

COMMISSION ON WATER RESOURCE MANAGEMENT

State of Hawaii  
DEPARTMENT OF LAND AND NATURAL RESOURCES  
ENGINEERING DIVISION  
Honolulu, Hawaii

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BOARD OF LAND AND NATURAL RESOURCES

Dawn N.S. Chang  
Chairperson

CONTRACT SPECIFICATIONS AND PLANS

JOB NO. F58C631E  
WAILOA RIVER SRA WAR MEMORIAL IMPROVEMENTS  
HILO, HAWAII

Architect: Engineering Partners Inc.  
Civil Engineer: Engineering Partners Inc.  
Structural Engineer: Engineering Partners Inc.  
Landscape Architect: John Mossman Design, Inc.  
Environmental Consultant: Enviro Services  
Land Survey: Engineering Partners Inc.

May 2024

State of Hawaii  
DEPARTMENT OF LAND AND NATURAL RESOURCES  
ENGINEERING DIVISION  
Honolulu, Hawaii

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CONTRACT SPECIFICATIONS AND PLANS

JOB NO. F58C631E  
WAILOA RIVER SRA WAR MEMORIAL IMPROVEMENTS  
HILO, HAWAII

Approved: *Curt Cottrell*  
CURT A. COTTRELL  
Administrator  
Division of State Parks

Approved: *CS*  
CARTY S. CHANG, P.E.  
Chief Engineer  
Engineering Division

May 2024

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NOTICE TO BIDDERS  
(Chapter 103D, HRS)

COMPETITIVE BIDS for Job No. F58C631E, Wailoa River SRA War Memorial Improvements, Hilo, Hawaii, shall be submitted to the Department of Land and Natural Resources, Engineering Division on the specified date and time through the Hawaii State e-Procurement (HIePRO). HIePRO is accessible through the State Procurement Office website at [www.spo.hawaii.gov](http://www.spo.hawaii.gov).

The Department of Land and Natural Resources Interim General Condition, dated October 1994, as amended, and the General Conditions –AG008, latest revision shall be made part of the specifications.

The project is located within Wailoa River State Recreation Area in Hilo, Hawaii (tax map key (3) 2-2-013:003).

The work shall generally consist of installation of flag poles and contiguous accessible route between the existing Korean War Memorial and Vietnam War Memorial.

To be eligible to submit a bid, the Bidder must possess a valid State of Hawaii Contractor's license classification "A".

All interested parties are invited to visit the project site during 8:00 a.m.–4:30 p.m, Monday through Friday, except state holidays, to conduct independent site investigation.

The estimated cost of construction is \$150,000.

The award of contract, if it is awarded, will be subject to the availability of funds.

Since the estimated value of the cost of construction is less than \$250,000, the apprenticeship agreement preference pursuant to Hawaii Revised Statutes §103-55.6 (ACT 17, SLH 2009) shall not apply.

Should there be any questions, please refer to the HIePRO solicitation.

# INFORMATION AND INSTRUCTIONS TO BIDDERS

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## INFORMATION AND INSTRUCTIONS TO BIDDERS

- A. PROJECT LOCATION AND SCOPE OF WORK: The project location and scope of work shall be as generally described in the Notice to Bidders.
- B. PROPOSALS: Bidders shall submit their bid, including the completed proposal form, bid bond, and any other documents required by the solicitation as part of their bid through the State of Hawaii e-Procurement System (HIePRO). See Item D, PROPOSAL FORM.
- C. GENERAL CONDITIONS: The Department of Land and Natural Resources Interim General Conditions dated October 1994, as amended, shall be made a part of these contract specifications and are referred to hereafter as the General Conditions.
- D. PROPOSAL FORM: **The Bidders shall fill out and upload the electronic copy of the proposal form to the HIePRO website when submitting the bid. Bid Proposals shall not be mailed, faxed, or delivered to the State, unless requested to do so after the designated closing date. The successful Bidder shall fill out and print a hard copy of the proposal form, sign and submit the form with the contract award package.**
- E. OMISSIONS OR ERASURES: Any proposal which contains any omission or erasure or alteration not properly initialed, or conditional bid, or other irregularity may be rejected by the Board of Land and Natural Resources (Board).
- F. NOTICE OF INTENT TO BID AND QUESTIONNAIRE:  
A Notice of Intent to Bid is not required for this project. In compliance with HRS Section 103D-310, the lowest responsive and responsible bidder may be required to complete a questionnaire. When requested by the State, the completed questionnaire shall be submitted to the Chief Engineer for evaluation. Failure to furnish the requested information within the time allowed may be grounds for a determination of non-responsibility, in accordance with HRS Section 103D-310 and HAR Section 3-122-108.
- G. BID SECURITY: A bid security will be furnished by each bidder as provided in sub-section 2.7 of the General Conditions. The successful bidder's bid security will be retained until Contract execution and furnished a performance and payment bond in an amount equal to one hundred percent (100%) of the total Contract price, including an amount estimated to be required for extra work, is furnished.
- The Board reserves the right to hold the bid securities of the four lowest bidders until the successful bidder has entered into a contract and has furnished the required performance bond. All bid securities will be returned in accordance with sub-section 3.5 of the General Conditions.
- Should the successful bidder fail to enter into a contract and furnish a satisfactory performance bond within the time stated in the proposal, the bid security shall be forfeited as required by law.
- H. CONTRACTOR'S LICENSE REQUIRED: The Board will reject all bids received from contractors who have not been licensed by the State Contractors License Board in accordance with Chapter 444, HRS; Title 16, Chapter 77, Hawaii Administrative Rules; and statutes amendatory thereto.

- I. IRREGULAR BIDS: No irregular bids or propositions for doing the work will be considered by the Board.
- J. WITHDRAWAL OF BIDS: No bidder may withdraw his bid between the time of the opening thereof and the award of contract.
- K. SUCCESSFUL BIDDER TO FILE PERFORMANCE AND PAYMENT BONDS: The successful bidder will be required to file performance and payment bonds each; in the amount equal to the total contract price, including amounts estimated to be required for extra work, as provided in sub-section 3.6 of the General Conditions.
- L. NUMBER OF EXECUTED ORIGINAL COUNTERPARTS OF CONTRACT DOCUMENTS: If requested by the Board, six copies of the Contract, performance and payment bonds shall be executed.
- M. CHANGE ORDERS: No work of any kind in connection with the work covered by the plans and specifications shall be considered as change order work, or entitle the Contractor to extra compensation, except when the work has been ordered in writing by the Chief Engineer (Engineer) and in accordance with sub-section 4.2 of the General Conditions.

The Contractor shall clearly identify and inform the Engineer in writing of any deviations from the contract documents at the time of submission and shall obtain the Engineer's written approval to the specified deviation prior to proceeding with any work.

- N. WAGES AND HOURS: In accordance with sub-sections 7.3 to 7.9 of the General Conditions relative to hours of labor, minimum wages and overtime pay, the current minimum wage rates promulgated by the Department of Labor and Industrial Relations (DLIR) shall be paid to the various classes of laborers and mechanics engaged in the performance of this contract on the job site. The minimum wages shall be increased during the performance of the contract in an amount equal to the increase in the prevailing wages for those kinds of work as periodically determined by the DLIR.

The Department of Land and Natural Resources will not recognize any claim for additional compensation because of the payment by the Contractor of any wage rate in excess of the said minimum wage rates. The possibility of wage increase is one of the elements to be considered by the Contractor in determining his bid, and will not, under any circumstances, be considered as the basis of a claim against the Department under this Contract.

No work shall be done on Saturdays, Sundays, legal State holidays, and/or in excess of eight (8) hours each day without the written consent of the Engineer. Should permission be granted to work at such times, the Contractor shall pay for all inspection administrative costs thereof. No work shall be done at night unless authorized by the Engineer.

- O. PERMITS: The State will process permit applications whenever possible, and the Contractor shall procure the pre-processed permits and pay the required fees. If permit applications are not processed by the State, the Contractor shall process the permit applications, permits and licenses, and pay all charges and fees. In all cases, the Contractor shall give all notices necessary and incident to the due and lawful prosecution of the work.

The Contractor shall obtain and pay for all permits required by the County of Hawaii.

- P. PROPERTY DAMAGE: It shall be the responsibility of the contractor to respect State property and to prevent damage to existing improvements. The Contractor will be responsible for damages resulting from construction operations. Immediately upon discovery, the Contractor shall repair such damage to the satisfaction of the Engineer.

All trees and shrubbery outside the excavation, embankment or construction limits shall be fully protected from injury.

- Q. TIME: The time of completion is specified in the Proposal. It is the Board's intention to insist the Contractor diligently prosecute the work to completion within the specified time.

Prospective bidders are reminded that the State has the option to proceed with or abandon a project depending on whether the project can be completed for occupancy in the specified time.

It is the bidder's responsibility to check the availability of all materials before bidding. The bidder shall select sub-contractors and suppliers who can warrant availability and delivery of all specified or qualified materials to assure project completion within the specified time.

The successful bidder must assume all risks for completing the project by the specified date. There shall be no extension of time for any reason except for delays caused by acts of God, labor disputes involving unions, or actions of the State. If for any reason the project falls behind schedule, the Contractor shall at its own cost, take necessary remedial measures to get the project back on schedule, i.e., working overtime, air freighting all materials, etc. In addition, if the Contractor fails to fully complete the project by the completion date, Contractor will be required to make the facility usable at its own cost.

- R. BIDDER'S RESPONSIBILITY TO PROVIDE PROPER SUPERINTENDENCE: The successful low bidder shall designate in writing to the Engineer the name of its authorized superintendent (Superintendent), who will be present at the job site whenever any work is in progress. The Superintendent shall be responsible for all work, receiving and implementing instructions from the Engineer in a timely manner. The cost for superintendence shall be considered incidental to the project.

If the Superintendent is not present at the site of work, the Engineer shall have the right to suspend the work as described under sub-section 5.5 c. and 7.20 - Suspension of Work of the General Conditions.

- S. LIQUIDATED DAMAGES: Liquidated damages in the amount specified in the Proposal will be assessed for each and every calendar day from and after the expiration of the time period stated in the Contract for the completion of the project.

- T. HIRING OF HAWAII RESIDENTS: The Contractor shall comply with Act 68, SLH 2010, in the performance and for the duration of this contract. The Contractor shall ensure that Hawaii residents compose not less than eighty percent of the workforce employed to perform the contract work on the project. The eighty percent requirement shall be determined by dividing the total number of hours worked on the contract by Hawaii residents, by the total number of hours worked on the contract by all employees of the Contractor in the performance of the contract. The hours worked by any Subcontractor of the Contractor shall count towards the calculation for this section. The hours worked by employees with shortage trades, as determined by the Department of Labor and Industrial Relations (DLIR), shall not be included in the calculation for this section.



The requirements shall apply to any subcontract of \$50,000 or more in connection with the Contractor, that is, such Subcontractors must also ensure that Hawaii residents compose not less than eighty percent of the Subcontractor's workforce used to perform the subcontract.

- U. WATER AND ELECTRICITY: The Contractor shall make all necessary arrangements and pay all expenses for water and electricity used in the construction of this project.
- V. PUBLIC CONVENIENCE AND SAFETY: The Contractor shall conduct construction operations with due regard to the convenience and safety of the public at all times. No materials or equipment shall be stored where it will interfere with the safe passage of public traffic. The Contractor shall provide, install, and maintain in satisfactory condition, all necessary signs, flares and other protective facilities and shall take all necessary precautions for the protection of the work and the convenience and safety of the public. The Engineer shall have the right to suspend the performance of the work in accordance with sub-section 7.20 - Suspension of Work of the General Conditions.
- W. WORK TO BE DONE WITHOUT DIRECT PAYMENT: Whenever the contract that the Contractor is to perform work or furnish materials of any kind for which no price is fixed in the contract, it shall be understood that the Contractor shall perform such work or furnish said materials without extra charge or allowance or direct payment of any sort. The cost of performing such work or furnishing said material is to be included by the Contractor in a unit price for the appropriate item unless it is expressly specified that such work or material is to be paid for as extra work.
- X. AS-BUILT DRAWINGS: As-built drawings, the intent of which is to record the actual in-place construction so that any future renovations or tie-ins can be anticipated accurately, shall be required. All authorizations given by the Engineer to deviate from the plans shall be drawn on the job site plans. All deviations from alignments, elevations and dimensions, which are stipulated on the plans, shall be recorded on the as-built drawings. Final as-built drawings shall be submitted to the Engineer for review and approval. After the Engineer approves the as-built drawings, the contractor shall submit an electronic copy in Adobe PDF format on CD ROM.
- Y. ASBESTOS CONTAINING MATERIALS: The use of asbestos containing materials or equipment is prohibited. The Contractor shall insure that all materials and equipment incorporated in the project are asbestos-free.
- Z. WORKER SAFETY: The Contractor shall provide, install and maintain in satisfactory condition all necessary protective facilities and shall take all necessary precautions for the protection and safety of its workers in accordance with the Occupational Safety and Health Standards for the State of Hawaii. The Engineer shall have the right to suspend the performance of the work in accordance with sub-section 7.20 - Suspension of Work of the General Conditions.
- AA. TOILET FACILITIES: All toilet facilities constructed at the project site shall be in accordance with the Public Health Regulations of the State Department of Health (DOH). All necessary precautions shall be observed at the project site. The use of sanitary facilities shall be strictly enforced and workers violating these provisions shall be promptly discharged.
- BB. SIGNS: Whenever the project involves closing or obstructing any public thoroughfare, the Contractor shall provide traffic signs conforming to the applicable provisions of the current edition of the "Manual on Uniform Traffic Control Devices for Streets and Highways", published by the Federal Highway Administration as directed by the Engineer for the purpose of diverting

or warning traffic prior to the construction area. All traffic signs shall bear proper wording stating thereon the necessary information as to diverting or warning traffic.

When indicated in the Proposal, the Contractor shall provide a project sign, size 4'-0" x 7'-0" to be placed as directed by the Engineer. The sign shall be constructed in accordance with Section 01581 - Project Sign of these specifications and approved by the Engineer. All wording, type and size of lettering and color selection shall be as specified in these specifications or as approved by the Engineer.

All signs shall be kept neat and clean, and properly erected at all times.

- CC. FIELD OFFICE AREA FOR DEPARTMENT: When indicated in the Proposal, the Contractor shall provide a housed working area of at least 100 square feet adjacent to the Contractor's office for the Department's use. This area will be used by the Engineer to perform tests and to store equipment. As a minimum, the field office shall include the following: standard sized office desk and chair, lighting, ventilation, window-type air conditioning rated at 5,000 BTU, door and window with locking hardware, electrical outlets, and working communications facilities (a cellular telephone is acceptable). The Department will pay for all long-distance toll charges made by the Engineer.
- DD. QUANTITIES: All bids will be compared on the basis of quantities of work to be done as shown in the Proposal; the quantities shown in the Unit Price items are estimated, being given as a basis for comparison of bids. The Board reserves the right to increase or decrease the quantities given under the items or delete items entirely as may be required during the progress of the work.
- EE. OTHER HEALTH MEASURES: Forms of work site exposure or conditions which may be detrimental to the health or welfare of workers or of the general public shall be eliminated or reduced to safe levels as required by the DOH codes, standards, and regulations. Suitable first aid kits and a person qualified to render first aid, as specified in the DOH regulations, shall be provided at all times when work is scheduled.
- FF. HAWAII BUSINESS OR COMPLIANT NON-HAWAII BUSINESS REQUIREMENT: Bidders (Contractors) shall be incorporated or organized under the laws of the State or be registered to do business in the State as a separate branch or division that is capable of fully performing under the contract, as stipulated in §3-122-112 HAR.
- GG. COMPLIANCE WITH §3-122-112 HAR: As a condition for award of the contract and as proof of compliance with the requirements of 103D-310(c) HRS, the apparent low bidder shall furnish the required documents to the Department. If the valid required certificates are not submitted on a timely basis for award of a contract, a bidder otherwise responsive and responsible may not receive the award. Bidder is responsible to apply for and submit the following documents to the Department.
- A. TAX CLEARANCE REQUIREMENTS (HRS Chapter 237): Bidder shall obtain a tax clearance certificate from the Hawaii State Department of Taxation (DOTAX) and the Internal Revenue Service (IRS). The certificate is valid for six months from the most recently approved stamp date on the certificate; the certificate must be valid on the date received by the Department.
- B. Department of Labor (DLIR) **“Certificate of Compliance”**. (HRS Chapter 383 - Unemployment Insurance, Chapter 386 - Workers’ Compensation, Chapter 392 - Temporary Disability Insurance, and 393 – Prepaid Health Care): Bidder shall obtain a

certificate of compliance from the Hawaii State Department of Labor and Industrial relations (DLIR). The certificate is valid for six months from the date of issue; certificates must be valid on the date received by the Department.

- C. Department of Commerce and Consumer Affairs (DCCA), Business Registration Division (BREG) **“Certificate of Good Standing”**. Bidder shall obtain a certificate of good standing issued by the Department of Commerce and Consumer Affairs (DCCA), Business Registration Division (BREG). The certificate of good standing is valid for six months from the date of issue; certificates must be valid on the date received by the Department.

Alternately, instead of separately applying for these certificates at the various state agencies, bidder may choose to use the Hawaii Compliance Express (HCE), which allows businesses to register online through a simple wizard interface at <http://vendors.ehawaii.gov> to acquire a “Certificate of Vendor Compliance” indicating the bidder’s status is compliant with the requirements of §103D-310(c), HRS, and shall be accepted for contracting and final payment purposes. Bidders that elect to use the new HCE services will be required to pay an annual fee of \$15.00 to the Hawaii Information Consortium, LLC (HIC). Bidders choosing not to participate in the HCE program will be required to provide the paper certificates as instructed in the previous paragraphs.

P R O P O S A L

FOR

DEPARTMENT OF LAND AND NATURAL RESOURCES  
ENGINEERING DIVISION  
State of Hawaii

JOB NO. F58C631E  
WAILOA RIVER SRA WAR MEMORIAL IMPROVEMENTS  
HILO, HAWAII

\_\_\_\_\_, 20\_\_

Chief Engineer  
Engineering Division  
Department of Land and Natural Resources  
State of Hawaii  
Honolulu, Hawaii

Dear Sir:

The undersigned, having carefully examined the local conditions and all available records and information covering conditions which may affect the cost of the work to be performed, and having carefully examined the Plans and Specifications, and other contract documents, hereby proposes to furnish and pay for all materials, tools, equipment, labor and other incidental work necessary to provide cement plaster finished and reinforced concrete monument, flagpoles and flags, signage, earthwork, relocation of existing gas line, concrete walkways, drainage features, re-grassing and related work, as required or called for in this Proposal, all according to the true intent and meaning of the Notice to Bidders, Information and Instructions to Bidders, Proposal, Detailed Specifications, Interim General Conditions, Plans, and any and all addenda for:

JOB NO. F58C631E  
WAILOA RIVER SRA WAR MEMORIAL IMPROVEMENTS  
HILO, HAWAII

on file in the office of the Engineering Division for the TOTAL BASE BID (Items 1 to 14) of:

\_\_\_\_\_  
Dollars (\$ \_\_\_\_\_)

and will fully complete all work under this contract within 180 consecutive calendar days from the date of written notice to proceed, including date of said order, said total sum being itemized on the following pages.

## PROPOSAL

Item No.	Quantity	Unit	Description	Unit Price	Total
<b><u>BASE BID</u></b>					
1.	1	LS	New monument wall and foundation, in place complete.	LS	\$
2.	3	LS	New flag poles and foundation, in place complete.	LS	\$
3.	1	LS	New signage, in place complete.	LS	\$
4.	1	LS	Site Preparation and Clearing	LS	\$
5.	LS	LS	Removal of portion of existing gas line, in place complete.	LS	\$
6.	25	C.Y.	Excavation (trenching for new gas line, poles and monument foundation), in place complete.	\$	\$
7.	LS	LS	New relocated Gas Line (installed complete in place per plan).	LS	\$
8.	5	C.Y.	Aggregate Cushion Fill, in place complete.	\$	\$
9.	18	C.Y.	Subbase Course, in place complete.	\$	\$
10.	5	C.Y.	Concrete Walkway, in place complete.	\$	\$
11.	2	Ea.	Walkway Culvert, in place complete.	\$	\$
12.	1	LS	BMP, Erosion Control and re-grassing in place complete.	LS	\$
13.	1	LS	Project Sign, in place complete.	LS	\$
	Allowance		Field Office	Allowance	\$ 10,000.00
<b>Subtotal Base Bid (Items 1-13)</b>					\$
14.		LS	Mobilization and Demobilization (not to exceed 10% of the Subtotal Base Bid)		\$
<b>Total Base Bid (Items 1-14)</b>					\$

RECYCLED PRODUCTS PREFERENCE

This project allows a 10% price preference for recycled products in accordance with HRS 103D-1005. Please indicate your selection of recycled or non-recycled product by indicating its cost FOB jobsite unloaded in the schedule below, including applicable General Excise & Use Taxes.

<u>DESCRIPTION</u>	<u>RECYCLED PRODUCT COST</u>	<u>NONRECYCLED PRODUCT COST</u>
_____	\$ _____	\$ _____
_____	\$ _____	\$ _____
_____	\$ _____	\$ _____
_____	\$ _____	\$ _____

The bidder requesting a recycled product preference shall also complete and submit the form "CERTIFICATION OF RECYCLED CONTENT" as shown in the Interim General Conditions and provide all supporting information with this proposal. Additional information may be requested to qualify a product.

The following definitions are applicable to the CERTIFICATION OF RECYCLED CONTENT form:

"Post-consumer recovered material" means any product used by a consumer, including a business that purchases the material, that has served its intended end use, and that has been separated or diverted from the solid waste stream for the purpose of use, reuse, or recycling.

"Product" includes materials, manufactures, supplies, merchandise, goods, wares, and foodstuffs.

"Recovered material" means waste material and by-products that have been separated, diverted, or removed from the solid waste stream after a manufacturing process for the purpose of use, reuse, or recycling. Recovered material does not include those materials and by-products that are generated and normally reused on-site or within original manufacturing processes (such as mill broke, in the case of paper products).

"Recycled content" means the percentage of a product composed of recovered material, or post-consumer recovered material, or both.

"Recycled product" means a product containing recovered material, or post-consumer recovered material, or both.

The bidder agrees that preference for recycled products shall be taken into consideration to determine the low bidder in accordance with said Section and the rules promulgated, however, the award of contract will be in the amount of the bid offered exclusive any preference.

## CONDITION OF AWARD

It is understood that the award of the contract will be made on the basis of the lowest responsible Total Base Bid (Items 1 to 14) selected by the Board of Land and Natural Resources. Write the total of bid items 1 to 14 on page P-1.

It is understood and agreed that the Board of Land and Natural Resources reserves the right to reject any and/or all bids and waive any defects when, in the Board's opinion, such rejection or waiver will be for the best interest of the State of Hawaii.

In the event all bids exceed available funds certified by the appropriate fiscal officer, the head of the purchasing agency responsible for the procurement in question is authorized in situations where time or economic considerations preclude resolicitation of work of a reduced scope to negotiate an adjustment of the bid price, including changes in the bid requirements, with the low responsible and responsive bidder, in order to bring the bid within the amount of available funds. It is understood and agreed upon that the head of the purchasing agency may delete a portion or all of any item(s) in the proposal at the stated unit or lump sum price as necessary to stay within the available funding. The bidder is responsible to make an earnest effort to represent the actual cost of each item, including all materials, labor, equipment, overhead and profit in their bid proposal to preclude claims of anticipated profit or loss of profit because of an unbalanced bid proposal.

It is also understood that if a mutually agreeable cost for the reduced scope of work necessitated by a lack of available funds cannot be agreed upon between the bidder and the head of the purchasing agency within 14 calendar days after the bid opening, then the bid may be rejected in the best interest of the purchasing agency, and the head of the purchasing agency may negotiate in progressive order (lowest to highest) with the next lowest responsible and responsive bidder.

It is also understood and agreed that the award of the contract shall be conditioned upon funds being made available for this project and further upon the right of the Board of Land and Natural Resources to hold all bids received for a period of one hundred eighty (180) days from the date of the opening thereof, unless otherwise required by law, during which time no bid may be withdrawn.

It is also understood that Notice to Proceed may be delayed up to one (1) year after the bid opening date, and that no additional compensation will be provided for any claim for escalation or delay for issuance of Notice to Proceed on or before that date.

It is also understood and agreed that the quantities given herewith are approximate only and are subject to increase or decrease, and that the undersigned will perform all quantities of work as either increased or decreased, in accordance with the provisions of the Contract Specifications.

It is also understood and agreed that the estimated quantities shown for the items for which a UNIT PRICE is asked in this Proposal are only for the purpose of comparing on a uniform basis, bids offered for the work under this contract, and the undersigned agrees that he is satisfied with and will at no time, dispute said estimated quantities as a means of claims for anticipated profit or loss of profit, because of a difference between the quantities of the various classes of work done or the materials and equipment installed, and the said estimated quantities. On UNIT PRICE bids, payment will be made only for the actual number of units incorporated into the finished project at the contract UNIT PRICE.

After the HIEPRO bid due date and time, the figures will be extended and/or totaled in accordance with the bid prices of the acceptable proposals and the totals will be compared. In the comparison of bids, words written in the proposal shall govern over figures and unit prices will govern over totals. Until the award of the contract, however, the right will be reserved to reject any and all proposals and to

waive any defects or technicalities as may be deemed best for the interest of the State.

It is also understood and agreed that liquidated damages in the amount one hundred fifty dollars (\$150.00) for each and every calendar day in excess thereof prior to completion of the contract shall be withheld from payments due to the Contractor.

It is also understood and agreed that if this bid is accepted, the successful bidder must enter into and execute a contract with the Board of Land and Natural Resources and furnish a Performance and Payment Bond, as required by law. These bonds shall conform to provisions of Section 103D-324 and 325, Hawaii Revised Statutes and any law applicable hereto.

It is also understood and agreed that the successful bidder will provide all necessary labor, materials, tools, equipment, and other incidentals necessary to do all the work and furnish all the materials specified in the contract in the manner and time herein prescribed, and according to the requirements of the Engineer as therein set forth.

It is understood that by submitting this proposal, the undersigned is declaring that his firm has not been assisted or represented on this matter by an individual who has, in a State capacity, been involved in the subject matter of this contract in the past two years.

It is understood that by submitting this proposal in accordance with HAR 3-122-192, the undersigned is declaring that the price submitted is independently arrived without collusion.

It is also understood that by submitting this proposal, a Certification for Safety and Health Programs for bids in excess of \$100,000 (in accordance with HRS 396-18), the undersigned certifies that his organization will have a written safety and health plan for this project that will be available and implemented by the Notice to Proceed date of this project. Details of the requirements of this plan may be obtained from the Department of Labor and Industrial Relations, Occupational, Safety and Health Division (HIOSH).

It is further understood and agreed that the successful bidder shall comply with paragraph 3.1.a "SUBCONTRACTING" of the General Provisions which requires that the contractor shall perform with his own organization and with the assistance of workmen under his immediate superintendence, work of a value not less than twenty percent (20%) of the value of all work embraced in the Contract, except that certain contract items of work, if specifically referred to in the special provisions, will be exempted from said twenty percent requirement.

Compliance with §103-310 HRS. As a condition of award all bidders shall comply with all laws governing entities doing business in the State, including Chapter 237 HRS (general excise tax); Chapter 383 HRS (employment security – unemployment insurance); Chapter 386 HRS (workers compensation); Chapter 392 HRS (temporary disability insurance); and Chapter 393 HRS (pre-paid health care), and shall produce all documents to the State (DLNR, Engineering Division) required to demonstrate compliance with these subsections. Any bidder making a false affirmation or certification under this subsection shall be suspended and may be debarred from further offerings or awards pursuant to §103D-702 HRS.



**RECEIPT OF ADDENDA**

The bidder also acknowledges receipt of any and all addenda issued by the Engineering Division, by recording the date of receipt of the respective addenda in the space provided below:

<u>Addendum</u>	<u>Date Received</u>	<u>Addendum</u>	<u>Date Received</u>
No. 1	_____	No. 5	_____
No. 2	_____	No. 6	_____
No. 3	_____	No. 7	_____
No. 4	_____	No. 8	_____

It is understood that failure to receive any such addendum shall not relieve the Contractor from any obligation under this Proposal as submitted.

It is also understood and agreed that if this Proposal is accepted and the undersigned should fail or neglect to contract as aforesaid, the Board may determine that the bidder has abandoned the Contract, and thereupon, forfeiture of the security accompanying his proposal shall operate and the same shall become the property of the Board.

JOINT CONTRACTORS OR SUBCONTRACTORS  
TO BE ENGAGED ON THIS PROJECT

The Bidder agrees that the following is a complete listing of all joint contractors or subcontractors covered under Chapter 444, Hawaii Revised Statutes (HRS), who will be engaged by the Bidder on this project to perform the required work indicated pursuant to Section 103D-302, HRS. 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. The Bidder certifies that the completed listing of joint contractors or subcontractors fulfills the requirements for the project and the Bidder, together with the listed subcontractors or joint contractors have all the specialty contractor's licenses to complete the work, except as provided for in HRS §103D-302(b). Failure of the Bidder to comply with this requirement may be just cause for rejection of the bid.

“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 in which 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.

General Engineering “A” Contractors automatically have these “C” specialty contractor’s licenses: C-3, C-9, C-10, C-17, C-24, C-31a, C-32, C-35, C-37a, C-37b, C-38, C-43, C-49, C-56, C-57a, C-57b and C-61.

General Building “B” Contractors automatically have these “C” specialty contractor’s licenses: C-5, C-6, C-10, C-12, C-24, C-25, C-31a, C-32a, C-42a and C-42b.

In completing the Joint Contractors or Subcontractors List, describe the specialty contractor’s nature and scope of work to be performed for this project and provide the complete firm name of the joint contractor or subcontractor in the respective columns. If the Bidder is a general contractor and providing the work of the required specialty contractor, fill in the Bidder’s (general contractor’s) name and nature and scope of work to be performed on this project.

List only one joint contractor or subcontractor per required specialty contractor’s classification, unless within the same specialty, the work of each joint contractor or subcontractor can be described so that there is no overlap in work descriptions.

If a contractor’s license is required by law for the performance of the work which is called for in this bid, the bidder and all subcontractors must have the required license before the submission of the bidder’s proposal in the case of a non-federal aid project, and for federal-aid projects, the bidder must have the required license prior to the award of the project and all subcontractors prior to the start of the subcontracted work.

<b>COMPLETE FIRM NAME OF JOINT CONTRACTOR OR SUBCONTRACTOR</b>	<b>NATURE AND SCOPE OF WORK TO BE PERFORMED</b>

Enclosed herewith is a:

- 1. Surety Bond (\*1) )
- 2. Legal Tender (\*2) )
- 3. Cashier's Check (\*3) )
- 4. Certificate of Deposit (\*3) ) in the
- 5. Certified Check (\*3) ) amount
- 6. Official Check (\*3) ) of
- 7. Share Certificate (\*3) )
- 8. Teller's Check (\*3) )
- 9. Treasurer's Check (\*3) )

(Cross Out Those Not Applicable)

---

Dollars (\$ \_\_\_\_\_)

as required by law.

Respectfully submitted,

---

Name of Company, Joint Venture  
or Partnership

---

Contractor's License No.

By \_\_\_\_\_  
Signature (\*4)

Title \_\_\_\_\_

Print Name \_\_\_\_\_

Date \_\_\_\_\_

Address \_\_\_\_\_

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

E-Mail Address \_\_\_\_\_

NOTES:

1. Surety bond underwritten by a company licensed to issue bonds in this State;
2. Legal tender; or
3. A certificate of deposit; share certificate; or cashier's, treasurer's, teller's, or official check drawn by, or a certified check accepted by, and payable on demand to the State by a bank, a savings institution, or credit union insured by the Federal Deposit Insurance Corporation or the National Credit Union Administration.
  - A. These instruments may be utilized only to a maximum of \$100,000.
  - B. If the required security or bond amount totals over \$100,000, more than one instrument not exceeding \$100,000 each and issued by different financial institutions shall be accepted.
4. Please attach to this page evidence of the authority of this officer to submit bids on behalf of the Company and also the names and residence addresses of all officers of the Company.
5. Fill in all blank spaces with information asked for or bid may be invalidated. PROPOSAL MUST BE INTACT, MISSING PAGES MAY INVALIDATE YOUR BID.

**End of Proposal**

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## DIVISION 1 – GENERAL REQUIREMENTS

### SECTION 01010

#### SUMMARY OF WORK

##### PART 1 - GENERAL

##### 1.1 SUMMARY OF PROJECT

- A. The work to be done shall include performing all operations and furnishing all equipment, tools, materials, and labor necessary to execute, complete and deliver all of the work and related items required for the project as called for on the drawings and as specified herein.
- B. This project includes but is not necessarily limited to the following general items of work:
  - 1. Furnishing and installation of site mass and finish grading, new concrete sidewalks, asphalt concrete paving, drainage features and swales, relocation of portion of existing gas line.
  - 2. Furnishing and installation of new concrete memorial monument.
  - 3. Installation of new monument signage.
  - 4. Furnishing and installation of new 25 ft and 30 ft aluminum flag poles and flags.
  - 5. All other related work as shown on the drawings and as specified herein

##### 1.2 CODES AND ORDINANCES

The Contractor shall comply with all Federal, State and local laws, ordinances, rules and regulations having jurisdiction over this project and shall apply for, pay for and obtain all permits, licenses and certificates and publish or post and pay for all notices required.

The requirements of the Americans with Disabilities Act Accessibility Guidelines are hereby made a part of the specifications. The contractor shall familiarize himself with all facets of said document and implement construction activities so as to comply with the requirements thereof whether or not specifically referenced in the drawings or specifications.

##### 1.3 DIVISION OF WORK

The Divisions, Sections and work specified within each Section into which these Specifications are divided shall not be considered an accurate or complete segregation of work by trades. As such, the disciplines by which the drawing sheets are divided, or the details therein, shall not be construed as a segregation of work by trades. All

specifications, drawings and referenced codes, rules, regulations, standards, etc. shall be considered in whole.

#### 1.4 GENERAL

- A. Construction Workscope: The Contractor shall verify the workscope indicated on the plans before any construction begins. Any discrepancies shall be immediately brought to the attention of the Contracting Officer, and any change shall be made in accordance with his instruction. The Contractor shall not be entitled to extra payment if he fails to report the discrepancies before proceeding with any work whether within the area affected or not.
- B. Examination of Premises: The Contractor shall contact the Contracting Officer and obtain permission before visiting secured areas at the site and of the structures thereon. The Contractor shall visit the site as many times and for as long as necessary to fully understand existing conditions and the scope of work required. The Contractor shall account for all hardships in executing the work of this project relative to existing conditions and make due allowances for such in his bid.
- C. Conditions at Site:
  - 1. The Contractor and Subcontractors are expected to:
    - a. Visit the site.
    - b. Make due allowances for difficulties and contingencies to be encountered;
    - c. Compare contract documents with work in place, inform themselves of existing conditions, the conditions to be encountered in performing the work, and the requirements of the plans and specifications.
      - 1) The Contractor shall accept the site in the condition in which it exists at the time he is given access to begin the work.
        - a) The Contractor shall verify all existing conditions and dimensions shown and other dimensions not indicated but necessary to accomplish the work.
        - b) Locate general reference points and take such action as necessary to prevent their destruction; layout work and be responsible for lines, elevations and measurements and the work executed. Exercise proper precautions to verify figures and conditions shown on drawings before layout of work.
        - c) The Contractor and each subcontractor, before starting work, shall verify governing dimensions at the premises and shall examine adjoining work on which his work is in any way dependent. No additional compensation will be allowed on account of differences between actual measurements and



dimensions shown. Submit differences discovered during the work to the Contracting Officer for interpretations before proceeding with the associated work.

- D. **Contract Zone Limits:** The Contract Zone Limits shall be as indicated on the plans. The Contractor, however, is required to perform any and all necessary and incidental work, which may fall outside of these demarcation lines. The Contractor is also expected to confine all of his construction activities within the Contract Zone Limits and not to spread his equipment and materials indiscriminately about the area.
- E. **Disruption of Utility Services:** All work related to the disconnection of any utility system shall be pre-arranged with the Contracting Officer. The Contractor shall notify the Contracting Officer at least fifteen (15) days in advance of any interruption of existing utility service. Time and duration of interruption shall be to the satisfaction of the Contracting Officer. The duration of interruption shall be kept to a minimum so as not to cause inconvenience or hardship to the facility and its occupants and staff. In the event temporary power hook-up is required, the Contractor shall provide the necessary services at his own expense.
- F. **Utility Services:**
  - 1. **Electricity and Telephone:** The Contractor may utilize these utilities in conjunction with its prosecution of this work only. The State reserves the right to restrict any usage for just cause as determined by the Contracting Officer.
  - 2. **Water:** The Contractor may utilize these utilities in conjunction with its prosecution of this work only. The State reserves the right to restrict any usage for just cause as determined by the Contracting Officer.
  - 3. **Sewer:** The Contractor shall include provisions to provide alternate toilet facilities and other sanitary requirements when work requires closure of restrooms.
- G. **Contractor Access:**
  - 1. The Contractor and his employees will only be allowed to park in areas on the site designated by the Contracting Officer.
  - 2. Areas to be used by the Contractor shall be as designated by the Contracting Officer. Any lawn when damaged by the Contractor shall be restored immediately to the satisfaction of the Contracting Officer at no additional cost to the State.
  - 3. Access to the Construction Area shall also be as designated by the Contracting Officer.
- H. **Protection of Property:** The Contractor shall continually maintain adequate protection of all his work from damage and shall protect all property, including but not limited to buildings, equipment, furniture, grounds, vegetation, material, and utility system located at and

adjoining the job site. The Contractor shall repair, replace or pay the expenses of repair of damages resulting from his fault or negligence.

- I. Use of Power-Driven Equipment: The Contractor is cautioned to take all necessary safety precautions to protect his personnel and the public whenever power driven equipment is used.
- J. Safety:
  - 1. The Hawaii Occupational Safety and Health Law, Chapter 396, Hawaii Revised Statutes, effective May 16, 1972, as amended, is applicable and made a part of the Contract.
  - 2. The Contractor shall carefully read and strictly comply with its requirements.
- K. Clean Up of Premises: The Contractor shall clean up and remove from premises all debris accumulated from operations as directed.
- L. Responsibility:
  - 1. The State will hold the Contractor liable for all the acts of Subcontractors and shall deal only with him (the prime Contractor) in matters pertaining to other trades employed on the job. The Contractor shall be responsible for coordinating the work of all trades on the job.
  - 2. Should he discover any discrepancy in the plans or specifications, the Contractor shall immediately notify the Contracting Officer before proceeding any further with the work, otherwise, he will be held responsible for any cost involved in correction of work placed due to such discrepancy.
- M. Plans and Specifications:
  - 1. The Contractor shall not deviate or make alterations in the drawings and specifications. In the event he discovers any errors or discrepancies, the Contractor shall immediately notify the Contracting Officer in accordance with Section 00700 – GENERAL CONDITIONS.
  - 2. Where devices, or items, or parts thereof are referred to in the singular, it is intended that such reference shall apply to as many devices, items, or parts as are required to properly complete the work.
  - 3. Specifications and drawings are prepared in abbreviated form and include incomplete sentences. Omission of words or phrases such as "the Contractor shall", "as shown on the drawings", "and", and "the" are intentional. Omitted words and phrases shall be provided by inference to form complete sentences.

4. The specifying of inference and coordination in the various Sections is provided for information and convenience only. Such requirements, in the various Sections shall complement the requirements of this Section.
5. In case of discrepancy figured dimensions shall govern over scaled dimensions, technical specifications shall govern over plans: special provisions and proposal shall govern over the General Requirements and Covenants.

N. Required Submittals:

1. Required submittals as specified in the technical sections of these specifications include one or more of the following: Shop drawings; color samples; material samples; technical data; schedules of materials; material safety data sheets; schedules of operations; certifications; guarantees; operating and maintenance manuals; and record drawings.
2. Contractor shall make a comprehensive list of the required submittals, by Specification Section, and submit this list to the Contracting Officer within 15 days after Notice to Proceed.
3. Record Drawings: Record Drawings are required for submittal and the following shall apply:
  - a. Record drawings, the intent of which is to record the actual in-place construction so that any future renovations or tie-ins can be anticipated accurately, shall be required.
  - b. To accomplish this, all authorizations given by the Contracting Officer to deviate from the plans shall be drawn onto the field set by the Contractor.
  - c. PDF Files for this purpose shall be furnished to the Contractor by the State upon the written request of the former or any suitable time.
  - d. All deviations from alignments, elevations and dimensions which are stipulated on the plans shall be recorded on the record drawings set.
  - e. The following procedure shall be followed:
    - 1) Immediately after these changes are constructed in place, the Contractor shall record them on the field office plans. This is to ensure that changes are recorded before they are forgotten or inaccessible due to subsequent construction activities.
    - 2) Within two weeks after final inspection of the project, the Contractor shall transfer the change marked on the field office plans onto the PDF as-built drawings in red. Any deletions shall be eradicated from the PDF drawings as necessary. The Contractor shall stamp or mark

the tracings "AS-BUILT", and sign and date each drawing so marked.

- 3) The Contractor shall submit the recorded drawings together with the marked-up field office plans to the Contracting Officer.
- 4) Any record drawing which the Contracting Officer determines does not accurately record the deviation shall be corrected by the State and the Contractor shall be charged for the services.

- O. Barricade: Erect Temporary barricade to prevent unauthorized persons from entering the project area as required by the contractor's safety requirements and additionally to the extent as agreeable to the Contracting Officer. At minimum, the Contractor shall erect barricades at the perimeter of the contract zone limits for this project.

The barricade shall be comprised of standard orange construction fencing, 4-feet high, secured with wood or metal stakes/posts at not greater than 8-foot intervals. Barricade shall have a continuous 2x4 top rail firmly secured to the posts. Fabric shall be tied to the posts with 11-gauge galvanized wire and secured to the top rail with stainless steel staples at 8-inch spacing. End treatments shall be such that any person wishing to circumvent the barricade may not do so.

Temporary barricades, as well as all of the Contractor's operations shall not block or impede any existing accessible routes. When accessible routes are caused to be occluded or otherwise detrimentally affected by the Contractor's actions, the Contractor shall provide temporary accessible route(s) in compliance with 2010 ADA 206.1 & 402 until such time that existing accessible routes are restored and maintained free and clear. Temporary accessible routes shall be clearly identified and shall comply with 2010 ADA 206.1 & 402 requirements as if it were new construction. The Contractor shall identify, design, and construct all such temporary accessible routes as incidental to the scope of this project.

- P. Protection of Drains: The Contractor shall provide adequate continuous protection of all drains, floor drains, inlets to catch basins, drywells, etc. to prevent intrusion of runoff, construction debris and waste materials. He shall erect and maintain silt fences or temporary plugs but shall in no way cause runoff to leave the site or damage existing improvements. When drains have been compromised, the contractor shall clean drains to like-new condition to the satisfaction of the Contracting Officer, at no additional cost to the State.

## 1.5 GENERAL CONTRACTOR RESPONSIBILITIES

- A. The General Contractor, referred to as "Contractor", shall be in charge of this Contract and the site, as well as the coordination, direction and scheduling of all work. Contractor shall include general supervision, management, and control of the work of this project, and in addition to other areas more specifically noted throughout the specification.

- B. Final responsibility for performance, interface, and completion of the Work and the project shall be the Contractor's.
- C. Job site Administration shall be the responsibility of the Contractor. The Contractor shall always provide a competent superintendent on the job during the progress of work with authority to act in its behalf. The Contractor shall also provide an adequate staff to coordinate and expedite all work properly and orderly in compliance with the plans and specifications. In addition, all workmen shall dress neatly and always conduct themselves properly; loud abusive behavior, sexual harassment and misconduct will not be tolerated. Workmen found in violation of the above shall be removed from the job site as directed by the Contracting Officer.
- D. Existing Conditions: Before commencing any of the work of this project, the Contractor shall verify if existing site conditions are the same as presented on the drawings, and immediately report any apparent discrepancies or inconsistencies in accordance with Paragraph 1.05 C.1.
- E. The Contractor shall be responsible for repairing any damage to the existing improvement to the satisfaction of the Contracting Officer and shall not be entitled to extra payment if he fails to report discrepancies before proceeding with any work within the affected areas or not.
- F. Shop Drawings: Shop drawings, manufacturer's literature, samples, color chips, schedules, catalogs, certificates, guarantees, bonds, and other items requiring State's review or acceptance shall be submitted through the Contractor as part of the control of the work. The Contractor shall prepare a schedule of submittals for review and approval by the Contracting Officer prior to commencement of construction in accordance with Paragraph 1.05 N.
- G. Laying out Work:
  - 1. Benchmarks and Reference Points: Unless specifically omitted by the Contracting Officer, the Contractor shall obtain and pay for the services of a Land Surveyor, licensed in good standing in the State to:
    - a. Establish benchmarks and other reference points; and
    - b. Establish alignments, azimuths, and distances; and
    - c. Layout levels, grades, slopes, and elevations for all work

The Contractor shall keep layouts intact throughout the work of the project. The Contractor shall correctly locate all grades, lines and levels as required for the construction and completion of the Project; be solely responsible for the accuracy and correctness of all lines, levels, and grades; and for establishing the location of buried utility lines at the site. Where work is required to comply with ADAAG, the Contractor shall employ all means at his disposal to ensure finished product is in full compliance.

2. Minor changes: Minor changes necessary to adjust conditions at the site to conform to the Contract Documents or vice versa will not be grounds for the Contractor to claim additional charges or additional time.
  3. Measurements: Before ordering any material, or doing any work, each Contractor shall verify all measurements and shall be responsible for the correctness of same. No extra charge or compensation will be allowed because of differences in actual dimensions and measurements indicated on the drawings.
- H. Protection: The Contractor shall be responsible for the protection and safeguarding of all new work until after final inspection and acceptance by the Department in accordance with Paragraph 1.05.H.
- I. Coordination: Provide project interface and coordination as required to properly and accurately bring together the several parts, components, systems, and assemblies and as required to complete the Work and the Project pursuant to the General Conditions and Special Provisions. All construction work and improvements shall be in accordance with the 2010 ADA 206.1 & 402, including providing temporary routes, features, equipment, services, etc. to be accessible during construction.

## PART 2 - PRODUCTS

### 2.1 ASBESTOS PROHIBITION

No asbestos containing materials or equipment shall be used in this Project. The Contractor shall ensure that all materials and equipment incorporated in the project are asbestos-free.

### 2.2 QUALITY

Materials, equipment, furnishings, fixtures, hereinafter specified in the various divisions and sections of the specifications shall be new, best, commercial grade, class, kind, and type available.

### 2.3 HANDLING

The Contractor shall supervise job site delivery and handling, and assign storage space for materials, equipment, furnishings, and fixtures of all trades. Contractor is responsible for delivery, unloading, unpacking, handling, storage, distribution, installation, and protection of materials at the job site until acceptance by the Department.

## PART 3 - EXECUTION

### 3.1 INSTALLATION

Materials, equipment, furnishings, and fixtures hereinafter specified in the various divisions and sections of the specifications shall be installed in accordance with manufacturer's current specifications, recommendations, instructions, and directions by workers specially trained and skilled in the performance of the particular type of work, to meet guarantee and regulatory agency requirements specified, including compliance with 2010 ADA 206.1 & 402 requirements.

### 3.2 ENVIRONMENTAL

The contractor shall oversee that proper environmental conditions are met regarding temperature, humidity, lighting, and ventilation.

### 3.3 PREPARATION AND PROTECTION

- A. Before starting work on previously erected construction, Contractor shall make a thorough and complete investigation of such recipient surfaces and determine their suitability to receive required additional construction and finishes. The contractor, at his own expense, shall make whatever repairs and conditioning required to properly prepare such surfaces. The contractor shall coordinate the work to provide suitable surfaces to receive subsequent work.
- B. Commencement of work by any trade will be construed as acceptance of existing conditions and surfaces being satisfactory for application of subsequent work. The contractor shall be responsible for finished results and assumption of warranty obligations under the contract.
- C. The contractor shall protect existing work in a manner to prevent any damage. Take positive measures to prevent breakage of glass and damage to all finishes.
- D. Contractor shall exercise all required precautions necessary to protect all buildings and other construction on property adjacent to that of the work under the contract.
- E. Throughout entire construction period Contractor shall provide adequate measures to fully protect all State property, staff, and the public.

### 3.4 CLEAN UP

Rubbish and debris resulting from work of the various divisions and sections of the specifications shall be collected daily and disposed of by the Contractor in compliance with appropriate government laws. Contractor(s) or trade(s) specifically involved shall remove materials, debris, and rubbish from the site daily and dispose of at legal disposal areas away from the premises. Permission to provide on site trash containers shall be granted by the Department and shall be placed where directed by the Contracting Officer.

END OF SECTION

## SECTION 01040

### COORDINATION

#### PART 1 - GENERAL

##### 1.1 COORDINATION REQUIREMENTS

- A. Provide project interface and coordination as required to properly and accurately bring together the several parts, components, systems, and assemblies and as required to complete the work and the project, pursuant to the GENERAL CONDITIONS. General Contractor and Subcontractors shall cooperate with others engaged on the premises as may be necessary to facilitate progress and to provide coordination and integration of the entire work.
- B. Provide interface and coordination of all trades, crafts, and subcontracts as required to provide correct and accurate connection of abutting, adjoining, overlapping, and related work, and provide all anchors, fasteners, accessories, appurtenances, and incidental items as required to complete the work properly, fully, and correctly in accordance with the Contract Documents.
- C. Materials, equipment, component parts, accessories, incidental items, connections, and services required to complete the work which are not provided by Subcontractors shall be provided by the Contractor.

##### 1.2 WORK SEQUENCE

- A. Contractor shall confine all work, equipment, materials and personnel as much as possible within the Contract Zone Limits so as not to interfere with the normal operations of adjoining properties. Coordinate schedule and operations with the Contracting Officer.
- B. The sequence of work shall be based on the CPM schedule and Gantt Chart submitted by the Contractor and approved by the Contracting Officer prior to the issuance of the Notice to Proceed or 60 calendar days after the date of award of contract, whichever is earlier. No work shall be started without the Contracting Officer's approval.
- C. All work shall be accomplished employing acceptable construction methods and through appropriate sequencing of operations.

##### 1.3 CONTRACTOR USE OF PREMISES

- A. Limit use of premises for work and for construction operations, and to allow for occupancy as required. Limit access to site as directed by the Contracting Officer.
- B. Parking: The Contracting Officer will designate areas for vehicle parking. Any damages to property by construction vehicles shall be restored at no cost to the Department to the satisfaction of the Contracting Officer. Construction vehicles will be permitted to park in



areas designated by the Contracting Officer, and in accordance with Section 01010-Paragraph 1.05, G.

#### 1.4 NOTICES

The Contractor shall serve proper written notices three (3) weeks prior and consult with the Contracting Officer regarding any temporary disconnection of electrical and other utility lines and all such lines, where necessary, shall be properly disconnected before commencing with the work.

#### 1.5 PRE-AWARD MEETINGS

The Contracting Officer may schedule a pre award meeting to review the low bidder's cost estimate and proposed methods of construction. If the Contracting Officer requests a meeting, the Contractor submitting the lowest responsible bid, along with all Subcontractors to be employed on the project, shall be required to attend as a precondition of award, and at no additional cost to the State.

#### 1.6 SUSPENSION OF WORK

The Contracting Officer shall have the right to suspend work of the Contractor or its Subcontractors whenever the Department determines that the Contractor's or Subcontractor's practices (1) jeopardize health and safety or State property; (2) unreasonably disrupts Department operations; and (3) are not in compliance with the plans and specifications herein. Only the Contracting Officer or his authorized personnel shall be authorized to order the suspension of work. Contractor shall not be entitled to any compensation for suspensions ordered by unauthorized personnel or for suspension due to the reasons stated herein.

#### 1.7 FIELD MEASUREMENTS AND TEMPLATES

- A. Contractor shall obtain all field measurements required for the accurate fabrication and installation of the work included in this Contract. Exact measurements are the Contractor's responsibility. Drawings shall not be scaled.
- B. Contractor shall also furnish or obtain templates, patterns, and setting instructions as required for the installation of all work. All dimensions shall be verified in the field.
- C. Material called out "to match existing" shall be the Contractor's responsibility to verify and provide for use on this project.

#### 1.8 CONTRACTOR'S RESPONSIBILITIES

- A. The General Contractor shall be in charge of this Contract and the site, as well as the directing and scheduling of all work.

It shall be the responsibility of the Contractor to provide the Department and Contracting Officer with the following information on a daily basis by 9:00 a.m.:

1. Status of project (location, phase of work, etc.).
2. A list of trades including the number of workmen and their title(s) present at the job site.

Note: No rain out or delay days will be granted to the Contractor if Items 1 and 2 above are not complied with fully.

- B. Final responsibility for performance, interface, and completion of the work and the project shall be the Contractor's.
- C. After hour call back and/or emergency: The Contractor shall provide the Contracting Officer with a 24 hour emergency phone number where he can be contacted in the event of an emergency. The Contractor shall respond and take corrective action (within 4 hours) to calls made by the Contracting Officer regarding safety and/or hazardous situations directly related to their work. If the Contractor fails to respond or take proper corrective action, he shall be responsible for all costs incurred by the Department.

#### 1.9 JOB SITE ADMINISTRATION

Job site administration shall be the responsibility of the Contractor.

END OF SECTION

SECTION 01300

SUBMITTAL PROCEDURE

PART 1 - GENERAL

1.1 GENERAL CONDITIONS

- A. Where required by the plans and specifications, the Contractor shall submit descriptive information to ascertain whether the Contractor's proposed materials, equipment or methods of work are in general conformance to the design concept and in compliance with the drawings and specifications. The information to be submitted shall consist of drawings, specifications, descriptive data, certificates, samples, test results and such other information, all as specifically required in the specifications.

1.2 BIDDER'S SPECIAL RESPONSIBILITY FOR COORDINATING CONTRACTUAL WORK AND SUBMITTALS:

- A. The Contractor shall be responsible for the coordination of all contractual work and submittals.
- B. The Contractor shall have a rubber stamp made up in the following format:

(Contractor's Name)

PROJECT: Wailoa River SRA War Memorial Improvements

JOB NO. F58C631E

THIS SUBMITTAL HAS BEEN CHECKED BY THIS CONTRACTOR. IT IS CERTIFIED CORRECT, COMPLETE, AND IN COMPLIANCE WITH CONTRACT DRAWINGS AND SPECIFICATIONS. ALL AFFECTED CONTRACTORS AND SUPPLIERS ARE AWARE OF, AND WILL INTEGRATE THIS SUBMITTAL INTO THEIR OWN WORK.

DATE RECEIVED  
SPECIFICATION SECTION #  
SPECIFICATION PARAGRAPH  
DRAWING  
SUBCONTRACTOR  
SUPPLIER  
MANUFACTURER

CERTIFIED BY:

- C. This stamp, "filled in", should appear on the title sheet of each shop drawing, on a cover sheet of submittals in an 8-1/2" x 11" format, or on one face of a cardstock tag (min. 3" x

6") tied to each sample. The tag on the samples should state what the sample is, so that if the tag is accidentally separated from the sample, they can be matched up again. The back of this tag will be used by the Contracting Officer for his receipt, review, and log stamp and for any comments that relate to the sample.

- D. All submittals for material, equipment, and shop drawings listed in the contract documents, shall be required and shall be first reviewed and certified by the Contractor, then reviewed by the Contracting Officer, prior to any ordering of materials and equipment. Submittals that have not been reviewed by the Contractor shall be returned for review.

## PART 2 - CONTRACTOR'S RESPONSIBILITIES

### 2.1 GENERAL

- A. All submittals required by these specifications are required to be submitted by the Contractor in full, complete form, no exceptions. The Contractor shall request in writing to the Contracting Officer those specific submittals he feels are not required or not applicable to the project. Unless so granted by the Contracting Officer, all submittals are required as a prerequisite to project acceptance.
- B. Contractor shall be responsible for the accuracy and completeness of the information contained in each submittal and shall assure that the material, equipment or method of work shall be as described in the submittal. Submittals shall contain all required information, including satisfactory identification of items, units, and assemblies in relation to the contract drawings and specifications. The Contractor shall verify that the material and equipment described in each submittal conform to the requirements of the specifications and drawings. Unless otherwise reviewed by the Contracting Officer, submittals shall be made only by the Contractor, who shall indicate by a signed stamp on the submittals, that it (the Contractor) has checked the submittals, and that the work shown conforms to contract requirements and has been checked for dimensions and relationship with work of all other trades involved. If the information shows deviations from the specifications or drawings, the Contractor, by statement in writing accompanying the information shall identify the deviations and state the reason(s) therefor. The Contractor shall insure that there is no conflict with other submittals and shall notify the Contracting Officer in each case where its submittal may affect the work of another contractor or the State. The Contractor shall insure coordination of submittals among the related crafts and Subcontractors.
- C. The Contractor may authorize in writing a material or equipment supplier to deal directly with the Contracting Officer or with the State with regard to a submittal. The Contractor, however, shall be responsible for the accuracy and completeness of information contained in all submittals.

### 2.2 PERFORMANCE (CONSTRUCTION) SCHEDULE

- A. The Contractor shall provide a construction schedule for scheduling and coordinating the work within the contract time. The construction schedule shall be itemized and be in

Gantt chart format, and shall be submitted to the Contracting Officer for approval no later than 60 days after the Contract Award Date or prior to the issuance of Notice to Proceed, whichever is earlier. Contract time extensions shall be incorporated into updated schedules, reflecting their effect at the time of occurrence. Failure of the Contractor to comply with these requirements for submittal of the performance schedule and reports shall be cause for delay in review of progress payments by the Contracting Officer. Project status review and update shall be provided each month and submitted with progress payment requests.

### 2.3 SUBMITTAL SCHEDULE

- A. The Contractor shall provide a submittal schedule as specified in Section 01010– Summary of Work.

### 2.4 AS-BUILT DRAWINGS

- A. As-Built drawings shall be submitted by the Contractor in conformance with Sections 010100 – Summary of Work, Paragraph 1.05.N.3.

### 2.5 SAMPLES AND TESTING

- A. Where required in the Specifications, and as determined necessary by the Contracting Officer, samples of materials, appliances, and fittings to be used or offered for use in connection with the work shall be submitted to the Contracting Officer at the Contractor's expense, with information as to their sources, with all cartage charges prepaid, and in such quantities and sizes as may be required for proper examination to establish the quality or equality thereof, as applicable.
- B. All samples shall be submitted in ample time to enable the Contracting Officer to make any examinations necessary, without delay to the work. The Contractor will be held responsible for any loss of time due to his neglect or failure to deliver the required samples to the Contracting Officer, as specified.
- C. Samples also shall be taken during the course of the work, as required by the Contracting Officer.
- D. All tests required by the specifications to be performed by an independent laboratory shall be made at the sole expense of the Contractor.
- E. Material used in the work shall conform with the submitted samples and test certificates as approved by the Contracting Officer.

### 2.6 SUBMITTALS FOR COLOR AND FINISH SELECTION

- A. Submit all submittals requiring color / finish selection by the Contracting Officer collectively so that an acceptable color scheme can be selected for all finish materials. The State reserves the right to make color and finish determination only after reviewing all pertinent submittals.

- B. For all colors, finishes and similar characteristics of new materials required to match existing, the Contractor shall in his submittal, identify existing colors / finishes as well as those he proposes to use in the project to match said existing. Where existing materials have been discontinued, the contractor shall propose new materials that most closely match those of the existing.

## PART 3 – TRANSMITTAL PROCEDURE

### 3.1 GENERAL

- A. Submittals regarding material shall be stamped as required, and accompanied by a transmittal document. A separate form shall be used for each specific item, class of material, and items specified in separate, discrete sections, for which the submittal is required. Submittals of various items shall be made with a single form when the items taken together constitute a manufacturer's package or are so functionally related that expediency indicates checking or review of the group or package as a whole.
- B. A unique number, sequentially assigned, shall be noted on the transmittal form accompanying each item submitted. Original submittal numbers shall have the following format: "XXX"; where "XXX" is the sequential number assigned by the Contractor.

- C. Resubmittals shall have the following format:

"XXX-Y"; where "XXX" is the originally assigned submittal number and "Y" is a sequential letter assigned for resubmittals, i.e., A, B, or C being the 1st, 2nd, and 3rd resubmittals, respectively. Submittal 25B, for example, is the second resubmittal of submittal 25.

### 3.2 CONTACT

Department of Land & Natural Resources  
Engineering Division  
1151 Punchbowl St., Rm 221  
Honolulu, HI 96813  
Attention: Dani Yoo  
Email: dani.yoo@hawaii.gov

### 3.3 SUBMITTAL COMPLETENESS

- A. Submittals shall contain all information specifically required and additional information as required to provide a complete description and reference for review by the Contracting Officer.
- B. Submittals shall be complete and not packaged by individual line items as may be presented in the specifications. Submittals shall include all information required of a

specific Section and include pertinent or related information required under separate Sections.

- C. Submittals that are not complete, in the Contracting Officer's opinion, shall be considered not in compliance with the intent of the contract and are therefore unacceptable. Such unacceptable submittals will be returned to the Contractor without review and it will be the Contractor's responsibility to complete and resubmit the submittal.

#### PART 4 - REVIEW PROCEDURE

- 4.1 When the contract requires a submittal, the Contractor shall submit the specified information as follows to the Contracting Officer for review:
  - A. One (1) electronic (digital) file of required submittal documents in PDF format of all the required, submitted information. Illegible copies, as deemed so by Contracting Officer, will be rejected.
  - B. Four (4) sets of sample materials need be submitted, unless otherwise noted or as directed by the Contracting Officer.
- 4.2 Unless otherwise specified, upon receipt of the submittal by the Contracting Officer, the submittal shall be reviewed and the Contracting Officer shall return a copy of a marked-up file. Unless otherwise indicated, the Contractor shall allow for ten (10) working days for review and return of all submittals. Submittals requiring shorter review times may be requested by the Contractor, however, no guarantee is made shorter review periods will be accommodated. The returned submittal shall indicate, by electronically applied consultant review stamp, one of the following actions:
  - A. If the review indicates that the material, or work method is in general conformance with the design concept and complies with the drawings and specifications, submittal copies will be marked "REVIEWED". In this event the Contractor may begin to implement the work method or incorporate the material or equipment covered by the submittal.
  - B. If the review indicates limited corrections are required, copies will be marked "FURNISH AS CORRECTED". The Contractor may begin implementing the work method or incorporating the material and equipment covered by the submittal in accordance with the noted corrections. A corrected copy of the submittal shall be provided by Contractor.
  - C. If the review reveals that the submittal is insufficient or contains incorrect data, submittal will be marked accordingly and will be required to be resubmitted. Except at his own risk, the Contractor shall not undertake work covered by this submittal until the submittal has been revised, resubmitted and returned and marked either "SUBMIT SPECIFIED ITEM" or "FURNISH AS CORRECTED".
  - D. If the review indicates that the material, equipment, or work method is not in general conformance with the design concept or incompliance with the drawings and specifications, copies of the submittal will be marked "REJECTED". Submittals with deviations that have

not been identified clearly may be rejected. Except at its own risk, the Contractor shall not undertake work covered by such submittals until a new submittal is made and returned marked either "SUBMIT SPECIFIED ITEM" or "FURNISH AS CORRECTED".

- 4.3 No changes shall be made by the Contractor of resubmittals other than those changes indicated on the reviewed submittals, unless such changes are clearly described in a letter accompanying the resubmittal. Changes will be subject to review of the Contracting Officer and the former requirements shall also apply.

**PART 5 - EFFECT OF REVIEW OF CONTRACTOR'S SUBMITTALS**

- 5.1 The Contracting Officer's review of drawings, methods of work, or information regarding materials or equipment the Contractor proposes to provide, shall not relieve the Contractor of its responsibility for deficiencies, omissions and errors therein and shall not be regarded as an assumption of risks or liability by the Contracting Officer or the State, or by any officer, employee, consultant, or subcontractor thereof, and the Contractor shall have no claim under the contract on account of the failure, or partial failure, of the method of work, material, or equipment so reviewed. A mark of "SUBMIT SPECIFIED ITEM" or "FURNISH AS CORRECTED" shall mean that the State has no objection to the Contractor, upon its own responsibility, using the plan or method of work proposed, or providing the material or equipment proposed.

Section No. – Title	Shop Drawings & Diagrams	Samples	Certifications (Material, Treatment, Applicator, etc.)	Product Data, Manufacturer's Technical Literature	MSDS Sheets	Calculations	Reports (Testing, Maintenance, Inspection, etc.)	Test Plan	O & M Manual	Equipment of Fixture Listing	Schedules (Project Installation)	Maintenance Service Contract	Field Posted As-Built Drawings	Others	Guaranty or Warranty	Manufacturer's Guaranty or Warranty
<b>01399 – Project Sign</b>	■															
<b>01500 – Temporary Facilities and Controls</b>	■															



<b>Section No. – Title</b>	<b>Shop Drawings &amp; Diagrams</b>	<b>Samples</b>	<b>Certifications (Material, Treatment, Applicator, etc.)</b>	<b>Product Data, Manufacture’s Technical Literature</b>	<b>MSDS Sheets</b>	<b>Calculations</b>	<b>Reports (Testing, Maintenance, Inspection, etc.)</b>	<b>Test Plan</b>	<b>O &amp; M Manual</b>	<b>Equipment of Fixture Listing</b>	<b>Schedules (Project Installation)</b>	<b>Maintenance Service Contract</b>	<b>Field Posted As-Built Drawings</b>	<b>Others</b>	<b>Guaranty or Warranty</b>	<b>Manufacturer’s Guaranty or Warranty</b>
<b>01524 – Construction Waste Management</b>			■			■								■		
<b>01582 – Barricades and Warning Signs</b>		■		■												
<b>01700 – Contract Closeout</b>													■	■	■	■
<b>03300 –Concrete</b>	■		■				■									
<b>03308 – Concrete Sidewalk</b>	■		■				■									
<b>09200 – Lath and Plaster</b>	■		■	■												
<b>10440 - Signage</b>	■	■		■												
<b>10750 - Flagpoles</b>	■			■												■

END OF SECTION

## SECTION 01399

### PROJECT SIGN

#### PART 1 - GENERAL

##### 1.1 DESCRIPTION OF WORK UNDER THIS SECTION

- A. Furnish and install Project Sign as set forth in this section, including framing, supports and bracing; maintenance; removal and restoration of site.
- B. A Project Sign shall consist of one Informational Board (depicted in Exhibit A, attached); and all necessary framing, support, bracing and preparatory site work appurtenant thereto. The sign shall be as indicated in this section.
- C. The Project shall require one (1) Project Sign:
  - 1. Project Sign: Location shall be determined by the Contracting Officer.

##### 1.2 SUBMITTALS

Contractor shall submit to the Contracting Officer in accordance with Section 01300 – SUBMITTAL PROCEDURE, the following items for review and approval:

- A. Shop drawings of the final sign copy with all graphics, in its finished colors and at not less than 1-1/2" = 1'-0" scale. Shop drawings shall be camera-ready copy.
- B. The State of Hawai'i reserves the right to modify the color scheme at the time of the submittal to ensure the graphics and copy are legible and clearly distinguishable relative to the purpose and intent of the sign.

##### 1.3 GENERAL REQUIREMENTS

- A. All Project Sign(s) shall be installed in their final location(s) at the job site not later than five (5) working days following Notice to Proceed. Under no circumstances shall the contractor be allowed to fully mobilize to the construction site nor commence any on site work until all required project signs have been installed and the final installation(s) approved by the Contracting Officer. Should the Contractor desire to commence the work ahead of the NTP on his own volition, the signs shall be installed within 5 of the agreed date of commencement or the penalties in paragraph C shall apply.
- B. The Contractor shall coordinate a meeting at the job site with the Contracting Officer to determine the exact location(s) and orientation(s) of the project sign(s). The Contractor is responsible to ensure the placement of the sign(s) will not interfere with its work scope and complies with all applicable rules and regulations. In the event a sign must be relocated, it shall be done so in accordance with the requirements for original placement and at no additional cost to the State of Hawai'i.

- C. Failure to furnish and install all project signs to the satisfaction of the Contracting Officer shall result in an assessed penalty of One Hundred Dollars (\$100) per consecutive calendar day incurred after the five-day grace period. Upon failure to install the signs after 30 consecutive calendar days following NTP, the State of Hawai'i reserves the right to secure the services of a separate contractor to furnish and install the project signs; all costs, direct and indirect, associated with such actions or portions thereof shall be assessed the contractor via deductive change order. Failure to install all project signs completely shall be justification for the stoppage of work by the Contracting Officer and no additional contract time will be granted from the contractor.

## PART 2 - PRODUCTS

### 2.1 MATERIALS

- A. Softwood Lumber Standard: Comply with the standards of Rule Book No. 16, "Standard Grading Rules for West Coast Lumber", effective September 1970, including Supplements I through IV of the West Coast Lumber Inspection Bureau.
- B. Softwood Plywood Standards: Shall be Douglas Fir, laminated veneers, exterior type, bonded with waterproof phenolic resin glue, DFPA grade marked: A-B. Plywood sheets for signs shall be specifically selected for use as a sign panel and shall be free from surface defects that would telegraph through sign copy.
- C. Fasteners: Shall be #12, length as appropriate for maximum penetration of components, 304 stainless steel, square drive.

### 2.2 PAINT

- A. The products specified herein are supplied by ICI and are so named to establish desired quality and standard of materials. The following manufacturers' products are acceptable, provided the products supplied are equal: Ace, Benjamin Moore, Cabot's, Carboline, Dupont, Dutch Boy, Fine Line Paint Corp., ICI Ameritone, ICI Decratrend, ICI Devoe, ICI Dulux, ICE Fuller O'Brien, ICI Glidden, ICI Sinclair, Martin Seymour, Olympic Stain, Pervo, Pittsburg, Porter Intl., Pratt & Lambert, Rust-Oleum, Sherwin-Williams, Smiland (Style tone), Spectra-Tone, Thoro Systems, Tnemec, United Paint and Coatings.
  - 1. All paint shall be lead-free, cadmium-free, mercury-free and chromate-free.

### B. SCHEDULE OF FINISHES

- 1. Paint plywood sign panel(s) and allow to fully cure prior to application of the vinyl sign faces. Paint all supports, framing and bracing, complete, in the shop prior to assembly and touch-up as needed in the field after erection.

2. Schedule: The schedule of paints shall be applied to the sign in the order presented:
  - a. 1 Prime Coat: Zinsser Cover-stain, 400 s.f. per gallon; tinted towards finish coat
  - b. 2 Finish Coats: ICI Paints Devshield 4328, 1.6-2.0 mils DFT; 400 sq. ft. per gallon; match sign background color

### 2.3 VINYL SIGN FACES

Sign face shall be generated on a vinyl sign surface by a digitizing graphics machine. All lettering, graphics and colored areas shall be thusly painted on, no vinyl appliques or metal sign plates shall be incorporated into the sign, unless noted otherwise. Vinyl sign shall be glued-on to the prepared plywood sign panel and allowed to fully cure prior to installation.

## PART 3 – EXECUTION

### 3.1 WORKMANSHIP

Sign panels shall be produced by a sign maker with prior experience in making these types of signs. All finishes shall be of highest quality and pleasing to the naked eye. Smudges, mars, discoloration, blemishes, fading, blurriness and other unacceptable conditions shall cause for rejection of the entire sign and immediately addressed by the Contractor.

Sign copy and graphics shall be clear, undistorted and have crisp, clean edges. Vinyl sign face shall be installed straight and true to the plywood backing and shall have no bubbles, creases, stretch marks, rips, tears, air pockets or other conditions indicative of poor workmanship.

### 3.2 INSTALLATION

- A. All signs' posts and supports shall be erected plumb and level and in the orientation desired. See Exhibit B for additional framing requirements. In areas near the shoreline (within 0.25 miles) or otherwise susceptible to high wind loads, the Contractor shall secure the services of a licensed structural engineer to design the sign supports. Shop drawings with structural calculations shall be submitted.
- B. The sign shall be located so as not to occlude or distract from roadway traffic signage, regulatory signage, or other existing informational signage.
- C. Sign Board: All fastener locations shall be pre-drilled and countersunk. Fasteners shall be provided at 6-inches on-center at the sign perimeter and 12-inches on-center at the intermediate vertical framing. Fastener locations shall be adjusted so as not to impede legibility of the sign's information. All exposed fastener heads shall be painted to match the corresponding sign color in the immediate vicinity.

### 3.3 MAINTENANCE

- A. The contractor shall maintain the project sign(s) in place, free of vandalism and secure in installation, for the duration of the contract. The contractor shall immediately address any acts of vandalism, theft, damage or general deterioration to the project sign(s) as appropriate, whether by fixing or replacing components, to the satisfaction of the Contracting Officer, at no additional cost to the State of Hawai'i.
- B. The Contractor shall take all necessary precautions to prevent willful vandalism or damage to the project signs. All such measures shall be incidental to its bid.
- C. Vegetation shall be trimmed away from signs and prevented from occluding the signs at any time.
- D. Signs shall be kept in like-new, neat and presentable condition at all times.

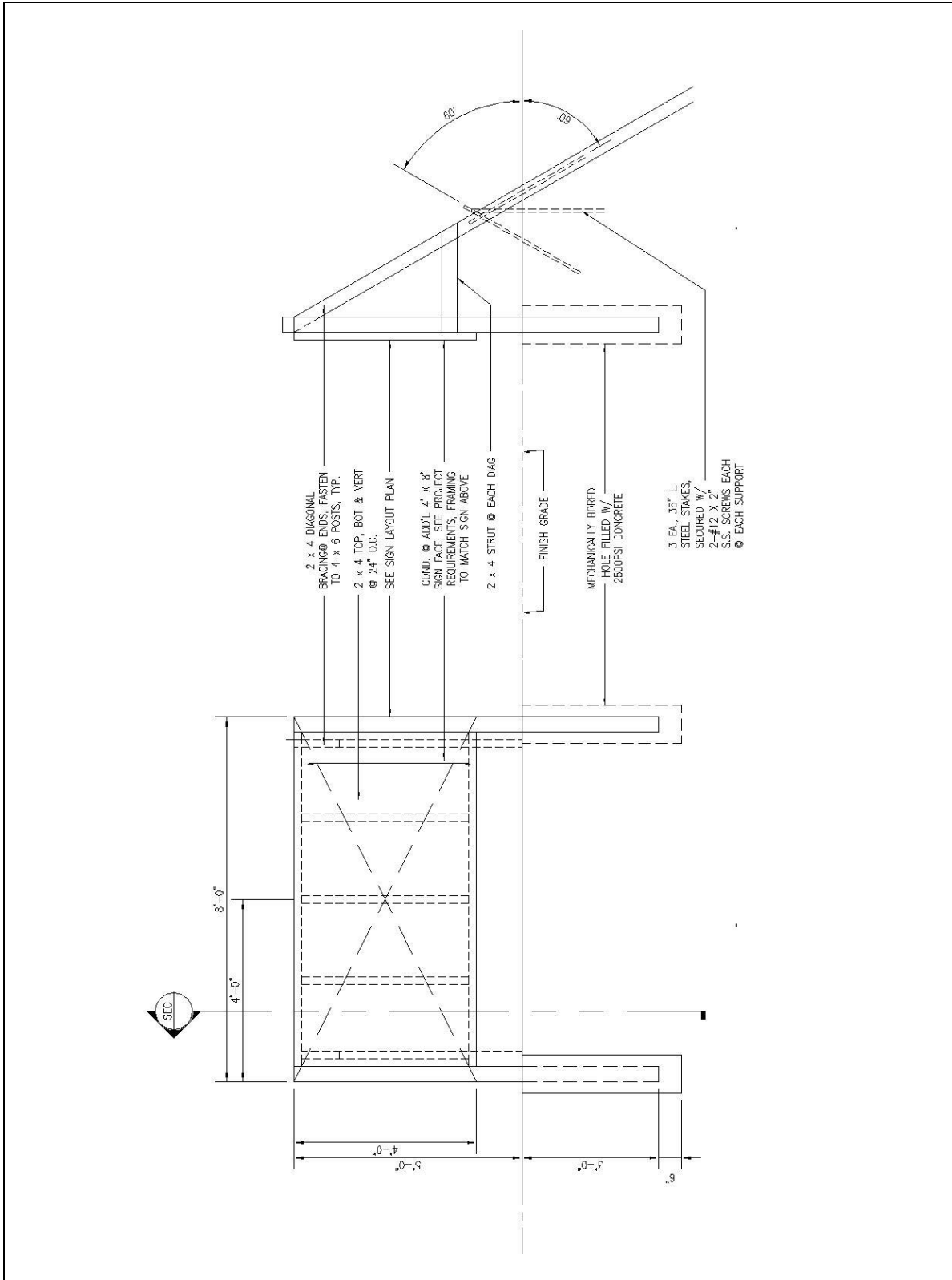
#### 3.4 REMOVAL AND RESTORATION

- A. Upon conducting the Final Inspection and with the approval of the Contracting Officer, the Contractor shall remove all project signs and associated improvements from the job site.
- B. Sign panels shall be removed neatly from the supports and the sign faces restored to an acceptable condition. At the Contracting Officer's discretion, the sign faces shall either be disposed of properly or turned in to the State of Hawai'i at a location to be determined, incidental to the project.
- C. The Contractor shall restore the areas affected by the sign installation to their appropriate ground surface conditions to the Contracting Officer's satisfaction.

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END OF SECTION

Project Sign  
01399 - 6

## SECTION 01400

### QUALITY CONTROL

#### PART 1 - GENERAL

##### 1.1 APPLICABLE CODES AND STANDARDS

- A. All work shall meet or exceed the requirements of the Uniform Building Code (UBC), Uniform Plumbing Code (UPC), National Electrical Code (NEC), latest adopted editions and the applicable codes and ordinances having jurisdiction of the State, and Federal governments. All work and improvements shall also be in accordance with the Americans with Disabilities Act Accessible Guidelines (ADAAG), HRS 103-50, and Chapter 11 of the Administrative Rules of the Department of Health, State of Hawaii.
- B. References in the specifications to "code" or to "building code" not otherwise identified, shall mean the foregoing specified codes, together with the additions, changes, amendments, and interpretations adopted by the enforcing agency, and in effect on the date of these contract documents. Nothing on the drawings or in the specifications should be interpreted as requiring or permitting work that is contrary to these rules, regulations, and codes. Any such discrepancies shall be brought to the attention of the Contracting Officer immediately.
- C. Where other codes or standards are referenced hereinafter in these specifications, the affected work shall meet or exceed the applicable requirements of such codes and standards. When the latest edition of a standard is specified, it shall mean the latest edition in effect as of the date of these contract documents. When the documents are not dated, the date of execution of the agreement shall establish the date of the contract documents. In the event that during the construction period, codes or standards referenced are superseded by newly promulgated regulations, and conflict with the plans and specifications exist, such conflict shall be brought to the attention of the Contracting Officer immediately.
- D. The code, specification, or standard referred to shall have full force and effect as though printed in these specifications, except as modified in these specifications.
- E. Where the drawings or specifications call for or describe materials, workmanship, or construction of a better quality, higher standard, or larger size than is required by said laws, codes, rules, and regulations, the provisions of the drawings and specifications shall take precedence over said laws, codes, rules, and regulations.

##### 1.2 OTHER APPLICABLE LAWS AND REGULATIONS

All applicable Federal, State, and local laws, and the regulations of governing utility districts and the various other authorities having jurisdiction over the construction and completion of the project shall apply to the contract throughout, and they shall be deemed to be included in the contract the same as though printed in the specifications.



### 1.3 REFERENCES

- A. The contract documents contain references to various standard specifications, codes, practices, and requirements for materials, work quality, installation, inspections, and tests, which references are published and issued by the organizations, societies, and associations listed below by abbreviation and name. Such references are hereby made a part of the contract documents to the extent required.
- B. The Specifications and Standards of the American Society for Testing and Materials (ASTM) and the American National Standards Institute (ANSI) are identified in the various sections by abbreviation and number only (not by title) and are not further identified.
- C. When the effective date of a reference standard is provided or not provided, it shall be understood that the current edition or latest revision thereof and any amendments or supplements thereto in effect shall govern the work.
- D. Reference standards are not furnished with the contract documents. The Contractor shall obtain copies of referenced standards direct from publication sources as needed for proper performance and completion of the work and provide and maintain referenced standards at the job site field office.

### 1.4 ABBREVIATIONS

Whenever in the specifications the abbreviation or acronym is specified, it shall be understood to mean the full name of the respective organization, as follows:

AAMA	Architectural Aluminum Manufacturer's Association
ACI	American Concrete Institute
ADA	Americans with Disabilities Act
ADAAG	Americans with Disabilities Act Accessibility Guidelines
AIA	American Institute of Architects
AIMA	Acoustical and Insulating Materials Association
AISC	American Institute of Steel Construction
ANSI	American National Standards Institute
APA	American Plywood Association
ARDI	American Rolling Door Institute
ASHRAE	American Society of Heating, Refrigerating and Air Conditioning Engineers, Inc.
ASTM	American Society for Testing and Materials
AWPA	American Wood Preservers Association
AWPB	American Wood Preservers Bureau
AWPI	American Wood Preservers Institute
AWS	American Welding Society
AWI	Architectural Woodwork Institute
BHMA	Builders' Hardware Manufacturer's Association
CRSI	Concrete Reinforcing Steel Institute
CS	U.S. Commercial Standard
CDA	Copper Development Association

DHI	Door and Hardware Institute
FGMA	Flat Glass Marketing Association
FS	Federal Specification (also abbreviated Fed. Spec.)
HMMA	Hollow Metal Manufacturer's Association
ICBO	International Conference of Building Officials
IEEE	Institute of Electrical and Electronic Engineers
IFB	Invitation for Bids
NAAMM	National Association of Architectural Metal Manufacturers
NBFU	National Board of Fire Underwriters
NCMA	National Concrete Masonry Association
NEC	National Electric Code
NEMA	National Electrical Manufacturers Association
NFPA	National Fire Protection Association
NWMA	National Woodwork Manufacturer's Association
MBMA	Metal Building Manufacturer's Association
PCA	Portland Cement Association
PDCA	Painting and Decorating Contractors of America
PIB	Plastering Industry Bureau
PS	U.S. Product Standard
PUC	Public Utilities Commission
RIS	Redwood Inspection Service
SMDI	Sheet Metal Door Institute
SMACNA	Sheet Metal and Air Conditioning Contractor's National Association
SWI	Sealant and Water proofers Institute
SSPC	Steel Structures Painting Council
TCA	Tile Council of America
UBC	Uniform Building Code
UMC	Uniform Mechanical Code
UL	Underwriters' Laboratories, Inc.
UPC	Uniform Plumbing Code
WCLIB	West Coast Lumber Inspection Bureau
WWPA	Western Wood Products Association

END OF SECTION

## SECTION 01500

### TEMPORARY FACILITIES AND CONTROLS

#### PART 1 - GENERAL

##### 1.1 SUMMARY

- A. This Section includes requirements for temporary utilities, support facilities, and security and protection facilities.
- B. See Division 01, Section 01700 - Contract Closout for progress cleaning requirements.

##### 1.2 DEFINITIONS

- A. Permanent Enclosure: As determined by Contracting Officer, permanent or temporary roofing is complete, insulated, and weathertight; exterior walls are insulated and weathertight; and all openings are closed with permanent construction or substantial temporary closures.

##### 1.3 USE CHARGES

- A. General: Cost or use charges for temporary facilities shall be included in the Contract Sum. Allow other entities to use temporary services and facilities without cost, including, but not limited to, Contracting Officer, Owner's representative, testing agencies, and authorities having jurisdiction.

##### 1.4 SUBMITTALS

- A. Site Plan: Show temporary facilities, utility hookups, staging areas, and parking areas for construction personnel.
- B. Comply with 2010 ADAAG requirements to provide accessible route to temporary facilities. Show route complying with ADAAG on site plan.

##### 1.5 QUALITY ASSURANCE

- A. Electric Service: Comply with NECA, NEMA, and UL standards and regulations for temporary electric service. Install service to comply with NFPA 70.
- B. Tests and Inspections: Arrange for authorities having jurisdiction to test and inspect each temporary utility before use. Obtain required certifications and permits.

##### 1.6 PROJECT CONDITIONS

- A. Temporary Use of Permanent Facilities: Installer of each permanent service shall assume responsibility for operation, maintenance, and protection of each permanent service during

its use as a construction facility before Owner's acceptance, regardless of previously assigned responsibilities.

## PART 2 – PRODUCTS (Not Used)

## PART 3 - EXECUTION

### 3.1 INSTALLATION, GENERAL

- A. Locate facilities where they will serve Project adequately and result in minimum interference with performance of the Work. Relocate and modify facilities as required by progress of the Work.
- B. Provide each facility ready for use when needed to avoid delay. Do not remove until facilities are no longer needed or are replaced by authorized use of completed permanent facilities.

### 3.2 TEMPORARY UTILITY INSTALLATION

- A. General: Install temporary service or connect to existing service.
  - 1. Arrange with utility company, Owner, and existing users for time when service can be interrupted, if necessary, to make connections for temporary services.
- B. Sanitary Facilities: Contractor shall provide adequate temporary sanitary facilities on-site.
  - 1. Contractor shall ensure, on a daily basis, that the facilities are maintained in a clean and orderly condition.
  - 2. Construction personnel may not use existing public sanitation facilities.

### 3.3 SUPPORT FACILITIES INSTALLATION

- A. General: Comply with the following:
  - 1. Provide incombustible construction for offices, shops, and sheds located within construction area or within 30 feet of building lines. Comply with NFPA 241.
  - 2. Maintain support facilities until near Final Completion. Remove before Final Completion. Personnel remaining after Final Completion will be permitted to use permanent facilities, under conditions acceptable to Owner.
- B. Traffic Controls: Comply with requirements of authorities having jurisdiction.
  - 1. Protect existing site improvements to remain including curbs, pavement, and utilities.

2. Maintain access for fire-fighting equipment and access to fire hydrants.
- C. Parking: Provide temporary parking areas for construction personnel.
1. Coordinate with the Contracting Officer to determine quantity and location of parking stalls for construction personnel.
- D. Project Identification and Temporary Signs: Provide Project identification and other signs as indicated on Drawings. Install signs were indicated to inform public and individuals seeking entrance to Project. Unauthorized signs are not permitted.
1. Provide temporary, directional signs for construction personnel and visitors.
  2. Maintain and touchup signs so they are legible at all times.
- E. Waste Disposal Facilities: Provide waste-collection containers in sizes adequate to handle waste from construction operations. Comply with requirements of authorities having jurisdiction. Comply with Division 01 Sections "Construction Waste Management" and "Execution" for progress cleaning requirements.
- F. Lifts and Hoists: Provide facilities necessary for hoisting materials and personnel.
1. Truck cranes and similar devices used for hoisting materials are considered "tools and equipment" and not temporary facilities.

#### 3.4 SECURITY AND PROTECTION FACILITIES INSTALLATION

- A. Environmental Protection: Provide protection, operate temporary facilities, and conduct construction in ways and by methods that comply with environmental regulations and that minimize possible air, waterway, and subsoil contamination or pollution or other undesirable effects.
- B. Dusts Control: Provide measures to prevent discharge of dust to adjacent properties and walkways, according to requirements of authorities having jurisdiction.
- C. Barricades, Warning Signs, and Lights: Comply with requirements of authorities having jurisdiction for erecting structurally adequate barricades, including warning signs and lighting.
- D. Temporary Enclosures: Provide temporary enclosures for protection of construction, in progress and completed, from exposure, foul weather, other construction operations, and similar activities. Provide temporary weathertight enclosure for building exterior.
1. Where heating or cooling is needed and permanent enclosure is not complete, insulate temporary enclosures.

- E. Temporary Fire Protection: Install and maintain temporary fire-protection facilities of types needed to protect against reasonably predictable and controllable fire losses. Comply with NFPA 241.
  - 1. Prohibit smoking in all construction areas.
  - 2. Supervise sources of fire ignition according to requirements of authorities having jurisdiction.
  - 3. Develop and supervise an overall fire-prevention and protection program for personnel at Project site. Review needs with local fire department and establish procedures to be followed. Instruct personnel in methods and procedures. Post warnings and information.

### 3.5 OPERATION, TERMINATION, AND REMOVAL

- A. Supervision: Enforce strict discipline in use of temporary facilities. To minimize waste and abuse, limit availability of temporary facilities to essential and intended uses.
- B. Maintenance: Maintain facilities in good operating condition until removal.
  - 1. Maintain operation of temporary enclosures, heating, cooling, humidity control, ventilation, and similar facilities on a 24-hour basis where required to achieve indicated results and to avoid possibility of damage.
- C. Temporary Facility Changeover: Do not change over from using temporary security and protection facilities to permanent facilities until Final Acceptance of Contract.
- D. Termination and Removal: Remove each temporary facility when need for its service has ended, when it has been replaced by authorized use of a permanent facility, or no later than Final Completion. Complete or, if necessary, restore permanent construction that may have been delayed because of interference with temporary facility. Repair damaged Work, clean exposed surfaces, and replace construction that cannot be satisfactorily repaired.
  - 1. Materials and facilities that constitute temporary facilities are property of Contractor. Owner reserves right to take possession of Project identification signs.
  - 2. At Final Completion, clean and renovate permanent facilities used during construction period. Comply with final cleaning requirements specified in Division 01 Section "Closeout Procedures."
  - 3. At completion of construction, temporary accessible route can be removed.

END OF SECTION

## SECTION 01524

### CONSTRUCTION WASTE MANAGEMENT

#### PART 1 - GENERAL

##### 1.1 SUMMARY

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

##### 1.2 DEFINITIONS

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

##### 1.3 PERFORMANCE REQUIREMENTS

- A. At no time shall excavated material be removed or disposed of off site. Coordinate with Contracting Officer to deposit at designated location on the site any excavated material not used for fill in this project.
- B. Salvage/Recycle Requirements: Owner's requirement is to salvage and recycle as much non-hazardous construction waste as possible including, but not limited to, the following materials:
  - 1. Construction Waste:
    - a. Site-clearing waste.

- b. Masonry.
  - c. Lumber.
  - d. Wood sheet materials.
2. Packaging: Regardless of salvage/recycle goal indicated above, salvage or recycle 100% of the following uncontaminated packaging materials:
- a. Paper.
  - b. Cardboard.
  - c. Boxes.
  - d. Plastic sheet and film.
  - e. Polystyrene packaging.
  - f. Wood crates.
  - g. Plastic pails

#### 1.4 QUALITY ASSURANCE

- A. Waste Management Coordinator Qualifications: Submit qualifications of individual designated as Waste Management Coordinator, including resume and past related projects.
- B. Regulatory Requirements: Comply with hauling and disposal regulations of authorities having jurisdiction.

#### PART 2 – PRODUCTS (Not Used)

#### PART 3 - EXECUTION

##### 3.1 RECYCLING CONSTRUCTION WASTE, GENERAL

- A. General: Recycle paper and beverage containers used by on-site workers.
- B. Recycling Incentives: Revenues, savings, rebates, tax credits, and other incentives received for recycling waste materials shall accrue to Owner.
- C. Procedures: Separate recyclable waste from other waste materials, trash, and debris. Separate recyclable waste by type at Project site to the maximum extent practical.



1. Provide appropriately marked containers or bins for controlling recyclable waste until they are removed from the Project site. Include a list of acceptable and unacceptable materials at each container and bin. Inspect containers and bins for contamination and remove contaminated materials if found.
2. Stockpile processed materials on-site without intermixing with other materials. Place, grade, and shape stockpiles to drain surface water. Cover to prevent windblown dust.
3. Verify compliance with pre-construction requirements, and obtain a copy of notifications.
4. Store components off the ground and protect from the weather.
5. Remove recyclable waste off Owner's property and transport to recycling receiver or processor.

### 3.2 RECYCLING CONSTRUCTION WASTE

#### A. Packaging:

1. Cardboard and Boxes: Break down packaging into flat sheets. Bundle and store in a dry location.
2. Polystyrene Packaging: Separate and bag materials.
3. Pallets: As much as possible, require deliveries using pallets to remove pallets from the Project site. For pallets that remain on-site, break down pallets into component wood pieces and comply with requirements for recycling wood.
4. Crates: Break down crates into component wood pieces and comply with requirements for recycling wood.

#### B. Concrete: Remove reinforcement and other metals from concrete and sort with other metals.

1. Pulverize concrete to maximum 6" size.

### 3.3 DISPOSAL OF WASTE

#### A. General: Except for items or materials to be salvaged, recycled, or otherwise reused, remove waste materials from Project site and legally dispose of them in a landfill or incinerator acceptable to authorities having jurisdiction.

1. Except as otherwise specified, do not allow waste materials that are to be disposed of to accumulate on-site.

2. Remove and transport debris in a manner that will prevent spillage on adjacent surfaces and areas.
- B. Burning: Burning of waste materials is not permitted.
  - C. Disposal: Transport waste materials off State property and legally dispose of them.
  - D. At no time shall excavated material be removed or disposed of off site. Coordinate with Contracting Officer to deposit at designated location on the site any excavated material not used for fill in this project.

END OF SECTION

## SECTION 01567

### POLLUTION CONTROL

#### PART 1 – GENERAL

##### 1.1 GENERAL REQUIREMENTS

###### A. Rubbish Disposal

1. No burning of debris and/or waste materials shall be permitted on the project site.
2. No burying of debris and/or waste materials, except for materials that are specifically indicated elsewhere in these specifications as suitable for backfill, shall be permitted on the project site.
3. All usable debris and waste material shall be hauled away to an appropriate off-site waste dump area. During loading operations, debris and waste material shall be watered down to allay dust.
4. No dry sweeping shall be permitted in cleaning rubbish and fines, which can become airborne from roof or other areas. Vacuuming, wet mopping or wet/damp sweeping is permissible.
5. Clean-up shall include the collection of all wastepaper and wrapping materials, cans, bottles, construction waste material and other objectionable materials, and their removal as required. Frequency of clean-up shall coincide with rubbish-generating activities; the work area shall be free of non-containerized debris and waste material at the end of each work day.

###### B. Dust

1. The Contractor shall prevent dust from becoming airborne at all times including non-working hours, weekends and holidays in conformance with State of Hawaii, Department of Health, Administrative Rules, Title 11, Chapter 60.1 – Air Pollution Control.
2. The method of dust control and costs shall be the responsibility of the Contractor. Methods of dust control shall include the use of water or chemicals approved for such use over surfaces that may create airborne dust.
3. The Contractor shall be responsible for all damage claims in accordance with section 7.7 – “Responsibility for Damage Claims” of the GENERAL CONDITIONS.

###### C. Noise

1. Noise shall be kept within acceptable levels at all times, in conformance with State of Hawaii, Department of Health, Administrative Rules, Title 11, Chapter 46 – Community Noise Control. The Contractor shall obtain and pay for the Community Noise Permit from the State of Hawaii, Department of Health when construction related equipment or activities emit noise at levels exceeding the specified limits.
2. All internal combustion engine-powered equipment shall have mufflers to minimize noise and shall be properly maintained to reduce noise to within acceptable levels.
3. Starting-up of construction equipment meeting allowable noise limits shall not be done prior to 7:45 AM without prior approval of the Contracting Officer. Equipment exceeding allowable noise levels shall not be started-up prior to 7:00 AM.

D. Others

1. Wherever construction and construction-related vehicles leave the site and enter surrounding paved streets or public rights-of-ways, the Contractor shall prevent any materials from being carried onto hard surfaces. All materials deposited on paved roads, streets, parking lots, sidewalks or walkways shall be immediately removed and cleaned to the satisfaction of the Contracting Officer.
2. Wastewater shall not be discharged into existing streams, waterways or drainage systems such as gutters and catch basins unless treated to comply with the State of Hawaii, Department of Health water pollution regulations.
3. Trucks hauling debris shall be covered as required by PUC Regulations. Trucks hauling fine materials or materials that may generate dust shall be covered, without exception.
4. No dumping of waste concrete will be permitted at the jobsite unless otherwise permitted in the Special Provisions.
5. Except for rinsing of hopper and delivery chute, and for wheel washing where required, concrete trucks shall not be cleaned on the job site. Rinse water shall not be allowed to drain into the drainage system.
6. Except in an emergency, such as mechanical failure, all vehicles fueling and maintenance shall be done in a designated area. A temporary berm shall be constructed around the area when runoff can cause a problem.

E. Suspension of Work

1. Violations of any of the above requirements or any other pollution control requirements which may be specified in the Technical Specifications herein shall be cause for suspension of the work creating such violation. No additional compensation shall be due to the Contractor for remedial measures to correct the

offense. Also, no extension of time will be granted for delays caused by such suspension.

2. If no corrective action is taken by the Contractor within 72 hours after suspension is ordered by the Contracting Officer, the State reserves the right to take whatever action is necessary to correct the situation and to deduct all costs incurred by the State in taking such action from monies due the Contractor.
3. The Contracting Officer may also suspend any operations that s/he feels are creating pollution problems although they may not be in violation of the above-mentioned requirements.

END OF SECTION

## SECTION 01582

### BARRICADES AND WARNING SIGNS

#### PART 1 - GENERAL

##### 1.1 GENERAL REQUIREMENTS

Furnish all labor, materials, and equipment necessary to construct and install temporary barricades and warning signs as specified hereinafter.

#### PART 2 - PRODUCTS

##### 2.1 TEMPORARY BARRICADES

###### A. MATERIALS:

1. Fence Posts: 6-foot long, galvanized "T" posts
2. Fabric: 4-foot high, high-visibility orange, plastic rectangular mesh fencing material w/UV inhibitors, contractor's grade, not less than 20-pounds in weight per 100 linear feet.
3. Tension Wire: No. 7 55 gage zinc-coated coil steel wire with 1.2 ounces of zinc coating 56 per square foot of surface.
4. Ties: Nylon 6/6, U/V stabilized, weather resistant cable ties, black, length as appropriate.

##### 2.2 WARNING SIGNS

###### A. MATERIALS:

1. Backing: Backing shall be 6061-T6 aluminum 0.032-inch minimum thickness
2. Paint: Commercial grade, high gloss, baked-on enamel
3. Signs shall be manufactured by a professional sign maker.

###### B. COLORS:

1. "Warning" sign shall have white background and its copy and graphics shall be similar to Rust-Oleum Federal Safety Red.
2. "Caution" sign shall be 12" high by 18" wide of the configuration shown below. Background shall be OSHA Yellow and copy shall be black.

C. REQUIREMENTS FOR WARNING SIGNS:

Message configuration and dimensions shall be in accordance with the attached illustrations.

PART 3 – EXECUTION

3.1 INSTALLATION

A. BARRICADES:

1. Fence posts shall be manually/mechanically pounded 24-inches deep into native, undisturbed earth or rock. Posts shall be able to independently withstand 50-lbs of pressure applied at its topmost point, in all directions. Additional support shall be provided to ensure each post adequately resists the required force.
2. Fence posts shall be installed at 8-foot centers and at each change in grade or direction and each fence post shall be capped with a compatible vinyl molded Safe-T-Post cap.
3. Tension wire shall be strung continuously and attached at the tops and near the bottoms of the posts to support the fencing fabric. Tension wire shall be affixed to each post with short sections of the same material used as tie wire. Tensions wire shall be pulled taught and evidence no sagging, kinks, bends, or other flaws that would not allow it to adequately support the fence fabric.
4. Fabric shall be affixed to every post and the tension wire utilizing nylon ties spaced equally at 18-inches on center. Fabric shall be installed taught and generally follow the contour of the grades where it is placed. At no time shall the fence have any gaps in or under it unless it is a designated ingress/egress point in use by the Contractor.
5. The Contractor shall provide prefabricated gates of similar characteristics (minimum) to the barricade for ingress/egress points that it intends to use on a continuous basis.

B. SIGNS:

1. Warning signs shall be located at 25-foot intervals at the barricaded perimeter or at midpoint of each continuous plane of fencing, whichever is more restrictive.
2. Caution signs shall be placed at all formal points of entry (on the gates in the “closed” position and adjacent to the gates in the “open” position) into the construction site at the barricade and at every terminus of the perimeter barricades.
3. Where sign placement does not correspond to a barricade, a sign shall be mounted on a temporary metal stake. Signs shall not be mounted to trees or other improvements scheduled to remain.

4. Signs shall be affixed at all four corners to the temporary barricade or other approved surface. When placed on the barricades, the two top corners of the signs shall be drilled and affixed to the top tension wire using two nylon ties, and the bottom two corners shall be affixed to the barricade fabric using two nylon ties.
5. The contractor may install additional signs as required by its safety program, but they shall be in addition to, not substitutes in lieu of, the signs required by this section.

### 3.2 PLACEMENT

- A. At minimum, temporary barricades and signage shall be required at the perimeter of all construction activities, or at the Contract Zone Limits, unless stated otherwise.
- B. Temporary barricades shall be installed and approved by the Contracting Officer in-place prior to the contractor mobilizing any equipment, materials, or other project related items to the job site.
- C. Temporary barricades shall remain in place until the work area contained therein is reviewed by the Contracting Officer and he/she has approved the removal of the barricades.
- D. Configuration of temporary barricades may be altered with the Contracting Officer's approval as appropriate for the projects' on-going work.

### 3.3 MAINTENANCE

- A. Contractor shall maintain all temporary barricades and signs for the duration of the project. Damaged, defaced, or stolen signs and barricades shall be immediately replaced with new materials or restored to original condition. The Contractor shall be required to respond immediately to notification of damaged barricades, ceasing work at other areas of the site or responding immediately to the site, to rectify the situation to the satisfaction of the Contracting Officer.
- B. The Contractor shall replace sections of the barricade removed for its own access reasons in whole; no seams or splices shall occur between posts, only at posts.
- C. Failure to properly install and maintain barricades and signage shall be grounds for stoppage of all onsite work activity at the contractor's sole expense and withholding of all pending payment applications until the issue is resolved.

### 3.4 REMOVAL AND RESTORATION

- A. With the Contracting Officer's consent, the Contractor shall remove all temporary barricades and restore the site to its preexisting condition or better. No traces of the barricades shall remain.



- B. Maintenance of all improvements, landscaping and lawns located within the barricades throughout the duration of the project shall be the contractor's responsibility. Restoration and acceptance of said items shall be a condition of removal of the barricades.



CAUTION SIGN



END OF SECTION

## SECTION 01700

### CONTRACT CLOSEOUT

#### PART 1 - GENERAL

##### 1.1 CLOSEOUT PROCEDURES

- A. A final inspection to determine acceptance of the project will be performed by the Contractor and Contracting Officer.
- B. From the information gathered from this inspection, the Contracting Officer will prepare a "punch list" of work to be performed before the project will be accepted. All work on the punch list shall be completed by the Contractor prior to acceptance of the project by the Contracting Officer.
- C. Execute final cleaning prior to final inspection.

##### 1.3 PROJECT RECORD DOCUMENTS

Store documents separate from those used for construction. Keep documents ("As-Built Drawing") current and do not permanently conceal any work until required information has been recorded. Prior to contract closeout, submit documents with transmittal letter for review and acceptance by the Contracting Officer.

##### 1.4 WARRANTIES

Provide triplicate notarized copies. Execute submittals and assemble documents executed by subcontractors, suppliers, and manufacturers. Submit materials prior to final application for payment. All warranties shall be in effect from the date of project acceptance for the duration specified.

##### 1.5 FINAL CLEANING

- A. At the completion of the project, prior to acceptance and prior to the final inspection, thoroughly clean the job site, buildings, and work areas. Areas requiring cleaning shall be limited to construction areas, areas used, traversed, or soiled by and attributed to construction operations and as indicated herein after. Vacuum clean where appropriate and remove grease, adhesive, dust, dirt, stains, fingerprints, labels, and other foreign materials from sight exposed. Use commercial cleaning compounds where necessary. Clean all surfaces where soiled. Clean and leave in like new condition all surfaces not specifically mentioned above.
- B. Follow the recommendations of the manufacturers of the materials and items to be cleaned for all cleaning, polishing, and treatment.

- C. Also prior to final inspection, clean the site and put it into a neat, acceptable condition. Hose down and scrub where necessary all existing pavement and walks dirtied as a result of the work. Contractor shall conduct an inspection of sight exposed surfaces, and all work areas, to verify that the entire work is clean and ready for final inspection.

END OF SECTION

## Section 02230

### Site Clearing

#### PART 1 - GENERAL

##### 1.01 GENERAL REQUIREMENTS

- A. Furnish materials, labor, and equipment necessary to clear the entire construction area, accumulate, and dispose of all debris and waste materials, and lay out the entire work, all as indicated on the drawings and specified herein.

#### PART 2 - PRODUCTS

##### 2.01 MATERIALS

- A. Asbestos Prohibition: No asbestos containing materials or equipment shall be used under this section. The Contractor shall ensure that all materials and equipment incorporated in the project are asbestos-free.

#### PART 3 - EXECUTION

##### 3.01 CLEARING

- A. The Contractor shall clear the premises of all obstacles and obstructions, the removal of which will be necessary for the proper reception, construction, execution, and completion of other work included in this contract.
- B. Within the Contract Zone Limits and where indicated on the drawings, clear the entire ground surface of all grass, weeds, and plants to ground surface in areas to receive fill and 6" below rough or subgrade in excavated areas. All debris accumulated from the operation shall be completely removed from the premises by the Contractor.
- C. No filling shall be undertaken until the area has been cleared.
- D. All clearing shall be done in accordance with Section 10, STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION, dated September 1986.
- E. The Contractor shall protect from injury and damage all surrounding plants, walks, pavements, lawn, buildings, utilities, etc., and shall leave all in as good a condition as at present. Any damage to existing improvements shall be repaired or replaced by the Contractor to the satisfaction of the Contracting Officer.

##### 3.02 CONTRACT ZONE LIMITS

- A. The Contract Zone Limits shown on the drawings indicate only in general the limits of the work involved. The Contractor, however, is required to perform any and all necessary and incidental work which may fall outside these demarcation lines. The Contractor is also expected to confine all their construction activities within the Contract Zone Limits, except as provided hereinbefore, and not to spread his equipment indiscriminately about the area.

### 3.03 CLEAN-UP OF PREMISES

- A. Clean up and remove all debris accumulated from construction operations from time to time as directed. Upon completion of the construction work and before final acceptance of the contract work, remove all surplus materials, equipment, scaffolding, etc., and leave the entire jobsite raked clean and neat to the satisfaction of the Contracting Officer.

END OF SECTION

## Section 02300

### Earthwork

#### PART 1 - GENERAL

##### 1.01 GENERAL REQUIREMENTS

- A. Furnish materials, labor and equipment required to accomplish all excavation, filling and grading as indicated on the drawings.
- B. It shall be the responsibility of the Contractor to examine the site and determine and verify for himself the existing conditions.
- C. Obvious conditions of the site existing on the date of the bid opening 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.

##### 1.02 PERMITS

The Contractor shall obtain and pay for necessary permits if required prior to the commencement of work.

##### 1.03 CONSTRUCTION LINES, LEVELS AND GRADES

The Contractor shall verify all lines, levels, elevations, and improvements indicated on the drawings before construction begins. Any discrepancy shall be immediately brought to the attention of the Contracting Officer and any change shall be made in accordance with his instruction. The Contractor shall not be entitled to extra payment if existing grades and improvements are in error after his verification thereof, or if he fails to report the discrepancies before proceeding with any work whether within the area affected or not.

- A. All lines and grades shall be verified and established by a Surveyor or Civil Engineer licensed in the State of Hawaii.
- B. The laying out of base lines, establishment of grades and staking out the entire work shall be done by a licensed Surveyor or licensed Civil Engineer.

#### PART 2 - PRODUCTS

##### 2.01 MATERIALS

- A. Asbestos Prohibition: No asbestos containing materials or equipment shall be used under this section. The Contractor shall ensure that all materials and equipment incorporated in the project are asbestos-free.



- B. General Fill Materials: General fill material shall be well-graded non-expansive granular material, free from organic material, debris and other deleterious substances.
- C. Cushion fill: Under interior concrete slabs-on-grade shall be ASTM C33 Standard Size Aggregate No. 67 (No. 3B fine gravel).
- D. Drain Rock: Shall meet the gradation requirements for ASTM C33 Standard Size No. 67 (No. 3B fine gravel).
- E. Aggregate Base Course: Aggregate base course shall meet the requirements of the Standard Specifications for Public Works Construction, Section 31 – Aggregate Base Course.
- F. Subbase Course for exterior walkways shall meet the requirements of the Standard Specifications for Public Works Construction, Section 30-Select borrow for Subbase Course.

### PART 3 - EXECUTION

#### 3.01 PROTECTIVE MEASURES

- A. Erect temporary barricade to prevent people from entering into project area, to the extent as required/approved by the Contracting Officer. The extent of barricades may be adjusted as necessary with the approval of the Contracting Officer. This work shall be accomplished at no extra cost to the Owner.
- B. The Contractor shall protect from damage all surrounding structures, trees, plants, grass, walks, pavements, etc. Any damage will be repaired or replaced by the Contractor to the satisfaction of the Engineer at no cost to the State.
- C. The Contractor shall conduct operations with minimum interference to streets, driveways, sidewalks, passageways, traffic, etc.
- D. The Contractor shall confine all work, equipment, materials, and personnel as much as possible to the work area as indicated.
- E. The Contractor shall prevent dust from becoming airborne at all times including non-working hours, weekends and holidays in conformance with State of Hawai'i, Department of Health, Administrative Rules, Title 11, Chapter 60.1 – Air Pollution Control. The method of dust control and costs shall be the responsibility of the Contractor.

#### 3.02 LAYING OUT

- A. The laying out of baselines, establishment of grades and staking out the entire work shall be done by a qualified surveyor, at the expense of the Contractor and he shall be solely responsible for their accuracy. The Contractor shall erect and maintain substantial batter boards showing construction lines and levels.

- B. Should any discrepancies be discovered in the dimensions given in the plans, the Contractor shall immediately notify the Contracting Officer before proceeding any further with the work; otherwise, he will be held responsible for any costs involved in corrections of construction placed due to such discrepancies.

### 3.03 SITE GRADING

- A. All grading work shall be performed in conformance with County of Hawaii Ordinance 168, the applicable provisions of Chapter 54, Water Quality Control Standards, and Chapter 55, Water Pollution Control, of Title 11, Administrative Rules of the State Department of Health. In addition, the work shall be in conformance with the Air Pollution Control Standards and Regulations of the State Department of Health.
- B. The areas not covered by concrete slab or pavement up to the Contract Zone Limits shall be graded to conform to finish contours with allowance for depth of topsoil. Rough grading shall prevent the drainage of water into construction areas.

### 3.04 SITE PREPARATION

- A. Prior to commencement of earthwork operations, all vegetation debris and other deleterious materials shall be removed from the site.

### 3.05 GENERAL FILL AND BACKFILL

- A. General fill and backfill shall be compacted to a firm unyielding surface. A testing program to evaluate the number of passes of a compactor needed to achieve the desired level of compaction shall be conducted at the start of the grading phase of the project.
- B. General fill, areas at least 3 feet outside of pavement shall be compacted not less than 90% compaction.
- C. General fill slopes shall not be steeper than 2 horizontal to 1 vertical.

### 3.06 FINISH GRADING

Where finish grades and contours are not given, Contractor shall grade to provide drainage away from new and existing structures and shall provide good transitions into existing grades outside the grading limits.

END OF SECTION

## SECTION 03210

### REINFORCING STEEL

#### PART 1 - GENERAL

##### 1.1 GENERAL REQUIREMENTS

This section covers the requirements for furnishing and placing of deformed steel bars or welded wire fabric as reinforcement in concrete. The quality, type, size, and dimensions shall be as called for in these specifications and as shown on the plans.

#### PART 2 - PRODUCTS

##### 2.1 MATERIALS

- A. Bar reinforcement shall be of grade 40, billet steel deformed type bars made by the open hearth process and shall conform to the requirements of ASTM Designation A615.
- B. Welded wire mesh reinforcement shall be galvanized steel, electric welded type and shall conform to the requirements of ASTM Designation A185. The gauge of the wire and dimensions of the mesh shall be given in these specifications or as shown on the plans.

##### 2.2 EPOXY COATING

Epoxy coating for the reinforcing steel shall be applied by the electrostatic spray method conforming to ASTM A-775.

#### PART 3 - EXECUTION

##### 3.1 CONSTRUCTION

Unless otherwise specified, the installation of reinforcing steel shall conform to the requirements of "ACI Standard Building Code Requirements for Reinforced Concrete" and "Concrete Reinforcing Steel Institute."

- A. Protection of Material: Steel reinforcement shall be protected at all times from damage. When placed in the work, all reinforcing steel shall be new, free from dirt, detrimental scale, paint, oil, or other foreign substances. No material cleaned by sandblasting will be allowed. In the absence of manufacturer's quality mark, the Engineer may require standard ASTM tests be made on representative samples before acceptance. All costs incurred in connection with these tests shall be borne by the Contractor.

- B. Bending Diagrams and Order Lists: Two copies of all reinforcing steel order lists and bending diagrams shall be furnished directly to the Engineer and at the site for his use in administering the contract.

Furnishing such lists and diagrams to the Engineer shall not be construed to mean that the lists and diagrams will be reviewed for accuracy. The Contractor shall be wholly and completely responsible for the accuracy of the lists and diagrams and for furnishing and placing all bar reinforcing steel in accordance with the details shown on the plans as specified.

- C. Bending: Bends for stirrups and ties shall be made around a pin having a diameter not less than two times the minimum dimensions of the bar. Bends for other bars shall be made around a pin having a diameter not less than six times the minimum dimension of the bar, except that for bars larger than one inch, the pin shall be not less than eight times the bar thickness. All bars shall be bent cold before placing in forms.

- D. Placing: Reinforcement shall be accurately placed, supported, aligned, and secured against movement. Bars shall be tied at all intersections except where the spacing is less than one foot in each direction, in which case alternate intersections shall be tied.

Distance from forms and between layers of reinforcing shall be maintained by means of approved commercial chairs, stays, blocks, ties, hangers, or other approved supports. The use of pebbles, pieces of broken stone or brick, metal pipe, or wooden blocks shall not be permitted.

No concrete shall be placed prior to the inspection and approval of the size and placement of all reinforcement by the Engineer.

- E. Splicing: End laps of bars at splices shall be a minimum of 30 bar diameters and shall be staggered unless otherwise shown. Bars shall be installed in as long lengths as practicable and splices reduced to a minimum unless otherwise shown on the plans.
- F. Wire Mesh: Wire mesh shall be rolled out flat and firmly held in place to the lines and grade as shown on the plans before placing concrete. Splices shall be made by lapping not less than one mesh and securely tied.
- G. Coverage: Unless otherwise specified on the plans, the minimum clear thickness of concrete covering reinforcement shall be 2 inches when concrete is placed against form, 3 inches when concrete is placed against ground, and 1-1/2 inches from tops of slabs or unformed surfaces.

END OF SECTION

## SECTION 03252

### JOINT SEALERS

#### PART 1 - GENERAL

##### 1.1 GENERAL

This section covers the requirements for sealing the contraction, expansion, and longitudinal joints as shown on the plans or as approved by the Engineer. The joint sealant shall be either a polysulfide or a polyurethane rubber compound as specified herein.

##### 1.2 CERTIFICATION

The Contractor shall furnish to the Engineer a statement certifying that the product conforms to these specifications. If the Contractor desires to use any other brand than those specified herein, a written approval of that brand must be secured from the Engineer.

#### PART 2 - PRODUCTS

##### 2.1 MATERIALS

- A. Redwood Filler: Fillers for contraction joints shall be redwood lumber, kiln dried to an average moisture content between 12-15%. Each piece of redwood filler shall be dip treated for 30 minutes with Water Repellent Penta containing 5% chlorinated phenol solution. A Certificate of Treatment showing compliance with these specifications shall be issued to the Engineer.

The redwood fillers shall be prepared so that when placed, the top surface shall be a regular sanded surface.

- B. Preformed Joint Filler: Preformed joint fillers shall conform to ASTM D994.

Approved preformed asphalt expansion joint fillers are by W.R. Meadows, P.O. Box 543, Elgin, IL 60121.

Preformed joint fillers shall be used in expansion and intersection joints as shown on the plans or directed by the Engineer.

- C. Joint Sealants: Polyurethane-base, non-sag elastomeric sealant shall conform to ASTM C-920, Type S, Grade NS, Class 25.

Approved joint sealants are Sikaflex-1a and Sikaflex-2c-NS/SL or Bostik Chem-Calk 900.

- D. Bond-Breaker Tape: Bond breaker tape shall be heavy duty polyethylene or similar type tape to which elastomeric sealant will not adhere. Bond breaker tape shall be colored and a minimum thickness of 14 mils.
- E. Primer: Primer shall be designated by the manufacturer for use on concrete in extreme water-immersion conditions.

## PART 3 - EXECUTION

### 3.1 PREPARATION OF SURFACES

The proper preparation of the construction joints prior to application of the primer and sealants is extremely important and the Engineer's approval will be required before such application will be allowed. However, such approval by the Engineer shall not relieve, waive, or modify the Contractor of his responsibility to meet the provisions and requirements of these specifications.

The surface against which the materials are to be deposited shall be thoroughly cleaned of all grease, oil, wax, mastic compounds, corrosion, dirt, concrete sluff from troweling, protective materials used in curing of concrete, and other foreign material. The joints shall be cleaned by sand blasting or with a wire brush capable of cleaning the sides of the joint. The use of equipment that spalls or damages the concrete will not be permitted.

Alkaline seepage from fresh concrete must be washed away. If the alkaline condition is excessive, the surface must be etched with 5% muriatic acid (commercial hydrochloric acid) by keeping the surface wet with acid for 15 minutes. The etched surface shall be rinsed with clean water and neutralized with household ammonia mixed in a ratio of 1 part ammonia to 8 parts water by wetting with ammonia for about 10 minutes. The neutralized surface shall then be rinsed with clean water.

After brushing or blasting and immediately prior to the application of the bond breaker, primer or sealant, the joints shall be blown clean of all loose material and dust with compressed air free of oil and moisture and a pressure of not less than 50 pounds per square inch. The height and size of nozzle shall be adjusted to secure the desired results. The air compressor shall be of sufficient capacity to carry on the work in a continuous operation. The Contractor shall remove and dispose of all materials occasioned by the cleaning operations.

The bond breaker, such as masking tape or polyethylene film shall be installed after the application of the primer and just prior to applying the sealant and shall completely cover the top of the joint filler to keep the sealant from adhering to the filler or soaking into

porous fillers. PRC 89 Prefomed Joint Fillers and others that act as bond breakers do not require a bond breaker.

The concrete must be fully cured and all surfaces must be thoroughly dry prior to the application of the primer and sealant. In the event drying of surfaces is done by mechanical means, care shall be exercised so as not to damage the concrete and the Contractor will be responsible for any damage due to his operations.

### 3.2 APPLICATION OF PRIMER AND SEALANT

Placing of the primer and sealant shall be done only in the presence of the Engineer, after his inspection and acceptance of the prepared joint areas. The instructions of the manufacturer are to be used in the application of the primers and sealants but they will not act to relieve the Contractor of the responsibility for obtaining joints completely filled in accordance with the plans and specifications. The Contractor is to furnish all equipment, labor and material necessary to attain such joints.

The primer shall be applied by brush or spray to the joint sidewalls before installing the bond breaker. After the primer is cured and the bond breaker is installed, the sealant shall be applied by means of a hand or air operated caulking gun, putty knife, or trowel. It is important that the sealant be firmly pressed into the joint to assure complete wetting of the bonding surface to obtain uniform adhesion. Surfaces of the freshly applied sealant may be pointed with a tool; however, tooling should be kept to a minimum to avoid causing slump.

The Contractor is cautioned to prepare only as much material as he can use in the application time corresponding to the ambient temperature. The Engineer reserves the right to establish a minimum temperature below which application will be not permitted. This is the temperature at which cure time becomes excessive for practical application. The Contractor is reminded of the safety and health precautions to be followed in the storage and use of the above products.

### 3.3 TESTING

Prior to acceptance, the Engineer will test various sections of the joint sealant for cohesive resistance and bonding of the material to the concrete in the following manner:

A wire hook, fabricated from 12-gauge steel wire, shall be inserted into the joint and then subjected to a pull of 15 pounds. The work will be considered satisfactory if there is no evidence of tearing of the material, or the material pulling away from the concrete. All such sections tested which fail to meet the test specified shall be repaired to the satisfaction of the Engineer and the test repeated.

END OF SECTION

## SECTION 03300

### CONCRETE

#### PART 1 - GENERAL

##### 1.1 GENERAL REQUIREMENTS

This specification covers the requirements for furnishing, hauling, mixing, placing, and curing of concrete.

##### 1.2 SUBMITTALS

The Contractor shall submit concrete mix design for approval.

#### PART 2 - PRODUCTS

##### 2.1 MATERIALS

A. Portland cement shall conform to the requirements of ASTM C150, Type I, for all concrete work.

B. Concrete Aggregates

1. Fine aggregates shall be calcareous or basalt sands, or a combination thereof. They shall meet the grading requirements of ASTM C33 unless the concrete producer can provide past data that show that a proposed non-conforming gradation will produce concrete with the required strength and suitable workability.

If manufactured sands are used in the concrete mix, the Contractor may select and use a water-reducing and/or an air-entraining admixture as specified hereinafter to provide satisfactory workability in the concrete. The cement content of a mix shall be as specified hereinafter, and the use of an admixture shall in no way result in the reduction of the cement factor.

2. Coarse aggregates shall be crushed close-grained, blue lava rock meeting the grading requirements of sizes 57 or 67 (ASTM D448) or both. The maximum size of aggregate shall not be larger than 1/5 of the narrowest dimensions between sides of the forms of the member for which the concrete is to be used not larger than 3/4 of the minimum clear spacing between individual reinforcing bars or bundles of bars.



C. Concrete Reinforcement

1. Reinforcing steel shall be deformed bars conforming to ASTM A615, grade as shown on plans.
2. Welded wire fabric for concrete reinforcement shall conform to ASTM A185 and shall be galvanized.
3. Metal accessories such as spaces, chairs, ties, and other devices necessary for properly placing, supporting and fastening reinforcement in place shall be provided. Chairs shall be galvanized. Annealed steel wire or not less than 16-gauge shall be used to secure reinforcement.

D. Water used in mixing concrete shall be potable.

E. Non-slip grit shall be an abrasive aggregate of silicon carbide or aluminum oxide.

F. Admixture, if used, shall conform to ASTM C494 or ASTM C260 and shall be mixed in proper amount in accordance with directions of manufacturer.

G. Curing compound shall conform to ASTM C309.

PART 3 - EXECUTION

3.1 DESIGN OF CONCRETE MIXES

A. All concrete throughout shall be either job or plant mixture in an approved type of power operated mixer that will insure uniformity and homogeneity of the concrete produced.

B. Mixing at jobsite shall be done in accordance with ACI 614.

C. Ready-mixed and mixed-in-transit concrete shall be mixed to conform to the provisions of ASTM C94.

D. Concrete shall be mixed only in such quantity as is required for immediate use. No retempering will be permitted and concrete that has started to harden shall be discarded and promptly removed from the job.

E. Admixtures conforming to paragraph 2.1 may be used in the concrete as recommended by the supplier and approved by the Engineer.

### 3.3 PLACING CONCRETE

- A. No concrete shall be placed in the absence of the Engineer or his representative who shall be given one day advance notice of starting time of concrete pour.
- B. Preparation
  - 1. Concrete shall be placed upon clean, damp surfaces with no free water, or upon properly compacted fills but never upon soft mud or dry, porous earth.
  - 2. Before depositing new concrete on or against concrete which has set, all accumulation or mortar splashed upon reinforcing steel and the surfaces of forms shall be removed and the forms shall be retightened. The surfaces of previously set concrete shall be thoroughly roughened and cleaned of all foreign matter and laitance, saturated with water and slushed with a coat of cement grout. New concrete shall be placed before the grout has attained its initial set.
- C. Conveying
  - 1. Concrete shall be conveyed from mixer to forms as rapidly as practicable by methods that will prevent segregation.
  - 2. Concrete shall be deposited as nearly as practicable in its final position. Extensive spading as a means of transportation shall be avoided and in no case shall vibrators be used to transport concrete inside forms.
  - 3. Open troughs and chutes shall have a slope not to exceed 1 vertical to 2 horizontal and not less than 1 vertical to 3 horizontal. Chutes more than 20 feet long and chutes not meeting the slope requirements may be used provided they discharge into a hopper before distribution.
  - 4. The concrete shall not be allowed to drop freely more than six feet except where specifically authorized by the Engineer. When placing operations would involve the dropping of concrete from a height of more than six feet it shall be conveyed through pipes or flexible drop chutes.
  - 5. If any appreciable segregation occurs through the conveying methods employed, their use shall be ordered discontinued by the Engineer and some other satisfactory method of placing concrete shall be used.
  - 6. All chutes, troughs, pipes and other means of conveyance shall kept clean and free from coatings of hardened cement or concrete by thoroughly cleaning with water and chipping after each pour. Water used for flushing shall be discharged away from the vicinity of the concrete or forms already in place.

D. Depositing

1. Unless adequate protection is provided, concrete shall not be placed during rain. Rainwater shall not be allowed to increase the mixing water nor to damage the surface finish. Fresh concrete that has been deposited but has not attained its initial set shall be protected in the event of rain.
2. Placing of the concrete shall be started at the far end of work so that each batch will be dumped against previously placed concrete, not away from it.

E. Compaction

1. All concrete shall be consolidated by vibration so that the concrete is thoroughly worked around the reinforcement, around embedded items, and into corners of forms, eliminating all air or stone pockets which may cause honey-combing, pitting, or planes of weakness. All compaction shall be done by use of high frequency internal vibrators. Where the vibrator cannot be inserted into the concrete, compaction shall be done by spading, rodding, or forking.
2. Frequency of vibrator shall be not less than 7,000 impulses per minute. The Contractor shall provide a sufficient number of vibrators to properly consolidate all concrete immediately after placing. At least one standby vibrator shall be on hand at all times during placement of the concrete.

3.4 REINFORCEMENT

- A. Reinforcing steel bars, wire and wire fabric shall be provided in the sizes, length and configurations as indicated on plans and shall be thoroughly cleaned, before placing, of loose mill scale, loose flaky rust, oil, and all coatings that will destroy or reduce bond. If necessary, they shall be cleaned again before placing of concrete. All items shall be fabricated, positioned and secured in place as indicated in the plans and as herein specified. Annealed steel wire of not less than 16-gauge shall be used to secure reinforcement. Unless otherwise noted, cleaning, bending and placing of reinforcement shall be done in accordance with the standard practice of the Concrete Reinforcing Steel Institute.
- B. Concrete or metal support and spacers shall be used to secure the proper spacing of reinforcement over formwork. Stirrups shall be accurately and securely wired to the bars at both top and bottom. At slabs, footings and beams in contact with earth, pre-cast concrete blocks (not bricks or hollow tile) shall be used to hold reinforcement at a proper distance above earth.

- C. Bars shall be tied at all intersections, and distances from forms shall be maintained by means of pre-cast concrete blocks, ties, hangers or other approved supports.
- D. Bars shall be bent cold to the shapes shown on the plans. Bends shall be made around a pin having a diameter not less than 6 times the bar diameter except that for bars of larger than 1-inch diameter the pin diameter shall be 8 times the bar diameter. If required, bars may be bent in the field using a "hickey" bar.
- E. All reinforcing steel bars shall be furnished in the lengths indicated on the plans. Splicing of bars, except where shown, will not be permitted without the approval of the Engineer.

### 3.5 CONCRETE SLABS ON GRADE

- A. Concrete slabs on earth shall be placed over a structural fill as specified in another section.
- B. All slabs shall be reinforced with 6 x 6 - W1.4 by W1.4 welded wire fabric unless otherwise shown or called for on the plans.
- C. Care shall be taken in handling and placing the reinforcement as follows:
  - 1. Reinforcing fabric shall not be rolled over by trucks, buggles or wheelbarrows, nor trampled to the extent that it is bent out of the plans of the fabric. Material which has been so bent that it cannot be laid out flat shall be rejected.
  - 2. Reinforcing fabric shall be positively set, either prior to or during the placement of concrete, to the levels required within the slabs as indicated on the plans or as otherwise called for herein.
- D. A bond-break filler shall be provided where edge of slab abuts any vertical surface and where indicated on plans. Width of filler strips shall equal depth of floor slab.
- E. Sawcut walkway slab every 5 feet and provide expansion joints at every 20 feet and as indicated.

### 3.6 FINISHING OF SLABS

- A. Broom Finish for Slabs: The concrete slabs shall be given a coarse transverse scored texture by drawing a broom across the surface. The operation shall follow immediately after steel trowelling.

### 3.7 REPAIR OF DEFECTS

- A. After forms have been removed, any concrete which is not constructed as shown on the plans or is out of alignment or level beyond required tolerances or which shows a defective surface which in the opinion of the Engineer cannot be properly repaired or patched shall be removed.

- B. Where concrete which is exposed to view requires repairing or patching, the texture of the surface of such repair or patch shall closely match that of the surrounding surface.

### 3.8 CURING AND PROTECTION

- A. All concrete shall be cured for a period of not less than seven (7) days by one of the methods listed below. During this curing period, the concrete shall be maintained with minimal moisture loss at a relatively constant temperature. Fresh concrete shall be protected from heavy rains, flowing water, mechanical injury, and injurious action of the sun. Curing method selected must be compatible with the finish to be applied to the concrete.

Curing shall immediately follow the finishing operation.

- B. Water Curing: If cured with water, concrete shall be kept wet by mechanical sprinklers, by ponding, or by any other method which will keep the surfaces continuously wet.
- C. Saturated Sand Curing: Surfaces cured with sand shall be covered with a minimum of one inch thickness of sand which shall be kept uniformly distributed and continuously saturated during the entire curing period.
- D. Curing Compounds: Curing compounds shall not be used on concrete surfaces that are to receive paint finish, acid stain or resilient flooring, except those that are recommended by the manufacturer to be compatible with the applied finish. The Contractor shall submit to the Engineer a letter certifying that the curing compound is compatible with the applied finish. Application shall be in accordance with the manufacturer's recommendations. If curing, sealing or other compounds are used which are incompatible with applied finish, such compound shall be thoroughly removed by grinding with a terrazo grinder.
- E. Waterproof Paper: Waterproof paper or opaque polyethylene film conforming to ASTM C171 may be used. The paper or film shall be anchored securely and all edges sealed or applied in such a manner as to prevent moisture escaping from the concrete.

### 3.9 SAMPLING AND TESTING

- A. Sampling - ASTM C 172: Collect samples of fresh concrete to perform tests specified. ASTM C 31 for making test specimens.
- B. Slump Tests - ASTM C 143: Take concrete samples during concrete placement. The maximum slump may be increased as specified with the addition of an approved admixture provided that the water-cement ratio is not exceeded. Perform tests at commencement of concrete placement, when test cylinders are made, and for each batch (minimum) or every 10 cubic yards (maximum) of concrete.

- C. Compressive Strength Tests - ASTM C 39: Make four test cylinders for each set of tests in accordance with ASTM C 31. Test one cylinder at 7 days, two cylinders at 28 days, and hold one cylinder in reserve. Provide concrete cylinders for compression tests not less than once a day, nor less than once for each 100 cubic yards of concrete, nor less than once for each 5,000 square feet of surface for slabs or walls. If the average strength of the 28-day test cylinders is less than  $f_c$  and a maximum of one single cylinder is less than  $f_c$  minus 300 psi, take three ASTM C 42 core samples and test. If the average strength of the 28-day test cylinders is less than  $f_c$  and two or more cylinders are less than  $f_c$  minus 300 psi, take six core samples and test. Concrete represented by core tests shall be considered structurally adequate if the average of the three cores is equal to at least 85 percent of  $f_c$  and if no single core is less than 80 percent of  $f_c$ . Locations represented by erratic core strengths shall be retested. Remove concrete not meeting strength criteria and provide new, acceptable concrete at no additional cost to the State. Repair core holes with nonshrink grout. Match color and finish of adjacent concrete.
- D. Testing: All sampling and testing shall be performed by an independent testing agency and all test results submitted to the Engineer for approval. All cost of sampling and testing shall be borne by the contractor.

END OF SECTION

SECTION 03308

CONCRETE SIDEWALK

PART 1 - GENERAL

1.1 GENERAL REQUIREMENTS

This section covers the requirements for furnishing and installing of concrete sidewalk in accordance with the lines and grades indicated on the plans.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. Materials for roads and parking areas shall be constructed in accordance with the below-listed sections of the Counties' STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION dated September 1986 and STANDARD DETAILS FOR PUBLIC WORKS dated September 1984 as revised, except as amended in the plans and/or specifications herewith. (Paragraphs concerning Measurements and Payments in the sections are not applicable to this project.)

- 1. Concrete Sidewalk ..... Section 42

PART 3 - EXECUTION

3.1 INSTALLATION

- A. The Contractor shall stake out the areas to be paved, using wooden stakes on which the final finish elevations, are clearly marked. All such stakes and elevations shall be approved by the Engineer before any work is done.
- B. Installation of concrete sidewalk shall be in accordance with sections noted hereinbefore. Provide expansion joint where new sidewalk joins existing sidewalk.
- C. Sawcut walkway slab every 5 feet and provide expansion joints at every 20 feet and as indicated.

3.2 REPAIR OF EXISTING CONCRETE SIDEWALKS

Any existing concrete sidewalks damaged by construction activities shall be repaired to the original condition and to the satisfaction of the Engineer. Damage done by heavy equipment, especially on walks not stable for such equipment, shall be repaired to the original condition and to the satisfaction of the Engineer.

END OF SECTION

Concrete Sidewalk  
03308-1

DIVISION 9 – FINISHES

SECTION 09200

LATH AND PLASTER

PART 1 – GENERAL

1.1 SUMMARY

- A. Complete all lath and plaster work as indicated or required by the drawings and as specified herein. Work shall include, but not be limited to, the following:
  - 1. Cement plastering.
- B. RELATED WORK
  - 1. SECTION 03300 - CONCRETE.

1.2 SUBMITTALS

- A. Submit in accordance with SECTION 01330 - SUBMITTAL PROCEDURES.
- B. Manufacturer's Data: Submit manufacturer's data consisting of manufacturer's product specifications and installation instructions for each product, including data showing compliance with the requirements.
- C. Samples:
  - 1. Samples for verification purposes in units at least 12-inches square of each type of finish indicated, in sets for each texture specified, showing full range of variations expected in these characteristics.
- D. Material Certificates: Submit producer's certificate for each kind of plaster aggregate indicated evidencing that materials comply with requirements.

1.3 DELIVERY, STORAGE, AND HANDLING

- A. Deliver materials in original packages, containers, or bundles bearing brand name and identification of manufacturer.
- B. Store materials inside, under cover, and in manner to keep them dry, protected from weather, direct sunlight, surface contamination, aging, corrosion, and damage from construction traffic and other causes. Neatly stack lath flat to prevent deformation.
- C. Handle lath to prevent damage to edges, ends, or surfaces. Protect corner beads and trim from being bent or damaged.



#### 1.4 PROJECT CONDITIONS

- A. Environmental Requirements, General: Comply with requirements of referenced plaster application standards and recommendations of plaster manufacturer for environmental conditions before, during, and after application of plaster.
- B. Protect contiguous work from soiling, spattering, moisture deterioration and other harmful effects that might result from plastering.

### PART 2 - PRODUCTS

#### 2.1 PLASTER FOR PORTLAND CEMENT PLASTER

- A. Base Coat Cements: Portland cement, ASTM C 150, Type I or II.
- B. Factory-Prepared Finish Coat: U-STUCCO HPX or approved equal white cement polymer modified finish, with acrylic polymer modified cementitious underlayment as recommended by the finish coat manufacturer, ASTM C 926. Color: White
- C. Light Weight Aggregate for Base Coats: ASTM C 330/332.

#### 2.4 MISCELLANEOUS MATERIALS

- A. Water for Mixing and Finishing Plaster: Potable and free of substances capable of affecting plaster set or of damaging plaster, lath, or accessories.

#### 2.6 MIXING

- A. Mechanically mix cementitious and aggregate materials for plasters to comply with applicable referenced application standard and with recommendations of plaster manufacturer.

### PART 3 - EXECUTION

#### 3.1 PLASTER APPLICATION, GENERAL

- A. Tolerances: Do not deviate more than 1/8-inch in 10-feet from a true plane in finished plaster surfaces, as measured by a 10-foot straightedge placed at any location on surface.
- B. Sequence plaster application with the installation and protection of other work so that neither will be damaged by the installation of the other. Coordinate work provided under SECTION 03300 - CONCRETE.
- C. Apply thicknesses and number of coats of plaster as indicated or as required by referenced standards.

#### 3.2 PORTLAND CEMENT PLASTER APPLICATION

- A. A. Portland Cement Plaster Application Standard: Apply Portland cement plaster materials, compositions, and mixes to comply with ASTM C 926.
- B. Number of Coats: Apply Portland cement plaster, of composition indicated, to comply with the following requirements:
  - 1. Use three-coat work over concrete surfaces.
  - 2. Finish Coat: Floated finish unless otherwise indicated; match Contracting Officer's sample for texture.
- C. Moist-cure Portland cement plaster base and finish coats to comply with ASTM C 926, including recommendations for time between coats and curing in "Annex A2 Design Considerations."

### 3.3 CLEANING AND PROTECTION

- A. Remove temporary protection and enclosure of other work. Promptly remove plaster from door frames, windows, and other surfaces that are not to be plastered. Repair floors, walls, and other surfaces that have been stained, marred, or otherwise damaged during the plastering work. When plastering work is completed, remove unused materials, containers, and equipment and clean floors of plaster debris.
- B. Provide final protection and maintain conditions, in a manner suitable to Installer that ensure plaster work's being without damage or deterioration at time of Substantial Completion.

END OF SECTION

## DIVISION 10 – SPECIALTIES

### SECTION 10440

#### SIGNAGE

#### PART 1 - GENERAL

##### 1.1 SUMMARY

- A. Provide all signage as shown and as specified herein, including the following:
  - 1. Dimensional Letters
- B. Sign Locations: As indicated and scheduled.

##### 1.2 SUBMITTALS

- A. Submit in accordance with SECTION 01330 - SUBMITTAL PROCEDURES.
- B. Manufacturer's Data: Include manufacturer's construction details relative to materials, dimensions of individual components, profiles, and finishes for each type of sign required.
- C. Shop Drawings: Provide shop drawings for fabrication and erection of signs. Include plans, elevations, and large-scale sections of typical members and other components. Show anchors, grounds, reinforcement, accessories, layout, and installation details.
  - 1. Provide message list for each sign required, including large-scale details of wording and layout of lettering.
  - 2. For signs supported by or anchored to permanent construction, provide setting drawings, templates, and directions for installation of anchor bolts and other anchors to be installed as a unit of work in other sections.
  - 3. Furnish full-size spacing templates for individually mounted dimensional letters and numbers.
- D. Samples: Provide the following samples of each sign component for initial selection of color, pattern and surface texture as required and for verification of compliance with requirements indicated.
  - 1. Samples for initial selection of color, pattern, and texture: Samples of each finish type and color, on 6-inch long sections of extrusions and not less than 4-inch squares of sheet or plate, showing the full range of colors available.

2. Samples for verification of color, pattern, and texture selected, and compliance with requirements indicated:
  - a. Dimensional Letters: Provide full-size representative samples of each dimensional letter type required, showing letter style, color, and material finish and method of attachment.
  - b. Acceptable samples will be returned and may be used in the work.

### 1.3 QUALITY ASSURANCE

- A. Single-Source Responsibility: For each separate type of sign required, obtain signs from one source from a single manufacturer.

### 1.4 ACCESSIBILITY COMPLIANCE

- A. The Americans with Disabilities Act Accessibility Guidelines (ADAAG). Signage shall comply with ADAAG Section 703 for mounting heights, finish, Braille characters and type of characteristics. See DCAB Interpretive Opinions for further clarification.

### 1.5 PROJECT CONDITIONS

- A. Field Measurements: Take field measurements prior to preparation of shop drawings and fabrication to ensure proper fitting. Show recorded measurements on final shop drawings. Coordinate fabrication schedule with construction progress to avoid delay.

## PART 2 - PRODUCTS

### 2.1 MATERIALS

- A. General Requirements: Character proportion, color contrast, dimension, depth, and heights of symbols, Grade II braille, and letters, location, and mounting heights shall be in accordance with the requirements noted in the Americans with Disabilities Act Accessibility Guidelines (ADAAG) Section 703.
- B. Anchors and Inserts: Use nonferrous metal or hot-dipped galvanized anchors and inserts for installations as required for corrosion resistance. Use toothed steel drilled-in-place anchors. Furnish inserts, as required, to be set into concrete or masonry work.

### 2.2 DIMENSIONAL LETTERS

- A. Cast Letters: Form individual letters by casting. Produce characters with smooth, flat faces, sharp corners, and precisely formed lines and profiles, free from pits, scale, sand holes, or other defects. Cast lugs into the back of characters and tap to receive threaded mounting studs and spacers. Comply with requirements indicated for finish, style, and size.

1. Material: Polished 316 stainless steel or equal as manufactured by Matthews or approved equal.
2. Text: Letter spacing and word spacing shall be in accordance with approved master samples to assure uniformity throughout the campus.
3. Letter Height: As indicated.
4. Letter Style: As indicated.
5. Finish: As indicated or as selected by the Contracting Officer.

B. Manufacturers:

1. A.R.K. Ramos Architectural Signage Systems
2. Gemini, Inc.
3. The Southwell Company.
4. Matthews.
5. Approved equal.

2.4 FINISHES

- A. Colors and Surface Textures: For exposed sign material that requires selection of materials with integral or applied colors, surface textures or other characteristics related to appearance, provide color matches indicated, or if not indicated, as selected by the Contracting Officer from the manufacturer's standards.
- B. Metal Finishes: Comply with NAAMM "Metal Finishes Manual" for finish designations and applications recommendations.

PART 3 - EXECUTION

3.1 INSTALLATION

A. General:

1. Installation of all signage shall be in strict accordance with manufacturer's printed instructions and approved shop drawings. Installation shall be accomplished by experienced mechanics and in a workmanlike manner.
2. Locate sign units and accessories where indicated, using mounting methods of the type described and in compliance with the manufacturer's instructions.

3. Install signs level, plumb, and at the height indicated, with sign surfaces free from distortion or other defects in appearance in accordance to ADAAG Section 703.
- B. Dimensional Letters: Mount letters using standard fastening methods recommended by the manufacturer for letter form, type of mounting, wall construction, and condition of exposure indicated. Provide heavy paper template to establish letter spacing and to locate holes for fasteners. For projected mounting, mount letters at 1/2-inch projection distance from the wall surface unless indicated otherwise.

### 3.2 CLEANING AND PROTECTION

- A. At completion of the installation, clean soiled sign surfaces in accordance with the manufacturer's instructions. Protect units from damage until acceptance by the Contracting Officer. Remove all tools, equipment, debris, and surplus materials.

END OF SECTION

## SECTION 10750

### FLAGPOLES

#### PART 1 - GENERAL

##### 1.1 SUMMARY

- A. Section includes ground-mounted, aluminum flagpoles.
- B. Flags.

##### 1.2 RELATED WORK

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.
- B. Section 03300 - Concrete

##### 1.3 PERFORMANCE REQUIREMENTS

- A. Structural Performance: Flagpole assemblies, including anchorages and supports, shall withstand the effects of gravity loads, and the following loads and stresses within limits and under conditions indicated according to the following design criteria:
  - 1. Wind Loads: Per information on Drawings according to NAAMM FP 1001, "Guide Specifications for Design of Metal Flagpoles."
  - 2. Base flagpole design on polyester flags of maximum standard size suitable for use with flagpole or flag size indicated, whichever is more stringent.
  - 3. Coordinate to provide footing as required by flagpole manufacturer and, if required, including reinforcing and concrete 3,500psi or higher.

##### 1.4 SUBMITTALS

- A. Product Data: For each type of product indicated. Include construction details, material descriptions, dimensions of individual components and profiles, operating characteristics, fittings, accessories, and finishes for flagpoles.
- B. Manufacturer's Warranty.
- C. Shop Drawings: For flagpoles. Include plans, elevations, details, and attachments to other work. Show general arrangement, jointing, fittings, accessories, grounding, anchoring, and support.
  - 1. Include section, and details of foundation system for ground-mounted flagpoles.

2. Operation and Maintenance Data: For flagpoles to include in operation and maintenance manuals.

#### 1.5 QUALITY ASSURANCE

- A. Source Limitations: Obtain flagpole as complete unit, including fittings, accessories, bases, and anchorage devices, from single source from single manufacturer.

#### 1.6 DELIVERY, STORAGE, AND HANDLING

- A. General: Spiral wrap flagpoles with heavy paper and enclose in a hard fiber tube or other protective container.

### PART 2 – PRODUCTS

#### 2.1 MANUFACTURERS

- A. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
  1. Acme/Lingo Flagpoles, LLC.
  2. American Flagpole.
  3. Atlantic Fiberglass Products, Inc.
  4. Baartol Company.
  5. Concord Industries, Inc.
  6. Eder Flag Manufacturing Company, Inc.
  7. Ewing Flagpoles.
  8. Federal Flags.
  9. Millerbernd Manufacturing Company.
  10. Morgan-Francis Flagpoles and Accessories.
  11. PLP Composite Technologies, Inc.
  12. Pole-Tech Company Inc.



13. U.S. Flag & Flagpole Supply, LP.
14. USS Manufacturing Inc.

## 2.2 FLAGPOLES

- A. Flagpole Construction, General: Construct flagpoles in one piece if possible. If more than one piece is necessary, comply with the following:
  1. Fabricate shop and field joints without using fasteners, screw collars, or lead caulking.
  2. Provide flush hairline joints using self-aligning, snug-fitting, internal sleeves.
  3. Provide self-aligning, snug-fitting joints.
- B. Exposed Height: 20 to 30 feet, as indicated on drawings.
- C. Aluminum Flagpoles: Provide cone-tapered flagpoles fabricated from seamless extruded tubing complying with ASTM B 241/B 241M, Alloy 6063, with a minimum wall thickness of 3/16 inch (4.8 mm).
- D. Metal Foundation Tube: Manufacturer's standard corrugated-steel foundation tube, not less than 0.064-inch (1.6-mm) nominal wall thickness. Provide with 3/16-inch (4.8-mm) steel bottom plate and support plate; 3/4-inch (19-mm) diameter, steel ground spike; and steel centering wedges welded together. Galvanize steel after assembly. Provide loose hardwood wedges at top of foundation tube for plumbing pole.
  1. Provide flashing collar of same material and finish as flagpole.

## 2.3 FLAGS

- A. Flags shall be heavy duty, 2-ply sewn spun polyester. Provide one each of the following:
  1. United States of America, 8 ft wide by 5 ft tall
  2. State of Hawaii, 6 ft wide by 4 ft tall
  3. MIA/POW, 6 ft wide by 4 ft tall

## 2.4 FITTINGS

- A. Finial Ball: Manufacturer's standard flush-seam ball, sized as indicated or, if not indicated, to match flagpole-butt diameter.
  1. 0.063-inch (1.6-mm) spun aluminum, finished to match flagpole.
- B. Internal Halyard and Winch: Ball-bearing, nonfouling, revolving truck assembly of cast metal with continuous 5/16-inch (8-mm) diameter, braided polypropylene halyard. Finish exposed metal surfaces to match flagpole.

1. Provide one halyard winch and removable crank at each flagpole.
2. Halyard Flag Snaps: Provide two chromium-plated bronze, stainless-steel, bronze, or nylon swivel snap hooks per halyard.
  - a. Provide with neoprene or vinyl covers.
3. Plastic Halyard Flag Clips: Made from injection-molded, UV-stabilized, acetal resin (Delrin). Clips attach to flag and have two eyes for inserting both runs of halyards. Provide two flag clips per halyard.
  - a. Product: Subject to compliance with requirements, provide "Quiet Halyard" flag clasp by Lingo.

## 2.5 MISCELLANEOUS MATERIALS

- A. Drainage Material: Crushed stone, or crushed or uncrushed gravel; coarse aggregate.
- B. Sand: ASTM C 33, fine aggregate.
- C. Elastomeric Joint Sealant: Single-component nonsag urethane joint sealant complying with requirements in Section 079200 "Joint Sealants" for Use NT (nontraffic) and for Use M, G, A, and, as applicable to joint substrates indicated, for Use O.
- D. Bituminous Paint: Cold-applied asphalt emulsion complying with ASTM D 1187

## 2.6 GENERAL FINISH REQUIREMENTS

- A. Comply with NAAMM's "Metal Finishes Manual for Architectural and Metal Products" for recommendations for applying and designating finishes.
- B. Appearance of Finished Work: Noticeable variations in same piece are not acceptable. Variations in appearance of adjoining components are acceptable if they are within the range of approved Samples and are assembled or installed to minimize contrast.

## 2.7 ALUMINUM FINISHES

- A. Natural Satin Finish: AA-M32, fine, directional, medium satin polish; buff complying with AA-M20; seal aluminum surfaces with clear, hard-coat wax.

## PART 3 - EXECUTION

### 3.1 EXAMINATION

- A. Examine substrates, areas, and conditions, with Installer present, for compliance with requirements for installation tolerances, including foundation; accurate placement, pattern, orientation of anchor bolts, and other conditions affecting performance of the Work.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.

### 3.2 PREPARATION

- A. Prepare uncoated metal flagpoles that are set in foundation tubes by painting below-grade portions with a heavy coat of bituminous paint.
- B. Foundation Excavation: Excavate to neat clean lines in undisturbed soil. Remove loose soil and foreign matter from excavation and moisten earth before placing concrete. Place and compact drainage material at excavation bottom.
- C. Provide forms where required due to unstable soil conditions and for perimeter of flagpole base at grade. Secure and brace forms to prevent displacement during concreting.
- D. Place concrete, as specified in Section 03300 "Concrete." Coordinate to provide footing as required by flagpole manufacturer, including reinforcing and concrete 3,500psi or higher. Compact concrete in place by using vibrators. Moist-cure exposed concrete for not less than seven days or use nonstaining curing compound.
- E. Trowel exposed concrete surfaces to a smooth, dense finish, free of trowel marks, and uniform in texture and appearance. Provide positive slope for water runoff to perimeter of concrete base.

### 3.3 FLAGPOLE INSTALLATION

- A. Ground Set: Place foundation tube, center, and brace to prevent displacement during concreting. Place concrete. Plumb and level foundation tube and allow concrete to cure. Install flagpole, plumb, in foundation tube.
- B. Ground Set: Place foundation tube, center, and brace to prevent displacement during concreting. Place concrete. Plumb and level foundation tube and allow concrete to cure. Install flagpole, plumb, in foundation tube.
  - 1. Foundation Tube: Place tube seated on bottom plate between steel centering wedges and install hardwood wedges to secure flagpole in place. Place and compact sand in foundation tube and remove hardwood wedges. Seal top of foundation tube with a 2-inch (50-mm) layer of elastomeric joint sealant and cover with flashing collar.

END OF SECTION