STATE OF HAWAII

DEPARTMENT OF TRANSPORTATION

AIRPORTS

# SPECIAL PROVISIONS, SPECIFICATIONS,

# PROPOSAL FOR

# TERMINAL 2 TSA CHECKPOINT 3 INTERIOR QUEUE INSTALL NEW AC

# DANIEL K. INOUYE INTERNATIONAL AIRPORT

# HONOLULU, OAHU, HAWAII

STATE PROJECT NO. CO1451-43

2024

# NOTICE TO BIDDERS

Hawaii Revised Statutes (HRS),
Chapter 103D

The receiving of bids for TERMINAL 2 TSA CHECKPOINT 3 INTERIOR QUEUE INSTALL NEW AC, DANIEL K. INOUYE INTERNATIONAL AIRPORT, HONOLULU, OAHU, HAWAII, STATE PROJECT NO. CO1451-43, will begin as of the HIePRO Release Date. Bidders shall register and submit complete bids through HIePRO only. Refer to the following HIePRO link for important information on Vendor Registration: https://hiepro.ehawaii.gov/welcome.html.

The solicitation plans, specifications, proposal, and additional documents designated or incorporated by reference shall be available in HIePRO.

HIePRO OFFER DUE DATE & TIME is June 13, 2024, at 2:00 p.m., Hawaii Standard Time (HST). **Bidders shall submit and upload the complete proposal to HIePRO prior to the offer due date and time. Proposals received after said due date and time shall not be considered. Any additional support documents explicitly designated as confidential and/or proprietary shall be uploaded as a separate file to HIePRO. Bidders shall not include confidential and/or proprietary documents as part of their proposal. The record of each bidder and their respective proposal shall be open to public inspection. FAILURE TO UPLOAD THE PROPOSAL TO HIePRO SHALL BE GROUNDS FOR REJECTION.**

The scope of work consists of installing a new AC system for the interior queue for the Terminal 2 TSA Checkpoint 3 at Daniel K. Inouye International Airport. The estimated cost of construction is between $80,000 and $200,000.

To be eligible for award, bidders shall possess a valid State of Hawaii General Building "B" license **at the time of bidding.**

The Hawaii Department of Transportation, Air and Water Transportation Facilities Division, 2016 GENERAL PROVISIONS FOR CONSTRUCTION PROJECTS, applicable to this project are available on the internet at: http://hidot.hawaii.gov/administration/con/.

A pre-bid conference and site visit is scheduled for May 23, 2024, at 2:00 p.m., HST, at the Airports Division Office, Daniel K. Inouye International Airport, Terminal 1, 7th Floor Conference Room C, 400 Rodgers Boulevard, Suite 700, Honolulu, Hawaii 96819. Persons needing special accommodations at the pre-bid conference due to a disability may contact Ms. Wendy Cheuk, our Airports State Project Manager at (808) 838-8822 or via email at wendy.cheuk@hawaii.gov no later than two working days prior to the scheduled pre-bid conference. All prospective bidders and/or their respective representatives are encouraged to attend, however, attendance is not mandatory. All information presented at the pre-bid conference shall be provided for clarification and information only. Any amendments to the solicitation shall be made by formal addendum and posted in HIePRO.

All Request for Information (RFI) questions and Substitution Requests shall be submitted in HIePRO **no later than May 30, 2024, at 2:00 p.m., HST.** RFI questions received after the stated deadline shall not be addressed. Substitution Requests received after the stated deadline shall not be considered. Verbal RFI(s) shall not receive a response. All responses to RFI questions shall be provided for clarification and information only and issued by formal addendum. Any amendments to the solicitation shall be made by formal addendum and posted in HIePRO.

If there is a conflict between the solicitation and information stated in the pre-bid conference, the meeting minutes, and/or the responses to RFI questions, the solicitation shall govern and control, unless as amended by formal addendum.

Apprenticeship Preference. A five percent bid adjustment for bidders that are party to apprenticeship agreements pursuant to HRS § 103-55.6 is applicable to this project.

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

Campaign contributions by State and County Contractors. Contractors are hereby notified of the applicability of HRS § 11-355 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 HRS § 103D-701 and Hawaii Administrative Rules § 3-126.

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 shall affirmatively ensure that the contract entered into pursuant to this advertisement shall 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 Wendy Cheuk, Project Manager, by phone at (808) 838-8822, or by email at wendy.cheuk@hawaii.gov.

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

EDWIN H. SNIFFEN
Director of Transportation

HIePRO RELEASE DATE: May 15, 2024

TABLE OF CONTENTS

FORMS

## 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:

1. 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."

2. 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 BID OPENING is amended as follows:

1. 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 fourteen (14) calendar days before the bid opening date.

2. 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:

"**Bidders shall submit and upload the complete proposal to HIePRO prior to the bid opening date and time. Proposals received after said due date and time shall not be considered. Any additional support documents explicitly designated as confidential and/or proprietary shall be uploaded as a separate file to HIePRO. Bidders shall not include confidential and/or proprietary documents with the proposal. The record of each bidder and respective bid shall be open to public inspection.** Original

(wet ink, hard copy) proposal documents are not required to be submitted. **Contract award shall be based on evaluation of proposals submitted and uploaded to HIePRO.**

**FAILURE TO UPLOAD THE COMPLETE PROPOSAL TO HIePRO SHALL BE GROUNDS FOR REJECTION OF THE BID.**

If there is a conflict between the specification document and the HIePRO solicitation, the specifications shall govern and control, unless otherwise specified."

2.11 BID SECURITY is amended by deleting (a) and replacing it with:

"(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 surety bid bond shall be included with its bid submitted and uploaded to HIePRO.**"

2.12 PRE-OPENING MODIFICATION OR WITHDRAWAL OF BIDS is amended by deleting 2.12 PRE-OPENING MODIFICATION OR WITHDRAWAL OF BIDS in its entirety and replacing with the following:

"2.12 PRE-OPENING MODIFICATION OF WITHDRAWAL OF BIDS. Bids may be modified or withdrawn prior to the bid opening date and time. Withdrawal or revision of

proposal shall be completed, and submitted and uploaded to HIePRO prior to the bid opening date and time."

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 , 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 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 .

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 .

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
    c. 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 , 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 I - 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 this Section.

1.02 SUMMARY

A. Section Includes:

1. Location of the work
2. Hours of work
3. Safety
4. Operation of airport facilities during construction
5. Disposal of excess soil materials
6. Construction stakes, lines and grades
7. Special project requirements
8. Scope of Work

1.03 VEHICLE PARKING

Parking passes may be purchased at a monthly rate of $175.00 plus a one-time fee of $25.00 for parking access card. These passes are subject to approval by the Airport Manager and availability of parking spaces. All costs associated with obtaining parking passes shall be the responsibility of the Contractor.

1.04 PROVISIONS FOR FIELD OFFICE/STORAGE SPACE

Pending the availability of space on airport property, the State will issue Revocable Permit(s) to the Contractor for the use of the space, assessed at a monthly fee of $25 for each Revocable Permit issued. The space(s) may be used for a field office, staging of materials and equipment, vehicle parking or other uses subject to the approval of the State. All spaces shall be subject to the requirements of Section 01561 - CONSTRUCTION SITE POLLUTION CONTROLS.

Since space on airport property is extremely limited, the State does not guarantee that space(s) provided to the Contractor will be in close proximity to the project site. 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.

1.05 LOCATION OF THE WORK

A. The work to be performed under this contract is located at Daniel K. Inouye International Airport in Honolulu, Oahu, Hawaii.

B. Conditions:

1. The Main Terminal and airport roadways shall remain operational at all times. Any damages to existing areas caused by the Contractor shall be repaired by the Contractor at no cost to the State.

2. Upon execution of the contract, the Contractor, at their cost, shall obtain all permits required for this project.

1.06 HOURS OF WORK

A. Work can be performed at the construction site at any time over a 24-hour period without considerable disruption to airport operations or other adjacent tenants. Noise, including demolition work, shall occur from 10:00 p.m. to 6:30 a.m., and water proofing shall be done from 1:30 p.m. to 10:00 p.m. Contractor shall coordinate other work activities with the Engineer for the hours between 6:30 a.m. to 1:30 p.m. Submit a proposed construction schedule to Engineer for review and approval within 14 calendar days prior to start of work. 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 construction management consultant as authorized by the State shall be the Contractor's obligation to pay in accordance with Section 7.6 – “Overtime and Night Payment for State Inspection Services” of the General Provisions of Construction Projects (2016).

B. Contractor shall clean work areas at the end of each working shift. Rubbish, loose materials, etc. shall be disposed of daily. **Tools and equipment shall not be left unattended during work hours.** This includes tools left in unlocked vehicles, in the bed of pickup trucks, or in unlocked job sites. TSA citations may result in fines in excess of $13,000 per violation and the confiscation of AOA badges. Materials shall be safely secured and stored in an area designated by the Airport Manager.

1.07 SAFETY

A. The Contractor shall take the necessary precautions to protect his workers and 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. Barricades and warning signs shall be erected by the Contractor in the work area to properly protect all personnel in the area.

C. During the progress of the work 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.

1.08 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 Contractors expense.

C. Outages for water, power, communications, air conditioning or any other utility, if necessary, shall be kept to a minimum and scheduled for off-peak hours, generally from 12:00 a.m. to 6:00 a.m. 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.

1.09 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. Existing horizontal and vertical survey control points for the project are shown on the plans. The Contractor shall verify the location of all control points prior to the start of construction.

C. The Department will not be responsible for delays in setting stakes and marks.

D. All control points and stakes or marks which the Engineer may set shall be preserved by the Contractor. If such control points, stakes or marks are destroyed or disturbed by the Contractor, the cost of replacing such stakes or marks will be charged against the Contractor and deducted from payments due the Contractor.

E. The Contractor shall be responsible for the placement and preservation of

adequate ties to all control points whether established by the Contractor or by the Engineer.

F. All original, additional or replacement stakes, marks, references and batter-boards which may be required for the construction operations, shall be furnished, set and properly referenced by the Contractor. The Contractor shall be solely and completely responsible for the accuracy of the line and grade of all features of the work. Any errors or apparent discrepancies found in previous surveys, the plans and specifications shall be called to the Engineer's attention by the Contractor for correction or interpretation prior to proceeding with the work.

G. Before construction is started on any structure which is referenced to an existing structure or topographical feature, the Contractor shall check the pertinent locations and grades of the existing structures or topographical features to determine whether the locations and grades shown on the plans are correct.

H. 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.

I. All stakes and markers used for control staking shall be of the same quality as used by the Department for this purpose. For slope limits, pavement edges, gutter lines, et cetera, where so called "working" stakes are commonly used, stakes of different quality may be acceptable.

J. 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 his 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 the Contractor.

K. The Contractor shall furnish all necessary personnel, engineering equipment and supplies, materials, and transportation incidental to the accurate and satisfactory completion of this work.

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.

## 1.10 SPECIAL PROJECT REQUIREMENTS

A. Upon receipt of the Contract, the Contractor shall process and return the Contract to the State' Contract Office within five (5) calendar days.

B. The State intends to issue the Notice to Proceed for the Project to the Contractor

within 35 calendar days after bid opening. The Contractor shall be able to commence work on this date.

1.11 SCOPE OF WORK

A. The work involves the following tasks at Daniel K. Inouye International Airport in Honolulu, Oahu.

1. Demolition and removal of a collapsed baseyard building and its associated floor slab as well as proper disposal of all waste material

2. Hazardous materials abatement as noted in the hazardous materials report.

3. Removal and/or relocation of various utilities including water and the airfield lighting system.

4. Removal of the baseyard septic tank and sewer system.

5. Filling in the area of the removed slab and septic tank and planting and establishment of grass.

6. Placement of barricades.

7. Any other work not explicitly mentioned in this section, but shown elsewhere in these plans and specifications.

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.

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 for payment, but will be paid for at the Contract Lum Sum Price.

| Item No. | Item | Unit |
|---|---|---|
| 01010.1 | Construction Work | Lump Sum |

END OF SECTION

# SECTION 01100 - SUMMARY

## 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 this Section.

### 1.02 SUMMARY

A. Section Includes:

1. Project information.
2. Work covered by Contract Documents.
3. Work under separate contracts.
4. Access to site.
5. Coordination with occupants.
6. Work restrictions.
7. Specification and drawing conventions.
8. Miscellaneous provisions.

B. Related Requirements:

1. SECTION 01580 TEMPORARY FACILITIES AND UTILITIES for limitations and procedures governing temporary use of Owner's facilities.

C. Conflicts:

1. In the event of conflicts between the requirements of this Section and any other Section of this Specification the stricter requirement in the judgement of the State Project Manager shall govern.

### 1.03 PROJECT INFORMATION

A. Project Identification: Project CO1451-43 – Terminal 2 Checkpoint 3 Interior Queue Install New AC

1. Project Location: Daniel K. Inouye International Airport

B. Owner: State of Hawaii Airport System owned and operated by the State of Hawaii, Department of Transportation, Airports

1. Owner's Representative: Mr. Malcom Smith, Oahu Air District Manager

1.04 WORK COVERED BY CONTRACT DOCUMENTS

A. The Work of Project is defined by the Contract Documents and described in Section 01000, Part 1

B. Type of Contract:

1. Project will be constructed under a single prime contract.

1.05 ACCESS TO SITE

A. General: Contractor shall have limited use of Project site for construction operations as indicated on Drawings by the Contract limits and as indicated by requirements of this Section.

1. Driveways, Walkways and Entrances: Keep driveways and entrances serving premises clear and available to Owner, Owner's tenants, and emergency vehicles at all times. Do not use these areas for parking or storage of materials.

a. Schedule deliveries to minimize use of driveways and entrances by construction operations.

b. Schedule deliveries to minimize space and time requirements for storage of materials and equipment on-site.

B. Condition of Existing Building: Maintain portions of existing building affected by construction operations in a weathertight condition throughout construction period. Repair damage caused by construction operations.

1.06 COORDINATION WITH OCCUPANTS

A. Full Owner Occupancy: Owner will occupy site and existing adjacent building(s) during entire construction period. Cooperate with Owner during construction operations to minimize conflicts and facilitate Owner usage. Perform the Work so as not to interfere with Owner's day- to-day operations. Maintain existing exits unless otherwise indicated.

1. Maintain access to existing walkways, corridors, and other adjacent occupied or used facilities. Do not close or obstruct walkways, corridors, or other occupied or used facilities without written permission from Owner and approval of authorities having jurisdiction.

2. Notify Owner not less than ten working days in advance of activities that will affect Owner's operations.

3. Runway: Keep the runway and affected areas clear and available for airplane use. Coordinate all runway closures at least 72 hours in advance with the Airport and install illuminated “X”’s when the runway is closed.

1.07 WORK RESTRICTIONS

A. Work Restrictions, General: Comply with restrictions on construction operations.

1. Comply with limitations on use of public streets and with other requirements of authorities having jurisdiction.

B. On-Site Work Hours: Coordinate work hours with the Airport Manager

C. Noise, Vibration, and Odors: Coordinate operations that may result in high levels of noise and vibration, odors, or other disruption to Owner occupancy with Owner.

1. Notify Owner not less than ten working days in advance of proposed disruptive operations.

2. Obtain Owner's written permission before proceeding with disruptive operations. Contractors shall submit an “Outage Request Form” at Daniel K. Inouye International Airport and a written request at all other airports.

D. Nonsmoking Building: Smoking is not permitted within the building or within 25 feet of entrances, operable windows, or outdoor-air intakes.

E. Controlled Substances: Use of tobacco products and other controlled substances on Project site is not permitted.

1.08 SPECIFICATION AND DRAWING CONVENTIONS

A. Specification Content: The Specifications use certain conventions for the style of language and the intended meaning of certain terms, words, and phrases when used in particular situations. These conventions are as follows:

1. Imperative mood and streamlined language are generally used in the Specifications. The words "shall," "shall be," or "shall comply with," depending on the context, are implied where a colon (:) is used within a sentence or phrase.

2. Specification requirements are to be performed by Contractor unless specifically stated otherwise.

B. DIVISION 01- GENERAL REQUIREMENTS: Requirements of Sections in Division 01 apply to the Work of all Sections in the Specifications.

C. Drawing Coordination: Requirements for materials and products identified on Drawings are described in detail in the Specifications. One or more of the following are used on Drawings to identify materials and products:

1. Terminology: Materials and products are identified by the typical generic terms used in the individual Specifications Sections.

2. Abbreviations: Materials and products are identified by abbreviations

3. Keynoting: Materials and products are identified by reference keynotes referencing Specification Section numbers found in this Project Manual.

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 prices bid for the various items of work in this project.

END OF SECTION

# SECTION 01210 - ALLOWANCES

## 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 this Section.

### 1.02 SUMMARY

A. This Section includes administrative and procedural requirements governing allowances.

1. Certain materials and equipment are specified in the Contract Documents by allowances. In some cases, these allowances include installation. Allowances have been established in lieu of additional requirements and to defer selection of actual materials and equipment to a later date when additional information is available for evaluation. If necessary, additional requirements will be issued by Change Order.

B. Types of allowances include the following:

1. Lump-sum allowances.

### 1.03 SELECTION AND PURCHASE

A. At the earliest practical date after award of the Contract, advise the Contracting Officer of the date when final selection and purchase of each product or system described by an allowance must be completed to avoid delaying the Work.

B. Purchase products and systems selected by the Contracting Officer from the designated supplier.

### 1.04 SUBMITTALS

A. Submit proposals for purchase of products or systems included in allowances.

B. Submit invoices or delivery slips to show actual quantities of materials delivered to the site for use in fulfillment of each allowance.

### 1.05 LUMP SUM ALLOWANCES

A. Use the lump sum allowance only as directed by the Contracting Officer for purpose scheduled in Part 3 below, and only by Change Orders that indicate amounts to be charged to the allowance.

1. Lump sum allowances to cover lump sum payments to another party shall not include contractor's overhead, profit, and related costs. These costs include delivery, installation, taxes, insurance, equipment rental, and similar costs. These shall be included in the Contract Sum.

2. Contractor's overhead, profit, and related costs for products and equipment ordered by State under the lump sum allowance are included in the allowance and are not part of the Contract Sum. These costs include delivery, installation, taxes, insurance, equipment rental, and similar costs.

3. At Project closeout, credit unused amounts remaining in the lump sum allowance to State by Change Order.

1.06 UNUSED MATERIALS

A. Return unused materials purchased under an allowance to manufacturer or supplier for credit to the State, after installation has been completed and accepted.

1. If requested by the Contracting Officer, prepare unused material for storage by State when it is not economically practical to return the material for credit. If directed by the Contracting Officer, deliver unused material to State's storage space. Otherwise, disposal of unused material is Contractor's responsibility.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.01 EXAMINATION

A. Examine products covered by an allowance promptly on delivery for damage or defects. Return damaged or defective products to manufacturer for replacement.

3.02 PREPARATION

A. Coordinate materials and their installation for each allowance with related materials and installations to ensure that each allowance item is completely integrated and interfaced with related work.

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 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 execution 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 execution 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 01400 - CONTRACTOR QUALITY CONTROL PROGRAM

## PART 1 - GENERAL

### 1.01 RELATED DOCUMENTS

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

### 1.02 GENERAL

A. The Contractor shall establish, provide, and maintain an effective Quality Control Program that details the methods and procedures that will be taken to assure that all materials and completed construction required by this contract conform to contract plans, technical specifications and other requirements, whether manufactured by the Contractor, or procured from subcontractors or vendors. Although guidelines are established and certain minimum requirements are specified herein and elsewhere in the contract technical specifications, the Contractor shall assume full responsibility for accomplishing the stated purpose.

B. The intent of this section is to enable the Contractor to establish a necessary level of control that will:

1. Adequately provide for the production of acceptable quality materials.
2. Provide sufficient information to assure both the Contractor and the Engineer that the specification requirements can be met.
3. Allow the Contractor as much latitude as possible to develop his or her own standard of control.

C. The Contractor shall be prepared to discuss and present, at the pre-construction conference, his/her understanding of the quality control requirements. The Contractor shall not begin any construction or production of materials to be incorporated into the completed work until the Quality Control Program has been reviewed and approved by the Engineer. No partial payment will be made for materials subject to specific quality control requirements until the Quality Control Program has been reviewed and approved.

### 1.03 DESCRIPTION OF PROGRAM

A. General Description. The Contractor shall establish a Quality Control Program to perform inspection and testing of all items of work required by the technical specifications, including those performed by subcontractors. This Quality Control Program shall ensure conformance to applicable specifications and plans with respect to materials, workmanship, construction, finish, and functional performance. The Quality Control Program shall be effective for control of all construction work performed under this Contract and shall specifically include surveillance and tests required by the technical specifications, in addition to other requirements of this section and any other activities deemed necessary by the Contractor to establish an

effective level of quality control.

B. Quality Control Program**.** The Contractor shall describe the Quality Control Program in a written document which shall be reviewed and approved by the Engineer prior to the start of any production, construction, or off-site fabrication. The written Quality Control Program shall be submitted to the Engineer for review no later than thirty (30) calendar days after execution of the Contract.

C. The Quality Control Program shall be organized to address, as a minimum, the following items:

1. Quality control organization;
2. Submittals schedule;
3. Inspection requirements;
4. Quality control testing plan;
5. Documentation of quality control activities; and
6. Requirements for corrective action when quality control and/or acceptance criteria are not met.
7. A listing of the definable features of work for the project.

D. The Contractor is encouraged to add any additional elements to the Quality Control Program that he/she deems necessary to adequately control all production and/or construction processes required by this contract.

1.04 QUALITY CONTROL ORGANIZATION

A. The Contractor's Quality Control Program shall be implemented by the establishment of a separate quality control organization that is not a part of the production organization.

B. An organizational chart shall be developed to show all quality control personnel and how these personnel integrate with other management/production and construction functions and personnel. The organizational chart shall identify all quality control staff by name and function, and shall indicate the total staff required to implement all elements of the Quality Control Program, including inspection and testing for each item of work. At the top of the chart, an overall Contractor Quality Control System Manager, CQCSM, shall be named and his/her subordinates shall follow thereafter.

C. The quality control organization shall consist of the following minimum personnel:

1. Contractor Quality Control System Manager

a. The CQCSM shall be a full-time employee of the Contractor, or a consultant engaged by the Contractor. The CQCSM shall have a minimum of 5 years of experience in airport and/or paving and building construction and shall have had prior quality control experience on a project of comparable size and scope as the contract. The CQCSM shall be on the project full time and shall have no production duties. The CQCSM shall NOT be the point of contact for the production organization.

The CQCSM shall have full authority to institute any and all actions necessary for the successful implementation of the Quality Control Program to ensure compliance with the contract plans and technical specifications including authority to independently stop any work not in compliance with the contract. The CQCSM shall report directly to a responsible officer of the construction firm, such officer not being the project superintendent or foreman. The CQCSM may supervise the Quality Control Program on more than one project provided that person can be at the job site within 2 hours after being notified of a problem and a Quality Control Technician is present on the job site full time.

2. Quality Control Technicians. A sufficient number of quality control technicians necessary to adequately implement the Quality Control Program shall be provided. These personnel shall be either engineers, engineering technicians, or experienced craftsman with qualifications in the appropriate fields and shall have a minimum of 2 years of experience in their area of expertise.

   a. The quality control technicians shall report directly to the CQCSM and shall perform the following functions:
      i. Inspection of all materials, construction, plant, and equipment for conformance to the technical specifications, and as required by Section 1.06.
      ii. Performance of all quality control tests as required by the technical specifications and Section 1.07.

3. Staffing

   a. The Contractor shall provide sufficient qualified quality control personnel to monitor each work activity at all times. The scheduling and coordinating of all inspection and testing must match the type and pace of work activity. The Quality Control Program shall state where different technicians will be required for different work elements.
   b. All personnel shown on the organizational chart shall have, in resume form, all information regarding their education, any licenses, their present position, previous work experience, etc. included in the Quality Control Program written documentation. These resumes shall be verified by the CQCSM.

## 1.05 SUBMITTALS SCHEDULE

A. The Contractor shall submit a detailed listing of all submittals (e.g., mix designs, material certifications, color samples) and shop drawings required by the technical specifications. The listing can be developed in a spreadsheet format and shall include:

1. Specification item number:
2. Item description;
3. Description of submittal;
4. Specification paragraph requiring submittal; and
5. Scheduled date of submittal.

1.06 INSPECTION REQUIREMENTS

A. Quality control inspection functions shall be organized to provide inspections for all definable features of work, as detailed below. All inspections shall be documented by the Contractor.

B. Inspections shall be performed daily to ensure continuing compliance with contract requirements until completion of the particular feature of work.

C. Before any definable feature of work is started, the CQCSM shall notify the Engineer of such work at least 48 hours in advance. Upon notification, the Engineer shall determine if a meeting shall be held to discuss the condition of the work area, material and equipment status, what is to be expected and any questions or possible problems. No definable feature work shall commence without the consent of the Engineer.

1.07 QUALITY CONTROL TESTING PLAN

A. As a part of the overall Quality Control Program, the Contractor shall implement a quality control testing plan, as required by the technical specifications. The testing plan shall include the minimum tests and test frequencies required by each technical specification item, as well as any additional quality control tests that the Contractor deems necessary to adequately control production and/or construction processes.

B. The testing plan can be developed in a spreadsheet fashion and shall, as a minimum, include the following:

1. Specification item number;
2. Item description (e.g., concrete cylinder test);
3. Test type (e.g., concrete compressive strength);
4. Test standard (e.g., ASTM or AASHTO test number, as applicable);
5. Test frequency (e.g., as required by technical specifications or minimum frequency when requirements are not stated);
6. Responsibility (e.g., plant technician, independent lab); and
7. Control requirements (e.g., target, permissible deviations).

C. The testing plan shall contain a statistically-based procedure of random sampling for acquiring test samples in accordance with ASTM D 3665. The Engineer shall be provided the opportunity to witness quality control sampling and testing. The CQCSM shall make every effort to inform the Engineer at least 24 hours, or more if stated in the specifications, before such testing occurs.

D. All quality control test results shall be documented by the Contractor as required by Section 1.08.

1.08 DOCUMENTATION

A. The Contractor shall maintain current quality control records of all inspections and tests performed. These records shall include factual evidence that the required inspections or tests have been performed, including type and number of inspections

or tests involved; results of inspections or tests; nature of defects, deviations, causes for rejection, etc.; proposed remedial action; and corrective actions taken.

B. These records must cover both conforming and defective or deficient features, and must include a statement that all supplies and materials incorporated in the work are in full compliance with the terms of the contract. Legible copies of these records shall be furnished to the Engineer daily. The records shall cover all work placed subsequent to the previously furnished records and shall be verified and signed by the CQCSM.

C. Specific Contractor quality control records required for the contract shall include, but are not necessarily limited to, the following records:

1. Daily Inspection Reports. Each Contractor quality control technician shall maintain a daily log of all inspections performed for both Contractor and Subcontractor operations on a form acceptable to the Engineer. These technician's daily reports shall provide factual evidence that continuous quality control inspections have been performed and shall, as a minimum, include the following:

    a. Technical specification item number and description and location of work performed;
    b. A comprehensive breakdown of the work force including the number of workers and total hours for each trade.
    c. Compliance with approved submittals;
    d. Proper storage of materials and equipment;
    e. Proper operation of all equipment;
    f. Adherence to plans and technical specifications;
    g. Review of quality control tests; and
    h. Safety inspection.

2. The daily inspection reports shall identify inspections conducted, results of inspections, location and nature of defects found, causes for rejection, and remedial or corrective actions taken or proposed.

3. The daily inspection reports shall be signed by the responsible quality control technician and the CQCSM. The Engineer shall be provided at least one copy of each daily inspection report on the work day following the day of record.

4. Daily Test Reports. The Contractor shall be responsible for establishing a system which will record all quality control test results. Daily test reports shall document the following information:

    a. Technical specification item number and description;
    b. Test designation;
    c. Location;
    d. Date of test;
    e. Control requirements;
    f. Test results;
    g. Causes for rejection;

h. Recommended remedial actions; and
i. Retests.

Test results from each day's work period shall be submitted to the Engineer prior to the start of the next day's work period. When required by the technical specifications, the Contractor shall maintain statistical quality control charts. The daily test reports shall be signed by the responsible quality control technician and the CQCSM.

1.09 CORRECTIVE ACTION REQUIREMENTS

A. The Quality Control Program shall indicate the appropriate action to be taken when a process is deemed, or believed, to be out of control (out of tolerance) and detail what action will be taken to bring the process into control. The requirements for corrective action shall include both general requirements for operation of the Quality Control Program as a whole, and for individual items of work contained in the technical specifications.

B. The Quality Control Program shall detail how the results of quality control inspections and tests will be used for determining the need for corrective action and shall contain clear sets of rules to gauge when a process is out of control and the type of correction to be taken to regain process control.

C. When applicable or required by the technical specifications, the Contractor shall establish and utilize statistical quality control charts for individual quality control tests. The requirements for corrective action shall be linked to the control charts.

1.10 SURVEILLANCE BY THE ENGINEER

A. All items of material and equipment shall be subject to surveillance by the Engineer at the point of production, manufacture or shipment to determine if the Contractor, producer, manufacturer or shipper maintains an adequate quality control system in conformance with the requirements detailed herein and the applicable technical specifications and plans. In addition, all items of materials, equipment and work in place shall be subject to surveillance by the Engineer at the site for the same purpose.

B. Surveillance by the Engineer does not relieve the Contractor of performing quality control inspections of either on-site or off-site Contractor's or subcontractor's work.

1.11 NONCOMPLIANCE

A. The Engineer will notify the Contractor of any noncompliance with any of the foregoing requirements. The Contractor shall, after receipt of such notice, immediately take corrective action. Any notice, when delivered by the Engineer or his/her authorized representative to the Contractor or his/her authorized representative at the site of the work, shall be considered sufficient notice.

B. In cases where quality control activities do not comply with either the Contractor's Quality Control Program or the Contract provisions, or where the Contractor fails to properly operate and maintain an effective Quality Control Program, as determined by

the Engineer, the Engineer may:

1. Order the Contractor to replace ineffective or unqualified quality control personnel or subcontractors in accordance with Section 8.5 of the General Provisions.
2. Order the Contractor to stop operations in accordance with Section 8.6 of the General Provisions.
3. Determine work performed by the Contractor during periods of noncompliance to be unacceptable and subject to inspection, removal or non-payment in accordance with Section 5.8 of the General Provisions.

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 prices bid for the various items of work in this project.

END OF SECTION

# SECTION 01524 - CONSTRUCTION WASTE MANAGEMENT

## 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 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 - 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 Lum Sum Price.

| Item No. | Item | Unit |
|---|---|---|
| 01524.1 | Construction Waste Management | Lump Sum |

END OF SECTION

STATE OF HAWAII

DEPARTMENT OF TRANSPORTATION

# 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

A. The General Provision of the contract, including the General Provisions for Construction Projects (2016) 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. He shall erect barricades to delineate his 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 his 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 his own security and protection of his 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

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 01560 – GENERAL ENVIRONMENTAL, HEALTH, & SAFETY CONTROLS

## PART I – 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 section addresses 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 that adversely affect human health or welfare, unfavorably alter ecological balances of importance to human life, adversely affect other species of importance, or degrade the utilization of the environment for aesthetic and recreational purposes.

### 1.03 REFERENCES

All work shall conform to the most recent edition of the following Federal, State, and Local regulations, unless otherwise noted or specified on the drawings or in these specifications. Where conflicts among the requirements or with these specifications exists, the most stringent requirements shall apply.

A. DOTA Construction Site Runoff Control Program
http://hidot.hawaii.gov/airports/doing-business/engineering/environmental/construction-site-runoff-control-program

1. DOTA Construction Activities Best Management Practices (BMP) Field Manual.

B. Department of Health (DOH) Hazard Evaluation & Emergency Response (DOH HEER) https://health.hawaii.gov/heer/

C. State of Hawaii Administrative Rules, Title 11, Department of Health (DOH)

1. Chapter 46, Community Noise Control.

2. Chapter 59, Ambient Air Quality.

3. Chapter 60.1, Air Pollution Control.

4. Chapters 260.1, 261.1, 262.1, 263.1, 264.1, 265.1, 266.1, 268.1, 270.1, 271.1, 273.1, and 279.1, Hazardous Waste Management.

5. Chapter 451, State Contingency Plan.

6. Chapter 501, Asbestos Requirements.

D. CFR Title 40, Protection of the Environment, Chapter I, Environmental Protection Agency.

E. CFR Title 42, Public Health, Chapter I, Public Health Service, Department of Health and Human Services.

1.04 SUBMITTALS

A. The Contractor shall submit the following items as required:

1. Individual Wastewater System (IWS) Final Report: For projects involving the construction of an individual wastewater system, an IWS Final Report is required to be submitted to the DOTA Engineering Branch, Environmental Section (AIR-EE) for approval, prior to submitting to DOH Wastewater Branch and prior to project closeout.

2. Underground Injection Control (UIC) Well Final Report: For new drainage well construction and existing drainage well modification, a UIC Well Final Report is required to be submitted to AIR-EE for review and approval, prior to submitting to DOH Safe Drinking Water Branch (SDWB), and prior to project closeout. The Final Report shall also be submitted within the deadline specified on the UIC Approval to Construct. If a project involves abandoning an existing drainage well, written instructions shall be obtained from DOH SDWB and a copy provided to AIR-EE prior to backfilling the demolished well. All supporting documentation requested by DOH post demolition work shall be completed and provided to AIR-EE for review prior to submitting to DOH SDWB.

3. AST (Flammable/Combustible Liquid) Tank Installation: Provide signed record of Final Inspection issued by County Fire Department.

4. Waste Manifests: If a project will generate hazardous waste, the Contractor shall prepare waste manifests in accordance with HAR 11-262 and provide records to AIR-EE.

B. The Contractor shall comply with all applicable regulations and maintain records of permits, licenses, certificates, and other environmental regulatory requirement correspondence. Submit copies of permits, licenses, certifications, inspection reports, releases, notices, receipts for fee payments, correspondence, records, and similar documents, established for compliance with environmental regulations bearing on performance of the work.

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, graded areas, staging and storage areas, and all other work areas within or outside the project limits free from dust that would cause a hazard or nuisance to the work or operations of other Contractors, or to persons or property. Industry-accepted methods, that meet requirements of DOTA Construction BMP Field Manual as noted in Specification 01561 and that meet stabilization suitable for the area or materials involved.

C. Burning on Airport property shall not be permitted.

3.02 SPILL CONTROL

A. The Contractor shall follow the DOTA Construction Site Runoff Program and relevant documents, such as the Construction BMP Field Manual to implement BMPs to prevent spills and leaks and report and cleanup spills and leaks immediately, as required.

3.03 DISPOSAL

A. All unusable debris and waste material shall be hauled away to an appropriate local landfill. Contractor shall control dust during loading operations.

B. Contractor shall consult with the landfill and conduct any required waste characterization to ensure that waste meets the landfill's requirements for size, type, etc.

C. No burying of debris or waste materials, except for materials that are specifically indicated elsewhere in these specifications as suitable for backfill, shall be permitted on the project site.

D. Contractor shall manage all construction materials, debris, and waste in a manner that prevents Foreign Object Debris (FOD) from reaching the airfield, where it could be an aircraft safety hazard.

3.04 HAZARDOUS MATERIALS CONTROL

Hazardous materials shall be properly stored and handled. The use of prohibited hazardous materials, e.g., asbestos, lead paint, and polychlorinated biphenyls (PCBs), in the construction of this project shall be strictly prohibited. Any corrective action to remove and replace hazardous material and contaminated work areas shall be at the sole expense of the Contractor.

3.05 OCCUPATIONAL HEALTH AND SAFETY

The Contractor shall at all times comply with all State of Hawaii and Federal rules and regulations related to occupational health and safety and develop and follow a Health and Safety Plan describing measures the Contractor will employ to protect the health and safety of their employees. Include measures required to protect the public from dangers associated with their work.

## 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 to item 01561.1, Construction Site Pollution Controls.

**END OF SECTION**

# SECTION 01561 – CONSTRUCTION SITE POLLUTION CONTROLS

## 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

A. This Section describes procedures for the proper application of management and engineering controls at State of Hawaii, Department of Transportation, Airports (DOTA) construction sites so that pollutants do not impact any storm drainage system, State water, soil, or groundwater.

B. The Contractor shall supply all labor, materials, and equipment necessary for the management of stormwater during construction and to carry out the work in accordance with these specifications, and all applicable Federal, State, and local regulations and latest amendments.

C. This Section also applies to construction support activities including concrete or asphalt batch plants, rock crushing plants, equipment staging yards/areas, material storage areas, excavated material disposal areas, borrow areas, waste management facilities, sanitary facilities, material storage areas, and temporary equipment fueling locations, regardless of their proximity to 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.

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

E. The Contractor shall examine and be familiar with documents related to stormwater management at the airports and shall comply with related requirements for construction stormwater control. Should a requirement not be clearly described within the construction plans, specifications, permits and other applicable bid documents, notify the Engineer immediately for interpretation.

### 1.03 REFERENCES

All work shall conform to the most recent edition of the following, unless otherwise noted or specified on the drawings or in these specifications. Where conflicts among the requirements or with these specifications exists, the most stringent requirements shall apply.

A. DOTA Construction Site Runoff Control Program
http://hidot.hawaii.gov/airports/doing-business/engineering/environmental/construction-site-runoff-control-program

1. DOTA Construction Activities Best Management Practices (BMP) Field Manual.

2. DOTA Environmental Requirements for Construction Projects Standard Operating Procedures.

3. DOTA Stormwater Management Plans (SWMPs) for the Daniel K. Inouye International Airport (HNL) and Kahului Airport (OGG), as applicable.

4. DOTA Industrial SWPPPs for the HNL, OGG, and the Lihue Airport (LIH), as applicable.

B. State of Hawaii Administrative Rules, Title 11, Department of Health (DOH)
https://health.hawaii.gov/opppd/department-of-health-administrative-rules-title-11/

1. Chapter 54, Water Quality Standards

2. Chapter 55, Water Pollution Control

3. Chapter 451, State Contingency Plan

C. United States (U.S.) Code of Federal Regulations (CFR), Title 40, Chapter I: Environmental Protection Agency.

D. Hawaii Revised Statutes (HRS), Part I, Chapter 128D, “Environmental Response Law”.

## PART 2 – PRODUCTS

### 2.01 MATERIALS

Comply with applicable materials described in the current DOTA Construction Activities BMP Field Manual. Refer to FAA Advisory Circulars and DOTA District Office, 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 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. Use stolons, sprigs, or plugs to avoid providing hazardous species with a readily available food source. The use of seeds is generally not allowed.

Alternative grass species shall only be applied with the approval by the Engineer

after consultation with United States Department of Agriculture (USDA) airport representative. This includes, but is 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.

B. Irrigation: Any required irrigation shall be done after dark to reduce instances of water becoming a hazardous wildlife attractant.

## PART 3 – EXECUTION

### 3.01 PRE-CONSTRUCTION REQUIREMENTS

Do not begin construction activities until all submittals detailed in this Subsection are completed, submitted to the Engineer, and accepted in writing by AIR-EE.

A. Water Pollution, Dust, Sediment, and Erosion Control Meeting: Schedule a water pollution, dust, sediment, and erosion control meeting with the Engineer after all documents required by AIR-EE are submitted to the Engineer and accepted in writing by AIR-EE. 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, subcontractors whose work may provide an impact to stormwater or site environmental conditions, Engineer, AIR-EE, and any authorized representatives of the designated attendees. The meeting will discuss the sequence of work and plans and proposals for water pollution, dust, sediment, and erosion controls.

B. Land Disturbance Calculations: The Contractor is responsible for calculating the total land disturbance for the life of the project and complying with all environmental requirements associated with the total land disturbance calculated. Disturbance of land is defined by Hawaii Department of Health as "the penetration, turning, or moving of soil or resurfacing of pavement with exposure of the base course or the exposure of bare soil or ground surface, including the land surface exposed by construction roads, baseyards, staging areas, demolition, headquarters, and parking areas. It does not include grass or weed cutting, bush or tree trimming or felling that leaves soil or ground intact. It includes 'grubbing' in its normal meaning of the use of equipment to knock down and push vegetation out of the way, typically uprooting vegetation and disturbing the ground surface."

Land disturbing activities that shall be included in the disturbance area calculation shall follow the guidance provided in the Environmental Requirements for Construction Projects Standard Operating Procedures.

C. Site-Specific BMP (SSBMP) Plan or Stormwater Pollution Prevention Plan (SWPPP): The Contractor shall submit a SSBMP Plan (for projects disturbing less than one acre) or SWPPP (for projects disturbing one acre or more) using the latest DOTA template for acceptance by AIR-EE. If a SSBMP Plan or SWPPP was prepared by the Designer, the Contractor shall revise the plan using

the latest template to include additional information required of the Contractor and any changes the Contractor proposes. The SSBMP Plan or SWPPP shall include site-specific temporary BMPs following requirements and practices outlined in DOTA's "Construction Activities BMP Field Manual." All AIR-EE comments shall be resolved and the SSBMP Plan or SWPPP approved prior to the start of land-disturbing activities, including those activities that are needed for the implementation of the BMPs. Submission of the complete and acceptable SSBMP Plan or SWPPP is the sole responsibility of the Contractor, and additional contract time will not be issued for delays due to incompleteness.

D. SSBMP Plan/SWPPP Modifications: Modify, as necessary, and resubmit amended SSBMP Plan or SWPPP and construction schedules to the Engineer for acceptance by AIR-EE. Amendments to the SSBMP Plan or SWPPP shall be made under the following circumstances at a minimum:

1. Conditions that develop during construction that were unforeseen during the design and pre-construction stages that could impact stormwater, soil, or groundwater.

2. Changes to the Contractor's Means and Methods of Construction that could impact stormwater, soil, or groundwater.

3. Omitted conditions that should have been allowed for in the accepted documents.

4. A SSBMP Plan measure that replaces an accepted SSBMP Plan measure that was not satisfactorily performing.

5. Revised dates of installation and/or removal of SSBMP Plan measures.

SSBMP Plan/SWPPP modifications shall be submitted to the Engineer and accepted in writing by AIR-EE before implementing the revised site-specific BMPs in the field. Amendments to the SSBMP Plan or SWPPP shall be included with the original SSBMP Plan or SWPPP and documented in the Amendment Log.

E. Documentation: A copy of the accepted original or amended SSBMP Plan or SWPPP, with the signed certification by the authorized representative filed with DOH for SWPPPs, 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, AIR-EE, DOTA's designated authorized representative, and/or DOH/EPA Representative.

F. NPDES Construction Permit: If the total land disturbance for the life of the project, including all construction support activity areas, is one acre or more, coverage under an NPDES Permit Authorizing Discharges of Storm Water Associated with Construction Activity (NPDES Construction Permit) authorizing stormwater discharges associated with construction activity is required from the Department of Health, Clean Water Branch (CWB).

1. Do not begin land-disturbing activities until the CWB has issued an Individual NPDES Permit or NGPC. Conduct land-disturbing activities in accordance with the conditions of the NPDES Permit and/or NGPC.

2. The Contractor shall submit a Notification of Start to CWB a minimum of seven calendar days before the start of construction and provide AIR-EE with a record of submittal.

3. Before construction begins, the Contractor shall assign one of their personnel as the Duly Authorized Representative, in accordance with Section 15 of Appendix A, Chapter 1155. The Duly Authorized Representative is responsible for compliance with the NPDES Construction Permit (i.e., operations of the construction project) and shall certify, sign, and date various documents, including the SWPPP and SWPPP inspection documents.

G. Solid Waste Disclosure: Submit the Solid Waste Disclosure Form for Construction Sites, if applicable, to the DOH Solid Waste Branch as specified on the form within 7 calendar days before the start of construction activities and provide a copy to the Engineer. 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 shall also include documentation from any intermediary facility where solid waste is stored, handled or processed.

H. NPDES Hydrotesting Permit: If hydrotesting activities require effluent discharge into State waters or drainage systems, coverage under an NPDES Hydrotesting Waters Permit authorizing discharges associated with hydrotesting is required from the CWB. Do not begin hydrotesting activities until the CWB has issued an Individual NPDES Permit or NGPC for hydrotesting. Conduct Hydrotesting operations in accordance with the conditions of the NPDES Permit and/or NGPC.

I. NPDES Dewatering Permit: If dewatering activities require effluent discharge into State waters or drainage systems, coverage under an NPDES Dewatering Permit authorizing discharges associated with dewatering is required from the CWB. Do not begin dewatering activities until the CWB has issued an Individual NPDES Permit or NGPC for dewatering. Conduct dewatering operations in accordance with the conditions of the permit or NGPC.

J. Construction BMP Training: All Contractor's and subcontractor's employees on the project shall complete the DOTA Construction BMP Training prior to entering the construction site and every calendar year thereafter. All Contractor and subcontractor personnel involved with construction project responsibilities shall also be trained on the site-specific BMPs that are utilized during construction and spill response. Records of completion and/or training roster sign-in sheet shall be up to date and included in the SWPPP or SSBMP Plan. Additional training required by AIR-EE shall be at no additional time or cost to the project. There are two training options:

1. All Contractor and subcontractor employees involved with construction project responsibilities watch the DOTA Construction BMP Training Video located on the DOTA Construction Site Runoff Control Program webpage and complete the DOTA Construction BMP Training Survey with a passing score, or

2. The Contractor and subcontractor supervisors/managers watch the DOTA Construction BMP Training Video located on the DOTA Construction Site Runoff Control Program webpage, complete the DOTA Construction BMP Training Survey with a passing score, then train all employees involved with construction project responsibilities and submit a sign-in roster documenting all employees trained at the bottom of the DOTA Construction BMP Training Survey.

   DOTA Construction BMP Training Survey:
   https://hidot.hawaii.gov/airports/doing-business/engineering/environmental/construction-bmp-training-survey/

K. Construction Connection, Discharge, and Surface Runoff Permit: The Contractor shall complete the Contractor's section of the Construction Connection, Discharge, and Surface Runoff Permit and submit to AIR-EE for review. All AIR-EE comments shall be resolved prior to the start of land-disturbing activities.

## 3.02 CONSTRUCTION REQUIREMENTS

A. Construction Start: Do not expose or disturb surface area of earth material or initiate any land-disturbing activities until submittals detailed in Subsection 01561.3.01 – Pre-construction Requirements are completed, submitted to the Engineer and accepted in writing by AIR-EE. Once installation of BMPs is allowed, a Pre-construction BMP Inspection is conducted, and all deficiencies that are noted during the inspection shall be corrected prior to any other ground disturbance.

B. BMP Installation and Maintenance: Provide, install, maintain, monitor, repair and replace BMPs as needed to maintain efficacy. Address all inspection comments received from the Engineer, AIR-EE, and/or DOTA's designated authorized representative.

C. 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.

D. Install and maintain stabilized construction entrances/exits, 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, conduct cleaning and sweeping immediately. Modify stabilized construction entrances/exits, as needed, to prevent mud from being tracked onto road. Stabilize entire access roads if necessary.

E. 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 that would cause a hazard to the work, airport operations, operations of other contractors, or to persons or property. If chemicals are used as soil stabilizers for erosion and dust control, submit the manufacturer's product data sheets of the chemicals to the Project Manager for acceptance by AIR-EE. Oil treating shall not be used. Dust screens and fabrics are not allowed to be mounted on, or to inhibit the view of, the TSA and AOA Security Fences.

F. Cover exposed surfaces 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.

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

1. Hydromulching cuts and fills that may erode.

2. Installing check dams or other silt control devices.

3. Other methods acceptable to AIR-EE.

H. Clean up and remove any pollutant that is attributed to the Contractor. Care shall be taken to ensure that no petroleum/chemical products, bituminous materials, or other deleterious substances, including debris, are allowed to fall, flow, leach, or otherwise enter the sewage systems or storm drains. Deposition of solid waste or the discharge of liquid waste, such as fuels, lubricants, bituminous waste, untreated sewage and other pollutants that may contaminate stormwater, surface waters, soil, or groundwater shall not be permitted.

I. Disturbed Area Stabilization: Immediately initiate stabilization of exposed soil areas upon completion of land-disturbing activities for areas where disturbance has permanently or temporarily ceased on any portion of the site. Land-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. Land-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 land-disturbing activities have temporarily or permanently ceased.

1. After the initiation of stabilization, stabilization activities shall be completed according to the following timeline:

    a. For projects with an NPDES Construction Permit:

        - For construction areas discharging into waters not impaired for nutrients or sediments, complete installation of stabilization measures within 14 calendar days after the temporary or permanent cessation of land-disturbing activities.

        - For construction areas discharging into nutrient or sediment impaired waters, complete installation of stabilization measures within 7 calendar days after the temporary or permanent cessation of land-disturbing activities.

    b. For projects without an NPDES Construction Permit, complete stabilization within 14 calendar days after the temporary or permanent cessation of land-disturbing activities.

J. Notice of Cessation: For projects with an NPDES Construction Permit, the Contractor shall submit a Notice of Cessation to CWB within seven calendar days after the end of the month that the project was completed and provide AIR-EE with a record of submittal.

K. Changes to Land-disturbing Activities: The Contractor shall be responsible to prepare a new SWPPP or SSBMP Plans or amend existing SWPPP or SSBMP Plans if changes to the project or to the Contractor's activities result in land-disturbing activities additional to those previously approved:

1. Land-disturbing activity outside of the approved limits is NOT allowed until approval and proper permits are received. Revised documents, including an updated SWPPP or SSBMP Plan, shall be submitted to and approved by AIR-EE prior to conducting additional land-disturbing activities.

2. If coverage under an NPDES Construction Permit is needed, no activity in the additional area may occur until the additional permit coverage is granted:

    a. If the project was already granted coverage under an NPDES Construction Permit, additional coverage shall be obtained from CWB for the additional area, either by adding the area to existing project documents, and applying for NPDES Construction Permit coverage for the entire project OR by creating new documents and obtaining separate NPDES Construction Permit coverage for the additional area.

    b. If the new disturbed area will result in the total disturbed area

equaling one (1.0) acre or more for a project without existing NPDES Construction Permit coverage, NPDES Construction Permit coverage shall be obtained from CWB that will cover all land-disturbing activities anticipated for the life of the project.

3.03 INSPECTIONS

Refer to the DOTA Construction Site Runoff Program for information pertaining to AIR-EE BMP inspections (pre-construction, routine, and final). Contractor self-inspections shall occur based on the frequency outlined in the SSBMP Plan and, if applicable, NPDES Permit (HAR 11-55) and SWPPP requirements.

A. Corrective Actions: The Contractor shall be responsible for the correction of all deficiencies identified during any of the above inspections.

1. If the Contractor fails to satisfactorily address inspection 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 related 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 progress payment. Additionally, DOTA can issue liquidated damages for deficiencies not resolved to DOTA's satisfaction and for illicit discharges or contaminant discharges to soil, groundwater, surface water, or State waters (see Appendix A).

2. Failure to install 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.

3. For all citations or fines received by the DOTA for non-compliance, including non-compliance with 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. The State may deduct incurred costs from the Contractor's progress payments; however, the Contractor shall be responsible for reimbursing the State if the costs exceed remaining payments owed to the Contractor.

4. 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 may make the appropriate deductions from the Contractor's progress payment.; however, the Contractor shall be responsible for reimbursing the State if the costs of correction exceed remaining payments owed to the Contractor.

## PART 4 – MEASUREMENT AND PAYMENT

### 4.01 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.

| Item No. | Item | Unit |
|---|---|---|
| 01561.1 | Construction Site Pollution Controls | Lump Sum |

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

A. 20% of the line item price shall be paid upon the satisfactory completion of the Pre-construction BMP Inspection and associated corrective actions accepted by AIR-EE or their designated authorized representative, as described in Section 01561.3.03(A), above.

B. 70% 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 that will disturb one acre or more of land, or will be part of a larger common plan of development that will disturb one acre or more of land, payments shall be made only after Routine BMP Inspections described in Section 01561.3.03 above have been satisfactorily completed, and associated corrective actions accepted by AIR-EE or their designated authorized representative.**

C. The remaining 10% of the line item price shall be paid after all temporary BMP measures have been satisfactorily removed.

Payment will be made only after the satisfactory completion of the Final BMP Inspection and associated corrective actions accepted by AIR-EE or their designated authorized representative, and acceptance of the Post-construction BMPs by AIR-EE or their designated authorized representative.

Liquidated Damages, up to $25,000 per day (Appendix A), 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.

The Liquidated Damages cited in Appendix A are in excess of reimbursement for any citations, fines, or penalties levied by any regulatory agency against the State due to the Contractor's violations of clean water regulations or standards.

## Appendix A. Liquidated Damages Schedule for Non-Compliances

| Non-Compliance | Amount |
|---|---|
| Failure to obtain coverage under an NPDES Construction Permit for construction activities associated with a project that will disturb one acre or more of land, or will be part of a larger common plan of development that will disturb one acre or more of land, as defined by DOH. | $1,000 per calendar day per violation. |
| Failure to obtain coverage under an NPDES Hydrotesting Permit for hydrotesting activities that will require effluent discharge into State waters or drainage systems. | $1,000 per calendar day per violation. |
| Failure to obtain coverage under an NPDES Dewatering Permit for dewatering activities that will require effluent discharge into State waters or drainage systems. | $1,000 per calendar day per violation. |
| Failure to comply with the conditions specified in an NPDES Permit, or any other applicable permit. | $1,000 per calendar day per violation. |
| Failure to schedule a Pre-construction BMP Inspection and receive acceptance of all associated corrective actions prior to conducting land-disturbing activities. | $1,000 per calendar day per violation. |
| Failure to provide corrective actions accepted by AIR-EE or their designated authorized representative by the deadlines identified in the BMP inspection report. | $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 properly install or maintain a BMP specified by the SSBMP Plan, SWPPP, contract drawings and documents, or permit. | $2,000 per calendar day per violation. |

| Non-Compliance | Amount |
|---|---|
| Failure to have an accepted amendment to the SSBMP Plan or an accepted amendment to the SWPPP prior to implementing changes to previously accepted BMPs.<br><br>Note: Advance review and acceptance can be provided to satisfy this non-compliance. However, for projects with an NGPC or NPDES permit, the written amendment shall still be formally submitted for certification and signature by the authorized representative identified in the NGPC or NDPES Permit. | $2,000 per calendar day per violation. |
| Failure to conduct required inspections. | $1,000 for each of the first ten violations,<br>$2,500 for each of the next ten violations,<br>$5,000 for each subsequent violation. |
| Failure to maintain required records such as BMP inspection reports, rain gauge data logs, etc. | $500 per calendar day for the first ten days of each violation,<br>$1,000 per calendar day for the next ten days of each violation,<br>$2,500 per calendar day for each subsequent day of 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(2)(d), responsible for the Contractor's Construction Site Runoff Control Program. An Enforcement Letter may be issued with or without previous verbal notifications, written warnings, or official enforcement letters (i.e. Warning Letter or Notice of Violation (NOV).

Liquidated Damages may be assessed for the following:

- Non-compliances listed in the Table, herein, included in Appendix A.
- Non-compliances have not been corrected in the timeframes noted.
- Corrective actions are not completed after a verbal notification, written warning (email or formal letter), or NOV 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 DOTA Engineer and AIR-EE along with documentation on how the deficiency was corrected. The DOTA Engineer and AIR-EE 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.

**The Contractor shall not be entitled for compensation for any liquidated damages or penalty, fine, or citations assessed and deducted from the Contractor's progress payments, even after corrective actions have been taken.**

END OF SECTION

# SECTION 01562 – MANAGEMENT OF CONTAMINATED MEDIA, SOIL DISPOSAL, AND SOIL REUSE

## 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

A. This Section describes procedures for the management of known and/or unknown contaminated media (e.g., soil, sediment, groundwater, soil vapor, and building materials) and disposal and on-site reuse of either contaminated or uncontaminated soil/sediment (referred to herein as “soil”), that may be disturbed or generated during excavation or demolition activities, or other construction activities associated with this project.

B. All soil shall be treated as potentially contaminated until it is determined otherwise.

C. The Contractor shall supply all labor, materials, and equipment necessary for the removal, temporary storage, testing, handling, backfilling and management of soil and contaminated media to carry out the work in accordance with these specifications, and all applicable Federal, State, and local regulations and latest amendments.

D. The Contractor shall follow the State of Hawaii, Department of Transportation, Airports (DOTA) Programmatic Environmental Hazard Evaluation and Environmental Hazard Management Plan (DOTA EHE-EHMP), a Construction-Environmental Hazard Management Plan (C-EHMP) Addendum, or a Site-Specific C-EHMP, whichever applies to the project.

E. The Contractor and their Qualified Environmental Professional shall review any site-specific investigation reports (e.g., Phase II Environmental Site Assessment [ESA]) or construction management plans, etc.) to understand the conditions that may affect work performance.

F. Qualified Environmental Professional: The Contractor shall employ a Qualified Environmental Professional (QEP) who possesses a minimum of five (5) years of experience providing environmental oversight for the management of contaminated media during construction activities, who shall assist in the preparation of the Contractor’s C-EHMP (Site-Specific or Addendum). The QEP shall be identified in the applicable EHMP document.

G. Should the Contractor deviate from the DOTA EHE-EHMP, C-EHMP Addendum, or Site-Specific EHMP, the Contractor shall be responsible to prepare or modify any existing Hawaii Department of Health (DOH) required C-EHMP (Site-specific

or Addendum). Any deviation from construction EHMPs will require approval by DOH and the DOTA Engineering Branch, Environmental Section (AIR-EE) prior to implementation. The Contractor shall detail deviations from standard practices and explain how those deviations will be protective of human health and the environment.

H. The primary contaminant-related hazards addressed by the DOTA EHE-EHMP or a C-EHMP include, but are not limited to, the following Contaminants of Potential Concern (COPCs):

- Petroleum-related Hydrocarbons, e.g., TPH-g, TPH-d, TPH-o, BTEX, and PAHs
- Constituents of light distillate fuels and/or Chlorinated Solvents (together considered volatile organic compounds or VOCs)
- Polychlorinated Biphenyls (PCBs)
- Pesticides, e.g., Chlordane, Dieldrin
- Metals, e.g., Arsenic, Barium, Cadmium, Total Chromium, Lead, Mercury, Selenium, and Silver
- Per- and Polyfluoroalkyl Substances (PFAS)

In addition, free petroleum product (e.g., gasoline, aviation gasoline, diesel fuel, jet fuel, motor oils, lubricating oils) may be encountered in soil or groundwater in areas of previous petroleum releases.

Soil vapor may be present from volatile COPCs present in subsurface soil or groundwater.

Should changes in site conditions or additional site information identify contaminants or risks to human health and/or the environment not addressed by the DOTA EHE-EHMP or C-EHMP (Site-Specific or Addendum), the Contractor shall be responsible to revise, update, and finalize a C-EHMP (Site-Specific or Addendum), to be reviewed and approved by AIR-EE and the DOH Hazard Evaluation and Emergency Response (HEER) Office.

The Contractor shall coordinate with AIR-EE, as well as have any C-EHMP (Site-Specific or Addendum) approved by the HEER Office, prior to the start or continuation (in the case of an Addendum) of any related ground disturbing activities.

## 1.03 REFERENCES

All work shall conform to the latest edition of the following, unless otherwise noted or specified on the drawings or in these specifications. Where conflicts among the requirements or with these specifications exists, the most stringent requirements shall apply.

A. DOTA Construction Site Runoff Control Program
https://hidot.hawaii.gov/airports/doing-business/engineering/environmental/construction-site-runoff-control-program/

1. DOTA EHE-EHMP

2. DOTA Construction Best Management Practices (BMP) Field Manual

B. Department of Health (DOH) Hazard Evaluation & Emergency Response (DOH HEER) https://health.hawaii.gov/heer/

1. Technical Guidance Manual (TGM) for Implementation of the State Contingency Plan (including updates).

2. Guidance for Soil Stockpile Characterization and Evaluation of Imported and Exported Fill Material.

3. HEER Office Screening for Environmental Hazards at Sites with Contaminated Soil and Groundwater.

4. HEER Office Construction EHMP and EHMP Addendum Template

C. State of Hawaii Administrative Rules, Title 11, DOH
https://health.hawaii.gov/opppd/department-of-health-administrative-rules-title-11/

1. Chapter 54 Water Quality Standards

2. Chapter 58.1 Solid Waste Management Control

3. Chapter 59 Ambient Air Quality Standards

4. Chapter 11-260.1-279.1 Hazardous Waste Management: General Provisions

5. Chapter 280.1 Underground Storage Tanks

6. Chapter 451 State Contingency Plan

D. 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).

E. American Petroleum Institute (API) RP 2219
https://www.api.org/oil-and-natural-gas/health-and-safety/refinery-and-plant-safety/occupational-safety/rp-2219

F. United States Code of Federal Regulations (CFR), Title 29: Labor
https://www.ecfr.gov/current/title-29

G. CFR, Title 40: Protection of the Environment https://www.ecfr.gov/current/title-40

1. Part 50, “National Primary and Secondary Ambient Air Quality Standards A”.

2. Part 122, “EPA Administered Permit Program: The National Pollutant Discharge Elimination System”.

3. Part 261, “Identification and Listing of Hazardous Waste”.

4. Part 263, “Standards Applicable to Transporters of Hazardous Waste”.

5. Part 302, “Designation, Reportable Quantities, and Notification”.

H. CFR, Title 49: Transportation
https://www.ecfr.gov/current/title-49

1. Part 171, “General Information, Regulations, and Definitions”.

2. Part 172, “Hazardous Materials Table, Special Provisions, Hazardous Materials Communications, Emergency Response Information, Training Requirements, and Security Plans”.

I. U.S. EPA Comprehensive Environmental Restoration, Compensation, and Liability Act (CERCLA), Section 107(1), exemption for cleanup of legally applied pesticide products.
https://www.epa.gov/enforcement/superfund-enforcement-authorities

## PART 2 – PRODUCTS (Not Used)

## PART 3 – EXECUTION

### 3.01 GENERAL WORK PROCEDURES

A. Prior to beginning work, the Contractor, the Contractor’s Qualified Environmental Professional, and the Engineer or their representative shall review and discuss all available information pertaining to contamination or potential contamination at the work site.

B. It should be noted that, in some cases, the contamination (e.g., soil contaminated with metals, PCBs, pesticides, PFAS, etc.) may not be identifiable through visual and/or olfactory observation, and contaminant-specific field screening techniques may need to be implemented.

C. Potential or suspected contaminated media from separate locations or sources shall not be mixed or placed together without the approval of the Qualified Environmental Professional and AIR-EE.

D. The removal, transfer, or handling of explosive or flammable media shall be

conducted using explosion-proof pumps and equipment. If a vacuum truck is used for removal of liquids or residues, the area of operation for the vacuum truck shall be vapor free. Discharge the vacuum pump exhaust gases through a hose of adequate size and length downwind of the truck and tank area. Vacuum truck operating and safety practices shall conform to API RP 2219. Collect tank residues in drums, tanks, or tank trucks labeled according to 49 CFR 171 and 49 CFR 172 and dispose of as required by regulation.

E. Follow Decontamination regulations and procedures as necessary.

F. Soil excavation, grading, and any disturbance of contaminated soil may cause a potential exposure to Contractor's employees and the public from the release of vapors or fugitive dust. The routes of exposure to 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. The Contractor shall use engineering controls to mitigate the release and exposure to soil vapors.

G. The Contractor shall test excavated soil for the presence of COPC and managed in accordance with this Section and relevant guidance and regulations.

H. 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 DOH Office of Hazard Evaluation and Emergency Response (HEER) Office and provide a copy of the forms to the Engineer and AIR-EE.

I. All correspondence with DOH and other regulatory agencies must include the Engineer and AIR-EE.

## 3.02 PRECONSTRUCTION REQUIREMENTS

A. Submit the following a minimum of 30 calendar days prior to beginning any ground disturbing activities, for approval by AIR-EE.

1. The Contractor's revisions to the C-EHMP Addendum or Site-Specific C-EHMP completed in the design phase, or creation of a C-EHMP addendum if deviating from the DOTA EHE-EHMP, that includes, but is not limited to:

a. Procedures, engineering controls, and methods the Contractor will use during the excavation, soil stockpiling and segregation, temporary storage, testing, handling, treatment, backfilling, and disposal of contaminated media, work area isolation, construction barriers, dust control, decontamination, and emergency management.

b. Names of the Contractor's and their subcontractor's qualified personnel who will be supervising or managing contaminated

materials at the site. Include the personnel's phone number and qualifications.

c. Name(s) of the Contractor's Qualified Environmental Professional, including their qualifications.

d. Proposed schedule of work.

e. Location map of temporary contaminated stockpiles and other contaminated media storage, including infrastructure such as pipes and appurtenances, if applicable.

f. All documents required as part of the appendices to the DOTA EHE-EHMP (e.g., health and safety plan and completing the management plans in the appendices) or C-EHMP (Site-Specific or Addendum) applicable appendices (e.g., health and safety plan, construction material documents, etc.).

## 3.03 CONSTRUCTION REQUIREMENTS

A. Soil Excavation and Stockpiling:

1. Notify the HDOH HEER Office at least 90 calendar days prior to disturbing contaminated soil at "HEER Sites" as defined HI DOH e-Permitting System - Notification of Construction Activities (HEER Office). Version 1.6 (hawaii.gov) or most recent version available. Obtain AIR-EE's review and concurrence prior to submittal to DOH.

2. The disturbance of contaminated media shall be performed in accordance with the DOTA EHE-EHMP or the Contractor's approved C-EHMP (Site-Specific or Addendum), where applicable. The HEER Office and AIR-EE shall be immediately notified if contaminated media not previously known or anticipated is encountered. The HEER Office will determine whether additional sampling is required. The Contractor shall provide a location map with Global Positioning System (GPS) coordinates and approximate depth below ground surface at which contaminated media were encountered to the Engineer and AIR-EE.

3. Any soil stockpile shall not exceed 100 cubic yards unless approved in the applicable C-EHMP document. If deviating from the plan, approval from DOH is required. Soils placed in watertight containers shall be covered with plastic sheeting or positioned under a roof when not in active use. Soil stockpiles and containers shall be located at least 50 feet from drainage features, surface waters, and stormwater drainage paths.

4. 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 or disposal facility.

B. Soil Testing and Disposal:

The contractor shall test all soil generated during excavation, demolition, or other construction activities. Sampling and testing of stockpiles shall be, at a minimum, in accordance with the latest edition of the DOH's Guidance for Soil Stockpile Characterization and Evaluation of Imported and Exported Fill Material. The Contractor's QEP 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 methodology in accordance with the TGM. Alternative sampling approaches, and appropriate decision unit (DU) volumes for large volume soil stockpiles, should be discussed with AIR-EE and may be utilized on a case-by-case basis when approved by the HEER Office.

Note that in accordance with DOTA policy, no soil from airport property shall be reused offsite, even if the soil appears acceptable for unrestricted reuse based on testing conducted. Exceptions to this policy may only occur with the written approval of the Engineer and AIR-EE.

1. Offsite Soil Disposal

   a. The Contractor shall confirm the disposal facility's sampling requirements, as well as their standards for disposal.

   b. Soil that is a regulated hazardous waste shall be disposed at an approved United States Environmental Protection Agency (EPA) regulated facility.

   c. Soil that is above the Hawaii Department of Health (DOH) Tier 1 Environmental Action Levels (EAL) for unrestricted use but not a regulated hazardous waste shall be disposed of at a DOH or EPA permitted disposal facility (i.e., landfill), unless on-site reuse is approved by the Engineer and AIR-EE as described below.

   d. For any contaminated media removed from Airport property to an approved facility, the Contractor shall be responsible for its legal disposal.

2. On-site Soil Reuse

   a. The Contractor shall test all soils designated for on-site reuse. Soil that does not exceed applicable DOH Tier 1 Environmental Action Levels (EAL) for unrestricted use may be reused on-site (within construction site boundaries) with AIR-EE approval.

   b. Soil with contaminants that exceed DOH Tier 1 EALs may be approved for on-site (within construction site boundaries) reuse with written approval from AIR-EE and when the following conditions are met:

i. Contaminated soil is reused within other contaminated areas in the proximity of its original location.

ii. Contaminated soil is reused no less than 150 meters from the nearest surface water or surface water inlet.

iii. Contaminated soil is reused at an elevation above the tidally influenced high water table, and at least one foot below the finish surface grade, with the most contaminated soil placed at the bottom of the excavation and cleanest soil toward the ground surface. A minimum of one foot of clean soil shall comprise the final, top backfill layer and, unless waived by DOTA and DOH, an impervious layer shall cap this top layer.

iv. Contaminated soil is not reused within or beneath the footprint of a permanent building structure.

v. Contaminated soil to be reused cannot contain free oil, oil sheens, oil stains, or total petroleum hydrocarbons (TPH) concentrations exceeding 5,000 milligrams per kilogram (mg/kg).

C. Groundwater Management: Groundwater may be contaminated by petroleum hydrocarbons, dissolved metals, PFAS, VOCs, and/or pesticides, and may be encountered during soil excavation or dewatering activities.

1. If contaminated groundwater is discovered at a previously unknown source or site on the project, the Contractor shall immediately notify the Engineer, AIR-EE, and HEER Office. Provide a location map with GPS coordinates and approximate mean sea level depth of the groundwater at which the contamination was encountered.

2. The disturbance of contaminated groundwater shall be performed in accordance with the DOTA EHE-EHMP, or C-EHMP (Site-Specific or Addendum), where applicable. The HEER Office will determine whether additional sampling is required.

3. If free product is present in the extracted groundwater, it shall be separated from the groundwater, profiled, and disposed of at an DOH-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. Water contaminated with free product shall not be discharged from a dewatering pit.

4. Releases of contaminated groundwater to surface water bodies or areas beyond the work area is prohibited.

5. Groundwater shall only be re-infiltrated in the ground with the prior approval of AIR-EE and HEER Office. Under circumstances where contaminated groundwater cannot be re-infiltrated, proper disposal at a licensed facility shall be conducted. Notification to the appropriate agencies and other pertinent information related to the discharge shall be conducted by copying the Engineer and AIR-EE on all correspondence and copies of correspondence provided upon request.

6. The Contractor is responsible for the legal disposal or discharge of groundwater that is not re-infiltrated and shall provide AIR-EE with copies of waste manifests.

7. For groundwater containerized and removed from Airport property, the Contractor shall have representative samples taken and tested in accordance with DOH guidelines, standards, and regulations. A copy of the groundwater test results shall be submitted to AIR-EE. The groundwater shall not be disposed offsite without the approval of the Engineer and a written approval from the DOH-permitted facility receiving the groundwater indicating that they acknowledge the groundwater test results and providing their approval to dispose the groundwater at their facility. Transport off-site shall occur in DOT-approved containers or mobile tanks. Documentation for the removal of containerized groundwater is required in the Close-Out Report detailed in Section 3.04.

8. With approval from AIR-EE and oversight from the QEP, small volumes of groundwater may be disposed via evaporation from a constructed (lined) pond or basin, with solid residuals properly tested and disposed in accordance with this specification.

9. Release Reporting: Encountering previously unknown contaminated soil or groundwater during subsurface construction activities is considered a release and shall be reported to the HEER Office. Copies of the DOH Release Report, DOH-issued Release Number, and email correspondence (if applicable), shall be furnished to the Engineer and AIR-EE. The Contractor shall be responsible for release reporting and AIR-EE shall be included on all correspondence with the HEER office.

10. Contractor shall comply with DOTA and HEER Office requirements. A written report shall be provided to the 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 Engineer and AIR-EE.

11. Report all leaks and spills immediately to AIR-EE, DOTA personnel, and regulatory agencies in accordance with the airport-specific DOTA Spill Reporting Fact Sheet available via the DOTA Construction Site Runoff

Control Program Webpage at https://hidot.hawaii.gov/airports/doing-business/engineering/environmental/construction-site-runoff-control-program/.

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

D. Underground Storage Tanks (USTs) and Utility Pipes:

1. For any UST or pipeline, whether unexpectedly discovered or a planned removal, the nature of the UST or pipeline and whether they are inactive shall be determined prior to removal. Immediately notify the Engineer, AIR-EE and HEER Office of any unexpected encounter with a UST or buried piping.

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 shall include a North arrow and a scale.

   b. Depth, diameter, length, and type of piping. Describe the condition of the pipe.

   c. Volume and type of fuel or product, including analytical laboratory reports for the product recovered.

   d. Beginning and ending fluid levels, if applicable.

   e. Flow rates, if applicable.

   f. Direction of flow.

   g. Detailed photographs.

   h. Detailed description of actions taken following the discovery, such as cutting, product removal, and disposal.

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

4. The removal of all USTs must comply with HAR § 11-280.1, and all correspondence related to identification, removal, and documentation must be provided to the Engineer and AIR-EE. Only personnel knowledgeable and trained in pipeline and UST removal shall cut, drain, and remove USTs and pipelines. Hazardous conditions, particularly those created by explosive vapors and releases of product to the

environment, shall be mitigated prior to removal activities. If any waste pipe or UST components are to be stored on-site prior to disposal, the area shall be lined with polyethylene plastic sheeting, 20 mil or thicker, and bermed to contain any free product. Provisions shall be in place to contain viscous products that may liquify after exposure to atmospheric heating. The waste pipe segments shall be drained of any residual product and 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.

5. All removed pipelines and USTs shall be properly disposed or recycled.

6. The Contractor shall prepare and submit a UST Removal Report, including the results of all sampling activities required under HAR § 11-280.1, to the Engineer, AIR-EE, and the DOH SHWB (UST Program).

3.04 POST-CONSTRUCTION REQUIREMENTS

A. Submit a Project Close-out Report within 30 calendar days after work is completed. The Close-out Report shall contain the following applicable contents:

1. A signed letter certifying that the removal and disposal of all contaminated materials were completed in accordance with the DOTA EHE-EHMP or Contractor's approved C-EHMP (Site-Specific or Addendum), and all applicable Federal, State, and local rules and regulations.

2. All approved DOTA EHE-EHMP deviation request forms. (Reference Appendix B of the DOTA EHE-EHMP.)

3. Any Site-Specific EHMP(s) or Long-term EHMP(s). For locations at an airport for which DOTA has already established a Site-Specific EHMP from previous projects, the DOTA's Site-Specific EHMP shall remain applicable, with any approved amendments resulting from a change in site conditions due to construction.

4. All testing and laboratory results, including chain of custody, for any soil/sediment, groundwater, soil vapor, or other media sampling and analysis.

5. Any results from air monitoring.

6. 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 DOH and all other associated documents.

7. If contaminated soil was disposed off-site (off Airport Property), include the following:

    a. A copy of the signed agreement from the receiving facility acknowledging the sample test results and indicating acceptance of the soil.

    b. Documentation of the quantity of soil received by the facility.

    c. Copies of the test results of the soil sampling.

    d. All certifications, disposal forms, waste manifests, and summary logs.

8. If any soil was approved for reuse on-site (within the construction site boundaries), at a minimum, include the following:

    a. Copies of the test results of the soil sampling.

    b. The quantity of soil that was re-used on-site.

    c. Location map of the re-used soil. Include GPS coordinates of its emplaced limits.

    d. A brief description of the purpose of the reused soil (e.g., general fill, utility trench backfill material, etc.). Include the depth and thickness of its placement.

    e. Photos of the site after placement of the re-use soil has been completed.

9. Record of Field Observation of any unanticipated UST or pipeline discovered during construction activities, including a copy of the completed DOH Notice of Intent to Close Underground Storage Tanks form, UST Closure Report, and all other associated documents.

10. The Close-out Report may be distinct to each contaminated media type/source. For sites with multiple contaminated media types/sources, Close-out Reports for each contaminated media type can be submitted separately or combined into a project-wide compilation of reports.

## PART 4 – MEASUREMENT AND PAYMENT

### 4.01 BASIS OF MEASUREMENT AND PAYMENT

Work specified in this Section will be paid at the unit price measurement noted below.

| Item No. | Item | Unit |
|---|---|---|
| 01562.1 | Management of Contaminated Media, Soil Disposal, and Soil Reuse | Lump Sum |

Payment shall be full compensation for work prescribed in this Section and contract documents and stipulated below.

Lump Sum items will be paid in accordance with the bid price upon approval of completed work under that line item by the Engineer. Should any unforeseen conditions arise, payment shall be made by an allowance, as directed by the Engineer.

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.

**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 Liquated Damages amount of $5,000 per truck per day, until the illegally dumped material has been cleaned up or the incident has been remedied to the satisfaction of the Engineer with the DOH'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 be responsible for reimbursing DOTA for all citations, fines, and penalties levied by DOH, EPA, Department of Labor and Industrial Relations, or any other regulatory agency 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 and Site-specific C-EHMP or C-EHMP Addendum.** The Contractor shall reimburse the State within 30 calendar days for the full amount of any outstanding cost that the State has incurred. The State may deduct all incurred costs from the Contractor's monthly progress payments; however, the Contractor shall be responsible for reimbursing the State if the costs of correction exceed remaining payments owed to the Contractor.

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 I – GENERAL

### 1.01 RELATED DOCUMENTS

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

### 1.02 DESCRIPTION

A. 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

A. 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 fourteen (14) calendar days after award of the Contract.

## PART 2 – PRODUCTS (Not Applicable)

## 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, Paragraph 8.21. All requests for badges and AOA decals shall be submitted in writing to the Airport District Manager through the Engineer within fourteen (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.

As of the writing of this specification, the fee to obtain a new airport identification badge are $10.00 for processing and $60.00 for fingerprinting. However, 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) 836-6427. For other Airport Districts cost inquiries should be made the relevant Air District Office:

| | |
|---|---|
| Ellison Onizuka | |
| Kona International Airport | (808) 327-9517 |
| Hilo International Airport | (808) 961-9350 |
| Kahului, Kapalua, Hana, Molokai, | |
| Kalaupapa, & Lanai Airports | (808) 872-3874 |
| Lihue & Port Allen Airports | (808) 271-3902 |

If access is required to the Daniel K. Inouye International Airport - 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

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

### 4.02 BASIS OF PAYMENT

A. Work under this Section, except for posting of security guards and the provision of security measures required by the State, shall be considered incidental to and included in the bid prices for the various items of work in this project. AOA badges, decals, and fines are not eligible for reimbursement.

B. Posting of security guards or other security measures 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.

C. Payment will be made under:

| **Item No.** | **Item** | **Unit** |
|---|---|---|
| 01565.1 | Security Measures | Allowance (ALLOW) |

END OF SECTION

# SECTION 01580 - TEMPORARY FACILITIES AND UTILITIES

## PART 1 - GENERAL

### 1.01 RELATED DOCUMENTS

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

### 1.02 DESCRIPTION

A. 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 a 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 fourteen (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

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 01700 – MOBILIZATION AND DEMOBILIZATION

## PART 1 - GENERAL

### 1.01 RELATED DOCUMENTS

A. The General Provisions of the Contract, including General and Special Provisions, apply to the work specified in this Section.

### 1.02 GENERAL REQUIREMENTS

A. Section 699 of "Hawaii Standard Specifications for Road and Bridge Construction, 2005", 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 2.24 of the General 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.

B. Payment for the Contractor's bond premium will be made as part of mobilization in accordance with 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 "Total Amount for Comparison of Bids," 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 "Total Amount for Comparison of Bids" 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.

| Item No. | Pay Item | Pay Unit |
|---|---|---|
| 01700.1 | Mobilization (Not to exceed 6% of sum of all items, excluding this item, all allowances and force account items) | Lump Sum (LS) |

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

END OF SECTION

# SECTION 01800 – SPECIAL REQUIREMENTS FOR CONTRACTORS ON THE AOA

## PART 1 - GENERAL

### 1.01 RELATED DOCUMENTS

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

### 1.02 DESCRIPTION OF WORK

A. Provide all materials, labor, equipment, and tools necessary to complete the Special Requirements for Contractors on the Air Operations Area (AOA).

B. The requirements of the Section are essential for ensuring public and worker safety on this project; hence, the Contractor shall comply with all requirements of this section when performing work on the AOA. Should the Contractor fail to comply with any requirement of this section; work may be delayed or temporarily suspended without contract time extensions. Liquidated damages or fines may result. All liquidated damages or fines resulting from violations due to improper activity, inattention, or failure to comply with required airport procedures; shall be borne by the Contractor.

### 1.03 PROJECT LIMITATIONS

A. The project normal working hours shall refer to SECTION 01010 – DESCRIPTION OF WORK. The Contractor shall work continuously during the project duration. No work shall be performed during State Holidays or when weather conditions restrict construction from occurring.

### 1.04 AOA SECURITY REQUIREMENTS

A. AOA Access Points: The Contractor will be assigned only one access point for each work phase, and shall ensure that all of their personnel, vehicles, and equipment enter and exit the AOA only through the assigned access point.

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 inspection.

If the State deems an emergency situation has rendered the assigned access point unusable the Contractor will be assigned a temporary access point for the remaining workday. Should the original assigned access point remain unusable for a prolonged period, the Contractor will be assigned a new access point the following day and shall be responsible for all requirements at the new assigned access point.

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. AOA Access Gates: Should the Contractor's assigned AOA access point be through an unguarded gate, the Contractor shall be responsible for the following:
   1. Obtain the AOA access gate key(s) from the Airport Security Office (a $500.00 deposit is required per key).
   2. Provide all gate guards required. Each gate guard shall possess the following expertise:
      a. Familiarity with all of the AOA security access clearance requirements.
      b. Knowledge related to AOA access badge, AOA vehicle decal, and airport vehicle operator requirements.
      c. A communication device and specific instructions to call for assistance whenever problems occur.
   3. Proper control of the AOA access gate in accordance with all required airport security procedures.
   4. Close the AOA access gate during prolonged periods of inactivity; and close and lock whenever the AOA access gate is not in use, or is unattended.

1.05 AOA OPERATIONAL SAFETY REQUIREMENTS

A. It is the explicit intent of this contract that the safety of aircraft, and all of the personnel and equipment under the Contractor's jurisdiction, be the highest priority; hence, the Contractor shall carefully plan the operations of all personnel and equipment under their jurisdiction to provide for the free and unobstructed movement of all aircraft on the AOA, and to provide for the uninterrupted operation of visual and electronic signals used to guide aircraft while all personnel and equipment under their jurisdiction traverses the AOA.

B. With the exception of actual construction methods, the Federal Aviation Administration (FAA), Airport Traffic Control Tower (ATCT) will have full authority to control the Contractor's movements within the existing movement area. If the FAA, ATCT notifies the Contractor to temporarily halt operations, the Contractor shall effectively notify all personnel and equipment under its jurisdiction, without using lighted flares, to cease all work and move all equipment and themselves away from hazardous areas.

C. The Contractor is responsible for all of their movements on the AOA. Should the State deem that an escort, flagman, or driver fails to perform their duties, that escort, flagman, or driver may be terminated, or suspended and required to undergo additional training.

1.06 AOA COMMUNICATION DEVICES: The Contractor shall have at least two (2) people on the AOA possessing and continuously monitoring the following fully charged communication devices:

A. A two-way radio capable of communicating on frequencies 118.90 (Tower) and 121.90 (Ground); with a spare charged battery and

B. A cellular telephone, with a listing of all required emergency contact numbers.

1.07 AOA TRAVEL ROUTE: The Contractor will be assigned only one (1) travel route per work phase, and shall ensure that all of their personnel, vehicles, and equipment traverses the AOA only along the assigned travel route.

Should the State deem that an emergency situation has caused the assigned travel route to become unusable the Contractor will be assigned a temporary travel route for the duration needed and shall be responsible for all requirements associated with the new assigned travel route.

1.08 AOA AUTHORIZED VEHICLES: Only vehicles considered safe, and required to complete the contracted work will be allowed to operate on the AOA. Each vehicle operating on the AOA shall be authorized, possessing:

A. An AOA vehicle decal obtained from the Airport Security Office and displayed on the driver's side front bumper (use of an AOA temporary vehicle permit is not allowed).

B. Insurance coverage as required by Article 7.1 of the General Provisions, and further amended by the Special Provisions.

1.09 VEHICLE AND EQUIPMENT REQUIREMENTS ON THE AOA: Each vehicle and driven piece of equipment shall possess the following when operating or staging on the AOA.

A. Operations occurring at night, or during periods of poor visibility, shall require a Flashing Amber Beacon mounted atop each vehicle /equipment's highest point.

B. Daylight operations with clear visibility, shall require a Checkered Orange and White Flag attached to a staff that is mounted to each vehicle and/or equipment in lieu of a Flashing Amber Beacon. The flag shall be at least a three-foot square with a checker pattern of international orange and white squares that are at least one-foot on each side.

C. Two placards shall be on both sides of each vehicle or equipment at all times to identify the vehicle or equipment owner. Placards shall contain the company name in letters at least four-inches (4") tall, or six-inch (6") minimum-sized company logo.

D. All additional equipment marking, lighting and positioning that may be required by the FAA.

1.10 AOA DRIVERS: All people operating a vehicle or any driven piece of equipment on the AOA shall possess the following license, permit and expertise:

A. Current and valid Hawaii State Driver's License.

B. Current and valid Airport Vehicle Operator's Permit.

C. Complete Airport Familiarization.

D. An understanding and ability to identify the following:
1. All RSA's (Runway Safety Area), TWSA's (Taxiway Safety Area).
2. All AOA Markings, Lighting, and Signing.
3. The Need for Control of DOD (Foreign Object Debris).
4. All AOA Equipment for Aircraft.
5. All AOA Critical Areas.
6. All AOA Travel Routes for the Various Work Places.

E. An understanding and ability to follow all ground vehicle operation and communication requirements while operating on the AOA.

F. Successful completion of all AOA driver training require by the Airport Operations Manager.

1.11 AIRPORT VEHICLE OPERATOR'S PERMIT: Airport vehicle operator's permit shall only be issued to people that apply through the Airport Security Office, and pass a written exam covering portions of the Airport Rules and Regulations related to vehicle operations on the AOA.

1.12 AOA ESCORTS: While operating on the AOA, the Contractor shall provide at least one escort for every five (5) vehicles and/or equipment under their jurisdiction. The Airport Operations Manager shall approve all escorts prior to any work commencing; hence, each escort shall possess:

A. All AOA Driver Requirements.

B. Both AOA Communications Devices previously specified.

C. Knowledge about the assigned access points and travel routes for the project.

D. Successful completion of all AOA driver training required by the Airport Operations Manager. Each escort shall pass an exam given by the Airport Operations Manager, which demonstrates they possess an understanding and ability to follow all ground vehicle operation and communication requirements while operating on the AOA.

1.13 AOA TRAFFIC CONTROL: The Contractor shall furnish and provide the following traffic control devices to block off entrances of working area:

A. Runway Lighted X's: Wherever working within an RSA.

B. Low-Profile Barricades: Low-profile barricades shall be any one of the following: however, if option a or b is selected, the Contractor shall be responsible for water filling and emptying these types of barricades as part of their contracted work.
   1. Neubert Aero Corporation's reusable Airport Low-Profile Barricade Model No. NAC-PC 2410 with at least one battery-powered red barricade light, or
   2. Multi-Barrier Safety Barricade Model No. AR-10x96 with at least one Multi-Barrier 360 degree solar-powered light, or
   3. Constructed barricades as indicated on plans.
   4. All Low-profile barricades shall be spaced fifteen (15) feet on center, and used as follows:
      a. Restrict aircraft from taxiing into work areas: Barricades shall extend across the full TWY/RWY width, with one (1) barricade places on the TWY/RWY centerline.
      b. Channel aircraft around work areas: Barricades shall be placed ten (10) feet away from active RSAs/TWSAs.

C. Reflective Cones: Reflective cones shall be used to demarcate AOA travel routes and locations where vehicles shall yield to aircraft.

1.14 AOA FOD CONTROL: The Contractor shall keep all work areas, AOA Travel Routes, and all adjacent areas clean at all times. Unless otherwise stated in this contract, or otherwise directed by the Airport Manager, the Contractor shall properly haul and dispose all removed pavement materials and collected debris to a site off the Airport. The State will require remedial cleaning from the Contractor whenever their FOD Control Operations are unsatisfactory. Upon receipt of notification, the Contractor shall be ready to start remedial cleaning at the jobsite within one-hour. Notification by telephone will be deemed as official.

1.15 AOA FLAG PERSONS: Should the plans require flag persons along the AOA Travel Route, each flag-person shall possess:

A. AOA Driver as state in Sections 1.05.E.3, 1.05.E.4, and 1.05.E.6.

B. Both AOA Communication Devices previously specified in Section 105.A.

C. A traffic directing LED (Light-Emitting Diode) Light Baton.

D. A broom and dustpan to assist in AOA FOD Control.

1.16 AIRPORT STAGING AREAS: The Contractor shall only stage its vehicles and equipment at State approved areas. No vehicle or equipment shall park within four (4) feet of a security fence. Demarcation of the staging area shall be as follows:

A. Weighted Lighted Barricades shall be placed around the staging area perimeter at a maximum of twenty feet (20') on center.

B. Yellow Barrier Tape with the words "CAUTION DO NOT ENTER" continuously printed on the tape shall be used with barricades to demarcate the staging area perimeter.

1.17 COORDINATION OF CONSTRUCTION ON THE AOA

A. Work on the AOA requires RWY and TWY closures that demand proper notification to numerous agencies responsible for public safety; thus, the Engineer shall receive the following sufficiently accurate information from the Contractor.

B. Maximum height equipment: Equipment height shall be submitted to the State at least thirty-five (35) consecutive calendar days prior to construction. Construction shall not commence until the State receives confirmation from the FAA. All reported heights shall be the maximum heights among all vehicles or equipment used to compete the contracted work, and includes proper notification to the State whenever the reported maximum heights are to be exceeded.

C. Detailed work schedule: See SECTION 01300 – SUBMITTALS.

D. Cancellations: The Contractor shall only cancel work through the Engineer, Airport Operations Manager, or Airport Duty Manager. Whenever a cancellation is not made and the Contractor is not at the assigned AOA Access Point within thirty (30) minutes of the start time; all Contractor closures for the remaining workweek will be cancelled. The Contractor shall reimburse the State six hundred dollars ($600.00) for every work cancellation the State deems unjustified. This reimbursement is to compensate the State for all unnecessary costs related to cancelling existing and coordinating new closures.

1.18 CONSTRUCTION LIGHTING REQUIREMENTS

A. Should any part of the work area lack sufficient sunlight; the Contractor shall provide sufficient artificial lighting to permit the work and inspection to be carried out efficiently, thoroughly, safely, and satisfactorily. Work and inspections shall not be performed with only flashlight and/or vehicle/equipment headlights. All lights shall be positioned so they do not blind aircraft pilots, or FAA-ATCT controllers. All wiring for electrical lights and power shall be properly installed, maintained, securely fastened and kept as far as possible from telephone and signal wires. The Contractor shall submit a lighting plan to the Engineer for all work phases that shall be subject to approval.

## 1.19 ENVIRONMETAL AND HEALTH REQUIREMENTS

A. The Contractor shall perform the following in accordance with all applicable federal, state, local, and airport rules and regulations related to environmental pollution control, abatement, and fire code.

B. Airport water: Airport water shall not be drawn from a top lacking a reverse pressure principal backflow prevention device. Water valves shall be opened and closed so that water hammers are not produced.

C. Waste Disposal: Waste disposal shall be performed properly. Materials shall not be burned, and construction wastes shall not be disposed into Airport storm water or sewer systems.

D. Restoration: Completely restore, to an acceptable condition; staging area, work area, AOA travel routes, and areas adjacent to the aforementioned.

E. When the Contractor damages and existing Airport perimeter fence, the Contractor shall perform immediate repairs on the fence to prevent inadvertent entry and maintain Airport Security.

F. Vehicle/equipment leaks and material spills: Shall be handled by the following five-step process, and pertains to all fluids other than potable water:
   1. All leaked or spilled fluids shall immediately be kept from entering the Airport storm water and sewer systems.
   2. All fluid leaks or spills shall be respectively fixed or stopped, immediately after ensuring that the fluids are kept out of the Airport storm water and sewer systems.
   3. All areas containing the leaks or spills shall be properly cleaned and restored.
   4. Dispose all wastes per Section 1.08.B.
   5. Submit proper documentation to the State showing that all leaks or spills were properly cleaned and disposed.

G. Erosion control: The Contractor shall provide any essential temporary drainage, dikes, and similar facilities to prevent erosion damage to the site. Run-off shall be controlled to prevent damage to the surrounding areas.

H. Dust control: The Contractor shall positive measures to ensure that dust is properly controlled without chemicals and/or oil treatments.

I. Noise control: Noise control shall be within the levels that comply with all applicable regulations.

## 1.20 OTHER REQUIREMENTS

A. The Contractor shall also comply with the following requirements should they arise:

B. Any new TSA (Transportation Security Administration) security requirements.

C. Any additional operational safety requirement generated by the FAA.

D. Provide additional lights along AOA travel routes should the Engineer deem additional safety enhancements are needed.

E. Any new environmental and health requirements generated by the EPA (Environmental Protection Agency) or DOH (Department of Health).

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.

END OF SECTION

# DIVISION 2 - SITE CONSTRUCTION

## SECTION 02411 - SELECTIVE DEMOLITION

## PART 1 - GENERAL

### 1.01 RELATED DOCUMENTS

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

### 1.02 SUMMARY

A. Section Includes:

1. Demolition and removal of selected portions of building or structure.

### 1.03 DESCRIPTION OF WORK

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

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

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

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

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

F. Protect all existing conditions surrounding the work area, including, but not limited to, walkways, parking, landscaping, etc. at all times from damage.

G. Any damage as a result of demolition work and any neglect to provide protection shall be fixed new at Contractor's own expense.

H. Demolish and remove materials as indicated on the drawings and as required to perform work under this project.

I. Carefully remove, salvage, and label existing items and store at project site at location as approved by the Engineer for re-installation in new work as indicated.

J. Remove/relocate existing furniture, equipment, pictures, signage, blinds, etc. as required to perform demolition work. Return all items to its original location, unless otherwise indicated or directed by the Engineer, after completion of work.

K. Temporarily disconnect and remove all existing overhead utilities on the roof if required during roofing work. Obtain State's written approval of all utility outages prior to performing work. Re-install and reconnect utility service when roofing work is completed.

L. Permits, Notice, Etc.:

1. The contractor shall procure and pay for all necessary permits or certificates that may be required in connection with this work.
2. The Contractor shall serve proper notice and consult with the Engineer regarding any temporary disconnections of electrical or other utility lines in the area which may interfere with the removal work, and all such lines where necessary shall be properly disconnected or relocated before commencing with the work.
3. Submit, where required, a State Department of Health Clean Air Branch, "Asbestos Notifications of Demolition & Renovation" form.

1.04 DEFINITIONS

A. Remove: Detach items from existing construction and legally dispose of them off-site unless indicated to be removed and salvaged or removed and reinstalled.

B. Remove and Reinstall: Detach items from existing construction, prepare for reuse, and reinstall where indicated.

C. Existing to Remain: Existing items of construction that are not to be permanently removed and that are not otherwise indicated to be removed, removed and salvaged, or removed and reinstalled.

1.05 PREINSTALLATION MEETINGS

A. Pre-demolition Conference: Conduct conference at Project site.

1.06 SUBMITTALS

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

B. Pre-demolition Photographs or Video: Submit before Work begins.

C. Landfill Records: Indicate receipt and acceptance of hazardous wastes by a landfill facility licensed to accept hazardous wastes, as applicable.

1.07 FIELD CONDITIONS

A. State will occupy portions of building immediately adjacent to selective demolition area. Conduct selective demolition so the State's operations will not be disrupted.

B. Conditions existing at time of inspection for bidding purpose will be maintained by the State as far as practical.

C. Notify Engineer of discrepancies between existing conditions and Drawings before proceeding with selective demolition.

D. Hazardous Materials: It is not expected that hazardous materials will be encountered in the Work.
   1. If suspected hazardous materials are encountered, do not disturb; immediately notify the Engineer.

E. Utility Service: Maintain existing utilities indicated to remain in service and protect them against damage during selective demolition operations.
   1. Maintain fire-protection facilities in service during selective demolition operations.

F. Partial Demolition and Removal: Items indicated to be removed but of salvageable value to Contractor, may be removed from structure as work progresses. Transport salvaged items from site as they are removed. Storage or sale of removed items on site will not be permitted.

G. Explosives: Use of explosives will not be permitted.

H. Noise and Dust shall be kept within acceptable levels at all times including non-working hours, weekends and holidays, in conformance with requirements of other sections of this specification.

I. Other Conditions:

   1. Wherever trucks and/or vehicles leave the site and enter surrounding paved streets, the Contractor shall prevent any material from being carried onto the pavement. Wastewater shall not be discharged into existing streams, waterways, or drainage systems such as gutter and catch basins unless treated to comply with Department of Health pollution regulations.
   2. Trucks hauling materials shall be covered as required by PUC regulation. Trucks hauling fine materials shall be covered.

J. Existing Conditions: The Contractor shall be responsible for protection of existing

conditions for the entire duration of the project. Damage to the existing conditions as a result of the work of this section shall be corrected at Contractor's own expense.

1.08 WARRANTY

A. Existing Warranties: Remove, replace, patch, and repair materials and surfaces cut or damaged during selective demolition, by methods and with materials so as not to void existing. warranties.

PART 2 - PRODUCTS

2.01 PEFORMANCE REQUIREMENTS

A. Regulatory Requirements: Comply with governing EPA notification regulations before beginning selective demolition. Comply with hauling and disposal regulations of authorities having jurisdiction.

B. Standards: Comply with ANSI/ASSE AI 0.6 and NFPA 241.

PART 3 - EXECUTION

3.01 EXAMINATION

A. Survey existing conditions and correlate with requirements indicated to determine extent of selective demolition required.

B. When unanticipated mechanical, electrical, or structural elements that conflict with intended function or design are encountered, investigate and measure the nature and extent of conflict. Promptly submit a written report to Engineer.

C. Survey of Existing Conditions: Prior to commencement of selective demolition work, inspect areas in which work will be performed. Inventory existing conditions of structure surfaces, equipment, or surrounding properties which could be misconstrued as damage resulting from selective demolition work; photograph, video or otherwise document and file with the Engineer prior to starting work.

3.02 UTILITY SERVICES AND MECHANICAL/ELECTRICAL SYSTEMS

A. Existing Services/Systems to Remain: Maintain services/systems indicated to remain and protect them against damage.

1. The existence of exposed and concealed utility lines other than those shown on the drawings is not definitely known. Should any other utility line be encountered, the Contractor shall immediately notify the Engineer and follow his direction as to procedure. Maintain existing utilities indicated to remain, keep in service, and protect against damage during demolition operations.

Do not interrupt existing utilities serving occupied building or facilities, except when authorized in writing by the Engineer. Submit written notice of outages and interruptions not less than fourteen (14) days in advance of intended outage. Report damage, however slight, immediately. Do not repair or reconstruct any pipe, conduit, or installation without authorization, except perform emergency repairs immediately.

B. Existing Services/Systems to Be Removed, Relocated, or Abandoned: Locate, identify, disconnect, and seal or cap off indicated utility services and mechanical/electrical systems serving areas to be selectively demolished.

1. The State will arrange to shut off indicated services/systems when requested by Contractor.
2. Arrange to shut off indicated utilities with utility companies.
3. If services/systems are required to be removed, relocated, or abandoned, provide temporary services/systems that bypass area of selective demolition and that maintain continuity of services/systems.

3.03 PREPARATION

A. Site Access and Temporary Controls: Conduct selective demolition and debris-removal operations to ensure minimum interference with roads, streets, walks, walkways, and other adjacent occupied and used facilities.

1. Comply with requirements for access and protection in Division 1 General Requirements.

B. Temporary Facilities: Provide temporary barricades and other protection required to prevent injury to people and damage to adjacent buildings and facilities to remain.

1. Erect temporary barricades as required, to prevent people from entering project area to the extent as accepted by the Engineer. The extent of barricade may be adjusted as necessary with the acceptance of the Engineer. This work shall be accomplished at Contractor's own expense.
2. When necessary, the Contractor shall provide, erect, and maintain lights, barriers, etc., as required by traffic and safety regulations with special attention to protection of life.
3. Provide interior and exterior shoring, bracing, or support to prevent movement, settlement, or collapse of structure or elements to be removed, and adjacent facilities or work to remain.
4. Protect from damage existing finish work that is to remain in place and becomes exposed during demolition operations.
5. Life safety procedures and provisions shall be in conformance with all applicable Federal, State, and City and County regulations, including OSHA.
6. Remove protections at completion of work.

C. Temporary Shoring: Provide and maintain shoring, bracing, and structural supports as required to preserve stability and prevent movement, settlement, or collapse of construction and finishes to remain, and to prevent unexpected or uncontrolled movement or collapse of construction being demolished.

3.04 SELECTIVE DEMOLITION. GENERAL

A. General: Demolish and remove existing construction only to the extent required by new construction and as indicated. Use methods required to complete the Work within limitations of governing regulations and as follows: ·

1. Neatly cut openings and holes plumb, square, and true to dimensions required. Use cutting methods least likely to damage construction to remain or adjoining construction. Use hand tools or small power tools designed for sawing or grinding, not hammering and chopping, to minimize disturbance of adjacent surfaces. Temporarily cover openings to remain.
2. Cut or drill from exposed or finished side into concealed surfaces to avoid marring existing finished surfaces.
3. Locate selective demolition equipment and remove debris and materials so as not to impose excessive loads on adjacent roads and parking areas.
4. Dispose of demolished items and materials promptly. Comply with requirements in SECTION 01560 GENERAL ENVIRONMENTAL, HEALTH, & SAFETY CONTROLS and other Division I General Requirements.

A. Removed and Re-installed Items:

1. Clean and repair items to functional condition adequate for intended reuse.
2. Pack or crate items after cleaning and repairing. Identify contents of containers.
3. Protect items from damage during transport and storage.
4. Reinstall items in locations indicated. Comply with installation requirements for new materials and equipment. Provide connections, supports, and miscellaneous materials necessary to make item functional for use indicated.

B. Existing Items to Remain: Protect construction indicated to remain against damage and soiling during selective demolition. When permitted by Engineer, items may be removed to a suitable, protected storage location during selective demolition and cleaned and reinstalled in their original locations after selective demolition operations are complete.

C. If unanticipated mechanical, electrical, or structural elements which conflict with intended function or design are encountered, investigate and measure both nature and extent of the conflict. Submit report to the Engineer in written, accurate detail. Pending receipt of directive from the Engineer rearrange selective demolition schedule as necessary to continue overall job progress without delay.

D. Conduct selective demolition operations and debris removal in a manner to ensure minimum interference with roads, streets, walks, and other adjacent occupied or used

facilities. Do not close, block or otherwise obstruct streets, walks or other occupied or used facilities without written permission from the Engineer. Provide alternate routes around closed or obstructed traffic ways if required by governing regulations, as directed by the Engineer.

E. Temporary buildings and facilities which are not of permanent construction but are extensively used or are essential for public use for a period of time shall be provided with safe pedestrian passageways around the construction site as per ADA-ABA 201.3.

3.02 DISPOSAL OF DEMOLISHED MATERIALS

A. General: Except for items or materials can to be recycled, reused, salvaged, reinstalled, or otherwise indicated to remain Owner's property, remove demolished materials from Project site.

1. Do not allow demolished materials to accumulate on-site.
2. Remove and transport debris in a manner that will prevent spillage on adjacent areas.

3. Comply with requirements specified in SECTION O1560 ENVIRONMENTAL CONTROLS and other Division 1 General Requirements.

B. Burning: Do not burn demolished materials.

C. Disposal: Transport demolished materials off Owner's property and legally dispose of them.

3.03 CLEANING

A. Upon completion of demolition work, remove tools, equipment, and demolished materials from site. Remove protections and leave interior areas broom clean.

B. Clean adjacent areas and improvements of dust, dirt, and debris caused by selective demolition operations. Repair demolition performed in excess of that required. Return structures and surfaces to condition existing prior to commencement of selective demolition work. Repair adjacent construction or surfaces soiled or damaged by selective demolition work.

C. Where exposed existing surfaces and/or materials are damaged or left unfinished by the removal work, the resultant exposed unfinished surfaces shall be repaired, patched, filled or finished to match the adjoining existing surfaces. Where the method of repair is not indicated or specified, the Contractor shall perform the repair work.

## PART 4 – MEASUREMENT AND PAYMENT

### 4.01 BASIS OF MEASUREMENT AND PAYMENT

A. Work specified in this Section will be paid at the unit price measurement noted below.

B. Allowance: Unforeseen Site Conditions encountered during the selective demolition or construction period shall be paid for under an allowance item in the Proposal Schedule.

| Item No. | Item | Unit |
|---|---|---|
| 02411.I | Unforeseen Condition | Allowance |

END OF SECTION

# DIVISION 5 - METALS

## SECTION 05120 - STRUCTURAL STEEL

## 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:

1. Structural steel.

2. Grout.

B. Related Sections:

1. Section 05519 – POST-INSTALLED CONCRETE ANCHORS

### 1.03 SUBMITTALS

A. General: Submit in accordance with Section 01300 – SUBMITTALS.

B. Product Data: For each type of product indicated.

C. Shop Drawings: Show fabrication of structural-steel components.

1. Include details of cuts, connections, splices, camber, holes, and other pertinent data.

2. Include embedment drawings.

3. Indicate welds by standard AWS symbols, distinguishing between shop and field welds, and show size, length, and type of each weld. Show backing bars that are to be removed and supplemental fillet welds where backing bars are to remain.

4. Indicate type, size, and length of bolts, distinguishing between shop and field bolts.

D. Welding Procedure Specifications (WPSs) and Procedure Qualification Records (PQRs): Provide according to AWS D1.1/D1.1M, "Structural Welding Code - Steel," for each welded joint whether prequalified or qualified by testing including the following:

1. Power source (constant current or constant voltage).

2. Electrode manufacturer and trade name, for demand critical welds.

E. Qualification Data: For qualified fabricator, testing agency.

F. Welding certificates.

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.

2. Direct-tension indicators.

3. Tension-control, high-strength bolt-nut-washer assemblies.

4. Shear stud connectors.

5. Shop primers.

6. Nonshrink grout.

1.04 QUALITY ASSURANCE

A. Fabricator Qualifications: A qualified fabricator that participates in the AISC Quality Certification Program and is designated an AISC-Certified Plant, Category STD. If an AISC-Certified Plant is not used then special inspection of the fabrication shall be provided in accordance with the Source Quality Control section. Contractor shall pay for fabrication special inspection.

B. Installer Qualifications: A qualified installer who participates in the AISC Quality Certification Program and is designated an AISC-Certified Erector, Category CSE.

C. Welding Qualifications: Qualify procedures and personnel according to AWS D1.1, "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.

D. Comply with applicable provisions of the following specifications and documents:

1. AISC 303.

2. AISC 341 and AISC 341s1.

3. AISC 360.

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

1.05 DELIVERY, STORAGE, AND HANDLING

A. Store materials to permit easy access for inspection and identification. Keep steel members off ground and spaced by using pallets, dunnage, or other supports and spacers. Protect steel members and packaged materials from corrosion and deterioration.

1. Do not store materials on structure in a manner that might cause distortion, damage, or overload to members or supporting structures. Repair or replace damaged materials or structures as directed.

B. Store fasteners in a protected place in sealed containers with manufacturer's labels intact.

1. Fasteners may be repackaged provided Owner's testing and inspecting agency observes repackaging and seals containers.

2. Clean and relubricate bolts and nuts that become dry or rusty before use.

3. Comply with manufacturers' written recommendations for cleaning and lubricating ASTM F 1852 fasteners and for retesting fasteners after lubrication.

1.06 COORDINATION

A. Coordinate selection of shop primers with topcoats to be applied over them. Comply with paint and coating manufacturers' recommendations to ensure that shop primers and topcoats are compatible with one another.

B. Coordinate installation of anchorage items to be embedded in or attached to other construction without delaying the Work. Provide setting diagrams, sheet metal templates, instructions, and directions for installation.

PART 2 – PRODUCTS

2.01 STRUCTURAL-STEEL MATERIALS

A. W-Shapes: ASTM A992.

B. Channels, Angles: ASTM A 36.

C. Plate and Bar: ASTM A 36.

D. Welding Electrodes: Comply with AWS requirements.

## 2.02 BOLTS, CONNECTORS, AND ANCHORS

A. Zinc-Coated High-Strength Bolts, Nuts, and Washers: ASTM F3125, Grade A325, Type 1, heavy-hex steel structural bolts; ASTM A 563, Grade DH heavy-hex carbon-steel nuts; and ASTM F 436, Type 1, hardened carbon-steel washers.

1. Finish: Hot-dip zinc coating.

2. Direct-Tension Indicators: ASTM F 959, Type 325, compressible-washer type with mechanically deposited zinc coating finish.

B. Anchor connections into concrete shall meet the requirements of Section 05519–POST-INSTALLED CONCRETE ANCHORS.

## 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. Compressive strength shall be a minimum of 3,000 psi in 1 day and 5,000 psi in 28 days.

## 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.

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. 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. Do not thermally cut bolt holes or enlarge holes by burning.

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. Weld Connections: Comply with AWS D1.1/D1.1M and AWS D1.8 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.

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 PAINTING

A. Zinc Coated Metal Surfaces: Provide the following finish systems over properly prepared zinc-coated (galvanized) metal surfaces.

1. Epoxy and Satin Polysiloxane Coating:

a. Pretreatment: Solvent clean surface to SSPC-SP 1 followed by power tool cleaning to SSPC-SP 3 or hand tool cleaning to SSPC-SP 2.

b. Primer: PPG Amercoat, Amerlock Sealer Two-Component Epoxy Primer Sealer, 1.0 to 1.5 mils dry film thickness, one coat.

c. Intermediate: PPG Amercoat, Amerlock 2 Two-Component Epoxy Coating, 5 to 7 mils dry film thickness, one coat.

d. Topcoat: PPG Amercoat, PSX 805 Satin Polysiloxane, 4 to 6 mils dry film thickness, one coat.

e. System DFT: 10-14.5 mils

f. If coating system products, dry film thickness, or installation requirements listed above differ from manufacturer's recommendation, manufacturer's recommendation shall govern.

g. Color to be selected by DOT-A from manufacturer's standard color catalog.

2. Substitution request:

a. Application or approved equals shall be requested in writing as noted in the Notice to Bidders. Application for steel paint finish approved equals shall include verification of the following information:

1) The paint manufacturer shall provide documented performance data from field installations showing that the submitted paint system has maintained its corrosive protection and adhesion to the substrate a minimum of 10 years in service in coastal or marine environments with minor to no color disfiguration.

2) The paint system shall have been used in a minimum of ten projects of similar size and application.

3) Installation requirements, equipment, and procedures including required installer qualifications recommended by the paint manufacturer.

4) Manufacturer's full color range for the submitted paint system.

## 2.08 SOURCE QUALITY CONTROL

A. Testing Agency: If an AISC-Certified Plant is not used for fabrication, the Engineer of record's firm will engage an independent testing and inspection agency, paid for at the contractor's expense, to perform shop tests and inspection and prepare test report.

1. Contractor shall provide testing agency with access to places where structural-steel work is being fabricated or produced to perform tests and inspections.

B. Correct deficiencies in Work that test reports and inspections indicate does not comply with the Contract Documents.

C. Welded Connections: In addition to visual inspection, shop-welded connections will be tested and inspected according to AWS D1.1 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.

## PART 3 – EXECUTION

### 3.01 EXAMINATION

A. Verify, with steel Erector present, elevations of concrete- and masonry-bearing surfaces and locations of anchor rods, bearing plates, and other embedments for compliance with requirements.

1. Prepare a certified survey of bearing surfaces, anchor rods, bearing plates, and other embedments showing dimensions, locations, angles, and elevations.

B. Proceed with installation only after unsatisfactory conditions have been corrected.

### 3.02 PREPARATION

A. Provide temporary shores, guys, braces, and other supports during erection to keep structural steel secure, plumb, and in alignment against temporary construction loads and loads equal in intensity to design loads. Remove temporary supports when permanent structural steel, connections, and bracing are in place unless otherwise indicated.

1. Do not remove temporary shoring supporting composite deck construction until cast-in-place concrete has attained its design compressive strength.

### 3.03 ERECTION

A. Set structural steel accurately in locations and to elevations indicated and according to AISC 303 and AISC 360.

B. Base Plates: Clean concrete- and masonry-bearing surfaces of bond-reducing materials, and roughen surfaces prior to setting plates. Clean bottom surface of plates.

1. Set plates for structural members on wedges, shims, or setting nuts as required.

2. Weld plate washers to top of baseplate.

3. Snug-tighten anchor rods after supported members have been positioned

and plumbed. Do not remove wedges or shims but, if protruding, cut off flush with edge of plate before packing with grout.

4. Promptly pack grout solidly between bearing surfaces and plates so no voids remain. Neatly finish exposed surfaces; protect grout and allow to cure. Comply with manufacturer's written installation instructions for shrinkage-resistant grouts.

C. Maintain erection tolerances of structural steel within AISC's "Code of Standard Practice for Steel Buildings and Bridges."

D. 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.

E. Splice members only where indicated.

F. Do not use thermal cutting during erection.

G. Do not enlarge unfair holes in members by burning or using drift pins. Ream holes that must be enlarged to admit bolts.

## 3.04 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.

## 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.

B. Touchup Painting: Immediately after erection, clean exposed areas where primer is damaged or missing and paint with the same material as used for shop painting to comply with SSPC-PA 1 for touching up shop-painted surfaces.

1. Clean and prepare surfaces by SSPC-SP 2 hand-tool cleaning or SSPC-SP 3 power-tool cleaning.

## 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 05519 – POST-INSTALLED CONCRETE ANCHORS

## 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: Post-installed anchors installed into concrete surfaces to anchor structural steel members.

B. Related Sections:

1. Section 05120 – STRUCTURAL STEEL

### 1.03 SUBMITTALS

A. General: Submit in accordance with Section 01300 – SUBMITTALS.

1. Product specifications with recommended design values and physical characteristics for epoxy dowels, expansion and undercut anchors.

2. Samples: Representative length and diameters of each type anchor shown on the Drawings.

3. Quality Assurance Submittals:

a. Test Reports: Certified test reports showing compliance with specified performance characteristics and physical properties.

b. Certificates:

1) ICC ES Evaluation Reports.

2) Manufacturer's installation instructions.

3) Installer Qualifications & Procedures: Submit installer qualifications as stated in Section 1.04B. Submit a letter of procedure stating method of drilling, the product proposed for use, the complete installation procedure, manufacturer training date, and a list of the personnel to be trained on anchor installation.

B. Closeout Submittals: Submit the following:

1. Record Documents: Project record documents for installed materials.

1.04 QUALITY ASSURANCE

A. Installer Qualifications:

1. Drilled-in anchors shall be installed by an installer with at least five years of experience performing similar installations.

B. Installer Training: Conduct a thorough training with the manufacturer or the manufacturer's representative for the installer on the project. Training to consist of a review of the complete installation process for drilled-in anchors, to include but not limited to:

1. Hole drilling procedure

2. Hole preparation & cleaning technique

3. Adhesive injection technique & dispenser training / maintenance

4. Rebar dowel preparation and installation

5. Proof loading/torquing

C. Certifications: Anchors shall have the following certifications:

1. ICC ES Evaluation Report indicating conformance with current applicable ICC ES Acceptance Criteria.

1.05 DELIVERY, STORAGE AND HANDLING

A. Store anchors in accordance with manufacturer's recommendations.

B. Ensure anchor adhesive is stored according to manufacturer's recommendations for temperature, sunlight exposure, and shelf-life limitations.

PART 2 – PRODUCTS

2.01 MATERIALS

A. Fasteners and Anchors:

1. Carbon and Alloy Steel Nuts: ASTM A563.

2. Carbon Steel Washers: ASTM F436.

3. Carbon Steel Threaded Rod: ASTM A36.

4. Hot-Dip Galvanizing: ASTM F2329.

2.02 DRILLED-IN ANCHORS

A. Cartridge Injection Adhesive Anchors: Threaded steel rod, inserts or reinforcing dowels, complete with nuts, washers, polymer or hybrid mortar adhesive injection system, and manufacturer's installation instructions. Type and size as indicated on Drawings.

1. As indicated on the Drawings, provide hot-dipped galvanized threaded rods. Threaded rods, nuts, and washers shall meet the corresponding ASTM and shall be hot-dipped galvanized according to the ASTM listed in paragraph 2.01A. Steel nuts and washers shall have minimum proof stress equal to or greater than the specified minimum full-size tensile strength of the externally threaded fastener.

## PART 3 – EXECUTION

### 3.01 INSTALLATION

A. Drilled-In Anchors:

1. Drill holes with rotary impact hammer drills using carbide-tipped bits or hollow drill bit system. Drill bits shall be of diameters as specified by the anchor manufacturer. Unless otherwise shown on the Drawings, all holes shall be drilled perpendicular to the concrete surface.

a. Cored Holes: Where anchors are permitted to be installed in cored holes, use core bits with matched tolerances as specified by the manufacturer. Properly clean cored hole per manufacturer's instructions.

b. Embedded Items: Identify position of reinforcing steel and other embedded items prior to drilling holes for anchors. Exercise care in coring or drilling to avoid damaging existing reinforcing or embedded items. Notify the Engineer if reinforcing steel or other embedded items are encountered during drilling. Take precautions as necessary to avoid damaging prestressing tendons, electrical and telecommunications conduit, and gas lines.

c. Base Material Strength: Unless otherwise specified, do not drill holes in concrete or masonry until concrete, mortar, or grout has achieved full design strength.

2. Perform anchor installation in accordance with manufacturer instructions.

3. Cartridge Injection Adhesive Anchors: Clean all holes per manufacturer instructions to remove loose material and drilling dust prior to installation of adhesive. Inject adhesive into holes proceeding from the bottom of the hole and progressing toward the surface in such a manner as to avoid introduction of air pockets in the adhesive. Follow manufacturer recommendations to ensure proper mixing of adhesive components. Sufficient adhesive shall be injected in the hole to ensure that the annular

gap is filled to the surface. Remove excess adhesive from the surface. Shim anchors with suitable device to center the anchor in the hole. Do not disturb or load anchors before manufacturer specified cure time has elapsed.

4. Observe manufacturer recommendations with respect to installation temperatures for cartridge injection adhesive anchors and capsule anchors.

3.02 REPAIR OF DEFECTIVE WORK

A. Remove and replace misplaced or malfunctioning anchors. Fill empty anchor holes and patch failed anchor locations with high-strength non-shrink, nonmetallic grout. Anchors that fail to meet proof load or installation torque requirements shall be regarded as malfunctioning.

1. If repair work is required, submit product data and safety data sheet of grout.

3.03 FIELD QUALITY CONTROL

A. Minimum anchor embedments shall be as shown on the Drawings.

B. Special inspection shall be performed by the Engineer of record or their personnel, to fulfill the special inspections requirements of International Building Code (IBC) 2018 for post installed concrete anchors.

C. The contractor shall be responsible for ensuring that special inspection of portions of the work as required by the building code is made at the appropriate time. The contractor shall submit statement of responsibility to the contracting officer prior to the commencement of work. The contractor shall give timely notice of when and where inspections are to be made and provide access for the inspector. Frequency of inspection is defined in the IBC, section 1705 tables. The contractor shall correct defective work at no additional cost to the state and pay for re-inspection as required.

D. Special inspectors shall keep records of inspections. Reports shall indicate that work inspected was done in conformance with approved construction documents. The inspector shall submit a final signed report to the state and licensed architect or engineer documenting that there are no known unresolved code requirements.

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 various items of work in this project.

END OF SECTION

DIVISION 7 - THERMAL AND MOISTURE PROTECTION

SECTION 07550 - MODIFIED BITUMINOUS SHEET ROOFING

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

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

1.01 SUMMARY

This Section includes a new roofing system consisting of the following:

1. Modified bituminous torch application base sheet and cap sheet.

2. Incorporated metal flashing as specified.

3. Liquid applied base flashing.

1.02 PERFORMANCE REQUIREMENTS

A. General: Provide installed roofing membrane and base flashings that remain watertight; do not permit the passage of water; and resist specified uplift pressures, thermally induced movement, and exposure to weather without failure.

B. Material Compatibility: Provide roofing materials that are compatible with one another under conditions of service and application required, as demonstrated by roofing manufacturer based on testing and field experience.

C. Windstorm Performance: Provide a roofing system that is identical to systems that have been successfully tested by a qualified testing and inspecting agency to resist uplift pressure calculated according to the latest adopted edition of the International Building Code, FM 1-570.

D. Fire-Test-Response Performance: Provide roofing materials with the fire-test-response characteristics indicated as determined by testing identical products per test method below by UL, or another testing and inspecting agency acceptable to authorities having jurisdiction. Materials shall be identified with appropriate markings of applicable testing and inspecting agency.

1. Exterior Fire-Test Exposure: Class B; ASTM E 108, for application and roof slopes indicated.

2. Fire-Resistance Ratings: ASTM E 119, for fire-resistance-rated roof

assemblies of which roofing system is a part.

1.03 SUBMITTALS

A. Submit in accordance with SECTION 01300 - SUBMITTALS.

B. Product Data: For each type of product indicated.

C. Safety Data Sheets (SOS): Provide material and/or product Safety Data Sheets (SOS) for each type of product indicated.

D. Shop Drawings: For roofing system. Include plans, elevations, sections, details, and attachments to other work.

1. Base flashings, cants, and membrane terminations.

2. Crickets, saddles, and tapered edge strips, including slopes.

E. Certificates:

1. Signed by roofing system manufacturer certifying that Installer is approved, authorized, or licensed by manufacturer to install roofing system.

2. Signed by roofing system manufacturer certifying that its representative is authorized to act on and make commitments on behalf of the manufacturer.

3. Signed by roofing system manufacturer certifying that the independent roofing auditor/inspector is authorized to act and make commitments in the manufacturer's behalf.

F. Manufacturer Certificates: Signed by roofing manufacturer certifying that roofing system complies with requirements specified in item entitled "PERFORMANCE REQUIREMENTS" hereinabove. Submit evidence of meeting performance requirements.

G. Product Test Reports: Based on evaluation of comprehensive tests performed by manufacturer and witnessed by a qualified testing agency, for components of roofing system.

1. Fire Classification-Rating Test: B.

2. Uplift Rating: FM 1-570.

I. Maintenance Data: For roofing system to include in maintenance manuals.

J. Inspection Report: Copy of roofing system manufacturer representative's or independent roofing inspection progress and final inspection reports.

1.04 SYSTEM DESCRIPTION

Modified bitumen roofing and insulation assembly meeting the performance requirements of this Section and consisting of the following components:

1. Two ply SBS mineral surfaced membrane roof covering, torch application to the existing modified bituminous sheet roofing, installed in conformance with the tested and approved fire rated assembly.

2. Liquid Flashing at curbs and penetrations in accordance with manufacturer's details and instructions.

1.05 QUALITY ASSURANCE

A. Installer Qualifications: A qualified firm that is approved, authorized, or licensed by roofing system manufacturer to install manufacturer's product and that is eligible to receive manufacturer's warranty.

B. Manufacturer Qualifications: A qualified manufacturer that has a UL listing for roofing system identical to that used for this Project.

C. Testing Agency Qualifications: An independent testing agency with the experience and capability to conduct the testing indicated, as documented according to ASTM E 548.

D. Source Limitations: Obtain components for roofing system approved by roofing system manufacturer.

1.06 PRE-INSTALLATION MEETING

The General Contractor, the authorized roofing and roofing insulation manufacturers' representatives, or their independent roofing inspectors shall attend a pre-installation meeting at Project site. Include other related trades, such as Sheet Metal Contractor, as applicable. Confirm the required participants with the Airports. Notify participants at least 5 days prior to meeting.

1. Review methods and procedures related to roofing installation, including manufacturer's written instructions.

2. Review and finish construction schedule and verify availability of materials, Installer's personnel, equipment, and facilities needed to make progress and avoid delays.

3. Review odor and air quality mitigation procedures, including location of asphalt kettles, ventilation openings, and air flow.

4. Examine deck substrate conditions and finishes for compliance with requirements, including flatness and fastening.

5. Review structural loading limitations of roof deck during and after roofing.

6. Review base flashings, special roofing details, roof drainage, roof penetrations, equipment/ductwork curbs, and condition of other construction that will affect roofing system.

7. Review governing regulations and requirements for insurance and certificates if applicable.

8. Review temporary protection requirements for roofing system during and after installation.

9. Review roof observation and repair procedures after roofing installation.

1.07 ROOFING SYSTEM MANUFACTURER'S PROJECT PARTICIPATION

General Contractor, Roofing Installer, and Roofing System Manufacturer Representative or their independent roofing inspector shall inspect the roof surfaces at the end of the roofing application, unless the Roofing System Manufacturer requires additional inspections for warranty provisions.

1.08 DELIVERY, STORAGE, AND HANDLING

A. Deliver roofing materials to Project site in original containers with seals unbroken and labeled with manufacturer's name, product brand name and type, date of manufacture, and directions for storage.

B. General: Each package of modified bitumen roof covering materials shall bear the label of a recognized agency having a service for the inspection of material and finished products during manufacture (e.g., ASTM, UL, etc.).

C. Store liquid materials in their original undamaged containers in a clean, dry, protected location and within the temperature range required by roofing system manufacturer. Protect stored liquid material from direct sunlight. Discard and legally dispose of liquid material that cannot be applied within its stated shelflife.

D. Protect roll goods, roof insulation, and any other materials that absorb or are affected by moisture from physical damage and from deterioration by sunlight, moisture, soiling, and other sources. Store in a dry location. Comply with insulation manufacturer's written instructions for handling, storing, and protecting during installation. Do not use wet materials and/or materials which appear to have been deteriorated after getting wet.

E. Storage of Materials at Job Site:

1. Except when placed on roof decks immediately prior to installation, store roofing materials above the supporting surfaces, such as on pallets.

2. Store materials containing solvents in a dry, cool area with proper fire and safety precautions.

3. Stored roll goods shall be stored on end.
4. Distribute materials stored on other than the ground, so that their resultant weight does not exceed the design live load on the deck (normally 20 pounds per square foot on roofs and 40 pounds per square foot on floors).

1.10 PROJECT CONDITIONS

Weather Limitations: Proceed with installation only when existing and forecasted weather conditions permit roofing system to be installed according to manufacturer's written instructions and warranty requirements.

## PART 2 - PRODUCTS

2.01 SBS-MODIFIED ASPHALT-SHEET MATERIALS

A. Granular Surfaced Roofing Membrane Cap Sheet FR: ASTM D 6164 Grade G, Type II, composite polyester and glass-fiber-reinforced, SBS-modified asphalt sheet; granular surfaced; suitable for application method specified and having an SRI Index of 87 and as follows:

1. Granule Material: Mineral.

2. Granule Color: UltraWhite.

3. Basis of Design: Firestone SBS Premium FR Torch Cap Sheet or pre-approved equal.

B. Base Sheet: ASTM D 1970, SBS rubber modified, self adhesive asphalt blend reinforced with a 1.8 pound per 100 square foot glass fiber mat and coated with a fine mineral release agent on the top surface and an opaque release film on the bottom surface.

Basis of Design: Firestone BaseGard SA Base Sheet or pre-approved equal.

2.02 AUXILIARY ROOFING MEMBRANE MATERIALS

A. General: Auxiliary materials recommended by roofing system manufacturer for intended use and compatible with roofing membrane and warranted by manufacturer as part of the full system warranty.

B. Mastic Sealant: Plain or modified bitumen, non-hardening, non-migrating, non-skinning, and nondrying as recommended by the roofing manufacturer.

C. Fasteners: Factory-coated steel fasteners and metal or plastic plates meeting corrosion-resistance provisions in FM 4470, designed for fastening roofing membrane components to substrate, tested by manufacturer for required pullout

strength, and acceptable to roofing system manufacturer.

D. Cant Strips and Tapered Edge Strips: 45 degree face slope and minimum 5-inch (127 mm) face dimension; provide at all angle changes between vertical and horizontal planes that exceed 45 degrees.

1. Type: Non-flammable perlite, complying with ASTM C 728.

2. Type: Wood fiber, complying with ASTM C 208.

3. Install using hot asphalt (Type IV), roofing mastic, or mechanically fastened using fasteners and plates approved by roofing manufacturer.

E. Lead Flashing: Soft lead sheet, minimum 3 pounds per square foot (1.19 mm).

F. Liquid Membrane Flashing: Apply to all curb flashings, penetrations and corners in accordance with manufacturer's details and instructions.

Basis of Design: Firestone UltraFlash Liquid Flashing or pre-approved equal.

G. Roofing Granules: Match roofing cap sheet.

H. Miscellaneous Accessories: Provide miscellaneous accessories recommended by roofing system manufacturer.

2.03 ACCESSORY MATERIALS

Wood Nailers: PS 20 dimension lumber, Structural Grade No. 2 or better Southern Pine, Douglas Fir; or PS 1, APA Exterior Grade plywood; pressure preservative treated.

1. Width: 3-1/2 inches, nominal minimum or as wide as the nailing flange of the roof accessory to be attached to it.

2. Thickness: Same as thickness of roof insulation.

## PART 3 - EXECUTION

3.01 EXAMINATION

Examine substrates, areas, and conditions, with Installer present, for compliance with the following requirements and other conditions affecting performance of roofing system:

1. Verify that roof openings and penetrations are in place and set and braced.

2. Verify that cants, blocking, curbs, and nailers are securely anchored to roof

deck at penetrations and terminations.

3. Verify that roof construction and surface meets the requirements of the roofing manufacturer.

4. Verify that concrete curing compounds that will impair adhesion of roofing components to roof deck have been removed.

5. Verify that substrate is visibly dry and free of moisture.

6. Verify that deck is securely fastened with no projecting fasteners and with no adjacent units in excess of 1/16-inch (1.6 mm) out of plane relative to adjoining deck.

7. Proceed with installation only after unsatisfactory conditions have been corrected.

3.02 PREPARATION - NEW ROOFING

A. Clean substrate of dust, debris, moisture, and other substances detrimental to roofing installation according to roofing system manufacturer's written instructions. Remove sharp projections.

B. Prevent materials from entering and clogging downspouts and conductors and from spilling or migrating onto surfaces of other construction.

3.03 ROOFING MEMBRANE INSTALLATION, GENERAL

A. Install roofing membrane system according to roofing system manufacturer's written instructions and applicable recommendations of ARMA/NRCA's "Quality Control Guidelines for the Application of Polymer Modified Bitumen Roofing".

B. Start installation of roofing membrane in presence of roofing system manufacturer's technical personnel.

C. Cooperate with testing and inspecting agencies engaged or required to perform services for installing roofing system.

D. Coordinate installing roofing system so insulation and other components of the roofing membrane system not permanently exposed are not subjected to precipitation or left uncovered at the end of the workday or when rain is forecast.

1. Provide tie-offs at end of each day's work to cover exposed roofing membrane sheets and insulation with a course of coated felt set in roofing cement or hot roofing asphalt with joints and edges sealed.

2. Complete terminations and base flashings and provide temporary seals to prevent water from entering completed sections of roofing system.

3. Remove and discard temporary seals before beginning work on adjoining roofing.

E. Substrate-Joint Penetrations: Prevent roofing materials from penetrating substrate joints, entering building, or damaging roofing system components or adjacent building construction.

## 3.04 MEMBRANE APPLICATION - GENERAL

A. Unroll roofing membrane sheets and allow them to relax for minimum time period required by manufacturer.

B. Laps: Accurately align roofing membrane sheets, without stretching, and maintain uniform side and end laps. Stagger end laps. Completely bond and seal laps, leaving no voids.

1. Repair tears and voids in laps and lapped seams not completely sealed.

2. Apply roofing granules to cover exuded bead at laps while bead is hot.

C. Install roofing membrane sheets so side and end laps shed water.

## 3.05 SBS-MODIFIED BITUMINOUS MEMBRANE INSTALLATION

Install modified bituminous roofing membrane sheet and cap sheet according to roofing manufacturer's written instructions, starting at low point of roofing system. Extend roofing membrane sheets over and terminate beyond cants, installing as follows:

1. Self-adhere base sheet to cover board.

2. Torch apply interply to base sheet.

3. Torch apply cap sheet to interply sheet.

## 3.06 FLASHING AND ACCESSORIES INSTALLATION

A. Install metal and liquid flashings, including laps, splices, joints, bonding, adhesion, and attachment, as required by membrane manufacturer's recommendations and details.

B. Metal Accessories: Install metal edgings, gravel stops, and copings in locations indicated on the drawings, with horizontal leg of edge member over membrane and flashing over metal onto membrane.

1. Follow roofing manufacturer's instructions.

2. Remove protective plastic surface film immediately before installation.

3. Install water block sealant under the membrane anchorage leg.

4. Flash with manufacturer's recommended flashing sheet unless otherwise indicated.

5. Where single application of flashing will not completely cover the metal flange, install additional piece of flashing to cover the metal edge.

6. If the roof edge includes a gravel stop and sealant is not applied between the laps in the metal edging, install an additional piece of self-adhesive flashing membrane over the metal lap to the top of the gravel stop; apply seam edge treatment at the intersections of the 2 flashing sections.

7. When the roof slope is greater than 1:12, apply seam edge treatment along the back edge of the flashing.

C. Flashing at Walls, Curbs, and Other Vertical and Sloped Surfaces: Install weathertight flashing at all walls, curbs, parapets, curbs, and other vertical and sloped surfaces that the roofing membrane abuts to; extend flashing at least 8-inches (200 mm) high above membrane surface.

1. Use the longest practical flashing pieces.

2. Evaluate the substrate and overlay and adjust installation procedure in accordance with membrane manufacturer's recommendations.

3. Complete the splice between flashing and the main roof sheet with specified splice adhesive before adhering flashing to the vertical surface.

D. Flashing at Penetrations: Flash all penetrations passing through the membrane; make flashing seals directly to the penetration.

1. Pipes. Round Supports. Corners. Curbs, Drains. Metal Flashing, and Similar Items: Flash with specified self-curing elastomeric flashing with same granules used on cap sheet.

2. Pipe Clusters and Unusual Shaped Penetrations: Provide penetration pocket at least 2-inches (50 mm) deep, with at least one-inch (25 mm) clearance from penetration, sloped to shed water.

## 3.07 FIELD QUALITY CONTROL - INSPECTIONS

A. Final Roof Inspection: Arrange for roofing system manufacturer's technical personnel to inspect roofing installation on completion and submit report to Airports and to roofing manufacturer as needed.

1. Notify Airports 48 hours in advance of date and time of inspection.

2. Repair or remove and replace components of roofing system where test

results or inspections indicate that they do not comply with specified requirements.

3. Additional testing and inspecting, at Contractor's expense, will be performed to determine compliance of replaced or additional work with specified requirements.

3.08 FIELD QUALITY CONTROL - TESTING

A. Final Roof Inspection: Arrange for roofing system manufacturer's technical personnel to inspect roofing installation on completion and submit report to Airports. Notify Airports 48 hours in advance of date and time of inspection.

B. Repair or remove and replace components of roofing system where test results or inspections indicate that they do not comply with specified requirements.

C. Additional testing and inspecting, at Contractor's expense, will be performed to determine compliance of replaced or additional work with specified requirements.

3.09 PROTECTING AND CLEANING

A. Protect roofing system from damage and wear during remainder of construction period. When remaining construction will not affect or endanger roofing, inspect roofing for deterioration and damage, describing its nature and extent in a written report, with copies to Airports.

B. Cleaning:

1. Remove debris from roofing work from the premises and dispose at the end of each working day and upon completion of the work to the satisfaction of the Airports. Leave roof in good, clean condition.

2. Bitumen, modified and otherwise, shall be removed completely from all surfaces other than the roofing, especially those to which sealants must be bonded and/or metal flashings which are to be painted. Cleaned out gutters, downspouts, and remove all blockages prior to acceptance of the project.

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 07620 - SHEET METAL FLASHING AND TRIM

## PART 1 - GENERAL

### 1.01 RELATED DOCUMENTS

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

### 1.02 SUMMARY

A. Provide all sheet metal flashing and trim work as indicated on the drawings and as specified herein, including the following:

1. Flashings and enclosure.

B. Related Work Specified Elsewhere: SECTION 07920 - JOINT SEALANTS: Sealant applications.

### 1.03 SUBMITTALS

A. Submit in accordance with SECTION 01300 - SUBMITTALS.

B. Product Data: Submit manufacturer's material product and finish data, installation instructions, and general recommendations for each material.

C. Shop Drawings: Submit shop drawings of all required details of items specified herein, showing layout, profile, methods of joining, and anchorage details.

D. Samples: Submit samples of sheet metal, expansion joint cover, and accessory items in the specified finish. Submit 8-inch square samples of sheet materials and 12-inch long samples of factory-fabricated products.

E. Warranty: Submit warranty as noted under item entitled "WARRANTY" hereinbelow.

### 1.04 WARRANTY

Contractor's Warranty: Submit Contractor's 2 year written warranty to provide labor and materials to repair or replace defective sheet metal flashing and trim materials and workmanship. Repairs include, but are not limited to, repair of water leaks and repair of damages to the building.

### 1.05 QUALITY ASSURANCE

A. Engage an experienced installer who has completed sheet metal flashing and trim work similar in material, design, and extent to that indicated for this project and with a record of successful in-service performance.

B. All sheet metal flashing and trim fabrications shall conform to State and local codes, SMACNA (latest edition) and industry standards.

C. Coordinate work with roofing work to provide required supports and fasteners to comply with roofing performance requirements.

1.06 PERFORMANCE REQUIREMENTS

Install sheet metal flashing and trim work to withstand wind loads, structural movement, thermally induced movement, and exposure to weather without falling, rattling, leaking, and fastener disengagement.

1.07 DELIVERY, STORAGE, AND HANDLING

A. Deliver sheet metal flashing and trim materials and fabrications undamaged. Protect sheet metal flashing and trim materials and fabrications during transportation and handling.

B. Unload, store, and install sheet metal flashing and trim materials and fabrications in a manner to prevent bending, warping, twisting, and surface damage.

C. Stack materials on platforms or pallets, covered with suitable weathertight and ventilated covering. Do not store sheet metal flashing and trim materials in contact with other materials that might cause staining, denting, or other surface damage.

1.08 COORDINATION

Coordinate installation of sheet metal flashing and trim with interfacing and adjoining construction to provide a leakproof, secure, and non-corrosive installation.

PART 2 - PRODUCTS

2.01 MATERIALS

A. Stainless Steel Flashing: 24 gauge unless otherwise indicated of stainless steel sheet, ASTM A 240/A 240M, Type 316, soft annealed, with No. 2B finish.

B. Hangers, Spacers, Brackets, Straps, etc.: Copper, ASTM B 152/8 152M, size and shape as indicated on the drawings or if not indicated, as per requirements of Architectural Sheet Metal Manual.

C. Fasteners: Fasteners shall be manufacturer's standard or custom fabricated stainless steel or copper types at copper materials and stainless steel types at other metal materials. Exposed fasteners where occurs or where required shall be of head to match flashing finish with composite metal and neoprene washer.

D. Solder: ASTM B 32, of grade and type required for materials to be soldered.

E. Moisture Barrier: ASTM D 226/D 226M, Type I, No. 15, or Type II, No. 30, asbestos free, asphalt saturated roofing felt as indicated.

F. Adhesive: Type recommended by flashing sheet metal manufacturer for waterproofing and weather resistant seaming and adhesive application of flashing sheet metal.

2.02 FABRICATION, GENERAL

A. Sheet Metal Fabrication Standard: Fabricate sheet metal flashing and trim to comply with recommendations of SMACNA's "Architectural Sheet Metal Manual" that apply to the design, dimensions, metal, and other characteristics of the item indicated.

B. Fabricating: Comply with details shown to fabricate sheet metal flashing and trim that fit substrates and result in waterproof and weather-resistant performance once installed. Verify shapes and dimensions of surfaces to be covered before fabricating sheet metal.

C. Forming: Form exposed sheet metal work that is without excessive oil canning, buckling, and tool marks and that is true to line and levels indicated, with exposed edges folded back to form hems.

D. Seams: Fabricate nonmoving seams in sheet metal with flat-lock seams. Tin edges to be seamed, form seams, and solder.

E. Expansion Provisions: Provide movement joints where indicated with no joints allowed within 24-inches of corner or intersection. Where lapped or bayonet-type expansion provisions in work cannot be used or would not be sufficiently weatherproof and waterproof, form expansion joints of intermeshing hooked flanges, not less than one-inch deep, filled with mastic sealant (concealed within joints).

F. Sealed Joints: Form nonexpansion, but movable, joints in metal to accommodate elastomeric sealant to comply with SMACNA standards.

G. Separation: Separate metal from noncompatible metal or corrosive substrates by coating concealed surfaces at locations of contact with asphalt mastic or other permanent separation as recommended by manufacturer.

H. Fasteners: Conceal fasteners and expansion provisions where possible. Exposed fasteners are not allowed on faces of sheet metal exposed to public view unless otherwise indicated.

I. Attachments: Fabricate cleats and attachment devices from same material as sheet metal component being anchored or from compatible, noncorrosive metal recommended by sheet metal manufacturer. Size shall be as recommended by SMACNA manual or sheet metal manufacturer for application but never less than thickness of metal being secured.

## PART 3 - EXECUTION

### 3.01 INSTALLATION AND WORKMANSHIP

A. General: Surface to which sheet metal is to be applied shall be even, smooth, sound, thoroughly clean and dry, and free from defects that might affect the application. Installer shall report any unsatisfactory surfaces to the Contractor. All such areas and/or conditions shall be corrected by the Contractor. Proceed with installation only after unsatisfactory conditions have been corrected. In the absence of such a report, the Contractor shall be held responsible for the finished product.

B. Accessories: All accessories or other items essential for the completeness of the sheet metal installation, though not specifically indicated on the drawings or specified, shall be provided. All such items unless otherwise indicated on the drawings or specified, shall be of the same kind of materials as the item to be applied, unless otherwise indicated or specified herein. Nails, screws, and bolts shall be of the type best suited for the purpose intended and shall be of stainless steel.

C. Workmanship: Except as otherwise indicated on the drawings or specified, the workmanship of sheet metal work, method of forming joints, anchoring, cleating, provisions for expansion, etc., shall conform to the standards details and recommendations of the Sheet Metal and Air Conditioning Contractors National Association's "Architectural Sheet Metal Manual".

D. Weather Resistance: All sheet metal work shall be fabricated to watertight and wind-tight in compliance with the purpose intended.

E. Protection from Contact of Dissimilar Materials: Surfaces in contact with dissimilar metal shall be painted with heavy-bodied bituminous paint, or shall be separated by means of moistureproof building felts.

### 3.02 PROTECTION

Protect all sheet metal work until final project acceptance.

### 3.03 CLEAN-UP

A. Remove all adhesive, sealants, grease, dirt, etc. from flashing and sheet metal and clean surfaces as recommended by the manufacturer and maintain in a clean condition during construction.

B. At completion of the work, clean up and remove all rubbish and debris from the premises which resulted from this work.

## 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 07920 - JOINT SEALANTS

## PART 1 - GENERAL

### 1.01 RELATED DOCUMENTS

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

### 1.02 SUMMARY

A. Provide all sealants to completely close all joints indicated on the drawings or specified to be sealed to a watertight condition, including the following:

1. Exterior joints.

2. Interior joints.

3. Horizontal traffic-bearing joints.

B. Related Work Specified Elsewhere: SECTION 09901 - PAINTING: Coordinate work.

### 1.03 SUBMITTALS

A. Submit in accordance with SECTION 01300 - SUBMITTALS.

B. Product Data: Submit manufacturer's product data and specifications for each type of sealant.

C. Color Samples: Submit color finish samples of each type of sealant for approval.

D. Product Certificates: Submit certificates signed by manufacturers of joint sealants certifying that products furnished comply with requirements and are suitable for the use indicated.

E. Warranty: Submit warranty as noted under item entitled "WARRANTY" hereinbelow.

### 1.04 WARRANTY

Contractor's Warranty: Submit Contractor's minimum 2 year written warranty from the project acceptance date against leaks, air infiltration, cracks, and other failures of the installation and materials. Where sealant is associated with a system with longer warranty period, sealant warranty shall match applicable system.

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

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

3. The Surety shall not be held liable beyond 2 years from the project acceptance date.

1.05 QUALITY ASSURANCE

A. Installer Qualifications: An experienced installer who has specialized in installing joint sealants similar in material, design, and extent to those indicated for this Project and whose work has resulted in joint-sealant installations with a record of successful in-service performance.

B. Source Limitations: Obtain each type of joint sealant through one source from a single manufacturer.

C. Preconstruction Compatibility and Adhesion Testing: Use manufacturers standard test methods to determine whether priming and other specific joint preparation techniques are required to obtain rapid, optimum adhesion of joint sealants to joint substrates.

D. Compatibility: Verify that each of the sealants are compatible for use with joint substrates.

1.06 PERFORMANCE REQUIREMENTS

A. Provide exterior joint sealants that establish and maintain watertight and airtight continuous joint seals without staining or deteriorating joint substrates.

B. Provide joint sealants for interior applications that establish and maintain airtight and water resistant continuous joint seals without staining or deteriorating joint substrates.

1.07 PRODUCT HANDLING

A. Delivery: Deliver sealants to the jobsite in sealed containers labeled to show the designated name, formula, or specification number, lot number, color, date of manufacture, shelf life, curing time, manufacturer's directions, and name of manufacturer.

B. Storage: Store and handle materials in compliance with manufacturer's written instructions to prevent their deterioration or damage due to moisture, high temperatures, contaminants, or other causes.

1.08 PROJECT CONDITIONS

A. Inspection: Examine joint surfaces and backing, joint widths, and their anchorage to the structure, and conditions under which joint sealer work is to be performed,

and notify Contractor in writing of conditions detrimental to proper completion of the work and performance of sealers. Do not proceed with joint sealer work until unsatisfactory conditions have been corrected in a manner acceptable to installer.

B. Weather Conditions: Do not proceed with installation of sealants under adverse weather conditions. Proceed with the work only when forecasted weather conditions are favorable for proper cure and development of high early bond strength.

## PART 2 - PRODUCTS

### 2.01 MANUFACTURERS

Products: Subject to compliance with requirements, products that may be incorporated into the work include, but are not limited to, products listed hereinbelow.

### 2.02 MATERIALS

A. Materials: Provide joint sealants, backing, and other related materials that are compatible with one another and with joint substrates under conditions of service and application, as approved by sealant manufacturer. Provide all joint sealants with low VOC.

B. Sealants:

1. Sealant No. 1 at Exterior Joints: One-component polyurethane sealant, conforming to ASTM C 920, Type S, Grade NS, Use NT, Class 25 or 35 as applicable. Provide one of the following, or pre-approved equal products of other manufacturers:

    a. Masterseal NP-1; BASF.

    b. Dymonic; Tremco.

    c. Sikaflex - 1a; Sika.

2. Sealant No. 2 at Interior Joints: One-component acrylic latex sealant, conforming to ASTM C 834. Provide one of the following, or pre-approved equal products of other manufacturers:

    a. AC-20 Acrylic Latex; Pecora Corp.

    b. Acrylic Latex; OAP.

    c. Tremflex 834; Tremco.

3. Sealant No. 3 at All Horizontal Traffic-Bearing Joints: One-component or

multi-component polyurethane sealant, conforming to ASTM C 920, Type S or M, Grade P, Use T, Class 25. Provide one of the following, or pre-approved equal products of other manufacturers:

a. Sikaflex - 1cSL or 2cSL; Sika Corp.

b. Urexpan NR-200 or NR-201; Pecora Corp.

c. SL 1 or SL 2; MasterSeal.

C. Sealant Backer Rod: Compressible rod stock of polyethylene foam, polyurethane foam, butyl rubber foam, neoprene foam or other flexible, permanent, durable, nonabsorptive material as recommended for compatibility with sealant by the sealant manufacturer to control the joint depth for sealant placement, to break bond of sealant at bottom of joint, to form optimum shape of sealant bead on back side, and to provide a highly compressible backer which will minimize the possibility of sealant extrusion when joint is compressed.

D. Bond-Breaker Tape: Polyethylene tape or other plastic tape as recommended by sealant manufacturer for preventing sealant from adhering to rigid, inflexible joint filler materials or joint surfaces at back of joint where such adhesion would result in sealant failure.

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

F. Masking Tape: Non-staining, non-absorbent material compatible with joint sealants and surfaces adjacent to joints.

## PART 3 - EXECUTION

### 3.01 MANUFACTURER'S INSTRUCTIONS

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

### 3.02 EXAMINATION

Examine joints indicated to receive joint sealers, with installer present, for compliance with requirements for joint configuration, installation tolerances and other conditions affecting joint sealer performance. Do not proceed with installation of joint sealers until unsatisfactory conditions have been corrected.

### 3.03 PREPARATION

A. Surface Cleaning of Joints: Clean out joints immediately before installing joint sealers to comply with recommendations of joint sealer manufacturers and the

following requirements:

1. Remove all foreign material from joint substrates which could interfere with adhesion of joint sealer, including dust; paints, except for permanent, protective coatings tested and approved for sealant adhesion and compatibility by sealant manufacturer; oil; grease; water; and surface dirt.

2. Clean concrete, masonry, and similar porous joint substrate surfaces, by brushing, grinding, mechanical abrading, or a combination of these methods to produce a clean, sound substrate capable of developing optimum bond with joint sealers. Remove loose particles remaining from above cleaning operations by vacuuming or blowing out joints with oil-free compressed air.

3. Remove laitance and form release agents from concrete.

4. Clean metal and other nonporous surfaces by chemical cleaners or other means which are not harmful to substrates or leave residues capable of interfering with adhesion of joint sealers.

B. Joint Priming: Prime joint substrates where indicated or where recommended by joint sealer manufacturer based on preconstruction joint sealer-substrate tests or prior experience. Apply primer to comply with joint sealer manufacturer's recommendations. Confine primers to areas of joint sealer bond, do not allow spillage or migration onto adjoining surfaces.

C. Masking Tape: Use masking tape where required to prevent contact of sealant with adjoining surfaces which otherwise would be permanently stained or damaged by such contact or by cleaning methods required to remove sealant smears. Remove tape immediately after tooling without disturbing joint seal.

## 3.04 INSTALLATION OF JOINT SEALERS

A. General: Comply with joint sealant manufacturers' printed installation instructions applicable to products and applications indicated, except where more stringent requirements apply. Do not apply sealants on wet surfaces.

B. Sealant Installation Standard: Comply with recommendations of ASTM C 1193 for use of joint sealants as applicable to materials, applications, and conditions.

C. Latex Sealant Installation Standard: Comply with requirements of ASTM C 1193 for use of latex sealants.

D. Installation of Sealant Backings: Install sealant backings to comply with the following requirements:

1. Install joint fillers of type indicated to provide support of sealants during application and at position required to produce the cross-sectional shapes and depths of installed sealants relative to joint widths which allow optimum

sealant movement capability.

a. Do not leave gaps between ends of joint fillers.

b. Do not stretch, twist, puncture, or tear joint fillers.

c. Remove absorbent joint fillers which have become wet prior to sealant application and replace with dry material.

2. Install bond breaker tape between sealants and joint fillers, compression seals, or back of joints where adhesion of sealant to surfaces at back of joints would result in sealant failure.

3. Install compressible seals serving as sealant backings to comply with requirements indicated above for joint fillers.

E. Primer: Immediately prior to application of the sealant, clean out all loose particles from joints. Where recommended by sealant manufacturer, apply primer to joints in concrete, masonry units, wood, and other porous surfaces in accordance with compound manufacturer's instructions. Do not apply primer to exposed finish surfaces.

F. Installation of Sealants: Install sealants by proven techniques that result in sealants directly contacting and fully wetting joint substrates, completely filling recesses provided for each joint configuration, and providing uniform, cross-sectional shapes and depths relative to joint widths which allow optimum sealant movement capability.

G. Tooling of Nonsag Sealants: Immediately after sealant application and prior to time skinning or curing begins, tool sealants to form smooth, uniform beads of configuration indicated, to eliminate air pockets, and to ensure contact and adhesion of sealant with sides of joint. Remove excess sealants from surfaces adjacent to joint. Do not use tooling agents which discolor sealants or adjacent surfaces or are not approved by sealant manufacturer.

1. Provide concave joint configuration per Figure 5A in ASTM C 1193, unless otherwise indicated.

2. Provide flush joint configuration per Figure 5B in ASTM C 1193, where indicated.

## 3.05 CLEANING

Clean off excess sealants or sealant smears adjacent to joints as work progresses by methods and with cleaning materials approved by manufacturers of joint sealers and of products in which joints occur.

## 3.06 PROTECTION

Protect joint sealers during and after curing period from contact with contaminating substances or from damage resulting from construction operations or other causes so that they are without deterioration or damage at time of project acceptance. If, despite such protection, damage or deterioration occurs, cut out and remove damaged or deteriorated joint sealers immediately and reseal joints with new materials to produce joint sealer installations with repaired areas indistinguishable from original work.

## 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

DIVISION 9 – FINISHES

SECTION 09290 - GYPSUM BOARD

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

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

1.02 SUMMARY

A. Provide all gypsum board where indicated on the drawings and as specified herein. Work shall include, but not be limited to, the following:

1. Interior gypsum boards.

2. Exterior sheathing boards.

3. Non-load bearing studs.

4. Batt insulation.

B. Related Work Specified Elsewhere: SECTION 09901 - PAINTING: Painting of gypsum board.

1.03 SUBMITTALS

A. Submit in accordance with SECTION 01300- SUBMITTALS.

B. Product Data: Submit product data for each type of product specified. Include manufacturer's recommended installation instructions.

C. Shop Drawings: Submit shop drawings showing locations, fabrication, and installation of materials, control joints, and expansion joints, including plans, elevations, details of components, and attachments to other units of work.

D. Trim and Finish Samples:

1. Submit trim accessories full-size samples in 12-inch lengths.

2. Submit gypsum board finish sample for approval.

1.04 QUALITY ASSURANCE

Industry Standard: Comply with applicable requirements of GA-216, "Application

and Finishing of Gypsum Board", by the Gypsum Association, except where more detailed or more stringent requirements are indicated, including the recommendations of the manufacturer, and GA-214, "Recommended Specification: Levels of Gypsum Board Finish", by the Gypsum Association.

1.05 PRODUCT HANDLING

Deliver gypsum board materials in sealed containers and bundles, fully identified with manufacturer's name, brand, type, and grade; store in a dry well ventilated space, protected from the weather, under cover, and off the ground. Stack gypsum panels flat to prevent sagging.

## PART 2 - PRODUCTS

2.01 MATERIALS

A. Gypsum Wallboard: ASTM C 1396/C 1396M, 5/8-inch thick unless indicated otherwise, tapered edges, 48-inches wide, Type "X".

B. Exterior Sheathing Board: ASTM C 1177/*C* 1177M, 5/8-inch thick unless indicated otherwise, 48-inches wide, for exterior sheathing substrate. "DensGlass Gold Fireguard" by Georgia Pacific. Provide tape, joint compound, fasteners, etc. as recommended by the manufacturer and as required for the system application.

C. Wallboard Fasteners: ASTM C 1002 or ASTM C 954 as applicable, to wood studs or steel studs, standard bugle head self-drilling, self-tapping corrosive- resistant drywall screws. For cementitious backer units, use screws of type and size recommended by backer unit manufacturer.

D. Non-Load Bearing Studs: ASTM C 645. Studs shall be rolled formed channel of minimum 20 gauge galvanized steel, ASTM A 653/A 653M, G60, hot-dip galvanized coating. Provide holes and notches for conduit or electrical wiring. Adjust stud to a heavier gauge where required by the manufacturer's recommendations for stud wall heights and ceiling supports.

E. PVC Trim Accessories: Provide cornerbeads, edge trim, etc. as indicated on the drawings or as required complying with ASTM C 1047, and formed of polyvinyl chloride (PVC) unless otherwise indicated or required.

F. Joint Treatment Materials: ASTM C 475/C 475M; tape and compound type recommended by wallboard manufacturer for the application indicated, except as otherwise noted.

1. Interior: Use perforated tape, and joint and topping compound, or "all- purpose" compound.

2. Exterior: Use setting-type taping and setting-type sandable topping compounds for gypsum board. Use joint treatment as

recommended by exterior sheathing board manufacturer.

3. Cementitious Backer Units: Use joint treatment as recommended by backer unit manufacturer.

G. Batt Insulation in Stud Walls: Fiberglass batt, ASTM C 665, Type I, thickness to match stud size.

## PART 3 - EXECUTION

### 3.01 EXAMINATION

Examine substrates to which drywall construction attaches or abuts preset hollow metal frames and structural framing, with installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of drywall construction. Do not proceed with installation until unsatisfactory conditions have been corrected.

### 3.02 INSTALLATION OF STEEL FRAMING, GENERAL

A. Steel Framing Installation Standard: Install steel framing to comply with ASTM C 754 requirements that apply to framing installation.

B. Install supplementary framing, blocking, and bracing at terminations in the work and for support of fixtures, equipment services, heavy trim, grab bars, toilet accessories, furnishings, and similar construction to comply with details indicated and with recommendations of gypsum board manufacturer, or if none available, with "Gypsum Construction Handbook" published by United States Gypsum Co.

### 3.03 INSTALLATION OF STEEL FRAMING FOR WALLS AND PARTITIONS AND SOFFIT FRAMING

A. Install runners (tracks) at floors, ceilings, and structural walls and columns where gypsum drywall stud system abuts other construction. Where studs are installed directly against exterior walls, install asphalt felt strips between studs and wall.

B. Install each steel framing and furring member so that fastening surface do not vary more than 1/8-inch from plane of faces of adjacent framing. Align plumb and square.

C. Extend partition framing full height to structural supports, unless otherwise indicated. Continue framing over frames for doors and openings to provide support for gypsum board.

D. Install steel studs and furring in sizes and at spacings indicated but not less than that required by referenced steel framing installation standard. For

single layer construction, 16-inches on center, except as otherwise indicated.

E. Frame door openings to comply with details indicated, with GA-219 and with applicable published recommendations of gypsum board manufacturer. Attach vertical studs at jambs with screws either directly to frames or to jamb anchor clips on door frames; install runner track section (for cripple studs) at head and secure to jamb studs.

F. Frame openings other than door openings to comply with details indicated, or if none indicated, in same manner as required for door openings.

G. Install batt insulation full height, tightly fit against studs, without sag or bulge, from floor to the underside of structure, unless otherwise indicated. Install non-combustible blocking around heat producing devices.

3.04 APPLICATION AND FINISHING OF GYPSUM BOARD, GENERAL

A. Gypsum Board Application and Finishing Standards: Install and finish gypsum board to comply with ASTM C 840, GA-216, and GA-214.

B. Locate exposed end-butt joints as far from center of walls and ceilings as possible, and stagger not less than 24-inches in alternate courses of board.

C. Install ceiling boards in the manner which minimizes the number of end-butt joints, and which avoids end joints in the central area of each ceiling. Stagger end joints at least 24-inches.

D. Install wall/partition boards in manner which minimizes the number of end-butt joints or avoids them entirely where possible.

E. Install exposed gypsum board with face side out. Do not install imperfect, damaged or damp boards. Butt boards together for a light contact at edges and ends with not more than 1/16-inch open space between boards. Do not force into place.

F. Locate either edge or end joints over supports, except in horizontal applications where intermediate supports or gypsum board back-blocking is provided behind end joints. Position boards so that like edges abut, tapered edges against tapered edges and mill-cut or field-cut ends against mill-cut or field-cut ends. Do not place tapered edges against cut edges or ends. Stagger vertical joints over different studs on opposite sides of partitions.

G. Attach gypsum board to supplementary framing and blocking provided for additional support at openings and cutouts.

H. Space fasteners in gypsum boards in accordance with referenced gypsum board application and finishing standard and manufacturer's recommendations.

3.05 METHODS OF GYPSUM BOARD APPLICATION

A. Single-Layer Application on Walls/Partitions: Apply gypsum board vertically (parallel to framing), unless otherwise indicated, and provide sheet lengths which will minimize end joints.

B. Single-Layer Application on Ceilings: Apply gypsum board before partition/wall board application to the greatest extent possible and at right angles to framing, unless otherwise indicated.

C. Single-Layer Fastening Method: Apply gypsum boards to supports by fastening with screws.

3.06 CEMENTITIOUS BACKER UNIT APPLICATION

Install in accordance with ANSI A108.11. Install on partitions/walls, in single-layer application, with screws at 6-inch centers, and in accordance with manufacturer's recommendations. Panel surfaces shall be finished/prepared to receive ceramic tile as per manufacturer's recommendations.

3.07 EXTERIOR SHEATHING BOARD APPLICATION

Install in single-layer application in accordance with ASTM C 1280 and manufacturer's written instructions. Board surfaces shall be finished as required to receive finish surface.

3.08 INSTALLATION OF TRIM ACCESSORIES

A. General: Where feasible, use the same fasteners to anchor trim accessory flanges as required to fasten gypsum board to the supports. Otherwise, fasten flanges to comply with manufacturer's recommendations.

B. Install corner beads at external corners.

C. Install edge trim whenever edge of gypsum board would otherwise be exposed or semi-exposed. Provide type with face flange to receive joint compound.

1. Install "LC" bead where drywall construction is tightly abutted to other construction and back flange can be attached to framing or supporting substrate.

2. Install "L" bead where edge trim can only be installed after gypsum board is installed.

3.09 FINISHING OF GYPSUM BOARD

A. General: Apply joint treatment at gypsum board joints (both directions); flanges of corner bead, edge trim, and control joints; penetrations; fastener heads, surface defects, and elsewhere as required to prepare work for decoration.

B. Prefill open joints and rounded or beveled edges, if any, using setting-type joint compound.

C. Apply joint tape at joints between gypsum boards, except where trim accessories are indicated.

D. Finish interior gypsum wallboard by applying the following levels of gypsum board finish in accordance with GA-214:

1. Level 1: For ceiling plenum areas and concealed areas.

2. Level 2: Not used.

3. Level 3: Not used.

4. Level 4: Not used.

5. Level 5: For exposed wall and ceiling surfaces receiving paints.

6. Where Level 1 gypsum board finish is specified, embed tape in joint compound.

7. Where Level 5 gypsum board finish is specified, embed tape in joint compound and apply first, fill (second), and finish (third) coats of joint compound over joints, angles, fastener heads, and accessories; and apply a thin, uniform skim coat of joint compound over entire surface. For skim coat, use joint compound specified for third coat, or a product specially formulated for this purpose and acceptable to gypsum board manufacturer. Touch up and sand between coats and after last coat as needed to produce a surface free of visual defects, tool marks, and ridges and ready for decoration.

## 3.10 PROTECTION

Provide final protection and maintain conditions, in a manner suitable to installer, which ensures gypsum drywall construction being without damage or deterioration at time of project acceptance.

# 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 09901 – PAINTING

## PART 1 – GENERAL

### 1.01 RELATED DOCUMENTS

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

1.01 DESCRIPTION: The work shall consist of furnishing and paying for all labor, tools, materials, and equipment necessary to install, in place complete, painting of new and existing interior and existing surfaces as indicated on the plans and specified herein. Paint all new work whether scheduled or not, except as otherwise indicated. Paint existing items and surfaces where indicated. Surface preparation, priming, and coats of paint specified are in addition to shop-priming and surface treatment specified under other sections of the work and is included in this Section.

1.02 GENERAL REQUIREMENTS:

A. All work under this section shall be done by a Contractor holding a current C-33 PAINTING AND DECORATING Contractor license from the State of Hawaii and the burden of proof shall rest with the General Contractor.

B. "Paint" as used herein means all coating systems materials, including primers, enamels, sealers, and fillers, and other applied materials whether used as prime, intermediate or finish coats, except as specifically noted herein.

C. Paint all new and selected existing exposed surfaces whether or not colors are designated in "schedules". Where items or surfaces are not specifically mentioned, paint these the same as adjacent similar materials or areas. If color or finish is not designated, the State will select these from standard colors available for the materials systems specified.

D. The manufacturer’s representative shall be present as often as he deems necessary to assure that the application of the product is in conformance with the manufacturer’s direction and will in no way negate the warranty of the manufacturer.

1.03 WORK TO BE INCLUDED: The surfaces to be painted shall include, but not be limited to the following:

A. Interior: All new and existing interior painted surfaces shall be painted as indicated on the plans and/or specifically deleted in these specifications. Interior surfaces to be painted shall be those surfaces not exposed to weather in an area enclose by 4 walls. Also, a surface shall be considered an interior surface and painted as such whenever the color is that of the existing interior color. Extent of treatment for special items is as follows:

1. Interior surfaces, walls, trims, etc.

2. G.I. pipes and conduits, electrical boxes, and similar appurtenances.

3. All areas damaged or exposed during construction.

B. Exterior: All new and existing exterior painted surfaces shall be painted as indicated on the plans and/or specifically deleted in these specifications. Exterior surfaces to be painted shall be any surface exposed to weather in an area not enclosed by 4 walls and a roof. Also, a surface shall be considered and painted as an exterior surface whenever the color is that of the existing exterior color. The extent of treatment for special items is as follows:

1. Steel Equipment Supports and Frames, G.I. Pipes and Conduits, Electric Boxes, Air Conditioning Ducts and Hangers, Fan Housing, and Similar Appurtenances: Exposed surfaces.

2. All areas damaged or exposed during construction.

1.04 SUBMITTALS:

A. Schedule of Finishes:

1. The Contractor shall submit four (4) sets of proposed painting finish schedule to the Officer-in-Charge for approval. The schedule shall indicate surface to be painted, manufacturer, product number, the spread rate which the proposed paint coating will be applied that are necessary to achieve the final dry film thickness indicated under item entitled "SCHEDULE OF FINISHES" hereinbelow.

B. Color Samples:

1. The Contractor shall submit four (4) sets of each color finish sample to the Officer-in-Charge for approval.

2. After the color finish sample has been approved, one (1) set of color finish samples painted onto 8-1/2" x 11" cardboard shall be submitted to the Officer-in-Charge. The cardboard shall be divided into four (4) horizontal strips and painted as follows:

a. Prime 3 strips starting from the bottom.

b. First coat bottom 2 strips.

c. Second coat bottom strip.

C. Schedule of Operations: Before work on the project has commenced, four (4) complete sets of a work schedule showing his sequence of operations and dates shall be submitted by the Contractor to the Officer-in-Charge.

D. Certifications: The Contractor shall submit three (3) copies of asbestos-free, lead-free, zinc-chromate-free, strontium-chromate-free, cadmium-free, and mercury-free paint certificates to the Officer-in-Charge.

E. Manufacturer's Materials Safety Data Sheets: The Contractor shall submit three (3) copies of the Manufacturer's Materials Safety Data Sheet for coatings, solvents, and other hazardous materials to the Officer-in-Charge.

F. Manufacturer's Product Data Sheets: Submit manufacturer's product data sheets for the primers, paints, coatings, solvents, sealing and patching materials, sealants, and caulking. Data sheets shall indicate thinning and mixing instructions, required film thickness (mil) and application instructions. Should the Contractor require additional copies for distribution to his suppliers and Subcontractors, he shall include these additional copies along with his submittal.

G. Safety Data Sheets (SOS): Submit material and/or product Safety Data Sheets (SOS) for coatings, solvents, and other hazardous materials. Should the Contractor require additional copies for distribution to his suppliers and Subcontractors, he shall include these additional copies along with his submittal.

H. Guarantee: The Contractor shall submit three (3) copies of a written guarantee to the Officer-in-Charge.

1.05 GUARANTEE:

A. The Contractor shall guarantee that the work performed under this section conforms to the contract requirements and is free of any defect of material or workmanship performed by the Contractor. Such guarantee shall continue for a period of two years from the date of project acceptance during which period the Contractor shall remedy at his own expense any such failure to conform or any such defect.

B. The State shall notify the Contractor in writing within a reasonable time after discovery of any failure or defect.

C. Should the Contractor fail to remedy any failure or defect described in Paragraph A above within ten (10) working days after receipt of notice thereof, the State shall have the right to repair or otherwise remedy such failure or damage at the Contractor's expense.

1.06 QUALITY ASSURANCE

A. Applicator Qualifications: A firm and individuals experienced in applying paints and coatings similar in material, design, and extent to those indicated for this project, whose work has resulted in applications with a record of successful in- service performance.

B. Field Samples (Mock-Ups): Provide a full-coat field sample panel for each type of coating and substrate at locations as directed by the State. Provide samples at

least 4-feet long by 8-feet high.

1.07 ANALYZING AND TESTING

A. All paints and their applied thickness shall be subject to testing whenever the State deems necessary to determine conformation to the requirements of these specifications. Should testing by a laboratory be required, the laboratory shall be selected by the State and the cost of testing shall be borne by the Contractor. However, should test results show that the paint is in compliance with this specification, the cost will also be borne by the Contractor.

B. All rejected material shall be removed from the job site immediately. Surfaces painted with the rejected material shall be redone at Contractor's own expense.

C. Where the required paint thickness is deficient, the affected surface(s) shall be recoated as necessary to provide the required paint thickness at Contractor's own expense.

1.08 PAINTING NOT INCLUDED

The following categories of work are not included as part of field applied paint and finish work.

A. Pre-Finished Items: Unless otherwise indicated, do not include painting for factory-finished or installer finished items such as (but not limited to) plastic laminate, acoustic materials, high performance organic coated metal, finished mechanical and electrical equipment, including light fixtures, switchgear, and distribution cabinets, etc.

B. Finished Metal Surfaces: Metal surfaces of anodized aluminum, stainless steel, chromium plate, copper, and similar finished materials will not require finish painting, unless otherwise indicated.

C. Labels: Do not paint over any code-required labels, such as Underwriters' Laboratories, or any equipment identification, performance rating, name, or nomenclature plates.

1.09 GENERAL

Right of Rejection: The State shall have the right to reject all work which is not in compliance with the plans and specifications. Rejected work shall be redone at Contractor's own expense. In addition, the State shall have the right to require the immediate removal of any paint applicator who demonstrates negligence, lack of competence, or repeated non-compliance with the contract requirements.

1.10 DELIVERY

Deliver materials to project site in manufacturer's original, unopened packages and containers bearing manufacturer's name and label.

1.11 SPECIAL REQUIREMENTS

A. Codes: The Contractor shall comply with the State OSHL (Occupational Safety and Health Law) and all pollution control regulations of the Department of Health.

B. Protection:

1. Persons:

a. The Contractor shall take all necessary precautions to protect the public and State employees.

b. The Contractor shall provide, erect and maintain safety barricades around scaffolds, hoists and wherever Contractor's operations create hazardous conditions in order to properly protect the public and State employees.

2. Completed Work: The Contractor shall provide all necessary protection for wet paint surfaces.

3. Protective Covering and Enclosures: The Contractor shall provide and install protective covering over furniture, equipment, floor and other areas that are not scheduled for treatment. Protective covering shall be clean sanitary drop cloths or plastic sheets. Paint applied to surfaces not scheduled for treatment shall be completely removed and surfaces shall be returned to original condition.

4. Safeguarding of Property: The Contractor shall take whatever steps may be necessary to safeguard his work and also the property of the Board of Water Supply 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 and for losses to work or property caused by his or his employee's negligence. Where the damaged property cannot be cleaned and restored to its original condition (i.e. prior to being damaged) it shall be replaced with a new product of equal quality. No proration or use of "used" products will be permitted.

5. Fire Safety: The Contractor shall direct his employees not to smoke on the Board of Water Supply property and exercise precautions against fire at all times. Waste rags, plastic (polyester sheets), empty cans, etc. shall be removed from the site at the end of each day.

C. Storage Area for Materials:

1. No paint No paint material, empty cans, paint brushes, and rollers may be stored in the building(s). They shall be stored in separate storage facilities away from the building(s).

2. The Contractor may furnish a job site storage facility. Such facility shall comply with the requirements of the local fire department. The storage area

shall be kept clean and the facility shall be locked when not in use or when no visual supervision is possible.

D. Sequence of Operations: The sequence of operations shall divide the surfaces into work areas and present a schedule for:

1. Surface preparation.

2. Prime coat.

3. First finish coat.

4. Second finish coat.

## PART 2 – PRODUCTS

### 2.01 MATERIALS

A. Lead Prohibition: All paint shall be free of lead.

B. Mercury Prohibition: All paint shall be free of mercury.

C. Chromate Prohibition: All paint shall be free of zinc-chromate and/or strontium-chromate.

D. Cadmium Prohibition: All paint shall be free of cadmium.

E. Asbestos: All paint shall be free of asbestos.

F. Material shall be equal in quality to that specified under the schedule of finishes and any given finish shall be as labeled by one manufacturer.

G. All materials shall be delivered to the job site in undamaged original containers bearing the manufacturer's label and shall be stored in such a manner as to prevent damage. All rejected materials shall be removed from the job site immediately.

H. Paints shall be as manufactured by Benjamin Moore, Carboline, Glidden Professional, Pittsburg, Pratt & Lambert, Rust-Oleum, Sherwin-Williams, or approved equal.

I. Thinning of paint shall be done using material recommended by the manufacturer. Mix proprietary products according to manufacturer’s printed instructions. Compound thinner, mineral oil, kerosene, refined linseed oil, or gasoline shall not be used for thinning.

J. Except for metal primers, all paint shall contain the maximum amount of mildewcide per gallon of paint permitted by the mildewcide manufacturer without

adversely affecting the quality of paint.

K. The supplier shall submit a signed certificate indicating the amounts of mildewcide added by both the paint manufacturer and the paint supplier. Mercurial fungicide shall not be used.

L. Provide all patching and repair materials compatible with paint finishes and substrates. Use weather resistant materials for exterior surfaces and surfaces exposed to moisture.

M. Provide all other materials not specified but required to achieve the finishes specified.

## PART 3 – EXECUTION

### 3.01 SURFACE PREPARATION OF EXISTING SURFACES:

A. General:

1. For surfaces to be painted remove all loose, blistered, scaled, crazed, chalky paint to an existing tight and firm finish. Sand to feather edges at scarred areas.

2. Mildew Removal: Remove all mildew and sterilize the surface to be painted using one of the following methods:

a. Apply a treatment solution composed of the following ingredients and in the noted proportions to the affected surface using a sponge or low-pressure sprayer:

2/3 cup TSP (Trisodium Phosphate)
1 quart household bleach
3 quarts warm water
Scrub the surface as necessary to completely remove the mildew.

b. Apply a commercial mildew treatment solution such as Purex, Jomax Remover, or approved equal in strict accordance with the manufacturer's recommendations and instructions.

Following either treatment method, the surface shall be cleaned with potable water and allowed to thoroughly dry for a minimum of 24 hours before priming, painting, or applying caulk or seal compounds. Rinsing may be performed by high-pressure washing. However, any lifting of the paint or scarring caused by this rinsing operation shall be re-sanded to a feathered edge.

B. Remove all foreign matter such as rock, debris, vegetation, tree roots, etc. in areas to be repaired and painted. The Contractor shall promptly repair any damages

caused by removal operations at no cost to the State. All debris, rubbish, and other materials resulting from removal operations shall be removed from the site and legally disposed of.

C. Cracks and openings found at joints and where different materials abut each other (e.g CMU/concrete, CMU or concrete/wood, etc.) shall be sealed with a caulking compound compatible with the substrate and primer/paint. The caulking shall be applied and allowed to set in accordance with the manufacturer's recommendations and instructions.

D. All openings in the surfaces to be painted left by abandoned conduits, pipes, bolt holes, and pull boxes, etc., shall be caulked and/or patched prior to painting.

E. Remove all hardware, hardware accessories, machined surfaces, plates, lighting fixtures, and similar items in place not to be finish-painted, or provide surface-applied protection prior to surface preparation and painting operations. Remove, if necessary, for the complete painting of the items and adjacent surfaces. All security cameras, sensors, and appurtenances shall not be removed and shall remain in service at all times. Following completion of painting of each space or area, reinstall the removed items by workmen skilled in the trades involved.

F. Wood to be Repainted:

1. Remove from surfaces to be repainted all foreign matter such as nails, screws, staples, tape, and gum.

2. Remove all loose, blistered, scaled, crazed or chalky finish to an existing tight and firm finish.

3. Remove all mildew as noted in paragraph entitled "Mildew Removal" hereinabove.

4. Where the existing finish remains tight and firm, prepare the surface by lightly sanding. Where the paint has been removed, sand the edges of scarred areas to a smooth feathered edge.

5. Wash all surfaces with a solution of trisodium phosphate (TSP) and water or other appropriate solution to remove any accumulated film of wax, oil, grease, smoke, dust, dirt, chalking or other foreign matter which would impair the bond of, or bleed through the new paint finish. After washing, rinse the surface with potable water and allow to thoroughly dry.

6. After cleaning and/or washing of the surface with water, the wood shall not be primed, painted or sealed unless it has been allowed to thoroughly dry for a minimum of 24 hours and until the moisture content of the wood is less than 15 percent when measured with an electronic moisture meter.

7. Fill holes (nail, tack, staple, etc.), cracks, open joints, and other imperfections with appropriate compound and allow to set (door and trim included). Seal and caulk all openings which will permit the entrance of water. Sealing and

caulking compounds shall be compatible with the substrate and primer/paint and shall be applied and allowed to set in accordance with the manufacturer's recommendations and instructions.

8. Spot prime areas where bare wood or fill material is exposed with the specified primer and feather out onto adjacent paint.

9. Follow up with primer and finish coats over entire surface.

G. Concrete, Masonry, and Plaster to be Repainted:

1. Remove from surfaces to be repainted all foreign matter such as nails, screws, staples, tape, and gum.

2. Remove all loose, blistered, scaled, crazed or chalky finish to an existing tight and firm finish.

3. Remove all mildew as noted in paragraph entitled "Mildew Removal" hereinabove.

4. Where the existing finish remains tight and firm, prepare the surface by lightly sanding. Where paint has been removed, sand the edges of scarred areas to a smooth feathered edge.

5. Wash all surfaces with a solution of trisodium phosphate (TSP) and water or other appropriate solution to remove any accumulated film of wax, oil, grease, smoke, dust, dirt, chalking or other foreign matter which would impair the bond of, or bleed through the new paint finish. After washing, rinse potable water and allow to thoroughly dry for a minimum of 24 hours.

6. Seal all cracks hairline to 1/8-inch in width with concrete patching compound. All cracks over 1/8-inch in width or holes 1/4-inch diameter or greater shall be sealed with latex modified or epoxy modified reinforced patching compound before paint application. All patching shall be done in accordance with the manufacturer's recommendations and instructions.

7. Spot prime areas where bare surface, seal or patch material is exposed with the specified primer and feather out onto adjacent paint.

8. Follow up with primer and finish coats over entire surface.

H. Ferrous Metal and Galvanized Metal to be Repainted:

1. Remove from surfaces to be repainted all foreign matter such as tape and gum.
2. Remove all loose, blistered, scaled, crazed, or chalky paint finish to an existing tight and firm finish.

3. Remove all mildew as noted in paragraph entitled "Mildew Removal" hereinabove.

4. Remove all rust, loose mill scale and loose and blistering paint by power tool chipping, de-scaling, sanding, wire brushing and grinding down to bare metal (only tightly adhering surface rust, mill scale and paint which cannot be removed with a dull putty knife remaining) in accordance with Steel Structures Painting Council (SSPC) Standard SP3. Care shall be taken so that the surface in not burnished during cleaning.

5. Where paint has been removed, sand scarred areas to a smooth feathered edge.

6. Completely wipe all surfaces with mineral spirits or other appropriate solution as required to remove accumulated film of wax, oil, grease, smoke, dust, dirt, chalky, or other foreign matter which would impair the bond of, or bleed through, the new finish.

7. Allow the surfaces to thoroughly dry and immediately spot prime bare metal areas with the specified primer and feather out onto adjacent paint.

8. Follow up with primer and finish coats over entire surface.

3.02 SURFACE PREPARATION OF NEW SURFACES:

A. The Painting Contractor shall be wholly responsible for the finish of his work and shall not commence any part of it until surfaces are in proper condition. If Painting Contractor considers any surfaces unsuitable for proper finish of his work, he shall notify the State of this fact in writing and he shall not apply any material until the unsuitable surfaces have been made satisfactory. Major defects shall be restored by the proper trades. In general, follow the manufacturer's direction for surface preparation for the paint to be applied.

B. All knots or sappy spots shall be given one coat of shellac before painting. All necessary puttying of nail holes, cracks, and blemishes shall be done after priming coat has become hard and dry and before second coat is applied. On stain work, putty shall match color of finish.

C. Unprimed galvanized metal shall be cleaned with nonpetroleum-based solvents so surface is free of oil and surface contaminants.

D. All metal surfaces shall be made clean and free of any defects or condition that may produce unsatisfactory finish.

3.03 PAINT APPLICATION:

A. General:

1. All work shall be done in a workmanlike manner by skilled and experienced mechanics and shall conform to the best painting practices.

2. All materials shall be in accordance with the manufacturer’s specifications and the finished surface shall be free from runs, sags, drops, ridges, waves,

laps, streaks, brush marks and variations in color, texture and finish (glossy or dull). The coverage shall be complete and each coat shall be so applied as to produce a film of uniform thickness. No paint, varnish or enamel shall be applied until the preceding coat is thoroughly dry and approved.

3. Completely paint entire new and existing surfaces for each sequence of operation; prime coat, first finish coat, and second finish coat, unless otherwise indicated on the paint schedule hereinafter.

4. No exterior painting of unprotected surfaces shall be done in rainy, damp weather. Coats shall be applied only to surfaces that are thoroughly dry.

B. Application: Shall be by brush or roller only.

C. Application of a coat shall constitute the painting Contractor's acceptance of the surface and the responsibility for it.

D. Colors: Each coat shall be tinted a different shade from the preceding coat. Colors shall be in accordance with the schedule on the drawings. Where a color is not indicated, the color shall be selected by the State.

E. Finish Film Thickness: Apply primer, intermediate, and finish coats in dry film thickness, as scheduled unless recommended otherwise in writing by the manufacturer, for each coat and in accordance with the manufacturer's recommendations. Verify mil thickness by use of a suitable wet film gauge. Use a Tooke or other dry film gauge to test for total dry film thickness.

3.04 APPLICATION RATE: Painting shall be at rates of application per layer in strict accordance with the manufacturer's directions to achieve the dry film thickness specified. Manufacturer's representative shall verify all firm spread rates.

A. All unpainted masonry shall be treated as new masonry and shall be painted as specified in the State approved schedule.

B. All unpainted concrete shall be treated as new concrete and shall be painted as specified in the State approved schedule.

C. All metal items, whether painted or unpainted, shall be treated as existing metal and shall be painted as specified in the State approved schedule.

D. Non-corrosive metals such as copper, brass, or bronze shall not be painted, except where noted on the plans.

3.05 MISCELLANEOUS:

A. Installation of Removed Items: After completion of final paint coat, removed items shall be reinstalled.

B. Clean-up:

1. During the progress of the work, all debris, empty crates, waste, drippings,

etc. shall be removed by the Contractor and the grounds about the areas to be painted shall be left clean and orderly at the end of each work day.

2. Upon completion of the work, staging, scaffolding, containers and all other debris shall be removed from the site. All paint splashed or spilled upon adjacent surfaces not requiring treatment (hardware, fixture, floor, glass, etc.) shall be removed and the entire job left clean and acceptable.

3.06 SCHEDULE OF FINISHES

A. The schedule of finishes is made for the convenience of the Contractor and indicates the types and quality of finishes to be applied to the surfaces.

B. Any existing painted surfaces not specifically noted in the finish schedule shall be finished to match adjoining work.

C. Paint schedule is based on the products of Benjamin Moore catalog, unless otherwise called for and are so named to establish quality and standard of materials. Paint materials pre-approved to those mentioned may be used provided they are acceptable to the State.

D. The painting schedule shall apply to new and previously painted surfaces of designated materials, unless specified otherwise, in conformity with instructions of the paint products used. Test for alkyd or latex paint when painting over previously painted surfaces.

E. The following schedule represents the general character of the paint systems necessary to complete the work. Provide additional comparable systems and sheens as required. At the option of the State, paint systems and sheens may be revised at Contractor's own expense.

3.07 PAINT SCHEDULE

A. Exterior Primer:

1. Ferrous Metal:

Corotech V131 Low voc Universal Metal Primer
2.1 mils OFT @ 458 sf/gal.

2. Galvanized Metal:

P04 Super Spec HP Acrylic Metal Primer
1.7 mils OFT @ 406 sf/gal.

3. Existing Painted Ferrous Metal or Galvanized Metal:

a. With Existing Solvent-Based Finish:
Corotech V131 Low voc Universal Metal Primer
2.1 mils OFT @ 458 sf/gal.

b. With Existing Latex-Based Finish:

P04 Super Spec HP Acrylic Metal Primer
1.7 mils OFT @ 406 sf/gal.

4. Wood:

N023 Fresh Start Multi-Purpose Latex Primer
1.2 mils OFT @ 425 sf/gal.

5. Existing Painted Wood:

a. With Existing Solvent-Based Finish:

INSL-X Prime Lock Plus Primer Sealer Stain Keller PS-800
2.6 mils OFT@ 346 sf/gal.

b. With Existing Latex-Based Finish:

N023 Fresh Start Multi-Purpose Latex Primer
1.2 mils OFT @ 425 sf/gal.

B. Exterior Finish:

1. Semi-Gloss 2 Coats:

N403 Regal Select Exterior Paint - High Build Soft Gloss Finish
2.0 mils OFT@ 325 sf/gal. per coat

C. Interior Primers:

1. Wood:

N534 Ultra Spec 500 Interior Latex Primer
1.8 mils OFT@ 267 sf/gal.

2. Existing Painted Gypsum Board or Wood:

a. With Existing Solvent-Based Finish:

INSL-X Prime Lock Plus Primer Sealer Stain Killer PS-800
2.6 mils OFT @ 346 sf/gal.

b. With Existing Latex-Based Finish:

N534 Ultra Spec 500 Interior Latex Primer
1.8 mils OFT @ 267 sf/gal.

3. Existing Painted Concrete, Concrete Masonry, or Plaster:

a. With Existing Solvent-Based Finish:
CLF 29/30 Waterborne Epoxy Masonry Primer
2.0 mils OFT@ 315 sf/gal.

b. With Existing Latex-Based Finish:

N534 Ultra Spec 500 Interior Latex Primer
1.8 mils OFT @ 267 sf/gal.

4. Ferrous Metal:

Corotech V131 Low voc Universal Metal Primer
2.1 mils OFT @ 458 sf/gal.

5. Galvanized Metal:

P04 Super Spec HP Acrylic Metal Primer
1.7 mils OFT @ 406 sf/gal.

6. Existing Painted Ferrous Metal or Galvanized Metal:

a. With Existing Solvent-Based Finish:

Corotech V131 Low voe Universal Metal Primer
2.1 mils OFT @ 458 sf/gal.

b. With Existing Latex-Based Finish:

P04 Super Spec HP Acrylic Metal Primer
1.7 mils OFT @ 406 sf/gal.

D. Interior Finish:

1. Semi-Gloss 2 Coats:

551 Regal Select Premium Interior Paint Semi-Gloss Finish
1.5 mils OFT @ 412 sf/gal. per coat

3.08 CLEAN UP: The Contractor shall clean the work area daily. At the completion of the work under this section, the site shall be cleared of all paint chips, dust and debris to the satisfaction of the Board of Water Supply.

## 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

# DIVISION 15 - MECHANICAL

## SECTION 15050 - MECHANICAL GENERAL PROVISIONS

### PART 1 - GENERAL

1.01 GENERAL CONDITIONS

A. As specified in SECTION 00700.

B. This Section applies to all DIVISION 15 - MECHANICAL categories.

1.02 SUMMARY

A. The work includes plumbing, air conditioning, and ventilation systems, and incidental related work as indicated and as specified herein.

B. Related Work:

1. SECTION 15400 - PLUMBING.

2. SECTION 15500 - FIRE SPRINKLER SYSTEM.

3. SECTION 15600 - AIR CONDITIONING AND VENTILATION.

1.03 SCOPE

These DIVISION 15 - MECHANICAL specifications and the accompanying drawings are intended to comprise the furnishing of all labor, and the furnishing and installing of all materials, equipment and supplies as specified herein and required for the satisfactory completion by the Contractor of all work pertaining to mechanical trades.

1.04 DEFINITIONS

A. "Provide" shall mean "provide complete in place," that is, "furnish and install."

B. "Piping" shall mean pipes, fittings, supports, valves and all like pipe accessories connected thereto.

C. Pressure ratings specified, such as for valves and the like, is the design working pressure and is for and with reference to the fluid which the device will serve.

D. "Ductwork" shall mean ducts, plenums, compartments, supports, casings or any like devices, including the building structure, which is used to convey or contain air.

E. "Building Boundary" shall mean exterior building walls.

F. "Mechanical Work" shall mean all work specified and shown in the DIVISION 15 - MECHANICAL categories. Mechanical Work generally includes: Plumbing, Heating, Ventilating, Air Conditioning and Fire Protection systems.

1.05 SUBMITTALS

A. Submit in accordance with SECTION 01330 - SUBMITTAL PROCEDURES.

B. Project Installation: Installation of materials or ordering of equipment prior to approval of submittals is done entirely at the risk of the Contractor.

C. Certificates:

1. Cross reference individual catalog numbers of substitute products to number of specified materials.

2. Submit manufacturer's certification that equipment meets or exceeds the minimum requirements as specified.

3. Where materials, equipment and installations are specified to conform with societies or agencies such as ANSI, ASHRAE, SMACNA, etc., submit certification of such compliance.

D. Product Data:

1. Reference catalog cuts and brochures of products to proper paragraph in specifications. Furnish numerical index by specification article number, listing product name, catalog number and reference to page number of submittal brochure.

2. The submittal shall be complete and with catalog data and information properly marked to show, among other things, material capacity and performance to meet capacities or performance as specified or indicated. Arrange the submittals in the same sequence as the specifications and reference in the upper right-hand corner, the particular specification provision for which each submittal is intended. Incomplete submittals will be rejected, unless prior approval for partial submittal has been obtained.

3. The Contractor is responsible for confirmation of code approval of material and equipment. Certification of code conformance by the manufacturer shall be submitted for plumbing sewer, vent, and water lines.

4. If the Contractor submits a product that is specified, a complete set of brochures, rating tables, etc., is still required for reference.

5. Review of the submittal is only for general conformance with design concept of project and general compliance with information given in the contract documents. The Contractor is responsible for confirmation and correlation of the dimensions, quantities and sizes, for information that

pertains to fabrication methods or construction techniques, and for coordination work of all trades. Deviations from drawings and specifications shall be clearly and completely indicated (by separate letter) in the submittal.

E. Shop Drawings: For items which are not manufactured and which have to be specifically fabricated including drawings and typical duct construction and complicated portions of ductwork, shop drawings and detail description shall be submitted. Shop drawings shall be submitted with such promptness as to allow ample time for examination and any resubmittal.

F. Warranty: Submit warranty as noted under item entitled "WARRANTY" hereinbelow.

G. Record Drawings: Submit record drawings as noted under item entitled "RECORD DRAWINGS" hereinbelow.

1.06 SUBSTITUTIONS

A. Submit in accordance with SECTION 01330 - SUBMITTAL PROCEDURES.

B. If the use of substitute equipment results in an increase in the cost, including the work of other trades, Contractor shall be solely responsible for payment of said increase in cost.

1.07 WARRANTY

Contractor's Warranty: In addition to the guarantees required elsewhere, all work, materials and equipment provided under the mechanical sections shall be guaranteed for a period of one year. The warranty period shall commence from the project acceptance date. Should any trouble develop during this period due to defective materials or faulty workmanship, the Contractor shall immediately furnish all necessary labor and materials to correct the trouble without cost to the Owner. The Contractor, under this guarantee, shall be responsible for all damage to any part of the premises caused by equipment furnished under this section.

1.08 EXPLANATION OF DRAWINGS AND REFERENCE TO SCHEDULES

A. The drawings and these specifications are complementary to each other in that all apparatus, materials and equipment outlined in the drawings and/or specified herein shall be considered essential to the contract.

B. The specifications are intended to describe the quality and character of the materials and equipment and methods of installation. All miscellaneous items of work and materials necessary for the completion of the installation shall be provided, whether or not mentioned in the specifications or shown on the drawings.

C. Space allotted, clearances, access, electrical data, structural supports, etc., on drawings, is for equipment models/sizes as listed in schedules on plans. The

Contractor shall assume the responsibility for the coordination with other trades required in the use of equal or substitute equipment or materials and pay all differences in cost arising from such substitutions, regardless of approval.

D. Separate Sections cover the Site Work, Architectural Work and the Electrical Work. The Contractor shall familiarize himself with the entire set of plans and specifications.

E. Should there be any question as to the scope of the work for which the Contractor is responsible, he shall ask the Architect for an interpretation before submitting his bid. In the event that the Contractor finds discrepancies or omissions, or is in doubt as to the exact meaning of the plans and/or specifications, he shall, before submitting bid, contact the Architect for clarification.

F. For purposes of clearness and legibility, drawings are essentially diagrammatic and, although size and location of equipment are drawn to scale wherever possible, the Contractor shall make use of all data in all the contract documents and shall verify this information before submitting bid.

G. The drawings indicate required size and points of termination of pipes, and suggest proper routes to conform to structure, avoid obstructions and preserve clearances. However, it is not intended that drawings indicate all necessary offsets, and it shall be the work of the Contractor to make the installation in such a manner as to conform to structure, avoid obstruction, preserve headroom and keep openings and passageways clear.

H. It is intended that all apparatus be located symmetrical with architectural elements. Refer to architectural details in completing the correlating work.

I. The Contractor shall fully inform himself regarding any and all peculiarities and limitations of the spaces available for the installation of all work and materials furnished and installed under the contract. He shall exercise due and particular caution to determine that all parts of his work are made quickly and easily accessible.

J. The Contractor shall study all drawings and specifications to determine any conflict with ordinances and statutes. Any errors or omissions shall be reported, and any changes shall be shown in the "As-Built" Drawings and the additional work performed at no cost to the Owner.

K. The submittal of bid shall indicate that the Contractor has examined the site and the drawings and has included all required allowances in his bid. He shall also determine in advance and make allowances for the methods of installing and connecting the equipment, the means of getting equipment in to place and he shall make himself familiar with all the requirements of the contract. No allowance will be made for any error resulting from the Contractor's failure to visit job site and to review drawings. Bid shall include costs for all required drawings and changes as outlined above.

L. The Contract Drawings indicate the extent, the general locations and arrangement of equipment, piping, ductwork, etc. Equipment, piping and ductwork shall be located to avoid interference with electrical, plumbing and structural features. All locations for mechanical work shall be checked and coordinated with the building, civil, structural, and electrical work.

M. If any conflicts occur necessitating departures from the Contract Drawings, details of departures and reasons therefore shall be submitted as soon as practical for written approval, and the piping, ductwork, fixtures or equipment affected shall not be installed until approval is received.

N. Reference to Drawings Schedules:

1. Refer to equipment schedule for unit identification number and corresponding capacity and design requirements.

2. Wherever schedules or notes appear on the Drawings or in the specifications in which sizes and capacities of equipment are indicated, the equipment furnished and installed under this contract shall meet the following requirements under operating conditions.

3. The RPM, the outlet velocities, tip speed and the DB ratings specified are the maximum that will be accepted.

4. The motor horsepower, the CFM, and the static pressure on fans, are the minimum that will be accepted.

5. The working pressure, the GPM at required pressure, the BTUH input are the minimum that will be accepted.

1.09 CODES AND STANDARDS

A. All work, material or equipment shall comply with the requirements of codes, ordinances and regulations of the local Government having jurisdiction at the location of the work, including the regulations of serving utilities, and any participating Government agencies having jurisdiction.

B. The latest editions of the following Specifications, Codes and Standards shall form a part of these specifications, the same as if herein written out in full, and all materials and installations include but not be limited to:

1. Revised Ordinances of Honolulu.

2. ASHRAE (American Society of Heating, Refrigeration and Air Conditioning).

3. UL (Underwriters' Laboratories, Inc.).

4. AMCA (Air Moving and Conditioning Associates).

5. UFC (Uniform Fire Code).

6. SMACNA Low Velocity Duct Manual.

7. IBC (International Building Code).

8. IECC (International Energy Conservation Code).

9. NFPA (National Fire Protection Association).

10. Requirements of the State Fire Marshall.

11. NEC (National Electrical Code).

12. ASTM (American Society for Testing and Materials).

13. AGA (American Gas Association).

14. OSHA (Occupational Safety and Health Administration).

15. UPC (Uniform Plumbing Code).

16. UMC (Uniform Mechanical Code).

C. No requirement of these drawings and specifications shall be construed to void any of the provisions of the above standards. No apparatus, equipment, device or construction shall be installed which will provide a cross connection permitting any backflow or siphonage from any source into the domestic water supply system.

## 1.10 PERMITS AND FEES

Obtain all permits, patent rights, and licenses that are required for the performing of the work by all laws, ordinances, rules and regulations, or orders of any officer and/or body, give all notices necessary in connection therewith, and pay all fees relating thereto and all costs and expenses incurred on account thereof. No work shall be covered before inspection by the jurisdictional authority and the Architect.

## 1.11 SUPERVISION AND COOPERATION

A. The Contractor shall include the services of experienced superintendents for each sub-section who shall be constantly in charge of the work, together with the qualified journeymen, helpers, and laborers, required to properly unload, install, connect, adjust, start, operate and test the work involved, including equipment and materials furnished by others.

B. The work under this section shall be in cooperation with the work of other trades to prevent conflict or interference and to aid rapid completion of the overall project.

1.12 PROJECT SITE VISIT

Periodic visits to the project site by the Architect are for the express purpose of verifying compliance with the contract documents. Such site visits shall not be construed as construction supervision, i.e., the Architect assumes no responsibility for providing a safe place for the performance of the work by the Contractor or the Contractor's employees or the safety of the supplies of the Contractor. Neither shall such site visits relieve the Contractor of the responsibility for the discovery of his own errors and the correction of them, nor of the responsibility of properly performing the work.

1.13 COORDINATION

A. The Contractor shall be responsible for providing and coordinating all information, drawings or layouts of equipment or work under this section which affect the work of the other trades.

B. In case changes in the indicated locations or arrangements are necessary due to developed conditions in the construction, or rearrangement of furnishings, or equipment, these changes shall be made without extra cost to the Owner, provided the change is ordered before work directly connected is installed, and no extra materials are required.

1.14 EXISTING UTILITIES

A. The location of utilities shown on the plans are the best-known information available at time of design. The Contractor shall contact the appropriate agencies and confirm the information and make arrangements for connection thereto, prior to excavation and installation of any piping or systems.

B. Prior to installation of any waste and soil lines the Contractor shall physically verify whether the building sewer can be installed and properly connected to the sewer main. Any work requiring added expense which is caused by the Contractor to make such physical verification shall be borne by the Contractor.

1.15 UTILITY SERVICES DURING CONSTRUCTION

All provisions for and use of sewer, water and electric power used for construction shall be paid for by the Contractor.

1.16 INTERRUPTION OF SERVICES

A. Existing services required to stay in operation in areas not remodeled shall be maintained rerouted or otherwise provided with temporary connection to prevent interruptions.

B. If impossible to prevent interruptions they shall be performed during "off-hours" and coordinated with the Owner and/or his/her Representative.

C. Provide a minimum of 7 days written notice of interruption. Do not interrupt services without written consent of the Owner.

1.17 DAMAGE BY LEAKS

The Contractor shall be responsible for damage to the grounds, walks, roads, buildings, furnishings, piping systems, electrical systems and their equipment and contents, caused by leaks in the piping systems being installed or having been installed herein. He shall repair at his expense all damage so caused.

1.18 EMERGENCY REPAIRS

The Owner reserves the right to make emergency repairs as required to keep equipment in operation without voiding the Contractor's guarantee bond nor relieving the Contractor of his responsibilities.

1.19 DEMOLTION

Demolition, capping and rerouting shall be performed as shown and as required to accommodate new construction.

PART 2 - PRODUCTS

2.01 MECHANICAL PRODUCTS

A. The specification of the mechanical products is detailed in the individual specification sections of DIVISION 15 - MECHANICAL.

B. Provide earthquake restraint system as noted under item entitled "EARTHQUAKE RESTRAINT" hereinbelow.

PART 3 - EXECUTION

3.01 INSTALLATION INSTRUCTIONS

The requirements of "mechanical" installation is detailed in the individual specification sections of DIVISION 15 - MECHANICAL. In addition, the following general requirements shall apply:

1. Obtain Manufacturer's printed installation instruction to aid in properly executing work of installing equipment whenever such instructions are available. Submit 3 copies of such instructions to the Architect prior to time of installation for use of supervising the work.

2. Erect equipment in a neat and workmanlike manner. Align, level and adjust for satisfactory operation. Install so that connecting and disconnecting of piping and accessories can be made readily, and so that all parts are easily accessible for inspection, operation, maintenance and repair. Minor deviation from arrangements shown on drawings may be made, as approved by the Architect.

3.02 PROTECTION OF PIPING SYSTEMS

A. It shall be the responsibility of the Contractor to install and maintain pipe and equipment which is reasonably clean and free from rust, dirt, scale, etc. Where necessary, the Contractor shall provide temporary airtight covers at all pipe and equipment openings.

B. Before turning the systems over to the Owner, all piping systems shall be thoroughly flushed of all scale and dirt. Drains shall be installed at the low points to facilitate flushing of the piping systems.

3.03 PROTECTION OF AIR HANDLING SYSTEMS

A. The Contractor shall continuously maintain adequate protection to keep dirt and foreign matter from getting into the air handling system.

B. Ductwork shall not be left open for any extended period of time. Open section and open fittings shall be capped wherever they occur until such time as final connections are made to equipment, grilles, register, etc.

3.04 PROTECTION OF ELECTRICAL SYSTEMS

Do not route liquid filled pressure and drain piping over electrical equipment, switchboards, motor control centers and the like. When unavoidable, install galvanized drain pans to prevent liquid from dripping or squirting onto such equipment.

3.05 EXCAVATION AND BACKFILL

See SECTION 02100 - SITE PREPARATION and SECTION 02200 - EARTHWORK of the specifications for requirements. In addition, the following shall apply:

1. Execute all excavation to grades to accommodate elevations indicated and where invert elevations are not indicated, provide minimum coverage (above top of pipes) as follows:

   a. Any piping under building slab (top of pipe to underside of slab) 12-inches.

3. Excavation for pipes shall be cut a minimum of 6-inches below the required grade. A 6-inch bed of sand or other approved material shall be then placed and properly compacted to provide an accurate grade and uniform throughout the length of the pipe, except for plastic piping for which sand shall be used.

4. Sand used shall be washed river sand normally used for backfill purposes, free of clods or lumps of clay, rock, debris and rubbish.

5. Backfilling shall not be placed until the work has been inspected, tested and approved.

6. Clods or lumps one inch in size or larger will not be permitted in the backfill. If the excavated material is not suitable adequate material shall be provided by hauling from other locations.

7. Surplus earth or material remaining after backfilling shall be removed from the site as indicated in SECTION 02100 - SITE PREPARATION and SECTION 02200 - EARTHWORK.

8. Do not excavate under or near foundations or footings except in manner permitted and approved by the Architect. Do not backfill until installed piping has been successfully tested and approved for backfill by the jurisdictional inspector and the Architect.

3.06 RECORD DRAWINGS

A. The Contractor shall keep an accurate dimensional record of the as-built locations of all work under this Contract. This record shall be kept up-to-date at all times on blue line prints as the job progresses, and shall be available for inspection at all times.

B. Upon completion of the work, obtain from the Architect one complete set of reproducible prints of the applicable Contract Documents. Record all changes and information contained on the Record Drawings onto the new set of reproducible prints in an orderly and legible manner.

C. Submit 3 blueline prints of the completed reproducible Record Set for approval. Make such changes and correction as may be required for final approval.

D. When final approval is received, sign the reproducible Record Set and stamp or note "As-Built" and submit to the Architect.

E. Final observation will not be made until these approved as-built drawings have been received by the Architect.

3.07 CUTTING AND PATCHING

A. Perform all cutting and fitting required for work of this Section in rough construction of the building.

B. All patching of finished construction of building shall be performed under the section of specification covering these materials.

C. All cutting of concrete work by this Contractor shall be by chipping, core drilling, or concrete sawing as coordinated with the Architect. No chipping, cutting, or coring shall be done without first obtaining the permission of the Architect.

D. Information regarding requirements for openings, recesses, chases in the walls, partitions, framing or openings shall be provided for work under the appropriate

sections of the specifications in advance of the work. Should this be neglected, delayed or incorrect and additional cutting is found to be required, this work shall be accomplished at no additional cost to the Owner.

E. All access panels shall be approved by the Architect as to location, appearance, color, and finish.

3.08 VIBRATION ELIMINATION AND CONNECTORS

Rotating or reciprocating mechanical equipment shall be mounted on or suspended from vibration isolators to prevent vibration and structural borne noise transmission to the building. Refer to each mechanical trade section of these specifications for specific details. Flexible duct connection shall be used between all fan openings and sheet metal work. Flexible connectors shall be used in piping connections to rotating or reciprocating equipment. See individual mechanical sections for specifications.

3.09 REQUIREMENTS FOR FINAL INSPECTION

All of the following items must be completed prior to final inspections. No exception and no final payment will be made until all items are completed and approved. For specific requirements see the individual section in the DIVISION 15 - MECHANICAL category.

1. Cleaning equipment and premises.

2. Test and balance of systems.

3. Test and balance reports are reviewed by the Architect and Mechanical Engineer.

4. Service manual.

5. Pipe and valve identification.

6. Pipe and valve identification schedule.

7. Operation tests.

8. Operating instructions and orientation of operating personnel.

9. As-built drawings.

10. Certification of water line sterilization.

11. Pressure test for water and sewer pipes and fittings.

12. Pressure test for fire protection systems.

3.10 EARTHQUAKE RESTRAINT

A. General:

1. All earthquake resistant designs for mechanical equipment, such as air handling units, water heaters, blowers, motors, ductwork, mechanical and plumbing piping, shall conform to the regulations of the International Building Code and ASCE 7.

2. The restraints which are used to prevent disruption of the function of the piece of equipment because of the application of the horizontal force shall be such that the forces are carried to the frame of the structure in such a way that the frame will not be deflected when the apparatus is attached to a mounting base and equipment pad, or to the structure in the normal way, utilizing the attachments provided. Equipment, piping, ductwork, etc., shall be secured to withstand a force in any direction equal to the values in the International Building Code and ASCE 7.

B. Piping:

1. All HVAC, Medical Gas, and Plumbing piping shall be secured by bracing at every 4th hanger transversely and every 8th hanger longitudinally. Bracing shall be done in accordance with the NFPA Code, and as described in paragraph "Sway Bracing for Protection Against Earthquakes," of that code.

2. As approved by code authority, the SMACNA "Guidelines for Seismic Restraints of Mechanical Systems" may be used as a guide.

C. As approved by the code authority a bracing system as manufactured by "Unistrut", "Superstrut", "Pipe Shields Inc.", or approved equal may be used.

3.11 ADJUSTMENTS OF SYSTEMS AND OPERATION TESTS

A. The Owner may require operation of parts or all of the systems prior to final acceptance. If it becomes necessary for temporary use of the systems before all parts are complete, the Contractor shall adjust all parts as far as possible in order to make such temporary use as effective as possible. After temporary use and before acceptance tests, all systems shall be readjusted to meet permanent operational requirements. This occupancy shall not be construed as final acceptance cost of utilities for such operation will be paid by the Owner.

B. Operation Test:

1. At completion, the Contractor shall operate all mechanical systems for a period of at least two 8-hour days to demonstrate fulfillment of the requirements of the contract. During this time all adjustments shall be made to the equipment until the entire system is in satisfactory operating condition acceptance to the Architect and the Owner.

2. Final Operation and Instruction: Upon completion of the installation of the equipment and after final acceptance, at a time approved by the Owner, the Contractor shall place a competent man, or men, at the building who shall operate the systems for a period of two 8-hour days instructing the Owner and/ or his/her Representative in all details of operation and maintenance.

3. Any required instructions from manufacturer's representatives shall be given during this period. The (one, 2, 3) day(s) specified under "Operation Test" does not substitute for these (this) day(s) of final operation and instruction.

4. All arrangements for operation periods shall be made through the Owner and Architect.

C. For specific requirements see individual Mechanical Sections.

3.12 RUBBISH REMOVAL AND CLEANING

Upon completion of the work under this section, the Contractor shall remove all surplus materials, equipment and debris incidental to his work, and leave the premises clean and orderly.

3.13 SERVICE

90 days free service shall be provided after completion of the job including changing of filters. Replacement filters shall be provided by the Contractor and shall be on the job site.

3.14 PAINTING

A. Excepting piping identification specified in the specific section all painting is specified in SECTION 09900 - PAINTING of the Specifications.

B. Surfaces to be painted shall be cleaned of cement, plaster and other spills.

C. Factory finishes shall be repaired to original condition when scratched or dented.

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 15400 - PLUMBING

## PART 1 - GENERAL

### 1.01 GENERAL CONDITIONS

As specified in SECTION 00700.

### 1.02 SUMMARY

A. The work includes drain, waste, and vent piping and cold-water systems, and incidental related work as indicated and as specified herein.

B. Related Work: SECTION 09900 - PAINTING: Coordinate work.

### 1.03 QUALITY ASSURANCE

All work shall comply with the Revised Ordinances of Honolulu, International Building Code, International Energy Conservation Code, Uniform Mechanical Code, Uniform Plumbing Code, National Fire Code, National Electrical Code, construction standards of the Board of Water Supply, regulations of the State Department of Health, State Fire Marshal's Regulations and all other applicable regulations. Upon completion of work present the Architect with the final inspection certificates.

### 1.04 DRAWINGS

A. Drawings show the general arrangement of all piping; however, where local conditions necessitate a rearrangement, Contractor shall prepare and submit for approval, drawings of the proposed rearrangement. Because of the small scale of drawings, it is not possible to indicate all offsets, fittings and accessories which may be required.

B. Contractor shall carefully investigate the structural and finish conditions affecting all his work and shall arrange such work accordingly, furnishing such fittings, traps, valves and accessories as may be required to meet such conditions.

### 1.05 SUBMITTALS

A. Submit in accordance with SECTION 01330 - SUBMITTAL PROCEDURES.

B. Product Data: Materials, fixtures and equipment.

C. Shop Drawings:

1. Plumbing pipe and fittings.

2. Equipment and Pipe Supports.

3. Piping Plans and Riser Diagrams.

4. Drain, Waste, Vent Plan and Piping Diagrams.

5. Pipe Insulation.

D. Project Closeout Submittals: Meet requirements of SECTION 01700 - PROJECT CLOSEOUT.

1. Record drawings.

2. Demonstration (if appropriate).

3. Warranty: Submit warranty as noted under item entitled "WARRANTY" hereinbelow.

E. Other: Note on drawings any deviations from contract plans or specifications. Access for equipment and proper fit for its operation and maintenance shall be the Contractor's responsibility.

F. O & M Manuals: Contractor to submit operation and maintenance manuals for plumbing fixtures and equipment.

1.06 WARRANTY

A. Manufacturer's Warranty: Provide manufacturer's warranty against defective materials and workmanship for a period of one year. The warranty period shall commence from the project acceptance date. This warranty shall include any motor and electrical components for any equipment furnished under this Section. This warranty shall also provide that factory-trained servicemen shall be locally available to perform service on the equipment.

B. If alternate equipment is proposed and furnished and it does not conform to the detailed specifications, it shall be removed from the job site and be replaced with the specified item at the expense of the Contractor.

PART 2 - PRODUCTS

2.01 ELECTRICAL EQUIPMENT

All electrical equipment provided under this Section shall bear the Underwriters' Laboratory seal of approval.

2.02 SOIL, WASTE, DRAIN, GAS, AND VENT PIPING

A. Above-Grade soil, waste, and vent pipes shall be no-hub cast-iron. Below-Grade soil, waste, and vent pipes shall be Schedule 40, DWV pipe and fittings. Below-Grade soil, waste, and vent pipes in areas where water temperatures are at or exceeding 140-deg. F shall be high-temperature, acid-waste Schedule 40 CPVC, DWV pipe and fittings.

B. Storm drain lines (gravity) above grade shall be no-hub cast iron pipe and fittings. Storm drain lines (gravity) below grade shall be Schedule 40 PVC, DWV, unless noted differently on the construction plans.

C. Condensate Drain Piping shall be Type "M" or "DWV" copper tube with wrought copper drainage pattern fittings or Schedule 40 PVC pipe and drainage pattern fittings with solvent welded joints. All condensate and refrigerant piping shall be insulated with a minimum 3/4-inch thick closed foam by AP Armaflex, Armstrong, Pittsburgh Corning-Foamglas, or approved equal. For insulation outside of the building and exposed or buried, provide PVC or aluminum all- weather jacket over insulation by Schuller-Zeston 2000, 300 PVC, Pittsburg Corning-Pittwrap, or approved equal.

D. Cleanouts: Inside and outside the building, provide cleanouts as indicated on the drawings and in accordance with the Plumbing Code. Wherever a line is enlarged, provide a cleanout of the same size as the larger line. Where cleanouts come through finished floor, provide a round scoriated polished brass access cover and frame set flush with finished floor. Cleanouts in finished walls shall be provided with polished brass round access cover with rough brass plug.

E. Joints: All joints shall be water-tight. Any leaks found when tested, shall be completely recaulked or rejoined and retested. Threaded joints shall be made up with an approved, non-hardening thread lubricant and screwed tight.

F. Vent Flashings: Vents through roof shall be made water-tight by means of flashings and counterflashings of 4-pounds/square foot sheet lead or as shown on Architectural drawings. Base flashing shall extend not less than 12-inches out on roof all around pipe, with tight fittings lead collar extending up and turned in at the top. Pipes shall extend not less than 6-inches above roof surface.

G. Provide valves to isolate each item of equipment or fixture and major branch lines, as indicated on drawings. Valves up to and including 2-inches shall be all bronze with threaded ends, rough bodies and finished trimmings. Valves 2-1/2-inches and larger in diameter shall have iron bodies, brass mounting and either screw or flange ends. For copper piping, ends shall be sweat type.

## 2.03 WATER PIPES

A. Water piping above ground shall be Type "K" copper pipe. Fittings shall be copper or cast bronze. Joints in copper piping shall be sweat soldered with 95-5 solder. Dielectric unions shall be used where indicated or where copper is connected to ferrous pipe and protected with felt and 2 layers of electrical tape where copper comes in contact with ferrous material.

B. Water piping below ground shall be Type "K" copper pipe. Fitting and installation shall be as specified above. Use "Plasti-Sleeve" or approved equal, 10-millimeter thickness, on all underground piping and piping imbedded in concrete. Solder for all domestic water pipes shall be "Lead Free" silver solder. Flux shall be non-corrosive complying with Copper Development Association Standard 1.0.

C. Solder for all domestic pipes shall be "Lead Free" 95-5 or silver solder.

2.04 CLEANOUTS

A. In the following specification, figure numbers are as manufactured by Jay R. Smith Co. Similar units as manufactured by Zurn Co., Josam Co., Wade, Inc. or approved equal may be furnished.

B. Floors Cleanout: J. R. Smith Figure 4023 cast iron adjustable floor level cleanout assembly with round nickel-bronze top or approved equal.

C. Wall Cleanouts: J. R. Smith Figure 4472 or approved equal.

D. Outside Cleanouts: J. R. Smith 4253 or approved equal.

2.05 EXPANSION COMPENSATORS

Metraflex Model LPS and HP, or Flexonics Model H, and HB or approved equal.

2.06 BALL VALVES

Ball valves shall be Watts GV Series or similar units as manufactured by Nibco, Crane, Stockham or approved equal.

2.07 CHECK VALVE

Check valve shall be a Watts CV Series or approved equal.

2.08 INSULATION

A. Insulation shall be closed-cell elastomeric foam Armacell AP Armaflex, or approved equal. Insulation shall be per IECC 2018.

B. Provide PVC or aluminum jacket on all insulation exposed to the weather.

2.09 PLUMBING FIXTURES AND FITTINGS

A. Shall be set in approved workmanlike manner, edges against the wall neatly pointed up with plaster of Paris. Fixtures, trims and fittings to be thoroughly cleaned and left in perfect operating condition.

B. Requirements of manufacturer's equipment that is a component of a system provided under this work are included with the system's specifications hereinafter. Capacities and characteristics of the equipment are indicated on the drawings. See electrical drawings for all voltage and phase requirements of all equipment furnished under this work.

C. All accessible type fixtures shall meet the American Disabilities Act and Uniform

Federal Accessibility Standards.

D. Provide chrome-plated angle stops, tube risers, chrome-plated p-traps, escutcheons and cover plates. Provide connecting fittings, china bolt caps, wall-support brackets and devices. All plumbing fixtures which are wall-mounted shall be provided with the necessary carriers, supplies, and appurtenances.

## PART 3 - EXECUTION

### 3.01 EXAMINATION

Examine the surfaces and conditions under which work of this Section will be performed. Do not proceed until unsatisfactory conditions detrimental to timely and proper completion of the work have been corrected.

### 3.02 OMISSION

Should it appear that any portion of the system has been omitted from the plans, the Contractor shall call the attention of the Architect to such apparent omission one week before date of bid opening so that correction may be made. Otherwise, the Contractor shall furnish and install, in a manner corresponding with the rest of the work, as if the same were specified and specifically provided for.

### 3.03 WORKMANSHIP

A. All workmanship shall be of the highest standard. The plumbing system shall be laid out to insure a neat, systematic and orderly arrangement of all work. Vertical lines shall be plumb and lines that are grouped shall be parallel and as direct as possible. Galvanized sheet metal thimbles shall be provided where pipes pass through masonry and cutting shall be avoided as far as possible. Exposed pipe, where occurring, shall be run parallel with walls.

B. Plumbing work shall be done correctly and neatly. No tool marks shall be allowed on surfaces of polished fixture, pipe or fitting.

C. No piping shall be covered or otherwise concealed until tested and inspected by the Architect or his/her representative.

D. Horizontal soil lines shall be installed with a minimum grade of 1/4-inch per foot unless otherwise shown on plan.

E. Provide and install brass square head service stops at all hose bibbs.

F. Flash vents at roof with 4-pounds per square foot sheet lead extending 12-inches at roof base or as shown on Architectural drawings. Turn in top to be 2-inches. Coordinate with roofing work.

3.04 EXCAVATION, BACKFILL AND CONCRETE WORK

A. Trenches for all underground pipe lines shall be excavated to the required depths. The bottoms of trenches shall be tamped hard and graded to secure the required fall. Bell holes shall be excavated so that pipe will rest on solid ground for its entire length. Rock, where encountered, shall be excavated to a depth 6-inches below the bottom of the pipe and rock surface shall be filled with sand.

B. Sewer and water pipes shall be laid in separate trenches, except where otherwise noted on drawings.

C. After pipe lines have been tested, inspected and approved, prior to backfilling, forms shall be removed and the excavation shall be cleaned of trash and debris. Materials for backfilling shall consist of the excavation except adobe, or borrow of sand, gravel or other materials approved by the Architect, and shall be free of trash, lumber or other debris. Backfill shall be placed in horizontal layers not exceeding 9-inches in thickness, and properly moistened to approximate optimum conditions.

D. Each layer shall be compacted by hand or machine tampers or by other suitable equipment to a density that will prevent excessive settlement or shrinkage. Backfill shall be brought to a suitable elevation above grade to provide anticipated settlement and shrinkage thereof. The backfill shall be tamped to density equal to the surrounding earth under concrete floor and paving. Concrete work shall comply with the SECTION 03300 - CAST-IN-PLACE CONCRETE of these specifications.

3.05 CROSS CONNECTIONS AND INTERCONNECTIONS

No plumbing fixture, device or piping shall provide a cross connection or interconnection between a distributing supply for drinking or domestic purposes and a polluted supply, such as a drainage system or a soil or waste pipe, so as to make possible the backflow of sewage, polluted water, or waste into the water supply system.

3.06 PREPARATION

Investigate the Contract Documents and make proper provisions to avoid interferences or construction delays. Determine the exact route of each pipe. Make off-sets and changes in direction required to maintain proper head room and pitch or to accommodate the structure and the work of other trades. Furnish other trades with information to properly locate and size openings in the structure required for this work. Furnish anchor bolts, sleeves, inserts, and supports required for this work.

3.07 INSTALLATION AND REQUIREMENTS

A. Perform work using personnel skilled in the trade involved. Provide competent supervision. Furnish new equipment, fixtures, materials and accessories bearing the manufacturer's identification and conforming to recognized commercial standards. Provide guard around all exposed moving machinery parts and around high-temperature equipment and materials.

B. When exposed to weather, provide a weather protected enclosure around electrical equipment, controls and other items that are not satisfactorily protected.

Provide access panels for concealed items provided under this Section that require maintenance, adjustment or inspection.

3.08 EQUIPMENT INSTALLATION

A. Install equipment in the space allotted with sufficient clearance for proper operation and maintenance. Where equipment differs in arrangement or connections from those shown, provide all required changes in piping, supports and appurtenances, and cost of work of any other trades affected.

B. Provide equipment accessories necessary for proper operation and support.

C. Concrete equipment bases and supports are specified under another Section. Direct trade providing concrete in the proper locations, dimensions, load carrying capacity and anchor-bolt locations. Concrete pads shall be not less than 4 inches above adjacent surfaces, have beveled edges and shall extend at least 3 inches beyond the base of the equipment.

D. Where vibration isolation units are specified for equipment, the isolators shall be selected for the load imposed by each support point. Secure floor-mounted isolators to base and to equipment.

3.09 FIXTURE INSTALLATION

A. Set fixtures in an approved workmanlike manner. Point up all edges against walls and partitions with white grout. Provide adequate supports for wall-mounted fixtures. Provide supplies for all water lines to fixtures, except those using flush valves; compression joint type with chromium plated brass escutcheon and cover tube, loose-key angle stop valve and drawn copper tube riser.

B. Provide chromium plated brass p-trap, waste fittings and escutcheon as required for fixture. Exposed metal surfaces including pipe shall be polished chromium plated in all areas of kitchen, guest rooms, and dishwashing.

3.10 FIXTURE PIPING INSTALLATION

A. Inspect all pipe inside and outside. Remove interior obstructions and ream out pipe ends. Tool markings on polished fittings are not acceptable. Cut pipe accurately so that it can be worked into place without springing or forcing. Install pipes parallel to the walls of the structure and plumb.

B. Make changes in direction and size with fittings. Install valves with stems above horizontal. Provide proper support and adequate provisions for expansion, contraction, slope, and anchorage. Provide dielectric unions where copper tubing connects to steel pipe. Wrap pipe or tubing with 1/4-inch thick felt, secured with

tape, where they contact other materials. Have piping tested, inspected and approved before it is furred in, buried or otherwise hidden. Provide standard weight galvanized steel pipe sleeves where water pipes pass through structure, sufficiently large to provide 1/4-inch clearance around pipe.

C. Wrap pipe with polyethylene tape where it passes through sleeve and when it contacts concrete or masonry. Caulk watertight around pipes passing through sleeves. Grout with fireproof material around all pipe penetrations through slabs and walls full length of penetration.

D. Provide chrome-plated brass escutcheons, set tight on the pipe and to the wall where pipes are exposed in finished areas. Provide clamping collar or membrane flange where pipe or drains penetrate waterproof membrane. Perform all welding using qualified welders in accordance with American National Standards Institute's Code B31.1.

3.11 PIPE INSTALLATION

A. All piping installation shall conform to current the Uniform Plumbing Code.

B. No pipe shall be closed up, furred in, butted, or otherwise hidden until it has been inspected, tested and approved by the proper authorities.

C. Unless specifically noted otherwise, sanitary piping shall slope not less than 1/4-inch per foot of horizontal run.

D. Drain pipes shall be run with easy bends and long radius turns. Offsets shall be made at an angle of 45-degrees or less, except where cleanouts are provided for shorter turns.

E. All piping shall be inspected inside and out before installation and no obstructions shall be allowed. Pipe ends shall be taper reamed to full I.D. and all burrs removed.

F. All exposed piping shall be carefully handled to avoid excessive tool marking and polished fittings shall be handled with extra care using friction wrench so that tool marks do not show. All exposed piping shall be in one length where possible. Fittings shall be in walls under counter cabinets, or in furred pass.

G. Underground pipes passing through walls or areas below walls or footings shall be provided with pipe sleeves one size larger and made water-tight at the sleeves. Provide sheet metal thimbles where pipes pass through floors or nonstructural members, steel pipe sleeves where pipes pass through structural members and concrete wall.

H. Wrap pipe with polyethylene tape where it passes through sleeve and when it contacts concrete or masonry. Caulk watertight around pipes passing through sleeves. Grout with fireproof material around all pipe penetrations through slabs and walls full length of penetration.

## 3.12 PIPING SYSTEM SUPPORTS

A. Pipe Supports: Factory-fabricated. Provide concrete inserts, beam clamps, channel framing, hanger rods and accessories required for proper pipe support. Ramset or explosive type anchors may not be used without written permission of the Architect. Support underground piping on firm soil along its entire length. Where rocks are encountered, have trench excavated to a minimum overdepth of 4-inches and backfilled with granular moist earth, thoroughly tamped. Materials used for backfilling over piping shall be granular earth, free from debris and stones. The Architect's representative may reject any materials which he considers unsuitable for fill.

B. Where sanitary drain and water lines are laid in the same trench, place water line on solid shelf with bottom of water lines 12-inches above top of sanitary drain. Where sanitary drain and water lines cross, encase drain in 4-inch thick concrete envelope.

C. Provide expansion loops in water piping where pipe crosses structural expansion joints, consisting of four 90-degree elbows with 10 pipe diameters in between. Provide "No-hub" pipe connection on drainage, waste and vent piping crossing an expansion joint.

## 3.13 DRAINAGE, WASTE, AND VENT PIPING SYSTEMS

Slope drain lines at 1/4-inch per foot unless otherwise indicated. On roof drains and where other drains occur above the ground floor, provide clamping device with drain. Provide a 4-pound lead flashing sheet extending 8-inches out around drain body and secure with clamping device. On vents through roof, extend vent flashing 8-inches out all around the base of roof, extend collar up vent and turn in at top.

## 3.14 WATER PIPING SYSTEM

A. Secure each water line where it penetrates partitions to serve fixtures, shower arms, hose bibbs and similar items. Wrap all lines passing through concrete with polyethylene tape. Install unions or flanges at all valves, equipment and system specialties. Set hose bibbs 18-inches above finished grade, unless otherwise indicated.

B. Provide water hammer arrester on all cold-water lines serving fixtures using flush valve, or dishwashers, or washing machines, sized and located in accordance with the Plumbing and Drainage Institute Standard WH-201 for the total number of fixture units connected to the branch line. Provide access door for concealed arresters.

C. Provide concrete thrust blocks at each change of direction in underground water-piping system.

3.15 INSULATION SYSTEM

A. Insulation shall be installed in accordance with the manufacturer's recommendations by tradesmen skilled in this trade and approved by the insulation manufacturer. Provide insulation products with a composite (insulation, jacket and adhesive) fire and smoke hazard rating not exceeding a Flame Spread of 25 and Smoke Developed of 50.

B. Insulation shall be closed-cell elastomeric foam Armacell AP Armaflex, or approved equal.

C. Provide PVC or aluminum jacket on all insulation exposed to the weather.

3.16 HOT WATER SUPPLY PIPES

Insulation shall be in accordance with IECC 2018.

3.17 ELECTRICAL

A. Conform to the requirements of National Fire Protection Association Code 70, National Electrical Code, and to the requirements of DIVISION 16 - ELECTRICAL of these specifications. Obtain equipment manufacturer's control wiring diagrams for the equipment furnished. Prepare a control and interlock wiring diagram for the complete system. Indicate terminal connection points to factory wired equipment.

B. Submit control diagram for review. Furnish combination type motor starters for all electrically driven plumbing equipment, complete with circuit breaker, one overload relay per phase, 120-volt control circuit and horsepower rating.

3.18 CUTTING AND REPAIRING

The work shall be carefully laid out in advance, and any excess cutting of construction will not be permitted. Cutting shall be carefully done and damage to buildings, piping, wiring, or equipment as a result of cutting for installation shall be repaired by skilled mechanics of the trade involved, at no additional expense to the Owner.

3.19 PROTECTION TO FIXTURES, MATERIALS AND EQUIPMENT

Pipe openings shall be closed with caps or plugs during installation. Fixtures and equipment shall be tightly covered and protected against dirt, water and chemical or mechanical injury. Upon completion of all work, the fixtures, materials and equipment shall be thoroughly cleaned, adjusted and operated.

3.20 PIPE INSTALLATION

Water lines shall be sterilized with chlorine as per UPC 2012, Section 609.9 Disinfection of Potable Water System, before acceptance of the work. Dosage of chlorine shall be not less than 50-parts per million. Chlorinating material shall be introduced into the water lines in a manner approved by the Owner. After a contact period of not less than 24-hours, the

system shall be flushed with clean water until the residual chlorine content is not greater than 0.2-parts per million. All valves in the lines being sterilized shall be opened and closed several times during the contact period. A certificate shall be furnished to the Owner evidencing proper performance of sterilization.

3.21 TESTING AND CLEANUP

A. Sanitary and Water Piping and Fittings: Pressure test as per UPC 2018.

B. Furnish all equipment for the tests and pay for all costs of repairing any damage resulting from such tests. Adjust systems until they are approved. Tests shall be performed in the presence of, and to the satisfaction of the Owner's representative and inspector of the official agency involved.

C. Faulty or defective material discovered shall be replaced at no cost to the Owner.

D. Upon completion of work all stains and defects marring or defacing walls, ceilings, fixtures, or floors caused by this work shall be cleaned or replaced with new material. All fixtures shall be washed and polished everything left in "broom clean" condition ready for use.

3.22 OPERATION TEST

At completion, operate all plumbing systems for a period of at least 2 days of 8- hours minimum to demonstrate fulfillment of the requirements. During this time all adjustments shall be made to the equipment until the entire system is in satisfactory operating condition, including the location of main and branch shut-off valves.

3.23 FINAL OPERATION AND INSTRUCTIONS

Upon completion of the installation and after operation test and final acceptance, at a mutually agreed time, the Contractor to instruct the Owner's personnel in the details of operations and maintenance, including the location of shut-off valves.

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 15500 - FIRE SPRINKLER SYSTEM

## PART 1 - GENERAL

### 1.01 GENERAL CONDITIONS

As specified in SECTION 00700.

### 1.02 SUMMARY

The work includes automatic fire sprinkler systems, including work as indicated and specified herein.

### 1.03 ORDINANCES, REGULATIONS AND CODES

A. The installation shall comply with the Uniform Fire Code, the International Building Code, the Fire Marshal's Regulations of the State of Hawaii, the Regulations of the Department of Health of the State of Hawaii, the requirements of the National Fire Protection Association, and all other applicable codes. Upon completion, transmit to the Architect applicable certificates of inspection.

B. The installation shall comply with NFPA 1 and NFPA 13.

### 1.04 SUBMITTALS

A. Submit in accordance with SECTION 01330 - SUBMITTAL PROCEDURES.

B. Shop Drawings: The Mechanical drawings show a general layout of sprinkler heads and the sprinkler main. Provide detailed working plans and hydraulic calculations of the entire system (including the sprinkler head locations). Final design and providing of the Sprinkler System meeting all applicable codes and regulations shall be the sole responsibility of the Contractor. The sprinkler shop drawings must be approved and stamped by a registered Mechanical Engineer in the State of Hawaii. Each system shall be designed for earthquakes. The Contractor shall provide a minimum of 3 copies of the fire sprinkler shop drawings, hydraulic calculations, and submittals to the Architect and Special Inspector for review and approval.

1. Design and install each system to give full consideration to blind spaces, piping, electrical equipment, ductwork, and all other construction and equipment to afford complete coverage in accordance with detailed drawings to be submitted for approval. Devices and equipment for fire protection service shall be of an approved make and type listed by the Underwriters' Laboratories, Inc., or approved by the Factory Mutual System.

2. The services of a Special Inspector for the fire sprinkler system(s) shall be obtained and cost borne by the Contractor. Prior to fabrication, the shop

drawings and hydraulic calculations shall be approved by the Special Inspector and Architect.

C. Product Data: The submittal of equipment to be furnished shall include the following:

1. Piping and fitting, including sizes and lengths.

2. Sprinkler heads.

3. Hydraulic calculations.

C. Quality Control Submittals: The submittal shall include a certificate of tests and inspection.

D. Project Closeout Submittals: Meet requirements of SECTION 01700 - PROJECT CLOSEOUT.

E. Warranty: Submit warranty as noted under item entitled "WARRANTY" hereinbelow.

F. Operation and Maintenance Manual: Submit Operation and Maintenance Manual as noted under item entitled "OPERATION AND MAINTENANCE MANUAL" hereinbelow.

1.05 WARRANTY

Contractor's Warranty: The Contractor by acceptance of the plans and specifications and signing the contract shall warranty all equipment, accessories and material furnished by him for a period of one year against all defects in material and workmanship, and that any defective material or work shall be promptly repaired or replaced without additional cost to the Owner. The warranty period shall commence from the project acceptance date.

1. All piping must be drip-tight and properly installed to be free of vibration, pounding or objectionable noise.

2. The Contractor shall furnish free of charge for a period of one year the necessary labor and service for performance or warranty.

3. The above Contractor warranty shall not be interpreted as voiding, limiting or reducing any equipment manufacturer's warranty.

1.06 FIRE PROTECTION SYSTEM SPECIAL INSPECTOR

The services of a Special Inspector for fire protection systems shall be obtained and paid for by the Contractor.

## PART 2 - PRODUCTS

### 2.01 MATERIALS

A. Pipes and Fittings:

1. Material for Interior Work: Piping within buildings shall be Schedule 40, black iron, or wrought-iron. Fittings shall be cast iron or malleable iron suitable for 175 lbs. working pressure.

2. Painting: All exposed piping, fittings, and hangers shall be painted as directed by SECTION 09900 - PAINTING. Special care shall be taken to prevent any paint from coating the sprinkler heads.

B. Sprinklers: Sprinklers shall be used in accordance with their listed coverage limitations. Sprinkler type, K-factor, temperature classification, response type, and finish shall be as indicated on the Contract Drawings. Sprinklers in high heat areas, include attic spaces or in close proximity to heat sources shall have temperature classification in accordance with NFPA13. Provide corrosion-resistant sprinklers for all exposed areas and sprinkler guards in accordance with NFPA 13.

Location of Sprinkler Heads: Heads in relation to ceiling and spacing of sprinkler heads shall not exceed that permitted by NFPA 13 for Light, Ordinary, and Extra Hazard occupancy. The spacing of sprinklers on branch lines shall be essentially uniform.

C. Water Flow Switches: Provide UL listed and FM approved flow switches on all fire sprinkler risers on each floor.

D. All gate and isolation valves on the automatic fire sprinkler system shall be secured in the 'open' position with a lock and chain.

### 2.02 ABOVE GROUND PIPING SYSTEM

A. Make changes in piping sizes through standard tapered reducing pipe fittings; use of bushings will not be permitted. Jointing compound for pipe threads shall be polytetrafluoroethylene (PTFE) pipe thread tape, pipe cement and oil, or graphite and oil; apply only on male threads. Pipe nipples 6 inches long and shorter shall be Schedule 80 steel pipe. Run piping concealed in areas with suspended ceilings.

B. Sprinkler Pipe and Fittings: Sprinkler pipe shall be in accordance with NFPA 13. Use of restriction orifices, reducing flanges and plain-end fittings with mechanical couplings (which utilize steel gripping devices to bite into pipe when pressure is applied) will not be permitted.

C. Pipe Hangers (Supports): Provide in accordance with NFPA 13. Attachment of pipe hangers to concrete structure shall be made only with the use of Unistrut concrete inserts. No drilling into the concrete structure will be permitted without

prior written approval of the Architect.

D. Valves: Provide valves as required by NFPA 13 and of types approved for fire service. Gate valves shall open by counterclockwise rotation. Check valves shall be flanged clear opening swing check type with flanged inspection and access plate for sizes 4 inches and larger.

E. Identification Signs: Attach properly lettered approved metal signs conforming to NFPA 13 to each valve and alarm device. Permanently affix design data nameplates to riser of each system.

F. Inspector's Test Connection: Provide test connections about 6 feet above floor for each portion of sprinkler system equipped with an alarm device and locate at hydraulically most remote part of each system. Provide test connection piping to a location where discharge will be readily visible and where water may be discharged without damage.

G. Main Drains: Provide drain piping to discharge at safe points outside each building. Provide auxiliary drains as required by NFPA 13.

H. Pipe Sleeves: Provide sleeves where piping passes through walls, floors, roofs and partitions. Secure sleeves in proper position and location during construction. Provide sleeves of sufficient length to pass through entire thickness of walls, floors, roofs and partitions. Provide not less than 0.25-inch space between exterior of piping or pipe insulation and interior of sleeve. Firmly pack space with insulation and caulk at both ends of sleeve with plastic waterproof cement.

1. Sleeves in Masonry and Concrete Walls, Floors and Roofs: Schedule 40 or Standard Weight, zinc coated steel pipe sleeves. Sleeves in floor slabs shall extend 3 inches above finished floor.

2. Sleeves in Partitions, and Other Than Masonry and Concrete Walls, Floors and Roofs: Provide zinc coated steel sheets having a nominal weight of not less than 0.90 pounds per square foot.

I. Escutcheon Plates: Provide approved one piece or split hinge type plates for piping passing through floors, walls and ceilings in both exposed and concealed areas. Provide chromium plated metal plates where pipe passes through finished ceilings. Provide other plates of steel or cast iron with aluminum paint finish. Securely anchor plates in place with set screws or other approved positive means.

## 2.03 BURIED PIPING

Pipe and Fittings: Provide outside coated cement lined ductile iron pipe and fittings conforming to NFPA 24 for piping under buildings and less than 5 feet outside of building walls. Anchor joints in accordance with NFPA 24 using pipe clamps and steel rods. Minimum pipe size shall be 4 inches. Minimum depth of cover shall be 3 feet. Piping more than 5 feet outside of building walls shall be outside coated cement lined ductile iron pipe and fittings conforming to NFPA 24.

## PART 3 - EXECUTION

### 3.01 EXAMINATION

Examine the surfaces and conditions under which work of this Section will be performed. Do not proceed until unsatisfactory conditions detrimental to timely and proper completion of the work have been corrected.

### 3.02 GENERAL SYSTEM REQUIREMENTS

Layout system so that no part thereof shall come in the way of doors, windows, light fixtures, or other obstruction. The design and installation shall be in accordance with the requirements for Light and Ordinary Hazard occupancy as set forth in the National Fire Protection Association, Pamphlet No. 13, and shall be in accordance with the Pacific Coast requirements for earthquake construction.

### 3.03 INSTALLATION AND WORKMANSHIP

A. Cut accurately, thread, ream and clean pipes before working into place without springing or forcing. Apply pipe compound on male thread only. Hanger spacing shall be in accordance with the National Fire Protection Association Pamphlet No. 13.

B. Flush underground main to sprinkler system before connecting to riser. Provide identification signs for drain, test and sectional control valves, and alarm flow switches.

### 3.04 FIELD PAINTING

Clean, pretreat, prime and paint new sprinkler systems including valves, piping, conduit, hangers, miscellaneous metalwork and accessories. Apply coatings to clean dry surfaces using clean brushes. Clean surfaces to remove dust, dirt, rust and loose mill scale. Immediately after cleaning, provide metal surfaces with one coat of pretreatment primer and one coat primer. Exercise care to avoid painting of sprinkler heads or protective devices. Remove sprinkler heads which are painted and provide new clean sprinkler heads of proper type. Provide primed surfaces with the following:

1. Sprinkler Systems in Unfinished Areas: Unfinished areas are defined as attic spaces, spaces above suspended ceilings, crawl spaces, pipe chases, and spaces where walls or ceilings are not painted or not constructed of a prefinished material. Provide primed surfaces with one coat red enamel.

2. Sprinkler Systems in All Other Areas: Provide primed surfaces with 2 coats of paint to match adjacent surfaces, except provide valves and operating accessories with one coat red enamel paint. Provide piping with 2-inch wide red enamel or self-adhering red plastic tape bands spaced at maximum of 20-foot intervals throughout piping systems, except in finished areas such as offices, red bands may be deleted.

3.05 TESTING AND INSPECTION

A. Conduct hydrostatic test on interior systems as per NFPA 13. Test of the underground piping shall be as described in the National Fire Protection Association Pamphlet No. 13. When installation is proved satisfactory, submit a signed and dated statement, setting forth the test made and certifying that all tests have been satisfactorily completed.

B. Contractor shall pay for any and all repairs and damage resulting from the foregoing tests.

3.06 CLEANUP

On the completion of the work, clear away and remove from the area surplus materials and rubbish and leave the area clean.

3.07 OPERATION AND MAINTENANCE MANUAL

A. 4-copies of an operation and maintenance manual shall be provided and shall include:

1. Shop drawings and/or catalog information and cuts.

2. Manufacturers' specifications.

3. Manufacturers' parts lists, wiring diagram and equipment drawings.

4. Complete maintenance and instructions including initial start-up instructions.

5. Other technical, installation and maintenance data as applicable.

B. All information submitted shall be specifically for the equipment installed in the project and all extraneous sheets shall be removed or deleted.

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 15600 - AIR CONDITIONING AND VENTILATION

## PART 1 - GENERAL

### 1.01 GENERAL CONDITIONS

As specified in SECTION 00700.

### 1.02 SUMMARY

A. This Section includes air conditioning and ventilation systems, including the following:

1. Diffusers and registers.

2. Ducts.

3. Flashing and counterflashing.

4. Hangers, supports, brackets for equipment, ductwork and piping.

5. Air conditioning and ventilation equipment.

B. Related Sections: SECTION 09900 - PAINTING: Coordinate work.

### 1.03 QUALITY ASSURANCE

A. Quality Standard: The highest levels of skill and craftsmanship are required to produce finish work of the best quality. Normal commercial standards are not acceptable.

B. The installation shall comply with all the latest applicable ordinances, regulations and codes of any Governmental Agency having jurisdiction including Health Department, State Fire Marshal, Division of Industrial Safety, the International Building Code, Uniform Plumbing Code, Uniform Mechanical Code, Revised Ordinances of Honolulu, and the National Fire Protection Association.

### 1.04 CONTRACT DRAWINGS

The location of fixtures, equipment, accessories and pipe shown on the drawings is schematic unless specifically dimensioned.

### 1.05 SUBMITTALS

A. Submit in accordance with SECTION 01330 - SUBMITTAL PROCEDURES.

B. Shop Drawings:

1. After the award of contract, 6 copies of shop drawings shall be submitted

to the Architect showing a minimum 1/4-inch scale layout of equipment, detailing all phases of the installation including equipment, piping, supports, etc. Piping diagrams and temperature control diagrams shall also be submitted for approval. Approval of drawings submitted shall not excuse the Contractor from requirements shown on the basic drawings or specifications.

2. In the preparation of the construction plans, a reasonable effort has been made to include all equipment manufacturers in space allotments. Since space requirements and equipment arrangement vary according to manufacturer, the responsibility for access and proper fit rests with the Contractor.

3. After approval of materials and equipment submittal of 6 sets of complete composite shop and setting drawings, required for the work shall be submitted to the Architect for approval of details of design.

4. Contractor shall coordinate his shop drawing to avoid work of other trades and with structural features. He shall show dimensioned elevations and locations of all ductwork, sleeves, holes and chases in wall floors and structural members. He shall show all adjacent architectural, structural, plumbing and electrical features, pipes, buss ducts and lighting. Show control piping.

5. Approval of shop drawings is confined to arrangement of equipment only, and does not relieve the Contractor from responsibility for proper fit, performance or construction. Any changes in foundations, bases, connections, piping, controls, electrical equipment, wiring and connections and openings required by alternate equipment specified, submitted and approved, shall be made at no additional cost to the Owner.

C. Congested areas shall be shown at 3/4-inch = one foot and equipment rooms at 1/2-foot = one foot.

D. Product Data: Before beginning work, submit for review manufacturer-certified literature showing ratings and dimensions of equipment and a list indicating all materials and items that are of a different manufacturer or model than those specified. Include equipment wiring diagrams. Submittal of all equipment shall be made at one time; piecemeal submittals will not be accepted.

E. Warranty: Submit warranty as noted under item entitled "WARRANTY" hereinbelow.

F. "As-Built" Drawings: Submit "As-Built" Drawings as noted under item entitled "'AS-BUILT' DRAWINGS" hereinbelow.

1.06 "AS-BUILT" DRAWINGS

The Contractor shall keep at the jobsite a complete, neat and accurate record of all

approved deviations from the contract drawings, shop drawings and specifications, indicating the work as actually installed. These changes shall be kept on prints of the drawings affected and shall be turned over to the Architect at the completion of the project.

1.07 WARRANTY

Contractor's Warranty: The Contractor by acceptance of the plans and specifications and signing the contract shall warranty the following:

1. All equipment, accessories and material furnished by him for a period of one year against all defects in material and workmanship. The warranty period shall commence from the project acceptance date. If any equipment fails, does not operate satisfactorily or shows undue wear, the Contractor will be notified and shall be required to remedy the defect and the damage to other work caused by such defect immediately at his own expense.

2. That all equipment will produce the results specified or shown.

3. All piping must be drip tight and properly installed to be free of vibrations, pounding or objectionable noise.

4. That all ductwork will be airtight and properly installed.

5. The above Contractor warranty shall not be interpreted as voiding, limiting or reducing any equipment manufacturer's warranty.

1.08 SEISMIC BRACING AND SUPPORTS

All HVAC components, including HVAC equipment and ductwork, shall be supported and braced per the seismic design requirements of the 2018 IBC and ASCE 7.

PART 2 - PRODUCTS

2.01 GENERAL

A. All materials installed shall be new, full weight, of the best quality with the same brand or manufacturer used for each class of material or equipment, such as valves, fans, compressors. All rotating equipment shall operate in perfect dynamic balance.

B. Manufacturers listed below show style and quality. Equivalent equipment and fixtures may be substituted with the prior approval of the Architect.

C. All electrical equipment shall be UL approved.

2.02 AIR CONDITIONING SYSTEMS

Refer to the Mechanical Equipment Schedule on drawings.

2.03 SPECIAL WIRING

Any wiring not shown and required for the air conditioning to properly connect the equipment, including connections to special safety control or apparatus not shown, shall be included under this Section.

2.04 MOTORS

A. Motors shall be sufficient size for the duty to be performed and shall not exceed their full rated load when the driven equipment is operating at specified capacity under the most severe conditions likely to be encountered.

B. Unless otherwise specified all motors shall have open drip-proof frames, ball bearing, Class "A" insulation and continuous duty classification based on a 40 degrees C ambient temperature or reference, and shall conform to NEMA Standards and Standard C-50 of the ASA.

C. Manufacturers: General Electric, Century, Westinghouse, Reliance of Louis Allis Co, or approved equal.

D. Fractional horsepower motors of single-phase alternating current shall be of capacitor-start type, unless otherwise specified, for 115-volt service. Use single phase motors for all motors 1/2 horsepower and smaller.

E. Integral Horsepower Motor: 3-phase, 60-cycle squirrel-cage induction type, unless otherwise specified. Use 3-phase motors 3/4 horsepower and larger, except as noted.

2.05 MOTOR STARTERS

A. Conform to the adopted standard and recommended practices of Industrial Control Standards of Industrial Control equipment of the Underwriters Laboratories, Inc. Each motor 1/8 power or larger, shall be provided with thermal overload protection. The overload protection device shall be provided either integrally with the motor or controller or mounted in a separate enclosure. Unless otherwise specified, the protective device shall be of the manually reset type. Single or double pole tumbler switches may be used as manual controller for motors 3/4 horsepower and larger shall be specifically designed for the purpose and shall have an HP rating adequate for the motor. Automatic control devices such as thermostats, float, or pressure switches may control the starting and stopping of motor directly, provided they are designed for that purpose and have an adequate horsepower rating.

B. When the automatic control device does not have such a rating, a magnetic starter shall be used, with the automatic control device actuating the pilot control circuit. When the manual and automatic control is specified and the automatic control device actuates the pilot control circuit of a magnetic starter, provide the latter with a 3-position selector switch. 3-position switches shall be marked "Manual-Off-Automatic".

C. All 3 phase motors furnished with magnetic starters having overload protection on every ungrounded leg and with fused disconnect switches with fusetron fuses in combination type general purpose enclosing cases. Starters shall have provision for "lock-out" in the "off" position. For motors 40 HP and larger, provide reduced voltage starters.

## PART 3 - EXECUTION

### 3.01 EXAMINATION

Examine the surfaces and conditions under which work of this Section will be performed. Do not proceed until unsatisfactory conditions detrimental to timely and proper completion of the work have been corrected.

### 3.02 PREPARATION

A. Visit the worksite and become fully aware of all existing conditions. Investigate the contract documents and make proper provisions to avoid interferences or construction delays. Determine the exact route of each duct and pipe.

B. Make offsets and changes in shape or direction required to maintain proper head room and pitch or to accommodate the structure and work of other trades. When changing the shape of ductwork, provide ducts having the same friction loss as the size of the duct shown in the contract documents.

C. Furnish other trades with information to properly locate and size openings in the structure required for the work under this Section. Furnish anchor bolts, sleeve inserts and supports required for the work under this Section. Provide access panels for concealed items provided under this Section that require maintenance, adjustment or inspection.

### 3.03 INSTALLATION REQUIREMENTS

A. Perform work using personnel skilled in the trade involved. Provide competent supervision. Furnish new equipment, materials and accessories bearing the manufacturer's identification and conforming to the recognized commercial standards. Guard exposed moving machinery parts and high-temperature equipment and materials.

B. When exposed to weather, provide a protective enclosure around electrical equipment, controls and other items that are not satisfactorily protected. No piping, electrical conduit, ceiling supports or similar items shall be supported from air conditioning equipment or ductwork.

### 3.04 EQUIPMENT INSTALLATION

Install equipment in the space allotted with sufficient clearance for proper operation and maintenance. Where equipment differs in arrangement or connections from those shown, provide all required changes in piping, supports and appurtenances. Provide equipment

accessories necessary for proper operation and support. Concrete equipment bases and supports are specified under another Section.

3.05 DUCTWORK AND ASSOCIATED SHEETMETAL

A. Sheet Metal Ductwork: Fabricate and install in accordance with the SMACNA Duct Manual for Low Velocity Systems, 5th edition (2-inch pressure only). Provide curved elbows with inside radius equal to the duct width. At contractor's option, 90-degree elbows may be square with factory-fabricated airfoil turning vanes. Provide factory-fabricated adjustable air extractors in straight branch-duct tap-ins or use radius tap-ins. Provide splitter dampers at all splits in the duct runs constructed in accordance with SMACNA Duct Manual Provide dampers where indicated with opposed blades and locking quadrant.

B. Provide flexible duct connections at inlet and outlet of all air moving devices. Seal watertight all ductwork exposed to weather, and cross-break to shed water. Provide stiffeners as required to assure no water puddling. Sizes of internally lined ducts shown on drawings are net inside duct dimensions. Adhere liner with bonding adhesive applied over entire duct surface and with weld pins per manufacturer's recommendations. Coat all exposed seams in liner.

C. All HVAC components, including HVAC equipment and ductwork, shall be supported and braced per the seismic design requirements of the 2018 IBC and ASCE 7.

D. All interior supply, return, transfer air ducts, and fittings shall be external-wrapped with AP Armaflex insulation with R-value as per IECC 2018. All exterior supply, return, and transfer air ducts, shall be internally-lined with AP Armaflex insulation with R-value as per IECC 2018. All registers, grilles, and diffusers shall be provided with an insulation blanket (R-velue as per IECC 2018) installed as per manufacturer’s recommendations.

E. All exterior ductwork shall be provided with a crown along the top of the duct to maintain a positive slope to mitigate ponding.

F. Air-cooled condensing units (ACCU) shall be provided with corrosion protection Blygold Poluai-XT coating for the coils and PSX700 coating for the ACCU casing.

3.06 CONTROL SYSTEMS

A. Provide all automatic system controls for this work installed by mechanics employed by or under contract to the control manufacturer in strict accordance with the manufacturer's instructions. Provide relays, control valves, control dampers, switches, control wiring and conduit and other items necessary to perform the functions specified or required for proper sequencing and operation of system. Direct the Mechanical Contractor in the proper location and installation of control valves, control dampers, wells, flow switches and similar items installed by that trade.

B. Provide identifying labels on all controls. Provide waterproof enclosures around control installed outdoors. Mount room thermostats 48 inches above floor unless otherwise indicated.

C. Control and Interlock Wiring: Provide all control and interlock wiring. Obtainwiring diagrams for all equipment and prepare a complete control-and-interlock-wiring shop drawing. Submit to Architect for review. Conform to all National Electrical Code requirements.

D. Set, test, calibrate, adjust and place in operation all control equipment. Upon completion of the operational test, inform the Architect in writing that the system is installed in accordance with the drawings and specifications and that the system has been calibrated and tested and is ready for use. Correct deficiencies observed after the facility is occupied.

## 3.07 ELECTRICAL

Conform to all applicable requirements of NFPA-70, National Electrical Code, and to the requirements of DIVISION 16 - ELECTRICAL of these specifications. Indicate terminal connection points to factory wired equipment on the control shop drawings.

## 3.08 BALANCE, ADJUST AND TESTING

A. Scope: Test mechanical systems to determine quantitative performance. Compare observe quantities with design quantities. Adjust systems to produce observed quantities that will conform to design quantities within tolerances specified. Balance the flow of fluids to conform to design, lock and mark adjustments, and leave systems in balance. Complete balancing, adjusting and testing prior to final inspection by the Architect and Engineer.

B. Contractor shall perform and provide a Test and Balancing Report (TAB) to the Architect and Engineer upon installation of the air conditioning and ventilation systems. Test and Balance system in accordance with SMACNA Manual for Balancing and Adjustment of Air Distribution Systems. The testing company shall be NEBB and/or AABC certified.

C. Job Conditions: Ventilating and air conditioning equipment shall have been completely installed and shall be put into continuous operation as required to accomplish the test adjustment and balance work specified. Test, adjust and balance shall be performed when outside conditions approximate design conditions indicated for cooling functions.

D. Certified Reports: Submit test reports on approved forms with certification by the Testing Engineer that the methods used and the results are as specified.

E. Air and Water Balancing and Performance Testing Equipments: Submit for review, with type, model and latest calibration date.

F. Procedures:

1. Air Systems: Test and balance systems in accordance with SMACNA manual for the Balancing and Adjustment of Air Distribution Systems; and provide test holes wherever a duct traverse is required.

a. Preliminary: Size, type and manufacturer of air terminals and all tested equipment shall be identified and listed. Manufacturer's ratings shall be used to make required calculations unless field test shows ratings to be erroneous.

b. Central Systems: Test and adjust air handling unit fan and ventilating fan rpm to design requirements. Test and record motor voltage and running amperes.

2. Record motor nameplate data and starter ratings. Make pitot tubetraverse of main supply ducts and return ducts and obtain design cfm at fans with air-conditioned space fully loaded. Test and record system static pressure, suction and discharge. Test and adjust system for design recirculated air CFM. Test and adjust system at design outside air CFM and record entering air temperatures (DB/WB cooling). Test and record leaving air temperatures (DB/WB), from cooling coil.

3. Verification: Prepare summation of readings of observed CFM for each system, compare with required CFM and verify that duct, coil, and filter losses are within reasonably allowable range. Contractor to provide a Test and Balancing Report to the Architect upon installation of the A/C system.

G. Automatic Control System: Set and adjust automatically operated devices to achieve required sequence of operations. Verify all controls for proper calibration.

H. System Performance Report:

1. After conclusion of balancing make temporary installation of portable recorders and simultaneously record temperature and humidity at representative locations in each system and outdoors. Test location shall be as approved by the Architect.

2. Recordings shall be made for a 5-day period, continuous over a weekend, and including at least one period of operation at outside conditions of 87 degrees F or higher.

I. Submission of Reports: Fill in test results on approved report forms. Submit 3 certified copies of required test reports to the Architect for approval.

3.09 CLEAN-UP

A. Stencil all exposed piping in mechanical equipment room with painted black letters indicating the service and with an arrow indicating the direction of low.

B. Stencil where pipes enter and leave and at not over 30-foot intervals. Width of color band, size of legend letters, and position of legend shall conform to the requirements of ANSI A13.1, Scheme for the Identification of Piping Systems.

C. Painting of exposed bare metal surfaces in finished areas shall be provided herein if it is not specified under SECTION 09900 - PAINTING.

D. Include in this work shall be bare metal registers, louvers, access panels for mechanical equipment, control covers, ductwork, piping, hangers, etc. Refer to Architectural finishing schedule for finish required. Prepare surface as required for oil-base enamel paint. Provide 2 final coats matching adjoining surface finish.

E. Clean up work provided under this Section, to new unblemished appearance. Refinish as required to correct all damaged factory finishes.

## 3.10 INSTRUCTIONS

Instruct the Owner's Representative in the proper operation and maintenance of the system. Review the maintenance manuals with the Owner.

## 3.11 SUBSTITUTIONS - MATERIALS

Requests for substitutions, complete with catalog data, shall be furnished the Architect as stated in the Special Provision of the specifications. Any substitution approved shall be included in the submittals. Design is based on equipment as described in the drawings' equipment schedule. Any changes in foundations, bases, connections, piping, controls, electrical equipment, wiring and connections and opening, required by alternate equipment specified, submitted and approved, shall be made at no additional cost to the Owner. Requests shall be in accordance with SECTION 01010 - SPECIAL CONDITIONS.

## 3.12 SELECTION AND ORDERING OF EQUIPMENT AND MATERIALS

A. Immediately after award of contract and approval of submittals by the Architect, the Contractor shall arrange for the purchase and delivery of all equipment and materials required, in ample quantities and at the proper time.

B. He shall deliver to the Architect, a complete list of equipment and materials ordered giving description, plate numbers, name of the wholesaler, date of orders, and approximate delivery dates.

## 3.13 LOCATIONS AND ACCESSIBILITY

A. Install all equipment in such a manner as to be readily accessible for maintenance and repairs. Install all piping ducts and conduit in such a manner as to preserve headroom, avoid obstructions and keep openings and passageways clear.

B. If changes in the indicated locations or arrangements are required, they shall be made by the Contractor without additional charges, provided that the change is

ordered before work is installed, and no extra labor or materials are required.

C. Contractor shall submit an estimate of the cost or credit for required changes and shall proceed with the work only upon the written authority of the Architect.

## 3.14 IDENTIFICATION OF PIPING AND EQUIPMENT

A. Identify all equipment with nameplate bearing equipment name and number using 1-1/2 inch wide, white Bakelite with 1/2-inch black letters permanently mounted in a conspicuous place.

B. Markings: Each piping system furnished and installed under this work shall be identified and the direction of flow indicated by means of legends, color bands and flow arrows, all as manufactured by W. H. Brady, Seton or approved equal. The markings shall be applied after all painting and cleaning of the piping and insulation is completed. The stick-ons shall be taped all around the pipe in addition to being cemented on.

1. Location:

a. The identification shall be applied to all piping except thoselocated in furred spaces without access to permit entrance of personnel and piping buried in the ground or concrete.

b. The symbol and flow arrow shall be applied at all valve locations, at all points where piping enters or leaves a wall, partition, cluster or piping or similar obstruction and at approximately 30-foot intervals on runs with at least one in each space or room.

c. Variation or changes in locations and spacing may be made with the approval of the Architect to meet conditions.

d. Wherever 2 or more pipes run parallel, the printed symbol and other markings shall be applied in the same relative locations so as to be in either vertical or horizontal linearity, whichever the case may be.

e. The markings shall be located so as to be conspicuous and legible at all times from any reasonable point.

2. Sizes shall be as recommended in ANSI A13.

C. As an alternate to the above, the Contractor may submit a system of painted stenciled letters on a color coded background per ANSI A13. Complete data, color chart and sizes shall be submitted for approval.

D. Valve charts shall be provided for each piping system and shall consist of schematic drawings of piping layouts showing and identifying each valve and describing its function.

E. Upon completion of the work and after approval by the Architect, one copy of each chart, sealed to rigid backboard with clear lacquer placed under glass and framed, shall be mounted in the mechanical room where directed by the Owner. 2 additional unmounted copies shall be delivered to the Owner. Valve lists shall be furnished as required.

F. Name Tags:

1. Provide 1-1/4 inch plastic square or 1-1/4 inch round with 1/4 inch letters for all valves, Seton or approved equal. Black letters on white tags and marked for type of service intended. Attach tags to valve handles by "S" hooks. Furnish 4 printed lists showing valve number, service and location.

2. One of these lists shall be individually framed with metal frames and glass fronts and mounted where directed by the Owner after approval. One additional copy shall be furnished as required.

## 3.15 COOPERATION WITH OTHER TRADES

Fixtures and Other Interferences:

1. Examine all drawings of the proposed work and coordinate his work with other trades. Work conflicts shall be brought to the Architect's attention and work rearranged in accordance with his decision. Should any additional work or material be required to complete the work as an operable system, perform the work and provide the materials to the Owner's satisfaction. This shall not be construed to include work not intended within the scope of this part of the specifications.

2. No extras will be allowed for changes made necessary by interference with work of other trades. Areas of limited clearance shall be laid out to 3/4-inch = one foot scale with all ducts, pipes, conduits, beams, etc., shown.

3. Cooperate with the other trades in the interest of obtaining the most practical overall arrangement of equipment, piping, conduit, and ducts, and to maintain maximum headroom and accessibility.

## 3.16 WORKMANSHIP AND SUPERVISION

All workmanship shall be of the highest standard. None but competent mechanics skilled in their trade shall be employed. Furnish the services of an experienced superintendent who shall be constantly in charge of the work.

## 3.17 OPENINGS

The work shall be carefully laid out in advance providing sleeves, templates or details for chases and openings to be left in the walls, floors, structural members, or partitions. Cutting, if permitted, shall be carefully done, and damage to building, piping, wiring or equipment as a result of cutting for installation shall be repaired by skilled mechanics of the trade involved, at no additional expense to the Owner. Written permission from the

Architect shall be obtained before any cutting is done.

3.18 FOOTING CLEARANCES

Under no circumstances shall pipes or conduit run through footings. They shall cross below footings, or through sleeve above footings. Those running parallel to footings shall have the minimum clearances indicated on the drawings and be out of a 45-degree included angle from the footings if below them.

3.19 DAMAGE BY LEAKS

Contractor shall be responsible for all damage to any part of the premises caused by defective flashing, leaks or breaks in piping, equipment or fixtures furnished and/or installed by him for a period of one year from the date of acceptance of the work by the Owner.

3.20 PROTECTION TO FIXTURES, MATERIALS AND EQUIPMENT

Pipe and duct openings shall be closed with caps or plugs during installation. Fixtures and equipment shall be tightly covered and protected against dirt, water and chemical or mechanical injury. Upon completion of all work, the fixtures, materials and equipment shall be thoroughly cleaned, repainted as required, adjusted and operated.

3.21 OPERATION TEST

At completion, operate all plumbing systems for a period of at least one day of 8-hours minimum to demonstrate fulfillment of the requirements of the contract. During this time all adjustments shall be made to the equipment until the entire system is in satisfactory operating condition acceptable to the Owner, including the location of main and branch shut-off valves.

3.22 FINAL OPERATION AND INSTRUCTIONS

A. Upon completion of the installation of the equipment and after final acceptance, at a time approved by the Owner, the Contractor shall place a competent person, or persons at the building who shall operate the systems for a period of one 8-hour day instructing the Owner's personnel in all details of operation and maintenance, including the location of main and branch shut-off valves.

B. Any required instructions from manufacturer's representatives shall be given during this period. The one day specified under "Operation Test" does not substitute for this day of final operation and instruction.

C. All arrangements for operation periods shall be made through the Architect.

3.23. OPERATION AND MAINTENANCE MANUAL

3 copies of an operation and maintenance manual shall be provided and shall include:

1. Shop Drawings and/or catalog information and cuts. Manufacturer's Specifications. Manufacturer's Parts Lists, Wiring Diagram and Equipment Drawings.

2. Complete lubrication, maintenance, and instructions including initial start-up instructions.

3. Other technical, installation and maintenance as applicable.

## 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 - ELECTRICAL WORK

## PART 1 - GENERAL

### 1.01 RELATED DOCUMENTS

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

### 1.02 DESCRIPTION OF WORK

A. Furnish all labor and materials required to complete all electrical work as indicted on the drawings and/or specified herein.

B. In general, the following work is included:

1. Demolition and removal of lighting and electrical equipment as indicated or no longer required.

2. Power and lighting systems; including panelboards, luminaires with lamps, feeder, branch circuits, circuit breakers, disconnect switches and wiring devices.

3. Connection of air conditioning equipment.

4. Installation of equipment furnished by the State or by others, including the furnishing of disconnects.

5. Submittal of shop drawings.

6. Preparation of “as-built” drawings.

C. The term “wiring” shall include raceways, outlets, conductors, fixtures, devices, and panelboards.

D. Wiring and connecting all electrical equipment supplied for installation and use in this contract and not specifically listed as work by others.

### 1.03 RULES, STANDARDS AND PERMITS

A. The entire work shall comply with applicable laws of the local electric bureau, the Standards of NEMA and ANSI and National Electrical Safety Code, and the regulations of the local utility companies.

B. The Contractor shall obtain and pay for the electrical permits required, and shall give notice for inspections as the work progresses. Upon completion, he shall deliver certificates of completion and inspection to the Engineer.

1.04 DRAWINGS

A. These specifications are accompanied by site plans and diagrammatic electrical layouts showing the approximate location of the outlets, switches, devices and other equipment.

B. The wiring layouts and schedules show the approximate locations of all outlets, switch control, service runs and other electrical apparatus. These locations are approximate and before installing Contractor shall study adjacent architectural details and make installation in most logical manner. Any device may be relocated within 10 feet before installation at the direction of the Engineer, whose decision shall be final.

C. Contractor shall maintain in his field office one set of electrical drawings for the sole purpose of recording changes and field deviations as they occur. Each change with explanatory notes shall be entered before the close of the work day, and shall be initialed by the representative of the Engineer.

Above reference to deviations shall not be construed to allow deviations without prior approval. Upon completion of the electrical work, the Contractor shall transfer all changes posted on the field set to a set of transparencies to be furnished by the Engineer. The final set shall be certified to show "as-built" conditions and both sets delivered to the Engineer. This is mandatory.

1.05 SUBMITTALS

Submit in accordance with SECTION 01300 – SUBMITTALS.

A. Lighting fixtures.

B. Panelboards, circuit breakers, disconnect switches.

C. Any other special or built-to-order equipment.

1.06 GUARANTEE

Installation shall be complete in every detail and ready for use. Any item supplied by Contractor developing defects within one year of final acceptance by State except lamps which shall be guaranteed for 50 percent of rated life as published by manufacturer, shall be replaced by such materials, apparatus or parts including installation labor to make such defective portion of complete system conform to true intent and meaning of Drawings and Specifications, at no additional charge to the State of Hawaii.

PART 2 - PRODUCTS

2.01 MATERIALS

A. Materials and equipment shall be new and those listed by Underwriters' Laboratories shall bear "UL" label of approval. Brand names, manufacturer's

names and catalog numbers indicate standards of design and quality required. Substitute materials may be used if qualified by written permission from the Engineer. List of substitute materials together with qualifying data shall be submitted for approval as provided in the GENERAL SPECIFICATIONS. Failure to obtain approval of substitute materials prior to bidding shall mean that materials as specified shall be provided.

Example

| Item | Manufacturer and Catalog No. Specified | Substitute Manufacturer and Catalog Number |
|---|---|---|
| Cable | Joe Doe - No. 3020 | King - No. 2200 |

Qualifying data shall include cuts, shop drawings, and specifications to show equality with material specified herein and in drawings.

B. Raceways:

1. Rigid Steel, zinc-coated, 3/4 inch minimum diameter, except as noted. Other sizes to conform to NEC Chapter 9, Table 3A, based on RHW wires.

2. Electric metallic tubing (EMT) galvanized round bore with compression connectors, 3/4 inch minimum diameter, other sizes to conform to NEC Chapter 9, Table 3A, based on RHW wires.

3. Flexible conduit - galvanized steel, neoprene jacketed for wet locations.

C. Conductors shall be delivered to site in original factory packages or reels. Conductors shall be copper, #12 AWG minimum.

1. Interior locations - Branch circuits, Type RHW, TW, THW or THWN.

2. LED fixture channels - Type THHN or RHH.

3. In gutters and feeders - #6 AWG and larger. Type THW or XHHW.

D. Boxes:

1. Outlet and small junction boxes shall be zinc-coated pressed steel of ample size. Light outlets shall be fitted with no-bolt type fixture studs as necessary for fixture support. Utility boxes ("Handy", Type OA, etc.) shall not be used. Minimum size of outlet boxes, 4 inches square of octagon.

2. Large junction boxes and covers shall be zinc-coated. Screws for cover shall be brass.

Exposed boxes and weather exposed boxes - galvanized cast steel or alloyed aluminum prime painted, enamel finished, all with threaded hubs for conduits.

E. Wiring Devices: Specification grade unless otherwise noted.

1. Receptacles, bakelite body, flush, nylon face, ivory: Duplex, grounding type, 20A, 125V., 3-wire, specification grade spring bronze contacts, bronze mounting strap and ground contacts, Hubbell 5362, Bryant, Leviton or equal.

2. Equivalent grade and type of wiring devices manufactured by General Electric Company, Sierra or Leviton are approved.

3. Plates shall be 0.040-inch thick, 18-8 stainless steel, except where other metals are noted or specified. Telephone and data outlets shall have plates with 3/8 inch diameter, grommeted hole.

F. Lighting Fixtures:

1. Provide all lighting fixtures and lamps as indicated including lamps, drivers, stems and accessories.

2. LED lamps shall be 4000 degrees Kelvin.

3. Fixtures shall be manufactured from sheet metal protected by "Bonderite" or "Cryscoat" process and baked white finished, 80 percent minimum reflectance, to resist 300 hours salt spray test. Anodize all aluminum, galvanize or chrome all steel. All ferrous metal surfaces, including edges shall be plated or primed and painted.

G. Circuit breakers and safety switches shall be of the rating and type indicated. Circuit breakers shall be of the interchangeable trip type when available. Safety switches shall be heavy duty for indoor locations, enclosures shall be NEMA 1 enclosure and for exterior locations enclosures shall be NEMA 3R.

H. Motor Starters shall be across the line, manual or magnetic type as required with overload protection in each phase in NEMA enclosure. Motor starters installed in exterior locations shall have NEMA 3R enclosures.

I. Panelboards shall be 3-phase, 4WSN application, voltage and mounting as indicated, with doors and trims, copper bussed with bolted molded case thermal magnetic breakers, complement as sown on the drawings, circuit directory, lock and 2 keys. Breakers shall be interchangeable trip type when such is available. All panels shall be keyed alike.

J. Hardware, Supports, Backing, Etc.: Provide all hardware, supports, backing and other accessories necessary to install electrical equipment. Wood materials to be termite resistant. Ferrous material shall be galvanized for corrosion protection. Non-ferrous materials shall be brass or bronze.

## PART 3 – EXECUTION

### 3.01 CONSTRUCTION METHODS

A. Workmanship shall be subject to the approval of the Engineer, who shall be afforded every facility to determine the skill and competency of labor.

B. Outlet locations are shown approximately only. The Contractor shall check architectural drawings and details and center or space the outlets to obtain neat symmetrical appearance. Provided change is ordered before outlets are installed, there shall be no additional cost to the State for reasonable change of outlet locations.

C. Building wiring shall be in concealed raceways, except as shown. Interior conduit for future extension shall be terminated in couplings set flush with finish surface and closed by means of recessed pipe plugs. Provide expansion fittings in conduit runs at all building expansion joints. Electrical metallic tubing may be used only in dry ceilings and walls. Electrical metallic tubing may not be used in exposed locations or embedded in concrete slabs.

D. Provide all necessary foundations, supports and backing for enclosures, conduit, and equipment. Fixture support shall be capable of 300-pound loading, and shall be made to building structure.

E. Perform all cutting, drilling and patching necessary for installation of conduit and equipment. Repair any surface damaged or marred during the installation. Cutting, repairs and finish shall be subject to the approval of the Engineer.

F. Minimum wire size for branch circuit shall be #12 AWG. Larger sizes may be used as necessary.

G. Homeruns shall mean that portion of a branch circuit from outlet nearest panel, to the panel.

H. Crimp or pressure-connect all splices #10 AWG or smaller. Leave no sharp points that can pierce taping. Use no-solder pressure connectors for #8 AWG and larger. Use highest grade insulating and friction tape, applied in accordance with best practice of trade. Connections of light fixture wires to building wires may be made with approved wire-nuts.

I. Form wires neatly in all enclosures. Cable together and lace with waxed strings branch circuit conductors at panelboards.

J. Lubricants used for wire-pulling in all areas except as noted, shall be such that lubricant will not damage conductor insulation or sheathing. For neoprene jacketed and plastic-sheathed conductors, use powdered soapstone.

K. Where ducts pass through structural wall, provide openings with minimum of 1 inch mastic fill between duct envelope and structure to eliminate transfer of stresses from one to another. Through each duct, pull a test mandrel 10 inches

long and 1/4 inch less than nominal size of duct. Clean duct with compressed air on "mouse". Provide duct "combs", or supports for all multiple duct runs.

L. All exposed riser shall be rigid steel conduit. Plug risers during construction with approved wood plugs or sealing bushings. Swab all conduits dry before pulling wires.

M. Conduit runs under floor slab to be heavily coated with 2 coats of asphaltum paint and shall be encased in 3 inches of concrete.

N. Attach conduit to concrete and masonry with expansion anchors. Attach to wood by means of wood or lag screws.

O. Set all enclosures plumb and exactly flush with finish surface.

P. All cable splices shall be made in accordance with manufacturer's instructions. In underground locations, all splices shall be cast type using thermo-setting epoxy resin insulation.

Q. Install all lamps. Provide lamp extensions where necessary to position filament.

R. Balance feeder loading on all three phases as closely as practicable. Furnish necessary test equipment and make all tests necessary to check for unspecified grounding, shorts and wrong connections. Correct faulty conditions, if any. Attach to the inside surface of panel door a card indicating recorded load of each phase.

S. Except as indicated in this section, the subcontractor shall be responsible for the proper wiring of the electrical equipment pertaining to this project whether furnished by him or by others and shall install and connect whatever control equipment which may be furnished to him by the equipment contractor or the State. He shall also furnish whatever raceways, disconnect switches, motor starters, boxes, fittings, wires and devices that he may need for proper and adequate installation of such electrical equipment.

T. Label all panels and service equipment. Signs by competent craftsmen. Letters to be one inch high minimum, black paint. Panels: Label designation, as directed. Tag all empty conduits in terminal cabinets and boxes giving destination. Use fiber disc tags in bushing.

U. Provide typewritten circuit directory for each panel.

V. Fixtures to be safely, positively and securely supported to structure by means of fixture studs in outlet boxes or other approved methods. Fixtures shall not be hung from outlet box "ears" or ceilings. Plumb and align fixtures shall be provided with swivel ball aligners. All suspended fixtures shall be positively supported from structural frame of building and shall not be supported from ceiling system. Provide independent suspensions wires and channels to support fixtures mounted on suspended ceilings.

W. Grounding:

1. Provide grounding for entire electric installation as indicated and specified herein. Following are included as requiring grounding:

   Electric service, its equipment and enclosures. Conduits, other conductor enclosures and panelboards.

   Neutral or identified conductor of interior wiring system.

   Non-current carrying metal parts of fixed equipment, such as, motors, starter and controller cabinets, lighting fixtures, etc.

2. Manner of Grounding: Sizes and types of ground conductors, ground clamps, bonding jumpers, conduit, fittings, also methods of securing same to obtain electric continuity and effective grounding, when not indicated: as per NEC Article 250.

3. Install ground wire in all non-metallic conduits. Size in accordance with NEC.

X. Finishing:

1. Patch, repair and restore all structural and architectural elements cut or drilled for installation of electrical system. Drilling, cutting, patching, repairing and restoring shall be subject to approval of the Engineer.

2. Attach electrical equipment to wood by wood screws, and attach to concrete by embedded or expansion inserts and bolts. Use powdered-driven charge with approval only. Close unused knock-outs on boxes or enclosures with metal cap. Powder actuated fasteners shall not be used on precast concrete. Do not use powder activated fasteners to attach enclosures and boxes to the building.

3. Wipe clean all exposed raceways and enclosures with rag and solvent. Prime painting and finishing of unfinished raceways and enclosures shall conform to SECTION 09901 - PAINTING. Factory finished enclosures shall not be painted.

## 3.02 TESTING AND COMPLETION

A. Final inspection of electrical work will be made by the Engineer.

B. Test all wiring and systems for proper operation. Measure insulation resistance of all wires #4 and larger, using Biddle Co. 500 volt megger. Record readings and submit 4 copies to the Engineer. Measure ground resistance at service and furnish 4 copies of readings to the Engineer. All test shall be made in the presence of the Engineer.

3.03 OUTAGES

Outages will not be permitted unless absolutely necessary. Outages will be scheduled to suit the schedule of the Airport. Contractor shall request for outages in writing at least three weeks prior to desired outages and shall state desired length of outage. Request for outage shall be submitted to the Engineer, who shall not conduct an outage until written approval is obtained from the Airport Manager. All desired outages shall be kept to a minimum and the outage time shall be kept as short in duration as possible. At the beginning of the project, contractor shall submit a tentative schedule of outages to the Engineer. Tentative schedule shall indicate approximate date of outage, duration of outage and purpose of the outage. Contractor shall provide temporary power and connections if necessary at no additional expense to the State of Hawaii.

## 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

# Requirements of Chapter 104, HRS
## Wages and Hours of Employees on Public Works Law

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(a), 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 inspection 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 and Trainees**

- 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, 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) 322-4808
Maui and Kauai .....(808) 243-5322

STATE OF HAWAII

DEPARTMENT OF TRANSPORTATION

# PROPOSAL

PROPOSAL TO THE

STATE OF HAWAII

DEPARTMENT OF TRANSPORTATION

| | |
|---|---|
| PROJECT: | Terminal 2 TSA Checkpoint 3<br>Interior Queue Install New AC<br>Daniel K. Inouye International Airport<br>Honolulu, Oahu, Hawaii |
| PROJECT NO.: | CO1451-43 |
| COMPLETION TIME: | ONE HUNDRED EIGHTY (180) Calendar days from the date indicated in the Notice to Proceed from the Department. |
| LIQUIDATED DAMAGES: | ONE HUNDRED FIFTY DOLLARS ($150.00) for each and every working (or calendar) day which the Contractor has delayed the completion of this project. |
| PROJECT MANAGER: | Ms. Wendy Cheuk<br>Department of Transportation<br>Airports<br>Daniel K Inouye International Airport<br>400 Rodgers Boulevard, Suite 700<br>Honolulu, HI 96819-1880<br>Phone: (808) 838-8822<br>Email: wendy.cheuk@hawaii.gov |
| ELECTRONIC SUBMITTAL: | **Bidders shall submit and upload the complete proposal to HIePRO prior to the bid opening date and time. Any additional support documents explicitly designated as confidential and/or proprietary shall be uploaded as a separate file to HIePRO. Bidders shall refer to SPECIAL PROVISIONS 2.8 PREPARATION AND DELIVERY OF BID for complete details. FAILURE TO UPLOAD THE COMPLETE PROPOSAL TO HIePRO SHALL BE GROUNDS FOR REJECTION OF THE BID.** |

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.

| Name of Subcontractor | Nature and Scope of Work |
|---|---|
| 1. | |
| 2. | |
| 3. | |
| 4. | |
| 5. | |
| 6. | |
| 7. | |
| 8. | |

| Name of Joint Contractor | Nature and Scope of Work |
|---|---|
| 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

TERMINAL 2 TSA CHECKPOINT 3 INTERIOR QUEUE INSTALL NEW AC
DANIEL K. INOUYE INTERNATIONAL AIRPORT
HONOLULU, OAHU, HAWAII

| Item No. | Description | Approx. Qty | Unit Price | Total |
|---|---|---|---|---|
| 1. | **DIVISION 1 – GENERAL REQUIREMENTS** | | | |
| 01010.1 | Construction Work | LS | LS | $_____ |
| 01524.1 | Construction Waste Management | LS | LS | $_____ |
| 01561.1 | Construction Site Pollution Controls | LS | LS | $_____ |
| 01562.1 | Management of Contaminated Media, Soil Disposal, and Soil Reuse | LS | LS | $_____ |
| 01565.1 | Security Measures | ALLOW | ALLOW | $20,000_____ |
| 01700.1 | Mobilization (Not to exceed 6% of sum of all items, excluding this item, all allowances and force account items) | LS | LS | $_____ |
| 2. | **DIVISION 2 – SITE CONSTRUCTION** | | | |
| 02411.1 | Unforeseen Conditions | ALLOW | ALLOW | $50,000_____ |
| | TOTAL AMOUNT FOR COMPARISON OF BIDS | | | $_____ |

Notes:

The bid prices 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.

Note 1: Bid shall include all Federal, State, County and other applicable taxes.

Note 2: The TOTAL AMOUNT FOR COMPARISON OF BIDS shall be used to determine the lowest responsible bidder.

Note 3: Bidders shall complete all unit prices and amounts. Failure to do so shall be grounds for rejection of bid.

Note 4: State reserves the right to reject any or all Bids and to waive any defects in said Bids in the best interest of the State.

Note 5: Submission of a Bid is a warranty that the bidder has made an examination of the project site and is fully aware of all conditions to be encountered in performing the work and the requirements of the plans and specifications.

Note 6: The bidder's attention is directed to Section 2.11 – BID SECURITY of the "General Provisions", as amended by the Special Provisions.

Note 7: Bidders shall be paid for actual work performed as directed by the Engineer for allowance items. Bidders will not be paid overhead and profit for unused allowance funds.

Note 8: If the TOTAL AMOUNT FOR COMPARISON OF BIDS exceeds the funds available for the project, then the State reserves the right to negotiate with the lowest, responsive, responsible bidder as permitted under Section 103D-302, Hawaii Revised Statutes (HRS), to further reduce the scope of work and award a contract thereafter.

Note 9: **Bidders shall submit and upload the complete proposal to HIePRO prior to the bid opening date and time. Proposals received after said due date and time shall not be considered. Any additional support documents explicitly designated as confidential and/or proprietary shall be uploaded as a separate file to HIePRO. Bidders shall not include confidential and/or proprietary documents with the proposal. The record of each bidder and respective bid shall be open to public inspection.** Original (wet ink, hard copy) proposal documents are not required to be submitted. **Contract award shall be based on evaluation of proposals submitted and uploaded to HIePRO.**

**FAILURE TO UPLOAD THE COMPLETE PROPOSAL TO HIePRO SHALL BE GROUNDS FOR REJECTION OF THE BID.**

If there is a conflict between the specification document and the HIePRO 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

Contents:

# C O N T R A C T

THIS AGREEMENT, made this day _____, by and between the STATE OF HAWAII, by its Director of Transportation, hereinafter referred to as "STATE", and «CONTRACTOR», «STATE_OF_INCORPORATON», whose business/post office address is «ADDRESS» hereinafter referred to as "CONTRACTOR",

WITNESSETH: That for and in consideration of the payments hereinafter mentioned, the CONTRACTOR hereby covenants and agrees with the STATE to complete in place, furnish and pay for all labor and materials necessary for

"«PROJECT_NAME_AND_NO»",

or such a part thereof as shall be required by the STATE, the total amount of which labor, materials and construction shall be computed at the unit and/or lump sum prices set forth in the attached proposal schedule and shall be the sum of «BASIC»----- DOLLARS ($«BASIC_NUMERIC») as follows:



TOTAL AMOUNT FOR COMPARISON OF BIDS…….…...……$«BASIC_NUMERIC»

which shall be provided from the following funds:

Federal Funds.....……..……..…...
State Funds.....……..……...
TOTAL AMOUNT.....……..….

all in accordance with the specifications, the special provisions, if any, the notice to bidders, the instructions to bidders, the proposal and plans for «PROJECT_NO_ONLY», and any supplements thereto, on file in the office of the Director of Transportation. These documents, together with all alterations, amendments, and additions thereto and deductions therefrom, are attached hereto or incorporated herein by reference and made a part of this contract.

The CONTRACTOR hereby covenants and agrees to complete such construction within «WORKING_DAYS» , from the date indicated in the notice to proceed from the STATE, subject, however, to such extensions as may be provided for under the specifications.

For and in consideration of the covenants, undertakings and agreements of the CONTRACTOR herein set forth and upon the full and faithful performance thereof by the CONTRACTOR, the STATE hereby agrees to pay the CONTRACTOR the sum of «BASIC»-----DOLLARS ($«BASIC_NUMERIC») in lawful money, but not more than such part of the same as is actually earned according to the STATE's determination of the actual quantities of work performed and materials furnished by the CONTRACTOR at the unit or lump sum prices set forth in the attached proposal schedule. Such payment, including any extras, shall be made, subject to such additions or deductions hereto or hereafter made in the manner and at the time prescribed in the specifications and this contract.

An additional sum of «EXTRAS»-----DOLLARS ($«EXTRA_NUMERIC») is hereby provided for extra work and shall be provided from the following funds:

Federal Funds…….....……
State Funds……
Total……..…….…...

Where Federal funds are involved, it is covenanted and agreed by and between the parties hereto that the sum of ----«FEDERAL_BASIC»----DOLLARS ($«FEDERAL_BASIC_NUMERIC») and ----«FEDERAL_EXTRAS»----DOLLARS ($«FEDERAL_EXTRAS_NUMERIC»), a portion of the contract price and extras, respectively, shall be paid out of the applicable Federal funds, and that this contract shall be construed to be an agreement to pay said sums to the Contractor only out of the aforesaid Federal funds if and when such Federal funds shall be received from the Federal Government, and that this contract shall not be construed to be a general agreement to pay said portions at all events out of any funds other than those which may be so received from the Federal Government; provided, that if the Federal share of the cost of the project is not immediately forthcoming from the Federal Government, the STATE may advance the CONTRACTOR the anticipated Federal reimbursement of the cost of the completed portions of the work from funds which have been appropriated by the STATE for its pro rata share.

All words used herein in the singular shall extend to and include the plural. All words used in the plural shall extend to and include the singular. The use of any gender shall extend to and include all genders.

IN WITNESS WHEREOF, the parties hereto have caused this instrument to be duly executed the day and year first above written.

STATE OF HAWAII

_____
Director of Transportation

«CONTRACTOR»

_____
Signature

_____
Print name

_____
Print Title

_____
Date

**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 Obligee 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 Obligee 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 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 Contract with the 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 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 _____.

_____
Name of Corporation, Partnership, or Individual

_____
Signature and Title of Signer

Subscribed and sworn before me this
_____day of_____.

_____
Notary Public,_____Judicial Circuit,
State of Hawaii
My Commission Expires: _____

# 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 Hawaii at the time the person claims to have established the person's domicile in the State of Hawaii and shows the person's intent is to make Hawaii the person's primary residence.

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 Hawaii 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 Hawaii residents, by the total number of hours worked on the contract by all employees of the Contractor in the performance of the contract. The hours worked by any Subcontractor of the Contractor shall count towards the calculation for this section. The hours worked by employees within shortage trades, as determined by the Department of Labor and Industrial Relations (DLIR), shall not be included in the calculation for this section.

b. Prior to 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 Hawaii 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 Hawaii. Revised Statues §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.

# CERTIFICATION OF COMPLIANCE
# FOR
# EMPLOYMENT OF STA'T'E RESIDENTS
## HRS CHAPTER 103B, AS AMENDED BY ACT 192, SLH 2011

Project Title: _____

Agency Project No: _____

Contract No.: _____

As required by Hawaii Revised Statutes Chapter103B, 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 Hawaii 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.

_____
Notary Public, 1" Circuit, State of Hawai`i
My commission expires: _____

Doc. Date: _____# of Pages _____1ST Circuit
Notary Name: _____
Doc. Description: _____
_____
_____

_____
Notary Signature Date
NOTARY CERTIFICATION

**EXHIBIT 2**