

Division of Forestry and Wildlife

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

BOARD OF LAND AND NATURAL RESOURCES

Suzanne Case
Chairperson

CONTRACT SPECIFICATIONS AND PLANS

Job No. J00CM60A
Kahakapao Recreational Area ADA Improvements
Makawao, Maui, Hawaii

Civil Engineer: Brown and Caldwell

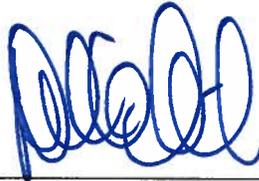
May 2016

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

CONTRACT SPECIFICATIONS AND PLANS

Job No. J00CM60A
Kahakapao Recreational Area ADA Improvements
Makawao, Maui, Hawaii

Approved:



DAVID G. SMITH
Administrator
Division of Forestry and Wildlife

Approved:



CARTY S. CHANG, P.E.
Chief Engineer
Engineering Division

May 2016

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DEPARTMENT OF LAND AND NATURAL RESOURCES INTERIM GENERAL CONDITIONS,
DATED OCTOBER 1994 (Bound Separately)

NOTICE TO BIDDERS
(Chapter 103D, HRS)

COMPETITIVE SEALED BIDS for Job No. J00CM60A; Kahakapao Recreational Area ADA Improvements (Makawao, Maui, Hawaii) shall be submitted to the Department of Land and Natural Resources, Engineering Division on the specified date and time through the State of Hawaii e-procurement system (HiePRO). HiePRO is accessible through the State Procurement Office website at www.hawaii.gov/spo.

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 at Kahakapao Recreational Area, Makawao, Maui, Hawaii.

The work shall general consist of ADA improvements at the Kahakapao Recreational Area, including mobilization; grading modifications; construction of concrete pads and walkways; installation of two accessible parking spaces, two portable toilets (one accessible and one standard), a picnic table area, and a post-mounted informational kiosk; demobilization; and pollution control.

Due to the nature of work contemplated, bidders must possess a valid State Contractor's license, Classification A.

The estimated cost of construction is \$340,000.00.

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

The job is subject to preference for Hawaii Products established by Section 103D, Hawaii Revised Statutes. The Hawaii Product List may be examined at the State Procurement Office.

Since the estimated cost of construction is \$250,000 or more, the apprenticeship agreement preference pursuant to Hawaii Revised Statutes §103-55.6 (ACT 17, SLH 2009) shall 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.
- 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.

PROPOSAL
FOR
DEPARTMENT OF LAND AND NATURAL RESOURCES
ENGINEERING DIVISION
State of Hawaii

JOB NO. J00CM60A
KAHAKAPAO RECREATIONAL AREA ADA IMPROVEMENTS
MAKAWAO, MAUI, HAWAII

_____, 2016

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 perform grading modifications, construct concrete pads, walkways, and a modular segmental wall, install accessible parking spaces, install portable toilets, construct a picnic table area, relocate an information kiosk, and perform related miscellaneous 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. J00CM60A
KAHAKAPAO RECREATIONAL AREA ADA IMPROVEMENTS
MAKAWAO, MAUI, HAWAII

on file in the office of the Engineering Division for the TOTAL BASE BID (Items 1 to 17) of:

_____ Dollars (\$ _____)

and will fully complete all work under this contract within 210 consecutive calendar days from the date of written notice to proceed, including date of said order, and total sum being itemized on the following pages.

PROPOSAL
FOR
JOB NO. J00CM60A
KAHAKAPAO RECREATIONAL AREA ADA IMPROVEMENTS
MAKAWAO, MAUI, HAWAII

Item No.	Quantity	Unit	Description	Unit Price	Total
			<u>SITE WORK</u>		
1.	132	S.Y.	4" thick concrete pads and walkway with thickened edge, including concrete, base course, reinforcement, formwork, and all other incidentals in place complete.	\$ _____	\$ _____
2.	67	S.Y.	8" thick concrete pad with thickened edge, including concrete, base course, reinforcement, formwork, and all other incidentals in place complete.	\$ _____	\$ _____
3.	168	L.F.	Modular segmental concrete wall, including concrete blocks, drainage pipe, weep hole installation, drainage rock, base course leveling pad, and all incidentals in place complete.	\$ _____	\$ _____
4.	2	EA	Concrete wheel stop, including all incidentals in place complete.	\$ _____	\$ _____
5.	2	EA	Reserved parking/van accessible sign and post, including all incidentals in place complete.	\$ _____	\$ _____
6.	2	EA	Accessible painted logo, including all incidentals in place complete.	\$ _____	\$ _____
7.	160	LF	Pavement markings, including all incidentals in place complete. Includes 2 parking stalls and 1 access aisle.	\$ _____	\$ _____
8.	1	EA	Picnic table, including all incidentals in place complete.	\$ _____	\$ _____
9.	L.S.	L.S.	Pedestrian swing gate and post, including all incidentals in place complete.	Lump Sum	\$ _____
10.	1	EA	Relocate informational kiosk, including removal from existing location, cleaning/preparation, installation in new location, and all other incidentals in place complete.	\$ _____	\$ _____
11.	L.S.	L.S.	Grading of project area required to construct improvements, including clearing, grubbing, excavation, fill, placement of topsoil, re-planting of disturbed areas, and all other incidentals in place complete.	Lump Sum	\$ _____
12.	495	S.Y.	Gravel parking lot, including reuse of existing gravel on-site, new gravel, geotextile fabric, and all incidentals in place complete.	\$ _____	\$ _____

PROPOSAL
FOR
JOB NO. J00CM60A
KAHAKAPAO RECREATIONAL AREA ADA IMPROVEMENTS
MAKAWAO, MAUI, HAWAII

Item No.	Quantity	Unit	Description	Unit Price	Total
13.	L.S.	L.S.	General site work, including temporary erosion and sediment control, site restoration, and all other incidentals in place complete.	Lump Sum	\$ _____
14.	L.S.	L.S.	Site clearing, including removal of all debris and vegetation within the limits of clearing, and obstruction, any permit fees, survey layout work, and all other incidentals.	Lump Sum	\$ _____
15.	L.S.	L.S.	Project sign, in place complete.	Lump Sum	\$ _____
16.	Allowance		Field office.	Allowance	\$ <u>5,000</u>

Sub-Total Base Bid (Items 1 - 16) \$ _____

Item No.	Quantity	Unit	Description	Unit Price	Total
			<u>GENERAL</u>		
17.	L.S.	L.S.	Mobilization and demobilization, not to exceed 10% of the sub-total base bid, excluding the bid price for mobilization and demobilization.	Lump Sum	\$ _____

Total Bid (Items 1 - 17) \$ _____

HAWAII PRODUCTS PREFERENCE AND/OR USE OF HAWAII PRODUCTS

In accordance with Act 175, SLH 2009, the Hawaii products preference is applicable to this solicitation. Bidder offering a Hawaii product (“HP”) shall identify the HP in the table below.

Persons desiring to qualify their product(s) not currently on the Hawaii Product List, shall complete Form SPO-38, *Certification for Hawaii Product Preference*, and submit the completed form no later than the deadline specified in the procurement notice and solicitation. The responsibility for certification and qualification shall rest upon the person requesting the preference. One form shall be completed and submitted for each product. Form SPO-38 is available at <http://hawaii.gov/spo/goods-services-construction/preferences-103d-pt-x/hi-products/hawaii-product-preferences>.

For the purpose of selecting the low bid when a solicitation contains both HP and non-HP, the price offered for a HP item shall be decreased by subtracting 10% for the class I or 15% for the class II HP item(s) offered. The lowest total offer, taking the preference into consideration, shall be awarded the contract, unless the offer provides for additional award criteria. The contract amount of any contract awarded, however, shall be the amount of the price offered, exclusive of the preferences.

In the event of any change that materially alters the bidder’s ability to supply the Hawaii product(s), the bidder shall immediately notify the procurement officer in writing and the parties shall enter into discussions for the purpose of revising the contract or terminating the contract for convenience.

Item No.	Pre-Approved Hawaii Product Description & Manufacturer	Class (I or II)	Quantity	Unit Measure	Unit Price	Total Price
1.	Aggregates: Ameron International Corporation Delta Construction Corporation Goodfellow Bros., Inc. Grace Pacific Corporation Hawaiian Cement Sphere, LLC Tileco, Inc. West Oahu Aggregate Co. Inc.	I				
2.	Asphalt and Paving Material: Ala Imua, LLC Black Plumeria LLC Grace Pacific Corporation Halawa Asphalt, LLC Road and Hwy Bldrs Walker-Moody Pavement Products and Equipment	I				

3	Cement and Concrete Products: Aloha Precast, Inc. Ameron International Corporation BOMAT, Ltd. GPRM Prestress, LLC Hawaii Concrete Products, Inc. Hawaii Precast, Inc. Hawaiian Cement Island Ready Mix Concrete, Inc. Jensen Enterprises Pohaku Paa LLC Ramtek Fabrication Co., Inc. Tileco, Inc. Walker Hawaii Precast Walker Industries, Ltd.	I				
4.	Compost Filter: Envirotech BioSolutions Hawaii, Inc. Certified Erosion Control Hawaii LLC	I				

RECYCLED PRODUCTS PREFERENCE

This project allows a 10% price preference for recycled products in accordance with HRS 103D-1005. Please indicate your 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 postconsumer 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.

APPRENTICESHIP AGREEMENT PREFERENCE

1. If applicable to this project, any bidder seeking the preference must be a party to an apprenticeship agreement registered with the State Department of Labor and Industrial Relations (DLIR) at the time the bid is submitted for each apprenticeable trade the bidder will employ to construct the project. “Employ” means the employment of a person in an employer-employee relationship.
 - a. The apprenticeship agreement shall be registered with the DLIR and conform to the requirements of Hawaii Revised Statutes Chapter 372.
 - b. Subcontractors do not have to be a party to an apprenticeship agreement for the bidder to obtain preference.
 - c. The bidder is not required to have apprentices in its employ at the time the bid is submitted to qualify for the preference.

2. A bidder seeking the preference must state the apprenticeable trade the bidder will employ for each trade to be employed to perform the work by submitting a completed signed original Certification Form 1 verifying participation in an apprenticeship program registered with DLIR. “Apprenticeable trade” shall have the same meaning as “apprenticeable occupation” pursuant to Hawaii Administrative Rules (HAR) §12-30-5.
 - a. The Certification Form 1 shall be authorized by an apprenticeship sponsor listed on the DLIR list of registered apprenticeship programs. “Sponsor” means an operator of an apprenticeship program and in whose name the program is approved and registered with the DLIR pursuant to HAR §12-30-1.
 - b. The authorization shall be an original signature by an authorized official of the apprenticeship sponsor.
 - c. The completed signed original Certification Form 1 for each trade must be submitted with the bid. Previous certifications shall not apply.
 - d. When filling out the Certification Form 1, the name of Apprenticeable Trade and Apprenticeship Sponsor must be the same as recorded in the List of Construction Trades in Registered Apprenticeship Programs that is posted on the DLIR website. “Registered apprenticeship program” means a construction trade program approved by the DLIR pursuant to HAR §12-301 and §12-30-4.
 - e. The Certificate Form 1 and the List of Construction Trades in Registered Apprenticeship Programs is available on the DLIR website at: <http://hawaii.gov/labor/wdd>.

3. Upon receiving the Certification Form 1, the Procurement Officer will verify that the apprenticeship program is on the List of Construction Trades in Registered Apprenticeship Programs and that the form is signed by an authorized official of the Apprenticeship Program Sponsor. If the programs and signature are not confirmed by the DLIR, the bidder will not qualify for the preference.

4. If the bidder is certified to participate in an apprenticeship program for each trade which will be employed by the bidder for the project, a preference will be applied to decrease the bidder's bid amount by five percent (5%) for evaluation purposes.
5. Should the bidder qualify for other preferences (e.g. Hawaii Products), all applicable preferences shall be applied to the bid price.

CONTRIBUTIONS BY STATE AND COUNTY CONTRACTORS PROHIBITED

Contractors are hereby notified of the applicability of Section 11-355, HRS, which states that campaign contributions are prohibited from specified State or county government contractors during the term of the contract if the contractors are paid with funds appropriated by a legislative body.

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 17) selected by the Board of Land and Natural Resources. Write the total of bid items 1 to 17 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 sixty (60) 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 proposals are opened and read, the figures will be extended and/or totaled in accordance with the bid prices of the acceptable proposals and the totals will be compared. 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 of One Hundred Fifty and No/100 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 § 16-7732*). 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 providing the work of a required specialty contractor, whose license is not automatically held pursuant to HAR 16-77-32, 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.

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

SPECIAL PROVISIONS

Amend INTERIM GENERAL CONDITIONS, dated October 1994, as follows:

Section 2 – Proposal Requirements and Conditions

1. **AMEND** Section 2.1 Qualification of Bidder with the following:

Written Notice of Intent to Bid or Offer: A written Notice of Intent to Bid is not required for the Solicitation.

Standard Qualification Questionnaire: Bidders may be required to complete a standard qualifications questionnaire. When requested, the information shall be furnished within two working days or longer at the discretion of the Engineer. 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.

Hawaii Business or Compliant Non-Hawaii Business Requirement: Bidders 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. A certified letter is not required prior to bid opening.

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 (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.

Hawaii Compliance Express. 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 that bidder’s status is compliant with requirements of §103D-310(c), HRS, 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.

2. **ADD** Section 2.4a, Pre-Bid Conferences

Required Pre-bid Conferences: For construction and design-build projects with an estimated value of \$500,000 or more and solicited under the competitive sealed bid method (103D-302 HRS); and for construction and design-build projects with an estimated value of \$100,000 or more and solicited under the competitive sealed proposal method (103D-303 HRS); a pre-bid conference is required.

Other Pre-Bid Conferences: The Department may require a pre-bid conference for construction or design-build projects that are below the dollar threshold listed in above or when projects have special or unusual requirements.

Other Conditions: The Department may require the prospective Bidders to make a physical inspection of the project site and make attendance at the pre-bid conference a condition for submitting an offer.

Nothing stated at the pre-bid conference shall change the solicitation unless a change is made by written addendum.

3. **DELETE** Section 2.5, Addenda and Interpretations, in its entirety and replace with the following:

“Discrepancies, omissions, or doubts as to the meaning of drawings and specifications should be communicated using the question and answer section on the HIEPRO solicitation for interpretation and must be received in the time frame set in the HIEPRO solicitation. Any interpretation, if made and any supplemental instructions will be in the form of written addenda to the plans and specifications and made available prior to the offer due date. It shall be the prospective bidder’s sole responsibility to verify and obtain any said addenda. Failure of any bidder to receive any such addendum or interpretation shall not relieve such bidder from any obligation under his bid as submitted. All addenda so issued shall become part of the contract documents.”

Section 3 – Award and Execution of Contract

1. **AMEND** Section 3.3, Award of Contract, by deleting “sixty (60)” and replacing with “ninety (90)” in the first paragraph.

2. **AMEND** Section 3.3, Award of Contract, by adding the following after the first paragraph:

“If the contract is not awarded within the ninety (90) days, the Department may request the successful Bidder to extend the time for the acceptance of its bid. The Bidder may reject such a request without penalty; and in such case, the Department may at its sole discretion make a similar offer to the next lowest responsive and responsible bidder and so on until a bid is duly accepted or until the Department elects to stop making such requests.”

3. **AMEND** Section 3.9, Notice to Proceed, by deleting “180 days” and replacing with “one (1) year” in the last paragraph.

4. **ADD** Section 3.10, Protests:

“3.10 PROTESTS—Pursuant to Section 103D-701, Hawaii Revised Statutes, an actual or prospective offeror who is aggrieved in connection with the solicitation or award may submit a protest. Any protest

shall be submitting in writing to the Chairperson, Department of Land and Natural Resources, 1151 Punchbowl Street, Honolulu, Hawaii 96813, or designee as specified in the solicitation.

A protest shall be submitted in writing within five (5) working days after the aggrieved person knows or should have known the facts giving rise thereto; provided that a protest based upon the content of the solicitation shall be submitted in writing prior to the date set for receipt of offers. Further provided that a protest of an award or proposed award shall be submitted within five (5) working days after the posting of the award of the contract.

The notice of award, if any, resulting from this solicitation shall be posted on the Procurement System on the SPO website: <http://hawaii.gov/spo2/>.

Section 5 – Control of Work

AMEND Section 5.8 Value Engineering Incentive by deleting “\$100,000” and replacing with “\$250,000” in the first paragraph.

Section 6 – Substitution of Materials and Equipment

ADD the following to Section 6.3 Sub-paragraph b:

4. If the substitution meets all the requirements of the specifications and plans.

Section 7 – Prosecution and Progress

1. **DELETE** Section 7.2d in its entirety and replace with the following:

“d. Insurance Requirements

1. Obligation of Contractor

The Contractor shall not commence any work until it obtains, at its own expense, all required insurance. Such insurance must have the approval of the Department as to limit, form and amount and must be maintained with a company authorized by law to issue such insurance in the State of Hawaii.

All insurance described herein will be maintained by the Contractor for the full period of the contract and in no event will be terminated or otherwise allowed to lapse prior to written certification of final acceptance of the work by the Department.

Certificate(s) of Insurance acceptable to the Department shall be filed with the Engineer prior to commencement of the work. These certificates shall contain a provision that coverages afforded under the policies will not be canceled or changed until at least thirty days written notice has been given to the Engineer by registered mail. The insurance policies shall name the State of Hawaii, its officers and employees as an additional insured and such coverage shall be noted on the Certificate. Should any policy be canceled before final acceptance of the work by the Department, and the Contractor fails to immediately procure replacement insurance as specified, the Department, in addition to all other remedies it may have for such breach, reserves the right to procure such insurance and deduct the cost thereof from any money due to the Contractor.

Nothing contained in these insurance requirements is to be construed as limiting the extent of Contractor's responsibility for payment of damages resulting from its operations under this contract, including the Contractor's obligation to pay liquidated damages, nor shall it affect the Contractor's separate and independent duty to defend, indemnify and hold the Department harmless pursuant to other provisions of this contract. In no instance will the Department's exercise of an option to occupy and use completed portions of the work relieve the Contractor of its obligation to maintain the required insurance until the date of final acceptance of the work.

All insurance described herein shall cover the insured for all work to be performed under the contract, all work performed incidental thereto or directly or indirectly connected therewith, including traffic detour work or other work performed outside the work area, and all change order work.

The Contractor shall, from time to time, furnish the Engineer, when requested, satisfactory proof of coverage of each type of insurance required or a copy of the actual policies covering the work. Failure to comply with the Engineer's request may result in suspension of the work, and shall be sufficient grounds to withhold future payments due the Contractor and to terminate the contract for Contractor's default.

2. Types of Insurance

The Contractor shall purchase and maintain insurance described below which shall provide coverage against claims arising out of the Contractor's operations under the contract, whether such operations be by the Contractor itself or by the subcontractor or by anyone directly or indirectly employed by any of them or by anyone for whose acts any of them may be liable.

(a) Worker's Compensation. The Contractor and all subcontractors shall obtain full worker's compensation insurance coverage for all persons whom they employ or may employ in carrying out the work under this contract. This insurance shall be in strict conformity with the requirements of the most current and applicable State of Hawaii Worker's Compensation Insurance laws in effect on the date of the execution of this contract and as modified during the duration of the contract.

(b) Commercial General Liability Insurance and Automobile Insurance. Contractor's commercial general liability insurance and automobile liability insurance shall both be obtained in a combined, single limit of not less than \$1,000,000 per occurrence that shall include coverage for bodily injury, sickness, disease or death of any person, arising directly or indirectly out of, or in connection with, the performance of work under this contract.

The Contractor's property damage liability insurance shall provide for a single combined limit of not less than \$1,000,000 for all damages arising out of injury to or destruction of property of others including the Department's, arising directly or indirectly out of or in connection with the performance of the work under this contract including explosion or collapse.

The Contractor shall either:

- i. Require each of its subcontractors to procure and to maintain during the life of its subcontract, subcontractors' comprehensive general liability, automobile liability

and property damage liability insurance of the type and in the same amounts specified herein; or

- ii. Insure the activities of its subcontractors in its own policy.

The Contractor will be permitted, in cooperation with insurers, to maintain a self insured retention for up to 25% of the per occurrence combined single limits of the commercial general liability and the automobile liability policies. The existence of the self insured retention must be noted on the certificate of insurance coverage submitted to the Department or else it will be understood that the insurer is providing first dollar coverage for all claims. For all claims within the self-insured retention amount, the rights, duties and obligations between the Contractor and the Department shall be identical to that between a liability insurer and the Department, as an additional insured, as if there was no self-insured retention.

- (c) Builder's Risk Insurance. Unless included in the Specifications of this project, the Contractor shall not be required to provide builder's risk insurance. If required as noted in the Specifications, builder's risk insurance shall be provided during the progress of work and until final acceptance by the Department upon completion of the contract. It shall be "All Risk" (including but not limited to earthquake, windstorm and flood damage) completed value insurance coverage on all completed work and work in progress to the full replacement value thereof. Such insurance shall include the Department as additional name insured. The Contractor shall submit to the Engineer for its approval all items deemed to be uninsurable. The policy may provide for a deductible in an amount of up to 25% of the amount insured by the policy. With respect to all losses up to any deductible amount, the relationship between the Contractor and the Department shall be that of insurer and additional insured as if no deductible existed".

2. **DELETE** Section 7.16 in its entirety and replace with the following:

"RESPONSIBILITY FOR DAMAGE CLAIMS; INDEMNITY – The Contractor shall indemnify the State and the Department against all loss of or damage to the State's or the Department's existing property and facilities arising out of any act or omission committed in the performance of the work by the Contractor, any subcontractor or their employees and agents. Contractor shall defend, hold harmless and indemnify the Department and the State, their employees, officers and agents against all losses, claims, suits, liability and expense, including but not limited to attorneys' fees, arising out of injury to or death of persons (including employees of the State and the Department, the Contractor or any subcontractor) or damage to property resulting from or in connection with performance of the work and not caused solely by the negligence of the State or the Department, their agents, officers and employees. The State or the Department may participate in the defense of any claim or suit without relieving the Contractor of any obligation hereunder. The purchase of liability insurance shall not relieve the Contractor of the obligations described herein.

The Contractor agrees that it will not attempt to hold the State and its Departments and Agencies and their officers, representatives, employees or agents, liable or responsible for any losses or damages to third parties from the action of the elements, the nature of the work to be done under these specifications or from any unforeseen obstructions, acts of God, vandalism, fires or encumbrances which may be encountered in the prosecution of the work.

The Contractor shall pay all just claims for materials, supplies, tools, labor and other just claims against the Contractor or any subcontractor in connection with this contract and the surety bond will not be

released by final acceptance and payment by the Department unless all such claims are paid or released. The Department may, but is not obligated to, withhold or retain as much of the monies due or to become due the Contractor under this contract considered necessary by the Engineer to cover such just claims until satisfactory proof of payment or the establishment of a payment plan is presented.

The Contractor shall defend, indemnify and hold harmless the State and its Departments and Agencies and their officers, representatives, employees or agents from all suits, actions or claims of any character brought on account of any claims or amounts arising or recovered under the Worker's Compensation Laws or any other law, by-law, ordinance, order or decree.

Section 8 – Measurement and Payment

1. **DELETE** Section 8.7a in its entirety and replace with the following:

- a. Tax Clearances from the State of Hawaii Department of Taxation and Internal Revenue Service, subject to section 103D-328, HRS, current within two months of issuance date indicating that all delinquent taxes levied or accrued under State Statutes against the contractor have been paid.

2. **ADD** Section 8.7d, Certificate of Compliance:

- d. A Certification from the Contractor affirming that the Contractor has, as applicable, remained in compliance with all laws as required by Section 103D-310, HRS, and Section 3-122-112, HAR. A contractor making a false affirmation shall be suspended and may be debarred pursuant to section 103D-702, HRS.

1. Certification of Compliance for Final Payment, State Procurement Office Form-22. Must be Signed Original.

3. **ADD** Section 8.7e, Hawaii Compliance Express:

- e. In lieu of submitting the tax clearances from Taxation and IRS, and SPO Form -22, the Contractor may choose to use the Hawaii Compliance Express as described on page SP-1 of this Special Provisions.

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SECTION 01019

GENERAL SPECIFICATIONS

PART 1 - GENERAL

1.1 GENERAL REQUIREMENTS

Work shall consist of furnishing all labor, tools, materials and equipment necessary and required to construct in place complete all work as indicated on the drawings and as specified herein.

1.2 GENERAL

- A. Examination of Premises: The Contractor shall contact the Engineer and obtain permission before visiting the site.
- B. All lines and grades shall be established by a licensed surveyor, or licensed Civil Engineer, registered in the State of Hawaii. The Contractor shall submit evidence of current and valid registration.
- C. Notices: The Contractor shall notify the Engineer and give at least three (3) working days notice before starting any work.
- D. Contractor's Operations
 - 1. The Contractor must employ, insofar as possible, such methods and means of carrying out the work so as not to cause any interruption or interference to the facility's operations. Where the Contractor's operations would result in interruptions which would hamper the operations of the facilities, the Contractor shall rearrange the schedule of work accordingly.
 - 2. The Contractor shall maintain safe passageway to and from the facility for the user agency personnel and the public at all times.
- E. Lead Paint
 - 1. When the project includes paint to be disturbed that was applied prior to 1980, it shall be assumed to contain lead. The Contractor shall inform its employees, subcontractors, and all other persons engaged in the project that lead containing paints are present in the existing buildings at the job site and to follow the requirements of the Department of Labor and Industrial Relations, Division of Occupational Safety and Health, Title 12, Subtitle 8, Chapter 148, Lead Exposure in Construction, Hawaii Administrative Rules (Chapter 12-148, HAR).

- F. Parking Policy for Contractor
1. The Contractor and its employees will not be allowed to park in zones assigned to facility personnel.
 2. Areas to be used by the Contractor shall be as designated by the Engineer. Any site damage by the Contractor shall be restored as instructed by the Engineer at no cost to the State.
- G. Toilet Accommodations: The Contractor may use the existing toilet facilities if so designated by the Engineer; however, it is the Contractor's responsibility to keep same clean and in a sanitary condition at all times.
- H. Protection of Property: The Contractor shall continually maintain adequate protection of all its work from damage and shall protect all property, including but not limited to buildings, equipment, furniture, grounds, vegetation, material, utility systems located at and adjoining the job site. The Contractor shall repair, replace or pay the expense of repair of damages resulting from its operations.
- I. Use of Power Driven Equipment: The Contractor is cautioned to take all necessary safety precautions to protect the facility personnel, and the public whenever power driven equipment is used.
- J. Safety: The Contractor shall carefully read and strictly comply with the requirements of the Hawaii Occupational Safety and Health Law, Chapter 396, Hawaii Revised Statutes, as amended, is applicable and made a part of the Contract.
- K. Clean Up Premises: The Contractor shall clean up and remove from premises all debris accumulated from operations as necessary or as directed. See also Section 7.25 of the General Conditions.
- L. Responsibility
1. The State will hold the Contractor liable for all the acts of Subcontractors and shall deal only with 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 the Contractor discover any discrepancy in the plans or specifications, the Contractor shall immediately notify the Engineer before proceeding any further with the work, otherwise, the Contractor will be held responsible for any cost involved in correction of work placed due to such discrepancy.
- M. Cooperation With Other Contractors: The State reserves the right at any time to contract for or otherwise perform other or additional work within the contract zone

limits of this Contract. The Contractor of this project shall, to the extent ordered by the State, conduct its work so as not to interfere with or hinder the progress or completion of the work performed by other contractors.

- N. Division of the Work: The Divisions and Sections into which these Specifications are divided shall not be considered an accurate or complete segregation of work by trades. This also applies to all work specified within each Section.
- O. Drawings and Specifications
1. The Contractor shall not make alterations in the drawings and specifications. In the event the contractor discovers any errors or discrepancies, the Contractor shall immediately notify the Engineer in accordance with the 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 such 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", "a", "an", and "the" are intentional. Omitted words and phrases shall be provided by inference to form complete sentences.
- P. 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; schedules of operations; guarantees; operating and maintenance manuals; and as-built drawings.
 2. The Contractor shall make a comprehensive list of the required submittals, by Specification Section, and submit this list to the Engineer within 15 days after notice to proceed.
 3. As-Built Drawings: When as-built drawings are required for submittal, the following shall apply:
 - a. 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.

- b. All deviations from alignments, elevations and dimensions which are stipulated on the plans shall be recorded in red on the as-built drawings.
- c. 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.
 - 2) Within two weeks after final inspection of the project, the Contractor shall transfer the changes marked on the field office plans onto a clean copy of plans using a red pencil. Any deletions shall be so noted and redrawn as necessary. The Contractor shall stamp or mark the tracings "AS-BUILT", and also sign and date each drawing so marked.
 - 3) The Contractor shall submit the as-built drawings 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.
 - 4) Any as-built drawing which the Engineer determines does not accurately record the deviation shall be corrected by the State, and the Contractor shall be charged for the services.

PART 2 - PRODUCTS *(NOT USED)*

PART 3 - EXECUTION *(NOT USED)*

- END OF SECTION -

SECTION 01090

STANDARD REFERENCES

PART 1 - GENERAL

Wherever used in the project, the following abbreviations will have the meanings listed:

<u>Abbreviation</u>	<u>Company</u>
AA	Aluminum Association Incorporated 818 Connecticut Avenue, N.W. Washington, D.C. 20006
AASHTO	American Association of State Highway and Transportation Officials 444 North Capitol Street, N.W., Suite 225 Washington, D.C. 20001
ACI	American Concrete Institute P.O. Box 19150 Detroit, MI
AEIC	Association of Edison Illuminating Companies 51 East 42nd Street New York, NY 10017
AFBMA	Anti-Friction Bearing Manufacturer's Association 60 East 42nd Street New York, NY 10017
AGA	American Gas Association 8501 East Pleasant Valley Road Cleveland, OH 44131
AGMA	American Gear Manufacturer's Association 1330 Massachusetts Avenue, N.W. Washington, D.C.
AISC	American Institute of Steel Construction 101 Park Avenue New York, NY 10017
AISI	American Iron and Steel Institute 1000 16th Street, N.W. Washington, D.C. 20036

<u>Abbreviation</u>	<u>Company</u>
AITC	American Institute of Timber Construction 333 West Hampden Avenue Englewood, CO 80110
AMCA	Air Moving and Conditioning Association, Inc. 30 West University Drive Arlington Heights, IL 60004
ANSI	American National Standards Institute, Inc. 1430 Broadway New York, NY 10018
APA	American Plywood Association 1119 A Street Tacoma, WA 98401
API	American Petroleum Institute 1801 K Street N.W. Washington, DC 20006
ARI	Air-Conditioning and Refrigeration Institute 1814 North Fort Myer Drive Arlington, VA 22209
ASCE	American Society of Civil Engineers 345 East 47th Street New York, NY 10017
ASCII	American Standard Code for Information Interchange United States of America Standards Institute 1430 Broadway New York, NY 10018
ASE Code	American Standard Safety Code for Elevators, Dumbwaiter and Escalators American National Standards Institute 1430 Broadway New York, NY 10018
ASHRAE	American Society of Heating, Refrigeration and Air Conditioning Engineers United Engineering Center 345 East 47th Street New York, NY 10017

<u>Abbreviation</u>	<u>Company</u>
ASME	American Society of Mechanical Engineers 345 East 47th Street New York, NY 10017
ASTM	American Society for Testing and Materials 1916 Race Street Philadelphia, PA 19103
AWPA	American Wood Preservers Association 1625 Eye Street Washington, DC 20006
AWS	American Welding Society 2501 N.W. 7th Street Miami, FL 33125
AWWA	American Water Works Association 6666 West Quincy Avenue Denver, CO 80235
CBM	Certified Ballast Manufacturers 2120 Keith Building Cleveland, OH 44115
CMAA	Crane Manufacturers Association of America, Inc. (Formerly called: Overhead Electrical Crane Institute - OECI) 1326 Freeport Road Pittsburgh, PA 15238
CRSI	Concrete Reinforcing Steel Institute 180 North La Salle Street Chicago, IL 60601
CSA	Canadian Standards Association 178 Rexdale Boulevard Rexdale, Ontario, M9W 1R3, Canada
DEMA	Diesel Engine Manufacturer's Association 122 East 42nd Street New York, NY 10017
DIS	Division of Industrial Safety California Department of Industrial Relations 2422 Arden Way Sacramento, CA 95825

<u>Abbreviation</u>	<u>Company</u>
EI	Edison Electric Institute 90 Park Avenue New York, NY 10016
EIA	Electronic Industries Association 2001 Eye Street N.W. Washington, DC 20006
EJMA	Expansion Joint Manufacturer's Association 331 Madison Avenue New York, NY 10017
ESO	Electrical Safety Orders, California Administrative Code, Title 8, Chap. 4, Subarticle 5 Office of Procurement, Publications Section P.O. Box 20191 8141 Elder Creek Road Sacramento, CA 95820
FEDSPEC	Federal Specifications General Services Administration Specification and Consumer Information Distribution Branch Washington Navy Yard, Bldg. 197 Washington, DC 20407
FEDSTDS	Federal Standards (see FEDSPECS)
FM	Factory Mutual Research 1151 Boston-Providence Turnpike Norwood, MA 02062
HEI	Heat Exchange Institute 122 East 42nd Street New York, NY 10017
HI	Hydraulic Institute 1230 Keith Building Cleveland, OH 44115
IAPMO	International Association of Plumbing and Mechanical Officials 5032 Alhambra Avenue Los Angeles, CA 90032

<u>Abbreviation</u>	<u>Company</u>
ICBO	International Conference of Building Officials 5360 South Workman Mill Road Whittier, CA 90601
ICEA	Insulated Cable Engineers Association P.O. Box P South Yarmouth, MA 02664
IEEE	Institute of Electrical and Electronics Engineers, Inc. 345 East 47th Street New York, NY 10017
IES	Illuminating Engineering Society C/O United Engineering Center 345 East 47th Street New York, NY 10017
ISA	Instrument Society of America 400 Stanwix Street Pittsburgh, PA 15222
JIC	Joint Industrial Council 7901 Westpark Drive McLean, VA 22101
MILSPEC	Military Specifications Naval Publications and Forms Center 5801 Tabor Avenue Philadelphia, PA 19120
MSS	Manufacturers Standardization Society of the Valve and Fittings Industry, Inc. 127 Park Street, N.E. Vienna, VA 22180
NAAMM	National Association of Architectural Metal Manufacturers 100 South Marion Street Oak Park, IL 60302
NACE	National Association of Corrosion Engineers P.O. Box 986 Katy, TX 77450

<u>Abbreviation</u>	<u>Company</u>
NEC	National Electric Code National Fire Protection Association 470 Atlantic Avenue Boston, MA 02210
NEMA	National Electrical Manufacturer's Association 155 East 44th Street New York, NY 10017
NESC	National Electric Safety Code American National Standards Institute 1430 Broadway New York, NY 10018
NFPA	National Forest Products Association (Formerly called: National Lumber Manufacturer's Association) 1619 Massachusetts Avenue, N.W. Washington, DC 20036
OSHA	Occupational Safety and Health Act U.S. Department of Labor San Francisco Regional Office 450 Golden Gate Avenue, Box 36017 San Francisco, CA 94102
PPIC	The Plumbing & Piping Industry Council, Inc. Suite 402 510 Shatto Place Los Angeles, CA 90020
SAE	Society of Automotive Engineers 2 Pennsylvania Street New York, NY 10001
SAMA	Scientific Apparatus Makers Association One Thomas Circle Washington, DC 20005
SBCC	Southern Building Code Congress 1116 Brown-Marx Building Birmingham, AL 35203
SMACNA	Sheet Metal and Air Conditioning Contractors National Association, Inc. 8224 Old Courthouse Road Tysons Corner Vienna, VA 22180

<u>Abbreviation</u>	<u>Company</u>
SSPWC	Standard Specifications for Public Works Construction Building News, Inc. 3055 Overland Avenue Los Angeles, CA 90034
TEMA	Tubular Exchanger Manufacturer's Association 331 Madison Avenue New York, NY 10017
UBC	Uniform Building Code Published by ICBO
UL	Underwriters Laboratories Inc. 207 East Ohio Street Chicago, IL 60611
UMC	Uniform Mechanical Code Published by ICBO
UPC	Uniform Plumbing Code Published by IAPMO
USBR	Bureau of Reclamation U.S. Department of Interior Engineering and Research Center Denver Federal Center, Building 67 Denver, CO 80225
WWPA	Western Wood Products Association (Formerly called: West Coast Lumberman's Association - WCLA) Yeon Building Portland, CA 97204

PART 2 - PRODUCTS *(NOT USED)*

PART 3 - EXECUTION *(NOT USED)*

- END OF SECTION -

SECTION 01300

SUBMITTALS

PART 1 - GENERAL

1.1 SUBMITTALS

- A. Shop drawings shall be required as called for in the Contract Documents or by the Engineer.
- B. Other required submittals shall include:
 - 1. Manufacturer's Data.
 - 2. Certificates of Warranty.
 - 3. Any others as called for in the plans, specifications, or by the Engineer.

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

- A. The Contractor is 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 NAME

PROJECT: _____

JOB NO: _____

THIS SUBMITTAL HAS BEEN CHECKED BY THIS GENERAL 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 NUMBER _____

SUBCONTRACTOR NAME _____

SUPPLIER NAME _____

MANUFACTURER NAME _____

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, it can be matched up again. The back of this tag will be used by the Engineer 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 reviewed by the Engineer, prior to any ordering of materials and equipment.
- E. Unless otherwise noted, the Contractor shall submit to the Engineer for his review eight copies of all shop drawings, piping layout, and/or catalog cuts for fabricated items and manufactured items (including mechanical and electrical equipment) required for the construction. Drawings shall be submitted in sufficient time to allow the Engineer not less than twenty regular working days for examining the drawings.
- F. The drawing shall be accurate, distinct, and complete and shall contain all required information, including satisfactory identification of items, units and assemblies in relation to the contract drawings and specifications.
- G. Unless otherwise approved by the Engineer, shop drawings shall be submitted only by the Contractor, who shall indicate by a signed stamp on the drawings or other approved means that the Contractor has checked the shop drawings and that the work or equipment shown is in accordance with contract requirements and has been checked for dimensions and relationship with work of all other trades involved. All deviations from the plans and specifications shall be listed. The practice of submitting incomplete or unchecked shop drawings for the Engineer to correct or finish will not be acceptable, and shop drawings which, in the opinion of the Engineer, clearly indicate that they have not been checked by the Contractor will be considered as not complying with the intent of the contract documents and will be returned to the Contractor for resubmission in the proper form.
- H. When the shop drawings have been reviewed by the Engineer, two sets of submittals will be returned to the Contractor appropriately stamped. If major changes or corrections are necessary, the drawing may be rejected and one set will be returned to the Contractor with such changes or corrections indicated, and the Contractor shall correct and resubmit eight copies of the drawings, unless otherwise directed by the Engineer. No changes shall be made by the Contractor to the resubmitted shop drawings other than those changes indicated by the Engineer. The resubmittal shall be so indicated on the shop drawing.
- I. The review of such drawings and catalog cuts by the Engineer shall not relieve the Contractor from responsibility for correctness of the dimensions, fabrication details, and space requirements or for deviations from the contract drawings and specifications, unless the Contractor has called attention to such deviations, in writing, by a letter accompanying the drawings and the Engineer approved the change or deviations, in writing, at the time of submission; nor shall review by the Engineer relieve the Contractor from the responsibility for errors in the shop drawings. When the Contractor does call such deviations to the attention of the

Engineer, he shall state in his letter whether or not such deviations involve any deduction or extra cost adjustment.

- J. The approval of the above drawings, lists, prints, specifications, or other data shall in no way release the Contractor from his responsibility for the proper fulfillment of the requirements of this contract nor for fulfilling the purpose of the installation nor from his liability to replace the same should it prove defective or fail to meet the specified requirements.

PART 2 - PRODUCTS (*NOT USED*)

PART 3 - EXECUTION (*NOT USED*)

- END OF SECTION -

SECTION 01505

MOBILIZATION AND DEMOBILIZATION

PART 1 - GENERAL

1.1 GENERAL REQUIREMENTS

Description: This section covers the requirements for mobilization and demobilization.

1.2 MOBILIZATION: Mobilization shall consist of the transporting, assembling, constructing, installing, and making ready for use at the job site, all the equipment, machinery, structures, utilities, materials, labor, and incidentals necessary to do the work covered by this contract.

1.3 DEMOBILIZATION: Demobilization shall consist of the dismantling and removal of the above-mentioned equipment, machinery, structures, utilities, materials, and incidentals, and the cleaning up of the site.

PART 2 - PRODUCTS *(NOT USED)*

PART 3 - EXECUTION

3.1 GUIDELINES: If the Contractor utilizes private lands other than the sites provided by the Department for mobilization purposes, the provisions of this section shall apply, and the mobilization and demobilization work on said private lands shall be in accordance with the agreement between the Contractor and the land owner.

Any and all additional mobilization or demobilization costs in excess of the maximum amounts specified in the Proposal shall be included in the appropriate unit prices bid in the Proposal. The Contractor shall not receive any compensation for mobilization and demobilization in addition to those specified in the Proposal.

All equipment, machinery, buildings, utilities and incidentals mobilized and demobilized under this section shall remain the property of the Contractor.

3.2 MEASUREMENT AND PAYMENT

Mobilization and demobilization, including materials, labor, equipment, and all other incidentals shall be paid for as specified in the Proposal Schedule.

- END OF SECTION -

SECTION 01530

BARRICADES

PART 1 – GENERAL

1.1 GENERAL REQUIREMENTS

- A. Description. This work shall consist of furnishing, installing and maintaining barricades in accordance with the requirements of the contract.

Barricade application shall be provided for in the latest edition of the FHWA publication, Manual on Uniform Traffic Control Devices for Streets and Highways (MUTCD), and as amended.

PART 2 – PRODUCTS

2.1 MATERIALS

- A. Lumber: Lumber for rails, frames and braces shall be dry, sound, undamaged, well seasoned, and free from any defect which may impair their strength and durability.
- B. Hardware: Nails shall be galvanized wire nails. As many and as large a size as is practicable shall be used.
- C. Paints: Paints shall be exterior enamel paint of the best grade or first line as made by approved manufacturers.
- D. Sheet Reflecting Material: Sheet reflecting material shall conform to the applicable requirements of Subsection 712.20(C) of the "Standard Specifications for Road and Bridge Construction".
- E. Alternate Designs: Alternate barricade designs such as plastic molded barricades may be used subject to the Engineer's approval. The Contractor shall submit shop drawings or catalog cuts for approval.

PART 3 – EXECUTION

3.1 CONSTRUCTION REQUIREMENTS

- A. GENERAL: Barricades shall be constructed in a first class, workmanlike manner in accordance with details shown on the plans and as specified herein.

Barricades shall be in good condition and approved by the Engineer for use within the project limits. Barricade application and installation shall be as shown on the plans and as directed by the Engineer in accordance with the guidelines provided in the latest edition of the FHWA publication, Manual on Uniform Traffic Control Devices for Streets and Highways (MUTCD), and any amendments or revisions thereof as may be made from time to time.

Sand bags or other approved weights shall be provided where required or as directed by the Engineer. Sand bags or other approved weights shall not be placed on any striped barricade rail.

Steady burn and/or flashing lamps shall be required on selected barricades used during hours of darkness. Locations shall be as shown on the plans and as directed by the Engineer. Lamps shall be attached on the barricade ends closest to the traveled way and shall be visible to the motorist.

Barricades furnished and paid for as provided for as provided herein may be used for temporary detours, construction phasing, or other temporary traffic control work.

Barricades furnished and paid for use in temporary detours or construction phasing may be used for permanent location called for on the plans.

Upon completion of the construction work, barricades shall be left in place, relocated, or removed and disposed of as shown on the plans or as directed by the Engineer. Barricades left in place, or relocated to new permanent locations shall become the property of the State. Barricades directed to be removed and disposed of shall become the property of the Contractor.

- B. Painting: Wooden rails, frames and braces shall be given a prime coat and 2 finish coats of new white exterior enamel paint. Rail faces to be reflectorized may be left unpainted unless otherwise specified or directed.
- C. Reflectorization: Reflectorization of barricade rails shall be done in a first class, workmanlike manner and the attachment of reflective sheeting shall be as shown on the plans, specified herein, or as directed and approved by the Engineer.

Both vertical faces of each barricade rail shall be reflectorized as shown on the plans.

Wooden rails shall be reflectorized with one of the following:

1. Reflective sheeting specified in Subsection 712.20(C)(4) of the "Standard Specifications for Road and Bridge Construction" and backed with a 26 gage galvanized steel sheet.

2. A hardened aluminum backed reflective sheeting as specified in Subsection 712.20(C)(5) of the "Standard Specifications for Road and Bridge Construction."

D. Color: Rails, frames and braces shall be white.

The front and back faces of barricade rails shall have 6-inch wide alternative colored and white striped sloping downward toward the traveled way at an angle of 45 degrees with the vertical. The colored stripes shall be either orange or red in accordance with the following requirements:

1. Orange and white stripes shall be used in the following conditions:
 - a. Construction work.
 - b. Detours.
 - c. Maintenance work.
2. Red and white stripes shall be used in the following conditions:
 - a. On roadways with no outlet (i.e. dead-ends, cul-de-sacs).
 - b. Ramps or lanes closed for operational purposes.
 - c. Permanent or semi-permanent closure or termination of a roadway.

E. Maintenance: Barricades shall be kept in good condition throughout their usage during construction until the end of the contract.

F. The Contractor shall repair, repaint, clean or replace the barricades as required and as directed by the Engineer to maintain their effectiveness and appearance.

The Constructor shall immediately replace all lost, stolen or damaged barricades, lamps, sand bags and other approved weights.

Barricades used during construction phasing, temporary detours or other temporary traffic control work shall be cleaned and repaired as necessary, prior to being relocated to a permanent location shown on the plans or as directed.

No extra payment will be made for any repair work, repainting, or cleaning of barricades. The Engineer shall determine the suitable condition of each barricade and shall determine when each barricade shall be repaired, repainted or cleaned.

- 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 material except for materials which are specifically indicated elsewhere in these specifications as suitable for backfill shall be permitted on the project site.
3. All unusable debris and waste material shall be hauled away to an appropriate off-site dump area. During loading operations, debris and waste materials shall be watered down to allay dust.
4. No dry sweeping shall be permitted in cleaning rubbish and fines which can become airborne from floors or other paved areas. Vacuuming, wet mopping or wet or damp sweeping is permissible.
5. Enclosed chutes and/or containers shall be used for conveying debris from above to ground floor level.
6. Clean-up shall include the collection of all waste paper and wrapping materials, cans, bottles, construction waste materials and other objectionable materials, and removal as required. Frequency of clean-up shall coincide with rubbish producing events.

B. DUST:

1. The Contractor shall prevent dust from becoming airborne at all times including non-working hours, weekends and holidays in conformance with the State Department of Health, Administrative Rules, Title 11, Chapter 60 - 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, chemicals or asphalt over surfaces which may create airborne dust.

3. The Contractor shall be responsible for all damage claims in accordance with Section 7.16 - "Responsibility for Damage Claims" of the GENERAL CONDITIONS.

C. NOISE:

1. Noise shall be kept within acceptable levels at all times in conformance with the County of Maui Noise Reference Manual. The Contractor shall obtain and pay for the Community Noise Permit from the State Department of Health when the construction equipment or other devices emit noise at levels exceeding the allowable limits.
2. All internal combustion engine-powered equipment shall have mufflers to minimize noise and shall be properly maintained to reduce noise to acceptable levels.
3. Pile driving operations shall be confined to the period between 9:00 a.m. and 5:30 p.m., Monday through Friday. Pile driving will not be permitted on weekends and legal State and Federal holidays.
4. Starting-up of construction equipment meeting allowable noise limits shall not be done prior to 6:45 a.m. without prior approval of the Engineer. Equipment exceeding allowable noise levels shall not be started-up prior to 7:00 a.m.

D. EROSION:

1. During interim grading operations, the grade shall be maintained so as to preclude any damage to adjoining property from water and eroding soil.
2. Temporary berms, cut-off ditches and other provisions which may be required because of the Contractor's method of operations shall be installed at no cost to the State.
3. Drainage outlets and silting basing shall be constructed and maintained as shown on the plans to minimize erosion and pollution of waterways during construction.

E. OTHERS:

1. Wherever trucks and/or vehicles leave the site and enter surrounding paved streets, the Contractor shall prevent any material from being carried onto the pavement. Wastewater shall not be discharged into existing streams, waterways, or drainage systems such as gutters and catch basins unless treated to comply with the State Department of Health water pollution regulations.

2. Trucks hauling debris shall be covered as required by PUC Regulation. Trucks hauling fine materials shall be covered.
3. No dumping of waste concrete will be permitted at the job-site.
4. Except for rinsing of the hopper and delivery chute, and for wheel washing where required, concrete trucks shall not be cleaned on the job-site.
5. Except in an emergency, such as a mechanical breakdown, all vehicle 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.
6. When spray painting is allowed such spray painting shall be done by the "airless spray" process. Other types of spray painting will not be allowed.

F. 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 the Contractor for remedial measures to correct the offense. Also, no extension of time will be granted for delays caused by such suspensions.
2. If no corrective action is taken by the Contractor within 72 hours after a suspension is ordered by the Engineer, 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 Engineer may also suspend any operations which he feels are creating pollution problems although they may not be in violation of the above-mentioned requirements. In this instance, the work shall be done by force account as described in Subsection 4.2b -"Additional Work" of the GENERAL CONDITIONS and paid for in accordance with Subsection 8.4b - "Force - Account Work" therein. The count of elapsed working days to be charged against the contract in this situation shall be computed in accordance with Subsection 7.18 - "Contract Time" of the GENERAL CONDITIONS.

PART 2 – PRODUCTS (*NOT USED*)

PART 3 – EXECUTION

3.1 MEASUREMENT AND PAYMENT

Pollution control, including all equipment, labor, and materials shall be paid for as specified in the Proposal Schedule.

- END OF SECTION -

SECTION 01581

PROJECT SIGN

PART 1 - GENERAL

1.1 GENERAL REQUIREMENTS

Furnish all labor, materials and equipment necessary to construct and install all project sign as specified hereinafter.

1.2 SUBMITTAL

The contractor shall provide the Engineer with six (6) shop drawings of the project sign for review and approval by the Engineer prior to ordering the sign.

1.3 LETTER STYLE

Copy is centered and set in Adobe Type Futura Heavy. If this specific type is not available, Futura Demi Bold may be substituted. Copy should be set and spaced by a professional typesetter and enlarged photographically for photo stencil screen process.

1.4 ART WORK

Constant elements of the sign layout - frame, outline, stripe, and official state information - may be duplicated following drawing measurements, or be reproduced and enlarged photographically using a layout template if provided. The "STATE OF HAWAII" masthead should be reproduced and enlarged as specified, using the artwork provided.

1.5 TITLES

The specific major work of the project under construction is emphasized by using 3-3/4" type, all capitals. Secondary information such as location or buildings uses 2-1/4" type, all capitals. Other related information of lesser importance uses letter heights as indicated on 01581-3, upper / lower case letters.

Design should follow the example on page 01581-3.

PART 2 – PRODUCTS

2.1 MATERIALS

A. LUMBER:

1. Panel is 3/4" exterior grade high density overlaid plywood, with resin-bonded surfaces on both sides.
2. 4"x4" sign posts shall be Douglas Fir No. 1 or better.

B. PAINTS & INKS:

Screen print inks are matte finish. Paints are satin finish, exterior grade. References to Ameritone Color Key Paint are for color match only.

- | | | |
|--------|----|-----------------------|
| COLOR: | 1. | 1BL10A Bohemian Blue |
| | 2. | 2H16P Softly (White) |
| | 3. | 2VR2A Hot Tango (Red) |
| | 4. | 1M52E Tokay (Gray) |

C. CONCRETE:

Concrete shall be Class B as specified in Section 03300.

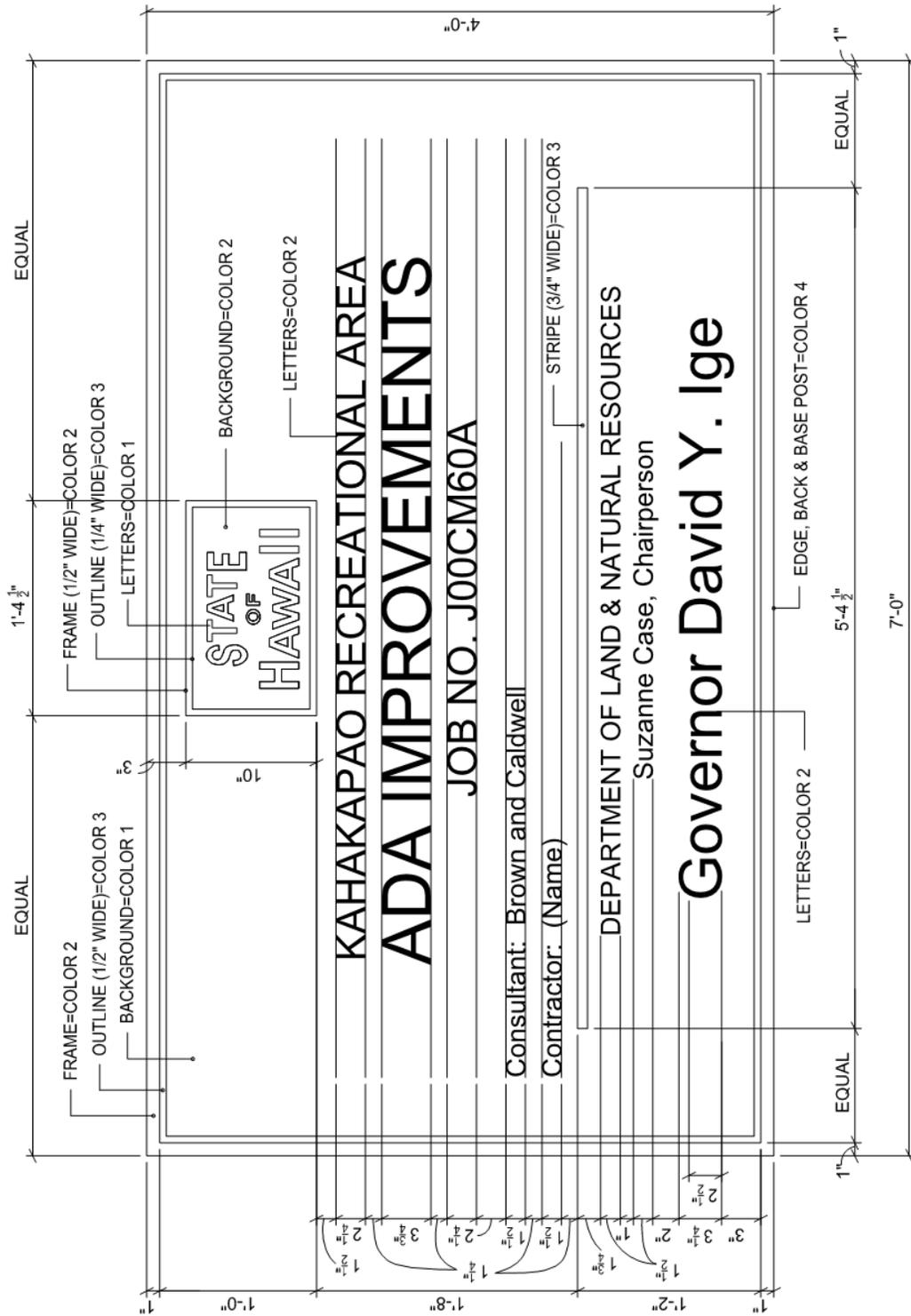
PART 3 – EXECUTION

3.1 GENERAL

- A. The Project Sign shall be constructed with new materials as specified above.
- B. The Project sign shall be installed at the location indicated on the drawings or as designated by the Engineer. The project sign shall be erected upon commencement of work.

3.2 MEASUREMENT AND PAYMENT

The construction of the project sign, including all equipment, labor and material necessary to furnish and install the project sign shall be paid for under the "Project Sign" item in the Proposal Schedule.



NOTE: Number of signs required 1

- END OF SECTION -

SECTION 02100

SITE PREPARATION

PART 1 - GENERAL

1.1 GENERAL REQUIREMENTS

The work to be performed under this section shall include clearing the premises of all obstacles and obstructions, the removal of which will be necessary for the proper reception, construction, execution and completion of the other work included in this contract.

1.2 COORDINATION WITH OTHER SECTIONS

- A. Earthwork is specified in Section 02200 - EARTHWORK.

PART 2 - PRODUCTS (*NOT USED*)

PART 3 - EXECUTION

3.1 GENERAL

- A. **Maintenance of Traffic:** The Contractor shall conduct operations with minimum interference to streets, driveways, walkways, passageways, parking areas, parking entry and exit ways, etc.

When necessary, the Contractor shall provide and erect barriers with special attention to protection of personnel.

- B. **Protection:** Throughout the progress of the work protection shall be provided for all property and equipment, and temporary barricades shall be provided as necessary. Work shall be done in accordance with the safety provisions of the Manual of Accident Prevention in Construction, published by the Associated General Contractors of America, and the State of Hawaii's Occupational Safety and Health Standards, Rules and Regulations.
- C. **Fires:** No burning of fires of any kind will be allowed.
- D. **Reference Points:** Bench marks, etc., shall be carefully maintained, but if disturbed or destroyed, shall be replaced as directed, at the Contractor's expense.
- E. **Disposal:** All materials resultant from operations under this Section shall become the property of the Contractor and shall be removed from the site. Loads of materials shall be trimmed to prevent droppings.

3.2 EXISTING UTILITY LINES

- A. The existence of active underground utility lines within the construction area is not definitely known other than those indicated in their approximate locations on the Contract Drawings. Should any unknown line be encountered during excavation, the Contractor shall immediately notify the Engineer of such discovery. The Engineer shall then investigate and issue instructions for the preservation or disposition of the unknown line. Authorization for extra work shall be issued by the Engineer only as he deems necessary.

3.3 CLEARING AND GRUBBING

- 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. Signs that need to be temporarily removed will be stored and relocated at the discretion of the Engineer.
- B. After clearing has been completed, the entire site shall be stripped of the organically contaminated near-surface soils to a minimum depth of 6 inches. Remove trees and roots to a minimum of 3 feet below existing ground level. Remove all large roots in excess of 2 inches in diameter, and backfill and compact the resulting depression. All debris accumulated from this operation shall be completely removed from the premises by the Contractor.
- C. The Contractor shall protect from injury and damage all surrounding trees, plants, etc., and shall leave all in as good as condition as at present. Any damage to existing improvement shall be repaired or replaced by the Contractor to the satisfaction of the Engineer.

3.4 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, scaffoldings, etc., and leave entire job site raked clean and neat to the satisfaction of the Engineer.

3.5 MEASUREMENT AND PAYMENT

Site preparation, including materials, labor, equipment, and all other incidentals shall be paid for as specified in the Proposal Schedule.

- END OF SECTION -

SECTION 02110

CLEARING AND GRUBBING

PART 1 – GENERAL

1.1 GENERAL REQUIREMENTS

This section covers the requirements for clearing and grubbing, within the areas shown on the plan or as directed by the Engineer. The above work shall include the removal and disposal of designated trees outside the clearing limits. Also included is the protection from injury or defacement of trees and other objects designated to remain and treatment or removal of damaged trees.

PART 2 – PRODUCTS (*NOT USED*)

PART 3 – EXECUTION

3.1 CLEARING AND GRUBBING WORK:

- A. The area to be cleared shall be to the dimensions shown on the plans or one foot beyond toe of fill and top of cut, whichever is greater.
- B. All debris, trees, logs, limbs, branches, brush, plants, and other protruding obstructions within the limits of work shall be removed and disposed of.
- C. Except as provided above, all limbs and branches more than ½-inch in diameter that extend into the cleared area shall be cut flush with the tree trunks or stems or cut at the ground surface.
- D. Felling, cutting, and trimming methods shall not cause bark damage to standing timber. If damage does occur to standing trees, the injured area shall be treated with a coat of treesurgery asphalt-based paint. Trees with major roots exposed by construction that are rendered unstable shall be felled and disposed of as specified herein.
- E. All stumps within the limits of work shall be removed. Stumps located immediately adjacent to the work area that cannot be cut flush with the finished slope, or are not tightly rooted, shall be removed.
- F. All logs, limbs, lopped tops, brush, grubbed stumps, and roots shall be scattered on the downhill side of and outside the clearing limits and site area, with the following exceptions:

1. Limbs, brush, and lopped tops from trees felled on the uphill side of the clearing limits shall be scattered downhill of the clearing limits and site area, except where the existing sideslope above the clearing limits is less than 20 percent; such material may be scattered uphill of the clearing limits and site area.
 2. Logs may be left on the uphill side of the clearing limits if they are placed so that they will not move into the clearing limits or site area.
- G. Debris from clearing and grubbing operations shall not be placed in streams, water courses or at locations that will impede flow of the natural drainage pattern.

3.2 MEASUREMENT AND PAYMENT

Clearing and grubbing, including materials, labor, equipment, and all other incidentals shall be paid for as specified in the Proposal Schedule.

- END OF SECTION -

SECTION 02200

EARTHWORK

PART 1 – GENERAL

1.1 GENERAL REQUIREMENTS

This section covers the requirements for earthwork.

- A. It shall be the responsibility of the Contractor to examine the project site and determine for himself the existing conditions.
- B. 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.
- C. All debris of any kind accumulated from clearing shall be disposed of from the site, and the whole area left clean. The Contractor shall be required to make all necessary arrangements relative to the proposed place of disposal.

1.2 REMOVAL AND REPAIR WORK

The Contractor shall exercise every precaution to preserve and protect all structures, walkways, or utility improvements which are to remain or be relocated. Portions of walkway and pavement which are to remain shall be sawcut neat and true to line. Restore all pavement and curbs upon completion of the work.

1.3 SEQUENCE OF WORK

All sequence of work shall be subject to the approval of the Engineer.

1.4 PROTECTION

- A. Barricade: Erect temporary barricade to prevent people from entering into the project area, to the extent as approved by the Engineer. Such barricade shall be as defined in Section 01530 - BARRICADES. The extent of barricades may be adjusted as necessary with the approval of the Engineer.
- B. Take all precautions and safety measures as required to protect DLNR free and harmless from liability of any kind. Conduct operations with minimum interference to streets, driveways, sidewalks, passages, etc.
- C. Adequate precautions shall be taken before commencing and during the course of the work to ensure the protection of life, limb, and property.

- D. 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.

1.5 PERMITS

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

1.6 MAINTAINING TRAFFIC

- A. The Contractor shall conduct operations with minimum interference to streets, driveways, sidewalks, public parking areas, entry and exit ways, traffic activities, etc.
- B. When necessary, the Contractor shall provide, erect, and maintain lights, barriers, etc., as required by traffic and safety regulations with special attention to protection of life.

1.7 CONSTRUCTION LINES, LEVELS AND GRADES

- A. The Contractor shall verify all lines, levels and elevations indicated on the drawings before any clearing, excavation or construction begins. Any discrepancy shall be immediately brought to the attention of the Engineer and any changes shall be made in accordance with his instructions. 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. The laying out of base lines, establishment of grades and staking out the entire work shall be done by a licensed Surveyor or a licensed Civil Engineer, registered in the State of Hawaii. He shall be solely responsible for their accuracy. Erect and maintain substantial batter boards showing construction lines and levels.

1.8 CLEANUP

Clean up and remove all debris accumulated from construction operations from time to time, when as directed by the Engineer. Upon completion of the construction work and before final acceptance of work, remove all surplus materials, equipment, etc. and leave entire jobsite clean and neat.

PART 2 – PRODUCTS

2.1 MATERIALS

- A. YARD FILL: Fill materials shall be soil with expansion value not greater than 3%, free from debris, perishable or combustible materials, sod and stones larger than 6" in maximum dimension. Rock or broken masonry shall be well distributed in earth or other fine material with voids filled and shall be placed within three feet of finished grades.
- B. STRUCTURAL FILL: New structural fill below interior and exterior concrete slabs or paving, with allowance for depth of cushion fill, shall be select borrow material. This material shall be granular with an expansion value not greater than 3% non-adobe and with a plasticity index less than ten. Decayed rubbish, debris, or rocks greater than 3" in diameter shall not be allowed as fill material. Certificate of compliance shall be submitted to the Engineer for approval prior to filling.
- C. TOPSOIL: Imported, fertile, friable soil of loamy character having normal amounts of natural humus, free from subsoil, clay, refuse roots, weeds, noxious seeds, nematodes or other deleterious matter, and free from toxic amounts of either acid or alkaline elements and capable of sustaining healthy plant life. Stones and earth lumps shall not be greater than one inch in largest dimension. Red humic latosol soils, or types known as "Palolo clay" or Lualualei clay" are unacceptable. Topsoil is subject to approval by Engineer.

PART 3 – EXECUTION

3.1 EXCAVATION

- A. PROTECTIVE MEASURES:
 - 1. All excavation shall be protected and guarded against danger to life, limb, and property.
 - 2. Shoring, cribbing and logging, as required to safely preserve the excavations and earth banks free from damages resulting from the work, shall be provided and installed by the Contractor.
 - 3. All excavations shall be kept free from standing water. The Contractor shall do all pumping and draining that may be necessary to remove water to the extent required in carrying on the work. Grading shall be controlled so that the ground surface is properly sloped to prevent water run-off into structural foundations and open trenching excavations.
 - 4. The underground utilities lines traversing the construction area known to exist

by the designer are indicated on the plans. Should any be encountered during excavation, the Contractor shall not disconnect same without authorization from the Engineer but shall inform the latter immediately of each discovery. The Engineer shall investigate and issue proper authorization for procedure.

B. GENERAL:

1. Excavation shall be done to the lines and grades indicated on the Contract Drawings. Concrete slabs, concrete curbs, asphaltic concrete pavement, etc., not indicated to remain shall be removed or broken up into pieces of sizes permitted in other paragraphs of this section. When incorporated in fill, broken up pieces shall be well mixed with finer materials filling all spaces between the pieces.
2. Excavation for footings, foundation, etc., shall have level beds on unfilled, undisturbed, firm bearing, with stepped level where necessary. Small soft spots shall be compacted to unyielding firmness. If soil conditions are suitable and approved, footing cuts may be made to exact size of footing.
3. Structural excavations carried below specified level shall be filled with concrete to the proper level at the expense of the Contractor.
4. Excavated materials declared unusable by Engineer shall be removed from the site at the Contractor's expense.

3.2 BACKFILL

A. YARD AREA:

1. Yard fill where no concrete slab occurs shall be in 6" layers (compacted thickness) compacted to 95% of maximum density as determined by ASTM Test, Method D-1557.
2. The areas not covered by gravel, asphalt paving, or concrete slab 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.

B. STRUCTURAL FILL:

1. In advance of preparing the subgrade or depositing a specified layer of material, existing material within the area where such materials is to be placed, which in the opinion of the Engineer is unsuitable as a subgrade foundation, shall be removed and the resulting space refilled with approved material and compacted.
2. Backfilling shall progress so that excessive unbalanced load is not introduced

against any structure.

3. New structural fill material shall be placed in layers not to exceed 6" per compacted layer and compacted to a compaction of 95% as determined by ASTM Test, Method D-1557.
4. Materials and compaction of all yard and structural fill shall be tested by an independent testing agency approved by the Engineer and all after-compaction test results have been submitted to the Engineer for approval. All cost of testing shall be borne by the Contractor. Testing shall be made throughout the area for each 6" compacted layer as directed by the Engineer. All test results must be approved before proceeding with placing of topsoil, cushion fill or base course.
5. In the event insufficient amount of structural fill or yard fill is derived from earthwork operations, the Contractor shall import the necessary materials without any additional cost to DLNR. Such imported material shall meet the requirements as specified for each category of materials.
6. The ground shall be scarified 6" below existing grade and recompacted to 90% compaction. Fill shall conform to structural fill.
7. Under interior and exterior slabs the cushion fill as specified shall be compacted to a level surface to 95% compaction as determined by modified ASTM Test Method, D-1557.

C. GRADING:

1. Rough Grading: The areas not covered by asphalt paving or concrete slab up to the contract zone limit shall be graded to topsoil. Contractor shall take the necessary precautions to prevent the drainage of water into construction area.
2. Finish Grading: Outdoor areas shall be graded to finish grade and contours with allowance for a 4" layer of topsoil as required. Grading shall conform with the ordinances of the applicable County issuing the Grading Permit and as amended. Areas to be topsoiled shall be compacted to 85% of maximum density before placing topsoil unless otherwise specified. Topsoil shall be spread evenly, compacted lightly and raked to a uniform place at required contours and grades.

3.3 GRASSING

- A. Replant graded and damaged areas with grass similar to adjoining area or as determined by the Engineer.
- B. Grass shall be maintained. Maintenance shall include watering, weeding, mowing, repairing, regrassing and protection, and be performed until the entire project is

accepted but in any event for a period not less than 60 days after planting of grass. At the time of acceptance, the grass shall have been well-established and shall be give a final weeding and a final mowing to a height of 1 inch. If the maintenance period has expired before acceptance of the entire project, the Contractor shall continue to maintain the grass until acceptance of the entire project. If the maintenance period should extend beyond acceptance of the entire project, the Contractor shall continue to maintain the grass until the end of the specified period of time required for maintenance.

3.4 MEASUREMENT AND PAYMENT

Earthwork, including materials, labor, equipment, and all other incidentals shall be paid for as specified in the respective line items in the Proposal Schedule.

- END OF SECTION -

SECTION 02230

AGGREGATE BASE COURSE

PART 1 - GENERAL

1.1 GENERAL REQUIREMENTS

- A. Description: This work shall consist of furnishing and placing one or more courses of aggregate base on a prepared surface in accordance with the requirements of the contract.

PART 2 - PRODUCTS

2.1 MATERIALS

Materials shall meet the requirements specified in the following Subsections of Division 700 Materials of the "Standard Specifications for Road and Bridge Construction."

Aggregate 703.06

Water 712.01

PART 3 - EXECUTION

3.1 CONSTRUCTION REQUIREMENTS

- A. Placing:
1. The base material shall be placed on the prepared surface without segregation. Segregated materials shall be remixed until a uniform distribution is obtained. The material shall not be dumped in piles on the prepared surface.
 2. Depositing and spreading shall commence at that part of the work farthest from the point of loading the material and shall progress continuously without breaks, unless otherwise directed by the Engineer.
 3. If the required compacted depth of the base course exceeds 6 inches, the base shall be constructed on 2 or more layers of approximately equal thickness. The maximum compacted thickness of any one layer shall not exceed 6 inches.

4. If the contractor uses a vibratory roller weighing 9 tons or more, the lift thickness may be increased to 7 inches.
5. Spreading of binder material over the surface of the compacted base will not be permitted. Additional material if required shall be incorporated uniformly throughout the thickness of the compacted material by scarifying and blading. The combined material shall meet all quality requirements as specified.

B. Shaping and Compacting:

1. The Contractor shall perform such shaping work as necessary and such that the finished base shall conform to the required grade and cross-section. The finished base where not controlled by adjacent structures or features shall not vary more than 0.04 foot above or below the theoretical grade.
2. Compaction of each layer shall continue until a density of not less than 95 percent of the maximum density, determined in accordance with the requirements of Subsection 106.09 - Special Test Methods, of the "Standard Specifications for Road and Bridge Construction, has been achieved. Field density determination will be made in accordance with Hawaii Test Method HWY-TC 1. The surface of each layer shall be maintained during the compaction operations in such a manner that a uniform texture is produced and the aggregates firmly keyed. Water shall be uniformly applied over the base materials during compaction in the quantity necessary for proper consolidation. All cost of testing shall be borne by the Contractor.
3. Should high or low spots develop during rolling operations, such spots shall be smoothed out by blading with a self-propelled and pneumatic-tired motor grader having a wheel base not less than 15 feet long and a blade not less than 10 feet long.
4. Each layer shall be compacted initially by rolling with three-wheel rollers followed by intermediate rolling with pneumatic-tired rollers. Final rolling shall be done with three-wheel rollers.

- C. Equipment: Three-wheel rollers and pneumatic-tired rollers shall conform to the requirements specified in Subsection 401.03(B)(4) - Rollers.

3.2 MEASUREMENT AND PAYMENT

Aggregate base course, including materials, labor, equipment, and all other incidentals shall be paid for as specified in the respective line items in the Proposal Schedule.

- END OF SECTION -

SECTION 02577

PAVEMENT MARKING

PART 1 - GENERAL

1.1 GENERAL REQUIREMENTS

This section consists of the furnishing and installing pavement striping and marking as shown on the plans or as directed by the Engineer.

PART 2 - PRODUCTS

- 2.1 Materials and construction methods shall conform to the "Manual on Uniform Traffic Control Devices for Streets and Highways, 2009," and to Section 629 - Pavement Markings, of the "Hawaii Standard Specifications for Road and Bridge Construction, 2005" of the State Department of Transportation, Highways Division.

PART 3 - EXECUTION

3.1 MEASUREMENT AND PAYMENT

Pavement striping and marking shall not be paid for directly, but shall be considered incidental and included in respective line items in the Proposal Schedule.

- END OF SECTION -

SECTION 03100

CONCRETE FORMWORK

PART 1 – GENERAL

1.1 GENERAL REQUIREMENTS

This section covers the requirements for furnishing and placing of concrete formwork.

PART 2 – PRODUCTS

2.1 MATERIALS:

- A. Plywood shall be new commercial-standard APA Plywood. Forms for concrete surfaces exposed to view, use APA High Density Overlay (HDO) Plyform Class I Exterior 48" X 96" X 3/4". Forms for other concrete surfaces, use APA Douglas Fir B-B Plyform Class 1 Exterior 48" X 96" X 3/4-inch.
- B. Metal forms may be used if they will produce surfaces equal to those specified for wood forms.
- C. Forms of other materials shall not be used unless approved by the Engineer.
- D. Commercially fabricated metal clamps and form ties shall be used. Form ties for exposed concrete shall be removable either completely or to a minimum depth of 1 inch from the face of the concrete.
- E. Coat form surfaces in contact with concrete using non-staining, non-residual, water based, bond-breaking form coating.

PART 3 – EXECUTION

3.1 TOLERANCES

- A. Forms shall be constructed so that the concrete surfaces do not deviate from established lines, grades, and dimensions in excess of industry accepted tolerances.

3.2 INSERTS AND FASTENING DEVICES

- A. Install inserts, reglet strips, hangers, metal ties, anchors, bolts, nailing strips, blocking grounds and other fastening devices as required for attachment of other work. Properly locate all embedded items in cooperation with other trades and secure in

position before concrete is placed.

- B. The Contractor shall coordinate the installation of all embedded items and penetrations. Cost of any added reinforcement required at embedment shall be borne by the Contractor.

3.3 CONSTRUCTION OF FORMS

- A. All concrete forms shall be placed with metal clamps and ties. Locate ties level and plumb in horizontal rows and vertical tiers.
- B. Where soil conditions will permit excavation to accurate sizes without bracing, side forms for footings may be omitted only if approved by the Engineer.
- C. Temporary access openings to forms for cleaning prior to depositing of concrete shall be provided.
- D. Unless otherwise called for on the plans, all exposed concrete surfaces and/or all surfaces designated as "Architectural Concrete" on the plans shall be formed with plywood. The arrangement of the plywood sheets shall be orderly and symmetrical and shall be of 4' x 8' size wherever practical.

Only new or unmarred plywood shall be used. A 3/4" by 3/4" chamber shall be provided at external corners of exposed concrete beams, girders, columns, and pilasters unless otherwise indicated on the plans. Metal forms may be used if they will produce surfaces equal to those specified for wood forms.

- E. Rough concrete finish may be used for all unexposed concrete surfaces as indicated in Section 03300 or on the plans. Rough concrete finish shall be obtained by using clean, straight lumber or metal forms.
- F. Forms for architectural concrete surfaces or on exposed surfaces which are to receive a finishing material shall be either wetted thoroughly immediately before placing concrete or coated with a bond-breaking material compatible with the finishing material and/or its adhesive prior to the placement of reinforcing steel. Forms for unexposed surfaces may be coated with form oil. However, any surplus oil on the form surfaces and any oil on the reinforcing steel shall be removed by wiping with dry rags.
- G. Forms which cannot be removed shall be of material other than wood and must be approved by the Engineer.
- H. All forms other than for the non-removable form described under the preceding subparagraph shall be constructed so that they can be removed without hammering or prying against the concrete.

I. Forms shall not be removed before the expiration of the minimum lapsed time from concrete pour shown below unless information and/or data justifying a request for a shorter period is submitted to and approved by the Engineer. Even with such approval, however, the Contractor shall be fully responsible to repair any damages which may result from the early removal.

1. Footing side forms 24 hours

No construction loads exceeding the structural design live loads shall be supported upon any unshored portion of the structure under construction. No construction load shall be supported upon, nor any shoring removed from any part of the structure under construction until the portion of the structure has attained sufficient strength to support safely its weight and the loads placed thereon. This strength may be demonstrated by job-cured test specimens and by a structural analysis considering the proposed loads in relation to this test strength. Such analysis and test data shall be furnished by the Contractor to the Engineer.

J. To maintain the tolerances specified in Paragraph 3.1, the formwork shall be cambered to compensate for anticipated deflections in the formwork prior to hardening of the concrete.

K. SCREEDS FOR SLABS:

1. Edge forms and intermediate screed strips shall be set accurately to produce the designated elevations and contours of the finished surface, and shall be sufficiently strong to support vibrating screeds or roller pipe screeds if the nature of the finish requires the use of such equipment.

The concrete surface shall be aligned to the contours of screed strips by the use of strike-off templates or approved compacting type screeds. Screeds shall be set adjacent to all walls and in parallel rows not to exceed 8 feet on center. Penetrations of the moisture barrier shall be held to a minimum.

2. At walks, screeds shall be set at the sides to serve as forms and additional screeds, if required, shall be spaced not exceeding 8 feet on center.

3.4 MEASUREMENT AND PAYMENT

Concrete formwork shall not be paid for directly, but shall be considered incidental and included in the bids for the respective items in the proposal schedule.

- 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.

1.2 REFERENCES:

The references listed below are a part of this section. Where a referenced document contains references to other standards, those documents are included as references under this section as if referenced directly. In the event of conflict between the requirements of this section and those of the listed documents, the requirements of this section shall prevail.

Reference	Title
ACI 117	Specification for Tolerances for Concrete Construction and Materials
ACI 315	Details and Detailing of Concrete Reinforcement
ACI 318	Building Code Requirements For Structural Concrete
ACI SP-66	ACI Detailing Manual
ASTM A615	Deformed and Plain Carbon-Steel Bars for Concrete Reinforcement
ASTM A775	Epoxy-Coated Steel Reinforcing Bars
ASTM A884	Epoxy-Coated Steel Wire and Welded Wire Reinforcement
ASTM A1064	Carbon-Steel Wire and Welded Wire Reinforcement, Plain and Deformed, for Concrete
CRSI-PRB	Placing Reinforcing Bars
CRSI-MSP	Manual of Standard Practice

1.2 SUBMITTALS:

Reinforcing steel shop drawings showing reinforcing steel bar quantities, sizes, spacing, dimensions, configurations, locations, mark numbers, lap splice lengths and locations, concrete cover and reinforcing steel supports. Reinforcing steel shop drawings shall be of sufficient detail to permit installation of reinforcing steel without reference to the contract drawings. Placement drawings shall be in accordance with ACI 315. Reinforcing details shall be in accordance with ACI SP-66.

PART 2 – PRODUCTS

2.1 MATERIALS

- A. Bar reinforcement shall be of grade 60, 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 A1064. The gauge of the wire and dimensions of the mesh shall be given in these specifications or as shown on the plans.
- C. Smooth dowel bars shall conform to ASTM A615, Grade 60, with a metal end cap at the greased or sliding end to allow longitudinal movement.
- D. The tie wire shall be minimum 16 gage annealed steel conforming to FEDSPEC QQ W 461H

2.2 EPOXY COATING

- A. Epoxy coating for the reinforcing steel shall be applied by the electrostatic spray method conforming to ASTM A-775 and ASTM A884.
- B. Epoxy coated reinforcing steel bar patching material shall be compatible with coating material, inert in concrete, obtained from manufacturer of the epoxy resin used to coat the reinforcing steel bars and meet the requirements of ASTM A775.

2.2 BAR SUPPORTS

- A. Bar supports coming into contact with forms shall be CRSI Class 1 plastic protected or Class 2 stainless steel protected and shall be located in accordance with CRSI-MSP and placed in accordance with CRSI-PRB.
- B. Provide manufactured concrete block supports with embedded tie wires (wire dobies) for footing and slabs on grade. Do not use brick, broken concrete masonry units, spalls, rocks, construction debris, or similar material for supporting reinforcing steel.

2.2 FABRICATION:

- A. Fabricate reinforcing steel bars in accordance with ACI 315.

PART 3 – EXECUTION

3.1 CONSTRUCTION

Unless otherwise specified, the installation of reinforcing steel shall conform to the requirements of "ACI 318 and CRSI PRB."

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 in accordance with ACI 318. 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 Class B splice lengths in accordance with ACI 318 for all reinforcing steel bars unless shown otherwise on the drawings 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 plus 2 inches 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.
- H. Epoxy coating damage need not be repaired in cases where the damaged area is 0.1 square inch or smaller. Repair all damaged areas larger than 0.1 square inch in conformance with ASTM A775.

3.2 MEASUREMENT AND PAYMENT

Reinforcing steel shall not be paid for directly, but shall be considered incidental and included in the respective line items in the Proposal Schedule.

- 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 REFERENCES:

- A. The references listed below are a part of this Section. Where a referenced document contains references to other standards, those documents are included as references under this Section as if referenced directly. In the event of conflict between the requirements of this section and those of the listed documents, the requirements of this Section shall prevail.

Reference	Title
ACI 117	Tolerances for Concrete Construction and Materials
ACI 211.1	Selecting Proportions for Normal, Heavy Weight and Mass Concrete
ACI 301	Specifications for Structural Concrete
ACI 305.1	Specification for Hot Weather Concreting
ACI 214R	Guide to Evaluation of Strength Test Results in Concrete
ACI 318	Building Code Requirements for Structural Concrete
ACI 614	Recommended Practice for Measuring, Mixing, and Placing
ASTM C31	Making and Curing Concrete Test Specimens in the Field
ASTM C33	Concrete Aggregates
ASTM C39	Compressive Strength of Cylindrical Concrete Specimens
ASTM C94	Ready-Mixed Concrete
ASTM C136	Sieve Analysis of Fine and Coarse Aggregates
ASTM C143	Slump of Hydraulic Cement Concrete
ASTM C150	Portland Cement
ASTM C172	Sampling Freshly Mixed Concrete
ASTM C192	Making and Curing Concrete Test Specimens in the Laboratory
ASTM C309	Liquid Membrane-Forming Compounds for Curing Concrete
ASTM C494	Chemical Admixtures for Concrete
ASTM C618	Coal Fly Ash and Raw or Calcined Natural Pozzolan for Use in Concrete
ASTM C1059	Latex Agents for Bonding Fresh to Hardened Concrete

Reference	Title
ASTM C1260	Potential Alkali Reactivity of Aggregates (Mortar-Bar Method)
ASTM C1315	Liquid Membrane-Forming Compounds Having Special Properties for Curing and Sealing Concrete
ASTM C1567	Potential Alkali-Silica Reactivity of Combinations of Cementitious Materials and Aggregate (Accelerated Mortar Bar Method)
ASTM C1602	Mixing Water Used in the Production of Hydraulic Cement Concrete
ASTM D75	Sampling Aggregates
ASTM D2419	Standard Test Method for Sand Equivalent Value of Soils and Fine Aggregate
ASTM E329	Agencies Engaged in Construction Inspection and/or Testing
IBC	International Building Code with local amendments

1.3 SUBMITTALS

- A. The Contractor shall submit concrete mix design for approval showing expected strength at 28 days, corresponding slump before and after the introduction of high-range water-reducing admixtures, water/cement ratios, aggregate gradation.
- B. Product literature, technical data and dosage of all proposed admixtures.
- C. Curing program description in sufficient detail to demonstrate acceptable strength, finish and crack control as specified.
- D. Product literature and technical data for, curing and sealing compounds, bonding compounds, and retardant.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. Portland cement shall conform to the requirements of ASTM C150, Type I/II, low alkali, containing less than 0.60 percent alkalis for all concrete work.
- B. 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 ASTM D448. 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. Water used in mixing concrete shall be potable.
- D. Non-slip grit shall be an abrasive aggregate of silicon carbide or aluminum oxide.
- E. Admixture shall conform to ASTM C494 or ASTM C260 and shall be mixed in proper amount in accordance with directions of manufacturer.
- F. Curing compound shall conform to ASTM C309.

2.2 CONCRETE CHARACTERISTICS

- A. Concrete shall be normal weight concrete composed of specified cement, pozzolan, admixtures, aggregates and water proportioned and mixed to produce a workable, strong, dense, and impermeable concrete. Water-cementitious material (w/cm) ratio is based on the combined contents of cement and pozzolan in a given mix proportion.
- B. Provide concrete in accordance with the following:

Concrete class	ASTM coarse aggregate size	Maximum water-cementitious materials (w/cm) ratio	Minimum Cementitious Materials Content (pounds/CY)	Pozzolan, percent by weight of cementitious materials	Air content (percent)	Minimum 28-day compressive strength, psi	Slump Range (inches)
B ^a	57 or 67	0.45	560	15-20	4-6	3000 ^c	3-5
C-1 ^b	57 or 67	0.40	560	15-20	Not Required	5000	3-5

a Non-structural concrete (temporary working slabs, sidewalks, curbs, gutters, pavers, thrust blocks, manhole channels, pipe bedding, pipe encasement, etc.) and fill concrete.

b Typical cast-in-place concrete structure.

c Determine compressive strength at the end of 28 days based on test cylinders made and tested in accordance with ASTM C39.

- C. Concrete admixture shall be a dark gray color to be selected by the Engineer.

PART 3 – EXECUTION

3.1 GENERAL

- 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.

3.2 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, and upon properly compacted fills. Do not place concrete on soft mud dry soil, or 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 be 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.

3.3 FINISHING OF SLABS

- A. 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 troweling.

3.4 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.

3.5 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.

3.6 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.

3.7 MEASUREMENT AND PAYMENT

Concrete, including materials, labor, equipment, and all other incidentals shall be paid for as specified in the respective line items in the Proposal Schedule.

- END OF SECTION -

Section 03830

MODULAR SEGMENTAL CONCRETE WALL

PART 1 – GENERAL

1.1 GENERAL REQUIREMENTS

This section covers the requirements of furnishing and constructing a modular segmental concrete wall in accordance with these specifications and conformity with the lines, grades, design, and dimensions shown on the plans.

1.2 REFERENCES

- A. The references listed below are part of this Section. Where a referenced document contains references to other standards, those documents are included as references under this Section as if referenced directly. In the event of a conflict between the requirements of this Section and those of the listed documents, the requirements of this Section shall prevail.

Reference	Title
ASTM C1372	Standard Specification for Dry-Cast Segmental Retaining Wall Units
ASTM C140	Standard Specification for Sampling and Testing Concrete Masonry Units and Related Units
ASTM D3034	Standard Specification for Type PSM PVC Sewer Pipe and Fittings
ASTM D422	Standard Test Method for Particle-Size Analysis of Soils
ASTM D4318	Standard Test Methods for Liquid Limit, Plastic Limit, and Plasticity Index of Soils

1.3 SUBMITTALS

- A. PROCEDURES: See Section 01300.
- B. SUBMITTAL ITEMS:
1. Manufacturer's certification, prior to the start of work, that the wall components meet the requirements of this specification and the structure design.
 2. Construction drawings and design calculations for the wall prepared and stamped by a Professional Engineer registered in the State of Hawaii. The engineering designs, techniques, and material evaluations shall be in accordance with industry best practices.

1.4 DELIVERY, STORAGE, AND HANDLING

- A. The Contractor shall check all materials upon delivery to assure that the proper type, grade, color, and certification have been received.
- B. The Contractor shall protect all materials from damage due to jobsite conditions and in accordance with manufacturer's recommendations. Damaged materials shall not be incorporated into the work.

PART 2 – PRODUCTS

2.1 CANDIDATE MANUFACTURERS/PRODUCTS

- A. Candidate manufacturers and models are listed below. To conform with specified requirements, the manufacturer's standard product may require modification.
 - 1. Keystone Standard
 - 2. Or Pre-Approved Equal
- B. Any substitution approval requests must be received by DLNR no later than 3:30 PM on _____.

2.2 MODULAR CONCRETE BLOCKS

- A. ARCHITECTURAL REQUIREMENTS:
 - 1. FACE COLOR: Concrete grey, unless specified otherwise by the Engineer.
 - 2. FACE FINISH: Sculptured rock face in angular tri-planer configuration. Other face finishes will not be allowed without approval from the Engineer.
 - 3. BOND CONFIGURATION: Running with bonds nominally located at midpoint vertically adjacent units, in both straight and curved alignments.
 - 4. Exposed surface of units shall be free of chips, cracks, or other imperfections.
- B. Concrete materials shall conform to the requirements of ASTM C1372.
- C. Concrete units shall conform to the following structural and geometric requirements measured in accordance with ASTM C140.

1. Compressive strength: 3000 psi minimum.
2. Absorption: Less than 8% for standard weight aggregates.
3. Dimensional tolerances: $\pm 1/8$ " from nominal unit dimensions not including rough split face, $\pm 1/16$ " unit height (top and bottom planes).
4. Unit size:

	Minimum Dimensions	Maximum Dimensions
Length	16"	18"
Width	12"	21.5"
Height	6"	8"

Dimensions noted will vary for cap units and corner units. Appropriate cap units and corner units to be determined by the manufacturer's recommendations.

5. Unit weight: 100 lbs/unit minimum for standard weight aggregates.

D. CONSTRUCTABILITY REQUIREMENTS:

1. Vertical setback: $1/8$ "- $1/4$ " per course (near vertical).
2. Horizontal gap between erected units shall be $1/2$ " or less.

2.3 SHEAR CONNECTORS

- A. If required by the manufacturer's design calculations, shear connectors shall be $1/2$ " diameter fiberglass reinforcement rods to provide connection between vertically and horizontally adjacent units.

2.4 BASE COURSE LEVELING PAD

- A. Base course shall consist of a compacted crushed stone base as specified in Section 02230, "Aggregate Base Course," and as shown on the Contract Drawings.

2.5 UNIT DRAINAGE FILL

- A. Unit drainage fill shall consist of clean 1" (25 mm) minus crushed stone or crushed gravel meeting the following gradation tested in accordance with ASTM D-422:

Sieve Size	Percent Passing
1 inch (25 mm)	100
3/4-inch (19 mm)	75-100
No. 4 (4.75 mm)	0-10
No. 50 (300 µm)	0-5

- B. Drainage fill shall be placed within the cores of, between, and behind the units as indicated on the Contract Drawings. Not less than 1.2 cubic foot (0.033 m³), of drainage fill shall be used for each square foot (0.093 m²) of wall face unless otherwise specified.

2.6 WALL BACKFILL

- A. Backfill shall be free of debris and meet the following gradation tested in accordance with ASTM D-422:

Sieve Size	Percent Passing
2 inch (50 mm)	100
3/4-inch (19 mm)	75-100
No. 40 (425 µm)	0-60
No. 200 (75 µm)	0-35

Plasticity Index (PI) <15 and Liquid Limit <40 per ASTM D-4318.

- B. The maximum aggregate size shall be limited to 3/4-inch.

2.7 DRAINAGE PIPE

- A. The drainage pipe shall be perforated PVC pipe manufactured in accordance with ASTM D-3034 and configured as shown on the Drawings.
- B. The drainage pipe shall be wrapped in geotextile filter fabric. Geotextile filter fabric shall be 4.0 oz/square yard, polypropylene, needle-punched, nonwoven fabric, unless otherwise approved by the Engineer.

PART 3 – EXECUTION

3.1 EXCAVATION

- A. Excavation shall be as specified in Section 02200, “Earthwork,” and shall follow the lines and grades specified in the Contract Drawings.

- B. Owner's representative shall inspect the excavation and approve prior to placement of leveling material or fill soils.

3.2 BASE COURSE LEVELING PAD

- A. Base course shall be installed as specified in Section 02230, "Aggregate Base Course."
- B. Leveling pad material shall be placed to the lines and grades shown on the Contract Drawings, to a minimum thickness of 6 inches and extend laterally a minimum of 6 inches from the toe and heel of the lowest wall units.
- C. Soil leveling pad materials shall be compacted to a minimum of 95 % Standard Proctor density per ASTM D-698 or 92% Modified Proctor Density per ASTM D1557.
- D. Leveling pad shall be prepared to insure full contact to the base surface of the concrete units.

3.3 INSTALLATION

- A. Modular segmental concrete wall to be installed per manufacturer's recommendations. Any deviations in installation from manufacturer's recommendations shall be first approved by the Engineer.
- B. First course of units shall be placed on the leveling course at the appropriate line and grade. Alignment and level shall be checked in all directions and ensured that all units are in full contact with the base and properly seated.
- C. Place the front of the units side-by-side. Do not leave gaps between adjacent units. Layout of corners and curves shall be in accordance with manufacturer's recommendations. All excess debris shall be cleaned from top of units and the next course of units installed on top of the units below.
- D. Install any required shear/connecting devices per manufacturer's recommendations.
- E. Place and compact drainage fill within and behind wall units per manufacturer's recommendations and the Contract Drawings.
- F. Place and compact backfill soil behind drainage fill.
 - 1. Backfill shall be placed, spread, and compacted in such a manner that minimizes installation damage.

2. Backfill shall be placed and compacted in lifts not to exceed 6 inches (150 mm) with hand compaction. Lift thickness shall be decreased to achieve the required density as required.
 3. Backfill shall be compacted to a minimum of 95 % Standard Proctor density per ASTM D-698 or 92% Modified Proctor Density per ASTM D1557. The moisture content of the backfill material prior to and during compaction shall be uniformly distributed throughout each layer and shall be dry of optimum, + 0%, - 3%.
- G. Maximum stacked vertical height of wall units, prior to unit drainage fill and backfill placement and compaction, shall not exceed two courses.
- H. Cap units shall be glued to underlying units with an all-weather adhesive recommended by the manufacturer.

3.2 MEASUREMENT AND PAYMENT

The modular concrete wall, including materials, labor, equipment, and all other incidentals shall be paid for as specified in the Proposal Schedule.

SECTION 06600

PLASTIC PICNIC TABLE

PART 1 – GENERAL

1.1 GENERAL REQUIREMENTS

This section covers the requirements for furnishing and installing recycled plastic picnic tables. The type, size, and dimensions shall be as called for in these specifications and as shown on the plans.

1.2 SUBMITTALS

A. PROCEDURES: See Section 01300.

B. SUBMITTAL ITEMS:

1. Shop drawings for fabricated recycled plastic table, showing assembly and erection details, size of members, fastening, supports, anchors, clearances, plastic welding at counter-sunk bolt holes, and any other necessary connections.
2. Manufacturer's product data.
3. Schedules and Samples of Material.
4. Material Guarantee.

1.3 QUALITY ASSURANCE

A. AMERICAN DISABILITY ACT REQUIREMENTS: The accessible picnic table shall comply with Section 410 of the 2010 ADA Standards for Accessible Design.

PART 2 – PRODUCTS

2.1 MATERIALS

A. ASBESTOS PROHIBITION: No asbestos containing materials shall be used under this section. The Contractor shall ensure that materials incorporated in the project are asbestos-free.

B. RECYCLED PLASTIC LUMBER PRODUCTS:

1. Out of 100% recycled plastic; Specific Gravity 0.75-0.92; Density, lbs/CF 35-50; Non-splintering; Non-weathering; No water absorption; No mildew or rot; Unaffected by Chemicals; No Insect Attack; UV Deterioration 1% in five (5) years; Flammability, Self-extinguishing; Ignition temperature approximately

650 Degrees Fahrenheit; Compression Strength 3,500 PSI; Tensile Strength ASTM D790 150,000PSE; Expected Life 35-50 years; Color: Dark Green.

C. PLASTIC PICNIC TABLE:

1. All Boards, including table top boards, seat, table end brace support, table top brace, and seat brace, shall be of 100% recycled plastic as specified herein. Contractor shall submit color samples to the Engineer for approval.
2. Table and seat dimensions shall be as shown on the Drawings.
3. Table top and seat plastic boards shall be secured with two stainless steel lag bolts each end and counter-sunk. Plastic welding will fill counter-sunk holes as per manufacturer's specifications.
4. Table top brace and seat plastic brace shall be secured with two stainless steel lag bolts each end and counter-sunk. Plastic welding will fill counter-sunk holes as per manufacturer's specifications.
5. Table shall be anchored and secured as shown on the Drawings.
6. All boards, ends, edges, and corners shall be 1/2" rounded.

2.2 CANDIDATE MANUFACTURERS

A. Candidate manufacturers and models are listed below.

1. Belson Outdoors Recycled Plastic, Model P-28
2. R.J. Thomas Mfg Co, Inc.
3. Or Pre-Approved Equal

B. Any substitution approval requests must be received by DLNR no later than 3:30 PM on _____.

PART 3 – EXECUTION

3.1 WORKMANSHIP

Good workmanship and appearance shall be considered of the highest importance. All work shall be done by experienced and skilled workers with operation and installation in a neat and workmanlike manner and in accordance with recognized good practices and standards.

3.2 EXAMINATION

- A. Verify that the field conditions are acceptable and are ready to receive work.
- B. Final location of plastic tables shall be as shown on the Drawings.

3.3 INSTALLATION

- A. Plastic tables to be set in concrete footing level with concrete pad/pavilion slab and/or leveled horizontally at condition without concrete base.
- B. Accessibility Guidelines (ADA – Americans with Disabilities Act): Verify all dimensions including seat height, table top height, accessible wheelchair clearance and passage, clear floor and ground space side walk and/or ramp connection before installation of plastic table unit.
- C. At the concrete pad, the footing at table end brace support legs shall be smooth and shall batch the slab floor line.

3.4 MEASUREMENT AND PAYMENT

The picnic table shall be paid for as specified in the Proposal Schedule.

- END OF SECTION -