

SPECIFICATIONS AND PROPOSAL

FOR

REPAIR GUARD SHACK

HILO HARBOR

ISLAND OF HAWAII, HAWAII

JOB H. C. 50173

**STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HARBORS DIVISION**

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NOTICE TO BIDDERS
(Chapter 103D, Hawaii Revised Statutes)

The receiving of SEALED BIDS for REPAIR GUARD SHACK, HILO HARBOR, ISLAND OF HAWAII, HAWAII - JOB H.C. 50173, will begin as advertised in HiePRO.

Bidders are to register and submit bids through HiePRO only. See the following HiePRO link for important information on registering: <https://hiepro.ehawaii.gov/welcome.html>.

Plans, specifications, proposal, contract forms, and any other applicable documents may be obtained from HiePRO.

Deadline to submit bids is Friday, June 2, 2023, at 2:00 p.m. Hawaii Standard Time (HST). Bids received after said due date and time shall not be considered.

The scope of work for this project consists of replacement of an existing prefabricated steel guard shack; construction of new concrete landings, stairs, platform, and equipment pad; installation of new galvanized pipe guardrails and handrails; installation of new traffic barrier gate operator and controls; relocation of existing concrete roadway barriers; removal of existing pavement markings and installation of new pavement markings; installation of new exterior lighting; installation of new ductlines for electrical power and telecommunications; electrical conduit and wiring work at interior of guard shack; and installation of replacement window air conditioning unit at guard shack. The estimated construction cost is between \$500,000 and \$750,000.

To be eligible for award, bidders must possess a valid State of Hawaii General Engineering Contractor's "A" license at the time of the bid opening.

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

A pre-bid meeting is scheduled for Tuesday, May 16, 2023, at 11:00 a.m. HST. All prospective bidders or their representatives (employees) are encouraged to attend, but attendance is not mandatory. The pre-bid meeting will be conducted on Microsoft Teams. Contact Mr. Gregg Hirokawa, Harbors Project Manager, by email at gregg.hirokawa@hawaii.gov, a minimum of 24 hours prior to the scheduled pre-bid meeting to receive the Teams meeting invitation. Anything said at the meeting is for clarification purposes and any changes to the bid documents will be made by addendum and posted in HIePRO.

All questions and requests for information (RFI) applicable to the bid documents shall be submitted via HIePRO no later than 14 calendar days before bid opening. Questions received after the deadline will not be addressed. Verbal RFI will not receive a response.

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

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

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

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

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 State Department of Transportation will affirmatively ensure that the contract entered into pursuant to this advertisement will be awarded to the lowest responsible bidder without discrimination on the grounds of race, color, national origin, or sex (as directed by 23 CFR, Part 200).

For additional information, contact Mr. Hirokawa by phone at (808) 587-1985 or by email as noted above.

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


DREANALEE K. KALILI
Deputy Director
Department of Transportation, Harbors

Internet Posting: May 4, 2023

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.

SPECIAL PROVISIONS

The General Provision is amended as follows:

A. ARTICLE I - TERMS, ABBREVIATIONS, AND DEFINITIONS

1. Section 1.3 Definitions: The definition for “Subcontractor” is amended by deleting it and replacing it 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 section 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.”

B. ARTICLE II – STANDARD PROVISIONS FOR COMPETITIVE SEALED BIDS AND AWARDS

1. 2.7 Request for Substitution of Specified Materials and Equipment Before Bid Opening is amended as follows:

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

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

- b. 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. 2.8 Preparation and Delivery of Bid is amended as follows: Last paragraph (line 189 to 192) shall be replaced with the following:

“The bidder shall submit the proposal in HiePRO. The proposal shall be UPLOADED to HiePRO prior to the bid opening date and time. Proposals received after said due date and time shall not be considered. Original (wet ink) proposal documents are not required to be submitted. The award will be made based on proposals uploaded in HiePRO. Any and all other additional documents explicitly designated and labeled as CONFIDENTIAL OR PROPRIETARY shall be UPLOADED SEPARATELY to HiePRO.”

3. 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.
- (4) Proposal Guaranty listed in (1) and (3) shall be in its original form, and shall be received at the Contracts Office, Department of Transportation, Aliiimoku Hale, 869 Punchbowl Street, Room 105, Honolulu, Hawaii 96813 before the bid deadline.”

4. 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 it with the following:

“2.12 Pre-Opening Modification or Withdrawal of Bids. A bidder may withdraw or modify a proposal after the bidder submits the proposal in HIePRO. Withdrawal or modify of proposal must be completed before the time set for the receiving of bids.”

5. 2.14 Public Opening of Bids is amended by deleting 2.14 Public Opening of Bids in its entirety.
6. 2.20 Bid Evaluation and Award is amended by replacing 2.20(a) and 2.20(b) with the following:

“(a) The award shall be made to the lowest, responsive, responsible bidder within 120 days after bid opening and shall be based on the criteria set forth in the invitation for bids. The Department may request the bidders to allow the Department to consider the bids for the issuance of an award beyond the 120 day period. Agreement to such an extension must be made by a bidder in writing. Only bidders who have agreed to such an extension will be eligible for the award.

(b) No bid shall be withdrawn or corrected for a period of 120 days after bid opening except for a mistake as described in this article; however, a bidder may withdraw a bid without penalty anytime prior to award of the contract if it finds it is unable to comply with the provisions regarding the employment of State of Hawaii residents as described in Section 7.2 and 103B-3, H.R.S.”

C. ARTICLE VII – LEGAL RELATIONS AND RESPONSIBILITY TO PUBLIC

1. 7.1 Insurance Requirements is amended by deleting paragraph “(b)(4) Builder’s Risk for All Work” in its entirety.

STATE OF HAWAII

DEPARTMENT OF TRANSPORTATION

HONOLULU, HAWAII

SPECIFICATIONS

PART II

TECHNICAL PROVISIONS

ARTICLE X - PROJECT DESCRIPTION

10.1 GENERAL - The work to be done on this project includes but is not necessarily limited to, removal of existing concrete roadway barriers; removal of existing pavement markings; removal of existing prefabricated steel guard booth and concrete pad; installation of new pavement markings; construction of new concrete landing, stairs, elevated booth platform, gate operator equipment pad and canopy roof columns and footings; construction of new air conditioning condensate drywell; installation of new galvanized pipe guardrails and handrails; furnishing and installation of a new prefabricated steel guard booth; furnishing and installation of new barrier gate operator and controls; construction of new steel framed roof canopy, preformed metal roofing and sheet metal flashing; installation of new exterior lighting; installation of new ductlines and conductors for electrical power and telcom; and electrical work at interior of guard shack.

Bidders are advised to examine the existing conditions at the proposed project site to familiarize themselves with the nature and extent of work involved and working conditions. Appointments may be made with the Harbors Division Project Engineer at (808) 587-1877 for clarification of the work involved or definition of the limits of the work.

Approximate repair locations are indicated on the plans. Actual methods of repair may vary from that indicated on the drawings. The Harbors Division Construction Engineer reserves the right to alter repair methods, sizes, and locations to suit field conditions.

10.2 SCOPE OF WORK - The work to be done includes, but is not necessarily limited to, the following major items of work:

- A. Mobilization and Demobilization.
- B. Selective Demolition.
- C. Relocation of Existing Concrete Roadway Barriers, Construction of New Concrete Jersey Barriers, Fencing and Gate, Barbed Wire, Pavement, Curbs, Tire Spike Strips, Wheel Stops, Traffic Signs with Posts, ADA Detectable Warning Panels and ADA Signage, Bollards, and Pavement Markings Work
- D. New Concrete Landing, Stairs, Booth Platform, Gate Operator Equipment Pad, and Roof Canopy Column Bases.
- E. New Galvanized Pipe Guardrails and Handrails.
- F. New Prefabricated Steel Guard Booth.
- G. New Electric Gate Operator.
- H. Painting work.

- I. Mechanical work.
- J. Electrical work.

10.3 HARBOR OPERATIONS - The Contractor shall coordinate its work so as to minimize interference with harbor operations. The work schedule shall be coordinated with the Harbors Division Hawaii District Manager and the Harbors Division Construction Engineer and shall be subject to their approval. All work shall be scheduled to minimize interference with any operations in the project area.

Shipping and dock activities will take precedence over the Contractor's activities. Vessels call at various days of the week. An approximate vessel schedule for the project area can be found at www.hawaiiportcall.com. The exact scheduling of the work and restrictions on the Contractor's activities will be established at the pre-construction meeting.

Tenant operations will be ongoing in areas adjacent to the project area for the duration of the project. Phasing and careful coordination of the work will be required to allow continuous use of the project location and adjacent areas. The Contractor shall be responsible for coordination with the tenant and the Harbors Division on a daily basis regarding scheduling of all work at no additional cost to the State.

All work shall be scheduled with the Harbors Division Hawaii District Manager and the Harbors Division Construction Engineer. The Contractor shall give the Harbors Division Hawaii Manager and the Construction Engineer at least 2 weeks prior notice whenever its work will render a portion of the pier or shed unusable. All outages must be coordinated with and approved by the Harbors Division.

10.4 HARBOR SECURITY - The Contractor shall submit required documentation of all Contractor and subcontractor's employees, their representatives, suppliers, manufacturers, and alike, and of all necessary vehicles needing access to the project site to the Harbors Division Construction Engineer and Hawaii District Manager before starting work on the project. The documentation will include the following:

- A. Authorized personnel's first name, middle initial(s), and last name by company name.
- B. Vehicle(s) license plate number(s) by company name.
- C. The Contractor may be directed to use a specified entrance to enter and exit the harbor. Upon every entry, each employee must present and possess a photo identification (ID) card.
- D. All Contractor's and sub-contractor's employees, their representatives, suppliers, manufacturers, and authorized personnel needing access to the project site shall wear their photo ID card at all times.

- E. Contractor's vehicles must be identified with a company logo and will be subject to search. Any employee's personal belongings will also be subject to search.
- F. If the Contractor wishes to remove any fencing or open any locked gates, they shall coordinate with and request approval from the Harbors Division Construction Engineer and Hawaii District Manager. If approval is granted, the Contractor shall then be responsible for securing open fencing or gate(s) immediately after entering or posting security personnel to monitor ingress and egress. Inspections of vehicles and equipment moving through the access points will be done in accordance with current MARSEC level and directives.
- G. If security personnel are required, the Contractor shall hire the same contract security that provides service to the State of Hawaii, Department of Transportation, Harbors Division. In the event that the security contract for Harbors changes, contractor must hire the new security contractor.
- H. By the end of each day, the Contractor shall re-erect and restore all fencing/barrier/perimeter security measures to the satisfaction of the Harbors Division Construction Engineer and Hawaii District Manager. Electricity and lighting shall also be restored and in satisfactory working order, to no less than pre-construction conditions, by the end of each day, to the satisfaction of the Harbors Division Construction Engineer and Hawaii District Manager.
- I. Under no circumstances shall perimeter security be compromised. If determined by the State, and solely by the State, that the contractor has left the project site in a condition that compromises security of the harbor, the State reserves the right to make the necessary arrangements to provide and enhance perimeter security, including restoration of electrical power and lighting, at the sole expense of the Contractor.
- J. At times, the maritime security level for the State of Hawaii and/or the general color-coded security level for State of Hawaii may be temporarily elevated. In these events, the contractor may be prohibited to access the project site and may be required to stop work as directed by either the Harbors Division Construction Engineer or Hawaii District Manager. The Harbors Division will consider impacts to the work and schedule as a result of prolonged work stoppages.
- K. Maritime Security Awareness training is mandatory for all personnel entering the Harbor facility. The Contractor shall be responsible to ensure all of its employees, representatives, subcontractors, vendors, and all alike, requiring access to the harbor area for this project, have been trained and possess the required maritime security card before entering the Harbor's property. Prior to starting work on this project, the Contractor shall provide a list of names (full legal name) and birth dates of all employees, representatives, subcontractors, vendors, and all alike, as well as their vehicles license number, year, make, color and model that will be entering the project site, together with a letter attesting that all personnel have received this training to the Harbors Division Construction

Engineer and Hawaii District Manager. All employees, representatives, subcontractors, vendors, and all alike, shall wear their respective company's identification card bearing the company's name, the individual's first and last name, and middle initial(s), and a recent photograph of the individual on the front of the identification card at all times while on Harbor's property.

With the possible exception of Item J above, all other requirements indicated shall be considered incidental to the project and shall be provided by the contractor at no cost to the State.

The Contractor's personnel requiring access to secure areas of maritime facilities will be required to obtain a Transportation Worker Identification Credential (TWIC). No escorting of personnel is allowed. The project area has been deemed to be within a secured area. TWIC was established by Congress through the Maritime Transportation Security Act and is administered by the Transportation Security Administration (TSA) and U.S. Coast Guard. To obtain a TWIC, the applicant must provide biographic and biometric information such as fingerprints, sit for a digital photograph and successfully pass a security threat assessment conducted by TSA. The Contractor will be responsible to obtain and pay for all costs associated in providing their appropriate employees with TWIC. Information regarding TWIC is available on the TSA website at http://www.tsw.dhs.gov/what_we_do/layers/twic/index/shtm.

10.5 WORK SCHEDULE AND STORAGE AREAS – The work schedule shall be coordinated with the Harbors Division Hawaii District Manager and the Construction Engineer and shall be subject to their approval. All work shall be scheduled to minimize interference with any operations in the project area.

Passenger ships and other vessels use the project area. The mooring of these vessels will limit the availability of the pier and shed areas for the Contractor's construction activities. Some of the vessels call at regularly scheduled intervals. Others call at irregular intervals. Bidders can obtain information on scheduled shipping activities from the Harbors Division Hawaii District Manager. Shipping activities will take precedence over the Contractor's activities. The exact scheduling of the work and restrictions on the Contractor's activities will be established at the pre-construction meeting.

Phasing and careful coordination of the work will be required to allow continuous use of the pier and shed. The Contractor shall be responsible for coordination with all tenants/users of the shed and the Harbors Division on a daily basis regarding scheduling of all work at no additional cost to the State.

Arrangements for work and storage areas shall be made with the Harbors Division Hawaii District Manager, the Harbors Division Construction Engineer and the tenant. The Contractor shall be responsible for maintaining the work and storage areas and, if necessary, shall restore these areas to their original condition at no cost to the State in the event any damage results from its operations.

10.6 LIABILITY AND RESPONSIBILITY - The Contractor shall provide, erect and maintain warning signs, lights, barricades, fences, watchmen and/or all other means as necessary to prevent unauthorized persons from wandering onto the job site where they may suffer injury or create a hazard to the construction operations or the work in progress. The Contractor shall also take all reasonable precautions for safety in its operations and to prevent injury to its employees and to others at the job site.

The Contractor shall be responsible for any and all damages to harbor facilities caused by its operations. The Contractor shall, at its own expense, make prompt restitution for damages to the harbor facility caused by its operations or negligence. The Contractor shall hold the State harmless from all claims for loss or injury.

Hawaii One Call. The Contractor shall comply with the Hawaii One Call law, HRS Section 269E-4. This includes, but is not limited to, coordination with the Hawaii One Call Center (HOCC) for any work involving excavation at least five (5) working days but not more than twenty-eight (28) calendar days prior to commencing excavation. The contractor shall provide to HOCC a description of the excavation site that may include the county, place, address and measurements as needed. HOCC contact information: telephone 811; website <http://www.digsafelyhawaii.com>.

The Contractor shall remove defective work and replace the required work at no cost to the State. Cause for rejection of the work may be a result of the following:

- A. Improper placement of reinforcing steel.
- B. Voids or surface defects in new concrete.
- C. Improper cleaning, preparation, and painting of existing guard shack.
- D. Improper fabrication or installation of new galvanized steel guardrails and handrails.
- E. Improper preparation and painting of new galvanized guardrails and handrails.

The Contractor shall verify conditions in the field prior to ordering any materials. The existing conditions are based on the best available information. The Contractor shall make no claim for extra compensation should actual existing conditions differ from those shown on the plans and specifications.

10.7 PERMITS - The Contractor will require permits for all welding and burning operations, if welding is contemplated. The Contractor shall obtain the required work permit from the Harbors Division Hilo District Manager.

A Building Permit from the County of Hawaii will not be required for this project.

10.8 BEST MANAGEMENT PRACTICES - The Contractor must follow standard best management practices (BMPs) for air pollution, water pollution, noise and solid waste control, as required by Federal, State and County regulations, to protect the environment from the effects of construction activity, including prohibiting any construction debris or other deleterious materials to fall, flow or otherwise enter harbor waters.

The Contractor shall submit a site specific BMP plan to the Construction Engineer before work begins. The plan shall satisfy the (applicable) requirements of ARTICLE XII – TEMPORARY WATER POLLUTION, DUST, AND EROSION CONTROL. This plan shall describe and detail the methods and procedures to be used to prevent air and water pollution, including preventing any materials, wastes, and debris from entering any adjacent storm drain system and the harbor to the satisfaction of the Harbors Division. The Contractor shall revise the BMP plan – at no additional cost to the State - should it be determined by the Construction Engineer that the plan is insufficient to prevent pollution.

The Contractor shall comply with the Clean Water Act and the State Harbors Division Stormwater Management Program. No pollutant is allowed to be discharged directly or indirectly through the Harbors small MS4 or other potential pathway into harbors waters.

In case of release of hazardous substance, oil, or encounter of contaminated soil, the Contractor shall notify appropriate facility personnel, emergency response agencies, and regulatory agencies following notification procedures, and shall notify Harbors Construction Engineer immediately (I.E. within 24 hours). Contact information must be in locations that are readily accessible and available.

The Contractor shall reimburse the State of Hawaii within 30-day for the full amount of all outstanding costs incurred by the State of Hawaii for all citations or fines received as a result of the Contractor's non-compliance with regulations.

10.9 APPROVED EQUAL - The term “approved equal” as used in these specifications refers to the use of alternate equipment, articles or materials of equal quality and characteristics for the purpose intended. An approved equal will be permitted, upon approval of the Director prior to bid opening, in accordance with the General Provisions.

10.10 STANDARD SPECIFICATIONS - The term "Standard Specifications" as used in these Technical Provisions of these Specifications, shall mean the "Hawaii Standard Specifications for Road and Bridge Construction, 2005, Department of Transportation Highways Division, Honolulu, Hawaii."

10.11 AS BUILT DRAWINGS - The Contractor shall keep one set of drawings at the job site and make all field changes thereon. After completion of the project, drawings marked up with all the field changes shall be submitted to the Harbors Division Construction Engineer in PDF/A format.

10.12 PAYMENT - Payment shall be made as specified below. Such payment shall include furnishing all labor, material, equipment and other expenses required to complete each item in accordance with the plans and specifications. The Best Management Practices (BMP) plan, including temporary water pollution, dust, and erosion measures shall be considered incidental to the pay items below.

Item 1 - Mobilization and Demobilization. Payment shall be made at the lump sum price bid in the Proposal Schedule. Sixty percent (60%) of the lump sum bid price will be paid to the Contractor upon completion of mobilization at the work site and approval of the BMP plan. The remaining forty percent (40%) will be included in the final payment under this contract. Such payment shall include setting up and removing all plant equipment and materials at the job site, providing temporary barricades as required for Harbor operations during construction, cleaning up the job site and all other incidental work required to complete this item.

Item 2 – Selective Demolition. Payment shall be made at the Contract Lump Sum Price in the Proposal Schedule. Such payment shall include demolition and removal of existing asphalt paving required for construction of new drywell, concrete landings, stairs, platform, and equipment pad; removal of existing concrete slab on grade guard shack base and landing; removal of existing electrical conductors; removal of existing gutter downspouts, window air conditioning unit infill panel, and electrical receptacle at existing guard shack; and all other incidental work required to complete this item.

Item 3 – Concrete Jersey Barriers, Fencing and Gate, Barbed Wire, Pavement, Curbs, Tire Spike Strips, Wheel Stops, Traffic Signs with Posts, ADA Detectable Warning Panels and ADA Signage, Bollards, and Pavement Markings Work. Relocation of Existing Concrete Roadway Barriers and Pavement Markings work. Payment shall be made at the Contract Lump Sum Price in the Proposal Schedule. Such payment shall include relocation of existing concrete roadway barriers; construction of new jersey barriers, chain link fence and gate with barbed wire; new wheel stops, parking striping, traffics sign and posts; removal of existing stop bar and “STOP” lettering pavement markings on asphalt roadway; installation of new raised walkway and “STOP” and “DO NOT ENTER TIRE DAMAGE” lettering pavement markings; installation of new ADA detectable warnings and signage; construction of bollards; and all other incidental work required to complete this item.

Item 4 – New Concrete Landing, Stairs, Platform, Equipment Pad, and Canopy Foundation. Payment shall be made at the Contract Lump Sum Price in the Proposal Schedule. Such payment shall include excavation; installing and removing formwork; furnishing and placing concrete and reinforcing steel; special inspections; patching holes used to support formwork; coating of new concrete with sealer (include grip additive at landings and stairs); and all other incidental work required to complete this item.

Item 5 – New Steel Canopy. Payment shall be made at the Contract Lump Sum Price in the Proposal Schedule. Such payment shall include furnishing and installing structural steel framing and decking; hot-dip galvanizing following fabrication; welding; high-strength bolting; special inspection; preformed metal roofing; sheet metal flashing and trim; painting; and all other incidental work required to complete this item.

Item 6 - New Galvanized Pipe Guardrails and Handrails. Payment shall be made at the Contract Lump Sum Price in the Proposal Schedule. Such payment shall include fabrication, welding and installation of new guardrails and handrails; hot-dip galvanizing following fabrication; imbed of guardrail pipe posts in concrete with non-shrink grout; and all other incidental work required to complete this item.

Item 7 – New Prefabricated Steel Guard Booth. Payment shall be made at the Contract Lump Sum Price in the Proposal Schedule. Such payment shall include furnishing and installation of new prefabricated steel guard booth on new concrete platform; installation of new anchors; and all other incidental work required to complete this item.

Item 8 – New Electric Gate Operator. Payment shall be made at the Contract Lump Sum Price in the Proposal Schedule. Such payment shall include installation of new electric barrier gate operator with built-in battery backup, new gate arm, indoor surface mounted control station within guard shack; and all other incidental work required to complete this item.

Item 9 – Painting Work. Payment shall be made at the Contract Lump Sum Price in the Proposal Schedule. Such payment shall include painting of new galvanized pipe guardrails and handrails; exposed condensate drain piping; electrical conduits and junction boxes; steel roof canopy exposed framing including columns, beams, purlins and decking; and all other incidental work required to complete this item.

Item 10 – Mechanical Work. Payment shall be made at the Contract Lump Sum Price in the Proposal Schedule. Such payment shall include installation of new window air conditioning unit, wall sleeve and supports, condensate drain line, and drywell; and all other incidental work required to complete this item.

Item 11 – Electrical Work. Payment shall be made at the Contract Lump Sum Price in the Proposal Schedule. Such payment shall include trenching/backfill, concrete encasement and pavement restoration for new ductlines. Installation of new exterior lighting luminaires; switches and branch circuiting; electrical support for new window air conditioning unit; electrical apparatus including circuit breakers, junction boxes, raceways and conductors; and all other incidental work required to complete this item.

ARTICLE XI - MOBILIZATION AND DEMOBILIZATION

11.1 GENERAL - The work consists of furnishing at the job site, plant, equipment, materials, labor and appliances and performing all work in connection with mobilization and demobilization for the job in accordance with this article of the specifications.

11.2 DESCRIPTION

- A. Mobilization shall include setting up, ready for use, all plant, equipment and necessary materials at the job site.
- B. Providing temporary barricades as required for Harbor operations during construction.
- C. Demobilization shall include the removal of all the Contractor's plant and equipment and surplus material from the job site. The cleanup of the job site, satisfactory to the Harbors Division Construction Engineer, shall also be included in this article.

11.3 PAYMENT - Payment for ARTICLE XI - Mobilization and Demobilization shall be made as described in Article X of these Specifications.

ARTICLE XII – TEMPORARY WATER POLLUTION, DUST, AND EROSION CONTROL
For Project NOT Subject to NPDES NOI-C Permit

12.1 DESCRIPTION - This section is required for all work, including the Contractor's storage sites. It describes the following:

- A. A detailed site-specific Best Management Practice (BMP) Plan including diagrams and narratives; constructing, maintaining, and repairing temporary water pollution, dust, and erosion control measures at the project site including local material sources, work areas and access roads; removing and disposing of wastes and hazardous wastes; and control of fugitive dust (defined as uncontrolled emission of solid airborne particulate matter from any source other than combustion). Additionally, all projects at Honolulu, Kalaehoa Barbers Point, and Kahului Harbors are subject to State of Hawaii, Department of Transportation (HDOT) Harbors Division, Storm Water Management Plan (SWMP) requirements, unless exempted, and are subject to Harbors Storm Water BMP inspections. If any requirement conflicts with those administered by State of Hawaii, Department of Health (HDOH), the Contractor shall follow the more stringent requirement.
- B. Compliance with applicable federal and other state permit conditions.
- C. Work associated with dewatering and hydrotesting activities and compliance with conditions of the NPDES general permit coverage authorizing discharges associated with construction activity dewatering and hydrotesting.

12.2 GENERAL REQUIREMENTS - In order to provide for the control of water pollution, dust, and erosion arising from the construction activities of the Contractor and his subcontractors in the performance of this contract, the work performed shall comply with all applicable federal, state, and local laws and regulations concerning water pollution control including, but not limited to, the following regulations:

- A. State of Hawaii, HDOH, Hawaii Administrative Rules (HAR) Chapter 11-54 – Water Quality Standards and Chapter 11-55 – Water Pollution Control.
- B. For projects at Honolulu, Kalaehoa Barbers Point, and Kahului Harbors ONLY, HDOT Harbors Division, Stormwater Management Plan.
- C. For projects at Honolulu, Kalaehoa Barbers Point, and Kahului Harbors ONLY, City and County of Honolulu (CCH), Rules Relating to Water Quality.
- D. For projects at Honolulu, Kalaehoa Barbers Point, and Kahului Harbors ONLY, CCH, Storm Water BMP Manual for Construction.
- E. 40 CFR Part 110, Environmental Protection Agency (EPA), Discharge of Oil.

- F. 40 CFR Part 117, EPA, Determination of Reportable Quantities for Hazardous Substances.
- G. 40 CFR Part 261, EPA, Identification and Listing of Hazardous Waste.
- H. 40 CFR Part 302, EPA, Designation, Reportable Quantities, and Notification.
- I. 49 CFR Part 171, U.S. Department of Transportation, Hazardous Materials Regulations.

12.3 MATERIALS - Materials shall conform to the following when applicable:

- A. Slope Drains. Slope drains may be constructed of pipe, fiber, mats, erosion control fabric, geotextiles, rubble, Portland cement concrete, bituminous concrete, plastic sheets, or other materials acceptable to the Construction Engineer.
- B. Grass. Grass shall be quick growing species such as rye grass, Italian grass, or cereal grasses. Grass shall be suitable to the area and provide a temporary cover that will not compete later with permanent cover. Alternative grasses are allowable if acceptable to the Construction Engineer.
- C. Fertilizer and Soil Conditions. Fertilizer and soil conditioners shall be a standard commercial grade acceptable to the Construction Engineer.
- D. Silt Fences. Silt fences shall be synthetic filter fabric mounted on posts and embedded in compacted ground in compliance with American Society for Testing and Materials (ASTM) D6462, Standard Practice for Silt Fence Installation.
- E. Berms. Berms shall be gravel or sand wrapped with geotextile material. Alternate materials are allowable if acceptable to the Construction Engineer.
- F. Alternate materials or methods to control, prevent, remove, and dispose of pollution are allowable if acceptable to the Construction Engineer.

12.4 CONSTRUCTION

- A. Preconstruction Requirements.
 - 1. Temporary Water Pollution, Dust, and Erosion Control Meeting. The contractor shall be required to submit a site-specific BMP Plan to the Construction Engineer and address all comments by the Construction Engineer. After the Plan is accepted in writing by the Construction Engineer, the Contractor shall schedule a meeting with the Construction Engineer before the start of construction work to discuss the sequence of work, and plans and proposals for water pollution, dust, and erosion control.

2. Temporary Water Pollution, Dust, and Erosion Control Submittals. The Contractor shall submit the site-specific BMP Plan to the Construction Engineer prior to the start of work for review of compliance with this Article. A site-specific BMP Plan template is available online at <https://hidot.hawaii.gov/harbors/malamaikeawakai/>, under HDOT Harbors Construction and Post-Construction Programs – Documents and Forms.
 - a. Written site-specific BMP Plan shall include the following as applicable:
 - 1) Identification of potential pollutants and their sources and other factors that may cause water pollution, dust, and erosion.
 - 2) A list of all material and heavy equipment to be used during construction. Vehicles and equipment shall be well maintained and free from any type of fluid leaks.
 - 3) Construction schedule.
 - 4) Name(s) of specific individual(s) designated responsible for water pollution, dust and erosion controls on the project site. Include home, business, and cellular telephone numbers, fax numbers, and e-mail addresses.
 - 5) Descriptions of the methods and devices used to eliminate certain pollutants (e.g., wastewater, fuels, solvents, detergents, toxic or hazardous substances) from discharging into state waters and drainage systems, and provide details of BMP(s) to be installed or utilized. Indicate approximate dates when BMP(s) will be installed and removed.
 - 6) Description of maintenance and subsequent removal of BMP(s).
 - 7) Method(s) of removal and disposal of solid and regulated hazardous wastes encountered or generated during construction. The Contractor is advised to procure regulated hazardous materials on an as-needed basis, as feasible. All excess regulated hazardous materials at the conclusion of this project shall remain the property of the Contractor and shall be removed from HDOT Harbors Division property upon the completion of the project.
 - 8) Method(s) of removing and disposing concrete and asphalt pavement cutting slurry, concrete curing water, and hydrodemolition water.

- 9) Method(s) of containing, removing and disposing of demolition dust and debris to minimize the discharge of these pollutants into state waters and drainage systems.
- 10) Spill kit contents and location.
- 11) Fugitive dust control, including dust from grinding, sweeping, or brooming off operations or combination thereof.
- 12) Method(s) of storing and handling of regulated hazardous materials (e.g. oils, paints) and other products used for the project. Safety Data Sheets (SDS) for all regulated hazardous materials used during construction activities shall be kept on-site throughout the duration of the project and readily available upon inspection. All containers of regulated hazardous materials should be provided with secondary containment during storage. Regulated hazardous materials not specifically needed in the execution of this project shall not be brought or stored on site. As feasible, the Contractor is encouraged to use products that do not contain any regulated constituents. The use of green products is encouraged.
- 13) Method(s) of concrete washout/waste control.
- 14) Method(s) of managing material stockpiles to minimize erosion and dust.
- 15) Good housekeeping practices.
 - a) Minimize tracking of sediment offsite from project entrances and exits.
 - b) Litter management. The Contractor shall have a comprehensive housekeeping policy and shall actively enforce housekeeping requirements. Housekeeping items include, but are not limited to, cups, cans, bottles and other forms of lightweight litter, unattended containers of hazardous materials, concrete debris (e.g. dust, chips, and other sweepings), and discarded articles of disposable Personal Protective Equipment (e.g., earplugs, dust masks, and gloves). Employees who are specifically tasked with housekeeping duties shall be identified by name.

- c) The Contractor should provide and maintain covered waste receptacles. No construction debris or other refuse that is generated as a result of project activities is to be disposed in HDOT Harbors Division-owned waste receptacles.
- 16) Provide plan(s)/drawing(s) showing location of followings when applicable:
- a) Boundaries of the property and the locations where construction activities will occur, including:
 - i. Locations where earth-disturbing activities will occur (noting any sequencing of construction activities);
 - ii. Approximate slopes and drainage patterns with flow arrows before and after the construction;
 - iii. Locations where sediment, soil, or other construction materials will be stockpiled;
 - iv. Locations of any contaminated soil or contaminated soil stockpiles;
 - v. Locations of any crossings of state waters;
 - vi. Designated points on the site where vehicle will exit onto paved roads;
 - vii. Locations of structures and other impervious surfaces upon completion of construction; and
 - viii. Locations of construction support activity areas.
 - b) Locations of all state waters, including wetlands and indicate which water bodies are listed as impaired.
 - c) The boundary lines of any natural buffers.
 - d) Topography of the site, existing vegetative cover, and features (e.g., forest, pasture, pavement, structures), and drainage pattern(s) of storm water

onto, over, and from the site property before and after major grading activities.

- e) Storm water discharge locations, including locations of any storm drain inlets on-site and in the immediate vicinity of the site to receive storm water runoff from the project; and locations where storm water will be discharging to state waters (including wetlands).
 - f) Locations of all potential pollutant-generating activities.
 - g) Locations of storm water control measures; and
 - h) Locations where chemicals will be used and stored.
- 17) Procedures for notification of appropriate facility personnel, emergency response agencies, and regulatory agencies where a leak, spill, or other release containing a hazardous substance or oil in an amount equal to or in excess of a reportable quantity established under either 40 CFR Parts 110, 117, or 302, occurs during a 24-hour period. Contact information must be in locations that are readily accessible and available.
- 18) The Contractor shall date and sign the site-specific BMP Plan.
- b. The Contractor shall keep the current Plan on-site or an easily accessible location throughout the duration of the project. Revisions to the Plan shall be included with the original plan. Modify contract documents to conform to revisions. Include actual date of installation and removal of BMP. Obtain written acceptance by the Construction Engineer before revising BMP. An updated Plan shall be kept on-site throughout the remainder duration of the project.
- c. The Contractor shall follow guidelines in the “*The City and County of Honolulu Storm Water Best Management Practice Manual – Construction*,” (dated November 2011) in developing, installing, and maintaining BMP for the project. Additionally, the Contractor shall follow City and County of Honolulu *Rules Relating to Soil Erosion Standards and Guidelines* (dated April 1999) **for all projects at Honolulu, Kalaeloa Barbers Point, and Kahului Harbors**, and use respective Soil Erosion Guidelines for other Maui, Kauai and Hawaii County projects. Information can be found at the respective County websites.

B. Construction Requirements are as follows.

1. No work shall be allowed to begin until submittals detailed in Subsection 12.4.A.2 – Temporary Water Pollution, Dust, and Erosion Control Submittals are completed and accepted in writing by the Construction Engineer. The Contractor shall prevent pollutants from entering state waters. These efforts shall address areas such as those that drain to water, are over water, or drain to storm drains adjacent and in the area of the project site. The Contractor shall design, operate, implement, and maintain the Plan to ensure that storm water discharges associated with construction activities will not cause or contribute to a violation of applicable state water quality standards.
2. All projects at Honolulu, Kalaehoa Barbers Point, and Kahului Harbors are subject to HDOT Harbors Division SWMP requirements for construction at those harbors unless the project meets a specified exemption class. The requirements include, but are not limited to, construction site BMP initial, recurring (i.e. every two weeks from October through March and every two months otherwise), and final inspections at the frequencies outlined in the SWMP. No grading or land disturbance activities are allowed until the initial BMP inspection is completed and required BMPs are found to be properly installed.
3. Address all comments received from the Construction Engineer.
4. Modify and resubmit plans and construction schedules to correct conditions that develop during construction which were unforeseen during the design and pre-construction stages.
5. Coordinate temporary control provisions with permanent control features throughout the construction and post-construction period.
6. BMP shall be in place and operational until the construction is completed and accepted by Harbors.
7. Install and maintain either or both stabilized construction entrances and wheel washes to minimize tracking of dirt and mud onto roadways. Restrict traffic to stabilized construction areas only. Clean dirt, mud, or other material tracked onto the road immediately. Modify stabilized construction entrances to prevent mud from being tracked onto roadways.
8. Chemicals may be used as soil stabilizers for either or both erosion and dust control if acceptable to the Construction Engineer.
9. Cover exposed surface of materials completely with tarpaulin or similar device when transporting aggregate, soil, excavated material or material that may be a source of fugitive dust.

10. Cleanup and remove any pollutant that can be attributed to the Contractor.
11. Install or modify BMP due to change in the Contractor's means and methods, or for omitted condition that should have been allowed for in the accepted site-specific BMP Plan or a BMP that replaces an accepted site-specific BMP that is not satisfactorily performing.
12. Properly maintain BMP.
13. Remove, replace or relocate any BMP that must be removed, replaced or relocated due to potential or actual flooding, or potential danger or damage to the project or public.
14. The Contractor's designated representative specified in Subsection 12.4.A.2.a.4 shall address any BMP concerns brought up by the Construction Engineer within 24 hours of notification, including weekends and holidays. Should the Contractor fail to satisfactorily address these concerns, the Construction Engineer reserves the right to employ outside assistance or use the Construction Engineer's own labor forces to provide necessary corrective measures. The Construction Engineer will charge the Contractor such incurred costs plus any associated project engineering costs. The Construction Engineer will make appropriate deductions from the Contractor's monthly progress estimate. Failure to apply BMP shall result in either or both the establishment and increase in the amount of retainage due to unsatisfactory progress or withholding of monthly progress payment. Continued failure to apply BMP may result in one or more of the following: The Contractor being fully responsible for all additional costs incurred by HDOT Harbors Division including any fines levied by HDOH, suspension of the Contract, or cancellation of the Contract.

- C. Hydrotesting Activities. If work includes removing, relocation or installing waterlines, and the Contractor elects to flush waterline or discharge hydrotesting effluent into state waters or drainage systems, obtain a Notice of General Permit Coverage (NGPC) authorizing discharges associated with hydrotesting waters from the HDOH Clean Water Branch (CWB). If a permit is required, prepare and submit permit application (CWB-Notice of Intent (NOI) Form F) to the HDOH CWB.

Do not begin hydrotesting activities until the HDOH CWB has issued a NGPC. Hydrotesting operations shall be in accordance with conditions in the NGPC. Submit a copy of the NPDES Hydrotesting Waters Application and Permit to the Construction Engineer.

- D. Dewatering Activities. If excavation of backfilling operations requires dewatering, and the Contractor elects to discharge dewatering effluent into state waters or existing drainage systems, obtain an NGPC authorizing discharges

associated with construction activity dewatering from the HDOH CWB. If a permit is required, prepare and submit permit application (CWB-NOI Form G) to the HDOH CWB.

Do not begin dewatering activities until the HDOH-CWB has issued an NGPC. Conduct dewatering operations in accordance with the conditions in the NGPC. Submit a copy of the NPDES Dewatering Application and Permit to the Construction Engineer.

12.5 PAYMENT

Payment for ARTICLE XII - Temporary Water Pollution, Dust, and Erosion Control shall not be measured and paid for separately but shall be considered incidental to the applicable items described in Article X of these Specifications.

No progress payment will be authorized until the Construction Engineer accepts in writing the site-specific BMP Plan or when the Contractor fails to maintain the project site in accordance with the accepted BMP Plan.

The Contractor shall reimburse the State of Hawaii within 30 days for the full amount of all outstanding costs incurred by the State of Hawaii for all citations or fines received as a result of the Contractor's non-compliance with regulations.

ARTICLE XIII – MATERIAL SUBMITTALS AND SHOP DRAWINGS

13.1 GENERAL

This Article consists of a list of materials and shop drawings required for this project. As soon as possible after award of the contract, the Contractor shall submit for approval, the required material submittals and shop drawings to the Harbors Division Construction Engineer at 79 S. Nimitz Highway, Honolulu, Hawaii 96813. The Material Submittals and Shop Drawings submitted by the Contractor shall include all items listed below. Material Submittals and Shop Drawings not submitted as a complete package will not be reviewed by the Harbors Division and will be sent back as a non-submittal. The Contractor shall promptly order its materials after approval of its submittals.

13.2 MATERIAL SUBMITTALS

The Contractor shall submit for review and approval digital copies of following items:

- A. Base Course
- B. Concrete curing compound
- C. Structural concrete mix design.
- D. Concrete sealer product data, including surface preparation, mixing procedures, and application instructions for approval.
- E. Metal fabrications manufacturer's product data, specifications, anchor details, and installation instructions for products used in metal fabrications, including paint products and grouts.
- F. Metal fabrications certifications: Submit certificates of asbestos-free, lead-free, zinc-chromate-free, strontium-chromate-free, cadmium-free, and mercury-free paint.
- G. Welding Certificates
- H. Electric gate operator product data including equipment list, system description, electrical wiring diagrams for installation, and manufacturer's data sheets on each product to be used, including:
 - 1. Preparation instructions and recommendations.
 - 2. Storage and handling requirements and recommendations.
 - 3. Installation methods.
- I. Electric gate operator Installer's Qualification Statement.

- J. Painting Finish Schedule. The schedule shall indicate surface to be painted, manufacturer, product no., 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" in ARTICLE XXV – Painting.
- K. Painting color samples:
 - 1. Submit color finish samples for approval.
 - 2. Submit, after the color finish sample has been approved, one set of color finish samples painted onto 8-1/2 inch x 11-inch cardboard. The cardboard shall be divided into 4 horizontal strips and painted as follows:
 - a. Prime 3 strips starting from the bottom.
 - b. 1st coat bottom 2 strips.
 - c. 2nd coat bottom strip.
- L. Paint Certifications: Submit asbestos-free, lead-free, zinc-chromate-free, strontium-chromate-free, cadmium-free, and mercury-free paint certificates. Should the Contractor require additional copies for distribution to his suppliers and subcontractors, he shall include these additional copies along with his submittal.
- M. Paint 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.
- N. Paint Manufacturer's Material Safety Data Sheets: Submit Manufacturer's Material Safety Data Sheets 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.
- O. Painting Receipt of Delivery: Submit receipt signed by the user's representative, attesting to delivery of extra paint as required under paragraph entitled "Extra Paint" in ARTICLE XXV - Painting.

13.3 SHOP DRAWINGS

The Contractor shall submit for review and approval digital copies of following items:

- A. Shop drawings for concrete reinforcing.

- B. Structural Steel Shop Drawings. Shop drawings shall contain details of fabrication and erection. Include details of cuts, connections, splices, camber, holes, and other pertinent data. Include embedment drawings. Indicate welds by standard AWS symbols, distinguishing between shop and field welds, and show size, length, and type of each weld. Indicate type, size, and length of bolts, distinguishing between shop and field bolts. Identify pretensioned and slip-critical, high-strength bolted connections.
- C. Metal fabrications shop drawings as required for all work in accordance with the contract drawings. Shop drawings, where applicable, shall be referenced to sheet and detail being depicted. Include plans, elevations, component details, and attachments to other Work. Indicate materials and profiles of each metal member, fittings, joinery, finishes, fasteners, anchorages, and accessory items. Include setting drawings, templates, and directions for installing anchor bolts and other anchorages.
- D. Electric gate operator shop drawings showing layout, profiles, and product components, including anchorage, edge conditions, and accessories.
 - 1. Operation, installation, and maintenance manuals including wiring diagrams.
 - 2. Risers, layouts, and special wiring diagrams showing any changes to standard drawings

13.4 SCHEDULES

The Contractor shall submit for review and approval digital copies of following items:

- A. Schedule indicating proposed methods and sequence of operations for Selective Demolition work to the Engineer 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. Painting schedule of operations: Submit, before work on the project is commenced, work schedule showing his sequence of operations and dates.

13.5 PAYMENT

Payment for Article XIII - Material Submittals and Shop Drawings shall not be made separately but shall be considered incidental to the items described in Article X of the Specifications.

ARTICLE XIV – SELECTIVE DEMOLITION

14.1 GENERAL

- A. Provide all materials, labor, equipment, and tools necessary to complete selective demolition work as indicated by the design intent of the drawings.
- B. It shall be the responsibility of the Contractor to examine the project site and determine for himself the existing conditions.
- C. Selective demolition work includes but is not limited to selective demolition, removal, and subsequent disposal of all materials indicated or required to be removed.
- D. Execute all work in an orderly and careful manner with due consideration for all items of work to remain.
- E. 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.
- F. All debris of any kind accumulated from the work of this Section shall be disposed off the Site.
- G. Protect all existing conditions surrounding the work area, including but not limited to roadways, walkways, curbs, etc. at all times from damage.
- H. Any damage as a result of demolition work and any neglect to provide protection shall be fixed new at no cost to the State.
- I. Demolish and remove, including but not limited to, existing prefabricated guard booth, concrete slab-on-grade and foundation, asphalt concrete pavement and curbs, as indicated in the plans and specifications.
- J. Permits, Notice, Etc.:

The Contractor shall serve proper notice and consult with the Engineer regarding any temporary disconnections of data, 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.

14.2 JOB CONDITIONS

- A. Condition of Structure: The State assumes no responsibility for actual condition of items or portions of structure to be demolished.

- B. Existing Conditions: Conditions existing at time of commencement of contract will be maintained by the State insofar as practicable.
- C. Occupied Spaces: Do not interfere with use of adjacent occupied spaces. Maintain free and safe passage to and from occupied spaces.
- D. 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.
- E. Utility Services: The existence of above and below ground and exposed and concealed utility lines other than those shown on the drawings is not definitely known. Should any other utility lines be encountered, the Contractor shall immediately notify the Engineer and follow his direction as to procedure. Maintain existing utilities indicated to remain, keep in service, and protect against damage during demolition operations. Do not interrupt existing utilities serving occupied building or facilities, except when authorized in writing by the Engineer. Outages and interruptions must be accepted in advance by the Engineer. Submit written notice of outages and interruptions not less than fourteen 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.
- F. Dust Control:
1. Keep dust within acceptable levels at all times, including nonworking hours, weekends and holidays, in conformance with Chapter 60.1 – Air Pollution Control of the State Department of Health, Public Health Regulations, latest edition.
 2. Mechanical dry sweeping not permitted. Vacuuming, wet mopping, approved limited dry hand, wet or damp sweeping is acceptable.
 3. During loading operations, water down debris and waste materials to allay dust.
 4. The method of dust control and all costs incurred thereof shall be the responsibility of the Contractor.
- G. Noise Control:
1. Noise shall be kept within acceptable levels at all times in conformance with State Department of Health, Title II, Administrative Rules, Chapter 46 – Community Noise Control.

2. The Contractor shall obtain and pay for community noise permit from the State Department of Health when the construction equipment or other devices emit noise at a level exceeding the allowable limits.
3. All internal combustion engine powered equipment shall have mufflers to minimize noise and shall be properly maintained to reduce noise to acceptable levels.
4. Starting up of on-site vehicular equipment meeting allowable noise limits shall not be done prior to 6:45 a.m. without prior acceptance of the Engineer. Equipment exceeding allowable noise limits shall not be started up prior to 7:00 a.m.
5. Conform to noise control related to events at the project site or adjoining facilities as directed by the Engineer.

H. Other Controls:

1. Wherever trucks and/or vehicles leave the site and enter surrounding paved streets, the Contractor shall prevent any material from being carried onto the pavement. Waste water shall not be discharged into existing streams, waterways, or drainage systems such as 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.
3. 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 no additional cost to the State.

14.3 INSPECTION – Prior to commencement of selective demolition work, inspect areas in which work will be performed. Inventory existing conditions of 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.

14.4 BARRICADES

- A. Erect temporary barricades as required, to prevent people from entering into 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 no extra cost to the State.

- B. When necessary, the Contractor shall provide, erect and maintain barriers, etc., as required by traffic and safety regulations with special attention to protection of life.

14.5 SELECTIVE DEMOLITION

- A. Perform selective demolition work, including all interior improvements indicated on the drawings, in a systematic manner. Use such methods as required to complete work indicated on drawings in accordance with demolition schedule and governing regulations.
 - 1. Demolish concrete in small sections. Cut concrete at junctures with construction to remain using power-driven masonry saw or hand tools; do not use power-driven impact tools.
 - 2. Provide services for effective air and water pollution controls as required by local authorities having jurisdiction. All dust shall be suppressed by a fog spray or other approved method.
 - 3. Water and sewer facilities shall be available and in operating condition at all times.
- B. 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.

14.6 PROTECTIONS – Provide temporary barricades and other forms of protection as required to protect the general public from injury due to selective demolition work.

- A. 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.
- B. Protect from damage existing finish work that is to remain in place and becomes exposed during demolition operations.
- C. Life safety procedures and provisions shall be in conformance with all applicable Federal, State, and City and County regulations, including OSHA.
- D. Remove protections at completion of work.

14.7 DAMAGES – Promptly repair damages caused to adjacent facilities by demolition work at no cost to the State.

14.8 DISPOSAL OF DEMOLISHED MATERIALS – Remove debris, rubbish, and other materials resulting from demolition operations from building site daily. Transport and legally dispose of materials off site.

- A. If hazardous materials are encountered during demolition operations, comply with applicable regulation, laws, and ordinances concerning removal, handling, and protection against exposure or environmental pollution.
- B. Burning of removed materials is not permitted on project site.

14.9 CLEAN-UP AND REPAIR

- A. Upon completion of demolition work, remove tools, equipment, and demolished materials from site. Remove protections and leave interior areas broom clean.
- B. Repair demolition performed in excess of that required. Return structures and surfaces to remain to condition existing prior to commencement of selective demolition work. Repair adjacent construction or surfaces soiled or damaged by selective demolition work.
- C. Return temporarily relocated furniture, equipment, supplies back to their original locations per existing conditions following completion of floor repair work to make space ready for next business day for Harbors operations.

14.10 PAYMENT – Payment for ARTICLE XIV - Selective Demolition shall not be paid for separately but shall be considered incidental to Item No. 2 as described in Article X of the specifications.

ARTICLE XV – CIVIL SITE REPAIR WORK

15.1 GENERAL – The work under this Article shall consist of furnishing all labor, materials, equipment and other expenses necessary for the civil site work required for relocation of an existing Guard Shack at Hilo Harbor, Hawaii. The work includes, but is not limited to, the following:

- A. Installation of white stop bar and white stop lettering pavement markings, including removal of existing stop bar and stop lettering pavement markings.
- B. Relocation of concrete barriers.

15.2 REFERENCES – All work shall be in accordance with applicable provisions of the following sections of the Standard Specifications except as modified or supplemented herein or on the drawings:

Section 629 Pavement Markings
Section 755 Pavement Marking Materials

Sections on Materials referenced in the above sections are hereby incorporated.

15.3 MATERIALS – The products specified herein serve as a guide. Equal products approved by the Construction Engineer may be substituted for those listed.

- A. Pavement Markings shall be thermoplastic extrusion pavement marking or preformed pavement marking tape, per Standard Specification, Section 629.

15.4 CONSTRUCTION

- A. All work on this project shall be performed without discharging any materials including earth, concrete, rubbish, and any construction by products into the harbor or nearby drain structures. The Contractor shall furnish and install, where necessary, a temporary structure to prevent such discharge into the harbor or drain structure.
- B. The Contractor shall install the new pavement markings as shown on the drawings and in accordance with the Standard Specification, Sections 629, and 755.
- C. Removal of existing pavement markings shall be done by Grinding, Burning, Sandblasting or other approved method as recommended by manufacturers, in accordance with Standard Specification, Section 629.
- D. Existing concrete barriers shall be relocated to the locations indicated on the drawings.

15.5 PAYMENT – Payment for ARTICLE XV- Civil Site Repair Work shall be made as described in Article X of these Specifications.

ARTICLE XVI – CAST-IN-PLACE CONCRETE

16.1 GENERAL

- A. Work under this Article includes furnishing all labor, materials, and equipment necessary for cast-in-place concrete pedestals, foundations, stairs, and slab-on-grade.
- B. All work shall be in accordance with the following sections of the Standard Specifications except as modified or supplemented herein:

Section 503 Concrete Structures
Section 601 Structural Concrete
Section 602 Reinforcing Steel
Section 711 Concrete Curing Materials and Admixtures
- C. Sections on Materials referenced in the above sections are hereby incorporated.

16.2 MATERIALS

- A. Concrete - Concrete shall be regular weight hard rock concrete and shall have a minimum 28-day compressive strength of $f'c = 5,000$ psi. Concrete shall conform to Section 601 “Structural Concrete” of the Standard Specifications. Maximum water to cementitious materials ratio shall be 0.40.
- B. Admixture – Admixture to be used in the concrete shall be approved by the Construction Engineer and shall conform to Section 711 of the Standard Specifications. Contractor shall strictly adhere to the manufacturer’s recommendations regarding the use of admixtures including storage, transportation and method of mixing.

CORTEC MCI-2005 NS migrating corrosion inhibiting admixture, as manufactured by Cortec Corporation, added at a rate of 1.5 pints per cubic yard of concrete.
- C. All inserts, anchor bolts, plates, and other items to be cast in the concrete shall be hot-dipped galvanized unless otherwise noted.
- D. New Reinforcing Steel - New reinforcing shall be ASTM A615, Grade 60.
- E. Forms shall conform to Section 503.03.C “Forms” of the Standard Specifications.
- F. Snap ties and inserts shall be plastic or stainless steel. All loose reinforcing steel shall be secured with ties at all intersections with adjacent reinforcing steel.

- G. Non-Shrink Grout – Non-shrink grout shall be a premixed non-metallic formula, capable of developing a minimum compressive strength of 3,000 psi in 1 day and 5,000 psi in 28 days.
- H. Tie Wire – Tie wire shall be plastic-coated, stainless steel, or of a non-corrosive material approved by the Harbors Division Construction Engineer. Tie wire shall be installed at all intersections of reinforcing steel.
- I. Untreated Aggregate Base Course - Base course shall be as specified in Section 304.02 of the Standard Specifications.

16.3 CONSTRUCTION METHODS

A. Foundation Excavation

1. Contractor shall provide for de-watering of excavation from surface water, ground water or seepage.
2. Contractor shall provide for design and installation of all underpinning, cribbing, sheeting, and shoring necessary to preserve excavations and earth banks.
3. Concrete foundations shall bear on undisturbed in-situ firm soils. Bottom of foundation shall be compacted to provide a relatively firm and smooth bearing surface prior to placement of reinforcing steel and concrete. If soft and/or loose materials are encountered at the bottom of foundation excavations, they shall be over-excavated to expose the underlying firm materials. The over-excavation shall be backfilled with select granular material compacted to a minimum of 95% relative compaction or the foundation bottom may be extended down to the underlying competent material.
4. Backfill material shall consist of soil which is free of organics, expansive clay, and debris. Backfill material shall be less than 3 inches in greatest dimension. Backfill material shall be placed in lifts not exceeding 8 inches in loose thickness.
5. Excavations for foundation shall be approved by the Harbors Division Construction Engineer prior to placement of concrete and reinforcing.
6. Untreated aggregate base course shall be provided beneath the slab on grade to the thickness specified. The base course material shall be compacted to a minimum of 95% of maximum density (ASTM D1557).
7. During construction, drainage shall be provided to minimize ponding of water adjacent to or on foundation and pavement areas. Ponded areas shall be drained immediately. Any subgrade soil that has become soft due

to ponding shall be removed to firm material and replaced with compacted structural fill.

B. Placing Concrete

1. Concrete construction shall conform to the American Concrete Institute (ACI) ACI 318-14 and ACI 546R-14.
2. Reinforcing steel shall be placed and spliced where indicated on plans.
3. Contractor shall locate construction joints so as to not impair the strength of the structure and to minimize shrinkage stresses. Submit location of construction joints to the Construction Engineer for approval, unless otherwise noted.
4. Reinforcing bars, anchor bolts, inserts, and other items to be cast in the concrete shall be secured in position prior to placement of concrete.
5. Formwork - Formwork shall be installed in accordance with Section 503.03.C - "Forms" of the Standard Specifications. Forms shall be designed to provide the minimum concrete cover over reinforcing steel.
6. See architectural drawings for chamfers, edge radii, drips, reglets, finishes and other non-structural items not shown or specified on the structural drawings.
7. Concrete delivery tickets shall record all free water in the mix: at batching by plant, for consistency by driver, and any additional request by the Contractor if permitted by the mix design.
8. Placing Concrete - Concrete shall be placed in accordance with Section 503.03 - "Construction" of the Standard Specifications.
9. Concrete Curing - Concrete shall be cured by covering the surface with a curing compound approved by the Harbors Division Construction Engineer and per manufacturer's recommendations.

16.4 PAYMENT - Payment for ARTICLE XVI - Cast-in-Place Concrete work shall be made as specified in Article X of the Specifications.

ARTICLE XVII – CONCRETE SEALER

17.1 SUMMARY

- A. Provide all materials, labor, equipment, and tools necessary to complete Concrete Sealer work as indicated on the drawings, complete, including, but not limited to, the following items.
 - 1. Sealing of concrete landings, stairs, platform, and equipment pad.
 - 2. Apply sealer with grip additive at concrete landings and stairs.

17.2 PRODUCT DELIVERY, STORAGE AND HANDLING

- A. Deliver all materials in sealed containers, clearly labeled and containing manufacturer's name, product identification, manufacturer's instructions for mixing, and warning for handling and toxicity.
- B. Handle all materials in safe manner and in a way to avoid breaking container seals.
- C. Environmental Requirements: Contractor shall comply with manufacturer's recommendations as to environmental conditions under which the sealer may be applied.

17.3 MATERIALS

- A. Concrete Sealer: Product based on Scofield Selectseal Plus – 1645 Gloss finish to establish the basis of design.
- B. Grip Additive: Product is based on Glaze 'N Seal-Grip 'N Seal Slip Resistant Additive to establish the basis of design.

17.4 SURFACE PREPARATION

- A. Preparation of concrete surfaces: Before any work is begun, the sealer applicator and the manufacturer's representative shall inspect the concrete surfaces on which the sealer is to be applied. Concrete shall be sound, clean, and free of dirt, paint, films, protective coatings, efflorescence, laitance, and other matter detrimental to proper adhesion. Sealer applicator shall report defective conditions to the Contractor for corrective measures. Contractor shall fix all defective conditions as required.

17.5 APPLICATION

- A. Add grip additive to concrete sealer according to the manufacturer's instructions.
- B. Apply concrete sealer according to manufacturer's instructions.

17.6 CURING

- A. Provide barricades as required to prevent damage to newly completed sealer work until system has cured at least 24 hours and as recommended by the manufacturer.

17.7 CLEAN UP

- A. Protect concrete surfaces until sealer is cured. Perform clean up with materials as recommend by the manufacturer.

17.8 PAYMENT – Payment for ARTICLE XVII - Concrete Sealer work shall not be paid for separately but shall be considered incidental to Item No. 4 as described in Article X of these specifications.

ARTICLE XVIII – STRUCTURAL STEEL

18.1 GENERAL

- A. Work under this Article includes furnishing all labor, materials and equipment necessary for the new structural steel canopy framing and decking.
- B. All work shall be in accordance with the following sections of the Standard Specifications except as modified or supplemented herein:

Section 501 Steel Structures

Section 713 Structural Steel and Related Materials

- C. Sections on Materials referenced in the above sections are hereby incorporated.
- D. Related Work Specified Elsewhere:
 - 1. ARTICLE XIX – METAL FABRICATIONS
 - 2. ARTICLE XXV – PAINTING

18.2 MATERIALS

- A. Structural Steel
 - 1. Structural steel shall conform to ASTM A36 unless otherwise noted.
 - 2. Steel wide flange sections shall conform to ASTM A992.
 - 3. Cold-formed hollow structural sections shall conform to ASTM A500, Grade C.
 - 4. High-strength steel plates shall conform to ASTM A572, Grade 50.
 - 5. High-strength bolts shall conform to ASTM F3125, Grade A325N, Type 1.
 - 6. Tension-controlled, high-strength, bolt-nut-washer assemblies shall conform to ASTM F3125, Grade F1852, Type 1.
 - 7. Headed anchor bolts shall conform to ASTM F1554, Grade 55, galvanized.
 - 8. Welding electrodes shall be E70XX.
 - 9. All steel shall be hot-dipped galvanized and painted per Article XXV.

B. Steel Deck

1. Steel deck and accessories shall be of the type and gage called for on the drawings.
2. Steel deck and accessories shall be formed from steel sheets conforming to ASTM A653, Structural Steel (SS), Grade 50 with G90 galvanized zinc coating.
3. Deck shall be three span continuous where possible. Do not locate single spans at edges or corners.
4. Deck fasteners shall be Hilti X-R stainless steel powder actuated deck fasteners, as manufactured by Hilti, Inc., or approved equal. Install per manufacturer's printed installation instructions
5. Screws shall be stainless steel, self-drilling, No. 12 screws.

C. Galvanizing Repair Paint – Galvanizing repair paint for field repairs shall conform with ASTM A780.

18.3 CONSTRUCTION METHODS

A. Structural Steel

1. Fabrication – Structural steel work shall be fabricated in accordance with the approved shop drawings. Exposed metal work shall be finished with even, close joints, and neat connections. Profiles shall be true to detail, clean, straight, and sharply defined. Metal shall be free from defects impairing strength, durability, and appearance of sufficient strength to adequately withstand required loads. Weld and grind permanent connections.
2. Conformance – Structural steel work shall conform to AISC “Specification for the Design, Fabrication and Erection of Structural Steel Buildings”.
3. Welding – Welding shall be performed in accordance with AWS D1.1 using the methods and electrodes as recommended by manufacturers of the base metal alloys being used. Welds shall be made only by welders who have previously qualified by test prescribed in AWS D1.1 to perform the type of work required. The location, size, and spacing of welds shall be shown on the shop drawings. Welds shall be cleaned immediately by chipping or wire brushing.
4. Galvanized steel surfaces damaged during construction shall be coated with galvanizing repair paint prior to painting.

B. Steel Deck

1. Install steel deck and accessories in compliance with the manufacturer's written recommendations and approved shop drawings.
2. Place steel deck units on supporting members and adjust to proper position. Ensure proper bearing on supporting members and accurate alignment of end laps and side laps prior to attaching units.
3. Fasten steel deck panels to steel supporting members with powder actuated deck fasteners, as indicated on the drawings.
4. Mechanically fasten side laps and perimeter edges of panels between supports with self-drilling screws, at intervals not exceeding the lesser of one half of the span or 24 inches.
5. Install deck ends over supporting frame with a minimum end bearing of 2 inches, with end joints lapped 2 inches minimum.
6. Do not use deck units for storage or working platforms until permanently secured in position. Construction loads shall not exceed the carrying capacity of the deck.

18.4 PAYMENT - Payment for structural steel work shall be made as specified in Article X of the Specifications.

ARTICLE XIX – METAL FABRICATIONS

19.1 SUMMARY

- A. Provide all miscellaneous metal as indicated on the drawings and as specified herein, including, but not limited to, the following:
 - 1. Metal guardrails and handrails.
- B. Related Work Specified Elsewhere: ARTICLE XXV – PAINTING

19.2 QUALITY ASSURANCE – Fabricator Qualifications: A firm with a minimum of five years of experience in producing metal fabrications similar to those indicated for this Project and with a record of successful in-service performance, as well as sufficient production capacity to produce required units.

19.3 PROJECT CONDITIONS – Field Measurements: Where metal fabrications are indicated to fit walls and other construction, verify dimensions by field measurements before fabrication and indicate measurements on Shop Drawings. Coordinate fabrication schedule with construction progress to avoid delaying the Work.

Established Dimensions: Where field measurements cannot be made without delaying the Work, establish dimensions and proceed with fabricating metal fabrications without field measurements. Coordinate construction to ensure that actual dimensions correspond to established dimensions. Allow for trimming and fitting.

19.4 COORDINATION – Coordinate installation of anchorages for metal fabrications. Furnish setting drawings, templates, and directions for installing anchorages, including sleeves, concrete inserts, anchor bolts, and items with integral anchors, that are to be embedded in concrete or masonry. Deliver such items to Project site in time for installation.

19.5 MATERIALS AND COMPONENTS

- A. Metal Surfaces, General: For metal fabrications exposed to view in the completed Work, provide materials selected for their surface flatness, smoothness, and freedom from surface blemishes. Do not use materials with exposed pitting, seam marks, roller marks, rolled trade names, or roughness.
- B. Steel Plates, Shapes, and Bars: ASTM A 36/A 36M, hot-dip galvanized.
- C. Steel Tube: ASTM A 500/A 500M or ASTM A 501/A 501M, hot-dip galvanized.

19.6 FASTENERS

- A. General: Provide plated fasteners complying with ASTM B 633, Class Fe/Zn 25 for electrodeposited zinc coating, for exterior use or where built into exterior walls.
- B. Wedge Anchors: Anchor shall be galvanized 3/8" diameter by 1 3/4" embedment depth Simpson Strong-Tie Wedge-All anchor. This specific anchor includes a bolt, nut and washer, hot dip galvanized.

19.7 PAINT

- A. Galvanizing Repair Paint: High-zinc-dust-content paint for regalvanizing welds in steel, complying with SSPC - Paint 20.
- B. Finish Painting: Paint all exposed metal fabrication items except for prefinished items as specified in Article XXII – Painting.

19.8 FABRICATION, GENERAL

- A. Shop Assembly: Preassemble items in shop to greatest extent possible to minimize field splicing and assembly. Disassemble units only as necessary for shipping and handling limitations. Clearly mark units for reassembly and coordinated installation.
- B. Workmanship: Use materials of size and thickness shown or, if not shown, of required size and thickness to produce strength and durability in the finished product. Work to dimensions shown or accepted on the shop drawings, using proven details of fabrication and support. Use type of materials shown or specified for the various components of the Work.
- C. Form exposed work true to line and level, with accurate angles and surfaces and with straight sharp edges. Ease exposed edges to a radius of approximately 1/32-inch unless otherwise shown. Form bent-metal corners to smallest radius possible without causing grain separation or otherwise impairing work.
- D. Miter and Weld corners and seams continuously, complying with AWS recommendations. At exposed connections, grind exposed welds smooth and flush to match and blend with adjoining surfaces.
- E. Form exposed connections with hairline joints, flush and smooth, using concealed fasteners wherever possible. Use exposed fasteners of type indicated or, if not indicated, Phillips flat head (countersunk) screws or bolts.
- F. Galvanizing: Provide all steel fabrications with hot-dip galvanized coating, unless otherwise indicated, as follows:

1. ASTM A 153/A 153M for galvanizing iron and steel hardware.
2. ASTM A 123/A 123M for galvanizing rolled, pressed, and forged steel shapes, plates, bars, and strip 1/8-inch thick and heavier, and assembled steel products.

19.9 PREPARATION

- A. Prior to all work of this section, the Contractor shall carefully inspect the installed work of all other trades and verify that all such work is complete to the point where fabrication and installation of the work of this section may properly commence.
- B. The Contractors shall make all required measurements in the field to ensure proper and adequate fit of all metal fabrication items.
- C. Installer must examine the areas and conditions under which metal fabrication items are to be installed and notify the Contractor in writing of conditions detrimental to the proper and timely completion of the Work. Do not proceed with the work until unsatisfactory conditions have been corrected in a manner acceptable to the installer.

19.10 INSTALLATION

- A. General: Install metal fabrications as per accepted shop drawings and manufacturer's written instructions.
- B. Fastening to In-Place Construction: Provide anchorage devices and fasteners where necessary for securing miscellaneous metal fabrications to in-place construction; including threaded fasteners for concrete and masonry inserts, toggle bolts, through-bolts, lag bolts, and other connectors as required.
- C. Cutting, Fitting, and Placement: Perform cutting, drilling, and fitting required for installation of miscellaneous metal fabrications. Set work accurately in location, alignment, and elevation, plumb, level, true, and free from rack, measured from established lines and levels. Provide temporary bracing or anchors in formwork for items which are to be installed into concrete, masonry or similar construction.
- D. Connections: Fit exposed connections accurately together to form tight hairline joints. Weld connections which are not to be left as exposed joints, but cannot be shop welded because of shipping size limitations. Grind exposed joints smooth, and touch-up repair paint. Do not weld, cut, or abrade the surfaces of units which have been hot-dip galvanized after fabrication and are intended for bolted or screwed field connections.

- E. Field Welding: Comply with AWS Code for procedures of manual shielded metal-arc welding, appearance and quality of weld made, and methods in correcting welding work.
- F. Touch Up: Field weld joints (if necessary) and scratch marks shall be touched up with galvanizing repair paint (high zinc dust content paint complying with SSPC-Paint 20) and provide with finish paint as specified in Article XIV-Painting.

19.11 CLEAN UP

- A. After installation, all surfaces shall be cleaned and ready to receive final treatment. All unused materials, tools, and equipment shall be removed from the project site.
- B. All rubbish, debris, fines, etc., accumulated from the work of this section shall be removed from the project site and the area left neat and clean.

19.12 PAYMENT – Payment for ARTICLE XIX - Metal Fabrications and installations shall be made separately as specified under payment in Article X of these Specifications

ARTICLE XX – PREFABRICATED STEEL GUARD BOOTH

20.1 SUMMARY

- A. Provide all equipment, materials, and labor necessary to complete the work as indicated on the drawings and as specified herein to furnish and install the new prefabricated steel Guard Booth.
- B. Related Work Specified Elsewhere:
 - 1. ARTICLE XVI – CAST-IN-PLACE CONCRETE
 - 2. ARTICLE XXV – PAINTING
 - 3. ARTICLE XXVII – ELECTRICAL

20.2 SUBMITTALS

- A. Prepare and submit shop drawings for the building required for this project. Drawings shall include elevations, section, floor plan, and anchor clip detail.
- B. Color charts illustrating available colors and patterns for specified finishes shall be submitted to Architect for selections.

20.3 QUALITY ASSURANCE

- A. Structures shall be the product of a manufacturer with a minimum of 10 years-documented experience in the design and fabrication of portable steel buildings.
- B. Prefabricated buildings by manufacturers other than the basis of design product shall submit sufficient data to enable approval to be given. As a minimum: design drawings and/or calculations, applicable certifications, catalog information, and color samples showing equal range of variety.
- C. Electrical devices factory installed within the prefabricated building shall be UL listed. Factory installed wiring system shall be in full compliance with the current NFPA's National Electrical Code
- D. Adherence to applicable portions of state and local building codes is the responsibility of the installing contractor.

20.4 MANUFACTURERS

- A. Basis of Design Product: 5'-6"W x 7'-6"L x 7'-11"H prefabricated steel booth manufactured by B.I.G. Enterprises, Inc.; 9702 E. Rush Street, South El Monte, California 91733-1730; Phone: (626) 448-1449; Website: www.bigbooth.com; E-MAIL: info@bigbooth.com or approved equal product of other manufacturers.

20.5 PREFABRICATED STEEL GUARD BOOTH

- A. Prefabricated steel building shall be single unit welded steel construction. Building to be shipped completely assembled. All welded joints ground smooth.
- B. Unit to be designed for exterior use and constructed of minimum 2" x 2" x .083" structural steel tube frames with 16ga galvanized steel interior and exterior walls. Walls from the floor to the soffit will have with R-10 exterior continuous insulation encapsulated in the final exterior layer of 16ga. galvanized steel panels.
- C. Wall Insulation: R-10.
- D. Roof to be insulated to R-19 and constructed of internal steel framing with 16ga. galvanized steel decking welded to the framing and then coated with a three part membrane with a solar reflective index of 95 or greater. Roof will have a 8" fascia and 6" overhang at rear only with PVC downspout (painted to match booth). Roof to have removable lifting eyes for optional crane offloading.
- E. Unit to have 12ga. Galvanized steel plate floor covered with black polyvinyl chloride commercial black resilient textured 20" x 20" inter locking tiles and 4" high black base cove, floor system is welded to a 2" galvanized steel tube frame and joists.
- F. Unit to have one 16 ga. custom commercial glazed steel swing door. Hardware to include a Corbin Russwin ADA complaint deadbolt mortise lock set with keyed operation outside, thumb turn inside, a hydraulic closer, stainless steel NRP hinges, and weather stripping.
- G. Unit to have two B.I.G. steel framed horizontal sliding windows, top hung with commercial lock and stainless steel sill 16 Ga. galvanized steel window frame system (painted to match booth) with flush mounted corners and welded fastening.
- H. Units to have 1/4" tinted tempered safety glass throughout.
- I. Unit to have one 3 wire single phase, 12 pole, 125 amp, 120/240 volts, load center mounted. All electrical equipment to be U.L. listed and all wiring to be per current published NEC standards. All conductors to be copper with a minimum size of #12. Exposed wiring to be in surface mounted EMT conduits. Concealed wiring to be in flexible aluminum conduits. Final power connection and grounding to be

done onsite by others. All work to be done by a qualified electrician in accordance with all applicable local codes.

- J. Load center to be fed with 120/208cv single phase power.
- K. Two 120 volt duplex outlets and one empty single gang J-Box mounted under the shelf.
- L. Interior 1' x 4' LED light recessed in a galvanized steel ceiling painted the match the booth, light is controlled by a wall mounted switch.
- M. Booth to have a 20" deep shelf at the front wall, mounted at 34" A.F.F. Shelf to be 16ga. galvanized steel painted to match booth color.
- N. Commercial through the rear wall mounted HVAC with 10,600 BTU cooling and 8,800 BTU electric heating and a 208 volt dedicated outlet.
- O. Booth will be painted one color of customers choice using high solids polyurethane paint over two- part polyurethane primer.
- P. Weather-tight for exterior use. All seams and joints pressure bonderized. All openings fully weather stripped.
- Q. Booth to ship in one piece, totally prefabricated, completely wired and painted. Price of unit shall include costs for wood shipping crate and all other freight and delivery costs and fees.

20.6 INSTALLATION

- A. Lift and position unit over electrical stub-up and place prefabricated building onto flat and level concrete base.
- B. Verify building is level. Drill and set expansion type anchor bolts.
- C. Connect power and seal around edges where the floor base meets the concrete base.
- D. Check all moving components for proper working order; door and windows shall open and close without binding.

20.7 CLEAN UP

- A. After installation, all surfaces of the guard shack shall be cleaned inside and out. Leave unit in condition ready for use. All unused materials, tools, and equipment shall be removed from the project site.

- B. All rubbish, debris, fines, etc., accumulated from the work of this section shall be removed from the project site and the area left neat and clean.

20.8 PAYMENT – Payment for ARTICLE XX – Prefabricated Steel Guard Booth shall be made separately as specified under payment in Article X of these Specifications.

ARTICLE XXI - PREFORMED METAL ROOFING

21.1 SUMMARY

- A. Provide all preformed metal roofing and other related work as indicated on the drawings and specified herein, including, but not limited to, the following:
 - 1. Metal roof panels.
 - 2. Flashing and closures.
 - 3. Underlayment.
 - 4. Miscellaneous materials.

- B. Related Work Specified Elsewhere:
 - 1. ARTICLE XXII - SHEET METAL FLASHING AND TRIM: Coordinate flashing installation not part of this Section.

 - 2. ARTICLE XXIII - JOINT SEALANTS: Field-applied sealants.

21.2 SUBMITTALS

- A. Product Data: Submit manufacturer's product data, specifications, standard details, installation instructions, and general recommendations, as applicable to materials and finishes for each component and for total panel assemblies.

- B. Test Results: Submit manufacturer's certified product test results as applicable to materials and finishes for each component and for total panel assemblies.

- C. Shop Drawings: Submit shop drawings with layouts of panels, details of edge conditions, joints, panel profiles, supports, anchorages, trim, flashings, underlayment, closures, and special details. Distinguish between factory assembled and field-assembled work.

- D. Certifications:
 - 1. Performance Certification:
 - a. Roofing panel supplier shall submit certification that panels meet performance requirements in paragraph entitled "Performance Requirements" hereinbelow. Provide design analysis and calculations to substantiate mechanical attachments to resist wind-uplift.

 - b. Manufacturer's technical representative shall submit certification that roofing panels have been installed according to the manufacturer's instructions and is free of defects in material and workmanship.

3. Contractor Certification: Submit a signed certificate from the manufacturer stating that the Contractor is an approved installer of the manufacturer's complete roofing system and that the installation crew has been trained in the system's proper installation by the manufacturer or the technical representative of the manufacturer. The certificate shall include a listing of the location, size of project, and date of 5 successful installations of the system by the Contractor within the previous 3 years.
 4. Technical Representative Certification: Submit a signed certificate from the manufacturer designating its technical representative for the project and attesting that this person is both qualified and authorized to act on its behalf of this position in respect to the complete roofing system.
 5. Warranty Certification: Submit a signed certificate from the manufacturer or its technical representative stating that the plans and specifications for the project have been reviewed and fully comply with the manufacturer's design standards and meet the requirements for warranty of the complete roofing system for the specified period.
- E. Samples:
1. Samples for Initial Selection: Submit manufacturer's full range of colors for panel and ridge vent selection.
 2. Samples for Verification: Submit sample panels and ridge vent 12-inches long by actual panel width, in the profile, style, and color selected. Include clips, caps, fasteners, closures, and other exposed panel accessories.
 3. Fasteners: Submit metal roof panel and rigid insulation fasteners of each type, length, and finish.
- F. Warranty: Submit warranty as noted under item entitled "WARRANTY" hereinbelow.

21.3 WARRANTY

- A. Manufacturer's Warranty: Submit manufacturer's written warranty for coating system under Hawaiian weather conditions, provide the following as a guide for expected warranty:
1. The roofing panels and matching flashings with a factory applied Fluoropolymer (Kynar 500) paint finish are free from material defects and shall be warranted for 20 years from the project acceptance date against peeling, blistering, chipping, cracking or color change in excess of 5 NBS units during the term of this warranty. The manufacturer/supplier shall provide labor and materials to replace or repair as necessary any panels

whose factory color finish fails under normal wind and weathering conditions. This paint finish warranty commences upon project acceptance date.

2. Additionally, the metal roofing system components for the project as identified by the Contract Drawings for this project, shall be warranted for a period of 15 years from the project acceptance date. Manufacturer/supplier shall replace or repair as necessary any component of the roof system supplied by them, when installed and maintained according to manufacturer's instructions, which fail to provide a watertight and weatherproof system due to defective materials. All labor, materials, and equipment required to perform any repair work shall be provided by the manufacturer/supplier. Repair work shall be done in a manner that will not disrupt State access to the building.
 3. Warranty Provisions: The warranty provisions and number of years for the warranties required in this Section shall take precedence over the standard provisions in the General Conditions (GC).
- B. Contractor's Warranty: Submit Contractor's 5 year written warranty to provide labor and materials to repair or replace defective preformed metal roofing materials and workmanship. The warranty period shall commence from the project acceptance date. Repairs include, but are not limited to, repair of water leaks and repair of damages to the building.
1. The Surety shall not be held liable beyond 2 years from the project acceptance date.
 2. Warranty Provisions: The warranty provisions and number of years for the warranties required in this Section shall take precedence over the standard provisions in the General Conditions (GC).

21.4 QUALITY ASSURANCE

- A. Installer Qualifications: Engage an experienced installer who has completed metal roof panel projects similar in material, design, and extent to that indicated for this project and with a record of successful in-service performance. A company specializing in performing work of this Section with minimum 5 years experience and approved by manufacturer.
- B. Performance Requirements: Provide roof panel assembly that meets requirements of 130 mph, Exposure C wind loads, in accordance with current adopted ICC IBC as amended. Panels shall be tested in accordance with ASTM E1592.
- C. Sealants: Provide sealants as recommended by the roofing manufacturer and installed under ARTICLE XXIII - JOINT SEALANTS.
- D. Should the manufacturer's warranty requirements necessitate different drawings

and details exceeding the requirements of those indicated or specified, provide shop drawings and field adjustments for approval at Contractor's own expense.

21.5 DELIVERY, STORAGE, AND HANDLING

- A. Deliver panels and other components so they will not be damaged or deformed. Package panels for protection against damage during transportation or handling.
- B. Exercise care in unloading, storing, and erecting panels to prevent bending, warping, twisting, and surface damage
- C. Stack materials on platforms or pallets, covered with tarpaulins or other suitable weathertight and ventilated covering. Store panels to ensure dryness. Do not store panels in contact with other materials that might cause staining, denting, or other surface damage.

21.6 PROJECT CONDITIONS

- A. Field Measurements: Verify location of structural members and openings in substrates by field measurements before fabrication and indicate measurements on shop drawings. Coordinate fabrication schedule with construction progress to avoid delaying the work.
 - 1. Established Dimensions: Where field measurements cannot be made without delaying the work, either establish opening dimensions and proceed with fabricating panels without field measurements or allow for trimming panel units. Coordinate construction to ensure actual locations of structural members and to ensure opening dimensions correspond to established dimensions.

21.7 METALS AND FINISHES

- A. Roof Panels: Formed from minimum 24 gauge zincalume coated steel conforming to ASTM A792/A792M, Grade 33 with minimum AZ55 coating. Panel configuration shall be as specified. Panel shall be prefinished Kynar 500 as specified.
- B. Finish: Apply the following organic coating in thickness indicated. Furnish appropriate air-drying spray finish in matching color for touchup.
 - 1. Fluoropolymer 2 Coat (Kynar 500) Coating System: Manufacturer's standard 2 coat, thermocured system composed of specially formulated inhibitive primer and fluoropolymer color topcoat containing not less than 70 percent polyvinylidene fluoride resin by weight with a total minimum

dry film thickness on the exposed top of one mil and 30 percent reflective gloss when tested according to ASTM D523. Interior/underside finish shall be one mil manufacturer's standard off white paint finish.

- a. Durability: Provide coating field tested under normal range of weather conditions for a minimum of 20 years without significant peel, blister, flake, chip, crack, or check in finish; without chalking in excess of a chalk rating of 8 according to ASTM D4214; and without fading in excess of 5 Hunter units.
- b. Color: Color shall be as selected and as approved as per item entitled "21.2 SUBMITTALS" hereinabove prior to fabrication.

c. ROOF PANEL ASSEMBLIES

- A. Standing-Seam Metal Roof Panels: Manufacturers standard factory-formed, standing-seam snap lock metal roof panel assembly with 1-3/4 inch high x 12-inch wide standing-seam, designed for concealed mechanical attachment of panels to roof sheathing or structure.
 1. Clips: Provide minimum 0.0625-inch thick, stainless steel panel clips designed to meet negative-load requirements.

21.8 FLASHING AND CLOSURES

- A. Provide flashings, including, but not limited to, ridges, hips, valleys, closures, etc. Formed of prefinished material to match panels of manufacturer's standard and custom fabricated flashings for the panels specified. Configuration of flashings shown on the drawings are intended to indicate basic intent. Other flashings which accomplish the basic intent and is standard with the panel manufacturer may only be acceptable with the approval as per item entitled "21.2 SUBMITTALS" hereinabove. Provide metal flashings for locations indicated. Furnish sheet metal flashing items in 8-foot to 10-foot lengths. Single pieces less than 8-feet long may be used at corners and at ends of runs. Provide accessories and other items essential to complete the sheet metal installation of the same materials as the items to which they are applied. Connect all pieces of linear flashing by a slip joint to permit thermal movement.

21.9 UNDERLAYMENT MATERIALS

- A. Self-Adhering Underlayment Membrane: Minimum 40 mil self-adhering sheet membrane. The product shall be Rainproof by Protecto Wrap Company, Polyguard Deck Guard by Polyguard Products, Inc., WinterGuard by CertainTeed Corp., or accepted equivalent.

21.10 MISCELLANEOUS MATERIALS

- A. General: Provide materials and accessories required for a complete panel assembly and as recommended by panel manufacturer, unless otherwise indicated.
- B. Fasteners: Self-tapping screws, bolts, nuts, self-locking rivets and bolts, end-welded studs, and other suitable fasteners designed to withstand design loads. Use stainless-steel fasteners for all applications. Use exposed fasteners with prefinished coated head to match panel color and with composite metal and neoprene washer.
- C. Accessories: Unless otherwise specified, provide components required for a complete panel assembly, including trim, copings, head closures, clips, flashings, sealants, gaskets, fillers, closure strips, and similar items. Match materials and finishes of panels.
 - 1. Closure Strips: Closed-cell, self-extinguishing, expanded, cellular, rubber or cross-linked, polyolefin-foam flexible closure strips. Cut or premold to match configuration of panels. Provide closure strips where indicated or necessary to ensure weathertight construction.
 - 2. Sealing Tape: Pressure-sensitive, 100 percent solids, polyisobutylene compound sealing tape with release paper backing. Provide permanently elastic, nonsag, nontoxic, nonstaining tape.
 - 3. Elastomeric Joint Sealant: ASTM C920, of base polymer, type, grade, class, and use classifications required to seal joints in panel and remain weathertight. Provide sealant recommended by panel manufacturer.
- D. Bituminous Coating: Cold-applied asphalt mastic, SSPC-Paint 12, compounded for 15-mil dry film thickness per coat, unless otherwise indicated. Provide inert-type noncorrosive compound free of asbestos fibers, sulfur components, and other deleterious impurities.

21.11 EXAMINATION

- A. Examine substrates and conditions, with installer present, for compliance with requirements indicated for conditions affecting performance of metal panel.
- B. Do not proceed with panel installation until unsatisfactory conditions have been corrected.

21.12 PREPARATION

- A. Coordinate panel system with rain drainage work; flashing; trim; roof insulation; and construction of substrates, vents, and other adjoining work to provide a leakproof, secure, and non-corrosive installation.
- B. Promptly remove protective film, if any, from exposed surfaces of metal panels. Strip with care to avoid damage to finish.

21.13 PANEL INSTALLATION

- A. General: Comply with panel manufacturer's written instructions and recommendations for installation, as applicable to project conditions and supporting substrates. Anchor panels and other components of the work securely in place, with provisions for thermal and structural movement.
 - 1. Field cutting exterior panels by torch is not permitted.
 - 2. Install panels with concealed fasteners, unless otherwise recommended by manufacturer.
 - 3. Install panels over solid substrate or structure unless otherwise indicated.
 - 4. Install underlayment under panels as per manufacturer's recommendations and where indicated on the drawings.
 - 5. Fasteners shall penetrate into plywood sheathing.
- B. Install in accordance with the approved erection instructions and shop drawings. Panels shall be in full and firm contact with supports and with each other at side and end laps. Correct defects or errors in the material in a manufacturer's approved manner. Replace materials which cannot be corrected in an approved manner with nondefective material.
- C. Roofing units shall be applied parallel to the roof slope. Provide panel sheets in full lengths from ridge to eave, with no transverse joints except at the junction of ventilators, curbs, and similar openings or as indicated on the drawings.
- D. Install components required for a complete panel assembly, including trim, copings, ridge closures, clips, flashings, sealants, fillers, closure strips, and similar items.
- E. Separate dissimilar metals by painting each metal surface in area of contact with a bituminous coating, by applying rubberized-asphalt underlayment to each metal surface, or by other permanent separation as recommended by manufacturers of dissimilar metals.

- F. Arrange side laps to leeward of prevailing wind direction.
- G. Install underlayment where specified and where indicated perpendicular to roof slope. Apply in shingle fashion and lap joints a minimum of 4-inches and 6-inches at end laps.
- H. Joint Sealers: Install gaskets, joint fillers, and sealants where indicated and where required for weatherproof performance of panel assemblies. Provide types of gaskets, fillers, and sealants indicated or, if not otherwise indicated, types recommended by panel manufacturer.
 - 1. Install weatherseal under head cap. Flash and seal panels at eave and rake with rubber, neoprene, or other closures to exclude weather.
 - 2. Seal panel end laps with double beads of tape or sealant, full width of panel. Seal side joints where recommended by panel manufacturer.
 - 3. Prepare joints and apply sealants to comply with requirements of Article XXIII - JOINT SEALANTS.
- I. Standing-Seam Roof Panel Assembly: Fasten panels to supports with concealed clip according to panel manufacturer's written instructions.
 - 1. Install clips at each support with self-drilling/self-tapping fasteners.
 - 2. Fasteners shall penetrate through steel decking.
 - 3. At end laps of panels, install tape calk between panels.
 - 4. Install factory-calked cleats to standing seam joints. Apply snap-on batten to panels to provide a weathertight joint.
- J. Installation Tolerances: Shim and align panel units within installed tolerance of 1/4-inch in 20-feet on slope and location lines as indicated and within 1/8-inch offset of adjoining faces and of alignment of matching profiles.
- K. Inspection: Manufacturer's technical representative shall inspect panels during installation to ensure compliance with these specifications and conformance to manufacturer's installation instructions. Upon completion of the panel system, manufacturer's representative shall provide a written certification that panels have been installed in accordance with manufacturer's instructions and is free of defects in material and workmanship.

21.14 CLEANING AND PROTECTING

- A. Damaged Units: Replace panels and other components of the work that have been damaged or have deteriorated beyond successful repair by finish touchup or similar minor repair procedures.
- B. Cleaning: Remove temporary protective coverings and strippable films, if any, as soon as each panel is installed. On completion of panel installation, clean finished surfaces as recommended by panel manufacturer and maintain in a clean condition during construction.

21.15 PAYMENT – Payment for ARTICLE XXI – Preformed Metal Roofing shall be made as described in Article X of these Specifications.

ARTICLE XXII - SHEET METAL FLASHING AND TRIM

22.1 GENERAL

- A. Provide all sheet metal flashing and trim work as indicated on the drawings and as specified herein, including the following:
 - 1. Flashings.
 - 2. Miscellaneous accessories.
- B. Related Work Specified Elsewhere:
 - 1. ARTICLE XXI - PREFORMED METAL ROOFING: Coordinate installation.
 - 2. ARTICLE XXIII - JOINT SEALANTS: Sealant applications.
 - 3. ARTICLE XXV - PAINTING: Sheet metal painting.

22.2 SUBMITTALS

- A. Product Data: Submit manufacturer's material product and finish data, installation instructions, and general recommendations for each material.
- B. Shop Drawings: Submit shop drawings of all required details of items specified herein, showing layout, profile, methods of joining, and anchorage details.
- C. Samples: Submit samples of flashing, trim, and accessory items in the specified finish. Submit 8-inch square samples of sheet materials and 12-inch long samples of factory-fabricated products.
- D. Warranty: Submit warranty as noted under item entitled "WARRANTY" hereinbelow.

22.3 WARRANTY

- A. 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. The warranty period shall commence from the project acceptance date. Repairs include, but are not limited to, repair of water leaks and repair of damages to the building.

22.4 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 ARTICLE XXI - PREFORMED METAL ROOFING to provide required supports and fasteners to comply with roofing performance requirements.

22.5 PERFORMANCE REQUIREMENTS

- A. 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.

22.6 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.

22.7 COORDINATION

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

22.8 MATERIALS

- A. Flashing, etc.: 24 gauge unless otherwise indicated of zincalume coated sheet metal with Kynar 500 finish, same material and color finish as specified in ARTICLE XXI - PREFORMED METAL ROOFING.

- B. Fasteners: Fasteners shall be manufacturer's standard or custom fabricated stainless steel. Exposed fasteners where occurs or where required shall be of head to match flashing finish with composite metal and neoprene washer.
- C. Moisture Barrier: ASTM D226/D226M, Type I, No. 15, or Type II, No. 30, asbestos free, asphalt saturated roofing felt as indicated.
- D. Cleating: Cleats for sheet metal work shall be provided where required.
- E. Adhesive: Type recommended by flashing sheet metal manufacturer for waterproofing and weather resistant seaming and adhesive application of flashing sheet metal.

22.9 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.

22.10 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 moisture proof building felts.

22.11 PROTECTION

- A. Protect all sheet metal work until final project acceptance.

22.12 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.

22.13 PAYMENT – Payment for ARTICLE XXII – Sheet Metal Flashing and Trim shall be made as described in Article X of these Specifications

ARTICLE XXIII - JOINT SEALANTS

23.1 SUMMARY

- A. Provide all sealants to completely close all joints indicated on the drawings or specified to be sealed, including the following:
 - 1. Exterior joints.
 - 2. Interior joints.
 - 3. Horizontal traffic-bearing joints.
 - 4. Silicone sealant.
- B. Related Work Specified Elsewhere:
 - 1. ARTICLE XXII - SHEET METAL FLASHING AND TRIM: Coordinate installation.

23.2 SUBMITTALS

- A. Product Data: Submit manufacturers product data and specifications for each type of sealant.
- B. Samples: Submit color finish samples of each type of sealant for approval.
- C. Product Certificates: Submit certificates signed by manufacturers of joint sealants certifying that products furnished comply with requirements and are suitable for the use indicated.
- D. Warranty: Submit warranty as noted under item entitled "WARRANTY" hereinbelow.

23.3 WARRANTY

- A. Contractor's Warranty:
 - 1. Submit Contractor's 2 year written warranty from the project acceptance date against leaks, air infiltration, cracks, and other failures of the installation and materials.

2. Where sealant is associated with a system with a longer warranty period, such as roofing, sealant warranty shall match applicable system.
 - a. The Surety shall not be held liable beyond 2 years from the project acceptance date.
 - b. Warranty Provisions: The warranty provisions and number of years for the warranties required in this Section shall take precedence over the standard provisions in the General Conditions (IGC).
3. Repair of sealants to seal leaks caused by faulty materials or workmanship.
4. Repair or replace damage to the building or its finishes, equipment, or furniture when occasioned by such leaks.

23.4 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.

23.5 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.

23.6 PRODUCT HANDLING

- A. Delivery: Deliver sealants to the job site 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.

23.7 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.

23.8 PAYMENT – Payment for ARTICLE XXIII – Joint Sealants shall be made as described in Article X of these Specifications.

ARTICLE XXIV – ELECTRIC GATE OPERATOR

24.1 GENERAL

- A. Provide Electric Gate Operator as indicated on the drawings and specified herein, including the following:
 - 1. High-performance commercial DC barrier gate operators with built-in battery backup.

24.2 REFERENCE STANDARDS

- A. National Electrical Manufacturers Association (NEMA): NEMA ICS 6 - Industrial Control and Systems: Enclosures.
- B. Underwriters Laboratories (UL): UL 325 - Standard for Door, Drapery, Gate, Louver, and Window Operators and Systems; Current Edition, Including All Revisions.
- C. UL 991 - Standard for Tests for Safety-Related Controls Employing Solid-State Devices; Current Edition, Including All Revisions.
- D. International Organization for Standardization: ISO 9001 - Quality Management Systems.

24.3 QUALITY ASSURANCE

- A. Source Limitations: Obtain system components through one source from a single manufacturer. Obtain manufacturer's approval for any products not available through manufacturer.
- B. Manufacturer Qualifications: ISO 9001 Certified Manufacturer specializing in manufacturing the products specified in this article.
- C. Installer Qualifications: Installation performed by factory authorized contractor specifically trained in gate operation systems of the type found within this section.
 - 1. Provide documentation of maintenance and repair service availability for emergency conditions.
 - 2. Provide quarterly maintenance for one year following Substantial Completion of the Project.

- D. Products Requiring Electrical Connection: Listed and classified by ITS (DIR), UL (DIR), or testing firm acceptable to authorities having jurisdiction as suitable for purpose specified.

24.4 DELIVERY, STORAGE, AND HANDLING

- A. Deliver, store, and handle materials and products in strict compliance with manufacturer's instructions and industry standards.
- B. Store products indoors in manufacturer's original containers and packaging, with labels clearly identifying product name and manufacturer. Protect from damage.

24.5 WARRANTY

- A. Warranty: Manufacturer's Standard Limited Warranty:
 - 1. Warranty Period: 2 years for operator, 10 years for operator frame.

24.6 MANUFACTURERS

- A. Basis of Design Product: Subject to compliance with requirements, provide product indicated on drawings or comparable product.
 - 1. LiftMaster; 300 Windsor Drive; Oak Brook, IL 60523. ASD. Toll-Free: 800.282.6225. Email: specs@LiftMaster.com. Web: LiftMaster.com.
- B. Requests for substitutions will be considered in accordance with provisions of Section 01600.

24.7 GATE OPERATORS

- A. Gate Operators: LiftMaster MA Series High-Performance Commercial Barrier Gate Operators with Built-in Battery Backup.
 - 1. LiftMaster MAT Mega Arm Barrier Gate Operators with aluminum cover.
 - 2. Compliance: UL Listed. Compliant to the UL 325, UL 991 and CSA C22.2 No. 247 standards.
 - a. This model is intended for use in Class I, II, III and IV vehicular barrier gate applications.
 - 3. Warranty: 2 years for operator, 10 years for operator frame.

4. Operation:
 - a. Soft start/stop.
 - b. Universal Controller: 8 inputs right or left-handed operation safety-stop.
 - c. Anti-tailgate, quick-close features.
 - d. Selectable Auto Open: 15 seconds after power failure or upon battery depletion barrier arm can be set to automatically open. 15-second delay helps reduce nuisance callbacks due to short power interruptions or brownouts.
5. Operator Speed: Open or close speed of 2.5 seconds.
6. Gate Arm: Aluminum LED Barrier Arm
 - a. Gate Arm Length: 17 feet.
 - b. Lamp Type: LED 2528 IP68 Silica Gel Filled
 - c. UL Listed: UL 325 and UL 991
 - d. Operating Voltage: 12 VDC
7. Motor: 1/2 HP, 24V DC, 800 RPM motor, 6,000 cycles per day.
8. Electrical Power Requirements: 120/220V AC.
9. Accessory Electrical Power Requirements: 24V DC 500 mA Battery Backup for accessory power.
10. Gear Reduction: 60:1 reducer in synthetic oil bath.
11. Chassis: Powder-coated 1/4-inch aluminum alloy.
12. Drive System: No. 80 gearbox.
13. Built-in Receiver: Single remote-control solution for gate access and additional access points. Ability to add up to 50 remote control.
14. Magnetic Limit Sensors: Designed for high-cycle applications, contain no moving parts to wear out, provide reliable operation.

15. Surge Protection: Built-in at point of incoming line voltage from power spikes, surges.
16. Auxiliary Outlet: Powers accessories devices.
17. Battery Backup: Provides operation during power outages to maintain traffic flow.
18. Automatically resets to normal operation when power is restored; provides up to 900 full cycles with a 12-foot arm.
19. Accessories: Provide the optional accessories listed below.
 - a. Clutch: Allows arm to be manually pushed open. Arm automatically resets to normal closed position upon receiving activation. Ideal for areas that are concerned with vandals damaging arm.
 - b. LiftMaster 02401 1 Button Indoor Surface Mount Control Station or approved equal.

24.8 EXAMINATION AND PREPARATION

- A. Inspect and prepare substrates using the methods recommended by the manufacturer for achieving best result for the substrates under project conditions.
- B. Do not proceed with installation until substrates have been prepared using the methods recommended by the manufacturer and deviations from manufacturer's recommended tolerances are corrected. Commencement of installation constitutes acceptance of conditions.
- C. If preparation is the responsibility of another installer, notify Architect in writing of deviations from manufacturer's recommended installation tolerances and conditions.

24.9 INSTALLATION

- A. Install in accordance with manufacturer's instructions. Test for proper operation and adjust until satisfactory results are obtained.

24.10 CLEANING AND PROTECTION

- A. Clean installed components.

- B. Protect installed products until completion of project.
- C. Touch-up, repair or replace damaged products before Substantial Completion.

24.11 PAYMENT – Payment for ARTICLE XXIV – Electric Gate Operator shall be made as described in Article X of these Specifications.

ARTICLE XXV – PAINTING

25.1 SUMMARY

- A. Provide painting and finishing of exterior items and surfaces as called for in the drawings. Paint all new work whether scheduled or not, except as otherwise 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 included in this section.
- 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 exposed surfaces and adjacent areas 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, submit standard colors available for the materials systems specified for selection as per submittals.

25.2 WARRANTY

- A. The Contractor shall provide written warranty 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 warranty shall continue for a period of two (2) years from the project acceptance date during which period the Contractor shall remedy at his own expense any such failure to conform or any such defect.
- B. The Contractor shall warrant a mildew free surface for a period of one year from the project acceptance date. Should mildew formation occur on surfaces painted under this project within the one year, the Contractor shall clean such surfaces at his own expense.
- C. 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 (2) years from the project acceptance date during which period the Contractor shall remedy at his own expense any such failure to conform to any such defect.
- D. Should the Contractor fail to remedy any failure or defect described in Paragraph A. above within 10 working days after receipt of notice thereof, the Harbors Division shall have the right to repair or otherwise remedy such failure or damage at the Contractor's expense.

25.3 INSPECTION AND APPROVALS

The Contractor shall obtain written approval from the Harbors Division Construction Engineer upon completion of each phase of work (phases of work are: surface preparation and spot prime, prime, first finish coat, second finish coat) before proceeding into the next phase of work. The Contractor shall give the Harbors Division Construction Engineer one day (24 hours minimum) advance notice of completion of any phase of work for a work area when he deviates from the previously submitted work schedule. The Contractor shall provide necessary access to areas to be inspected. Failure to obtain approval of any phase of work for a work area may result in redoing the operation at no cost to the STATE.

Right of Rejection: The Harbors Division Construction Engineer shall have the right to reject all work which is not in compliance with the plans and specifications. Rejected work shall be redone at no cost to the STATE.

In addition, the Harbors Division Construction Engineer shall have the right to require the immediate removal of any paint applicator who demonstrates negligence, lack of competence or repeated non-compliance with the contract requirements.

25.4 ANALYZING AND TESTING

- A. All paints and their applied thickness shall be subject to testing whenever the Architect 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 Harbors Division and the cost of testing shall be borne by the Contractor. 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.

25.5 PAINTING NOT INCLUDED

The following categories of work are not included as part of field applied paint and finish work.

1. Pre-Finished Items: Unless otherwise indicated, do not include painting for factory-finished or installer finished items such as (but not limited to) solid phenolic, plastic laminate, acoustic materials, high performance organic coated metal, finished mechanical and electrical equipment, including light fixtures, switchgear, and distribution cabinets, etc.

3. 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.
4. Labels: Do not paint over any code-required labels, such as Underwriters' Laboratories, or any equipment identification, performance rating, name, or nomenclature plates.

25.6 GENERAL REQUIREMENTS

- A. Inspection and Approvals: The Contractor shall obtain written approval from the Architect upon completion of each phase of work (phases of work are surface preparation and spot prime, prime, first finish coat, second finish coat) before proceeding into the next phase or work. The Contractor shall give the Architect one day (24 hours minimum) advance notice of completion of any phase of work for a work area when he deviates from the previously submitted work schedule noted under paragraph entitled "Schedule of Operations" hereinabove. The Contractor shall provide necessary access to areas to be inspected. Failure to obtain approval of any phase of work for a work area may result in redoing the operation at Contractor's own expense.
- B. Right of Rejection: The Architect 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 Architect 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.

25.7 SPECIAL REQUIREMENTS

- A. Codes: The Contractor shall comply with the HIOSH codes and regulations (Occupational Safety and Health Law) and all pollution control regulations of the State Department of Health.
- B. Protection
 1. Persons:
 - a. The Contractor shall take all necessary precautions to protect public pedestrians, including tenants from injury.
 - 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 tenants.

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 cloth or plastic sheets. Paint applied to surfaces not scheduled for treatment shall be completely removed and surfaces shall be returned to their original condition.
 4. Protection of Vehicles: The Contractor shall take all necessary precautions to protect vehicles. Spray painting is not allowed and no painting will be done on windy weather. The Contractor shall be responsible for any damages to vehicles caused by his or his employee's negligence.
 5. Safeguarding of Property: The Contractor shall take whatever steps may be necessary to safeguard his work and also the property of the Harbors Division 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.
 6. Fire Safety: The Contractor shall direct his employees not to smoke in the vicinity 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 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 and spot prime.

2. Prime coat.
3. First finish coat.
4. Second finish coat.

25.8 AREAS (SURFACES/STRUCTURES) TO BE PAINTED

A. Exterior Surfaces to be Painted:

1. Exterior surfaces shall be painted as indicated on the plans unless specifically deleted in these specifications.
2. Exterior surfaces to be painted shall be any surfaces exposed to weather in an area not enclosed by 4 walls and a roof.
3. Extent of treatment for special items is as follows:
 - a. Previously painted exterior metal panels and steel framing.
 - b. Metal fabrication items.
 - c. Concrete/concrete masonry as required.
 - d. All other miscellaneous items.
 - e. All areas damaged or exposed during construction.

25.9 OTHER INCIDENTAL WORK TO BE PERFORMED BY CONTRACTOR

Exterior: Areas Inaccessible to Normal Painting: The Contractor shall remove and reinstall items as required to paint area(s) where indicated or required.

25.10 MATERIALS

- A. Asbestos Prohibition: All paints shall be asbestos-free.
- B. Lead Prohibition: All paints shall be lead-free.
- C. Mercury Prohibition: All paint shall be mercury-free.
- D. Chromate Prohibition: All paint shall be free of zinc-chromate and/or strontium-chromate.

- E. Cadmium Prohibition: All paint shall be cadmium-free.
- 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 Ace, Benjamin Moore, Cabot's, Carboline, Dupont, Dutch Boy, Glidden Professional, Olympic Stain, Pittsburg, Porter Inti., Pratt & Lambert, Rust-Oleum, Sherwin-Williams, Spectra-Tone, Thoro Systems, Tnemec, United Paint and Coatings, or approved equal.
- I. Thinning of paint shall be done using material recommended by the manufacturer. Mix proprietary products according to manufacturer's printed specifications. Compound thinner, mineral oil, kerosene, refined linseed oil, or gasoline shall not be used for thinning.
- J. Except for metal primers all interior paint shall contain the maximum amount of mildewcide per gallon of paint permitted by the mildewcide manufacturer without adversely affecting the quality of the paint.
- K. The supplier shall submit a signed certificate indicating the amounts of mildewcide added by both the paint manufacturer and the paint supplier.

25.11 SURFACE PREPARATION OF 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 Architect 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. Concrete and concrete masonry unit surfaces shall be cured and dry and shall be wire brushed clean to remove all dust and loose mortar, efflorescence, and laitance. Test for alkalinity level and provide remedy where alkalinity exceeds manufacturer's acceptable level.
- 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.

25.12 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 applied in strict accordance with the manufacturer's specifications, including spread rates, and the finished surfaces 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 shall be applied until the preceding coat is thoroughly dry and approved.
3. Any mixing shall be done outside the building.

B. Application: Paint application shall be by brush and roller only.

C. Colors: Each coat shall be tinted a different shade from the preceding coat. Colors shall match existing surfaces and/or adjacent surfaces. Where a color is not indicated, the color shall be selected by the Architect.

D. 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.

25.13 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 painted splashed or spilled upon adjacent surfaces not requiring treatment (hardware, fixture, floor glass) shall be removed and the entire job left clean and acceptable.
3. Work to correct punchlist items shall be performed during non-business hours if the work will inconvenience the building occupants. Where

necessary for access during non-business hours, the Contractor shall pay for custodial staff to gain entry and to secure the building.

- C. Extra Paint: The Contractor shall provide extra paint in each of the different colors of interior and exterior paint used for all surfaces to the Harbors Division upon completion of the project. The paint shall be in unopened one-gallon cans and shall be in the quantities listed below:
1. Paint used in single room areas and in small areas, such as rooms and doors
1 gallon of each color.
 2. Paint used over large areas, such as the interior and exterior of the building and in several rooms – 5 one-gallon cans of each color.

25.14 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 equal to those mentioned may be used provided they are acceptable to the Architect.
- D. The painting schedule shall apply to new and existing surfaces of designated materials, unless specified otherwise, in conformity with instructions of the paint products used.
- 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 Architect, paint systems and sheens may be revised at Contractor's own expense.

25.15 EXTERIOR PAINT SCHEDULE

- A. Concrete:
- | | |
|---|---|
| Prime coat: | N023 Fresh Start Multi-Purpose Latex Primer
1.2 mils DFT@400 sf/gal |
| 2 nd and
3 rd coats: | N539 Ultra Spec Interior Waterborne Semi-Gloss Finish
1.8 mils DFT@350-400 sf/gal/coat
or |

N536 Ultra Spec Interior Waterborne Flat Finish
1.8 mils DFT@350-400 sf/gal/coat
or
N538 Ultra Spec Interior Waterborne Eggshell Finish
1.8 mils DFT@350-400 sf/gal/coat

B. Ferrous Metal:

Corrosion treatment V180 Rust Arrestor
for existing surfaces: 0.9-1.2 mils DFT@300-400sf/gal

Prime coat: Corotech V131 Low VOC Universal Metal Primer
2.1 mils DFT@458 sf/gal

2nd and
3rd coats: N401 Regal Select Exterior Paint – High Build Low Lustre finish
(Satin Gloss)
2.3 mils DFT @ 300 sf/gal. per coat or

C. Galvanized Metal:

Corrosion treatment V180 Rust Arrestor
for existing surfaces: 0.9-1.2 mils DFT@300-400sf/gal

Prime coat: Corotech V131 Low VOC Universal Metal Primer
2.1 mils DFT@458 sf/gal

2nd and
3rd coats: N401 Regal Select Exterior Paint – High Build Low Lustre finish
(Satin Gloss)
2.3 mils DFT @ 300 sf/gal. per coat or

25.16 PAYMENT – Payment for ARTICLE XXV – Painting shall be made as described in Article X of these Specifications.

ARTICLE XXVI - MECHANICAL WORK

26.1 DESCRIPTION OF WORK

- A. Furnish and install a new AC unit in the Guard Shack.
- B. This section covers the furnishing, delivery and installation of the mechanical system complete, including but not limited to the following:
 - 1. Proper installation of the new AC unit and related appurtenances.

26.2 RELATED WORK SPECIFIED IN OTHER SECTIONS

- A. Section XXV - PAINTING
- B. Section XXVII - ELECTRICAL

26.3 CODES, STANDARDS, REGULATIONS

- A. Installation of all work in this Section shall be made in accordance with the State of Hawaii Department of Health Chapter 39 Air Conditioning and Ventilating, International Building Code, and International Energy Conservation Code, including all amendments as adopted by the State of Hawaii and County of Hawaii.
- B. All applicable codes, regulations and ordinances of public bodies having jurisdiction are considered a part of these specifications; all work installed and materials provided must comply with the current edition of such codes, regulations and ordinances.
- C. Present to the Engineer certificates of inspection and approval from proper authorities.

26.4 CONTRACT DRAWINGS

- A. Contract drawings are essentially diagrammatic, indicating general layout and approximate locations toward establishing the scope for uniform estimating basis for all bidders. They are not intended to be detailed construction working drawings. Equipment arrangements shall fit into space allotted and shall allow adequate clearances for servicing and maintenance. Reasonable modifications to indicated locations and arrangement to suit job conditions shall not constitute basis for requesting additional funds from the State.

- B. Nameplate: Each major component of equipment shall have the manufacturer's name, address, and catalog number on a plate securely attached to the item of equipment.
- C. Verification of Dimensions: The Contractor shall be responsible for the coordination and proper relation of this work to the building structure and to the work of all trades. The Contractor shall visit the premises and thoroughly familiarize himself with all details of the work and working conditions, to verify all dimensions in the field, and to advise the Engineer of any discrepancy before performing any work.

26.5 SHOP DRAWINGS AND MANUFACTURER'S PUBLISHED DATA

- A. Six (6) sets as soon as practicable and within 20 days after award of contract and before installation of any materials or equipment is begun, Contractor shall submit complete list of materials and equipment together with names and addresses of manufacturers, catalog numbers, and trade names to the Engineer for approval. No consideration shall be given to partial list submitted from time to time.
- B. Approval of materials will be based on manufacturer's published rating. Any materials and equipment which are not in accordance with these specifications may be rejected.
- C. Prior to start of any field work, required copies of to-scale shop drawings of mechanical equipment, piping, ductwork and controls shall be submitted for review. No work shall be started without approval of the Engineer. Where apparatus and equipment have been indicated on the drawings, dimensions have been taken from typical equipment of the class indicated. The shop drawings shall show the details of construction and installation of the particular equipment furnished. The shop drawings shall be fully dimensioned to show that the equipment and connections thereto fit the space provided.
- D. Contractor shall check the submittals and shop drawings and certify that they are correct and in compliance with the drawings and specifications.

26.6 AS-BUILT DRAWINGS

Upon completion of work, submit accurate field posted as-built drawings to the Engineer. With these drawings, also submit six (6) sets of operating instructions and other pertinent literature of fixtures and equipment incorporated into the project. Show exact locations and sizes, as actually installed, of air conditioning equipment, piping, drains and controls of this record field posted "as-built" drawing.

26.7 SUBSTITUTION OF MATERIAL

- A. Request for substitutions, complete with catalog data, shall be furnished to the Engineer.
- B. Design is based on equipment as described in drawings and by Equipment Schedule. Any changes in foundations, bases, connections, piping, controls, electrical equipment, specified and required by approved substitutions shall be made by Contractor at no additional cost to the State.

26.8 OMISSIONS

It is the intent of the plans and specifications to provide a complete installation. Should there be omissions, the Contractor shall call the attention of the Engineer to such omissions in sixteen (16) days advance of the date of bid opening so that the necessary corrections can be made.

26.9 GUARANTEE AND CERTIFICATE

Contractor and Installer shall guarantee and certify in writing all work in this section for a period of one (1) year after 30 days of trouble-free operation from date of project acceptance by the Engineer. Should any equipment or material fail due to faulty workmanship or materials within this period, replace or repair that item at no cost to the State. Contractor shall be responsible for all damages to any part of the premises during equipment installation work under this section.

26.10 MATERIALS

- A. AC Unit: The AC unit fan shall be Friedrich Chill Model CP08G10B or equivalent, with a cooling capacity of 8,000 BTUH at standard ARI conditions. The AC unit shall be ENERGY STAR qualified with an EER of 12.2 and use low GWP refrigerant, R32. The unit shall be supported with wood blocking on both sides. The unit shall be mounted in the existing building opening with a maximum height x width of 1.5ft x 2ft and weigh no more than 72 lbs.
- B. Condensate Drain Piping: The condensate drain piping shall be ¾” diameter PVC. Piping shall terminate to a drywell adjacent to the building’s concrete platform on the building’s west elevation.

26.11 COOPERATION WITH OTHER TRADES AND CONFLICT IN WORK

- A. Contractor shall examine all drawings of proposed work and coordinate his work with other trades. Work conflicts shall be brought to the attention of the Engineer and work rearranged or modified in accordance with his decision.
- B. If changes in indicated locations or arrangements of work are required, they shall be made by Contractor without additional charge to the State.

26.12 EQUIPMENT INSTALLATION

- A. Install AC unit in accordance with Installation Instructions provided by the manufacturer to suit the job conditions.
- B. Necessary supports shall be provided for equipment, and appurtenances as required. These include frames or supports for the AC unit fan, and other similar type items requiring supports.
- C. Perform the following field tests and inspections and prepare test reports:
 - 1. After installing AC unit completely, perform visual and mechanical check of individual components. Except for manufacturer's nameplate data, remove any manufacturer's marketing labels.
 - 2. After electrical circuitry has been energized, start unit to confirm motor rotation and unit operation.
 - 3. Test and adjust controls and safeties. Replace damaged and malfunctioning control and equipment.
 - 4. Repair or replace malfunctioning unit and retest as specified above.
- D. Clean the outside of the AC unit of any dirt, debris, grease, grime, or other foreign material.
- E. Clean the inside of the AC unit and filter of any dirt, debris, grease, grime, or other foreign material as necessary to ensure proper operation.

26.13 CLEANUP AND REPAIRS

- A. Condensate drain line shall be leak tested. No leaks are allowed at any joints.
- B. Equipment shall be wiped clean, with all traces of oil, debris, dirt, grime, or paint spots removed. Clean the inside of the AC unit and filter of oil, debris, dirt, grime, or other foreign material as necessary to ensure proper operation.
- C. All surfaces damaged by this project's renovation work shall be repaired and restored to match the existing adjacent surfaces. Painted finishes shall be repainted with matching paint type of identical color and sheen.

26.14 PAYMENT

Payment for ARTICLE XXVI - Mechanical work shall be made as described in Article X of these Specifications.

ARTICLE XXVII - ELECTRICAL WORK

27.1 GENERAL

- A. Work under this Article consists of the furnishing and installation of electrical work, including but is not necessarily limited to, the following:
 - 1. Complete electrical system wiring including wiring devices, luminaires, overcurrent protection devices and branch circuiting.
 - 2. Underground electrical distribution system, including ductlines and conductors
 - 3. Testing.
 - 4. Immediately report and pay for damages to existing equipment and facilities.

- B. Special Conditions.
 - 1. Contractor shall arrange for Harbors Division inspection and acceptance of new work.
 - 2. The entire installation shall be done in strict accordance with local ordinances; National Electrical Code; applicable regulations of the National Board of Fire Underwriters; specifications of ANSI, NEMA, UL, and IPCEA; and regulations of the County of Hawaii.
 - 3. In the event of conflict between pertinent codes and regulations, and the requirements of the referenced standards, or those indicated in the Specifications and on Drawings, the provisions of the more stringent shall govern.

- C. Coordination.
 - 1. Refer to all project Drawings and to all sections of the project Specifications. Coordinate and fit all work accordingly so that all electrical outlets and equipment will be properly located and readily accessible. The Drawings indicate the relation of wiring and connections and must not be scaled for exact locations. Verify all construction dimensions at the project and make changes necessary to conform to the building as constructed. Work improperly installed due to lack of construction verification shall be corrected at the Contractor's expense.
 - 2. Cut, break, drill and patch as required to install electrical system. Repair any surface damaged or marred by notching, drilling or any other process

necessary for installation of electrical work. Patch any damaged surfaces to match the existing surface.

3. During pricing and construction, Contractor shall coordinate his work with other trades to avoid omissions and overlapping of responsibilities.

27.2 MATERIALS

- A. Materials shall be new and those items listed by the Underwriters' Laboratories shall bear "UL" label of approval.
- B. Electrical equipment shall be supplied through the manufacturer's designated representative by a local distributor.
- C. Proof of compliance shall be furnished when shop drawings are submitted.
- D. Where two or more similar type items are furnished, all shall be of the same manufacture, e.g., safety switches shall be of the same manufacturer unless otherwise noted.
- E. Raceways.
 1. Rigid Steel Conduit. Rigid steel, zinc-coated inside and outside, for use with threaded fittings. ANSI C80.1.
 2. Flexible Metal Conduit. Flexible steel conduit; zinc-coated inside and outside, smooth inside walls, liquid-tight with factory fittings for liquid-tight installation. Provide bushings with bonding jumper lugs for flexible conduit in excess of six feet in length. UL 360.
 3. Plastic Conduit. Polyvinyl chloride, Schedule 40.
- F. Boxes.
 1. Outlet and Small Junction Boxes. Nominal 4 inches square, 2 1/8 inches minimum depth exclusive of plaster ring, pressed steel, galvanized for corrosion protection. Surface mounted boxes and boxes exposed to the weather shall be cast steel, type FD, prime painted and enamel finished with neoprene gasketed covers, threaded hubs for conduit connections and stainless steel screws.
 2. Extension Rings for Outlet Boxes. Pressed steel, zinc-coated for corrosion protection.
- G. Conductors.
 1. Solid or stranded copper, sizes according to American Wire Gauge as shown on Drawings and #12 AWG minimum unless otherwise indicated.

Stranded conductors only for #8 AWG and larger. All wiring shall be color-coded.

2. Feeders and Underground Conductors. Type XHHW or RHW-2 unless otherwise specified.
3. Branch Circuits. Type THWN.
4. Conductors for Equipment Connection. Stranded flexible type.
5. Luminaire Wires. Per NEC.
6. Bonding Conductors. Solid bare copper wire for sizes No. 8 AWG and smaller diameter; Class B, stranded bare copper wire for sizes No. 6 AWG and larger diameter.

H. Wiring Devices.

1. General. Ratings and NEMA arrangement types as indicated. Drawings show minimum application ratings, specification describes nominal ratings.
2. Switches. Ivory, 20A, 120/277V, non-mercury quiet type, specification grade with nylon body.
3. Duplex Convenience Receptacles. Ivory, 20A, 125V, specification grade, grounding type.

I. Device Plates. Type FD outlet boxes, stainless steel screws. Gangs as required.

J. Circuit Breakers.

1. Circuit breakers, unless otherwise shown, shall be molded case, toggle mechanism operated, with no-fuse ambient-compensated thermal-magnetic overload automatic trip units for overcurrent and short-circuit protection, and contacts rated to interrupt short-circuit currents as specified on Drawings. Multi-pole breakers shall have single, common operating handle for all poles. Toggle positions "ON", "OFF" and "TRIPPED" and breaker rating engraved or embossed on body and visible without removing enclosure cover.
2. Circuit breakers installed in existing panelboards shall be of a manufacture compatible with the panelboard.
3. Provide updated, typewritten panelboard directories for all panelboards modified by the Contract.

K. Luminaires.

1. UL 1598, NEMA C82.77 and UL 8750. Provide luminaires as indicated in luminaire schedule or details on project plans. Provide luminaires complete with light sources of quantity, type, and wattage indicated. All luminaires of the same type shall be provided by the same manufacturer.
2. LED luminaires shall be rated for operation within an ambient temperature range of minus 22 degrees F to 104 degrees F.
3. Luminaires shall be UL listed for wet locations where indicated per UL 1598. Optical compartment for LED luminaires shall be sealed and rated a minimum of IP65 per NEMA IEC 60529.
4. Luminaires shall be fully assembled and electrically tested prior to shipment from factory.
5. The finish color shall be as indicated in the luminaire schedule or detail on the project plans.
6. Incorporate modular electrical connections, and construct luminaires to allow replacement of all or any part of the optics, heat sinks, power supply units, surge suppressors and other electrical components using only a simple tool, such as a manual or cordless electric screwdriver.
7. Luminaires shall have a nameplate bearing the manufacturer's name, address, model number, date of manufacture, and serial number securely affixed in a conspicuous place. The nameplate of the distributing agent will not be acceptable.
8. All factory electrical connections shall be made using crimp, locking, or latching style connectors. Twist-style wire nuts are not acceptable.
9. LED Light Sources.
 - a. Correlated Color Temperature (CCT) shall be in accordance with NEMA ANSLG C78.377. Nominal CCT: 3000 degrees K unless otherwise indicated.
 - b. Color Rendering Index (CRI). Shall be greater than or equal to 70 for 3500 degrees K light sources.
10. LED Power Supply Units (Drivers). UL 1310. LED Power Supply Units (Drivers) shall meet the following requirements.
 - a. Minimum efficiency shall be 80 percent.

- b. Shall be designed to operate on the voltage system to which they are connected, typically ranging from 120 V to 480 V nominal.
 - c. Operating frequency shall be 60 Hz.
 - d. Power Factor (PF) shall be greater than or equal to 0.90.
 - e. Total Harmonic Distortion (THD) current shall be less than or equal to 20 percent.
 - f. Shall be mounted integral to luminaire. Remote mounting of power supply is not allowed.
 - g. Shall be equipped with over-temperature protection circuit that turns light source off until normal operating temperature is achieved.
 - h. LED Luminaire Surge Protection. Provide surge protection integral to luminaire to meet C Low waveforms as defined by IEEE C62.41.2, Scenario 1, Location Category C.
 - i. A warranty must be provided for full replacement of LED luminaires, due to any failure for a period of 5 years. The warranty shall provide for the repair or replacement of the luminaire and LED power components (LED driver, light source thermal control device and surge protector).
- L. Time Switch. Shall be equipped with a self-starting synchronous drive motor, an astronomic dial calibrated for 21 degrees north latitude, an electrically wound carry-over spring mechanism providing a minimum of ten (10) hours of operation during periods of loss of power. Time switch shall be two (2) pole with forty (40) ampere contacts and timing motor voltage as required to match the lighting circuit, Time switch shall be equipped with a manual type bypass switch.
- M. Warning Tape. Pre-printed polyethylene tape marked with “CAUTION BURIED ELECTRICAL LINE BELOW,” 4 mil thick, detectable foil backed, 3” minimum width.
- N. Duct Seal. Pliable, non-toxic material used for application around and in conduits and to minimize moisture and rodent/insect infiltration. Must be re-enterable material allowing form removal/reapplication after initial installation. Non-drying, non-cracking, non-corrosive material that will not adversely affect raceways and conductors. Provide duct seal at all duct entries in handholes, apparatus and risers.

- O. Pullstring. Pullstring shall be plastic rope having a minimum tensile strength of 200 lbs. in each empty telecom duct.
- P. Ground Rods. Copper clad steel, 3/4-inch x 10 feet long minimum.
- Q. Hardware, Supports, Backing, Etc..
 - 1. Provide all hardware, supports, backing and other accessories necessary to install electrical equipment. Wood materials shall be treated against termites, iron or steel materials shall be galvanized for corrosion protection, and non-ferrous materials shall be brass or bronze.
 - 2. Bolts, nuts, washers, and screws used for exterior use shall be high quality stainless steel or brass.

27.3 CONSTRUCTION METHODS

- A. General.
 - 1. Comply with local County ordinances and regulations. Workmanship subject to approval of Harbors Division Construction Engineer who shall be afforded every opportunity to determine skill and competency.
 - 2. Construction shall conform to construction practices as recommended by American Electricians practices as recommended by American Electricians Handbook by Croft (latest edition), National Electrical Code, National Electrical Safety Code, and applicable instructions of manufacturers of equipment and materials supplied for project.
 - 3. Electrical outages shall be granted at the convenience of the Harbors Division. Requests for electrical outages shall be submitted, in writing, a minimum of two (2) weeks prior to the requested outage date, and shall be approved by the Harbors Division Construction Engineer. The request shall indicate the date and time of the requested outage, and the proposed outage duration. Contractor shall advise and/or coordinate work with the Harbors Division Construction Engineer, Harbors Hawaii District, and all users and tenants a minimum of two (2) weeks in advance.
- B. Wiring System. Unless otherwise indicated or specified herein, wiring shall consist of single conductor cables installed in conduit in areas where permitted by the National Electrical Code.

C. Raceways.

1. Use conduits with approved coupling and connectors. All cuts square, using saw. Ream the ends. Bends made with approved tools. Reject flattened or crushed conduit. No running thread. Bushing and two locknuts at connection to boxes and enclosures.
2. All raceways shall be blown and swabbed after installation to remove any water then immediately sealed to prevent water infiltration during construction. Raceways must remain sealed except when pulling conductors. If water is discovered during the warranty period the Contractor shall remove water from raceways and associated boxes at no additional cost to the State.
3. Surface mounted conduit runs to be parallel and/or perpendicular to architectural and structural elements.
4. Non-metallic conduits only permitted for exterior ductlines and beneath grade slab at building; within retaining walls in contact with earth up to the first outlet box or conduit coupling above the height of earth being retained; and within walls anchored to grade slab and not in contact with earth up to height of first outlet box or conduit coupling. Exposed installation of non-metallic conduit not permitted.
5. Minimum conduit diameter shall be 3/4-inch trade size except that 1/2-inch conduit will be permitted for branch circuit raceways with a maximum of two current carrying conductors #10 AWG and smaller.
6. Provide nylon pullstring of 200-pound minimum tensile strength in all empty conduits in excess of 15 feet in length.
7. Raceway penetrations through walls and raceway terminations shall be watertight as necessary and be caulked, sealed and made with materials approved for that purpose.

B. Boxes.

1. Plumb and securely fasten.
2. Remove all debris from interior.

C. Conductors.

1. Lubricants. Non-wax type, chemically neutral to insulation and sheath. Mechanical means for pulling to be torque-limiting type and not be used for #2 AWG and smaller wires.

2. No-solder pressure connectors or crimp connections for #8 AWG and larger wires. Remove all sharp points that can pierce tape. Reinsulate according to wire manufacturer's directions. Make splices within boxes in accessible locations.
 3. Clean all raceways, boxes, and enclosures before pulling wires and cables. Form neatly in enclosures for minimum of cross-overs.
- D. Luminaires. Set luminaires plumb, square, and level with ceiling and walls, in alignment with adjacent luminaires, and secure in accordance with manufacturers' directions and accepted shop drawings. The installation shall meet with the requirements of NFPA 70. Mounting heights specified or indicated shall be to bottom of luminaire for ceiling-mounted luminaires and to center of luminaire for wall-mounted luminaires. Obtain approval of the exact mounting for each luminaire on the job before installation is commenced.
- E. Underground Ductlines.
1. PVC ductlines shall be jacketed and shall be installed by qualified electricians. Coat tapered ends of ducts or conduits with sealing compound before coupling is applied to insure watertight joint. Concrete shall be poured without the use of mechanical vibrators. Tamp concrete manually with wooden rods. Thickness of concrete encasement shown is minimum and may be increased to fit actual shape of trench.
 2. The top of the ductline shall be at a minimum depth as indicated on drawings.
 3. Duct lines shall have a continuous slope downward away from buildings with a pitch of not less than 3 inches in 100 feet. Except at conduit risers, accomplish changes in direction of runs exceeding a total of 10 degrees, either vertical or horizontal, by long sweep bends having a minimum radius of curvature of 25 feet. Sweep bends may be made up of one or more curved or straight sections or combinations thereof. Manufactured bends shall have a minimum radius of 18 inches for use with conduits of less than 3 inches in diameter and a minimum radius of 36 inches for ducts of 3 inches in diameter and larger.
 4. Separators shall be of precast concrete, high impact polystyrene, steel, or any combination of these. Stagger the joints of the conduits by rows and layers so as to provide a duct line having the maximum strength. After laying, bind ducts with #12 wire and anchor to prevent movement during concrete pouring. During construction, protect partially completed duct lines from the entrance of debris such as mud, sand and dirt by means of suitable conduit plugs.

5. The concrete encasement surrounding the ductbank shall be rectangular in cross-section and shall provide at least 3 inches of concrete cover for ducts. Separate conduits by a minimum concrete thickness of 2 inches for conduits of similar systems and 3 inches between power and signal systems.
6. Mandrel Test. After new ductline is complete, draw bristle brush through ductline and perform mandrel test. Mandrel shall be a wooden plug, 8-inch minimum length, with a diameter 1/2 inch less than duct inside diameter. Perform test on all new ducts 2 inch and larger. After this, pull brush with stiff bristles through to make certain that no particles of earth, sand, or gravel have been left in line.

B. Underground Conductors.

1. Cable Pulling. Pull cables down grade with the feed-in point at the building of the highest elevation. Use flexible cable feeds to convey cables through the handhole opening and into the duct runs. Cable slack shall be accumulated at each handhole or junction box where space permits by training the cable around the interior to form one complete loop. Minimum allowable bending radii shall be maintained in forming such loops.
2. Lubricants for assisting in the pulling of jacketed cables shall be those specifically recommended by the cable manufacturer. The lubricant shall not be deleterious to the cable sheath, jacket, or outer coverings.
3. Cable pulling tensions shall not exceed the maximum pulling tension recommended by the cable manufacturer.
4. Pullstring. Provide all empty conduits with a plastic pullstring. Provide 48 inches of coiled spare at each end of the pull.
5. Cable Terminating. Protect terminations of insulated power cables from accidental contact, deterioration of coverings and moisture by the use of terminating devices and materials. Install all terminations of insulated power cables and cable splices in accordance with the manufacturer's requirements. Make terminations using materials and methods as indicated or specified herein or as designated by the written instructions of the cable manufacturer and termination kit manufacturer.

C. Boxes and Enclosures. Boxes to be plumb. Close all unused knockout holes.

D. Grounding.

1. Provide grounding for entire electrical installation as required by Article 250 of the National Electrical Code.
2. Final connection to equipment, raceways, and other metallic parts directly exposed to ungrounded electric conductors shall be No. 12 AWG minimum, copper, NEC type TW, green insulation. Use approved bonding terminal at panels. Ground metallic enclosures, raceways and electrical equipment according to requirements of National Electrical Code, Article 250.
3. Ground connections to equipment, raceways, motors, and other metallic parts directly exposed to ungrounded conductors by insulated conductors, No. 12 minimum, AWG copper, NEC Type TW, green insulation. Provide insulated ground wires within raceways. Run equipment ground wires together with circuit conductors.
4. All grounding wire runs shall be routed together with circuit conductors.
5. Install green-insulated equipment grounding conductor in all conduits. Conductor sizes per Article 250 of the National Electrical Code.

E. Finishing.

1. All cutting that may be required for the complete installation of the electrical work shall be carefully performed and all patching shall be finished to match existing conditions.
2. Close unused knockouts in boxes or enclosures with metal cap.
3. Wipe clean all new exposed raceways and enclosures with rag and solvent. New unfinished raceways and enclosures shall be prime-painted and finished to blend into background. (Do not cover nameplates.) Factory finished enclosures shall not be painted.

F. Miscellaneous Details.

1. Provide necessary foundations, supports, backing, etc., for all raceways and equipment. Attach to wood and steel by screws or bolts. Attach to concrete by expansion anchors. Powder charge driven studs and anchors shall not be used.
2. Clean all surfaces of enclosures and equipment.
3. Close all unused knockout holes.

4. All surface-mounted boxes, enclosures, and exposed raceways shall be painted to match the color of surrounding areas. Luminaires shall not be painted.

G. Connections to Equipment Provided by Other Trades.

1. Electrical Contractor shall provide conduit, wiring and all electrical connections from building wiring to motors for ventilation, air conditioning, and other equipment, including all switches, motor protection devices, as specified by other trades.
2. Electrical Contractor shall ascertain from other trades furnishing motor-driven equipment, the exact size and type of all motors, the exact locations of such equipment and the proper point where electrical connections should be brought through the floors or walls, as the case may be. Locations shown are diagrammatic only; correct locations shall be the full responsibility of the Electrical Contractor.
3. Examine Mechanical, Architectural, and other Drawings and Specifications for information concerning motors and control apparatus and diagrams.
4. Install individually mounted starters furnished for motors under other Articles. Provide and install safety switches as necessary for each such motor.
5. All control devices and control wiring shall be provided as described in the installation manuals of equipment and/or the Drawings and Specifications of other trades and disciplines.

H. Testing.

1. Upon completion of this portion of work, and prior to its acceptance by the State, make all required tests. Any deficiencies found shall be rectified and work affected by such deficiencies shall be completely retested at Contractor's expense. Written notification of all proposed tests shall be provided to the Engineer a minimum of seven (7) days prior to the date of the test.
2. Demonstrate operation of electrical systems. Provide labor, apparatus and equipment for systems' demonstrations. The various tests shall be under the direction of the Construction Engineer.
3. A visual inspection of all electrical equipment, to check for foreign material, tightness or wiring and connection, proper grounding, etc. shall be made prior to actual testing.

27.4 PAYMENT - Payment for ARTICLE XXVII - Electrical Work shall be made as described in Article X of these Specifications.

ARTICLE XXVIII – PHOTOS OF EXISTING CONDITIONS



View from entrance driveway of existing guard shack.



Front view of existing guard shack.
Note window A/C opening in wall and concrete base.



Side and rear view of existing guard shack.
Note concrete base, landing, and downspouts.



Surface corrosion at base of wall panel.



Existing guard shack on concrete base.



Surface corrosion at sliding window.



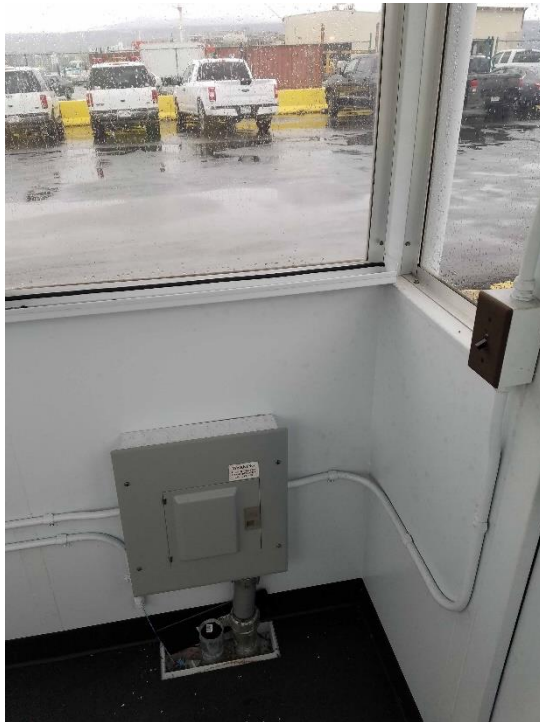
Surface corrosion at sliding window jamb.



Surface corrosion at wall panel.



Surface corrosion at attic vent.



Existing electrical panel and stub up.



Existing electrical panel and stub up.



Existing countertop, window AC opening infill panel, electrical conduits and junction boxes.



Existing countertop, window AC opening infill panel, electrical conduits and junction boxes.



Existing sliding window at driveway side of guard shack. Note painted concrete barriers in background to be relocated.





Existing prefabricated guard shack on traffic island.
Note concrete barriers to be relocated at right.

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(b), HRS; §12-22-10, HAR]
 - the name and home address of each employee
 - the last four digits of social security number
 - a copy of the apprentice's registration with DLIR
 - the employee's correct classification
 - rate of pay (basic hourly rate + fringe benefits)
 - itemized list of fringe benefits paid
 - daily and weekly hours worked
 - weekly straight time and overtime earnings
 - amount and type of deductions
 - total net wages paid
 - date of payment
- Records shall be made available for examination by the contracting agency, the Department of Labor and Industrial Relations (DLIR), or any of its authorized representatives, who may also interview employees during working hours on the job. [§§104-3(c), 104-22(a), HRS; §12-22-10, HAR]

Termination of Work on Failure to Pay Wages

- If the contracting agency finds that any laborer or mechanic employed on the job site by the contractor or any subcontractor has not been paid prevailing wages or overtime, the contracting agency may, by written notice to the contractor, terminate the contractor's or subcontractor's right to proceed with the work or with the part of the work in which the required wages or overtime compensation have not been paid. The contracting agency may complete this work by contract or otherwise, and the contractor or contractor's sureties shall be liable to the contracting agency for any excess costs incurred. [§104-4, HRS]

Apprentices

- Apprentice wage rates apply to contractors who are a party to a bona fide apprenticeship program which has been registered with the DLIR. In order to be paid apprentice rates, apprentices must be parties to an agreement either registered with or recognized as a USDOL nationally approved apprenticeship program by the DLIR, Workforce Development Division, (808) 586-8877, and the apprentice must be individually registered by name with the DLIR. [§12-22-6(1) and (2), HAR]
- The number of apprentices on any public work in relation to the number of journeyworkers in the same craft classification as the apprentices employed by the same employer on the same public work may not exceed the ratio allowed under the apprenticeship standards registered with or recognized by the DLIR. A registered or recognized apprentice receiving the journeyworker rate will not be considered a journeyworker for the purpose of meeting the ratio requirement. [§12-22-6(3), HAR]

Enforcement

- To ensure compliance with the law, DLIR and the contracting agency will conduct investigations of contractors and subcontractors. If a contractor or subcontractor violates the law, the penalties are: [§104-24, HRS]
 - First Violation Equal to 25% of back wages found due or \$250 per offense up to \$2,500, whichever is greater.
 - Second Violation Equal to amount of back wages found due or \$500 for each offense up to \$5,000, whichever is greater.
 - Third Violation Equal to two times the amount of back wages found due or \$1,000 for each offense up to \$10,000, whichever is greater; and
Suspension from doing any new work on any public work of a governmental contracting agency for three years.
- A violation would be deemed a second violation if it occurs within two years of the **first notification of violation**, and a third violation if it occurs within three years of **the second notification of violation**. [§104-24, HRS; §12-22-25(b), HAR]
- **Suspension:** For a first or second violation, the department shall immediately suspend a contractor who fails to pay wages or penalties until all wages and penalties are paid in full. For a third violation, the department shall penalize and suspend the contractor as described above, **except that if the contractor continues to violate the law, then the department shall immediately suspend the contractor for a mandatory three years. The contractor shall remain suspended until all wages and penalties are paid in full.** [§§104-24, 104-25, HRS]
- **Suspension:** Any contractor who fails to make payroll records accessible or provide requested information within 10 days, or fails to keep or falsifies any required record, shall be assessed a penalty including suspension as provided in Section 104-22(b) and 104-25(a)(3), HRS. [§104-3(c), HRS; §12-22-26, HAR]
- If any contractor interferes with or delays any investigation, the contracting agency shall withhold further payments until the delay has ceased. Interference or delay includes failure to provide requested records or information within ten days, failure to allow employees to be interviewed during working hours on the job, and falsification of payroll records. The department shall assess a penalty of \$10,000 per project, and \$1,000 per day thereafter, for interference or delay. [§104-22(b), HRS; §12-22-26, HAR]
- Failure by the contracting agency to include in the provisions of the contract or specifications the requirements of Chapter 104, HRS, relating to coverage and the payment of prevailing wages and overtime, is not a defense of the contractor or subcontractor for noncompliance with the requirements of this chapter. [§104-2(f), HRS]

For additional information, visit the department's website at <http://labor.hawaii.gov/wsd> or contact any of the following DLIR offices:



Oahu (Wage Standards Division).....(808) 586-8777
Hawaii Island(808) 974-6464
Maui and Kauai(808) 243-5322

PROPOSAL TO THE STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HARBORS DIVISION

PROJECT: REPAIR GUARD SHACK, HILO HARBOR
ISLAND OF HAWAII, HAWAII

JOB NO: H. C. 50173

COMPLETION TIME: All work shall be completed within THREE HUNDRED THIRTY (330) CALENDAR DAYS from the date indicated in the Notice to Proceed from the Department.

LIQUIDATED DAMAGES: TWO HUNDRED TWENTY-FIVE DOLLARS (\$225.00) for each and every calendar day which the Contractor has delayed the completion of this project.

ELECTRONIC SUBMITTAL: The bidder shall submit the proposal in HIePRO. The Proposal shall be UPLOADED to HIePRO prior to the bid opening date and time. See SPECIAL PROVISIONS - Section 2.8 PREPARATION AND DELIVERY OF BID - for additional information.

DESIGN PROJECT MANAGER: MR. GREGG HIROKAWA
DEPARTMENT OF TRANSPORTATION
HARBORS DIVISION
HALE AWA MOKU
79 S. NIMITZ HIGHWAY
HONOLULU, HAWAII 96813
PHONE: (808) 587-1985
EMAIL: gregg.hirokawa@hawaii.gov

Director of Transportation
869 Punchbowl Street
Honolulu, Hawaii 96813

Dear Sir:

The undersigned Bidder declares the following:

1. It has not, either directly or indirectly, entered into any agreement, participated in any collusion, or otherwise taken any action in restraint of free competitive bidding in connection with this proposal.
2. It has not been assisted or represented on this matter by any individual who has, in a State capacity, been involved in the subject matter of this contract within the past two years.
3. It has not and will not, either directly or indirectly offered or given a gratuity (i.e. an entertainment or gift) to any State or County employee to obtain a contract or favorable treatment under a contract.

The undersigned Bidder further agrees to the following:

1. If this proposal is accepted, it shall execute a contract with the Department to provide all necessary labor, machinery, tools, equipment, apparatus and any other means of construction, to do all the work and to furnish all the materials specified in the contract in the manner and within the time therein prescribed in the contract, and that it shall accept in full payment therefore the sum of the unit and/or lump sum prices as set forth in the attached proposal schedule for the actual quantities of work performed and materials furnished and furnish satisfactory security in accordance with Section 103D-324, Hawaii Revised Statutes, within 10 days after the award of the contract or within such time as the Director of Transportation may allow after the undersigned has received the contract documents for execution, and is fully aware that non-compliance with the aforementioned terms will result in the forfeiture of the full amount of the bid guarantee required under Section 103D-323, Hawaii Revised Statutes.
2. That the quantities given in the attached proposal schedule are approximate only and are intended principally to serve as a guide in determining and comparing the bids.
3. That the Department does not either expressly or by implication, agree that the actual amount of work will correspond therewith, but reserves the right to increase or decrease the amount of any class or portion of the work, or to omit portions of the work, as may be deemed necessary or advisable by the Director of Transportation, and that all increased or decreased quantities of work shall be performed at the unit prices set forth in the attached proposal schedule except as provided for in the specifications.

4. In case of a discrepancy between unit prices and the totals in said Proposal Schedule, the unit prices shall prevail.
5. Agrees to begin work within 10 working days after the date of notification to commence with the work, which date is in the notice to proceed, and shall finish the entire project within the time prescribed.
6. The Director of Transportation reserves the right to reject any or all bids and to waive any defects when in the Director's opinion such rejections or waiver will be for the best interest of the public.

The Bidder acknowledges receipt of and certifies that it has completely examined the following listed items: the Hawaii Department of Transportation, Air and Water Transportation Facilities Division General Provisions for Construction Projects dated 2016, the Notice to Bidders, the Special Provisions, if any, the Technical Provisions, the Proposal, the Contract and Bond Forms, and the Project Plans.

In accordance with Section 103D-323, Hawaii Revised Statutes, this proposal is accompanied with a bid security in the amount of 5% of the total amount bid, in the form checked below. (Check applicable bid security submitted with bid.)

Surety Bid Bond (Use standard form),

Cash,

Cashier's Check,

Certified Check, or

(Fill in other acceptable security.)

The undersigned Bidder acknowledges receipt of any addendum issued by the Department by recording in the space below the date of receipt.

Addendum No. 1 _____

Addendum No. 3 _____

Addendum No. 2 _____

Addendum No. 4 _____

In accordance with Section 103D-302, Hawaii Revised Statutes, the undersigned as Bidder, has listed the name of each person or firm, who will be engaged by the Bidder on the project as a Subcontractor or Joint Contractor and the nature of work to be done by each. The Bidder must adequately and unambiguously disclose the unique nature and scope of the work to be performed by each Subcontractor or Joint Contractor. For each listed firm, the Bidder declares the respective firm is a Subcontractor or Joint Contractor and is subject to evaluation as a Subcontractor or Joint Contractor. It is understood that failure to comply with the aforementioned requirements may be cause for rejection of the bid submitted.

<u>Name of Subcontractor</u>	<u>Nature and Scope of Work</u>
1. _____	_____
2. _____	_____
3. _____	_____
4. _____	_____
5. _____	_____
6. _____	_____
7. _____	_____
8. _____	_____

<u>Name of Joint Contractor</u>	<u>Nature and Scope of Work</u>
1. _____	_____
2. _____	_____
3. _____	_____

("None" or if left blank indicates no Subcontractor or Joint Contractor; if more space is needed, attach additional sheets.)

The undersigned hereby certifies that the bid prices contained in the attached proposal schedule have been carefully checked and are submitted as correct and final.

This declaration is made with the understanding that the undersigned is subject to the penalty of perjury under the laws of the United States and is in violation of the Hawaii Penal Code, Section 710-1063, unsworn falsification to authorities, of the Hawaii Revised Statutes, for knowingly rendering a false declaration.

Bidder (Company Name)

By _____
Authorized Signature

Print Name and Title

Business Address

Business Telephone Email

Date

Contact Person (If different from above)

Phone: _____ Email: _____

NOTE:

If Bidder is a CORPORATION, the legal name of the corporation shall be set forth above, the corporate seal affixed, together with the signature(s) of the officer(s) authorized to sign contracts for the corporation. Please attach to this page current (not more than six months old) evidence of the authority of the officer(s) to sign for the corporation.

If Bidder is a PARTNERSHIP, the true name of the partnership shall be set forth above, with the signature(s) of the general partner(s). Please attach to this page current (not more than six months old) evidence of the authority of the partner authorized to sign for the partnership.

If Bidder is an INDIVIDUAL, the bidder's signature shall be placed above.

If signature is by an agent, other than an officer of a corporation or a partner of a partnership, a POWER OF ATTORNEY must be on file with the Department before opening bids or submitted with the bid. Otherwise, the Department may reject the bid as irregular and unauthorized.

PREFERENCES

Bidders agree that preferences shall be taken into consideration to determine the low bidder in accordance with said Sections and the rules promulgated, however, the award of contract will be in the amount of the bid offered exclusive of any preferences.

A. HAWAII PRODUCTS PREFERENCE

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

B. APPRENTICESHIP PROGRAMS PREFERENCE

In accordance with ACT 17, SLH 2009 – Apprenticeship Program, a 5% bid adjustment for bidders that are parties to apprenticeship agreements pursuant to Hawaii Revised Statutes (HRS) Section 103-55.6 may be applied to the bidder's price for evaluation purposes.

Any bidder seeking this preference must be a party to an apprenticeship agreement registered with the Department of Labor and Industrial Relations at the time the offer is made for each apprenticeable trade the bidder will employ to construct the public works projects for which the offer is being made.

The bidder is responsible for complying with all submission requirements for registration of its apprenticeship program before requesting the preference.

Yes, I wish to be considered for the Apprenticeship Programs Preference. I have included Certification Form(s) 1 with my bid.

C. RECYCLED PRODUCT PREFERENCE

Recycled product preference shall not apply to this proposal.

REPAIR GUARD SHACK
HILO HARBOR
ISLAND OF HAWAII, HAWAII

JOB H. C. 50173

PROPOSAL SCHEDULE

	DESCRIPTION	QUANTITY/UNIT	AMOUNT BID
1.	Mobilization and Demobilization	LUMP SUM	\$ _____
2.	Selective Demolition	LUMP SUM	\$ _____
3.	Concrete Jersey Barriers, Fencing and Gate, Barbed Wire, Pavement, Curbs, Tire Spike Strips, Wheel Stops, Traffic Signs with Posts, ADA Detectable Warning Panels and ADA Signage, Bollards, and Pavement Markings Work	LUMP SUM	\$ _____
4.	New Concrete Landings, Stairs, Platform, Equipment Pad, and Canopy Foundation	LUMP SUM	\$ _____
5.	New Steel Canopy	LUMP SUM	\$ _____
6.	New Galvanized Pipe Guardrails and Handrails	LUMP SUM	\$ _____
7.	New Prefabricated Steel Guard Booth	LUMP SUM	\$ _____
8.	New Electric Gate Operator	LUMP SUM	\$ _____
9.	Painting Work	LUMP SUM	\$ _____
10.	Mechanical Work	LUMP SUM	\$ _____
11.	Electrical Work	LUMP SUM	\$ _____
TOTAL AMOUNT FOR COMPARISON OF BIDS			\$ _____

NOTES:

The bidder shall submit the proposal in HiePRO. The proposal shall be UPLOADED to HiePRO prior to the bid opening date and time. Proposals received after said due date and time shall not be considered. Original (wet ink) proposal documents are not required to be submitted. The award will be made based on proposals uploaded in HiePRO. Any and all other additional documents explicitly designated and labeled as CONFIDENTIAL OR PROPRIETARY shall be UPLOADED SEPARATELY to HiePRO.

Bid to include all Federal, County and other applicable taxes and fees.

The TOTAL AMOUNT FOR COMPARISON OF BIDS will be used to determine the lowest responsible bidder.

Bidders must complete all unit prices and amounts. Failure to do so may be grounds for rejection of bid.

If the lowest TOTAL AMOUNT FOR COMPARISON OF BIDS exceeds the funds available for this project, the State reserves the right to negotiate with the lowest responsible bidder as permitted under Section 103D-302, Hawaii Revised Statutes, as amended, to reduce the scope of work and award a contract.

Submission of Proposal 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.

No additional compensation will be paid by the State for losses, including overhead and profit, resulting from reduced scope of work.

Contract time shall remain the same whether or not the overall scope of work is decreased.

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

HONOLULU, HAWAII

SAMPLE FORMS

PERFORMANCE BOND (SURETY)
(6/21/07)

KNOW TO ALL BY THESE PRESENTS:

That _____,
(Full Legal Name and Street Address of Contractor)

as Contractor, hereinafter called Principal, and _____

(Name and Street Address of Bonding Company)

as Surety, hereinafter called Surety, a corporation(s) authorized to transact business as a
surety in the State of Hawaii, are held and firmly bound unto the _____,
(State/County Entity)

its successors and assigns, hereinafter called Obligee, in the amount of _____

_____ DOLLARS (\$ _____), to which payment Principal and Surety bind themselves,
their heirs, executors, administrators, successors and assigns, jointly and severally, firmly by
these presents.

WHEREAS, the above-bound Principal has signed a Contract with Obligee on
_____, for the following project: _____

hereinafter called Contract, which Contract is incorporated herein by reference and made a part
hereof.

NOW THEREFORE, the condition of this obligation is such that:

If the Principal shall promptly and faithfully perform, and fully complete the Contract in
strict accordance with the terms of the Contract as said Contract may be modified or amended
from time to time; then this obligation shall be void; otherwise to remain in full force and effect.

Surety to this Bond hereby stipulates and agrees that no changes, extensions of time, alterations, or additions to the terms of the Contract, including the work to be performed thereunder, and the specifications or drawings accompanying same, shall in any way affect its obligation on this bond, and it does hereby waive notice of any such changes, extensions of time, alterations, or additions, and agrees that they shall become part of the Contract.

In the event of Default by the Principal, of the obligations under the Contract, then after written Notice of Default from the 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 Oblige, in the amount of _____

_____ Dollars (\$_____), to which payment Principal and Surety bind themselves, their heirs, executors, administrators, successors and assigns, jointly and severally, firmly by these presents.

WHEREAS, the above-bound Principal has signed Contract with the Oblige on _____ for the following project: _____

hereinafter called Contract, which Contract is incorporated herein by reference and made a part hereof.

NOW THEREFORE, the condition of this obligation is such that if the Principal shall promptly make payment to any Claimant, as hereinafter defined, for all labor and materials supplied to the Principal for use in the performance of the Contract, then this obligation shall be void; otherwise to remain in full force and effect.

1. Surety to this Bond hereby stipulates and agrees that no changes, extensions of time, alterations, or additions to the terms of the Contract, including the work to be performed thereunder, and the specifications or drawings accompanying same, shall in any way affect its obligation on this bond, and it does hereby waive notice of any such changes, extensions of time, alterations, or additions, and agrees that they shall become part of the Contract.

2. A "Claimant" shall be defined herein as any person who has furnished labor or materials to the Principal for the work provided in the Contract.

Every Claimant who has not been paid amounts due for labor and materials furnished for work provided in the Contract may institute an action against the Principal and its Surety on this bond at the time and in the manner prescribed in Section 103D-324, Hawaii Revised Statutes, and have the rights and claims adjudicated in the action, and judgment rendered thereon; subject to the Obligee's priority on this bond. If the full amount of the liability of the Surety on this bond is insufficient to pay the full amount of the claims, then after paying the full amount due the Obligee, the remainder shall be distributed pro rata among the claimants.

Signed this _____ day of _____, _____.

(Seal)

Name of Principal (Contractor)

*

Signature

Title

(Seal)

Name of Surety

*

Signature

Title

***ALL SIGNATURES MUST BE ACKNOWLEDGED
BY A NOTARY PUBLIC**

LABOR AND MATERIAL PAYMENT BOND

KNOW TO ALL BY THESE PRESENTS:

That we, _____
(full legal name and street address of Contractor)

as Contractor, hereinafter called Contractor, is held and firmly bound unto _____
(State/County entity)

its successors and assigns, as Obligee, hereinafter called Obligee, in the amount
_____ DOLLARS (\$ _____)
(Dollar amount of Contract)

lawful money of the United States of America, for the payment of which to the said Obligee, well and truly to be made, Contractor binds itself, its heir, executors, administrators, successors and assigns, firmly by these presents. Said amount is evidenced by:

- Legal Tender;
- Share Certificate unconditionally assigned to or made payable at sight to _____
Description: _____
- Certificate of Deposit, No. _____, dated _____ issued by _____ drawn on _____ a bank, savings institution or credit union insured by the Federal Deposit Insurance Corporation or the National Credit Union Administration, payable at sight or unconditionally assigned to _____;
- Cashier's Check No. _____, dated _____ drawn on _____ a bank, savings institution or credit union insured by the Federal Deposit Insurance Corporation or the National Credit Union Administration, payable at sight or unconditionally assigned to _____;
- Teller's Check No. _____, dated _____ drawn on _____ a bank, savings institution or credit union insured by the Federal Deposit Insurance Corporation or the National Credit Union Administration, payable at sight or unconditionally assigned to _____;
- Treasurer's Check No. _____, dated _____ drawn on _____ a bank, savings institution or credit union insured by the Federal Deposit Insurance Corporation or the National Credit Union Administration, payable at sight or unconditionally assigned to _____;
- Official Check No. _____, dated _____ drawn on _____ a bank, savings institution or credit union insured by the Federal Deposit Insurance Corporation or the National Credit Union Administration, payable at sight or unconditionally assigned to _____;
- Certified Check No. _____, dated _____ accepted by a bank, savings institution or credit union insured by the Federal Deposit Insurance Corporation or the National Credit Union Administration, payable at sight or unconditionally assigned to _____;

WHEREAS:

The Contractor has by written agreement dated _____ entered into a contract with Obligee for the following Project: _____

hereinafter called Contract, which Contract is incorporated herein by reference and made a part hereof.

NOW THEREFORE,

The condition of this obligation is such that, if Contractor shall promptly and faithfully perform the Contract in accordance with, in all respects, the stipulations, agreements, covenants and conditions of the Contract as it now exists or may be modified according to its terms, free from all liens and claims and without further cost, expense or charge to the Obligee, its officers, agents, successors or assigns, free and harmless from all suits or actions of every nature and kind which may be brought for or on account of any injury or damage, direct or indirect, arising or growing out of the doing of said work or the repair or maintenance thereof or the manner of doing the same or the neglect of the Contractor or its agents or servants or the improper performance of the Contract by the Contractor or its agents or servants or from any other cause, then this obligation shall be void; otherwise it shall be and remain in full force and effect.

AND IT IS HEREBY STIPULATED AND AGREED that suit on this bond may be brought before a court of competent jurisdiction without a jury, and that the sum or sums specified in the said Contract as liquidated damages, if any, shall be forfeited to the Obligee, its successors or assigns, in the event of a breach of any, or all, or any part of, covenants, agreements, conditions, or stipulations contained in the Contract or in this bond in accordance with the terms thereof.

AND IT IS HEREBY STIPULATED AND AGREED that this bond shall inure to the benefit of any and all persons entitled to file claims for labor performed or materials furnished in said work so as to give any and all such persons a right of action as contemplated by Sections 103D-324(d) and 103D-324(e), Hawaii Revised Statutes.

The amount of this bond may be reduced by and to the extent of any payment or payments made in good faith hereunder, inclusive of the payments of mechanics' liens which may be filed of record against the Project, whether or not claim for the amount of such lien be presented under and against this bond..

Signed this _____ day of _____, _____.

(Seal) _____

Name of Contractor

Signature*

Title

ALL SIGNATURES MUST BE ACKNOWLEDGED BY A NOTARY PUBLIC

CHAPTER 104, HRS COMPLIANCE CERTIFICATE

The undersigned bidder does hereby certify to the following:

1. Individuals engaged in the performance of the contract on the job site shall be paid:
 - A. Not less than the wages that the director of labor and industrial relations shall have determined to be prevailing for corresponding classes of laborers and mechanics employed on public works projects; and
 - B. Overtime compensation at one and one-half times the basic hourly rate plus fringe benefits for hours worked on Saturday, Sunday, or a legal holiday of the State or in excess of eight hours on any other day.
2. All applicable laws of the federal and state governments relating to workers' compensation, unemployment compensation, payment of wages, and safety shall be fully complied with.

DATED at Honolulu, Hawaii, this _____ day of _____, 20__.

«CONTRACTOR»
Name of Corporation, Partnership, or Individual

Signature and Title of Signer

Notary Seal
NOTARY ACKNOWLEDGEMENT

Subscribed and sworn before me this _____ day of _____
Notary signature _____
Notary public, State of _____
My Commission Expires: _____

Notary Seal
NOTARY CERTIFICATION

Doc. Date: _____ #Pages: _____
Notary Name: _____ Circuit _____
Doc. Description: _____

Notary signature _____
Date _____

PROVISIONS TO BE INCLUDED IN CONSTRUCTION PROCUREMENT SOLICITATIONS

1. Definitions for terms used in HRS Chapter 103B as amended by Act 192, SLH 2011:
 - a. "Contract" means contracts for construction under 103D, HRS.
 - b. "Contractor" has the same meaning as in Section 103D-104, HRS, provided that "contractor" includes a subcontractor where applicable.
 - c. "Construction" has the same meaning as in Section 103D-104, HRS.
 - d. "General Contractor" means any person having a construction contract with a governmental body.
 - e. "Procurement Officer" has the same meaning as in Section 103D-104, HRS.
 - f. "Resident" means a person who is physically present in the State of Hawai'i at the time the person claims to have established the person's domicile in the State of Hawai'i and shows the person's intent is to make Hawai'i the person's primary residence.
 - g. "Shortage trade" means a construction trade in which there is a shortage of Hawai'i residents qualified to work in the trade as determined by the Department of Labor and Industrial Relations.

2. HRS Chapter 103B as amended by Act 192, SLH 2011--Employment of State Residents Requirements:
 - a. A Contractor awarded a contract shall ensure that Hawai'i residents comprise not less than 80% of the workforce employed to perform the contract work on the project. The 80% requirement shall be determined by dividing the total number of hours worked on the contract by Hawai'i residents, by the total number of hours worked on the contract by all employees of the Contractor in the performance of the contract. The hours worked by any Subcontractor of the Contractor shall count towards the calculation for this section. The hours worked by employees within shortage trades, as determined by the Department of Labor and Industrial Relations (DLIR), shall not be included in the calculation for this section.

- b. Prior to award of a contract, an Offeror/Bidder may withdraw an offer/bid without penalty if the Offeror/Bidder finds that it is unable to comply with HRS Chapter 103B as amended by Act 192, SLH 2011.
- c. Prior to starting any construction work, the Contractor shall submit the subcontract dollar amount for each of its Subcontractors.
- d. The requirements of this section shall apply to any subcontract of \$50,000 or more in connection with the Contractor; that is, such Subcontractors must also ensure that Hawai'i residents comprise not less than 80% of the Subcontractor's workforce used to perform the subcontract.
- e. The Contractor and any Subcontractor whose subcontract is \$50,000 or more shall comply with the requirements of HRS Chapter 103B as amended by Act 192, SLH 2011.
 - 1) Certification of compliance shall be made in writing under oath by an officer of the General Contractor and applicable Subcontractors and submitted with the final payment request.
 - 2) The certification of compliance shall be made under oath by an officer of the company by completing a "Certification of Compliance for Employment of State Residents" form and executing the Certificate before a licensed notary public.
 - 3) In addition to the certification of compliance as indicated above, the Contractor and Subcontractors shall maintain records such as certified payrolls for laborers and mechanics who performed work at the site and time sheets for all other employees who performed work on the project. These records shall include the names, addresses and number of hours worked on the project by all employees of the Contractor and Subcontractor who performed work on the project to validate compliance with HRS Chapter 103B as amended by Act 192, SLH 2011. The Contractor and Subcontractors shall retain these records and provide access to the State for a minimum period of four (4) years after the final payment, except that if any litigation, claim, negotiation, investigation, audit or other action involving the records has been started before the expiration of the four-year period, the Contractor and Subcontractors shall retain the records until completion of the action and resolution of all issues that arise from it, or until the end of the four-year period, whichever occurs later. Furthermore, it shall be the Contractor's responsibility to enforce compliance with this provision by any Subcontractor.

- f. A General Contractor or applicable Subcontractor who fails to comply with this section shall be subject to any of the following sanctions:
- 1) With respect to the General Contractor, withholding of payment on the contract until the Contractor or its Subcontractor complies with HRS Chapter 103B as amended by Act 192, SLH 2011.
 - 2) Proceedings for debarment or suspension of the Contractor or Subcontractor under Hawai'i Revised Statutes §103D-702.
3. Conflict with Federal Law: This section shall not apply if the application of this section is in conflict with any federal law, or if the application of this section will disqualify the State from receiving Federal funds or aid.

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

Project Title: _____

Agency Project No: _____

Contract No.: _____

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

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

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

CORPORATE SEAL

(Name of Company)

(Signature)

(Print Name)

(Print Title)

Subscribed and sworn to me before this
____ day of _____, 2011.

Doc. Date: _____ # of Pages _____ 1st Circuit

Notary Name: _____

Doc. Description: _____

Notary Public, 1st Circuit, State of Hawai'i
My commission expires: _____

Notary Signature

Date

NOTARY CERTIFICATION