work site and verify all conditions pertinent to the Contract they are bidding on.

1.07 COORDINATION

- A. The Contractor shall coordinate the work of different trades and shall be solely responsible for fulfillment of requirements specified herein.

1.08 SAFETY

- A. The Contractor shall take all necessary precautions to protect all their workmen and all other personnel from injuries. The rules and regulations promulgated by the Occupational Safety and Health Acts are applicable and made a part of these specifications.
- B. During the progress of work, all debris, empty crates, waste, material

drippings, etc., shall be removed by the Contractor at the end of each workday, and the work area shall be left clean and orderly.

- C. Outage: Written requests for power outage shall be submitted to the Engineer at least seven (7) days in advance or as specified in other sections of these specifications. Outage will be restricted to non-peak operational hours.
- D. Barricades and warning signs shall be erected by the Contractor in the work area to properly protect all personnel in the area.

#### 1.09 VEHICLE PARKING

- A. Subject to availability of space and approval by the Airport Manager, parking may be made available for Contractor vehicle parking. The Contractor shall submit the parking requests for themselves and any subcontractors to the Airport Manager through the Engineer for review. Upon approval by the Airport Manager, a maximum of two (2) temporary parking passes per subcontractor and maximum of three (3) passes for the General Contractor will be issued at no charge. At the Airport Manager's discretion, the parking passes are good for either three (3) months or six (6) months and must be renewed before the passes expire.
- B. All passes will be signed out and become the responsibility of the General Contractor. The General Contractor will distribute the parking passes among their subcontractors.
- C. Additional parking passes beyond the temporary parking passes may be purchased. These passes are subject to approval by the Airport Manager and availability of parking spaces.
- D. All costs associated with obtaining parking passes shall be incidental to the Contract.

#### 1.10 PROVISIONS FOR FIELD OFFICE/STORAGE SPACE

- A. Bidders shall not assume that a field office and or storage space will be available on the Airport Property by the Notice to Proceed date. Pending the availability, the State may issue a permit to the Contractor for the use of a space within the Airport Property, at no charge, to be used specifically for a field office and/or storage of materials and equipment. The State will make every effort to provide the Contractor with space on airport property, however, should the State determine that no space is available for such use(s), the responsibility shall then be on the Contractor to find space outside of airport property at no additional cost to the State.

#### 1.11 PROTECTION OF EXISTING STRUCTURES AND IMPROVEMENTS

- A. The Contractor shall preserve and protect all structures, equipment, and vegetations on/or adjacent to the work site, which are not to be removed and which do not unreasonably interfere with the work required under this Contract. The Contractor shall only remove trees when specifically authorized to do so, and shall avoid damaging vegetation that will remain in place. If any limb or branches of trees are broken during Contract performance, or by the careless operations of equipment, or by workmen, the Contractor shall trim those limbs or branches with a clean cut and paint the cut with a tree-pruning compound as directed by the Engineer.
- B. The Contractor shall protect from damage all existing improvements and utilities at/or near the work site.

1.12 TEMPORARY CONSTRUCTION SIGNS

- A. The Contractor shall install temporary construction signs where the presence of planned construction areas will obstruct the existing signage or cause the closing of an existing method of egress or ingress and/or as directed by the State. Such signs shall be in accordance with the Department of Transportation – Airports Signage and Graphics Manual, highway standards for construction warning signs for background and text colors (white letters on fluorescent yellow background). Signs may be mounted on suitable approved material other than aluminum panels. The Contractor will be responsible to fabricate and install such signs. Costs related to this activity will be considered as incidental to and included in the bid price for the various items of work in this project.

1.13 OPERATION OF AIRPORT FACILITIES DURING CONSTRUCTION

- A. The Contractor shall coordinate the phases of work under this contract with the Engineer to permit the continuing operation of existing Airport facilities and to minimize disruption to pedestrian and vehicular traffic.
- B. Utility Maintenance: During the construction of this contract, existing utility services serving occupied or used facilities shall not be disrupted except where authorized in writing by authorities having jurisdiction. Contractor shall provide temporary services during interruptions to existing utilities, as acceptable to the Engineer. Damages to the existing utility facilities by the Contractor will be repaired at the Contractor's expense.
- C. Outages for power, communications or any other utility, if necessary, shall be kept to a minimum and scheduled for off-peak hours, generally from 12:00 AM to 6:00 AM. The Contractor shall submit written requests to the Engineer for such outages no later than fourteen (14) calendar days in advance. The request shall include a description of work and the duration of the outage. The Contractor shall not proceed with such outages until written approval is received from the State.

1.14 CONSTRUCTION STAKES, LINES AND GRADES

- A. The Contractor shall perform all construction layout and reference staking necessary for the proper control and satisfactory completion of all structures, grading, paving, drainage, sewer, water, and all other appurtenances required for the completion of the work.
- B. All construction staking shall be performed by qualified personnel under the direct supervision of a person with an engineering background who is experienced in the direction of such work and is acceptable to the Engineer.
- C. The Department may check the Contractor's control of the work at any times as the work progresses. The Contractor will be informed of the results of these checks, but the Department by doing so will in no way relieve the Contractor of his responsibility for the accuracy of the layout work. The Contractor shall at this expense correct or replace any deficient or inaccurate layout and construction work. If, as a result of these deficiencies or inaccuracies, the Department is required to make further studies, redesign, or both, all expenses incurred by the Department due to such deficiencies or inaccuracies, will be deducted from any payments due to the Contractor.
- D. The Contractor shall furnish all necessary personnel, engineering equipment and supplies, materials, and transportation incidental to the accurate and satisfactory completion of this work.
- E. Unless otherwise provided, all requirements imposed by this section and performed by the Contractor shall be considered incidental to the various contract items and not separate or additional payment will be made thereof.

1.15 OPERATIONS AND STORAGE AREAS

- A. Storage and staging areas may be available on a limited basis. Due to the number of projects in progress or projected to be in progress, the State does not guarantee the availability of such areas on airport property. The Contractor may request storage and staging area(s) within AOA fence once the Notice to Proceed date is set.
- B. The Contractor shall confine all operations (including storage of material) on the Airport premises to areas authorized or approved by the Engineer. The Contractor shall hold and save the Airports free and harmless from liability of any nature occasioned by the Contractor's performance.
- C. The Contractor shall use only established roadways. When materials are transported in prosecuting the work, vehicle shall not be loaded beyond the loading capacity recommended by the manufacturer of the vehicle or prescribed by any Federal, State, or local laws or regulations. When it is necessary to cross curbs or sidewalks, the Contractor shall protect them

from damage. The Contractor shall repair or pay for the repair of any damaged curbs, sidewalks, and roadways.

1.16 CLEANING UP

- A. The Contractor shall at all times keep the work area, including storage areas, free from accumulations of waste materials. Before completing the work, the Contractor shall remove from the work and premises any rubbish, tools, scaffolding, equipment, and materials that are not the property of the Airports. Upon completing the work, the Contractor shall leave the work area in clean, neat, and orderly condition satisfactory to the Engineer.

1.17 VERIFICATION OF DIMENSIONS

- A. The Contractor shall be responsible for the coordination and proper relation of his work to the work of all trades. The Contractor shall visit the premises and thoroughly familiarize themselves with all details of the work and working conditions, to verify all dimensions in the field, and to advise the Owner's Representative of any discrepancy between the field measurements and the plan dimensions before performing any work.

1.18 STANDARDS AND CODES

- A. Wherever references are made in the contract to the representative standards, specifications and advisory circulars in accordance with which work is to be performed or tested, it is to be understood that the edition or revision of the standards, specifications, and advisory circulars in effect on the date of the bidder's proposal shall apply unless otherwise expressly set forth in the contract. Unless otherwise specified, reference to such standards is solely for technical information.
- B. In case of conflict among any such referenced standards and codes or between any such standard(s) or code(s) and the requirements of the Contract, the stricter requirement shall govern.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

PART 4 - MEASUREMENT AND PAYMENT

4.01 BASIS OF MEASUREMENT AND PAYMENT

- A. Work under this section will not be measured nor paid for separately but shall be considered incidental to and included in the bid prices for the various items of work in this project.
- B. Work under this section for temporary traffic controls and unforeseen

conditions shall be paid under allowance items in the Proposal Schedule.  
The allowance is an estimate and the amount shall not exceed the maximum amount shown in the Proposal Schedule.

<u>Item No.</u>	<u>Description</u>	<u>Unit Price</u>
01010.1	Temporary Traffic Controls & Signs	Allowance
01010.2	Unforeseen Conditions	Allowance

END OF SECTION

## SECTION 01300 - SUBMITTALS

### PART 1 - GENERAL

#### 1.01 RELATED DOCUMENTS

The General Provisions for Construction Projects (2016), Special Provisions and General Requirements of the Specifications, apply to the work specified in this section.

#### 1.02 PROJECT DOCUMENTATION

The contract will not be considered complete until required submittals have been received and accepted by the State.

At the discretion of the Project Manager, the number of copies to be submitted may differ from that specified in this Section.

#### 1.03 DETAILED CONSTRUCTION SCHEDULE

A. The Contractor shall submit a detailed construction schedule to the Engineer for review, no later than 30 calendar days after award of the contract. The detailed construction schedule shall be based on a detailed critical path analysis of construction activities and sequence of operations needed for the orderly performance and completion of any separable parts of any work and all work in accordance with the contract. The schedule shall be Critical Path Method (CPM) type in the form of an arrow diagram and activity listing or comprehensive bar graph. The network diagram shall show in detail and in orderly sequence all activities on a time scale, their descriptions, durations and dependencies, necessary and required to complete all work and any separable parts thereof. The schedule shall show in detail the following information for each activity:

1. Identification by code numbers and description;
2. Duration;
3. Craft and Equipment;
4. Earliest start and finish dates;
5. Latest start and finish dates;
6. Total and free float time; and
7. Highlighted Critical Path

B. The construction schedule shall be complete in all respects, covering in addition to activities at the site of work, off-site activities such as design,

fabrication, and procurement of equipment; the scheduled delivery dates of such equipment; submittal and approval of shop drawings and samples; ordering and delivery of materials; inspections; and testing. The schedule shall also include a manpower forecast by crafts. The detailed construction schedule shall be supplemented by a three-week schedule prepared by the Contractor and submitted to the Engineer on a weekly basis. The Contractor shall promptly inform the Engineer of any proposed change in the schedule and shall furnish the Engineer with a revised schedule and cash flow diagram within 15 calendar days after approval of such change.

The schedule shall be kept up to date, taking into account the actual progress of work and shall be updated, if necessary, every 30 calendar days. The updated schedule shall, as determined by the Engineer, be sufficient to meet the requirements for the completion of the separable parts of work and the entire projects as set forth in the contract.

Upon commencing work, the Contractor shall submit at the start of each week to the Engineer for review, a detailed three (3) week construction schedule.

- C. If at any time during the progress of the Work, the Contractor's actual progress appears to the Engineer to be inadequate to meet the requirements of the contract, the Engineer will notify the Contractor of such imminent or actual noncompliance with the contract. The Contractor shall thereupon take such steps as may be necessary to improve his progress and the Engineer may require an increase in the labor force, the number of shifts, and/or overtime operations, days of work and/or the amount of construction plants all without additional cost to the State. Neither such notice by the Engineer nor the Engineer's failure to issue such notice shall relieve the Contractor from his obligation to achieve the quality of work and rate of progress required by the contract. Failure of the Contractor to comply with instructions of the Engineer under these provisions may be grounds for determination by the State that the Contractor is not prosecuting work with such diligence as will assure completion within the times specified. Upon such determination, the State may employ labor and equipment and charge the Contractor for the cost thereof, including depreciation for plant and equipment or may terminate the Contractor's right to proceed with the performance of the contract, or any separable part thereof, in accordance with the applicable provisions of the contract.
- D. The Contractor shall submit to the Engineer one (1) reproducible and three (3) prints of the detailed construction schedule and of each revised schedule submitted thereafter.

#### 1.04 SCHEDULE OF VALUES

- A. The Contractor shall submit the Schedule of Values to the Engineer for

review, no later than 30 calendar days after award of the Contract.

- B. Format and Content: Use Proposal Schedule and/or the Project Specifications table of contents as a guide to establish the format for the Schedule of Values. Provide at least one line item for each Specification Section. Provide a breakdown of the contract sum in sufficient detail to facilitate continued evaluation of Applications for Payment and progress reports. Break principle work or subcontract amounts down into several smaller identifiable items of work.
- C. Identification: Include the following Project identification on the schedule of values:
  - 1. Project name and location
  - 2. Project number
  - 3. Contractor's name and address
  - 4. Contract No.
  - 5. Date of submittal
- D. Arrange the Schedule of Values in tabular form with separate columns to indicate the following items listed:
  - 1. Related Specification Section or Division
  - 2. Description of work
  - 3. Dollar value and percent complete
- E. Correlate line items in the Schedule of Values with other required administrative schedules and forms including;
  - 1. Construction Schedule
  - 2. Application for Payment forms including continuation sheets
  - 3. List of Subcontractors
  - 4. List of principle suppliers and fabricators
  - 5. Schedule of submittals
- F. Round amount to nearest whole dollar; the total shall equal the contract sum.
- G. Provide a separate line item in the Schedule of Values for each part of the

work where Applications for Payment may include materials or equipment, purchased, fabricated or stored, but not yet installed.

- H. Schedule Updating: Update and resubmit the Schedule of Values prior to the next Applications for Payment or when Change Orders or Construction Change Directives result in a change in the Contract Sum.

1.05 OTHER SUBMITTALS REQUIRED BEFORE CONSTRUCTION

The Contractor shall submit the following items prior to or at the pre-construction meeting or unless otherwise noted:

- A. Name, residence phone number, addresses and scope of authority for the following persons:
  - 1. Superintendent
  - 2. Contractor's authorized representative to sign documents
  - 3. Two (2) additional persons who can be contacted during non-working hours for emergencies.
  - 4. Field Office location and phone numbers (cellular, pager, fax, etc.)
- B. Name of Safety Officer
- C. Notice of Materials to be furnished
- D. Three (3) copies each of Certificates of Insurance. The State of Hawaii, Department of Transportation, Airports Division shall be named as additionally insured. The project number and project title shall be referenced in the Description of Operations/Locations/Vehicles. If canceled, 30 days written notice to the State of Hawaii must be given. If certificates are not correct, work cannot proceed.
- E. Three (3) copies each Insurance and Tax Rates.
- F. List of apprentices who will be working on the project supported with the Statement of Apprenticeship or copy of the Apprenticeship Agreements registered with the State Board, for each apprentice.
- G. List of equipment to be used on the job. Designate maximum working height and capacity of equipment involved and their respective rental rates.
- H. Three (3) copies of an expenditure (cash flow) plan consisting of an anticipated work completion graph plotting contract time and gross payment anticipated.

1.06 SHOP DRAWINGS, SAMPLES, CATALOG CUTS, AND CERTIFICATES

- A. Submittal Schedule: Prior to the submission of any shop drawings or submittals, the Contractor shall submit to the Engineer for review, a submittal schedule. The schedule shall identify the subject matter of each submittal, the corresponding specification section number and the proposed date of submission. During the progress of work, the Contractor shall revise and resubmit the submittal schedule as directed by the Engineer.
- B. The Contractor shall submit for review to the Engineer, or to a representative designated by the Engineer, six (6) copies of all shop drawings, samples, catalog cuts and certificates. Three (3) copies will be returned to the Contractor with information of review action. The Contractor shall submit additional quantities for their subcontractor's or supplier's use. Each shop drawing, certificate of compliance, sample, and equipment list shall be checked and certified correct by the Contractor and shall be identified with the applicable information specified hereinafter under "Submittal Identification."

Items are to be reviewed prior to commencing fabrication or delivery of material to the job site.

- C. Each copy of the drawings, certificates, catalog cuts, and lists reviewed by the Engineer will be stamped "REVIEW ACTION" with the appropriate action noted therein. The review of the Engineer shall not be construed as a complete check but will indicate only that the general method of construction and detailing is satisfactory. Acceptance of such drawings will not relieve the Contractor the responsibility of conforming to the contract drawings and specifications or for any error or omission which may exist as the Contractor shall be responsible for the dimensions and design of adequate connections, details, and satisfactory construction of all work. Each shop drawing submitted for review shall have, in the lower right-hand corner just above title, a white space 4" x 4" in which the Engineer can place the stamp and indicate action taken. The Contractor shall also inform their subcontractors to provide this space in their preparation of shop drawings.

1.07 MAINTENANCE DATA AND OPERATING INSTRUCTIONS

Six (6) copies of maintenance data and operating instructions shall be submitted by the Contractor at the conclusion of the equipment installation. The manuals shall be assembled in one or more binders, each with a title page, typed table of contents, and heavy section dividers with numbered plastic index tabs. The binders shall be a minimum of 2 inches thick, three ring, "D slant" with hard covers. All data shall be punched for binding and composition and printing shall be arranged so that punching does not obliterate any data. The project number, project title, and Airport shall be inserted in the front and backbone binder cover.

The Contractor shall submit a draft to the Engineer for review prior to the submission of the final copies.

The manual shall include separate sections describing each equipment. Provide a general description of the equipment, instructions for operation, maintenance, recommended inspection points and periods for inspection, testing, adjustments, calibration procedures with illustrations, wiring diagrams, trouble shooting situations and solutions, and repair methods in a practical, complete, and comprehensive manner.

For each equipment, include information on detailed parts listings (part numbers and costs) with the manufacturer's name, address, contact person, e-mail address and phone/fax numbers. Provide the contact name, address, e-mail address and phone/fax numbers of the distributor in the State of Hawaii for each equipment.

Include a separate section on warranty information on all products and equipment. Provide this information in a tabular format with a listing on all products and equipments with warranty start and completion dates for each item.

Include separate sections on all approved submittals, test reports, certifications, etc.

All information shall be arranged in a logical, orderly sequence. Manuals submitted by the manufacturer will not be accepted.

1.08 TEST REPORTS

Six copies of test reports for any material used in this Contract shall be submitted when specified or required by the Engineer.

1.09 SUBMITTAL IDENTIFICATION

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

B. \_\_\_\_\_  
General Contractor's Name

PROJECT TITLE: \_\_\_\_\_

AIRPORT: \_\_\_\_\_

STATE PROJECT NO: \_\_\_\_\_

AIP PROJECT NO: \_\_\_\_\_

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

SPECIFICATIONS.

ITEM NO. \_\_\_\_\_

SUBMITTAL NUMBER \_\_\_\_\_

DATE RECEIVED \_\_\_\_\_

SPECIFICATION SECTION # \_\_\_\_\_

SPECIFICATION PARAGRAPH # \_\_\_\_\_

DRAWING NUMBER \_\_\_\_\_

SUBCONTRACTOR NAME \_\_\_\_\_

SUPPLIER NAME \_\_\_\_\_

MANUFACTURER NAME \_\_\_\_\_

CERTIFIED BY \_\_\_\_\_  
(Contractor's Signature, Date)  
(Contractor's Name and Title)

- C. This stamp "filled in" should appear on each reproducible shop drawing, on the cover sheet of copies of test and mill reports, certificates of compliance, catalog cuts, brochures, etc. The stamp should be placed on a heavy stock paper merchandise (approximately 3" x 6") and one tag tied to each sample submitted for approval. The tag on the samples should state what the sample is, so that if the tag is accidentally separated from the sample, they can be matched up again. The back of this tag will be used by the Engineer for receipt, approval, and log stamp for any comments that relates to the sample.
- D. Submission Number: Each submission is to be sequentially numbered in the space provided in the Contractor's stamp. Correspondence and transmittal will refer to this number.
- E. The Contractor shall ensure that all submittals, including shop drawings, are complete and in conformance to the requirements of the Contract specifications prior to submission to the State for review and acceptance. Incomplete submittals will not be processed by the State and returned to the Contractor for correction. Any cost impacts and delays in the Project schedule as a result of incomplete submittals shall be the responsibility of the Contractor.

1.10 AS-BUILT DRAWINGS

As-built drawings shall conform to the requirements of Section 5.8 - "Coordination Between the Contractor and the State" of the General Provisions for Construction Projects (2016), and the following requirements:

The Contractor shall maintain on the job site a set of full-size contract drawings, marking them in red to show all variations between the construction actually provided and that indicated or specified in the contract documents, including buried or concealed construction. (Section 5.8 (a) Drawings and Special Provisions of the General Provisions for Construction Projects.)

Where a choice of material or method is permitted herein or where variations in scope of character of work from that of the original contract or authorized, the drawings shall be marked to define the construction actually provided. Where equipment installation is involved, the size, manufacturer's name, model number, power input or output characteristics as applicable shall be shown on the as-built drawings.

The representation of such changes shall conform to standard drafting practice and shall include such supplementary notes, legends, and details as necessary to clearly portray the as-built construction.

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

AS-BUILT DRAWINGS/SPECIFICATIONS

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

---

CONTRACTOR'S NAME

---

Signature

Date

Monthly and final payments to the Contractor shall be subject to prior approval of the drawings. On completion of the work, both sets of marked-up drawings shall be delivered to the Engineer and shall be subject to approval before acceptance.

1.11 GUARANTEES

Guarantee periods shall start at time of acceptance in writing by the State.

All guarantees and warranties shall be made out to the "State of Hawaii." Supplier and subcontractor guarantees shall be co-signed by the Contractor.

The Contractor is solely responsible for coincidence or non-coincidence of factory warranties or equipment guarantees, and the Contractor's own warranties and guarantees as required by the contract. The Contractor is solely responsible for scheduling and coordinating the installation of equipment and materials so as to take maximum advantage of factory warranties.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

PART 4 - MEASUREMENT AND PAYMENT

4.01 BASIS OF MEASUREMENT AND PAYMENT

Work under this section will not be measured nor paid for separately but shall be considered incidental to and included in the bid prices for the various items of work in this project.

END OF SECTION

## SECTION 01524 - CONSTRUCTION WASTE MANAGEMENT

### PART 1 - GENERAL

#### 1.01 RELATED DOCUMENTS

The General Provisions for Construction Projects (2016), Special Provisions and General Requirements of the Specifications, apply to the work specified in this Section.

#### 1.02 SUMMARY

- A. Section includes administrative and procedural requirements for the following:
1. Salvaging nonhazardous demolition and construction waste.
  2. Recycling nonhazardous demolition and construction waste.
  3. Disposing of nonhazardous demolition and construction waste.

#### 1.03 DEFINITIONS

- A. Construction Waste: Building and site improvement materials and other solid waste resulting from construction, remodeling, renovation, or repair operations. Construction waste includes packaging.
- B. Demolition Waste: Building and site improvement materials resulting from demolition or selective demolition operations.
- C. Disposal: Removal off-site of demolition and construction waste and subsequent sale, recycling, reuse, or deposit in landfill or incinerator acceptable to authorities having jurisdiction.
- D. Recycle: Recovery of demolition or construction waste for subsequent processing in preparation for reuse.
- E. Salvage: Recovery of demolition or construction waste and subsequent sale or reuse in another facility.
- F. Salvage and Reuse: Recovery of demolition or construction waste and subsequent incorporation into the Work.

#### 1.04 PERFORMANCE REQUIREMENTS

- A. General: Practice efficient waste management in the use of materials in the course of the Work. Use all reasonable means to divert construction and demolition waste from landfills and incinerators. Facilitate recycling and salvage of materials, including the following:

1. Demolition Waste:
  - a. Asphaltic concrete paving
  - b. Concrete
  - c. Equipment
  - d. Wiring
2. Construction Waste:
  - a. Packaging: Regardless of salvage/recycle goal indicated in "General" Paragraph above, salvage or recycle 100 percent of the following uncontaminated packaging materials:
    - 1) Paper.
    - 2) Cardboard.
    - 3) Boxes.
    - 4) Plastic sheet and film.
    - 5) Polystyrene packaging.
    - 6) Wood crates.
    - 7) Plastic pails.
    - 8) Conductors.

1.05 ACTION SUBMITTALS

- A. Waste Management Plan: Submit plan within fourteen (14) days of date established for the Notice to Proceed.

1.06 INFORMATIONAL SUBMITTALS

- A. Waste Reduction Progress Reports: Concurrent with each Application for Payment, submit report. Include the following information:
  1. Material category.
  2. Generation point of waste.
  3. Total quantity of waste in tons.
  4. Quantity of waste salvaged, both estimated and actual in tons.

5. Quantity of waste recycled, both estimated and actual in tons.
  6. Total quantity of waste recovered (salvaged plus recycled) in tons.
  7. Total quantity of waste recovered (salvaged plus recycled) as a percentage of total waste.
- B. Waste Reduction Calculations: Before request for Substantial Completion, submit calculated end-of-Project rates for salvage, recycling, and disposal as a percentage of total waste generated by the Work.
- C. Records of Donations: Indicate receipt and acceptance of salvageable waste donated to individuals and organizations. Indicate whether organization is tax exempt.
- D. Records of Sales: Indicate receipt and acceptance of salvageable waste sold to individuals and organizations. Indicate whether organization is tax exempt.
- E. Recycling and Processing Facility Records: Indicate receipt and acceptance of recyclable waste by recycling and processing facilities licensed to accept them. Include manifests, weight tickets, receipts, and invoices.
- F. Landfill and Incinerator Disposal Records: Indicate receipt and acceptance of waste by landfills and incinerator facilities licensed to accept them. Include manifests, weight tickets, receipts, and invoices. The Honolulu Program of Waste Energy Recovery (H- POWER) by the City and County of Honolulu is the only acceptable incinerator in Oahu.
- G. Statement of Refrigerant Recovery: Signed by refrigerant recovery technician responsible for recovering refrigerant, stating that all refrigerant that was present was recovered and that recovery was performed according to EPA regulations. Include name and address of technician and date refrigerant was recovered.

#### 1.07 QUALITY ASSURANCE

- A. Refrigerant Recovery Technician Qualifications: Certified by EPA-approved certification program.
- B. Regulatory Requirements: Comply with hauling and disposal regulations of authorities having jurisdiction.
- C. Waste Management Conference: Conduct conference at Project site to comply with requirements. Review methods and procedures related to waste management including, but not limited to, the following:
1. Review requirements for documenting quantities of each type of waste and its disposition.

2. Review and finalize procedures for materials separation and verify availability of containers and bins needed to avoid delays.
3. Review procedures for periodic waste collection and transportation to recycling and disposal facilities.
4. Review waste management requirements for each trade.

#### 1.08 WASTE MANAGEMENT PLAN

- A. General: Develop a waste management plan according to ASTM E 1609 and requirements in this Section. Plan shall consist of waste identification, waste reduction work plan, and cost/revenue analysis.
- B. Waste Reduction Work Plan: List each type of waste and whether it will be salvaged, recycled, or disposed of in landfill or incinerator. Include points of waste generation, total quantity of each type of waste, quantity for each means of recovery, and handling and transportation procedures.
  1. Salvaged Materials for Reuse: For materials that will be salvaged and reused in this Project, describe methods for preparing salvaged materials before incorporation into the Work.
  2. Salvaged Materials for Sale: For materials that will be sold to individuals and organizations, include list of their names, addresses, and telephone numbers.
  3. Recycled Materials: Include list of local receivers and processors and type of recycled materials each will accept. Include names, addresses, and telephone numbers.
  4. Disposed Materials: Indicate how and where materials will be disposed of. Include name, address, and telephone number of each landfill and incinerator facility.
  5. Handling and Transportation Procedures: Include method that will be used for separating recyclable waste including sizes of containers, container labeling, and designated location where materials separation will be performed.

#### PART 2 – PRODUCTS (Not Used)

#### PART 3 - EXECUTION

##### 3.01 PLAN IMPLEMENTATION

- A. General: Implement approved waste management plan. Provide handling, containers, storage, signage, transportation, and other items as required to implement waste management plan during the entire duration of the Contract.

- B. Training: Train workers, subcontractors, and suppliers on proper waste management procedures, as appropriate for the Work.
  - 1. Distribute waste management plan to everyone concerned within three days of submittal return.
  - 2. Distribute waste management plan to entities when they first begin work on-site. Review plan procedures and locations established for salvage, recycling, and disposal.
- C. Site Access and Temporary Controls: Conduct waste management operations to ensure minimum interference with roads, streets, walks, walkways, and other adjacent occupied and used facilities.
  - 1. Designate and label specific areas on Project site necessary for separating materials that are to be salvaged, recycled, reused, donated, and sold.

### 3.02 SALVAGING DEMOLITION WASTE

- A. Salvaged Items for Reuse in the Work: Salvage items for reuse and handle as follows:
  - 1. Clean salvaged items.
  - 2. Pack or crate items after cleaning. Identify contents of containers with label indicating elements, date of removal, quantity, and location where removed.
  - 3. Store items in a secure area until installation.
  - 4. Protect items from damage during transport and storage.
  - 5. Install salvaged items to comply with installation requirements for new materials and equipment. Provide connections, supports, and miscellaneous materials necessary to make items functional for use indicated.
- B. Salvaged Items for Sale: Not permitted on Project site.
- C. Salvaged Items for Owner's Use: Salvage items for Owner's use and handle as follows:
  - 1. Clean salvaged items.
  - 2. Pack or crate items after cleaning. Identify contents of containers with label indicating elements, date of removal, quantity, and location where removed.

3. Store items in a secure area until delivery to Owner.
4. Transport items to Owner's storage area designated by Owner.
5. Protect items from damage during transport and storage.

### 3.03 RECYCLING DEMOLITION AND CONSTRUCTION WASTE, GENERAL

- A. General: Recycle paper and beverage containers used by on-site workers.
- B. Preparation of Waste: Prepare and maintain recyclable waste materials according to recycling or reuse facility requirements. Maintain materials free of dirt, adhesives, solvents, petroleum contamination, and other substances deleterious to the recycling process.
- C. Procedures: Separate recyclable waste from other waste materials, trash, and debris. Separate recyclable waste by type at Project site to the maximum extent practical according to approved construction waste management plan.
  1. Provide appropriately marked containers or bins for controlling recyclable waste until removed from Project site. Include list of acceptable and unacceptable materials at each container and bin.
    - a. Inspect containers and bins for contamination and remove contaminated materials if found.
  2. Stockpile processed materials on-site without intermixing with other materials. Place, grade, and shape stockpiles to drain surface water. Cover to prevent windblown dust.
  3. Stockpile materials away from construction area. Do not store within drip line of remaining trees.
  4. Store components off the ground and protect from the weather.
  5. Remove recyclable waste from Owner's property and transport to recycling receiver or processor.

### 3.04 RECYCLING DEMOLITION WASTE

- A. Asphalt Paving: Break up and transport paving to asphalt-recycling facility or crush asphaltic concrete paving and screen.
- B. Concrete: Break up and transport paving to concrete recycling facility or crush concrete and screen.
- C. Concrete: Remove reinforcement and other metals from concrete and sort with other metals.

- D. Masonry: Remove metal reinforcement, anchors, and ties from masonry and sort with other metals.
- E. Wood Materials: Sort and stack members according to size, type, and length. Separate lumber, engineered wood products, panel products, and treated wood materials.
- F. Metals: Separate metals by type.
  - 1. Structural Steel: Stack members according to size, type of member, and length.
  - 2. Remove and dispose of bolts, nuts, washers, and other rough hardware.
- G. Asphalt Shingle Roofing: Separate organic and glass-fiber asphalt shingles and felts. Remove and dispose of nails, staples, and accessories.
- H. Gypsum Board: Stack large clean pieces on wood pallets or in container and store in a dry location. Remove edge trim and sort with other metals. Remove and dispose of fasteners.
- I. Acoustical Ceiling Panels and Tile: Stack large clean pieces on wood pallets and store in a dry location.
- J. Metal Suspension System: Separate metal members including trim, and other metals from acoustical panels and tile and sort with other metals.
- K. Carpet and Pad: Roll large pieces tightly after removing debris, trash, adhesive, and tack strips.
  - 1. Store clean, dry carpet and pad in a closed container or trailer provided by Carpet Reclamation Agency or carpet recycler.
- L. Carpet Tile: Remove debris, trash, and adhesive.
  - 1. Stack tile on pallet and store clean, dry carpet in a closed container or trailer provided by Carpet Reclamation Agency or carpet recycler.
- M. Piping: Reduce piping to straight lengths and store by type and size. Separate supports, hangers, valves, sprinklers, and other components by type and size.
- N. Conduit: Reduce conduit to straight lengths and store by type and size.

### 3.05 RECYCLING CONSTRUCTION WASTE

- A. Packaging:
  - 1. Cardboard and Boxes: Break down packaging into flat sheets. Bundle

and store in a dry location.

2. Polystyrene Packaging: Separate and bag materials.
  3. Pallets: As much as possible, require deliveries using pallets to remove pallets from Project site. For pallets that remain on-site, break down pallets into component wood pieces and comply with requirements for recycling wood.
  4. Crates: Break down crates into component wood pieces and comply with requirements for recycling wood.
- B. Wood Materials:
1. Clean Cut-Offs of Lumber: Grind or chip into small pieces.
  2. Clean Sawdust: Bag sawdust that does not contain painted or treated wood.
- C. Gypsum Board: Stack large clean pieces on wood pallets or in container and store in a dry location.

### 3.06 DISPOSAL OF WASTE

- A. General: Except for items or materials to be salvaged, recycled, or otherwise reused, remove waste materials from Project site and legally dispose of them in a landfill or incinerator acceptable to authorities having jurisdiction. The Honolulu Program of Waste Energy Recovery (H-POWER) by the City and County of Honolulu is the only acceptable incinerator.
1. Except as otherwise specified, do not allow waste materials that are to be disposed of accumulate on-site.
  2. Remove and transport debris in a manner that will prevent spillage on adjacent surfaces and areas.
  3. H-POWER will take the architectural canopy fabric made of mostly vinyl. Contractor can contact Scale House at 808-682-0261. H-POWER requires an account with Contractor.
- B. Burning: Do not burn waste materials in Airport ground.
- C. Disposal: Remove waste materials from Owner's property and legally dispose of them.

## PART 4 - METHOD OF MEASUREMENT AND BASIS OF PAYMENT

### 4.01 BASIS OF MEASUREMENT AND PAYMENT

- A. Work under this section will not be measured for payment but will be paid for at the Contract Lum Sum Price.

Item No.  
01524.1

Item  
Construction Waste Management

Unit  
Lump Sum

END OF SECTION

STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HONOLULU, HAWAII

**SPECIFICATIONS**

**SECTION 01524 - CONSTRUCTION WASTE MANAGEMENT**

**APPENDIX A**

TABLE 1: WASTE IDENTIFICATION

Material	Est. Qty.	Est. tons *	Point of Generation	Comments/Assumptions

\* Avg volume-to-weight conversions are:

- Mixed waste 5.7 yds/ton
- Wood 6.7 yds/ton
- Cardboard 20 yds/ton
- Drywall 4 yds/ton
- Rubble 1.4 yds/ton

TABLE 2: WASTE REDUCTION WORK PLAN

Material	S/R/D *	Est Qty S/R/D (tons)	Actual Qty S/R/D(tons)	Handling and Transport Procedures	Destination (Name, address, phone) **

\*S Salvage/Reuse  
 R Recycle  
 D Dispose

\*\* For materials sent for recycling or disposal, send to facilities currently permitted by the DOH, Solid Waste Section (808) 586-4226. No solid waste management permit required for on-site processing of clean waste concrete, provided the processed product meets the "inert fill material" definition in Chapter 342H, HRS. Solid Waste Management Permit required if destination site accepts for processing such waste materials (eg. Clean waste concrete) from other sites.

TABLE 3: COST/REVENUE ANALYSIS

Material	Est Cost of Disposal(1)	Est Revenue from Salvage/Recycle(2)	Est Cost of Salvage/Recycle(3)	Est Net Savings/Cost (1)+(2)-(3)

## SECTION 01533 - BARRICADES

### PART 1 - GENERAL

#### 1.01 RELATED DOCUMENTS

The General Provisions for Construction Projects (2016), Special Provisions and General Requirements of the Specifications, apply to the work specified in this Section.

#### 1.02 BARRICADES

- A. The Contractor shall take precaution to protect people and property from injury and damage. They shall erect barricades to delineate their work areas and provide the appropriate signing, hazard lights, and temporary paint striping as directed by the Engineer, to aid public and airport pedestrian and vehicular traffic around their work areas. Barricades shall be traffic cones, delineators, blinker barricades, caution tape, sawhorses, plywood barricades or other barriers as approved by the Engineer to effectively provide proper protection.
- B. The Contractor shall be responsible for their own security and protection of their own property, including mobilization yard barricades.
- C. Barricades, in general, shall be neat and in good condition, as required for protection. In areas frequented by the general public, the barricades shall be visually presentable and plywood partitions shall be painted. Where dust is a problem, the Contractor shall erect floor to ceiling dust proof partitions.
- D. The Contractor shall coordinate and sequence this work with the Engineer to permit the continuing operation of the existing Airport facility. Barricades shall be removed upon the completion and acceptance of work and the premises left clean and operational.

### PART 2 - PRODUCTS (Not Used)

### PART 3 - EXECUTION (Not Used)

### PART 4 – MEASUREMENT AND PAYMENT

#### 4.01 BASIS OF MEASUREMENT AND PAYMENT

Work under this section will not be measured nor paid for separately but shall be considered incidental to and included in the prices bid for the various items of work in this project.

END OF SECTION

## SECTION 01560 - ENVIRONMENTAL CONTROLS

### PART 1 – GENERAL

#### 1.01 RELATED DOCUMENTS

- A. The General Provisions, Special Provisions, and Technical Provisions, apply to the work specified in this section. Special attention is directed to the following Articles:
1. State of Hawaii, Air and Water Transportation Facilities Division, General Provisions for Construction Projects, Article VI, Control of Materials, Paragraph 6.8 Non-Conforming Materials.
  2. State of Hawaii, Air and Water Transportation Facilities Division, General Provisions for Construction Projects, Article VII, Legal Relations and Responsibility to Public, Paragraph 7.14 Pollution Control and Protection of Archeological Historical, and Burial Sites.
  3. State of Hawaii, Air and Water Transportation Facilities Division, General Provisions for Construction Projects, Article VII, Legal Relations and Responsibility to Public, Paragraph 7.17 Contaminated or Hazardous Items and Material; Regulated Items and Material; Waste.
  4. Section 01561 Construction Site Runoff Control Program.
  5. Section 01562 Management of Contaminated Medias.
- B. The latest version of the State of Hawaii, Department of Transportation, Airports Division (DOTA) Construction Activities BMP Field Manual.

#### 1.02 ENVIRONMENTAL PROTECTION

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

#### 1.03 APPLICABLE REGULATIONS

In order to provide abatement and control of environmental pollution arising from the construction activities of the Contractor and their Subcontractors in

the performance of this contract, the work performed shall comply with the intent of all applicable Federal, State, and Local laws and regulations concerning environmental pollution control and abatement, including, but not limited to, the following regulations:

- A. State of Hawaii, Department of Health, Administrative Rules, Chapter 55, WATER POLLUTION CONTROL; Chapter 54, WATER QUALITY STANDARDS.
- B. State of Hawaii, Department of Health, Administrative Rules, Chapter 59, AMBIENT AIR QUALITY, Chapter 60.1, AIR POLLUTION CONTROL.
- C. State of Hawaii, Department of Health, Administrative Rules, Chapter 42, VEHICULAR NOISE CONTROL.
- D. State of Hawaii, Department of Health, Administrative Rules, Chapter 46, COMMUNITY NOISE CONTROL.
- E. State of Hawaii, Occupational Safety and Health Standards, Title 12, Department of Labor and Industrial Relations, Subtitle 8, Division of Occupational Safety and Health, Part 3 Construction Standards, Chapter 145 Asbestos.
- F. Environmental Protection Agency, Code of Federal Regulations Title 40, Part 61, Subpart M (Revised Subpart B), NATIONAL EMISSION STANDARDS FOR AIR POLLUTANTS and Subpart B, NATIONAL EMISSION STANDARDS FOR ASBESTOS; Final Rule dated November 20, 1990.
- G. U.S. Department of Labor - Occupational Safety and Health Administration (OSHA) Asbestos Regulations, Code of Federal Regulations Title 29, Parts 1910, 1915 and 1926, Occupational Exposure to Asbestos, Final Rule dated August 10, 1994.

### 1.03 SUBMITTALS

The Contractor shall submit the following items within thirty (30) calendar days after the Notice to Proceed Date:

- A. Submit proposed means, methods, techniques and procedures to be used for environmental control.

## PART 2 – PRODUCTS (NOT USED)

## PART 3 – EXECUTION

### 3.01 AIR POLLUTION CONTROL

- A. Emission: The Contractor shall not be allowed to operate equipment and vehicles that show excessive emissions of exhaust gases until corrective repairs or adjustments are made, as determined by the Engineer.
- B. Dust: The Contractor, for the duration of the contract, shall maintain all excavations, embankments, haul roads, permanent access roads, plant sites, waste disposal areas, borrow areas, and all other work areas within or without the project limits free from dust which would cause a hazard to the work or operations of other Contractors, or to persons or property. Industry-accepted methods of stabilization suitable for the area involved, such as sprinkling or similar methods, will be permitted. Chemical or oil treating shall not be used.
- C. Burning on Airport property shall not be permitted.

### 3.02 WATER POLLUTION CONTROL

- A. Wastes: The Contractor shall not deposit, at the airport site or in its vicinity, solid waste or discharge liquid waste, such as fuels, lubricants, bituminous waste, untreated sewage, and other pollutants which may contaminate the body of ground water.
- B. Spillages: Care shall be taken to ensure that no petroleum products, bituminous materials, or other deleterious substances, including debris, are allowed to fall, flow, leach, or otherwise enter the sewage systems or storm drains.
- C. Erosion: The Contractor shall provide any necessary temporary drainage, dikes, and similar facilities to prevent erosion damage to the site. Run-off shall be controlled to prevent damage to the surrounding area.

### 3.03 NOISE CONTROL

- A. At all times keep objectionable noise generation to a minimum by:
  - 1. Equipping air compressors with silencing packages.
  - 2. Equipping jackhammers with silencers on the air outlet.
  - 3. Equipment that can be electrically driven instead of gas or diesel is preferred. If noise levels on equipment cannot reasonably be brought down to criteria, listed as follows, either the equipment will not be allowed on the job or use time will have to be scheduled subject to approval of the Engineer.
  - 4. All construction vehicles and equipment on the project operating between 10:00 p.m. and 7:00 a.m. shall be equipped with an

ambient noise sensing variable volume backup alarm system. The system shall be in compliance with Title 29 of the Code of Federal Regulations, Part 1926.601(b)(4)(i).

- B. Objectionable noise received on neighboring properties is defined as any noise exceeding the noise limits of State Regulations (Title 11, Hawaii Administrative Regulations, Department of Health, Chapter 46 – Community Noise Control) or City and County of Honolulu ordinance, as stated below, or as any noise causing a public nuisance in a residential area, as determined by the State and community representatives, or by the nuisance provisions of local ordinances.
  - 1. The noise limitations established are as set forth in the following table after any applicable adjustments provided for herein are applied:

RECEIVING PROPERTY

<u>Noise Source</u>	<u>Residential</u>	<u>Commercial</u>	<u>Industrial</u>
Airport	50 dBA	65 dBA	70 dBA

- 2. Between the hours of 6:00 p.m. to 5:00 a.m. on weekdays and weekends, the noise limitations above may be exceeded for any receiving property by no more than:
  - a. Five (5) dBA for a total of fifteen (15) minutes in any one (1) hour period; or
  - b. Ten (10) dBA for a total of five (5) minutes in any one (1) hour period; or
  - c. Fifteen (15) dBA for a total of one and one half (1.5) minutes in any one (1) hour period.
- C. In addition to the noise controls specified, demolition and construction activities conducted within 1,000 feet of residential areas may have additional noise controls required.
- D. The Contractor and its subcontractor operations shall, at all times, comply with all State of Hawaii and City and County of Honolulu requirements.
- E. For work conducted within Airport buildings, noise levels from work activities shall not exceed 85 dBA on the slow scale at the project boundary.

3.04 DISPOSAL

Contractor shall adhere to Construction Waste Management Section 01524. Construction rubbish shall be properly disposed of at a licensed landfill.

Please consult with the local landfill to ensure that objects meet the specific landfill's requirements for size, type, etc. Other areas or methods proposed by the Contractor will be approved only if the Engineer determines that their effect on the environment is equal to or less than those described herein.

### 3.05 HAZARDOUS MATERIALS CONTROL

A. The use of hazardous materials, i.e., asbestos and PCB, in the construction of this project shall be strictly prohibited. Any corrective action to remove and replace the hazardous material and contaminated work shall be at the sole expense of the Contractor.

#### B. DEFINITIONS

1. HAZARDOUS SUBSTANCE – Any substance designated pursuant to Section 311(b)(2)(A) of the Clean Water Act; any element, compound, mixture, solution, or substance designated pursuant to Section 102 of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA); any hazardous waste having the characteristics identified under or listed pursuant to Section 3001 of the Solid Waste Disposal Act; any toxic pollutant listed under Section 307(a) of the Clean Water Act; any hazardous air pollutant listed under Section 112 of the Clean Air Act, as amended (42 U.S.C. §§7401-7626); any imminently hazardous chemical substance or mixture regulated under Section 7 of the Toxic Substances Control Act, as amended (15 U.S.C. §§2601-2671), oil, trichloro propane, and any other substance or pollutant or contaminant designated by rules adopted pursuant to this chapter (Chapter 128D, Hawaii Revised Statutes)
2. OIL – Oil Waste of any kind or in any form, including, but not limited to, petroleum, fuel oil, sludge, oil refuse, oil mixed with waste, crude oil, or any fraction or residue.
3. POLLUTANT OR CONTAMINANT – Any element, substance, compound, or mixture, which after release into the environment and upon exposure, ingestion, inhalation, or assimilation into any organism either directly from the environment or indirectly by ingestion through food chains, will or may reasonably be anticipated to cause death, disease, behavioral abnormalities, cancer, genetic mutation, physiological malfunctions (including malfunctions in reproduction) or physical deformation, in such organism or their offspring.

## PART 4 – MEASUREMENT AND PAYMENT

### 4.01 BASIS OF MEASUREMENT AND PAYMENT

All work specified in this Section shall not be measured nor paid for separately but shall be considered incidental and included in the prices bid for the various items of work in this project.

END OF SECTION

## SECTION 01561 – CONSTRUCTION SITE RUNOFF CONTROL PROGRAM

### PART 1 – GENERAL

#### 1.1 DESCRIPTION

This Section describes the following:

- (A) The Contractor shall comply with the following referenced documents:
- State of Hawaii, Department of Transportation, Airports Division (DOTA) Construction Activities Best Management Practices (BMP) Field Manual, in developing, installing, and maintaining Site-Specific BMPs for all projects.
  - DOTA's Storm Water Programs (SWMPP) for the Daniel K. Inouye International Airport (HNL) and Kahului Airport (OGG), as applicable.
  - Hawaii Administrative Rules (HAR) Chapters 11-54, 11-55, and 11-60.
  - Honolulu's City and County "Rules Relating to Water Quality" for all projects on Oahu. Use respective Soil Erosion Guidelines for Maui, Kauai and Hawaii projects.
  - Applicable Federal, State and Local Permit Conditions.
  - All other documents referenced in this Section.

For any conflicting requirements between the referenced documents and applicable bid documents, the stricter requirement will prevail and govern. Should a requirement not be clearly described within the applicable bid documents, notify the Engineer immediately for interpretation. For the purposes of clarification, "applicable bid documents" include the construction plans, specifications, and Permits.

- (B) Detailed plans, diagrams, and written Site-Specific Best Management Practices (BMPs); construction, maintenance, and repair of temporary water pollution, dust, and erosion control measures at the project site, including local material sources, work areas, and haul roads; removal and disposal of hazardous wastes; control of fugitive dust (defined as uncontrolled emission of solid airborne particulate matter from any source other than combustion).
- (C) Work associated with construction stormwater, dewatering, and hydrotesting activities and compliance with conditions of the Notice of General Permit Coverage (NGPC) or National Pollutant Discharge Elimination System (NPDES) permit(s) authorizing discharges associated with construction stormwater, dewatering, and hydrotesting activities.
- (D) Potential pollutant identification and mitigation measures, listed in Appendix A for use in the development of the Contractor's Site-Specific BMP.

Requirements of this Section also apply to construction support activities including: concrete or asphalt batch plants, rock crushing plants, equipment staging yards/areas, material storage areas, excavated material disposal areas, and borrow areas located both inside and outside of the Airport Property and State Right-of-Way. For areas serving multiple construction projects or operating beyond the completion of the construction project in which it supports, the Contractor shall be responsible for securing the necessary permits, clearances, and documents, and following the conditions of the permits and clearances, at no cost to the State.

The Contractor shall be responsible for all applicable subcontractors, suppliers and vendors, and shall ensure that the means and methods of construction activities of applicable subcontractors, suppliers and vendors are in full compliance with this Section.

## PART 2 PRODUCTS

### 2.1 MATERIALS

Comply with applicable materials described in the current DOTA "Construction Activities BMP Field Manual" and Section 3 and 4 of the current City and County of Honolulu "Storm Water Best Management Practice Manual." Refer to FAA Advisory Circulars and DOTA District, including Wildlife Hazard Management Plan, for additional guidance and conditions.

In addition, materials shall comply with the following:

- (A) Grass. The FAA and USDA recommend the following grass species when requiring grass: "No-Mow" bermudagrass ("Green Velvet") (*Cynodon dactylon*) or Seashore paspalum (*Paspalum vaginatum*). These species both possess higher than average drought resistance, saline soil tolerances, and, most importantly, do not produce seed heads attractive to the majority of hazardous avian species. It is recommended that stolons, sprigs, or plugs be used to avoid providing hazardous species with a readily available food source. The use of seeds shall not be allowed.

Alternative grass species shall only be applied with the approval of the DOTA Environmental Section. This includes, but not limited to, sodding, cuttings, and planting. Grass shall be a quick-growing species. Grass shall be suitable to the area and provide a temporary cover that will not compete later with permanent cover. The grass label or tag shall be provided to the DOTA Environmental Section.

Irrigation of these grass shall be done during the hours of darkness to avoid providing another hazardous wildlife attractant.

- (B) Fertilizer and Soil Conditioners. Fertilizer and soil conditioners shall conform to Hawaii Standard Specifications for Road and Bridge Construction 2005 or latest

edition, Subsection 619.02(H)(1) – Commercial Fertilizer. Fertilizers shall not be applied during inclement weather or rain events.

The use of alternative types of fertilizer and soil conditioners shall be subject to the approval of the DOTA Environmental Section.

- (C) Hydro-mulching. Hydro-mulching used as a temporary stabilization measure shall consist of specially processed fiber which shall form a homogeneous slurry after addition and agitation in hydro-mulch applicator equipment.
1. Mulches shall be recycled materials including bagasse, hay, straw, wood cellulose bark, wood chips, or other material acceptable to the DOTA Environmental Section. Mulches shall be clean and free of noxious weeds and deleterious materials.
  2. Potable water shall meet the requirements of Hawaii Standard Specifications for Road and Bridge Construction 2005 or latest edition, Subsection 712.01 – Water. Submit alternate sources of irrigation water to the Engineer for acceptance by the DOTA Environmental Section if deviating from 712.01 – Water.
  3. Soil and Mulch Tackifier shall meet the requirements and installation in accordance with portions of Hawaii Standard Specifications for Road and Bridge Construction 2005 or latest edition, Section 641 – Hydro-Mulch Seeding, including 641.02(D) – Soil and Mulch Tackifier. The use of seeds in the hydro-mulch mixtures shall not be allowed.

Alternative materials or methods to control, prevent, remove, and dispose pollution are allowable if acceptable to the DOTA Environmental Section.

## PART 3 EXECUTION

### 3.1 PRECONSTRUCTION REQUIREMENTS

- (A) Water Pollution, Dust, and Erosion Control Meeting.  
Schedule a water pollution, dust, and erosion control meeting with the Engineer after the Site-Specific BMP Plan is submitted to the Engineer and accepted in writing by the DOTA Environmental Section. The meeting shall be scheduled a minimum of 14 calendar days prior to the Start Work Date. At a minimum, the meeting shall be attended by the Contractor, applicable subcontractors, Engineer, DOTA Environmental Section and/or any authorized representatives of the designated attendees. The meeting will discuss the sequence of work, and plans and proposals for water pollution, dust, and erosion controls.
- (B) Water Pollution, Dust, and Erosion Control Submittals.

Submit a Site-Specific BMP Plan within 30 calendar days of Contract Execution to the Engineer for acceptance by the DOTA Environmental Section. Submission of the complete and acceptable Site-Specific BMP Plan is the sole responsibility of the Contractor, and additional contract time will not be issued for delays due to incompleteness.

Include the following:

1. Written description of activities to minimize water pollution and soil erosion into drainage systems, sewer systems, and State waters. Include proposed means, methods, techniques, and procedures to be used for environmental control. BMP shall include, but not limited to, the following:
  - a. An identification of potential pollutants and their sources.
  - b. A list of all materials and heavy equipment to be used during construction.
  - c. Descriptions of the methods and devices used to minimize the discharge of pollutants into drainage systems, sewer system, and State waters.
  - d. Details of the procedures used for the maintenance and subsequent removal of any erosion or siltation control devices.
  - e. Methods of removing and disposing hazardous wastes encountered or generated during construction.
  - f. Methods of removing and disposing concrete and asphalt pavement cutting slurry, concrete curing water, and hydro-demolition water.
  - g. Spill Control and Prevention, and Emergency Spill Response Plan.
  - h. Fugitive dust control, including dust from earth-disturbing, hauling, grinding, sweeping, or brooming off operations, or combination thereof.
  - i. Methods of storing and handling of oils, paints, and other products used for the project.
  - j. Material storage and handling areas, and other staging areas, including storage of reinforcing steel and building material.
  - k. Concrete truck washouts.
  - l. Concrete waste and asphalt concrete waste control.

- m. Fueling and maintenance of vehicles and other equipment.
  - n. Tracking of sediment offsite from project entries and exits.
  - o. Litter management. Prevention of Foreign Object Debris (FOD) is essential.
  - p. Sanitary/Septic Waste Management and Facilities.
  - q. Stockpiles of Aggregates, Soils, Asphalt Concrete Material, Concrete Waste, and Asphalt Concrete Waste.
  - r. Methods of Handling and Removal of Contaminated Soils and Groundwater encountered or generated during construction.
  - s. Methods and Procedures for Dewatering.
  - t. Methods and Procedures for Hydro-Testing.
  - u. Methods and Practices for proper Housekeeping, including excessive sawdust; concrete spill prevention and removal; and collection and removal of building materials waste, such as tie wires, reinforcing steel, and lumber.
  - v. Other factors that may cause water pollution, dust, and erosion control.
2. Plans indicating location of water pollution, dust and erosion control devices; plans and details of BMP measures and devices to be installed or utilized; identify areas of soil disturbance in cut and fill; indicate areas used for construction staging and storage, including items (1) through (22) above, storage of aggregate (indicate type of aggregate), asphalt cold mix, soil or solid waste, equipment and vehicle parking, and areas where vegetative practices are to be implemented. Indicate intended drainage pattern on plans. Include flow arrows. Include separate drawing for each phase of construction that alters drainage patterns.
  3. Dates when BMP measures will be installed and removed.
  4. Name(s) of specific individual(s) designated responsible for the Contractor's Construction Site Runoff Control Program. Include cellular and business telephone numbers, fax numbers, and e-mail addresses. These individuals shall be available 24 hours a day, 7 days a week.
  5. Description of fill material to be used.

6. For projects with an NGPC or NPDES Permit for Construction Activities, submit information to address all sections in the Storm Water Pollution Prevention Plan (SWPPP), as described in HAR Chapter 11-55, Appendix C, Section 7.
7. For projects with an NGPC or NPDES Permit, submit information required for compliance with the conditions of the Notice of General Permit Coverage (NGPC)/NPDES Permit.
8. Date and sign the Site-Specific BMP Plan.

Modify, as necessary, and resubmit amended Site-Specific BMP plans and construction schedules to the Engineer for acceptance by DOTA Environmental Section. Modify the Site-Specific BMP Plan to address, but not limited to, the following.

1. To correct conditions that develop during construction which were unforeseen during the design and pre-construction stages.
2. Changes to the Contractor's Means and Method of Construction.
3. Omitted conditions that should have been allowed for in the accepted Site-Specific BMP Plan.
4. A Site-Specific BMP measure that replaces an accepted Site-Specific BMP measure that was not satisfactorily performing.
5. Revised dates of installation and/or removal of Site-Specific BMP measures.

The modifications shall be submitted to the Engineer and accepted in writing by DOTA Environmental Section before implementing the revised Site-Specific BMPs in the field. Amendments to the Site-Specific BMP Plan shall be included with the original Site-Specific BMP Plan.

A copy of the accepted original Site-Specific BMP Plan and all accepted amended Site-Specific BMP Plans, with the signed certification by the authorized representative listed in the NGPC or NPDES Permit, shall be kept on site or at an accessible location so that it can be made available at the time of an on-site inspection, or upon request by the Engineer, DOTA Environmental Section, DOTA's Third Party Inspector, and/or DOH/EPA Representative.

- (C) Discharges of Stormwater Associated with Construction Activities. If the project scope consists of ground disturbing activities and the total work area, including all construction support activity areas (i.e. storage and/or staging areas), is one acre or more, an NPDES Permit authorizing Discharges of Storm Water Associated with

Construction Activity (CWB-NOI Form C) or Individual Permit authorizing stormwater discharges associated with construction activity is required from the Department of Health Clean Water Branch (DOH-CWB).

Do not begin construction activities until all required conditions of the permit are met and submittals detailed in Subsection 01561.3.1(B) – Water Pollution, Dust, and Erosion Control Submittals are completed, submitted to the Engineer and accepted in writing by the DOTA Environmental Section.

- (D) Discharges Associated with Hydrotesting Activities. If hydrotesting activities require effluent discharge into State waters or drainage systems, an NPDES Hydrotesting Waters Permit (CWB-NOI Form F) or Individual Permit authorizing discharges associated with hydrotesting is required from the DOH-CWB.

Do not begin hydrotesting activities until the DOH-CWB has issued an Individual NPDES Permit or Notice of General Permit Coverage (NGPC). Conduct Hydrotesting operations in accordance with the conditions of the permit or NGPC.

- (E) Discharges Associated with Dewatering Activities. If dewatering activities require effluent discharge into State waters or drainage systems, an NPDES Dewatering Permit (CWB-NOI Form G) or Individual Permit authorizing discharges associated with dewatering is required from the DOH-CWB.

Do not begin dewatering activities until the DOH-CWB has issued an Individual NPDES Permit or Notice of General Permit Coverage (NGPC). Conduct dewatering operations in accordance with the conditions of the permit or NGPC.

- (F) Solid Waste Disclosure. Submit the Solid Waste Disclosure Form for Construction Sites, if applicable, to the Engineer within 30 calendar days of Contract Execution or upon the discovery of the solid waste. Provide a copy of all the disposal receipts from the facility permitted by the Department of Health to receive solid waste to the Engineer. This should also include documentation from any intermediary facility where solid waste is handled or processed.

- (G) Construction BMP Training. The Contractor's representative(s), identified in Section 01561.3.1(B)(4), responsible for the Contractor's Construction Site Runoff Control Program, site managers, and appropriate subcontractors' personnel shall be properly trained on environmental compliance by attending a designated DOTA training seminar (e.g. HDOT's Protect Our Water Conference) or viewing the DOTA construction and post-construction training available at:

<http://hidot.hawaii.gov/airports/doing-business/engineering/environmental/construction-site-runoff-control-program>

Submit completed Training Roster and Construction Training Quizzes to the DOTA Environmental Section (fax: 808-838-8017 or email to [dot.air.environmental@hawaii.gov](mailto:dot.air.environmental@hawaii.gov)) prior to the start of construction activities.

Individual workers must be trained on their site-specific BMPs by the Contractor's representative(s) and managers who are knowledgeable in the proper manufacturer's installation, maintenance, and repair of the BMP product, or the manufacturer's authorized instructor. The Contractor shall keep training logs updated and readily available.

- (H) Health and Safety Plan. A site-specific Health and Safety Plan for excavation work conducted in the known or suspected area of contamination shall be prepared and submitted at least 15 calendar days prior to initiating any excavation work. The Plan shall be applicable to Federal and State regulations.

The Contractor shall retain and pay for the services of a Certified Industrial Hygienist (CIH), certified by the American Board of Industrial Hygiene, to certify training, and review and approve the Health and Safety Plan, excavation procedures, including the determination of the need for personal protective equipment.

The Health and Safety Plan shall describe methods, techniques, and phases for handling the contaminated soil and groundwater, if present, including:

1. A sequence of operations.
2. Method of excavation, transporting, and disposal.
3. Soil Stockpiling and Groundwater Storage procedures.
4. Proposed equipment.
5. Provisions to ensure that chemical and petroleum constituent concentrations, both airborne and in the soil, are below the Department of Health Environmental Action Level (EAL), Permissible Exposure Limit (PEL) and below the Lower Explosive Limit (LEL). Provide soil testing, air monitoring, personnel monitoring, and air sampling to ensure worker safety as determined by CIH. If airborne concentrations exceed the PEL or the LEL at the control area boundary, then, work must stop immediately and the Engineer and DOTA Environmental Section notified.

### 3.2 CONSTRUCTION REQUIREMENTS

Do not begin work until submittals detailed in Subsection 01561.3.1(B) – Water Pollution, Dust, and Erosion Control Submittals are completed, submitted to the Engineer and accepted in writing by the DOTA Environmental Section, and required conditions of the NPDES Permit and other applicable permits are met.

Do not expose or disturb surface area of earth material, or initiate any ground-disturbing activities (including clearing and grubbing) until BMPs are installed, functional and accepted in writing by DOTA Environmental Section and/or their designated authorized representative. Only the soil, to the extent that is required to install the BMP measures and devices, shall be disturbed and minimized to the extent possible.

Install, maintain, monitor, repair and replace BMPs, such as for water pollution, dust, and erosion control; installation, monitoring, and operation of hydrotesting activities; removal and disposal of hazardous waste indicated on plans, concrete cutting slurry, concrete curing water; or hydro-demolition water. Address all comments received from the Engineer, DOTA Environmental Section and/or DOTA's Third-party inspector.

Coordinate temporary control provisions with permanent control features throughout the construction and post-construction period.

Protect temporarily or permanently disturbed soil surface from rainfall impact, runoff, and wind before the end of each work day. Coordinate and schedule the work to the maximum extent possible to minimize the amount of exposed or disturbed surface area of earth material.

Immediately *initiate* stabilizing exposed soil areas upon completion of earth disturbing activities for areas permanently or temporarily ceased on any portion of the site. Earth-disturbing activities have permanently ceased when clearing and excavation within any area of the construction site that will not include permanent structures has been completed. Earth-disturbing activities have temporarily ceased when clearing, grading, or excavation within any area of the site will not resume for a period of 14 or more calendar days, but such activities will resume in the future. The term "immediately" is used in this section to define the deadline for *initiating* stabilization measures. "Immediately" means as soon as practicable, but no later than the end of the next work day, following the day when the earth-disturbing activities have temporarily or permanently ceased.

Any of the following types of activities constitutes *initiation of stabilization*:

1. Prepping the soil for vegetative or non-vegetative stabilization;
2. Applying mulch or other non-vegetative product to the exposed area;
3. Planting the exposed area;

4. Starting any of the activities in items (1) – (3) above on a portion of the area to be stabilized, but not on the entire area; and
5. Finalizing arrangements to have stabilization product fully installed in compliance with the deadline for completing initial stabilization activities.

After the initiation of stabilization, stabilization activities shall be completed by the following deadline.

1. For projects with an NGPC or NPDES Permit for Construction activities:
  - (a) For construction areas discharging into waters not impaired for nutrients or sediments, complete stabilization within 14 calendar days after the temporary or permanent cessation of earth-disturbing activities.
  - (b) For construction areas discharging into nutrient or sediment impaired waters, complete stabilization within 7 calendar days after the temporary or permanent cessation of earth-disturbing activities.
2. For projects without an NGPC or NPDES Permit for Construction activities, complete stabilization within 14 calendar days after the temporary or permanent cessation of earth-disturbing activities.

Any of the following types of activities constitutes completion of stabilization activities:

1. For vegetative stabilization, all activities necessary to initially plant the area to be stabilized; and/or
2. For non-vegetative stabilization, the installation or application of all such non-vegetative measures.

If the Contractor is using vegetative cover for temporary or permanent stabilization and is unable to meet the deadlines above due to circumstances beyond the Contractor's control, the Contractor shall notify and provide documentation of the circumstances to the Engineer for acceptance by DOTA Environmental Section. The Contractor shall include in their documentation the schedule that the Contractor will follow for initiating and completing stabilization. If agreed to by DOTA Environmental Section, the Contractor may, instead, comply with the following stabilization deadlines:

1. Immediately initiate, and complete within the timeframe shown above, the installation of temporary non-vegetative stabilization measures to prevent erosion;
2. Complete all soil conditioning, planting, watering or irrigation installation, mulching, and other required activities related to the planting and initial establishment of vegetation as soon as conditions or circumstances allow it on the site.

Follow the applicable requirements of the contract documents including Hawaii Standard Specifications for Road and Bridge Construction 2005 or latest edition, Section 619 and Section 641, as amended.

Where necessary to prevent erosion on the planted area, immediately install non-vegetative erosion controls that provide cover (e.g., mulch, rolled erosion control products) to the area while vegetation is becoming established.

Protect exposed or disturbed surface area with mulches or hydro-mulch with no seeds. Spray mulches at a rate of 2,000 pounds per acre. Add tackifier to mix at a rate of 85 pounds per acre. For hydro-mulch, use the ingredients and rates required for mulches. Apply fertilizer, if applicable, per the manufacturer's recommendations. Mulches, hydro mulch, and/or fertilizers shall not be applied during inclement weather or rain events. Submit recommendations from a licensed Landscape Architect when deviating from the application rates above or manufacturer's recommendations.

Install velocity dissipation measures when exposing erodible surfaces greater than 15 feet in height.

BMP measures shall be in place and operational at the end of each work day or as required by Section 01561.3.1(B).

Install and maintain stabilized construction entrances, including any wheel washes, to minimize tracking of dirt and mud onto roadways, sidewalks, and other paved areas. Restrict traffic to stabilized construction entrance areas only. Clean dirt, mud, or other material tracked onto the road, sidewalk, or other paved area by the end of the same day in which the track-out occurs. If tracking is excessive or sediment is being transported farther along the pavement or sidewalk by other vehicles traveling outside of the construction site, then, conduct cleaning and sweeping immediately. Modify stabilized construction entrances, as needed, to prevent mud from being tracked onto road. Stabilize entire access roads if necessary.

Maintain all excavations, embankments, haul roads, permanent access roads, plant sites, waste disposal areas, borrow areas, and all other work areas within the project limits free from dust which would cause a hazard to the work, airport operations, operations of other contractors, or to persons or property. Chemicals may be used as soil stabilizers for erosion and dust control. Submit the manufacturer's product data sheets of the chemicals to the Engineer for acceptance by the DOTA Environmental Section. Oil treating shall not be used. When using water for dust control, only potable water, that conform to Hawaii Standard Specifications for Road and Bridge Construction 2005 or latest edition, Subsection 712.01 – Water, shall be used. Dust screens and fabrics are not allowed on, or inhibit the view of, the TSA and AOA Security Fences.

Cover exposed surface of materials completely with tarpaulin or a similar device when transporting aggregate, soil, excavated material, or other materials that may be a source of fugitive dust.

Provide temporary slope drains of rigid or flexible conduits to carry runoff from cuts and embankments. Provide portable flume at the entrance. Shorten or extend temporary slope drains to ensure proper function.

Protect ditches, channels, and other drainageways leading away from cuts and fills at all times by either:

1. Hydro-mulching the lower region of embankments in the immediate area.
2. Installing check dams and siltation control devices.
3. Other methods acceptable to the DOTA Environmental Section.

Provide for controlled discharge of waters impounded, directed, or controlled by project activities or erosion control measures.

Cleanup and remove any pollutant that is attributed to the Contractor. Deposit of solid waste or the discharge of liquid waste, such as fuels, lubricants, bituminous waste, untreated sewage and other pollutants which may contaminate the body of ground water shall not be permitted. Care shall be taken to ensure that no petroleum products, bituminous materials, or other deleterious substances, including debris, are allowed to fall, flow, leach, or otherwise enter the sewage systems or storm drains.

Burning of matter or waste material on Airport property shall not be permitted.

The use of hazardous materials is prohibited without the approval of the Engineer. Any corrective actions to remove and replace the hazardous material and contaminated work shall be at the sole expense of the Contractor. Hazardous materials shall be properly stored and handled.

### 3.3 INSPECTIONS

For all projects with earth-disturbing activities, including construction support activity areas, the following inspections shall be conducted:

- (A) Initial Inspection of BMPs. Prior to the start of construction activities, the DOTA Environmental Section, or their designated authorized representative, will conduct an initial site inspection of the BMPs.

The Contractor shall submit their request for this inspection in writing to the Engineer. The inspection is subject to the availability of the DOTA Environmental Section or their designated authorized representative.

Prior to this inspection, only the soil, to the extent that is required to install the BMP measures and devices, shall be disturbed. During the inspection, the inspector will note any deficiencies in the BMP measures and devices, including identifying any

site conditions that have the potential to result in the discharge of pollutants. The Contractor is responsible for the correction of the deficiencies. Corrective Action shall be documented and submitted to the Engineer for acceptance by the DOTA Environmental Section and/or their designated authorized representative. The deficiencies must be corrected and accepted before construction activities are allowed to commence.

Initial Inspections shall be conducted separately for each new construction phase, new work areas, and additional construction support areas that occur during the construction period.

- (B) Contractor's Inspection of BMPs. Commencing immediately after the Initial BMP Inspection and until the acceptance of the Final BMP Inspection, the Contractor shall conduct inspections of the sites to ensure that BMPs are effective and activities do not have the potential of causing a polluted discharge.

The Contractor's Inspections shall be conducted at the following intervals:

1. Weekly.
2. Within 24 hours of any rainfall of 0.25 inch or greater which occurs in a 24-hour period.

The Contractor shall use on-line rainfall measurements data sources and providers. Rainfall measurements shall be taken from the same airport as the location of the project or within one (1) mile distance from the disturbed areas. Submit the identity of the provider, with the location of their measuring device, to the Engineer for approval by DOTA Environmental Section.

In lieu of using any on-line rainfall provider or if there are no measuring device of an on-line provider on the airport or within one (1) mile from the disturbed area, the Contractor shall furnish and install a rain gauge in a secure location prior to field work including installation of site-specific BMPs. Provide a rain gauge with a tolerance of at least 0.05 inches of rainfall. Install the rain gauge on the project site in an area that will not deter rainfall from entering the gauge opening. Do not install in a location where rain water may splash into the rain gauge. The rain gauge installation shall be stable and plumbed. Maintain rain gauge and replace any rain gauge that is stolen, does not function properly or accurately, is worn out, or needs to be relocated. Do not begin field work until the rain gauge is installed and Site-Specific BMPs are in place. Rain gauge data logs shall be readily available.

Submit rain gage data logs weekly with the Contractor's BMP Inspection Report to the Engineer for acceptance by the DOTA Environmental Section.

3. When existing erosion control measures are damaged or not operating properly as required by Site-Specific BMP.

Prepare a written report of the inspection and submit a copy of the report within 24-hours to the Engineer for acceptance by the DOTA Environmental Section. The report must include any deficiencies of the Site-Specific BMPs observed and the correction of these deficiencies. Corrective actions can be documented in a separate report and submitted upon completion of the corrective actions. Submit the report(s) to the Engineer for acceptance by DOTA Environmental Section.

The initiation of the work to repair or correct the deficiency shall begin immediately. However, except for those deficiencies that pose an immediate threat for the discharge of pollutants to the drainage system, surface waters, or receiving water, if the deficiency is identified at a time in the day in which it is too late to initiate the work, the initiation of the work shall begin on the following day.

After the initiation of the work to repair or correct the deficiency, the work shall be completed as follows:

1. If the deficiency poses an immediate threat for the discharge of pollutants to the drainage system, surface waters, or receiving waters, the work to fix the deficiency shall be completed by the close of the same day of discovery of the deficiency. Examples of these deficiencies included, but not limited to, illicit discharge, absence of perimeter controls in an area with evidence of sediment transporting off-site, and spills near a drain or waterway that have not been cleaned.
2. If the deficiency poses a significant threat for the discharge of pollutants to the drainage system, surface waters, or receiving waters, the work to fix the deficiency shall be completed by five (5) calendar days or before the next forecasted rain event, whichever is sooner. Examples of these deficiencies include, but not limited to, perimeter controls that are not functional or require maintenance, drain inlet protections that are not functional or require maintenance, installation of a new pollution prevention control, and deficiencies requiring significant repair for the correction of the deficiency.
3. If the deficiency does not pose a threat for the discharge of pollutants to the drainage system, surface waters, or receiving waters, but are not in strict conformance with the SWPPP, SSBMP Plan, or DOTA's Construction Activities BMP Field Manual, the work to correct the deficiency shall be completed by ten (10) calendar days or within the time specified by the

Engineer, whichever is sooner. These deficiencies include all deficiencies except those deficiencies included in (1) and (2), above.

4. If it is infeasible to complete the correction of the deficiency or installation of a new pollution prevention control within the respective timeframe above, notify the Engineer who will consult with DOTA Environmental Section. Document why it is infeasible to complete the work within the required timeframe. Complete the work as soon as practicable and as agreed to by both the Engineer and DOTA Environmental Section.

Retain copies of these inspection reports on-site or at an accessible location for the duration of the project so that they can be made available at the time of an on-site inspection, or upon request by the Engineer, DOTA Environmental Section, DOTA's Third Party Inspector, and/or DOH/EPA Representative. Present these inspection reports to the DOTA's Third-Party Inspectors at the time of their inspection for review.

- (C) Final Inspection / Post-construction BMP Initial Inspection. The DOTA Environmental Section, or their designated authorized representative, shall conduct a Final Inspection / Post-Construction BMP initial inspection when the Contractor has completed construction, including installing permanent BMPs and stabilizing exposed soil.

The Contractor shall submit the request for this inspection in writing to the Engineer. The inspection is subject to the availability of the DOTA Environmental Section or their designated authorized representative.

All deficiencies noted must be addressed before the Contractor can remove temporary BMPs and close the site. The Contractor is responsible for correction of the deficiencies. Corrective Action shall be documented and submitted to the Engineer for acceptance by the DOTA Environmental Section. Any deficiencies noted during the final inspection must be corrected before the State will issue the project final acceptance and make final payment.

Partial Final Inspection of construction phases or partial areas of the project shall be conducted during the construction of the project for areas that are to be transferred for DOTA's use.

- (D) Routine Inspections Conducted by DOTA. The Contractor's designated representative specified in Subsection 01561.3.1(B)(4) shall address any Site-Specific BMP deficiencies brought up by the Engineer or their authorized representative (i.e. Quality Control Engineer, Project Inspector, etc.) taking all reasonable measures to minimize or prevent discharge of pollutants until a permanent solution is installed and made operational.

The initiation of the work to repair and correction of the deficiency shall be completed within the same timelines as required in Subsection 01561.3.3(B).

(E) DOTA's SWMPP Inspections. For Projects located at the Daniel K. Inouye International Airport (HNL) or the Kahului Airport (OGG) that have a NGPC or NPDES Permit, or disturb one acre or more, including the construction support activity areas, the following additional inspections shall be conducted:

1. Third-Party Inspections. The DOTA Environmental Section's Third-Party inspector will conduct routine inspections. Third-party inspections shall be conducted monthly. The frequency of the inspections may increase if deficiencies are identified as determined by the inspector. Deficiencies must be corrected within the timeline defined in DOTA's SWMPP, Section C, Construction Site Runoff Control Program, which can be downloaded from the website:

<http://hidot.hawaii.gov/airports/doingbusiness/engineering/environmental/construction-site-runoff-control-program/>

The Contractor shall be responsible for the correction of ALL deficiencies identified during any of the above inspections. Corrective Action shall be documented and submitted to the Engineer for acceptance by the DOTA Environmental Section or their designated authorized representative.

If the Contractor fails to satisfactorily address Site-Specific BMP deficiencies, the DOTA reserves the right to employ outside assistance or use the State's own labor forces to provide necessary corrective measures. The Contractor will be fully responsible for all cost and time. The State will charge the Contractor such incurred costs plus any associated project engineering costs and will make appropriate deductions from the Contractor's monthly progress payment.

Failure to apply or maintain Site-Specific BMP measures may result in the assessment of liquidated damages (Appendix B). Depending on the severity of the deficiencies, additional enforcement actions, such as, suspension of work and/or termination of the contract (with the Contractor's Surety being fully responsible for all additional costs incurred by the State) can be conducted and assessed against the Contractor.

For all citations or fines received by the DOTA for non-compliance, including non-compliance with NGPC/NPDES Permit conditions, the Contractor shall reimburse the State within 30 calendar days for the full amount of outstanding cost that the State has incurred, or the State shall deduct all incurred costs from the Contractor's monthly progress payments.

The Contractor shall be responsible for all citations, fines and penalties levied by DOH or EPA against the State due to the Contractor's failure to satisfactorily address Site-Specific BMP deficiencies and/or any Contractor's illicit discharges. The State will make the appropriate deductions from the Contractor's monthly progress payment.

PART 4 MEASUREMENT AND PAYMENT

4.1 BASIS OF MEASUREMENT AND PAYMENT

The work specified in this Section will be paid for at the contract lump sum price. Payment shall be full compensation for work prescribed in this Section and contract documents, including but not limited to, all labor, materials, tools, equipment, and all incidentals necessary to install, maintain, monitor, repair, replace, modify, and remove Site-Specific BMP measures.

<u>Item No.</u>	<u>Item</u>	<u>Unit</u>
01561.1	Construction Site Runoff Control Program	Lump Sum

Partial payments shall be paid in the Monthly Progress Payment as follows:

1. 20% of the line item price shall be paid upon DOTA Environmental Section's acceptance in writing of the Site-Specific BMP Plan and the satisfactory completion of the Initial Inspection of BMPs defined in Section 01561.3.3(A), above.
2. 60% of the line item price shall be paid in equal monthly payments over the duration of the contract. Failure to satisfactorily apply, maintain, or modify BMP measures and devices, and/or submittals shall result in the withholding of monthly progress payments for this line item.

**For projects located at the Daniel K. Inouye International Airport (HNL) or the Kahului Airport (OGG) that have a NGPC or NPDES Permit, or disturb one (1) acre or more, including construction support activity areas, payments shall be made only after the DOTA's Third-Party Inspection defined in Section 01561.3.3(E), above, have been satisfactorily completed and accepted by the DOTA Environmental Section. Any deficiencies classified as Major or above will result in the withholding of monthly progress payments for this line item.**

3. The remaining 20% of the line item price shall be paid after all BMP measures have been satisfactorily removed.

Payment will be made only after the satisfactory completion of the Final Inspection / Post-Construction BMP Initial Inspection defined in Section 01561.3.3(C), above, and acceptance of the Post-Construction BMPs by the DOTA Environmental Section.

Liquidated Damages, up to \$25,000 per day (Appendix B), shall be assessed for each non-compliance of the BMP requirements described in this Section. The Contractor shall not be entitled to recover any Liquidated Damages assessed, even after the deficiencies have been corrected.

## Appendix A

The current DOTA's Construction Activities Best Management Practices (BMP) Field Manual can be found on DOTA's Environmental Website at

<https://hidot.hawaii.gov/airports/doing-business/engineering/environmental/construction-site-runoff-control-program/>

The manual is periodically updated and should be downloaded via the website to ensure that the latest version is applied. The manual identifies potential pollutant sources and BMPs that should be used to mitigate pollutants.

Additional information and requirements for stormwater programs at all airports can also be found at the above website, including additional requirements for Daniel K. Inouye International Airport (HNL) and Kahului Airport (OGG).

**Appendix B Liquidated Damages Schedule for Non-Compliances.**

Non-Compliance	Amount
Failure to submit a Notice of Intent or otherwise obtain a permit for Staging and/or Storage Area beyond the project limits.	\$1,000 per calendar day per violation.
Failure to comply with the conditions specified in the Notice of General Permit Coverage (NGPC) or Individual NPDES Permit, or any other applicable permit.	\$1,000 per calendar day per violation.
Failure to have the accepted SSBMP Plan and Amendments or the accepted SWPPP and Amendments available at a project construction site.	\$1,000 per calendar day per violation.
Failure to install a BMP specified by the SSBMP Plan or SWPPP, or permit.	\$2,000 per calendar day per violation.
Failure to properly install or maintain appropriate Site-Specific BMPs in accordance with applicable plans, permits, and guidance documents.	\$2,000 per calendar day per violation.
<p>Failure to have an accepted Amendment to the SSBMP Plan or an accepted Amendment to the SWPPP prior to implementation of the proposed BMPs.</p> <p>Note: Advance review and acceptance can be provided via email which will satisfy this non-compliance. However, the written Amendment must still be formally submitted for certification and signature by the authorized representative identified in the NGPC or NPDES Permit.</p>	\$2,000 per calendar day per violation.
Failure to conduct required inspections.	<p>\$1,000 for each of the first ten violations,</p> <p>\$2,500 for each of the next ten violations,</p> <p>\$5,000 for each subsequent violation.</p>
Failure to submit required reports such as BMP inspection reports, rain gauge data logs, etc.	<p>\$500 per calendar day for the first ten days of each violation,</p> <p>\$1,000 per calendar day for the next ten days of each violation,</p> <p>\$2,500 per calendar day for each subsequent day of violation.</p>

Non-Compliance	Amount
Any "major" or "critical" non-compliance violation with the applicable plans, permits, and guidance documents.	Up to \$25,000 per calendar day per violation.
Any violation resulting in a polluted discharge.	Up to \$25,000 per calendar day per violation.

Note: Liquidated Damages shown in the Table shall be assessed at the discretion of the DOTA.

**Assessment of Liquidated Damages for Non-Compliance:**

The Contractor may be assessed liquidated damages by issuance of an Enforcement Letter. The Enforcement Letter shall indicate the amount of liquidated damages that are assessed for the non-compliances which shall be deducted from the Contractor's next progress payment. The Enforcement Letter will be sent electronically via e-mail and a hard copy to the Contractor's designated representative(s), identified in Section 01561.3.01(B)(4), responsible for the Contractor's Construction Site Runoff Control Program. An Enforcement Letter may be issued with or without a previous Verbal Notification, Warning Letter, or Notice of Apparent Violation (NAV).

Liquidated Damages may be assessed for the following:

- Non-compliances listed in the Table, herein, included in Appendix B.
- Non-compliances have not been corrected in the timeframes noted.
- Corrective actions are not completed after a Verbal Notification, Warning Letter, or Notice of Apparent Violation is issued.
- Contractors are non-responsive to DOTA's directives.
- Repeated non-compliance.
- A polluted discharge has occurred.

The number of days used for the liquidated damages calculations shall start on the day that the non-compliance was required to be corrected and shall end on the day that the non-compliance is corrected and accepted. If DOTA's personnel are not able to go out in the field to verify that the BMP deficiencies are corrected in the timeframe specified, the Contractor can send photographs showing the corrected deficiency via e-mail to the Engineer and DOTA Environmental Section along with documentation on how the deficiency was corrected. The Engineer and DOTA Environmental Section may visit the site to verify the corrective actions are acceptable. If the

corrective actions are acceptable, then the clock stops on the day that the documentation was received.

END OF SECTION

## SECTION 01562 – MANAGEMENT OF CONTAMINATED MEDIAS

### PART 1 – GENERAL

#### 1.1 RELATED DOCUMENTS

The General Provisions, Special Provisions, and General Requirements of the Specifications apply to the work specified in this section.

#### 1.2 DESCRIPTION AND SCOPE OF WORK

- A. This Section describes procedures for the management of contaminated media (soil, groundwater, and soil vapor) that may be disturbed during excavation activities associated with this project.
- B. The Contractor shall supply all labor, materials, and equipment necessary for the removal, temporary storage, testing, handling, soil backfilling and management of contaminated media to carry out the work in accordance with these specifications, and all applicable Federal, State, and local regulations and latest amendments.
- C. The Contractor shall examine the State of Hawaii, Department of Transportation, Airports Division (DOTA) Programmatic Environmental Hazard Evaluation and Environmental Hazard Management Plan (DOTA EHE-EHMP) and, if included as part of these specifications, the Environmental Site Assessment (ESA) Phase II, to understand the conditions that may affect work and performance. Should the Contractor deviate from the DOTA EHE-EHMP or ESA, the Contractor shall be responsible to prepare a DOH required Construction EHMP (C-EHMP) utilizing the C-EHMP Addendum Template or most recent version provided by DOH, also known as a Site-Specific EHMP. Any deviation will require approval by the State of Hawaii, Department of Health (HDOH) and DOTA Environmental Section (DOTA AIR-EE) prior to implementation, using the forms provided in Appendix B of the DOTA EHE-EHMP. The forms should detail deviations from standard practices in the text and explain how those deviations will be protective of human health and the environment. The forms should be submitted to HDOH and DOTA AIR-EE for review and approval if deviations are requested or if notifying of a release.
- D. It should be noted that the DOTA EHE-EHMP is for Contaminants of Potential Concern (COPCs) which include, but not limited to, the following:
- Petroleum Substances, e.g., TPH, TPH-g, TPH-d, TPH-o, BTEX, and PAHs.
  - Chlorinated Solvents, e.g., VOCs
  - Polychlorinated Biphenyls (PCBs)
  - Pesticides, e.g., chlordane
  - Heavy Metals, e.g., Arsenic, Barium, Cadmium, Total Chromium, Lead, Mercury, Selenium, and Silver.

In addition, free product (e.g., gasoline, diesel fuel, fuel oils, lubricating oils, benzene, toluene, xylenes) may be encountered in areas of previous petroleum releases.

Should the ESA Phase II identify contaminants other than those listed above or there

is a risk to human health and/or the environment (such as indoor air quality in an occupied building), the Contractor shall be responsible to revise, update, and finalize the C-EHMP Addendum. The Contractor shall coordinate with, as well as have their C-EHMP approved by HDOH prior to the start of any ground disturbing activities.

### 1.3 REFERENCES

- A. Programmatic Environmental Hazard Evaluation and Environmental Hazard Management Plan dated July 2019, or its latest edition.
- B. DOTA's Storm Water Management Program Plan (SWMPP) for the Daniel K. Inouye International Airport (HNL) and Kahului Airport (OGG), including DOTA's Construction Activities BMP Field Manual dated August 2019, or its latest edition.
- C. All work under this contract shall be performed in strict accordance with all applicable Federal, State, and local regulations, standards, and codes governing contaminated media.
- D. The most recent editions of any relevant regulations, standards, documents, or codes shall be in effect, including, but not limited to, the following. Where conflicts among the requirements or with these specifications exists, the most stringent requirements shall apply.
  - 1. 29 CFR 1910, "Occupational Safety and Health Standards".
  - 2. 29 CFR 1926, "Safety and Health Regulations for Construction".
  - 3. 40 CFR 50, "National Primary and Secondary Ambient Air Quality Standards A".
  - 4. 40 CFR 122, "EPA Administered Permit Program: The National Pollutant Discharge Elimination System".
  - 5. 40 CFR 261, "Identification and Listing of Hazardous Waste".
  - 6. 40 CFR 263, "Standards Applicable to Transporters of Hazardous Waste".
  - 7. 40 CFR 302, "Designation, Reportable Quantities, and Notification".
  - 8. 49 CFR 172, Subpart E, "Labeling".
  - 9. 49 CFR 172, Subpart F, "Placarding".
  - 10. The Hawaii Environmental Response Law (Hawaii Revised Statutes [HRS] Chapter 128D) and the State Contingency Plan (Hawaii Administrative Rules [HAR] Title 11, Chapters 451-1–451-24).
  - 11. The Hazard Evaluation and Emergency Response Office Technical Guidance Manual (TGM) for Implementation of the State Contingency Plan (Interim Final, June 21, 2009).
  - 12. Hawaii Hazardous Waste Laws and Regulations (HRS Chapter 342J, HAR Title 11, Chapters 260.1–279.1).

13. Hawaii Solid Waste Laws and Regulations (HRS Chapters 342H and I, HAR Title 11, Chapter 58.1).
14. Hawaii Underground Storage Tank Laws and Regulations (HRS Chapter 342L; HAR Title 11, Chapter 280.1).
15. Hawaii Water Quality Standards (HAR Title 11, Chapter 54).
16. Hawaii Ambient Air Quality Standards (HAR Title 11, Chapter 59).
17. Hawaii Occupational Safety and Health Standards (HAR Title 12, Subtitle 8).
18. Hawaii Department of Health, Office of Hazard Evaluation and Emergency Response. Screening for Environmental Hazards at Sites with Contaminated Soil and Groundwater. Website URL: <http://eha-web.doh.hawaii.gov/eha-cma/Leaders/HEER/EALs>. Fall 2011 (and updates).
19. Hawaii Department of Health, Office of Hazard Evaluation and Emergency Response. Guidance for Soil Stockpile Characterization and Evaluation of Imported and Exported Fill Material. Website URL: <http://eha-web.doh.hawaii.gov/eha-cma/Leaders/HEER/technical-guidance-and-fact-sheets>. October 8, 2017 (and updates).
20. Hawaii Department of Health, Office of Hazard Evaluation and Emergency Response. Construction EHMP Addendum Template, available from AIR-EE.
21. U.S. Environmental Protection Agency (EPA): Comprehensive Environmental Restoration, Compensation, and Liability Act, Section 107(1), 1980, exemption for cleanup of legally applied pesticide products.

## PART 2 – PRODUCTS

### 2.1 PERSONAL PROTECTIVE EQUIPMENT & SIGNAGE

- A. Provide workers with Personal Protective Equipment (PPE) according to the Contractor's PPE Assessment.
- B. Provide warning signs and labels to protect the workers and the public.

### 2.2 POLYETHYLENE SHEETING

Sheet plastic shall be new, and clear or black with at least 20-mil thickness. A 6-mil plastic sheet can be used to cover the stockpiles.

## PART 3 – EXECUTION

### 3.1 GENERAL WORK PROCEDURES

- A. Prior to beginning work, the Contractor, the Contractor's Qualified Environmental Professional, and DOTA Engineer or its representative shall discuss the approved

Work Plan, as described in Paragraph 3.2 below, including work procedures and safety precautions.

- B. Communicate any existing, potential, or new hazards to workers before a job begins or as necessary. The workers shall be aware of the need for proper safety procedures and be familiar with the Contractor's Work Plan.
- C. Boundaries shall be established at each area where soil excavation is to be performed. The area shall be clearly identified to prevent unauthorized entry. Establish a control area by completely enclosing/roping-off the area where contaminated soil excavation, removal, stockpiling and disposal operations will be performed.
- D. Provide physical boundaries around the control area by roping-off the area to ensure that airborne concentrations of COPC will not exceed permissible exposure limits outside the control area.
- E. Where applicable, caution signs shall be placed at the entrances to each work area, located such that approaching personnel may read the signs and take necessary precautions before entering the work area. No one will be permitted in the work area unless the person is provided with appropriate training and protective equipment.
- F. It should be noted that, in some cases, the contamination may not be identifiable through visual and/or olfactory observation (e.g., soil contaminated with metals, PCBs, pesticides, etc.) and contaminant-specific field screening techniques may need to be implemented.
- G. Measure, monitor, and record worker exposure to toxic materials or harmful agents as necessary.
- H. Follow Decontamination regulations and procedures as necessary.
- I. Soil excavation activities, grading, and any disturbance of impacted soil may cause a potential exposure to Contractor's employees and the general public due to fugitive dust. The routes of exposure of dusts are by inhalation, ingestion, and dermal contact. The Contractor shall use engineering controls such as water spraying and wind barriers to control fugitive dust.
- J. The Contractor shall test residual soils not used as backfill for COPC. Soils with concentrations above regulatory and/or unrestricted use environmental action levels shall be disposed of in accordance with regulatory requirements.
- K. Report construction activities in areas with contaminated soil or groundwater by completing the appropriate forms in the DOTA EHE-EHMP, Appendix B.3 Construction Activities Release Response Plan. Submit the forms to the HDOH Office of Hazard Evaluation and Emergency Response (HEER Office) and provide a copy of the forms to the DOTA Engineer and DOTA AIR-EE.

### 3.2 PRECONSTRUCTION REQUIREMENTS

- A. Submit the following a minimum of 30 calendar days prior to beginning any ground

disturbing activities, for approval by DOTA AIR-EE.

1. Contractor's Work Plan for Known or Suspected Areas of Contaminated Media:

- a. The Contractor shall submit their work plan which shall include, but not limited to, a Site-Specific Health and Safety Plan (HASp) or if needed, a C-EHMP. The work plan shall describe the procedures, engineering controls, and methods the Contractor will use during the excavation, temporary storage, handling, treatment, backfilling, and disposal of soil and/or water at the project site. The plan shall also include soil stockpiling and segregation, testing, contaminated soil and water quality testing, contaminated soil and water disposal procedures, backfilling procedures, personal protection requirements, work area isolation, construction barriers, wetting methods, decontamination procedures, and emergency procedures. The work plan shall be in accordance to all applicable Federal, State, and local regulations and latest amendments.

**For locations within the airport which DOTA has already established a Site-Specific EHMP from previous projects, the DOTA's Site-Specific EHMP, shall govern, where applicable.**

- b. The plan shall include the names of the Contractor's and their subcontractor's qualified personnel who will be supervising or managing the management of contaminated materials at the site. Include the personnel's phone number and qualifications.
- c. The plan shall include the name(s) of the Contractor's Qualified Environmental Professional, including their qualifications.
- d. Proposed schedule of work.
- e. A sketch identifying the location of temporary soil stockpiling and water storage devices, including pipes and appurtenances, if applicable.
- f. A map showing the location of the work and nearest medical facilities and hospitals.
- g. A copy of this Work Plan must be on the construction site and available at all times.
- h. The Work Plan shall be amended to reflect changes to the site or work conditions, as needed.

**B. QUALIFIED ENVIRONMENTAL PROFESSIONAL**

The Contractor shall employ a Qualified Environmental Professional who possesses five (5) years, minimum, experience providing environmental oversight for the management of contaminated media during construction activities. The Environmental Professional shall assist in the preparation of the Contractor's Work Plan by reviewing the work procedures, including the determination of the need for

PPE, and to provide environmental oversight during construction. The Environmental Professional shall be identified in the Work Plan, including a list of their environmental qualifications, for approval by DOTA AIR-EE.

### C. CONTRACTOR TRAINING

The Contractor and its subcontractors shall implement safe work places and practices by eliminating, mitigating, or protecting against existing or potential hazards to the workers who may be exposed to harmful, hazardous, and toxic materials and substances, including contaminated water and soil.

## 3.3 CONSTRUCTION REQUIREMENTS

### A. SOIL EXCAVATION AND STOCKPILING

1. Notify the HDOH Clean Water Branch (CWB) at least 90 calendar days prior to disturbing contaminated soil from known areas of contamination. Notify the HDOH HEER Office at least seven (7) calendar days prior to construction activities that could disturb known contaminated soil.
2. The HDOH HEER Office shall be immediately notified if contaminated soils are encountered. The disturbance of contaminated soil shall be performed in accordance with the Contractor's approved Work Plan, the DOTA EHE-EHMP, or a C- EHMP Addendum where applicable. HDOH HEER Office will determine whether additional sampling is required. Provide a location map with Global Positioning System (GPS) coordinates and approximate depth (bgs) at which the contaminated soils were encountered to the DOTA Engineer and DOTA AIR-EE.
3. During excavation and disturbance of impacted soil, all workers, supervisory personnel, subcontractors, and consultants must take precautionary measures as necessary to prevent exposure of the workers and the general public to chemicals of concern (COCs) by contaminated soil dust and inhalation of associated vapors.
4. The Contractor's Qualified Environmental Professional shall direct the segregation of the soil into three (3) separate soil piles: Pile No. 1 will consist of clean soil; Pile No. 2 will consist of soil excavated from areas found to be contaminated or suspected to be contaminated; and Pile No. 3 will consist of soil that is grossly contaminated. Contaminated soil stockpiles, suspected contaminated soil stockpiles, and grossly contaminated soil stockpiles shall be placed onto 20-mil plastic sheeting. Underlay edges of the plastic sheeting with bermed soil. Ensure that the height of the bermed soil will be sufficient to prevent stormwater runoff from breaching it. Place the excavated soil inside the bermed area on top of the plastic sheeting. Cover the stockpiles with 6-mil plastic sheeting in the bermed area to mitigate dust concerns caused by wind and prevent contact with rainwater and stormwater runoff. Secure the plastic cover with sufficient ballast and place sediment control devices along the entire toe of each stockpile.
5. Each stockpile shall not exceed 100 cubic yards and shall be located away from drainage features, surface waters, and stormwater drainage paths. Or, the soils

can be placed in watertight containers, such as 20-yard steel roll-off bins, drums, etc. These containers shall be covered.

6. The Contractor shall have representative soil samples taken from each stockpile (Pile No. 1, 2, and 3) and tested in accordance with HDOH guidelines, standards, and regulations, such that the soil sample report, prepared by the Contractor's Qualified Environmental Professional, can specifically state one of the following:
  - a. "The soil is not a regulated hazardous waste and is acceptable for disposal at a HDOH permitted facility."; or
  - b. "The soil is acceptable for unrestricted reuse."

Sampling and testing of the stockpiles shall be, at a minimum, in accordance to the latest edition of the HDOH's *Guidance for Soil Stockpile Characterization and Evaluation of Imported and Exported Fill Material*. The Contractor's Qualified Environmental Professional shall direct the soil sampling collection and testing methods in accordance with the most current guidelines. Stockpiles shall be tested using multi-increment (MI) sampling approaches. Appropriate decision unit (DU) volumes for larger stockpiles of soil should be discussed with the HDOH HEER Office on a case-by-case basis.

The Contractor shall also confirm, with the HDOH permitted facility, the facility's sampling requirements, as well as their standards for disposal.

7. Any liquid-phase oil or free product associated with the contaminated soil shall be drained prior to stockpiling. If feasible, the free product should be separated from the soil, properly stored, profiled, and disposed of at an approved recycling/disposal facility.
8. For any soils hauled off Airport property, the Contractor shall be responsible for the legal disposal of any soil. The Contractor shall implement and maintain the following:
  - a. A form, signed by the Contractor and haul truck driver. The form shall contain the following information:
    - i. The date the material is being taken off Airport property.
    - ii. The name of the haul trucking company.
    - iii. The haul truck number and license plate number.
    - iv. The quantity of material being loaded into the haul truck.
    - v. The disposal facility or location of where the material is to be taken.
    - vi. The time the truck left the project site.
  - b. The form and waste manifest from the HDOH permitted facility shall be provided to the Engineer or its representative by the close of the next working day. The Contractor shall verify that the quantity of material loaded into the truck, as indicated on the form, exactly matches the quantity of material disposed at the HDOH permitted facility, as indicated on the waste manifest.

- c. The Contractor shall maintain a log that summarizes each form and waste manifest for ease of tracking and monitoring.
  - d. **All forms, waste manifest, and summary log shall be a condition of payment being made to the Contractor and shall be submitted with each progress payment. Failure to submit the above and/or should any quantity of material loaded into the truck, as indicated on the form, not exactly match the quantity of material disposed at the HDOH permitted facility, as indicated on the waste manifest, shall be reason for the State to withhold payment to the Contractor.**
9. Excavated soils can be reused onsite (within the construction site boundaries) with the prior approval of the DOTA AIR-EE, HDOH HEER Office, and subject to the following conditions:
- a. Representative soil samples have been taken and tested in accordance with HDOH standards and regulations.
  - b. The contaminated soil can only be reused within proximity of its original excavation.
  - c. The contaminated soil is placed within areas more than 150 meters from surface water and drainage features.
  - d. The contaminated soil cannot be placed beneath or within the footprint of a planned building structure.
  - e. The contaminated soil can only be placed at an elevation above the tidally influenced high water table and at least 1-foot below the finish surface grade. The more highly impacted soil should be placed at the bottom of the excavation and the cleanest soil at the top of the excavation. At least 1-foot of clean soil must be placed as the final backfill layer at the top. The excavation shall then be capped with an impervious layer, such as concrete and asphalt.
  - f. The contaminated soil cannot contain any free oil, oil sheens, oil stains, or total petroleum hydrocarbon (TPH) concentrations exceeding 5,000 parts per million (ppm).
  - g. The contaminated soil is not considered a hazardous waste pursuant to Federal and State laws.
  - h. Contaminated soil shall not be reused in areas that are uncontaminated.
10. Excavated soils can be reused offsite (off Airports property) with the prior approval of the DOTA AIR-EE, HDOH HEER Office, and subject to the following conditions:
- a. Representative soil samples have been taken and tested in accordance with HDOH standards and regulations.

- b. The work shall be performed in accordance to the latest edition of the HDOH's *Guidance for Soil Stockpile Characterization and Evaluation of Imported and Exported Fill Material*.
  - c. A signed agreement with the receiving facility acknowledging the test results of the soil samples and acceptance of the soil is required to be submitted to the DOTA Engineer and DOTA AIR-EE ten (10) calendar days prior to hauling of the soil to the receiving facility.
  - d. The contaminated soil shall not contain any free oil, oil sheens, oil stains, or total petroleum hydrocarbon (TPH) concentrations exceeding 5,000 parts per million (ppm).
  - e. The contaminated soil is not considered a hazardous waste pursuant to Federal and State laws.
11. All soil that is reused onsite or offsite shall be included in the Closeout Report. The report shall include, at a minimum, a copy of the signed agreement from the receiving facility accepting the soil, a copy of the soil test results, the quantity of soil received by the facility, a location map of the reused soil including GPS coordinates of its limits, the depth and thickness of the soil's placement, a brief description of the purpose of the soil's re-use, and photos of the site conditions after placement has been completed.

## B. GROUNDWATER MANAGEMENT

Soil and groundwater may be impacted by petroleum hydrocarbons, dissolved metals, and/or pesticides, and may be encountered during soil excavation.

1. The disturbance of contaminated groundwater shall be performed in accordance with the approved Work Plan, DOTA EHE-EHMP, or Site-Specific EHMP, where applicable. HDOH HEER Office will determine whether additional sampling is required.
2. If contaminated groundwater is uncovered at a previously unknown source or site on the project, the Contractor shall immediately notify the DOTA Engineer, DOTA AIR-EE, and HDOH HEER Office of its discovery. Provide a location map with GPS coordinates and approximate depth of the groundwater (bgs) at which the discovery was encountered.
3. During excavation and disturbance of impacted groundwater, all workers, supervisory personnel, subcontractors and consultants must take precautionary measures as necessary to prevent exposure of the workers and the general public to COCs and inhalation of associated vapors. Free product, sheen, and impacted groundwater must be managed properly.
4. Groundwater that exhibits evidence of possible contamination, i.e., odor, visual sheen, free product, coloration, and PID measurement, shall be properly stored when removed from the ground. Storage devices shall be watertight and leak-free to prevent discharge of the water into the surrounding ground, drainage system, and surface waters.

When disconnecting pipes and hoses from storage devices and equipment, residual waters contained in the pipes and hoses shall also be prevented from discharging into the surrounding ground, drainage system, and surface waters.

5. Representative water samples shall be taken and tested in accordance with Federal and State guidelines, standards, and regulations.
6. If free product is present in the extracted groundwater, it must be separated from the groundwater, profiled, and disposed of at an HDOH approved recycling/disposal facility. Free product shall not be moved from one excavation to another. Engineering measures shall be taken to prevent the transfer of the free product during dewatering. Under no circumstances shall water contaminated with free product be discharged from a dewatering pit.
7. At least once daily, remove oil observed floating on the groundwater during excavation activities using a vacuum truck, absorbent pad, or other methods approved by HDOH HEER Office. Excavations shall not be backfilled until the floating oil is removed to the maximum extent practicable, which is when further use of vacuum trucks, absorbent pads, or other approved methods do not result in further floating oil removal. Backfilling of any excavation shall not occur without concurrence from DOTA AIR-EE and HDOH HEER Office.
8. Avoid any releases of contaminated groundwater to surface water bodies or areas beyond the work area.
9. Groundwater shall only be re-infiltrated in the ground with the prior approval of DOTA AIR-EE and HDOH HEER Office, and subject to the following conditions:
  - a. Within 200-feet of its original location or source and returned to the same aquifer which is not a current or potential drinking water source. Re-infiltration shall not contaminate uncontaminated areas.
  - b. More than 150 meters from surface waters, drainage features, and drainage structures.
  - c. Groundwater does not contain any gross contaminants.
  - d. If petroleum free product is present in the groundwater, the free product shall be removed prior to transfer of the groundwater to the re-infiltration site. Free product shall be removed at least once daily until no free product is observed after 24 hours. The free product shall be disposed at an HDOH-approved facility.
  - e. Groundwater is not considered a hazardous waste pursuant to Federal and State law.
  - f. Re-infiltration shall be conducted at a slow enough rate so that it does not flow past the designated infiltration area, enter storm drains, or impact surface water in the area.
  - g. If discharging to a re-infiltration trench, the trench must not be an

underground injection control (UIC) well by HDOH's Safe Drinking Water Branch (SDWB) definitions. If some part of the trench system is deemed to be a UIC well, then the whole system shall be considered an injection well.

- h. Advance clearance from HDOH SDWB is required if a re-infiltration trench is deeper than 10 feet.
  - i. If a UIC well is used for re-infiltration, the Contractor is responsible to obtain the necessary permits, including, but not limited to, HDOH's UIC Permit. The Contractor shall meet and comply with all permit requirements, including, but not limited to, well construction, placement, use, and closure.
10. Under circumstances where contaminated groundwater cannot be re-infiltrated, proper disposal must be conducted with the prior approval of the DOTA AIR-EE, HDOH SDWB, HDOH Solid and Hazardous Waste Branch (SHWB), and HDOH HEER Office. This is also subject to the following conditions:
- a. Discharge to the local or municipal sanitary sewer system after acquiring appropriate permit(s) from City and County (if applicable and if allowable by the receiving governmental agency) prior to discharge. If discharge water was generated within contaminated areas, additional coordination with HDOH HEER Office is required, and Aquatic Habitat Criteria (Chronic Toxicity) shall apply to discharge within these areas, in addition to any criteria applicable to the National Pollutant Discharge Elimination System (NPDES) permit or pretreatment facility. Water discharged to a sanitary sewer may be required to meet Water Quality Standards.
  - b. Notification to the appropriate agencies and other pertinent information related to the discharge must be provided upon request.
  - c. The Contractor is responsible for the legal disposal or discharge of any groundwater that is not re-infiltrated, and shall provide the DOTA AIR-EE with copies of waste manifests.
  - d. For any groundwater hauled off Airport property, the Contractor shall have representative samples taken and tested in accordance with HDOH guidelines, standards, and regulations. A copy of the groundwater test result shall be submitted to DOTA AIR-EE. The groundwater shall not be disposed offsite without the approval of DOTA AIR-EE and the HDOH permitted facility that is receiving the groundwater. Furnish documentation from the receiving facility indicating that they acknowledge the groundwater test results, including their approval to dispose the groundwater at their facility.

### C. RELEASE REPORTING

Encountering previously unknown, suspected, or confirmed contaminated soil or groundwater during subsurface construction activities is considered a release and shall be reported to HDOH HEER Office (phone: 808-586-4249, or after hours at 808-236-8200). Copies of the HDOH Release Report, HDOH issued Release Number, and email correspondence (if applicable), shall be furnished to the DOTA Engineer

and DOTA AIR-EE.

1. Upon the discovery of contaminated soil and/or groundwater, the Contractor shall immediately notify the DOTA Engineer, DOTA AIR-EE, and HDOH HEER Office.
2. A reportable release of hazardous substances or contaminated soil or groundwater may be indicated by, but not limited to, any of the following:
  - A petroleum sheen on the groundwater in an excavation.
  - Any free product that appears on groundwater.
  - Visual or olfactory evidence of contamination (e.g., unusual discoloration, buried containers, fumes, unknown liquids).
3. Comply with DOTA and HDOH HEER Office requirements. A written report shall be provided to the HDOH HEER Office. The *Hawaii Hazardous Substance Written Follow-up Notification Form* is provided in the DOTA EHE-EHMP, Appendix B.1. Photos shall be included to document the incident. The Contractor shall keep a copy of the completed Form B.1 and provide copies of the written report to the DOTA Engineer and DOTA AIR-EE.
4. If free product is encountered, report the release in accordance with HAR § 11-451.

Releases that occur during construction activities or releases due to unforeseen events (spill) shall also be reported.

1. Report all spills to immediately to AIR-EE, State Engineer, and appropriate airport personnel and regulatory agencies (if applicable) following the DOTA Spill Reporting Fact Sheets for each airport. Spill Reporting Fact Sheets can be found on DOTA's Environmental Webpage for Construction site Runoff at <https://hidot.hawaii.gov/airports/doing-business/engineering/environmental/construction-site-runoff-control-program/>.
2. In the event of a release of a hazardous substance that causes an imminent threat to human health or the environment, the first call shall be to 911.
3. Small spills of petroleum or hazardous substances (less than 25 gallons) which are capable of being cleaned up within 72 hours and do not threaten ground or surface waters shall be cleaned up immediately.
4. Report spills of a certain size (e.g., volume of greater than 25 gallons or not contained within 72 hours), per HAR § 11-451, to HDOH HEER Office and the National Response Center immediately. Comply with the HDOH HEER Office requirements. A written report shall be provided to the HDOH HEER Office within 30 calendar days of a Reportable Quantity spill cleanup. The *Hawaii Hazardous Substance Written Follow-up Notification Form* is provided in the DOTA EHE-EHMP, Appendix B.1. Photos shall be included to document the incident. The Contractor shall keep a copy of the completed Form B.1, and provide copies of the written report, the HDOH issued Release Number, and email correspondence (if applicable) to the DOTA Engineer and DOTA AIR-EE.
5. Any spill that enters a body of water, onto an adjoining shoreline, or discharges

into the storm drain system, HDOH CWB must also be immediately notified and the National Response Center notified within 24 hours. Report significant spills to the U.S. Coast Guard.

D. FINAL CLEANUP

1. When work which disturbs contaminated soil has been completed, the State will visually inspect the work area for evidence of contaminated materials and direct the Contractor to clean and remove remaining contaminated materials. The Contractor shall not dismantle the work area boundaries prior to authorization by the State.
2. Any equipment which contacts contaminated materials shall be cleaned with a water spray immediately upon completion of work. The wash location shall be located immediately adjacent to the contaminated area. All wash water and solid waste shall be disposed of in accordance with the Work Plan. The wash water shall not be allowed to discharge into the drainage system and surface waters.

E. AIR MONITORING

1. Air monitoring shall be conducted when petroleum-contaminated soil (PCS), contaminated groundwater, free product, or chlorinated solvents (e.g., PCE, TCE, etc.) is present in an excavated area. The monitoring shall include both work area and perimeter measurements of volatile organic compound (VOC) vapors. Appropriate response actions shall be taken in conformance to Federal and State regulatory requirements and guidelines. The response actions shall include ensuring that on-site workers have the appropriate level of PPE and the general public is not affected adversely.
2. Air monitoring shall be conducted with a conventional photoionization detector (PID) to measure total VOC vapor concentrations. If high levels of benzene are anticipated, an Ultra-Rae PID, which is benzene-specific, shall also be used.
3. If toxic gases are a potential concern, air monitoring of the lower explosive limit (LEL) shall be conducted using a multi-gas meter to determine if a hazardous atmosphere exists.
4. Air monitoring shall be conducted for at least three (3) full 8-hour shifts to establish a negative exposure assessment for worker's exposure to airborne contaminants. After the establishment of the negative worker's exposure, periodic monitoring shall be conducted once every seven (7) calendar days to document worker exposure for the duration of the contaminated soil work.
5. Work area and perimeter air monitoring shall be conducted throughout the entire duration of the contaminated soil work to ensure unprotected personnel are not exposed above permissible exposure limits at all times. If the outside boundary levels are at or exceed permissible exposure limits, work shall be stopped, and the Contractor's Qualified Environmental Professional and DOTA Engineer shall be immediately contacted to address the situation causing the increased levels.
6. Submit air sampling results to the DOTA Engineer within five (5) calendar days after the samples are collected, signed by the testing laboratory employee

performing the air monitoring.

F. UNDERGROUND STORAGE TANKS (UST) AND UTILITY PIPES

1. For any UST or pipeline discovered or planned removal, the nature of the UST or pipeline, and whether they are inactive, shall be determined prior to removal. Immediately notify the DOTA Engineer and DOTA AIR-EE of the discovery.

If unanticipated petroleum pipelines are discovered, contact HDOH HEER Office within 24 hours after encountering them.

2. The Contractor shall record field observations of the UST and pipelines. These observations shall include, but are not limited to, the following:
  - a. Location relative to fixed landmarks, including GPS coordinates. Provide a location map that shows the UST and pipelines that were encountered. The map must include a North arrow and a scale.
  - b. Depth, diameter, length, and type of pipe, if applicable. Describe the condition of the pipe.
  - c. Type of fuel or product, including analytical laboratory reports for the product that is recovered.
  - d. Beginning and ending fluid levels, if applicable.
  - e. Volume of each type of product removed.
  - f. Flow rates, if applicable.
  - g. Direction of flow.
  - h. Detailed photographs.
  - i. Detailed description of actions taken following the discovery, such as, cutting, product removal, and disposal.

Provide records of the field observations to the DOTA Engineer, DOTA AIR-EE, and HDOH HEER Office.

3. Prior to removal of a UST, the Contractor shall prepare and submit to the DOTA Engineer, for review by DOTA AIR-EE, a Site-Specific plan. All work associated with USTs shall be in compliance with HAR § 11-280.1 requirements, and HDOH HEER Office and HDOH SHWB requirements.

The contractor shall also complete the HDOH *Notice of Intent to Close Underground Storage Tanks* form and submit it to the DOTA Engineer for submission to HDOH SHWB (UST Section) by DOTA AIR-EE.

Prior to the removal of the UST, the Contractor shall receive approval from DOTA AIR-EE and HDOH HEER Office.

4. The UST or pipeline segment must be drained of its content or determined that it is empty of liquids or flammable vapors prior to the removal. Any petroleum fluids recovered must be representatively sampled and tested to determine how they can be recycled or disposed in full accordance with HAR § 11-58.1 and § 11-260–279, and any other Federal and State regulations.
5. Only personnel knowledgeable and trained in pipeline and UST removal shall cut, drain, and remove USTs and pipelines. Prior to cutting, plastic sheeting and absorbent material shall be placed below and adjacent to the cutting location. Any residual fluid in the UST or pipeline must be properly contained on the sheeting and prevented from discharging into the surrounding soil or entering any drainage system and surface waters.
6. The cut-off ends of the pipeline segments, that remain in-place, must be filled with concrete and appropriately sealed to prevent any potential leakage and contact with groundwater.
7. If the waste pipe or UST are to be stored onsite prior to disposal, the area shall be lined with polyethylene plastic sheeting, 10 mil or thicker, and bermed to contain any free product. Some viscous products may appear to be immobile, however, after exposed to atmosphere heating, can liquefy. The waste pipe segment shall be stored on appropriate dunnage with the ends of the pipe sealed or covered to protect the interior of the pipe from contact with rainwater and wind.
8. All removed pipelines and USTs shall be properly disposed or recycled.
9. For USTs, a UST Removal Report including all sampling activities required under HAR § 11-280.1 shall be prepared and submitted to the DOTA Engineer, DOTA AIR-EE, and HDOH SHWB (UST Section).

### 3.4 POST-CONSTRUCTION REQUIREMENTS

A. Submit the following within 30 calendar days after work is completed.

1. Close-out Report

- a. A signed certificate stating that the removal and disposal of all contaminated materials were completed in accordance with the Contractor's approved Work Plan or C-EHMP Addendum, and all applicable Federal, State, and local rules and regulations.
- b. All approved DOTA EHE-EHMP deviation request forms. (Reference Appendix B of the DOTA EHE-EHMP.)
- c. All Site-Specific EHMP, if applicable.
- d. All testing, laboratory results, and reports for any soil, groundwater, soil vapor, UST, pipeline, and other samplings taken.
- e. All disposal forms, waste manifests, and summary logs.

- f. Any results from project air monitoring.
- g. Record of Field Observations, including location map with GPS coordinates, limits, and depths of any contaminated media (soil, groundwater, etc.) that were encountered at previously unknown source or sites on the project. Include a copy of the completed *Hawaii Hazardous Substance Written Follow-up Notification* form that was submitted to HDOH and all other associated documents.
- h. If any contaminated soil was removed offsite (off of Airport Property), at a minimum, include the following:
  - A copy of the signed agreement from the receiving facility acknowledging the test result of the soil samples and indicating acceptance of the soil for reuse.
  - Copies of the test results of the soil sampling.
- i. If any contaminated soil was re-used onsite (within the construction site boundaries), at a minimum, include the following:
  - Copies of the test results of the soil sampling.
  - The quantity of soil that is re-used on-site.
  - Location map of the re-used soil. Include GPS coordinates of its limits, if the area is accessible.
  - A brief description of the purpose of the re-used soil (e.g., general fill, utility trench backfill material, etc.). Include the depth and thickness of its placement.
  - Photos of the site after placement of the re-use soil has been completed.
- j. Record of Field Observation of any unanticipated UST or pipeline discovered during construction activities, including a copy of the completed HDOH *Notice of Intent to Close Underground Storage Tanks* form and all other associated documents.

The Close-out Report shall be by each individual contaminated media and shall include all appropriate documentations. The Close-out Reports for each contaminated media can be submitted separately or combined in a 3-ring binder with divider tabs.

PART 4 – MEASUREMENT AND PAYMENT

4.1 BASIS OF MEASUREMENT AND PAYMENT

Work under this Section will be paid for under the various contract items as shown below.

For ALLOWANCE items in the Proposal Schedule, the allowance is an estimate and the amount shall not exceed the maximum amount shown in the Proposal Schedule. Payment shall be the actual cost as invoiced by the Contractor and approved by the DOTA Engineer. The Contractor shall be allowed to include overhead, profit, insurance and/or other mark-ups, as stipulated in Section 9.5 of the 2016 General Provisions for Construction Projects, Air and Water Transportation Facilities Divisions.

<u>Item No.</u>	<u>Item</u>	<u>Unit</u>
01562.1	Management of Contaminated Medias	Allowance

**Should the DOTA receive reports of any illegal dumping of material, and if illegal dumping is confirmed to have occurred, the DOTA will assess a Liquidated Damage amount of \$5,000 per truck per day, until the illegal dumped material has been cleaned up or the incident has been remedied to the HDOH’s concurrence. The Contractor shall not be entitled to recover any Liquidated Damages assessed, even after the non-compliance has been corrected.**

**The Contractor shall also be responsible for all citations, fines, and penalties levied by HDOH or EPA against the State due to the Contractor’s failure to properly manage contaminated medias, including non-compliance with the DOTA EHE-EHMP, DOTA Site-Specific EHMP, or C-EHMP Addendum. The Contractor shall reimburse the State within 30 calendar days for the full amount of outstanding cost that the State has incurred, or the State shall deduct all incurred costs from the Contractor’s monthly progress payments.**

If the Contractor fails to satisfactorily address the non-compliance item, DOTA reserves the right to employ outside assistance or use the State’s own labor forces to provide necessary corrective measures. The Contractor shall be fully responsible for all cost and time. The State shall charge the Contractor such incurred costs plus any associated project engineering costs and shall make appropriate deductions from the Contractor’s monthly progress payment.

END OF SECTION

## SECTION 01565 – SECURITY MEASURES

### PART 1 – GENERAL

#### 1.01 RELATED DOCUMENTS

The General Provisions for Construction Projects (2016), Special Provisions and General Requirements of the Specifications, apply to the work specified in this Section.

#### 1.02 DESCRIPTION

The Contractor shall incorporate the State's airport security measures as part of his work. The Contractor shall adhere to established and enhanced security procedures, as mandated by the State and FAA, throughout the course of this Contract.

#### 1.03 SUBMITTALS

Submit a security plan that addresses the conditions set forth in this Contract. Said plan shall contain, at a minimum, a plan of the project scope with locations of construction barricades with secured entry/exits, identification of locations requiring guards, Contractor measures to ensure security of worksite and personnel and procedures to ensure the containment of the worksite from unauthorized personnel. This package shall be submitted within 14 calendar days after award of the Contract.

### PART 2 – PRODUCTS (Not Used)

### PART 3 – EXECUTION

#### 3.01 SECURITY

- A. Obtain airport security identification badges for all employees working on this project and Air Operations Area (AOA) decals for all vehicles entering the AOA area in accordance to the requirements stated in the Special Provisions, Section 7.21 – “PUBLIC CONVENIENCE AND SAFETY”. All requests for badges and AOA decals shall be submitted in writing to the Airport District Manager through the Engineer within 14 calendar days after award of the Contract. Only authorized personnel working on this project shall be allowed to obtain badges. The Contractor shall be responsible to pay for all costs associated with complying with airport security requirements, including obtaining airport security identification badges.

Currently, the fee to obtain a new airport identification badge is \$100.00, but due to the changing fee structure of these services, the Contractor shall inquire with the Daniel K. Inouye International Airport AOA badge

and ramp license office at (808) 836-6548. For other Airport Districts cost inquiries should be made the District Manager's office.

If access is required to the Honolulu International Arrivals Building, inquiries shall be made to the Bureau of Customs and Border Patrol at (808) 861-8642 for additional bonding requirements.

- B. The Contractor shall comply with all existing and proposed airport security initiative requirements. Contractor may be subject to civil penalties up to \$35,000.00 for each security violation.
- C. The Contractor shall protect work areas from theft, vandalism, and unauthorized entry. Ensure that proper methods are undertaken to secure tools, materials, and equipment from the public.
- D. All vehicles entering the AOA through any of the Airport Access Check Points may be subject to search. The Contractor shall allow extra time for these inspections and be able to provide personnel, as required, to assist Airport security personnel during the inspections.
- E. If required by the State, the Contractor will be responsible for the posting of guards at access points where the construction traffic may compromise the integrity of the airport security. Payment for posting of security guards required by the State shall be paid for as an allowance item in the Proposal Schedule. The Contractor shall submit the name and qualifications of the security company to the Engineer for review prior to hiring the security company. The security company shall have extensive experience in working on airports and knowledgeable in airport security procedures within the State of Hawaii.

#### PART 4 - MEASUREMENT AND PAYMENT

##### 4.01 METHOD OF MEASUREMENT

No measurement shall be made for the items in this Section.

##### 4.02 BASIS OF PAYMENT

Work under this Section, except for posting security guards, shall be considered incidental to, and included in the bid prices for the various items of work in this project.

Posting of security guards required by the State shall be paid for under an allowance item in the Proposal Schedule. The allowance is an estimate, and the amount shall not exceed the maximum amount shown in the proposal schedule. Additional charges by the Contractor for overhead, coordination, profit, insurances, and other incidental expenses shall not be allowed. These shall be included in the Contractor's lump sum bid price.

<u>Item No.</u>	<u>Description</u>	<u>Unit Price</u>
01565.1	Security Measures	Allowance

END OF SECTION

## SECTION 01580 - TEMPORARY FACILITIES AND UTILITIES

### PART 1 - GENERAL

#### 1.01 RELATED DOCUMENTS

The General Provisions for Construction Projects (2016), Special Provisions and General Requirements of the Specifications, apply to the work specified in this section.

#### 1.02 DESCRIPTION

This item shall consist of arranging and maintaining all utilities including, but not limited to, water, electricity, sewage disposal and telephone communications in the work area which the Contractor and Engineer deems necessary to meet the requirements of the work under the contract.

### PART 2 - PRODUCTS (Not Used)

### PART 3 - EXECUTION

#### 3.01 TEMPORARY UTILITIES DURING CONSTRUCTION

- A. Water and Sanitation: The Contractor shall provide temporary drinking water and sanitary facilities for the field personnel. The facilities shall be in accordance with the applicable health regulations and shall be maintained clean and operable until the conclusion of the construction work.
- B. Telephone: The Contractor shall have a telephone available for the State's use for communications with field personnel. Cellular telephones are acceptable. The Contractor shall install the telephone immediately upon starting work and maintain service until the project is completed. All costs associated with obtaining and maintaining telephone service shall be borne by the Contractor.
- C. Electricity: Contractor shall obtain or provide temporary electric power and shall pay for all connections and energy charges incurred during construction.
- D. Metering: Water and electrical services shall be metered and payment for meters and services shall be borne by the Contractor. Temporary connections for water shall include installation of a meter and backflow preventer at the point of connection according to State standards at the Contractor's cost. The Contractor shall submit requests for temporary connections in writing to the Engineer 14 calendar days prior to the connection and shall include a description of work and a sketch of the proposed installation.

PART 4 – MEASUREMENT AND PAYMENT

4.01 BASIS OF MEASUREMENT AND PAYMENT

Work under this section will not be measured nor paid for separately but shall be considered incidental to and included in the bid prices for the various items of work in this project.

END OF SECTION

## SECTION 01700 – MOBILIZATION, DEMOBILIZATION

### PART 1 - GENERAL

#### 1.01 RELATED DOCUMENTS

The General Provisions for Construction Projects (2016), Special Provisions and General Requirements of the Specifications, apply to the work specified in this section.

#### 1.02 GENERAL REQUIREMENTS

- A. Section 699 of "Hawaii Standard Specifications for Road, Bridge, and Public Works Construction, 1994," are hereby incorporated into and made a part of these specifications by reference unless otherwise modified hereinafter.

#### 1.03 MOBILIZATION

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

#### 1.04 DEMOBILIZATION

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

#### 1.05 PERFORMANCE BOND

- A. The Contractor shall file and pay for the performance and payment bonds according to Section 3.5 of the Special Provisions, except that the value of the bonds shall equal one hundred percent (100%) of the amount of the contract basic bid amount plus one hundred percent (100%) of the amount of the extra work.

Payment for the Contractor's bond premium will be made as part of mobilization in accordance to the terms stated in Part 4 below.

### PART 2 - PRODUCTS (Not Used)

### PART 3 - EXECUTION (Not Used)

PART 4 - MEASUREMENT AND PAYMENT

4.01 METHOD OF MEASUREMENT

- A. Mobilization shall not be measured for payment. The maximum bid allowed for "Mobilization" is an amount not to exceed six (6) percent of the sum of all items (excluding this item and all Allowances). If the proposal submitted by the bidder indicates an amount in excess of the allowable maximum, the indicated amount or amounts shall be reduced to the allowable maximum; the "Sum of All Items," in the proposal schedule shall be adjusted to reflect any such reduction. For the purposes of comparing bids and determining the contract price to be inserted in the contract awarded to the bidder, if any is so awarded, the "Sum of All Items" adjusted in accordance with the foregoing shall be used and the bidder's proposal shall be deemed to have been submitted for the amounts as reduced and adjusted in accordance herewith."
  
- B. Demobilization will not be measured for payment.

4.02 BASIS OF PAYMENT

- A. Mobilization will be paid for at the contract lump sum price under Mobilization. Partial payment will be made as follows:
  - 1. When 2 1/2 percent of the original contract amount is earned, 50 percent of the bid amount will be paid.
  - 2. When 5 percent of the original contract amount is earned, 75 percent of the bid amount will be paid.
  - 3. When 10 percent of the original contract amount is earned, 100 percent of the bid amount will be paid.

Nothing herein shall be construed to limit or preclude partial payments otherwise provided by the contract.

<u>Item No.</u>	<u>Description</u>	<u>Unit Price</u>
01700.1	Mobilization (Not to exceed 6% of sum of all items, excluding this item, all allowances and force account items)	Lump Sum

END OF SECTION

SECTION 01715 - EXISTING CONDITIONS - ASBESTOS / LEAD / HAZARDOUS  
MATERIAL SURVEY

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

- A. The General Provisions for Construction Projects (2016), Special Provisions and General Requirements of the Specifications, apply to the work specified in this section.

1.02 SUMMARY

- B. This section includes the results of the State's surveys for Asbestos Containing Materials, Lead-Containing Paint, and other hazardous materials; and is provided for the Contractor's information.
- C. Related Sections include the following:
  - 1. SECTION 13281 - ASBESTOS ABATEMENT for requirements of all work which disturbs asbestos containing materials.
  - 2. SECTION 13282 - LEAD-CONTAINING MATERIALS for requirements of all work which disturbs lead containing materials.
  - 3. SECTION 13286 - ARSENIC CONTROL MEASURES for all requirements of all work which disturbs arsenic containing materials.
  - 4. SECTION 13287 - PCB BALLASTS AND MERCURY CONTAINING LAMPS ABATEMENT for all requirements of all work which disturbs PCB ballasts and/or mercury containing lamps.
  - 5. SECTION 13288 - TESTING AND MONITORING for all testing and air monitoring of asbestos-containing materials and lead-containing paint (LCP).

1.03 ASBESTOS

- A. ACM is assumed to be in all areas to be renovated or modified.
  - 1. The Contractor may perform further surveys at its own expense, if ACBM not shown in the report(s) is suspected in the areas of the building(s) in which work will be performed. If ACBM is found, notify the Contracting Officer immediately. The Contracting Officer will reimburse the Contractor for the testing cost if ACBM is found.
  - 2. If there is ACBM outside of the area in which work will be performed, this ACBM shall not be disturbed in any way.

- B. If applicable, notify employees, Subcontractors and all other persons engaged on the project of the presence of asbestos in the existing buildings in accordance with the requirements of State of Hawaii: Occupational Safety and Health Administration 29 CFR 1926.1101, Asbestos.
- C. In the event work is required in any building or buildings on the site other than the one(s) designated within this project scope, request copies of the asbestos survey report(s) for such building(s) from the Contracting Officer assuming they are available. Based on the information contained in the additional survey(s), notify affected personnel per paragraph 1.02 B. If not available, Contracting Officer and/or DAGS Project Coordinator must decide to perform additional hazardous materials survey as soon as practicable.

1.04 LEAD-CONTAINING PAINT

- A. Inform employees, Subcontractors and all other persons engaged in the project that lead containing paints (LCP) are assumed to be present in the existing building(s) and at the job site. Conduct work in accordance with the requirements of Occupational Safety and Health Administration 29 CFR 1926.62 Lead.
- B. Review the attached lead testing data which identifies locations where LCP was found and ensure that all workers that need to be involved understand the contents of the report(s) referring to areas in which work is to be performed. Contractor must understand that lead testing was for design purposes only, and the results do not satisfy any of the requirements of Occupational Safety and Health Administration 29 CFR 1926.62 Lead.

1.05 ARSENIC CONTAINING MATERIAL

- A. Arsenic containing materials are assumed to be present at the site.

1.06 POLYCHLORINATED BIPHENYLS (PCB's) AND MERCURY CONTAINING LAMPS

- A. Inform employees, Subcontractors and all other persons engaged in the project that PCB ballasts and mercury containing lamps may be present in the existing building(s) and at the job site.

PART 2 - PRODUCTS (NOT USED)

PART 3 – EXECUTION

3.01 SURVEY (Attached)

- A. None.

PART 4 – MEASUREMENT AND PAYMENT

4.01 BASIS OF MEASUREMENT AND PAYMENT

- A. Work under this section will not be measured nor paid for separately but shall be considered incidental to and included in the prices bid for the various items of work in this project.

END OF SECTION

## DIVISION – 3 CONCRETE

### SECTION 03300 – STRUCTURAL CONCRETE

#### PART 1 – GENERAL

##### 1.01 RELATED DOCUMENTS

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

##### 1.02 SUMMARY

- A. Section includes cast-in-place concrete, including formwork, reinforcement, concrete materials, mixture design, placement procedures, and finishes, for the following:
  - 1. Roadway Pavement Slabs

##### 1.03 DEFINITIONS

- A. Cementitious Materials: Portland cement alone or in combination with one or more of the following: blended hydraulic cement, fly ash and other pozzolans, ground granulated blast-furnace slag, and silica fume; subject to compliance with requirements.

##### 1.04 SUBMITTALS

- A. Product Data: For each type of product indicated.
- B. Design Mixtures: For each concrete mixture. Submit alternate design mixtures when characteristics of materials, Project conditions, weather, test results, or other circumstances warrant adjustments.
- C. Construction Joint Layout: Indicate proposed construction joints required to construct the structure.
  - 1. Location of construction joints is subject to approval of the DOT-A.
- D. Qualification Data: For Installer.
- E. Material Certificates: For each of the following, signed by manufacturers:
  - 1. Cementitious materials.
  - 2. Admixtures.

3. Form materials and form-release agents.
  4. Fiber Reinforced Polymer reinforcement bars and accessories.
  5. Fibrous reinforcement.
  6. Curing compounds.
  7. Bonding agents.
  8. Adhesives
- F. Material Test Reports: For the following, from a qualified testing agency, indicating compliance with requirements:
1. Aggregates
  2. Cement

1.05 QUALITY CONTROL

- A. Installer Qualifications: A qualified installer who employs on Project personnel qualified as ACI-certified Flatwork Technician and Finisher and a supervisor who is an ACI-certified Concrete Flatwork Technician.
- B. Manufacturer Qualifications: A firm experienced in manufacturing ready-mixed concrete products and that complies with ASTM C 94 requirements for production facilities and equipment.
- C. Testing Agency Qualifications: An independent agency qualified according to ASTM C 1077 and ASTM E 329 for testing indicated.
1. Personnel conducting field tests shall be qualified as ACI Concrete Field Testing Technician, Grade 1, according to ACI CP-1 or an equivalent certification program.
  2. Personnel performing laboratory tests shall be ACI-certified Concrete Strength Testing Technician and Concrete Laboratory Testing Technician - Grade I. Testing Agency laboratory supervisor shall be an ACI-certified Concrete Laboratory Testing Technician - Grade II.
- D. Source Limitations: Obtain each type or class of cementitious material of the same brand from the same manufacturer's plant, obtain aggregate from single source, and obtain admixtures from single source from single manufacturer.
- E. ACI Publications: Comply with the following unless modified by requirements in the Contract Documents:

1. ACI 301, "Specifications for Structural Concrete," Sections 1 through 5.
  2. ACI 117, "Specifications for Tolerances for Concrete Construction and Materials."
- F. Concrete Testing Service: Engage a qualified independent testing agency to perform material evaluation tests and to design concrete mixtures.

1.06 DELIVERY, STORAGE, AND HANDLING

- A. Steel Reinforcement: Deliver, store, and handle steel reinforcement to prevent bending and damage.

PART 2 – PRODUCTS

2.01 FORM-FACING MATERIALS

- A. Smooth-Formed Finished Concrete: Form-facing panels that will provide continuous, true, and smooth concrete surfaces. Furnish in largest practicable sizes to minimize number of joints.
1. Plywood, metal, or other approved panel materials.
  2. Exterior-grade plywood panels, suitable for concrete forms, complying with DOC PS 1, and as follows:
    - a. High-density overlay, Class 1 or better.
    - b. Medium-density overlay, Class 1 or better; mill-release agent treated and edge sealed.
    - c. Structural 1, B-B or better; mill oiled and edge sealed.
    - d. B-B (Concrete Form), Class 1 or better; mill oiled and edge sealed.
- B. Chamfer Strips: Wood, metal, PVC, or rubber strips, 3/4 by 3/4 inch, minimum.
- C. Rustication Strips: Wood, metal, PVC, or rubber strips, kerfed for ease of form removal.
- D. Form-Release Agent: Commercially formulated form-release agent that will not bond with, stain, or adversely affect concrete surfaces and will not impair subsequent treatments of concrete surfaces.
- E. Form Ties: Factory-fabricated, removable or snap-off glass-fiber-reinforced plastic form ties designed to resist lateral pressure of fresh concrete on forms and to prevent spalling of concrete on removal.

1. Furnish units that will leave no material closer than 1 inch to the plane of exposed concrete surface.
2. Furnish ties that, when removed, will leave holes no larger than 1 inch in diameter in concrete surface.

## 2.02 REINFORCEMENT BARS

- A. Reinforcement bar products shall be in accordance with all rules, regulations, and requirements.

## 2.03 REINFORCEMENT ACCESSORIES

- A. Bar Supports: Bolsters, chairs, spacers, and other devices for spacing, supporting, and fastening reinforcing bars in place. Manufacture bar supports from plastic.

## 2.04 STRUCTURAL CONCRETE MATERIALS

- A. Cementitious Material: Use the following cementitious materials, of the same type, brand, and source, throughout Project:
  1. Portland Cement: ASTM C 150, Type I/II
- B. Normal-Weight Aggregates: ASTM C 33, Class 3M coarse aggregate or better, graded. Provide aggregates from a single source
  1. Maximum Coarse-Aggregate Size: 3/4 inch nominal.
  2. Fine Aggregate: Free of materials with deleterious reactivity to alkali in cement.
- C. Water: ASTM C 94 and Potable.

## 2.05 ADMIXTURES

- A. Chemical Admixtures: Provide admixtures certified by manufacturer to be compatible with other admixtures and that will not contribute water-soluble chloride ions exceeding those permitted in hardened concrete. Do not use calcium chloride or admixtures containing calcium chloride.
  1. Water-Reducing Admixture: ASTM C 494, Type A.
  2. High-Range, Water-Reducing Admixture: ASTM C 494, Type F.

## 2.06 FIBER REINFORCEMENT

- A. Fiber reinforcement products shall be in accordance with all rules, regulations, and requirements.

## 2.07 CURING MATERIALS

- A. Clear, Waterborne, Membrane-Forming Curing Compound: ASTM C 309, Type 1, Class B, dissipating.

## 2.08 RELATED MATERIALS

- A. Expansion-and Isolation-Joint-Filler Strips: ASTM D 1751, asphalt-saturated cellulosic fiber or ASTM D 1752, cork or self- expanding cork.
- B. Semirigid Joint Filler: Two-component, semirigid, 100 percent solids, per ASTM D 2240

## 2.09 CONCRETE MIXTURES, GENERAL

- A. Prepare design mixtures for each type and strength of concrete, proportioned on the basis of laboratory trial mixture or field test data, or both, according to ACI 301.
  - 1. Use a qualified independent testing agency for preparing and reporting proposed mixture designs based on laboratory trial mixtures.
- B. Admixtures: Use admixtures according to manufacturer's written instructions.
  - 1. Use water-reducing high-range water-reducing or plasticizing admixture in concrete, as required, for placement and workability.
  - 2. Use water-reducing admixture in pumped concrete, concrete for heavy-use industrial slabs and parking structure slabs, concrete required to be watertight, and concrete with a water-cementitious materials ratio below 0.50.

## 2.10 CONCRETE MIXING

- A. Ready-Mixed Concrete: Measure, batch, mix, and deliver concrete according to ASTM C 94 and ASTM C 1116, and furnish batch ticket information.
  - 1. When air temperature is between 85 and 90 deg F, reduce mixing and delivery time from 1-1/2 hours to 75 minutes; when air temperature is above 90 deg F, reduce mixing and delivery time to 60 minutes.

## 2.11 LEVELING CONCRETE

- A. Leveling concrete shall meet the following:

1. The leveling concrete shall be a blend of selected Portland Cements, specially graded aggregates, admixtures for controlling setting time, and water reducers for workability and an organic accelerator.
2. The materials shall be non-combustible before and after cure.
3. The materials shall be supplied as a factory-blended unit.
4. The Portland Cement mortar shall be placeable from ¼" to 1" in depth per lift for horizontal applications.

### PART 3 – EXECUTION

#### 3.01 FORMWORK

- A. Design, erect, shore, brace, and maintain formwork, according to ACI 301, to support vertical, lateral, static, and dynamic loads, and construction loads that might be applied, until structure can support such loads.
- B. Construct formwork so concrete members and structures are of size, shape, alignment, elevation, and position indicated, within tolerance limits of ACI 117.
- C. Limit concrete surface irregularities, designated by ACI 347 as abrupt or gradual, as follows:
  1. Class A, 1/8 inch for smooth-formed finished surfaces.
- D. Construct forms tight enough to prevent loss of concrete mortar.
- E. Fabricate forms for easy removal without hammering or prying against concrete surfaces. Provide crush or wrecking plates where stripping may damage cast concrete surfaces. Provide top forms for inclined surfaces steeper than 1.5 horizontal to 1 vertical.
  1. Install keyways, reglets, recesses, and the like, for easy removal.
  2. Do not use rust-stained steel form-facing material.
- F. Set edge forms, bulkheads, and intermediate screed strips for slabs to achieve required elevations and slopes in finished concrete surfaces. Provide and secure units to support screed strips; use strike-off templates or compacting-type screeds.
- G. Provide temporary openings for cleanouts and inspection ports where interior area of formwork is inaccessible. Close openings with panels tightly fitted to forms and securely braced to prevent loss of concrete mortar. Locate temporary openings in forms at inconspicuous locations.
- H. Chamfer exterior corners and edges of permanently exposed concrete.

- I. Form openings, chases, offsets, sinkages, keyways, reglets, blocking, screeds, and bulkheads required in the Work. Determine sizes and locations from trades providing such items.
- J. Clean forms and adjacent surfaces to receive concrete. Remove chips, wood, sawdust, dirt, and other debris just before placing concrete.
- K. Retighten forms and bracing before placing concrete, as required, to prevent mortar leaks and maintain proper alignment.
- L. Coat contact surfaces of forms with form-release agent, according to manufacturer's written instructions, before placing reinforcement.

### 3.02 EMBEDDED ITEMS

- A. Place and secure anchorage devices and other embedded items required for adjoining work that is attached to or supported by cast-in-place concrete. Use setting drawings, templates, diagrams, instructions, and directions furnished with items to be embedded.

### 3.03 REMOVING AND REUSING FORMS

- A. General: Formwork for sides of parts of the Work that does not support weight of concrete may be removed after cumulatively curing at not less than 50 deg F for 24 hours after placing concrete. Concrete has to be hard enough to not be damaged by form-removal operations and curing and protection operations need to be maintained.
  - 1. Leave formwork for beam soffits and other structural elements that supports weight of concrete in place until concrete has achieved at least 70 percent of its 28-day design compressive strength.
- B. Clean and repair surfaces of forms to be reused in the Work. Split, frayed, delaminated, or otherwise damaged form-facing material will not be acceptable for exposed surfaces. Apply new form-release agent.
- C. When forms are reused, clean surfaces, remove fins and laitance, and tighten to close joints. Align and secure joints to avoid offsets. Do not use patched forms for exposed concrete surfaces unless approved by DOT-A.

### 3.04 REINFORCEMENT BARS

- A. Installation procedures shall be in accordance all rules, regulations, and requirements.

### 3.05 JOINTS

- A. General: Construct joints true to line with faces perpendicular to surface plane of concrete.
- B. Construction Joints: Install so strength and appearance of concrete are not impaired, at locations indicated or as approved by DOT-A.
  - 1. Place joints perpendicular to main reinforcement. Continue reinforcement across construction joints unless otherwise indicated. Do not continue reinforcement through sides of strip placements of floors and slabs.
  - 2. Form keyed joints as indicated. Embed keys at least 1-1/2 inches into concrete.
  - 3. Locate horizontal joints in floor slabs.
  - 4. Space vertical joints in walls as indicated. Locate joints beside piers integral with walls, near corners, and in concealed locations where possible.
  - 5. Use a bonding agent at locations where fresh concrete is placed against hardened or partially hardened concrete surfaces.
  - 6. Use epoxy-bonding adhesive at locations where fresh concrete is placed against hardened or partially hardened concrete surfaces.
- C. Doweled Joints: Install dowel bars and support assemblies at joints where indicated. Lubricate or asphalt coat one-half of dowel length to prevent concrete bonding to one side of joint.

### 3.06 CONCRETE PLACEMENT

- A. Before placing concrete, verify that installation of formwork, reinforcement, and embedded items is complete and that required inspections have been performed.
- B. Do not add water to concrete during delivery, at Project site, or during placement unless approved by DOT-A.
- C. Deposit and consolidate concrete for floors and slabs in a continuous operation, within limits of construction joints, until placement of a panel or section is complete.
  - 1. Consolidate concrete during placement operations so concrete is thoroughly worked around reinforcement and other embedded items and into corners.
  - 2. Maintain reinforcement in position on chairs during concrete placement.
  - 3. Screed slab surfaces with a straightedge and strike off to correct elevations.

4. Slope surfaces uniformly to drains where required.
5. Begin initial floating using bull floats or darbies to form a uniform and open-textured surface plane, before excess bleedwater appears on the surface. Do not further disturb slab surfaces before starting finishing operations.

### 3.07 FINISHING FORMED SURFACES

- A. Smooth-Formed Finish: As-cast concrete texture imparted by form-facing material, arranged in an orderly and symmetrical manner with a minimum of seams. Repair and patch tie holes and defects. Remove fins and other projections that exceed specified limits on formed-surface irregularities.
  1. Apply to concrete surfaces exposed to public view, to receive a rubbed finish, to be covered with a coating or covering material applied directly to concrete.
- B. Related Unformed Surfaces: At tops of walls, horizontal offsets, and similar unformed surfaces adjacent to formed surfaces, strike off smooth and finish with a texture matching adjacent formed surfaces. Continue final surface treatment of formed surfaces uniformly across adjacent unformed surfaces unless otherwise indicated.

### 3.08 FINISHING SLABS

- A. General: Comply with ACI 302.1R recommendations for screeding, restraightening, and finishing operations for concrete surfaces. Do not wet concrete surfaces.
- B. Scratch Finish: While still plastic, texture concrete surface that has been screeded and bull-floated or darbied. Use stiff brushes, brooms, or rakes to produce a profile amplitude of 1/4 inch in one direction.
- C. Float Finish: Consolidate surface with power-driven floats or by hand floating if area is small or inaccessible to power driven floats. Restraighten, cut down high spots, and fill low spots. Repeat float passes and restraightening until surface is left with a uniform, smooth, granular texture.
  1. Apply float finish to surfaces to receive broom finish.
- D. Broom Finish: Apply a broom finish to exterior concrete platforms, steps, ramps, and elsewhere as indicated.
  1. Immediately after float finishing, slightly roughen trafficked surface by brooming with fiber-bristle broom perpendicular to main traffic route. Coordinate required final finish with DOT-A before application.

### 3.09 MISCELLANEOUS CONCRETE ITEMS

- A. Filling In: Fill in holes and openings left in concrete structures after work of other trades is in place unless otherwise indicated. Mix, place, and cure concrete, as specified, to blend with in-place construction. Provide other miscellaneous concrete filling indicated or required to complete the Work.
- B. Curbs: Provide monolithic finish to interior curbs by stripping forms while concrete is still green and by steel-troweling surfaces to a hard, dense finish with corners, intersections, and terminations slightly rounded.

### 3.10 CONCRETE PROTECTING AND CURING

- A. General: Protect freshly placed concrete from premature drying and excessive cold or hot temperatures. Comply with for ACI 301 for hot-weather protection during curing.
- B. Formed Surfaces: Cure formed concrete surfaces, including underside of beams, supported slabs, and other similar surfaces. If forms remain during curing period, moist cure after loosening forms. If removing forms before end of curing period, continue curing for the remainder of the curing period.
- C. Unformed Surfaces: Begin curing immediately after finishing concrete. Cure unformed surfaces, including floors and slabs, concrete floor toppings, and other surfaces.
- D. Cure concrete according to ACI 308.1, by one or a combination of the following methods:
  - 1. Moisture Curing: Keep surfaces continuously moist for not less than seven days with the following materials:
    - a. Water.
    - b. Continuous water-fog spray.
    - c. Absorptive cover, water saturated, and kept continuously wet. Cover concrete surfaces and edges with 12-inch lap over adjacent absorptive covers.
  - 2. Curing Compound: Apply uniformly in continuous operation by power spray or roller according to manufacturer's written instructions. Recoat areas subjected to heavy rainfall within three hours after initial application. Maintain continuity of coating and repair damage during curing period.
    - a. Removal: After curing period has elapsed, remove curing compound without damaging concrete surfaces by method recommended by curing compound manufacturer.

3. Curing and Sealing Compound: Apply uniformly to floors and slabs indicated in a continuous operation by power spray or roller according to manufacturer's written instructions. Recoat areas subjected to heavy rainfall within three hours after initial application. Repeat process 24 hours later and apply a second coat. Maintain continuity of coating and repair damage during curing period.

### 3.11 JOINT FILLING

- A. Prepare, clean, and install joint filler according to manufacturer's written instructions.
  1. Defer joint filling until concrete has aged at least one month(s). Do not fill joints until construction traffic has permanently ceased.
- B. Remove dirt, debris, saw cuttings, curing compounds, and sealers from joints; leave contact faces of joint clean and dry.
- C. Install semirigid joint filler full depth in saw-cut joints and at least 2 inches (50 mm) deep in formed joints. Overfill joint and trim joint filler flush with top of joint after hardening.

### 3.12 CONCRETE SURFACE REPAIRS

- A. Defective Concrete: Repair and patch defective areas when approved by DOT-A. Remove and replace concrete that cannot be repaired and patched to DOT-A's approval.
- B. Patching Mortar: Mix dry-pack patching mortar, consisting of one part portland cement to two and one-half parts fine aggregate passing a No. 16 (1.18-mm) sieve, using only enough water for handling and placing.
- C. Repairing Formed Surfaces: Surface defects include color and texture irregularities, cracks, spalls, air bubbles, honeycombs, rock pockets, fins and other projections on the surface, and stains and other discolorations that cannot be removed by cleaning.
  1. Immediately after form removal, cut out honeycombs, rock pockets, and voids more than 1/2 inch in any dimension to solid concrete. Limit cut depth to 3/4 inch. Make edges of cuts perpendicular to concrete surface. Clean, dampen with water, and brush-coat holes and voids with bonding agent. Fill and compact with patching mortar before bonding agent has dried. Fill form-tie voids with patching mortar or cone plugs secured in place with bonding agent
  2. Repair defects on surfaces exposed to view by blending white portland cement and standard portland cement so that, when dry, patching mortar will match surrounding color. Patch a test area at inconspicuous locations

to verify mixture and color match before proceeding with patching. Compact mortar in place and strike off slightly higher than surrounding surface.

3. Repair defects on concealed formed surfaces that affect concrete's durability and structural performance as determined by DOT-A.
- D. Repairing Unformed Surfaces: Test unformed surfaces, such as floors and slabs, for finish and verify surface tolerances specified for each surface. Correct low and high areas. Test surfaces sloped to drain for trueness of slope and smoothness; use a sloped template.
1. Repair finished surfaces containing defects. Surface defects include spalls, popouts, honeycombs, rock pockets, crazing and cracks in excess of 0.01 inch wide or that penetrate to reinforcement or completely through unreinforced sections regardless of width, and other objectionable conditions.
  2. After concrete has cured at least 14 days, correct high areas by grinding.
  3. Correct localized low areas during or immediately after completing surface finishing operations by cutting out low areas and replacing with patching mortar. Finish repaired areas to blend into adjacent concrete.
  4. Correct other low areas scheduled to receive floor coverings with a repair underlayment. Prepare, mix, and apply repair underlayment and primer according to manufacturer's written instructions to produce a smooth, uniform, plane, and level surface. Feather edges to match adjacent floor elevations.
  5. Correct other low areas scheduled to remain exposed with a repair topping. Cut out low areas to ensure a minimum repair topping depth of 1/4 inch to match adjacent floor elevations. Prepare, mix, and apply repair topping and primer according to manufacturer's written instructions to produce a smooth, uniform, plane, and level surface.
  6. Repair defective areas, except random cracks and single holes 1 inch or less in diameter, by cutting out and replacing with fresh concrete. Remove defective areas with clean, square cuts and expose steel reinforcement with at least a 3/4-inch clearance all around. Dampen concrete surfaces in contact with patching concrete and apply bonding agent. Mix patching concrete of same materials and mixture as original concrete except without coarse aggregate. Place, compact, and finish to blend with adjacent finished concrete. Cure in same manner as adjacent concrete.
  7. Repair random cracks and single holes 1 inch or less in diameter with patching mortar. Groove top of cracks and cut out holes to sound concrete and clean off dust, dirt, and loose particles. Dampen cleaned concrete surfaces and apply bonding agent. Place patching mortar before bonding

agent has dried. Compact patching mortar and finish to match adjacent concrete. Keep patched area continuously moist for at least 72 hours.

- E. Perform structural repairs of concrete, subject to DOT-A's approval, using epoxy adhesive and patching mortar.
- F. Repair materials and installation not specified above may be used, subject to DOT-A's approval.

### 3.13 FIELD QUALITY CONTROL

- A. Testing and Inspecting: Contractor will engage a qualified testing agency to perform field and prepare test reports.
- B. Concrete Tests: Testing of composite samples of fresh concrete obtained according to ASTM C 172 shall be performed according to the following requirements:
  - 1. Testing Frequency shall be as follows:
    - a. Samples for strength of each class of concrete placed each day shall be taken not less than once a day, nor less than ones for each 150 cubic yards of concrete, nor less than once for each 5,000 square feet of surface area for slabs.
    - b. If the total volume of concrete is such that the frequency of testing would provide less than five strength tests for a given class of concrete, tests shall be made from at least five randomly selected batches or from each batch if fewer than five batches are used.
  - 2. Slump: ASTM C 143; one test at point of placement for each composite sample, but not less than one test for each day's pour of each concrete mixture. Perform additional tests when concrete consistency appears to change.
  - 3. Concrete Temperature: ASTM C 1064; one test hourly when air temperature is 40 deg F and below and when 80 deg F and above, and one test for each composite sample.
  - 4. Compression Test Specimens: ASTM C 31.
    - a. Cast and field cure two sets of two standard cylinder specimens for each composite sample.
  - 5. Compressive-Strength Tests: ASTM C 39; test one set of two laboratory-cured specimens at 7 days and one set of two specimens at 28 days.
    - a. Test one set of two field-cured specimens at 7 days and one set of two specimens at 28 days.

- b. A compressive-strength test shall be the average compressive strength from a set of two specimens obtained from same composite sample and tested at age indicated.
  - 6. When strength of field-cured cylinders is less than 85 percent of companion laboratory-cured cylinders, Contractor shall evaluate operations and provide corrective procedures for protecting and curing in-place concrete.
  - 7. Strength of each concrete mixture will be satisfactory if every average of any three consecutive compressive-strength tests equals or exceeds specified compressive strength and no compressive-strength test value falls below specified compressive strength by more than 500 psi.
  - 8. Test results shall be reported in writing to DOT-A, concrete manufacturer, and Contractor within 48 hours of testing. Reports of compressive-strength tests shall contain Project identification name and number, date of concrete placement, name of concrete testing and inspecting agency, location of concrete batch in Work, design compressive strength at 28 days, concrete mixture proportions and materials, compressive breaking strength, and type of break for both 7- and 28-day tests.
  - 9. Nondestructive Testing: Impact hammer, sonoscope, or other nondestructive device may be permitted by DOT-A but will not be used as sole basis for approval or rejection of concrete.
  - 10. Additional Tests: Testing and inspecting agency shall make additional tests of concrete when test results indicate that slump, air entrainment, compressive strengths, or other requirements have not been met, as directed by DOT-A. Testing and inspecting agency may conduct tests to determine adequacy of concrete by cored cylinders complying with ASTM C 42 or by other methods as directed by DOT-A.
  - 11. Additional testing and inspecting, at Contractor's expense, will be performed to determine compliance of replaced or additional work with specified requirements.
  - 12. Correct deficiencies in the Work that test reports and inspections indicate do not comply with the Contract Documents.
- C. Measure floor and slab flatness and levelness according to ASTM E 1155 within 48 hours of finishing.

### 3.14 PROTECTION OF LIQUID FLOOR TREATMENTS

- A. Protect liquid floor treatment from damage and wear during the remainder of construction period. Use protective methods and materials, including temporary covering, recommended in writing by liquid floor treatments installer.

PART 4 – MEASUREMENT AND PAYMENT

4.01 BASIS OF MEASUREMENT AND PAYMENT

- A. Work under this section will not be paid for separately but shall be considered incidental to and included in the prices bid for the various items of work in this project.

END OF SECTION

## DIVISION 5 - METALS

### SECTION 05120 - STRUCTURAL STEEL

#### PART 1 – GENERAL

##### 1.01 RELATED DOCUMENTS

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

##### 1.02 SUMMARY

- A. Section Includes:
  - 1. Structural steel.
- B. Related Sections:
  - 1. Division 1 Section "Quality Requirements" for independent testing agency procedures and administrative requirements.

##### 1.03 DEFINITIONS

- A. Structural Steel: Elements of structural-steel frame, as classified by AISC 303, "Code of Standard Practice for Steel Buildings and Bridges."

##### 1.04 SUBMITTALS

- A. Product Data: For each type of product indicated.
- B. Shop Drawings: Show fabrication of structural-steel components.
  - 1. Include details of cuts, connections, splices, camber, holes, and other pertinent data.
  - 2. Include embedment drawings.
  - 3. Indicate welds by standard AWS symbols, distinguishing between shop and field welds, and show size, length, and type of each weld. Show backing bars that are to be removed and supplemental fillet welds where backing bars are to remain.
  - 4. Indicate type, size, and length of bolts, distinguishing between shop and field bolts. Identify pretensioned and slip-critical high-strength bolted connections.
- C. Welding Procedure Specifications (WPSs) and Procedure Qualification Records (PQRs): Provide according to AWS D1.1/D1.1M, "Structural Welding Code - Steel," for each welded joint, including the following:

1. Power source (constant current or constant voltage).
  2. Electrode manufacturer and trade name, for demand critical welds.
- D. Qualification Data: For qualified fabricator.
- E. Welding certificates.
- F. Paint Compatibility Certificates: From manufacturers of topcoats applied over shop primers, certifying that shop primers are compatible with topcoats.
- G. Mill test reports for structural steel, including chemical and physical properties.
- H. Product Test Reports: For the following:
1. Bolts, nuts, and washers including mechanical properties and chemical analysis.
- I. Source quality-control reports.

#### 1.05 QUALITY ASSURANCE

- A. Fabricator Qualifications: A qualified fabricator that participates in the AISC Quality Certification Program and is designated an AISC-Certified Plant, Category STD.
- B. Installer Qualifications: A qualified installer who participates in the AISC Quality Certification Program and is designated an AISC-Certified Erector, Category ACES.
- C. Shop-Painting Applicators: Qualified according to AISC's Sophisticated Paint Endorsement or SSPC-QP 3, "Standard Procedure for Evaluating Qualifications of Shop Painting Applicators."
- D. Welding Qualifications: Qualify procedures and personnel according to AWS D1.1/D1.1M, "Structural Welding Code - Steel."
1. Welders and welding operators performing work on bottom-flange, demand-critical welds shall pass the supplemental welder qualification testing, as required by AWS D1.8. FCAW-S and FCAW-G shall be considered separate processes for welding personnel qualification.
- E. Comply with applicable provisions of the following specifications and documents:
1. AISC 303.
  2. AISC 341 and AISC 341s1.
  3. AISC 360.

4. RCSC's "Specification for Structural Joints Using ASTM A 325 or A 490 Bolts."

#### 1.06 DELIVERY, STORAGE, AND HANDLING

- A. Store materials to permit easy access for inspection and identification. Keep steel members off ground and spaced by using pallets, dunnage, or other supports and spacers. Protect steel members and packaged materials from corrosion and deterioration.
  1. Do not store materials on structure in a manner that might cause distortion, damage, or overload to members or supporting structures. Repair or replace damaged materials or structures as directed.
- B. Store fasteners in a protected place in sealed containers with manufacturer's labels intact.
  1. Fasteners may be repackaged provided Owner's testing and inspecting agency observes repackaging and seals containers.
  2. Clean and relubricate bolts and nuts that become dry or rusty before use.
  3. Comply with manufacturers' written recommendations for cleaning and lubricating ASTM F 1852 fasteners and for retesting fasteners after lubrication.

#### 1.07 COORDINATION

- A. Coordinate selection of shop primers with topcoats to be applied over them. Comply with paint and coating manufacturers' recommendations to ensure that shop primers and topcoats are compatible with one another.
- B. Coordinate installation of anchorage items to be embedded in or attached to other construction without delaying the Work. Provide setting diagrams, sheet metal templates, instructions, and directions for installation.

### PART 2 – PRODUCTS

#### 2.01 STRUCTURAL-STEEL MATERIALS

- A. Channels, Angles: A36
- B. Plates: ASTM A 572, Grade 50.
- C. Pipes: ASTM A 53, Type E or S, Grade B.
- D. Steel Tubes: ASTM A500, Grade C.

E. Welding Electrodes: Comply with AWS requirements.

## 2.02 BOLTS, CONNECTORS, AND ANCHORS

A. High-Strength Bolts, Nuts, and Washers: ASTM A 325, Type 1, heavy-hex steel structural bolts; ASTM A 563, Grade C, heavy-hex carbon-steel nuts; and ASTM F 436 (), Type 1, hardened carbon-steel washers; all with plain finish.

B. Galvanizing Repair Paint: ASTM A 780.

## 2.03 GROUT

A. Nonmetallic, Shrinkage-Resistant Grout: ASTM C 1107, factory-packaged, nonmetallic aggregate grout, noncorrosive and nonstaining, mixed with water to consistency suitable for application and a 30-minute working time.

## 2.04 FABRICATION

A. Structural Steel: Fabricate and assemble in shop to greatest extent possible. Fabricate according to AISC's "Code of Standard Practice for Steel Buildings and Bridges" and AISC 360.

1. Camber structural-steel members where indicated.
2. Fabricate beams with rolling camber up.
3. Identify high-strength structural steel according to ASTM A 6/A 6M and maintain markings until structural steel has been erected.
4. Mark and match-mark materials for field assembly.
5. Complete structural-steel assemblies, including welding of units, before starting shop-priming operations.

B. Thermal Cutting: Perform thermal cutting by machine to greatest extent possible.

1. Plane thermally cut edges to be welded to comply with requirements in AWS D1.1/D1.1M.

C. Bolt Holes: Cut, drill, or punch standard bolt holes perpendicular to metal surfaces.

D. Finishing: Accurately finish ends of columns and other members transmitting bearing loads.

E. Cleaning: Clean and prepare steel surfaces that are to remain unpainted according to SSPC-SP 1, "Solvent Cleaning".

- F. Holes: Provide holes required for securing other work to structural steel and for other work to pass through steel framing members.
  - 1. Cut, drill, or punch holes perpendicular to steel surfaces.
  - 2. Baseplate Holes: Cut, drill, mechanically thermal cut, or punch holes perpendicular to steel surfaces.
  - 3. Weld threaded nuts to framing and other specialty items indicated to receive other work.

## 2.05 SHOP CONNECTIONS

- A. High-Strength Bolts: Shop install high-strength bolts according to RCSC's "Specification for Structural Joints Using ASTM A 325 or A 490 Bolts" for type of bolt and type of joint specified.
  - 1. Joint Type: Snug tightened.
- B. Weld Connections: Comply with AWS D1.1/D1.1M for tolerances, appearances, welding procedure specifications, weld quality, and methods used in correcting welding work.
  - 1. Assemble and weld built-up sections by methods that will maintain true alignment of axes without exceeding tolerances in AISC 303 for mill material.

## 2.06 GALVANIZING

- A. Hot-Dip Galvanized Finish: Apply zinc coating by the hot-dip process to structural steel according to ASTM A 123/A 123M.
  - 1. Fill vent and drain holes that will be exposed in the finished Work unless they will function as weep holes, by plugging with zinc solder and filing off smooth.

## 2.07 SOURCE QUALITY CONTROL

- A. Testing Agency: Owner will engage an independent testing and inspecting agency to perform shop tests and inspections and prepare test reports.
  - 1. Provide testing agency with access to places where structural-steel work is being fabricated or produced to perform tests and inspections.
- B. Correct deficiencies in Work that test reports and inspections indicate does not comply with the Contract Documents.
- C. Bolted Connections: Shop-bolted connections will be inspected according to RCSC's "Specification for Structural Joints Using ASTM A 325 or A 490 Bolts."

- D. Welded Connections: In addition to visual inspection, shop-welded connections will be tested and inspected according to AWS D1.1/D1.1M and the following inspection procedures, at testing agency's option:
1. Liquid Penetrant Inspection: ASTM E 165.
  2. Magnetic Particle Inspection: ASTM E 709; performed on root pass and on finished weld. Cracks or zones of incomplete fusion or penetration will not be accepted.
  3. Ultrasonic Inspection: ASTM E 164.
  4. Radiographic Inspection: ASTM E 94.
- E. In addition to visual inspection, shop-welded shear connectors will be tested and inspected according to requirements in AWS D1.1/D1.1M for stud welding and as follows:
1. Bend tests will be performed if visual inspections reveal either a less-than-continuous 360-degree flash or welding repairs to any shear connector.
  2. Tests will be conducted on additional shear connectors if weld fracture occurs on shear connectors already tested, according to requirements in AWS D1.1/D1.1M.

## PART 3 – EXECUTION

### 3.01 PREPARATION

- A. Provide temporary shores, guys, braces, and other supports during erection to keep structural steel secure, plumb, and in alignment against temporary construction loads and loads equal in intensity to design loads. Remove temporary supports when permanent structural steel, connections, and bracing are in place unless otherwise indicated.
1. Do not remove temporary shoring supporting composite deck construction until cast-in-place concrete has attained its design compressive strength.

### 3.02 ERECTION

- A. Set structural steel accurately in locations and to elevations indicated and according to AISC 303 and AISC 360.
- B. Maintain erection tolerances of structural steel within AISC's "Code of Standard Practice for Steel Buildings and Bridges."

- C. Align and adjust various members that form part of complete frame or structure before permanently fastening. Before assembly, clean bearing surfaces and other surfaces that will be in permanent contact with members. Perform necessary adjustments to compensate for discrepancies in elevations and alignment.
  - 1. Level and plumb individual members of structure.
  - 2. Make allowances for difference between temperature at time of erection and mean temperature when structure is completed and in service.
- D. Splice members only where indicated.
- E. Do not use thermal cutting during erection. Finish thermally cut sections within smoothness limits in AWS D1.1/D1.1M].
- F. Do not enlarge unfair holes in members by burning or using drift pins. Ream holes that must be enlarged to admit bolts.
- G. Shear Connectors: Prepare steel surfaces as recommended by manufacturer of shear connectors. Use automatic end welding of headed-stud shear connectors according to AWS D1.1/D1.1M and manufacturer's written instructions.

### 3.03 FIELD CONNECTIONS

- A. High-Strength Bolts: Install high-strength bolts according to RCSC's "Specification for Structural Joints Using ASTM A 325 or A 490 Bolts" for type of bolt and type of joint specified.
  - 1. Joint Type: Snug tightened.
- B. Weld Connections: Comply with AWS D1.1/D1.1M for tolerances, appearances, welding procedure specifications, weld quality, and methods used in correcting welding work.
  - 1. Comply with AISC 303 and AISC 360 for bearing, alignment, adequacy of temporary connections, and removal of paint on surfaces adjacent to field welds.
  - 2. Remove backing bars or runoff tabs, back gouge, and grind steel smooth.
  - 3. Assemble and weld built-up sections by methods that will maintain true alignment of axes without exceeding tolerances in AISC's "Code of Standard Practice for Steel Buildings and Bridges" for mill material.

### 3.04 FIELD QUALITY CONTROL

- A. Testing Agency: Owner will engage a qualified independent testing and inspecting agency to inspect field welds and high-strength bolted connections.
- B. Bolted Connections: Bolted connections will be inspected according to RCSC's "Specification for Structural Joints Using ASTM A 325 or A 490 Bolts."

- C. Welded Connections: Field welds will be visually inspected according to AWS D1.1/D1.1M.
1. In addition to visual inspection, field welds will be tested and inspected according to AWS D1.1/D1.1M and the following inspection procedures, at testing agency's option:
    - a. Liquid Penetrant Inspection: ASTM E 165.
    - b. Magnetic Particle Inspection: ASTM E 709; performed on root pass and on finished weld. Cracks or zones of incomplete fusion or penetration will not be accepted.
    - c. Ultrasonic Inspection: ASTM E 164.
    - d. Radiographic Inspection: ASTM E 94.
- D. In addition to visual inspection, test and inspect field-welded shear connectors according to requirements in AWS D1.1/D1.1M for stud welding and as follows:
  1. Perform bend tests if visual inspections reveal either a less-than-continuous 360-degree flash or welding repairs to any shear connector.
  2. Conduct tests on additional shear connectors if weld fracture occurs on shear connectors already tested, according to requirements in AWS D1.1/D1.1M.
- E. Correct deficiencies in Work that test reports and inspections indicate does not comply with the Contract Documents.

### 3.05 REPAIRS AND PROTECTION

- A. Galvanized Surfaces: Clean areas where galvanizing is damaged or missing and repair galvanizing to comply with ASTM A 780.

## PART 4 – MEASUREMENT AND PAYMENT

### 4.01 BASIS OF MEASUREMENT AND PAYMENT

- A. Work under this section will not be measured nor paid for separately but shall be considered incidental to and included in the prices bid for the various items of work in this project.

END OF SECTION

DIVISION 13 - SPECIAL CONSTRUCTION

SECTION 13281 - ASBESTOS ABATEMENT

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

- A. The General Provisions for Construction Projects (2016), Special Provisions and General Requirements of the Specifications, apply to the work specified in this section.

1.02 SUMMARY

- A. Furnish all labor, materials, equipment, and services, necessary to carry out the safe removal and disposal of asbestos-containing material in compliance with these specifications, EPA, OSHA, State of Hawaii regulations, and any other applicable Federal and State regulations. Whenever there is a conflict or overlap of the above references, the most stringent shall apply.
- B. Contractor to coordinate all work with the Contracting Officer and the State hired Qualified Consultant. Contractor shall verify the existing locations, conditions, layers, and thickness of all materials prior to commencement of any work. The asbestos work shall generally include:
  - 1. Penetrations through ceiling, flooring, and walls as identified in the Architectural drawings.
  - 2. Anchoring into walls as identified in the Architectural drawings.
  - 3. Contractor to coordinate all work with the General Contractor, Contracting Officer, and the Qualified Consultant. Contractor is responsible to satisfy himself as to the total extent of all work, including to but not limited to the quantity, location, thickness, layers, accessibility, etc. of all material prior to commencement of any work.
- C. In general, the principal items of the asbestos removal work shall be as follows:
  - 1. Worker Protection
  - 2. Decontamination Enclosure System
  - 3. Preparation of Work Area
  - 4. Removal of asbestos-containing materials
  - 5. Removal of protective sheeting

6. Disposal

- D. Cleaning shall include areas within and immediately around the work area affected by the abatement work and all areas contaminated by the Contractor's work.
- E. The asbestos abatement work shall include removal of all asbestos-containing materials within the work area as specified herein.
- F. Contractor shall comply with all regulations pertaining to asbestos removal. If there is a conflict with the specifications, the more stringent requirement shall apply.

1.03 COORDINATION WITH OTHER SECTIONS

- A. Prior to commencement of work, an annotated description of all existing damaged and missing items shall be submitted to the Contracting Officer. It will be the Contractor's responsibility to repair and/or replace to the Contracting Officer's satisfaction all items identified as damaged and/or missing that cannot be proven to have been in this condition prior to the commencement of this project.

1.04 SUBMITTALS PRIOR TO WORK

- A. Submit in accordance with Section 01300 – SUBMITTALS.
- B. Final payment will not be made until copies of all submittals have been furnished to and accepted by the Contracting Officer. Submit 4 copies of the submittal package which will include the items listed below.
- C. Notices: As early as possible but prior to commencement of work, as regulated by each agency and before commencement of any on-site project activity, send written courtesy 10-day notice in accordance with 40 CFR Part 61.145 of Subpart M, of the proposed asbestos abatement work with copies to the Contracting Officer and to the following agencies:
  - 1. The Administrator of the Environmental Protection Agency (EPA) Regional Office having jurisdiction over the project.
  - 2. State of Hawaii, Department of Health, "Notification of Demolition and Renovation" form. Send to: Noise, Radiation and Indoor Air Quality Branch, Asbestos Abatement Office, State Department of Health, P.O. Box 3378, Honolulu, Hawaii 76801-9984.
    - a. Permits & Licenses: Copies of all permits, licenses (C-19) and arrangements for removal, transportation and disposal of asbestos-containing materials and waste water, no later than 20 consecutive working days from notice of award unless otherwise instructed in writing by the Contracting Officer.

- b. Insurance: Proof of insurance for Workman's Compensation and General Liability which covers asbestos, lead, and pollution.
  - c. Qualifications of the Qualified Consultant.
  - d. Manufacturer's Data: Copies of manufacturer's specifications, installation instructions and field test procedures for each material and all equipment related to asbestos handling and abatement and include other data as may be required to show compliance with these specifications and proposed uses.
- D. Samples: Samples of the following items for approval prior to ordering materials:
- 1. Surfactant: copies of manufacturer's literature including all laboratory data, mixing and application instructions.
  - 2. Tapes and Adhesives: copies of manufacturer's literature including all laboratory data.
  - 3. Warning Labels and Signs: copies of examples of all required signage.
  - 4. Protective Clothing: copies of manufacturer's literature on all protective clothing and one sample of each item which will be returned to the Contractor.
  - 5. Respirator Equipment: copies of manufacturer's literature on all respirator equipment and one sample of each item which will be returned to the Contractor.
  - 6. Asbestos Encapsulant(s): copies of manufacturer's literature including all laboratory data, application instructions.
- E. Work Plan: Submit a project Work Plan for the asbestos-containing material disturbance work written and signed by the Contractor's State of Hawaii, Department of Health certified Asbestos Project Designer. The Contractor shall also provide detailed information concerning:
- 1. Preparation of the work area including erecting a negative pressure enclosure system for the removal of interior ductwork insulation.
  - 2. Personal protective equipment including respiratory protection and protective clothing.
  - 3. Decontamination procedures for the personnel who may be exposed to asbestos.

4. Handling and disposal methods and procedures to be used.
  5. Required air monitoring procedures and sampling protocols.
  6. Procedures for final cleanup.
  7. A sequence of work and performance schedule in coordination with other trades.
  8. Emergency procedures.
- F. Shop Drawings: Submit shop drawings for the following items as a minimum:
1. Descriptions of any equipment to be employed not discussed in this section.
  2. Security provisions, if any, in and around the project area.
  3. Outline of work procedures to be employed.
  4. Location and construction of all airtight barriers including temporary air tight negative pressure enclosure containment system for the removal of exterior paint and coating material
  5. Location of waste dumpster.
  6. Staging of the work, the sequence
  7. Entrances and exits to the work place
  8. Location and construction of worker decontamination units
  9. Water filtration system for all contaminated water. Description of water disposal and copy of water disposal permit from the City & County of Honolulu, Environmental Services, Division of Environmental Quality, Temporary Industrial Wastewater Discharge Permit.
  10. Proposed method of attaching plasticizing (polyethylene sheeting) shall be approved in advance to minimize damage to equipment and surfaces. Method of attachment may include any combination of duct tape or other approved waterproof tape, furring strips, spray glue, staples, nails screws or other effective procedures capable of sealing adjacent sheets of polyethylene sheeting and capable of sealing polyethylene to dissimilar finished or unfinished surfaces both under wet and dry conditions (including amended water).

11. Proposed method of patching and repairing all damage to existing finishes from the attachment of polyethylene sheeting (as applicable).

- G. Documentation for Instruction: Submit documentation that each and every individual, including foremen, supervisors, and other company personnel or agents and any other individual who may be exposed to airborne asbestos fibers, who may be responsible for any aspect of abatement activities, or who is allowed or permitted to enter areas where such exposure may occur has currently attended and passed the Abatement Worker and/or Abatement Contractor/Supervisor course whichever is relevant to that workers responsibilities as specified in 40 CFR Part 763, "Asbestos Materials in Schools". These courses shall be EPA-approved or approved by a State Accreditation Program in the most current listing of the Federal Register. No worker shall be allowed on site if they are found to have either an expired accreditation certificate or does not comply with the requirements set forth in 40 CFR Part 763 on training. All workers shall be certified for asbestos related work in accordance with Department of Health, Chapter 11-504, Hawaii Administrative Rules, *Asbestos Abatement Certification Program*.

The Contractor shall be responsible for keeping the documentation up to date and subsequent submittals to the Contracting Officer before any additional employee or individual, not currently on the list, is allowed within the project site.

Submit completed and signed "Employee Acknowledgment of Instruction and Release" forms. A sample "Employee Acknowledgment of Instruction and Release" form is provided at the end of this section.

- H. Documentation from Physician: Submit documentation from a physician that all employees or agents who may be exposed to airborne asbestos have been provided with an opportunity to be medically monitored to determine whether they are physically capable of working while wearing the respirator required without suffering adverse health effects. In addition, document that all individuals permitted within the project site have received medical monitoring or had such monitoring made available to them as required in OSHA 29 CFR 1926.1101, and HIOSH 12-145.1. The Contractor must be aware of and provide information to the examining physician about unusual conditions in the workplace environment (e.g. high temperatures, humidity, chemical contaminants) that may impact on the employee's ability to perform work activities. The Contractor shall keep and make available to all affected individuals a record and the results of such examinations.
- I. HEPA Vacuums: Submit manufacturer's certification that vacuums conform to ANSI Z9.2-79, Fundamentals Governing the Design and Operation of Local Exhaust Systems as applicable to this project.

- J. Rental Equipment: When rental equipment is to be used in abatement areas or to transport asbestos contaminated waste, a written notification concerning intended use of the rental equipment must be provided to the rental agency with a copy submitted to the Contracting Officer.
- K. Emergency Planning Procedures: Contractor shall submit for review and acceptance by the Contracting Officer, an emergency plan prior to abatement initiation.
  - 1. Emergency procedures shall be in written form and prominently posted adjacent to the Worker Protection Notices specified hereinafter. Everyone prior to entering the work area must read and sign these procedures to acknowledge receipt of emergency exits and emergency procedures.
  - 2. Emergency planning shall include notification of police, fire, and emergency medical personnel of planned abatement activities work schedule, and layout of the work area, particularly barriers that may affect response capabilities.
  - 3. Emergency planning shall include considerations of fire, explosion, toxic atmospheres, electrical hazards, slips, trips and falls, and heat related injury. Written procedures shall be developed and employee training procedures shall be provided in Contractors plan.

1.05 SUBMITTAL AFTER WORK IS COMPLETED

- A. At the completion of the work, a final report shall be prepared by the Contractor for acceptance by the Contracting Officer. Six copies of the report shall be submitted and shall include the items listed below.
  - 1. The project name, Abatement Contractor, Abatement Contractor license number, notification form to the Hawaii Department of Health and EPA, work duration, material removed, respiratory protection employed, asbestos waste manifest, total quantity of waste, employee exposure air sample results, and results of the most current PAT round results for the laboratory or laboratories conducting the employee exposure, ambient, and PCM air sample analysis.
  - 2. Certification of the Abatement Contractor's employees.
  - 3. Visitor/Worker Entry Log: The daily log of all personnel including the Contractor's employees and agents who enter the work area while asbestos abatement operations are in progress, until final clearance is received that the work area is asbestos free. The log shall contain the listed information as a minimum and shall be certified by the Qualified Consultant.
    - a. Date of visit/worker entry.

- b. Visitor/Worker's name, employer, business address and telephone number.
  - c. Time of entry and exit from work area.
  - d. Purpose of visit .
  - e. Type of protective clothing and respirator worn.
  - f. Certificate of release signed and filed with the contractor.
- B. Clearance certifications received from the Qualified Consultant.
- C. A statement signed by the Asbestos Abatement Contractor that all asbestos abatement and disposal was completed in compliance with this specification, Federal and State regulations, and the approved Work Plan.

#### 1.06 PRODUCT HANDLING

- A. Delivery and Storage of Materials: Deliver materials to the site in original packages, containers or bags fully identified with manufacturer's name, brand and lot number. Store materials in a dry well-ventilated space, under cover, off the ground and away from surfaces subject to dampness or condensation as approved by the Contracting Officer. Material that becomes contaminated with asbestos shall be disposed of in accordance with applicable regulations. Replacement materials shall be stored outside the contaminated work area until abatement is completed.

#### 1.07 PROTECTION

- A. Site Security: The work area is to be restricted only to authorized, trained, and protected personnel. These may include the Contractor's employees, employee's of subcontractors, the Contracting Officer and its representatives, State and local inspectors and any other designated individuals. A list of authorized personnel shall be established prior to job start.
- 1. Entry to the work area by unauthorized individuals shall not be permitted without the express approval of the Contracting Officer and any such entry shall be reported immediately to the Contracting Officer by the Contractor.
  - 2. A Visitor/Worker Entry Log shall be maintained.
  - 3. The Contractor shall have control, subject to approval of the Contracting Officer, of security in the work area and in proximity of Contractor's equipment and materials.

- B. Site Protection and Safety: As a minimum follow the requirements of EPA, HIOSH (State of Hawaii), OSHA and NIOSH. Take all necessary precaution to ensure there is no asbestos contamination to those areas not included in the work schedule.
- C. Protective Covering: The Contractor shall provide and install protective covering on an "as required" or "upon request" by the Qualified Consultant. Protective covering shall be clean plastic sheets minimum thickness of 6-mil.
- D. Safeguarding of Property: The Contractor shall take whatever steps necessary to safeguard his work and also the property of the Contracting Officer and other individuals in the vicinity of his work area during the execution of this Contract. He shall be responsible for and make good on any and all damages by his employees negligence. Do not load structure with weight that will endanger the structure.
- E. Completed Work: The Contractor shall provide all necessary protection for surfaces encapsulated under this section.

#### 1.08 ABBREVIATIONS

- A. ANSI: American National Standards Institute, Inc.
- B. CFR: Code of Federal Regulations
- C. HIOSH: Division of Occupational Safety and Health, Department of Labor and Industrial Relations, State of Hawaii
- D. EPA: U.S. Environmental Protection Agency
- E. NESHAP: National Emission Standards for Hazardous Air pollutants
- F. NIOSH: National Institute for Occupation Safety and Health
- G. OSHA: Occupational Safety and Health Administration

#### 1.09 GENERAL REQUIREMENTS

- A. Contractor shall examine and have at all times in his possession at his office (one copy) and in view at each job site office (one copy) a current issue of the following publications:
  - 1. State of Hawaii: Occupational Safety and Health Standards; Title 12, Subtitle 8, Chapter 145.1, Asbestos.
  - 2. State of Hawaii, Department of Health, Title 11, Chapter 501-1, Asbestos Requirements.

3. State of Hawaii, Department of Health, Title 11, Chapter 501-2, Asbestos Containing Materials in Schools.
  4. State of Hawaii, Department of Health, Title 11, Chapter 501-4, Asbestos Abatement Certification Program.
  5. Title 29, Code of Federal Regulations, Section 1910.134 - General Industry Standard for Respiratory Protection, Occupational Safety and Health Administration (OSHA), U.S. Department of Labor.
  6. Title 29, Code of Federal Regulations, Section 1926.1101 - Asbestos, Construction Industry, Occupational Safety and Health Administration (OSHA), U.S. Department of Labor.
  7. Title 29, Code of Federal Regulations, Section 1910.2 - Access to Employee Exposure and Medical Records, Occupational Safety and Health Administration (OSHA), U.S. Department of Labor.
  8. Title 29, Code of Federal Regulations, Section 1910.1200 - Hazard Communication, Occupational Safety and Health Administration (OSHA), U.S. Department of Labor.
  9. Title 40, Code of Federal Regulations, Part 61, Subparts A and M (Revised Subpart B), National Emission of Standards for Hazardous Air Pollutants, U.S. Environmental Protection Agency (EPA).
  10. Guidance for Controlling Asbestos-Containing Materials in Buildings, EPA 560/5-85-024 (Purple Book), U.S. Environmental Protection Agency (EPA).
  11. Title 34, Code of Federal Regulations, Part 231, Appendix C, Procedures For Containing and Removing Building Materials Containing Asbestos, U.S. Environmental Protection Agency (EPA).
  12. Title 29, Code of Federal Regulations, Section 1910.145 Specifications for Accident Prevention, Signs and Tags, Occupational Safety and Health Administration (OSHA), U.S. Department of Labor.
  13. ANSI Z88.2-80 Practice for Respiratory Protection.
  14. EPA, Final Response to the Asbestos Hazard Emergency Response Act (AHERA), 40 CFR, Part 763, Subpart.
- B. The Contractor shall comply with the above requirements and any applicable State and City & County regulations. Where conflict or any inconsistency among requirements or with this specification exists, the more stringent requirements shall apply. Ignorance of the above requirements and any applicable State and City & County regulations

resulting in additional cost to the Contractor shall be solely the Contractor's responsibility.

- C. All regulations shall govern over these specifications, except that any more stringent specification or specification providing greater protection against asbestos exposure, injury, loss or liability, shall control to the extent permitted by regulation. Any question regarding conflict or inconsistency between specification and/or regulations should be directed to the Contracting Officer.
- D. Whenever approval of the Contracting Officer is required prior to proceeding with other work, the following shall be complied with:
  - 1. The Contractor shall allow the Contracting Officer 72 hours from notification to respond to the request for inspection.
  - 2. The Contractor shall designate one person (either a foreman or superintendent) who will be authorized to request for inspections. The name of the designated person shall be submitted in writing to the Contracting Officer prior to commencing with the work. Request from any other person will not be considered an official request.
  - 3. The designated person when requesting for inspection shall provide the following information:
    - a. Name of caller.
    - b. Building and rooms to be inspected (as applicable).
    - c. Work phase of inspection, as specified.

#### 1.10 DEFINITIONS

- A. Abatement: Procedure to control fiber release from asbestos-containing building materials.
  - 1. Removal: All herein specified procedures necessary to remove asbestos-containing materials at an approved site in an acceptable manner.
  - 2. Post-Removal Surface Encapsulation: Procedures necessary to coat surfaces from which asbestos-containing materials have been removed and where designated on the drawings to control any residual fiber release.
- B. Air Monitoring: The process of measuring the fiber content of a specific, known, volume of air in a stated period of time.

- C. Amended Water: Water to which a surfactant has been added to reduce water surface tension and thereby provide a more rapid penetration.
- D. Authorized Visitor: the Contracting Officer, the Qualified Consultant, his representatives, air monitoring personnel, or a representative of any regulatory or other agency having jurisdiction over the project.
- E. Holding Area: A secure area used for the storage of double-bagged asbestos containing material before removal from the project site to an approved disposal site.
- F. Fixed Object: A unit of equipment or furniture in the work area which cannot be removed from the work area without dismantling.
- G. Friable Asbestos: Asbestos containing material which can be crumbled to dust, when dry, under hand pressure.
- H. HEPA Filter: A High Efficiency Particulate Absolute filter capable of trapping and retaining 99.97% of asbestos fibers greater than 0.3 micron in length.
- I. HEPA Vacuum Equipment: Vacuuming equipment that utilizes a High Efficiency Particulate Absolute (HEPA) filter.
- J. Surfactant: A chemical wetting agent added to water to improve penetration, thus reducing the quantity of water required for a given operation or area.
- K. Post-Removal Encapsulation: A liquid material which can be applied to surfaces from which asbestos-containing material has been removed to control the possible release of residual fibers, either by creating a membrane over the surface (bridging encapsulant) or by penetrating in to the material and binding its components (penetrating encapsulant). Selected product shall be compatible with the existing finishes including wood, metal, and plastic.
- L. Qualified Consultant: Consultant hired by the State who will perform air monitoring and inspection during abatement work and shall have the authority to initiate engineering controls. The Qualified Consultant will be accredited as a State of Hawaii Department of Health accredited Asbestos Building Inspector and Project Monitor.

## PART 2 - PRODUCTS

### 2.01 MATERIALS

- A. Plastic Sheeting: Minimum thickness is 6-mil polyethylene film.
- B. Plastic Bags: Minimum thickness 6-mil polyethylene film labeled as specified hereinafter.

- C. Tapes: Tape shall be capable of sealing joints of adjacent sheets of polyethylene and for attaching polyethylene sheets to finished or unfinished surfaces of dissimilar materials and capable of adhering under both dry and wet conditions, including the use of amended water. Silver cloth duct tape, minimum 2 inches wide; red or NATO orange tape, minimum 2 inches wide for exit arrows; and double faced foam tapes, by Nashua, 3-M, Arno, or approved equal.
- D. Adhesives: Adhesives (3-M #76, #77, or approved equal) shall be capable of sealing joints of adjacent sheets of polyethylene and for attachment of polyethylene sheet to finished or unfinished surfaces of dissimilar materials and capable of adhering under both dry and wet conditions, including use of amended water.
- E. Surfactant (Wetting Agent): 50 percent polyoxyethylene ester and 50 percent polyoxyethylene ether, or equivalent, and shall be mixed with water to provide a concentration of one ounce, or more as needed, of surfactant to 5 gallons of water. (An equivalent surfactant shall be understood to mean material with a surface tension of 29 dynes/cm as tested in its properly mixed concentration, using ASTM method D 1331-56 (R 1980), "Surface and Interfacial Tension of Solutions of Surface-Active Agents.")
- F. Warning Labels and Signs: As required by OSHA regulations 29 CFR 1926.1101 and HIOSH 12-145.1. Permanent signage for access panels and areas with encapsulated asbestos-containing materials shall be as specified hereinafter. Signage shall be as approved by the Contracting Officer.
- G. Protective Clothing: As specified hereinafter. The Contractor shall have all the required sets of coveralls required for this project on island prior to the start of work. There will be no time extension for the unavailability of coveralls or related equipment.
- H. Post-Removal Encapsulation: The encapsulant shall be applied to surfaces from which asbestos-containing material has been removed to control the possible release of residual fibers, either by creating a membrane over the surface (bridging encapsulant) or by penetrating in to the material and binding its components (penetrating encapsulant) and shall be compatible with the existing finishes including wood, metal, and plastic.
- I. Other Materials: Provide all other materials, such as, but not limited to lumber, plywood, nails, fasteners, metal studs, hardware, foam sealants, and caulking which may be required to properly prepare and complete this project.

## 2.02 TOOLS AND EQUIPMENT

- A. General: Provide and fabricate suitable tools for the asbestos abatement procedures.
- B. Water Sprayer: Airless or a pressure sprayer for amended water application as applicable.
- C. Air Purification Equipment: High Efficiency Particulate Absolute (HEPA) filtration systems.
- D. Paint/Encapsulant Sprayer: Airless type.
- E. Other tools and equipment as necessary.

### 2.03 PERSONNEL PROTECTION REQUIREMENTS

- A. The contractor acknowledges he alone is responsible for instruction and for enforcing personnel protection requirements and that these specifications provide only a minimum acceptable standard.
- B. Provide workers with sufficient sets of disposable protective full body clothing consisting of material impenetrable by asbestos fibers and of the proper size for each individual to accommodate movement without tearing. Such clothing shall consist of full body coveralls, footwear, gloves and headgear. Provide hard hats as required by applicable safety regulations. Disposable clothing shall not be allowed to accumulate and shall be disposed of as asbestos contaminated waste. Protective clothing shall be worn by all personnel within the work area from the start of the removal and post-removal encapsulation work until the work area has received its final clearance.
- C. Insulated non-skid rubber boots or an approved equal shall be required for all individuals entering the work area. Protective full body clothing without elastic at sleeves and legs shall require separate elastic or taped protection to seal the opening. Visitors shall be provided full body protective clothing.
- D. No visitors shall be allowed in work areas, except as authorized by the Contracting Officer. Visitors must supply their own respiratory protection and show proof training in accordance with DOH 11-501-504.
- E. Provide authorized visitors with suitable disposable protective full body clothing consisting of material impenetrable by asbestos fibers and of the proper size for each individual to accommodate movement without tearing. Such clothing shall consist of full body coveralls, footwear, gloves and headgear including hard hat when required and insulated rubber boots or equal. The Contractor shall include in his Bid the expense of a total of 4 changes of clothing per day for each day of asbestos abatement work for visitor's use. The quantity shall accumulate and may be used at any time during asbestos abatement work at the discretion of the Contracting Officer.

- F. All electrical systems used for asbestos abatement operations shall as a minimum be protected with "Ground Fault Circuit Interrupters" selected and installed in strict accordance with the manufacturer's instructions, the National Electric Code and all other pertinent codes.
- G. Additional safety equipment (e.g. hardhats meeting the requirements of ANSI Z-89.1-1981, eye protection meeting the requirements of ANSI Z87.1-1979, safety shoes meeting the requirements of ANSI Z41.1-1967, disposable PVC gloves), as necessary, shall be provided to all workers and authorized visitors.

### PART 3 – EXECUTION

#### 3.01 SEPARATION OF WORK AREAS FROM NON WORK AREAS

- A. Air Systems: Shut down and isolate all ventilation air systems to prevent contamination and fiber dispersal to other areas of the building. During the abatement operations, air intake vents within the work area shall all be sealed with tape and two layers of 6-mil polyethylene sheeting.
- B. Penetrations: Ceiling and wall penetrations, windows and doors, shall be sealed with two layers of 6-mil poly sheeting and secured with duct tape.
- C. For exterior paint/coating removal work, the Contractor shall construct an air-tight negative pressure mini enclosure.
- D. Emergency Exits: Designate and maintain emergency and fire exits from the work area in accordance with local codes and regulations. Provide knockout/cut away panels in the barriers in the direction of emergency egress. Properly mark the knockout/cut away panels, seal them airtight, and on a continuing basis instruct workers and authorized personnel as to their locations. Post a diagram in each Clean Room and Equipment Room locating the emergency exits. In case of fire while doing work in the work areas, emergency exit procedures have priority over normal work exiting procedures.
- E. Inspection: The Contractor shall inspect all barriers at least twice a day (once prior to the start of each day's abatement operations and following the day's abatement operations). Document the inspections and observations in a daily project log.

#### 3.02 DECONTAMINATION ENCLOSURE SYSTEMS

- A. General: The Contractor shall construct the decontamination enclosure system or use portable units acceptable to the Qualified Consultant and as described in the approved Work Plan.
- B. Maintenance of Decontamination Units: At the beginning of each work shift and throughout abatement operations, all seals and curtained doorways

shall be inspected and if not found in proper condition, repaired immediately. All areas shall be kept clean at all times. Ensure that drainage filtering systems are kept clean and operational at all times.

- C. Worker Protection Notice: Post the following notice in each Clean Room and Equipment Room:
1. Workers and authorized personnel, in order to enter the work area, shall:
    - a. Remove all clothing, unless it is to remain in the Equipment room for eventual disposal.
    - b. Don the appropriate respiratory protection, follow all training procedures and manufacturer's instructions. Once all of the above has been completed, proceed to the shower. Check the equipment out for proper operation before proceeding any further.
    - c. Don protective clothing (full body coveralls, gloves, boots, headgear etc.) after donning respirator.
  2. All workers and authorized personnel, in order to leave the work area, shall:
    - a. Remove gross (visible) contamination from themselves and their equipment. Brush off dust with a fine bristle brush and leave the brush outside the Equipment Room in the work area.
    - b. Enter the Equipment Room and, keeping your respirator in place, remove all protective clothing, including full body coveralls, gloves, boots, and headgear. Place contaminated clothing in the bag(s) provided. Store reusable gloves and boots in their respective areas in the Equipment Room.
    - c. Respirator still in place, move into the Shower Room and rinse off thoroughly.
    - d. Accomplish complete showering, thoroughly soaping and shampooing.
    - e. Proceed to the Clean Room: Dry off, get dressed and return respirator to its proper place.
    - f. No smoking, eating, drinking shall be allowed inside the work area or the decontamination enclosures.

### 3.03 WASTE WATER FILTERING SYSTEM

- A. Prior to any waste water disposal into the sanitary sewer system, the Contractor shall be responsible for obtaining from the City and County of Honolulu, Environmental Services, Division of Environmental Quality, *Temporary Industrial Wastewater Discharge Permit*.
- B. Filter: All waste water that will be discharged into the sanitary sewer system shall be treated as contaminated with asbestos and shall be filtered using two in-line filter cartridges with 2" inlets and outlets. The outlet of the first cartridge shall connect to the inlet of the second cartridge. The first cartridge shall contain six 100-micron prefilters and a second cartridge shall contain six 0.5-micron filters or equal staging according to type filtering unit.
- C. One spare set of 100-micron prefilters shall be maintained at the site at all times to replace prefilters during cleaning. Maintain at least one set of 0.5-micron or equal filters at the site at all items form replacement as necessary.
- D. When the final filters become clogged, remove the filters, replace with new, and dispose of the clogged filters as contaminated waste.

#### 3.04 COMMUNICATIONS

- A. Provide a communications system suitable to monitor all activities within the work area and to readily transfer messages from one location to another.

#### 3.05 WORK AREA PREPARATION

- A. Work by the Asbestos Abatement Contractor:
  - 1. Step 1:
    - a. Posting of Danger Signs: Post danger signs in and around the work area to comply with 29 CFR 1926.1101, HIOSH 12-145.1 and all other Federal, State and local requirements. Signs shall be posted at a distance sufficiently far enough away from the work area to permit a person to read the sign and take the necessary protective measures to avoid exposure.
    - b. Inspect the Building Openings: At the beginning of each work day, the Contractor shall inspect and ensure that all doors, windows and other openings of affected building(s) and all surrounding buildings are closed and locked (as applicable).
    - c. Barrier Enclosures: Cover all openings between the work area and the occupied portions of the building with opaque plastic. Construct all general and separation barriers.

- d. Sealing Openings: Seal all openings including but not limited to ducts, vents, electrical penetrations, and any other penetrations of the work areas, with plastic sheeting sealed with tape.
  - e. Erect an air tight negative pressure enclosure containment system attached to the exterior surfaces for the removal of paint/coating material.
2. Step 2:
- a. Provide Decontamination Units where appropriate: Personnel Decontamination Unit(s) specified hereinafter shall be required.
  - b. Air Filtration Units: Install sufficient number of HEPA air filtration units to create a minimum of four air changes per hour and create a negative pressure differential of 0.2 inches of water. Contractor to monitor the pressure differential for the duration of the project using a portable manometer. Contractor will keep one spare unit at the job site for the duration of the work.
  - c. Precleaning/Wet-wiping: Preclean fixed object within the work area, first using HEPA vacuum equipment and then wet cleaning methods as appropriate and separately enclose with minimum 6-mil plastic sheeting sealed with tape. Fixed objects shall include, but not be limited to exposed electrical conduits and all other permanently fixed items.
3. Step 3:
- a. Plasticizing: Objects which may be contaminated during abatement or difficult to clean shall be taped and sealed in a minimum of 6-mil polyethylene plastic sheeting. A minimum of 2 layers of 6-mil polyethylene plastic sheeting shall be used for preparation of critical barriers and containments.
  - b. When sealing (plasticizing), plastic sheet shall be protected against damages by sharp edges, projections, etc. Provide 2" squares of duct tape at all sharp projections prior to applying plastic sheet to prevent puncture and tearing.
  - c. NOTE: Combining lower mil thickness sheets to total the minimum mil thickness is not acceptable.
  - d. Marking Exits: Maintain and mark both normal and emergency exits from the work areas to include large tape or spray painted orange arrows in the direction of egress and at curtained doorways which side of plastic sheeting to access first. One arrow marking shall be visible from every work location.

Establish a color or designation system to distinguish normal exiting to the personnel decontamination unit and emergency exiting when life safety conditions prevail.

4. Step 4: Temporary utility services:
  - a. Temporary Electricity and Lighting:
    - i. Existing electrical service to the building may be used for temporary electrical power during abatement and replacement work; however, the electrical power to the work area will be shut down during abatement work.
    - ii. The Contractor shall verify the locations(s) of available electrical service outside the work areas and shall tie into the existing system at a location approved by the Contracting Officer.
    - iii. Install circuit and branch wiring, with area distribution boxes located so that power is available throughout the project by use of construction type power cords. All lighting shall be three wire with a ground fault interrupter.
    - iv. Provide a minimum of 35 foot-candles of illumination on surface for finishing operation and 100-foot candles for removal operations. Provide 24 volt safety lighting.
  - b. Temporary Water:
    - i. Existing domestic water service to the building may be used for temporary water during construction. Location of tie-in shall be approved by the Contracting Officer.
    - ii. Install branch piping as necessary throughout the construction area.
  - c. Temporary Fire Protection:
    - i. Provide and maintain temporary fire protection equipment during the asbestos abatement operations.
    - ii. Equipment shall be of the appropriate type to fight fires associated with the existing building materials and those materials used during the construction operations.
    - iii. The Contractor shall clearly mark the location of all fire extinguishers.

5. Step 5: After the sealing and temporary facility work is completed, notify the Qualified Consultant and get his approval prior to proceeding with abatement.

### 3.06 REMOVAL OF PAINT/SKIM COAT

- A. A minimum of 4-mil polyethylene shall be laid beneath the area where the paint/skim coat will be removed.
- B. The chemical peel will be applied to the paint in accordance to the manufactures directions. After the recommended contact time the chemical peel will be removed using painters spatulas or hand razors. The peel will be removed and placed directly into waste disposal bags. The process will be repeated until a surface free of paint and coating material is obtained to allow for the safe installation of new electrical system including all associated conduits.
- C. In the event mechanical removal becomes necessary, Desco deck crawlers will be used. The Desco units will be attached to a HEPA vacuum to collect all emissions generated by the units.
- D. It shall be the responsibility of the Contractor to verify the thickness of the material and satisfy himself as to the total work and/or effort to remove said material. No additional payment will be considered by the State for any deviations of the actual thickness from the thickness noted on the drawings.
- E. The Contractor is prohibited from using methods of removal that create excessive amounts of dust and debris.
- F. The Contractor shall take whatever steps necessary to safeguard and protect the surrounding areas during the execution of this Contract. He shall be responsible for any and all damages including contamination of surrounding areas caused by the compromised containment and/or safeguards.
- G. Exposed raw surface edges will be completely sealed using an appropriate encapsulant.

### 3.07 REMOVAL OF FLOOR TILE WITH MASTIC

- A. Removal work will be conducted in a negative pressure enclosure containment system.
- B. Thoroughly wet the affected floor covering with amended water before starting the removal.

- C. Spray the flooring material repeatedly during the removal operations to maintain a wet condition and to minimize asbestos fiber dispersion. The Qualified Consultant shall have the authority to stop all work due to improper removal techniques.
- D. The asbestos-containing material shall be removed in small sections. Before beginning the next section, the material shall be packed while still moist into sealable 6-mil double polyethylene bags and sealed airtight. No removed material, whether bagged or unbagged, shall be allowed to dry, fall to the ground, be crumbled into small pieces, pulverized, or made friable.
- E. The Abatement Contractor is prohibited from using methods of removal that create excessive amounts of dust and debris.

### 3.08 EQUIPMENT CLEANING

- A. All contaminated equipment and tools used for removal work shall be washed and cleaned in the work area prior to removing them from the work area. No washing of contaminated equipment and tools will be allowed outside the work area.

### 3.09 ASBESTOS-CONTAINING WASTE HANDLING

- A. Collect and bag all asbestos debris and any other contaminated debris found in the work area. Clean the visible residual by HEPA vacuuming.
- B. Clean fixed object within the work area, using HEPA vacuum equipment. Fixed objects shall include, but not be limited to pipes, wiring and all other permanently fixed items. Do not use methods that raise dust, such as dry sweeping or vacuuming with equipment not equipped with HEPA filters. Do not use HEPA vacuum equipment on wet surfaces.
- C. Debris shall be bagged and sealed in 6-mil plastic bags immediately after removal. All gross debris created by the removal process shall be bagged and sealed at the end of each removal day.
- D. The bags containing the asbestos waste material shall be checked for evidence of waste material attached to the outside of the bags. If dirty, the bags shall be washed down in the work area. The bags are then moved to the Holding bin. Bags and containers shall be marked with OSHA label prescribed by the Hawaii OSHA regulations referenced in these specification. Label shall state, "DANGER – CONTAINS ASBESTOS FIBERS – AVOID CREATING DUST – CANCER AND LUNG DISEASE HAZARD." Additionally, label bags in accordance with OSHA 40 CFR 61.150; or EPA 40 CFR 763 if more restrictive. Labeling shall include the name of the waste generator and the site where the waste was generated.

- E. Asbestos contaminated waste with sharp edges (e.g. nails, screws, metal lath, etc.) will tear the polyethylene bags and sheeting and therefore shall be placed in drums or enclosed with cardboard and double wrapped and sealed with plastic.
- F. During the removal process, if plastic sheeting tears, or the duct tape loosens from the surface, the Abatement Contractor shall immediately stop work, cleanup loose asbestos-containing materials, and then reseal the surface by taping over the torn or loosened surface, before commencing again.
- G. Protect the plastic sheeting against tearing caused by sharp projection, corners, edges, etc., of all equipment being used in the removal process. However, if the plastic sheeting tears, the Abatement Contractor shall follow repair procedure specified above.
- H. Any housing or penetration concealing asbestos-containing materials shall be removed and protected to provide access to the materials. Replacement or reattachment of these shall be in a manner such that function and appearance is equal or exceeds the original condition.

### 3.10 CLEANING AND CLEARANCE OF THE WORK AREA

- A. Should the contractor fail to commence work to clean-up and make the work area asbestos free within one working day after the clean-up thereof has been requested by the Contracting Officer, and thereafter to expeditiously complete the said clean-up, Contracting Officer may without further notice and without termination of contract, have the clean-up done and deduct the cost thereof from the contract.
- B. Visual Clearance of Removal Work Areas: Remove all visible accumulation of asbestos-containing materials and debris by HEPA vacuums, sponging, and wet-wiping. The work areas shall be totally visibly clean and remaining material encapsulated. The Contractor, in the presence of the Qualified Consultant, shall make a complete visual inspection of the work area to ensure dust-free conditions.
- C. Once the Qualified Consultant verifies that the work areas are essentially clean of visible asbestos-containing debris, the Qualified Consultant will collect post abatement PCM air clearance samples.
- D. For interior removal work, air clearance samples will be collected by the Qualified Consultant until an air clearance level of 0.01 fibers/cc is obtained.
- E. Should the Contractor fail to achieve the respective clearance level lower than 0.01 f/cc in the removal work area. The Contractor will re-clean the area at no additional cost to the State and all additional fees to perform the

sampling and analysis by the Qualified Consultant shall be paid for by the Contractor.

- F. After achieving a respective clearance level lower than 0.01 f/cc, the work area will be cleared of all remaining containment enclosure sheeting and released to the Contracting Officer. Signage applicable to job site safety and the performance of the remaining portions of the work shall remain as applicable.

### 3.11 DISPOSAL OF ASBESTOS-CONTAINING MATERIAL

- A. Painted asbestos-containing waste shall be TCLP tested by the Contractor prior to disposal to determine if the asbestos-containing waste must be disposed of as hazardous waste or as asbestos-containing waste. If painted asbestos-containing waste passes the TCLP test, the waste may be disposed of as asbestos-containing waste. If the painted asbestos-containing waste fails the TCLP test, the waste must be disposed of as hazardous waste.
- B. As the work progresses asbestos-containing waste is generated the Contractor shall transport all waste generated on a pre-scheduled day to the State of Hawaii, Department of Health's authorized disposal site, or as specifically approved by the Contracting Officer to delay a disposal operation. Transport all waste to the predesignated disposal site in accordance with EPA regulations and specific landfill requirements.
- C. Contaminated material shall be double-bagged in bags with OSHA label prescribed by the HIOSH regulations referenced in these specifications. Label shall state, "DANGER – CONTAINS ASBESTOS FIBERS – AVOID CREATING DUST – CANCER AND LUNG DISEASE HAZARD." Additionally, label bags in accordance with OSHA requirement 29 CFR 1926.1101, HIOSH 12-145.1 or EPA 40 CFR 61.150 if more restrictive. Labeling shall include the name of the waste generator and the site where the waste was generated.
- D. Mark vehicles used to transport asbestos-containing waste material during the loading and unloading of the waste so that the signs are visible. The marking must be displayed in such a manner and location that a person can easily read the legend. Refer to 40 CFR Part 61.149 for lettering size, fonts and wording of sign requirements. For all loading and unloading activities, the sign referred to in 40 CFR Part 61.150 (b) (3) shall be displayed prominently.
- E. Vehicles used for transporting waste to the disposal sites shall have a completely enclosed, lockable storage compartment. Storage compartments shall be plasticized and sealed with a minimum of one layer of 6 mil polyethylene sheeting on the sides and top and two layers of 6 mil polyethylene on the floor (bed). Waste materials, except those with sharp edges (metal lath, screws, nails, metal suspension system, etc.), properly

double bagged may be transported to the disposal site without being placed in drums if the transporting vehicle is prepared as specified above in addition to any more stringent requirements by HIOSH. The compartments shall be thoroughly wet-cleaned and/or HEPA vacuumed following the disposal of each load at the disposal sites at an approved location with electrical power as required. At the conclusion of the asbestos abatement, or before transport vehicles are used for other purposes, the polyethylene sheeting shall be properly removed and disposed of as contaminated waste. After this has been accomplished, compartments shall once again be wet-cleaned and HEPA vacuumed in order to eliminate all debris.

- F. At the landfill, upon delivery of the waste for disposal, the Contractor shall notify the Scale Attendant and Landfill Spotter that the waste to be disposed of is asbestos material.
- G. Workers unloading bags at the disposal sites shall be dressed in full body protective clothing and dual cartridge respirators.
- H. Waste disposal manifest forms shall be properly completed to assure custody and disposal of all asbestos-containing material and asbestos contaminated waste at approved disposal sites. Forms shall be kept on file as directed by the Contracting Officer with copies submitted to the Qualified Consultant the next working day after each trip.

NOTE: IT IS THE CONTRACTOR'S RESPONSIBILITY TO ASSURE THAT ANY LANDFILL USED FOR DISPOSAL OF ASBESTOS-CONTAINING OR ASBESTOS CONTAMINATED WASTE IS APPROVED FOR THAT PURPOSE.

- I. Bags must be placed in the hole for burial. Dumping of bags from the containers will not be allowed. However, if a bag is torn and if acceptable by the landfill, the entire container may be buried.
- J. Liquid waste for disposal shall be filtered as specified herein.
- K. The Contractor shall pay the waste disposal charge and any special handling charges at the landfills. All expenses for landfills shall be the complete responsibility of the Contractor. The bagged material shall be loaded in drums except as noted previously and transported to a landfill authorized by the State Department of Health to accept material containing asbestos. In the event the bag is torn, the tear shall be immediately mended with duct tape and the bag placed into another bag and sealed, and the wrapped material covered with another wrap and sealed. The Contractor shall make all prior arrangements with the landfill.

### 3.12 LOCK DOWN

- A. After clean-up of gross contamination and final visual inspection, a compatible post removal (lockdown) encapsulant shall then be spray

applied to all surfaces. The removal area shall include but not to be limited to constructed enclosures, barriers, polyethylene sheeting that covers any equipment articles to be discarded, critical barriers, air locks, load out units for bag removal, and on-site constructed decontamination unit.

TEN DAY NOTICE FORM

(sample)

page 1

This 3-page form is to be filled in and filed with both state and regional officials a minimum of 10 working days before start of the asbestos abatement contract. An electronic version can be found at:

<http://hawaii.gov/health/environmental/noise/asbestoslead/asbestoslead/pdf/asbnotificationinfo.pdf>

**Asbestos Notification of Demolition & Renovation  
(Ref. HAR Chapter 11-501)**

**SEND TO: STATE DEPARTMENT OF HEALTH  
INDOOR AND RADIOLOGICAL HEALTH BRANCH  
99-945 HALAWA VALLEY STREET  
AIEA, HAWAII 96701  
Phone (808) 586-5800 Fax (808) 586-5811**



<b>I. Type of notification:</b> O=original R=revised C=cancelled		
<b>II. Type of operation:</b> D=Demolition R=Renovation OD=Ordered Demolition ER=Emergency Renovation		
<b>III. Facility information</b>		
Owner name:		
Address:		
City:	State:	Zip code:
Contact person:		Telephone #:
Removal contractor:		License #:
Address:		
City:	State:	Zip code:
Contact person:		Telephone #:
Other operator:		
Address:		
City:	State:	Zip code:
Contact person:		Telephone #:
<b>IV. Is asbestos present (y/n):</b>		
Inspector's name:	Certification #:	State of certification:
<b>V. Facility description (Include building number, floor and room number)</b>		
Building name:		
Address:		
City:	State:	Zip code:
Location(s) on site:		
Building size (sq. ft.):	# Floors:	Age:
Present use:	Prior use:	
<b>Official Use Only</b>		
Postmark Date:	Received by:	State Record Number:

Page 1 of 3

**TEN DAY NOTICE FORM  
(sample)  
page 2**

This 3-page form is to be filled in and filed with both state and regional officials a minimum of 10 working days before start of the asbestos abatement contract. An electronic version can be found at:

LIGHTNING WARNING SYSTEM  
DANIEL K. INOUE INTERNATIONAL AIRPORT  
STATE PROJECT NO. CO1335-53

ASBESTOS ABATEMENT  
13281-26 OF 32  
r04/25/23

<b>VI. Procedure used to detect the presence of asbestos</b>			
Laboratory name:		Analytical method:	
<b>VII. Specify the nature of the asbestos material (TSL, surfacing, VAT, miscellaneous):</b>			
Amount of asbestos, including: 1. RACM to be removed 2. CAT I left in place, and 3. CAT II left in place	RACM to be removed	Nonfriable ACM (not) to be removed	
		Category I	Category II
Pipes (linear ft.)			
Surfacing (square ft.)			
Facility components (cu. ft.)			
<b>Scheduled asbestos abatement dates</b>			
Start (mm/dd/yy):		Finish (mm/dd/yy)	
Circle workdays and times:	weekdays:	daytime	nighttime
	weekends:	daytime	nighttime
<b>Scheduled renovation/demolition dates</b>			
Start (mm/dd/yy):		Finish (mm/dd/yy)	
Circle workdays and times:	weekdays:	daytime	nighttime
	weekends:	daytime	nighttime
<b>Description of the planned renovation/demolition work and methods to be used:</b>			
<b>Description of the work practices and engineering controls to be used to prevent emissions of asbestos from the work-site:</b>			
Project designer name:		Certification #:	State:
<b>XII. Waste transporter #1</b>			
Name:			
Address:			
City:		State:	Zip code:
Contact Person:		Telephone:	
<b>Waste transporter #2</b>			
Name:			
Address:			
City:		State:	Zip code:
Contact Person:		Telephone:	
<b>XIII. Waste disposal site</b>			
Facility Name:		Telephone:	
Address:			
City:		State:	Zip code:





EMPLOYEE ACKNOWLEDGMENT OF INSTRUCTION AND RELEASE FORM  
(sample)

Employee Name:

Employee Address:

Employee Telephone No.:

DOH Asbestos Certification Number:

Classification of Worker:

Have you had in the past, or present, any respiratory problems?

Yes            No

Have you worked in the past with asbestos or fiberglass type materials?

Yes            No

The project you will be working on involves the use of asbestos and the removal of the asbestos from the building. Asbestos is considered a health hazard.

The company is supplying all necessary safety clothing and working conditions required and necessary for your protection from asbestos hazard.

You shall be instructed a commencement of the job on the required use of safety equipment, clothing, working conditions and procedures. These must be rigidly adhered to. Smoking is not permitted in the work areas. Disregarding of safety instructions shall result in instant dismissal.

I acknowledge that safety instructions have been given to me by the company at my work commencement and I am thoroughly conversant with them and have answered the above questions truthfully.

Signed:

Employee

Date:

ASBESTOS DISPOSAL FORM  
(sample)

Date:

Owner or Operator of Landfill

Name

Address

City

State

Zip

Phone:

Name of Landfill

Name

Address

City

State

Zip

Phone:

Hauler

Approximate Volume of Asbestos Received

Type of Container Asbestos in

Asbestos Container Labeled? YES NO

I certify that the above statements are true and that the landfill has been approved for the disposal of asbestos. The delivered material will be covered within 6 inches (15 cm.) of non-asbestos material within 24 hours.

signed

Landfill Owner-Operator

PART 4 – MEASUREMENT AND PAYMENT

4.01 BASIS FOR MEASUREMENT AND PAYMENT

- A. Work under this section will not be measured for payment nor paid for separately, but shall be considered incidental to and included in the prices bid for the various items of work in this project.

END OF SECTION

## SECTION 13282 - LEAD-CONTAINING PAINT CONTROL MEASURES

### PART 1 - GENERAL

#### 1.01 RELATED DOCUMENTS

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

#### 1.02 SUMMARY

- A. In performing the handling of building components with lead-containing paint, all possible safeguards, precautions and protective measures shall be utilized to prevent exposure of any individual to lead particulates.

#### 1.03 SCOPE

- A. Furnish all labor, materials and equipment necessary to carry out the safe removal, clean-up, handling, transportation and disposal of lead paint and associated debris in compliance with all applicable laws and regulations concerning lead, including all incidental and pertinent operations. Penetrations through the existing structure for conduits and piping will be required for the renovation activities. Coordinate all work with the Contracting Officer.
- B. All paint is considered lead-containing.
- C. All untested paint will be assumed to contain lead.
- D. The Contractor shall inform his employees, Subcontractors and all other persons performing work in this project, that interior and exterior surfaces of existing buildings at the site are assumed to be painted or stained with a lead-containing paint or stain. The Contractor, his employees, Subcontractors, etc. shall initiate and maintain all programs necessary to execute the work in accordance with the contract documents, federal, state and local laws, codes, rules and regulations.
- E. The Contractor shall be responsible for ensuring that all work generating lead-containing paint containing debris conforms to the following applicable federal, state and local laws, codes, rules and regulations.
  - 1. Occupational Safety and Health Administration (OSHA); Hawaii Occupational Safety and Health (HIOSH) standards and rules.
  - 2. Environmental Protection Agency (EPA), Toxic Substance Control Act (TSCA), 40 CFR Part 745, Lead, Requirements for Lead-Containing Paint Activities in Target Housing and Child Occupied Facilities.

3. Environmental Protection Agency (EPA), Resource Conservation and Recovery Act (RCRA) of 1976, amended in 1980 and 1984.

F. The Contractor shall be responsible for initiating and maintaining all safety precautions and programs necessary to keep the work place safe for his employees and Subcontractors; and ready for safe reoccupancy of the work area and building by the buildings occupants.

#### 1.04 COORDINATION WITH OTHER SECTIONS

A. The Contractor shall coordinate all of his lead paint removal activities with the Contracting Officer and the Contractor's hired Third party independent industrial hygienist.

#### 1.05 CONTRACTOR RESPONSIBILITIES

A. The Contractor acknowledges that he alone is responsible for the instruction and for enforcing personnel protection requirements and that these specifications provide only a minimum acceptable standard. Contractor shall comply with all requirements of 29 CFR 1926.62. The Contractor shall also be responsible for complying with all applicable EPA regulations in regards to lead-containing materials.

1. Respirators: Use appropriate respirators and filters which meet all requirements of OSHA 29 CFR 1926.62.

2. Protective Clothing: Use appropriate personal protective clothing (disposable suits, eye protection, gloves, etc.) as required by OSHA 29 CFR 1926.

#### 1.06 GENERAL REQUIREMENTS

A. The work specified herein shall include the handling of components painted or coated with lead-containing paint, transportation and disposal procedures as required of lead-containing materials by persons with at least EPA Lead Training. This work must be performed in compliance with all applicable federal, state, and local regulations and be performed by workers who are capable of and willing to perform the work of this contract.

B. Applicable Standards and Guidelines: All work under this contract, and any other trade work conducted with the project, shall be done in strict accordance with all applicable federal, state and local regulations, standards and codes governing lead-containing paint removal, transportation and disposal of lead materials.

The most recent edition of any relevant regulation, standard, document or code shall be in effect.

C. Specific Statutory and Regulatory Requirements:

1. Title 29, Code of Federal Regulations, section 1926.62, entitled "Lead Exposure in Construction; Interim Final Rule".
2. Title 29 Code of Federal Regulations Part 1910.134, Respiratory Protection.
3. Federal Register: Vol. 54, No. 131; Tuesday, July 11, 1989. Department of Labor, Occupational Safety and Health Administration; 29 CFR Parts 1910, 1915, 1917, and 1918; Occupational Exposure to Lead; Statement of Reasons; Final Rule.
4. Title 40 Code of Federal Regulations Part 61, National Emissions Standards for Hazardous Air Pollutants

#### 1.07 DEFINITIONS

- A. Action Level (AL): Employee exposure averaged over an 8-hour period, without regard to the use of respirators, to a particular airborne concentration. OSHA requirements become effective at this level. Lead: 30 micrograms per cubic meter of air.
- B. Air Monitoring: The process of measuring the content of a specific, known, volume of air in a stated period of time. For this project, NIOSH 7082 method for lead monitoring.
- C. Authorized Visitor: The Contracting Officer, Contractor hired Third party independent industrial hygienist, their representatives, air monitoring personnel, or a representative of any regulatory or other agency having jurisdiction over the project.
- D. Contaminated Area: An area where unwanted toxic or harmful substances exists.
- E. HEPA Filter: A High Efficiency Particulate Absolute filter capable of trapping and retaining 99.97 percent of particulates greater than 0.3 micron in length.
- F. Lead: Metallic lead, all inorganic lead compounds, and inorganic lead soaps. Excluded are all other organic lead compounds.
- G. Monitoring Specialist: A person under the supervision of the Contractor's hired Third party independent industrial hygienist who is trained in health and safety requirements for lead exposure and air-monitoring in accordance with 40 CFR 745, 29 CFR 1926.62.
- H. Permissible Exposure Limit (PEL): The employer shall ensure that no employee is exposed to concentrations greater than the PEL as determined from an 8-hour time weighted average. Lead: 50 micrograms per cubic meter.

- I. Personal Monitoring: Contractor's sampling of lead in air concentrations within the breathing zone of an employee to determine the 8-hour time weighted average. The samples shall be representative of the employee's work tasks. The breathing zone shall be considered an area within 12 inches of the nose or mouth of an employee.
- J. Contractor's Third Party Independent Industrial Hygienist: Person hired by the Contractor, who is educated and trained in recognizing and evaluating work place hazards and stress (in this instance, lead-containing paint removal and related work in accordance with 40 CFR 745, 29 CFR 1926.62) and providing guidance on the methods and means of removing or correcting such hazards and stresses within the work environment.

#### 1.08 ABBREVIATIONS

- A. CFR - Code of Federal Regulations
- B. HIOSH - Department of Occupational Safety and Health, Department of Labor and Industrial Relations, State of Hawaii
- C. EPA - U.S. Environmental Protection Agency
- D. NIOSH - National Institute for Occupational Safety and Health
- E. OSHA - Occupational Safety and Health Administration
- F. NESHAP - National Emissions Standards for Hazardous Air Pollutants
- G. LCP - Lead-Containing Paint
- H. TCLP - Toxicity Characteristic Leaching Procedure

#### 1.09 SUBMITTALS PRIOR TO WORK

- A. Submit in accordance with SECTION 01300 - SUBMITTALS. Final payment will not be made until copies of all submittals have been furnished to and accepted by the DAGS. Submit 8 copies of the submittal package no later than 10 work days from the notice of award unless otherwise specified in this section. The submittal package will include the items listed below.
- B. Detailed Work Plan: The Contractor shall submit a project work plan for the lead-containing paint disturbance work. The Plan shall be prepared by the Certified Industrial Hygienist. The Contractor shall also provide detailed information concerning:
  - 1. Preparation of the work area.
  - 2. Personal protective equipment including respiratory protection and protective clothing.

3. Employees who will participate in the project: include documentation of experience, documented proof of lead removal training based on 29 CFR 1926.62, and/or the proposed EPA Model Accreditation for Lead-based Paint Removal Work Training, in addition to any current EPA regulatory requirements, and assigned responsibilities during the project.
  4. Decontamination procedures for the personnel who may be exposed to lead-containing paint.
  5. Lead-containing paint treatment, handling and disposal methods and procedures to be used.
  6. Required air monitoring procedures and sampling protocols.
  7. Procedures for final cleanup.
  8. A sequence of work and performance schedule in coordination with other trades.
  9. Emergency procedures.
- C. Shop Drawings: Submit shop drawings for the following items as a minimum:
1. Descriptions of any equipment to be employed not discussed in this section.
  2. Security provisions, if any, in and around the project area.
  3. Outline of work procedures to be employed.
  4. Location of the waste storage area.
  5. Staging of the work, the sequence
  6. Entrances and exits to the work place
  7. Location and construction of worker decontamination units
  8. Water filtration system for all contaminated water. Description of water disposal and copy of water disposal permit from the City & County of Honolulu, Environmental Services, Division of Environmental Quality, *Temporary Industrial Wastewater Discharge Permit*.
- D. Notices: The Contractor shall obtain a Generator's EPA Identification number (if necessary) for the lead-containing waste material generated from the project that is determined to be hazardous.

- E. Insurance: Proof of insurance for Workman's Compensation and General Liability which covers asbestos, lead, and pollution.
- F. Qualifications of the Third party Independent Industrial Hygienist.
- G. Manufacturer's Data: Copies of manufacturer's specifications, installation instructions and field test procedures for each material and all equipment related to lead handling and abatement and include other data as may be required to show compliance with these specifications and proposed uses.
- H. Documentation for Instructions:
  - 1. Submit documentation satisfactory to the Contracting Officer that the Contractor's *employees*, including foremen, supervisors, and any other company personnel or agents who will be exposed to airborne lead dust or who shall be responsible for any aspects of the lead-containing paint removal work activities, have received training in accordance with this specification, 29 CFR 1926.62, (OSHA Lead Awareness or the EPA Model Accreditation for Lead-based Paint Removal Work Training) and any current EPA regulatory requirements.
  - 2. Submit to the Contracting Officer a written respiratory protection program meeting the requirements of 29 CFR 1910.134(b)(d)(e) and (f), documentation that all employees using respirators have received training, and documentation of respirator fit-testing for all Contractor employees and agents who will enter the work area wearing negative pressure respirators. The Contractor shall be solely responsible for his employee's personal protection.
- I. Documentation From Physician: Before exposure to lead dust or fumes, the Contractor shall provide workers with a comprehensive medical examination as required by 29 CFR 1926.62. This examination will not be required if adequate records show the employees have been examined as required by the aforementioned regulations within the last year.
- J. Respirators: Submit document NIOSH approvals for all respiratory protective devices used on site. Include manufacturer certification of HEPA filtration capabilities for all cartridges and filters.
- K. Emergency Planning Procedures:
  - 1. The Contractor shall submit an emergency evacuation plan for the Contracting Officer's acceptance prior to the commencement of work. This plan shall include consideration of fire explosion, toxic atmospheres, electrical hazards, slips, trips and falls, confined spaces and heat related injury. In non-life threatening situations, the injured or incapacitated employee shall decontaminate following normal procedures, with assistance from co-workers if necessary, before

exiting the work area to obtain proper medical treatment. In life threatening situations, worker decontamination shall take least priority after measures to stabilize the injured worker, remove the injured worker from the work area, and secure proper medical treatment.

2. Emergency Response and Evacuation: The Contractor shall provide and document training in emergency response and evacuation procedures to all workers entering the work area.

L. Weekly Submittals During the Lead-containing Paint Disturbance Work:  
Copies of the following:

1. Contractor's weekly job progress reports detailing lead-containing paint disturbance, handling, transportation, and disposal activities. In the job progress reports, the Contractor shall include information on the review of progress concerning previously established milestones and schedules, major problems and action taken, injury reports, equipment breakdown, and bulk material and air sampling results.
2. Work site entry logbooks with information on worker and visitor access.
3. Daily logs documenting filter changes on respirators, HEPA vacuums, and other engineering controls.
4. Waste disposal manifest forms for all lead-containing waste material removed from the lead-containing paint removal site and transported to the disposal site. The papers will include a chain-of-custody form with the names and addresses of the facility, the Contractor, the landfill operator, as well as the estimated quantity of lead-containing waste material, and the number and type of containers used. The form shall be signed and dated by the State, the Contractor, and the landfill operator as the material changes custody. If a separate hauler is employed, their name, address, telephone number, and signature also shall appear on the form.

M. Waste Disposal and Landfill Requirements: Contractor shall separate lead-containing paint chips and debris from non-hazardous waste materials such as used plastics, disposable tools, etc. Contractor shall clean all bulk lead-containing debris and waste from non-hazardous plastic, tools, suits, etc. prior to disposal.

1. If Toxic Characteristic Leaching Procedure (TCLP) test results of the containers of waste material are below the EPA limit the lead-containing waste materials (paint chips, contaminated materials, etc.) shall be disposed of at a landfill approved for such purposes. The Contractor shall submit to the Contracting Officer, documentation that the lead-containing waste material removed from the work area has been accepted by the landfill Owner.

2. If the TCLP test results are above the EPA limit or if materials are identified as hazardous waste, the lead-containing waste materials shall be disposed of at an EPA approved facility capable of accepting such hazardous waste.
3. The Contractor shall submit to the Contracting Officer, documentation that disposal of the lead-containing waste material at the selected landfill is approved by the State of Hawaii, or the EPA approved mainland facility for hazardous lead-containing waste material.

#### 1.10 SUBMITTAL AFTER WORK IS COMPLETED

- A. Submit in accordance with SECTION 01300 - SUBMITTALS.
- B. Final Report: At the completion of the work, a final report shall be prepared by the Contractor for acceptance by the Contracting Officer. The report shall be submitted and shall include the items listed below.
  1. The project name, Abatement Contractor, Abatement Contractor license number, EPA waste generator number, work duration, material removed, respiratory protection employed, waste manifest signed by the Contractor, waste transporter, and landfill operator, and total quantity of waste, TCLP lead reports, employee exposure air sample results, and results of the most current PAT round results for the laboratory conducting the employee exposure air sample analysis.
  2. Certification of the Abatement Contractor's employees.
  3. Visitor/Worker Entry Log: The daily log of all personnel including the Contractor's employees and agents who enter the work area while lead abatement operations are in progress, until final clearance is received from the Third party independent industrial hygienist. The log shall contain the listed information as a minimum and shall be certified by the Contractor hired Third party independent industrial hygienist.
    - a. Date of visit/worker entry
    - b. Visitor/Worker's name, employer, business address and telephone number
    - c. Time of entry and exit from work area
    - d. Purpose of visit
    - e. Type of protective clothing and respirator worn
    - f. Certificate of release signed and filed with the contractor

4. Clearance certifications received from the Contractor hired Third party independent industrial hygienist.
5. A statement signed by the Lead Abatement Contractor that all lead abatement and disposal was completed in compliance with this specification, Federal and State regulations, and the approved Work Plan.

## PART 2 - PRODUCTS (Not Used)

## PART 3 - EXECUTION

### 3.01 POTENTIAL LEAD HAZARD

- A. The disturbance or dislocation of lead-containing materials may cause lead-containing dust to be released into the atmosphere, thereby creating a potential health hazard to the workers and the general public. Apprise all workers, supervisory personnel, subcontractors, consultants, authorized visitors, occupants and neighbors who will be at or near the job site of the seriousness of the hazard and of proper work and protective procedures which must be followed (such as informing affected individuals as required by 40 CFR 745, keeping windows and doors closed; and air conditioning and ventilation units shut down during removal work).
- B. Where in the performance of the work, workers, supervisory personnel, subcontractors, or consultants who may encounter, disturb, or otherwise function in the immediate vicinity of any identified lead-containing materials, take appropriate continuous measures as necessary to protect all workers and the general public from the potential hazard of exposure to respirable airborne lead dust. Such measures shall include the procedures and methods described in the regulations of applicable federal, state and local agencies.
- C. Paint in good condition need not be removed prior to selective demolition/renovation activities except where the activities create airborne dust such as drilling, saw cutting, or surface preparation for repainting (cracking, peeling, flaking). 6 mil polyethylene must be placed in the work areas where these types of activities may occur to capture and contain the paint waste. Removal of lead-containing paint shall follow wet methods to minimize dust and no chemical stripping of paint using methylene chloride shall be allowed. All paint waste must be containerized (DOT drum) and characterized for proper disposal (see Section 3.03.A).

### 3.02 WORK AREA PREPARATION

- A. Protect occupants, and surrounding area from possible contamination. Inform occupants of the removal work involving lead.
- B. Treatment of Surfaces: During disturbance work, acceptable industry standard dust control methods shall be used to control dust (such as

wetting items to be disturbed, by misting; provide dust screens; remove items in large, whole pieces; avoid crushing and pulverizing removal methods; encapsulate material prior to disturbance; use amended water; and containerize wet waste material). Prevent contamination spreading to the surrounding public and residential area.

- C. Barriers: Standard barriers such as construction warning tape, fencing, etc. shall be used to prevent the general public access on to the work site. Seal any penetrations to the affected work area with 6 mil polyethylene plastic sheeting and duct tape.
- D. NESHAP Compliance: Compliance with the requirements of EPA's NESHAP regulation is required for this project. Proper notification of the renovation of the building to the Department of Health shall be the Contractor's responsibility.
- E. Ensure that all personnel working on site during the removal work are properly trained and protected as required by law.

### 3.03 CLEANUP AND TESTING

- A. Wet clean and HEPA vacuum clean surfaces and surrounding ground within the lead control area daily. Do not allow lead painted/coated debris, paint chips, and dust to accumulate. Restrict the spread of dust and debris. Keep waste from being distributed over the general area. Do not dry sweep or use compressed air to clean the area. When the removal operation has been completed, the area will be cleaned of all visible lead paint contamination by vacuuming with a High Efficiency Particulate Absolute (HEPA) filtered vacuum cleaner followed by wet mopping where applicable.
- B. The paint chip/debris (separated out or mixed with other construction debris) must be TCLP (Toxicity Characteristic Leachability Product) by the contractor to determine if it should be disposed of as hazardous waste or regular construction debris. If determined to be hazardous waste, then the waste manifest must be signed by the Contracting Officer's Environmental Health and Safety Office's Hazardous Materials Manager before disposal. For the purposes of bidding, the contractor shall include the cost of the TCLP testing and disposal costs as as regular construction debris. Should the TCLP test fail and the debris is considered hazardous waste, the Contracting Officer will issue a change order to the contractor to dispose of as hazardous waste.
- C. The Contractor's Third party independent industrial hygienist (a third party independent industrial hygiene consultant hired by the General Contractor and not affiliated with the abatement contractor) shall conduct visual inspection of the lead abatement area to ensure that the area is clean and free of visible lead dust.
- D. All non-hazardous waste shall be removed from the site by the completion of the project. The Contractor, in the presence of the Third party

independent industrial hygienist, shall collect representative samples of the waste stream for TCLP lead analysis (as noted above). All hazardous waste shall be removed from the site to an EPA approved disposal facility within 90 days of the removal work.

- E. Do not remove the lead control area or roped-off perimeter and warning signs prior to the receipt of the Third party independent industrial hygienist's lead clearance certification.
- F. All wastewater shall be treated as lead contaminated and shall be properly filtered so as not to allow large visible particles of paint debris from accumulating in the water. Lead-contaminated waste water shall be tested and disposed of in compliance with the City & County of Honolulu, Environmental Services, Division of Environmental Quality, Temporary Industrial Wastewater Discharge Permit for the disposal of filtered waste water into the sanitary sewer system. Waste water shall be tested by the Third party independent industrial hygienist to determine if it is a hazardous waste and disposed of in accordance with current regulations and guidelines and as specified herein. Disposal of waste water in the City and County of Honolulu sanitary sewer must be tested to be <0.6 mg/L lead in water. Wastewater will not be discharged into the storm drain system unless an appropriate NPDES permit has been obtained.

#### 3.04 TRANSPORTATION AND DISPOSAL

- A. Disposal of Hazardous Waste and Non-hazardous Waste: Contractor shall separate potentially non-hazardous waste material (i.e. plastic sheeting, disposable protective suits, etc.) from hazardous waste material prior to testing. All other debris, scraps, waste materials, rubbish and trash contaminated with lead-containing paint and contaminated dust from the immediate work area and place in UN approved (49 CFR 178) and appropriately labeled containers and store on site for TCLP lead testing. The Contractor shall be responsible for collecting and paying of all TCLP testing.
  - 1. Local waste landfill facilities do not accept any RCRA hazardous waste. All hazardous waste must be disposed of at an EPA approved mainland U.S. RCRA hazardous waste disposal facility. Hazardous waste must be disposed of within 90 days of the waste being created.
  - 2. Non-hazardous lead waste and debris may be disposed of at the local waste landfill facility that is State approved to accept such waste.
    - a. Notify Non-hazardous Waste Landfill Operator: The Contractor shall advise the Non-hazardous Waste landfill operator, at least twenty-four (24) hours prior to transportation, of the material to be delivered.

- b. Provide the Non-hazardous Waste Landfill Operator with applicable TCLP results which indicate that the waste material is non-hazardous.
- B. Disposal of Non-Hazardous Painted Construction Debris (TCLP for Lead Not Exceeding EPA Limits): Remove non-hazardous lead waste including, debris, scraps, waste materials, rubbish, and trash from the site and disposed of at a landfill approved for disposal.
- C. The Contractor shall submit disposal manifest and receipts showing acceptance of all waste material by the approved waste disposal site to the Contractor's hired Third party independent industrial hygienist. The shipping papers shall include a chain-of-custody form and include names and addresses of the State, the Contractor, and the Landfill Operator and information on the type and number of waste containers.

### 3.05 CLEARANCE CRITERIA

- A. Visual clearance of the work area will be performed by the Third Party Industrial Hygienist. The clearance criteria shall be based on the latest Housing and Urban Development (HUD) "Guidelines for the Evaluation and Control of Lead-Based Paint Hazards in Housing" publication. Any additional clearance inspection, sampling and analysis initiated by the Contractor or required due to failure of the first set of clearance inspection and sampling, shall be at the Contractor's expense.

### 3.06 TESTING AND AIR MONITORING

- A. The Contractor's hired Third party independent industrial hygienist shall have the authority to instigate engineering controls during the project.
- B. Testing, daily area (environmental) air monitoring and final clearance inspections shall be provided by the Contractor's hired Third party independent industrial hygienist, for the purpose of:
  - 1. verifying compliance with the specifications and the applicable regulations listed in this section;
  - 2. ensuring that the documentation required by these specifications and by law is collected and reported to the Contracting Officer;
  - 3. instigating engineering control during the project.

### 3.07 CONTRACTOR RESPONSIBILITIES

- A. The Contractor shall be responsible for all TCLP lead testing and analysis.
- B. The Contractor shall be responsible for his employees' personnel protection, personal air monitoring and necessary records as required by OSHA, Hawaii State Law and all other applicable laws and as required in

these specifications. The Contractor shall provide all required documentation to the Contracting Officer. Contractor shall collect daily personal air samples on at least 25 percent of the personnel performing removal work with the most exposure for the duration of the project.

- C. The Contractor shall procure legally required reports for air monitoring as part of the contract. All air monitoring reports shall included all field data, laboratory reports, test results and other pertinent information about the daily work activities.
- D. Contractor's hired Third party independent industrial hygienist shall make available, one copy of daily area air monitoring reports for the Contractor's use. The Contractor may accept such reports as they are offered at his own risk. Availability of additional copies of the reports during the work or at any future time shall not be considered a part of the contract. The Contractor shall be responsible for his own personnel air monitoring as required by law and these specifications.
- E. Air monitoring and testing which becomes necessary in order to follow up on work by the Abatement Contractor, rejected as not conforming to the requirements shall be the responsibility of the Abatement Contractor. The full cost of such additional monitoring shall be borne by the Abatement Contractor, and shall not be a part of the final contract payment.
- F. The Abatement Contractor shall be responsible for the proper required notifications to the State of Hawaii Department of Health.

### 3.08 MONITORING RESULTS

- A. Airborne lead levels in areas adjacent to the work area or in any part of the work site impacted by the removal activities shall not exceed 30 micrograms per cubic meter of air or 1.5 micrograms per cubic meter of air.
- B. If the above ambient concentrations and/or the PEL's are exceeded, the Contractor shall cease all work immediately in any work area causing or contributing to such a condition. The Contractor shall take remedial action (e.g. misting with more water, encapsulation, provide dust screens, etc.) to reduce concentrations to acceptable levels.
- C. The Contractor is solely responsible for monitoring his personnel in compliance with all OSHA and HIOSH requirements.

## PART 4 – MEASUREMENT AND PAYMENT

### 4.01 BASIS OF MEASUREMENT AND PAYMENT

- A. Work under this section will not be measured for payment nor paid for separately but shall be considered incidental to and included in the prices bid for the various items of work in this project.

END OF SECTION

LIGHTNING WARNING SYSTEM  
DANIEL K. INOUE INTERNATIONAL AIRPORT  
STATE PROJECT NO. CO1335-53

LEAD-CONTAINING PAINT  
CONTROL MEASURES  
13282-14 OF 14  
r04/25/23

## SECTION 13286 - ARSENIC CONTROL MEASURES

### PART 1 - GENERAL

#### 1.01 RELATED DOCUMENTS

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

#### 1.02 SUMMARY

- A. Furnish all labor, materials, equipment, and services, necessary to carry out the safe removal of arsenic-containing material in compliance with these specifications, EPA, OSHA, State of Hawaii regulations, and any other applicable Federal and State regulations. Whenever there is a conflict or overlap of the above references, the most stringent shall apply.
- B. Contractor to coordinate all work with the General Contractor and the Qualified Consultant. Contractor shall verify the existing locations, conditions, layers, and thickness of all materials prior to commencement of any work. The arsenic work shall generally include:

Removal and disposal of suspect arsenic containing material.

- C. The Contractor shall be responsible for testing, handling, transporting and disposal of arsenic containing materials from the subject property.
- D. Contractor is responsible to satisfy himself as to the total extent of all work, including to but not limited to the quantity, location, thickness, layers, accessibility, etc. of all material prior to commencement of any work.
- E. During any removal involving arsenic containing materials, the following shall apply:
  - 1. The Contractor shall delineate regulated areas in which workers may be exposed to levels of inorganic arsenic in excess of the OSHA PEL. Access to such regulated areas shall be limited to authorized personnel.
  - 2. All workers within arsenic regulated areas shall be supplied with a respirator selected according to 29 CFR 1910.1018(h).
  - 3. All workers within arsenic regulated areas shall be supplied with personal protective equipment selected according to 29 CFR 1910.10180).
  - 4. Whenever arsenic containing materials are being disturbed, the Contractor shall monitor worker exposure to arsenic dust.

5. The Qualified Consultant shall perform area air monitoring to ensure that no arsenic particulates migrate from regulated areas to non-regulated areas.

### 1.03 CONTRACTOR RESPONSIBILITIES

- A. The Contractor acknowledges that he alone is responsible for the instruction and for enforcing personnel protection requirements and that these specifications provide only a minimum acceptable standard. Contractor shall comply with all requirements of 29 CFR 1910.1018 and provide daily personnel air monitoring. The Contractor shall also be responsible for complying with all applicable EPA regulations in regards to arsenic-containing materials:
  1. Respirators: Use appropriate respirators and filters which meet all requirements of OSHA 29 CFR 1910.134.
  2. Protective Clothing: Use appropriate personal protective clothing (disposable suits, eye protection, gloves, etc.) as required by OSHA 29 CFR 1910.1018.

### 1.04 APPLICABLE STANDARDS AND GUIDELINES

- A. All work under this contract, and any other trade work conducted with the project, shall be done in strict accordance with all applicable federal, state and local regulations, standards and codes governing arsenic-containing material, transportation and disposal. The most recent edition of any relevant regulation, standard, document or code shall be in effect.
- B. Compliance with the specific statutory and regulatory requirements shall include but not limited to:
  1. Title 29 Code of Federal Regulations Part 1910.1018, Inorganic Arsenic
  2. Title 29 Code of Federal Regulations Part 1910.134, Respiratory Protection.
  3. Title 40 Code of Federal Regulations Part 61, National Emissions Standards for Hazardous Air Pollutants
  4. Title 40 Code of Federal Regulations Part 261, Identification and Listing of Hazardous Waste
  5. Title 40 Code of Federal Regulations Part 262, Generators of Hazardous Waste
  6. Title 40 Code of Federal Regulations Part 263, Transporters of Hazardous Waste

7. Title 40 Code of Federal Regulations Part 264, Owners and Operators of Hazardous Waste Treatment, Storage, and Disposal Facilities
8. Title 40 Code of Federal Regulations Part 265, Interim Status Standard for Owners and Operators of Hazardous Waste Treatment, Storage, and Disposal Facilities
9. Title 40 Code of Federal Regulations Part 268, Land Disposal Restrictions
10. Title 49 Code of Federal Regulations Part 172, Hazardous Materials, Tables, and Hazardous Materials Communications Regulations
11. Title 49 Code of Federal Regulations Part 178, Shipping Container Specification

#### 1.05 DEFINITIONS

- A. Abatement: Procedure to control fiber release from arsenic containing building materials.
  1. Removal: All herein specified procedures necessary to remove arsenic containing materials from an area and disposal of the material at an approved site in an acceptable manner.
  2. Air Monitoring: The process of measuring the fiber content of a specific, known volume of air in a period of time.
- B. Authorized Visitor: the Contracting Officer, the Qualified Consultant, his representatives, air monitoring personnel, or a representative of any regulatory or other agency having jurisdiction over the project.
- C. Contractor: The firm hired by the General Contractor to remove and dispose of the arsenic-containing materials.
- D. Fixed Object: A unit of equipment or furniture in the work area which cannot be removed from the work area without dismantling.
- E. Holding Area: A secure area used for the storage of double-bagged arsenic containing material before removal from the project site to an approved disposal site.
- F. Qualified Consultant: A third party independent consultant hired by the General Contractor who will perform air monitoring and inspection during abatement work and shall have the authority to initiate engineering controls.

#### 1.06 ABBREVIATIONS

- A. CFR: Code of Federal Regulations

- B. HIOSH: Department of Occupational Safety and Health, Department of Labor and Industrial Relations, State of Hawaii
- C. EPA: U.S. Environmental Protection Agency
- D. NIOSH: National Institute for Occupational Safety and Health
- E. OSHA: Occupational Safety and Health Administration
- F. NESHAP: National Emissions Standards for Hazardous Air Pollutants
- G. TCLP: Toxicity Characteristic Leaching Procedure

1.07 COORDINATION WITH OTHER SECTIONS

Prior to commencement of work, an annotated description of all existing damaged and missing items shall be submitted to the Contracting Officer. It will be the Contractor's responsibility to repair and/or replace to the Contracting Officer's satisfaction all items identified as damaged and/or missing that cannot be proven to have been in this condition prior to the commencement of this project.

1.08 GENERAL REQUIREMENTS

- A. Worker Training: Contractor employees assigned to work at the site must have successfully completed either the 40-hour basic HAZWOPER or the refresher course, as stipulated in 29 CFR 1910.120, within the last year.
- B. Supervisor Training: Field managers and supervisors who are directly responsible for, or who supervise employees engaged in hazardous waste site operations, must have successfully completed either the 40 hour basic HAZWOPER and additional 8-hour supervisor training, or the refresher courses, as required by 29 CFR 1910.120, within the last year.
- C. Field Experience: Each employee assigned to work at the site must also have a minimum of three days of field experience under the direct supervision of trained, experienced personnel. The field experience, at a minimum, must have included hands-on training in the proper use and calibration of field instruments, waste cleanup, spill control and containment, and general site safety.
- D. First-Aid and CPR Training: A minimum of two Contractor personnel with current Basic First Aid and CPR training must be on site at all times. Valid documentation in the form of a Red Cross or American Heart Association card must be submitted to the Contracting Officer prior to performing any work.
- E. Medical Surveillance: Employees and subcontractors who are assigned to

work at the site are required to have medical clearance satisfying 29 CFR 1910.120 and 1910.134. A physician must have examined the employee or subcontractor within the past twelve months and must certify that the employee or subcontractor is physically fit to wear a respirator and perform work at hazardous waste sites. Individuals, whose medical clearance is not current will not be allowed to work at the site.

#### 1.09 SUBMITTALS

- A. Submittals shall be submitted in the order listed herein. Failure to do so will result in automatic rejection of submittals.
1. **Arsenic Removal Work Plan:** Submit arsenic job-specific work plan. The work plan shall itemize the work procedures to be used in the removal and disposal of arsenic-containing material prior to the start of work. The work plan shall also include interfacing with other trades, sequencing of arsenic-related work; a disposal plan; a liquid and solid waste storage plan, a containerization plan; a daily personnel air sampling plan; respirators; protective equipment; worker training certification; an emergency plan; and a detailed description of the measures to be employed to control pollution and security provisions. The personal air-sampling portion of the plan shall include sampling training and strategy, the estimated number of air samples to be taken per day, and the sampling methodology. At the conclusion of the project, the Contractor and the Qualified Consultant shall submit a co-signed certification stating that the removal of arsenic-containing material was completed in accordance with the Contractor's accepted Arsenic Work Plan and in accordance with all applicable specifications, rules, and regulations.
  2. **Manufacturer's Catalog Data:** Submit copies of manufacturer's specifications, installation instructions and field test materials for all chemicals and equipment related to arsenic containing materials, including any other data that may be required to demonstrate compliance with these Specifications and proposed uses. This includes, but is not limited to, data for respirators.
  3. **Material Safety Data Sheets:** Submit copies of the Material Safety Data Sheets for all chemicals used.  
  
Respiratory Protection Program: Submit no later than 10 consecutive working days from notice of award, a copy of the Contractor's Respiratory Protection Program prepared in accordance with all applicable laws. The Contractor shall also submit fit test records on all employees to be used on this project who may be required to wear a respirator.
  4. **Hazard Communication Program:** Submit no later than 10 consecutive working days from notice of award, a copy of the Contractor's Hazard

Communication Program prepared in accordance with all applicable laws.

5. Safety Program: Submit no later than 10 consecutive working days from notice of award, a copy of the Contractor's Health and Safety Plan prepared in accordance with all applicable laws.
6. Certification of medical examinations: The Contractor shall submit documentation from a physician that all employees or agents who may be required to wear a respirator have been medically monitored to determine whether they are physically capable of working while wearing the respirator required without suffering adverse health effects.
7. Employee training certifications: Submit documentation within 10 consecutive calendar days of award , satisfactory to the Contracting Officer that the Contractor's employees , including foreman , supervisors and any other company personnel or agents who may be responsible for any aspects of removal and disposal of miscellaneous hazardous materials, have received training in accordance with Section 1.06 of this specification.
8. Emergency Planning Procedures: Emergency planning shall be developed prior to initiation of work and approved by the Contractor and the Contracting Officer. It shall include, but not be limited to, considerations of fire, explosion, electrical hazards, slips, trips and falls and heat related injuries. The Contractor shall develop written emergency procedures and provide employee emergency training.
9. Notification: Notify the Contracting Officer 10 working days prior to the start of any removal work.
10. Waste Disposal Manifest Forms: Submit copies of all transport manifests, trip tickets and disposal receipts for all hazardous waste removed from the work area and disposed of at a disposal facility during the work process.

## PART 2 - PRODUCTS

### 2.01 EQUIPMENT AND MATERIALS

Furnish the Qualified Consultant two complete sets of personal protective equipment daily, as required herein, for entry to and inspection of the arsenic control area. The personal protective equipment shall include but not limited to gloves, eye-protection, hardhat, boots and disposable protective whole body covering. The personal protective equipment shall remain the property of the Contractor.

- A. Respirators: Select respirators approved by the National Institute for Occupational Safety and Health (NIOSH), Department of Health and Human Services. Respirators shall comply with the requirements of 29 CFR 1910.1018. For this project, respirators shall be worn at all times throughout the removal process or as deemed necessary by the QC.
- B. Protective Clothing: Furnish personnel exposed to arsenic dust with disposable protective whole body clothing, eye-protection, head covering, gloves, and foot coverings. Furnish disposable plastic or rubber gloves to protect hands. Reduce the level of protection only after approval from the Qualified Consultant. For this project, respirators shall be worn at all times throughout the removal process or as deemed necessary by the Qualified Consultant.
- C. Warning Signs and Labels: Provide warning signs at approaches to the arsenic control areas. Locate signs at such a distance that personnel may read the sign and take the necessary precautions before entering the area. Provide and affix labels to impermeable bags, arsenic waste drums, and other containers containing arsenic materials, scrap, waste, or debris. Signs and labels shall comply with the requirements of 29 CFR 1910.1018. Warning signs and labels shall be provided throughout the entire project and as deemed necessary by the Qualified Consultant.
- D. Tools: Filters on vacuums and exhaust equipment shall be High Efficiency Particulate Absolute (HEPA) filters and UL 586 labeled.

### PART 3 - EXECUTION

#### 3.01 POTENTIAL ARSENIC HAZARD

- A. The disturbance or dislocation of arsenic-containing materials may cause arsenic-containing dust to be released into the atmosphere, thereby creating a potential health hazard to the workers and the general public. Apprise all workers, supervisory personnel, subcontractors, consultants and authorized visitors who will be at the job site of the seriousness of the hazard and of proper work procedures which must be followed.
- B. Where in the performance of the work, workers, supervisory personnel, subcontractors, or consultants who may encounter, disturb, or otherwise function in the immediate vicinity of any identified arsenic-containing materials, take appropriate continuous measures as necessary to protect all workers and the general public from the potential hazard of exposure to respirable airborne arsenic dust. Such measures shall include the procedures and methods described in the regulations of applicable federal, state and local agencies.

#### 3.02 WORK AREA PREPARATION

- A. Area Requirements: Establish an arsenic control area with warning signs and appropriate barriers. Only authorized personnel shall be allowed within the control area.
- B. Barriers:
  - 1. Standard barriers such as construction warning tape, fencing, etc. shall be used to prevent the general public access on to the work site.
  - 2. Warning signs in compliance with 29 CFR 1910.1018 and 29 CFR 1926.62 shall be posted at all sides of the work area.
  - 3. Seal windows, door openings, roof vents and other penetrations to the removal area with 6 mil polyethylene plastic sheeting, duct tape, spray adhesive, foam sealant, etc.

### 3.03 WORK PROCEDURE

- A. Perform arsenic-related work as specified herein.
  - 1. Personnel shall wear and use protective clothing and equipment as specified herein.
  - 2. Eating, smoking, or drinking shall not be permitted in the arsenic control area.
  - 3. No one will be permitted in the arsenic control area unless the person is provided with appropriate training and protective equipment. The Contractor shall be responsible for providing their personnel with the appropriate training and the necessary protective equipment while they are performing arsenic-related work.
  - 4. Removal methods shall be limited to HEPA vacuum and wet wipe methods; and bagging the wet material in 6 mil polyethylene bags. Properly containerize bagged arsenic waste for disposal as hazardous waste in accordance with 49 CFR 172 and 49 CFR 178.
  - 5. Avoid creating dust at all times. Absolutely no dust creating method shall be utilized during the arsenic-containing material removal.
  - 6. The removal area shall be clean of all visible arsenic-containing debris prior to final visual inspection by the Contractor and QC.
  - 7. The Contractor is solely responsible for complying with any and all regulations concerning his employees' safety and health and the requirements specified herein.
- B. Arsenic Control Area Requirements: Establish an arsenic control area by roping off the area or providing curtains, portable partitions or other enclosures to maintain the concentration of arsenic below 5 micrograms per

cubic meter of air and visible dust beyond the boundaries. No one will be permitted in the arsenic control area unless the person is provided with appropriate training and protective equipment. During the arsenic-containing material removal operation, when the employees need to exit the controlled area, they will be required to remove all visible dust from themselves using a HEPA vacuum and wet wiping; remove their disposable coveralls; place them in an approved impermeable container; as a minimum wash face and hands with soap and water; and then exit the area. All arsenic-contaminated waste water shall be collected and tested prior to proper disposal.

- C. NESHAP Compliance: Compliance with the requirements of EPA's NESHAP regulation is required for this project. Proper notification of the demolition of the building to the EPA and Department of Health shall be the Contractor's responsibility.
- D. Ensure that all personnel working on site during the demolition work is properly trained and protected as required by law.
- E. At the completion of the removal work, ensure that all arsenic-containing debris is removed from the site. Hazardous arsenic waste must be disposed of off-island at a continental U.S., EPA approved hazardous waste disposal site within 90 days of the removal work. The Contractor shall comply with all applicable transport and disposal regulations including 40 CFR 261, 40 CFR 262, 40 CFR 263, 40 CFR 264, 40 CFR 265, 40 CFR 268, 49 CFR 172 and 49 CFR 178.

#### 3.04 TRANSPORTATION AND DISPOSAL

- A. Disposal of Non-Hazardous Waste: Remove non-hazardous arsenic waste including, debris, scraps, waste materials, rubbish, and trash from the site and dispose of at a landfill approved for such purposes within 90 days of the removal work. If Toxic Characteristic Leaching Procedure (TCLP) test results of the containers of waste material are below the EPA limit the arsenic containing waste materials shall be disposed of at a landfill approved for such purposes. The Contractor shall submit to the Contracting Officer, documentation that the lead-containing waste material removed from the work area has been accepted by the landfill Owner.
- B. If the TCLP test results are above the EPA limit or if materials are identified as hazardous waste, the arsenic containing waste materials shall be disposed of at an EPA approved facility capable of accepting such hazardous waste. Local waste landfill facilities do not accept any hazardous waste. All hazardous waste must be disposed of at an EPA approved mainland U.S. hazardous waste disposal facility.
- C. The Contractor shall submit disposal manifest and receipts showing acceptance of all waste material by the approved waste disposal site to the Contracting Officer. The shipping papers shall include a chain-of-custody

form and include names and addresses of the Facility Owner, the Contractor, and the Landfill Operator and information on the type and number of waste containers.

### 3.05 TESTING AND MONITORING RESULTS

- A. Airborne arsenic levels in areas adjacent to the work area or in any part of the work site impacted by the demolition activities shall not exceed 5 micrograms per cubic meter of air. The clearance criteria for arsenic shall be <5 micrograms per cubic meter of air.
- B. If the above ambient concentrations and/or the PEL is exceeded, the Contractor shall cease all work immediately in any work area causing or contributing to such a condition. The Contractor shall take remedial action (i.e. increase misting, utilize less dust creating methods of demolition, etc.) to reduce concentrations to acceptable levels.
- C. The Contractor is solely responsible for personal monitoring and providing personal protective equipment including respiratory protection for his personnel in compliance with all OSHA and HIOSH requirements.
- D. The Qualified Consultant shall inspect the site upon the conclusion of the demolition and clean up, to determine if the site is essentially clean of visible arsenic-containing ceiling tiles and board.

## PART 4 – MEASUREMENT AND PAYMENT

### 4.01 BASIS OF MEASUREMENT AND PAYMENT

- A. Work under this section will not be measured nor paid for separately but shall be considered incidental to and included in the prices bid for the various items of work in this project.

END OF SECTION

SECTION 13287 - PCB BALLASTS AND MERCURY CONTAINING LAMPS  
ABATEMENT

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

- A. The General Provisions for Construction Projects (2016), Special Provisions and General Requirements of the Specifications, apply to the work specified in this section.

1.02 SUMMARY

- A. This section addresses the removal and disposal of PCB containing fluorescent light ballasts and mercury containing lamps. In performing the work, all possible safeguards, precautions and protective measures shall be utilized to prevent exposure of any individual to PCB's and mercury.
- B. Furnish all labor, materials and equipment necessary to carry out the safe testing, removal and disposal of PCBs and Mercury-containing material in compliance with all applicable laws and regulations from all surfaces as identified in the hazardous material survey report and/or drawings, including all incidental and pertinent operations.
- C. Contractor shall not be allowed to perform any on-site work unless the Construction Manager is present. Contractor shall give no less than 3 working days written notice by facsimile to the Contracting Officer of the actual start of work date and time.

1.03 SCOPE

- A. All fluorescent light fixtures are assumed to contain PCB containing ballasts and mercury containing lamps if not observed to have the "No PCB" label. Furnish all labor, materials, and equipment necessary to carry out the safe removal and disposal of PCB ballasts and mercury-containing light tubes in compliance with all applicable laws and regulations.

1.04 COORDINATION WITH OTHER SECTIONS

- A. The Contractor shall coordinate all of his PCB and Mercury removal work with the Contracting Officer and the Construction Manager.
  - 1. SECTION 13281 - ASBESTOS ABATEMENT
  - 2. SECTION 13282 - LEAD-CONTAINING PAINT CONTROL MEASURES
  - 3. SECTION 13286 - ARSENIC CONTROL MEASURES

#### 4. SECTION 13288 - TESTING AND AIR MONITORING

##### 1.05 SUBMITTALS

- A. General: Submit in accordance with SECTION 01300 - SUBMITTALS.
- B. Final payment will not be made until copies of all submittals have been furnished to and accepted by the Contracting Officer. Submit 4 copies, approved by the Construction Manager, of the submittal package no later than 10 work days from the notice of award unless otherwise specified in this section.
- C. Pre-Project Submittal: The submittal shall include the following:
  - 1. Name and qualifications of the Construction Manager: who by education and/or experience is competent to perform and certify any required inspection.
  - 2. Documentation for Instruction: Each Worker and Supervisor shall submit current training certificates applicable for removing PCB and mercury containing equipment.
  - 3. PCB and Mercury Removal Plan: Submit a detailed job-specific plan of the work procedures to be used in the removal and disposal of PCB and mercury containing materials. The plan shall also include interface of trades, sequencing of PCB and mercury related work, disposal plan, respirators, protective equipment, and a detailed description of the method to be employed in order to control pollution.
  - 4. PCB and Mercury Disposal Plan: The PCB and Mercury Disposal Plan shall comply with applicable requirements of federal, state, and local PCB and mercury containing waste regulations and address:
    - a. Identification of PCB and mercury waste associated with the work. EPA Generator I.D. # must be obtained from EHSO's Hazardous Materials Manager, Mr. Tim O'Callaghan at 956-3198.
    - b. Estimated quantities of waste to be generated and disposed.
    - c. Names and qualifications of each contractor that will be transporting, storing, treating, disposing of the waste (PCB waste shall be required to be incinerated and mercury lamps to be sent to an EPA approved recycler). Include the facilities location and a 24 hour point of contact. Furnish two copies of EPA, state, and local PCB waste permit applications, permits, and EPA Identification numbers.

- d. Names and qualifications (experience and training) of personnel who will be working on-site with PCB and mercury waste.
  - e. List of waste handling equipment to be used in performing the work, to include cleaning, volume reduction, and transport equipment.
  - f. Spill prevention, containment, and cleanup contingency measures to be implemented.
  - g. Work plan and schedule for PCB and mercury waste containment, removal and disposal. Waste shall be containerized daily.
5. Transporter Certification: Submit certification of notification to EPA of their PCB and mercury waste activities and EPA Identification numbers.
  6. Permits: Submit copies of all permits and arrangements for transportation and disposal of Polychlorinated Biphenyls and mercury materials.
  7. Manufacturer's Data: Submit copies of manufacturer's specifications, installation instructions and field test procedures for each material and all equipment related to Polychlorinated Biphenyls and mercury handling, disposal and other data as may be required to show compliance with these specifications and proposed uses. Indicate by transmittal form that a copy of each installation instruction has been distributed to the installer.
  8. Protective Clothing: Submit copies of manufacturer's literature on all protective clothing and one sample of each item which will be returned to the Contractor.
  9. Shop Drawings: Submit 6 copies of shop drawings for the following items as a minimum:
    - a. Description of any equipment to be employed not discussed in this Section.
    - b. Security provisions, if any, in and around the project areas
    - c. Outline of work procedures to be employed
    - d. Staging of the work, the sequence
    - e. Entrances and exits to the work place
    - f. Placement of air supply system, if any



1. Entry to the work area by unauthorized individuals shall not be permitted without the express approval of the Contracting Officer and any such entry shall be reported immediately to the Contracting Officer by the Contractor.
  2. A Visitor's Log shall be maintained.
  3. The Abatement Contractor shall have control, subject to approval of the Contracting Officer, of security in the work area and in proximity of Contractor's equipment and materials.
  4. Food, drink, and smoking materials shall not be permitted in areas where PCB or mercury are handled or where PCB or mercury items are stored.
- B. Site Protection and Safety: As a minimum follow the requirements of EPA, HIOSH (State of Hawaii), OSHA and NIOSH.
- C. Safeguarding of Property: The Contractor shall take whatever steps necessary to safeguard his work and also the property of Authority and other individuals in the vicinity of his work area during the execution of this Contract. He shall be responsible for and make good on any and all damages by his employees negligence.

#### 1.07 QUALITY ASSURANCE

- A. Training Certificates: Within one year prior to assignment to PCB and mercury work, each employee shall be instructed by a Certified Industrial Hygienist (CIH) or equivalent safety specialist with regard to the hazards of PCB and mercury, safety and health precautions, the use and requirements for protective clothing, equipment, and respirators, and the additional requirements 40 CFR 761 and 29 CFR 1910.120. Fully cover engineering and other hazard control techniques and procedures. Submit certificates signed and dated by the CIH or equivalent safety specialist indicating that the employee has received training.
- B. Construction Manager: Person hired by the General Contractor, who is educated and trained in recognizing and evaluating work place hazards and stress and providing guidance on the methods and means of removing or correcting such hazards and stresses within the work environment. The Construction Manager shall be hired by the General Contractor for the duration of the removal and disposal of PCB-containing material and mercury-containing material. The Construction Manager shall be on the job site conducting the inspection of the PCB and mercury material removal work to ensure that the requirements of the contract have been satisfied during the PCB and mercury material removal operation. At a minimum, he or she shall have Hazardous Materials Handling and Emergency Response Training in accordance with OSHA regulation 29 CFR 1910.120 and

Competent person training in accordance with OSHA 20 CFR 1926.32 or equivalent training and work experience.

1.08 REGULATORY REQUIREMENTS

- A. Furnish employee certification, within 10 consecutive calendar days from award, that the employees have had instructions on the dangers of PCB and mercury exposure, on respirator use, and decontamination.
- B. Contractor shall examine and have at all times in his possession at his office (one copy) and in view at each jobsite office (one copy) a current issue of the following publications:
  - 1. Title 40, Code of Federal Regulations, Part 761, Polychlorinated Biphenyls (PCB) Manufacturing, Processing, Distribution In Commerce, and Use Prohibitions, U.S. Environmental Protection Agency (EPA)
  - 2. Title 49, Code of Federal Regulations, Part 171, General Information, Regulations, and Definitions
  - 3. Title 49, Code of Federal Regulations, Part 172, Hazardous Materials, Tables, and Hazardous Materials Communications Regulations.
  - 4. Title 49, Code of Federal Regulations, Part 173, Shipments and Packagings.
  - 5. Title 49, Code of Federal Regulations, Part 176, Carriage by Vessel
  - 6. Title 49, Code of Federal Regulations, Section 177, Carriage by Public Highway.
  - 7. Title 49, Code of Federal Regulations, Section 178 Shipping Container Specification
  - 8. Title 29, Code of Federal Regulations, Section 1910.145 Specifications for Accident Prevention, Signs and Tags, Occupational Safety and Health Administration (OSHA), U.S. Department of Labor
  - 9. Title 29, Code of Federal Regulations, Section 1910.1000, Air Contaminants.
- C. The Contractor shall comply with the above requirements and any applicable State and City & County regulations. Where conflict or any inconsistency among requirements or with this specification exists, the more stringent requirements shall apply. Ignorance of the above requirements and any applicable Federal, State and City & County regulations resulting in additional cost to the Contractor shall not be paid by Authority.

- D. All regulations shall govern over these specifications, except where more stringent specification or specification providing greater protection against PCB and mercury exposure, injury, loss or liability shall control to the extent permitted by regulation. Any question regarding conflict or inconsistency between specification and/or regulations should immediately be directed to the Contracting Officer.

#### 1.09 EQUIPMENT

- A. Furnish the Construction Manager with two complete sets of personal protective equipment daily, as required herein, for entry to and inspection of the PCB control area. The personal protective equipment shall include respirators, and disposable protective whole body covering. The personal protective equipment shall remain the property of the Contractor.
1. Respirators: Select respirators approved by the National Institute for Occupational Safety and Health (NIOSH), Department of Health and Human Services, for use in atmospheres containing PCB and mercury material. Respirators shall comply with the requirements of 29 CFR 1910.134.
  2. Protective Clothing: Furnish personnel exposed to PCB and mercury material with fire-retardant, disposable protective whole body clothing, head covering, gloves, and foot coverings. Furnish disposable plastic or rubber gloves and footwear to protect hands and feet respectively. Reduce the level of protection only after approval from the Construction Manager.
  3. Warning Signs and Labels: Provide warning signs at approaches to the PCB and mercury control areas. Locate signs at such a distance that personnel may read the sign and take the necessary precautions before entering the area. Provide and affix labels to impermeable bags, PCB and mercury waste drums, and other containers containing PCB and mercury materials, scrap, waste, or debris. The labels shall be of sufficient size to be clearly legible, and display the following: "CAUTION: Contains PCBs (Polychlorinated Biphenyls)" or "CAUTION: Contains Mercury". Signs and labels shall comply with the requirements of 29 CFR 1910.145. and 40 CFR 761, Subpart C.
- B. Personnel Protection Equipment: Workers shall wear and use PPE during PCB and mercury removal. Workers' personnel protection equipment, as required by OSHA regulations, shall consist of but not limited to the following.
1. Disposal coveralls
  2. Disposable rubber gloves
  3. Disposal foot covers (polyethylene)

4. Chemical Safety Goggles
- C. PCB and Mercury Spill Kit: Assemble a spill kit to include several pairs of the following items (at minimum):
1. Disposable polyethylene gloves
  2. Disposable Coveralls
  3. Chemical Safety Goggles
  4. Disposable polyethylene foot covers
  5. PCB Caution Sign: "PCB Spill--Authorized Personnel Only" and Mercury Caution Sign: "Mercury Spill--Authorized Personnel Only"
  6. 100 foot caution tape
  7. Absorbent material
  8. Polyethylene waste bags
  9. Cloth backed tape
  10. Rags
  11. Paper and writing equipment
  12. Waste containers

#### 1.10 DEFINITIONS

- A. Abatement: Procedure to control material release from PCB-containing or mercury-containing materials.
- B. Authorized Visitor: Contracting Officer, his representatives, the Construction Manager or a representative of any regulatory or other agency having jurisdiction over the project.
- C. Leak: Leak means any instance in which the PCB or mercury Article, container or equipment has any PCB or mercury on any portion of its external surface or in the case of mercury-containing lamps where fumes or vapors are released when broken.
- D. Mercury: Mercury as used in this specification shall mean the same as mercury, mercury Article, mercury Article Container, mercury Equipment, mercury-Containing, mercury Item, or mercury containing Lamp.

- E. PCB: PCB as used in this specification shall mean the same as PCB, PCB Article, PCB Article Container, PCB Equipment, PCB Item, PCB - Contaminated Equipment, as defined in 40 CFR 761, Section 3, Definitions.
- F. PEL: OSHA has in place two 8-hour time-weighted averages (TWA) for chlorodiphenyl:
  - 1. For chlorodiphenyl with 42 percent chlorine TWA = 1 milligram per cubic meter of air.
  - 2. For chlorodiphenyl with 54 percent chlorine TWA = 0.5 milligram per cubic meter of air.
- G. Removal: All herein specified procedures necessary to remove PCB and mercury materials at an approved site in an acceptable manner.
- H. Spill: Spill means an uncontrolled release which results in any quantity of PCB or mercury running off/out or about to run off the external surface of the equipment or material, as well as the contamination resulting for those releases.
- I. Holding Area: A secure area used for the storage of PCB and mercury containing material before removal from the project site to an approved disposal site.

## PART 2 – PRODUCTS (NOT USED)

## PART 3 - EXECUTION

### 3.01 PCB AND MERCURY CONTROL AREA

- A. Establish a PCB and mercury control area by roping off the area to prevent unauthorized entry of personnel. No one will be permitted in the PCB and mercury control area unless the person is provided with appropriate training and protective equipment. Food, drink and smoking materials is prohibited in the designated PCB and mercury control area.

### 3.02 PERSONAL PROTECTIVE EQUIPMENT

- A. Workers shall wear and use personal protective equipment upon entering the work area. Footwear and disposable rubber gloves shall be worn at all times during the removal process.

### 3.03 SPECIAL HAZARDS

- A. PCB and mercury shall not be exposed to open flames or other high temperature sources since toxic decomposition by-products may be produced.

- B. PCB and mercury shall not be heated to temperatures of 55C (135F) or higher.
- C. Avoid breaking mercury containing lamps. Vapors/fumes are hazardous. Package lamps to avoid breakage during shipping to mainland disposal/recycling site.

### 3.04 WORK PROCEDURE

- A. The polychlorinated biphenyls and mercury work shall generally include the removal of existing fluorescent light ballasts containing polychlorinated biphenyls and mercury containing fluorescent light tubes. Personnel shall wear and use protective clothing and equipment as specified herein. Eating, smoking, or drinking shall not be permitted in the PCB and mercury control area. No one will be permitted in the PCB and mercury control area unless the person is provided with appropriate training and protective equipment. Package and mark PCB and mercury materials as required by EPA and DOT regulations and dispose of in accordance with EPA, DOT, and local regulations at a permitted site.
  - 1. PCB and Mercury Control Area Requirements: Establish a PCB and mercury control area by roping off the area or providing curtains, portable partitions or other enclosures. No one will be permitted in the PCB and mercury control area unless the person is provided with appropriate training and protective equipment. During the PCB and mercury removal operation, should the employees need to exit the controlled area, they will be required to remove their disposable coveralls, place them in an approved impermeable disposal bag, and then exit the area. The Contractor is solely responsible for complying with any and all regulations concerning his employees' safety and health.
  - 2. Inspection: Inspection and reporting shall be performed by the Construction Manager.
  - 3. Inspection During PCB and Mercury Removal Work: The Construction Manager shall perform daily inspections during the entire PCB and mercury removal operation. If the adjacent areas are contaminated, the contaminated areas shall be cleaned, ventilated and visually inspected. Only when the area is deemed essentially free of PCB and mercury-containing waste materials, will unprotected persons be allowed into the area.

### 3.05 WORK OPERATIONS

- A. Ensure that work operations or processes involving PCB, mercury or PCB-contaminated materials are conducted in accordance with 40 CFR 761 and the applicable requirements of this section including but not limited to:

1. Obtaining advance approval of PCB and mercury storage sites.
2. Notifying the Contracting Officer and the Construction Manager prior to commencing the operation.
3. Reporting leaks and spills to the Contracting Officer and the Construction Manager.
4. Cleaning up spills.
5. Maintaining an access log of employees working in a PCB and mercury control area and providing a copy to the Contracting Officer upon completion of the operation.
6. Inspection of PCB, mercury and PCB-contaminated items and waste containers for leaks and forwarding copies of inspection reports to the Contracting Officer.
7. Maintaining a spill kit as specified in paragraph entitled "PCB and Mercury Spill Kit."
8. Maintaining inspection, inventory and spill and testing records.

### 3.06 PCB AND MERCURY REMOVAL PROCEDURE/PROCESS

- A. Select PCB and mercury removal procedure to minimize contamination of work areas with PCB, mercury or other PCB-contaminated debris/waste. Handle PCB and mercury such that no skin contact occurs. PCB and mercury removal process should be described in the work plan.
  1. All removal work shall be conducted when the building is closed or during the off hours.
  2. Removal of PCB Containing Light Fixtures and Mercury Containing Lamps:
  3. Light ballasts and other items within this category without the "No PCB" designation gets put into a separate drum than those that are marked as "No PCB". These items are disposed of separately and will require draining the transformer of oil (PCB or not) prior to acceptance by the landfill. The draining process would include pumping out the oil and cleaning the transformer prior to disposal. The company that cleans the transformer should certify completion of this task as documentation for the landfill and the Contracting Officer. Depending on the construct, the cleaned transformer housing may be recyclable.
  4. "PCB or Hg Authorized Personnel Only" or "PCB or Hg Spill Authorized Personnel Only" caution signs shall be posted at a

distance sufficiently far enough away from the work area to permit a person to read the sign and take the necessary protective measures to avoid exposure.

5. All light fixtures shall be deenergized prior to the light fixture removal.
6. Remove mercury containing lamps, package and recycle as specified in this section. Avoid breaking the lamps.
7. Workers shall wear rubber gloves, safety glasses, and other necessary personnel protective equipment at all times during the fluorescent light fixture removal process.
8. Remove fluorescent light ballasts in whole. If the light fixture ballast is leaking and it is not possible or feasible to clean the light fixture, dispose of entire fixture as PCB contaminated material.
9. If the fluorescent light fixtures are leaking oil, avoid ingestion, contact with skin, and inhalation and follow this section for PCB clean-up procedures.
10. Dispose of all PCB containing and contaminated material as specified in this section.

### 3.07 CONTROL AREA

- A. Only personnel who have PCB and mercury training shall be allowed in work area.

### 3.08 TEMPERATURES

- A. As feasible, handle PCB and mercury at ambient temperatures and not at elevated temperatures to avoid the risk of vaporization.

### 3.09 SOLVENT CLEANING

- A. Cleaning of tools or equipment: cleaning of contaminated tools or equipment shall be wiped or rinsed down with a solvent wetted rag.

### 3.10 EMERGENCY PLANNING PROCEDURES

- A. Emergency planning procedures shall be written for the evacuation of injured workers. Aid for a seriously injured worker shall not be delayed for reasons of decontamination.

### 3.11 PCB AND MERCURY SPILL CLEANUP REQUIREMENTS

- A. PCB and Mercury Spills: The Contractor shall immediately report any PCB and mercury spills on the ground or in the water, or leaks.

- B. PCB and Mercury Spill Control Area: Rope off the area around the PCB and/or mercury spill or leak area and post a "PCB Spill Authorized Personnel Only" and/or "Mercury Spill Authorized Personnel Only" caution sign. Immediately transfer leaking items to a drip pan or other container.
- C. Mercury Spill Cleanup: The mercury cleanup shall begin immediately after its discovery and after vapors are no longer visible (for mercury-containing lamp breaks). The personnel shall wear personal protective equipment specified in the specifications. The spill area shall be mopped up or cleaned up with absorbent material in the PCB and mercury spill kit. The material used to clean up the mercury material shall be properly contained and disposed of as solid mercury waste.
- D. PCB Spill Cleanup: The PCB cleanup will be in accordance with disposal requirements and procedures outlined in 40 CFR 761, Subpart G. Cleanup procedures shall begin immediately but no later than 48 hours after its discovery. The personnel shall wear personal protective equipment specified in the specifications. The spill will be mopped up or cleaned up with absorbent material in PCB spill kit. The material used to clean up the PCB material shall be properly contained and disposed of as solid PCB waste.
- E. Record Keeping and Certification: Document the cleanup in accordance with 40 CFR 761, Section 125, Requirement for PCB Spill Cleanup. Provide certification of decontamination.
- F. Sampling Requirements: Perform post cleanup sampling as required by 40 CFR 761, Section 130, Sampling Requirements. Do not remove boundaries of the PCB and mercury control area until site is determined clean by the Construction Manager.

3.12 STORAGE FOR DISPOSAL

- A. Storage Container for PCB and Mercury: The Contractor shall comply with requirements and procedures outlined in 40 CFR 178. Store liquid PCB in UN approved and Department of Transportation (DOT) Specifications 17E containers. Store non-liquid PCB mixtures, article, or equipment in DOT Specifications 5, 5b, or 17C containers with removable heads.
- B. Waste Containers, Articles and PCB-Contaminated Items: Label with the following:
  1. "Solid (or liquid) Waste Polychlorinated Biphenyls" and "Mercury Containing Lamps" as applicable.
  2. The PCB or Mercury Caution Label, paragraph entitled "PCB and Mercury Caution Label"

3. The date the items were placed in storage and the name of the cognizant activity/building.

### 3.13 APPROVAL OF TEMPORARY STORAGE SITE

- A. Obtain the Contracting Officer's approval to store the PCB and mercury materials and containers.
- B. The following criteria will be followed to select a storage site:
  1. Adequate roof and wall to prevent rainwater from reaching the stored PCB or mercury.
  2. Floors constructed of smooth and impervious material to prevent or minimize penetrations of PCB or mercury.
  3. No drain valve, floor drains, expansion joints, sewer lines or other openings that would permit liquids to flow from the controlled area.
- C. Temporary onsite storage shall not exceed 10 working days from end of removal work.

### 3.14 CLEANUP

- A. Clean surfaces within the PCB and mercury control area daily. Do not allow PCB or mercury material, debris and dust to accumulate. Restrict the spread of dust, debris, vapors and fumes; keep waste from being distributed over the general area. Do not remove the PCB and mercury control area or roped-off perimeter and warning signs prior to the Contracting Officers receipt of the Construction Manager's certification. The Construction Manager will visually inspect the affected surfaces for residual PCB and mercury material and accumulated dust before the removal of the PCB and mercury controlled area. The Contractor shall re-clean areas showing dust or residual PCB or mercury material.

### 3.15 DISPOSAL OF PCB AND MERCURY MATERIALS

- A. PCB and mercury disposal shall comply with requirements and procedures outlined in 40 CFR 761. LOCAL WASTE DISPOSAL FACILITIES DO NOT ACCEPT PCB AND MERCURY WASTE. Before transporting the PCB and mercury waste, the Contractor shall submit the following to the Construction Manager:
  1. The site specific EPA Generator I.D. number, disposal manifest and receipts showing acceptance of the material by the approved waste disposal or recycling site. EPA Generator I.D. # must be obtained from EHSO's Hazardous Materials Manager, Mr. Tim O'Callaghan at 956-3198.

2. The Contractor shall submit transporter certification of notification to EPA of their PCB and mercury waste activities.

### 3.16 CERTIFICATE OF DISPOSAL

- A. Certificate of disposal shall be submitted to the Construction Manager and the Contracting Officer within 30 days of the date that the disposal of the PCB and mercury waste identified on the manifest was completed. Certificate for the PCB, mercury and PCB items disposed shall include:
  1. The shipping papers shall use chain-of-custody form and include names and addresses of the disposal/recycling facility, the Contractor, EPA Identification, and the Landfill Operator and information on the type and number of waste containers.
  2. The identity of the PCB and mercury waste affected by the Certificate of Disposal including reference to the manifest number for the shipment.
  3. A statement certifying the fact of disposal of the identified PCB and mercury waste, including the date(s) of disposal, and identifying the disposal process used.
  4. A certification as defined in 40 CFR 761, Section 3.

## PART 4 – MEASUREMENT AND PAYMENT

### 4.01 BASIS OF MEASUREMENT AND PAYMENT

- A. Work under this section will not be measured nor paid for separately but shall be considered incidental to and included in the prices bid for the various items of work in this project.

END OF SECTION

## SECTION 13288 – TESTING AND AIR MONITORING

### PART 1 - GENERAL

#### 1.01 RELATED DOCUMENTS

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

#### 1.02 SUMMARY

- A. In performing this project, all possible safeguards, precautions and protective measures should be utilized to prevent exposure of any individual to hazardous substances.

These specifications are based upon procedures and standards derived from U.S. regulatory agencies (EPA, OSHA, NIOSH) and the Hawaii State Division of Occupational Safety and Health as well as from industry and sound industrial hygiene practice. They must be followed to ensure that no measurable amount of lead is released to the uncontrolled work and public areas.

- B. Testing, daily area air monitoring and visual inspections shall be provided by the third party independent industrial hygienist for the purpose of:
  - 1. Verifying compliance with the specifications and the applicable regulations listed in, SECTION 13281 - ASBESTOS ABATEMENT, SECTION 13282 - LEAD-CONTAINING PAINT CONTROL MEASURES, and SECTION 13286 – ARSENIC CONTROL MEASURES;
  - 2. Ensuring that the documentation required by these specifications and by law is collected and reported to the Contracting Officer;
  - 3. Providing engineering control during the project.

#### 1.03 DEFINITIONS

- A. Building Representative(s): The person or persons designated by the users of the building to act on their behalf.
- B. Contractor: The construction firm engaged to remove, encapsulate and/or dispose of the hazardous materials.
- C. Industrial Hygienist: An individual trained in air monitoring and project supervision. A member of the construction management team who enters the work area to set up the air monitoring device and then collects the various air samples to be sent to the laboratory for analysis.

- D. Project Manager: The State employee responsible for administering the construction contract and ensuring that the work of the contractor is conducted according to the contract documents and in compliance with applicable laws, regulations, ordinance, etc.
- E. Third Party Independent Industrial Hygienist: The General Contractor shall hire an independent third party qualified environmental Industrial Hygienist who is a State of Hawaii certified Project Monitor licensed to perform work in Hawaii (and employed by a company licensed to perform work in Hawaii). The Industrial Hygienist Consultant shall be a first tier subcontractor to the General Contractor, independent of the Abatement Contractor. The Third Party Independent Industrial Hygienist will perform air monitoring and inspection during abatement work and shall have the authority to initiate engineering controls.

#### 1.04 PRE-CONSTRUCTION CONFERENCE

- A. Submit in accordance with SECTION 01300 - SUBMITTALS.
- B. Hold conference prior to construction and shall be conducted by the Contracting Officer assisted by the consultant's construction manager.
  - 1. Attendance: Present also shall be the Contractor, project designer, user agency and/or building representative(s), industrial hygienist, and air monitoring personnel.
  - 2. Agenda:
    - a. Review final schedule for project.
    - b. Verify legal requirements and special conditions.
    - c. Verify compliance with pre-construction requirement.
    - d. Obtain copies of all mandatory notifications.
    - e. Inspect sample respiratory equipment and other abatement equipment.
    - f. Review procedures and responsibilities.
    - g. Clarify the scope of work and its best impact on the users of the building.

#### 1.05 SUBMITTAL AFTER WORK IS COMPLETED

- A. Submit in accordance with SECTION 01300 - SUBMITTALS.
- B. At the completion of the work, a final report shall be prepared by the Contractor for acceptance by the Contracting Officer. The report shall be submitted and shall include daily testing records and post-construction

reports as noted in SECTION 13281 - ASBESTOS ABATEMENT and SECTION 13282 - LEAD-CONTAINING PAINT CONTROL MEASURES.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.01 CONTRACTOR RESPONSIBILITIES

- A. The Contractor shall be responsible for his employees' personnel protection, personal air monitoring and necessary records as required by OSHA (29 CFR 1926.1101) and all other applicable laws and as required in these specifications. The Contractor shall provide all required documentation to the Contracting Officer. Contractor shall collect daily personal air samples on at least 25 percent of the personnel performing removal work with the most exposure for the duration of the project.
- B. The Contractor shall procure legally required reports for air monitoring as part of the contract. All air monitoring reports shall include all field data, laboratory reports, test results and other pertinent information about the daily work activities.
- C. Third party independent industrial hygienist shall make available, one copy of daily area air monitoring reports for the Contractor's use. The Contractor may accept such reports as they are offered at his own risk. Availability of additional copies of the reports during the work or at any future time shall not be considered a part of the contract. The Contractor shall be responsible for his own personnel air monitoring as required by law and these specifications.
- D. Air monitoring and testing which becomes necessary in order to follow up on work by the Abatement Contractor, rejected as not conforming to the requirements shall be the responsibility of the Abatement Contractor. The full cost of such additional monitoring shall be borne by the Abatement Contractor, and shall not be a part of the final contract payment.
- E. The Abatement Contractor shall be responsible for the proper required notifications to the State of Hawaii Department of Health.

3.02 TESTING/AIR MONITORING

- A. The third party independent industrial hygienist shall have the authority to implement engineering controls during the project.
- B. Daily area air monitoring shall be performed to detect airborne lead concentrations in and outside the work area for the duration of the project.
  - 1. On-site environmental air monitoring as required by EPA, OSHA, and the project specifications.
  - 2. Laboratory analysis using NIOSH 7400 and NIOSH 7082 methods.

3. Monitoring of decontamination procedures at site entry/exit.
  4. Monitoring of containment maintenance by visual and instrumental inspection.
  5. Interface with project inspectors, building representatives, representatives of regulatory agencies, and project designers during site visits.
  6. Ensure that proper respiratory protection is utilized by all persons at the project site.
  7. Relay to the Contracting Officer any discrepancies in contractor's action with provisions of project specifications.
  8. Act quickly in case of emergencies with appropriate response.
- C. Any testing above and beyond what is specified and initiated by the Contractor shall be paid for by the Contractor at no additional cost to the Contracting Officer.
- D. Air monitoring will be conducted according to the method prescribed by NIOSH 7400 and NIOSH 7082 methods. Final visual clearance inspection will be performed by the third party independent industrial hygienist together with the Abatement Contractor's foreman.

### 3.03 SAMPLING DESIGN

- A. The following is a typical sampling design per containment area during the actual abatement. The number of samples and volume quantities may vary, depending on each project's specifications.
1. Background Samples: Background baseline samples shall be taken prior to abatement to establish pre-abatement airborne concentration levels.
  2. Work Area Samples: Low volume samples (as per NIOSH 7400 and 7082) shall be taken in the work areas. Ambient air samples shall be taken in the work area for comparison to barrier samples in an effort to ensure that containment systems are secure and that the persons entering the work area are wearing proper respiratory protection. If monitoring inside and outside the abatement work area shows airborne concentrations have reached the predetermined specified TWA, the third party independent industrial hygienist shall stop all work, notify the Contracting Officer immediately, have the Contractor correct the condition(s) causing the increase and ensure that the Contractor obtains the Contracting Officer's approval prior to restarting the removal work.

3. Barrier Samples: Monitoring outside the temporary barriers determines if leakage is occurring outside the work area due to loss of negative pressure or faulty seals. At minimum of one sample upwind of the work area and two samples downwind of the work area shall be collected.
4. Final Clearance Samples: Visual inspections will be conducted at the completion of removal work.

#### 3.04 LABORATORY ANALYSIS

- A. Samples will be delivered to a laboratory that has successfully participated in the National Lead Laboratory Accreditation Program. Samples will be analyzed on a 24-hour turn-around-time.

#### 3.05 DAILY TESTING RECORDS

- A. At the conclusion of every day's testing, the third party independent industrial hygienist shall have available copies of all air monitoring records of each containment area for the Contracting Officer.

### PART 4 – MEASUREMENT AND PAYMENT

#### 4.01 BASIS OF MEASUREMENT AND PAYMENT

- A. Work under this section will not be measured nor paid for separately but shall be considered incidental to and included in the prices bid for the various items of work in this project.

END OF SECTION

## DIVISION 16 - ELECTRICAL

### SECTION 16010 - GENERAL ELECTRICAL REQUIREMENTS

#### PART 1 - GENERAL

##### 1.01 RELATED DOCUMENTS

- A. The General Provisions for Construction Projects (2016), Special Provisions and General Requirements for the Specifications, apply to the work specified in this section.

##### 1.02 GENERAL REQUIREMENTS

- A. As specified in SECTION 01010 – DESCRIPTION OF WORK.

##### 1.03 SUMMARY

- A. Electrical Work: Provide all articles, materials, equipment operators, systems and services specified herein and on the Drawings and as normally required by accepted industry standard practices, including all labor taxes, fees, insurance, warranties and incidentals required to complete all electrical work.
- B. In general, the following work is included:
  - 1. Provide a complete lightning detection and/or prediction system (LDS).
  - 2. Provide multiple complete lightning warning systems (LWS’).
  - 3. Provide wireless communication network for overall system communication between the LDS and LWS systems.
  - 4. Provide human machine interface (HMI) for configuration, access, monitoring, and end-user use of the overall LDS and LWS system.
  - 5. Provide LWS’ to the sides of existing concrete light poles and building facias. Penetrate, mount, patch, waterproof, and paint to match the surrounding surfaces.
  - 6. Provide LWS’ on the sides of existing metal light poles. Prevent galvanic corrosion between dissimilar metals of the existing poles and LWS’.
  - 7. Hazardous materials abatement (asbestos and lead based paint) and air quality monitoring for the installation of the LWS’. Provide deductive alternates for each concrete light pole and building facia mounting location. The State will be conducting testing of the mounting locations and will provide the results of the tests after the award of this project. Areas found not to require hazardous materials

abatement shall be provided with the deductive alternate for each such mounting location.

8. Provide ballasted (non-penetrating) roof mounted LWS' on existing roofs.
  9. Provide ballasted (non-penetrating) ground mounted LWS' where indicated.
  10. Conduct an audibility test, after the installation of several LWS' and install additional LWS' as required to provide adequate audible coverage of the designated areas of coverage.
  11. Identify in the bid if there is any annual recurring fee or subscription cost to maintain the connectivity of the LDS. Provide a five year fee schedule for any such annual recurring fee or subscription cost.
- C. Furnish required submittals and samples, operations and maintenance manuals, and "As-built" Drawings.
- D. Coordinate work with other trades to avoid omissions and overlapping of responsibilities.
- E. Apply for, obtain and pay for all State and County fees, permits, licenses, utility fees, assessments and inspections required for this work.
- F. Before bidding, visit project site, carefully review each section of the Specifications and all Drawings of this Contract. Verify details, report any error, conflicts or omissions to the State at least 10 calendar days before submission of bids for interpretation or clarification. If errors or omissions are not reported, Contractor shall provide necessary work at no additional cost to State to properly complete intent of Specifications and Drawings. By submitting a proposal of the work included in this contract, the Contractor shall be deemed to have made such examination and to be familiar with and accept all conditions of the job site.

#### 1.04 INTENT OF SPECIFICATIONS AND DRAWINGS

- A. Specifications and Drawings are prepared in abbreviated form and include incomplete sentences. Omission of words or phrases such as "the Contractor shall", "as shown on the drawings", "a" and "the" are intentional. Omitted words and phrases shall be provided by inference to form complete sentences.
- B. Specifications and Drawings complement each other and what is specified, scheduled or mentioned on one shall be binding as if called for by both.
- C. Discrepancies and Interpretations:
1. Should the Contractor find any discrepancies in or omissions from any of the documents or be in doubt as to their meaning, he shall advise

the State who will issue any necessary clarification within a time period which does not disrupt the progress of the work.

2. All interpretation and supplemental instructions will be in the form of a written addendum to the Contract Documents.
3. Should any discrepancies arise from the failure of the Contractor to notify the State, the higher quality or larger quantity of item shall prevail. State shall make the final interpretation and judgment.
4. In the event of a discrepancy between small scale drawings and large scale details, or between Drawings and Specifications, of which is in violation of any regulations, ordinances, laws or codes, the discrepancy, if known by the Contractor, shall be immediately brought to the attention of the State for a decision before proceeding with the particular work involved. Work carried out disregarding these instructions will be subject to removal and replacement at the Contractor's expense.

#### 1.05 DEFINITIONS

- A. Provide: "Furnish and install, test and deliver to the State in operating and ready to use condition."
- B. Wiring: "Provide all raceways, junction boxes, conductors, devices, protection equipment, installation of motor controllers (furnished by others) when required, etc., including testing for a complete, operative and ready to use electrical system."
- C. Equal: "Material, equipment or system, including all necessary labor, modifications and accessories satisfying the requirements of the contract documents, the design intent, and to provide features or have operating characteristics equal or better than that specified."
- D. Complete: "Furnish installation that is operative, tested, and ready to use and which satisfies the intent of the contract documents, including all necessary accessories and modifications."
- E. Contractor: "General Contractor responsible for all work shall assign work to Sub-Contractors. Except where noted, work of this section shall be assigned to the Electrical Sub-Contractor."

#### 1.06 QUALITY ASSURANCE

- A. Government and Utility Requirements: Comply with all requirements of the State of Hawaii, City and County of Honolulu, Disability and Communication Access Board (DCAB), and respective utility company rules and regulations.
- B. Specifications are accompanied by plans of the buildings, site, and diagrammatical electrical plans showing locations of electrical equipment.

Locations are approximate and before installation, Contractor shall study adjacent construction details and make installation in the most logical manner. Prior to installation and at the direction of the State, relocate any LWS within 30'-0" of the location presently shown without added cost to the State.

- C. Prior to start of the rough-in work, verify all dimensions and equipment sizes with the approved shop drawings including equipment furnished by others. All changes from the contract documents shall be subject to review and acceptance of the State and indicated on the "As-built" Drawings.
- D. Materials and Equipment: Materials and equipment shall conform to requirements of applicable technical specification sections, publications specified therein and shall be as shown on the drawings. Materials and equipment shall be new and shall be the product of manufacturers regularly engaged in the manufacture of such products.

All items shall essentially duplicate materials and equipment which have been in satisfactory use at least two years prior to bid opening and shall be supported by a service organization that is located reasonably close to the site of installation.

E. Substitutions:

1. Where items are specified by manufacturer's name or catalog number, substitutions require written permission by the State prior to bidding. Brand names, manufacturer's names and catalog numbers indicate the standard of design and quality required. List of substitute materials together with qualifying data shall be submitted for review at least twelve (12) working days before bid date. Failure to submit for review substitute materials prior to bidding shall mean that materials, as specified, will be provided. Substitute materials submitted and rejected shall not be resubmitted in any modified form.
2. Samples of proposed substitute items may be required and shall be submitted by the Contractor at his expense as soon as practicable after they are requested.
3. Burden of proof of equality of proposed substitutions will be the responsibility of the Contractor. Submittals shall be sufficiently detailed to permit evaluation of the proposed items. Inadequacy of submittals shall be sufficient cause to reject a proposed substitution.
4. All prospective bidders must submit descriptive information on proposed material for pre-bidding acceptance where an item is detailed but no manufacturer is named.
5. Costs to review any contractor submitted value engineering change proposals shall be paid by the Contractor.

- F. Prevention of Corrosion: All metallic materials shall be protected against corrosion. Exposed metallic parts of equipment, apparatus, devices, mounting hardware, and fasteners shall be constructed from 316 or 316L stainless steel. All such parts as boxes, bodies, fittings, guards and miscellaneous parts shall be constructed of 316 or 316L stainless steel. The Contractor shall not join dissimilar metals that will result in deterioration due to galvanic corrosion.

Exterior enclosures shall be rated NEMA 4X and be constructed from 316 or 316L stainless steel.

1.07 DEPARTURES

- A. Departures resulting from the substitution of materials or systems shall be accompanied by appropriate changes in all affected work of every trade and shall include stamped and signed drawings by a licensed engineer for any portion of the project requiring re-design. Such changes shall be done at no increase to the contract amount and shall be the responsibility of the Sub-Contractor or supplier responsible for the departures. Changes proposed by the Contractor shall be based on a system approach and may be allowed if implemented without decrease in quality, performance and operations, increase in utility costs or adverse effect on the available physical space to install the equipment. Such departures shall be submitted and noted in shop drawings for review and acceptance by the State. Departures initiated by other trades, requiring changes in the electrical system as well as other systems, shall be accompanied by appropriate changes to all affected work of every trade, at no increase in contract amount. Submission for departure shall be as follows:

EXAMPLE:

<u>Item</u>	<u>Manufacturer and Catalog Number Specified</u>	<u>Substitute Manufacturer and Catalog Number</u>
Cable	John Doe - No. 3200	King - No. 2200

- B. The General Contractor shall be responsible to coordinate, approve and select systems that do not impose unaccounted for impacts on the electrical work. It shall be understood that after the award of contract, all departures having electrical impact, unless otherwise noted, have been reviewed and approved by the General Contractor.

1.08 SUBMITTALS

- A. Submit in accordance with SECTION 01300 - SUBMITTALS. All submittals shall be reviewed and approved by the general contractor and the electrical contractor. Partial submittals or submittals lacking the general contractor's and electrical contractor's approvals will not be acceptable. Submit for approval six (6) complete sets of submittals as described below. Annotate descriptive data to show the specific model, type, option, and size of each item the Contractor proposes to furnish. Do not commence work until each system, including all the various components, have been approved. The

State will review and approve all submittals. Before the materials are ordered or the work is commenced the shop drawings must be approved.

- B. List of Materials and Equipment: Submit in accordance with Section 01330 - SUBMITTALS. These lists shall include manufacturer's names and material or equipment identification such as styles, types, or catalog numbers to permit ready and complete identification. Original catalog cuts or brochures shall be provided. Scanned or photocopied submittals will be rejected without review.
- C. Product Data: Shall be sufficiently comprehensive and detailed to permit evaluations, otherwise the item may be rejected, and shall include, as applicable, the following:
  - 1. Original catalog cuts or brochures shall be provided. Scanned or photocopied submittals will be rejected without review.

Each submittal shall contain an itemized list of each item being submitted. Each item shall be identified with the complete manufacturer's ordering number including all options.

- 2. Dimensioned drawings of complete LWS installations (wall mounted, pole mounted, ballasted roof mounted, ballasted ground mounted) that include all system components, framing, and ballasts.
  - 3. Scaled site plan drawings showing the locations of all ballasted LWS' with respect to the surrounding buildings, fences, stanchions, etc. within 20' of the LWS.
  - 4. Scaled elevation drawings of each light pole (concrete and metal), with the LWS, mounting height, and mounting details.
  - 5. Scaled elevation drawings of each building mounted LWS, with the LWS, mounting height, and mounting details.
  - 6. Operating and electrical characteristics including candela output of the visual signaling device and dB output of the audible signaling device.
- D. Certificate of Compliance: Where required by the section specifying the equipment, the Contractor shall submit six (6) copies of certificates of compliance in accordance with the requirements of the GENERAL REQUIREMENTS. The certificates shall include but not be limited to factory test reports.
- E. Installation, Operation and Maintenance Data: Six (6) copies of installation, operation and maintenance data shall be submitted for equipment specified to require such data. The data shall be in the form of manuals and shall indicate instructions for operating, maintaining, repairing, recommended inspection points, periods for inspection, and all related spare parts in a practical, complete and comprehensive manner. The information shall be

arranged in a logical, orderly sequence, including a general description of the equipment and significant technical characteristics.

Test, adjustment and calibration information shall be furnished and identified to specific equipment. The installation, operation and maintenance data shall be as required by the General Requirements.

- F. Acceptance Requirements: Acceptance for material and equipment will be based on manufacturer's published data. Where materials or equipment are specified to be constructed and tested, or both, in accordance with the standards of the National Electrical Manufacturers Association (NEMA) or the American National Standards Institute (ANSI), the Contractor shall submit proof that the items furnished under this section of the specifications conform to such requirements. A certification or published catalog specification data statement to the effect that the item is in accordance with the referenced NEMA standard by a company listed as a member company of NEMA for the section whose standards cover the item under construction, will be acceptable as sufficient evidence that the item conforms to the requirements of the National Electrical Manufacturers Association. A manufacturer's statement indicating complete compliance of each item with the applicable NEMA, ANSI or other commercial standard specified shall be submitted and will be acceptable proof of compliance. Conformance with the agency requirements does not relieve the item from complying with any other requirements of the specifications.

G. Nameplates:

1. General: In addition to standard manufacturer's nameplate, permanent corrosion resistant nameplates shall be provided for each lightning warning system. Nameplates shall designate name/identifier and location. The designations shall be submitted for review and acceptance with the shop drawings.
2. Material and Lettering: 1/16" thick, laminated plastic, black-white-black. Nameplate lettering shall be 1/4" high upper-case.
3. Fastening: Nameplates shall be fastened stainless steel (316) screws.
4. Hand lettering or stick-on embossed marking tape is not acceptable.
5. Provide laminated tape labeling for all new receptacles on coverplates. Identify associated panel name and circuit number.

H. Factory Tests and Inspection:

1. The equipment furnished shall be inspected mechanically and electrically, and all manufacturers' routine factory tests shall be performed to verify conformance with the specified requirements. The test equipment and test methods shall conform to the requirements of standards specified. The contract price shall include cost of performing all tests.
2. The Contractor shall furnish, at time of equipment delivery, six (6) certified copies of all test results.

- I. Equipment Guarantees: Installation shall be complete in every detail and ready for use. Any item furnished or provided by the Contractor developing defects within one (1) year after final acceptance by the State shall be replaced by materials, apparatus and parts including installation labor costs to make such defective portion of the completed system conform to the true intent and meaning of the drawings and specifications, without additional cost to the State. The Contractor shall guarantee all equipment provided from the date such equipment is accepted by the State, against defects in materials, design, performance and workmanship. Guarantees shall be supported by manufacturer's written warranties and shall be signed by an official of the manufacturer's organization. Replacement parts shall be delivered and repairs shall be made promptly upon receipt of notice of failure under normal and proper use and maintenance. All costs of replacement and repair shall be borne by the Contractor provided that a report substantiating such defect or failure to conform to specifications is promptly given to the Contractor.

1.09 CODES, REGULATIONS AND STANDARD SPECIFICATIONS

- A. Work shall conform to the Hawaii Revised Statutes, the Ordinances of City and County of Honolulu; the International Conference of Building Officials (ICBO) International Building Code (IBC); and the latest edition of National Electrical Code (NEC).
- B. Applicable rules, standards and specifications of following associations shall apply to materials, workmanship, and procedures:

American National Standards Institute (ANSI)  
Illuminating Engineering Society of North America (IESNA)  
National Electrical Manufacturer's Association (NEMA)  
National Fire Protection Association (NFPA)  
Underwriters' Laboratories, Inc. (UL)

1.10 ACKNOWLEDGEMENT

- A. By bidding on this project and or by providing this work the Contractor acknowledges that:

1. The Designer is not responsible for the means and methods employed by the Contractor and that the Contractor is responsible for his means and methods.
2. The Designer is not responsible for job site and worker safety and that the Contractor is responsible for job site and worker safety.

#### 1.11 WARRANTY

- A. Defective materials and workmanship shall be removed and replaced at no cost to the State. For a period of one year after acceptance of work by State, materials and workmanship developing defects and malfunctions shall be repaired and/or replaced, to conform with intent of the specification and drawings, at no additional cost to the State.
- B. Provide an extended warranty for an additional four years after the end of the initial one year period described above. For the additional four year period, materials and workmanship developing defects and malfunctions shall be repaired and/or replaced, to conform with intent of the specification and drawings, at no additional cost to the State.

#### 1.12 Operation and Maintenance Services

- A. For a period of five years after acceptance of work by State, provide all services to operate and maintain the LDS and the LWS systems. The operations costs shall include any annual service fees or subscriptions for firmware updates to the LDS, at no additional cost to the State.

### PART 2 – PRODUCTS

#### 2.01 MATERIALS

All materials shall be new, except as specifically noted, and shall bear the label of Underwriter's Laboratories, Inc., wherever standards have been established and label service is normally and regularly furnished by the agency. See the respective technical sections for the electrical material specifications.

### PART 3 – EXECUTION

#### 3.01 MATERIALS AND EQUIPMENT PROVIDED BY THE CONTRACTOR

The electrical installation shall be complete and operable and shall conform to the requirements of the contract drawings. The Contractor shall provide all electrical equipment and materials, wiring, supports and such additional parts as are necessary to make the installation complete. All Contractor furnished materials and equipment are subject to review and acceptance by the State.

#### 3.02 PROTECTION DURING STORAGE

Store all materials and equipment in a safe manner. Provide weather, dehumidification, and fire protection for all materials. Store all materials above grade to avoid damage by moisture. Cover all materials to avoid damage from sunlight.

### 3.03 PROTECTION OF WORK IN PROGRESS

All electrical materials and equipment shall be completely protected during installation. Equipment shall be securely protected against physical or chemical damage. In areas exposed to weather, materials unused at the end of each day's work shall be protected by weatherproofed installations. All unprotected conduits shall be sealed to prevent water and foreign debris from entering conduits. Damage to materials and equipment due to Contractor's neglect shall be repaired or replaced by and at the expense of the Contractor.

### 3.04 PROGRESS OF WORK AND COORDINATION

The Contractor shall prepare a schedule identifying the sequence of electrical work. The electrical work shall be coordinated with the work of other Contractors and other trades. The schedule shall be submitted prior to beginning installation and shall be subject to review and acceptance by the State.

### 3.05 RULES

The entire electrical installation shall conform to the applicable rules and regulations of the State Fire Code and the standards and publications specified in the technical sections.

### 3.06 COORDINATION

The contract drawings indicate the extent and general location and arrangement of equipment. LWS' shall be located so as to avoid interference with architectural, mechanical and structural features, and CCTV cameras and ground operations. The State may request any lightning warning system be relocated within 30'-0" of the location shown on the Drawings before installation is initiated and without increase in contract amount.

### 3.07 WORKMANSHIP

- A. All materials and equipment shall be installed in accordance with printed recommendations of the manufacturer and shall conform to the requirements of the contract drawings. The installation shall be accomplished by workers skilled in this type of work. For actual fabrication, installation and testing of the Electrical Work, use only thoroughly trained and experienced workmen completely familiar with items to be installed and with manufacturers' recommended methods of installation. In acceptance or rejection of installed work no allowance will be made for lack of skill on part of workmen.
- B. Inspection: Skill and competency of workmanship shall be subject to the approval of the State and the City and County of Honolulu. The contractor

shall open all electrical equipment, cabinets, junction boxes, and devices as required by the State or inspector for inspection. All equipment shall be de-energized prior to inspection unless voltage and current measurements are required. The Contractor shall be responsible for all electrical and arc flash safety at the project site.

### 3.08 FIELD TESTS

- A. After the installation is completed, and at such time the State may direct, the Contractor shall conduct field tests for acceptance by the State. When the tests are specified to be performed under the supervision of the equipment manufacturer, the Contractor shall cooperate with the State during tests and shall place at the manufacturer's disposal, all assistance, materials and services required to perform such tests. The tests shall be performed in the presence and to the satisfaction of the State. The Contractor shall furnish all necessary electric power, fuel, instruments, equipment, and personnel required for the tests and shall pay for all power and fuel.
- B. Audible Tests:
  - 1. Conduct an audibility test, after the installation of several LWS' and install additional LWS' as required as additive bid alternates.
  - 2. Conduct an audibility test of the LWS' with a calibrated sound meter device. Measure the sound levels on the aprons at the center point in between LWS' and the buildings. The ambient noise levels shall also be recorded at each location. Submit results of tests to the State.
- C. Operating Tests: The equipment and systems shall be demonstrated to operate in accordance with the requirements of the technical sections in which the equipment or systems are specified.
- D. Ground Resistance Test: Test ground resistance by three-point method. Results of test shall be submitted to the State. Ground Resistance: Ground resistance measurements of each ground rod shall be taken and certified by the Contractor. Upon completion of the project, the Contractor shall submit in writing to the State, the measured ground resistance of each ground rod and grounding system, as well as the resistance and soil conditions at the time the measurements were made. Ground resistance measurements shall be made in normally dry weather, not less than 48 hours after rainfall, and with the ground under test isolated from other grounds.
- E. Test all 600 volt class conductors to verify that no short circuits or accidental grounds exist. Make tests using an instrument which applies a voltage of approximately 500 volts to provide a direct reading in resistance, and measure the insulation resistance from phase to phase and phase to neutral. All test results shall be recorded and submitted to the State.

- F. Wherever test or inspection reveals faulty materials or installation, Contractor shall take corrective action, at his own expense, repairing or replacing materials or installation as directed. The materials or installation shall then be retested.

#### PART 4 – MEASUREMENT AND PAYMENT

##### 4.01 BASIS OF MEASUREMENT AND PAYMENT

Work under this Section will not be measured nor paid for separately but shall be considered incidental to and included in the prices bid for the various items of work in this project.

END OF SECTION

## SECTION 16050 – ELECTRICAL BASIC MATERIALS AND METHODS

### PART 1 - GENERAL

#### 1.01 RELATED DOCUMENTS

- A. The General Provisions for Construction Projects (2016), Special Provisions and General Requirements for the Specifications, apply to the work specified in this section.

#### 1.02 GENERAL REQUIREMENTS

As specified in Section 01010 - DESCRIPTION OF WORK.

#### 1.03 SUMMARY

- A. This section provides the specifications for general electrical work. See other specification sections for more detailed specifications related to specific electrical systems.
- B. The Contractor shall furnish all labor, materials, tools, equipment, electricity, fuel, shipping and delivery, and appliances required to provide all Electrical Work, complete, as indicated on the drawings and/or as specified herein. The drawings note various sizes of equipment as determined for basis of design; the electrical work, however, shall be installed to comply with the equipment furnished by the successful supplier and shall be based on the approved shop drawing submittals. The work shall include but not necessarily be limited to, the following:
  - C. Provide complete Lightning Detection and/or Prediction System (LDS).
  - D. Provide multiple complete Lightning Warning Systems (LWS’).
  - E. Conduct an audibility test, after the installation of several LWS’ and install additional LWS’ as required as additive bid alternates.
  - F. Provide 5 years extended warranty and operations and maintenance services.
  - G. Before bidding on this work, carefully examine each of the drawings and the site. By submitting a proposal of the work included in this contract, the Contractor shall be deemed to have made such examination and to be familiar with and accept all conditions of the job site.

#### 1.04 SUBMITTALS

- A. Submit in accordance with SECTION 01300 - SUBMITTALS.

- B. Shop drawings and catalogue cuts for substitute materials shall clearly specify compliance with and/or deviation from specified material. Certification shall not contain statements to imply that the item does not meet requirements specified, such as "as good as"; and "achieve the same end use and results as materials formulated in accordance with the referenced publications". Certifications shall simply state that the item conforms to the requirements specified. Certificates shall be printed on the manufacturer's letterhead and shall be signed by the manufacturer's official authorized to sign certificates of compliance. Review of shop drawings and catalogue cuts shall not release Contractor from complying with intent of specification and drawings. Partial or incomplete submittals will be returned without review.
- C. Shop Drawings: Submit complete shop drawings and manufacturer's literature for the State's review before any work is ordered or fabricated. All submittals shall bare the approval of the general contractor and the electrical contractor. Partial or incomplete submittals or submittals lacking the general contractor's and electrical contractor's approval will be returned without review. Submit in accordance with Section 01300 - SUBMITTALS. Submit manufacturer's literature for the following:
1. Lightning Detection and/or Prediction System
    - a. Include summary of the LDS (system overview, detection or prediction overview, data management, data presentation, features and functionalities).
    - b. Include the following LDS performance metrics:
      - (1) Location Accuracy.
      - (2) Detection Efficiency.
      - (3) Classification Accuracy.
  2. Lightning Warning System
    - a. Include summary of the LWS device overview, method of communication, power and backup power, mounting).
    - b. Include the following LWS specifications:
      - (1) Horn type and decibel rating.
      - (2) Strobe type and candela rating.
      - (3) PV panel specifications.
      - (4) Battery specifications.

3. Wireless Network Communication System (between LDS and LWS)
4. Raceways
5. Conductors
6. Mounting Details, Hardware and Fasteners
7. Drawings
8. Signage
9. Nameplates

D. As-Built Drawings: Submit as-built drawings as specified under SECTION 01300 - SUBMITTALS.

#### 1.05 GUARANTEE AND CERTIFICATE

Any item of material, apparatus, equipment furnished and installed, or constructed by the Contractor showing defects in design, construction, quality or workmanship within one year from the date of final acceptance by the State shall be replaced by such new material, apparatus or parts as may be found necessary to make such defective portion of the installation conform to the true intent and meaning of the specification and/or the drawings. Such repairs or replacement shall be made by the Contractor, free of all expense to the State.

#### 1.06 COORDINATION WITH UTILITY COMPANIES AND OTHER TRADES

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

#### 1.07 CODES, REGULATIONS AND STANDARD SPECIFICATIONS

- A. Work shall conform to latest edition of National Electrical Code.
- B. Applicable rules, standards and specifications of following associations shall apply to materials and workmanship:

American National Standards Institute (ANSI)  
Illuminating Engineering Society of North America (IESNA)  
National Board of Fire Underwriters (NBFU)  
National Electrical Manufacturer's Association (NEMA)  
National Fire Protection Association (NFPA)  
Underwriters' Laboratories, Inc. (UL)

### PART 2 - PRODUCTS

## 2.01 MATERIALS

- A. General: All materials shall be new, except as specifically noted, and shall bear the label of Underwriters' Laboratories whenever standards have been established and label service is normally and regularly furnished by the agency.
- B. Raceways:
1. Conduits: EMT and galvanized rigid steel, 3/4" minimum diameter with compression or threaded fittings, respectively. Aluminum conduits shall not be used.
  2. Non-Metallic Conduit: PVC Schedule 40 and sunlight-resistant epoxy resin coated fiberglass, wall thickness as indicated (ISO 9001: 2008 certified), 3/4" minimum diameter.
  3. Reinforced Thermosetting Resin Conduit: NEMA Standard TC 14, UL 2515 IPS above Ground and 2515A Extra Heavy Wall standards, ISO 9001: 2015 Quality Control Management, Type AG, sunlight resistant, wall thickness as required to provide degree of protection suitable for installation location.
  4. Flexible Conduit: 3/4" minimum, zinc-coated inside and outside; for damp, wet, moist, or corrosive areas -- liquid-tight with factory fittings and UV stabilized PVC jacket.
- C. Conductors: Conductors shall be copper, No. 12 AWG minimum; No. 10 AWG and smaller, solid and round; No. 8 AWG and larger, 7 or 19 strands concentric. All conductors No. 6 and smaller shall be types THW for interior use or RHW for exterior use. All conductors No. 4 AWG and larger shall be type THWN-2 for interior use; or RHW-2 or USE-2 for exterior use. Conductors used for fire alarm, sound system, and control wiring may be sized according to the system manufacturer based on their load and voltage drop calculations and code requirements. Conductors used to serve critical operations power systems (power systems for facilities or parts of facilities that require continuous operations for reasons of public safety, emergency management, national security, or business continuity) including but not limited to emergency power, HVAC, fire alarm, security, telecommunications, and signaling shall be a listed 2-hour electrical circuit protective system. Conductors installed on roof tops and exposed to sunlight shall be derated per NEC Table 310.15(B)(2)(b) or shall be type XHHW-2. Conduit sizes shall be increased as necessary to accommodate derated and type XHHW-2 conductors. Reduce conductor sizes at equipment terminations as required to accommodate maximum allowable conductor size accepted at equipment terminals per manufacturer's recommendations. Provide UL listed in-line reducer splice kit or UL listed cable reducing adapter plugs as required to reduce conductor sizes.

D. Lightning Detection and/or Prediction System (LDS):

1. Provide multiple alert notifications (email, text message, phone call, audible/ visual, etc.) of approaching lightning storms, lightning strikes (cloud-to-cloud, cloud-to-ground), or predictive lightning strikes in the Ramp Control Office, located on the 10<sup>th</sup> floor of the Amin Tower building.
2. Approaching storms or lightning strikes can either be detected or predicted.
3. The alert distance of the approaching storm to the airport shall be adjustable, depending on the requirements of the State.
4. The LDS shall include access to a real-time web-based color weather map that indicates the storms' size, direction, and speed. Provide connections to the existing LAN system and up to two computers, identified by the State, as required.
5. Provide power to the LDS as required.
6. Provide cellular or radio installations as required to communicate with the lightning warning systems.
7. Provide two modes of activating/de-activating the LWS'.
  - a) Mode 1: Manual Operation – Provide the means to allow Ramp Control to manually active/de-activate the LWS'.
  - b) Mode 2: Automated Operation – Provide the means to allow the LWS' to be automatically activated/de-activated based on alerts from the LDS.
  - c) Enable either of the above mentioned Modes at the direction of the State.
8. Lightning Warning System (LWS):
  - a. General: Furnish and install, as shown on the plans, multiple lightning warning systems as necessary to provide sufficient audible and visual coverage of all ground apron, maintenance, and service areas.
  - b. Lightning Warning System: each LWS shall consist of the following:
    - 1) Control unit.
    - 2) High output horn.

- 3) High intensity blue strobe light.
- 4) Radio or cellular communication system.
- 5) Photovoltaic system with battery storage.
- 6) Framing/supports as necessary.
- 7) Mounting hardware.
- 8) Signage

All components shall be highly corrosion resistant (316 stainless steel or aircraft aluminum whenever possible), UV stabilized, and weatherproof.

- c. **Communication Units:** Provide communication units as necessary to communicate with each lighting warning system. The communication units shall receive the activation/de-activation signal from the LDS and shall communicate with each LWS via radio or cellular connection. Provide power and communication connections as required.

- F. **Outlet and Small Junction Boxes:** Pressed, zinc-coated steel, minimum nominal size 4", minimum depth 1-1/2", with raised cover- ring for devices in concrete masonry units. Exposed boxes and weather exposed boxes shall be ferrous alloy, prime painted and enamel finished, with threaded hubs for conduit connection. Surface mounted boxes shall be smooth walled with clean 90 degree corners.
- I. **Large Junction Boxes:** For dry interior locations, the box shall be fabricated from NEC gauge galvanized steel with matching screw-on type cover, field punched knockouts. Flush mounted junction boxes shall have flange type covers. For exterior, damp, wet, or corrosive locations, boxes shall be NEMA 4X stainless steel (316), pad lockable. All screws and hardware shall be stainless steel (316).
- J. **Enclosures and Cabinets:** Enclosures and cabinets for panelboards, enclosed circuit breakers, and safety disconnect switches shall be NEMA type, fabricated from galvanized steel, or as indicated, prime painted and enamel finished according to NEMA specifications. For dry interior locations, enclosures shall be NEMA 1. For exterior, damp, wet, or corrosive locations, enclosures shall be NEMA 4X stainless steel (316) with stainless steel (316) fasteners and hardware, pad lockable. Provide enclosures made of continuous welds. Enclosures made of bolted panels/parts will not be allowed.
- K. **Device and Cover Plates:**

1. Plates for interior flush construction shall be smooth reinforced plastic, with suitable hole(s) and color to match device. Plates for receptacles on Department of Education projects shall be brushed stainless steel.
  2. Device covers outlets in damp, wet, or corrosive locations shall be weatherproof with lockable stainless steel (316) covers. Covers shall permit plugs to be connected without compromising the integrity of the protective nature of the cover while in use.
  3. Plates for receptacles shall be labeled with the name of the panelboard and circuit number serving the receptacle.
- L. Convenience Duplex Receptacles: Duplex, 20 ampere, 125-volt, back and side wired, 3 wires, grounding type in ivory plastic body, specification grade, with parallel and ground U-shaped slots. Enclose in outlet box and device plate. Hubbell, Leviton, or pre-approved equal.
- R. Duct Sealant: Shall not affect physical or electrical properties of wire and cable. Shall meet NEC codes for raceway seals and be UL listed. Shall be capable of holding 15 feet waterhead pressure continuous and block up to 4 psi gas or vapor continuous. Polywater FST, or pre-approved equal.
- S. Nameplates: Laminated nameplates shall be provided for each LDS component and each LWS, junction box, and cabinet for identification purposes.
1. Laminated plastic shall be 1/8-inch thick Melamine plastic, black with white center core. Letters, numbers, symbols, or pictographs shall be incised a minimum of 1/32-inch into the plastic to expose the white core. Size of nameplate shall be 1-inch by 2-1/2 inches minimum. Lettering shall be minimum 1/4-inch high normal block lettering. Labels shall identify the equipment being part of the Lightning Detection System or Lightning Warning System and shall identify the type of equipment being labeled.
- T. Labels for Receptacles: Thermal transfer or direct thermal labeling; minimum 1/8" high black lettering on white background; self-adhesive backing; sunlight, water and moisture resistant. Kroy or approved equivalent.
- U. Warning/Instructions/Educational Signs (Signage)
1. Provide warning, instructional, and educational signs below or at each lightning warning system and at each ground level building entrance within 150' of each lightning warning system.
  2. Verify location of each sign with each building owner/tenant prior to installing the signs.

3. Provide 30 spare signs and stainless steel fasteners.
4. The signs shall:
  - a. Warn people to seek shelter indoors when the audible signal of the lightning warning system is heard or the visual signaling device is seen activated.
  - b. Warn people to stay indoors until the ALL CLEAR signal is given.
  - c. Identify the color of the visual signaling device.
  - d. Identify the sound(s) of the audible warning signal(s).
  - e. Identify the sound of the ALL CLEAR signal.
  - f. Be vinyl, weatherproof, and sunlight resistant.
  - g. Be mounted at each corner (minimum) with stainless steel fasteners.
  - h. Be at least 8.5"H X 11"W.
  - i. Wording and a sample of the sign material shall be submitted for review.
- V. Hardware, Supports, Backing, Etc.: All hardware, fasteners, supports, backing and other accessories necessary to install electrical equipment shall be provided. Wood materials shall be "wolmanized" treated against termites, iron or steel materials shall be galvanized for corrosion protection, and non-ferrous materials shall be brass or bronze. Installations in damp, wet, or corrosive locations shall be of stainless steel, 316.

### PART 3 - EXECUTION

#### 3.01 GENERAL

- A. Rules and Permit: The entire installation shall be made in strict accordance with the latest rules and regulations of the National Board of Fire Underwriters, the currently adopted edition of the National Electrical Code and the Electrical Branch of the local Building Department. The Contractor shall obtain and pay for the electrical permit as required by local laws and rules. All work shall be inspected by the proper local authorities as it progresses. The Contractor shall pay all inspection fees and shall deliver certificates of completion and inspection to the State before final payment

will be made. Costs of permits and inspection fees shall be included in the Contractor's bid price.

- B. Construction Methods: Construction shall conform to construction practices as recommended by the American Electricians Handbook by Croft (latest edition), Edison Electric Institute, National Electrical Code, National fire Protection Association, National Electrical Safety Code and applicable instructions of manufacturers of equipment and material supplied for this project.
- C. Materials and Workmanship: All labor and materials of every kind shall be subject to the approval of the State, who shall be afforded every facility for ascertaining the competence of such labor and examining such materials as they may deem necessary. Concealed work, handholes, and enclosures shall be reopened / opened at random as directed during inspections by the State. Materials shall be new and shall bear the listed label of the Underwriters' Laboratories, Inc. Brand names and catalog numbers used in this specification indicate the standards of design and quality required. Substitution of other brands or catalog numbers shall conform to the requirements in the Bidding Documents. All high voltage work shall be performed by qualified electricians certified to work on high voltage systems.
- D. Record Drawings: The Contractor shall maintain an accurate and adequate record of each change as it occurs, regardless of how ordered.
- E. Drawings and Specification: This specification is intended to cover all labor, materials and standards of workmanship to be employed in the work indicated on the Drawings and called for in the specification or reasonably implied therein. The Drawings and specification supplement one another. Any part of the work mentioned in one and not represented in the other, shall be done the same as if it has been mentioned in both. The Contractor shall not make alterations in the Drawings and specification.
- F. Discrepancies and Interpretations:
  - 1. Should the Contractor find any discrepancies in or omissions from any of the documents or be in doubt as to their meaning, he shall advise the State who will issue any necessary clarification within a time period which does not disrupt the progress of the work.
  - 2. All interpretation and supplemental instructions will be in the form of a written addenda to the Contract Documents.
  - 3. Should any discrepancy arise from the failure of the Contractor to notify the State, the higher quality or larger quantity of item shall prevail. The State shall make the final interpretation and judgment.

4. In the event of a discrepancy between small scale drawings and large scale details, or between the Drawings and specification, on which is in violation of any regulations, ordinances, laws or codes, the discrepancy, if known by the Contractor, shall be immediately brought to the attention of the State for a decision before proceeding with the particular work involved. Work carried out disregarding these instructions will be subject to removal and replacement at the Contractor's expense.
- G. Symbols: The standard electrical symbols together with the special symbols, notes and instructions shown on the drawings indicate the work and outlets required and are all to be included as a part of this specification.
- H. Coordination: This specification is accompanied by Drawings which contain site plans and elevations of acceptable locations for the LWS. These locations are approximate and, before installing, the Contractor shall study the adjacent installations and actually make the installation in the most logical manner. Any LDS component or LWS may be relocated within thirty feet before installation at the direction of the State.

### 3.02 INSTALLATION

#### A. Grounding:

1. All raceways shall be grounded according to requirements of NEC Article 250.
2. All grounding wire runs within building shall be routed together with circuit conductors. Ground and bond per the NEC and local authority having jurisdiction. Final connection to equipment, raceways, grounding type receptacles and other metallic parts directly exposed to ungrounded electric conductors shall be No. 8 AWG minimum, copper, NEC type TW, green insulation. Use approved bonding terminal at panels.

#### B. Wiring System:

1. For conduits rising out of walls, transition to EMT and galvanized rigid steel conduit as required below within 6" of emerging from the wall.
2. Above finished ground floor where exposed below 7'- 0" above finished floor use rigid steel conduit; in non-air conditioned locations use rigid steel conduit; exposed on the exterior of the building or beneath the building use rigid steel conduit; where exposed on exterior of the building and exposed to sunlight use regular walled sunlight-resistant epoxy resin coated fiberglass conduit with white finish and threaded fittings. Where exposed to corrosive atmospheres and near shorelines use regular walled sunlight-resistant epoxy resin coated fiberglass conduit. Where exposed to damage use rigid steel

conduits or medium walled sunlight-resistant epoxy resin coated fiberglass conduits.

3. Above finished ground floor where concealed in stud walls or above suspended ceilings, and not exposed to damage, use EMT with compression fittings.
4. Where exposed on the roof, in damp, wet, or corrosive locations use sunlight-resistant epoxy resin coated fiberglass.
5. All wiring shall be installed in conduits except as noted.
6. Conduit system shall be continuous from outlet to outlet and fitting to fitting so that electrical continuity is obtained between all conduits of the system.
7. Conduits cut square and inner edges reamed. Butt together evenly within couplings.
8. Make bends and offsets with hickey or conduit-bending machine. Do not use vise or pipe tee. Flattened or crushed conduit not acceptable.
9. Use of running threads not permitted. Where conduits cannot be joined by standard threaded couplings, approved water-tight conduit unions shall be used.
10. Cap conduits during construction with plastic or metal-capped bushings to prevent entrance of dirt and moisture. Swab all conduits and dry before installing wires. Provide removable watertight conduit seals on all conduits entering the building, or exposed equipment.
11. Install insulating bushings and two locknuts on each end of every conduit run at enclosures and boxes. Provide grounding bushings as required.
12. LAN cabling shall be CAT-6.

C. Conductors:

1. Mechanical means for pulling shall be torque-limiting type and not used for #2 AWG and smaller wires.
2. Pulling tension shall not exceed wire manufacturer's recommendations.
3. Where necessary, powdered soapstone may be used as a lubricant for drawing wires through conduit. No other means of lubricating will be allowed.

4. Form neatly in enclosures for minimum of crossovers. Tag and label all branch circuits in all enclosures and devices. Identify panel name and branch circuit number.

D. Splicing of Wire and Cable:

1. Wires shall be formed neatly in enclosures and boxes.
2. Splices made according to NEC Article 110.
3. Splices shall be reinsulated. Remove all sharp points that can pierce tape. Use Minnesota Mining and Manufacturing Co. "Scotch" #33 tape, or pre-approved equal. Splices in pull boxes shall be water-tight.
4. Below grade splices not allowed for fire alarm circuits.

E. Boxes and Enclosures:

1. Not all boxes are shown on the Drawings. The number of conduit bends between pull points shall not be greater than four quarter bends (360 degrees total) per NEC. For telecommunication conduits the number of conduit bends between pull points shall not be greater than two quarter bends (180 degrees total). Provide additional boxes as necessary.
2. Boxes to be plumb and exactly flush.

F. Convenience Outlets: Shall be installed vertically, centers eighteen inches above the finish floor unless otherwise required.

G. Finishing:

1. All cutting that may be required for complete installation of the electrical work shall be carefully performed, and all patching shall be finished in first-class condition by the Contractor.
2. Close unused knockouts in boxes or enclosures with metal cap that will maintain the rating of the box or enclosure.
3. Wipe clean all exposed raceways and enclosures with rag and solvent. Unfinished raceways and enclosures shall be primed and painted and finished to blend in with the surface it is mounted on. (Do not cover nameplates.) Factory finished enclosures shall not be painted, touch up where required.

H. Miscellaneous Details:

1. Cut, drill and patch as required to install electrical system. Repair any surface damaged or marred by notching, drilling or any other process necessary for installation of electrical work. Cutting, repairs and refinishing subject to the approval of the State. Need for remedial work determined by the State as attributable to poor coordination and workmanship shall be cause for reconstruction to the satisfaction of the State and at no additional cost to the State.
2. Attachment of electrical equipment to wood by non-ferrous wood screws. Attachment to concrete by expansion anchors. Powder-charge-driven studs and anchors permitted only with prior approval.
3. Update all panel circuit directories, using typewriter. Verify "room" and "use" designations before typing.
4. Prime and paint all exposed conduits, hangers, and fasteners.
5. Furnish necessary test equipment and make all tests necessary to check for unspecified grounding, shorts and wrong connections. Correct fault conditions, if any.
6. Provide plastic safety end caps on all c-channel ends. End caps shall be U.V. stabilized where installed exposed to the weather and sunlight.

### 3.03 TESTING AND INSPECTION

- A. If the State (or its representative) discovers any errors, the Contractor, at his own expense, shall go over all similar portions of the entire job, taking the necessary or directed remedial action.
- B. Wherever test or inspection reveals faulty equipment or installation, the Contractor shall take corrective action, at his own expense, repairing or replacing equipment or installation as directed.
- C. Audible Tests:
  1. Conduct an audibility test, after the installation of several LWS' and install additional LWS' as required to provide adequate audible coverage of the designated areas of coverage.
  2. Conduct an audibility test of the LWS' with a sound meter device. Measure the sound levels on the aprons at the center point in between LWS' and the buildings. The ambient noise levels shall also be recorded at each location. Submit results of tests to the State.

## PART 4 – MEASUREMENT AND PAYMENT

4.01 BASIS OF MEASUREMENT AND PAYMENT

- A. Work under this Section will not be measured for payment but will be paid for at the Contract bid price. Bid prices shall include all labor, materials, tools, equipment, and incidentals needed to complete all work according to the contract requirements.

Payment for all items shall be as follows:

<u>Item No.</u>	<u>Description</u>	<u>Unit</u>
16050.1	Furnish and install Lightning Warning System	Lump Sum

END OF SECTION

## **Requirements of Chapter 104, HRS Wages and Hours of Employees on Public Works Law**

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Chapter 104, HRS, applies to every public works construction project over \$2,000, regardless of the method of procurement or financing (purchase order, voucher, bid, contract, lease arrangement, warranty, SPRB).

### **Rate of Wages for Laborers and Mechanics**

- Minimum prevailing wages (basic hourly rate plus fringe benefits), as determined by the Director of Labor and Industrial Relations and published in wage rate schedules, shall be paid to the various classes of laborers and mechanics working on the job site. [§104-2(a), (b), Hawaii Revised Statutes (HRS)]
- If the Director of Labor determines that prevailing wages have increased during the performance of a public works contract, the rate of pay of laborers and mechanics shall be raised accordingly. [§104-2(a) and (b), HRS; §12-22-3(d) Hawaii Administrative Rules (HAR)]

### **Overtime**

- Laborers and mechanics working on a Saturday, Sunday, or a legal holiday of the State or more than eight hours a day on any other day shall be paid overtime compensation at not less than one and one-half times the basic hourly rate plus the cost of fringe benefits for all hours worked. If the Director of Labor determines that a prevailing wage is defined by a collective bargaining agreement, the overtime compensation shall be at the rates set by the applicable collective bargaining agreement [§§104-1, 104-2(c), HRS; §12-22-4.1, HAR]

### **Weekly Pay**

- Laborers and mechanics employed on the job site shall be paid their full wages at least once a week, without deduction or rebate, except for legal deductions, within five working days after the cutoff date. [§104-2(d), HRS]

### **Posting of Wage Rate Schedules**

- Wage rate schedules with the notes for prevailing wages and special overtime rates, shall be posted by the contractor in a prominent and easily accessible place at the job site. A copy of the entire wage rate schedule shall be given to each laborer and mechanic employed under the contract, except when the employee is covered by a collective bargaining agreement. [§104-2(d), HRS]

### **Withholding of Accrued Payments**

- If necessary, the contracting agency may withhold accrued payments to the contractor to pay to laborers and mechanics employed by the contractor or subcontractor on the job site any difference between the wages required by the public works contract or specifications and the wages received. [§104-2(e), HRS]

### **Certified Weekly Payrolls and Payroll Records**

- A certified copy of all payrolls shall be submitted weekly to the contracting agency. [§104-3(a), HRS; §12-22-10, HAR]
- The contractor is responsible for the submission of certified copies of the payrolls of all subcontractors. The certification shall affirm that the payrolls are correct and complete, that the wage rates listed are not less than the applicable rates contained in the applicable wage rate schedule, and that the classifications for each laborer or mechanic conform with the work the laborer or mechanic performed. [§104-3(a), HRS; §12-22-10, HAR]
- Payroll records shall be maintained by the contractor and subcontractors for three years after completion of construction. The records shall contain: [§104-3(b), HRS; §12-22-10, HAR]
  - the name and home address of each employee
  - the last four digits of social security number
  - a copy of the apprentice's registration with DLIR
  - the employee's correct classification
  - rate of pay (basic hourly rate + fringe benefits)
  - itemized list of fringe benefits paid
  - daily and weekly hours worked
  - weekly straight time and overtime earnings
  - amount and type of deductions
  - total net wages paid
  - date of payment
- Records shall be made available for examination by the contracting agency, the Department of Labor and Industrial Relations (DLIR), or any of its authorized representatives, who may also interview employees during working hours on the job. [§§104-3(c), 104-22(a), HRS; §12-22-10, HAR]

## Termination of Work on Failure to Pay Wages

- If the contracting agency finds that any laborer or mechanic employed on the job site by the contractor or any subcontractor has not been paid prevailing wages or overtime, the contracting agency may, by written notice to the contractor, terminate the contractor's or subcontractor's right to proceed with the work or with the part of the work in which the required wages or overtime compensation have not been paid. The contracting agency may complete this work by contract or otherwise, and the contractor or contractor's sureties shall be liable to the contracting agency for any excess costs incurred. [§104-4, HRS]

## Apprentices

- Apprentice wage rates apply to contractors who are a party to a bona fide apprenticeship program which has been registered with the DLIR. In order to be paid apprentice rates, apprentices must be parties to an agreement either registered with or recognized as a USDOL nationally approved apprenticeship program by the DLIR, Workforce Development Division, (808) 586-8877, and the apprentice must be individually registered by name with the DLIR. [§12-22-6(1) and (2), HAR]
- The number of apprentices on any public work in relation to the number of journeyworkers in the same craft classification as the apprentices employed by the same employer on the same public work may not exceed the ratio allowed under the apprenticeship standards registered with or recognized by the DLIR. A registered or recognized apprentice receiving the journeyworker rate will not be considered a journeyworker for the purpose of meeting the ratio requirement. [§12-22-6(3), HAR]

## Enforcement

- To ensure compliance with the law, DLIR and the contracting agency will conduct investigations of contractors and subcontractors. If a contractor or subcontractor violates the law, the penalties are: [§104-24, HRS]
  - First Violation Equal to 25% of back wages found due or \$250 per offense up to \$2,500, whichever is greater.
  - Second Violation Equal to amount of back wages found due or \$500 for each offense up to \$5,000, whichever is greater.
  - Third Violation Equal to two times the amount of back wages found due or \$1,000 for each offense up to \$10,000, whichever is greater; and  
**Suspension** from doing any new work on any public work of a governmental contracting agency for three years.
- A violation would be deemed a second violation if it occurs within two years of the **first notification of violation**, and a third violation if it occurs within three years of **the second notification of violation**. [§104-24, HRS; §12-22-25(b), HAR]
- **Suspension:** For a first or second violation, the department shall immediately suspend a contractor who fails to pay wages or penalties until all wages and penalties are paid in full. For a third violation, the department shall penalize and suspend the contractor as described above, **except that if the contractor continues to violate the law, then the department shall immediately suspend the contractor for a mandatory three years. The contractor shall remain suspended until all wages and penalties are paid in full.** [§§104-24, 104-25, HRS]
- **Suspension:** Any contractor who fails to make payroll records accessible or provide requested information within 10 days, or fails to keep or falsifies any required record, shall be assessed a penalty including suspension as provided in Section 104-22(b) and 104-25(a)(3), HRS. [§104-3(c), HRS; §12-22-26, HAR]
- If any contractor interferes with or delays any investigation, the contracting agency shall withhold further payments until the delay has ceased. Interference or delay includes failure to provide requested records or information within ten days, failure to allow employees to be interviewed during working hours on the job, and falsification of payroll records. The department shall assess a penalty of \$10,000 per project, and \$1,000 per day thereafter, for interference or delay. [§104-22(b), HRS; §12-22-26, HAR]
- Failure by the contracting agency to include in the provisions of the contract or specifications the requirements of Chapter 104, HRS, relating to coverage and the payment of prevailing wages and overtime, is not a defense of the contractor or subcontractor for noncompliance with the requirements of this chapter. [§104-2(f), HRS]

**For additional information, visit the department's website at <http://labor.hawaii.gov/wsd> or contact any of the following DLIR offices:**



Oahu (Wage Standards Division).....(808) 586-8777  
Hawaii Island .....(808) 974-6464  
Maui and Kauai .....(808) 243-5322

STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
AIRPORTS

PROPOSAL

PROPOSAL TO THE STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
AIRPORTS

PROJECT: LIGHTNING WARNING SYSTEM  
DANIEL K. INOUE INTERNATIONAL AIRPORT  
HONOLULU, OAHU, HAWAII

PROJECT NO.: CO1335-53

CONTRACT TIME: All work under this Contract shall be completed within  
THREE HUNDRED SIXTY-FIVE (365) CALENDAR  
DAYS from the date indicated in the Notice to Proceed  
from the State.

LIQUIDATED DAMAGES: TWO HUNDRED FIFTY DOLLARS (\$250.00) for each  
and every calendar day for failure to complete the project in  
the time stated above.

ELECTRONIC SUBMITTAL: The bidder shall submit the proposal in HiePRO. The  
proposal shall be UPLOADED to HiePRO prior to the bid  
opening date and time. See SPECIAL PROVISIONS – 2.8  
PREPARATION AND DELIVERY OF BID – for  
additional information.

PROJECT MANAGER: Shaun Yamaki  
Department of Transportation, Airports  
400 Rodgers Blvd., Suite 700  
Honolulu, Hawaii 96819  
808) 838-8713

Director of Transportation  
869 Punchbowl Street  
Honolulu, Hawaii 96813

Dear Sir:

The undersigned Bidder declares the following:

1. It has not, either directly or indirectly, entered into any agreement, participated in any collusion, or otherwise taken any action in restraint of free competitive bidding in connection with this proposal.
2. It has not been assisted or represented on this matter by any individual who has, in a State capacity, been involved in the subject matter of this contract within the past two years.
3. It has not and will not, either directly or indirectly offered or given a gratuity (i.e. an entertainment or gift) to any State or County employee to obtain a contract or favorable treatment under a contract.

The undersigned Bidder further agrees to the following:

1. If this proposal is accepted, it shall execute a contract with the Department to provide all necessary labor, machinery, tools, equipment, apparatus and any other means of construction, to do all the work and to furnish all the materials specified in the contract in the manner and within the time therein prescribed in the contract, and that it shall accept in full payment therefore the sum of the unit and/or lump sum prices as set forth in the attached proposal schedule for the actual quantities of work performed and materials furnished and furnish satisfactory security in accordance with Section 103D-324, Hawaii Revised Statutes, within 10 days after the award of the contract or within such time as the Director of Transportation may allow after the undersigned has received the contract documents for execution, and is fully aware that non-compliance with the aforementioned terms will result in the forfeiture of the full amount of the bid guarantee required under Section 103D-323, Hawaii Revised Statutes.
2. That the quantities given in the attached proposal schedule are approximate only and are intended principally to serve as a guide in determining and comparing the bids.
3. That the Department does not either expressly or by implication, agree that the actual amount of work will correspond therewith, but reserves the right to increase or decrease the amount of any class or portion of the work, or to omit portions of the work, as may be deemed necessary or advisable by the Director of Transportation, and that all increased or decreased quantities of work shall be performed at the unit prices set forth in the attached proposal schedule except as provided for in the specifications.

4. In case of a discrepancy between unit prices and the totals in said Proposal Schedule, the unit prices shall prevail.
5. Agrees to begin work within 10 working days after the date of notification to commence with the work, which date is in the notice to proceed, and shall finish the entire project within the time prescribed.
6. The Director of Transportation reserves the right to reject any or all bids and to waive any defects when in the Director's opinion such rejections or waiver will be for the best interest of the public.

The Bidder acknowledges receipt of and certifies that it has completely examined the following listed items: the Hawaii Department of Transportation, Air and Water Transportation Facilities Division General Provisions for Construction Projects dated 2016, the Notice to Bidders, the Special Provisions, if any, the Technical Provisions, the Proposal, the Contract and Bond Forms, and the Project Plans.

In accordance with Section 103D-323, Hawaii Revised Statutes, this proposal is accompanied with a bid security in the amount of 5% of the total amount bid, in the form checked below. (Check applicable bid security submitted with bid.)

Surety Bid Bond (Use standard form),

Cash,

Cashier's Check,

Certified Check, or

\_\_\_\_\_  
(Fill in other acceptable security.)

The undersigned Bidder acknowledges receipt of any addendum issued by the Department by recording in the space below the date of receipt.

Addendum No. 1 \_\_\_\_\_

Addendum No. 3 \_\_\_\_\_

Addendum No. 2 \_\_\_\_\_

Addendum No. 4 \_\_\_\_\_

In accordance with Section 103D-302, Hawaii Revised Statutes, the undersigned as Bidder, has listed the name of each person or firm, who will be engaged by the Bidder on the project as a Subcontractor or Joint Contractor and the nature of work to be done by each. The Bidder must adequately and unambiguously disclose the unique nature and scope of the work to be performed by each Subcontractor or Joint Contractor. For each listed firm, the Bidder declares the respective firm is a Subcontractor or Joint Contractor and is subject to evaluation as a Subcontractor or Joint Contractor. It is understood that failure to comply with the aforementioned requirements may be cause for rejection of the bid submitted.

<u>Name of Subcontractor</u>	<u>Nature and Scope of Work</u>
1. _____	_____
2. _____	_____
3. _____	_____
4. _____	_____
5. _____	_____
6. _____	_____
7. _____	_____
8. _____	_____

<u>Name of Joint Contractor</u>	<u>Nature and Scope of Work</u>
1. _____	_____
2. _____	_____
3. _____	_____

("None" or if left blank indicates no Subcontractor or Joint Contractor; if more space is needed, attach additional sheets.)

The undersigned hereby certifies that the bid prices contained in the attached proposal schedule have been carefully checked and are submitted as correct and final.

This declaration is made with the understanding that the undersigned is subject to the penalty of perjury under the laws of the United States and is in violation of the Hawaii Penal Code, Section 710-1063, unsworn falsification to authorities, of the Hawaii Revised Statutes, for knowingly rendering a false declaration.

\_\_\_\_\_  
Bidder (Company Name)

By \_\_\_\_\_  
Authorized Signature

\_\_\_\_\_  
Print Name and Title

\_\_\_\_\_  
Business Address

\_\_\_\_\_  
Business Telephone                      Email

\_\_\_\_\_  
Date

\_\_\_\_\_  
Contact Person (If different from above)

Phone: \_\_\_\_\_ Email: \_\_\_\_\_

NOTE:

If Bidder is a CORPORATION, the legal name of the corporation shall be set forth above, the corporate seal affixed, together with the signature(s) of the officer(s) authorized to sign contracts for the corporation. Please attach to this page current (not more than six months old) evidence of the authority of the officer(s) to sign for the corporation.

If Bidder is a PARTNERSHIP, the true name of the partnership shall be set forth above, with the signature(s) of the general partner(s). Please attach to this page current (not more than six months old) evidence of the authority of the partner authorized to sign for the partnership.

If Bidder is an INDIVIDUAL, the bidder's signature shall be placed above.

If signature is by an agent, other than an officer of a corporation or a partner of a partnership, a POWER OF ATTORNEY must be on file with the Department before opening bids or submitted with the bid. Otherwise, the Department may reject the bid as irregular and unauthorized.

## PREFERENCES

Bidders agree that preferences shall be taken into consideration to determine the low bidder in accordance with said Sections and the rules promulgated, however, the award of contract will be in the amount of the bid offered exclusive of any preferences.

### **A. HAWAII PRODUCTS PREFERENCE**

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

### **B. APPRENTICESHIP PROGRAMS PREFERENCE**

In accordance with ACT 17, SLH 2009 – Apprenticeship Program, a 5% bid adjustment for bidders that are parties to apprenticeship agreements pursuant to Hawaii Revised Statutes (HRS) Section 103-55.6 may be applied to the bidder's price for evaluation purposes.

Any bidder seeking this preference must be a party to an apprenticeship agreement registered with the Department of Labor and Industrial Relations at the time the offer is made for each apprenticeable trade the bidder will employ to construct the public works projects for which the offer is being made.

The bidder is responsible for complying with all submission requirements for registration of its apprenticeship program before requesting the preference.

**( ) Yes, I wish to be considered for the Apprenticeship Programs Preference. I have included Certification Form(s) 1 with my bid.**

### **C. RECYCLED PRODUCT PREFERENCE**

Recycled product preference shall not apply to this proposal.

**PROPOSAL SCHEDULE**

**LIGHTNING WARNING SYSTEM  
DANIEL K. INOUE INTERNATIONAL AIRPORT  
HONOLULU, OAHU, HAWAII  
STATE PROJECT NO. CO1335-53**

Item No.	Description	Approx Qty	Unit Price	Total
<b>A <u>DIVISION 1 - GENERAL REQUIREMENTS</u></b>				
01010.1	Temporary Traffic Controls & Signs	Allowance	Allowance	\$ 30,000.00
01010.2	Unforeseen Conditions	Allowance	Allowance	\$ 50,000.00
01524.1	Construction Waste Management	L.S.	L.S.	\$ _____
01561.1	Construction Site Runoff Control Program	L.S.	L.S.	\$ _____
01562.1	Management of Contaminated Medias	Allowance	Allowance	\$ 40,000.00
01565.1	Security Measures	Allowance	Allowance	\$ 50,000.00
01700.1	Moblization (Not to exceed 6% of sum of all items, excluding this item, all allowances and force account items)	L.S.	L.S.	\$ _____
<b>B <u>DIVISION 16 - ELECTRICAL</u></b>				
16050.1	Furnish and Install Lightning Warning System	L.S.	L.S.	\$ _____
<b>TOTAL AMOUNT FOR COMPARISON OF BIDS</b>				\$ _____

The prices bid herein shall include all labor, materials, equipment, and incidentals necessary to construct all items in place, including installation and testing of equipment, complete and ready for operation, all in accordance with the plans and specifications.

**Notes:**

1. Bids shall include all Federal, State, County and other applicable taxes.
2. The TOTAL AMOUNT FOR COMPARISON OF BIDS will be used to determine the lowest responsible bidder.
3. Bidders must complete all unit prices and amounts. Failure to do so may be grounds for rejection of bid.
4. The State reserves the right to reject any or all Proposals and to waive any defects in the best interest of the State.
5. The bidder's attention is directed to Section 2.11 – BID SECURITY and Section 2.24 –

## **PROPOSAL SCHEDULE**

### **LIGHTNING WARNING SYSTEM DANIEL K. INOUE INTERNATIONAL AIRPORT HONOLULU, OAHU, HAWAII STATE PROJECT NO. CO1335-53**

REQUIREMENTS OF CONTRACT BONDS of the “General Provisions” as amended by the Special Provisions.

6. If the lowest TOTAL AMOUNT FOR COMPARISON OF BIDS is less than, or approximately equal to the funds available for this project, an award will be made to the lowest responsible bidder.
7. If the TOTAL AMOUNT FOR COMPARISON OF BIDS exceeds the funds available, the State reserves the right to negotiate with the lowest responsible bidder as permitted under Section 103D-302, Hawaii Revised Statutes, to further reduce the scope of work and award a contract thereafter.
8. The bidder shall submit the proposal in HlePRO. The proposal shall be UPLOADED to HlePRO prior to the bid opening date and time. Proposals received after said due date and time shall not be considered. Original (wet ink) proposal documents are not required to be submitted. The award will be made based on proposals uploaded in HlePRO. Any and all other additional documents explicitly designated and labeled as CONFIDENTIAL OR PROPRIETARY shall be UPLOADED SEPARATELY to HlePRO. If there is a conflict between this specification and its HlePRO solicitation, the specifications shall govern and control unless otherwise specified.

# SURETY BID BOND

Bond No. \_\_\_\_\_

KNOW TO ALL BY THESE PRESENTS:

That we, \_\_\_\_\_  
(full name or legal title of offeror)

as Offeror, hereinafter called the Principal, and

\_\_\_\_\_  
(name of bonding company)

as Surety, hereinafter called Surety, a corporation authorized to transact business as a Surety in the State of Hawaii, are held and firmly bound unto

\_\_\_\_\_  
(State/county entity)

as Owner, hereinafter called Owner, in the penal sum of

\_\_\_\_\_  
(required amount of bid security)

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

**WHEREAS:**

The Principal has submitted an offer for

\_\_\_\_\_  
(project by number and brief description)

**NOW, THEREFORE:**

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

Signed this \_\_\_\_\_ day of \_\_\_\_\_, \_\_\_\_\_

\_\_\_\_\_  
Name of Principal (Offeror) (Seal)

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Title

\_\_\_\_\_  
Name of Surety (Seal)

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Title

STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
AIRPORTS

FORMS

**PERFORMANCE BOND (SURETY)**  
(6/21/07)

**KNOW TO ALL BY THESE PRESENTS:**

That \_\_\_\_\_,  
*(Full Legal Name and Street Address of Contractor)*

as Contractor, hereinafter called Principal, and \_\_\_\_\_  
\_\_\_\_\_  
*(Name and Street Address of Bonding Company)*

as Surety, hereinafter called Surety, a corporation(s) authorized to transact business as a  
surety in the State of Hawaii, are held and firmly bound unto the \_\_\_\_\_,  
*(State/County Entity)*

its successors and assigns, hereinafter called Obligee, in the amount of \_\_\_\_\_

\_\_\_\_\_ DOLLARS (\$ \_\_\_\_\_), to which payment Principal and Surety bind themselves,  
their heirs, executors, administrators, successors and assigns, jointly and severally, firmly by  
these presents.

**WHEREAS**, the above-bound Principal has signed a Contract with Obligee on  
\_\_\_\_\_, for the following project: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

hereinafter called Contract, which Contract is incorporated herein by reference and made a part  
hereof.

**NOW THEREFORE**, the condition of this obligation is such that:

If the Principal shall promptly and faithfully perform, and fully complete the Contract in  
strict accordance with the terms of the Contract as said Contract may be modified or amended  
from time to time; then this obligation shall be void; otherwise to remain in full force and effect.

Surety to this Bond hereby stipulates and agrees that no changes, extensions of time, alterations, or additions to the terms of the Contract, including the work to be performed thereunder, and the specifications or drawings accompanying same, shall in any way affect its obligation on this bond, and it does hereby waive notice of any such changes, extensions of time, alterations, or additions, and agrees that they shall become part of the Contract.

In the event of Default by the Principal, of the obligations under the Contract, then after written Notice of Default from the Oblige to the Surety and the Principal and subject to the limitation of the penal sum of this bond, Surety shall remedy the Default, or take over the work to be performed under the Contract and complete such work, or pay moneys to the Oblige in satisfaction of the surety's performance obligation on this bond.

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

(Seal)

\_\_\_\_\_  
Name of Principal (Contractor)

\*

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Title

(Seal)

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

\*

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Title

**\*ALL SIGNATURES MUST BE ACKNOWLEDGED  
BY A NOTARY PUBLIC**

# PERFORMANCE BOND

**KNOW TO ALL BY THESE PRESENTS:**

That we, \_\_\_\_\_  
*(full legal name and street address of Contractor)*

as Contractor, hereinafter called Contractor, is held and firmly bound unto the

\_\_\_\_\_ *(State/County entity)*

its successors and assigns, as Obligee, hereinafter called Obligee, in the amount

\_\_\_\_\_ DOLLARS \$ \_\_\_\_\_),  
*(Dollar amount of Contract)*

lawful money of the United States of America, for the payment of which to the said Obligee, well and truly to be made, Contractor binds itself, its heir, executors, administrators, successors and assigns, firmly by these presents. Said amount is evidenced by:

- Legal Tender;**
- Share Certificate** unconditionally assigned to or made payable at sight to \_\_\_\_\_  
Description: \_\_\_\_\_;
- Certificate of Deposit**, No. \_\_\_\_\_, dated \_\_\_\_\_ issued by \_\_\_\_\_ drawn on \_\_\_\_\_ a bank, savings institution or credit union insured by the Federal Deposit Insurance Corporation or the National Credit Union Administration, payable at sight or unconditionally assigned to \_\_\_\_\_;
- Cashier's Check** No. \_\_\_\_\_, dated \_\_\_\_\_ drawn on \_\_\_\_\_ a bank, savings institution or credit union insured by the Federal Deposit Insurance Corporation or the National Credit Union Administration, payable at sight or unconditionally assigned to \_\_\_\_\_;
- Teller's Check** No. \_\_\_\_\_, dated \_\_\_\_\_ drawn on \_\_\_\_\_ a bank, savings institution or credit union insured by the Federal Deposit Insurance Corporation or the National Credit Union Administration, payable at sight or unconditionally assigned to \_\_\_\_\_;
- Treasurer's Check** No. \_\_\_\_\_, dated \_\_\_\_\_ drawn on \_\_\_\_\_ a bank, savings institution or credit union insured by the Federal Deposit Insurance Corporation or the National Credit Union Administration, payable at sight or unconditionally assigned to \_\_\_\_\_;
- Official Check** No. \_\_\_\_\_, dated \_\_\_\_\_ drawn on \_\_\_\_\_ a bank, savings institution or credit union insured by the Federal Deposit Insurance Corporation or the National Credit Union Administration, payable at sight or unconditionally assigned to \_\_\_\_\_;
- Certified Check** No. \_\_\_\_\_, dated \_\_\_\_\_ accepted by a bank, savings institution or credit union insured by the Federal Deposit Insurance Corporation or the National Credit Union Administration, payable at sight or unconditionally assigned to \_\_\_\_\_;

**WHEREAS:**

The Contractor has by written agreement dated \_\_\_\_\_ entered into a contract with Obligee for the following Project: \_\_\_\_\_

hereinafter called Contract, which Contract is incorporated herein by reference and made a part hereof.

**NOW THEREFORE,**

The Condition of this obligation is such that, if Contractor shall promptly and faithfully perform the Contract in accordance with, in all respects, the stipulations, agreements, covenants and conditions of the Contract as it now exists or may be modified according to its terms, and shall deliver the Project to the Obligee, or to its successors or assigns, fully completed as in the Contract specified and free from all liens and claims and without further cost, expense or charge to the Obligee, its officers, agents, successors or assigns, free and harmless from all suits or actions of every nature and kind which may be brought for or on account of any injury or damage, direct or indirect, arising or growing out of the doing of said work or the repair or maintenance thereof or the manner of doing the same or the neglect of the Contractor or its agents or servants or the improper performance of the Contract by the Contractor or its agents or servants or from any other cause, then this obligation shall be void; otherwise it shall be and remain in full force and effect.

**AND IT IS HEREBY STIPULATED AND AGREED** that suit on this bond may be brought before a court of competent jurisdiction without a jury, and that the sum or sums specified in the said Contract as liquidated damages, if any, shall be forfeited to the Obligee, its successors or assigns, in the event of a breach of any, or all, or any part of, covenants, agreements, conditions, or stipulations contained in the Contract or in this bond in accordance with the terms thereof.

The amount of this bond may be reduced by and to the extent of any payment or payments made in good faith hereunder.

Signed and sealed this \_\_\_\_\_ day of \_\_\_\_\_, \_\_\_\_\_.

(Seal) \_\_\_\_\_

Name of Contractor

\_\_\_\_\_  
Signature\*

\_\_\_\_\_  
Title

\*ALL SIGNATURES MUST BE ACKNOWLEDGED BY A NOTARY PUBLIC

**LABOR AND MATERIAL PAYMENT BOND (SURETY)**  
(6/21/07)

**KNOW TO ALL BY THESE PRESENTS:**

That \_\_\_\_\_,  
*(Full Legal Name and Street Address of Contractor)*

as Contractor, hereinafter called Principal, and \_\_\_\_\_  
\_\_\_\_\_  
*(Name and Street Address of Bonding Company)*

as Surety, hereinafter called Surety, a corporation(s) authorized to transact business as a surety in the State of Hawaii, are held and firmly bound unto the \_\_\_\_\_,  
*(State/County Entity)*

its successors and assigns, hereinafter called Oblige, in the amount of \_\_\_\_\_

\_\_\_\_\_ Dollars (\$\_\_\_\_\_), to which payment Principal and Surety bind themselves, their heirs, executors, administrators, successors and assigns, jointly and severally, firmly by these presents.

**WHEREAS**, the above-bound Principal has signed Contract with the Oblige on \_\_\_\_\_ for the following project: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

hereinafter called Contract, which Contract is incorporated herein by reference and made a part hereof.

**NOW THEREFORE**, the condition of this obligation is such that if the Principal shall promptly make payment to any Claimant, as hereinafter defined, for all labor and materials supplied to the Principal for use in the performance of the Contract, then this obligation shall be void; otherwise to remain in full force and effect.

1. Surety to this Bond hereby stipulates and agrees that no changes, extensions of time, alterations, or additions to the terms of the Contract, including the work to be performed thereunder, and the specifications or drawings accompanying same, shall in any way affect its obligation on this bond, and it does hereby waive notice of any such changes, extensions of time, alterations, or additions, and agrees that they shall become part of the Contract.

2. A "Claimant" shall be defined herein as any person who has furnished labor or materials to the Principal for the work provided in the Contract.

Every Claimant who has not been paid amounts due for labor and materials furnished for work provided in the Contract may institute an action against the Principal and its Surety on this bond at the time and in the manner prescribed in Section 103D-324, Hawaii Revised Statutes, and have the rights and claims adjudicated in the action, and judgment rendered thereon; subject to the Obligee's priority on this bond. If the full amount of the liability of the Surety on this bond is insufficient to pay the full amount of the claims, then after paying the full amount due the Obligee, the remainder shall be distributed pro rata among the claimants.

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

(Seal)

\_\_\_\_\_  
Name of Principal (Contractor)

\*

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Title

(Seal)

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

\*

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Title

**\*ALL SIGNATURES MUST BE ACKNOWLEDGED  
BY A NOTARY PUBLIC**

# LABOR AND MATERIAL PAYMENT BOND

KNOW TO ALL BY THESE PRESENTS:

That we, \_\_\_\_\_  
(full legal name and street address of Contractor)

as Contractor, hereinafter called Contractor, is held and firmly bound unto \_\_\_\_\_  
(State/County entity)

its successors and assigns, as Obligee, hereinafter called Obligee, in the amount  
\_\_\_\_\_ DOLLARS (\$ \_\_\_\_\_ )  
(Dollar amount of Contract)

lawful money of the United States of America, for the payment of which to the said Obligee, well and truly to be made, Contractor binds itself, its heir, executors, administrators, successors and assigns, firmly by these presents. Said amount is evidenced by:

- Legal Tender;
- Share Certificate unconditionally assigned to or made payable at sight to \_\_\_\_\_  
Description: \_\_\_\_\_
- Certificate of Deposit, No. \_\_\_\_\_, dated \_\_\_\_\_ issued by \_\_\_\_\_ drawn on \_\_\_\_\_ a bank, savings institution or credit union insured by the Federal Deposit Insurance Corporation or the National Credit Union Administration, payable at sight or unconditionally assigned to \_\_\_\_\_;
- Cashier's Check No. \_\_\_\_\_, dated \_\_\_\_\_ drawn on \_\_\_\_\_ a bank, savings institution or credit union insured by the Federal Deposit Insurance Corporation or the National Credit Union Administration, payable at sight or unconditionally assigned to \_\_\_\_\_;
- Teller's Check No. \_\_\_\_\_, dated \_\_\_\_\_ drawn on \_\_\_\_\_ a bank, savings institution or credit union insured by the Federal Deposit Insurance Corporation or the National Credit Union Administration, payable at sight or unconditionally assigned to \_\_\_\_\_;
- Treasurer's Check No. \_\_\_\_\_, dated \_\_\_\_\_ drawn on \_\_\_\_\_ a bank, savings institution or credit union insured by the Federal Deposit Insurance Corporation or the National Credit Union Administration, payable at sight or unconditionally assigned to \_\_\_\_\_;
- Official Check No. \_\_\_\_\_, dated \_\_\_\_\_ drawn on \_\_\_\_\_ a bank, savings institution or credit union insured by the Federal Deposit Insurance Corporation or the National Credit Union Administration, payable at sight or unconditionally assigned to \_\_\_\_\_;
- Certified Check No. \_\_\_\_\_, dated \_\_\_\_\_ accepted by a bank, savings institution or credit union insured by the Federal Deposit Insurance Corporation or the National Credit Union Administration, payable at sight or unconditionally assigned to \_\_\_\_\_;

**WHEREAS:**

The Contractor has by written agreement dated \_\_\_\_\_ entered into a contract with Obligee for the following Project: \_\_\_\_\_

hereinafter called Contract, which Contract is incorporated herein by reference and made a part hereof.

**NOW THEREFORE,**

The condition of this obligation is such that, if Contractor shall promptly and faithfully perform the Contract in accordance with, in all respects, the stipulations, agreements, covenants and conditions of the Contract as it now exists or may be modified according to its terms, free from all liens and claims and without further cost, expense or charge to the Obligee, its officers, agents, successors or assigns, free and harmless from all suits or actions of every nature and kind which may be brought for or on account of any injury or damage, direct or indirect, arising or growing out of the doing of said work or the repair or maintenance thereof or the manner of doing the same or the neglect of the Contractor or its agents or servants or the improper performance of the Contract by the Contractor or its agents or servants or from any other cause, then this obligation shall be void; otherwise it shall be and remain in full force and effect.

**AND IT IS HEREBY STIPULATED AND AGREED** that suit on this bond may be brought before a court of competent jurisdiction without a jury, and that the sum or sums specified in the said Contract as liquidated damages, if any, shall be forfeited to the Obligee, its successors or assigns, in the event of a breach of any, or all, or any part of, covenants, agreements, conditions, or stipulations contained in the Contract or in this bond in accordance with the terms thereof.

**AND IT IS HEREBY STIPULATED AND AGREED** that this bond shall inure to the benefit of any and all persons entitled to file claims for labor performed or materials furnished in said work so as to give any and all such persons a right of action as contemplated by Sections 103D-324(d) and 103D-324(e), Hawaii Revised Statutes.

The amount of this bond may be reduced by and to the extent of any payment or payments made in good faith hereunder, inclusive of the payments of mechanics' liens which may be filed of record against the Project, whether or not claim for the amount of such lien be presented under and against this bond..

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

(Seal) \_\_\_\_\_

Name of Contractor

\_\_\_\_\_  
Signature\*

\_\_\_\_\_  
Title

ALL SIGNATURES MUST BE ACKNOWLEDGED BY A NOTARY PUBLIC

CHAPTER 104, HRS COMPLIANCE CERTIFICATE

The undersigned bidder does hereby certify to the following:

1. Individuals engaged in the performance of the contract on the job site shall be paid:
  - A. Not less than the wages that the director of labor and industrial relations shall have determined to be prevailing for corresponding classes of laborers and mechanics employed on public works projects; and
  - B. Overtime compensation at one and one-half times the basic hourly rate plus fringe benefits for hours worked on Saturday, Sunday, or a legal holiday of the State or in excess of eight hours on any other day.
2. All applicable laws of the federal and state governments relating to workers' compensation, unemployment compensation, payment of wages, and safety shall be fully complied with.

DATED at Honolulu, Hawaii, this \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_.

\_\_\_\_\_  
«CONTRACTOR»  
Name of Corporation, Partnership, or Individual

\_\_\_\_\_  
Signature and Title of Signer

Notary Seal  
NOTARY ACKNOWLEDGEMENT

Subscribed and sworn before me this \_\_\_\_\_ day of \_\_\_\_\_  
Notary signature \_\_\_\_\_  
Notary public, State of \_\_\_\_\_  
My Commission Expires: \_\_\_\_\_

Notary Seal  
NOTARY CERTIFICATION

Doc. Date: \_\_\_\_\_ #Pages: \_\_\_\_\_  
Notary Name: \_\_\_\_\_ Circuit \_\_\_\_\_  
Doc. Description: \_\_\_\_\_  
\_\_\_\_\_  
Notary signature \_\_\_\_\_  
Date \_\_\_\_\_

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

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

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

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

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

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

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

*CORPORATE SEAL*

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

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

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

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

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

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

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

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

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

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

NOTARY CERTIFICATION

## **PROVISIONS TO BE INCLUDED IN CONSTRUCTION PROCUREMENT SOLICITATIONS**

1. Definitions for terms used in HRS Chapter 103B as amended by Act 192, SLH 2011:
  - a. "Contract" means contracts for construction under 103D, HRS.
  - b. "Contractor" has the same meaning as in Section 103D-104, HRS, provided that "contractor" includes a subcontractor where applicable.
  - c. "Construction" has the same meaning as in Section 103D-104, HRS.
  - d. "General Contractor" means any person having a construction contract with a governmental body.
  - e. "Procurement Officer" has the same meaning as in Section 103D-104, HRS.
  - f. "Resident" means a person who is physically present in the State of Hawai'i at the time the person claims to have established the person's domicile in the State of Hawai'i and shows the person's intent is to make Hawai'i the person's primary residence.
  - g. "Shortage trade" means a construction trade in which there is a shortage of Hawai'i residents qualified to work in the trade as determined by the Department of Labor and Industrial Relations.
  
2. HRS Chapter 103B as amended by Act 192, SLH 2011--Employment of State Residents Requirements:
  - a. A Contractor awarded a contract shall ensure that Hawai'i residents comprise not less than 80% of the workforce employed to perform the contract work on the project. The 80% requirement shall be determined by dividing the total number of hours worked on the contract by Hawai'i residents, by the total number of hours worked on the contract by all employees of the Contractor in the performance of the contract. The hours worked by any Subcontractor of the Contractor shall count towards the calculation for this section. The hours worked by employees within shortage trades, as determined by the Department of Labor and Industrial Relations (DLIR), shall not be included in the calculation for this section.

- b. Prior to award of a contract, an Offeror/Bidder may withdraw an offer/bid without penalty if the Offeror/Bidder finds that it is unable to comply with HRS Chapter 103B as amended by Act 192, SLH 2011.
- c. Prior to starting any construction work, the Contractor shall submit the subcontract dollar amount for each of its Subcontractors.
- d. The requirements of this section shall apply to any subcontract of \$50,000 or more in connection with the Contractor; that is, such Subcontractors must also ensure that Hawai'i residents comprise not less than 80% of the Subcontractor's workforce used to perform the subcontract.
- e. The Contractor and any Subcontractor whose subcontract is \$50,000 or more shall comply with the requirements of HRS Chapter 103B as amended by Act 192, SLH 2011.
  - 1) Certification of compliance shall be made in writing under oath by an officer of the General Contractor and applicable Subcontractors and submitted with the final payment request.
  - 2) The certification of compliance shall be made under oath by an officer of the company by completing a "Certification of Compliance for Employment of State Residents" form and executing the Certificate before a licensed notary public.
  - 3) In addition to the certification of compliance as indicated above, the Contractor and Subcontractors shall maintain records such as certified payrolls for laborers and mechanics who performed work at the site and time sheets for all other employees who performed work on the project. These records shall include the names, addresses and number of hours worked on the project by all employees of the Contractor and Subcontractor who performed work on the project to validate compliance with HRS Chapter 103B as amended by Act 192, SLH 2011. The Contractor and Subcontractors shall retain these records and provide access to the State for a minimum period of four (4) years after the final payment, except that if any litigation, claim, negotiation, investigation, audit or other action involving the records has been started before the expiration of the four-year period, the Contractor and Subcontractors shall retain the records until completion of the action and resolution of all issues that arise from it, or until the end of the four-year period, whichever occurs later. Furthermore, it shall be the Contractor's responsibility to enforce compliance with this provision by any Subcontractor.

- f. A General Contractor or applicable Subcontractor who fails to comply with this section shall be subject to any of the following sanctions:
- 1) With respect to the General Contractor, withholding of payment on the contract until the Contractor or its Subcontractor complies with HRS Chapter 103B as amended by Act 192, SLH 2011.
  - 2) Proceedings for debarment or suspension of the Contractor or Subcontractor under Hawai'i Revised Statutes §103D-702.
3. Conflict with Federal Law: This section shall not apply if the application of this section is in conflict with any federal law, or if the application of this section will disqualify the State from receiving Federal funds or aid.