



STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
HONOLULU, HAWAII

SPECIAL PROVISIONS
PROPOSAL
CONTRACT AND BOND

FOR

KAMEHAMEHA HIGHWAY

KAIPAPAU STREAM BRIDGE REPLACEMENT

FEDERAL-AID PROJECT NO. BR-083-1(48)

DISTRICT OF KOOLAULOA

ISLAND OF OAHU

FY 2021

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

The receiving of SEALED BIDS for Kamehameha Highway, Kaipapau Stream Bridge Replacement, Federal-Aid Project No. BR-083-1(48), will begin as advertised on June 15, 2021, in HiePRO. Bidders are to register and submit bids through HiePro only. See the following HiePRO link for important information on registering: <https://hiepro.ehawaii.gov/welcome.html>. Deadline to submit bids is Thursday, July 15, 2021, at 2:00 p.m., Hawaii Standard Time (HST). Bids received after said due date and time shall not be considered.

Plans, specifications, proposal, contract forms, stormwater pollution prevention plan, National pollutant discharge elimination system documents, Section 10 and Section 404 permit applications, Nationwide permit verification documents, water quality monitoring plan and archaeological monitoring plan are available on HiePRO.

The scope of work consists of constructing a new bridge across Kaipapau Stream; installing temporary detour road; temporary prefabricated steel beam bridge; walls and fences; channel shaping; installing bridge approaches and shoulders; installing pavement markings, striping and signing; guardrails and end treatments; demolishing structures on two properties acquired by the State; and relocating water and utility lines. The estimated cost of construction is between \$15,000,000.00 and \$17,000,000.00.

To be eligible for award, bidders must possess a valid State of Hawaii General Engineering Contractor's "A" license prior to the award of the contract.

A pre-bid conference is scheduled for Tuesday, June 22, 2021, at 1:30 p.m. HST, on Microsoft Teams. All prospective bidders or their representatives (employees) are encouraged to attend, but attendance is not mandatory. Due to the impacts of COVID 19, the pre-bid meeting

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will be conducted virtually. Questions applicable to the Project Specifications should be submitted to the Project Manager no later than two days prior to the scheduled date of the pre-bid meeting.

Contact Jennifer Russell, Project Manager, by phone at (808) 692-7572, by facsimile at (808) 692-7590 or by email at jennifer.t.russell@hawaii.gov to obtain the venue for the pre-bid meeting.

ALL requests for information (RFI) shall be received in writing via HiePRO no less than 14 calendar days before bid opening. Questions received after the deadline will not be addressed. Verbal RFIs will not receive a response. Anything said at the conference is for clarification purposes and any changes to the bid documents will be made by addendum and posted in HiePRO.

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

Campaign contributions by State and County Contractors. 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 the legislative body. For more information, contact the Campaign Spending Commission at (808) 586-0285.

The U.S. Department of Transportation (DOT) Regulation entitled “Nondiscrimination in Federally-Assisted Programs of the U.S. DOT,” Title 49, Code of Federal Regulations (CFR), Part 21 is applicable to this project. Bidders are hereby notified that the DOT will affirmatively ensure that the contract entered into pursuant to this advertisement will be awarded to the lowest

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responsible bidder without discrimination on the grounds of race, color, national origin or sex (as directed by 23 CFR Part 200).

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

The U.S. DOT Regulations entitled "Participation by Disadvantaged Business Enterprise (DBE) in DOT Programs", Title 49, CFR, Part 26 is applicable to this project. Bidders are hereby notified that the DOT will strictly enforce full compliance with all of the requirements of the DBE program with respect to this project.

Bidders are directed to read and be familiar with the DBE Requirements for Federal-Aid Projects regarding DBE, which establishes the program requirements pursuant to Title 49 CFR Part 26 and, particularly, the requirements of certification, method of award, and evidence of good faith. All Bidders must e-mail the Engineer at jennifer.t.russell@hawaii.gov, the DBE Contract Goal Verification and Good Faith Efforts Documentation for Construction, DBE Confirmation and Commitment Agreement – Trucking Company and DBE Confirmation and Commitment Agreement – Subcontractor, Manufacturer, or Supplier by Tuesday, July 20, 2021, at 2:00 p.m. HST. Failure to provide these documents shall be cause for bid/proposal rejection.

Driving While Impaired (DWI) Education. HDOT encourages all organizations contracted with the DOT to have an employee education program preventing DWI. DWI is defined as operating a motor vehicle while impaired by alcohol or other legal or illegal substances. HDOT promotes this type of program to accomplish our mission to provide a safe environment for motorists, bicyclists and pedestrians utilizing our State highways, and expects its contractors to do so as well.

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For additional information, contact Jennifer Russell, Project Manager, by phone at (808) 692-7572, by fax at (808) 692-7590 or by email at jennifer.t.russell@hawaii.gov.

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



JADE T. BUTAY
Director of Transportation

INSTRUCTIONS FOR CONTRACTOR'S LICENSING

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

**NOTICE OF REQUIREMENT FOR AFFIRMATIVE ACTION TO ENSURE EQUAL
EMPLOYMENT OPPORTUNITY (EXECUTIVE ORDER 11246)**

1. The Bidder's attention is called to the "Equal Opportunity" and the "Specific Equal Employment Opportunity Responsibilities" set forth in the "Required Federal Aid Construction Contract Provisions."

2. The goals and timetables for minority and female participation, expressed in percentage terms for the Contractor's aggregate workforce in each trade on all construction work on this project are as follows:

CATEGORY	TIMETABLE	GOAL
Female participation in each trade	Indefinite	6.9%
Minority participation in each	None	69.1% (Oahu)
Trade (female included)	None	70.4% (Hawaii, Maui, Kauai)

These goals are applicable to all the Contractor's aggregate on-site construction workforce whether or not part of that workforce is performing work on a Federal or Federally assisted construction contract or subcontract.

The Contractor's compliance with the Executive Order shall be based on its implementation of the Equal Opportunity Clause, and its efforts to meet the goals established for the contract resulting from this solicitation. The hours of female and minority employment and training must be substantially uniform throughout the length of the contract, and in trade, and the Contractor shall make a good faith effort to employ minorities and women evenly on each of its projects. The transfer of minority or female employees or trainees from Contractor to Contractor or from project to project for the sole purpose of meeting the Contractor's goals shall be a violation of the contract and Executive Order. Compliance with the goals will be measured against the total work hours performed.

3. The Contractor shall provide written notification to the Area Director, Hawaii Area Office, Office of Federal Contract Compliance Programs, U.S. Department of Labor, 300 Ala Moana Blvd., P.O. Box 50149, Honolulu, Hawaii 96850, within 10 working days of award of any construction subcontract in excess of \$10,000 at any tier for construction work under the contract resulting from this solicitation. The notification shall list the name, address, and telephone number of the subcontractor; employer identification number; estimated dollar amount of the subcontract; and estimated starting and completion dates of the subcontract. The Contractor shall indicate which are minority group subcontractors and the ethnic identity and sex of the owner(s) and policy-making official(s).

DISADVANTAGED BUSINESS ENTERPRISE REQUIREMENTS

I. GENERAL

This project is subject to Title 49, Code of Federal Regulations, Part 26, entitled "Participation by Disadvantaged Business Enterprise in Department of Transportation Financial Assistance Programs," hereinafter referred to as the ("DBE Regulations") and is incorporated and made a part of this contract herein by this reference. The following shall be incorporated as part of the contract documents for compliance. If any requirements herein are in conflict with the general provisions or special provisions applicable to this project, the requirements herein shall prevail unless specifically superseded or amended in the special provisions or by addendum.

II. POLICY

It is the policy of the U.S. Department of Transportation ("USDOT") and the State of Hawaii, Department of Transportation and its political subdivisions ("Department") that Disadvantaged Business Enterprises ("DBE"), as defined in the DBE Regulations, have an equal opportunity to receive and participate in federally assisted contracts.

III. DBE ASSURANCES

Each contract signed with a prime contractor (and each subcontract the prime contractor signs with a subcontractor) shall include the following assurance:

"The contractor, sub-recipient, or subcontractor shall not discriminate on the basis of race, color, national origin, or sex in the performance of this contract. The contractor shall carry out applicable requirements of 49 CFR Part 26 in the award and administration of USDOT assisted contracts. Failure by the contractor to carry out these requirements is a material breach of this contract, which may result in the termination of this contract or such other remedy as the recipient deems appropriate which may include, but is not limited to; 1) withholding monthly progress payments; 2) assessing sanctions; 3) liquidated damages; and/or 4) disqualifying the contractor from future bidding as non-responsible."

The prime contractor agrees to include the above statements in any subsequent contracts that it enters into with other contractors and shall require those contractors to include similar statements in further agreements.

IV. BIDDER/OFFEROR RESPONSIBILITIES

All bidders/offerors are required to register with the Department's Office of Civil Rights (OCR), DBE Section, using the Bidder Registration Form, which can be downloaded from the Department's website at <http://hidot.hawaii.gov/administration/ocr/dbe/dbe-program-forms/>. Certified DBEs are considered registered with the Department and are not required to submit a Bidder Registration Form. All other bidders/offerors are required to complete this form which may be faxed to (808) 831-7944, e-mailed to:

HDOT-DBE@hawaii.gov, or mailed to the HDOT DBE Section at 200 Rodgers Boulevard, Honolulu, Hawaii 96819. Registered bidders/offerors are posted on the website listed above.

Bidders/offerors, subcontractors, manufacturers, vendors or suppliers, and trucking companies shall fully inform themselves with respect to the requirements of the DBE Regulations. Particular attention is directed to the following matters:

- A. Bidders/offerors shall take all necessary steps to ensure that DBEs have an opportunity to participate in this contract.
- B. DBEs may participate as a consultant, prime contractor, subcontractor, trucking company, or vendor of materials or supplies. DBEs may also team with other DBE or non-DBE firms as part of a joint venture or partnership.
- C. Agreements between a bidder/offeror and a DBE in which a DBE promises not to provide subcontracting quotations to other bidders/offerors are strictly prohibited.
- D. A DBE shall be certified by the Department under the appropriate North American Industry Classification System (NAICS) code and work in their registered field of work in order for credit to be allowed.
- E. Information regarding the current certification status of DBEs is available on the Internet at <https://hidot.hawaii.gov/administration/ocr/dbe/>.
- F. Commercially Useful Function (“CUF”). A DBE must perform a CUF. This means that a DBE must be responsible for the execution of a distinct element of the work, must carry out its responsibility by actually performing, managing, and supervising at least 30% of the work involved by using its own employees and equipment, must negotiate price, determine quality and quantity, order and install material (when applicable), and must pay for the material itself.¹

To determine whether a DBE is performing a CUF, the Department must evaluate the amount of work subcontracted, industry practices, whether the amount the firm is to be paid under the contract is commensurate with the work it is actually performing, the DBE credit claimed for performance of the work, and other relevant factors. The prime contractor is responsible to ensure that the DBE performs a CUF.

V. PROPOSAL REQUIREMENTS

- A. DBEs must be certified by the bid opening date.

¹ The use of joint checks payable to a DBE subcontractor and supplier may be allowed to purchase materials and supplies under limited circumstances. See VIII USE OF JOINT CHECKS UNDER THE DBE PROGRAM

B. DBE subcontractors, manufacturers, suppliers, trucking companies and any second tier subcontractors shall be listed on the respective DBE forms as specified below in order to receive credit.

C. The following forms are due **five (5) days after bid opening:**²

1. DBE Confirmation and Commitment Agreement. This form must be **signed by the bidder/offeror and each DBE** subcontractor, manufacturer, supplier, or trucking company and submitted to the State Project Manager. Information to be provided on the form shall include, among other things, the project number, the DBE's NAICS codes, description of work, bid items with corresponding price information, prime contractor name and contact information DBE name and contact information and subcontractor name and contact information if the DBE is a second tier subcontractor.
2. DBE Contract Goal Verification and Good Faith Efforts (GFE) Documentation for Construction. List the dollar amount of all subcontractors, manufacturers, suppliers, and trucking companies (both DBE and non-DBE firms). Bidder/offeror must also list the DBE project goal on this form (See paragraph D below regarding goal calculation). If the project goal is not met, the bidder/offeror shall submit documentation of good faith efforts including quotations for both DBE and non-DBE subcontractors when a non-DBE is selected over a DBE for the project.

Failure to provide any of the above shall be cause for bid/proposal rejection.

D. Calculation of the DBE contract goal for this project is the proportionate contract dollar value of work performed, materials, and goods to be supplied by DBEs. DBE credit shall not be given for mobilization, force account items and allowance items. This DBE contract goal is applicable to all the contract work performed for this project and is calculated as follows:

1. DBE contract goal percentage = Contract Dollar Value of the work to be performed by DBE subcontractors and manufacturers, plus 60% of the contract dollar value of DBE suppliers, divided by the sum of all contract items (sum of all contract items is the total amount for comparison of bids less mobilization, force account items, and allowance items).
2. The Department shall adjust the bidder's/offeror's DBE contract goal to the amount of the project goal if it finds that the bidder/offeror met the goal but erroneously calculated a lower percentage. If the amount the

² In computing calendar days, the day from which the period begins to run is not counted, and when the last day of the period is a Saturday, Sunday, or Federal or State holiday, the period extends to the next day that is not a Saturday, Sunday, or holiday.

bidder/offeror submits as its contract goal exceeds the project goal, the bidder/offeror shall be held to the higher goal.

VI. COUNTING DBE PARTICIPATION TOWARDS CONTRACT GOAL

- A. Count the entire amount of the portion of a contract (or other contract not covered by paragraph B below) that is performed by the DBE's own forces. Include the cost of supplies and materials obtained by the DBE for the work on the contract, including supplies purchased or equipment leased by the DBE (except supplies and equipment the DBE subcontractor purchases or leases from the prime contractor or its affiliate).
- B. Count the entire amount of fees or commissions charged by a DBE firm for providing a bona fide service, such as professional, technical, consultant, or managerial services, or for providing bonds or insurance specifically required for the performance of a USDOT-assisted contract, toward DBE goals, provided the Department determines the fee to be reasonable and not excessive as compared with fees customarily allowed for similar services.
- C. When a DBE subcontracts part of the work of its contract to another firm, the value of the subcontracted work may be counted toward DBE goals only if the DBE's subcontractor is itself a DBE. Work that a DBE subcontracts to a non-DBE firm does not count toward DBE goals.
- D. When a DBE performs as a participant in a joint venture, count a portion of the total dollar value of the contract equal to the distinct, clearly defined portion of the work of the contract that the DBE performs with its own forces toward DBE goals.
- E. Count expenditures to a DBE contractor toward DBE goals only if the DBE is performing a CUF on that contract.
- F. The following is a list of appropriate DBE credit to be allowed for work to be performed by a DBE subcontractor. Count expenditures with DBEs for materials or supplies toward DBE goals as provided in the following:
 - 1. If the materials or supplies are obtained from a DBE manufacturer, count 100 percent of the cost of the materials or supplies toward DBE goals;
 - 2. For purposes of determining DBE goal credit, a manufacturer is a firm that operates or maintains a factory or establishment that produces (on the premises) the materials, supplies, articles, or equipment required under the contract and of the general character described by the specifications;
 - 3. If the materials or supplies are purchased from a DBE regular dealer, count 60 percent of the cost of the materials or supplies toward DBE goals;
 - 4. For purposes of determining DBE goal credit, a regular dealer is a firm that owns, operates, or maintains a store, warehouse, or other

establishment in which the materials, supplies, articles or equipment of the general character described by the specifications and required under the contract are bought, kept in stock, and regularly sold or leased to the public in the usual course of business;

5. To be a regular dealer, the firm must be an established, regular business that engages, as its principal business and under its own name, in the purchase and sale or lease of the products in question;
6. A person may be a regular dealer in such bulk items as petroleum products, steel, cement, gravel, stone, or asphalt without owning, operating, or maintaining a place of business as provided in the DBE Regulations, if the person both owns and operates distribution equipment for the products. Any supplementing of a regular dealers' own distribution equipment shall be by a long-term lease agreement and not on an ad hoc or contract-by-contract basis;
7. Packagers, brokers, manufacturers' representatives, or other persons who arrange or expedite transactions are not regular dealers;
8. With respect to materials or supplies purchased from a DBE, which is neither a manufacturer nor a regular dealer, count the entire amount of fees or commissions charged for assistance in the procurement of the materials and supplies, or fees or transportation charges for the delivery of materials or supplies required on a job site, toward DBE goals, provided that the Department determines the fees to be reasonable and not excessive as compared with fees customarily allowed for similar services. Do not count any portion of the cost of the materials and supplies themselves toward DBE goals; however,
9. If a firm is not currently certified as a DBE in accordance with standards of this part at the time of the execution of the contract, do not count the firm's participation toward any DBE goals, except as provided for in §26.87(i);
10. Do not count the dollar value of work performed under a contract with a firm after it has ceased to be certified toward the Department's overall goal; and
11. Do not count the participation of a DBE subcontractor toward a contractor's final compliance with its DBE obligations on a contract until the amount being counted has actually been paid to the DBE.

G. The following factors are used in counting DBE participation for trucking companies:

1. The DBE must be responsible for the management and supervision of the entire trucking operation for which it is responsible on a particular contract, and there cannot be a contrived arrangement for the purpose of meeting DBE goals;
2. The DBE must itself own and operate at least one (1) fully licensed, insured, and operational truck used on the contract;

3. The DBE receives credit for the total value of the transportation services it provides on the contract using trucks it owns, insures, and operates using drivers it employs;
4. The DBE may lease trucks from another DBE firm, including an owner-operator who is certified as a DBE. The DBE who leases trucks from another DBE receives credit for the total value of the transportation services the lessee DBE provides on the contract;
5. The DBE may also lease trucks from a non-DBE firm, including from an owner-operator. The DBE that leases trucks equipped with drivers from a non-DBE is entitled to credit for the total value of transportation services provided by non-DBE leased trucks equipped with drivers not to exceed the value of transportation services on the contract provided by DBE-owned trucks or leased trucks with DBE employee drivers. Additional participation by non-DBE owned trucks equipped with drivers receives credit only for the fee or commission it receives as a result of the lease arrangement. If a recipient chooses this approach, it must obtain written consent from the appropriate Department operating administration.

EXAMPLE: DBE firm X uses two (2) of its own trucks on a contract, leases two (2) trucks from DBE Firm Y and six (6) trucks from non-DBE Firm Z. DBE credit would be awarded for the total value of transportation services provided by Firm X and Firm Y, and may also be awarded for the total value of transportation services provided by four (4) of the six (6) trucks provided by Firm Z. In all, full credit would be allowed for the participation of eight (8) trucks. With respect to the other two (2) trucks provided by Firm Z, DBE credit could be awarded only for the fees or commissions pertaining to those trucks Firm X receives as a result of the lease with Firm Z;

6. The DBE may lease trucks without drivers from a non-DBE truck leasing company. If the DBE leases trucks from a non-DBE truck leasing company and uses its own employees as drivers, it is entitled to credit for the total value of these hauling services.

EXAMPLE: DBE Firm X uses two (2) of its own trucks on a contract. It leases two (2) additional trucks from non-DBE Firm Z. Firm X uses its own employees to drive the trucks leased from Firm Z. DBE credit would be awarded for the total value of the transportation services provided by all four (4) trucks; and

7. For purposes of determining whether a trucking firm performs a CUF, a lease must indicate that the DBE has exclusive use of and control over the truck. This does not preclude the leased truck from working for others during the term of the lease with the consent of the DBE, so long as the lease gives the DBE absolute priority for use of the leased truck. Leased trucks must display the name and identification number of the DBE.

- H. The bidder/offeror may be a joint venture or partnership that has a certified DBE as a partner. A "Joint Venture" means an association between a DBE firm and one (1) or more other firms to carry out a single, for-profit, business enterprise for

which the parties combine their property, capital, efforts, skills and knowledge, and in which the DBE is responsible for a distinct, clearly defined portion of the work of the contract, and whose share in the capital contribution, control, management, risks and profits are commensurate with its ownership interest.

- I. Effects of a Summary Suspension of a DBE. When a DBE's certification is suspended, the DBE may not be considered to meet a contract goal on a new contract and any work it does on a contract received during the suspension shall not be counted towards the overall goal. The DBE may continue to perform work under an existing contract executed before the DBE received a Notice of Suspension and may be counted towards the contract goal during the period of suspension as long as the DBE is performing a CUF under the existing contract.
- J. Effects of Decertification of a DBE. Should a DBE become decertified during the term of the subcontract for reasons beyond the control of and with no fault or negligence on the part of the contractor, the work remaining under the subcontract may be credited towards the contract goal, but are not included in the overall accomplishments.

Should the DBE be decertified after contract award and before notice to proceed, the contractor must still meet the DBE goal by either; a) withdrawing the subcontract from the DBE and expending good faith efforts to replace it with a DBE that is currently certified for that same work; or b) continuing with the subcontract with the decertified firm and expending good faith efforts to find other work not already subcontracted out to DBEs in an amount to meet the DBE goal either by; 1) increasing the participation of other DBEs on the project; 2) documenting good faith efforts; or 3) by a combination of the above.

VII. USE OF JOINT CHECKS UNDER THE DBE PROGRAM

- A. The following guidelines apply to the use of joint checks:
 - 1. The second party (typically the prime contractor) acts solely as a guarantor;
 - 2. The DBE must release the check to the supplier;
 - 3. The use of joint checks is a commonly recognized business practice;
 - 4. The Department must approve the use of joint checks prior to use by contractors and/or DBEs. As part of this approval process the Department will analyze industry practice to confirm that the use of joint checks is commonly employed outside of the DBE program for non-DBE subcontractors on both federal and state funded contracts. Using joint checks shall not be approved if it conflicts with other aspects of the DBE regulations regarding CUF; and
 - 5. The Department will monitor the use of joint checks closely to avoid abuse.

- B. Contractors and DBEs should review the following general guidelines when determining whether to use joint checks closely to avoid abuse:
1. That standard industry practice applies to all contractors (federal and state contracts);
 2. Use of joint checks must be available to all subcontractors;
 3. Material industry sets the standard industry practice, not prime contractors;
 4. Short term, not to exceed reasonable time (i.e., one (1) year, two (2) years) to establish/increase a credit line with the material supplier;
 5. No exclusive arrangement between one (1) prime and one (1) DBE in the use of joint checks that might bring the independence of the DBE into question;
 6. Non-proportionate ratio of DBE's normal capacity to size of contract and quantity of material to be provided under the contract;
 7. The DBE is normally responsible to install and furnish the work item; and
 8. The DBE must be more than an extra participant in releasing the check to the material supplier.
- C. The Department shall allow the use of joint checks if the following general conditions are met:
1. DBE submits request to the Department for action;
 2. There is a formalized agreement between all parties that specify the conditions under which the arrangement shall be permitted;
 3. There is a full and prompt disclosure of the expected use of joint checks;
 4. The Department will provide prior approval;
 5. DBE remains responsible for all other elements of 49 CFR 26.55(c)(1);
 6. The agreement states clearly and determines that independence is not threatened because the DBE retains final decision making responsibility;
 7. The Department will determine that the request is not an attempt to artificially inflate DBE participation;
 8. Standard industry practice is only one (1) factor;
 9. The Department will monitor and maintain oversight of the arrangement by reviewing cancelled checks and/or certification statement of payment; and
 10. The Department will verify there is no requirement by prime contractor that the DBE is to use a specific supplier nor the prime contractor's negotiated unit price.

VIII. DEMONSTRATION OF GOOD FAITH EFFORTS FOR CONTRACT AWARD

- A. When a project goal is not met, the Department shall conduct the initial review of GFE submitted by the bidder/offeror and shall determine whether the bidder/offeror has performed the quality, quantity, and intensity of efforts that demonstrate a reasonably active and aggressive attempt to meet the contract goal in accordance with 49 CFR Part 26, Appendix A.
- B. The bidder/offeror bears the responsibility of demonstrating that it met the contract goal, or if the contract goal was not met, by documenting the GFE it made in an attempt to meet the goal. It is the sole responsibility of the bidder/offeror to submit any and all documents, logs, correspondence, and any other records or information to the Department that will demonstrate that the bidder/offeror made good faith efforts to meet the DBE goal.
- C. In its good faith evaluation, the Department shall perform the following as part of its evaluation: a) request additional information and documents from the bidder/offeror; b) compare the bidder's/offeror's bid against the bids/offers of other bidders/offerors, and compare the DBEs and DBE work areas utilized by the bidder/offeror with the DBEs listed in other bids/offers submitted for this contract (If other bidders obtained DBEs in a particular work area in which the low bidder did not, the Department shall take this into consideration in its evaluation); c) verify contacts by bidders/offerors with DBEs; and d) compare the DBE and the categories of DBE work targeted by the bidder/offeror for participation in the contract, with the total pool of available DBEs ready, willing and able to perform work on each particular subcontract targeted by the bidder/offeror.
- D. Actions on the part of the bidder/offeror that will be considered demonstrative of good faith efforts include, but are not limited to, the following:
 - 1. Whether the bidder/offeror submitted the required information at the time of bid opening (i.e. DBE name, address, NAICS code, description of work, project name, and number), and dollar amounts for all subcontractors, within five (5) days of bid opening;
 - 2. Whether the bidder/offeror solicited through all reasonable and available means (e.g. attendance at pre-bid meetings, advertising and/or written notices) the interest of all certified DBEs who have the capability to perform part or all of the work to be included under the contract. The Department will also consider whether the bidder/offeror solicited the participation of potential DBEs as early in the procurement process as practicable, and allowed sufficient time for the DBEs to properly inquire about the project and respond to the solicitation. The Department will also review whether the bidder/offeror took appropriate steps to follow up with interested DBEs in a timely manner to facilitate participation by DBEs in this project;
 - 3. Whether the bidder/offeror identified and broke up portions of work that can be performed by DBEs in order to increase the likelihood that a DBE will be able to participate, and that the DBE goal could be achieved (e.g. breaking out contract items into economically feasible units to facilitate

- DBE participation even when the bidder/offeror might otherwise prefer to self-perform these work items with its own forces);
4. Whether the bidder/offeror made available or provided interested DBEs with adequate information about the plans, specifications, and requirements of the project in a timely manner, and assisted them in responding to the bidder's/offeror's solicitation;
 5. Whether the bidder/offeror negotiated in good faith with interested DBEs. Evidence of such negotiations includes documenting: a) the names, addresses and telephone numbers of DBEs that were contacted; b) a description of the information that was provided to DBEs regarding the plans and specifications; and c) detailed explanation for not utilizing individual DBEs on the project;
 6. Whether the bidder/offeror solely relied on price in determining whether to use a DBE. The fact that there may be additional or higher costs associated with finding and utilizing DBEs are not, by itself, sufficient reasons for a bidder's/offeror's refusal to utilize a DBE, or the failure to meet the DBE goal, provided that such additional costs are not unreasonable. Also, the ability or desire of a bidder/offeror to perform a portion of the work with its own forces, that could have been undertaken by an available DBE, does not relieve the bidder/offeror of the responsibility to make good faith efforts to meet the DBE goal, and to make available and solicit DBE participation in other areas of the project to meet the DBE goal;
 7. Whether the bidder/offeror rejected DBEs as being unqualified without sound reasons based on a thorough investigation of their capabilities. The DBEs standing within the industry, membership in specific groups, organizations or associations, and political or social affiliation are not legitimate basis for the rejection or non-solicitation of bids from particular DBEs;
 8. Whether the bidder/offeror made efforts to assist interested DBEs in obtaining bonding, lines of credit, or insurance;
 9. Whether the bidder/offeror made efforts to assist interested DBEs in obtaining necessary equipment, supplies, materials or related assistance or services;
 10. Whether the bidder/offeror effectively used the services of available minority/women community organizations, minority/women business groups, contractors' groups, and local, state and federal minority/women business assistance offices or other organizations to provide assistance in recruitment and placement of DBEs;
 11. Whether the bidder/offeror, who selects a non-DBE over a DBE subcontractor, has quotes of each DBE and non-DBE subcontractor submitted to the bidder for work on the contract; and for each DBE that was contacted but not utilized by the bidder/offeror for a contract, the bidder/offeror has a detailed written explanation for each DBE detailing the reasons for the bidder's/offeror's failure or inability to utilize, or to allow the DBE to participate in the contract; and
 12. Whether other bidders/offerors met the goal and whether the apparent successful bidder/offeror could have met the goal with additional efforts.

The Department may determine that an apparent successful bidder/offeror who fell short of meeting the goal, made good faith efforts when it met or exceeded the average DBE participation obtained by other bidders/offerors.

IX. ADMINISTRATIVE RECONSIDERATION.

If it is determined by the Department that the apparent successful bidder/offeror has failed to meet the provisions of 49 CFR Section 26.53(a), the bidder/offeror may submit a request for administrative reconsideration. If under the provisions of 49 CFR, Section 26.53(d), it is determined by the Department that the apparent successful bidder/offeror has failed to meet the provisions of this subsection, the bidder/offeror may submit a written request for administrative reconsideration.

- A. Within five (5) working days of being informed in writing by the Department that the bidder/offeror has not documented sufficient GFE, a bidder/offeror may request administrative reconsideration. Bidders/offerors should make this request in writing to the following official:

Director of Transportation
Hawaii Department of Transportation
869 Punchbowl Street, Room 509
Honolulu, Hawaii 96813

- B. The reconsideration official, or his or her designee (referred to as “reconsideration official”), shall not have played any role in the original determination that the bidder/offeror failed to meet the goal or make adequate good faith efforts to do so.
- C. As part of this reconsideration, the bidder/offeror will have the opportunity to provide written documentation or argument concerning the issue of whether it met the goal or made adequate GFE to do so. The bidder/offeror will have the opportunity to meet in person with the reconsideration official to discuss the issue of whether it met the goal or made adequate GFE to do so.
- D. In an administrative reconsideration, the reconsideration official will review all previously submitted documents, oral and written arguments, and other evidence presented in the reconsideration, in making the decision.
- E. The Department shall inform the bidder/offeror of the decision within thirty (30) days of the proceeding. The decision will state the Department’s findings, and explain the basis of those findings, with respect to whether or not the bidder/offeror met the contract goal, or whether or not the bidder/offeror made adequate GFE to achieve the contract goal.
- F. The reconsideration decision is not administratively appealable to USDOT but is appealable under HRS 103D-709.

X. AWARD OF CONTRACT

- A. In a sealed bid procurement, the Department reserves the right to reject any or all bids. The award of contract, if it is awarded, will be to the lowest responsive and responsible bidder who meets or exceeds the DBE project goal, or who makes good faith efforts to meet or exceed the DBE project goal, as determined by the Department.
- B. If the lowest responsible bidder does not meet the DBE project goal and does not demonstrate to the satisfaction of the Department that it made good faith efforts to meet the DBE project goal, such bid shall be rejected as non-responsive. The Department will then consider the next lowest responsive and responsible bidder for award in accordance with paragraph A above.

XI. REPLACEMENT OF A DBE ON A PROJECT WITH A CONTRACT GOAL

Under this contract, the prime contractor shall utilize the specific DBE listed to perform the work and supply the materials for which each is listed unless the contractor obtains written consent from the Department to replace a DBE. If the Department's consent is not provided, the contractor shall not be entitled to any payment for work or material unless it is performed or supplied by the listed DBE. The Department reserves the right to request copies of all DBE subcontracts.

The Department will require a contractor to make good faith efforts to replace a DBE that is terminated or has otherwise failed to complete its work on a contract with another certified DBE, to the extent needed to meet the contract goal. A prime contractor's inability to find a replacement DBE at the original price is not sufficient to demonstrate that good faith efforts have been made to replace the original DBE. The fact that the contractor has the ability and/or desire to perform the contract work with its own forces does not relieve the contractor of the obligation to make good faith efforts to find a replacement DBE, and it is not a sound basis for rejecting a prospective replacement DBE's reasonable quote.

The Department will require the prime contractor to promptly provide written notice to the project manager of the DBE's inability or unwillingness to perform and provide reasonable documentation.

The written notice by the contractor must include the following:

1. The date the contractor determined the certified DBE to be unwilling, unable or ineligible to perform work on the contract;
2. The projected date that the contractor shall require a substitution or replacement DBE to commence work if consent is granted by the Department;
3. Documentation of facts that describe and cite specific actions or inactions on the part of the affected DBE that led to the contractor's conclusion that the DBE is unwilling, unable, or ineligible to perform work on the contract;

4. A brief statement of the affected DBE's capacity and ability or inability to perform the work as determined by the contractor;
5. Documentation of contractor's good faith efforts to enable affected DBE to perform the work;
6. The current percentage of work completed on each bid item by the affected DBE;
7. The total dollar amount currently paid per bid item for work performed by the affected DBE;
8. The total dollar amount per bid item remaining to be paid to the DBE for work completed but for which the DBE has not received payment, and with which the contractor has no dispute; and
9. The total dollar amount per bid item remaining to be paid to the DBE for work completed, for which the DBE has not received payment, and with which the contractor and DBE have a dispute.

The prime contractor shall send a copy of the written notice to replace a certified DBE on a contract to the affected DBE. The affected DBE may submit a written response within five (5) calendar days to the Department to explain its position on its performance on the committed work. The Department shall consider both the prime contractor's request and DBE's stated position before approving the termination or substitution request, or determining if any action shall be taken against the contractor.

There shall be no substitution or termination of a DBE subcontractor at any time without the prior written consent of the Department. The Department will provide written consent only if the contractor has good cause, as determined by the Department, to terminate the DBE. Good cause may include, but is not limited to the following circumstances:

1. The DBE subcontractor fails or refuses to execute a written contract;
2. The listed DBE subcontractor fails or refuses to perform the work of its subcontract in a way consistent with normal industry standards;
3. The listed DBE subcontractor fails or refuses to meet the prime contractor's reasonable, nondiscriminatory bond requirements;
4. The listed DBE subcontractor becomes bankrupt, insolvent, or exhibits credit unworthiness;
5. The listed DBE subcontractor is ineligible to work on public works projects because of suspension and debarment proceedings pursuant to 2 CFR Parts 180, 215 and 1200 or applicable state law;
6. The Department has determined that the listed DBE subcontractor is not a responsible contractor;
7. The listed DBE subcontractor voluntarily withdraws from the project and provides to the Department written notice of its withdrawal;
8. The listed DBE is ineligible to receive DBE credit for the type of work required; and

9. A DBE owner dies or becomes disabled with the result that the listed DBE contractor is unable to complete its work on the contract.

Upon approval from the Department to replace a DBE, the contractor's good faith efforts shall be documented and submitted to the Department within seven (7) calendar days. This time period may be extended for another seven (7) calendar days upon request by the prime contractor.

If a DBE subcontractor is unable to perform work under the contract, and is to be replaced, the contractor's failure to obtain a substitute certified DBE or to make good faith effort to obtain such a substitute DBE subcontractor to perform said work, may constitute a breach of this contract for which the Department may terminate the contract or pursue such remedy as deemed appropriate by the Department.

XII. CONTRACT COMPLIANCE

This contract is subject to contract compliance tracking, and the prime contractor and all subcontractors are required to report payments electronically in the HDOT online Certification and Contract Compliance Management System (hereafter referred to as "online tracking system"). The prime contractor and all subcontractors are responsible for responding by any noted response date or due date to any instructions or request for information, and to check the online tracking system on a regular basis to manage contact information and contract records.

The prime contractor is responsible for ensuring all subcontractors have completed all requested items and that their contact information is accurate and up-to-date. HDOT may require additional information related to the contract to be provided electronically through the online tracking system at any time before, during, or after contract award. Information related to contractor access of the online tracking system will be provided to designated point of contact with each contractor upon award of the contract. The online tracking system is web-based and can be accessed at the following Internet address: <https://hdot.dbesystem.com/>.

XIII. PAYMENT

- A. The Department will make an estimate in writing each month based on the items of work performed and materials incorporated in the work and the value therefore at the unit prices or lump sum prices set forth in the contract. All progress estimates and payments will be approximate only and shall be subject to correction at any time prior to or in the final estimate and payment. The Department will not withhold any amount from any payment to the contractor, including retainage.
- B. The contractor shall pay all subcontractors within ten (10) calendar days after receipt of any progress payments from the Department. This clause applies to both DBE and non-DBE subcontractors, and all tiers of subcontracts.

- C. The Contractor will verify that payment or retainage has been released to the subcontractors or its suppliers within the specified time through entries in the Department's online tracking system during the corresponding monthly audits. Prompt payment will be monitored and enforced through the Contractor's reporting of payments to its subcontractors and suppliers in the online tracking system.

Subcontractors, including lower tier subcontractors and/or suppliers will confirm the timeliness and the payment amounts received utilizing the online tracking system. Discrepancies will be investigated by the DBE Program Office and the project engineer. Payments to the subcontractors, including lower tier subcontractors, and including retainage released after the subcontractor or lower tier subcontractor's work has been completed to the Department's satisfaction, will be reported by the Contractor or the subcontractor.

- D. When any subcontractor has satisfactorily completed its work as specified in the subcontract, and there are no bona fide disputes, the contractor shall make prompt and full payment to the subcontractor of all monies due, including retainage, within ten (10) calendar days after the subcontractor's work is satisfactorily completed. A subcontractor's work is satisfactorily completed when all the tasks called for in the subcontract have been accomplished and documented, as required by the Department. The contractor must obtain the prior written approval from the Department before it can continue to withhold retainage from any subcontractor who has completed its portion of the work. This clause applies to both DBE and non-DBE subcontractors, and all tiers of subcontracts.

XIV. RECORDS

The contractor shall maintain and keep all records necessary for the Department to determine compliance with the contractor's DBE obligations. The records shall be available at reasonable times and places for inspection by the Department and appropriate Federal agencies. The records to be kept by the contractor shall include:

1. The names, race/ethnicity, gender, address, phone number, and contact person of all DBE and non-DBE consultants, subcontractors, manufacturers, suppliers, truckers and vendors identified as DBEs (for vendor to identify whether it is a supplier or manufacturer);
2. The nature of work of each DBE and non-DBE consultant, subcontractor, manufacturer, supplier, trucker and vendor;
3. The dollar amount contracted with each DBE and non-DBE consultant, subcontractor, manufacturer, supplier, trucker and vendor; and
4. Cumulative dollar amount of all change orders to the subcontract.

XV. FAILURE TO COMPLY WITH DBE REQUIREMENTS

The contractor shall carry out applicable requirements of 49 CFR Part 26 in the award and administration of USDOT assisted contracts. All contractors, subcontractors, manufacturers and suppliers are hereby advised that failure to carry out all DBE requirements specified herein shall constitute a material breach of contract that may result in termination of the contract or such other remedy as deemed appropriate by the Department including but not limited to; 1) withholding monthly progress payments; 2) assessing sanctions; 3) liquidated damages; and/or 4) disqualifying the contractor from future bidding as non-responsible.

**REQUIRED CONTRACT PROVISIONS
FEDERAL-AID CONSTRUCTION CONTRACTS**

- I. General
- II. Nondiscrimination
- III. Nonsegregated Facilities
- IV. Davis-Bacon and Related Act Provisions
- V. Contract Work Hours and Safety Standards Act Provisions
- VI. Subletting or Assigning the Contract
- VII. Safety: Accident Prevention
- VIII. False Statements Concerning Highway Projects
- IX. Implementation of Clean Air Act and Federal Water Pollution Control Act
- X. Compliance with Governmentwide Suspension and Debarment Requirements
- XI. Certification Regarding Use of Contract Funds for Lobbying

ATTACHMENTS

A. Employment and Materials Preference for Appalachian Development Highway System or Appalachian Local Access Road Contracts (included in Appalachian contracts only)

I. GENERAL

1. Form FHWA-1273 must be physically incorporated in each construction contract funded under Title 23 (excluding emergency contracts solely intended for debris removal). The contractor (or subcontractor) must insert this form in each subcontract and further require its inclusion in all lower tier subcontracts (excluding purchase orders, rental agreements and other agreements for supplies or services).

The applicable requirements of Form FHWA-1273 are incorporated by reference for work done under any purchase order, rental agreement or agreement for other services. The prime contractor shall be responsible for compliance by any subcontractor, lower-tier subcontractor or service provider.

Form FHWA-1273 must be included in all Federal-aid design-build contracts, in all subcontracts and in lower tier subcontracts (excluding subcontracts for design services, purchase orders, rental agreements and other agreements for supplies or services). The design-builder shall be responsible for compliance by any subcontractor, lower-tier subcontractor or service provider.

Contracting agencies may reference Form FHWA-1273 in bid proposal or request for proposal documents, however, the Form FHWA-1273 must be physically incorporated (not referenced) in all contracts, subcontracts and lower-tier subcontracts (excluding purchase orders, rental agreements and other agreements for supplies or services related to a construction contract).

2. Subject to the applicability criteria noted in the following sections, these contract provisions shall apply to all work performed on the contract by the contractor's own organization and with the assistance of workers under the contractor's immediate superintendence and to all work performed on the contract by piecework, station work, or by subcontract.

3. A breach of any of the stipulations contained in these Required Contract Provisions may be sufficient grounds for withholding of progress payments, withholding of final payment, termination of the contract, suspension / debarment or any other action determined to be appropriate by the contracting agency and FHWA.

4. Selection of Labor: During the performance of this contract, the contractor shall not use convict labor for any purpose within the limits of a construction project on a Federal-aid highway unless it is labor performed by convicts who are on parole, supervised release, or probation. The term Federal-aid highway does not include roadways functionally classified as local roads or rural minor collectors.

II. NONDISCRIMINATION

The provisions of this section related to 23 CFR Part 230 are applicable to all Federal-aid construction contracts and to all related construction subcontracts of \$10,000 or more. The provisions of 23 CFR Part 230 are not applicable to material supply, engineering, or architectural service contracts.

In addition, the contractor and all subcontractors must comply with the following policies: Executive Order 11246, 41 CFR 60, 29 CFR 1625-1627, Title 23 USC Section 140, the Rehabilitation Act of 1973, as amended (29 USC 794), Title VI of the Civil Rights Act of 1964, as amended, and related regulations including 49 CFR Parts 21, 26 and 27; and 23 CFR Parts 200, 230, and 633.

The contractor and all subcontractors must comply with: the requirements of the Equal Opportunity Clause in 41 CFR 60-1.4(b) and, for all construction contracts exceeding \$10,000, the Standard Federal Equal Employment Opportunity Construction Contract Specifications in 41 CFR 60-4.3.

Note: The U.S. Department of Labor has exclusive authority to determine compliance with Executive Order 11246 and the policies of the Secretary of Labor including 41 CFR 60, and 29 CFR 1625-1627. The contracting agency and the FHWA have the authority and the responsibility to ensure compliance with Title 23 USC Section 140, the Rehabilitation Act of 1973, as amended (29 USC 794), and Title VI of the Civil Rights Act of 1964, as amended, and related regulations including 49 CFR Parts 21, 26 and 27; and 23 CFR Parts 200, 230, and 633.

The following provision is adopted from 23 CFR 230, Appendix A, with appropriate revisions to conform to the U.S. Department of Labor (US DOL) and FHWA requirements.

1. Equal Employment Opportunity: Equal employment opportunity (EEO) requirements not to discriminate and to take affirmative action to assure equal opportunity as set forth under laws, executive orders, rules, regulations (28 CFR 35, 29 CFR 1630, 29 CFR 1625-1627, 41 CFR 60 and 49 CFR 27) and orders of the Secretary of Labor as modified by the provisions prescribed herein, and imposed pursuant to 23 U.S.C. 140 shall constitute the EEO and specific affirmative action standards for the contractor's project activities under

this contract. The provisions of the Americans with Disabilities Act of 1990 (42 U.S.C. 12101 et seq.) set forth under 28 CFR 35 and 29 CFR 1630 are incorporated by reference in this contract. In the execution of this contract, the contractor agrees to comply with the following minimum specific requirement activities of EEO:

a. The contractor will work with the contracting agency and the Federal Government to ensure that it has made every good faith effort to provide equal opportunity with respect to all of its terms and conditions of employment and in their review of activities under the contract.

b. The contractor will accept as its operating policy the following statement:

"It is the policy of this Company to assure that applicants are employed, and that employees are treated during employment, without regard to their race, religion, sex, color, national origin, age or disability. Such action shall include: employment, upgrading, demotion, or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship, pre-apprenticeship, and/or on-the-job training."

2. EEO Officer: The contractor will designate and make known to the contracting officers an EEO Officer who will have the responsibility for and must be capable of effectively administering and promoting an active EEO program and who must be assigned adequate authority and responsibility to do so.

3. Dissemination of Policy: All members of the contractor's staff who are authorized to hire, supervise, promote, and discharge employees, or who recommend such action, or who are substantially involved in such action, will be made fully cognizant of, and will implement, the contractor's EEO policy and contractual responsibilities to provide EEO in each grade and classification of employment. To ensure that the above agreement will be met, the following actions will be taken as a minimum:

a. Periodic meetings of supervisory and personnel office employees will be conducted before the start of work and then not less often than once every six months, at which time the contractor's EEO policy and its implementation will be reviewed and explained. The meetings will be conducted by the EEO Officer.

b. All new supervisory or personnel office employees will be given a thorough indoctrination by the EEO Officer, covering all major aspects of the contractor's EEO obligations within thirty days following their reporting for duty with the contractor.

c. All personnel who are engaged in direct recruitment for the project will be instructed by the EEO Officer in the contractor's procedures for locating and hiring minorities and women.

d. Notices and posters setting forth the contractor's EEO policy will be placed in areas readily accessible to employees, applicants for employment and potential employees.

e. The contractor's EEO policy and the procedures to implement such policy will be brought to the attention of employees by means of meetings, employee handbooks, or other appropriate means.

4. Recruitment: When advertising for employees, the contractor will include in all advertisements for employees the notation: "An Equal Opportunity Employer." All such advertisements will be placed in publications having a large circulation among minorities and women in the area from which the project work force would normally be derived.

a. The contractor will, unless precluded by a valid bargaining agreement, conduct systematic and direct recruitment through public and private employee referral sources likely to yield qualified minorities and women. To meet this requirement, the contractor will identify sources of potential minority group employees, and establish with such identified sources procedures whereby minority and women applicants may be referred to the contractor for employment consideration.

b. In the event the contractor has a valid bargaining agreement providing for exclusive hiring hall referrals, the contractor is expected to observe the provisions of that agreement to the extent that the system meets the contractor's compliance with EEO contract provisions. Where implementation of such an agreement has the effect of discriminating against minorities or women, or obligates the contractor to do the same, such implementation violates Federal nondiscrimination provisions.

c. The contractor will encourage its present employees to refer minorities and women as applicants for employment. Information and procedures with regard to referring such applicants will be discussed with employees.

5. Personnel Actions: Wages, working conditions, and employee benefits shall be established and administered, and personnel actions of every type, including hiring, upgrading, promotion, transfer, demotion, layoff, and termination, shall be taken without regard to race, color, religion, sex, national origin, age or disability. The following procedures shall be followed:

a. The contractor will conduct periodic inspections of project sites to insure that working conditions and employee facilities do not indicate discriminatory treatment of project site personnel.

b. The contractor will periodically evaluate the spread of wages paid within each classification to determine any evidence of discriminatory wage practices.

c. The contractor will periodically review selected personnel actions in depth to determine whether there is evidence of discrimination. Where evidence is found, the contractor will promptly take corrective action. If the review indicates that the discrimination may extend beyond the actions reviewed, such corrective action shall include all affected persons.

d. The contractor will promptly investigate all complaints of alleged discrimination made to the contractor in connection with its obligations under this contract, will attempt to resolve such complaints, and will take appropriate corrective action within a reasonable time. If the investigation indicates that the discrimination may affect persons other than the complainant, such corrective action shall include such other persons. Upon completion of each investigation, the contractor will inform every complainant of all of their avenues of appeal.

6. Training and Promotion:

a. The contractor will assist in locating, qualifying, and increasing the skills of minorities and women who are

applicants for employment or current employees. Such efforts should be aimed at developing full journey level status employees in the type of trade or job classification involved.

b. Consistent with the contractor's work force requirements and as permissible under Federal and State regulations, the contractor shall make full use of training programs, i.e., apprenticeship, and on-the-job training programs for the geographical area of contract performance. In the event a special provision for training is provided under this contract, this subparagraph will be superseded as indicated in the special provision. The contracting agency may reserve training positions for persons who receive welfare assistance in accordance with 23 U.S.C. 140(a).

c. The contractor will advise employees and applicants for employment of available training programs and entrance requirements for each.

d. The contractor will periodically review the training and promotion potential of employees who are minorities and women and will encourage eligible employees to apply for such training and promotion.

7. Unions: If the contractor relies in whole or in part upon unions as a source of employees, the contractor will use good faith efforts to obtain the cooperation of such unions to increase opportunities for minorities and women. Actions by the contractor, either directly or through a contractor's association acting as agent, will include the procedures set forth below:

a. The contractor will use good faith efforts to develop, in cooperation with the unions, joint training programs aimed toward qualifying more minorities and women for membership in the unions and increasing the skills of minorities and women so that they may qualify for higher paying employment.

b. The contractor will use good faith efforts to incorporate an EEO clause into each union agreement to the end that such union will be contractually bound to refer applicants without regard to their race, color, religion, sex, national origin, age or disability.

c. The contractor is to obtain information as to the referral practices and policies of the labor union except that to the extent such information is within the exclusive possession of the labor union and such labor union refuses to furnish such information to the contractor, the contractor shall so certify to the contracting agency and shall set forth what efforts have been made to obtain such information.

d. In the event the union is unable to provide the contractor with a reasonable flow of referrals within the time limit set forth in the collective bargaining agreement, the contractor will, through independent recruitment efforts, fill the employment vacancies without regard to race, color, religion, sex, national origin, age or disability; making full efforts to obtain qualified and/or qualifiable minorities and women. The failure of a union to provide sufficient referrals (even though it is obligated to provide exclusive referrals under the terms of a collective bargaining agreement) does not relieve the contractor from the requirements of this paragraph. In the event the union referral practice prevents the contractor from meeting the obligations pursuant to Executive Order 11246, as amended, and these special provisions, such contractor shall immediately notify the contracting agency.

8. Reasonable Accommodation for Applicants / Employees with Disabilities: The contractor must be familiar

with the requirements for and comply with the Americans with Disabilities Act and all rules and regulations established there under. Employers must provide reasonable accommodation in all employment activities unless to do so would cause an undue hardship.

9. Selection of Subcontractors, Procurement of Materials and Leasing of Equipment: The contractor shall not discriminate on the grounds of race, color, religion, sex, national origin, age or disability in the selection and retention of subcontractors, including procurement of materials and leases of equipment. The contractor shall take all necessary and reasonable steps to ensure nondiscrimination in the administration of this contract.

a. The contractor shall notify all potential subcontractors and suppliers and lessors of their EEO obligations under this contract.

b. The contractor will use good faith efforts to ensure subcontractor compliance with their EEO obligations.

10. Assurance Required by 49 CFR 26.13(b):

a. The requirements of 49 CFR Part 26 and the State DOT's U.S. DOT-approved DBE program are incorporated by reference.

b. The contractor or subcontractor shall not discriminate on the basis of race, color, national origin, or sex in the performance of this contract. The contractor shall carry out applicable requirements of 49 CFR Part 26 in the award and administration of DOT-assisted contracts. Failure by the contractor to carry out these requirements is a material breach of this contract, which may result in the termination of this contract or such other remedy as the contracting agency deems appropriate.

11. Records and Reports: The contractor shall keep such records as necessary to document compliance with the EEO requirements. Such records shall be retained for a period of three years following the date of the final payment to the contractor for all contract work and shall be available at reasonable times and places for inspection by authorized representatives of the contracting agency and the FHWA.

a. The records kept by the contractor shall document the following:

(1) The number and work hours of minority and non-minority group members and women employed in each work classification on the project;

(2) The progress and efforts being made in cooperation with unions, when applicable, to increase employment opportunities for minorities and women; and

(3) The progress and efforts being made in locating, hiring, training, qualifying, and upgrading minorities and women;

b. The contractors and subcontractors will submit an annual report to the contracting agency each July for the duration of the project, indicating the number of minority, women, and non-minority group employees currently engaged in each work classification required by the contract work. This information is to be reported on [Form FHWA-1391](#). The staffing data should represent the project work force on board in all or any part of the last payroll period preceding the end of July. If on-the-job training is being required by special provision, the contractor

will be required to collect and report training data. The employment data should reflect the work force on board during all or any part of the last payroll period preceding the end of July.

III. NONSEGREGATED FACILITIES

This provision is applicable to all Federal-aid construction contracts and to all related construction subcontracts of \$10,000 or more.

The contractor must ensure that facilities provided for employees are provided in such a manner that segregation on the basis of race, color, religion, sex, or national origin cannot result. The contractor may neither require such segregated use by written or oral policies nor tolerate such use by employee custom. The contractor's obligation extends further to ensure that its employees are not assigned to perform their services at any location, under the contractor's control, where the facilities are segregated. The term "facilities" includes waiting rooms, work areas, restaurants and other eating areas, time clocks, restrooms, washrooms, locker rooms, and other storage or dressing areas, parking lots, drinking fountains, recreation or entertainment areas, transportation, and housing provided for employees. The contractor shall provide separate or single-user restrooms and necessary dressing or sleeping areas to assure privacy between sexes.

IV. DAVIS-BACON AND RELATED ACT PROVISIONS

This section is applicable to all Federal-aid construction projects exceeding \$2,000 and to all related subcontracts and lower-tier subcontracts (regardless of subcontract size). The requirements apply to all projects located within the right-of-way of a roadway that is functionally classified as Federal-aid highway. This excludes roadways functionally classified as local roads or rural minor collectors, which are exempt. Contracting agencies may elect to apply these requirements to other projects.

The following provisions are from the U.S. Department of Labor regulations in 29 CFR 5.5 "Contract provisions and related matters" with minor revisions to conform to the FHWA-1273 format and FHWA program requirements.

1. Minimum wages

a. All laborers and mechanics employed or working upon the site of the work, will be paid unconditionally and not less often than once a week, and without subsequent deduction or rebate on any account (except such payroll deductions as are permitted by regulations issued by the Secretary of Labor under the Copeland Act (29 CFR part 3)), the full amount of wages and bona fide fringe benefits (or cash equivalents thereof) due at time of payment computed at rates not less than those contained in the wage determination of the Secretary of Labor which is attached hereto and made a part hereof, regardless of any contractual relationship which may be alleged to exist between the contractor and such laborers and mechanics.

Contributions made or costs reasonably anticipated for bona fide fringe benefits under section 1(b)(2) of the Davis-Bacon Act on behalf of laborers or mechanics are considered wages paid to such laborers or mechanics, subject to the provisions

of paragraph 1.d. of this section; also, regular contributions made or costs incurred for more than a weekly period (but not less often than quarterly) under plans, funds, or programs which cover the particular weekly period, are deemed to be constructively made or incurred during such weekly period. Such laborers and mechanics shall be paid the appropriate wage rate and fringe benefits on the wage determination for the classification of work actually performed, without regard to skill, except as provided in 29 CFR 5.5(a)(4). Laborers or mechanics performing work in more than one classification may be compensated at the rate specified for each classification for the time actually worked therein: Provided, That the employer's payroll records accurately set forth the time spent in each classification in which work is performed. The wage determination (including any additional classification and wage rates conformed under paragraph 1.b. of this section) and the Davis-Bacon poster (WH-1321) shall be posted at all times by the contractor and its subcontractors at the site of the work in a prominent and accessible place where it can be easily seen by the workers.

b. (1) The contracting officer shall require that any class of laborers or mechanics, including helpers, which is not listed in the wage determination and which is to be employed under the contract shall be classified in conformance with the wage determination. The contracting officer shall approve an additional classification and wage rate and fringe benefits therefore only when the following criteria have been met:

(i) The work to be performed by the classification requested is not performed by a classification in the wage determination; and

(ii) The classification is utilized in the area by the construction industry; and

(iii) The proposed wage rate, including any bona fide fringe benefits, bears a reasonable relationship to the wage rates contained in the wage determination.

(2) If the contractor and the laborers and mechanics to be employed in the classification (if known), or their representatives, and the contracting officer agree on the classification and wage rate (including the amount designated for fringe benefits where appropriate), a report of the action taken shall be sent by the contracting officer to the Administrator of the Wage and Hour Division, Employment Standards Administration, U.S. Department of Labor, Washington, DC 20210. The Administrator, or an authorized representative, will approve, modify, or disapprove every additional classification action within 30 days of receipt and so advise the contracting officer or will notify the contracting officer within the 30-day period that additional time is necessary.

(3) In the event the contractor, the laborers or mechanics to be employed in the classification or their representatives, and the contracting officer do not agree on the proposed classification and wage rate (including the amount designated for fringe benefits, where appropriate), the contracting officer shall refer the questions, including the views of all interested parties and the recommendation of the contracting officer, to the Wage and Hour Administrator for determination. The Wage and Hour Administrator, or an authorized representative, will issue a determination within 30 days of receipt and so advise the contracting officer or

will notify the contracting officer within the 30-day period that additional time is necessary.

(4) The wage rate (including fringe benefits where appropriate) determined pursuant to paragraphs 1.b.(2) or 1.b.(3) of this section, shall be paid to all workers performing work in the classification under this contract from the first day on which work is performed in the classification.

c. Whenever the minimum wage rate prescribed in the contract for a class of laborers or mechanics includes a fringe benefit which is not expressed as an hourly rate, the contractor shall either pay the benefit as stated in the wage determination or shall pay another bona fide fringe benefit or an hourly cash equivalent thereof.

d. If the contractor does not make payments to a trustee or other third person, the contractor may consider as part of the wages of any laborer or mechanic the amount of any costs reasonably anticipated in providing bona fide fringe benefits under a plan or program. Provided, That the Secretary of Labor has found, upon the written request of the contractor, that the applicable standards of the Davis-Bacon Act have been met. The Secretary of Labor may require the contractor to set aside in a separate account assets for the meeting of obligations under the plan or program.

2. Withholding

The contracting agency shall upon its own action or upon written request of an authorized representative of the Department of Labor, withhold or cause to be withheld from the contractor under this contract, or any other Federal contract with the same prime contractor, or any other federally-assisted contract subject to Davis-Bacon prevailing wage requirements, which is held by the same prime contractor, so much of the accrued payments or advances as may be considered necessary to pay laborers and mechanics, including apprentices, trainees, and helpers, employed by the contractor or any subcontractor the full amount of wages required by the contract. In the event of failure to pay any laborer or mechanic, including any apprentice, trainee, or helper, employed or working on the site of the work, all or part of the wages required by the contract, the contracting agency may, after written notice to the contractor, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds until such violations have ceased.

3. Payrolls and basic records

a. Payrolls and basic records relating thereto shall be maintained by the contractor during the course of the work and preserved for a period of three years thereafter for all laborers and mechanics working at the site of the work. Such records shall contain the name, address, and social security number of each such worker, his or her correct classification, hourly rates of wages paid (including rates of contributions or costs anticipated for bona fide fringe benefits or cash equivalents thereof of the types described in section 1(b)(2)(B) of the Davis-Bacon Act), daily and weekly number of hours worked, deductions made and actual wages paid. Whenever the Secretary of Labor has found under 29 CFR 5.5(a)(1)(iv) that the wages of any laborer or mechanic include the amount of any costs reasonably anticipated in providing benefits under a plan or program described in section 1(b)(2)(B) of the Davis-

Bacon Act, the contractor shall maintain records which show that the commitment to provide such benefits is enforceable, that the plan or program is financially responsible, and that the plan or program has been communicated in writing to the laborers or mechanics affected, and records which show the costs anticipated or the actual cost incurred in providing such benefits. Contractors employing apprentices or trainees under approved programs shall maintain written evidence of the registration of apprenticeship programs and certification of trainee programs, the registration of the apprentices and trainees, and the ratios and wage rates prescribed in the applicable programs.

b.(1) The contractor shall submit weekly for each week in which any contract work is performed a copy of all payrolls to the contracting agency. The payrolls submitted shall set out accurately and completely all of the information required to be maintained under 29 CFR 5.5(a)(3)(i), except that full social security numbers and home addresses shall not be included on weekly transmittals. Instead the payrolls shall only need to include an individually identifying number for each employee (e.g., the last four digits of the employee's social security number). The required weekly payroll information may be submitted in any form desired. Optional Form WH-347 is available for this purpose from the Wage and Hour Division Web site at <http://www.dol.gov/esa/whd/forms/wh347instr.htm> or its successor site. The prime contractor is responsible for the submission of copies of payrolls by all subcontractors. Contractors and subcontractors shall maintain the full social security number and current address of each covered worker, and shall provide them upon request to the contracting agency for transmission to the State DOT, the FHWA or the Wage and Hour Division of the Department of Labor for purposes of an investigation or audit of compliance with prevailing wage requirements. It is not a violation of this section for a prime contractor to require a subcontractor to provide addresses and social security numbers to the prime contractor for its own records, without weekly submission to the contracting agency..

(2) Each payroll submitted shall be accompanied by a "Statement of Compliance," signed by the contractor or subcontractor or his or her agent who pays or supervises the payment of the persons employed under the contract and shall certify the following:

(i) That the payroll for the payroll period contains the information required to be provided under §5.5 (a)(3)(ii) of Regulations, 29 CFR part 5, the appropriate information is being maintained under §5.5 (a)(3)(i) of Regulations, 29 CFR part 5, and that such information is correct and complete;

(ii) That each laborer or mechanic (including each helper, apprentice, and trainee) employed on the contract during the payroll period has been paid the full weekly wages earned, without rebate, either directly or indirectly, and that no deductions have been made either directly or indirectly from the full wages earned, other than permissible deductions as set forth in Regulations, 29 CFR part 3;

(iii) That each laborer or mechanic has been paid not less than the applicable wage rates and fringe benefits or cash equivalents for the classification of work performed, as specified in the applicable wage determination incorporated into the contract.

(3) The weekly submission of a properly executed certification set forth on the reverse side of Optional Form WH-347 shall satisfy the requirement for submission of the "Statement of Compliance" required by paragraph 3.b.(2) of this section.

(4) The falsification of any of the above certifications may subject the contractor or subcontractor to civil or criminal prosecution under section 1001 of title 18 and section 231 of title 31 of the United States Code.

c. The contractor or subcontractor shall make the records required under paragraph 3.a. of this section available for inspection, copying, or transcription by authorized representatives of the contracting agency, the State DOT, the FHWA, or the Department of Labor, and shall permit such representatives to interview employees during working hours on the job. If the contractor or subcontractor fails to submit the required records or to make them available, the FHWA may, after written notice to the contractor, the contracting agency or the State DOT, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds. Furthermore, failure to submit the required records upon request or to make such records available may be grounds for debarment action pursuant to 29 CFR 5.12.

4. Apprentices and trainees

a. Apprentices (programs of the USDOL).

Apprentices will be permitted to work at less than the predetermined rate for the work they performed when they are employed pursuant to and individually registered in a bona fide apprenticeship program registered with the U.S. Department of Labor, Employment and Training Administration, Office of Apprenticeship Training, Employer and Labor Services, or with a State Apprenticeship Agency recognized by the Office, or if a person is employed in his or her first 90 days of probationary employment as an apprentice in such an apprenticeship program, who is not individually registered in the program, but who has been certified by the Office of Apprenticeship Training, Employer and Labor Services or a State Apprenticeship Agency (where appropriate) to be eligible for probationary employment as an apprentice.

The allowable ratio of apprentices to journeymen on the job site in any craft classification shall not be greater than the ratio permitted to the contractor as to the entire work force under the registered program. Any worker listed on a payroll at an apprentice wage rate, who is not registered or otherwise employed as stated above, shall be paid not less than the applicable wage rate on the wage determination for the classification of work actually performed. In addition, any apprentice performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed. Where a contractor is performing construction on a project in a locality other than that in which its program is registered, the ratios and wage rates (expressed in percentages of the journeyman's hourly rate) specified in the contractor's or subcontractor's registered program shall be observed.

Every apprentice must be paid at not less than the rate specified in the registered program for the apprentice's level of progress, expressed as a percentage of the journeymen hourly

rate specified in the applicable wage determination. Apprentices shall be paid fringe benefits in accordance with the provisions of the apprenticeship program. If the apprenticeship program does not specify fringe benefits, apprentices must be paid the full amount of fringe benefits listed on the wage determination for the applicable classification. If the Administrator determines that a different practice prevails for the applicable apprentice classification, fringes shall be paid in accordance with that determination.

In the event the Office of Apprenticeship Training, Employer and Labor Services, or a State Apprenticeship Agency recognized by the Office, withdraws approval of an apprenticeship program, the contractor will no longer be permitted to utilize apprentices at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

b. Trainees (programs of the USDOL).

Except as provided in 29 CFR 5.16, trainees will not be permitted to work at less than the predetermined rate for the work performed unless they are employed pursuant to and individually registered in a program which has received prior approval, evidenced by formal certification by the U.S. Department of Labor, Employment and Training Administration.

The ratio of trainees to journeymen on the job site shall not be greater than permitted under the plan approved by the Employment and Training Administration.

Every trainee must be paid at not less than the rate specified in the approved program for the trainee's level of progress, expressed as a percentage of the journeyman hourly rate specified in the applicable wage determination. Trainees shall be paid fringe benefits in accordance with the provisions of the trainee program. If the trainee program does not mention fringe benefits, trainees shall be paid the full amount of fringe benefits listed on the wage determination unless the Administrator of the Wage and Hour Division determines that there is an apprenticeship program associated with the corresponding journeyman wage rate on the wage determination which provides for less than full fringe benefits for apprentices. Any employee listed on the payroll at a trainee rate who is not registered and participating in a training plan approved by the Employment and Training Administration shall be paid not less than the applicable wage rate on the wage determination for the classification of work actually performed. In addition, any trainee performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed.

In the event the Employment and Training Administration withdraws approval of a training program, the contractor will no longer be permitted to utilize trainees at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

c. Equal employment opportunity. The utilization of apprentices, trainees and journeymen under this part shall be in conformity with the equal employment opportunity requirements of Executive Order 11246, as amended, and 29 CFR part 30.

d. Apprentices and Trainees (programs of the U.S. DOT).

Apprentices and trainees working under apprenticeship and skill training programs which have been certified by the Secretary of Transportation as promoting EEO in connection with Federal-aid highway construction programs are not subject to the requirements of paragraph 4 of this Section IV. The straight time hourly wage rates for apprentices and trainees under such programs will be established by the particular programs. The ratio of apprentices and trainees to journeymen shall not be greater than permitted by the terms of the particular program.

5. Compliance with Copeland Act requirements. The contractor shall comply with the requirements of 29 CFR part 3, which are incorporated by reference in this contract.

6. Subcontracts. The contractor or subcontractor shall insert Form FHWA-1273 in any subcontracts and also require the subcontractors to include Form FHWA-1273 in any lower tier subcontracts. The prime contractor shall be responsible for the compliance by any subcontractor or lower tier subcontractor with all the contract clauses in 29 CFR 5.5.

7. Contract termination: debarment. A breach of the contract clauses in 29 CFR 5.5 may be grounds for termination of the contract, and for debarment as a contractor and a subcontractor as provided in 29 CFR 5.12.

8. Compliance with Davis-Bacon and Related Act requirements. All rulings and interpretations of the Davis-Bacon and Related Acts contained in 29 CFR parts 1, 3, and 5 are herein incorporated by reference in this contract.

9. Disputes concerning labor standards. Disputes arising out of the labor standards provisions of this contract shall not be subject to the general disputes clause of this contract. Such disputes shall be resolved in accordance with the procedures of the Department of Labor set forth in 29 CFR parts 5, 6, and 7. Disputes within the meaning of this clause include disputes between the contractor (or any of its subcontractors) and the contracting agency, the U.S. Department of Labor, or the employees or their representatives.

10. Certification of eligibility.

a. By entering into this contract, the contractor certifies that neither it (nor he or she) nor any person or firm who has an interest in the contractor's firm is a person or firm ineligible to be awarded Government contracts by virtue of section 3(a) of the Davis-Bacon Act or 29 CFR 5.12(a)(1).

b. No part of this contract shall be subcontracted to any person or firm ineligible for award of a Government contract by virtue of section 3(a) of the Davis-Bacon Act or 29 CFR 5.12(a)(1).

c. The penalty for making false statements is prescribed in the U.S. Criminal Code, 18 U.S.C. 1001.

V. CONTRACT WORK HOURS AND SAFETY STANDARDS ACT

The following clauses apply to any Federal-aid construction contract in an amount in excess of \$100,000 and subject to the overtime provisions of the Contract Work Hours and Safety Standards Act. These clauses shall be inserted in addition to the clauses required by 29 CFR 5.5(a) or 29 CFR 4.6. As used in this paragraph, the terms laborers and mechanics include watchmen and guards.

1. Overtime requirements. No contractor or subcontractor contracting for any part of the contract work which may require or involve the employment of laborers or mechanics shall require or permit any such laborer or mechanic in any workweek in which he or she is employed on such work to work in excess of forty hours in such workweek unless such laborer or mechanic receives compensation at a rate not less than one and one-half times the basic rate of pay for all hours worked in excess of forty hours in such workweek.

2. Violation; liability for unpaid wages; liquidated damages. In the event of any violation of the clause set forth in paragraph (1.) of this section, the contractor and any subcontractor responsible therefor shall be liable for the unpaid wages. In addition, such contractor and subcontractor shall be liable to the United States (in the case of work done under contract for the District of Columbia or a territory, to such District or to such territory), for liquidated damages. Such liquidated damages shall be computed with respect to each individual laborer or mechanic, including watchmen and guards, employed in violation of the clause set forth in paragraph (1.) of this section, in the sum of \$10 for each calendar day on which such individual was required or permitted to work in excess of the standard workweek of forty hours without payment of the overtime wages required by the clause set forth in paragraph (1.) of this section.

3. Withholding for unpaid wages and liquidated damages. The FHWA or the contracting agency shall upon its own action or upon written request of an authorized representative of the Department of Labor withhold or cause to be withheld, from any moneys payable on account of work performed by the contractor or subcontractor under any such contract or any other Federal contract with the same prime contractor, or any other federally-assisted contract subject to the Contract Work Hours and Safety Standards Act, which is held by the same prime contractor, such sums as may be determined to be necessary to satisfy any liabilities of such contractor or subcontractor for unpaid wages and liquidated damages as provided in the clause set forth in paragraph (2.) of this section.

4. Subcontracts. The contractor or subcontractor shall insert in any subcontracts the clauses set forth in paragraph (1.) through (4.) of this section and also a clause requiring the subcontractors to include these clauses in any lower tier subcontracts. The prime contractor shall be responsible for compliance by any subcontractor or lower tier subcontractor with the clauses set forth in paragraphs (1.) through (4.) of this section.

VI. SUBLETTING OR ASSIGNING THE CONTRACT

This provision is applicable to all Federal-aid construction contracts on the National Highway System.

1. The contractor shall perform with its own organization contract work amounting to not less than 30 percent (or a greater percentage if specified elsewhere in the contract) of the total original contract price, excluding any specialty items designated by the contracting agency. Specialty items may be performed by subcontract and the amount of any such specialty items performed may be deducted from the total original contract price before computing the amount of work required to be performed by the contractor's own organization (23 CFR 635.116).

a. The term "perform work with its own organization" refers to workers employed or leased by the prime contractor, and equipment owned or rented by the prime contractor, with or without operators. Such term does not include employees or equipment of a subcontractor or lower tier subcontractor, agents of the prime contractor, or any other assignees. The term may include payments for the costs of hiring leased employees from an employee leasing firm meeting all relevant Federal and State regulatory requirements. Leased employees may only be included in this term if the prime contractor meets all of the following conditions:

(1) the prime contractor maintains control over the supervision of the day-to-day activities of the leased employees;

(2) the prime contractor remains responsible for the quality of the work of the leased employees;

(3) the prime contractor retains all power to accept or exclude individual employees from work on the project; and

(4) the prime contractor remains ultimately responsible for the payment of predetermined minimum wages, the submission of payrolls, statements of compliance and all other Federal regulatory requirements.

b. "Specialty Items" shall be construed to be limited to work that requires highly specialized knowledge, abilities, or equipment not ordinarily available in the type of contracting organizations qualified and expected to bid or propose on the contract as a whole and in general are to be limited to minor components of the overall contract.

2. The contract amount upon which the requirements set forth in paragraph (1) of Section VI is computed includes the cost of material and manufactured products which are to be purchased or produced by the contractor under the contract provisions.

3. The contractor shall furnish (a) a competent superintendent or supervisor who is employed by the firm, has full authority to direct performance of the work in accordance with the contract requirements, and is in charge of all construction operations (regardless of who performs the work) and (b) such other of its own organizational resources (supervision, management, and engineering services) as the contracting officer determines is necessary to assure the performance of the contract.

4. No portion of the contract shall be sublet, assigned or otherwise disposed of except with the written consent of the contracting officer, or authorized representative, and such consent when given shall not be construed to relieve the contractor of any responsibility for the fulfillment of the contract. Written consent will be given only after the contracting agency has assured that each subcontract is

evidenced in writing and that it contains all pertinent provisions and requirements of the prime contract.

5. The 30% self-performance requirement of paragraph (1) is not applicable to design-build contracts; however, contracting agencies may establish their own self-performance requirements.

VII. SAFETY: ACCIDENT PREVENTION

This provision is applicable to all Federal-aid construction contracts and to all related subcontracts.

1. In the performance of this contract the contractor shall comply with all applicable Federal, State, and local laws governing safety, health, and sanitation (23 CFR 635). The contractor shall provide all safeguards, safety devices and protective equipment and take any other needed actions as it determines, or as the contracting officer may determine, to be reasonably necessary to protect the life and health of employees on the job and the safety of the public and to protect property in connection with the performance of the work covered by the contract.

2. It is a condition of this contract, and shall be made a condition of each subcontract, which the contractor enters into pursuant to this contract, that the contractor and any subcontractor shall not permit any employee, in performance of the contract, to work in surroundings or under conditions which are unsanitary, hazardous or dangerous to his/her health or safety, as determined under construction safety and health standards (29 CFR 1926) promulgated by the Secretary of Labor, in accordance with Section 107 of the Contract Work Hours and Safety Standards Act (40 U.S.C. 3704).

3. Pursuant to 29 CFR 1926.3, it is a condition of this contract that the Secretary of Labor or authorized representative thereof, shall have right of entry to any site of contract performance to inspect or investigate the matter of compliance with the construction safety and health standards and to carry out the duties of the Secretary under Section 107 of the Contract Work Hours and Safety Standards Act (40 U.S.C.3704).

VIII. FALSE STATEMENTS CONCERNING HIGHWAY PROJECTS

This provision is applicable to all Federal-aid construction contracts and to all related subcontracts.

In order to assure high quality and durable construction in conformity with approved plans and specifications and a high degree of reliability on statements and representations made by engineers, contractors, suppliers, and workers on Federal-aid highway projects, it is essential that all persons concerned with the project perform their functions as carefully, thoroughly, and honestly as possible. Willful falsification, distortion, or misrepresentation with respect to any facts related to the project is a violation of Federal law. To prevent any misunderstanding regarding the seriousness of these and similar acts, Form FHWA-1022 shall be posted on each Federal-aid highway project (23 CFR 635) in one or more places where it is readily available to all persons concerned with the project:

18 U.S.C. 1020 reads as follows:

"Whoever, being an officer, agent, or employee of the United States, or of any State or Territory, or whoever, whether a person, association, firm, or corporation, knowingly makes any false statement, false representation, or false report as to the character, quality, quantity, or cost of the material used or to be used, or the quantity or quality of the work performed or to be performed, or the cost thereof in connection with the submission of plans, maps, specifications, contracts, or costs of construction on any highway or related project submitted for approval to the Secretary of Transportation; or

Whoever knowingly makes any false statement, false representation, false report or false claim with respect to the character, quality, quantity, or cost of any work performed or to be performed, or materials furnished or to be furnished, in connection with the construction of any highway or related project approved by the Secretary of Transportation; or

Whoever knowingly makes any false statement or false representation as to material fact in any statement, certificate, or report submitted pursuant to provisions of the Federal-aid Roads Act approved July 1, 1916, (39 Stat. 355), as amended and supplemented;

Shall be fined under this title or imprisoned not more than 5 years or both."

IX. IMPLEMENTATION OF CLEAN AIR ACT AND FEDERAL WATER POLLUTION CONTROL ACT

This provision is applicable to all Federal-aid construction contracts and to all related subcontracts.

By submission of this bid/proposal or the execution of this contract, or subcontract, as appropriate, the bidder, proposer, Federal-aid construction contractor, or subcontractor, as appropriate, will be deemed to have stipulated as follows:

1. That any person who is or will be utilized in the performance of this contract is not prohibited from receiving an award due to a violation of Section 508 of the Clean Water Act or Section 306 of the Clean Air Act.

2. That the contractor agrees to include or cause to be included the requirements of paragraph (1) of this Section X in every subcontract, and further agrees to take such action as the contracting agency may direct as a means of enforcing such requirements.

X. CERTIFICATION REGARDING DEBARMENT, SUSPENSION, INELIGIBILITY AND VOLUNTARY EXCLUSION

This provision is applicable to all Federal-aid construction contracts, design-build contracts, subcontracts, lower-tier subcontracts, purchase orders, lease agreements, consultant contracts or any other covered transaction requiring FHWA approval or that is estimated to cost \$25,000 or more – as defined in 2 CFR Parts 180 and 1200.

1. Instructions for Certification – First Tier Participants:

a. By signing and submitting this proposal, the prospective first tier participant is providing the certification set out below.

b. The inability of a person to provide the certification set out below will not necessarily result in denial of participation in this

covered transaction. The prospective first tier participant shall submit an explanation of why it cannot provide the certification set out below. The certification or explanation will be considered in connection with the department or agency's determination whether to enter into this transaction. However, failure of the prospective first tier participant to furnish a certification or an explanation shall disqualify such a person from participation in this transaction.

c. The certification in this clause is a material representation of fact upon which reliance was placed when the contracting agency determined to enter into this transaction. If it is later determined that the prospective participant knowingly rendered an erroneous certification, in addition to other remedies available to the Federal Government, the contracting agency may terminate this transaction for cause of default.

d. The prospective first tier participant shall provide immediate written notice to the contracting agency to whom this proposal is submitted if any time the prospective first tier participant learns that its certification was erroneous when submitted or has become erroneous by reason of changed circumstances.

e. The terms "covered transaction," "debarred," "suspended," "ineligible," "participant," "person," "principal," and "voluntarily excluded," as used in this clause, are defined in 2 CFR Parts 180 and 1200. "First Tier Covered Transactions" refers to any covered transaction between a grantee or subgrantee of Federal funds and a participant (such as the prime or general contract). "Lower Tier Covered Transactions" refers to any covered transaction under a First Tier Covered Transaction (such as subcontracts). "First Tier Participant" refers to the participant who has entered into a covered transaction with a grantee or subgrantee of Federal funds (such as the prime or general contractor). "Lower Tier Participant" refers any participant who has entered into a covered transaction with a First Tier Participant or other Lower Tier Participants (such as subcontractors and suppliers).

f. The prospective first tier participant agrees by submitting this proposal that, should the proposed covered transaction be entered into, it shall not knowingly enter into any lower tier covered transaction with a person who is debarred, suspended, declared ineligible, or voluntarily excluded from participation in this covered transaction, unless authorized by the department or agency entering into this transaction.

g. The prospective first tier participant further agrees by submitting this proposal that it will include the clause titled "Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion-Lower Tier Covered Transactions," provided by the department or contracting agency, entering into this covered transaction, without modification, in all lower tier covered transactions and in all solicitations for lower tier covered transactions exceeding the \$25,000 threshold.

h. A participant in a covered transaction may rely upon a certification of a prospective participant in a lower tier covered transaction that is not debarred, suspended, ineligible, or voluntarily excluded from the covered transaction, unless it knows that the certification is erroneous. A participant is responsible for ensuring that its principals are not suspended, debarred, or otherwise ineligible to participate in covered transactions. To verify the eligibility of its principals, as well as the eligibility of any lower tier prospective participants, each participant may, but is not required to, check the Excluded Parties List System website (<https://www.epls.gov/>), which is compiled by the General Services Administration.

i. Nothing contained in the foregoing shall be construed to require the establishment of a system of records in order to render in good faith the certification required by this clause. The knowledge and information of the prospective participant is not required to exceed that which is normally possessed by a prudent person in the ordinary course of business dealings.

j. Except for transactions authorized under paragraph (f) of these instructions, if a participant in a covered transaction knowingly enters into a lower tier covered transaction with a person who is suspended, debarred, ineligible, or voluntarily excluded from participation in this transaction, in addition to other remedies available to the Federal Government, the department or agency may terminate this transaction for cause or default.

* * * * *

2. Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion – First Tier Participants:

a. The prospective first tier participant certifies to the best of its knowledge and belief, that it and its principals:

(1) Are not presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participating in covered transactions by any Federal department or agency;

(2) Have not within a three-year period preceding this proposal been convicted of or had a civil judgment rendered against them for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, State or local) transaction or contract under a public transaction; violation of Federal or State antitrust statutes or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, or receiving stolen property;

(3) Are not presently indicted for or otherwise criminally or civilly charged by a governmental entity (Federal, State or local) with commission of any of the offenses enumerated in paragraph (a)(2) of this certification; and

(4) Have not within a three-year period preceding this application/proposal had one or more public transactions (Federal, State or local) terminated for cause or default.

b. Where the prospective participant is unable to certify to any of the statements in this certification, such prospective participant shall attach an explanation to this proposal.

2. Instructions for Certification - Lower Tier Participants:

(Applicable to all subcontracts, purchase orders and other lower tier transactions requiring prior FHWA approval or estimated to cost \$25,000 or more - 2 CFR Parts 180 and 1200)

a. By signing and submitting this proposal, the prospective lower tier is providing the certification set out below.

b. The certification in this clause is a material representation of fact upon which reliance was placed when this transaction was entered into. If it is later determined that the prospective lower tier participant knowingly rendered an erroneous certification, in addition to other remedies available to the Federal Government, the department, or agency with which

this transaction originated may pursue available remedies, including suspension and/or debarment.

c. The prospective lower tier participant shall provide immediate written notice to the person to which this proposal is submitted if at any time the prospective lower tier participant learns that its certification was erroneous by reason of changed circumstances.

d. The terms "covered transaction," "debarred," "suspended," "ineligible," "participant," "person," "principal," and "voluntarily excluded," as used in this clause, are defined in 2 CFR Parts 180 and 1200. You may contact the person to which this proposal is submitted for assistance in obtaining a copy of those regulations. "First Tier Covered Transactions" refers to any covered transaction between a grantee or subgrantee of Federal funds and a participant (such as the prime or general contract). "Lower Tier Covered Transactions" refers to any covered transaction under a First Tier Covered Transaction (such as subcontracts). "First Tier Participant" refers to the participant who has entered into a covered transaction with a grantee or subgrantee of Federal funds (such as the prime or general contractor). "Lower Tier Participant" refers any participant who has entered into a covered transaction with a First Tier Participant or other Lower Tier Participants (such as subcontractors and suppliers).

e. The prospective lower tier participant agrees by submitting this proposal that, should the proposed covered transaction be entered into, it shall not knowingly enter into any lower tier covered transaction with a person who is debarred, suspended, declared ineligible, or voluntarily excluded from participation in this covered transaction, unless authorized by the department or agency with which this transaction originated.

f. The prospective lower tier participant further agrees by submitting this proposal that it will include this clause titled "Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion-Lower Tier Covered Transaction," without modification, in all lower tier covered transactions and in all solicitations for lower tier covered transactions exceeding the \$25,000 threshold.

g. A participant in a covered transaction may rely upon a certification of a prospective participant in a lower tier covered transaction that is not debarred, suspended, ineligible, or voluntarily excluded from the covered transaction, unless it knows that the certification is erroneous. A participant is responsible for ensuring that its principals are not suspended, debarred, or otherwise ineligible to participate in covered transactions. To verify the eligibility of its principals, as well as the eligibility of any lower tier prospective participants, each participant may, but is not required to, check the Excluded Parties List System website (<https://www.epls.gov/>), which is compiled by the General Services Administration.

h. Nothing contained in the foregoing shall be construed to require establishment of a system of records in order to render in good faith the certification required by this clause. The knowledge and information of participant is not required to exceed that which is normally possessed by a prudent person in the ordinary course of business dealings.

i. Except for transactions authorized under paragraph e of these instructions, if a participant in a covered transaction knowingly enters into a lower tier covered transaction with a person who is suspended, debarred, ineligible, or voluntarily excluded from participation in this transaction, in addition to other remedies available to the Federal Government, the

department or agency with which this transaction originated may pursue available remedies, including suspension and/or debarment.

* * * * *

Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion--Lower Tier Participants:

1. The prospective lower tier participant certifies, by submission of this proposal, that neither it nor its principals is presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participating in covered transactions by any Federal department or agency.

2. Where the prospective lower tier participant is unable to certify to any of the statements in this certification, such prospective participant shall attach an explanation to this proposal.

* * * * *

XI. CERTIFICATION REGARDING USE OF CONTRACT FUNDS FOR LOBBYING

This provision is applicable to all Federal-aid construction contracts and to all related subcontracts which exceed \$100,000 (49 CFR 20).

1. The prospective participant certifies, by signing and submitting this bid or proposal, to the best of his or her knowledge and belief, that:

a. No Federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of any Federal agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.

b. If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any Federal agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this Federal contract, grant, loan, or cooperative agreement, the undersigned shall complete and submit Standard Form-LLL, "Disclosure Form to Report Lobbying," in accordance with its instructions.

2. This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by 31 U.S.C. 1352. Any person who fails to file the required certification shall be subject to a civil penalty of not less than \$10,000 and not more than \$100,000 for each such failure.

3. The prospective participant also agrees by submitting its bid or proposal that the participant shall require that the language of this certification be included in all lower tier subcontracts, which exceed \$100,000 and that all such recipients shall certify and disclose accordingly.

**ATTACHMENT A - EMPLOYMENT AND MATERIALS
PREFERENCE FOR APPALACHIAN DEVELOPMENT
HIGHWAY SYSTEM OR APPALACHIAN LOCAL ACCESS
ROAD CONTRACTS**

This provision is applicable to all Federal-aid projects funded under the Appalachian Regional Development Act of 1965.

1. During the performance of this contract, the contractor undertaking to do work which is, or reasonably may be, done as on-site work, shall give preference to qualified persons who regularly reside in the labor area as designated by the DOL wherein the contract work is situated, or the subregion, or the Appalachian counties of the State wherein the contract work is situated, except:

a. To the extent that qualified persons regularly residing in the area are not available.

b. For the reasonable needs of the contractor to employ supervisory or specially experienced personnel necessary to assure an efficient execution of the contract work.

c. For the obligation of the contractor to offer employment to present or former employees as the result of a lawful collective bargaining contract, provided that the number of nonresident persons employed under this subparagraph (1c) shall not exceed 20 percent of the total number of employees employed by the contractor on the contract work, except as provided in subparagraph (4) below.

2. The contractor shall place a job order with the State Employment Service indicating (a) the classifications of the laborers, mechanics and other employees required to perform the contract work, (b) the number of employees required in each classification, (c) the date on which the participant estimates such employees will be required, and (d) any other pertinent information required by the State Employment Service to complete the job order form. The job order may be placed with the State Employment Service in writing or by telephone. If during the course of the contract work, the information submitted by the contractor in the original job order is substantially modified, the participant shall promptly notify the State Employment Service.

3. The contractor shall give full consideration to all qualified job applicants referred to him by the State Employment Service. The contractor is not required to grant employment to any job applicants who, in his opinion, are not qualified to perform the classification of work required.

4. If, within one week following the placing of a job order by the contractor with the State Employment Service, the State Employment Service is unable to refer any qualified job applicants to the contractor, or less than the number requested, the State Employment Service will forward a certificate to the contractor indicating the unavailability of applicants. Such certificate shall be made a part of the contractor's permanent project records. Upon receipt of this certificate, the contractor may employ persons who do not normally reside in the labor area to fill positions covered by the certificate, notwithstanding the provisions of subparagraph (1c) above.

5. The provisions of 23 CFR 633.207(e) allow the contracting agency to provide a contractual preference for the use of mineral resource materials native to the Appalachian region.

6. The contractor shall include the provisions of Sections 1 through 4 of this Attachment A in every subcontract for work which is, or reasonably may be, done as on-site work.

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
HONOLULU, HAWAII

SPECIAL PROVISIONS

These Special Provisions shall supplement and/or amend the applicable provisions of the Hawaii Standard Specifications for Road and Bridge Construction, 2005, hereinafter referred to as the "Standard Specifications".

1 Amend **Section 101 - TERMS, ABBREVIATIONS, AND DEFINITIONS** to read
2 as follows:

3
4 **“DIVISION 100 - GENERAL PROVISIONS**

5
6 **SECTION 101 - TERMS, ABBREVIATIONS, AND DEFINITIONS**

7
8 **101.01 Meaning of Terms.** The specifications are generally written in the
9 imperative mood. In sentences using the imperative mood, the subject, “the
10 Contractor shall”, is implied. In the material specifications, the subject may also
11 be the supplier, fabricator, or manufacturer supplying material, products, or
12 equipment for use on the project. The word “will” generally pertains to decisions
13 or actions of the State.

14
15 When a publication is specified, it refers to the most recent date of issue,
16 including interim publications, before the bid opening date for the project, unless
17 a specific date or year of issue is provided.

18
19 **101.02 Abbreviations.** Meanings of abbreviations used in the specifications,
20 on the plans, or in other contract documents are as follows:

21
22

AAN	American Association of Nurserymen
AASHTO	American Association of State Highway and 25 Transportation Officials
ACI	American Concrete Institute
ADA	Americans with Disabilities Act
ADAAG	Americans with Disabilities Act Accessibility Guidelines
AGC	Associated General Contractors of America
AIA	American Institute of Architects
AISC	American Institute of Steel Construction
AISI	American Iron and Steel Institute
ANSI	American National Standards Institute
APA	American Plywood Association
ARA	American Railway Association

46

47	AREA	American Railway Engineering Association
48		
49	ASA	American Standards Association
50		
51	ASCE	American Society of Civil Engineers
52		
53	ASLA	American Society of Landscape Architects
54		
55	ASTM	American Society for Testing and Materials
56		
57	AWG	American Wire Gauge
58		
59	AWPA	American Wood Preserver's Association
60		
61	AWS	American Welding Society
62		
63	AWWA	American Water Works Association
64		
65	BMP	Best Management Practice
66		
67	CCO	Contract Change Order
68		
69	CFR	Code of Federal Regulations
70		
71	CRSI	Concrete Reinforcing Steel Institute
72		
73	DCAB	Disability and Communication Access Board, Department of Health, State of Hawaii
74		
75		
76	DOTAX	Department of Taxation, State of Hawaii
77		
78	EPA	U.S. Environmental Protection Agency
79		
80	FHWA	Federal Highway Administration, U.S. Department of Transportation
81		
82		
83	FSS	Federal Specifications and Standards, General Services Administration, U.S. Department of Defense
84		
85		
86		
87	HAR	Hawaii Administrative Rules
88		
89	HDOT	Department of Transportation, State of Hawaii
90		
91	HIOSH	Occupational Safety and Health, Department of Labor and Industrial Relations, State of Hawaii
92		
93		

94	HMA	Hot Mix Asphalt
95		
96	HRS	Hawaii Revised Statutes
97		
98	ICEA	Insulated Cable Engineers Association (formerly IPCEA)
99		
100	IMSA	International Municipal Signal Association
101		
102	IRS	Internal Revenue Service
103		
104	ITE	Institute of Transportation Engineers
105		
106	MUTCD	Manual on Uniform Traffic Control Devices for Streets and Highways, FHWA, U.S. Department of Transportation
107		
108		
109	NCHRP	National Cooperative Highway Research Program
110		
111	NEC	National Electric Code
112		
113	NEMA	National Electrical Manufacturers Association
114		
115	NFPA	National Forest Products Association
116		
117	NPDES	National Pollutant Discharge Elimination System
118		
119	OSHA	Occupational Safety and Health Administration/Act, U.S. Department of Labor
120		
121		
122	SAE	Society of Automotive Engineers
123		
124	SI	International Systems of Units
125		
126	UFAS	Uniform Federal Accessibility Standards
127		
128	UL	Underwriter's Laboratory
129		
130	USGS	U.S. Geological Survey
131		
132	VECP	Value Engineering Cost Proposal
133		

134 **101.03 Definitions.** Whenever the following words, terms, or pronouns are
135 used in the contract documents, unless otherwise prescribed therein and without
136 regards to the use or omission of uppercase letters, the intent and meaning shall
137 be interpreted as follows:

138
139 **Addendum (plural - Addenda)** - A written or graphic document, including
140 drawings and specifications, issued by the Director during the bidding period.

141 This document modifies or interprets the bidding documents by additions,
142 deletions, clarifications or corrections.

143

144 **Addition** (to the contract sum) - Amount added to the contract sum by change
145 order.

146

147 **Advertisement** - A public announcement inviting bids for work to be performed or
148 materials to be furnished.

149

150 **Amendment** - A written document issued to amend the existing contract between
151 the State and Contractor and properly executed by the Contractor and Director.

152

153 **Award** - Written notification to the bidder that the bidder has been awarded a
154 contract.

155

156 **Bad Weather Day (or Unworkable Day)** - A day when weather or other conditions
157 prevent a minimum of four hours of work with the Contractor's normal work force
158 on critical path activities at the site.

159

160 **Bag** - 94 pounds of cement.

161

162 **Barrel** - 376 pounds of cement.

163

164 **Base Course** - The layer or layers of specified material or selected material of a
165 designed thickness placed on a subbase or subgrade to support a surface course.

166

167 **Basement Material** - The material in excavation or embankments underlying the
168 lowest layer of subbase, base, pavement, surfacing or other specified layer.

169

170 **Bid** - See Proposal.

171

172 **Bidder** - An individual, partnership, corporation, joint venture or other legal entity
173 submitting, directly or through a duly authorized representative or agent, a
174 proposal for the work or construction contemplated.

175

176 **Bidding Documents (or Solicitation Documents)** - The published solicitation
177 notice, bid requirements, bid forms and the proposed contract documents
178 including all addenda and clarifications issued prior to receipt of the bid.

179

180 **Bid Security** - The security furnished by the bidder from which the State may
181 recover its damages in the event the bidder breaches its promise to enter into a
182 contract with the State, or fails to execute the required bonds covering the work
183 contemplated, if its proposal is accepted.

184

185 **Blue Book** - EquipmentWatch Cost Recovery (formerly known as
186 EquipmentWatch Rental Rate Blue Book), available from EquipmentWatch, a
187 division of Penton, Inc.

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Calendar Day - See Day.

Change Order (or Contract Change Order) - A written order signed by the Engineer issued with or without the consent of the Contractor directing changes in the work, contract time or contract price. The purposes of a change order include, but are not limited to (1) establishing a price or time adjustment for changes in the work; (2) establishing full payment for direct, indirect, and consequential costs, including costs of delay; (3) establishing price adjustment or time adjustment for work covered and affected by one or more field orders; or (4) settling Contractor's claims for direct, indirect, and consequential costs, or for additional contract time, in whole or in part.

Completion - See Substantial Completion and Final Completion.

Completion Date - The date specified by the contract for the completion of all work on the project or of a designated portion of the project.

Comptroller - the Comptroller of the State of Hawaii, Department of Accounting and General Services.

Contract - The written agreement between the Contractor and the State, by which the Contractor shall provide all labor, equipment, and materials and perform the specified work within the contract time stipulated, and by which the State of Hawaii is obligated to compensate the Contractor at the prices set forth in the contract documents.

Contract Certification Date - The Date on which the Deputy Comptroller for the State of Hawaii (or authorized representative) signs the Contract Certification.

Contract Completion Date - The calendar day on which all work on the project, required by the contract, must be completed. See CONTRACT TIME.

Contract Documents - The contract, solicitation, addenda, notice to bidders, Contractor's bid proposal (including wage schedule, list of subcontractors and other documentations accompanying the bid), notice to proceed, bonds, general provisions, special provisions, specifications, drawings, all modifications, all written amendments, change orders, field orders, orders for minor changes in the work, the Engineer's written interpretations and clarifications issued on or after the effective date of the contract.

Contract Item (Pay Item) - A specific unit of work for which there is a price in the contract.

Contract Modification (Modification) - A change order that is mutually agreed to and signed by the parties to the contract.

235 **Contract Price** - The amount designated on the face of the contract for the
236 performance of work.

237
238 **Contract Time (or Contract Duration)** - The number of calendar or working days
239 provided for completion of the contract, inclusive of authorized time extensions.
240 Contract time shall commence on the Start Work Date and end on the Substantial
241 Completion Date. If in lieu of providing a number of calendar or working days, the
242 contract requires completion by a certain date, the work shall be completed by that
243 date.

244
245 **Contracting Officer** - See Engineer.

246
247 **Contractor** - Any individual, partnership, firm, corporation, joint venture, or
248 other legal entity undertaking the execution of the work under the terms of the
249 contract with the State.

250
251 **Critical Path** - Longest logical sequence of activities that must be completed on
252 schedule for the entire project to be completed on schedule.

253
254 **Day** - Any day shown on the calendar, beginning at midnight and proceeding up
255 to, but not including, midnight the following day. If no designation of calendar or
256 working day is made, "day" shall mean calendar day.

257
258 **Department** - The Department of Transportation of the State of Hawaii
259 (abbreviated HDOT).

260
261 **Director** - The Director of the HDOT acting directly or through duly authorized
262 representatives.

263
264 **Plans (or Drawings)** - The contract drawings in graphic or pictorial form including
265 the notes, tables and other notations thereon indicating the design, location,
266 character, dimensions, and details of the work.

267
268 **Engineer** - The Highway Administrator, Highways Division, HDOT, or the
269 authorized person delegated to act on the Administrator's behalf.

270
271 **Equipment** - All machinery, tools, and apparatus needed to complete the
272 contract.

273
274 **Field Order** - A written order issued by the Engineer or the Engineer's authorized
275 representative to the Contractor requiring a change or changes to the contract
276 work. A field order may (1) establish a price adjustment or time adjustment; or
277 (2) may declare that no adjustment will be made to contract price or contract time;
278 or (3) may request the Contractor to submit a proposal for an adjustment to the
279 contract price or contract time.

280

281 **Final Acceptance** - The Status of the project when the Engineer finds that the
282 Contractor has satisfactorily completed all contract work in compliance with the
283 contract including all plant establishment requirements, and all the materials have
284 been accepted by the State.

285
286 **Final Completion** - The date set by the Director that all work required by the
287 contract has been completed in full compliance with the contract documents.

288
289 **Final Inspection** - Inspection where all contract items (with the exception of
290 Planting Period and Plant Establishment Period) are accepted by the Engineer.
291 Substantial Completion will be issued by the Engineer based on the satisfactory
292 results of the Final Inspection.

293
294 **Float** - The amount of time between when an activity can start and when an activity
295 must start, i.e., the time available to complete non-critical activities required for
296 the performance of the work without affecting the critical path.

297
298 **Guarantee** - Legally enforceable assurance of the duration of satisfactory
299 performance of quality of a product or work.

300
301 **Hawaii Administrative Rules** - Rules adopted by the State in accordance with
302 Chapter 91 of the Hawaii Revised Statutes, as amended.

303
304 **Highway (Street, Road, or Roadway)** - A public way within a right-of-way
305 designed, intended, and set aside for use by vehicles, bicyclists, or pedestrians.

306
307 **Highways Division** - The Highways Division of the Hawaii Department of
308 Transportation constituted under the laws of Hawaii for the administration of
309 highway work.

310
311 **Holidays** - The days of each year which are set apart and established as State
312 holidays pursuant to Chapter 8 of the Hawaii Revised Statutes, as amended.

313
314 **Inspector** - The Engineer's authorized representative assigned to make detailed
315 inspections of contract performance, prescribed work, and materials supplied.

316
317 **Laboratory** - The testing laboratory of the Highways Division or other testing
318 laboratories that may be designated by the Engineer.

319
320 **Laws** - All Federal, State, and local laws, executive orders and regulations having
321 the force of law.

322
323 **Leveling Course** - An aggregate mixture course of variable thickness used to
324 restore horizontal and vertical uniformity to existing pavements or shoulders.

325
326 **Liquidated Damages** - The amount prescribed in Subsection 108.08 - Liquidated
327 Damages for Failure to Complete the Work or Portions of the Work on Time, to be

328 paid to the State or to be deducted from any payments payable to or, which may
329 become payable to the Contractor.

330
331 **Lump Sum (LS)** - When used as a payment method means complete payment
332 for the item of work described in the contract documents.

333
334 **Material** - Any natural or manmade substance or item specified in the contract to
335 be incorporated in the work.

336
337 **Notice to Bidders** - The advertisement for proposals for all work or materials on
338 which bids are required. Such advertisement will indicate the location of the work
339 to be done or the character of the material to be furnished and the time and place
340 for the opening of proposals.

341
342 **Notice to Proceed** - Written notice from the Engineer to the Contractor identifying
343 the date on which the Contractor is to begin procuring materials and required
344 permits and adjusting work forces, equipment, schedules, etc. prior to beginning
345 physical work.

346
347 **Pavement** - The uppermost layer of material placed on the traveled way or
348 shoulders or both. Pavement and surfacing may be interchangeable.

349
350 **Pavement Structure** - The combination of subbase, base, pavement, surfacing
351 or other specified layer of a roadway constructed on a subgrade to support the
352 traffic load.

353
354 **Payment Bond** - The security executed by the Contractor and surety or sureties
355 furnished to the Department to guarantee payment by the Contractor to laborers,
356 material suppliers and subcontractors in accordance with the terms of the contract.

357
358 **Physical Work** - Physical construction activities on the project site or at
359 appurtenant facilities including staging areas. It includes (i) building or installing
360 any structures or facilities including, but not limited to sign erection; BMP
361 installation; field office site grading and building; (ii) removal, adjustment, or
362 demolition of physical obstructions on site; (iii) any ground breaking activities; and
363 (iv) any utility work. It does not include pre-construction environmental testing
364 (such as water quality baseline measurements) that may be required as part of
365 contract.

366
367 **Pre-Final Inspection** - Inspection scheduled when Contractor notifies Engineer
368 that all physical work on the project, with the exception of planting period and plant
369 establishment period, has been completed. Notice from Contractor of substantial
370 completion will suspend contract time until Contractor receives punchlist from
371 Engineer.

372
373 **Profile Grade** - The elevation or gradient of a vertical plane intersecting the top
374 surface of the proposed pavement.

375
376 **Project Acceptance Date** - The calendar day on which the Engineer accepts the
377 project as completed. See Final Completion.
378
379 **Proposal (Bid)** - The executed document submitted by a Bidder in response to a
380 solicitation request, to perform the work required by the proposed contract
381 documents, for the price quoted and within the time allotted.
382
383 **Public Traffic** - Vehicular or pedestrian movement on a public way.
384
385 **Punchlist** - A list compiled by the Engineer specifying work yet to be completed or
386 corrected by the Contractor in order to substantially complete the contract.
387
388 **Questionnaire** - The specified forms on which the bidder shall furnish required
389 information as to its ability to perform and finance the work.
390
391 **Request for Change Proposal** - A written notice from the Engineer to the
392 Contractor requesting that the Contractor provide a price and/or time proposal for
393 contemplated changes preparatory to the issuance of a field order or change order.
394
395 **Right-of-Way** - Land, property, or property interests acquired by a government
396 agency for, or devoted to transportation purposes.
397
398 **Roadbed** - The graded portion of a highway within top and side slopes, prepared
399 as a foundation for the pavement structure and shoulders.
400
401 **Roadside** - The area between the outside edges of the shoulders and the right-of-
402 way boundaries. Unpaved median areas between inside shoulders of divided
403 highways and infield areas of interchanges are included.
404
405 **Section and Subsection** - Section or subsection shall be understood to refer to
406 these specifications unless otherwise specified.
407
408 **Shop Drawings** - All drawings, diagrams, illustrations, schedules and other data
409 or information which are specifically prepared or assembled by or for the
410 Contractor and submitted by the Contractor to illustrate some portion of the work.
411
412 **Shoulder** - The portion of the roadway next to the traveled way for:
413 accommodation of stopped vehicles, placement of underground facilities,
414 emergency use, and lateral support of base and surface courses.
415
416 **Sidewalk** - That portion of the roadway primarily constructed for use by
417 pedestrians.
418
419 **Solicitation** - An invitation to bid or request for proposals or any other document
420 issued by the Department to solicit bids or offers to perform a contract. The

421 solicitation may indicate the time and place to receive the bids or offers and the
422 location, nature and character of the work, construction or materials to be provided.

423

424 **Specifications** - Compilation of provisions and requirements to perform
425 prescribed work.

426

427 **(A) Standard Specifications.** Specifications by the State intended for
428 general application and repetitive use.

429

430 **(B) Special Provisions.** Revisions and additions to the standard
431 specifications applicable to an individual project.

432

433 **Standard Plans** - Drawings provided by the State for specific items of work
434 approved for repetitive use.

435

436 **State** - The State of Hawaii, its Departments and agencies, acting through its
437 authorized representative(s).

438

439 **State Waters** – All waters, fresh, brackish, or salt, around and within the State,
440 including, but not limited to, coastal waters, streams, rivers, drainage ditches,
441 ponds, reservoirs, canals, ground waters, and lakes; provided that drainage
442 ditches, ponds, and reservoirs required as a part of a water pollution control
443 system are excluded.

444

445 **Start Work Date** - Date on which Contractor begins physical work on the contract.
446 This date shall also be the beginning of Contract Time.

447

448 **Structures** - Bridges, culverts, catch basins, drop inlets, retaining walls,
449 cribbing, manholes, endwalls, buildings, sewers, service pipes, underdrains,
450 foundation drains, and other such features that may be encountered in the work.

451

452 **Subbase** - A layer of specified material of specified thickness between the
453 subgrade and a base.

454

455 **Subcontract** - Any written agreement between the Contractor and its
456 subcontractors which contains the conditions under which the subcontractor is to
457 perform a portion of the work for the Contractor.

458

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

463

464 **Subgrade** - The top surface of completed earthwork on which subbase, base,
465 surfacing, pavement, or a course of other material is to be placed.

466

467 **Substantial Completion** - The Status of the project when the Contractor has
468 completed the work, except for the planting period and plant establishment period,
469 and each of the following requirements are met:

- 470
- 471 (1) All traffic lanes (including shoulders, ramps, sidewalks and bike
472 paths) are in their final configuration as designed and the final
473 wearing surface has been installed;
 - 474
 - 475 (2) All operational and safety devices have been installed in accordance
476 with the contract documents including guardrails, end treatments,
477 traffic barriers, required signs and pavement markings, drainage,
478 parapet, and bridge and pavement structures;
 - 479
 - 480 (3) All required illumination and lighting for normal and safe use and
481 operation is installed and functional in accordance with the contract
482 documents;
 - 483
 - 484 (4) All utilities and services are connected and working;
 - 485
 - 486 (5) The need for temporary traffic controls or lane closures at any time
487 has ceased, except for lane closures required for routine
488 maintenance;
 - 489
 - 490 (6) The building, structure, improvement or facility can be used for its
491 intended purpose.

492

493 **Substantial Completion Date** - The date the Substantial Completion is granted
494 by the Engineer in Writing and Contract Time stops.

495

496 **Superintendent** - The employee of the Contractor who is responsible for all the
497 work and is a Contractor's agent for communications to and from the State.

498

499 **Surety** - The qualified individual, firm or corporation other than the Contractor,
500 which executes a bond with and for the Contractor to insure its acceptable
501 performance of the contract.

502

503 **Surfacing** - The uppermost layer of material placed on the traveled way or
504 shoulders. This term is used interchangeably with pavement.

505

506 **Traveled Way** - The portion of the roadway for the movement of vehicles,
507 exclusive of shoulders.

508

509 **Unsuitable Material** - Materials that contain organic matter, muck, humus, peat,
510 sticks, debris, chemicals, toxic matter, or other deleterious materials not suitable
511 for use in earthwork.

512

513 **Utility** - A line, facility, or system for producing, transmitting, or distributing
514 communications, power, electricity, heat, gas, oil, water, steam, waste, or
515 storm water.

516

517 **Utility Owner** - The entity, whether private or owned by a State, Federal, or
518 County governmental body, that has the power and responsibility to grant approval
519 for, or undertake construction work involving a particular utility.

520

521 **Water Pollutant** - Dredged spoil, solid refuse, incinerator residue, sewage,
522 garbage, sewage sludge, munitions, chemical waste, biological materials,
523 radioactive materials, heat, wrecked or discarded equipment, rock, sand, soil,
524 sediment, cellar dirt and industrial, municipal, and agricultural waste.

525

526 **Water Pollution** - **(1)** Such contamination or other alteration of the physical,
527 chemical, or biological properties of any state waters, including change in
528 temperature, taste, color, turbidity, or odor of the waters, or **(2)** Such discharge
529 of any liquid, gaseous, solid, radioactive, or other substances into any state
530 waters, as will or is likely to create a nuisance or render such waters unreasonably
531 harmful, detrimental, or injurious to public health, safety, or welfare, including
532 harm, detriment, or injury to public water supplies, fish and aquatic life and
533 wildlife, recreational purposes and agricultural and industrial research and
534 scientific uses of such waters or as will or is likely to violate any water quality
535 standards, effluent standards, treatment and pretreatment standards, or
536 standards of performance for new sources adopted by the Department of Health.

537

538 **Work** - The furnishing of all labor, material, equipment, and other incidentals
539 necessary or convenient for the successful execution of all the duties and
540 obligations imposed by the contract.

541

542 **Working Day** - A calendar day in which a Contractor is capable of working four or
543 more hours with its normal work force, exclusive of:

544

545 **(1)** Saturdays, Sundays, and recognized legal State holidays and such
546 other days specified by the contract documents as non-working days,

547

548 **(2)** Day in which the Engineer suspends work for four or more hours
549 through no fault of the Contractor.”

550

551

552

553

554

555

END OF SECTION 101

1 Make this section a part of the Standard Specifications:
2

3 **“SECTION 102 - BIDDING REQUIREMENTS AND CONDITIONS**
4

5
6 **102.01 Prequalification of Bidders.** Prospective bidders shall be capable of
7 performing the work for which they are bidding.
8

9 In accordance with HRS Chapter 103D-310, the Department may require
10 any prospective bidder to submit answers to questions contained in the 'Standard
11 Qualification Questionnaire For Prospective Bidders On Public Works Contracts'
12 furnished by the Department, properly executed and notarized, setting forth a
13 complete statement of the experience of such prospective bidder and its
14 organization in performing similar work and a statement of the equipment
15 proposed to be used, together with adequate proof of the availability of such
16 equipment. Whenever it appears to the Department, from answers to the
17 questionnaire or otherwise, that the prospective bidder is not fully qualified and
18 able to perform the intended work, the Department will, after affording the
19 prospective bidder an opportunity to be heard and if still of the opinion that the
20 bidder is not fully qualified to perform the work, refuse to receive or consider any
21 bid offered by the prospective bidder. All information contained in the answers to
22 the questionnaire shall be kept confidential. Questionnaire so submitted shall be
23 returned to the bidders after serving their purpose.
24

25 No person, firm or corporation may bid where (1) the person, firm, or
26 corporation, or (2) a corporation owned substantially by the person, firm, or
27 corporation, or (3) a substantial stockholder or an officer of the corporation, or (4)
28 a partner or substantial investor in the firm is in arrears in payments owed to the
29 State or its political subdivisions or is in default as a surety or failure to do faithfully
30 and diligently previous contracts with the State.
31

32 **102.02 Contents of Proposal Forms.** The Department will furnish prospective
33 bidders with proposal forms posted in HlePRO stating:
34

- 35 (1) The location,
- 36
- 37 (2) Description of the proposed work,
- 38
- 39 (3) The approximate quantities,
- 40
- 41 (4) Items of work to be done or materials to be furnished,
- 42
- 43 (5) A schedule of items, and
- 44
- 45 (6) The time in which the work shall be completed.
46

47 Papers bound with or attached to the proposal form are part of the
48 proposal. The bidder shall not detach or alter the papers bound with or attached
49 to the proposal when the bidder submits its proposal through HIEPRO.
50

51 Also, the bidder shall consider other documents including the plans and
52 specifications a part of the proposal form whether attached or not.
53

54 **102.03 Issuance of Proposal Forms.** The Department reserves the right to
55 refuse to issue proposal forms to prospective bidders, which refusal may be based
56 on the following:
57

58 (1) Lack of competency or adequate machinery, plant, and other
59 equipment (which determination may be based on the financial statement
60 and experience questionnaires required under Subsection 102.01 -
61 Prequalification of Bidders);
62

63 (2) Uncompleted work that might hinder or prevent the prompt
64 completion of additional work if awarded;
65

66 (3) Failure to pay or settle bills due for labor and material on former
67 contracts in force at the time of issuance of the solicitation;
68

69 (4) Failure to comply with qualification regulations of the Department;
70

71 (5) Default under previous contracts; or
72

73 (6) Lack of responsibility and cooperation from past work.
74

75 **102.04 Estimated Quantities.** The quantities shown in the contract are
76 approximate and are for the comparison of bids only. The actual quantity of work
77 may not correspond with the quantities shown in the contract. The Department will
78 make payment to the Contractor for unit price items in accordance with the
79 contract for only the following:
80

81 (1) Actual quantities of work done and accepted, not the estimated
82 quantities; or
83

84 (2) Actual quantities of materials furnished, not the estimated quantities.
85

86 The Department may increase, decrease, or omit each scheduled quantities
87 of work to be done and materials to be furnished. When the Department increases
88 or decreases the estimated quantity of a contract item by more than 15% the
89 Department will make payment for such items in accordance with Subsection
90 104.06 - Methods of Price Adjustment.
91

92 **102.05 Examination of Contract and Site of Work.** The bidder shall examine
93 carefully the site of the proposed work and contract before submitting a proposal.

94
95 By the act of submitting a bid for the proposed contract, the bidder warrants that:

96
97 (1) The bidder and its Subcontractors have reviewed the contract
98 documents and found them free from ambiguities and sufficient for the
99 purpose intended;

100
101 (2) The bidder and its workers, employees and subcontractors have the
102 skills and experience in the type of work required by the contract
103 documents bid upon;

104
105 (3) Neither the bidder nor its employees, agents, suppliers or
106 subcontractors have relied upon verbal representations from the
107 Department, its employees or agents, including architects, engineers or
108 consultants, in assembling the bid figure; and

109
110 (4) The basis for the bid figure are solely on the construction contract
111 documents.

112 Also, the bidder warrants that the bidder has examined the site of the work.
113 From its investigations, the bidder acknowledges satisfaction on:

114
115 (1) The nature and location of the work;

116
117 (2) The character, quality, and quantity of materials;

118
119 (3) The difficulties to be encountered; and

120
121 (4) The kind and amount of equipment and other facilities needed;

122
123 Subsurface information or hydrographic survey data furnished are for the
124 bidders' convenience only. The data and information furnished are the product of
125 the Department's interpretation gathered in investigations made at the specific
126 locations. These conditions may not be typical of conditions at other locations
127 within the project area or that such conditions remain unchanged. Also, conditions
128 found at the time of the subsurface explorations may not be the same conditions
129 when work starts. The bidder shall be solely responsible for assumptions,
130 deductions, or conclusions the bidder may derive from the subsurface information
131 or data furnished.

132
133 If the Engineer determines that the natural conditions differ from that
134 originally anticipated or contemplated by the Contractor in the items of excavation,
135 the State may treat the difference in natural conditions, as falling within the
136 meaning of Subsection 104.02 – Changes.

137 **102.06 Preparation of Proposal.** The submittal of its proposal shall be on
138 forms furnished by the Department. The bidder shall specify in words or
139 figures:(1) A unit price for each pay item with a quantity given;

140
141 (2) The products of the respective unit prices and quantities

142
143 (3) The lump sum amount; and

144
145 (4) The total amount of the proposal obtained by adding the amounts of
146 the several items.

147
148 The words and figures shall be in ink or typed. If a discrepancy occurs
149 between the prices written in words and those written in figures, the prices written
150 in words shall govern.

151
152 When an item in the proposal contains an option to be made, the bidder
153 shall choose in accordance with the contract for that particular item.
154 Determination of an option will not permit the Contractor to choose again.

155
156 The bidder shall sign the proposal properly in ink. A duly authorized
157 representatives of the bidder or by an agent of the bidder legally qualified and
158 acceptable to the Department shall sign, including one or more partners of the
159 bidder and one or more representatives of each entity comprising a joint venture.

160
161 When an agent, other than the officer(s) of a corporation authorized to sign
162 contracts for the corporation or a partner of a partnership, signs the proposals, a
163 'Power of Attorney' shall be on file with the Department or submitted with the
164 proposal. Otherwise, the Department will reject the proposal as irregular and
165 unauthorized.

166
167 The bidder shall submit acceptable evidence of the authority of the partner,
168 member(s) or officer(s) to sign for the partnership, joint venture, or corporation
169 respectively with the proposal. Otherwise, the Department will reject the proposal
170 as irregular and unauthorized.

171
172 **102.07 Irregular Proposals.** The Department may consider proposals irregular
173 and may reject the proposals for the following reasons:

174
175 (1) The proposal is a form not furnished by the Department, altered, or
176 detached;

177
178 (2) The proposal contains unauthorized additions, conditions, or
179 alternates. Also, the proposal contains irregularities that may tend to make
180 the proposal incomplete, indefinite, or ambiguous to its meaning;

182 (3) The bidder adds provisions reserving the right to accept or reject an
183 award. Also, the bidder adds provisions into a contract before an award;

184
185 (4) The proposal does not contain a unit price for each pay item listed
186 except authorized optional pay items; and

187
188 (5) Prices for some items are out of proportion to the prices for other
189 items.

190
191 (6) If in the opinion of the Director, the bidder and its listed
192 subcontractors do not have the Contactor's licenses or combination of
193 Contractor's licenses necessary to complete the work.

194 Where the prospective bidder is bidding on multiple projects simultaneously
195 and the proposal limits the maximum gross amount of awards that the bidder can
196 accept at one bid letting, the proposal is not irregular if the limit on the gross
197 amount of awards is clear and the Department selects the awards that can be
198 given.

199
200 **102.08 Proposal Guaranty.** The Department will not consider a proposal of
201 \$25,000 or more unless accompanied by:

202
203 (1) A deposit of legal tender; or

204
205 (2) A valid surety bid bond, underwritten by a company licensed to issue
206 bonds in the State of Hawaii, in the form and composed, substantially, with
207 the same language as provided herewith and signed by both parties; or

208
209 (3) A certificate of deposit, share certificate, cashier's check, treasurer's
210 check, teller's check, or official check drawn by, or a certified check
211 accepted by and payable on demand to the State by a bank, savings
212 institution, or credit union insured by the Federal Deposit Insurance
213 Corporation (FDIC) or the National Credit Union Administration (NCUA).

214
215 (a) The bidder may use these instruments only to a maximum of
216 \$100,000.

217
218 (b) If the required security or bond amount totals over \$100,000
219 more than one instrument not exceeding \$100,000 each and issued
220 by different financial institutions shall be acceptable.

221
222 (c) The instrument shall be made payable at sight to the
223 Department.
224

225 (d) Proposal Guaranty listed in (1) and (3) shall be in its original
226 form, and shall be received at the Contracts Office, Department of
227 Transportation, 869 Punchbowl Street, Honolulu, Hawaii 96813
228 before the bid deadline.

229
230 In accordance with HRS Chapter 103D-323, the above shall be in a sum
231 not less than 5% of the amount bid.

232
233 **102.09 Delivery of Proposal.** The bidder shall submit the proposal in HlePRO.
234 Bids received after said due date and time shall not be considered. Original bid
235 documents do not have to be submitted. Award will be made based on proposals
236 submitted in HlePRO.

237
238 **102.10 Withdrawal or Revision of Proposals.** A bidder may withdraw or
239 revise a proposal after the bidder submits the proposal in HlePRO. Withdrawal or
240 revision of proposal must be completed before the time set for the receiving of
241 bids.

242
243 **102.11 Public Opening of Proposals.** Not applicable.

244
245 **102.12 Disqualification of Bidders.** The Department may disqualify a bidder
246 and reject its proposal for the following reasons:

247
248 (1) Submittal of more than one proposal whether under the same or
249 different name.

250
251 (2) Evidence of collusion among bidders. The Department will not
252 recognize participants in collusion as bidders for any future work of the
253 Department until such participants are reinstated as qualified bidders.

254
255 (3) Lack of proposal guaranty.

256
257 (4) Submittal of an unsigned or improperly signed proposal.

258
259 (5) Submittal of a proposal without a listing of subcontractors or
260 containing only a partial or incomplete listing of subcontractors.

261
262 (6) Submittal of an irregular proposal in accordance with Subsection
263 102.07 - Irregular Proposals.

264
265 (7) Evidence of assistance from a person who has been an employee of
266 the agency within the preceding two years and who participated while in
267 State office or employment in the matter with which the contract is directly
268 concerned, pursuant to HRS Chapter 84-15.

- 269 (8) Suspended or debarred in accordance with HRS Chapter 104-25.
- 270
- 271 (9) Failure to complete the prequalification questionnaire, if applicable.
- 272
- 273 (10) Failure to attend the mandatory pre-bid meeting, if applicable.
- 274

275 **102.13 Material Guaranty.** The successful bidder may be required to furnish a
276 statement of the composition, origin, manufacture of materials, and samples.

277
278 **102.14 Substitution of Materials and Equipment Before Bid Opening.** See
279 Subsection 106.13 for Substitution Of Materials and Equipment After Bid Opening.

280
281 (A) **General.** When brand names of materials or equipment are
282 specified in the contract documents, they are to indicate a quality, style,
283 appearance, or performance and not to limit competition. The bidder shall
284 base its bid on one of the specified brand names unless alternate brands
285 are qualified as equal or better in an addendum. Qualification of such
286 proposed alternate brands shall be submitted in HlePRO. The request
287 must be posted in HlePRO no later than 14 calendar days before the bid
288 opening date, not including the bid opening date.

289
290 An addendum will be issued to inform all prospective bidders of any
291 accepted substitution in accordance with Subsection 102.17 – Addenda.

292
293 (B) **Statement of Variances.** The statement of variances must list all
294 features of the proposed substitution that differ from the contract documents
295 and must further certify that the substitution has no other variant features.
296 The brochure and information submitted shall be clearly marked showing
297 make, model, size, options, and any other features requested by the
298 Engineer and must include sufficient evidence to evaluate each feature
299 listed as a variance. A request will be denied if submitted without sufficient
300 evidence. If after installing the substituted product, an unlisted variance is
301 discovered, the Contractor shall immediately replace the product with a
302 specified product at no increase in contract price and contract time.

303
304 (C) **Substitution Denial.** Any substitution request not complying with
305 the above requirements will be denied.

306
307 **102.15 Preferences.** Hawaii Products and Recycled Products shall not apply
308 to this project.

309 **102.16 Certification for Safety and Health Program for Bids in excess of**
310 **\$100,000.** In accordance with HRS Chapter 396-18, the bidder or offeror, by
311 signing and submitting this proposal, certifies that a written safety and health plan
312 for this project will be available and implemented by the notice to proceed date for
313 this project. Details of the requirements of this plan may be obtained from the
314 State Department of Labor and Industrial Relations, Occupational Safety and
315 Health Division (HIOSH).

316
317 **102.17 Addenda.** Addenda issued shall become part of the contract
318 documents. Addenda to the bid documents will be provided to all prospective
319 bidders via HlePRO. Each addendum shall be an addition to the contract
320 documents. The terms and requirements of the bid documents (i.e. drawings,
321 specifications and other bid and contract documents) cannot be changed prior to
322 the bid opening except by a duly issued addendum.”

323
324
325
326
327

END OF SECTION 102

1 Make this section a part of the Standard Specifications:
2

3 **“SECTION 103 - AWARD AND EXECUTION OF CONTRACT**
4

5
6 **103.01 Consideration of Proposals.** The Department will compare the
7 proposals in terms of the summation of the products of the approximate quantities
8 and the unit bid prices after the submittal date and time established in HlePRO. If
9 a discrepancy occurs between the unit bid price and the bid price, the unit bid price
10 shall govern.
11

12 The “Buy America” provisions in the Surface Transportation Assistance Act
13 of 1982 is applicable to Federal-aid projects. Bidders may submit a bid based upon
14 the furnishing and use of domestic steel or foreign steel. Manufacturing processes
15 for domestic steel shall occur in the United States.
16

17 The Department reserves the right to reject proposals, waive technicalities or
18 advertise for new proposals, if the rejection, waiver, or new advertisement favors
19 the Department.
20

21 **103.02 Award of Contract.** The award of contract, if it be awarded, will be made
22 within 60 calendar days after the opening of bids, to the lowest responsible
23 bidder whose proposal complies with all the requirements. (Through HlePRO). The
24 successful bidder will be notified by letter mailed to the address shown in its
25 proposal, that its proposal has been accepted, and that it has been awarded
26 the contract.
27

28 **(1) Requirement for Award.** To be eligible for award, the apparent
29 low bidder will be contacted to submit copies of the documents listed
30 below to demonstrate compliance with HRS Section 103D-310(c). The
31 documents should be submitted to the Department as soon as possible.
32 If a valid certificate/clearance is not submitted on a timely basis for award
33 of a contract, a bidder otherwise responsive and responsible may not
34 receive the award. See also Subsection 108.03 – Preconstruction Data
35 Submittal.
36

37 **(A) Tax Clearance.** Pursuant to HRS Sections 103D-310(c), 103-53 and
38 103D-328, the successful bidder shall be required to submit a certified copy
39 of its tax clearance issued by the Hawaii State Department of Taxation
40 (DOTAX) and the Internal Revenue Service (IRS) to demonstrate its
41 compliance with HRS Chapter 237. A tax clearance is valid for six (6) months
42 from the most recent approval stamp date on the tax clearance and must be
43 valid on the bid’s first legal advertisement date or any date thereafter up to
44 the bid opening date.
45

46 FORM A6, TAX CLEARANCE CERTIFICATE, is available at
47 the following website:

48 <http://www.hawaii.gov/tax/>
49

50 To receive DOTAX Forms by fax or mail, phone
51 (808) 587-7572 or 1-800-222-7572.
52

53
54 The application for the Tax Clearance Certificate is the responsibility
55 of the bidder and must be submitted directly to the DOTAX or IRS. The
56 approved certificate may then be submitted to the Department.
57

58 **(B) DLIR Certificate of Compliance.** Pursuant to HRS Section 103D-
59 310(c), the successful bidder shall be required to submit a copy (faxed copies
60 are acceptable) of its approved certificate of compliance issued by the Hawaii
61 State Department of Labor and Industrial Relations (DLIR) to demonstrate its
62 compliance with unemployment insurance (HRS Chapter 383), workers'
63 compensation (HRS Chapter 386), temporary disability insurance (HRS
64 Chapter 392), and prepaid health care (HRS Chapter 393). The certificate is
65 valid for six (6) months from the most recent approval stamp date on the
66 certificate and must be valid on the bid's first legal advertisement date or any
67 date thereafter up to the bid opening date. For certificates which receive a
68 "pending" approval stamp, a DLIR approval stamp is required prior to the
69 issuance of the Notice to Proceed.
70

71 FORM LIR#27, APPLICATION FOR CERTIFICATE OF COMPLIANCE
72 WITH SECTION 3-122-112, HAR, is available at the following website:

73 www.hawaii.gov/labor
74

75
76 More information is available by calling the DLIR Unemployment Insurance
77 Division at (808) 586-8926.
78

79 Inquiries regarding the status of a LIR#27 Form may be made by calling
80 the DLIR Disability Compensation Division at (808) 586-9200.
81

82 The application for the Certificate of Compliance is the responsibility of
83 the bidder and must be submitted directly to the DLIR. The approved
84 certificate may then be submitted to the Department.
85

86 **(C) DCCA Certificate of Good Standing.** Pursuant to HRS Section
87 103D-310(c), the successful bidder shall be required to submit a copy (faxed
88 copies are acceptable) of its approved Certificate of Good Standing issued by
89 the Hawaii State Department of Commerce and Consumer Affairs (DCCA),
90 Business Registration Division (BREG) to demonstrate that it is either:
91

- 92 (1) Incorporated or organized under the laws of the State; or
93
94 (2) Registered to do business in the State as a separate branch or
95 division that is capable of fully performing under the contract.
96

97 The Certificate of Good Standing is valid for six (6) months from
98 the approval date on the certificate and must be valid on the bid's first
99 legal advertisement date or any date thereafter up to the bid opening
100 date. A Hawaii business that is a sole proprietorship, however, is not
101 required to register with the BREG, and therefore not required to
102 submit a Certificate of Good Standing. Bidders are advised that there
103 are costs associated with registering and obtaining a Certificate of
104 Good Standing from the DCCA.
105

106 To purchase a CERTIFICATE OF GOOD STANDING, go to On-Line
107 Services at the following website:

108
109 www.hawaii.gov/dcca/
110

111 The application for the Certificate of Good Standing is the
112 responsibility of the bidder and must be submitted directly to the DCCA. The
113 approved certificate may then be submitted to the Department.
114

115 (D) **Hawaii Compliance Express (HCE).** In lieu of the certificates
116 referenced above, the bidder may make available proof of compliance
117 through the Hawaii Compliance Express or any other designated certification
118 process. Bidders may apply and register at the "Hawaii Compliance Express"
119 website:
120

121 <https://vendors.ehawaii.gov>
122

123 **103.03 Cancellation of Award.** The Department reserves the right to cancel
124 the award of contracts before the execution of said contract by the parties.
125 There will be no liability to the awardee and to other bidders.
126

127 **103.04 Return of Proposal Guaranty.** The Department will return the proposal
128 guaranties, except those of the three lowest bidders, after the Department
129 checks the proposals. The Department will return the proposal guaranties of the
130 remaining two lowest bidders not awarded the contract within five working days
131 following the execution of the contract. The Department will return the successful
132 bidder's proposal guaranty after the successful bidder furnishes a bond and
133 executes the contract.
134

135 **103.05 Requirement of Contract Bond.** At the time of execution of the contract,
136 the successful bidder shall file a good and sufficient performance bond and a
137 payment bond on the forms furnished by the Department conditioned for the full
138 and faithful performance of the contract in accordance with the terms and intent
139 thereof and for the prompt payment to all others for all labor and material furnished
140 by them to the bidder and used in the prosecution of the work provided for in the
141 contract. The bonds shall be of an amount equal to 100 percent of the amount of
142 the contract price and include 5 percent of the contract amount estimated to be
143 required for extra work. The bidder shall limit the acceptable performance and
144 payment bonds to the following:

145
146 (a) Legal tender;

147
148 (b) Surety bond underwritten by a company licensed to issue bonds in the
149 State of Hawaii; or

150
151 (c) A certificate of deposit; share certificate; cashier's check; treasurer's
152 check, teller's check drawn by or a certified check accepted by and payable
153 on demand to the State by a bank savings institution or credit union insured
154 by the Federal Deposit Insurance Corporation (FDIC) or the National Credit
155 Union Administration (NCUA).

156
157 1. The bidder may use these instruments only to a maximum of
158 \$100,000.

159
160 2. If the required security or bond amount totals over \$100,000
161 more than one instrument not exceeding \$100,000 each and issued
162 by different financial institutions shall be acceptable.

163
164 Such bonds shall also by the terms inure to the benefit of any and all persons
165 entitled to file claims for labor done or material furnished in the work so as to give
166 them a right of action as contemplated by HRS Section 103D-324.

167
168 **103.06 Execution of the Contract.** The contract bond and HRS Chapter 104 -
169 Compliance Certificate, similar to a copy of the same annexed hereto, shall
170 be executed by the successful bidder and returned within ten days after the award
171 of the contract or within such further time as the Director may allow after the
172 bidder has received the contract for execution.

173
174 The contract shall not bind the Department unless said parties execute
175 the contract and the Director of Finance endorses the bidder's certificate in
176 accordance with HRS Section 103-39.

178 **103.07 Failure to Execute Contract.** Failure to execute the contract and file
179 acceptable bonds shall be cause for the cancellation of the award in accordance
180 with Subsection 103.06 - Execution of the Contract. Also, the Contractor forfeits the
181 proposal guaranty which becomes the property of the Department. This is not a
182 penalty, but liquidated damages sustained by the State. The Department may then
183 make award to the next lowest responsible bidder or the Department may
184 readvertise and construct the work under contract.”

185

186

187

188

189

END OF SECTION 103

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submission by the contractor of proper documentation of completed force account work, whether periodic (conforming to the applicable billing cycle) or final. The Engineer shall return any documentation that is defective, to the contractor within fifteen days after receipt, with a statement identifying the defect; or

(B) For change orders with value exceeding \$50,000 by a unilateral determination by the Engineer of the costs attributable to the events or situations with adjustment of profit and fee, all as computed by the Engineer in accordance with applicable sections of HAR Chapters 3-123 and 3-126, and Section 109.05 - Allowances for Overhead and Profit. When a unilateral determination has been made, a unilateral change order shall be issued within ten days. Upon receipt of the unilateral change order, if the contractor does not agree with any of the terms or conditions, or the adjustment or nonadjustment of the contract time or contract price, the contractor shall file a notice of intent to claim within thirty days after the receipt of the written unilateral change order. Failure to file a protest within the time specified shall constitute agreement on the part of the contractor with the terms, conditions, amounts, and adjustment or nonadjustment of the contract time or the contract price set forth in the unilateral change order.

A contractor shall be required to submit cost or pricing data if any adjustment in contract price is subject to the provisions of HAR Chapter 3-122, Subchapter 15. A fully executed change order or other document permitting billing for the adjustment in price under any method listed in Subsections 104.06(1) through 104.06(7) shall be issued within ten days after agreement on the method of adjustment."

END OF SECTION 104

48 perform duties in connection with the work. Unless otherwise specified in
49 writing to the Contractor, such retained consultants and construction
50 managements shall have no greater authority than an Inspector.”

51
52 **(II) Amend Subsection 105.02 - Submittals** by revising the first paragraph
53 from lines 52 to 61 to read as follows:

54
55 **“105.02 Submittals.** The contract contains the description of various
56 items that the Contractor must submit to the Engineer for review and acceptance.
57 The Contractor shall review all submittals for correctness, conformance with the
58 requirements of the contract documents and completeness before submitting
59 them to the Engineer. The submittal shall indicate the contract items and
60 specifications subsections for which the submittal is provided. The submittal
61 shall be legible and clearly indicate what portion of the submittal is being
62 submitted for review. The Contractor shall provide six copies of the required
63 submissions at the earliest possible date.”

64
65 **(III) Amend Subsection 105.08 (A) - Furnishing Drawings and Special**
66 **Provisions** to read as follows:

67
68 **“(A) Furnishing Drawings and Special Provisions.** The State will
69 furnish the Contractor electronic sets of the project plans and special
70 provisions. The Contractor or its subcontractors shall have and maintain
71 at least one set of plans and specifications on the work site at all times.”

72
73 **(IV) Amend Subsection 105.14(D) – No Designated Storage Area** from lines
74 421 to 432 to read as follows:

75
76 **“(D) No Designated Storage Area.** If no storage area is designated
77 within the contract documents, materials and equipment may be stored
78 anywhere within the State highway right-of-way, provided such storage
79 and access to and from such site, within the sole discretion of the
80 Engineer, does not create a public or traffic hazard or an impediment to
81 the movement of traffic.”

82
83 **(V) Amend 105.16(A) – Subcontract Requirements** by adding the following
84 paragraph after line 483:

85
86 The 'Specialty Items' of work for this project are as follows:

87

88 Section No.	Description
92 401	Contract Item No. 401.0000 under Section 401 – Dense Graded HMA Pavement

93
94

- 95 606 All Contract Items under Section 606 - Guardrail
96
97 622 All Contract Items under Section 622 – Roadway and Sign
98 Lighting System
99
100 629 All Contract Items under Section 629 - Pavement Markings
101
102 631 All Contract Items under Section 631 - Traffic Control
103 Regulatory, Warning, and Miscellaneous Signs
104
105 645 Contract Item No. 645.1000 under Section 645 – Work Zone
106 Traffic Control”
107

108 **(VI)** Amend **Subsection 105.16(B)** – **Substituting Subcontractors** by
109 revising the second sentence from line 490 to line 493 to read:

110
111 “Contractors may enter into subcontracts only with subcontractors listed in the
112 proposal or with non-listed joint contractors/subcontractors permitted under
113 Subsection 102.06 – Preparation of Proposal.”
114
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END OF SECTION 105

1 **SECTION 106 – MATERIAL RESTRICTIONS AND REQUIREMENTS**

2

3 Make the following amendment to said Section:

4

5 **(I)** Amend **106.05(B) – Deviation** by revising the third sentence from line 106
6 to 108 to read as follows:

7

8 “Any deviations will be subject to Subsection 102.14 – Substitution of Materials
9 and Equipment Before Bid Opening.”

10

11

12

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14

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16

END OF SECTION 106

1 **SECTION 107 - LEGAL RELATIONS AND RESPONSIBILITY TO PUBLIC**

2
3 Make the following amendments to said Section:

4
5 **(I)** Amend **Section 107.01 Insurance Requirements** from lines 5 to 81 to
6 read as follows:

7
8 **“(A) Obligation of Contractor.** Contractor shall not commence any
9 work until it obtains, at its own expense, all required insurance described
10 herein. Such insurance shall be provided by an insurance company
11 authorized by the laws of the State to issue such insurance in the State of
12 Hawaii. Coverage by a “Non-Admitted” carrier is permissible provided the
13 carrier has a Best’s Rating of “A-VII” or better. The Contractor shall
14 maintain and ensure all insurance policies are current for the full period of
15 the contract until final acceptance of the work by the State.

16
17 The Certificate of Insurance shall contain: a clause that it is agreed
18 that any insurance maintained by the State of Hawaii will apply in excess
19 of, and not contribute with, insurance provided by this policy; and shall be
20 accompanied by endorsement form CG2010 or equivalent naming the
21 State as an additional insured to the policy which status shall be
22 maintained for the full period of the contract until final acceptance of the
23 work by State.

24
25 The Contractor shall obtain all required insurance as part of the
26 contract price. Where there is a requirement for the State of Hawaii and
27 its officers and employees to be named as additional insureds under any
28 Contractor’s insurance policy, before the State of Hawaii issues the Notice
29 to Proceed, the Contractor shall obtain and submit to the Engineer a
30 Certificate of Insurance and a written policy endorsement that confirms the
31 State of Hawaii and its officers and employees are additional insureds for
32 the specific State project number and project title under such insurance
33 policies. The written policy endorsement must be issued by the insurance
34 company insuring the Contractor for the specified policy type or by an
35 agent of such insurance company who is vested with the authority to issue
36 a written policy endorsement. The insurer’s agent shall also submit
37 written confirmation of such authority to bind the insurer. Any delays in
38 the issuance of the Notice to Proceed attributed to the failure to obtain the
39 proof of the State of Hawaii and its officers and employees’ additional
40 insured status shall be charged to the Contractor.

41
42 A mere Certificate of Insurance issued by a broker who represents
43 the Contractor (but not the Contractor’s insurer), or by any other party who
44 is not authorized to contractually name the State as an additional insured
45 under the Contractor’s insurance policy, is not sufficient to meet the
46 Contractor’s insurance obligations.

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Certificates shall contain a provision that coverages being certified will not be cancelled or materially changed without giving the Engineer at least thirty (30) days prior written notice. Contractor will immediately provide written notice to the Director should any of the insurance policies evidenced on its Certificate of Insurance form be cancelled, reduced in scope or coverage, or not renewed upon expiration. Should any policy be canceled before final acceptance of the work by the State, and the Contractor fails to immediately procure replacement insurance as specified, the State, 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 or to become 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 State harmless pursuant to other provisions of this contract. In no instance will the State'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 be primary and cover the insured for all work to be performed under the contract, all work performed incidental thereto or directly or indirectly connected therewith, including but not limited to traffic detour work, barricades, warnings, diversions, lane closures, and 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 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.

(B) Types of Insurance. 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 any subcontractor or by anyone directly or indirectly employed by any of them or by anyone for whose acts any of them may be liable.

92 **(1) Workers' Compensation.** The Contractor shall obtain
93 worker's compensation insurance for all persons whom they
94 employ in carrying out the work under this contract. This insurance
95 shall be in strict conformity with the requirements of the most
96 current and applicable State of Hawaii Worker's Compensation
97 Insurance laws in effect on the date of the execution of this contract
98 and as modified during the duration of the contract.
99

100 **(2) Auto Liability.** The Contractor shall obtain Auto Liability
101 Insurance covering all owned, non-owned and hired autos with a
102 Combined single Limit of not less than \$1,000,000 per occurrence
103 for bodily injury and property damage with the State of Hawaii
104 named as additional insured. Refer to SPECIAL CONDITIONS for
105 any additional requirements.
106

107 **(3) General Liability.** The Contractor shall obtain General
108 Liability insurance with a limit of not less than \$2,000,000 per
109 occurrence and in the Aggregates for each of the following:
110

111 (a) Products - Completed/Operations Aggregate,
112

113 (b) Personal & Advertising Injury, and
114

115 (c) Bodily Injury & Property Damage
116

117 The General Liability insurance shall include the State as an
118 Additional Insured. The required limit of insurance may be provided
119 by a single policy or with a combination of primary and excess
120 policies. Refer to SPECIAL CONDITIONS for any additional
121 requirements.
122

123 **(4) Builders Risk For All Work.** The Contractor shall take out
124 a policy of builder's risk insurance for the full replacement value of
125 the project work; from a company licensed or otherwise authorized
126 to do business in the State of Hawaii; naming the State as an
127 additional insured under each policy; and covering all work, labor,
128 and materials furnished by such Contractor and all its
129 subcontractors against loss by fire, windstorm, tsunamis,
130 earthquakes, lightning, explosion, other perils covered by the
131 standard Extended Coverage Endorsement, vandalism, and
132 malicious mischief. Refer to SPECIAL CONDITIONS for any
133 additional requirements."
134

135 **(II) Amend Section 107.03 Working Hours; Night Work** by adding the
136 following after line 142:
137

138 "On July 5, 2012, Senate Bill 3010 SD2 HD1 was signed into law which
139 exempts the State Department of Transportation from state noise requirements
140 under Chapter 342F, Hawaii Revised Statutes, noise pollution.
141

142 The Contractor may work between the hours of 6 p.m. and 7 a.m. from
143 Monday to Sunday subject to the following conditions:
144

- 145 (A) The Contractor shall make every effort to minimize noise emanating
146 from the project.
147
- 148 (B) The use of equipment with noise decibels greater than 90 shall be
149 prohibited after 10 p.m.
150
- 151 (C) The use of reverse signal alarms shall be prohibited during the
152 variance hours. Alternative methods such as utilizing a ground
153 guide for signaling shall be employed.
154
- 155 (D) Traffic noise from heavy vehicles traveling to and from the
156 construction site shall be minimized near residences.
157
- 158 (E) The Contractor shall have a job-site inspector to whom immediate
159 complaints can be forwarded for prompt response and who shall
160 have the general responsibility of monitoring quiet work procedures.
161
- 162 (F) The Contractor shall give sufficient notice regarding the project to
163 any residents that may be impacted by the nighttime activity. The
164 notification for the planned nighttime activity shall also contain the
165 name and telephone number of the job-site inspector. In addition, a
166 copy of any notifications, as well as progress reports, shall also be
167 sent to the Noise, Radiation and Indoor Air Quality Branch, State
168 Department of Health.
169
- 170 (G) If the noise level is such that numerous complaints are received by
171 the State, the Contractor shall cease operations upon receipt of an
172 order to complete the project during hours on weekdays and
173 weekends as directed.
174
- 175 (H) The Contractor shall notify the Noise, Radiation and Indoor Air
176 Quality Branch, State Department of Health, as to the date and time
177 of any variance hour activity as soon as the dates are confirmed
178 and also when the project is completed."
179

180 (III) Amend **Section 107.10 Furnishing Right-of-Way** by adding the following
181 paragraphs after line 279:
182

183 "The State DOT is processing Right-of-Entry and Rental Agreements with
184 the following property owners and the Contractor shall comply with terms of the
185 Right-of-Entry and Rental Agreements, including but not limited to, the following:
186

187 **(A)** Mitch A. Afalava, Marvel M. Afalava, Teresa A. Tanoai, and Rita S.
188 Afalava, TMK (1) 5-4-018-001 (portion)
189

190 **(1)** STATE's Responsibility. The State shall be responsible, to
191 the extent permitted by law, for damage or injury caused by the
192 State's officers and employees in the scope of their employment
193 provided that the State's liability for such damage or injury has been
194 determined by a court or agreed to by the State. The State shall
195 pay for such damage and injury provided that funds are appropriate
196 and allotted for that purpose.
197

198 **(2)** Insurance by CONTRACTOR. The State shall require the
199 CONTRACTOR to include the GRANTOR and the STATE as
200 additional insured on the insurance policies (Comprehensive
201 Personal Injury and Property Damage Liability; Automobile Bodily
202 Injury and Property Damage; and Worker's Compensation) that will
203 be prescribed by the proposed Project construction contract. Said
204 insurance policies shall also provide a waiver of subrogation in
205 GRANTOR's favor. The STATE shall require the CONTRACTOR
206 to provide written verification of compliance in the form of an
207 insurance certificate to the GRANTOR prior to the start of Project
208 construction.
209

210 **(3)** Indemnification by CONTRACTOR. The STATE shall
211 ensure that the CONTRACTOR shall execute an agreement
212 whereby the CONTRACTOR would indemnify the GRANTOR
213 against any liability, including all loss, damages, costs, expenses
214 and attorney's fees, for any damage, if any, or injury to or death of
215 persons when such damage, injury or death is caused by
216 negligence, gross negligence, or willful action of the
217 CONTRACTOR in the exercise of the rights granted under this
218 Agreement; provided that the CONTRACTOR shall not be obligated
219 to indemnify the GRANTOR if and to the extent that such damage,
220 injury, or death is caused by the negligence of the GRANTOR or
221 any of the GRANTOR's officers, employees, agents, licensees,
222 invitees, contractors, representatives, or guests.
223

224 **(4)** Restoration. Upon the full or partial termination of this
225 Agreement, the STATE and/or its contractors shall remove all
226 equipment or tangible personal property from the Property or such
227 portion thereof not required by the STATE and shall restore the
228 ground condition of only of that portion of the Property no longer

229 required by the STATE to the condition as mentioned in the
230 STATE's offer letter to you.

231
232 The State DOT is processing a Grant of Easement with the following
233 property owners and the Contractor shall comply with terms of the Grant of
234 Easement, including but not limited to, the following:

235
236 (A) Mervyn M. and Lynette H. F. Kotake, TMK (1) 5-4-011-004 (portion)

237
238 (1) State's Responsibility. The GRANTEE shall require its
239 contractor for the Project within the Easement Area ("Contractor")
240 to (1) to include GRANTOR as additional insured on the insurance
241 policies (Comprehensive Personal Injury and Property Damage
242 Liability; Automobile Bodily Injury and Property Damage; and
243 Worker's Compensation) that are prescribed by the proposed
244 project construction contract, and (2) to provide to GRANTOR (1) a
245 Certificate of Insurance evidencing such coverage and (2) copies of
246 the insurance policies, and the same for any renewals thereof
247 during the term of this Easement.

248 Additionally, the GRANTEE shall be responsible, to the extent
249 permitted by law, for damage or injury caused by the GRANTEE's
250 officers and employees in the scope of their employment provided
251 that the GRANTEE's liability for such damage or injury has been
252 determined by a court or agreed to by the GRANTEE. The
253 GRANTEE shall pay for such damage and injury provided that
254 funds are appropriate and allotted for that purpose.

255
256 (2) Maintenance and Repair. GRANTEE shall (either directly or
257 through its contractors or agents) (a) secure the entire parcel with a
258 chain link fence or with comparable security measures to protect
259 the Parcel and the improvements thereon from vandalism, theft, or
260 damages by trespassers or unauthorized third parties; (b) provide
261 for security patrols of the Parcel on a regular basis; (c) maintain the
262 Parcel and the improvements thereon in good condition and repair,
263 reasonable wear and tear excepted; and (d) regularly maintain the
264 yard area in a neat and clean condition.

265
266 (3) Removal upon Termination and Restoration. Upon any full
267 or partial termination or cancellation of this Grant of Easement,
268 GRANTEE and/or its contractors shall, at GRANTEE's sole cost
269 and expense, remove any and all portions of the GRANTEE
270 facilities installed or constructed on, within, under, over or across
271 the Easement Area or the Parcel and any improvements,
272 equipment, facilities, components and appurtenances relating
273 thereto and restore the Easement Area and the improvements
274 thereon to the same condition they were at the commencement of

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this Easement, and shall restore or repair any portion of the Easement Area or the Parcel altered by the GRANTEE's facilities including installation of a protective barrier between the Parcel and the public right-of-way, restoration of landscaping, except for trees removed and compensated for by GRANTEE, and turf re-establishment to approximately the same condition as existed prior to the commencement of this Grant of Easement, as reasonably determined by mutual agreement. GRANTEE shall be solely responsible for all reasonable costs and expenses incurred in completing and accomplishing such restoration. GRANTEE shall have no duty or obligation to restore other than explicitly stated herein.

(4) Indemnification by Contractor. The GRANTEE shall ensure that the Contractor shall execute an agreement (and provide a copy to GRANTOR) whereby the Contractor shall indemnify and hold harmless the GRANTOR against any liability, including all loss, damages, costs, expenses and attorney's fees, for any damage to real or personal property, if any, and including environmental damage, or injury to or death of persons when such damage, injury of death is caused by the negligence, gross negligence or willful action of the Contractor in the exercise of the rights granted under this Grant of Easement, provided, that the Contractor shall not be obligated to indemnify and hold harmless the GRANTOR if and to the extent that such damage, injury or death is caused solely by the negligence of the GRANTOR, any of the GRANTOR's officers, employees, agents or representatives."

END OF SECTION 107

1 Amend **Section 108 – PROSECUTION AND PROGRESS** to read as follows:
2

3 **“SECTION 108 – PROSECUTION AND PROGRESS**
4

5
6 **108.01 Notice to Proceed (NTP).** A Notice To Proceed will be issued to the
7 Contractor not more 30 calendar days after the contract certification date. The
8 Engineer may suspend the contract before issuing the Notice To Proceed, in
9 which case the Contractor’s remedies are exclusively those set forth in Subsection
10 108.10 – Suspension of Work.
11

12 The Contractor shall be allowed up to 14 calendar days after the Notice to
13 Proceed to begin physical work. The Start Work Date will be established when
14 this period ends or on the actual day that physical work begins, whichever is first.
15 Charging of Contract Time will begin on the Start Work Date. The Contractor shall
16 notify the Engineer, in writing, at least five working days before beginning physical
17 work.
18

19 In the event that the Contractor fails to start physical work within the time
20 specified, the Engineer may terminate the contract in accordance with Subsection
21 108.11 – Termination of Contract for Cause.
22

23 During the period between the Notice to Proceed and the Start Work Date
24 the Contractor should adjust work forces, equipment, schedules, and procure
25 materials and required permits, prior to beginning physical work.
26

27 Any physical work done prior to the Start Work Date will be considered
28 unauthorized work. If the Engineer does not direct that the unauthorized work be
29 removed, it shall be paid for after the Start Work Date and only if it is acceptable.
30

31 In the event that the Engineer establishes, in writing, a Start Work Date that
32 is beyond 60 calendar days from the Notice to Proceed date, the Contractor may
33 submit a claim in accordance with, Subsection 107.15 – Disputes and Claims for
34 increased labor and material costs which are directly attributable to the delay
35 beyond the first 60 calendar days after the Notice to Proceed date.
36

37 The Contractor shall notify the Engineer at least 24 hours before restarting
38 physical work after a suspension of work pursuant to Subsection 108.10 –
39 Suspension of Work.
40

41 Once physical work has begun, the Contractor shall work expeditiously and
42 pursue the work diligently to completion with the contract time. If a portion of the
43 work is to be done in stages, the Contractor shall leave the area safe and usable
44 for the user agency and the public at the end of each stage.
45

46 **108.02 Prosecution of Work.** Unless otherwise permitted by the Engineer, in
47 writing, the Contractor shall not commence with physical construction unless
48 sufficient materials and equipment are available for either continuous construction
49 or completion of a specified portion of the work.

50
51 **108.03 Preconstruction Data Submittals.** The awardee shall submit to the
52 Engineer for information and review the pre-construction submittals within 21
53 calendar days from award. Until the items listed below are received and found
54 acceptable by the Engineer, the Contractor shall not start physical work unless
55 otherwise authorized to do so in writing and subject to such conditions set by the
56 Engineer. Charging of Contract Time will not be delayed, and additional contract
57 time will not be granted due to Contractor delay in submitting acceptable
58 preconstruction submittals. No progress payment will be made to the Contractor
59 until the Engineer acknowledges, in writing, receipt of the following preconstruction
60 submittals acceptable to the Engineer:

- 61
62 (1) List of the Superintendent and other Supervisory Personnel, and
63 their contact information.
- 64
65 (2) Name of person(s) authorized to sign for the Contractor.
- 66
67 (3) Work Schedule including hours of operation.
- 68
69 (4) Initial Progress Schedule (See Subsection 108.06 – Progress
70 Schedule).
- 71
72 (5) Water Pollution and Siltation Control Submittals, including Site-
73 Specific Best Management Practice Plan.
- 74
75 (6) Solid Waste Disposal form.
- 76
77 (7) Tax Rates.
- 78
79 (8) Insurance Rates.
- 80
81 (9) Certificate of Insurance, satisfactory to the Engineer, indicating that
82 the Contractor has in place all insurance coverage required by the contract
83 documents.
- 84
85 (10) Schedule of agreed prices.
- 86
87 (11) List of suppliers.
- 88
89 (12) Traffic Control Plan, if applicable.

90 **108.04 Character and Proficiency of Workers.** The Contractor shall at all
91 times provide adequate supervision and sufficient labor and equipment for
92 prosecuting the work to full completion in the manner and within the time required
93 by the contract. The superintendent and all other representatives of the
94 Contractor shall act in a civil and honest manner in all dealings with the Engineer,
95 all other State officials and representatives, and the public, in connection with the
96 work.

97
98 All workers shall possess the proper license, certification, job classification,
99 skill, training, and experience necessary to properly perform the work assigned to
100 them.

101
102 The Engineer may direct the removal of any worker(s) who does not carry
103 out the assigned work in a proper and skillful manner or who is disrespectful,
104 intemperate, violent, or disorderly. The worker shall be removed forthwith by the
105 Contractor and will not work again without the written permission of the Engineer.

106
107 **108.05 Contract Time.**

108
109 **(A) Calculation of Contract Time.** When the contract time is on a
110 working day basis, the total contract time allowed for the performance of the
111 work will be the number of working days shown in the contract plus any
112 additional working days authorized in writing as provided hereinafter. The
113 count of elapsed working days to be charged against contract time, will
114 begin from the Start Work Date and will continue consecutively to the date
115 of Substantial Completion. When multiple shifts are used to perform the
116 work, the State will not consider the hours worked over the normal eight
117 working hours per day or night as an additional working day.

118
119 When the contract is on a calendar day basis, the total contract time
120 allowed for the performance of the work will be the number of days shown
121 in the contract plus any additional days authorized in writing as provided
122 hereinafter. The count of elapsed days to be charged against contract time
123 will begin from the Start Work Date and will continue consecutively to the
124 date of Substantial Completion. The Engineer will exclude days elapsing
125 between the orders of the Engineer to suspend work and resume work for
126 suspensions not the fault of the Contractor.

127
128 **(B) Modifications of Contract Time.** Whenever the Contractor
129 believes that an extension of contract time is justified, the Contractor shall
130 serve written notice on the Engineer not more than five working days after
131 the occurrence of the event that causes a delay or justifies a contract time
132 extension. Contract time may be adjusted for the following reasons or
133 events, but only if and to the extent the critical path has been affected:
134

135 **(1) Changes in the Work, Additional Work, and Delays**
136 **Caused by the State.** If the Contractor believes that an extension of
137 time is justified on account of any act or omission by the State, and is
138 not adequately provided for in a field order or change order, it must
139 request the additional time as provided above. At the request of the
140 Engineer, the Contractor must show how the critical path will be
141 affected and must also support the time extension request with
142 schedules, as well as statements from its subcontractors, suppliers,
143 or manufacturers, as necessary. Claims for compensation for any
144 altered or additional work will be determined pursuant to Subsection
145 104.02 – Changes.

146
147 Additional time to perform the extra work will be added to the
148 time allowed in the contract without regard to the date the change
149 directive was issued, even if the contract completion date has
150 passed. A change requiring time issued after contract time has
151 expired will not constitute an excusal or waiver of pre-existing
152 Contractor delay.

153
154 **(2) Delay for Permits.** For delays in the routine application and
155 processing time required to obtain necessary permits, including
156 permits to be obtained from State agencies, the Engineer may grant
157 an extension provided that the permit takes longer than 30 days to
158 acquire and the delay is not caused by the Contractor, and provided
159 that as soon as the delay occurs, the Contractor notifies the
160 Engineer in writing that the permits are not available. Permits
161 required by the contract that take less than 30 days to acquire from
162 the time which the appropriate documents are granted shall be
163 acquired between Notice to Proceed and Start Work Date or
164 accounted for in the contractor's progress schedule. Time
165 extensions will be the exclusive relief granted on account of such
166 delays.

167
168 **(3) Delays Beyond Contractor's Control.** For delays caused by
169 acts of God, a public enemy, fire, inclement weather days or adverse
170 conditions resulting therefrom, earthquakes, floods, epidemics,
171 quarantine restrictions, labor disputes impacting the Contractor or
172 the State, freight embargoes and other reasons beyond the
173 Contractor's control, the Contractor may be granted an extension of
174 time provided that:

175
176 **(a)** In the written notice of delay to the Engineer, the
177 Contractor describes possible effects on the completion date
178 of the contract. The description of delays shall:
179

180 1. State specifically the reason or reasons for the
181 delay and fully explain in a detailed chronology how the
182 delay affects the critical path.

183
184 2. Include copies of pertinent documentation to
185 support the time extension request.

186
187 3. Cite the anticipated period of delay and the time
188 extension requested.

189
190 4. State either that the above circumstances have
191 been cleared and normal working conditions restored
192 as of a certain day or that the above circumstances will
193 continue to prevent completion of the project.

194
195 **(b)** The Contractor shall notify the Engineer in writing when
196 the delay ends. Time extensions will be the exclusive relief
197 granted and no additional compensation will be paid the
198 Contractor for such delays.

199
200 **(4) Delays in Delivery of Materials or Equipment.** For delays
201 in delivery of materials or equipment, which occur as a result of
202 unforeseeable causes beyond the control and without fault of the
203 Contractor, its subcontractor(s) or supplier(s), time extensions shall
204 be the exclusive relief granted and no additional compensation will
205 be paid the Contractor on account of such delay. The delay shall not
206 exceed the difference between the originally scheduled delivery date
207 and the actual delivery date. The Contractor may be granted an
208 extension of time provided that it complies with the following
209 procedures:

210
211 **(a)** The Contractor's written notice to the Engineer must
212 describe the delays and state the effect such delays may have
213 on the critical path.

214
215 **(b)** The Contractor, if requested, must submit to the
216 Engineer within five days after a firm delivery date for the
217 material and equipment is established, a written statement
218 regarding the delay. The Contractor must justify the delay as
219 follows:

220
221 1. State specifically all reasons for the delay.
222 Explain in a detailed chronology the effect of the delay
223 on the critical path.
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2. Submit copies of purchase order(s), factory invoice(s), bill(s) of lading, shipping manifest(s), delivery tag(s), and any other documents to support the time extension request.

3. Cite the start and end date of the delay and the time extension requested.

(5) Delays for Suspension of Work. When the performance of the work is totally suspended for one or more days (calendar or working days, as appropriate) by order of the Engineer in accordance with Subsections 108.10(A)(1), 108.10(A)(2), or 108.10(A)(5) the number of days from the effective date of the Engineer's order to suspend operations to the effective date of the Engineer's order to resume operations shall not be counted as contract time and the contract completion date will be adjusted. During periods of partial suspensions of the work, the Contractor will be granted a time extension only if the partial suspension affects the critical path. If the Contractor believes that an extension of time is justified for a partial suspension of work, it must request the extension in writing at least five working days before the partial suspension will affect the critical operation(s) in progress. The Contractor must show how the critical path was increased based on the status of the work and must also support its claim if requested, with statements from its subcontractors. A suspension of work will not constitute a waiver of pre-existing Contractor delay.

(6) Contractor Caused Delays. No time extension will be granted under the following circumstances:

(a) Delays within the Contractor's control in performing the work caused by the Contractor, subcontractor, supplier, or any combination thereof.

(b) Delays within the Contractor's control in arrival of materials and equipment caused by the Contractor, subcontractor, supplier, or any combination thereof, in ordering, fabricating, and delivery.

(c) Delays requested for changes which do not affect the critical path.

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(d) Delays caused by the failure of the Contractor to make submittals in a timely manner for review and acceptance by the Engineer, such as but not limited to shop drawings, descriptive sheets, material samples, and color samples except as covered in Subsection 108.05(B)(3) – Delays Beyond Contractor’s Control and 108.05(B)(4) – Delays in Delivery of Materials or Equipment.

(e) Delays caused by the failure to submit sufficient information and data in a timely manner in the proper form in order to obtain necessary permits related to the work.

(f) Failure to follow the procedure within the time allowed by contract to request a time extension.

(g) Failure of the Contractor to provide evidence sufficient to support the time extension request.

(7) **Reduction in Time.** If the State deletes or modifies any portion of the work, an appropriate reduction of contract time may be made in accordance with Subsection 104.02 - Changes.

108.06 Progress Schedules.

(A) **Forms of Schedule.** All schedules shall be submitted using the specific computer program designated in the bid documents. If no such scheduling software program is designated, then all schedules shall be submitted using the latest version of Microsoft Project by Microsoft or approved equivalent software program.

Schedule submittals shall be as follows:

(1) **For Contracts \$2,000,000 or less or For Contract Time 100 Working Days or 140 Calendar Days or Less.** For contracts of \$2,000,000 or less or for contract time of 100 working days or 140 calendar days or less, the progress schedule will be a Time Scaled Logic Diagram (TSLD). The Contractor shall submit a TSLD submittal package meeting the following requirements and having these essential and distinctive elements:

(a) The major features of work, such as but not limited to BMP installation, grubbing, roadway excavation, structure excavation, structure construction, shown in the chronological order in which the Contractor proposes to work that feature or work and its location on the project. The schedule shall account for normal inclement weather, unusual soil or other

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conditions that may influence the progress of the work, schedules, and coordination required by any utility, off or on site fabrications, and other pertinent factors that relate to progress;

(b) All features listed or not listed in the contract documents that the Contractor considers a controlling factor for the timely completion of the contract work.

(c) The time span and sequence of the activities or events for each feature, and its interrelationship and interdependencies in time and logic to other features in order to complete the project.

(d) The total anticipated time necessary to complete work required by the contract.

(e) A chronological listing of critical intermediate dates or time periods for features or milestones or phases that can affect timely completion of the project.

(f) Major activities related to the location on the project.

(g) Non-construction activities, such as submittal and acceptance periods for shop drawings and material, procurement, testing, fabrication, mobilization, and demobilization or order dates of long lead material.

(h) Set schedule logic for out of sequence activities to retain logic. In addition, open ends shall be non-critical.

(i) Show target bars for all activities.

(j) Vertical and horizontal sight lines both major and minor shall be used as well as a separator line between groups. The Engineer will determine frequency and style.

(k) The file name, print date, revision number, data and project title and number shall be included in the title block.

(l) Have columns with the appropriate data in them for activity ID, description, original duration, remaining duration, early start, early finish, total float, percent complete, resources. The resource column shall list who is responsible for the work to be done in the activity. These columns shall be to the left of the bar chart.

359 **(2) For Contracts Which Have A Contract Amount More Than**
360 **\$2,000,000 Or Having A Contract Time Of More Than 100**
361 **Working Days Or 140 Calendar Days.** For contracts which have a
362 contract amount more than \$2,000,000 or contract time of more than
363 100 working days or 140 calendar days, the Contractor shall submit
364 a Timed-Scaled Logic Diagram (TSLD) meeting the following
365 requirements and having these essential and distinctive elements:
366

367 **(a)** The information and requirements listed in Subsection
368 108.06(A)(1) – For Contracts \$2,000,000 or Less or For
369 Contract Time 100 Working Days or 140 Calendar Days or
370 Less.

371
372 **(b)** Additional reports and graphics available from the
373 software as requested by the Engineer.

374
375 **(c)** Sufficient detail to allow at least weekly monitoring of
376 the Contractor and subcontractor's operations.
377

378 **(d)** The time scaled schematic shall be on a calendar or
379 working days basis. What will be used shall be determined by
380 how the contract keeps track of time. It will be the same. Plot
381 the critical calendar dates anticipated.
382

383 **(e)** Breakdown of activity, such as forming, placing
384 reinforcing steel, concrete pouring and curing, and stripping in
385 concrete construction. Indicate location of work to be done in
386 such detail that it would be easily determined where work
387 would be occurring within approximately 200 feet.
388

389 **(f)** Latest start and finish dates for critical path activities.

390
391 **(g)** Identify responsible subcontractor, supplier, and others
392 for their respective activity.
393

394 **(h)** No individual activity shall have duration of more than
395 20 calendar days unless requested and approved by the
396 Engineer.
397

398 **(i)** All activities shall have work breakdown structure
399 codes and activity codes. The activity codes shall have
400 coding that incorporates information for phase, location, who
401 is responsible for doing work and type of operation and
402 activity description.
403

404 (j) Incorporate all physical access and availability
405 restraints.

406
407 **(B) Inspection and Testing.** All schedules shall provide reasonable
408 time and opportunity for the Engineer to inspect and test each work activity.
409

410 **(C) Engineer's Acceptance of Progress Schedule.** The submittal of,
411 and the Engineer's receipt of any progress schedule, shall not be deemed
412 an agreement to modify any terms or conditions of the contract. Any
413 modifications to the contract terms and conditions that appear in or may be
414 inferred from an acceptable schedule will not be valid or enforceable unless
415 and until the Engineer exercises discretion to issue an appropriate change
416 order. Nor shall any submittal or receipt imply the Engineer's approval of
417 the schedule's breakdown, its individual elements, any critical path that may
418 be shown, nor shall it obligate the State to make its personnel available
419 outside normal working hours or the working hours established by the
420 Contract in order to accommodate such schedule. The Contractor has the
421 risk of all elements (whether or not shown) of the schedule and its
422 execution. No claim for additional compensation, time, or both, shall be
423 made by the Contractor or recognized by the Engineer for delays during
424 any period for which an acceptable progress schedule or an updated
425 progress schedule as required by Subsection 108.06(E) – Contractor's
426 Continuing Schedule Submittal Requirements had not been submitted. Any
427 acceptance or approval of the schedule shall be for general format only and
428 shall not be deemed an agreement by the State that the construction
429 means, methods, and resources shown on the schedule will result in work
430 that conforms to the contract requirements or that the sequences or
431 durations indicated are feasible.
432

433 **(D) Initial Progress Schedule.** The Contractor shall submit an initial
434 progress schedule. The initial progress schedule shall consist of the
435 following:
436

- 437 (1) Four sets of the TSLD schedule.
- 438
- 439 (2) All the software files and data to re-create the TSLD in a
440 computerized software format as specified by the Engineer.
- 441
- 442 (3) A listing of equipment that is anticipated to be used on the
443 project. Including the type, size, make, year of manufacture, and all
444 information necessary to identify the equipment in the Rental Rate
445 Blue Book for Construction Equipment.
- 446
- 447 (4) An anticipated manpower requirement graph plotting contract
448 time and total manpower requirement. This may be superimposed
449 over the payment graph.
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(5) A Method Statement that is a detailed narrative describing the work to be done and the method by which the work shall be accomplished for each major activity. A major activity is an activity that:

- (a) Has a duration longer than five days.
- (b) Is a milestone activity.
- (c) Is a contract item that exceeds \$10,000 on the contract cost proposal.
- (d) Is a critical path activity.
- (e) Is an activity designated as such by the Engineer.

Each Method Statement shall include the following items needed to fulfill the schedule:

- (a) Quantity, type, make, and model of equipment.
- (b) The manpower to do the work, specifying worker classification.
- (c) The production rate per eight hour day, or the working hours established by the contract documents needed to meet the time indicated on the schedule. If the production rate is not for eight hours, the number of working hours shall be indicated.

(6) Two sets of color time-scaled project evaluation and review technique charts ("PERT") using the activity box template of Logic – Early Start or such other template designated by the Engineer.

If the contract documents establish a sequence or order for the work, the initial progress schedule shall conform to such sequence or order.

(E) Contractor’s Continuing Schedule Submittal Requirements.

After the acceptance of the initial TSLD and when construction starts, the Contractor shall submit four plotted progress schedules, two PERT charts, and reports on all construction activities every two weeks (bi-weekly). This scheduled bi-weekly submittal shall also include an updated version of the project schedule in a computerized software format as specified by the Engineer. The submittal shall have all the information needed to re-create that time period’s TSLD plot and reports. The bi-weekly submittal shall include, but not limited to, an update of activities based on actual durations,

497 all new activities and any changes in duration or start or finish dates of any
498 activity.

499
500 The Contractor shall submit with every update, in report form
501 acceptable to the Engineer, a list of changes to the progress schedule since
502 the previous schedule submittal. The Engineer may change the frequency
503 of the submittal requirements but may not require a submittal of the
504 schedule to be more than once a week. The Engineer may decrease the
505 frequency of the submittal of the bi-weekly schedule.

506
507 The Contractor shall submit updates of the anticipated work
508 completion graph, equipment listing, manpower requirement graph or
509 method statement when requested by the Engineer. The Contractor shall
510 submit such updates within 4 calendar days from the date of the request by
511 the Engineer.

512
513 The Engineer may withhold progress payment until the Contractor is
514 in compliance with all schedule update requirements

515
516 **(F) Float.** All float appearing on a schedule is a shared commodity.
517 Float does not belong to or exist for the exclusive use or benefit of either
518 the State or the Contractor. The State or the Contractor has the opportunity
519 to use available float until it is depleted. Float has no monetary value.

520
521 **(G) Scheduled Meetings.** The Contractor shall meet on a bi-weekly
522 basis with the Engineer to review the progress schedule. The Contractor
523 shall have someone attending the meeting that can answer all questions on
524 the TSLD and other schedule related submittals.

525
526 **(H) Accelerated Schedule; Early Completion.** If the Contractor
527 submits an accelerated schedule (shorter than the contract time), the
528 Engineer's review and acceptance of an accelerated schedule does not
529 constitute an agreement or obligation by the State to modify the contract
530 time or completion date. The Contractor is solely responsible for and shall
531 accept all risks and any delays, other than those that can be directly and
532 solely attributable to the State, that may occur during the work, until the
533 contract completion date. The contract time or completion date is
534 established for the benefit of the State and cannot be changed without an
535 appropriate change order or Substantial Completion granted by the State.
536 The State may accept the work before the completion date is established,
537 but is not obligated to do so.

538 If the TSLD indicates an early completion of the project, the
539 Contractor shall, upon submittal of the schedule, cooperate with the
540 Engineer in explaining how it will be achieved. In addition, the Contractor
541 shall submit the above explanation in writing which shall include the State's
542 part, if any, in achieving the early completion date. Early completion of the
543 project shall not rely on changes to the Contract Documents unless
544 approved by the Engineer.

545
546 **(l) Contractor Responsibilities.** The Contractor shall promptly
547 respond to any inquiries from the Engineer regarding any schedule
548 submission. The Contractor shall adjust the schedule to address directives
549 from the Engineer and shall resubmit the TSLD package to the Engineer
550 until the Engineer finds it acceptable.

551
552 The Contractor shall perform the work in accordance with the
553 submitted TSLD. The Engineer may require the Contractor to provide
554 additional work forces and equipment to bring the progress of the work into
555 conformance with the TSLD at no increase in contract price or contract time
556 whenever the Engineer determines that the progress of the work does not
557 insure completion within the specified contract time.

558
559 **108.07 Weekly Meeting.** In addition to the bi-weekly schedule meetings, the
560 Contractor shall be available to meet once a week with the Engineer at the time
561 and place as determined by the Engineer to discuss the work and its progress
562 including but not limited to, the progress of the project, potential problems,
563 coordination of work, submittals, erosion control reports, etc. The Contractor's
564 personnel attending shall have the authority to make decisions and answer
565 questions.

566
567 The Contractor shall bring to weekly meetings a detailed work schedule
568 showing the next three weeks' work. Submit directly an informational copy of the
569 three-week schedule to the Material Testing Research Branch (MTRB) on the
570 same day as the weekly meeting is held or was to be held or no less than once a
571 week for information use only. Number of copies of the detailed work schedule
572 to be submitted will be determined by the Engineer. The three-week schedule is in
573 addition to the TSLD and shall in no way be considered as a substitute for the
574 TSLD or vice versa. The three-week schedule shall show:

575
576 **(a)** All construction events, traffic control and BMP related activities in
577 such detail that the Engineer will be able to determine at what location and
578 type of work will be done for any day for the next three weeks. This is for
579 the State to use to plan its manpower requirements for that time period.

580
581 **(b)** The duration of all events and delays.

582

583 (c) The critical path clearly marked in red or marked in a manner that
584 makes it clearly distinguishable from other paths and is acceptable to the
585 Engineer.

586
587 (d) Critical submittals and requests for information (RFI's).

588
589 (e) The project title, project number, date created, period the schedule
590 covers, Contractor's name and creator of the schedule on each page.

591
592 Two days prior to each weekly meeting, the Contractor shall submit a
593 list of outstanding submittals, RFIs and issues that require discussion.

594
595 **108.08 Liquidated Damages for Failure to Complete the Work or Portions**
596 **of the Work on Time.** The actual amount of damages resulting from the
597 Contractor's failure to complete the contract in a timely manner is difficult to
598 accurately determine. Therefore, the amount of such damages shall be liquidated
599 damages as set forth herein and in the special provisions. The State may, at its
600 discretion, deduct the amount from monies due or that may become due under the
601 contract.

602
603 When the Contractor fails to reach substantial completion of the work for
604 which liquidated damages are specified, within the time or times fixed in the
605 contract or any extension thereof, in addition to all other remedies for breach that
606 may be available to the State, the Contractor shall pay liquidated damages to the
607 State, in the amount of \$5,000 per working day.

608
609 (A) **Liquidated Damages Upon Termination.** If the State terminates
610 on account of Contractor's default, liquidated damages may be charged
611 against the defaulting Contractor and its surety until final completion of
612 work.

613
614 (B) **Liquidated Damages for Failure to Complete the Punchlist.** The
615 Contractor shall complete the work on any punchlist created after the pre-
616 final inspection, within the contract time or any extension thereof.

617
618 When the Contractor fails to complete the work on such punchlist
619 within the contract time or any extension thereof, the Contractor shall pay
620 liquidated damages to the State of 20 percent of the amount of liquidated
621 damages established for failure to substantially complete the work within
622 contract time. Liquidated damages shall not be assessed for the period
623 between:

624
625 (1) Notice from the Contractor that the project is substantially
626 complete and the time the punchlist is delivered to the Contractor.

628 (2) The date of the completion of punchlist as determined by the
629 Engineer and the date of the successful final inspection, and

630
631 (3) The date of the Final Inspection that results in Substantial
632 Completion and the receipt by the Contractor of the written notice of
633 Substantial Completion.
634

635 (C) **Actual Damages Recoverable If Liquidated Damages Deemed**
636 **Unenforceable.** In the event a court of competent jurisdiction holds that
637 any liquidated damages assessed pursuant to this contract are
638 unenforceable, the State will be entitled to recover its actual damages for
639 Contractor's failure to complete the work, or any designated portion of the
640 work within the time set by the contract.
641

642 **108.09 Rental Fees for Unauthorized Lane Closure or Occupancy.** In
643 addition to all other remedies available to the State for Contractor's breach of the
644 terms of the contract, the Engineer will assess the rental fees in the amount of
645 \$500 for every one-to fifteen-minute increment or portion thereof, for each location,
646 for each roadway lane closed to public use or encroached upon or occupied
647 beyond the time periods authorized in the contract or by the Engineer. The State
648 may, at its discretion, deduct the amount from monies due or that may become
649 due under the contract. The rental fee may be waived in whole or part if the
650 Engineer determines that the unauthorized period of lane closure or occupancy
651 was due to factors beyond the control of the Contractor. Equipment breakdown is
652 not a cause to waive rental fees.
653

654 **108.10 Suspension of Work.**
655

656 (A) **Suspension of Work.** The Engineer may, by written order, suspend
657 the performance of the work, either in whole or in part, for such periods as
658 the Engineer may deem necessary, for any cause, including but not limited
659 to:
660

661 (1) Weather or soil conditions considered unsuitable for
662 prosecution of the work.
663

664 (2) Whenever a redesign that may affect the work is deemed
665 necessary by the Engineer.
666

667 (3) Unacceptable noise or dust arising from the construction even
668 if it does not violate any law or regulation.
669

670 (4) Failure on the part of the Contractor to:
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672 (a) Correct conditions unsafe for the general public or for
673 the workers.

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(b) Carry out orders given by the Engineer.

(c) Perform the work in strict compliance with the provisions of the contract.

(d) Provide adequate supervision on the jobsite.

(5) The convenience of the State.

(B) Partial and Total Suspension. Suspension of work on some but not all items of work shall be considered a “partial suspension”. Suspension of work on all items shall be considered “total suspension”. The period of suspension shall be computed from the date set out in the written order for work to cease until the date of the order for work to resume.

(C) Reimbursement to Contractor. In the event that the Contractor is ordered by the Engineer in writing as provided herein to suspend all work under the contract for the reasons specified in Subsections 108.10(A)(2), 108.10(A)(3), or 108.10(A)(5) of the “Suspension of Work” paragraph, the Contractor may be reimbursed for actual direct costs incurred on work at the jobsite, as authorized in writing by the Engineer, including costs expended for the protection of the work. An allowance of 5 percent for indirect categories of delay costs will be paid on any reimbursed direct costs, including extended branch and home-office overhead and delay impact costs. No allowance will be made for anticipated profits. Payment for equipment which is ordered to standby during such suspension of work shall be made as described in Subsection 109.06(H) - Idle and Standby Equipment.

(D) Cost Adjustment. If the performance of all or part of the work is suspended for reasons beyond the control of the Contractor except an adjustment shall be made for any increase in cost of performance of this contract (excluding profit) necessarily caused by such suspension, and the contract modified in writing accordingly.

However, no adjustment to the contract price shall be made for any suspension, delay, or interruption:

(1) For weather related conditions.

(2) To the extent that performance would have been so suspended, delayed, or interrupted by any other cause, including the fault or negligence of the Contractor.

720 (3) Or, for which an adjustment is provided for or excluded under
721 any other provision of this Contract.

722
723 **(E) Claims for Adjustment.** Any adjustment in contract price made
724 shall be determined in accordance with Subsections 104.02 – Changes and
725 104.06 – Methods of Price Adjustment.

726
727 Any claims for such compensation shall be filed in writing with the
728 Engineer within 30 days after the date of the order to resume work or the
729 claim will not be considered. The claim shall conform to the requirements
730 of Subsection 107.15(D) – Making of a Claim. The Engineer will take the
731 claim under consideration, may make such investigations as are deemed
732 necessary and will be the sole judge as to the equitability of the claim. The
733 Engineer’s decision will be final.

734
735 **(F) No Adjustment.** No provision of this clause shall entitle the
736 Contractor to any adjustments for delays due to failure of its surety, the
737 cancellation or expiration of any insurance coverage required by the
738 contract documents, for suspensions made at the request of the Contractor,
739 for any delay required under the contract, for suspensions, either partial or
740 whole, made by the Engineer under Subsection 108.10(A)(4) of the
741 “Suspension of work” paragraph.

742
743 **108.11 Termination of Contract for Cause.**

744
745 **(A) Default.** If the Contractor refuses or fails to perform the work, or any
746 separable part thereof, with such diligence as will assure its completion
747 within the time specified in this contract, or any extension thereof, or
748 commits any other material breach of this contract, and further fails within
749 seven days after receipt of written notice from the Engineer to commence
750 and continue correction of the refusal or failure with diligence and
751 promptness, the Engineer may, by written notice to the Contractor, declare
752 the Contractor in breach and terminate the Contractor’s right to proceed
753 with the work or the part of the work as to which there has been delay or
754 other breach of contract. In such event, the State may take over the work,
755 perform the same to completion, by contract or otherwise, and may take
756 possession of, and utilize in completing the work, the materials, appliances,
757 and plants as may be on the site of the work and necessary therefore.
758 Whether or not the Contractor’s right to proceed with the work is terminated,
759 the Contractor and the Contractor’s sureties shall be liable for any damage
760 to the State resulting from the Contractor’s refusal or failure to complete the
761 work within the specified time.

762
763 **(B) Additional Rights and Remedies.** The rights and remedies of the
764 State provided in this contract are in addition to any other rights and
765 remedies provided by law.

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(C) Costs and Charges. All costs and charges incurred by the State, together with the cost of completing the work under contract, will be deducted from any monies due or which would or might have become due to the Contractor had it been allowed to complete the work under the contract. If such expense exceeds the sum which would have been payable under the contract, then the Contractor and the surety shall be liable and shall pay the State the amount of the excess.

In case of termination, the Engineer will limit any payment to the Contractor to the part of the contract satisfactorily completed at the time of termination. Payment will not be made until the work has satisfactorily been completed and all required documents, including the tax clearance required by Subsection 109.11 – Final Payment are submitted by the Contractor. Termination shall not relieve the Contractor or Surety from liability for liquidated damages.

(D) Erroneous Termination for Cause. If, after notice of termination of the Contractor's right to proceed under this section, it is determined for any reason that good cause did not exist to allow the State to terminate as provided herein, the rights and obligations of the parties shall be the same as, and the relief afforded the Contractor shall be limited to, the provisions contained in Subsection 108.12 – Termination for Convenience.

108.12 Termination For Convenience.

(A) Terminations. The Director may, when the interests of the State so require, terminate this contract in whole or in part, for the convenience of the State. The Director will give written notice of the termination to the Contractor specifying the part of the contract terminated and when termination becomes effective.

(B) Contractor's Obligations. The Contractor shall incur no further obligations in connection with the terminated work and on the date set in the notice of termination the Contractor shall stop work to the extent specified. The Contractor shall also terminate outstanding orders and subcontracts as they relate to the terminated work. The Contractor shall settle the liabilities and claims arising out of the termination of subcontracts and orders connected with the terminated work subject to the State's approval. The Engineer may direct the Contractor to assign the Contractor's right, title, and interest under terminated orders or subcontracts to the State. The Contractor must still complete the work not terminated by the notice of termination and may incur obligations as necessary to do so.

810 **(C) Right to Construction and Goods.** The Engineer may require the
811 Contractor to transfer title and to deliver to the State in the manner and to
812 the extent directed by the Engineer, the following:

813
814 (1) Any completed work.

815
816 (2) Any partially completed construction, goods, materials, parts,
817 tools, dies, jigs, fixtures, drawings, information, and contract rights
818 (hereinafter called "construction material") that the Contractor has
819 specifically produced or specially acquired for the performance of the
820 terminated part of this contract.

821
822 (3) The Contractor shall protect and preserve all property in the
823 possession of the Contractor in which the State has an interest. If
824 the Engineer does not elect to retain any such property, the
825 Contractor shall use its best efforts to sell such property and
826 construction materials for the State's account in accordance with the
827 standards of HRS Chapter 490:2-706.

828
829 **(D) Compensation.**

830
831 (1) The Contractor shall submit a termination claim specifying the
832 amounts due because of the termination for convenience together
833 with cost or pricing data, submitted to the extent required by HAR
834 Subchapter 15, Chapter 3-122. If the Contractor fails to file a
835 termination claim within one year from the effective date of
836 termination, the Engineer may pay the Contractor, if at all, an amount
837 set in accordance with Subsection 108.12(D)(3).

838
839 (2) The Engineer and the Contractor may agree to a settlement
840 provided the Contractor has filed a termination claim supported by
841 cost or pricing data submitted as required and that the settlement
842 does not exceed the total contract price plus settlement costs
843 reduced by payments previously made by the State, the proceeds of
844 any sales of construction, supplies, and construction materials under
845 Subsection 108.12(C)(3), and the proportionate contract price of the
846 work not terminated.

847
848 (3) Absent complete agreement, the Engineer will pay the
849 Contractor the following amounts less any payments previously
850 made under the contract:

851
852 (a) The cost of all contract work performed prior to the
853 effective date of the notice of termination work plus a 5
854 percent markup on the actual direct costs, including amounts
855 paid to subcontractor, less amounts paid or to be paid for

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completed portions of such work; provided, however, that if it appears that the Contractor would have sustained a loss if the entire contract would have been completed, no markup shall be allowed or included and the amount of compensation shall be reduced to reflect the anticipated rate of loss. No anticipated profit or consequential damage will be due or paid.

(b) Subcontractors shall be paid a markup of 10 percent on their direct job costs incurred to the date of termination. No anticipated profit or consequential damage will be due or paid to any subcontractor. These costs must not include payments made to the Contractor for subcontract work during the contract period.

(c) The total sum to be paid the Contractor shall not exceed the total contract price reduced by the amount of any sales of construction supplies, and construction materials.

(4) Cost claimed, agreed to, or established by the State shall be in accordance with HAR Chapter 3-123.

108.13 Pre-Final and Final Inspections.

(A) Inspection Requirements. Before the Engineer undertakes a final inspection of any work, a pre-final inspection must first be conducted. The Contractor shall notify the Engineer that the work has reached substantial completion and is ready for pre-final inspection.

(B) Pre-Final Inspection. Before notifying the Engineer that the work has reached substantial completion, the Contractor shall inspect the project and test all installed items with all of its subcontractors as appropriate. The Contractor shall also submit the following documents as applicable to the work:

- (1)** All written guarantees required by the contract.
- (2)** Two accepted final field-posted drawings as specified in Section 648 – Field-Posted Drawings;
- (3)** Complete weekly certified payroll records for the Contractor and Subcontractors.
- (4)** Certificate of Plumbing and Electrical Inspection.
- (5)** Certificate of building occupancy as required.

- 902 (6) Certificate of Soil and Wood Treatments.
903
904 (7) Certificate of Water System Chlorination.
905
906 (8) Certificate of Elevator Inspection, Boiler and Pressure Pipe
907 Inspection.
908
909 (9) Maintenance Service Contract and two copies of a list of all
910 equipment installed.
911
912 (10) Current Tax clearance. The contractor will be required to
913 submit an additional tax clearance certificate when the final payment
914 is made.
915
916 (11) All required submittals, e.g., test results, certifications,
917 Certificate of Compliance, samples, pile or drilled shaft location
918 drawings and final items.
919
920 (12) And any other final items and submittals required by the
921 contract documents.

922
923 **(C) Procedure.** When in compliance with the above requirements, the
924 Contractor shall notify the Engineer in writing that the project has reached
925 substantial completion and is ready for pre-final inspection.
926

927 The Engineer will then make a preliminary determination as to
928 whether or not the project is substantially complete and ready for pre-final
929 inspection. The Engineer may, in writing, postpone until after the pre-final
930 inspection the Contractor's submittal of any of the items listed in Subsection
931 108.13(B) – Pre-Final Inspection, herein, if in the Engineer's discretion it is
932 in the interest of the State to do so.
933

934 If, in the opinion of the Engineer, the project is not substantially
935 complete, the Engineer will provide the Contractor a punchlist of specific
936 deficiencies in writing which must be corrected or finished before the work
937 will be ready for a pre-final inspection. The Engineer may add to or
938 otherwise modify this punchlist from time to time. The Contractor shall take
939 immediate action to correct the deficiencies and must repeat all steps
940 described above including written notification that the work is ready for pre-
941 final inspection.
942

943 After the Engineer is satisfied that the project appears substantially
944 complete a final inspection shall be scheduled within ten working days after
945 receipt of the Contractor's latest letter of notification that the project is ready
946 for final inspection.
947

948 If, as a result of the pre-final inspection, the Engineer determines the
949 work is not substantially complete, the Engineer will inform the Contractor in
950 writing as to specific deficiencies which must be corrected before the work
951 will be ready for another pre-final inspection. If the Engineer finds the work
952 is substantially complete but finds deficiencies that must be corrected
953 before the work is ready for final inspection, the Engineer will prepare in
954 writing and deliver to the Contractor a punchlist describing such
955 deficiencies.

956
957 At any time before final acceptance, the Engineer may revoke the
958 determination of substantial completion if the Engineer finds that it was not
959 warranted and will notify the Contractor in writing the reasons therefore
960 together with a description of the deficiencies negating the declaration.

961
962 When the date of substantial completion has been determined by the
963 State, liquidated damages for the failure to complete the punchlist, if due to
964 the State will be assessed in pursuant to Subsection 108.08(B) - Liquidated
965 Damages for Failure to Complete the Punchlist.

966
967 **(D) Punchlist; Clean Up and Final Inspection.** Upon receiving a
968 punchlist after pre-final inspection, the Contractor shall promptly devote all
969 required time, labor, equipment, materials and incidentals to correct and
970 remedy all punchlist deficiencies. The Engineer may add to or otherwise
971 modify this punchlist until substantial completion of the project.

972
973 Before final inspection of the work, the Contractor shall clean all
974 ground occupied by the Contractor in connection with the work of all
975 rubbish, excess materials temporary structures and equipment, shall
976 remove all graffiti and defacement of the work and all parts of the work and
977 the worksite must be left in a neat and presentable condition to the
978 satisfaction of the Engineer.

979
980 Final inspection will occur within ten working days after the
981 Contractor notifies the Engineer in writing that all punchlist deficiencies
982 remaining after the pre-final inspection have been completed and the
983 Engineer concurs. If the Engineer determines that deficiencies still remain
984 at the final inspection, the work will not be accepted and the Engineer will
985 notify the Contractor, in writing, of the deficiencies which shall be corrected
986 and the steps above repeated.

987
988 If the Contractor fails to correct the deficiencies and complete the
989 work by the established or agreed date, the State may correct the
990 deficiencies by whatever method it deems appropriate and deduct the cost
991 from any payments due the Contractor.

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993 **108.14 Substantial Completion and Final Acceptance.**

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(A) Substantial Completion. When the Engineer finds that the Contractor has satisfactorily completed all work for the project in compliance with the contract, with the exception of the planting period and the plant establishment period, the Engineer will notify the Contractor, in writing, of the project's substantial completion, effective as of the date of the final inspection. The substantial completion date shall determine end of contract time and relieve contractor of any additional accumulation of liquidated damages for failure to complete the punchlist.

(B) Final Acceptance. When the Engineer finds that the Contractor has satisfactorily completed all contract work in compliance with the contract including all plant establishment requirements, and all the materials have been accepted by the State, the Engineer will issue a Final Acceptance Letter. The Final Acceptance date shall determine the commencement of all guaranty periods subject to Subsection 108.16 – Contractor's Responsibility for Work; Risk of Loss or Damage.

108.15 Use of Structure or Improvement. The State has the right to use the structure, equipment, improvement, or any part thereof, at any time after it is considered by the Engineer as available. In the event that the structure, equipment or any part thereof is used by the State before final acceptance, the Contractor is not relieved of its responsibility to protect and preserve all the work until final acceptance.

108.16 Contractor's Responsibility for Work; Risk of Loss or Damage. Until the written notice of final acceptance has been received, the Contractor shall take every precaution against loss or damage to any part of the work by the action of the elements or from any other cause whatsoever, whether arising from the performance or from the non-performance of the work. The Contractor shall rebuild, repair, restore and make good all loss or damage to any portion of the work resulting from any cause before its receipt of the written notice of final acceptance and shall bear the risk and expense thereof.

The risk of loss or damage to the work from any hazard or occurrence that may or may not be covered by a builder's risk policy is that of the Contractor and Surety, unless such risk of loss is placed elsewhere by express language in the contract documents.

108.17 Guarantee of Work.

(1) Regardless of, and in addition to, any manufacturers' warranties, all work and equipment shall be guaranteed by the Contractor against defects in materials, equipment or workmanship for one year from the date of final acceptance or as otherwise specified in the contract documents.

1040 (2) When the Engineer determines that repairs or replacements of any
1041 guaranteed work and equipment is necessary due to materials, equipment,
1042 or workmanship which are inferior, defective, or not in accordance with the
1043 terms of the contract, the Contractor shall, at no increase in contract price
1044 or contract time, and within five working days of receipt of written notice
1045 from the State, commence to all of the following:

1046
1047 (a) Correct all noted defects and make replacements, as directed
1048 by the Engineer, in the equipment and work.

1049
1050 (b) Repair or replace to new or pre-existing condition any
1051 damages resulting from such defective materials, equipment or
1052 installation thereof.

1053
1054 (3) The State will be entitled to the benefit of all manufacturers and
1055 installers warranties that extend beyond the terms of the Contractor's
1056 guaranty regardless of whether or not such extended warranty is required
1057 by the contract documents. The Contractor shall prepare and submit all
1058 documents required by the providers of such warranties to make them
1059 effective, and submit copies of such documents to the Engineer. If an
1060 available extended warranty cannot be transferred or assigned to the State
1061 as the ultimate user, the Contractor shall notify the Engineer who may direct
1062 that the warranted items be acquired in the name of the State as purchaser.

1063
1064 (4) If a defect is discovered during a guarantee period, all repairs and
1065 corrections to the defective items when corrected shall be guaranteed for a
1066 new duration equal to the original full guarantee period. The running of the
1067 guarantee period shall be suspended for all other work affected by any
1068 defect. The guarantee period for all other work affected by any such defect
1069 shall restart for its remaining duration upon confirmation by the Engineer
1070 that the deficiencies have been repaired or remedied.

1071
1072 (5) Nothing in this section is intended to limit or affect the State's rights
1073 and remedies arising from the discovery of latent defects in the work after
1074 the expiration of any guarantee period.

1075
1076 **108.18 No Waiver of Legal Rights.** The following will not operate or be
1077 considered as a waiver of any portion of the contract, or any power herein
1078 reserved, or any right to damages provided herein or by law:

1079
1080 (1) Any payment for, or acceptance of, the whole or any part of the work.

1081
1082 (2) Any extension of time.

1083
1084 (3) Any possession taken by the Engineer.

1085

1086 A waiver of any notice requirement or of any noncompliance with the
1087 contract will not be held to be a waiver of any other notice requirement or any
1088 other noncompliance with the contract.
1089

1090 **108.19 Final Settlement of Contract.**
1091

1092 **(A) Closing Requirements.** The contract will be considered settled
1093 after the project acceptance date and when the following items have been
1094 satisfactorily submitted, where applicable:
1095

- 1096 (1) All written guarantees required by the contract.
- 1097
- 1098 (2) Complete and certified weekly payrolls for the Contractor and
1099 its subcontractor's.
- 1100
- 1101 (3) Certificate of plumbing and electrical inspection.
- 1102
- 1103 (4) Certificate of building occupancy.
- 1104
- 1105 (5) Certificate for soil treatment and wood treatment.
- 1106
- 1107 (6) Certificate of water system chlorination.
- 1108
- 1109 (7) Certificate of elevator inspection, boiler and pressure pipe
1110 installation.
- 1111
- 1112 (8) Tax clearance.
- 1113
- 1114 (9) All other documents required by the Contract or by law.
1115

1116 **(B) Failure to Meet Closing Requirements.** The Contractor shall meet
1117 the applicable closing requirements within 60 days from the date of Project
1118 Acceptance or the agreed to Punchlist complete date. Should the
1119 Contractor fail to comply with these requirements, the Engineer may
1120 terminate the contract for cause.”
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END OF SECTION 108

1 **SECTION 109 – MEASUREMENT AND PAYMENT**

2
3 Make the following amendment to said Section:

4
5 **(I) Amend Subsection 109.05 Allowances for Overhead and Profit** by
6 revising lines 101 to 110 to read as follows:

7
8 **“(1) 20 percent of the direct cost for any work performed by the**
9 **Contractor’s own labor force.**

10
11 **(2) 20 percent of the direct cost for any work performed by each**
12 **subcontractor’s own labor force.**

13
14 **(3) For the Contractor or any subcontractor for work performed**
15 **by their respective subcontractor or tier subcontractor, 10 percent**
16 **of the amount due to the performing subcontractor or tier**
17 **subcontractor.”**

18
19 **(II) Amend Subsection 109.08(B) Payment for Material On Hand** by
20 revising lines 421 to 423 to read as follows:

21
22 **“(2) The materials shall be stored and handled in accordance**
23 **with Subsection 105.14 – Storage and Handling of Materials and**
24 **Equipment.”**

25
26
27 **(III) Amend Subsection 109.11 Final Payment** by revising lines 568 to 576
28 to read as follows:

29
30 **“(3) A current “Certificate of Vendor Compliance” issued by the**
31 **Hawaii Compliance Express (HCE). The Certificate of Vendor**
32 **Compliance is used to certify the Contractor’s compliance with**

33
34 **(a) Section 103D-328, HRS (for all contracts \$25,000 or**
35 **more) which requires a current tax clearance certificate**
36 **issued by the Hawaii State Department of Taxation and the**
37 **Internal Revenue Service;**

38
39 **(b) Chapters 383, 386, 392, and 393, HRS; and**

40
41 **(c) Subsection 103D-310(c), HRS. The State reserves**
42 **the right to verify that compliance is current prior to the**
43 **issuance of final payment. Contractors are advised that non-**
44 **compliance status will result in final payment being withheld**
45 **until compliance is attained.**

46
47 Sums necessary to meet the claims of any governmental agencies
48 may be withheld from the sums due the Contractor until said

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claims have been fully and completely discharged or otherwise satisfied.”

END OF SECTION 109

SECTION 201 – CLEARING AND GRUBBING

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Make the following amendment to said Section:

(I) Amend Subsection **201.05 Payment**, by adding the following pay item after line 180:

“Removal of Trees Lump Sum”

END OF SECTION 201

1 **SECTION 202 – REMOVAL OF STRUCTURES AND OBSTRUCTIONS**

2
3 Make the following amendments to said Section:

4
5 **(I)** Amend Subsection **202.01 Description**, line 6 as follows:

6
7 “pipelines, utilities, cesspools, septic tanks, leaching fields, and other
8 structures and obstructions designated for removal.”

9
10 **(II)** Add the following paragraphs to **Subsection 202.03(A) Removal of**
11 **Obstructions**, line 33.

12
13 “(5) Cesspool

14
15 Drain cesspool completely, remove the top and backfill with CLSM.”

16
17 **(III)** Amend Subsection **202.03(C) Removal of Bridges**, line 107 and 108 as
18 follows:

19
20 “Remove pilings, piers, abutments, and pedestals in accordance with the
21 Contract Documents.”

22
23 **(IV)** Add the following paragraphs to Subsection **202.03(C) Removal of**
24 **Bridges**, line 118, to read as follows:

25
26 “Prior to the removal of the bridge and pedestrian walkway, the Contractor
27 shall hire a certified professional to check for lead-based paint and collect paint
28 samples for testing. This work shall not be paid for separately but shall be
29 considered incidental to the removal of concrete bridge and pedestrian walkway.
30 If significant levels of lead are detected, the Contractor shall perform safety lead
31 abatement method and procedure on a force account basis in accordance with
32 Section 657 - Handling and Disposal of Hazardous Items and Material.

33
34 All demolished concrete and/or reinforcing steel shall be recycled by an
35 appropriately licensed or certified concrete recycling facility.

36
37 All submitted details of removal operations shall be shown on shop
38 drawings and calculations stamped by a registered Hawaii Structural Engineer
39 and a registered Civil Engineer specializing in Geotechnical Engineering in the
40 State of Hawaii. The shop drawings and calculations shall be reviewed and
41 accepted by the Engineer before proceeding with the construction.”

42
43 **(V)** Amend **Subsection 202.04 Measurement** by revising lines 119 to 120 to
44 read as follows:

45
46 **“202.04 Measurement.**

- 47 (A) The Engineer will measure removal of Guardrails per linear foot in
 48 accordance with the contract documents.
- 49 (B) The Engineer will measure removal of AC Pavement per square
 50 yard in accordance with the contract documents.
- 51 (C) The Engineer will measure removal of AC Pavement Driveways per
 52 square yard in accordance with the contract documents.
- 53 (D) Removal of the Existing Concrete Bridge and Pedestrian Walkway
 54 will be paid on a lump sum basis. Measurement for payment will not
 55 apply.
- 56 (E) The Engineer will measure removal of Concrete Pavement per
 57 square yard in accordance with the contract documents.
- 58 (F) Removal of Concrete and CRM Retaining Walls will be paid on a
 59 lump sum basis. Measurement for payment will not apply.
- 60 (G) The Engineer will measure removal of Riprap per square yard in
 61 accordance with the contract documents.
- 62 (H) Removal of Pavement Striping and Markers will be paid on a lump
 63 sum basis. Measurement for payment will not apply.
- 64 (I) The Engineer will measure removal of 6-inch, 8-inch, 12-inch and
 65 16-inch Water line per linear foot in accordance with the contract
 66 documents.
- 67 (J) Removal of gate valves, valve boxes, reaction blocks, fire hydrants,
 68 concrete jacket, and any other waterline appurtenances and incidentals
 69 will be paid on a lump sum basis. Measurement for payment will not
 70 apply.
- 71 (K) Removal of Cesspools will be paid on a Force Account basis. All
 72 permits and approvals for proper disposal of sanitary waste shall be
 73 considered incidental and shall be the responsibility of the Contractor.
- 74 (L) Removal of Excavated Material will be paid on a lump sum basis.
 75 Measurement for payment will not apply.
- 76 (M) Removal of Houses will be paid on a lump sum basis.
 77 Measurement for payment will not apply.
- 78 (N) The Engineer will measure removal of Chain Link Fencing,
 79 Salvaging and Reinstallation at 5-4-18:3 and 5-4-11:20 per linear foot in
 80 accordance with the contract documents.
- 81 (O) The Engineer will measure removal of Chain Link Fencing and
 82 Salvaging at 5-4-11:4 per linear foot in accordance with the contract
 83 documents.”

84
 85 **(VI) Revise Subsection 202.05 Payment, lines 129 to 131, to read as follows:**

"Pay Item	Pay Unit
Removal of _____	Linear Foot
Removal of _____	Square Yard
Removal of _____	Lump Sum

94
95
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98

Removal of _____

Force Account”

END OF SECTION 202

1 **SECTION 203 – EXCAVATION AND EMBANKMENT**

2
3 Make the following amendments to said Section:

4
5 **(I)** Amend **203.03(C)(2)(a) – Maximum Dry Unit Weight** from line 245 to line
6 255 to read as follows:

7
8 **“(a) Maximum Dry Unit Weight.** Test for maximum dry
9 unit weight according to AASHTO T 180, and apply the
10 correction for fraction larger than 3/4 inch. Use Hawaii
11 Test Method HDOT TM 5 for sample preparation of sensitive
12 soils when so designated by the Engineer.”

13
14 **(II)** Amend **203.04 – Measurement** by revising lines 345 to 366 to read as
15 follows:

16
17 **“203.04 Measurement.**

18
19
20 **(A)** The Engineer will measure roadway excavation per cubic yard.
21 The Engineer will compute quantities of roadway excavation by average
22 end area method and centerline distances. Curvature correction will not
23 be applied to quantities within roadway prism, as indicated in the contract
24 documents. In computing excavation quantities from outside the roadway
25 prism, where roadway centerline is used as a base, curvature correction
26 will be applied when centerline radius is 1,000 feet or less.

27
28 When roadway excavation quantities by average end area method
29 cannot be computed due to the nature of a particular operation or changed
30 conditions, the Engineer will determine and use computation method that
31 will produce an accurate quantity estimate.

32
33 **(B)** The Engineer will measure borrow excavated material per cubic
34 yard. The Engineer will compute quantities of borrow material
35 incorporated into the work on a volume basis, using average end area
36 method in place at work site.

37
38 **(III)** Amend **203.05 – Payment** by revising lines 368 to 457 to read as follows:

39
40 **“203.05 Payment.** The Engineer will pay for the accepted pay items listed
41 below at the contract price per pay unit, as shown in the proposal schedule.
42 Payment will be full compensation for the work prescribed in this section and the
43 contract documents.

44
45 The Engineer will pay for each of the following pay items when included in
46 the proposal schedule:

47		
48	Pay Item	Pay Unit
49		
50	(A) Roadway Excavation	Cubic Yard
51		
52	The Engineer will pay for:	
53		
54	(1) 15 percent of the contract bid price upon completion of	
55	obliterating old roadways and hauling.	
56		
57	(2) 30 percent of the contract bid price upon completion of	
58	preparing subgrade.	
59		
60	(3) 40 percent of the contract bid price upon completion of placing	
61	selected material in final position, rounding of slopes, and using water	
62	for compaction.	
63		
64	(4) 15 percent of the contract bid price upon completion of	
65	disposing of surplus excavation material.	
66		
67	(B) Borrow Excavated Material	Cubic Yard
68		
69	The Engineer will pay for:	
70		
71	(1) 10 percent of the contract bid price upon completion of staking	
72	out and cross sectioning existing condition at borrow excavated and in-	
73	place sites and establishing borrow area.	
74		
75	(2) 5 percent of the contract bid price upon completion of providing,	
76	replacing, and maintaining temporary and permanent fencing, and	
77	confining livestock.	
78		
79	(3) 15 percent of the contract bid price upon completion of all	
80	necessary storing and processing of borrow material.	
81		
82	(4) 15 percent of the contract bid price upon completion of watering	
83	and hauling material to work site.	
84		
85	(5) 20 percent of the contract bid price upon completion of placing,	
86	grading, and compacting material in accordance with contract	
87	requirements at work site.	
88		
89	(6) 15 percent of the contract bid price upon completion of restoring	
90	and regrading borrow area.	
91		

92 **(7)** 10 percent of the contract bid price upon completion of staking
93 out and cross sectioning final condition at borrow excavated and in-
94 place sites.

95
96 **(8)** 10 percent of the contract bid price upon completion of
97 removing and disposing of excess and unsuitable material from work
98 site.

99
100 The Engineer will pay for accepted quantities of subexcavation, as
101 roadway excavation at the contract unit price per cubic yard, when ordered by
102 the Engineer, for work prescribed in Subsection 203.03(A)(4) – Subexcavation.
103 Payment will be full compensation for the work prescribed therein and in the
104 contract documents.

105
106 The Engineer will not pay for stockpiling selected material, placing
107 selected material in final position, or placing selected material in windrows along
108 tops of roadway slopes for erosion control work, separately and will consider the
109 cost as included in the unit prices for the various excavation contract pay items.
110 The cost is for work prescribed in this section and the contract documents.

111
112 The Engineer will not pay for overhaul separately and will consider the
113 cost as included in the unit prices for the various excavation contract pay items.
114 The cost is for work prescribed in this section and the contract documents.

115
116 The Engineer will not pay for embankment separately and will consider the
117 cost as included in the unit price for roadway excavation. The cost is for work
118 prescribed in this section and the contract documents.”

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END OF SECTION 203

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SECTION 204 – EXCAVATION AND BACKFILL FOR MISCELLANEOUS FACILITIES

Make the following amendments to said Section:

(I) Amend **204.04 – Measurement** by revising lines 180 to 186 to read as follows:

“204.04 Measurement.

- (A)** The Engineer will measure trench excavation per cubic yard in accordance with the contract documents.
- (B)** The Engineer will measure trench backfill per cubic yard in accordance with the contract documents.
- (C) Dewatering.** Dewatering for trench excavation and backfill will not be paid separately and will be considered incidental to excavation, backfill, trench excavation, and trench backfill.”

(II) Amend **204.05 – Payment** by revising lines 196 to 200 to read as follows:

“Pay Item	Pay Unit
Trench Excavation for _____	Cubic Yard
Trench Backfill for _____	Cubic Yard”

(III) Amend **204.05 – Payment** by adding the following paragraph on line 221:

“The Engineer will not pay for dewatering related to excavation for structures, trench excavation, and backfill. The Engineer will consider the cost for all items requiring dewatering as included in the contract plans for the various contract pay items. The cost is for the work prescribed in this section and the contract documents.”

END OF SECTION 204

1 **SECTION 205 – EXCAVATION AND BACKFILL FOR BRIDGE AND**
2 **RETAINING STRUCTURES**

3
4 Make the following amendments to said Section:

5
6
7 **(I)** Amend **205.01 Description** by revising subparagraph (A) between lines 5
8 and 8 to read as follows:

9
10 **“(A)** Excavating and backfilling to depths and lines established for
11 bridge, overhead-mounted expressway sign, retaining (reinforced concrete
12 or cement rubble masonry) structures, foundations, and box culverts.”

13
14 **(II)** Amend **205.03(A)(1) General** by adding the following paragraph
15 after line 47 to read as follows:

16
17 “The Contractor shall be responsible for protecting the sides of the
18 excavations from cave-ins. The Contractor shall submit shop drawings and
19 calculations for any bracing or shoring to be installed. The shop drawings and
20 calculations shall be stamped by a registered Hawaii Structural Engineer and a
21 registered Civil Engineer specializing in Geotechnical Engineering in the State of
22 Hawaii. If the Contractor decides not to brace the cut slope, the Contractor shall
23 submit when requested by the Engineer, calculations, showing the stability of the
24 slope, stamped by a registered Civil Engineer specializing in Geotechnical
25 Engineer in the State of Hawaii. The shop drawings and calculations shall be
26 reviewed and accepted by the Engineer before proceeding with the construction.”

27
28 **(III)** Amend **205.03(B) Structure Backfill** by revising the lines 151 to 155 to
29 read as follows:

30
31 **“(B) Structure Backfill.** Place structure backfill material A behind
32 bridge abutments, wingwalls, and retaining structures. Do not deposit fill material
33 against back of concrete abutments, piers, concrete box culverts, retaining
34 structures, and foundations until the concrete has met the requirements in
35 Subsection 503.03(E) – Loading.”

36
37 **(IV)** Amend **Section 205.03(C) Filter Material** by revising the first sentence to
38 read as follows:

39
40 “Place backfill filter material at bridge and retaining structures in
41 accordance with the contract documents.”

42
43 **(V)** Amend **205.03(B) Structures Backfill** by revising the second sentence of
44 the second paragraph at lines 158 and 159 to read as follows:

46 "Continue backfilling so that uneven or unsymmetrical lifts do not exceed
47 16 inches in height creating an unbalanced loading condition."
48

49 **(VI)** Amend **205.04 – Measurement** by revising lines 206 to 214 to read as
50 follows:
51

52 **"(A) Structure Excavation.** Structure excavation will be paid per cubic
53 yard. The limits for payment of structure excavation shall be shown on the
54 plans and contract documents.
55

56 **(B) Structure Backfill.** Structure backfill for bridge abutments,
57 wingwalls, and retaining walls will be paid per cubic yard. The limits for
58 payment of structure backfill shall be shown on the plans and contract
59 documents.
60

61 **(C) Filter Material.** Filter material will be paid per cubic yard. The
62 limits for payment of filter material shall be shown on the plans and
63 contract documents."
64

65 **(VII)** Amend **205.05 – Payment** by revising lines 216 to 230 to read as follows:
66

67 **205.05 Payment.** The Engineer will pay for the accepted pay items listed
68 below per cubic yard as shown in the proposal schedule. Payment will be full
69 compensation for the work prescribed in this section and the contract documents.
70

71 The Engineer will pay of each of the following pay items when included in the
72 proposal schedule:
73

74 Pay Item	75	76 Pay Unit
77 Structure Excavation for _____		78 Cubic Yard
79 Structure Backfill for _____		80 Cubic Yard
81 Filter Material		82 Cubic Yard"

81
82
83
84

END OF SECTION 205

1 **SECTION 206 – EXCAVATION AND BACKFILL**
2 **FOR DRAINAGE FACILITIES**

3
4 Make the following amendments to said Section:

5
6 **(I)** Amend **206.04 – Measurement** by revising lines 142 to 143 to read as
7 follows:

8
9 **“206.04 Measurement.** The Engineer will measure excavation per cubic yard
10 in accordance with contract documents.”

11
12 **(II)** Amend **206.05 – Payment** by revising lines 145 to 154 to read as follows:

13
14 **“206.05 Payment.** The Engineer will pay for the accepted excavation per
15 cubic yard. Payment will be full compensation for the work prescribed in this
16 section and contract documents.

17
18 The Engineer will pay for the following pay item when included in the
19 proposal schedule:

20

Pay Item	Pay Unit
Excavation for _____	Cubic Yard”

21
22
23
24
25

26 **END OF SECTION 206**

1 **SECTION 209 - TEMPORARY WATER POLLUTION, DUST, AND EROSION**
2 **CONTROL**

3
4
5 **209.01 Description.** This section describes the following:

6
7 **(A)** Contractor’s requirements to identify, detail and describe per his
8 means and methods and the Site-Specific Best Management Practices Plan
9 (BMP) associated with his means and methods to construct the project. The
10 Contractor shall complete and provide all of the items to complete Storm
11 Water Pollution Prevention Plan/In-Water Pollution Prevention Plan
12 (SWPPP/IWPPP) to allow HDOT to certify the SWPPP/IWPPP. These items
13 include but are not limited to the following detailed plans, diagrams, and
14 written Site-Specific Best Management Practices (BMP); constructing,
15 maintaining, and repairing temporary water pollution, dust, and erosion
16 control measures at the project site, including local material sources, work
17 areas and haul roads; removing and disposing hazardous wastes; control of
18 fugitive dust (defined as uncontrolled emission of solid airborne particulate
19 matter from any source other than combustion); and complying with
20 applicable State and Federal permit conditions.

21
22 **(B)** Contractor’s requirements to identify his means and methods and
23 associated stormwater controls associated with construction storm water,
24 dewatering, and hydrotesting activities and complying with conditions of the
25 National Pollutant Discharge Elimination System (NPDES) permit(s)
26 authorizing discharges associated with construction storm water, dewatering,
27 and hydrotesting activities.

28
29 **(C)** Work associated with U.S. Department of Army, Section 404 Permit,
30 and State Department of Health, Section 401 Water Quality Certification (or
31 Blanket Section 401 Water Quality Certification (WQC), Modification for
32 Certain 2017 Department of the Army Nationwide Permits and Activities).
33 Under the provisional approval of the United States Army Corps of Engineers
34 and the Department of Health, Clean Water Branch, the Department of
35 Transportation, Highways Division (HDOT) is authorized to implement the
36 BMPs and/or Clear Water Diversion identified in “An Integrated Storm Water
37 Management Approach and a Summary of Clear Water Diversion and
38 Isolation Best Management Practices for Use in the State of Hawaii, by the
39 Federal Highway Administration and Hawaii Department of Transportation
40 Practitioners Guide (Practitioners Guide)” for use in an authorized temporary
41 impact area. The appropriate use of BMPs shall be authorized by HDOT thru
42 the use of an In-water Pollution Prevention Plan/Storm Water Pollution
43 Prevention Plan (IWPPP/SWPPP)

44
45 **(D)** Potential pollutant identification and mitigation measures are listed in
46 Appendix A for use in the development of the Contractor’s Site-Specific BMP.
47

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

57
58 **209.02 Materials.** Comply with applicable materials described in the current
59 HDOT “Construction Best Management Practices Field Manual” and the current “An
60 Integrated Storm Water Management Approach and a Summary of Clear Water
61 Diversion and Isolation Best Management Practices for Use in the State of Hawaii,
62 by the Federal Highway Administration and Hawaii Department of Transportation,
63 Practitioners Guide” hereafter called “Practitioners Guide”. In addition, the materials
64 shall comply with the following:

65
66 **(A) Grass.** Grass shall be a quick growing species such as rye grass,
67 Italian rye grass, or cereal grasses. Grass shall be suitable to the area and
68 provide a temporary cover that will not compete later with permanent cover.
69 Alternative grasses are allowable if acceptable to the Engineer.

70
71 **(B) Fertilizer and Soil Conditioners.** Fertilizer and soil conditioners shall
72 be a standard commercial grade acceptable to the Engineer. Fertilizer shall
73 conform to Subsection 619.02(H)(1) - Commercial Fertilizer.

74
75 **(C) Hydro-mulching.** Hydro-mulching used as a temporary vegetative
76 stabilization measure shall consist of materials in Subsections 209.02(A) -
77 Grass, and 209.02(B) – Fertilizer and Soil Conditioners. Mulches shall be
78 recycled materials including bagasse, hay, straw, wood cellulose bark, wood
79 chips, or other material acceptable to the Engineer. Mulches shall be clean
80 and free of noxious weeds and deleterious materials. Potable water shall
81 meet the requirements of Subsection 712.01 - Water. Submit alternate
82 sources of irrigation water for the Engineer’s acceptance if deviating from
83 712.01 - Water. Installation and other requirements shall be in accordance
84 with portions of Section 641- Hydro-Mulch Seeding including 641.02(D) - Soil
85 and Mulch Tackifier, 641.03(A) – Seeding, and 641.03(B) - Planting Period.
86 Install non-vegetative controls including mulch or rolled erosion control
87 products while the vegetation is being established. Water and fertilize grass.
88 Apply fertilizer as recommended by the manufacturer. Replace grass the
89 Engineer considers unsuitable or sick. Remove and dispose of trash and
90 debris. Remove invasive species. Mow as needed to prevent site or signage
91 obstructions, fire hazard, or nuisance to the public. Do not remove down
92 stream sediment control measures until the vegetation is uniformly
93 established, including no large bare areas, and provides 70 percent of the
94 density of pre-disturbance vegetation. Obtain Engineer’s acceptance prior to

95 removal of BMPs. Temporary vegetative stabilization shall not be used
96 longer than one year.

97
98 **(D) Silt Fences.** Comply with ASTM D6462, Standard Practice for Silt
99 Fence Installation.

100
101 **(E) Mineral-Based Binder.** Apply mineral-based binder for erosion
102 control per manufacturer's requirements or as accepted by the Engineer.
103 Mineral-based binder shall be environmentally benign, harmless to fish, birds,
104 plants, and animals, and shall be nontoxic and noncombustible.

105
106 **(F) Surfactant.** Apply surfactant per manufacturer's requirements or as
107 accepted by the Engineer. Surfactant shall be environmentally benign,
108 harmless to fish, birds, plants, and animals, and shall be nontoxic and
109 noncombustible.

110
111 Alternative materials or methods to control, prevent, remove and dispose
112 pollution are allowable if acceptable to the Engineer.

113 114 **209.03 Construction.**

115 116 **(A) Preconstruction Requirements.**

117
118 **(1) SWPPP/IWPPP Meeting(s).** HDOT will schedule
119 SWPPP/IWPPP meeting(s) with the Contractor to discuss HDOT's
120 SWPPP/IWPPP comments, status to resolve the SWPPP/IWPPP
121 comments, and timeline to finalize the SWPPP/IWPPP. The
122 Contractor shall make himself available within 48 hours of the meeting
123 requested by HDOT. At this meeting, the Contractor shall identify
124 HDOT's comments and how the HDOT's comments will be
125 addressed, including when the next SWPPP/IWPPP submittal will be
126 sent to HDOT.

127
128 **(2) Water Pollution, Dust, and Erosion Control Meeting.** Schedule
129 a water pollution, dust, and erosion control meeting with the Engineer
130 after the Storm Water Pollution Prevention Plan/In-Water Pollution
131 Plan (SWPPP/IWPPP) is accepted in writing by the Engineer.
132 Conduct meeting a minimum of 7 calendar days prior to the Start
133 Work Date. The Contractor shall be prepared to discuss the
134 sequence of work, plans and proposals for water pollution, dust, and
135 erosion control and address any comments, questions or concerns
136 raised by the State.

137
138 **(3) Water Pollution, Dust, and Erosion Control Submittals.**
139 Submit a completed SWPPP/ IWPPP within 21 calendar days of date
140 of award. The SWPPP/IWPPP is applicable to projects with a U.S.
141 Department of Army, Section 404 Permit, and/or State Department of

142 Health, Section 401 Water Quality Certification and/or Blanket Section
143 401 Water Quality Certification (WQC), Modification for Certain 2017
144 Department of the Army Nationwide Permits and Activities.
145 Submission of complete and acceptable SWPPP/IWPPP is the sole
146 responsibility of the Contractor and additional contract time or
147 compensation will not be issued for delays due to incompleteness.
148 The SWPPP/IWPPP shall include but not be limited to the following:
149

150 **(a)** Written description of activities to reduce erosion and
151 minimize water pollutants entering State waters, drainage or
152 sewer systems. BMP shall include the following:
153

- 154 1. An identification of potential pollutants and their
155 sources.
- 156
- 157 2. A list of all materials and heavy equipment to be
158 used during construction.
- 159
- 160 3. Descriptions of the methods and devices used to
161 minimize the discharge of pollutants into State waters,
162 drainage or sewer systems, and/or isolation of In-Water
163 work.
- 164
- 165 4. Details of the procedures used for the
166 maintenance and subsequent removal of any erosion or
167 siltation control devices.
- 168
- 169 5. Methods of removing and disposing hazardous
170 wastes encountered or generated during construction.
- 171
- 172 6. Methods of removing and disposing concrete and
173 asphalt pavement cutting slurry, concrete curing water,
174 and hydrodemolition water.
- 175
- 176 7. Spill Control and Prevention and Emergency Spill
177 Response Plan.
- 178
- 179 8. Fugitive Dust Control Plan, including dust from
180 grinding, sweeping, or brooming off operations or
181 combination thereof containing the following:
182
- 183 a. List of dust producing activities.
- 184
- 185 b. Method(s) that shall be used to mitigate or
186 eliminate amount of dust produced, such as
187 spraying water from water truck, using misters,
188 chemical dust controlling agents, or combination

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thereof; hydro-mulching, keeping soil moist, and grassing to minimize project impacts on adjacent properties.

c. Methods to prevent the discharge of fugitive dust from leaving the project site, including project staging areas, onto adjacent properties including details for constructing and maintaining dust screens.

9. Methods of storing and handling of oils, paints and other products used for the project.

10. Material storage and handling areas, and other staging areas.

11. Concrete truck washouts.

12. Concrete waste control.

13. Fueling and maintenance of vehicles and other equipment.

14. Tracking of sediment off-site from project entries and exits.

15. Litter management.

16. Toilet facilities.

17. Other factors that may cause water pollution, dust and erosion control.

(b) Provide plans indicating location of water pollution, dust and erosion control devices; provide plans and details of BMPs to be installed or utilized; show areas of soil disturbance in cut and fill, indicate areas used for construction staging and storage including items (1) through (17) above, storage of aggregate (indicate type of aggregate), asphalt cold mix, soil or solid waste, equipment and vehicle parking, and show areas where vegetative practices are to be implemented. Indicate intended drainage pattern on plans. Include flow arrows. Include separate drawing for each phase of construction that alters drainage patterns or Contractor's sequencing for In-Water work including the in-water isolation BMPs associated with each in-water activity/phase.. Indicate approximate date when device will be installed and removed.

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(c) Construction schedule.

(d) Name(s) of specific individual(s) (on the Stormwater Team including roles and responsibilities to facilitate the project's compliance with stormwater permits) designated responsible for water pollution, dust, and erosion controls on the project site. Include home, cellular, and business telephone numbers, fax numbers, and e-mail addresses. Individual(s) shall have authority to resolve complaints and inquiries. The Engineer will forward public complaints and inquiries regarding dust from construction activities to the representative(s).

(e) Description of fill material to be used.

(f) For projects with an NPDES Permit for Construction Activities and for projects on Oahu, complete all sections in the SWPPP/IWPPP.

(g) For projects with an Army Corps 404 Permit, complete all sections in the SWPPP/IWPPP.

(h) For projects with an NPDES Permit, information required for compliance with the conditions of the Notice of General Permit Coverage (NGPC)/NPDES Permit.

(i) Site-Specific BMP Review Checklist. The checklist may be downloaded from HDOT's Storm Water Management website at <http://stormwaterhawaii.com>.

Complete, Date and sign SWPPP/IWPPP. The Site-Specific BMP Review Checklist will be an attachment of the SWPPP/IWPPP. Keep accepted copy of certified SWPPP/IWPPP and certified SWPPP/IWPPP amendments on-site or at an accessible location so that it can be made available at the time of an on-site inspection or upon request by the Engineer, HDOT Third-Party Inspector, and/or DOH/EPA Representative. The Site-Specific BMP Review Checklist will be an attachment of the SWPPP/IWPPP. Amendments to the Site-Specific BMP Plan shall be included with original Site-Specific BMP Plan. Modify SWPPP/IWPPP if necessary to conform to revisions. Include date of installation and removal of Site-Specific BMP measures. Obtain certified SWPPP/IWPPP or certified SWPPP/IWPPP amendment before implementing revised Site-Specific BMPs in the field.

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Follow the guidelines in the current HDOT “Construction Best Management Practices Field Manual”, in developing, installing, and maintaining land-based Site-Specific BMPs for all projects.

Follow the guidelines in the current HDOT “Practitioners Guide” in developing, installing, and maintaining in-water or over water Site-Specific BMPs. BMPs in Chapter 5 (Construction BMPs for working In, Over or adjacent to Waters of the U.S.) of the Practitioners Guide describe BMPs which are authorized clear water isolation techniques to be implemented within the defined Temporary Impact Area described in the Army Corps Section 404 Pre-construction Notification Permit application and/or other contract documents. Request for the Engineer’s approval to include other clear water isolation techniques not included in the manual when submitting SWPPP/IWPPP.

For any conflicting requirements between the Manual(s) and applicable bid documents, the applicable bid documents will govern. Should a requirement not be clearly described within the applicable bid documents, notify the Engineer immediately for interpretation. For the purposes of clarification “applicable bid documents” include the construction plans, standard specifications, special provisions, permits, and the SWPPP/IWPPP when applicable.

Use respective Soil Erosion Guidelines for Oahu, Maui, Kauai and Hawai’i projects.

(B) Construction Requirements.

(1) General.

Do not begin work until submittals detailed in Subsection 209.03(A)(2) - Water Pollution, Dust, and Erosion Control Submittals are completed and accepted in writing (either by Certified SWPPP/IWPPP or certified SWPPP/IWPPP amendment) by the Engineer.

Install, maintain, monitor, repair and replace Site-Specific BMP measures, such as for water pollution, dust and erosion control; installation, monitoring, and operation of hydrotesting activities; removal and disposal of hazardous waste indicated on plans, concrete cutting slurry, concrete curing water; or hydrodemolition water.

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Site-Specific BMP measures shall be in place, functional and accepted by HDOT personnel prior to initiating any ground disturbing or In-Water activities.

Furnish and install rain gage in a secure location prior to field work including installation of Site-Specific BMP. Provide rain gage with a tolerance of at least 0.05 inches of rainfall. Install rain gage on project site in an area that will not deter rainfall from entering the gate opening. Do not install in a location where rain water may splash into rain gage. The rain gage installation shall be stable and plumbed. Maintain rain gage and replace rain gage that is stolen, does not function properly or accurately, is worn out, or needs to be relocated. Do not begin field work until rain gage is installed and Site-Specific BMPs are in place. Rain gage data logs shall be readily available. Submit rain gage data logs weekly to the Engineer.

Address all comments received from the Engineer.

Submit SWPPP/IWPPP amendment to modify and resubmit plans and construction schedules to correct conditions that develop during construction which were unforeseen during the design and pre-construction stages. Include changes in the SWPPP/IWPPP

BMP measures shall be in place and operational at the end of work day or as required by Section 209.03(B) – Construction Requirements.

Install and maintain either or both stabilized construction entrances and wheel washes to minimize tracking of dirt and mud onto roadways. Restrict traffic to stabilized construction areas only. Clean dirt, mud, or other material tracked onto the road, sidewalk, or other paved area by the end of the same day in which the track-out occurs. Modify stabilized construction entrances to prevent mud from being tracked onto road. Stabilize entire access roads if necessary.

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

Limit maximum surface area of earth material exposed at any time to 300,000 square feet. Do not expose or disturb surface area of earth material (including clearing and grubbing) until BMP measures are installed and accepted in writing by the Engineer. Protect temporarily or permanently disturbed soil surface from rainfall impact, runoff and wind before end of the work day.

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(2) Stabilization.

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

(a) Complete initial stabilization within 7 calendar days after the temporary or permanent cessation of earth-disturbing activities.

(b) Any of the following types of activities constitutes initiation of stabilization:

1. Prepping the soil for vegetative or non-vegetative stabilization;
2. Applying mulch or other non-vegetative product to the exposed area;
3. Seeding or planting the exposed area;
4. Starting any of the activities in items (1) – (3) above on a portion of the area to be stabilized, but not on the entire area; and
5. Finalizing arrangements to have stabilization product fully installed in compliance with the deadline for completing initial stabilization activities.

(c) Any of the following types of activities constitutes completion of initial stabilization activities:

1. For vegetative stabilization, all activities necessary to initially seed or plant the area to be stabilized; and/or

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2. For non-vegetative stabilization, the installation or application of all such non-vegetative measures.

(d) If the Contractor is unable to meet the deadlines above due to circumstances beyond the Contractor's control, and the Contractor is using vegetative cover for temporary or permanent stabilization, the Contractor may comply with the following stabilization deadlines instead as agreed to by the Engineer:

1. Immediately initiate, and complete within the timeframe shown above, the installation of temporary non-vegetative stabilization measures to prevent erosion;

2. Complete all soil conditioning, seeding, watering or irrigation installation, mulching, and other required activities related to the planting and initial establishment of vegetation as soon as conditions or circumstances allow it on the site; and

3. Notify and provide documentation to the Engineer the circumstances that prevent the Contractor from meeting the deadlines above for stabilization and the schedule the Contractor will follow for initiating and completing initial stabilization and as agreed to by the Engineer.

Follow the applicable requirements of the specifications and special provisions including Section 619 - Planting and Section 641 – Hydro-Mulch Seeding.

Immediately after seeding or planting the area to be vegetatively stabilized, to the extent necessary to prevent erosion on the seeded or planted area, select, design, and install non-vegetative erosion controls that provide cover (e.g., mulch, rolled erosion control products) to the area while vegetation is becoming established.

Protect exposed or disturbed surface area with mulches, grass seeds or hydromulch. Spray mulches at a rate of 2,000 pounds per acre. Add tackifier to mix at a rate of 85 pounds per acre. Apply grass seeds at a rate of 125 pounds per acre. For hydromulch, use the ingredients and rates required for mulches and grass seeds. Submit recommendations from a licensed Landscape Architect when deviating from the application rates above.

471 Apply fertilizer to mulches, grass seed or hydromulch
472 per manufacturer's recommendations. Submit
473 recommendations from a licensed Landscape Architect when
474 deviating from the manufacturer's recommendations.

475
476 Install velocity dissipation measures when exposing
477 erodible surfaces greater than 15 feet in height.

478
479 **(3) Dust Control.**

480
481 Chemicals may be used as soil stabilizers for either or both
482 erosion and dust control if acceptable to the Engineer. Chemicals
483 may include mineral-based binders with surfactants to minimize water
484 consumption.

485
486 If dust screens are required, maintain dust screens until
487 permanent ground cover has been established. Revise dust screen
488 installations, as necessary, to complete work and to meet
489 environmental and climate changes.

490
491 When applying water for dust control comply with the following:

492
493 **(a)** Apply water uniformly by pressure-type tank truck
494 equipped with spray system and adequate control apparatus.
495 Ensure uniform application of water. Use watering systems
496 such as pipe, hose, and spray apparatus, only if uniform
497 application of water can be ensured.

498
499 **(b)** Apply water as conditions require. Prevent water from
500 wetting vehicles, pedestrians, and existing pavements. Repair
501 or compensate for damages caused by watering.

502
503 **(c)** Employ best management practices (BMP's) with regard
504 to dust control water leaving project site or entering into
505 drainage or sewer systems, or State waters. Washing down of
506 debris or dirt into drainage or sewer systems, or State waters
507 will not be allowed.

508
509 Continue monitoring for dust until the Substantial Completion
510 Date.

511
512 Cover exposed surface of materials completely with tarpaulin or
513 similar device when transporting aggregate, soil, excavated material
514 or material that may be source of fugitive dust.

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(4) Maintenance and Inspection.

Install or modify Site-Specific BMP measures due to change in the Contractor's means and methods, or for omitted condition that should have been allowed for in the certified SWPPP/IWPPP or certified SWPPP/IWPPP amendment that replaces a certified SWPPP/IWPPP or certified SWPPP/IWPPP amendment that is not satisfactorily performing. Modifications to Site-Specific BMP measures shall be certified as an amendment to the SWPPP/IWPPP and updated in the SWPPP/IWPPP prior to implementation.

Properly maintain all Site-Specific BMP measures.

Obtain Engineer's acceptance prior to removing BMPs.

Cleanup and remove any pollutant that can be attributed to the Contractor.

Inspect, prepare a written report, and make repairs to land based BMP measures at the following intervals:

- a. Weekly.
- b. Within 24 hours of any rainfall of 0.25 inch or greater which occurs in a 24-hour period.
- c. When existing erosion control measures are damaged or not operating properly as required by Site-Specific BMP.

Temporarily remove, replace or relocate any Site-Specific BMP that must be removed, replaced or relocated due to potential or actual flooding, or potential danger or damage to project or public as directed by the Engineer. Reinstall once flooding, or potential danger or damage to project or public is no longer a risk.

Maintain records of inspections of Site-Specific BMP work. Keep continuous records for duration of the project. Submit copy of Inspection Report to the Engineer within 24 hours after each inspection. Inspection reports shall be completed after initial inspection and after deficiencies have been corrected. Keep copies on-site or at an accessible location so that it can be made available at the time of an on-site inspection or upon request by the Engineer, HDOT Third-Party Inspector, and/or DOH/EPA Representative.

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The Contractor's designated representative specified in Subsection 209.03(A)(2)(d) shall address any Site-Specific BMP deficiencies brought up by the Engineer immediately, including weekends and holidays, and complete work to fix the deficiencies by the close of the next work day if the problem does not require significant repair or replacement, or if the problem can be corrected through routine maintenance. Address any Site-Specific BMP deficiencies brought up by the State's Third-Party Inspector in the timeframe above or as specified in the MS4 NPDES Permit or Enforcement Response Plan Construction Site Runoff Control, whichever is more stringent. The MS4 NPDES Permits only apply to Oahu and Maui (Kahului). The Enforcement Response Plan Construction Site Runoff Control only applies to Oahu. In this section, "immediately" means the Contractor shall take all reasonable measures to minimize or prevent discharge of pollutants until a permanent solution is installed and made operational. If a problem is identified at a time in the day in which it is too late to initiate repair, initiation of repair shall begin on the following work day.

When installation of a new pollution prevention control or a significant repair is needed, complete installation or repair no later than seven calendar days from the time of notification/Contractor discovery. Notify the Engineer and document why it is infeasible to complete the installation or repair within seven calendar days and complete the work as soon as practicable and as agreed to by the Engineer. Address Site-Specific BMP deficiencies discovered by the Contractor within the timeframe above. Address any inquiries or complaints forwarded by the Engineer from the public regarding dust from construction activities and correct deficiencies in dust control methods immediately or by the next working day if a problem is identified at a time in the day in which it is too late to respond or initiate correcting deficiencies or as directed by the Engineer. If the Contractor fails to satisfactorily address these Site-Specific BMP deficiencies, the Engineer reserves the right to employ outside assistance or use the Engineer's own labor forces to provide necessary corrective measures. The Engineer will charge the Contractor such incurred costs plus any associated project engineering costs. The Engineer will make appropriate deductions from the Contractor's monthly progress estimate. Failure to apply Site-Specific BMP measures may result in one or more of the following: assessment of liquidated damages, suspension, or cancellation of Contract with the Contractor being fully responsible for all additional costs incurred by the State.

(C) Additional Construction Requirements for In-Water Work.

Coordinate site access, schedule of construction activities, Site-Specific BMPs measures, erosion and sediment control

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measures, and document visual observations, and comply with all requirements and conditions of the Section 401 WQC/Army Corps Section 404 Permit.

At minimum, obtain site photographs at an upstream control station (USC) (50 feet upstream of the work area), impact station (IS) (immediately downstream of the last in-water BMP) and downstream control station (DSC) (50 feet downstream of the IS) at the construction site. See HDOT Inspection Report for In-Water Work for photo orientation map and locations of photos.

All photographs and inspections shall be prepared, labeled and annotated with appropriate captions on the HDOT Inspection Report for In-Water Work. Submit the completed HDOT Inspection Report for In-Water Work to the Engineer. A location map, site plan showing the location and photo orientation map shall also be included as part of the report. The digital files of the HDOT Inspection Report for In-Water Work and/or documents containing the photographs, the site plan and other accompanying documents, if necessary, shall be placed on a CD and submitted to the Engineer. The file format shall be acceptable to the Engineer. The Contractor shall submit the HDOT Inspection Report for In-Water Work as indicated in the table below.

During in-water inspections/photographs, the Contractor's representative shall identify and document irregularities upstream of construction activities, irregularities associated with the day's in-water construction activities and general site observations of the stream, construction activities, etc., and document findings on the HDOT Inspection Report for In-Water Work.

The frequency and requirement of each phase of construction (pre-construction, during construction and post construction) are indicated below.

Requirement	Frequency of Requirement	Submission timeline to HDOT
Preconstruction inspections/photographs	Once per week for two weeks for a total of two inspections/photographs	Prior to the start of in-water construction
During construction inspections/photographs	Daily during in-water work activities	Before the end of next business day
Post construction inspections/photographs	Once per week for a total of two inspections/photographs	Within 5 business days after the completion of the final post construction inspection/photograph

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648 The Contractor shall be responsible for the effectiveness and
649 adequacy of the implemented Site-Specific BMP measures, and other
650 environmental protection measures. The Contractor shall review and
651 assess these measures daily or as required by the permits. If there
652 are any indications of a discharge at any time, including a turbidity
653 plume, stop work immediately and investigate the source of the
654 plume. The Contractor shall notify HDOT immediately. If possible
655 contain the area where the plume is emanating from. If the discharge
656 poses an immediate threat to the public or environment, call 911
657 immediately.

658
659 (1) If the BMPs require reinstallation in accordance with the
660 accepted Site-Specific BMP Plan, the Contractor shall cease
661 activities, take immediate corrective action, document the
662 corrective action taken, and provide a written report to the
663 Engineer by the close of the workday.

664
665 (2) If the BMPs do not require repair or modification, determine
666 what activities are causing the discharges and provide a report
667 to the Engineer proposing corrective action. Monitor following
668 corrective action to ensure the effectiveness of the corrective
669 action.

670
671 (3) If the BMPs require modification, the Contractor shall cease
672 activities, and submit an amendment to the Site-Specific BMP
673 Plan in a SWPPP/IWPPP amendment within 24 hours to the
674 Engineer for review. Do not resume work until the proposed
675 SWPPP/IWPPP amendments are accepted by the Engineer
676 and certified by the Authorized Representative. Upon receiving
677 the certified SWPPP/IWPPP amendment or Engineer's
678 acceptance, the Contractor shall take immediate corrective
679 action, and document the corrective action taken.

680
681 Section 404 Department of the Army Permit.

682
683 Implement only the Site-Specific BMPs on the certified
684 SWPPP/IWPPP or certified SWPPP/IWPPP amendment.
685 Immediately notify the Engineer if the BMPs are insufficient for
686 preventing discharge of pollutants. The Contractor shall be
687 responsible for any revisions required to modify the 404 Permit at no
688 additional cost to the State and no extension of time if the Contractor
689 discharges unauthorized fill.

690
691 Notify the Engineer immediately if BMPs have been damaged
692 or displaced, or result in a discharge of material. The Engineer must
693 notify the USACE and obtain approval prior to recovery of discharged
694 materials outside the Temporary Impact Area.

695 Severe Storm Contingency Plan

696

697 Provide a Severe Storm Contingency Plan and implement each
698 response appropriately.

699

700 **(D) Discharges of Storm Water Associated with Construction**
701 **Activities.** If work includes disturbance of one acre or more, an NPDES
702 Permit authorizing Discharges of Storm Water Associated with Construction
703 Activity (CWB-NOI Form C) or Individual Permit authorizing storm water
704 discharges associated with construction activity is required from the
705 Department of Health Clean Water Branch (DOH-CWB).

706

707 Do not begin construction activities until all required conditions of the
708 permit are met and submittals detailed in Subsection 209.03(A)(2) – Water
709 Pollution, Dust, and Erosion Control Submittals are completed and accepted
710 in writing by the Engineer.

711

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

717

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

722

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

728

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

733

734 **(G) Solid Waste.** Submit the Solid Waste Disclosure Form for
735 Construction Sites to the Engineer within 21 calendar days of date of award.
736 Keep copies on-site or at an accessible location so that it can be made
737 available at the time of an on-site inspection or upon request by the
738 Engineer, HDOT Third-Party Inspector, and/or DOH/EPA Representative.
739 Provide a copy of all the disposal receipts from the facility permitted by the
740 Department of Health to receive solid waste to the Engineer monthly. This
741 should also include documentation from any intermediary facility where solid

742 waste is handled or processed, haul tags as applicable, or any
743 documentation as requested by the Engineer. Notify Engineer at minimum
744 48 hours prior to removal of material from site. All material not used on the
745 project shall be considered solid waste. If the Contractor elects to reclassify
746 the solid waste as inert fill, follow the requirements in Section 219 –
747 Determination and Characterization of Fill Material.

748
749 **(H) Construction BMP Training.** The Contractor's representative
750 responsible for development of the Site-Specific BMP Plan and
751 implementation of Site-Specific BMPs in the field shall attend the State's
752 Construction Best Management Practices Training. The Contractor shall
753 keep training logs updated and readily available.

754
755 **209.04 Measurement.**

756
757 **(A)** Installation, maintenance, monitoring, and removal of BMP and Water
758 Quality Sampling will be paid on a lump sum basis. Measurement for
759 payment will not apply.

760
761 **(B)** The Engineer will only measure additional water pollution, dust and
762 erosion control required and requested by the Engineer on a force account
763 basis in accordance with Subsection 109.08 – Force Account Provisions and
764 Compensation.

765
766 **209.05 Payment.** The Engineer will pay for accepted pay items listed below at
767 contract price per pay unit, as shown in the proposal schedule. Payment will be full
768 compensation for work prescribed in this section and contract documents.

769
770 The Engineer will pay for each of the following pay items when included in
771 proposal schedule:

772

773 Pay Item	774 Pay Unit
775 Installation, Maintenance, Monitoring, and Removal of BMP	776 Lump Sum
777 Water Quality Sampling	778 Lump Sum

779 Payment for all work prescribed in this section including: submittals,
780 sampling, testing, reporting, dust control measures, installation, maintenance,
781 monitoring, and removal of BMP's shall be paid for under the lump sum pay item
782 shown in the proposal schedule. This includes payment for installation or
783 modification of Site-Specific BMP measures due to change in the Contractor's
784 means and methods, or for omitted condition that should have been allowed for in
785 the accepted Site-Specific BMP or a Site-Specific BMP that requires repair or
786 replacement of an accepted Site-Specific BMP that is not satisfactorily performing.

787
788 Additional Water Pollution, Dust, and Erosion Control Force Account

789 An estimated amount for force account is allocated in proposal schedule
790 under 'Additional Water Pollution, Dust, and Erosion Control', but actual amount to
791 be paid will be the sum shown on accepted force account records, whether this sum
792 be more or less than estimated amount allocated in proposal schedule. The
793 Engineer will pay for BMP measures requested by the Engineer that are beyond
794 scope of accepted Site-Specific BMP for the original contract work on a force
795 account basis.

796
797 No progress payment will be authorized until the Engineer accepts in writing
798 Site-Specific BMP or when the Contractor fails to maintain project site in accordance
799 with accepted BMP.

800
801 For all citations or fines received by the Department for non-compliance,
802 including compliance with NPDES Permit and Army Corps 404 Permit conditions,
803 the Contractor shall reimburse State within 30 calendar days for full amount of
804 outstanding cost State has incurred, or the Engineer will deduct cost from progress
805 payment.

806
807 The Engineer will not pay for work to repair or to compensate for damages
808 caused by dust or water.

809
810 The Engineer may assess liquidated damages up to \$27,500 per day for non-
811 compliance of each BMP requirement and all other requirements in this section.
812

813 **Appendix A**

814

815 The following list identifies potential pollutant sources and corresponding
816 BMPs used to mitigate the pollutants. Each BMP is referenced to the
817 corresponding section of the current HDOT Construction Best Management
818 Practices Field Manual or appropriate Supplemental Sheets. The Manual may be
819 obtained from the HDOT Statewide Storm Water Management Program Website at
820 <http://www.stormwaterhawaii.com/resources/contractors-and-consultants/> under
821 Construction Best Management Practices Field Manual. Supplemental BMP sheets
822 are located at <http://www.stormwaterhawaii.com/resources/contractors-and-consultants/storm-water-pollution-prevention-plan-swppp/> under Concrete Curing
823 and Irrigation Water.
824
825

Pollutant Source	Appropriate Site-Specific BMP to be Implemented	BMP Requirements
<p><i>Construction debris, green waste, general litter</i></p>	<ul style="list-style-type: none"> • <i>Separate contaminated clean up materials from construction and demolition (C&D) wastes.</i> • <i>Provide waste containers (e.g., dumpster or trash receptacle) of sufficient size and number to contain construction and domestic wastes.</i> • <i>Inspect construction waste and recycling areas regularly.</i> • <i>Schedule solid waste collection regularly.</i> • <i>Schedule recycling activities based on construction/demolition phases.</i> • <i>Empty waste containers weekly or when they are two-thirds full, whichever is sooner.</i> • <i>Do not allow containers to overflow. Clean up immediately if they do.</i> • <i>On work days, clean up and dispose of waste in designated waste containers.</i> • <i>Cover dumpster or trash receptacle with impermeable cover at the end of the workday.</i> • <i>See Solid Waste Management Section SM-6 for additional requirements.</i> • <i>Provide Storm Drain Inlet Protection and/or Perimeter Sediment Controls as applicable.</i> 	<p><i>See Solid Waste Management Section SM-6. Protect Storm Drain Inlets SC-2, and Perimeter Sediment Controls where applicable.</i></p>
<p><i>Materials associated with the operation and maintenance of equipment, such as oil, fuel, and hydraulic fluid leakage</i></p>	<ul style="list-style-type: none"> • <i>Use off-site wash racks, repair and maintenance facilities, and fueling sites when practical.</i> • <i>Designate bermed wash area if cleaning on-site is necessary.</i> • <i>Place drip pans or drop cloths under vehicles and equipment to absorb spills or leaks.</i> • <i>Provide an ample supply of readily available spill cleanup materials.</i> • <i>Clean up spills immediately, using dry clean-up methods where possible, and dispose of used materials properly.</i> • <i>Do not clean surfaces or spills by hosing the area down.</i> • <i>Eliminate the source of the spill to prevent a discharge or a continuation of an ongoing discharge.</i> • <i>Inspect on-site vehicles and equipment regularly and immediately repair leaks.</i> 	<p><i>See Vehicle and Equipment Cleaning, Maintenance, and Refueling, Sections SM-11, SM-12, and SM-13, and Material Delivery, Storage and Material Use Sections SM-2 and SM-3, and Spill</i></p>

Pollutant Source	Appropriate Site-Specific BMP to be Implemented	BMP Requirements
	<ul style="list-style-type: none"> • Regularly inspect fueling areas and storage tanks. • Train employees on proper maintenance and spill practices and procedures and fueling and cleanup procedures. • Store diesel fuel, oil, hydraulic fluid, or other petroleum products or other chemicals in water-tight containers and provide cover or secondary containment. • Do not remove original product labels and comply with manufacturer's labels for proper disposal. • Dispose of containers only after all the product has been used. • Dispose of or recycle oil or oily wastes according to Federal, State, and Local requirements. • Store soaps, detergents, or solvents under cover or other means to prevent contact with rainwater. • See Vehicle and Equipment Cleaning, Maintenance, and Refueling, Sections SM-11, SM-12, and SM-13 and Material Use Section SM-3 for additional requirements. 	Prevention and Control SM-10.

Pollutant Source	Appropriate Site-Specific BMP to be Implemented	BMP Requirements
Soil erosion from the disturbed areas	<ul style="list-style-type: none"> • Provide Soil Stabilization, Slope Protection, Storm Drain Inlet Protection SC-2, Perimeter Controls and Sediment Barriers, Sediment Basins and Detention Ponds, Check Dams SC-9 ,Level Spreader SC-10, Paving Operations SM-19, Construction Road Stabilization EC-1, Controlling Storm Water Flowing Onto and Through the Project, Post-Construction BMPs, and Non-Structural BMPs (Employee Training SM-1, Scheduling SM-14, Location of Potential Sources of Sediment SM-15, Preservation of Existing Vegetation SM-16) . • Delineate, and clearly mark off, with flags, tape, or other similar marking device all natural buffer areas defined in the SWPPP. • Preserve native topsoil where practicable. • In areas where vegetative stabilization will occur, restrict vehicle/equipment use in areas to avoid soil compaction or condition soil to promote vegetative growth. • For Storm Drain Inlet Protection, clean, or remove and replace, the protection measures as sediment accumulates, the filter becomes clogged, and/or performance is compromised. • Where there is evidence of sediment accumulation adjacent to the inlet protection measure, remove the deposited sediment by the end of the same day in which it is found or by the end of the following work day if removal by the same day is not feasible. • Sediment basins shall be designed and maintained in accordance with HAR 11-55. • Minimize disturbance on steep slopes (Greater than 15% in grade). • If disturbance of steep slopes are unavoidable, phase disturbances and use stabilization techniques 	<p>Soil Stabilization</p> <ol style="list-style-type: none"> 1. SM-21 Topsoil Management 2. EC-5 Seeding and Planting 3. EC-6 Mulching 4. EC-7 Geotextiles and Mats <p>Slope Protection</p> <ol style="list-style-type: none"> 1. EC-5 Seeding and Planting 2. EC-6 Mulching 3. EC-7 Geotextiles and Mats 4. EC-9 Slope Roughening, Terracing, and Rounding 5. SC-11 Slope Drains and Subsurface Drains 6. SC-12 Top and Toe of Slope Diversion Ditches

Pollutant Source	Appropriate Site-Specific BMP to be Implemented	BMP Requirements
	<p><i>designed for steep grades.</i></p> <ul style="list-style-type: none"> • <i>For temporary drains and swales use velocity dissipation devices within and at the outlet to minimize erosive flow velocities.</i> 	<p><i>and Berms</i></p> <p><i>SC-2 Storm Drain Inlet Protection</i></p> <p><i>Perimeter Controls and Sediment Barriers</i></p> <ol style="list-style-type: none"> <i>1. SC-1 Silt Fence</i> <i>2. SC-5 Vegetated Filter Strips and Buffers</i> <i>3. SC-8 Compost Filter Berm</i> <i>4. SC-13 Sandbag Barrier</i> <i>5. SC-14 Brush or Rock Filter</i> <p><i>Sediment Basins and Detention Ponds</i></p> <ol style="list-style-type: none"> <i>1. SC-15 Sediment Trap</i> <i>2. SC-16 Sediment Basin</i> <p><i>SC-9 Check Dams</i></p> <p><i>SC-10 Level Spreader</i></p>

Pollutant Source	Appropriate Site-Specific BMP to be Implemented	BMP Requirements
		<p>SM-19 Paving Operations</p> <p>EC-1 Construction Road Stabilization</p> <p>Controlling Storm Water Flowing onto and Through the Project</p> <ol style="list-style-type: none"> 1. EC-8 Run-On Diversion 2. SC-6 Earth Dike 3. SC-7 Temporary Drains and Swales <p>Post Construction BMPs</p> <ol style="list-style-type: none"> 1. EC-4 Flared Culvert End Sections 2. SC-3 Rip-Rap and Gabion Inflow Protection 3. SC-4 Outlet Protection and Velocity Dissipation Devices

<i>Pollutant Source</i>	<i>Appropriate Site-Specific BMP to be Implemented</i>	<i>BMP Requirements</i>
		<p>4. <i>SM-21 Topsoil Management</i></p> <p><i>Non-Structural BMPs</i></p> <ol style="list-style-type: none"> 1. <i>SM-1 Employee Training</i> 2. <i>SM-14 Scheduling</i> 3. <i>SM-15 Location of Potential Sources of Sediment</i> 4. <i>SM-16 Preservation of Existing Vegetation</i>

Pollutant Source	Appropriate Site-Specific BMP to be Implemented	BMP Requirements
Sediment from soil stockpiles	<ul style="list-style-type: none"> • <i>Locate stockpiles a minimum of 50 feet or as far as practicable from concentrated runoff or outside of any natural buffers identified on the SWPPP.</i> • <i>Place bagged materials on pallets and under cover.</i> • <i>Provide physical diversion to protect stockpiles from concentrated runoff.</i> • <i>Cover stockpiles with plastic or comparable material when practicable.</i> • <i>Place silt fence, fiber filtration tubes, or straw wattles around stockpiles.</i> • <i>Do not hose down or sweep soil or sediment accumulated on pavement or other impervious surfaces into any storm water conveyance (unless connected to a sediment basin, sediment trap, or similarly effective control), storm drain inlet, or state water.</i> • <i>Unless infeasible, contain and securely protect stockpiles from the wind.</i> • <i>Provide Storm Drain Inlet Protection and/or Perimeter Sediment Controls as applicable.</i> • <i>See Protection of Stockpiles Section SM-4 for additional requirements.</i> 	<p>See Protection of Stockpiles Section SM-4. Protect Storm Drain Inlets SC-2, and Perimeter Sediment Controls where applicable.</p> <p>Note: Stockpiles include soil or sediment material stored for multiple days awaiting transportation for disposal.</p>
Emulsified asphalt or prime/tack coat	<ul style="list-style-type: none"> • <i>Provide training for employees and contractors on proper material delivery and storage practices and procedures.</i> • <i>Restrict paving operations during wet weather to prevent paving materials from being discharged.</i> • <i>Use asphalt emulsions such as prime coat when possible.</i> • <i>Protect drain inlet structures and manholes during application of tack coat, seal coat, slurry seal, and fog seal.</i> • <i>Keep ample supplies of drip pans and absorbent materials on-site.</i> • <i>Inspect inlet protection devices.</i> • <i>See Material Delivery and Storage Section SM-2 and Paving Operations Section SM-19 for additional requirements.</i> • <i>Provide Storm Drain Inlet Protection and/or</i> 	<p>See Material Delivery and Storage Section SM-2 and Material Use Section SM-3, Paving Operations Section SM-19, Protect Storm Drain Inlets SC-2, and Perimeter Sediment Controls where</p>

Pollutant Source	Appropriate Site-Specific BMP to be Implemented	BMP Requirements
	<i>Perimeter Sediment Controls as applicable.</i>	<i>applicable.</i>
<i>Materials associated with painting, such as paint and paint wash solvent</i>	<ul style="list-style-type: none"> • <i>Hazardous chemicals shall be well-labeled and stored in original containers.</i> • <i>Keep ample supply of cleanup materials on-site.</i> • <i>Dispose container only after all of the product has been used.</i> • <i>Remove as much paint from brushes on painted surface.</i> • <i>Rinse from water-based paints shall be discharged into the sanitary sewer system where possible. If not, direct all washwater into a leak-proof container or leak-proof pit. The container or pit must be designed so that no overflows can occur due to inadequate sizing or precipitation.</i> • <i>Locate on-site wash area a minimum of 50 feet away or as far as practicable from storm drain inlets, open drainage facilities, or water bodies.</i> • <i>. Do not dump liquid wastes into the storm drainage system.</i> • <i>Filter and re-use solvents and thinners.</i> • <i>Dispose of oil-based paints and residue as a hazardous waste.</i> • <i>Ensure collection, removal, and disposal of hazardous waste complies with regulations.</i> • <i>Immediately clean up spills and leaks.</i> • <i>Properly store paints, solvents, and epoxy compounds.</i> • <i>Properly store and dispose waste materials generated from painting and structure repair and construction activities.</i> • <i>Mix paints in a covered and contained area when possible to minimize adverse impacts from spills.</i> • <i>Do not apply traffic paint or thermoplastic if rain is forecasted.</i> • <i>See Material Delivery and Storage Section SM-2, Material Use SM-3, Waste Management, Hazardous Waste Management Section SM-9, Waste Management, Spill Prevention and Control Section SM-10, and Structure Construction and Painting Section SM-20 for additional requirements.</i> 	<i>See Material Delivery and Storage Section SM-2, Material Use Section SM-3, Hazardous Waste Management Section SM-9, Waste Management, Spill Prevention and Control Section SM-10, and Structure Construction and Painting Section SM-20, Protect Storm Drain Inlets SC-2, and Perimeter Sediment Controls where applicable.</i>

Pollutant Source	Appropriate Site-Specific BMP to be Implemented	BMP Requirements
	<ul style="list-style-type: none"> • Provide Storm Drain Inlet Protection and/or Perimeter Sediment Controls as applicable. 	
<p>Industrial chemicals, fertilizers, and/or pesticides</p>	<ul style="list-style-type: none"> • Hazardous chemicals shall be well-labeled and stored in original containers. • Keep ample supply of cleanup materials on-site. • Clean up spills immediately, using dry clean-up methods where possible, and dispose of used materials properly. • Do not clean surfaces or spills by hosing the area down. • Eliminate the source of the spill to prevent a discharge or a furtherance of an ongoing discharge. • Dispose container only after all of the product has been used. • Retain a complete set of material safety data sheets on-site. • Store industrial chemicals in water-tight containers and provide either cover or secondary containment. • Provide cover when storing fertilizers or pesticides to prevent these chemicals from coming into contact with rainwater. • Restrict amount of pesticide prepared to quantity necessary for the current application. • Do not apply fertilizers or pesticides during or just before a rain event. • Do not apply to storm water conveyance channels with flowing water. • Comply with fertilizer and pesticide manufacturer's recommended usage instructions. • Follow federal, state, and local laws regarding fertilizer application. • Do not dispose of toxic liquid wastes (solvents, used oils, and paints) or chemicals (additives, acids, and curing compounds) in dumpsters allocated for construction debris. • Ensure collection, removal, and disposal of hazardous waste complies with regulations. Hazardous waste that cannot be reused or recycled shall be disposed of by a licensed hazardous waste hauler. • See Material Delivery and Storage Section SM2, 	<p>See Material Delivery and Storage Section SM-2, Material Use Section SM-3, and Hazardous Waste Management Section SM-9, and Spill Prevention and Control SM-10</p>

Pollutant Source	Appropriate Site-Specific BMP to be Implemented	BMP Requirements
	<i>Material Use SM-3, and Waste Management, Hazardous Waste Management Section SM-9 for additional requirements.</i>	
<i>Hazardous waste (Batteries, Solvents, Treated Lumber, etc.)</i>	<ul style="list-style-type: none"> • <i>Do not dispose of toxic materials in dumpsters allocated for construction debris.</i> • <i>Ensure collection, removal, and disposal of hazardous waste complies with regulations.</i> • <i>Hazardous waste that cannot be reused or recycled shall be disposed of by a licensed hazardous waste hauler.</i> • <i>Segregate and recycle wastes from vehicle/equipment maintenance activities such as used oil or oil filters, greases, cleaning solutions, antifreeze, automotive batteries, and hydraulic and transmission fluids.</i> • <i>Store waste in sealed containers, which are constructed of suitable materials to prevent leakage and corrosion, and which are labeled in accordance with applicable Resource Conservation and Recovery Act (RCRA) requirements and all other applicable federal, state, and local requirements.</i> • <i>All containers stored outside shall be kept away from surface waters and within appropriately-sized secondary containment (e.g., spill berms, decks, spill containment pallets). Provide cover if possible.</i> • <i>Clean up spills immediately, using dry clean-up methods where possible, and dispose of used materials properly.</i> • <i>Do not clean surfaces or spills by hosing the area down.</i> • <i>Eliminate the source of the spill to prevent a discharge or a continuation of an ongoing discharge.</i> • <i>Ensure collection, removal, and disposal of hazardous waste complies with manufacturer's recommendations and is in compliance with federal, state, and local requirements.</i> • <i>See Hazardous Waste Management Section SM-9 and Vehicle and Equipment Management, Vehicle and Equipment Maintenance SM-12 for additional requirements.</i> 	<i>See Hazardous Waste Management Section SM-9 and Vehicle and Equipment Maintenance SM-12</i>
<i>Metals and</i>	<ul style="list-style-type: none"> • <i>Inspect construction waste and recycling areas</i> 	<i>See Solid</i>

Pollutant Source	Appropriate Site-Specific BMP to be Implemented	BMP Requirements
<i>Building Materials</i>	<p><i>regularly.</i></p> <ul style="list-style-type: none"> • <i>Schedule solid waste collection regularly.</i> • <i>If building materials or metals are stored on-site (such as rebar) store under cover under tarps or in containers.</i> • <i>Minimize the amount of material stored on-site.</i> • <i>Do not stockpile uncovered metals or other building materials in close proximity to discharge points.</i> • <i>See Solid Waste Management Section SM-6 for additional requirements.</i> 	<i>Waste Management Section SM-6</i>
<i>Contaminated Soil</i>	<ul style="list-style-type: none"> • <i>See Waste Management, Contaminated Soil Management Section SM-8 and/or Hazardous Waste Management Section SM-9 for additional requirements.</i> • <i>At minimum contain contaminated material soil by surrounding with impermeable lined berms or cover exposed contaminated material with plastic sheets.</i> 	<i>See Waste Management, Contaminated Soil Management Section SM-8 and/or Hazardous Waste Management Section SM-9</i>
<i>Fugitive Dust Control and Dust Control Water</i>	<ul style="list-style-type: none"> • <i>Do not over spray water for dust control purposes which will result in runoff from the area.</i> • <i>Apply water as conditions require.</i> • <i>Washing down of debris or dirt into drainage, sewage systems, or State waters is not allowed.</i> • <i>Minimize exposed areas through the schedule of construction activities.</i> • <i>Utilize vegetation, mulching, sprinkling, and stone/gravel layering to quickly stabilize exposed soil.</i> • <i>Direct construction vehicle traffic to stabilized roadways.</i> • <i>Cover dump trucks hauling material from the site with a tarpaulin. See Dust Control Section SM-18 for</i> 	<i>See Dust Control Section SM-18 and DOH Clean Air Branch Fugitive Dust Fact Sheet</i>

Pollutant Source	Appropriate Site-Specific BMP to be Implemented	BMP Requirements
	<i>additional requirements.</i>	
<i>Concrete Truck Wash Water</i>	<ul style="list-style-type: none"> • <i>Disposal of concrete truck wash water via percolation is prohibited.</i> • <i>Wash concrete-coated vehicles or equipment off-site or in the designated wash area.</i> • <i>Locate on-site wash area a minimum of 50 feet away or as far as practicable from storm drain inlets, open drainage facilities, or water bodies.</i> • <i>Runoff from the on-site concrete wash area shall be contained in a temporary pit or level bermed area where the concrete can set.</i> • <i>Design the area so that no overflow can occur due to inadequate wash area sizing or precipitation.</i> • <i>The temporary pit shall be lined with plastic to prevent seepage of wash water into the ground.</i> • <i>Allow wash water to evaporate or collect wash water and all concrete debris in a concrete washout system bin.</i> • <i>Do not dump liquid wastes into storm drainage system.</i> • <i>Dispose of liquid and solid concrete wastes in compliance with federal, state, and local standards.</i> • <i>See Waste Management, Concrete Waste Management Section SM-5 for additional requirements.</i> 	<i>See Waste Management, Concrete Waste Management Section SM-5</i>
<i>Sediment Track-Out</i>	<ul style="list-style-type: none"> • <i>Include Stabilized Construction Entrance at all points that exit onto paved roads.</i> • <i>A sediment trapping device is required if a wash rack is used in conjunction with the stabilized construction entrance/exit.</i> • <i>The pavement shall not be cleaned by washing</i> 	<i>See Stabilized Construction Entrance Section EC-2</i>

Pollutant Source	Appropriate Site-Specific BMP to be Implemented	BMP Requirements
	<p><i>down the street.</i></p> <ul style="list-style-type: none"> • <i>If sweeping is ineffective or it is necessary to wash the streets, wash water must be contained either by construction of a sump, diverting the water to an acceptable disposal area, or vacuuming the wash water.</i> • <i>Use BMPs for adjacent drainage structures.</i> • <i>Remove sediment tracked onto the street by the end of the day in which the track-out occurs.</i> • <i>Restrict vehicle use to properly designated exit points.</i> • <i>Include additional BMPs which remove sediment prior to exit when minimum dimensions can not be met.</i> • <i>See Stabilized Construction Entrance Section EC-2 for additional requirements.</i> 	

Pollutant Source	Appropriate Site-Specific BMP to be Implemented	BMP Requirements
Irrigation Water	<ul style="list-style-type: none"> • Consider irrigation requirements. • Where possible, avoid species which require irrigation. • Design timing and application methods of irrigation water to eliminate the runoff of excess irrigation water into the storm water drainage system. • See Seeding and Planting Section EC-5 and California Storm Water BMP Handbook SD-12 Efficient Irrigation at http://www.stormwaterhawaii.com/resources/contractors-and-consultants/storm-water-pollution-prevention-plan-swppp/ under Irrigation Water for additional requirements. 	See Seeding and Planting Section EC-5 and California Storm Water BMP Handbook SD-12 Efficient Irrigation
Hydrotesting Effluent	<ul style="list-style-type: none"> • If work includes removing, relocation or installing waterlines, and Contractor elects to flush waterline or discharge hydrotesting effluent into State waters or drainage systems, the Contractor shall prepare and obtain HDOT acceptance of a NOI/NPDES Permit Form F application for HDOT submittal to DOH CWB at least 30 calendar days prior to the start of Hydrotesting Activities if necessary. Site-Specific BMPs will be included in the NOI/NPDES Permit Form F submittal. 	Site-Specific BMPs will be included in the NOI/NPDES Permit Form F submittal.
Dewatering Effluent	<ul style="list-style-type: none"> • If excavation or backfilling operations require dewatering, and Contractor elects to discharge dewatering effluent into State waters or existing drainage systems, Contractor shall prepare and obtain HDOT acceptance of a NOI/NPDES Permit Form G application for HDOT submittal to DOH CWB at least 30 calendar days prior to the start of Dewatering Activities if necessary. See Site Planning and General Practices, Dewatering Operations Section SM-17 for additional requirements. 	See Dewatering Operations SM-17. Site-Specific BMPs will be included in the NOI/NPDES Permit Form G submittal.

Pollutant Source	Appropriate Site-Specific BMP to be Implemented	BMP Requirements
<i>Saw-cutting Slurry</i>	<ul style="list-style-type: none"> • <i>Saw cut slurry shall be removed from the site by vacuuming.</i> • <i>Provide storm drain protection during saw cutting. See Paving Operations Section SM-19 for additional requirements.</i> • <i>Provide Storm Drain Inlet Protection and/or Perimeter Sediment Controls as applicable.</i> 	<i>See Paving Operations Section SM-19, Storm Drain Inlet Protection SC-2, Perimeter sediment controls where applicable</i>
<i>Concrete Curing Water</i>	<ul style="list-style-type: none"> • <i>Avoid overspraying of curing compounds.</i> • <i>Apply an amount of compound that covers the surface, but does not allow any runoff of the compound.</i> • <i>See California Storm Water BMP Handbook NS-12 Concrete Curing at http://www.stormwaterhawaii.com/resources/contractors-and-consultants/storm-water-pollution-prevention-plan-swppp/ under Concrete Curing for additional requirements.</i> 	<i>See California Storm Water BMP Handbook NS-12 Concrete Curing</i>
<i>Plaster Waste Water</i>	<ul style="list-style-type: none"> • <i>Direct all washwater into a leak-proof container or leak-proof pit. The container or pit must be designed so that no overflows can occur due to inadequate sizing or precipitation.</i> • <i>Locate on-site wash area a minimum of 50 feet away or as far as practicable from storm drain inlets, open drainage facilities, or water bodies.</i> • <i>Any significant residual materials remaining on the ground after the completion of construction shall be removed and properly disposed. If the residual materials contaminate the soil, then the contaminated soil shall also be removed and properly disposed of.</i> • <i>Plaster waste water shall not be allowed to flow</i> 	<i>See Material Delivery and Storage Section SM-2, Material Use Section SM-3, and Hazardous Waste Management Section SM-9</i>

Pollutant Source	Appropriate Site-Specific BMP to be Implemented	BMP Requirements
	<p><i>into drainage structures or State waters.</i></p> <ul style="list-style-type: none"> • <i>See Material Delivery and Storage Section SM-2, Material Use SM-3, and Hazardous Waste Management Section SM-9 for additional requirements.</i> 	
<i>Water-Jet Wash Water</i>	<ul style="list-style-type: none"> • <i>For Water-Jet Wash Water used to clean vehicles, use off-site wash racks or commercial washing facilities when practical.</i> • <i>See Vehicle and Equipment Cleaning Section SM-11 for additional information.</i> • <i>For Water-Jet Wash Water used to clean impervious surfaces, the runoff shall not be allowed to flow into drainage structures or State Waters.</i> 	<i>See Vehicle and Equipment Cleaning Section SM-11</i>
<i>Sanitary/Septic Waste</i>	<ul style="list-style-type: none"> • <i>Locate Sanitary facilities in a convenient place away from drainage facilities.</i> • <i>Position sanitary facilities so they are secure and will not be tipped over or knocked down.</i> • <i>Wastewater shall not be discharged to the ground or buried.</i> • <i>A licensed service provider shall maintain sanitary/septic facilities in good working order.</i> • <i>Schedule regular waste collection by a licensed transporter.</i> • <i>See Sanitary/Septic Waste Section SM-7 for additional requirements.</i> 	<i>See Sanitary/Septic Waste Section SM-7.</i>

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END OF SECTION 209

1 Make the following Section a part of the Standard Specifications:
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3 **“SECTION 219 – DETERMINATION AND CHARACTERIZATION OF FILL**
4 **MATERIAL**
5
6

7 **219.01 Description.** This section describes determination and characterization
8 of fill material for project sites.
9

10 Requirements of this section apply to all waste generated from construction
11 and demolition (C&D) activities on the project.
12

13 **219.02 Definitions.**
14

15 **(A) Inert Fill Material.** Inert Fill Material is defined in the Hawaii Revised
16 Statutes (HRS) 342H-1. Materials that do not meet this definition shall be
17 disposed of at the appropriate Hawaii Department of Health (HDOH) Solid
18 and Hazardous Waste Branch permitted solid waste management facility.
19

20 The January 2008 State of Hawaii Department of Transportation,
21 Highways Division, Construction Best Management Practices Field Manual,
22 specifies inert fill material shall not be contaminated with asbestos or lead-
23 based paint. In addition, inert fill materials do not decompose or produce
24 leachate or other products harmful to the environment.
25

26 **219.03 Construction.**
27

28 **(A) Preconstruction Requirements.** Retain the services of an
29 Environmental Professional as accepted by the Engineer. Submit
30 documentation the Environmental Professional has a minimum of five (5)
31 years of experience in solid and hazardous waste management and fill
32 material characterization within 30 calendar days of contract certification
33 date.
34

35 **(B) Construction Requirements.**
36

37 **(1) Reclassification of Solid Waste into Inert Fill Material.** If
38 reclassifying solid waste as inert fill, obtain written acceptance from
39 the Engineer before following the requirements of Section
40 219.03(B)(2) Inert Fill Material.
41

42 **(2) Inert Fill Material.** The State reserves the right to reject
43 imported fill from sources known to contain hazardous material or if
44 any of the requirements in this specification are not met. The source
45 and/or stockpiled location of the material shall remain accessible at all
46 times to State personnel for sampling, testing, and inspection as

47 determined by the Engineer. Prior to importing/removal of material,
48 the Contractor shall provide the specific location and quantity of
49 material that is to be transported to/from the project site.
50

51 **(a) Certificates.** Provide a written certificate indicating that
52 the fill material meets the inert fill material definition specified
53 herein. The written certificate shall include a description of the
54 evidence (including but not limited to historical documentation
55 of land use, test results, fill material characterization report,
56 and/or Phase I Environmental Site Assessment) used by the
57 Contractor to determine that the fill material is inert fill material.
58 The written certificate shall be prepared and signed by an
59 Environmental Professional. Submit the written certificate to
60 the Engineer 14 calendar days before the fill material is
61 imported to or removed from the project site. Do not import the
62 fill material to, or export the fill material from the project site
63 until the Engineer has accepted the certificate. Revise the
64 written certificate as requested by the Engineer until the
65 Engineer has accepted the certificate at no additional cost to
66 the State. If the Engineer does not accept the certificate, the
67 fill material shall not be considered inert fill material; and the
68 Contractor shall dispose of the fill material in accordance with
69 all applicable Federal, state, and Local laws and regulations at
70 no additional cost to the State.
71

72 **(b) Documentation.** Provide documentation that the
73 material will be taken to a properly permitted site. At minimum
74 the documentation shall include the location of the disposal site
75 (name, address, Tax Map Key No., telephone number, and
76 map) with a revised Solid Waste Disclosure Form to indicate
77 the material that was reclassified as inert fill and the location
78 that the inert fill will be taken to.
79

80 **(c) Laboratory Certification.** Samples shall be tested by a
81 laboratory certified to perform the specific analyses.
82

83 **(d) Hawaii Department of Health Guidance Documents.**
84 The HDOH has published guidance documents for the
85 characterization of fill material and construction and demolition
86 (C&D) waste. Comply with all applicable Federal, State, and
87 Local laws and regulations. The procedures of the most recent
88 versions of the following guidance documents or their
89 replacements for the determination and characterization of the
90 fill material or waste may be used as a reference:
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- 92 1. Guidance for Soil Stockpile Characterization and

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Evaluation of Imported and Exported Fill Material.

2. Evaluation of Fill Material for Chemical Contaminants (Fact Sheet).

3. Guidance for Construction & Demolition (C&D) Waste Disposal.

4. Technical Guidance Manual for the Implementation of the Hawai'i State Contingency Plan.

Obtain and follow the latest versions of the applicable HDOH guidance documents.

219.04 Measurement. Determination and characterization of fill material will be paid on a lump sum basis. Measurement for payment will not apply.

219.05 Payment. The Engineer will pay for the accepted pay items listed below at contract price per pay unit, as shown in the proposal schedule. Payment will be full compensation for work prescribed in this section and contract documents.

The Engineer will pay for the following pay item when included in proposal schedule:

Pay Item	Pay Unit
Determination and Characterization of Fill Material	Lump Sum

The Engineer may assess liquidated damages up to \$27,500 per day for non-compliance of each requirement and all other requirements in this section.”

END OF SECTION 219

1 **SECTION 301 – HOT MIX ASPHALT BASE COURSE**

2
3 Make the following amendments to said Sections:

4
5 **(I)** Amend **Section 301.03(B) Compaction** by revising the second
6 paragraph from lines 84 to 87 to read as follows:

7
8 “Compact mixture immediately upon completion of spreading
9 operations to density of not less than 92.0 percent of maximum theoretical
10 specific gravity in accordance with AASHTO T 209, modified by deletion of
11 Supplemental Procedure for Mixtures Containing Porous Aggregate.”

12
13 **(II)** Amend **Section 301.04 Measurement** from lines 98 to 100 to read as
14 follows:

15
16 **“301.04 Measurement.**

17
18 **(A)** The Engineer will measure HMAB course per cubic yard in
19 accordance with contract documents.”

20
21 **(III)** Amend **Section 301.05 Payment**, from lines 102 to 111 to read as
22 follows:

23
24 **“301.05 Payment.** The Engineer will pay for the accepted pay items
25 listed below at the contract price per pay unit, as shown in the proposal schedule.
26 Payment will be full compensation for the work prescribed in this section and the
27 contract documents.

28
29 The Engineer will pay for the following pay item when included in the
30 proposal schedule:

31

	Pay Item	Pay Unit
(A)	Hot Mix Asphalt Base Course	Cubic Yard
	(1) 80% of the contract unit price upon completion of submitting a job-mix formula acceptable to the Engineer; preparing the surface, spreading, and finishing the mixture; and compacting the mixture by rolling;	
	(2) 20% of the contract unit price upon completion of cutting samples from the compacted pavement for testing; placing and compacting the sampled area with new material conforming to the surrounding area; protecting the pavement; and final analysis.”	

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END OF SECTION 301

1 **SECTION 304 – AGGREGATE BASE COURSE**
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3 Make the following amendments to said Section:
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5 **(I)** Amend **304.04 – Measurement** by revising lines 54 to 55 to read as
6 follows:
7

8 **“304.04 Measurement.**

9
10 **(A)** The Engineer will measure aggregate base per ton or cubic yard in
11 accordance with the contract documents.”

12
13 **(II)** Amend **304.05 – Payment** by revising lines 57 to 66 to read as follows:
14

15 **“304.05 Payment.** The Engineer will pay for the accepted aggregate base
16 at the contract price per pay unit, as shown in the proposal schedule. Payment
17 will be full compensation for the work prescribed in this section and the contract
18 documents.
19

20 The Engineer will pay for the following pay item when included in the
21 proposal schedule:
22

Pay Item	Pay Unit
(A) Aggregate Base	Cubic Yard”

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30 **END OF SECTION 304**

1 **SECTION 305 – AGGREGATE SUBBASE COURSE**

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3 Make the following amendments to said Section:

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5 **(I)** Amend **305.04 – Measurement** by revising lines 54 to 55 to read as
6 follows:

7
8 **“305.04 Measurement.**

9
10 **(A)** The Engineer will measure aggregate subbase per cubic yard in
11 accordance with the contract documents.”

12
13 **(II)** Amend **305.05 – Payment** by revising lines 57 to 66 to read as follows:

14
15 **“305.05 Payment.** The Engineer will pay for the accepted aggregate
16 subbase at the contract price per pay unit, as shown in the proposal schedule.
17 Payment will be full compensation for the work prescribed in this section and the
18 contract documents.

19
20 The Engineer will pay for the following pay item when included in the
21 proposal schedule:

22

Pay Item	Pay Unit
(A) Aggregate Subbase	Cubic Yard”

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31 **END OF SECTION 305**

1 **Amend Section 401- HOT MIX ASPHALT (HMA) PAVEMENT to read as follows:**

2
3 **“SECTION 401 – DENSE GRADED HMA PAVEMENT**

4
5 **401.01 Description.** This section describes furnishing and placing dense graded
6 HMA pavement (herein referred to as HMA) on a prepared surface.

7
8 **401.02 Materials.**

9
10 Asphalt Binder (PG 64-16) 702.01A
11 Use for non-surface mixes, unless otherwise specified in the project documents

12
13 Asphalt Binder (PG 64E-22) 702.01B
14 Use for all surface mixes, except for on Lanai and Molokai, and unless otherwise
15 specified in the project documents

16 Emulsified Asphalt 702.04

17
18 Warm Mix Asphalt Additive 702.06

19
20 Aggregate for Hot Mix Asphalt Pavement 703.09

21
22 Filler 703.15

23
24 Hydrated Lime or a liquid anti-strip approved by the engineer 712.03

25
26 **(A) General.** HMA pavement shall be plant mixed and shall include
27 mixture of aggregate and asphalt binder and may include reclaimed asphalt
28 pavement (RAP) or filler, or both.

29
30 The manufacture of HMA may include warm mix asphalt (WMA)
31 processes in accordance with these specifications. WMA processes include
32 combinations of organic additives, chemical additives, and foaming.

33
34 HMA pavement shall include surface course and may include one or
35 more binder courses, depending on HMA pavement thickness indicated in
36 the contract documents.

37
38 RAP is defined as removed or reprocessed pavement materials
39 containing asphalt and aggregates. Process RAP by crushing until 100
40 percent of RAP passes 3/4-inch sieve. Size, grade uniformly, and combine
41 materials such that blend of RAP and aggregate material conforms to grading
42 requirements of Subsection 703.09 - Aggregate for Hot Mix Asphalt
43 Pavement.

44
45 In surface and binder courses, aggregate for HMA may include RAP
46 quantities up to 20 percent of total mix weight.

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Quantity of filler material to correct deficiencies in aggregate gradation passing the No. 200 sieve shall not exceed 3 percent by weight of fine aggregates.

(B) Job-Mix Formula and Tests. Design job-mix formula in accordance with procedures contained in current edition of Asphalt Institute's *Mix Design Methods for Asphalt Concrete and Other Hot Mix Types*, Manual Series No. 2 (MS-2) for either Marshall Method or Hveem Method of Mix Design.

Limit compacted lift thickness and asphalt content of job-mix formula as specified in Table 401.02-1 - Limits of Compacted Lift Thickness and Asphalt Content.

TABLE 401.02-1 - LIMITS OF COMPACTED LIFT THICKNESS AND ASPHALT CONTENT				
MIX NO.	II	III	IV, PMA	V
Minimum to Maximum Compacted Thickness for Individual Lifts (Inches)	2-1/4 to 3	2 to 3	1-1/2 to 3	1-1/4 to 3
Asphalt Content Limits (Percent of Total Weight of Mix)	3.8 to 6.1	4.3 to 6.1	4.3 to 6.5	4.8 to 7.0

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Asphalt content limits for porous aggregate may be exceeded only if it is requested ahead of placement and is reviewed then accepted in writing by the Engineer.

Meet job-mix formula design criteria specified in Table 401.02-2 - Job-Mix Formula Design Criteria.

TABLE 401.02-2 - JOB-MIX FORMULA DESIGN CRITERIA	
Hveem Method Mix Criteria (AASHTO T 246 and AASHTO T 247)	
Stability, minimum	37
Air Voids (percent) ¹	3 - 5
Marshall Method Mix Criteria (AASHTO T 245)	
Compaction (number of blows each end of specimen)	75
Stability, minimum (pounds)	1,800
Flow (x 0.01 inch)	8 - 16
Air Voids (percent) ¹	3 - 5
Notes:	
1. Air Voids: AASHTO T 166 or AASHTO T 275; AASHTO T 209, AASHTO T 269.	

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Minimum percent voids in mineral aggregates (VMA) of job-mix formula shall be as specified in Table 401.02-3 - Minimum Percent Voids in Mineral Aggregates (VMA).

TABLE 401.02-3 - MINIMUM PERCENT VOIDS IN MINERAL AGGREGATES (VMA)						
Nominal Maximum Particle Size, (Inches)	1-1/2	1	3/4	1/2	3/8	
VMA, (percent) ¹	11.0	12.0	13.0	14.0	15.0	
Notes:						
1. VMA: See Asphalt Institute Manual MS-2,						

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(C) Submittals. Establish and submit job-mix formula for each type of HMA pavement mix indicated in the contract documents a minimum of 30 days before paving production. Job mix shall include the following applicable information:

- (1) Design percent of aggregate passing each required sieve size.

- 85 (2) Design percent of asphalt binder material (type
- 86 determined by type of mix) added to the aggregate (expressed
- 87 as % by weight of total mix),
- 88
- 89 (3) Design proportion of processed RAP.
- 90
- 91 (4) Design temperature of mixture at point of discharge at paver.
- 92
- 93 (5) Source of aggregate.
- 94
- 95 (6) Grade of asphalt binder.
- 96
- 97 (7) Test data used to develop job-mix formula.
- 98

99 Except for item (4) in this subsection, if design requirements are
 100 modified after the Engineer accepts job-mix formula, submit new job-mix
 101 formula before using HMA produced from modified mix design. Submit any
 102 changes to the design temperature of mixture at point of discharge for
 103 acceptance by the Engineer.

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105 Submit a certificate of compliance for the asphalt binder, accompanied
 106 by substantiating test data from a certified testing laboratory.

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108 **(D) Range of Tolerances for HMA.** Provide HMA within allowable
 109 tolerances of accepted job-mix formula as specified in Table 401.02-4 -
 110 Range of Tolerances HMA. These tolerances are not to be used for the
 111 design of the job mix, they are solely to be used during the testing of the
 112 production field sample of the HMA mix.

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TABLE 401.02-4 - RANGE OF TOLERANCES HMA	
Passing No. 4 and larger sieves (percent)	± 7.0
Passing No. 8 to No. 100 sieves (inclusive) (percent)	± 4.0
Passing No. 200 sieve (percent)	± 3.0
Asphalt Content (percent)	± 0.4
Mixture Temperature (degrees F)	± 20

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116 The tolerances shown are the allowable variance between the physical
 117 characteristics of laboratory job mix submitted mix design and the production
 118 or operational mix, i.e., field samples.

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401.03 Construction.

(A) Weather Limitations. Placement of HMA shall not be allowed under the following conditions:

(1) On wet surfaces, e.g., surface with ponding or running water, surface that has aggregate or surface that appears beyond surface saturated dry, as determined by the Engineer.

(2) When air temperature is below 50 degrees F and falling. **HMA** may be applied when air temperature is above 40 degrees F and rising. Air temperature will be measured in shade and away from artificial heat.

(3) When weather conditions prevent proper method of construction.

(B) Equipment.

(1) Mixing Plant. Use mixing plants that conform to AASHTO M 156, supplemented as follows:

(a) All Plants.

1. Automated Controls. Control proportioning, mixing, and mix discharging automatically. When RAP is incorporated into mixture, provide positive controls for proportioning processed RAP.

2. Dust Collector. AASHTO M 156, Requirements for All Plants, Emission Controls is amended as follows:

Equip plant with dust collector. Dispose of collected material. In the case of baghouse dust collectors, dispose of collected material or return collected material uniformly.

3. Modifications for Processing RAP. When RAP is incorporated into mixture, modify mixing plant in accordance with plant manufacturer's recommendations to process RAP.

(b) Drum Dryer-Mixer Plants.

1. Bins. Provide separate bin in cold aggregate

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feeder for each individual aggregate stockpile in mix. Use bins of sufficient size to keep plant in continuous operation and of proper design to prevent overflow of material from one bin to another.

2. Stockpiling Procedures. Separate aggregate for Mix II, Mix III and Mix IV into at least three stockpiles with different gradations as follows: coarse, intermediate, and fine. Separate aggregates for Mix V into at least two stockpiles. Stockpile RAP separately from virgin aggregates.

3. Checking Aggregate Stockpile. Check condition of the aggregate stockpile often enough to ensure that the aggregate is in optimal condition.

(c) Batch and Continuous Mix Plants.

1. Hot Aggregate Bin. Provide bin with three or more separate compartments for storage of screened aggregate fractions to be combined for mix. Make partitions between compartments tight and of sufficient height to prevent spillage of aggregate from one compartment into another.

2. Load Cells. Calibrated load cells may be used in batch plants instead of scales.

(2) Hauling Equipment. Use trucks that have tight, clean, smooth metal beds for hauling HMA.

Thinly coat truck beds with a minimum quantity of non-stripping release agent to prevent mixture from adhering to beds. Diesel or petroleum-based liquid release agents, except for paraffin oil, shall not be used. Drain excess release agent from truck bed before loading with HMA.

Provide a designated clean up area for the haul trucks.

Equip each truck with a tarpaulin conforming to the following:

(a) In good condition, without tears and holes.

(b) Large enough to be stretched tightly over truck bed, completely covering mix. The tarpaulin shall be secured in such a manner that it remains stretched tightly over truck bed and

211 HMA mix until the bed is about to be raised up in preparation
212 for discharge.

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214 **(3) Asphalt Pavers.** Use asphalt pavers that are:

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216 **(a)** Self-contained, power-propelled units.

217
218 **(b)** Equipped with activated screed or strike-off assembly,
219 heated if necessary.

220
221 **(c)** Capable of spreading and finishing courses of HMA
222 mixtures in lane widths applicable to typical section and
223 thicknesses indicated in the contract documents.

224
225 **(d)** Equipped with receiving hopper having sufficient
226 capacity for uniform spreading operation.

227
228 **(e)** Equipped with automatic feed controls to maintain
229 uniform depth of material ahead of screed.

230
231 **(f)** Equipped with automatic screed controls with sensors
232 capable of sensing grade from outside reference line, sensing
233 transverse slope of screed, and providing automatic signals to
234 control screed grade and transverse slope.

235
236 **(g)** Capable of operating at constant forward speeds
237 consistent with satisfactory laying of mixture.

238
239 **(h)** Equipped with a means of preventing the segregation of
240 the coarse aggregate particles from the remainder of the
241 bituminous plant mix when that mix is carried from the paver
242 hopper back to the paver augers. The means and methods
243 used shall be approved by the paver manufacturer and may
244 consist of chain curtains, deflector plates, or other such devices
245 and any combination of these.

246
247 The following specific requirements shall apply to the
248 identified bituminous pavers:

249
250 **1. Blaw-Knox Bituminous Pavers.** Blaw-Knox
251 bituminous pavers shall be equipped with the
252 Blaw-Knox Materials Management Kit (MMK).

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254 **2. Cedarapids Bituminous Pavers.** Cedarapids
255 bituminous pavers shall be those that were
256 manufactured in 1989 or later.

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3. Barber-Green/Caterpillar Bituminous Pavers.

Barber-Green/Caterpillar bituminous pavers shall be equipped with deflector plates as identified in the December 2000 Service Magazine entitled "New Asphalt Deflector Kit {6630, 6631, 6640}".

Bituminous pavers not listed above shall have similar attachments or designs that shall make them equivalent to the bituminous pavers listed above. The Engineer will solely decide if it is equal to or better than the setups described for the equipment listed above.

Submit for review and acceptance, prior to the start of using the paver for the placing of plant mix, a full description in writing of the means and methods that will be used to prevent the bituminous paver from having both aggregate and temperature segregation. Use of any paver that has not been accepted is prohibited until acceptance of the paver is received from the Engineer. Any pavement placed with an unaccepted paver will be regarded as not compliant work and may not be paid for and may require removal.

Supply a Certificate of Compliance that verifies that the manufacturer's approved means and methods used to prevent bituminous paver from having both aggregate and temperature segregation have been implemented on all pavers used on the project and are working in accordance with the manufacturer's requirements and Contract Documents.

(4) Rollers. Rollers shall be self-propelled, steel-tired tandem, pneumatic-tired, or vibratory-type rollers capable of reversing without shoving or tearing the just placed HMA mixture. Provide sufficient number, sequencing, type, and rollers of sufficient weight to compact the mixture to required density while mixture is still in workable condition unless otherwise indicated in the Contract Documents. Equipment shall not excessively crush aggregate. Operate rollers in accordance with manufacturer's recommendations and Contract Documents. The use of intelligent compaction is encouraged and may be required elsewhere in the Contract Documents.

(a) Steel-Tired Tandem Rollers. Steel-tired tandem rollers used for initial breakdown or intermediate roller passes shall have minimum gross weight of 12 tons and shall provide minimum 250-pound weight per linear inch of width on drive

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wheel.

Steel-tired tandem rollers used for finish roller passes shall have minimum total gross weight of 3 tons.

Do not use roller with grooved or pitted rolling drum or worn scrapers or wetting pads. Replace excessively worn scrapers and wetting pads before use.

(b) Pneumatic-Tired Rollers. Pneumatic-tired rollers shall be oscillating-type, equipped with smooth-tread pneumatic tires of equal size and diameter. Maintain tire pressure within 5 pounds per square inch of designated operational pressure when hot. Space tires so that gaps between adjacent tires are covered by following set of tires.

Pneumatic-tired rollers used for breakdown or intermediate roller passes shall have a ballast capable of establishing an operating weight per tire of not less than 3,000 pounds. Equip rollers with tires having minimum 20-inch wheel diameter with tires inflated to 70 to 75 pounds per square inch pressure when cold and 90 pounds per square inch when hot. Equip rollers with skirt-type devices to maintain temperature of tires during rolling operations.

Pneumatic-tired rollers used for kneading finished asphalt surfaces shall have a ballast capable of establishing an operating weight per tire of not less than 1,500 pounds. Equip rollers with tires having minimum 15-inch wheel diameter with tires inflated to 50 to 60 pounds per square inch pressure. If required, equip rollers with skirt-type devices to maintain temperature of tires during rolling operations.

(c) Vibratory Rollers. Vibratory rollers shall be steel-tired tandem rollers having minimum total weight of 3 tons. Equip vibratory rollers with amplitude and frequency controls and speedometer. Operate vibratory roller in accordance with manufacturer's recommendations. For very thin lifts, 1 inch or less in thickness, vibratory rollers shall not be used in the vibratory mode. Instead, operate the unit in the static mode.

(5) Hand Tools. Keep hand tools used in production, hauling, and placement of HMA clean and free of contaminants. Diesel or mineral spirits or other cleaning material that is potentially deleterious to HMA may be used to clean hand tools providing:

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- (a) It does not contaminate HMA with cleaning material.
- (b) Clean hand tools over catch pan with capacity to hold all the cleaning material.
- (c) Remove all diesel or mineral spirits or other cleaning material that is potentially deleterious to HMA from hand tools before using with HMA.
- (a) Hand tools used shall be in a condition such that it meets the requirements that it was manufactured for, e.g., a straightedge shall meet the straightness requirement of the manufacturer.

(6) Material Transfer Vehicle (MTV).

(a) **Usage.** MTV usage applies to surface courses of paving projects on all Islands except Lanai, unless otherwise indicated in the Contract Documents. When placing HMA surface course use MTV to independently deliver mixtures from hauling equipment to paving equipment. MTV usage will not be required for the following:

1. Projects with less than 1,000 tons of HMA.
2. Temporary pavements.
3. Bridge deck approaches.
4. Shoulders.
5. Tapers.
6. Turning lanes.
7. Driveways.
8. Areas with low overhead clearances.

(b) **Equipment.** When using MTV, install minimum 10-ton-capacity hopper insert in conventional paver hopper. Provide the following equipment:

1. High-capacity truck unloading system in MTV capable of receiving HMA from hauling equipment.

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- 2. MTV storage bin with minimum 15-ton capacity.

- 3. An auger mixing system in one of the following: the MTV storage bin, or paver hopper insert, or paver hopper to continuously mix HMA prior to discharging to the paver's conveyor system.

Avoid stop-and-go operations by coordinating plant production rate, number of haul units, and MTV and paver speeds to provide a continuous, uniform, segregation-free material flow and smooth HMA pavement. Maintain uniform paver speed to produce smooth pavements.

(c) Performance Evaluation. Evaluate the performance of MTV and mixing equipment by measuring mat temperature profile immediately behind paver screed on first day of paving and when it feels the need to do so due to perceived changes in performance or as directed by the Engineer.

Use a hand-held temperature device that has been calibrated within the past 12 months. It shall be an infrared temperature gun is capable of measuring in one degree or finer increments between the temperatures of 80 degrees to 400 degrees F with a laser to indicate where the temperature reading is being taken. Six temperature profile measurements shall be taken of mat surface using infrared temperature gun at 50-foot intervals behind paver. Each temperature profile shall consist of three surface temperature measurements taken transversely across the mat in approximately a straight line from screed while paver is operating. For each profile, temperatures shall be measured approximately 1 foot from each edge and in middle of mat. The difference between maximum and minimum temperature measurements for each temperature profile shall not exceed 10 degrees F. If any two or more temperature profiles exceeds the allowable 10-degree F temperature differential, halt paving operation and adjust MTV or mixing equipment to ensure that material placed by paver meets specified temperature requirements. Redo the measuring of mat temperature profile until adjustment of the MTV or mixing equipment is adequate. Submit all temperature profiles to the Engineer by next business day. Information on the report shall show location and temperature readings and time test was performed. Enough information shall be given, so the Engineer will be able to easily locate the test site of the individual measurement.

441 When requested temperature profile measurements
442 shall be done in the presence of the Engineer.
443

444 Once adjustments are made, repeat measurement
445 procedure for the next two placements to verify that material
446 placed by paver meets specified temperature requirements.
447 Terminate paving if temperature profile requirements are not
448 met during repeated measurement procedure. If equipment
449 fails to meet requirements after measurement procedure is
450 repeated once, replace equipment before conducting any
451 further temperature profile measurements
452

453 The Engineer may perform surface temperature profile
454 measurements at any time during project. The Engineer may
455 in lieu of a hand-held infrared temperature device use an
456 infrared camera or device that is capable of measuring
457 temperatures to locate cold spots. If such cold spots exist, the
458 Engineer may require adjustments to the MTV.
459

460 If bleeding or fat spots occur in the pavement adjust
461 means and methods to eliminate such pavement defects and
462 perform remedial repair to pavement acceptable to the
463 Engineer. Bleeding is defined as excess binder occurring on
464 the surface of the pavement. It may create a shiny, glass-like,
465 reflective appearance and may be tacky to the touch. Fat spots
466 are localized bleeding.
467

468 **(d) Transport.**
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470 **1. Trailered MTV.** Transport MTV by means of
471 truck-tractor/trailer combination in accordance with
472 Chapter 104 of Title 19, Department of Transportation,
473 entitled "The Movement by Permit of Oversize and
474 Overweight Vehicles on State Highways".
475

476 **2. Crossing Bridges for Self-Powered MTV.**
477 When self-powered MTV exceeds legal axle or total
478 weight limits for vehicles under the HRS, Chapter 291,
479 conform to the following when crossing bridges within
480 project limits unless otherwise indicated in the Contract
481 Documents:
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- 483 a. Completely remove mix from MTV.
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- 485 b. Move MTV at relatively constant speed not
486 exceeding 5 miles per hour. MTV will not be

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allowed to stop on bridge.

c. No other vehicle or equipment will be allowed on bridge.

d. The MTV shall not attempt to cross a bridge where the posted load limit is less than or equal to the weight of the MTV empty. Permission to cross the bridge shall be obtained from the Engineer and HWY-DB in writing.

(C) Preparation of Surface. Clean existing pavement in accordance with Section 310 - Brooming Off. Apply tack coat in accordance with Section 407 - Tack Coat. Tack coat shall not be applied to surfaces to receive an application of joint adhesive.

Where indicated in the Contract Documents, bring irregular surfaces to uniform grade and cross section by furnishing and placing one or more leveling courses of HMA Mix V. Spread leveling course in variable thicknesses to eliminate irregularities in existing surface. Place leveling course such that maximum depth of each course, when thoroughly compacted to the Contract Documents' requirements, does not exceed 3 inches.

In multiple-lift leveling course construction, spread subsequent lifts beyond edges of previously spread lifts in accordance with procedures contained in current edition of the Asphalt Institute's *Construction of Hot Mix Asphalt Pavements*, Manual Series No. 22 (MS-22) for leveling wedges.

Notify the Engineer of existing surfaces that may not be in a condition that will have enough strength to be a good bonding surface or foundation and should be removed or have remedial repairs done before new pavement placement.

(D) Plant Operation.

(1) Preparation of Asphalt Binder. Uniformly heat asphalt binder and provide continuous supply of heated asphalt cement from storage to mixer. Do not heat asphalt binder above the recommendation of the supplier for modified binders or above 350 degrees F for neat binders.

(2) Preparation of Aggregate. Dry and heat aggregate material at temperature sufficient to produce design temperature of job-mix formula. Do not exceed 350 degrees F. Adjust heat source used for drying and heating to avoid damage to and contamination of

533 aggregate. When dry, aggregate shall not contain more than 1
534 percent moisture by weight.

535
536 For batch plants, screen aggregates immediately after heating
537 and drying into three or more fractions. Convey aggregates into
538 separate compartments ready for batching and mixing with asphalt
539 binder.

540
541 **(3) Mixing.** Measure aggregate and asphalt; or aggregate, RAP,
542 and asphalt into mixer in accordance with an accepted job-mix
543 formula. Mix until components are completely mixed and adequately
544 coated with asphalt binder in accordance with AASHTO M 156.
545 Percent of coated particles shall be 95 percent when tested in
546 accordance with AASHTO T 195.

547
548 **(4) Plant Inspection.** For control and acceptance testing during
549 periods of production, provide a testing laboratory that meets the
550 requirements of AASHTO M 156. Provide space, utilities, and
551 equipment required for performing specified tests.

552
553 **(E) Spreading and Finishing.** Prior to each day's paving operation,
554 check screed or strike-off assembly surface with straight edge to ensure
555 straight alignment and there is no damage or wear to the machine that will
556 affect performance. Provide screed or strike-off assembly that produces
557 finished surface without tearing, shoving, and gouging HMA. Discontinue
558 using spreading equipment that leaves ridges, indentations, or other marks,
559 or combination thereof in surface that cannot be eliminated by rolling or
560 affects the final smoothness of the pavement or be prevented by adjustment
561 in operation.

562
563 Maintain HMA at minimum 250 degrees F temperature at discharge to
564 paver. The Engineer shall observe the contractor measuring the temperature
565 of mix in hauling vehicle just before depositing into spreader or paver or MTV.

566
567 Deposit HMA in a manner that minimizes segregation. Raise truck
568 beds with tailgates closed before discharging HMA.

569
570 Lay, spread, and strike off HMA upon prepared surface. Where
571 practical, use asphalt pavers to distribute mixture.

572
573 Where practical, control horizontal alignment using automatic grade
574 and slope controls from reference line, slope control device. Existing
575 pavements or features shall not be used for grade control alone.

576
577 Obtain sensor grade reference, horizontal alignment by using
578 established grade and slope controls. For subsequent passes, substitution

579 of one ski with joint-matching shoe riding on finished adjacent pavement is
580 acceptable. Use of a comparable non-contact mobile reference system and
581 joint matching shoe is acceptable.
582

583 Avoid stop-and-go operation. Maintain a constant forward speed of
584 paver during paving operation and minimize other methods that impact
585 smoothness.
586

587 Offset longitudinal joint in successive lifts by approximately 6 inches.
588 Incorporate into paving method an overlap of material of 1-inch +/- 0.5 inches
589 at the longitudinal joint. The HMA overlap material shall be left alone when
590 initially placed and shall not be bumped back or pushed back with a lute or
591 any other hand-held device. If the overlap exceeds the maximum amount,
592 remove the excess with a flat shovel, allowing recommended amount of
593 overlap HMA material to remain in place to be compacted. Do not throw the
594 removed excess HMA material on to the paving mat. The longitudinal joint
595 in a surface course when total roadway width is comprised of two lanes shall
596 be near the centerline of pavement or near lane lines when roadway is more
597 than two lanes in width. The longitudinal joint shall not be constructed in the
598 wheel path. Every effort should be made to not locate the longitudinal joint
599 under the longitudinal lane lines. Make a paving plan drawing showing how
600 the longitudinal joint will not be located in these areas.
601

602 Control the horizontal alignment of the longitudinal edge of the HMA
603 mat being installed so that the edge is parallel to the centerline or has a
604 uniform alignment, e.g., the edge of the mat is straight line or uniform curve,
605 no wavy edge, etc. to have a consistent amount of HMA material at the joint.
606

607 Check the compaction of the longitudinal joint during paving often
608 enough to ensure that it will meet the compaction requirements.
609

610 If nuclear gauges and ground penetrating radar are used as the
611 contractor's quality control method, they shall be properly calibrated and
612 periodically checked by comparison to cores taken from the pavement. The
613 use of sand as an aid in properly seating the gauge may also be considered
614 for improving the accuracy of the gauge.
615

616 In areas where irregularities or unavoidable obstacles make use of
617 mechanical spreading and finishing equipment impracticable, spread, rake,
618 and lute mixture by hand tools. For such areas, deposit, spread evenly, and
619 screed mixture to required compacted thickness.
620

621 Demonstrate competence of personnel operating grade and crown
622 control device before placing surface courses. If automatic control system
623 becomes inoperative during the day's work, the Engineer will permit the
624 Contractor to finish day's work using manual controls. The Engineer may

625 also allow additional HMA to be ordered and placed using manual controls if
626 it will provide a safer work site for the public to travel through. Do not resume
627 work until automatic control system is made operative. The Engineer may
628 waive requirement for electronic screed control device when paving gores,
629 shoulders, transitions, and miscellaneous reconstruction areas where the
630 use of the devices is not practical.

631
632 When production of HMA can be maintained and when practicable,
633 use pavers in echelon shall be used to place surface course in adjacent
634 lanes.

635
636 At the end of each workday, HMA pavement that is open to traffic shall
637 not extend beyond the panel of the adjacent new lane pavement by more
638 than the distance normally placed in one workday. At end of each day's
639 production, construct tapered transitions along all longitudinal and transverse
640 pavement drop-offs; this shall apply to areas where existing pavement is to
641 meet newly placed pavement. Use slopes of 6:1 for longitudinal taper
642 transitions and 48:1 for transverse tapered transitions. Maximum drop-off
643 height along the joints shall be 3 inches. Also, using a 48:1 slope provides a
644 taper around any protruding object, e.g., manholes, drain boxes, survey
645 monuments, inlets, etc., that may be above pavement surface when opened
646 to the public. If the object is below the surface of the pavement then fill the
647 depression until it is level with the surrounding pavement or raise depressed
648 objects to the finish grade of the placed pavement. Remove and dispose of
649 all transition tapers before placing adjoining panel or next layer of HMA.
650 Notify traveling public of pavement drop-offs or raised objects with signs
651 placed in every direction of traffic that may use and encounter pavement
652 drop-offs or protruding objects or holes.

653
654 Use the same taper rates for areas where there is a difference in
655 elevation due to construction work.

656
657 At end of each workweek, complete full width of the roadway's
658 pavement, including shoulders, to same elevation with no drop-offs.

659
660 **(F) Compaction.** Immediately after spreading and striking off HMA and
661 adjusting surface irregularities, uniformly compact mixture by rolling.

662
663 Initiate compaction at highest mix temperature allowing compaction
664 without excessive horizontal movement. Temperature shall not be less than
665 220 degrees F.

666
667 Finish rolling using tandem roller while HMA temperature is at or
668 above 175 degrees F.

669
670 On superelevated curves, begin rolling at lower edge and progress to

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higher edge by overlapping of longitudinal trips parallel to centerline.

If necessary, repair damage immediately using rakes and fresh mix. Do not displace line and grade of HMA edges during rolling.

Keep roller wheels properly moistened with water or water mixed with small quantities of detergent. Use of excess liquid, diesel, and petroleum-based liquids will not be allowed on rollers.

Along forms, curbs, headers, walls and other places not accessible to rollers, compact mixture with hot hand tampers, smoothing irons, or mechanical tampers. On depressed areas, trench roller or cleated compression strips under roller may be used to transmit compression.

Before the start of compaction or during compaction or both remove pavement that is loose, broken, or contaminated, or combination thereof; pavement that shows an excess or deficiency in asphalt binder content; and pavement that is defective in any way. Replace with fresh HMA pavement of same type, and compact. Remove and replace defective pavement and compact at no increase in contract price or contract time.

Operate rollers at slow and uniform speed with no sudden stops. The drive wheels shall be nearest to the paver. Continue rolling to attain specified density and until roller marks are eliminated.

Rollers shall not be parked on the pavement placed that day or shift.

(1) HMA Pavement Courses One and a Half Inches Thick or Greater. Where HMA pavement compacted thickness indicated in the Contract Documents is 1-1/2 inches or greater, compact to not less than 93.0 percent nor greater than 97.0 percent of the maximum specific gravity determined in accordance with AASHTO T 209, modified by deletion of Supplemental Procedure for Mixtures Containing Porous Aggregate.

Place HMA pavement in individual lifts that are within minimum and maximum allowable compacted thickness for various types of mixture as specified in Table 401.02-1 - Limits of Compacted Lift Thickness and Asphalt Content.

(2) HMA Pavement Courses Less Than One and a Half Inches Thick. Where HMA pavement compacted thickness indicated in the contract documents is less than 1-1/2 inches, compaction to a specified density will not be required.

Use only non-vibratory, steel-tired, tandem roller. Roll entire

717 surface with minimum of two roller passes. A roller pass is defined as
718 one trip of the roller in one direction over any one spot.

719
720 For intermediate rolling, roll entire surface with minimum of four
721 passes of roller.

722
723 Finish rolling using steel-tired, tandem roller. Continue rolling
724 until entire surface has been compacted with minimum of three passes
725 of roller, and roller marks have been eliminated.

726
727 Do not use rollers that will excessively crush aggregate.

728
729 **(3) HMA Pavement Courses One and a Half Inches Thick or**
730 **Greater In Special Areas Not Designated For Vehicular Traffic.**

731 For areas such as bikeways that are not part of roadway and other
732 areas not subjected to vehicular traffic, compact to not less than 90.0
733 percent of maximum specific gravity determined in accordance with
734 AASHTO T 209, modified by deletion of Supplemental Procedure for
735 Mixtures Containing Porous Aggregate. Increase asphalt content by
736 at least 0.5 percent above that used for HMA pavements designed for
737 vehicular traffic. Paved shoulders shall be compacted in the same
738 manner as pavements designed for vehicular traffic.

739
740 **(G) Joints, Trimming Edges and Utility Marking.** At HMA pavement
741 connections to existing pavements, make joints vertical to depth of new
742 pavement. Saw cut existing pavement and cold plane in accordance with
743 Section 415 - Cold Planing of Existing Pavement to depth equal to thickness
744 of surface course or as indicated in the Contract Documents.

745
746 At HMA connections to previously placed lifts, form joints by cutting
747 back on previous run to expose full depth of course. Dispose of material
748 trimmed from edges. Protect end of freshly laid mixture from rollers.

749
750 Before and after paving, identify and mark location of existing utility
751 manholes, valves, and handholes on finished surface. Adjust existing frames
752 and covers and valve boxes to final pavement finish grade in accordance with
753 Section 604 - Manholes, Inlets and Catch Basins and Section 626 - Manholes
754 and Valve Boxes for Water and Sewer Systems.

755
756 **(1) Longitudinal joints.** Submit for review the means and methods
757 that will be used to install longitudinal joints at the required compaction
758 and density. The Engineer may allow a waiver to the Contract
759 Documents by allowing the compaction of the HMA at the longitudinal
760 joints to be no lower than 90.0 percent of the maximum specific gravity
761 determined in accordance with AASHTO T 209, modified by deletion
762 of Supplemental Procedure for Mixtures Containing Porous

763 Aggregate. The air voids at the longitudinal joints shall not exceed 10
764 percent. Verify the compaction of the longitudinal joints meets the
765 Contract Documents' requirements by using non-destructive testing
766 methods during paving and submit the results on the daily quality
767 control test reports.
768

769 Overband all longitudinal joints within the entire lot represented by the
770 non-compliant core, PG binder seal coat, or other type of joint enrichment
771 accepted by the Engineer when the longitudinal joints are found to have less
772 than 93.0 percent but is no less than 90 percent of the maximum specific
773 gravity or has an air void that exceeds 10 percent. The overband shall not
774 decrease the skid resistance of the pavement under any ambient weather
775 condition. Submit overband material's catalog cuts, test results and
776 application procedure for review and acceptance by the Engineer before use.
777 Center the overband over the longitudinal joint. The overband shall be placed
778 in a uniform width and horizontal alignment. The overband shall have no
779 holidays or streaking in its placement. The width of the overband shall be
780 based on how the longitudinal joint was constructed or as directed by the
781 Engineer. If a butt joint is used, the overband width shall be a minimum of
782 12-inches. For butt wedge or wedge joints the overband width shall be the
783 width of the wedge plus an additional six-inches minimum. Replace any
784 pavement markings damaged or soiled by the overband remedial repair
785 process.
786

787 For longitudinal joints that have a compaction of less than 90 percent
788 of the maximum specific gravity; removal may be required by the Engineer
789 instead of overbanding the non-compliant joint. The Engineer will solely
790 decide if removal or overbanding is required. If removal is required, it shall
791 be the material on one side of the longitudinal joint for the full width of the
792 mat for the paving day. The Engineer will solely decide which material shall
793 be used.
794

795
796 Persistent low compaction results may be cause to suspend work and
797 remove non-conforming work. During the suspension of paving, revise
798 means and methods used in constructing longitudinal joints and submit to the
799 Engineer for review and acceptance. Suspension may occur when:

- 800
801 **(1)** Two or more longitudinal joints tests fail to meet the minimum
802 compaction
803
804 **(2)** One sample reveals that the joint compaction is 90 percent or
805 less.
806
807 **(3)** The maximum air void requirement exceeds 10 percent.
808 Test for compaction and density regardless of layer thickness.

809 Compaction and density shall be determined by using six-inch diameter or
810 larger cores instead of four-inch diameter cores. For longitudinal joints made
811 using butt joints cores shall be taken over the joint with half of the core being
812 on each side of the joint. For longitudinal joints using butt wedge joints,
813 center core over the center of the wedge so that 50 percent of the material is
814 from the most recently paved material and the remaining 50 percent of the
815 core is from the material used to pave the previous layer. One core shall be
816 taken at a maximum of every 250 tons of longitudinal joint and any fraction
817 of that length for each day of paving with a minimum of one core taken for
818 each longitudinal joint per day. Cores taken for the testing of the longitudinal
819 joint may be used to determine pavement thickness.

820
821 Compaction results for longitudinal joints until January 1, 2023 will not
822 be included in any Sliding Scale Pay Factor for Compaction payment
823 calculation. After, January 1, 2023 it will be included.

824
825 **(H) HMA Pavement Samples.** Obtain test samples from compacted
826 HMA pavement within 72 hours of lay down. Provide minimum 4-inch
827 diameter cores consisting of undisturbed, full-depth portion of compacted
828 mixture taken at locations designated by the Engineer in accordance with the
829 “Sampling and Testing Guide for Acceptance and Verification” in Hawaii DOT
830 Highways Division, *Quality Assurance Manual for Materials*, Appendix 3.
831 Cores shall be taken in the presence of the Engineer. Turn cores over to
832 Engineer immediately after cores have been taken.

833
834 For pavement samples for longitudinal joints provide 6-inch diameter
835 cores minimum. For pavement samples for other than longitudinal joints
836 4-inch diameter cores minimum shall be taken. All cores shall consist of
837 undisturbed, full-depth of the lift of the compacted mixture taken at locations
838 designated by the Engineer in accordance with the “Sampling and Testing
839 Guide for Acceptance and Verification” in Hawaii DOT Highways Division,
840 *Quality Assurance Manual for Materials*, appendix 3. Coring of longitudinal
841 joints shall use a modified HDOT Sampling and Testing Guide as required
842 by the Contract Documents.

843
844 Cores that separate shall indicate to the Engineer that there is
845 insufficient bonding of layers. Modify the previously used paving means and
846 methods to prevent future debonding of layers. Debonding of a core sample
847 after adjustment of the Contractor’s methods will be an indication of
848 continued non-conforming work and the Engineer may direct removal of the
849 layer at no additional cost or contract time.

850
851 Restore HMA pavement immediately after obtaining samples. Clean core
852 hole and walls of all deleterious material that will prevent the complete filling
853 of the core hole and the bonding of the new HMA to the existing. Apply tack
854 coat to vertical faces of sample holes. Fill sampled area with new HMA

855 pavement of same type as that removed. If hand compaction is used; fill in
856 layers not exceeding the minimum thickness stated in Table 401.02-1 - Limits
857 of Compacted Lift Thickness And Asphalt Content. Compact each layer to
858 compaction requirements. If Mechanical Compaction methods are used, then
859 layers may be the maximum layer thickness stated in Table 401.02-1 - Limits
860 of Compacted Lift Thickness And Asphalt Content. Using tires or hand
861 tamping to compact the HMA material to restore the pavement shall not be
862 considered as mechanical compaction.
863

864 Only sample and test leveling course if 1-1/2 inches or greater. No
865 compaction requirements for less than 1-1/2 inches.
866

867 **(I) HMA Pavement Thickness Tolerances.**
868

869 The Engineer will measure thickness of pavement by cores obtained
870 by the Contractor in accordance with HDOT TM 09-19 Field Sampling
871 Bituminous Material after Compaction (Obtaining Cores). The Engineer will
872 measure cores in accordance with HDOT TM 09-19, except that
873 measurement will be taken to nearest one thousandth of an inch; and
874 average of such measurements will be taken to nearest one hundredth of an
875 inch.
876

877 Thickness of finished HMA pavement shall be within 0.25 inch of
878 thickness indicated in the Contract Documents. Pavement not meeting the
879 thickness requirements of the Contract Documents may be required by the
880 Engineer to be removed and replaced.
881

882 Corrective methods taken on pavement exceeding specified
883 tolerances, e.g., insufficient thickness by methods accepted by the Engineer,
884 including removal and replacement, shall be at no increase in contract price
885 or contract time.
886

887 The checking of pavement thickness shall be done after all remedial
888 repairs, e.g., smoothness compliance repairs, compaction, have been
889 completed, reviewed, and accepted by the Engineer.
890

891 **(J) Quality Control Using New Technology.** The Engineer and MTRB
892 reserves the right to utilize new technology and methods to improve the
893 detection of noncompliant work on the project. The technology or method
894 may be used to locate defects in the work, e.g., ground penetrating radar to
895 locate delaminations, moisture damage, thin sections, voids, non-compliant
896 compaction, other non-destructive testing to locate flaws. The defect will be
897 verified by the methods stated in the Contract Documents or by other
898 established conventional means. If the technology or method has already
899 been accepted elsewhere or has standardized testing procedures the results
900 may be judged acceptable by the Engineer and no further testing will be

901 required. These new technologies and methods may be used for the
902 selection of sampling locations.

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905 **(K) Protection of HMA Pavement.** Except for construction equipment
906 directly connected with paving operations, keep traffic off HMA pavement.

907
908 Protect HMA pavement from damage until it has cooled and set.

909
910 Do not refuel equipment or clean equipment or hand tools over paved
911 surfaces unless catch pan or device that will contain spilled fuel and other
912 products is provided. After completion of refueling or cleaning, remove catch
913 pan or device without spilling any of the collected content.

914
915 Do not park roller or other paving equipment on HMA pavement paved
916 within 24 hours of laydown.

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918 **(L) Pavement Joint Adhesive**

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920 **(1) Pavement Joint Adhesive on Joints.** Use on all asphalt
921 pavement construction where joints are formed at such
922 locations but not limited to the following:

923
924 **(a)** Adjacent asphalt pavements, e.g., trafficked lanes,
925 shoulders, etc.

926
927 **(b)** Asphalt pavement and adjacent concrete pavement or
928 curb and gutter or any other surface where the bonding of the
929 asphalt pavement and concrete surface is desired,

930
931 **(c)** Transverse joints between asphalt pavements not
932 placed at the same time or if the pavement's temperature on
933 one side of the joint is below the minimum temperature the mix
934 can be at, during asphalt pavement compaction or installation.

935
936 **(d)** Cut face of an existing pavement where it will have new
937 HMA pavement placed against it, e.g., utility trenches, partial or
938 full depth repairs, etc.

939
940 Pavement joint adhesive is not required on a longitudinal
941 construction joint between adjacent hot mix asphalt pavements
942 formed by echelon paving. Echelon paving is defined as paving
943 multiple lanes side-by-side with adjacent pavers slightly offset at the
944 same time.

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946 A longitudinal construction joint between one shift's work and

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another shall have pavement joint adhesive applied at the joint. Any longitudinal construction joint formed, with the temperature on one side of the joint that is below the minimum temperature the mix can be when compacted to contract requirements during asphalt pavement installation, shall have pavement joint adhesive applied at the joint.

(2) Material requirements. Asphalt joint adhesive shall meet requirements as specified in Table 401.03-1 - Asphalt Joint Adhesive Specifications.

TABLE 401.03-1 – ASPHALT JOINT ADHESIVE SPECIFICATIONS		
TEST		SPECIFICATION
Brookfield Viscosity, 204 °C [400 °F]	ASTM D 3236	4,000-10,000 cp
Cone Penetration, 25 °C [77 °F]	ASTM D 5329	60-100 dmm
Resilience, 25 °C [77 °F]	ASTM D 5329	30% minimum
Ductility, 25 °C [77 °F]	ASTM D 113	30 cm minimum
Ductility, 4 °C [39.2 °F]	ASTM D 113	30 cm minimum
Tensile Adhesion, 25 °C [77 °F]	ASTM D 5329	500% minimum
Softening Point	ASTM D 36	77 °C [170 °F] min.
Asphalt Compatibility	ASTM D 5329	Pass

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(3) Construction Requirements for Asphalt Joint Adhesive

(a) Equipment Requirements. Use a jacketed double boiler type melting unit, with both agitation and recirculation systems. Provide a pressure feed wand application system.

(b) Material Handling. Submit a copy of the manufacturer's recommendations for heating, re-heating, and applying the joint adhesive material. Follow manufacturer's recommendations. Do not remove the joint adhesive from the package until immediately before it is placed in the melter. Joint adhesive boxes must be clearly marked with the name of the manufacturer, the trade name of the adhesive, the manufacturer's batch and lot number, the application/pour temperature, and the safe heating temperature. Feed

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additional material into the melter at a rate equal to the rate of material used.

Verify the pouring temperature of the joint adhesive at least once per hour at the point of discharge. Stop production if the adhesive falls below the recommended application/pour temperature. When the temperature of the adhesive exceeds the maximum safe heating temperature, stop production, empty the melter, and dispose of that adhesive in an environmentally safe method. No payment will be made for this material or its disposal.

Do not blend or mix different manufacturer's brands or different types of adhesives.

(c) Joint Adhesive Application: The face of the joint that the new asphalt pavement will bind to shall be clean and dry before the joint adhesive is applied. Apply the pavement joint adhesive material to the entire face of the surface where HMA pavement shall be installed. The thickness of the asphalt adhesive application shall be approximately 1/8 inch. Use an application shoe attached to the end of application wand. Do not overlap the joint by greater than 1/2-inch at the top of the joint or two-inches at the bottom of the joint. Apply the joint adhesive immediately in front of the paving operation. If the adhesive is tracked by construction vehicles, repair the damaged area, and restrict traffic from driving on the adhesive.

(d) Field Sampling. Take a sample during each shift from the application wand during the first 20 minutes of placing sealant from each melter on the Project in the presence of the Engineer.

Each sample shall consist of two aluminum or steel sample containers with the capacity to hold five pounds of sealant each. The two sampling containers shall be labeled with Contractor's name; project name and number; date and time sample taken; location of where material was used at, e.g., from where to where it was used at in stations; manufacturer and lot number of the sealant. Each container shall be numbered one of two, or two of two. Turn over samples to Engineer without Engineer losing sight of the sample. The Engineer reserves the right to conduct supplementary sampling and testing of the sealant material.

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1. Document the locations where the material came from, each lot number of sealant that is placed and submit the document to the Engineer within 2 working days of placement.

2. If a field sample fails to meet any or all of the requirements in Table 401.03-1 - Asphalt Joint Adhesive Specifications; the work completed using the material from the lot that the field sample represents, shall be subject to a five percent reduction in the contract price of the lift of the HMA pavement it was used on; for example, if two lanes are paved and the longitudinal joint between the two lanes uses material not meeting the contract requirements both of the lanes' asphalt pavement used for both lanes will be subject to a price reduction. If the joint was between an existing pavement and a new the price reduction will be based on the new pavement.

3. Overband with PG binder seal coat or other type of joint enrichment material over the entire length of the joint where the use of non-compliant material occurred.

4. Width of the overband shall follow the criteria used for low density longitudinal joints. In areas where the joint was formed with a curb or gutter use a joint sealer acceptable to the Engineer.

(M) Pavement Smoothness Rideability Test. Perform surface profile tests frequently to ensure that the means and methods being used produces pavement that is compliant with the Contract Document's surface profile smoothness requirement. Test the pavement surface for smoothness with High-Speed Inertial Profiler to determine the International Roughness Index (IRI) of the pavement. For the locations determined by the Engineer, a 12-foot straightedge shall be used to measure smoothness.

All smoothness testing must be performed with the presence of the Engineer. The High-Speed Inertial Profiler operator shall be a certified operator by MTRB or the manufacturer.

The High-Speed Inertial Profiler operator's certification shall be no older than five years old at the date of the Notice to Proceed and at the day of the pavement profile measurement.

All submittals shall be sent directly to MTRB.
The finished pavement shall comply to all the following requirements:

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(a) Smoothness Test using 12-Foot Straightedge (Manual or rolling) The 12-foot straightedge is used to identify the locations that vary more than $\frac{1}{4}$ inch from the lower edge when the 12-foot straightedge is laid on finished pavement on the direction parallel with the centerline or perpendicular to centerline. Remove the high points that cause the surface to exceed that $\frac{1}{4}$ inch tolerance by grinding.

The Contractor shall use a 12-foot straightedge for the following locations:

1. Construction joints where a day's paving ended and another day's began.
2. Longitudinal profiling parallel to centerline, when within 15 feet of a bridge approach or existing pavement which is being joined.
3. Transverse profiling of cross slopes, approaches, and as otherwise directed with respect to the requirements below:
 - a) Lay the straightedge in a direction perpendicular to the centerline.
 - b) When pavement abuts bridge approaches or pavement not under this Contract, ensure that the longitudinal slope deviations of the finished pavement comply with Contract Document's requirements.
 - c) Short pavement sections up to 250 feet long, including both mainline and non-mainline sections on tangent sections and on horizontal curves with a centerline radius of curve less than 1,000 feet.
 - d) Within a superelevation transition on horizontal curves having centerline curve radius less than 1,000 feet, e.g., curves, turn lanes, ramps, tapers, and other non-mainline pavements.
 - e) Within 15 feet of transverse joint that separates pavement from existing pavement not constructed under the contract, or from bridge deck or approach slab for longitudinal profiling.
 - f) As otherwise directed by the Engineer.

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4. The Engineer may confine the checking of through traffic lanes with the straightedge to joints and obvious irregularities or choose to use it at locations not specifically stated in this Section.

(b) High-Speed Inertial Profiler

There shall be a minimum 3 profile runs per lane, for each wheel path (left and right) which is approximately three feet from edge lane line. The segment length shall be 0.1 mi. The final segments in a lane that are less than 0.1 mi shall be evaluated as an independent segment and pay adjustments will be prorated for length. The profiles shall be taken in the direction of traffic only.

The latest version of FHWA ProVal software shall be used to conduct profile analysis to determine IRI and areas of localized roughness. The IRI values shall be reported in units of in/mi. For localized roughness, apply 250-mm filter on ProVal on Smoothness.

Additional runs may be required by the Engineer if the data indicate a lack of repeatability of results. A 92% agreement is required for repeatability and IRI values shall have at minimum a 95% confidence level.

(N) Required Pavement Smoothness

The IRI for the left and right wheel paths in an individual lane will be computed and then averaged to determine the Mean Roughness Index (MRI) values. The MRI will be used to determine acceptance and pay adjustment. Each lane shall be tested and evaluated separately.

There are three (3) categories of acceptable MRI values:

Category	Description	MRI
Type A	Three or more HMA Lifts	Shall not exceed 60 in/mi
Type B	Two HMA Lifts	Shall not exceed 70 in/mi
Type C	One HMA Lift	Shall not exceed 75 in/mi

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For the location where a 12-foot manual straightedge is required, the surface shall not vary more than 1/4 inch from the lower edge of a straightedge.

For any pavement segments not able to meet the above requirements and not waived by the Engineer, remedial repair acceptable to the Engineer

1153 or removal of pavement shall be performed. No reduction of contract price
1154 for these areas will be an acceptable remedy.

1155
1156 No pre-final inspection, final inspection, and substantial completion
1157 granted will be made until the pavement meets smoothness requirement and
1158 other Contract Document requirements and all required profile reports are
1159 submitted to the Engineer and MTRB and are accepted.

1160
1161 **(O) Request for Acceptance Profile Testing by the Department.**

1162
1163 The Contractor shall submit a written request to the Engineer to
1164 perform an acceptance profile test.

1165
1166 The request shall be made at least 30 days before desired testing date
1167 and shall include an approximate acceptance profile testing date, a plan view
1168 drawing of the area to be tested with the limits of the test area highlighted.
1169 The Contractor's profile test results of the area to be tested shall be submitted
1170 to the Engineer at least 15 days before the scheduled profile testing date.

1171
1172 No acceptance testing will be made without the submittal of the
1173 Contractor pavement profile test results and required drawing. Failure to
1174 submit the pavement profile results and required drawing by the stated
1175 deadline or by an Engineer accepted deadline date will be considered a
1176 cancellation of the acceptance test and the Contractor shall request another
1177 profile test date. The Contractor shall reimburse HDOT for any incurred cost
1178 related to any Contractor-caused cancellation or a deduction to the monthly
1179 payment will be made.

1180
1181 **(P) Department Requirements for Acceptance Profile Testing.** When
1182 a request for testing is made, the requested area to be tested shall be 100%
1183 of the total area indicated to be paved in the Contract Documents unless the
1184 requirement is waived by the Engineer and MTRB.

1185
1186 Department acceptance surface tests will not be performed earlier
1187 than 14 days after HMA placement.

1188
1189 Clean debris and clear obstructions from area to be tested, as well as
1190 a minimum of 100 feet before and beyond the area to be tested before testing
1191 starts for use as staging areas. Provide traffic control for all profile testing.

1192
1193 The Engineer or MTRB or both may cancel the profile testing if the test
1194 area is not sufficiently clean, traffic control is unsatisfactory, or the area is not
1195 a safe work environment or test area does not meet Contract Document
1196 requirements. This canceled profile test will count as one profile test.

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(Q) Cost of Acceptance Profile Testing by The Department. The Engineer, MTRB, or State’s Third-Party Consultant will perform one initial profile test, at no cost to the Contractor for each area to be tested.

The Department’s High-Speed Inertial Profiler pavement profile will be used to determine if the pavement’s profile, i.e., smoothness is acceptable.

If the profile of the pavement does not meet the requirements of the Contract Documents, the Contractor shall perform remedial work, i.e. corrective work then retest the area to ensure that the area has the required MRI, i.e., smoothness, before requesting another profile test by the Engineer.

(1) Additional testing. Additional testing, by the Department beyond the initial test will be performed at cost to the Contractor as follows:

(a) \$2,500 per test will be required when Department personnel or State’s Third-Party Consultant is used.

(R) Remedial Work for Pavements.

(1) The Contractor shall notify the Engineer at least 24 hours prior to commencement of the corrective work. The Contractor shall not commence corrective work until the methods and procedure have been approved in writing by the Engineer.

(2) All smoothness corrective work for areas of localized roughness shall be for the entire lane width. Pavement cross slope shall be maintained through corrective areas.

(3) The remedial repair areas shall be neat, rectangular areas having a uniform surface appearance.

(4) If grinding is used on HMA pavement, the surface shall have nearly invisible grinding marks to passing motorist. Coat surface with a coating acceptable to the Engineer or MTRB to restore original impermeability level.

(5) Other methods may include milling and overlaying HMA pavement. The length, depth of the milling and the replacement material will be solely decided by the Engineer.

(6) The finished repaired pavement surface shall leave no ridges or valleys or fins of pavement other than those allowed below.

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(7) Remedial repairs shall not leave any drainage structures' inlets higher than the surrounding pavement or alter the Contract Document's drainage pattern.

(7) For items in the pavement other than drainage structures, e.g., manhole frame and covers, survey monuments, expansion joints etc., the finish pavement, ground or not, shall not be more than 1/4 inch in elevation difference. Submit to the Engineer remedial repair method to correct these conditions for acceptance.

(8) Do not grind pavement to smooth or polished finish, i.e., do not decrease the friction coefficient of the pavement.

(9) When the Engineer determines that the ground pavement surface is smooth or has a polished finish, i.e., has the appearance to the Engineer that the roadway surface's coefficient of friction has decreased, submit remedial repair method to correct the condition.

(11) Pick up immediately grinding operation residue by using a vacuum attached to grinding machine or other method acceptable to the Engineer.

(a) Any remaining residue shall be picked up before the end of shift or before the area is open to traffic, whichever is earlier.

(b) Prevent residue from flowing across pavement or from being left on pavement surface or both.

(c) Residue shall not be allowed to enter the drainage system.

(d) The residue shall not be allowed to dry or remain on the pavement.

(e) Dispose of all material that is the result of the remedial repair operation, e.g., HMA residue, wastewater, and dust at a legal facility.

(12) Use of bush hammers and other impact devices shall not be used for pavement surface remediation.

(13) Complete corrective work before determining pavement thickness for HMA pavements in accordance with Subsection 401.03(I) – HMA Pavement Thickness Tolerances.

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(14) All HMA wearing surface areas that have been ground shall receive a coating, e.g., a coating material that will restore any lost impermeability of the HMA due to the grinding of the surface. The coating used shall not be picked up or tracked by passing vehicles or be degraded after a short period of time has passed, i.e., it shall have a service life equal to or greater than the HMA pavement. The coating shall not decrease the pavement's friction value. The coating's limits shall be the full width of the lane regardless how small. If the remedial repair area extends into the next lane, then the repair area will be full lane width also. Extend the length of coating areas in order for the coating area to look like the rest of the road and does not have patches on it, i.e., make the road look uniform in color. The coating shall be of a color that matches the surrounding pavement. The areas receiving the coating shall not be open to traffic until it has cured enough so that it cannot be picked up or tracked by passing vehicles or degrade. Submit means and methods of the coating and type of coating to the Engineer or MTRB for review and acceptance. Do not proceed with the coating without acceptance from the Engineer.

(15) Recompacting cold HMA, i.e., HMA that has reached ambient temperature is not an acceptable remedial repair method.

(16) Replace all pavement markings damaged or discolored by remedial repairs.

(S) Pavement Smoothness and Acceptance.

(1) Price and payment in various paving sections, e.g., 401 (Hot Mix Asphalt Pavement), shall be full compensation for all work and materials specified in the various paving sections and this section, including but not limited to furnishing all labor, materials, tools, equipment, testing, incidentals and for doing all work involved in micro milling, milling,(cold planing), grinding existing or new pavement, removing residue, cleaning the pavement, necessary disposal of residue, furnishing of any water or air used in cleaning the pavement and any other related ancillary work or material or services. Also, it includes any remedial work, e.g., re-paving, surface grinding, application of a coating, curing compound, and replacement of damaged pavement markings.

(2) The contract price in those sections may be adjusted for pavement smoothness by the Engineer. The pavement smoothness contract unit price adjustments and work acceptance will be made in accordance with the following schedules

Category	MIRI (in/mi)	Pay Adjustment \$ per 0.1 mi
Type A (Three or more HMA Lifts)	<30.0	\$580
	30.0- less than 35.0	\$480
	35.0- less than 40.0	\$380
	40.0- less than 45.0	\$280
	45.0- less than 50.0	\$180
	50.0- less than 55.0	\$80
	55.0- less than 60.0	\$0
	> 60.0	Corrective Work
Type B (Two HMA Lifts)	<35.0	\$420
	35.0- less than 40.0	\$360
	40.0- less than 45.0	\$300
	45.0- less than 50.0	\$240
	50.0- less than 55.0	\$180
	55.0- less than 60.0	\$120
	60.0 less than 65.0	\$60
	65.0 less than 70.0	\$0
> 70.0	Corrective Work	
Type C (One HMA Lift)	<40.0	\$280
	40.0- less than 45.0	\$240
	45.0- less than 50.0	\$200
	50.0- less than 55.0	\$160
	55.0- less than 60.0	\$120
	60.0- less than 65.0	\$80
	65.0- less than 70.0	\$40
	70.0- less than 75.0	\$0
> 75.0	Corrective Work	

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(3) Pay Pavement Smoothness Incentive will be based on the initial measured MIRI for both left and right wheel path, prior to any corrective work for the 0.10-mile section.

(a) The Pavement Smoothness Incentive will be computed using the plan surface area of pavement shown in the Contract Documents. This Pavement Smoothness Incentive will apply to the total area of the 0.10-mile section for the lane width represented by MIRI for the same lane. It does not include any other price adjustments specified in the Contract Documents. Those price adjustments will be, for each adjustment, calculated separately using the original contract price to

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determine the amount of adjustment to be made to the contract price.

(b) There will be no disincentive price adjustments to the contract prices since a remedial repair is required in lieu of a reduction of contract prices since pavement smoothness and ride quality is of utmost importance.

(c) Localized Roughness. The Engineer will determine areas of localized roughness using the average profile from both wheel paths. The Engineer may waive localized roughness requirements for deficiencies resulting from manholes or other similar appurtenances. Adjust manholes or other similar appurtenances so that using a 12-ft. straightedge the area around that manhole or other similar appurtenance shall not have more than 1/4-in. variation between any 2 contacts on the straightedge.

1) Corrective Action. Use an Engineer accepted method to remove localized roughness. For asphalt concrete pavements, fog-seal the aggregate exposed from diamond grinding.

2) Reprofile the corrected area and provide the Engineer the results that show the corrective action, i.e., remedial repairs were successful.

(d) Incentives will not apply to areas where payment deductions or remedial repairs could be made or has been made for non-compliant work, e.g., low compaction, thin pavement, thermal segregation, low compressive or flexural strength, non-compliant alignment. Incentives will also not apply to areas where corrective work was required to meet contract smoothness requirements. All areas where corrective work was performed shall be tested again to ensure the smoothness requirements are met. Corrective work shall be repeated until it meets the smoothness requirement of the Contract Documents and any other Contract Documents' requirement. Removal of non-compliant work will be tested for compliance until it is determined by the Engineer to be compliant to the requirements of the Contract Documents.

(e) There will be no incentive price adjustments to the contract prices regardless of the pavement meeting the Contract Documents' requirements for incentive contract price adjustment, when 25% of the total area paved of that particular

1395 type of pavement on the project has failed to meet any of the
1396 Contract document requirements, e.g., smoothness, thickness,
1397 unit weight, asphalt content, pavement defects, compaction,
1398 flexural or compressive strength. Areas exempt from the
1399 smoothness requirements may not be included in the total area
1400 calculation unless it is non-compliant.

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1402 (f) For contracts using lump sum the method described in
1403 Subsection 104.08 Methods of Price Adjustment paragraph (3),
1404 will be used to calculate proportionate unit price, i.e., the
1405 Engineer's calculated theoretical unit price. This calculated
1406 proportionate unit price will be used to calculate the unit price
1407 adjustment.
1408

1409 **401.04 Measurement.**

1410
1411 (A) The Engineer will measure HMA pavement per ton in accordance with
1412 the Contract Documents.

1413
1414 (B) The Engineer will measure leveling course and HMA pavement
1415 overlay per ton in accordance with the Contract Documents.

1416
1417
1418 (C) Engineer will measure additional State pavement profiling work when
1419 applicable on a cost-plus basis as specified in this section and as ordered by
1420 Engineer. The Engineer will issue a billing for the pavement profile work done
1421 for the time period with the invoices and receipts that the billing was based
1422 on attached to the Contractor for each contract item. The Contractor's
1423 pavement profile work required in this section will not be measured and will
1424 be considered incidental to the various paving items unless stated otherwise.
1425

1426 **401.05 Payment.** The Engineer will pay for the accepted HMA pavement at the
1427 contract price per pay unit, as shown in the proposal schedule. Payment will be full
1428 compensation for the work prescribed in this section and the contract documents.
1429

1430 (A) Price and payment in Section 401 – Dense Grade HMA Pavement will
1431 be full compensation for all work and materials specified in this Section
1432 including furnishing all labor, materials, tools, equipment, testing, pavement
1433 profiles and incidentals and for doing all work involved in grinding existing or
1434 new pavement, removing residue, and cleaning the pavement, including
1435 necessary disposal of residue and furnishing any water or air used in
1436 cleaning the pavement and remedial work needed to conform to the
1437 requirements of the Contract Documents.

1438
1439 (B) No payment for the Contractor's pavement profile work required in this
1440 section will be made. The Contractor's pavement profile work shall be

1441 considered incidental to the various paving items unless stated otherwise.

1442

1443 **(C)** Engineer will pay or deduct for the following pay items when included
1444 in proposal schedule:

1445

1446	Pay Item	Pay Unit
------	-----------------	-----------------

1447

1448	Pavement Smoothness Incentive	Allowance
------	-------------------------------	-----------

1449

1450	_____ HMA Pavement, Mix No. _____	Ton
------	-----------------------------------	-----

1451

1452

1453 **(1)** 70% of the contract unit price or the theoretical calculated unit
1454 price upon completion of submitting a job-mix formula acceptable to
1455 the Engineer; preparing the surface, spreading, and finishing the
1456 mixture; and compacting the mixture.

1457

1458 **(2)** 20% of the contract unit price or the theoretical calculated unit
1459 price upon completion of cutting samples from the compacted
1460 pavement for testing; placing and compacting the sampled area with
1461 new material conforming to the surrounding area; protecting the
1462 pavement; and compaction acceptance. Maintain temporary
1463 pavement markings and other temporary work zone items, maintain a
1464 clean work site.

1465

1466 **(3)** 10% of the contract unit price or calculate the unit price when
1467 the final configuration of the pavement markings is in place.

1468

1469

1470 The Engineer may, at its sole discretion, in lieu of requiring removal and
1471 replacement, use the sliding scale factor to accept HMA pavements compacted
1472 below 93.0 percent and above 97.0 percent. The Engineer will make payment for
1473 the material in that production day, if the Engineer decides to use a sliding scale
1474 factor, at a reduced price arrived at by multiplying the contract unit price by the pay
1475 factor. The Engineer is not obligated to allow non-compliant work to remain in place
1476 and may at any time chose not to use a sliding scale factor method of payment and
1477 instead require removal of the noncompliant pavement that is greater than 97.0 or
1478 less than 93.0.

1479

1480 In compliance with Subsection 105.12 Removal of Non-Conforming and
1481 Unauthorized Work remove and replace HMA compacted below 90.0 percent.

1482

1483 The Engineer will solely decide if the noncompliant work would be acceptable
1484 if a reduced payment for the noncompliant work is made. The Engineer is not
1485 obligated to allow noncompliant work to remain in place and may at any time choose

1486 not to use a sliding scale factor method of payment as a method of resolution.
1487 Instead, utilize the remedy allowed in Subsection 105.12 Removal of Non-
1488 Conforming and Unauthorized Work, requiring removal of the noncompliant
1489 pavement, shall be used.

1490
1491 Such a reduced payment, if made and accepted by the Contractor, shall be
1492 a mutually agreeable resolution to the noncompliant work being addressed. If it is
1493 not mutually acceptable, the noncompliant work shall be removed. If the reduced
1494 payment is acceptable; the Engineer will make the reduced payments for the
1495 noncompliant work in accordance with Table 401.05-2 - Sliding Scale Pay Factor
1496 for Compaction. The amount of tonnage to be reduced will be determined by the
1497 Engineer by using the initial cores taken on the mat. No additional cores shall be
1498 taken to determine the limits of the non-compliant area unless requested by the
1499 Engineer.

1500
1501 The Engineer, for determining the reduced tonnage for noncompliant work,
1502 will assume the level of compaction is linear and will proportion the compaction level
1503 from the last core that indicated an acceptable compaction level to the nearest core
1504 indicating a noncompliant compaction level to determine the calculated limit of
1505 acceptable compaction. The length will be the linear distance between the cores
1506 measured along the baseline. If there is no core that was taken for the shift's or
1507 day's work that were compliant then the limit will be the end or start of the day's or
1508 shift's work. The width will be the nominal paving width. Use the day's specific
1509 gravity of the mix to determine tonnage. The thickness will be the nominal paving
1510 thickness.

1511
1512 The total reduced noncompliant tonnage to be paid will be determined by
1513 multiplying the applicable percent of reduction by the computed tonnage of the
1514 noncompliant work. Percent of Quantity Paid shall be the percentage shown in
1515 Table 401.05-2 - Sliding Scale Pay Factor for Compaction. The reduced tonnage
1516 shall be used as the payment quantity for the noncompliant work. The reduced
1517 quantity paid that is used for the monthly payment will be arrived at by multiplying
1518 the contract unit price by the reduced tonnage.

1519
1520

Table 401.05-2 – Sliding Scale Pay Factor for Compaction	
"Percent Compaction	Percent of Quantity Paid
> 98.0	Removal
>97.0 - 98.0	95
93.0- 97.0	100
90.0 - <93.0	80
<90.0	Removal

1521 ”
1522
1523

END OF SECTION 401

1 Make the following Section a part of the Standard Specifications:
2

3 **“SECTION 403 – ANTI-SKID COATING**
4

5 **403.01 Description.** This section is for furnishing and installing two anti-
6 skid coating to top surface of the prefabricated steel beam bridge according to
7 the contract.
8

9 **403.02 Materials.** The material shall be comprised of the lightweight,
10 100% solids, 2 component epoxy urethane system. The mix shall consist of
11 equal parts by volume. It is designed to be highly resistant to traffic abrasion, de-
12 icing salts, grease, oils, gasoline, alkalis and most other chemicals which come
13 in frequent contact with bridge deck surfaces.
14

15 **403.03 Construction Requirements.**
16

17 **(A) General.**
18

19 Contractor shall follow the coating manufacturer's installation
20 requirements. **Contractor shall be responsible for maintaining**
21 **the anti-skid coating.**
22

23 **(B) Surface Preparation.**
24

25 The top surface of the decking is to be thoroughly cleaned and shall
26 have all galvanizing, rust and contaminates removed by grit
27 blasting to near white metal finish in accordance with Steel
28 Structures Painting Council (SSPC) SP 10. The profile of the
29 prepared steel deck shall be between 3.0 and 4.0 mils.
30

31 **(C) Application.**
32

33 The surface of the deck is to be coated as soon as possible after
34 blasting cleaning to prevent any oxidation of the newly blasted
35 surface.
36

37 **(D) Hand Application.**
38

39 Spread the mixed material onto the prepared surface by using a
40 clean notched squeegee and then back roll to obtain a smooth
41 uniform thickness.
42

43 **(E) Seeding Aggregate.**
44

45 The aggregate is to be Traprock #8 and #9 or equal. Immediately
46 after application of each coat of the epoxy, broadcast the required

47 aggregate lightly onto the surface until no “wet spots” are visible.
48 When the first coat has cured to sustain working traffic, any excess
49 aggregate must be removed before recoating. After the second
50 coat has fully cured, remove all excess aggregate by sweeping
51 prior to shipping.

52
53 **403.04 Method of Measurement.** The Engineer will not measure Anti-
54 Skid Coating for payment.

55
56 **403.05 Basis of Payment.** The Engineer will not pay for the accepted
57 Anti-Skid Coating separately. The Engineer will consider the cost for the Anti-
58 Skid Coating as included in the contract price for Installing Prefabricated Steel
59 Beam Bridge in Section 512. The cost is for the work prescribed in this section
60 and the contract documents.”

61
62
63

END OF SECTION 403

1 **SECTION 503 - CONCRETE STRUCTURES**

2
3 Make the following amendments to said Section:

4
5 **(I)** Amend **503.01 Description** by revising the word culverts in line 4 to read
6 “box culverts”.

7
8 **(II)** Amend **503.02 Materials** by deleting Abrasive Coating 712.11 at line 31
9 and by adding the following after line 32:

10
11 “Grout 712.04”

12
13 **(III)** Amend **503.03(B) Falsework, Formwork, or Centering** as follows:

14
15 Delete the word formwork from line 59 in the first sentence.

16
17 Replace the words “AASHTO LRFD Bridge Specifications” with “AASHTO Guide
18 Design Specifications for Bridge Temporary Works at line 78.

19
20 Add the following two sentences at the end of the first paragraph at line 63:
21 “Formwork is a temporary structure or mold used to retain the plastic on fluid
22 concrete in its designated shape until it hardens. Formwork shall have enough
23 strength to resist the concrete loads, as well as the fluid pressure exerted by
24 plastic concrete and any additional fluid pressure effects generated by
25 vibrations.”

26
27 **(IV)** Amend **503.03(B) Falsework, Formwork, or Centering** by adding the
28 following sentence to the seventh paragraph at line 106:

29
30 “Temporary bracing shall be provided, as necessary to withstand all imposed
31 loads during erection, construction and removal of falsework.”

32
33 **(V)** Amend **503.03(B) Falsework, Formwork, or Centering** by revising the
34 ninth paragraph from lines 112 to 122 as follows:

35
36 “Show stresses and deflection of load supporting members in design
37 calculations. Show anticipated total settlements of falsework and forms on
38 falsework drawings, including falsework footing pressure and settlement, and
39 joint take-up. Construct deck slab form between girders with no allowance for
40 settlement relative to girders. Do not exceed 1 inch for anticipated settlements of
41 falsework. Provide tell-tales attached to soffit forms, readable from the ground,
42 at sufficient locations to determine total settlements and deflections resulting
43 form concrete placement. Check for any movement or deformation of forms and
44 falsework that may exceed the calculated or anticipated deflection or settlement.
45 If the movement or deformation is exceeded, take appropriate action. This action
46 may include halting concrete placement to install additional bracing or changing

47 the rate or sequence of concrete placement to achieve the required lines and
48 grade. Discontinue concrete placement when settlements deviate more than +
49 3/8 inch from those indicated on falsework drawings. In such affected areas,
50 provide corrective measures prior to initial set of concrete. Remove
51 unacceptable concrete.”

52

53 **(VI)** Amend **503.03(C)(1) Construction** by revising the first paragraph
54 between lines 169 and 172 as follows:

55

56 **(1) Construction.** “Use wood or metal forms that are impervious to
57 moisture, non-staining to concrete, mortar tight and sufficiently rigid to prevent
58 distortion due to pressure of concrete and other loads, including vibration,
59 incidental to construction. Construct and maintain forms to prevent joints from
60 opening. Formwork joints shall be filled with approved material that is impervious
61 to moisture, will not stain concrete, and produces tight joints.”

62

63 **(VII)** Amend **503.03(C)(1) Construction** by revising the second paragraph
64 between lines 174 and 176 to read as follows:

65

66 “Unless otherwise indicated in the contract documents, place minimum 3/4
67 inch by 3/4 inch chamfer at sharp edges of exposed concrete surfaces. Give
68 girder and coping forms bevels or drafts to ensure easy removal.”

69

70 **(VIII)** Amend **503.03(C)(1) Construction** by adding the following sentence to
71 the ninth paragraph at line 209:

72

73 “The Engineer will stop the use of the forms or forming systems which
74 produce a concrete surface with excessive undulations until the Contractor
75 makes modification acceptable to the Engineer.”

76

77 **(IX)** Amend **503.03(C)(2) Form Lumber** by adding the following sentence to
78 the first paragraph after line 223:

79

80 “When requested by the Engineer, submit certificates verifying grade and
81 species of any piece of lumber which does not have a grade or species stamp.”

82

83 **(X)** Amend **503.03(D) Removal of Falsework and Forms** by revising Table
84 503.03-1 – Removal of Falsework and Forms at line 297 to read as follows:

85

86

87

88

89

90

91

92

93
94

“TABLE 503.03-1 – REMOVAL OF FALSEWORK AND FORMS						
Railing and Barriers – 12 Hours Removal Time						
Beams, Arches, and Other Members – 14 days Removal Time						
Slabs With Maximum Thickness of (Inches)	9		12		More Than 12	
Removal Time (Days)	7		10		14	
Walls, Columns, and Vertical Sides of Beams With Maximum Height of (Feet)	2	5	10	20	30	40 or More
Removal Time (Days)	0.5	1	2	3	5	7
Note: Where forms also support vertical or horizontal loads imposed on slab or beam soffits, use 14 days for removal time.”						

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117

(XI) Amend **503.03(D) Removal of Falsework and Forms** by deleting the last paragraph between lines 329 and 334.

(XII) Amend **503.03(E) Loading** by deleting the words, “except abutment walls and wing walls” in line 337.

(XIII) Amend **503.03(F)(1) General** by adding the following paragraphs after line 419:

“At the time of placement, the concrete temperature shall not exceed 85 degrees Fahrenheit.

The rate of evaporation shall be measured by using the nomograph: ACI 308R Figure 4.1 Nomograph for Estimating the Maximum Potential Rate of Evaporation of the Environment Assuming a Water-Covered Surface in Which the Water Temperature Is Equal to the Concrete Temperature or by using an evaporation rate calculator e.g., Kestrel 5200 hat has been reviewed and accepted by the Engineer. Use procedures as stated in ACI 308R Chapter 4 – Monitoring Curing and Curing Effectiveness. Approximately 30 minutes prior to the scheduled start of concrete placement measure the ambient air temperature, relative humidity and wind velocity with industrial grade weather monitoring instruments or with an evaporation rate calculator to determine the on-site

118 evaporation rate. When the rate of evaporation is equal to or exceeds 0.05
119 lb/ft²/h fogging shall begin. During the placement of the concrete recalculate
120 evaporation rate every 15 minutes using new real-time data including actual
121 temperature of concrete being placed. The concrete shall be fogged before,
122 during and after finishing. Fogging shall start at the point the bleed water starts to
123 evaporate. Fogging may stop when the curing compound application is complete.
124 Fogging shall be accomplished by self-powered atomized mister, e.g. BossTek
125 DustBoss, that creates a mist of water droplets above the concrete surface that
126 will float in the air. The droplets should float in the air, not fall on the concrete.
127 The goal is to humidify the air, not wet the concrete. Let the water evaporate
128 before finishing. If the concrete is fogger before floating, brooming or trowelling,
129 do not finish the accumulated surface water into the concrete surface or it will
130 weaken it. Do not allow water to run off the concrete surface. Adjust foggers or
131 pause its operation. Foggers shall not drip water on the poured concrete surface.
132 Point foggers into the air above the concrete pour not at it and not in the direction
133 of the incoming wind. It shall not be acceptable to use a water hose to spray
134 water into the air as a substitute. This will be considered adding additional water
135 to the deck surface. If plastic shrinkage cracks appear during the finishing, the
136 cracks shall be closed by striking each side of the crack with a float and
137 refinishing the concrete.”

138

139 **(XIV) Amend 503.03(F)(3) Box Girder Spans** by revising the title Box Girder
140 Spans at line 431 to read Sequence.

141

142 **(XV) Amend 503.03(F)(7) Hot Weather Concreting** by adding the word
143 “ambient” in front of the word “temperature” at line 560.

144

145 **(XVI) Amend 503.03(F) Placing Concrete** by adding the following Subsection
146 after line 565:

147

148 **“(8) Certified Concrete Flatwork Finisher Requirement.** Perform
149 the placement, and finishing operations of concrete flatwork with a
150 minimum ratio of one certified ACI Concrete Flatwork Finisher and
151 Technician with 4,500 hours of acceptable work experience (certified
152 craftsman) per three concrete finishers (concrete finishers without ACI
153 Concrete Flatwork Finisher and Technician certification and 4,500 hours of
154 acceptable work experience) at each location having flatwork done. The
155 concrete flatwork shall be under the direct supervision of a certified
156 craftsman. Designate the certified craftsman who will be supervising and
157 responsible for determining the quality of the finish of the concrete flatwork
158 being performed. No flatwork shall be performed without the required
159 amount of certified craftsman present.

160

161 **(a)** Flatwork concrete is defined as any concrete work that
162 requires tools or machines to be used during the placement and
163 finishing operations of concrete. Concrete flatwork includes

164 concrete work that requires a specified finishing, smoothness or
165 rigid surface tolerances such as sidewalks, walkways, Portland
166 cement concrete pavement, concrete white-topping, girder seats,
167 pier caps, bridge decks, on-grade concrete slabs, approach slabs,
168 concrete overlays, and concrete repairs which exceed one square
169 foot per day.

170
171 **(b)** Areas that are not considered flatwork concrete are the top
172 of foundations or structures that will have backfill material placed
173 directly on the concrete surface.

174
175 **(c)** Submit copies of the craftsman's current ACI certification 30
176 days before concrete flatwork begins for the Engineer's review and
177 acceptance. The Engineer has the right to require the removal,
178 replacement, retraining and re-certification of a certified craftsman if
179 that person does not, in the opinion of the Engineer, demonstrate
180 the ability to place and finish concrete in accordance with the
181 practices recommended in the ACI Concrete Flatwork Finisher
182 Certification Program and to meet the finishing standards required
183 by the contract documents.

184
185 **(d)** Any cost or impact to the contractor in providing, training,
186 certification, retraining, replacement or re-certification is incidental
187 to the contract items that require concrete flatwork."
188

189 **(XVII)** Amend **503.03(G) Joints** by adding the following sentence after line 566:

190
191 "Prior to backfilling with earth or other materials against the joints, all
192 construction, expansion, contraction, and control joints shall be waterproofed with
193 flashing compound waterproofing as detailed in the Standard Plans."
194

195 **(XVIII)** Amend **503.03(G)(1) Construction Joints** by revising the second
196 paragraph between lines 572 and 579 to read as follows:

197
198 "Before placing concrete on substrate concrete at construction joint, the
199 following work shall be performed:

200
201 **(a)** Remove laitance, loose particles, dust, dirt, impervious
202 membrane curing compound, and any other material foreign to the
203 construction joint and projecting reinforcement.

204
205 **(b)** Roughen horizontal construction joint by abrasive blast
206 cleaning or other approved methods to full amplitude of
207 approximately ¼ inch."
208

209 **(XIX)** Amend **503.03(G)(3) Contraction Joints** by revising the first paragraph
210 from lines 661 to 665 to read as follows:

211

212 **“(3) Contraction Joints.** Contraction joints in walls and in other
213 structures shall be spaced at not more than 20 feet on centers and shall
214 be spaced, at abrupt changes in height or thickness and at obtuse corners
215 unless otherwise directed by the Engineer.”

216

217 **(XX)** Amend **503.03(I)(3) Flashing Compound for Joints** between lines 755
218 and 757 by deleting this subsection.

219

220 **(XXI)** Amend **503.03(L) Curing Methods** by adding the following paragraph
221 after line 794:

222

223 “The Contractor shall have the option to use curing compound SINAK WCE or
224 SINAK LITHIUM for bridge structures when approved by the Engineer. SINAK
225 WCE or SINAK LITHIUM if used for concrete pavements or bridge decks shall
226 be white pigmented. Six copies of the manufacturer’s brochure and certificates
227 of test results shall be submitted. All work shall conform with the manufacturer’s
228 recommendations.”

229

230 **(XXII)** Amend **503.03(L)(2) Impervious Membrane Curing** by revising the third
231 sentence of the first paragraph from lines 818 to 819, to read as follows:

232

233 “Use ratio of at least one gallon for each 100 square feet of concrete
234 surface.”

235

236 **(XXIII)** Amend **503.03(L)(2) Impervious Membrane Curing** by adding the
237 following sentences to the first paragraph after line 819:

238

239 “The curing compound shall be applied to the concrete following the surface
240 finishing operation, immediately before the moisture sheen disappears from the
241 surface, but before any drying shrinkage or craze cracks begin to appear. In the
242 event of any drying or cracking of the surface, application of water with an
243 atomizing nozzle (fog spray) as specified in Section 503.03(L)(1), “Water Curing”,
244 shall be started immediately and shall be continued until application of the
245 compound is resumed or started; however, the compound shall not be applied
246 over any resulting freestanding water. Should the film of compound be damaged
247 from any cause before the expiration of 7 days after the concrete is placed in the
248 case of structures and 72 hours in the case of pavement, the damaged portion
249 shall be repaired immediately with additional compound.”

250

251 **(XXIV)** Amend **503.03(L)(2) Impervious Membrane Curing** by revising the last
252 sentence of the second paragraph between lines 822 and 825 as follows:

253

254 “Do not apply membrane curing compound on surfaces to which concrete
255 is to be bonded or to which waterproofing or epoxy is to be applied.”

256
257 **(XXV) Amend 503.03(M) Finishing Concrete Surfaces** by adding the following
258 sentences at line 841:

259
260 “No additional water shall be added to the concrete surfaces in an effort to
261 aid the finishing operation as the application of water to aid the finishing
262 operation will result in the rejection of the concrete pour. Finishing aids or
263 evaporation retarders may be used only with written authorization by the
264 Engineer. Only finishing aids shall be used to finish the concrete surface and
265 only evaporation retarders used to minimize the evaporation rate of the plastic
266 concrete. These solutions shall not be used interchangeably.”

267
268 **(XXVI) Amend 503.03(M)(3)(a)1. Machine Finishing** by adding the following
269 sentences at the end of the second paragraph at line 1021:

270
271 “The supports for the screed rails shall not be placed within the full width
272 of the bridge. The Contractor shall not apply any additional water to the deck
273 surface in an effort to aid his finishing operation. The unauthorized application of
274 water will result in the rejection of that day’s concrete placement.”

275
276 **(XXVII) Amend 503.03(M)(3)(a)1. Machine Finishing** by deleting the last three
277 paragraphs between lines 1098 to 1111 and adding the following five
278 paragraphs:

279
280 “Concrete bridge decks, concrete sleeper slabs, and concrete approach
281 slabs shall be textured longitudinally by mechanical grooving. Grooves shall be
282 cut into the hardened concrete using a mechanical water-cooled diamond edge
283 blade saw device which shall produce straight uniformly spaced grooves spaced
284 at 3/4 inch. The groove width shall be 1/8 inch plus or minus 0.02 inch and the
285 groove depth shall be 1/8 inch plus 1/16 inch or minus zero inches.

286
287 If grooves cannot be cut into a continuous longitudinal operation, the
288 continuation of grooves shall be aligned such that joints are not visible.

289
290 Before grooves are cut into the accepted hardened concrete, the upper
291 1/8 inch of the concrete surface shall be removed by grinding. Grooving shall be
292 done after the concrete has attained sufficient strength to prevent spalling and
293 ravelling, and before the structure is opened to traffic.

294
295 A working drawing to control, collect and dispose of run-off water at an
296 accepted off-site facility shall be submitted to the Engineer.

297
298 The requirements of Section 411.03(N) Surface Test shall apply to
299 concrete bridge decks and concrete approach slabs. If additional grinding is

300 required to achieve the specified profile index, the grinding shall be performed
301 prior to the mechanical grooving and shall be done only in the longitudinal
302 direction.”

303

304 **(XXVIII)** Amend **503.03(M)(3)(b) Sidewalk and Median Strip** by revising the
305 first and second paragraphs from lines 1182 to 1191 to read as follows:

306

307 **(b) Sidewalks and Median Strips.** “Provide final finish for concrete
308 sidewalks and median strips using wooden float and broom finish. Do not plaster
309 surface. Use edging tool with ¼-inch radius to finish outside edges of sidewalk.
310 Finish sidewalk as plane surface with 2-percent (allowable construction tolerance
311 of plus or minus 0.4 percent maximum) cross slope towards roadway. Test
312 surface of concrete sidewalk with 10-foot straightedge. Correct any deviation in
313 excess of ¼ inch.”

314

315 **(XXIX)** Amend **503.03 Construction** by adding subsection 503.03(0) beginning
316 at line 1200 as follows:

317

318 **“(0) Tolerance for Concrete Construction and Materials.** Conform to
319 the stricter of tolerances specified in the specifications, ACI 117 Standard
320 Specifications for Tolerance for Concrete Construction and Materials, PCI
321 Tolerance for Precast and Prestressed Concrete, and PCI MNL-116 Manual for
322 Quality Control of Plants and Production of Structural Precast Concrete
323 Products.”

324

325 **(XXX)** Amend **503.4 Measurement** by revising lines 1201 to 1205 to read as
326 follows:

327

328 **“503.04 Measurement.** The Engineer will measure the concrete by cubic
329 yard according to the dimensions shown in the contract or as ordered by the
330 Engineer.

331

332 The Engineer will measure mechanical grooving (includes initial grinding)
333 per square foot according to the dimensions shown in the contract or as ordered
334 by the Engineer.

335

336 The Engineer will not make deductions for the volume occupied by
337 reinforcing steel, piles, floor drains, weepholes, timber bumpers, pipes less
338 than eight (8) inches, conduits, or expansion joint materials.”

339

340 **(XXXI)** Amend **503.05 Payment** by revising lines 1206 to 1223 to read as
341 follows:

342

343 **“503.05 Payment.** The Engineer will pay for the accepted quantities of
344 concrete complete in place at the contract unit price per cubic yard. The

345 Engineer will pay for the accepted mechanical grooving at the contract unit price
346 per square foot for the pay items listed below and contained in the proposal.

347
348 The contract unit price shall be full compensation for mechanical grooving;
349 for the concrete; for placing, curing and finishing; for furnishing materials
350 including admixtures and cement (including extra cement added to concrete
351 deposited under water); for furnishing and installing drains, scuppers, premolded
352 joint fillers, joint seals, waterproofing at construction joints, waterstops, pipes and
353 conduits; for furnishing and installing metal rockers, anchor bolts, structural
354 shapes for expansion joints and other similar items; for timber bumpers, forms,
355 form lining and falsework or centering, bearing pads, structural steel bearing
356 plates; reinforcing bars conforming to ASTM A1035 Type CS Grade 100; and for
357 equipment, tools, labor, materials and incidentals necessary to complete the
358 work.

359
360 The Engineer will pay for the following pay item when included in the
361 proposal schedule:

362 Pay Item	363 Pay Unit
364 Concrete for _____ 365 (Class _____ if applicable)	366 Cubic Yard
367 Mechanical Grooving	368 Square Foot

369
370 The Engineer will pay for excavation and backfill for foundations in
371 accordance with and under Section 205 – Excavation and Backfill for Bridge and
372 Retaining Structures and Section 206 – Excavation and Backfill for Drainage
373 Facilities.”

374
375
376
377

END OF SECTION 503

1 **SECTION 504 - PRESTRESSED CONCRETE MEMBERS**
2
3

4 Make the following amendments to said Section:
5
6

7 **(I)** Amend **504.01 Description** by adding the following paragraph after line 7:
8

9 “Prestressed concrete members fabricated in a State other than Hawaii shall
10 conform to that State’s Department of Transportation Standard Plans and Standard
11 Specifications. However, if conflicts between Hawaii State Specifications and that State’s
12 Plans and Specifications occur, the stricter provisions shall govern unless otherwise
13 permitted by the Engineer.
14

15 All work performed in a State other than Hawaii shall be inspected by inspectors
16 certified by that State’s Department of Transportation and approved prior to construction by
17 both States Departments of Transportation. The inspector shall observe and inspect work
18 in progress, shall furnish periodic reports to the Engineer and fabricator and shall bring all
19 discrepancies to the immediate attention of the Engineer and fabricator for correction prior
20 to proceeding with the work. A final report documenting required inspections and
21 correction of any discrepancies noted in the inspections shall be submitted at a point in
22 time agreed upon by the Engineer prior to the start of work.”
23

24 **(II)** Amend **504.02 (A) Portland Cement Concrete** by revising the number 893 at line
25 24 to read 800.
26

27 **(III)** Amend **504.03 (A)(1) Design** by revising the title and the first paragraph between
28 lines 55 and 57 to read as follows:
29

30 “(1) Design and Construction. Design, fabricate and erect prestressed members
31 in accordance with AASHTO LRFD Bridge Design Specification and AASHTO LRFD Bridge
32 Construction Specifications including the latest interim revision.”
33

34 **(IV)** Amend **504.03 (A)(1) Design** by revising the number 70 in the fourth paragraph at
35 line 76 to read 75.
36

37 **(V)** Amend **504.03 (A)(2) Shop Drawings** by revising the entire paragraph between
38 lines 112 and 122 to read as follows:
39

40 “(2) Shop Drawings. Prior to casting prestressed members, submit 10 copies of
41 shop drawings, including complete outline and details of the following: prestressing method;
42 materials; pattern of prestressing steel; post-tensioned duct location calculations;
43 elongation calculations; sequence of stressing and releasing; complete specifications and
44 details of prestressing steel and anchoring devices; anchoring stresses; type of enclosure;
45 handling, shipping, storage, bracing, transportation and delivery; and other data for
46 prestressing operation. Prestressing operation includes proposed arrangement of

47 prestressing materials, and equipment. Obtain shop drawing acceptance prior to casting.

48

49 The shop drawings for the supports for the temporary truss which may be used to
50 install the girders and the operational details for such installation shall be stamped by a
51 Hawaii licensed structural engineer. The foundation details and calculations for the truss
52 supports shall be stamped by a Hawaii licensed civil engineer specializing in geotechnical
53 engineering.”

54

55 **(VI)** Amend **504.03 (A)(5) Tolerances** by revising the title to read Tolerances and
56 Cambers and by adding a third paragraph at line 153 as follows:

57

58 “Submit records of monthly measurements of the member cambers and of a final
59 measurement just prior to placing the member onto the substructure. The Contractor shall
60 also submit a record of the member cambers after the pretensioning has been completed
61 and prior to splicing the members.”

62

63 **(VII)** Amend **504.03 (A)(6) Form Fabrication** by deleting the last paragraph between
64 lines 166 and 170.

65

66 **(VIII)** Amend **504.03 (C) Prestressing Steel** by adding the following sentence at line 246
67 of the seventh paragraph:

68

69 “The maximum tensile stress (jacking stress) in prestressing steel shall not exceed
70 75 percent of the specified minimum ultimate tensile strength of the prestressing steel.”

71

72 **(IX)** Amend **504.03 (C) Prestressing Steel** by adding the following sentence after the
73 first sentence of the penultimate paragraph at line 255 to read as follows:

74

75 “The force provided shall not be less than the force shown on the plans.”

76

77 **(X)** Amend **504.03 (I) Handling, Storage, and Transportation** by revising the first
78 sentence of the sixth paragraph between lines 622 and 624 to read as follows:

79

80 “Make provisions for supporting prestressed concrete with adequate bracing to
81 maintain vertical and horizontal positions and to dampen vibration during all stages of work
82 prior to the final set of the concrete in the diaphragms or transverse beams between the
83 prestressed concrete members.”

84

85 **(XI)** Amend **504.04 Measurement.** to read as follows:

86

87 **“504.04 Measurement.**

88

89 **(A)** The Engineer will measure inspections in a State other than Hawaii, including
90 remedial measures and reports, on a force account basis according to **Subsection 109.06-**
91 **Force Account Provisions and Compensation** and as ordered by the Engineer.

92

93 (B) The Engineer will measure the prestressed concrete members per linear foot
94 when contracted on a unit price basis.”

95
96 (XII) Amend **504.05 Payment** to read as follows:

97
98 “**504.05 Payment.** The Engineer will pay for the accepted pay items listed below at
99 the contract price per pay unit, as shown in the proposal schedule. Payment will be full
100 compensation for the work prescribed in this section and the contract documents.”

101
102 The Engineer will pay for the following pay item when included in the proposal
103 schedule:

Pay Item	Pay Unit
(A) Inspections in a State other than Hawaii	Force Account
(B) Precast Prestressed Concrete Girders	Linear Foot

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111 The Engineer will not pay for work required that is due to the Contractor's
112 convenience, negligence, carelessness or failure to properly complete the work.”

113
114 **END OF SECTION 504**

1 Amend **Section 511 - Drilled Shafts** to read as follows:
2
3

4 **“SECTION 511 - DRILLED SHAFTS**
5

6
7 **511.01 Description.** This section is for installing, drilling, reinforcing, concreting
8 and crosshole sonic logging of drilled shafts in the locations shown on the plans.
9

10 **511.02 Materials.** Materials shall conform to the following:
11

12 **(A) Portland Cement Concrete.** Concrete shall conform to Section 601 -
13 Structural Concrete and Section 511 – Drilled Shafts.
14

15 The in-place concrete shall have minimum 28-day compressive strength
16 $f'_c = 4500$ pounds per square inch and maximum water to cement ratio of 0.40
17 based on a maximum cementitious material content of 700 pounds per cubic
18 yard.
19

20 Proportion the concrete mix designs to get properties of high workability,
21 compaction under self-weight, resistance to segregation, and resistance to
22 excessive bleeding. The maximum nominal aggregate size shall be 0.375 inch.
23 The slump range shall be 7.0 inches \pm 1.0 inch for concrete poured into a water
24 free borehole and 8.0 inches \pm 1.0 inch for concrete placed under water or under
25 drilling slurry. Slump for the concrete shall be a minimum of four inches after four
26 hours from initial mixing or after the completion of the concrete placement,
27 whichever occurs later.
28

29 A migrating corrosion inhibiting amine carboxylate water-based admixture
30 shall be added to the concrete. The minimum dosage shall be 1.5 pints per cubic
31 yards of concrete.
32

33 The Engineer will permit superplasticizers.
34

35 At the time of placement, the concrete temperature shall not exceed 85°F.
36

37 The final concrete mix design shall be based on field trial batches to
38 determine the most suitable materials and proportions that will provide a concrete
39 mixture having the least amount of segregation and bleeding, and at the same
40 time provide the necessary workability to meet placing requirements.
41

42 **(B) Reinforcing Steel.** Reinforcing steel shall conform to Section 602 -
43 Reinforcing Steel.
44

45 **(C) Casings.** Casings shall have inside diameters not less than the
46 required diameter of the shafts and wall thicknesses specified or adequate to
47 withstand construction loads and stresses.
48

49 **(D) Cement Grout.** Cement grout used for setting the expandable load
50 cells and for filling the access tubes after completion of crosshole sonic logging
51 tests and cored holes, shall be prepackaged, non-shrink, and non-metallic grout.
52 The grout shall, at a minimum, have the same strength as the drilled shaft
53 concrete. The grout shall contain 10 grams of water-based migrating amine
54 carboxylate corrosion inhibitor per 0.5 cubic feet. Cement grout used to fill cored
55 holes shall be extended with 3/8 inch pea gravel per manufacturer's
56 recommendations.

57
58 **(E) Crosshole Sonic Logging (CSL) Test Access Tube.** Access tube
59 shall be at least 2-inch inside diameter, Standard steel pipe conforming to ASTM
60 A53, Grade B, Type E.

61
62 Access tube shall have round, regular inside diameter, free of defects and
63 obstructions, including all pipe joints, in order to permit free unobstructed
64 passage of 1.375-inch maximum diameter source and receiver probes used for
65 crosshole sonic logging testing. Access tube shall be watertight, free from
66 corrosion, with clean internal and external faces to ensure good bonding between
67 the drilled shaft concrete and access tubes. Fit access tubes with watertight
68 caps on bottom and top. Both ends of the access tube shall be capped at all
69 times except when being connected to another access tube. The end of the
70 tubes shall be undamaged and suitably prepared for the end caps and coupling
71 system adopted. Access tube coupling shall be used when extension of the
72 access tubes is necessary. The access tube coupling shall be watertight.

73
74 When crosshole sonic logging testing is indicated in the contract
75 documents, submit manufacturer's certificate of compliance for the acceptance of
76 the access tube.

77 78 **511.03 Construction**

79
80 **(A) Qualifications of Drilled Shaft Contractor.** Be capable of installing
81 drilled shafts, conducting load tests and other related work as specified in the
82 contract and shall have the following minimum experience requirements below.

83
84 **(1) Drilled Shaft Experience.** Because of the expertise required to
85 successfully complete the drilled shafts according to the contract, a
86 qualified drilled shaft Contractor shall install the drilled shaft. The drilled
87 shaft Contractor shall have installed at least three projects completed in
88 the last three years on which the Contractor has installed a minimum of
89 five drilled shafts per project of a diameter and length similar to those
90 shown in the contract. Include in list of projects, names and phone
91 numbers of owner's representatives who can verify the drilled shaft
92 contractor's participation on those projects. Drilled shaft Contractor shall
93 have on its payroll and on the project for the entire duration, supervisory
94 personnel who have participated in drilled shaft construction, similar to the
95 type proposed in the contract, for duration of at least three years within the
96 last 10 years.

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(B) Preconstruction Requirements.

(1) Experience Information. Submit the following information to the Engineer within 30 days after award of contract for acceptance by the Engineer:

(a) List of drilled shaft projects completed in the past 10 years. The list of projects shall contain the names and phone numbers of owner's representatives who can verify participation on that project.

(b) Name and experience record of the drilled shaft superintendent who will be in charge of drilled shaft operations for this project. Drilled shaft superintendent shall have minimum three years experience within the last 10 years in drilled shaft construction similar to type proposed. Drilled shaft superintendent shall remain on the project for the duration of the drilled shaft work. Drilled shaft superintendent who leaves the project shall be replaced with personnel with equal or better experience. Submit proposed replacement superintendent's name and experience record for acceptance.

(2) Protection of Existing Structures. Prevent damage to existing structures and utilities. Preventive measures shall include:

(a) Selecting construction methods and procedures that will prevent caving of the shaft excavation and

(b) Monitoring and controlling the vibrations from construction activities such as the driving of casing or sheeting or drilling of the shaft

(3) Installation Plan. At least 30 days before constructing the drilled shafts, submit an installation plan for acceptance by the Engineer. This plan shall at a minimum provide information on the following:

(a) List of proposed equipment such as cranes, drills, augers, bailing buckets, final cleaning equipment, concrete pumps, and casing,

(b) Details of construction operation sequence and the sequence of shaft construction in bents or groups,

(c) Details of shaft excavation methods including how the excavated material from the drilled shaft will be controlled on site and removed; and method of setting and extracting temporary casing,

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- (d)** If the Contractor plans to use slurry, details of the methods to mix, circulate and desand slurry,
- (e)** Details of methods to clean the shaft excavation, include the method that shall be used to determine that the bottom of the drilled shaft has been cleaned to contract document requirements
- (f)** Details of reinforcement placement including lifting, support, and centralization methods,
- (g)** Details of concrete placement including proposed operational procedures for pumping method,
- (h)** Details of attaching the crosshole sonic logging test access tubes to the reinforcing cage, details of testing access tubes for leakage after cage installation and prior to shaft concrete placement, and details for grout placement in the crosshole sonic logging test access tubes after testing is completed,
- (i)** Details of required load tests, including equipment, procedures, and recent calibrations for jacks or load cells supplied by the Contractor,
- (j)** Proposed concrete mix design, including expected strengths at 3,7, and 28 days. Submit test results of both a trial mix and a slump loss test, conducted by State-accepted accredited testing laboratory using methods specified in Section 601 - Structural Concrete. Tests shall demonstrate that concrete meets 4-hour plasticity requirement at expected ground ambient temperature and at highest expected ambient air temperature (two separate slump loss tests required), and
- (k)** Test results from laboratory measurements of the ultrasonic pulse velocity, performed in accordance with ASTM C 597, on 3-day, 7-day, and 28-day concrete trial mix samples described in Subsection 511.03(B)(3)(j).

The Engineer will evaluate the drilled shaft installation plan for conformance with the contract documents. Within 30 days after receipt of the plan, the Engineer will notify the Contractor of additional information required including if applicable, changes necessary to meet the contract requirements. The Engineer will reject parts of the installation plan that are unacceptable. The Contractor shall resubmit changes for re-evaluation within 15 days. The Engineer will have another 30 days to review all resubmittals. Procedural acceptance given by the Engineer shall be subject to trial in the field. The acceptance shall not relieve the Contractor of the responsibility to complete the work according to the contract.

194 **(4) Trial Shaft Installation.** Demonstrate adequacy of proposed
195 methods and equipment by successfully constructing a trial shaft of the
196 shaft diameter to be installed, in accordance with contract documents.
197 The details of reinforcement shall be the same as for the production drilled
198 shafts. Position trial shaft away from production shafts, at location shown
199 in the contract documents, or as ordered by the Engineer. Drill trial shaft
200 to the depth shown on the contract documents.
201

202 CSL test access tubes shall be installed in the trial shaft as shown
203 on the contract to allow performance of CSL tests. Installation of the CSL
204 tubes shall be in accordance with Subsection 511.02(E) Crosshole Sonic
205 Logging (CSL) Test Access Tube and shall be incidental to the trial shaft
206 work.
207

208 The trial shaft shall be subject to integrity testing using concrete
209 coring to evaluate the effectiveness of the concrete placement method
210 proposed by the Contractor. Coring shall be conducted by the Contractor
211 in the presence of the Engineer. The Contractor shall core a vertical hole
212 throughout the full depth at two locations of the trial shaft determined by
213 the Engineer. Core specimens shall be a minimum diameter of 3.7 inches.
214 The Contractor shall submit the coring samples to the Engineer in core
215 boxes properly labeled with the core number and depths. Coring of the
216 trial shaft shall be incidental to the trial shaft work. The measured unit
217 weight of the air-dry core samples shall not be less than three pounds per
218 cubic foot of the air-dry unit weight test cylinders.
219

220 If the Engineer rejects trial shaft due to deviation from requirements
221 of the contract documents, alterations to proposed methods and
222 equipment may be required. The concrete mix design may also be altered
223 to meet the contract document requirements. Drill additional trial holes to
224 demonstrate adequacy of altered construction methods or equipment at
225 no increase in contract price or contract time. Once the Engineer has
226 accepted trial shaft and has authorized construction of production shafts,
227 do not deviate from accepted methods or equipment without the
228 Engineer's written approval.
229

230 Fill trial drilled shaft hole with concrete using the accepted
231 production drilled shaft concrete mix design, using method proposed for
232 production shaft construction. Cut the concreted trial shafts off 24 inches
233 below finished grade and leave in place. Restore disturbed areas at trial
234 shaft sites to original condition, unless otherwise specified.
235

236 **(5) Drilled Shaft Load Tests.** Load test shall be performed at the
237 location shown on the plans and be completed before construction of any
238 production drilled shafts. This work includes all labor, materials,
239 equipment and services necessary for conducting the bi-directional axial
240 load tests and reporting the results, including the following: (a) the
241 number of bi-directional expandable load cells as indicated on the plans,

242 (b) materials to construct a stable reference beam system(s) for
243 monitoring vertical and horizontal deflection of the drilled shaft during
244 testing, supported a minimum distance of the reference system, (c)
245 materials sufficient to construct and protect the work area, load test
246 equipment, and personnel from inclement weather and sunlight, and
247 illuminate area as needed, (d) electric power as required and suitable for
248 lights, welding, instruments, etc., working all at once and (e) suitable
249 optical survey equipment to measure the horizontal and vertical
250 displacement of shafts during tests independent of the reference beam(s)
251 and electronic equipment.

252
253 **(a) Experience Requirements.** The Contractor shall obtain
254 the services of an experienced specialty Subcontractor with a
255 minimum of three years of bi-directional load testing experience
256 accepted by the Engineer to direct the assembly and
257 instrumentation of the load cells, and to record all data and furnish
258 results of the test to the Engineer.

259
260 **(b) Materials.** Materials for the drilled shaft load test shaft
261 shall conform to the requirements of Section 511.02 - Materials.

262
263 **(c) Load Test Instrumentation.** Provide instrumentation
264 consisting of vibrating wire embedment strain gauges connected to
265 a central data collection terminal; expandable load cell with readout
266 device, and/or other equipment specified or indicated to measure
267 movement of the top and bottom plates of the load cell, top of
268 shafts, and strain at indicated locations within the shaft.

269
270 The embedment strain gauges shall be positioned along the
271 test shaft at intervals shown on the Plans. The embedment strain
272 gauges shall be attached securely to prevent movement from the
273 installed location. The Engineer may require relocation of the
274 embedment strain gauges and load cell based on the submittals
275 provided by the Contractor. Each embedment strain gauge shall
276 be capable of measuring strain to the nearest 0.0001 inch/inch and
277 shall be capable of measuring or compensating for temperature.
278 All embedment strain gauges shall have been calibrated or certified
279 as accurate prior to installation. Take precautions not to damage
280 the embedment strain gauges.

281
282 Load cell shall be a flat, hydraulically expandable load cell of
283 a minimum of 26 inches in diameter and capable of applying a load
284 test of at least 3,600 kips in each direction. The load cell shall be
285 accurate to within 1%, shall expand uniformly, and shall be capable
286 of being installed as described herein. The load cell shall have
287 provisions for monitoring displacements of the upper and lower
288 plates to an accuracy of 0.001 inch. The load cell shall have
289 been calibrated or certified as accurate to within 1% of the true
290 loads not more than six months prior to installation.

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(d) Construction Requirement. The drilled shaft load test shall be a bi-directional load test utilizing a hydraulically expanded load cell. The bi-directional load test separately tests the shear resistance and end-bearing of the drilled shaft by loading the shaft in two directions (upward-shear resistance, downward-end bearing and shear resistance), using hydraulically expanded load cell, or by loading the shaft using other accepted methods capable of full separation of the shear bearing components. The drilled shaft used for the load test program shall be instrumented, as specified in this Section, by an experienced specialty Subcontractor accepted by the Engineer. Load test shaft with excessive lateral extension (more than 12 inches) of the shaft diameter will be rejected, unless accepted by the Engineer. Rejected load test shaft shall be replaced at no additional cost to the State.

The Contractor shall supply equipment required to install the load cell, conduct the load test, and remove the load test apparatus as required. For the drilled shaft load test, the following set up procedure shall be used:

(1) The load cell, piping and other attachments will be assembled and made ready for installation under the direction of the specialty Subcontractor, in a suitable area, adjacent to the load test shaft, to be provided by the Contractor. The load cell assembly shall be placed at the location shown on the plans in conjunction with the construction of the reinforcing cage. The Engineer reserves the right to adjust the location of the load cell prior to installation.

(2) Advance the load test excavation to the maximum depth shown on the plans. A successfully completed trial shaft that is acceptable to the Engineer may not be used as the load test shaft.

(3) Clean the bottom of the shaft excavation after drilling is complete.

(4) Caliper testing shall be performed on the load test shaft to obtain profile shape data to be used to verify the shaft verticality and diameter. A minimum of eight data points around the circumference of the load test shaft shall be obtained at every one foot increment throughout the depth of the load test shaft. Caliper testing may be performed using a sonar-type caliper.

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(5) Install the rebar cage assembly and load cell under the direction of the specialty Subcontractor and in the presence of the Engineer. The Contractor shall use the utmost care in handling the rebar cage/test equipment assembly so as not to damage the instrumentation during installation.

(6) After the installation of the rebar cage/test equipment assembly, the drilled shaft shall be concreted in the same manner as accepted by the Engineer based on the trial shaft installation and as specified for production shafts.

(e) Load Test Schedule. The Contractor shall notify the Engineer of the load testing schedule a minimum of fifteen calendar days prior to the commencement of load testing.

(f) Load Test Procedures. The load test shall be completed and the load test data evaluated by the Engineer for revision to the production shaft length before construction of any production shafts. The Engineer shall have at least 21 calendar days after submission of the load test report to review the load test result prior to providing the production shaft lengths. Load testing on the shaft shall not begin until the concrete has attained a compressive strength of 4,000 psi and aged for seven days.

Load the load test shaft using the quick load test method of ASTM D1143 except as modified herein. Apply the test load in increments of 50 to 100 kips, as directed by the Engineer. A load-deflection curve shall be plotted as the test progresses to avoid missing information near the failure load or to correct the precise load increments.

The load test shall be conducted to the maximum test load of 3,000 kips or plastic failure, whichever occurs first. Plastic failure is defined as the load corresponding to mobilization of side shear or end bearing and no further increase in load can be obtained.

The load test shall be held for a minimum of 4 hours each at the 2,000, 2,500, and 3,000-kip load interval to evaluate the creep effects, or at specific loads as directed by the Engineer.

(g) Cleanup. After completion of the load test, and at the direction of the Engineer, the Contractor shall remove all equipment, waste and other material that is not a part of the finished structure. The load cell remaining in the shafts shall then be grouted through the piping provided as a part of the load cell assembly. Use non-shrink, non-metallic grout that at a minimum has the same strength as the drilled shaft concrete.

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After completing the test, cut off the load test shafts at an elevation 24 inches below the finished ground surface. The portion of the shafts cut off and removed shall remain the property of the Contractor.

(h) Replacement. Load test shaft found inadequate because of improper or failure of instrumentation, testing or construction procedures shall be replaced and retested, at no additional cost to the State.

(i) Reporting. Report the test results as specified in ASTM D1143-81 including, but not limited to, the following:

- (1)** Introduction;
- (2)** Drilled shaft installation procedure;
- (3)** Load test procedure and instrumentation; and
- (4)** Appendix which shall include report of calibration of instruments, plan view location of the load test and test boring related to the Project, records of subsurface exploration, records of load test shaft installation, tabular and graphical presentation of the load-deflection data of end-bearing and side shear from the load test.

(C) Construction Requirement. This subsection shall be applicable to trial, load test and production drilled shafts unless otherwise directed by the Engineer.

(1) Construction Sequence. Complete the excavation to footing elevations before shaft construction begins. Repair the disturbances caused by shaft installation to the footing area before pouring the footing.

When installing drilled shafts with embankment placement, construct drilled shafts after the placement of fills.

Do not cap the drilled shafts before placing the fills as near to final grade as possible. Only leave room for construction of the caps.

(2) Construction Methods. Excavate for shafts to the dimensions and elevations shown in the contract. Its methods and equipment shall be suitable for the intended purpose and materials met. Use the permanent casing method only when required by the contract or authorized by the Engineer. Blasting shall not be permitted.

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(a) Dry Construction Method. The dry method includes drilling the shaft excavation, removing accumulated water and loose material from the excavation, and placing the reinforcing cage and shaft concrete in a dry excavation. Use this method only at sites where the groundwater table and soil conditions are suitable to permit construction of the shaft in a dry excavation. The Engineer will inspect the sides and bottom of the shaft visually before placing the concrete. Dry excavation is defined as an excavation where maximum depth of water does not exceed 3 inches.

(b) Wet Construction Method. This method includes using water, mineral, or polymer slurry to maintain stability of the hole perimeter while advancing the excavation to final depth, placing the reinforcing cage, and concreting the shaft. Use this method at sites where a dry excavation for placement of the shaft concrete cannot be maintained

Reuse drilling water only if permitted by the Engineer and contingent upon control of unit weight to no more than 62.5 pounds per cubic foot and Marsh funnel viscosity to not more than 27 seconds per quart, at the time drilling water is introduced into the borehole.

When locating drilled shafts in open water areas, extend the exterior casings from above the water elevation into the ground. Install the exterior casing to produce a positive seal at the bottom of the casing so that no intrusion or extrusion of water or other materials occurs into or from the shaft excavation.

(c) Casing Construction Method. The casing method may be used when shown in the contract or at sites where the dry or wet construction methods are inadequate. The casing may be placed either in a predrilled hole or advanced through the ground by twisting, driving, before cleaning the casing.

(3) Excavation.

(a) General. Make the shaft excavations at locations, and to shaft geometry and dimensions shown in the contract. After acceptance by the Engineer, adjust drilled shaft tip elevations when the material met during excavation is unsuitable and/or differs from that anticipated in the design of the drilled shaft.

Maintain a construction method log during shaft excavation. Submit method log within 24 hours of shaft drilling completion. The log shall contain information such as:

- 481 (1) Excavation diameters;
482
483 (2) Equipment used;
484
485 (3) Type of material excavated with the elevations of the
486 material;
487
488 (4) Rate of excavation including time drilling started,
489 when different material is encountered, tool changes, finish
490 of shaft excavation, and difficulties encountered; include
491 start, end time of obstruction encounters as well as type,
492
493 (5) The description of and approximate top and bottom
494 elevation of each soil or rock material as well as type of
495 obstruction, encountered.
496
497 (6) Elevation and approximate rate of any seepage or
498 groundwater; and
499
500 (7) Remarks, including temporary stoppages
501

502 Drilling of shafts within a horizontal distance of 3.0 times the
503 shaft diameter to the hole being drilled shall not commence until a
504 minimum of 24 hours after the drilled shaft has been completed by
505 placement of concrete to the top of shaft elevation in order to avoid
506 interaction effects between adjacent shafts.
507

508 On projects with cofferdams, provide a qualified diver to
509 inspect the cofferdam conditions when the contract requires a seal
510 for construction. Before placing the concrete seal, the diver shall
511 inspect the cofferdam interior periphery. The cofferdam interior
512 periphery inspection includes each sheeting indentation and around
513 each drilled shaft.
514

515 Furnish drilled shaft concrete required to fill excavations for
516 shafts dimensioned in the contract documents.
517

518 Any drilled shaft concrete over the theoretical amount
519 required to fill any excavations for the shafts dimensioned on the
520 plans shall be furnished at no additional cost.
521

522 Dispose the excavated material according to Section 203 -
523 Excavation and Embankment.
524

525 Do not permit workers to enter the shaft excavation unless:
526

- 527 (1) A suitable casing is in place.
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(2) The water level is lowered and stabilized below the level the workers will occupy, and

(3) Adequate safety equipment and procedures are provided, performed and in place.

(b) Excavation and Drilling Equipment. The excavation and drilling equipment shall have adequate capacity including power, torque, and down thrust to excavate a hole to the maximum diameter and to a depth of ten feet or 20% beyond the depths shown in the contract, whichever is greater.

The use of special drilling equipment and/or procedures will be necessary to drill through the cobbles and boulders. The Contractor shall anticipate an abundance of boulders or various sizes in deposits classified as "fill" and "older alluvium" on the boring logs and shall make allowance for difficult drilling in his bid. In addition, the Contractor shall make allowance for difficult drilling in his bid within the basalt rock formation.

The excavation and overreaming tools shall be of adequate design, size, and strength to do the work shown in the contract.

(1) Special Drilling Equipment. When conventional earth augers and/or underreaming tools cannot be used for drilling, provide special drilling equipment including rock core barrels, rock tools, air tools and other equipment as necessary to construct the shaft excavation to the size and depth required. The use of special drilling equipment and/or procedures will be necessary to drill through the cobbles and boulders, and cost shall be incidental to unclassified shaft excavation.

(2) Sidewall Overreaming. When the sidewall of the hole has softened, swelled, or degraded, sidewall overreaming will be required by the Engineer. Overreaming thickness shall be a minimum of 0.5 inch and a maximum of 3.0 inches. The Contractor may overream with a grooving tool or overreaming bucket. The thickness and elevation of sidewall overreaming shall be according to the contract or as directed by the Engineer. Overream sidewall and place additional shaft concrete at no cost to the State.

(c) Unclassified Excavation. All excavation for the production drilled shafts shall be designated as unclassified. The Contractor shall anticipate the presence of cobbles and boulders within the depths of the drilled shafts. The Contractor shall provide the necessary equipment to remove and dispose of materials met

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in forming the drilled shaft excavation, including installation of temporary casing and/or use of slurry, as necessary. The Engineer will not make separate payment for excavation of materials of different densities and character (hardness) or employment of special tools and procedures necessary to excavate. The Engineer will pay for obstruction removal separately.

(d) Obstructions Removal. Remove obstructions at drilled shafts locations when authorized by the Engineer. Obstructions shall include man-made materials such as but not limited to old concrete foundations not shown on the Plans.

The Contractor shall employ special procedures and/or tools after the Contractor cannot advance the hole using conventional augers fitted with soil or rock teeth, drilling buckets, core barrels and/or underreaming tools. Such special procedures/tools may include: chisels, boulder breakers, air tools, hand excavation, temporary casing, and increasing the hole diameter.

Drilling tools and any other equipment, lost in excavation, are not considered obstructions. Remove the drilling tools and any other equipment promptly. The cost due to tools lost in the excavation shall be at no additional cost to the State including costs associated with hole degradation (requiring overreaming or other methods) due to removal operations or the time the hole remains open or any other remedial actions needed to be performed to correct the situation caused by the tool lost.

Natural materials used as fill materials such as cobbles and boulders shall be anticipated at the site during excavation and shall not be considered an obstruction regardless of the size and hardness of the boulder. These natural materials used as fill materials shall not be considered an obstruction under this section.

(4) Casings.

(a) General. Casings shall be steel, smooth, watertight, and of ample strength to withstand both handling and driving stresses and the pressure of concrete and the surrounding earth materials. The inside diameter of the casing shall not be less than the specified size of the shaft. The Engineer will not allow extra compensation for concrete required to fill the oversized casing or oversized excavation. Remove casings from shaft excavations except when the casing is permanent. If the Contractor elects to pre-drill for the permanent casing, the pre-drilled hole diameter shall be no larger than the outside diameter of the permanent casing. The Contractor shall take proper measures and shall be

624 responsible for maintaining the tip elevation of the permanent
625 casing at the specified elevations.

626
627 When the shaft extends above ground or through a body of
628 water, the shaft may be formed with removable casing except when
629 the casing is permanent. Remove the casing carefully, where
630 specified, so that the casing will not damage the cured concrete.
631 When the casing needs to be removed after the concrete hardens
632 in open water, design and submit the special system for
633 acceptance by the Engineer. The Contractor may remove the
634 casings only when the concrete attains sufficient strength provided:

635
636 (1) The curing of the concrete continues for the full 72
637 hour period,

638
639 (2) The shaft concrete is not exposed to salt water or
640 moving water for a minimum of 7 days after placement, and

641
642 (3) The concrete reaches a compressive strength of at
643 least 2,500 pounds per square inch.

644
645 **(b) Temporary Casing.** The Engineer will consider
646 subsurface casing temporary unless shown in the contract as
647 permanent casing. Remove the temporary casing before
648 completing the placing of concrete in the drilled shaft. The
649 Contractor may require telescoping, predrilling with slurry, and/or
650 overreaming to beyond the outside diameter of the casing to install
651 casing.

652
653 When choosing to remove a casing and substituting a longer
654 or larger diameter casing through caving soils, stabilize the
655 excavation with slurry or backfill before installing the new casing.

656
657 Before withdrawing the casing, the level of fresh concrete in
658 the casing shall be the higher of the following:

659
660 (1) Minimum of five feet above the hydrostatic water
661 level, or

662
663 (2) Level of drilling fluid, outside the casing.

664
665 While withdrawing the casing, maintain an adequate level of
666 concrete within the casing to:

667
668 (1) Displace the fluid trapped behind the casing upward
669 and

671 (2) Discharge the fluid at the ground surface without
672 contaminating or displacing the shaft concrete.
673

674 When temporary casings become bound or fouled during
675 shaft construction and cannot be removed, the Engineer will
676 consider the drill shaft defective. Improve such defective shafts
677 according to the contract or submit remedial repair for acceptance
678 by the Engineer. Such improvement may consist of removing the
679 shaft concrete and extending the shaft deeper, providing straddle
680 shafts to compensate for capacity loss, or providing a replacement
681 shaft. Do corrective measures including redesign of footings
682 caused by defective shafts according to the contract at no cost to
683 the State or extension of the contract time. Any redesign of the
684 footing shall be submitted to the Engineer for acceptance. The
685 redesign shall be performed by a structural engineer and a civil
686 engineer specializing in the geotechnical practice both licensed in
687 the State of Hawaii. All remedial repairs shall have drawings and
688 calculations signed and stamped by both of the above licensed
689 engineers. The Engineer will not pay for the casing remaining in
690 place as well as any redesign or remedial repair.
691

692 (5) **Slurry.** If required, use only polymer slurry in the drilling process.
693 The polymer slurry shall have sufficient viscosity and gel characteristics to
694 transport excavated material to suitable screening system. The
695 percentage and specific gravity shall be sufficient to maintain the stability
696 of the excavation and to allow proper concrete placement.
697

698 During construction, maintain the level of the slurry at a height
699 sufficient to prevent caving of the hole. When a sudden significant loss of
700 slurry occurs, delay the construction of that foundation until an alternate
701 construction procedure is submitted for acceptance by the Engineer.
702

703 Premix the polymer slurry thoroughly with clean fresh water in
704 slurry tanks and adequate time (as prescribed by the manufacturer)
705 allotted for dehydration before introducing the slurry by pumping into the
706 shaft excavation. The slurry tanks shall have capacity for adequate slurry
707 circulation, storage, and treatment. Excavated slurry pits in lieu of slurry
708 tanks will not be allowed without the written permission of the Engineer.
709

710 Use desanding equipment to control slurry sand content to less
711 than 0.5% by volume in the borehole for polymer slurry. The Engineer will
712 not require desanding equipment for setting temporary casing, sign post,
713 or lighting mast foundations.
714

715 Prevent the slurry from "setting up" in the shaft, such as: agitation,
716 circulation and/or adjusting the properties of the slurry. Dispose of slurry
717 in suitable areas off from the project site.
718

719 The Contractor shall have the representative from the manufacturer
720 of the slurry product on site providing the technical support for the slurry

721 preparation, placement, testing and other quality control. Also, make
722 adjustment as needed to slurry due to difference in ambient temperature
723 from the tables. Carry out the control tests using suitable apparatus on
724 the polymer or mineral slurry to resolve the density, viscosity, pH, and
725 sand content. Acceptable range of values for those physical properties for
726 two types of polymer slurries is in Tables 511-1 – Shore Pac GVC
727 (CETCO Drilling Products Group) IN FRESH WATER and 511-2 –
728 SLURRYPRO CDP (KB Technologies Ltd.) IN FRESH WATER.
729

730 Test the density, viscosity, and pH value during the shafts
731 excavation to establish a consistent working pattern. Make a minimum of
732 four sets of tests during the first 8 hours of slurry use. When the results
733 show consistent behavior, decrease the testing frequency to one set every
734 four hours of slurry use.
735

TABLE 511-1 - Shore Pac GCV (CETCO Drilling Products Group) IN FRESH WATER			
Property	Range of Values *		Test Method
	Time of Slurry Introduction	In Hole At Time Of Concreting	
Density (pcf)	Less than or equal to 64.0**	Less than or equal to 64.0**	Density Balance
Viscosity (sec/qt)	33 - 74	Less than or equal to 57	Marsh Cone
PH	8.0 – 11.0	8.0 – 11.0	pH paper pH meter
<p>* At 20^o C(68 degrees F)</p> <p>** Increase by two pounds per cubic foot in salt water</p> <p>Notes: a. When the Contractor does not need to control the bottom hole conditions or when tests show that other criteria are appropriate, the Engineer may modify the values.</p> <p>b. When the contract requires desanding, the sand content shall not exceed 0.5% percent (by volume) in the bore hole as resolved by the American Petroleum Institute sand content test.</p> <p>c. Submit changes for acceptance in writing by the Engineer.</p> <p>d. Increases in the viscosity of polymer slurry beyond the above acceptable ranges during drilling may be allowed by the Engineer. However, increases in the viscosity of the polymer slurry beyond the above acceptable ranges during concrete placement will not be allowed. Use of other polymer materials that increase the cohesion of the soil material, or other construction methods to reduce the slurry viscosity just prior to concrete placement may be considered in-lieu of increasing the viscosity of the slurry.</p>			

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TABLE 511-2 - SLURRYPRO CDP (KB Technologies Ltd.) IN FRESH WATER			
Property	Range of Values *		Test Method
	Time of Slurry Introduction	In Hole At Time Of Concreting	
Density (pcf)	Less than or equal to 67.0**	Less than or equal to 64.0**	Density Balance
Viscosity (sec/qt)	50 - 120	Less than or equal to 70	Marsh Cone
PH	6.0 – 11.5	6.0 – 11.5	pH paper pH meter

* At 20^o C (68 degrees F)
** Increase by two pounds per cubic foot in salt water

Notes: a. When the Contractor does not need to control the bottom hole conditions or when tests show that other criteria are appropriate, the Engineer may modify the values.

b. When the contract requires desanding, the sand content shall not exceed 0.5% percent (by volume) in the bore hole as resolved by the American Petroleum Institute sand content test.

c. Submit changes for acceptance in writing by the Engineer.

d. Increases in the viscosity of polymer slurry beyond the above acceptable ranges during drilling may be allowed by the Engineer. However, increases in the viscosity of the polymer slurry beyond the above acceptable ranges during concrete placement will not be allowed. Use of other polymer materials that increase the cohesion of the soil material, or other construction methods to reduce the slurry viscosity just prior to concrete placement may be considered in-lieu of increasing the viscosity of the slurry.

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Before placing concrete in the shaft excavation, take slurry samples from the base of the shaft using a sampling tool. Extract slurry samples from the base of the shaft and at intervals not exceeding 10 feet up the shaft. Extract samples until two consecutive samples produce acceptable values for density, viscosity, pH, and sand content (within the values

752 shown on Table 511-1 - Shore Pac GCV (CETCO Drilling Products Group)
753 IN FRESH WATER or 511-2 - SLURRYPRO CDP (KB Technologies Ltd.)
754 IN FRESH WATER.
755

756 Ensure that the bottom of the shaft does not accumulate heavily
757 contaminated slurry suspension. The heavily contaminated slurry
758 suspension could impair the free flow of concrete. When finding
759 unacceptable slurry samples, take actions necessary to bring the slurry as
760 specified in the contract. Do not pour the concrete until re-sampling and
761 testing results produce acceptable values.
762

763 Furnish the reports of tests required above to the Engineer on
764 completion of each drilled shaft. An authorized person of the Contractor
765 shall sign the reports.
766

767 During construction, maintain at the level of slurry not less than five
768 feet above the highest piezometric water pressure along the depth of a
769 shaft. When the slurry construction method fails, stop this method and
770 propose an alternate method for acceptance by the Engineer
771

772 The Contractor shall use and dispose of slurry in accordance with
773 applicable Federal, State, and County requirements.
774

775 **(6) Excavation Inspection.** Provide equipment for checking the
776 dimensions and alignment of each permanent shaft excavation.
777 Determine the dimensions and alignment according to the contract.
778 Measure the final shaft depths with a suitable weighted tape after final
779 cleaning.
780

781 A minimum of 50% of the base of each shaft shall have less than
782 0.5 inch of sediment at the time the concrete is placed. The maximum
783 depth of sediment or debris on the base of the shaft shall not exceed 1.5
784 inches. The Contractor will measure the shaft cleanliness in the presence
785 of the Engineer by methods deemed appropriate to the Engineer.
786

787 Also, for dry excavations the maximum depth of water shall not
788 exceed 3 inches before pouring the concrete.
789

790 **(7) Reinforcing Steel Cage Construction and Placement.**
791 Assemble and place the reinforcing steel cage immediately after the
792 Engineer inspects and accepts the shaft excavation before pouring the
793 concrete. To prevent deformation of the cage and CSL test access tubes
794 while lifting, brace the reinforcing steel cage and CSL test access tubes
795 until the cage is set in it's final position. The reinforcing steel cage
796 includes longitudinal bars, ties, cage stiffener bars, spacers, centralizers,
797 and other necessary appurtenances to acceptably complete and place the
798 cage.
799

800 Tie and support the reinforcing steel in the shaft so that the reinforcing
801 steel will remain within allowable tolerances given in Subsection
802 511.03(C)(10) – Construction Tolerances. Use the concrete spacers or
803 other approved non-corrosive spacing devices at sufficient intervals (near
804 the bottom and at intervals not exceeding 10 feet up the shaft) to insure
805 concentric spacing for the entire cage length. Use minimum of four
806 spacers, equally spaced around circumference, at each vertical interval.
807 The spacers shall be constructed of accepted material equal in quality and
808 durability to concrete specified for the shaft, and shall be of adequate
809 dimension to insure a minimum of four inches annular space between the
810 outer portion of the reinforcing steel cage and the side of the excavated
811 hole. Provide accepted cylindrical concrete bottom supports to maintain
812 the proper distance between bottom of the cage and base of the shaft
813 excavation. Securely attach CSL test access tubes to reinforcing steel
814 cage so that it maintains during reinforcing steel cage placement. Check
815 CSL test access tubes that they are straight and its proper location add
816 additional devices to assure that the VSL test access tubes will remain in
817 the required location and alignment during the pouring of the drilled shaft
818 concrete.

819
820 Check the elevation of the top of the steel reinforcing cage and center of
821 cage location before, during and after pouring the concrete. When not
822 maintaining the rebar within the specified tolerances, make the corrections
823 needed to bring to within tolerances of the contract. Do not construct
824 additional shafts until after modifying the reinforcing steel cage support
825 according to the contract.

826
827 When the excavation at the bottom of the constructed shaft elevation is
828 lower than shown in the contract, extend at least half of the longitudinal
829 bars required in the upper portion of the shaft the additional length.
830 Continue the tie bars for the extra depth, spaced two-foot on center
831 measured along the circumference of the reinforcing steel cage. Extend
832 the stiffener bars to the final depth. These bars may be lap spliced or
833 unspliced bars of the proper length. The Engineer will not permit welding
834 to the reinforcing steel. Unless the extra depth of the drilled shaft is
835 required due to modifications by the Engineer, the additional reinforcing
836 bars shall be at no additional cost to the State.

837
838 **(8) Crosshole Sonic Logging (CSL) Test Access Tubes.**
839 Installation of access tubes shall be in accordance with ASTM Standard
840 Test Method for Integrity Testing of Concrete Deep Foundations by
841 Ultrasonic Crosshole Testing Designation D 6760, except as modified
842 herein. Install access tubes in all drilled shafts to allow performance of
843 CSL tests. Attach CSL access tubes securely to the interior of the
844 reinforcement cage as near to parallel as possible to the vertical center
845 axis of the drilled shaft in each drilled shaft and in the pattern shown on
846 the plans. Extend the access tubes from the bottom of the reinforcement
847 cage to at least 3.5 feet above the top of the shaft. The bottom of the

848 access tube shall be capped permanently. Joints required to achieve full
849 length of access tubes shall be watertight. Contractor shall take extra
850 care to prevent damaging the access tubes during reinforcement cage
851 installation. Fill the tubes with potable water to the top of the tubes as
852 soon as the reinforcing steel cage is installed. Check for leakage,
853 misalignment, and damage before placing concrete in the drilled shaft.
854 Stop all leaks if present and repair any damages or misalignment before
855 placement of concrete starts. Check water level as soon as possible after
856 concrete placement (within 4 hours after concrete placement) and fill with
857 potable water if needed. Check water level in tubes every day until CSL
858 testing is completed. Top off tubes with potable water if needed. Always
859 reinstall the top watertight caps. Installation of CSL access tubes shall be
860 incidental to the construction of the drilled shaft and shall be at no
861 additional cost to the State.
862

863 The completed drilled shaft foundations will be tested by crosshole
864 sonic logging (CSL) after at least five days of curing time, but no later than
865 20 days after concreting. The CSL test will be performed by the Engineer.
866 The Contractor shall assist in the testing by making all the shafts in the
867 project accessible to the Engineer; provide electricity, lights and other
868 needs whenever requested by the Engineer. Assistance by the
869 Contractor shall be incidental to the construction of the drilled shaft and
870 shall be at no additional cost to the State. The Contractor shall provide
871 accurate data on the dates and time of concrete placement for each drilled
872 shaft and the surveyed location of each tube. Also, provide the elevation
873 of the concrete at the top of the drilled shaft. The Engineer will require a
874 minimum of 20-working days after testing of any drilled shaft to accept or
875 reject that shaft.
876

877 The results of the CSL tests will be based on the percentage
878 decrease in velocity as correlated to the following Concrete Condition
879 Rating Criteria (CCRC), as shown in Table 511-3 – Concrete Condition
880 Rating Criteria. Deviations from the following values shall be used for
881 determining the Concrete Condition Rating.
882

Table 511-3 Concrete Condition Rating Criteria			
Concrete Condition Rating	Rating Symbol	Velocity Reduction	Indicative Results
Good	G	0 – 10%	Acceptable concrete
Questionable	Q	10% - 25%	Minor concrete contamination or intrusion. Questionable quality concrete.
Poor	P/D	> 25%	Defects exist, possible water slurry contamination, soil intrusion, and or poor quality concrete.
Water	W	V=4760 – 5005 feet/sec	Water intrusion or water filled gravel intrusion with few or no fines present.
No Signal	NS	No signal received	Soil intrusion or other severe defect absorbed the signal, tube debonding if near top.

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Shafts with test results other than “Good” will be tested in accordance with Subsection 511.03(C)(12), Integrity Testing.

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(9) Concrete Placement.

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(a) General. Place the concrete through a concrete pump or other means as accepted by the Engineer using accepted methods as described below.

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902

Concrete shall be placed in the shaft immediately after placing the reinforcing steel.

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Concrete placement for the load test drilled shaft shall be continuous from the bottom to at least the top of shaft cutoff

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elevation and until good quality concrete emerges above the top of the shaft cutoff elevation. To ensure that the drilled shaft concrete is sound below the top of shaft cutoff elevation, the trial and production drilled shafts shall be poured at least four feet above the cutoff elevation and until good quality concrete is evident at least four feet above top of shaft cutoff elevation. The start of the removal of concrete above the cutoff elevation shall begin no sooner than 12 hours after the completion of the production drilled shafts concrete pour. For the trial drilled shafts, the concrete above the cutoff elevation shall be removed after the coring is completed. Prior to removing the concrete above the cutoff elevation, a circumferential diamond blade sawcut 2 ½ inches deep shall be made at the cutoff elevation. Then the portion of the drilled shaft more than one foot above the cutoff elevation shall be removed with equipment no larger than a 90-pound pavement breaker. Thereafter the remaining one foot of the drilled shaft above the cutoff elevation shall be removed using demo hammers no heavier than 30 pounds for the upper nine inches and 15 pound maximum for the lowest three inches, i.e., three-inches above the cutoff elevation. Hydro wash the demoed surface with a minimum of 2500 psi before pouring concrete.

A minimum of four and two, 6-inch by 12-inch concrete cylinders shall be made for the compressive strength testing and unit weight testing, respectively. Production shafts with compressive strength less than the minimum 28-day compression strength will be considered defective. Production shafts with air-dry core sample unit weight less than three pounds per cubic foot of the air-dry unit weight test cylinders will be considered defective. Contractor shall submit a corrective method plan for the defective shaft to the Engineer for review and approval prior to their use.

The elapsed time from the beginning of concrete placement in the shaft to the completion of the placement shall not exceed two hours. Adjust admixtures accepted by the Engineer so that concrete remains in a workable plastic state throughout 2-hour placement limit. A longer placement time may be requested, and requests shall be submitted to the Engineer for review and acceptance 30 days prior to the time the concrete pour (with a longer placement time) is needed. Should the Contractor exceed the 2-hour limit without obtaining prior acceptance by the Engineer, the Contractor may be required to core the drilled shaft. These drilled shaft corings shall be at no additional cost to the State and no additional time will be granted.

Before placing the concrete, provide results of 3-day, 7-day, 14-day and 28-day compressive strength tests of a trial mix and a slump loss test at least 30 days prior to placement of concrete.

955 Supply a concrete mix that will maintain a slump of four inches or
956 greater after four hours from initial mixing. Conduct the trial mix and
957 slump loss tests using concrete and under ambient temperatures
958 appropriate for the site conditions. The ambient temperature used
959 shall be the temperature at the elevation of existing ground before
960 any excavation started.

961
962 The top surface of the drilled shafts shall be leveled and
963 roughened. Hydro wash the roughen surface with a minimum of
964 2500 psi prior to concrete placement for the footing.

965
966 **(b) Monitoring Concrete Volume.** For each drilled shaft,
967 prepare and submit a monitoring record the next working day after
968 concrete placement has been completed. All monitoring shall be
969 performed in the presence of the Engineer or his representative. As
970 a minimum, the monitoring record shall consist of the following:

971
972 **(1)** A chart that is made up after drilled shaft excavation
973 has been completed and accepted by the Engineer and
974 before concrete placement has commenced. Indicated on
975 the chart, depth of hole plotted with theoretical volume of
976 concrete to fill drilled shaft hole. Plot concrete elevation
977 (surface) along the vertical axis and concrete volume along
978 the horizontal axis.

979
980 **(2)** As concrete is being place, measure concrete surface
981 at an interval of approximately each cubic yard of concrete
982 discharged. Plot concrete volume actually placed at each
983 elevation point. Use this chart to determine if any necking
984 down or enlargement of shaft has occurred during concrete
985 placement.

986
987 **(3)** Keep records of steel and concrete movement to
988 document the following conditions:

989
990 **(a)** When removing temporary or permanent
991 casing, elevation of the top of reinforcing cage shall
992 not rise more than 2 inches from its original elevation;

993
994 **(b)** As temporary casing is extracted, static level of
995 fluid concrete shall not rise.

996
997 **(c) Concreting by Pump.** Concrete pumps and discharge
998 lines for concrete placement in wet or dry excavations shall be
999 used. Pumps and pump lines used to place concrete shall be of
1000 sufficient length, weight, and diameter to discharge concrete at the
1001 shaft base elevation. The pump and pump lines that will come in
1002 contact with concrete shall not contain aluminum parts. Discharge

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line shall have a minimum diameter of 4 inches and watertight joints. Concrete placement shall not begin until the pump line discharge orifice is at the shaft base elevation.

For wet excavations, use a plug to separate the concrete from the fluid in the hole until pumping begins. Remove the plug from the excavation or use plugs, made from a material accepted by the Engineer that will not cause a defect, if not removed.

The discharge orifice shall remain at least five feet below the surface of the fluid concrete. When lifting the pump line during concreting, reduce the line pressure temporarily until the orifice at a higher level in the excavation has been repositioned.

Upon removal of the pumpline orifice from the fluid concrete column and/or discharging concrete above the rising concrete level during the concrete pour, the Engineer will consider the shaft defective. In such a case, remove the reinforcing cage and concrete, the necessary sidewall removal specified by the Engineer, and repour the shaft. Costs of replacement of defective shafts shall be at no costs to the State and no additional time will be granted.

(10) Construction Tolerances. The following construction tolerances apply to drilled shafts:

(a) The center of the drilled shaft concrete and reinforcing bars shall be within 1/12 of the shaft diameter or 3 inches, whichever is less, in the horizontal plane at the plan elevation for the top of the shaft.

(b) The vertical alignment of the shaft excavation shall not vary from the plan alignment by more than 0.25 inch per foot of depth. The alignment of a battered shaft excavation shall not vary by more than 0.5 inch per foot of depth from the prescribed batter.

(c) After placing the concrete, the top of the reinforcing steel cage shall be no more than 6.0 inches above and no more than 3.0 inches below plan position.

(d) The cutoff (top) elevation of the shaft shall have a tolerance of ± 0.5 inch from the plan top of shaft elevation.

(e) The dimensions of casing are subject to American Pipe Institute tolerances applicable to regular steel pipe.

(f) Design the excavation equipment and methods so that the completed shaft excavation will have a flat bottom. The cutting

1051 edges of excavation equipment shall be normal to the vertical axis
1052 of the equipment within a tolerance of $\pm 3/8$ inch per foot of
1053 diameter.

1054
1055 **(g)** Casing diameters shown in the contract documents to
1056 outside diameter (OD) dimensions. When accepted by the
1057 Engineer, a casing larger in diameter than shown in the contract
1058 documents may be provided to facilitate meeting this requirement.
1059 When using a series of telescoping casings, size casing to maintain
1060 shaft diameters.

1061
1062 Drilled shaft excavations that cannot be completed within the
1063 required tolerances are unacceptable. When accepted by the Engineer,
1064 corrections may be made to an unacceptable drilled shaft excavation by
1065 accepted combination of the following methods:

1066
1067 **(a)** Overdrill the shaft excavation to a larger diameter to permit
1068 accurate placement of the reinforcing steel cage with the required
1069 minimum concrete cover.

1070
1071 **(b)** Increase the number, size, or length of the reinforcing steel.

1072
1073 **(c)** Redesign the foundation.

1074
1075 **(d)** Other methods accepted by the Engineer.

1076
1077 The acceptance of correction procedures is dependent on
1078 analysis of the effect of the degree of misalignment and improper
1079 positioning. The Contractor is solely responsible to submit remedial
1080 repair procedures that shall make the structure equal to or better
1081 than the original design. The Engineer will solely determine if the
1082 remedial repair meets the requirements and is acceptable. A
1083 Hawaii Licensed Professional Structural Engineer and a Hawaii
1084 Licensed Professional Civil Engineer who specializes in
1085 Geotechnical Engineering shall stamp and sign the redesign
1086 drawings and computations. Correct out of tolerance drilled shaft
1087 excavations including engineering analysis and redesign at no cost
1088 to the State. No time extension will be granted for any impact to
1089 the critical path due to the Contractor's incorrect installation of the
1090 drilled shaft.

1091
1092 **(11) As-Built Drilled Shaft Location.** The Contractor shall provide
1093 survey ties to all as-built location of all drilled shafts. All survey work shall
1094 be done by a surveyor licensed in the State of Hawaii.

1095
1096 The Contractor shall notify the Engineer prior to performing the
1097 survey work and the Contractor shall survey the drilled shafts under the
1098 supervision of the Engineer or the Engineer's representative. A copy of the

1099 survey notes and the scaled plan locating all the completed drilled shafts
1100 for each footing shall be submitted to the Engineer for review and
1101 acceptance. The submittal shall be stamped and signed by the Hawaii
1102 licensed surveyor who did the work. Submit accepted copy of the survey
1103 notes and the scaled plan as an electronic file, the Engineer will determine
1104 the acceptable format and media.

1105
1106 No form work for any footing shall proceed until the drilled shafts
1107 are found acceptable by the Engineer.

1108
1109 **(12) Integrity Testing.** Drilled shafts shall be visually inspected and
1110 tested for density, strength and soundness. Integrity testing will be
1111 performed on drilled shafts as determined by the Engineer. Integrity
1112 testing shall consist of partial or full depth concrete coring at drilled shafts
1113 determined by the Engineer. Coring shall be performed by the Contractor
1114 at the locations designated by the Engineer in the presence of the
1115 Engineer. The Engineer will solely determine if the cored shaft is
1116 acceptable or defective. Defective shafts shall be replaced or repair using
1117 engineer accepted drawings and computations by a Hawaii Licensed Civil
1118 Engineer specializing in Geotechnical Engineering and Structural
1119 Engineer currently licensed in the State of Hawaii, and it shall bear their
1120 stamps and signatures. The Contractor shall core vertical holes at
1121 locations and depths determined by the Engineer. The number of core
1122 holes to be done shall be determined by the Engineer. The core hole shall
1123 be accepted by the Engineer. The recovered core samples shall have a
1124 minimum diameter of 3.7 inches or 3 times the nominal maximum
1125 aggregate size of the concrete mix, use whichever is larger

1126
1127 Provide concrete cores properly marked in a core box with labels of
1128 the drilled depth at each interval of core recovery to the Engineer for
1129 evaluation and testing. The Engineer will be allowed a minimum of 7
1130 working days for evaluation and testing of the core samples. The cored
1131 holes shall be filled with prepackaged, non-shrink, non-metallic grout that
1132 at a minimum has the same strength as the drilled shaft concrete.

1133
1134 Cost of coring performed on acceptable production drilled shafts
1135 with no defects will be borne by the State. Cost of full depth coring of trial
1136 shaft shall be borne by the Contractor. Cost of coring performed on any
1137 drilled shaft that has defects shall be borne by the Contractor. If the drilled
1138 shaft in question is on the critical path, a time extension and the linear foot
1139 payment for coring will be the sole remedy given if the drilled shaft has no
1140 defects. The delay will be calculated from the end of the 20 working days
1141 review period of the cores to when the last core was taken. Contractor
1142 shall submit a corrective methods plan for the defective shafts to the
1143 Engineer for review and approval prior to their use. The corrective
1144 methods plan shall restore the defective drilled shaft to a condition equal
1145 or better that of a drilled shaft that had no defects. Do not begin repair
1146 operations until receiving the Engineer's acceptance of the corrective
1147 methods plan for that defective drilled shaft.

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511.04 Measurement.

(A) Furnishing drilled shaft drilling equipment and furnishing instrumentation and collecting data will be paid on a lump sum basis. Measurement for payment will not apply.

(B) The Engineer will measure obstruction per hour in accordance with the contract documents. Once the Engineer authorizes compensation for obstruction removal, duration of obstruction removal, including time required for obstruction disposal, will be measured for payment. Depth of obstruction removed will be subtracted from total depth measured for payment under other applicable drilled shaft excavation pay items.

(C) The Engineer will measure load test per each in accordance with the contract documents.

(D) The Engineer will measure trial shaft per linear foot. The Engineer will compute length between existing ground surface elevation at trial shaft hole center, before drilling, and authorized bottom elevation of hole.

(E) The Engineer will measure unclassified shaft excavation per linear foot, along shaft centerline, including bells. The Engineer will compute length between plan top of shaft elevation to plan estimated tip elevation.

(F) The Engineer will measure drilled shaft per linear foot. The Engineer will compute length between plan top of shaft elevation and to plan estimated tip elevation.

(G) The Engineer will measure coring for integrity testing per linear foot. The Engineer will compute length between the bottom of coring elevation and the top of the shaft concrete elevation.

511.05 Payment. The Engineer will pay for the accepted pay items listed below at the contract price per pay unit, as shown in the proposal schedule. Payment will be full compensation for the work prescribed in this section and the contract documents.

The Engineer will pay for each of the following pay items when included in the proposal schedule.

Pay Item	Pay Unit
Furnishing Drilled Shaft Drilling Equipment	Lump Sum

The Engineer will pay for:

(A) 60 percent of the contract bid price when drilling equipment is on job site, assembled, and ready to drill foundation shafts.

1196
1197 **(B)** 40 percent of the contract bid price upon completion of drilling shafts, and
1198 placing shaft concrete up to top of shafts.
1199

1200 Obstructions Hour

1201
1202 The Engineer will pay for:

1203
1204 **(A)** 80 percent of the contract bid price upon completion of removing the
1205 obstruction.

1206
1207 **(B)** 20 percent of the contract bid price upon removing and disposing of the
1208 obstruction.

1209
1210 The maximum payment per designated obstruction shall not exceed 20
1211 times the unit cost for unclassified excavation.
1212

1213 Load Test Each

1214
1215 The Engineer will pay for:

1216
1217 **(A)** 100 percent of the contract bid price upon completion of load test shaft
1218 installation/construction and testing, and other related costs to the performance
1219 of the load test.

1220
1221 Trial Shaft Linear Foot

1222
1223 The Engineer will pay for:

1224
1225 **(A)** 60 percent of the contract bid price upon completion of excavation trial
1226 shaft holes through to bottom of shaft elevation or as authorized by the Engineer
1227 and providing inspection facilities.

1228
1229 **(B)** 20 percent of the contract bid price upon completion of backfilling hole.

1230
1231 **(C)** 20 percent of the contract bid price upon completion of CSL testing and
1232 restoring the site.

1233
1234 The Engineer will not pay for trial shaft holes that the Contractor failed to
1235 demonstrate to the Engineer the adequacy of its proposed methods and
1236 equipment.

1237
1238 Unclassified Shaft Excavation (_____) Linear Foot

1239
1240 The Engineer will pay for:

1241
1242 **(A)** 60 percent of the contract bid price upon completion of using drilling
1243 equipment, using special tools and drilling equipment to excavated shaft.

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(B) 20 percent of the contract bid price upon completion of furnishing and installing temporary casing.

(C) 20 percent of the contract bid price upon completion of removing and disposing of excavated material.

Drilled Shaft (_____) Linear Foot

The Engineer will pay for:

(A) 60 percent of the contract bid price upon completion of drilling.

(B) 15 percent of the contract bid price upon completion of furnishing, assembling, and placing steel cage.

(C) 15 percent of the contract bid price upon completion of furnishing and placing concrete.

(D) 10 percent of the contract bid price upon completion of removing and disposing of excavated material.

Coring for Integrity Testing for acceptable drilled shaft. Linear Foot

The Engineer will pay for:

(A) 70 percent of the contract bid price upon completion of concrete coring.

(B) 20 percent of the contract bid price upon completion of filling cored holes with non-shrink grout of the same minimum strength as drilled shaft.

(C) 10 percent of the contract bid price upon completion of packaging the core samples and delivering them to the Engineer.”

END OF SECTION 511

1 Make the following Section a part of the Standard Specifications:
2

3 **“SECTION 512- PREFABRICATED STEEL BEAM BRIDGE**
4

5 **512.01 Description.** This work includes design, fabrication, erection,
6 monthly rental, monthly maintenance, and removal of one fully-engineered 90
7 foot 2 span Prefabricated Steel Beam Bridge of modular galvanized steel
8 construction or as directed by the Engineer. The Prefabricated Steel Beam
9 Bridge configuration shown on the contract documents is for bidding purposes
10 only.
11

12
13 **512.02 Materials**
14

15 **(A) General.** All Prefabricated Steel Beam Bridge material shall be
16 of recent manufacture and shall be of domestic origin and fabricated in the
17 United States. Submit certificates of compliance for each shipment prior
18 to erection for Engineers review and acceptance. Certificates of
19 compliance shall identify the manufacture date and attest to required
20 domestic content and fabrication. All materials shall conform to the
21 applicable sections of the Hawaii Standard Specifications and Project
22 Special Provisions.
23

24 **(B) Structural Concrete.** Structural concrete shall have a minimum
25 compressive strength $f'c = 4000$ psi at 28 days.
26

27 **(C) Reinforcing Steel.** Reinforcing steel shall conform to ASTM
28 A615, Grade 60, deformed bars.
29

30 **(D) Prefabricated Steel Beam Bridge.**
31

32 **(1) Panels.** Span length shall be either 25, 35 or 45 ft long.
33 Panels shall be 6 ft wide. Panels shall be able to be placed side by
34 side in 6 ft increments to provide variable width roadways. Panels
35 shall be made up of beams, diaphragms, posts, and orthotropic
36 steel deck.
37

38 **(2) Beams.** Primary beams shall be fabricated from wide
39 flanged sections of hot-rolled steel. Beams shall meet or exceed
40 AASHTO M223 Grade 50 – Yield 50,000 psi – elongation 18% of 8
41 inch gauge length. Ultimate tensile strength shall be 70,000 psi.
42

43 **(3) Diaphragms.** Diaphragms shall be fabricated from
44 channels. Diaphragms shall meet or exceed AASHTO M183 Grade
45 36 – Yield 36,000 psi – elongation 20% of 8 inch gauge length.
46 Ultimate tensile strength shall be 63,000 psi.
47

48 **(4) Posts.** The bridge shall be supplied with stanchion post to
49 accommodate either standard "W" or "Thrie" Beam rails. The post
50 shall be fabricated from wide flanged sections of hot rolled steel
51 and provide substantial resistance to horizontal loads from vehicles.
52 Post shall meet or exceed AASHTO M183 Grade 36 – Yield 36,000
53 psi – elongation 20% of 8 inch gauge length. Ultimate tensile
54 strength shall be 63,000 psi.

55
56 **(5) Orthotropic Steel Decks.** The deck system shall be
57 comprised of a single orthotropic deck for each beam panel that is
58 6 ft. wide by either: 25, 35 or 45 ft. in length. The steel deck plate
59 shall be welded to the internal stringers and large beams on each
60 side. The top surface of the deck plate shall be coated with an anti
61 - skid aggregate epoxy non-skid mixture. Unless approved
62 otherwise by the Engineer, anti-skid coating in accordance with
63 Special Provision 403 – Anti-Skid Coating shall be applied by the
64 Prefabricated Steel Beam Bridge Manufacturer under controlled
65 environmental conditions as required by the anti-skid system. Steel
66 Deck shall meet or exceed AASHTO M183 Grade 36 – Yield
67 36,000 psi – elongation 20% of 8 inch gauge length. Ultimate
68 tensile strength shall be 63,000 psi. In addition to all dead loads,
69 the deck shall have a live load rating which meets or exceeds
70 AASHTO HS25-44 as well as AASHTO HL-93.

71
72 **(6)** Bolts shall meet or exceed AASHTO M164.

73
74 **(7)** All Prefabricated Steel Beam Bridge structural steel
75 components shall be hot-dipped galvanized to meet or exceed
76 AASHTO M111 and ASTM A123. The Manufacturer's
77 representative shall visit the project site to adjust galvanizing
78 requirements based on project duration of at least 24 months. All
79 bolts shall be galvanized or spun galvanized.

80
81 **512.03 Construction Requirements.**

82
83 **(A) Submittals of Working Drawings and Data Prior to Bid**
84 **Opening.** Unless approved by the Engineer, submit the following prior
85 to bid opening:

86
87 **(1)** Manufacturer's literature and product data for Prefabricated
88 Steel Beam Bridge and components.

89
90 **(2)** Manufacturer's installation instructions

91
92 **(3)** Details of Prefabricated Steel Beam Bridge component
93 connections.
94

95 (4) Prefabricated Steel Beam Bridge, abutment and pier
96 specifications, working drawings and structural calculations.
97

98 The Engineer shall be the sole authority for determining if
99 the proposed Prefabricated Steel Beam Bridge and Prefabricated
100 Steel Beam Bridge foundation system is acceptable for use on the
101 project.
102

103 The submitted specifications, working drawings and
104 structural calculations shall be signed and sealed by Hawaii
105 licensed professional geotechnical and structural engineers.
106

107 The Engineer will require two weeks review time to
108 determine the acceptability of the working drawings and data
109 submitted.
110

111 **(B) Quality Assurance**
112

113 (1) Components of the Prefabricated Steel Beam Bridge shall
114 be made by a firm regularly engaged in the manufacture of these
115 components.
116

117 (2) Installation and removal (at the end of the project) of the
118 Prefabricated Steel Beam Bridge shall be performed by personnel
119 with experience with the brand and type of Prefabricated Steel
120 Beam Bridge proposed for the project and shall provide at least
121 three successful examples of recent installations of similar length,
122 capacity and configuration.
123

124 **(C) Design Criteria**
125

126 (1) **General Specifications.** Conform to the State of Hawaii,
127 Department of Transportation, Hawaii Standard Specifications for
128 Road and Bridge Construction, 2005 and Special Provisions
129

130 **(2) Design Specifications.**
131

132 (a) American Association of State Highway and
133 Transportation Officials (AASHTO) LRFD Bridge Design
134 Specifications, 6th Edition 2012, including all subsequent
135 Interim Revisions.
136

137 (b) AASHTO Structural Specifications for Structural
138 Supports for Highway Signs, Luminaires and Traffic Signals,
139 6th Edition 2013, including all subsequent Interim Revisions.
140

141 (c) Hawaii Department of Transportation Memorandum

142 dated March 1, 2013 with Subject Title "Design Criteria for
143 Bridges and Structures".

144
145 **(3) Design Loads.** As presented in Subsection 512.03(C)(2) -
146 Design Specifications, the following minimum loads are required.

147
148 **(a) Dead Load:** A 330 pound per linear foot allowance
149 for guardrails and guardrail supports shall be included in
150 Dead Load calculations. Concrete unit weight of 160 pounds
151 per cubic foot shall be assumed for Dead Load calculations.

152
153 **(b) Truck and Lane Live Load:** AASHTO HL-93.

154
155 **(c) Seismic:** Importance Category is "Other".
156 Acceleration Coefficient is 0.18. Site Coefficient shall be
157 for AASHTO Soil Profile Type D.

158
159 **(d) Hydraulic:** The Prefabricated Steel Beam Bridge
160 shall accommodate stream flow resulting from a '5-year'
161 storm.

162
163 **(D) Fabrication.**

164
165 **(1) Workmanship.** Prefabricated Steel Beam Bridge
166 workmanship, fabrication and shop connections shall be in
167 accordance with the American Society of Steel Construction
168 (AISC), American Welding Society (AWS) D1.1 and D1.5 Bridge
169 Welding codes, AASHTO and ISO9000 (International Standard for
170 Quality Control). The Prefabricated Steel Beam Bridge shall be
171 fabricated in the United States.

172
173 **(2) Prefabricated Steel Beam Bridge Welding.** Welding
174 shall be by certified welders in accordance with the Specifications
175 and AWS D1.5. The Engineer will not allow field welding unless
176 AWS D1.5 welder's certifications are submitted and accepted by
177 the Engineer prior to the delivery of the Prefabricated Steel Beam
178 Bridge. All field welds shall be subjected to Non Destructive
179 Testing (NDT) by an accredited testing laboratory accepted by the
180 Engineer. Correct all defective welds immediately and retest until
181 NDT tests are accepted by the Engineer.

182
183 **(3) Prefabricated Steel Beam Bridge Foundations and**
184 **Abutments.** Abutments, abutment foundations, piers, pier
185 foundations, bridge layouts, loadings, geotechnical and structural
186 designs shall be in accordance with the contract structural drawings
187 and the Special Provisions. Prefabricated Steel Beam Bridge
188 Foundations, Abutments, and Piers shall be constructed by the

189 Kaipapau Stream Bridge Contractor.

190

191

(E) Product Delivery, Storage and Handling.

192

193

(1) Prefabricated Steel Beam Bridge components shall be suitably protected against the elements for shipping and delivery to the jobsite and in accordance with the Prefabricated Steel Beam Bridge manufacturer's instructions.

194

195

196

197

198

(2) Specially fabricated framing shown on the Contract Documents shall be suitably protected for delivery to the jobsite in accordance with the Specifications.

199

200

201

202

(F) Delivery and Erection.

203

204

(1) Delivery of the Prefabricated Steel Beam Bridge shall be to the jobsite or as near to the job site as practicable.

205

206

207

(2) The Contractor shall coordinate delivery and erection with the Prefabricated Steel Beam Bridge manufacturer. The manufacturer shall provide a Construction Supervisor to assist the Contractor in construction and erection of the Prefabricated Steel Beam Bridge. The manufacturer's Construction Supervisor shall have a minimum of 3 years experience with the manufacturer in overseeing the construction and erection of the Prefabricated Steel Beam Bridge. Submit manufacturer's Construction Supervisors qualifications for review and acceptance by the Engineer prior to delivery. The Construction Supervisor shall be present on a daily basis during the Prefabricated Steel Beam Bridge erection to ensure that erection is in compliance with the accepted Prefabricated Steel Beam Bridge manufacturer's specifications and drawings.

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221

(G) Maintenance for Structural Capacity, Safety and Rideability.

222

223

(1) Prior to opening the Prefabricated Steel Beam Bridge to traffic the Contractor shall submit the following to the Engineer:

224

225

226

(a) Load and Resistance Factor Rating (LRFR) consisting of a summary sheet, Calculations, and BRASS data file.

227

228

229

(b) Scour Evaluation Report

230

231

(c) National Bridge Inventory (NBI) Inspection

232

233

(d) Structural Inventory and Assessment (SI&A) Sheet

234

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(2) The Contractor shall maintain all portions of the Prefabricated Steel Beam Bridge to insure structural capacity, roadway safety and ride ability. Inspect the bridge every 30 days and repair and maintain as the inspection may warrant. The Engineer may increase the inspection, repair, and maintenance cycle if the bridge's condition in the sole opinion of the Engineer warrants it.

(3) The Contractor shall maintain the waterway opening shown on the plans at all times. Any debris accumulations within the waterway opening or on any part of the Prefabricated Steel Beam Bridge structure shall be immediately removed by the Contractor.

(4) Closing of the Prefabricated Steel Beam Bridge structure:

(a) If for any reason or at any time, the Prefabricated Steel Beam Bridge structures ability to safely carry traffic is in question, the Contractor shall be responsible for immediately taking the actions necessary to protect traffic, for repairing and reopening the Prefabricated Steel Beam Bridge.

(b) When the Contractor closes the Prefabricated Steel Beam Bridge structure, he shall immediately notify the Engineer and the appropriate law enforcement agencies.

(c) Water elevations exceeding the design year high water elevation or an excessive accumulation of debris within the waterway opening shall be sufficient reason to close the Prefabricated Steel Beam Bridge structure.

(d) The Design Year high water elevation shall be painted with fluorescent paint on the Prefabricated Steel Beam Bridge structure at a visible location.

(e) Closing of the Prefabricated Steel Beam Bridge shall be included as incidental to Maintenance of Traffic Control.

(H) Removal at completion of the Kaipapau Stream Bridge.

(1) After the Kaipapau Stream Bridge is opened to traffic and when directed by the Engineer, the above referenced manufacturer's Construction Supervisor shall be present on a daily basis to ensure that the Prefabricated Steel Beam Bridge is removed from the job site. Non-removal of the prefabricated steel beam bridge shall be considered a punchlist deficiency.

283 (2) The Prefabricated Steel Beam Bridge shall be accepted by
284 and removed to a site specified by the manufacturer. Upon removal
285 from the site, the Prefabricated Steel Beam Bridge shall be the
286 contractors and manufacturers sole responsibility and the Engineer
287 will not approve any additional payment for Prefabricated Steel
288 Beam Bridge relocation. The Contractor shall be responsible for
289 any relocation, storage and disposal costs related to the
290 Prefabricated Steel Beam Bridge and the Prefabricated Steel Beam
291 Bridge foundation and attached guardrails.

292

293 **512.04 Method of Measurement.**

294

295 (A) The Engineer will not measure Contractor's Prefabricated Steel
296 Beam Rental. The Engineer shall consider the cost for Contractor's
297 Prefabricated Steel Beam Rental as included in the contract price for
298 Installing Prefabricated Steel Beam Bridge.

299

300 (B) The Engineer will measure Installing Prefabricated Steel Beam
301 Bridge Abutments, and Piers per each in accordance with the contract
302 documents.

303

304 (C) The Engineer will measure Installing Prefabricated Steel Beam
305 Bridge per each in accordance with the contract documents.

306

307 (D) The Engineer will not measure Maintenance of Prefabricated Steel
308 Beam Bridge. The Engineer shall consider the cost for Maintenance of
309 Prefabricated Steel Beam Bridge as included in the contract price for
310 Installing Prefabricated Steel Beam Bridge.

311

312 (E) The Engineer will measure Removal of Prefabricated Steel Beam
313 Bridge, Prefabricated Steel Beam Bridge Abutments and Piers per each.

314

315 **512.05 Payment.** The Engineer will pay for the accepted pay items listed
316 below at the contract price per pay unit, as shown in the proposal schedule.
317 Payment will be full compensation for the work prescribed in this section and the
318 contract documents.

319

320 The Engineer will pay for each of the following pay items when included in
321 the proposal schedule:

322

323 **Pay Item** **Pay Unit**

324

325 Installing Prefabricated Steel Beam Bridge Abutments and Piers Each

326

327 The Engineer will pay for:

328

329 (A) 60 percent of the contract bid price upon completion of approved

330 Bridge Abutments and Piers.
331
332 **(B)** 40 percent of the contract bid price upon start of Installing
333 Prefabricated Steel Beam Bridge Abutments and Piers.

334
335 Installing Prefabricated Steel Beam Bridge Each
336

337 The Engineer will pay for:

338
339 **(A)** 60 percent of the contract bid price upon completion of approved
340 Prefabricated Steel Beam Bridge.

341
342 **(B)** 20 percent of the contract bid price upon completion of approved
343 guardrails on Prefabricated Steel Beam Bridge including guardrail
344 transitions each side at each approach for Phase 1.

345
346 **(C)** 20 percent of the contract bid price upon completion of approved
347 guardrails on Prefabricated Steel Beam Bridge including guardrail
348 transitions each side at each approach for Phase 2.

349
350 Removal of Prefabricated Steel Beam Bridge, Prefabricated Steel Beam Bridge
351 Abutments and Piers Each
352

353 The Engineer will pay for:

354
355 **(A)** 60 percent of the contract bid price upon Engineers receipt and
356 approval of manufacturers certified acceptance of and completion of
357 delivery of Prefabricated Steel Beam Bridge to a location designated by
358 the manufacturer and acceptable to the Engineer. Upon removal from the
359 site, the Prefabricated Steel Beam Bridge shall be the contractors and
360 manufacturers sole responsibility and the Engineer will not approve any
361 additional payment for Prefabricated Steel Beam Bridge relocation.

362
363 **(B)** 20 percent of the contract bid price upon completion removal of
364 Prefabricated Steel Beam Bridge Abutments and Piers.

365
366 **(C)** 20 percent of the contract bid price upon Engineers acceptance of
367 Prefabricated Steel Beam Bridge site restoration
368

369 The Engineer will not pay for the restoration of abutment, pier, and approach
370 areas separately. The Engineer will consider the cost for the restoration of
371 abutment and approach areas as included in the contract prices for the various
372 contract pay items.

373
374 Guardrails will be paid under Section 606 – Guardrails. Payment will be
375 full compensation for the work prescribed in this section and the contract
376 documents.”

377
378
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381

END OF SECTION 512

1 Make the following Section a part of the Standard Specifications:
2

3 **"SECTION 530 – TEMPORARY SEGMENTAL RETAINING WALL SYSTEM**
4

5 **530.01 General.**
6

7 **(A) Description.** This work shall consist of furnishing materials and
8 constructing a temporary segmental retaining wall, faced with precast
9 concrete facing units, constructed in accordance with these specifications
10 and in reasonably close conformity with the lines, grades and dimensions
11 shown on the plans or established by the Engineer. This specification is
12 intended to cover segmental retaining wall systems.
13

14 The segmental retaining wall system shall consist of a non-
15 structural leveling pad, concrete facing units and soil reinforcement
16 elements connected to the concrete facing units. Soil reinforcement shall
17 have sufficient strength, frictional resistance and length as required by the
18 design, as outlined in these specifications. In addition, an adequate
19 subsurface drainage system consisting of underdrains and geocomposite
20 drains shall be provided for the wall system.
21

22 **(B) General Considerations.** Provide to the Engineer fully completed
23 calculations, drawings and materials submittals for the proposed
24 segmental retaining wall system within 60 days from the date of contract
25 award of the project, unless the construction schedule requires an earlier
26 submission. The time required to prepare the calculations, drawings and
27 materials submitted shall be considered as part of the completion time
28 allowed for construction. No addition to the completion time for the project
29 will be allowed for the Engineer's review of the Contractor's submittal, nor
30 for the Engineer's request for additional information, material or other
31 items found necessary to provide compliance with the specifications and
32 drawings.
33

34 Inadequate information, details or design shall be cause for
35 rejection of a proposed system. Delays caused by untimely submissions
36 or insufficient data will not be considered justification for extension to the
37 completion time.
38

39 A soils investigation report has been prepared for this project and is
40 available for review. Should the Contractor need additional information
41 not contained in the soils investigation report, the Contractor shall be
42 responsible for obtaining whatever information is required for design and
43 construction of the walls, at no increase in contract price and contract
44 time. The Contractor will be responsible for the stability of the open cuts
45 during construction of the segmental retaining wall system.
46

47 **(C) Submittals.** The segmental retaining wall system designer shall
48 have completed at least 3 projects in the last ten years using the proposed
49 segmental retaining wall system.
50

51 Prepare all design calculations and drawings by or under the
52 supervision of a Hawaii licensed Civil Engineer specializing in
53 Geotechnical Engineering and Structural Engineer currently licensed in
54 the State of Hawaii, and it shall bear their stamps and signatures.
55 Acceptance of the proposed segmental retaining wall design shall not
56 relieve the Contractor of any responsibility with respect to adequacy of the
57 design and the performance of the segmental retaining wall. The
58 Contractor shall also be responsible for verifying the internal stability of the
59 segmental retaining wall system proposed.
60

61 Prepare a design submittal for review and acceptance by the
62 Engineer. The design submittal shall contain calculations, drawings,
63 specifications and notes to fully describe the design and construction of
64 the segmental retaining wall system for the project. Do not start work or
65 order materials until the Engineer has accepted the design submittal.
66

67 Provide the design submittal for final review to the Engineer within
68 60 days from the date of contract award.
69

70 Submit others such as shop drawings, product data, samples, test
71 reports, certifications of compliance, and warranties as required by the
72 contract documents.
73

74 Provide manufacturer's literature and product data for underdrain
75 pipe and geocomposite drain. Also, provide manufacturer's installation
76 instruction for geocomposite drain. Provide data including physical
77 properties of geogrid reinforcement.
78

79 The final design to be submitted subsequent to contract award shall
80 include detailed design computations and all details, dimensions,
81 quantities and cross sections necessary to construct the wall. Prepare the
82 fully detailed plans in accordance with State drafting standards and
83 include, but not be limited to, the following items:
84

85 **(1)** A plan and elevation sheet or sheets for each wall,
86 containing the following:
87

88 **(a)** An elevation view of the wall which shall indicate the
89 elevation at the top of the wall and top of parapet, at all
90 horizontal and vertical break points and at least every 10 feet
91 along the wall, elevations at the top of leveling pads and
92 footings, the distance along the face of the wall to all steps in

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the footings and leveling pads, the designation as to the type of facing unit, the length, size and number of geogrid, the distance along the face of the wall to where changes in length of the geogrid occur, and the locations of the original and final ground lines.

(b) A plan view of the wall which shall indicate: the offset from the construction baseline to the face of the wall at all changes in horizontal alignment, geogrid length, location of supports for signs, protective walls, and lighting near the wall by station and offset, and the centerline of any drainage structures, drainage pipe or utility located behind or passing through, or under the wall.

(c) Any general notes required for design and construction of the wall.

(d) All horizontal and vertical curve data affecting wall construction as shown on the retaining wall plans.

(e) A listing of the summary of quantities provided on the elevation sheet of each wall for all items including incidental items.

(f) Cross section showing limits of construction and limits and extent of select granular backfill material placed.

(g) Limits and extent of reinforced soil volume.

(2) Show all details for leveling pads, including details for steps in the leveling pads.

(3) Show all details for facing elements. The details shall show shape, proposed color, and attachment devices.

(4) Show all details for construction of the wall around drainage facilities, and overhead sign footings and other appurtenances shall be clearly shown.

(5) Show all details for connections to traffic barriers, coping, parapets, form liners and attached light supports.

(6) Show all detailed design computations. The computations shall include a detailed explanation of any symbols and computer programs used in the design of the walls. Any computer programs used shall be familiar and acceptable to the Engineer. Any

139 computer program that the Engineer is not familiar with should be
140 tested for reliability by manual computations or by comparing
141 results with programs that are acceptable to the Engineer. The
142 Contractor shall also furnish one copy of the computer program
143 manual to become the property of the State.

144
145 **(7)** Details of the architectural treatment, if any.

146
147 **(8)** Details for connections between the concrete face units and
148 the soil reinforcements.

149
150
151 **(D) Design Criteria.** The design of the segmental retaining wall (SRW)
152 system shall consider the internal stability of the wall mass including
153 composite failure modes through the wall system and surrounding ground.

154
155 The Engineer reserves the right to reject any segmental retaining
156 wall system should the proposed wall, in the Engineer's judgment, present
157 unreasonable slope stability risks.

158
159 **(1)** SRW systems shall conform to the following design criteria:

160
161 **(a)** The loading conditions shall be in accordance with the
162 current AASHTO LRFD Bridge Design Specifications,
163 including the latest interim revisions, and shall include
164 effects of surcharge and other loads. Seismic loading
165 conditions should utilize a peak ground horizontal
166 acceleration coefficient of 0.26.

167
168 **(b)** The internal stability and detail design shall conform
169 to the current AASHTO LRFD Bridge Design Specifications,
170 including the latest interim revisions and FHWA reports
171 FHWA-NHI-10-024 and FHWA-NHI-10-025, whichever is
172 most stringent.

173
174 **(c)** The design life of the wall structure shall be 2 years.
175 The corrosion life of any metal components which are
176 exposed to soil shall be 2 years. Calculations concerning
177 corrosion life shall be based on FHWA report FHWA-NHI-09-
178 087 and be submitted to the Engineer for review and
179 acceptance.

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181 **(d)** The stability of the wall mass shall be analyzed in
182 order to insure that the wall shall function as intended. The
183 failure plane must be analyzed so that the soil stabilizing
184 component extends sufficiently beyond the failure plane to

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stabilize the material. The failure plane may be established by acceptable theories of soil mechanics or by experimental data. Any experimental data indicating failure planes varying from the normally accepted theories of soil mechanics shall be presented to the Engineer for review and acceptance before any adjustments in the failure plane is acceptable. External loads which affect the internal stability such as those applied through footings, traffic, slope surcharge, hydrostatic and seismic loads shall be accounted for in design. A minimum design surcharge load of 250 psf shall be used. The size of soil stabilizing material, connections, and all other structural elements shall be determined such that the design load stresses do not exceed the allowable stresses found in the current American Association of State Highway and Transportation Officials (AASHTO) LRFD Bridge Design Specifications, including the latest interim revisions. Pull-out resistance of each size and configuration of the reinforcing material shall be verified by pull-out tests. Anchorage factors used for design must be accepted by the Engineer. Pull-out tests shall be run utilizing stabilizing material and backfill material compatible with the actual materials to be used.

(e) The minimum length of stabilizing material shall be 1.33 times the wall height but not less than 12 feet. The wall height is measured from top of footing or leveling pad to upper finish grade.

(f) All appurtenances behind, in front of, under, mounted upon, or passing through the wall such as drainage structures, utilities, protective walls, light standards, sign supports, or other items shown on the drawings must be accounted for in the stability design of the wall. When it is necessary to go through or puncture the stabilizing material provide a detail of how it shall accomplish to minimize the impact to the storability and structural capacity of the wall.

(g) Concrete parapets shall be designed for a Railing Test Level of TL-2 as specified in the current AASHTO LRFD Bridge Design Specifications, including the latest interim revisions. Loads to the concrete parapet and the effects of live load surcharge shall be accounted for in the design of the wall.

(h) Adequate subsurface drainage system shall be provided for the SRW systems.

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530.02 Materials. Arrange to purchase or manufacture the facing elements, reinforcing mesh (geogrid), attachment devices, and all other necessary components to construct the SRW system. Furnish the Engineer with a Certificate of Compliance certifying that the applicable materials comply with this section of the specifications. Do not use materials not conforming to this section of the specifications without written consent from the Engineer.

(A) Underdrain. Underdrain shall conform to Section 605-Underdrain of the Standard Specifications.

(B) Geocomposite Drain. Geocomposite drain shall conform to Section 646 - Geocomposite Drain of the Standard Specifications.

(C) Leveling Pad. The leveling pad shall consist of aggregate base course or concrete. The aggregate base course shall conform to the Section 703.06 Aggregate for Untreated Base of the Standard Specifications. The concrete for the leveling pad shall be Class A and conforming to the requirements of Section 601 - Structural Concrete of the Standard Specifications.

(D) Geogrid (Soil Reinforcement).

(1) General. The standards referenced herein for the wall geogrid reinforcement include the following:

(a) Geosynthetic Research Institute (GRI)

GG1 Standard Test Method for Geogrid Rib Tensile Strength

GG2 Standard Test Method for Geogrid Junction Strength

GG4 Standard Practice for Determination of the Long-Term Design Strength of Geogrids

(2) Geogrid structure shall be select high density polyethylene, polyester or polypropylene resin. Geogrid shall be a geosynthetic reinforcement material having regular and defined open areas. The long-term design strength (LTDS) for the geogrid shall be determined by GRI GG4.

(3) Geogrid shall have minimum allowable junction strength equal to or greater than 90% of the ultimate strength of the geogrid. At the allowable tensile strength:

(a) Maximum geogrid extension shall not exceeding 10 percent when tested according to GRI. Incorporate factors

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of safety for installation, damage, biological chemical degradation according to GRI GG4. Determine ultimate tensile strength by GRI GG1 test method for quality control purposes.

(E) Segmental Concrete Facing Units.

(1) Concrete shall conform to Section 601-Structural Concrete and as specified herein. Provide cap units at the top of the segmental concrete units.

(2) Concrete used in the manufacture of the units shall have a 28-day compressive strength of not less than 3,000 psi.

(3) Segmental concrete unit dimensions shall differ not more than $\pm 1/8$ inch from the manufacturer's published dimensions.

(4) Units shall be sound and free of cracks and other defects that would interfere with the proper placing of the unit or significantly impair the strength or permanence of the construction.

(5) Exposed surfaces of units shall be free of chips, cracks, or other imperfections when viewed from a distance of 10 feet under diffused lighting.

(F) Connecting Pins. Connecting pins shall be high strength reinforced fiberglass specifically designed for the purpose of connecting the facing units. Minimum allowable shear strength shall be 2,000 lbs.

(G) Select Granular Backfill Material.

(1) The select granular backfill material shall be coarse grain material free from organic or other deleterious materials. The backfill material shall conform to the following grading requirements and the top 3 feet shall contain sufficient fines (minus No. 10) to fill the voids in a compacted state.

<u>U.S. Standard Sieve Size</u>	<u>Percent Passing By Weight</u>
3 inch	100
No. 4	20 – 75
No. 40	0 - 60
#200	0 - 15

322 Select granular material shall also conform to the following
323 requirements:

324
325 (a) The material shall be non-plastic. Plasticity Index (PI)
326 as determined by AASHTO T-90 shall be 0.

327
328 (b) The fraction finer than 15 microns (0.015 mm) as
329 determined by AASHTO T-88 shall not exceed 5 percent.

330
331 (c) The material shall exhibit an angle of internal friction
332 of not less than 34 degrees, as determined by the standard
333 Direct Shear test - AASHTO T-236 (ASTM D-3070), utilizing
334 a sample of the material compacted to 95 percent of ASTM
335 D-1557, Methods C or D at Optimum Moisture Content.

336
337 (H) **Unit Backfill.** Unit backfill shall be crushed stone or aggregate
338 conforming to the following gradation.

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<u>Sieve Size</u>	<u>Percent Passing</u>
1 inch	100
3/4 inch	90 - 100
3/8 inch	20 - 55
No. 4	0 - 10
No. 8	0 - 5

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348 **530.03 Construction Requirements.**

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350 (A) **Underdrain.** Underdrain installation shall conform to Section 605-
351 Underdrain of the Standard Specifications.

352
353 (B) **Geocomposite Drains.**

354
355 (1) Geocomposite drains shall be installed to conform to the
356 excavation surface. Geocomposite drains shall be attached to the
357 excavation surface by methods accepted by the Engineer.

358
359 (2) Geocomposite drains shall be spliced and connected in
360 accordance with manufacturer's instructions to maintain continuity
361 of flow channel through the drain.

362
363 (3) Should the geotextile cover fabric become damaged during
364 installation by tearing or puncturing, the damaged section shall be
365 completely cut out and replaced. If, in the judgment of the
366 Engineer, the damage is not serious enough to warrant removal,
367 the damaged area shall be repaired by overlaying with a piece of

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fabric, large enough to cover the damaged area and provide a 4 inch overlap on all sides, and taping it in place with 3 inch wide strips of waterproof, plastic tape.

(4) Geocomposite drains shall be protected from damage and deleterious contamination where drains must remain exposed until they are covered with embankment or select backfill material.

(C) Wall Construction.

(1) Compact the subgrade of original ground or embankment to 95% relative compaction. Remove soft, yielding, or otherwise unsuitable foundation material to a depth of 2 feet, and replace with select backfill material. Place select backfill material in 6 inch layers and compact to 95% relative compaction.

(2) Segmental Concrete Facing Units

(a) Place the first course of segmental concrete wall units on top of and in full contact with the leveling pad. Check units frequently for proper elevation and alignment.

(b) The units shall be placed side by side for full length of the wall, and in proper alignment with the aid of a string line or offset from baseline.

(c) Connecting pins shall be installed and the voids in and around the units shall be filled with compacted or tamped unit backfill.

(d) Remove excess material from the top of the units before installing next course. Completely fill each course before proceeding to next course.

(e) Lay units in a manner such that adjoining unit pin holes are 12 inches on center or as otherwise shown on the plans. Lay units such that only the front face of the units is visible.

(3) Geogrid

(a) Orient geogrid with the highest strength axis perpendicular to the wall alignment.

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(b) Place geogrid at the elevations and to the extent shown on the working drawings or as ordered by the Engineer.

(c) Lay geogrid horizontally on compacted backfill. Place the next course of segmental concrete wall units over the geogrid. Pull the geogrid taut and anchor before placing backfill on the geogrid.

(d) Geogrid shall be continuous throughout their embedment lengths. The Engineer will not accept spliced connections between shorter pieces of geogrid.

(4) Select Granular Fill

(a) Spread select granular fill and compact in such a manner that minimizes the development of slack in the geogrid.

(b) Place select fill and compact in lifts not to exceed 6 inches.

(c) Compact select fill to 95% relative compaction. Maintain moisture within 2 percent of optimum moisture content throughout each layer of the backfill material before and during compaction.

(d) Use lightweight hand-operated compaction equipment within 3 feet from the tail of the concrete units.

(e) At the end of each day's operation, slope the last lift of reinforced backfill away from the wall units to direct runoff away from the wall face. In addition, surface runoff from adjacent areas shall not enter the wall construction site.

(D) Relative Compaction. Relative compaction refers to the in-place dry density of soil expressed as a percentage of the maximum dry density of the same soil established in accordance with AASHTO T-180 (ASTM D 1557) Test Method.

530.04 Method of Measurement. The Engineer will not measure temporary segmental retaining wall for payment.

530.05 Basis of Payment. The Engineer will not pay for the accepted temporary segmental retaining wall separately. The Engineer will consider the cost for the temporary segmental retaining wall as included in the contract price

458 for Installing Prefabricated Steel Beam Bridge Abutment and Piers in Section 512
459 Prefabricated Steel Beam Bridge. The cost is for work prescribed in this section
460 and the contract documents.”

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END OF SECTION 530

1 **Make the following Section a part of the Standard Specifications:**

2
3 **"SECTION 540 – VERY EARLY STRENGTH LATEX MODIFIED CONCRETE**
4 **(VESLMC)**

5
6 **540.01 Description.** The work in this section describes the construction of
7 very early strength latex modified concrete (VESLMC) for bridge deck closure pour
8 and end beam closure pours.
9

10 Related works for the VESLMC are applicable and specified in Section
11 411.03 (N) - Surface Test, Section 503 - Concrete Structures, Section 601 -
12 Structural Concrete, and Section 602 - Reinforcing Steel.
13

14 **540.02 Materials.**

15
16 **(A) VESLMC.** Use very early strength latex modified concrete (VESLMC)
17 with fibers which provides a low color contrast with the surrounding deck
18 surfaces. The nominal maximum size of coarse aggregate shall be 3/8 inch.
19 The Engineer may accept an alternative concrete that is equal or better in
20 performance, when compared to the characteristics and requirements of the
21 VESLMC stated herein.
22

23 **(1)** The VESLMC shall use cement which is a finished calcium –
24 sulfo-aluminate that contains no more than 2 percent C3A and not
25 greater than 0.03 percent shrinkage in accordance with ASTM C 157 for
26 hardened-cement mortar based on air storage at relative humidity of 50
27 +/- 4 percent and at a temperature of 73 +/- 3 deg F. The amount of
28 cement in the VESLMC shall not exceed 700 lbs/cy.
29

30 **(2)** The VESLMC shall include a modified styrene butadiene
31 copolymer latex that meets the requirements of FHWA Research Report
32 RD-78-35, except for curing or an accepted equal.
33

34 **(3)** The VESLMC shall include 1 ¼ inch length alkali-resistant (AR)
35 glass fiber at 6 lbs/cy or approved equal.
36

37 **(4)** Corrosion Inhibitor in the VESLMC shall be migrating amine
38 carboxylate. Use a minimum of 24 ounces per cubic yard or as
39 recommended by the manufacturer.
40

41 **(5)** The VESLMC shall also meet the following requirements:
42

Characteristics	Requirements	Test Methods
Minimum Compressive Strength: At 3 hours At 28 days	3000 psi 6000 psi	ASTM C1074 ASTM C39

Bond and Tensile Strength	250 psi	ASTM C1583
Ring Test	No cracking at age less than 28 days	ASTM C 1581
Rapid Chloride Permeability Test	Charge passed less than 150 coulombs @ 63 days	ASTM C1202

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(a) Provide certified test data from the concrete manufacturer and cement manufacturer that the concrete complies with these requirements. Perform the material sampling and testing in the presence of the Engineer or as acceptable to the Engineer. Certification shall be submitted prior to the placement of the VESLMC.

(b) In addition to the aforementioned requirements, use ASTM C1074 to provide test results of three cylinder and provide a strength-maturity relationship for each 3, 4, 6, and 12 hour test ages from trial batches of the proposed concrete.

(c) VESLMC shall provide the minimum bond requirement of 250 psi to all concrete including itself.

(B) Other Materials.

- (1)** Fine Aggregate for Concrete 703.01
- (2)** Coarse Aggregate for Portland Cement Concrete 703.02
- (3)** Admixtures 711.03
- (4)** Water 712.01
- (5)** Reinforcing Steel including GFRP bars 602

540.03 Construction Requirements. Conform to the requirements of Section 503 Concrete Structures and as required in these specifications.

(A) Submittal Requirements. Prior to the start of this work, provide six copies of the following submittals in one complete set for acceptance. Indicate clearly the name of the product and its manufacturer on pertinent submittals. No work that is related to these submittals shall be performed until written acceptance has been received.

- (1)** Certifications, test data and assurances.

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(2) Information on the concrete including shelf life, working times, and placement rates.

(3) Detailed information on all equipment and materials that will be used for all aspects of the work including but not limited to determining surface profiles and compressive strengths, quality control (QC) plan, placing (handling, mixing, consolidating, finishing, curing, and texturing) of concrete, and testing for delaminations. If equipment includes use of a continuous volumetric concrete mixer, provide the documentation required under Section 540.03(C) Continuous Volumetric Concrete Mixers herein.

(4) Detailed step by step procedures for all aspects of the work including determining surface profiles and compressive strengths, cleaning and roughening substrata, placement (handling, mixing, consolidating, finishing, curing, and texturing) of concrete, and testing for delaminations.

(5) Detailed plans and procedures to be in compliance with the requirements of Section 107 Legal Relations and Responsibility to the Public including complying to noise variances, and controlling of work to appropriately minimize dust and air borne debris from cleaning and roughening the substrata, mixing and placing concrete, and cleaning operations, and to prevent water runoffs.

(6) Planned actions to maintain adherence to limitations and requirements of the following variables with regards to concrete work:

(a) Evaporation rate as determined from ACI 305 Hot Weather Concreting

(b) Rain

(c) Equipment and traffic control near or on work areas during placement and curing operations

(7) Test reports of compressive strengths, bond strengths, and maturity readings during the progress of the work.

(B) Early Strength Monitoring. Provide a minimum of two sacrificial sensor type maturity meters meeting the requirements of ASTM C1074 to determine concrete conformance to early strength requirements. The maturity meters shall have a secure and unalterable means of collecting data.

Verify the calibration of the maturity meters in the presence of the Engineer prior to use on the project by placing a temperature sensor in a controlled

128 temperature water bath and recording whether the indicated temperature
129 agrees with the known temperature of the water bath. Perform temperature
130 comparison test at approximately 5 different temperatures, 75°F, 100°F, 125°F,
131 150°F and 175°F. The temperature recording device shall be accurate to within
132 ± 2°F.

133
134 Develop strength-maturity relationship using only maturity meters, materials
135 and conditions to be used or encountered on the project for VESLMC prior to
136 placing any VESLMC on the project. Notify the Engineer when the
137 development of the maturity curve will be done and conduct all tests in the
138 presence of the Engineer in accordance with ASTM C 1074 Estimating
139 Concrete Strength by the Maturity Method at the VESLMC producer's
140 laboratory or other approved laboratory facilities. The material testing
141 laboratory shall be accredited in all the test methods used. The technicians
142 doing the sampling and testing shall be certified in all the test methods being
143 performed. For every VESLMC design, prepare a minimum size of each batch
144 of VESLMC of at least one cubic yard and cast a minimum of 15 cylinders in
145 accordance with AASHTO T23. Test three cylinders at ages of 3, 4, 6, 12, and
146 24 hours. Submit all results and curves to the Engineer for review and
147 acceptance.

148
149 Any alterations in mix proportions or material source or type of material, in
150 excess of those tolerable by batching variability, requires the development of a
151 new strength-maturity relationship prior to use. This includes a change in
152 material type, source, or proportion of cement, fly ash, coarse aggregate, fine
153 aggregate, fibers or admixtures. The Engineer will require the development of a
154 new strength-maturity relationship for any changes in the water to cement ratio
155 of greater than 0.02.

156
157 Submit the following information of the strength-maturity relationship prior to
158 placing any VESLMC on the project.

- 159
160 (1) Project number, VESLMC mix number and test date.
161
162 (2) Air content, slump and total free water of the batch of VESLMC.
163
164 (3) Type and amount of admixtures used in the batch of VESLMC.
165
166 (4) Strength of each specimen and average strength of specimens at
167 each test age.
168
169 (5) Maturity index for each instrumented test specimen and the
170 average maturity index for the instrumented specimens at each
171 test age.
172
173 (6) Graphs of the average compressive strength verses the average
174 value of the maturity index as described in the strength-maturity

175 relationship of ASTM C 1074.

176
177 Provide a minimum of two maturity meters at the project site for monitoring the
178 early strength of VESLMC during each section of VESLMC placement. Assure
179 that the batteries for the maturity meters are adequately charged prior to use.
180 Use the same brand and type of maturity meters and thermocouple sensors as
181 those used to develop and verify the strength-maturity relationship.

182
183 Install at least two maturity meter sensors per VESLMC placement such that
184 there is a minimum of one sensor in each half of the length of the deck slab to
185 be poured. Place sensors no closer than 4 inches from any formed surface or
186 edge of slab being placed. Modify means and methods subsequent to failures
187 of sensors to prevent any reoccurrence. The Engineer may designate location
188 of maturity meter sensors.

189
190 Conduct a validation test after each day of VESLMC placement by comparing
191 an average compressive strength of three cylinders to the compressive
192 strength as determined in the accepted strength-maturity relationship to verify
193 that the in-place VESLMC compressive strengths are accurately represented.
194 Submit the validation data with the same extent of information as the initial
195 strength-maturity relationship submittal. The Engineer will consider the
196 strength-maturity relationship valid for the predicted strengths within 5 percent
197 of the actual compressive strength. Make a mathematical adjustment to the
198 strength-maturity relationship when the actual average compressive strength
199 for three validation tests are 5 to 10 percent above or below the predicted
200 compressive strength as directed by the Engineer. Develop a new strength-
201 maturity relationship when the actual average compressive strength for three
202 validation tests exceeds 10 percent above or below the predicted compressive
203 strengths.

204
205 The Engineer will not accept VESLMC which does not meet the compressive
206 VESLMC strength of 3,000 pounds per square inch within 3 hours as
207 determined by the maturity meter readings. No waiver to this requirement will
208 be granted by the Engineer or shall it be requested for by the Contractor.

209
210 **(C) Continuous Volumetric Concrete Mixers.** The Engineer will allow
211 the use of continuous volumetric concrete mixers. Use standard manufactured
212 continuous volumetric concrete mixers that are capable of combining
213 aggregate, cement, water, fibers, and admixtures into a uniform mixture within
214 the specified mixing time and comply with ASTM C 685. The volumetric
215 continuous concrete mixers shall also conform to the following requirements:

- 216
217 (1) Proportion cement, aggregate, water and admixture by volume.
218
219 (2) Carry each ingredient in separate compartments and produce a
220 minimum of 6 cubic yards of concrete.
221

- 222 (3) Measure the cement as it is introduced into the mixture with a
223 recording meter.
224
225 (4) Control the flow of water and admixtures as they are introduced
226 into the mixture with calibrated and adjustable flow control valves.
227
228 (5) Indicate the number of gallons used to the nearest 0.10 gallons
229 with a water flow control meter.
230
231 (6) Proportion and blend all components of the concrete mixture on
232 a continuous or intermittent basis via automatic calibration.
233

234 Calibrate and perform uniformity checks in accordance with ASTM C 685 and
235 manufacturer's recommendations to ensure proper proportioning and
236 consistency of concrete. Provide the Engineer with the means to verify the
237 calibration of the mixer and uniformity of the mix. Submit mixer calibration and
238 uniformity reports and equipment specifications for review and approval. Do not
239 use the continuous volumetric concrete mixer until the submittals are approved
240 by the Engineer.
241

242 **(D) Just -In-Time Training.** Provide Just-In-Time Training (JITT) which is
243 a formal joint training class on very early strength latex modified concrete
244 (VESLMC). Do not begin operations for VESLMC until the Contractor's and the
245 Engineer's personnel have completed the mandatory JITT. Include the
246 Contractor's personnel in the list of participants for the Pre-Operation
247 Conference along with the Engineer's representatives.
248

249 Conduct the JITT session will be conducted for not less than 4 hours, unless
250 allowed by the Engineer. The training class may be an extension of the Pre-
251 Operation Conference. Conduct training at the project field location convenient
252 for both the Contractor's and the Engineer's project staffs. Schedule and
253 complete the JITT session at least 15 days prior to the start of construction of
254 VESLMC. Hold the class during normal working hours.
255

256 Select a JITT instructor experienced in the construction methods, materials,
257 and test methods associated with VESLMC. Do not use an employee of the
258 Contractor or a member of the Engineer's field staff as an instructor. Submit a
259 copy of the syllabus, handouts, and presentation material to the Engineer at
260 least 7 days before the day of the training and furnish a copy to each
261 participant on the day of the training. Mutually agree on the selection of the
262 course instructor, the course content and training site between the Contractor
263 and the Engineer. Issue a certificate of completion to the participants upon the
264 completion of the class. Include the course title, date and location of the class,
265 the name of the participant, instructor's name, location and phone number on
266 the certificate.
267

268 The Contractor's or Engineer's personnel involved with VESLMC operations

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will not be required to attend JITT if they have completed similar training within the previous 12 months of the date of the JITT for this project. Provide a certificate of class completion as described above for each staff member to be excluded from the JITT session. The final determination for exclusion of any staff member's participation will be as determined by the Engineer. Complete and submit to the Engineer, an evaluation of the training by all attendees on a form provided by the Contractor.

The Just-In-Time Training does not relieve the Contractor of any responsibility under the contract for the successful completion of the work in conformity with the requirements of the plans and specifications.

Consider the cost of the JITT incidental to the VESLMC work in this section.

(E) Pre-Operational Conference. Schedule a meeting with the Contractor, and suppliers representatives involved in construction operation of the VESLMC and the Engineer, at a mutually agreed time, to discuss and verify the methods of accomplishing all phases of the VESLMC operations, contingency planning, and standards of workmanship for the completed items of work. Include the Contractor's superintendents, foremen, subcontractors, and supplier's technical representatives, and all key personnel involved with the VESLMC work as attendees of the pre-operation conference. Do not begin placement of VESLMC before the Engineer accepts the pre-operational conference as completed.

(F) Authorization to Work. Proceed with the work within the project limits when the following items have met the requirements and are accepted by the Engineer in writing.

- (1) Subsection 540.03(A) Submittal Requirements.
- (2) Subsection 540.03(B) Early Strength Monitoring.
- (3) Subsection 540.03(C) Continuous Volumetric Concrete Mixers.
- (4) Subsection 540.03(D) Just-In-Time Training.
- (5) Subsection 540.03(E) Pre-Operational Conference.

(G) Preparation of Substrate. Use the procedures of ICRI (International Concrete Repair Institute) Guideline No. 03730 "Guide for Surface Preparation for the Repair of Deteriorated Concrete Resulting from Reinforcement Steel Corrosion", ICRI Guideline 03732 "Selecting and Specifying Concrete Surface, Surface Preparation for Sealers, Coatings and Polymer Overlays" sections of ACI 546.1R-80 (Reapproved 1997) "Guide for Repair of Concrete Bridge Superstructures". The Contractor shall be responsible for any falsework requirements, debris, noise and pollution control on and below the repair area.

316 Prepare the repair areas as follows:

317
318 **(1) Removing Material:**

319
320 **(a)** Protect surfaces outside the placement areas from
321 damage during concrete removal operations.

322
323 **(b)** Following the AC removal operation, remove unsound
324 concrete from the deck surface. Hydrodemolition, pneumatic
325 tools weighing less than 15 pounds, or approved equal maybe
326 used. Special care shall be taken to ensure compliance with
327 Section 540.03(A) Submittal Requirements and especially
328 540.03(A)(5). Produce a minimum profile of the substrate surface
329 which meets International Concrete Repair Institute (ICRI)
330 concrete surface profile (CSP) 7 or a minimum roughness of
331 approximately one-fourth inch amplitude. Demonstrate
332 roughness by comparing the ICRI Concrete Surface Profile chip
333 set to the prepared surface. Produce a minimum macrotexture
334 depth of 0.08 inch as determined according to ASTM E965
335 Measuring Surface Macrotexture Depth using a Volumetric
336 Technique. Perform surface macrotexture depth tests in the
337 presence of the Engineer. Perform a minimum of one
338 macrotexture depth test every fifty feet or fraction thereof of
339 longitudinal distance.

340
341 **(2) Preparation.** Prepare the concrete substrate and any reinforcing
342 steel in the area by removing any contaminants, dust, loose concrete
343 and mortar that may affect bonding of the VESLMC. Remove debris,
344 wash water and waste material using vacuum machines and properly
345 dispose outside the project limits at a disposal site accepted by the
346 Engineer. Brooms shall not be used on the prepared surface for
347 cleaning. The repair area shall be free of dust, dirt, oil, grease and other
348 contaminants that may affect bonding of the VESLMC. The Contractor
349 shall protect the public from dust pollution and other damages resulting
350 from the preparation of the construction area. The Contractor shall
351 prevent abrasives and debris from entering drainage systems and
352 streams.

353
354 **(H) Traffic and Equipment Control on Bridge.**

355
356 **(1)** Construction vehicles shall not exceed a 5-mph speed limit within
357 the placement area in both directions during VESLMC placement and
358 curing.

359
360 **(2)** Equipment and vehicles shall not contaminate the prepared deck
361 surface.

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(3) The Contractor shall not permit compressors or other equipment that produce vibrations on the span undergoing deck VESLMC work. Equipment shall not be located on spans undergoing deck VESLMC unless approved by the Engineer.

(4) Vehicular traffic shall not exceed a 15-mph speed limit on the bridge span during VESLMC pour and cure.

(5) The VESLMC shall have a minimum compressive strength of 3000 psi as determined by Early Strength Monitoring and by testing according to manufacturer's recommendations prior to opening to traffic.

(6) The bridge deck shall not be used as a storage area for equipment or for stockpiling materials. Loads exceeding eight tons shall not be used on the bridge unless approved by the Engineer.

(I) Placement of VESLMC.

(1) The concrete manufacturer's and cement manufacturer's technical representatives shall be present during initial work and as requested by the Engineer at no increase in contract time or contract price.

(2) A technical representative shall be capable and knowledgeable about the product he represents, e.g., know under what conditions the product should be placed for optimal results, know what causes defects or problems, and know how to troubleshoot the product. These are topics that should be discussed in the JITT.

(3) A technical representative shall provide aid and field supervision to assure that the work is properly installed and performed as recommended by the manufacturer and accepted by the Engineer at no increase in contract time or contract price.

(4) The Contractor shall adhere to recommendations made by the technical representative and accepted by the Engineer at no increase in contract time or contract price.

(5) Place the VESLMC according to the concrete manufacturer's and cement manufacturer's recommendations and instructions and as accepted by the Engineer. The Contractor shall inform the Engineer in writing of any work that is not in conformance with the manufacturer's recommendation.

(6) A bonding agent recommended by the cement manufacturer may be used where concrete is placed against existing concrete. Use bonding agent in accordance with the manufacturer's recommendations.

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(7) Unless otherwise directed by the manufacturer, maintain the interface surface wet for a minimum of 1 hour prior to placement and remove all excess surface moisture using oil free compressed air just prior to placing the concrete.

(8) Any falsework and formwork required shall be considered incidental to this work.

(9) Concrete shall be mixed as recommended in writing by the manufacturer.

(J) Consolidation. Consolidate the concrete as recommended by the manufacturer.

(K) Finishing. Finish while the concrete is plastic and workable. Position float parallel to road centerline and finish in the transverse direction passing gradually from one side of the pavement to the other. Move ahead along pavement centerline advancing not more than one-half of float length. Finish the concrete to meet the requirements of the Surface Testing subsection. Texture surface of the concrete by longitudinal tining 1/8" wide uniformly spaced at 3/4-inch on center and 1/8" deep.

For each day of production, complete one bond test for every 1000 square feet or fraction thereof of VESLMC area, but no less than one per day.

(L) Protection and Curing. Protect freshly placed concrete from plastic shrinkage, premature drying, excessive hot temperatures and direct wind. See Section 540.03(A) for submittal requirements. Cure the concrete as recommended by the concrete, cement, and curing manufacturers.

(M) Construction Joints. Use construction joints only with the acceptance of the Engineer and in accordance with the Contract.

(N) Surface Testing. The finished surface shall conform to the following requirements when tested by the Contractor in the presence of the Engineer within 14 days following the placement of concrete:

(1) Surface Flatness. The surface shall not vary more than 1/8 inch under a 10-foot straightedge placed parallel to the traffic lanes.

(2) Surface Condition. The surface shall be sound and free from cracks greater than 0.01 inch in width.

(O) Quality Control (QC):

(1) Plastic Concrete Sampling and Testing. Perform QC

457 concrete sampling and testing in accordance with the QC plan and
458 following requirements:

459
460 **(a)** QC tests shall include air content, temperature, slump and
461 preparing compressive strength cylinders for testing at later
462 dates. Perform plastic concrete tests on the initial delivery for
463 each concrete design mix each day. Ensure that QC technicians
464 and laboratory are qualified in accordance with the HDOT's
465 Quality Assurance Manual for Materials dated October 2001.
466 Ensure one technician is present and performing test throughout
467 the placement operation at each placement site. If any QC plastic
468 properties fail, with no exceptions, reject the mixer until
469 recalibrated, terminate the LOT and notify the Engineer. A LOT
470 shall be one day's production, once every maximum of 20 cubic
471 yards of concrete, or approximately once every 1000 square feet
472 of overlay area, whichever is least. Cast a set of cylinders
473 representing the LOT of concrete from the same sample of
474 concrete.

475
476 **(b)** Following the termination of a LOT, obtain samples from a
477 new load and perform plastic properties tests until such time as
478 water to cementitious material ratio, air content, temperature and
479 slump comply with project requirements. Initiate a new LOT once
480 the testing indicates compliance.

481
482 **(c)** Maintain a logbook with records of relevant details of all
483 tests. Provide a copy of new entries at the end of each work day.
484 Make available for inspection by the Engineer during the normal
485 working hours of construction. At the end of the project, deliver
486 the original logbook to the Engineer. The original logbook will
487 become property of the Engineer.

488
489 **(P) Verification and Independent Assurance.** HDOT may perform
490 Verification sampling and testing for its own use for internal assurance and
491 acceptance testing. Furnish sufficient concrete of each design mix for
492 verification and independent assurance sampling and testing as required by
493 the Engineer. When the Engineer performs verification, the Contractor may
494 perform the same tests on the concrete at the same time. HDOT's Independent
495 Assurance Program will be conducted to evaluate all sampling and testing used
496 in the acceptance material.

497
498 **(Q) Acceptance.**

499
500 **(1) Sampling and Testing.** Sample and test concrete of each mix
501 design for water to cementitious material ratio, air content, temperature,
502 slump and cast a set of three cylinders for compressive strength once
503 per LOT. A LOT shall be one day's production, once every maximum of

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20 cubic yards of concrete, or approximately once every 1000 square feet of area, whichever is least. When more than one production facility or continuous volumetric mixers is used for the same mix design, apply the sampling and testing frequency per production facility or per continuous volumetric mixer.

Take these acceptance samples randomly in accordance with ASTM D 3665 or as determined by a random number table acceptable to the Engineer. Select and document the selection of random sample(s) prior to the work activity. Include the date and time of determination of the selection.

Provide curing facilities that have the capacity to store cylinder samples for QC and Verification, and Independent Assurance simultaneously for initial curing. Deliver the QC samples to the final curing facility in accordance with AASHTO T 23. At the same time, the Engineer will deliver verification and independent assurance samples to their final curing facility. All cylinders shall be clearly identified.

Test the QC laboratory cured samples for compressive strength at the age of 28 days in a laboratory meeting and maintaining at all times the qualification requirements in the Highways Division's Quality Assurance Manual for Materials and is an accredited material testing laboratory in the test method being performed. Notify the Engineer of the Quality Control Laboratory compressive test results within 24 hours.

The Engineer will average the QC compressive strengths data, average the Verification compressive strength data and compare the results. Comparison of results can also be on the latest five Verification data and the QC data during the same period. Based on this comparison, the Engineer will determine if the Validation Criteria as shown in the following table has been met.

Validation Criteria	
Range of Average Compressive Strength	QC and Verification Difference
Less than 3500 psi	450 psi
3,501 – 4,500 psi	590 psi
4,501 – 6,500 psi	910 psi
6,501 – 8500 psi	1,275 psi
Greater than 8,500 psi	1,360 psi

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When the difference between the QC and Verification are less than or equal to the Validation Criteria, the QC data is validated and the Engineer will use the Contractor's data as a part of the acceptance procedures. When the difference between QC and Verification data exceeds the Validation Criteria, the Engineer will initiate the dispute

543 resolution process requirements of Section V of Highway's Quality
544 Assurance Manual for Materials.

545
546 **(2) Hardened Concrete.** Hardened concrete will be accepted
547 or rejected on the basis of strength tests and any of the requirements or
548 characteristics in Subsection 540.02 Materials. Do not discard a cylinder
549 strength test result based on a low strength (strength below the specified
550 minimum strength). Full payment will be made only for acceptable LOTS
551 of concrete. The compressive strength of the LOT shall meet the
552 specified minimum strength of 6000 psi at 28 days. The Engineer may
553 accept the average compressive strength of three individual test results
554 in lieu of individual strength test results provided that no single test result
555 is less than 90 percent of the average value. The concrete shall also
556 meet the specified minimum compressive strength of 3000 psi within 3
557 hours as determined by the maturity meter index correlation.

558
559 **(3) Bond Strengths.** Bond strengths shall be determined in
560 accordance with the manufacturer's recommendations. The Engineer
561 may allow for a sample slab to be tested in lieu of the existing substrate.

562
563 The bond strengths shall be 250 psi at 24 hours. If bond strengths are
564 less than 250 psi due to failure in the substrate than the Engineer will
565 determine if the bond is acceptable.

566
567 The Engineer may accept the average of 3 individual test results for that
568 LOT in lieu of individual test readings, provided that no single test value
569 is less than 90% of the average value.

570
571 **(R) Post-Construction Survey, Sealing Cracks and Repairing**
572 **Delaminations.** Perform a post-construction survey with the Engineer
573 present between three and nine months after overlay placement. Contractor
574 shall survey all VESLMC repairs in accordance with ASTM D4580 Standard
575 Practice for Measuring Delaminations in Concrete Bridge Decks by Sounding
576 including visual inspections for cracks and other defects in the presence of the
577 Engineer. Seal cracks that are greater than 0.01 inch in width with epoxy
578 materials which are compatible with VESLMC and acceptable to the Engineer.
579 Remedy, remove, or replace unacceptable areas with VESLMC using
580 installation methods as specified in this section at no increase in contract time
581 or contract price. Repaired areas will be subject to re-inspection. Provide
582 documents of the post construction surveys that are acceptable to the
583 Engineer.

584
585 **540.04 Measurement.** VESLMC overlay will be paid per cubic yard as
586 determined by the Engineer.

587
588 **540.05 Payment.** The Engineer will pay for accepted VESLMC concrete per
589 cubic yard. Payment will be full compensation for the work prescribed in this section

590 and the contract documents.

591

592 The Engineer will pay for the following pay item when included in the proposal
593 schedule:

594

595 **Pay Item**

Pay Unit

596

597 VESLMC (Bridge Deck Closure)

Cubic Yard

598

599 VESLMC (End Beam Closures)

Cubic Yard”

600

601

602

END OF SECTION 540

48 instead of 0.49 at line 73 in Table 601.03-1- DESIGN OF CONCRETE.

49

50 **(IV)** Amend **601.03(C)(4) Admixtures** by adding the following sentences at the
51 start of the first paragraph at line 198:

52

53 "All admixtures shall be compatible with each other. Admixtures which
54 significantly increase the drying shrinkage or creep in the concrete will be rejected
55 by the Engineer."

56

57 **(V)** Amend **601.03(E) Transporting Mixed Concrete** by deleting the words
58 "Section 12.5 of" at the end of the first paragraph at line 429.

59

60 **(VI)** Amend Subsection **601.03(F) Consistency** by revising the slump for Bridge
61 Decks in Table 601.03-3 at line 506 as follows:

62

63 "Nominal Slump shall be between 6 to 8 inches and maximum slump shall be
64 9 inches."

65

66 **(VII)** Amend **601.03(F) Consistency** by adding the following paragraph after the
67 last paragraph at line 507:

68

69 "If the slump of the ready mix concrete upon delivery is below the design
70 slump, water may be added provided all of the following conditions are met:

71

72 **(1)** Water shall not be added to the concrete if more than $\frac{1}{4}$ cubic of
73 concrete has been discharged from the mixer.

74

75 **(2)** Water may be added only up to 30 minutes after the average travel
76 time to the jobsite.

77

78 **(3)** The maximum slump, the maximum water/cement ratio, and the
79 maximum water per cubic yard shall not be exceeded.

80

81 **(4)** Not more than $1 \frac{1}{2}$ gallons of water per cubic yard shall be added to
82 the concrete, but not more than the amount of "held-back" water. "Held-
83 back" water is defined as the difference between the amount of water in the
84 mix design and the amount of water actually in the plastic concrete mix in the
85 concrete truck.

86

87 **(5)** The amount of "held-back" water from the approved mix design shall
88 be shown on the delivery ticket."

89

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END OF SECTION 601

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93

94

TABLE 602.04-1 – BAR DESIGNATION, WEIGHT AND AREA		
Bar No.	Weight Per Linear Foot (Pounds)	Area (Square Inches)
3	0.376	0.11
4	0.668	0.20
5	1.043	0.31
6	1.502	0.44
7	2.044	0.60
8	2.670	0.79
9	3.400	1.00
10	4.303	1.27
11	5.313	1.56
14	7.650	2.25
18	13.600	4.00

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The Engineer will not make allowance for clips, wire or other material used for fastening reinforcement in place. The cost is for the work prescribed in this section and the contract documents.

The Engineer will not measure mesh reinforcement.”

(VIII) Amend **602.05 Payment** to read as follows:

602.05 Payment. The Engineer will pay for the accepted reinforcing steel at the contract unit price per pound for the contract items specified in the proposal.

The Engineer will pay for the following pay item when included in the proposal schedule:

Pay Item	Pay Unit
Reinforcing Steel for _____	Pound”

END OF SECTION 602

1 **SECTION 603 – CULVERTS AND STORM DRAINS**

2
3 Make the following amendments to said Section:

4
5 **(I)** Amend **603.03(C)(1) - Culverts** by revising lines 106 to 108 to read as
6 follows:

7
8 “Spacing between multi-barrel culverts shall be a minimum of 18 inches or
9 0.5 the culvert width, whichever is greater. The minimum spacing shall be 1 foot
10 when placing controlled low strength material (CLSM) as backfill. Anchor the
11 culverts in such a manner that the horizontal and vertical alignment of the
12 culverts does not change.”

13
14 **(II)** Amend **603.04 – Measurement** by revising lines 282 to 292 to read as
15 follows:

16
17 **“603.04 Measurement.**

18
19 **(A)** The Engineer will measure bed course material for culverts per
20 cubic yard in accordance with contract documents.

21
22 **(B)** The Engineer will measure high density polyethylene pipe per linear
23 foot in accordance with contract documents.

24
25 **(III)** Amend **603.05 – Payment** by revising lines 294 to 357 to read as follows:

26
27 **“603.05 Payment.** The Engineer will pay for the accepted pay items listed
28 below at the contract price per pay unit, as shown in the proposal schedule.
29 Payment will be full compensation for the work prescribed in this section and
30 contract documents.

31
32 The Engineer will pay for each of the following pay items when included in
33 the proposal schedule:

34

Pay Item	Pay Unit
Bed Course Material for Culvert	Cubic Yard
4- Inch High Density Polyethylene Pipe, Type S	Linear Foot”

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42 **END OF SECTION 603**

1 Make this Section a part of the Standard Specifications:

2
3 **“SECTION 621 – RODENT CONTROL AND SECURITY GUARD SERVICES**

4
5 **621.01 Description.** This section describes the following services for the
6 properties designated as TMK (1) 5-4-11:04, TMK (1) 5-4-18: 01.

7
8 (1) Rodent Control;

9
10 (2) Security Guard Services.

11
12 **621.02 Materials.**

13
14 **(A) Rodent Control.**

15
16 (1) **Bait Boxes.** Bait boxes shall comply and be maintained in
17 accordance with all Federal, State, and County rules and regulations
18 including but not limited to EPA regulations.

19
20 **621.03 Construction.**

21
22 **(A) Rodent Control.**

23
24 (1) **Pre-Construction Meeting.** The Contractor along with the
25 Engineer shall hold a Pre-Construction meeting with the relocated
26 tenant to go over specifics of the required rodent control.

27
28 (2) **Bait Box Locations.** The estimated number of required bait
29 boxes is five. Locations of the bait boxes would be one near the shed
30 and the rest under the windows. The number and locations shall be
31 confirmed at the Pre-Construction meeting.

32
33 (3) **Use of Bait Boxes.** All bait boxes shall be maintained in
34 accordance with EPA regulations, with an emphasis on the safety of
35 non-target organisms. The Contractor shall adhere to the following
36 five points:

37
38 (a) All bait boxes shall be placed out of the general view, in
39 locations where they will not be disturbed by routine
40 operations.

41
42 (b) The lids of all bait boxes shall be securely locked or
43 fastened shut.

44
45 (c) All bait boxes shall be securely attached or anchored to
46 floor, ground, wall, or other immovable surface, so that the box
47 cannot be picked up or moved.

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(d) Bait shall always be secured in the feeding chamber of the box and never placed in the runway or entryways of the box.

(e) All bait boxes shall be labeled on the inside with the Contractor's business name and address, and dated by the Contractor's technician at the time of installation and each servicing.

(4) Service Schedule. The Contractor shall monitor bait boxes on a monthly basis.

(5) Commercial Rodent Control Applicator Certificates or Licenses. The Contractor shall provide photocopies of State-issued Commercial Rodent Control Applicator Certificates or Licenses for every Contractor employee who will be performing on-site service under this contract.

(6) Record Keeping. The Contractor shall be responsible for maintaining a rodent control logbook or file for the property specified in this contract. Brand names of rodent control bait boxes shall be documented.

(7) Safety and Health. The Contractor shall observe all safety precautions throughout the performance of this contract. All work shall be in strict accordance with all applicable Federal, state, and local safety and health requirements. Where there is a conflict between applicable regulations, the most stringent will apply.

The Contractor shall assume full responsibility and liability for compliance with all applicable regulations pertaining to the health and safety of personnel during the execution of work.

(8) Uniforms and Protective Clothing. All Contractor personnel working in or around property specified in this contract shall wear distinctive uniform clothing. The Contractor shall determine the need for and provide any personal protective items required for the safe performance of work. Protective clothing, equipment, and devices shall, as a minimum, conform to U.S. Occupational Safety and Health Administration (OSHA) standards for the products being used.

(9) Vehicles. Vehicles used by the Contractor shall be identified in accordance with state and local regulations.

(B) Security Guard Services

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(1) Pre-Construction Meeting. The Contractor along with the Engineer shall hold a Pre-Construction meeting with the relocated tenant to go over specifics of the required security guard services.

(2) Service Schedule. It is estimated that security guard services will be required twice at night (i.e. once between 7:00 pm and midnight and once between midnight and 4:00 am, 7 nights a week). The frequency of services shall be confirmed at the Pre-Construction Meeting.

(3) Scope of Work. Contractor shall provide appropriately equipped and well-trained certified *and/or* licensed Security personnel to patrol the property. Contractor shall provide all labor, supervision, material and equipment necessary to perform and complete the Services in all respects in accordance with the Contract Documents. Contractor hereby warrants that all services shall be performed in a timely and first-class workmanlike manner.

(4) Hiring Standards and Policies:

(a) Minimum Hiring Standards. The Contractor's security officers shall meet or exceed the minimum standards set forth below before assignment to the premises:

- Valid driver's license. No moving traffic violations, DUIs etc. within the past five years.
- Successfully pass a drug test.
- Successfully pass background investigations for the city, county, state, and federal government Federal Citizen Information Center (FCIC).
- Successfully pass a pen and paper test including, but not limited to, spelling and grammar.
- Well-developed level of maturity necessary for professional interaction.
- Neat, clean, and well-groomed appearance while providing services.
- Be able to speak and write in English at a level that shall allow the ability to perform its required duties.
- Have passed the employer's security guard training.

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(5) Uniforms. All Contractor personnel working in or around property specified in this contract shall wear distinctive uniform clothing.

(6) Reporting Procedures. The Contractor shall maintain a log of each site visit.

(7) Insurance. Insurance coverage shall include:

- The Contractor shall secure and maintain errors and omissions coverage in the amount of \$1,000,000.
- Personal Injury Liability;
 - False arrest, detention and imprisonment, or malicious prosecution;
 - Wrongful entry or eviction or other invasion of the right of private occupancy;
- Assault and Battery offenses;
- Third party theft from clients;
- Comprehensive Automobile Liability - The policy shall provide bodily injury and property damage liability insurance for all owned, hired and non-owned automobiles used by the Contractor in its operations.

621.04 Measurement.

(A) Rodent control will be paid on a lump sum basis for a twenty-four (24) month duration. Measurement for payment will not apply.

(B) Security guard services will be paid on a lump sum basis for a twenty-four (24) month duration. Measurement for payment will not apply.

621.05 Payment. The Engineer will pay for the accepted rodent control and security guard services on a contract lump sum basis. Payment will be full compensation for the work prescribed in this section and the contract documents.

The Engineer will pay for the following pay items when included in the proposal schedule:

Pay Item	Pay Unit
Rodent Control	Lump Sum
Security Guard Services	Lump Sum”

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END OF SECTION 621

1 **SECTION 622 – ROADWAY AND SIGN LIGHTING SYSTEM**

2
3 Make the following amendments to said Section:

4
5 **(I)** Amend Subsection **622.03(C) Installation**, by deleting paragraphs (1)
6 Foundations and (2) Metal Lamp Standards in its entirety.

7
8 **(II)** Amend Subsection **622.03(C) Installation**, by deleting paragraph (5) Pull
9 Boxes in its entirety.

10
11 **(III)** Amend Subsection **622.03(C) Installation**, by deleting paragraph (9) Pull
12 boxes in its entirety.

13
14 **(IV)** Amend Subsection **622.04 Measurement** to read as follows:

15
16 **“622.04 Measurement.**

17
18 **(A)** The Engineer will measure the highway lighting luminaire and
19 bracket arm per each.

20
21 **(B)** Temporary highway lighting will be paid on a lump sum basis.
22 Measurement for payment will not apply.”

23
24 **(V)** Amend Subsection **622.05 Payment** to read as follows:

25
26 **“622.05 Payment.** The Engineer will pay for the accepted highway lighting
27 luminaire and bracket arm on a contract unit price per each. The price includes
28 full compensation for submitting the equipment list and drawing; furnishing and
29 installing the highway lighting luminaire and bracket; furnishing and installing street
30 light tags and fused connectors; coordinating with HECO; restoring pavements and
31 appurtenances damaged or destroyed during construction, removing existing
32 street light luminaires and bracket arms on wood poles; salvaging existing
33 materials, including transporting and delivering to the Engineer’s designated
34 location; making required tests; furnishing labor, materials, equipment, tools, and
35 incidentals necessary to complete the work.

36
37 The Engineer will pay for the accepted temporary highway lighting system
38 on a contract lump sum basis. The price includes full compensation for furnishing
39 and installing, modifying and removing the wood poles, luminaires, bracket arms
40 and conductors; all utility costs, including any fees for HECO service; costs for
41 disconnection of electrical service; excavating and backfilling; restoring pavements
42 damaged or destroyed during construction, salvaging existing materials, including
43 transporting and delivering to the Engineer’s designated location; making required
44 tests; furnishing labor, materials, equipment, tools, and incidentals necessary to
45 complete the work.

46 The Engineer will consider additional materials and labor, needed to
47 complete the installation of the system and not shown in the contract included in
48 the bid price of the various contract items.

49
50 The Engineer will pay for hauling and stockpiling of salvaged materials and
51 equipment off the right-of-way as ordered by the Engineer in accordance with
52 Subsection 104.02 – Changes.

53
54 The Engineer will pay for each of the pay items when included in the
55 proposal schedule:

56

Pay Item	Pay Unit
Highway Lighting Luminaire and Bracket Arm _____	Each
Temporary Highway Lighting	Lump Sum”

62
63
64

END OF SECTION 622

1 **SECTION 624 - WATER SYSTEM**

2
3 Make the following amendment to said Section:

4
5 **(I) Amend Subsection 624.03 (P) Maintaining Existing Water System** by
6 adding at line 541 the following:

7
8 “Maintain Temporary Water Systems by painting the pipe after installation,
9 re-painting as necessary to cover graffiti, and ensuring pipe supports and
10 restraints are in place and in good condition.”

11
12 **(II) Amend Subsection 624.03 (P) Maintaining Existing Water System** by
13 adding at line 546 the following:

14
15 “Immediately notify the Engineer and the County Water Works System of
16 damages to the Temporary Water System. Contractor shall do the necessary
17 repairs per County Water Works System order or under County Water Works
18 System supervision, or County Water Works System will do necessary repairs.
19 County Water Works System will bill the Contractor for costs incurred in this
20 work.”

21
22 **(III) Amend Subsection 624.05 Payment** from lines 594 to 596 to read as follows:

23 “Pay Item	24 Pay Unit
25 Temporary Water Systems	26 Lump Sum
27 Permanent Water Systems	28 Lump Sum”

29
30
31
32
33
34 **END OF SECTION 624**

1 **SECTION 626 – MANHOLES AND VALVE BOXES FOR WATER AND SEWER**
2 **SYSTEMS**

3
4 Make the following amendment to said Section:

5
6 **(I)** Amend **626.04 - Measurement** by replacing lines 172 to 173 to read:

7
8 **“626.04 Measurement.** The Engineer will measure manholes and valve boxes
9 per each for water and sewer systems.”

10
11 **(II)** Amend **626.05 – Payment** by revising lines 174 to 192 to read as follows:

12
13 **“626.05 Payment.** The Engineer will pay for the accepted pay items listed
14 below on a contract lump sum or per each basis, as shown in proposal schedule.
15 Payment will be full compensation for work prescribed in this section and in
16 contract documents.

17
18 The Engineer will pay for each of the following pay items when included in
19 proposal schedule:

20

Pay Item	Pay Unit
___ Manhole, ___ feet to ___ feet	Each
(_____) Standard Valve Box	Each

21
22
23
24
25
26

27 The Engineer will pay for excavation and backfill in accordance with and
28 under Section 204 -- Excavation and Backfill for Miscellaneous Facilities.”

29
30
31 **END OF SECTION 626**
32

1 Make this Section a part of the Standard Specifications:

2
3 **“SECTION 627 – LIGHTWEIGHT CONCRETE**

4
5
6 **627.01 Description.** This work includes furnishing and placing Lightweight
7 Concrete as fill material in suspended waterline enclosures and other works
8 where firm support is needed for utilities and structural elements.

9
10 **627.02 Materials.**

11		
12	Portland Cement	701.01
13		
14	Fine Aggregate for Concrete	703.01
15		
16	Water	712.01
17		

18 The Contractor shall proportion the lightweight concrete to produce a
19 material that is self-compacting. The proportions of the lightweight concrete
20 shall:

- 21
- 22 (a) produce a uniform, flowable mixture that is essentially self-leveling
 - 23 when placed;
 - 24
 - 25 (b) have a minimum 28-day compressive strength of approximately
 - 26 3000 psi;
 - 27
 - 28 (c) have a maximum unit weight of 120 pcf; and
 - 29
 - 30 (d) conform to Section 601 - Structural Concrete.
- 31

32 The Contractor may use aggregates that are different from Subsection
33 703.01 - Fine Aggregate for Concrete subject to acceptance by the Engineer.
34 Aggregate shall stay in suspension in the lightweight concrete to the extent
35 required for proper flow. Use foaming agent in accordance with ASTM C869.

36
37 **627.03 Construction Requirements.**

38

39 **(A) Placement.** Follow guidelines in Section 503.03 (F) Placing
40 Concrete. Place the lightweight concrete to the designated fill line or as
41 specified by the Engineer without vibration or other means of compaction.
42 Provide sufficient mixing capacity to allow the lightweight concrete to be
43 placed without interruption.

44

45 Place the lightweight concrete by chute, pumping, or other methods
46 acceptable by the Engineer. Cure the lightweight concrete in accordance
47 with manufacturer’s instructions.

48

49 **(B) Acceptance.** Proportion and place the lightweight concrete as
50 specified herein. Submit a manufacturer’s certification of the lightweight
51 concrete and include the unconfined 28 day compressive strengths and
52 tested in place density. The material certification shall include the actual
53 test data for each mixture used.

54
55 **627.04 Method of Measurement.** The Engineer will measure lightweight
56 concrete per cubic yard according to the dimensions shown in the contract or as
57 ordered by the Engineer. The Engineer will not make deductions for the volume
58 occupied by reinforcing steel, inserts, or hangers.

59
60 **627.05 Basis of Payment.** The Engineer will pay for the accepted
61 quantities of lightweight concrete complete in place at the contract unit price per
62 cubic yard.

63
64 The Engineer will pay for the following pay item when included in the
65 proposal schedule:

66 Pay Item	Pay Unit
67 Lightweight Concrete	Cubic Yard”

68
69
70
71
72

END OF SECTION 627

SECTION 629 - PAVEMENT MARKINGS

Make the following amendments to said Section:

(I) Amend **Subsection 629.03(B) – Temporary Pavement Markings** by revising the third paragraph from line 62 to 63 to read:

“Maintain and replace temporary pavement markings, flexible delineators, and barricades.”

(II) Amend **Table 629.03 – 1 – Temporary Pavement Markings** to read as follows:

“TABLE 629.03-1 TEMPORARY PAVEMENT MARKINGS	
TYPE	PAVEMENT MARKINGS
Passing Permitted - Both Sides	Single 4-inch yellow stripe 5 feet in length spaced 20 feet on center with Type D markers spaced 40 feet on center and located on center of 5-foot length of stripe.
Passing Prohibited - Both Sides	Double solid 4-inch yellow stripes with Type D markers placed 20 feet on center on one of 4-inch yellow stripes selected by the Engineer.
Passing Permitted - One Side Only	Single continuous 4-inch yellow stripe with Type D markers placed on stripe 20 feet on center on no-passing side and single 4-inch yellow stripes 5 feet in length spaced 20 feet on center on passing side.
Lane Lines - Lane Changing Permitted	Single 4-inch yellow or white stripe 5 feet in length spaced 20 feet on center with Type C or Type D markers spaced 40 feet on center.
Lane Lines - Lane Changing Prohibited	Double solid 4-inch white stripes with Type C markers placed 20 feet on center on one of the 4-inch white stripes selected by the Engineer.
Crosswalk	Two 12-inch white transverse lines spaced 8 feet on center or as ordered by the Engineer.
Stop Line	Single 12-inch white transverse line.
Note: Paint may be used for temporary markings in areas where final paving is not complete.”	

(III) Amend **629.04 – Measurement** by revising lines 292 to 294 to read as follows:

19 **“629.04 Measurement.**

20
21 (A) The Engineer will measure thermoplastic and preformed pavement
22 marking tape per linear foot in accordance with the contract
23 documents. The longitudinal pavement markings will be measured per
24 linear foot as a single stripe for the width specified in the contract and
25 in the proposal. The Engineer will include the longitudinal gaps for skip
26 striping, up to thirty (30) feet long, in the measurement.

27
28 The Engineer will measure the transverse markings by the linear
29 foot or per each according to the contract.

30
31 The Engineer will not measure temporary pavement markings
32 including flexible delineator posts with reflector markers or Type I
33 Barricades and temporary signs installed for the longitudinal guidance
34 of public traffic over reconstructed areas, cold planed surfaces, newly
35 paved surfaces or other unmarked or scarified areas for payment.

36
37 The Contractor shall consider the work required for the removal of
38 pavement markings incidental to the various contract items, except as
39 provided in the proposal or elsewhere in the contract. If the contract
40 stipulates that the Engineer will make payment for the removal of
41 pavement markings, the Engineer will not measure the removal of
42 pavement markings.

43
44 (B) The Engineer will measure the pavement markers per each for the
45 types shown in the proposal.

46
47 (C) The Engineer will measure the painted stripes that are twelve (12)
48 inches wide or less as a single stripe. The Engineer will measure the
49 painted stripes over twelve (12) inches wide as two (2) stripes. The
50 Engineer will measure the double stripes that are twelve (12) inches or
51 less in total width including the transverse space between the stripes
52 as a single stripe.

53
54 The Engineer will measure the longitudinal pavement markings by
55 the linear foot according to the contract. Longitudinal gaps for skip
56 striping that are 30 feet or less will be included in the measurement.

57
58 The Engineer will measure the transverse markings by the linear
59 foot or per each according to the contract."

60
61 (IV) Amend **629.05 – Payment** by revising lines 296 to 330 to read as follows:

62
63 **“629.05 Payment.**

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(A) The Engineer will pay for thermoplastic and preformed pavement marking tape at the contract price per linear foot according to the contract, complete in place, including primers.

The Engineer will pay for double four (4) inch striping with a four (4) inch space between stripes at the contract price per linear foot according to the contract.

The Engineer will pay for pavement arrows (single and multiple heads), symbols, and words at the contract price per each according to the contract.

The contract unit price paid shall be full compensation for furnishing labors, materials, tools, equipment and incidentals and for doing the work involved in furnishing and installing pavement markings complete in place according to the contract.

The Engineer will not pay for the temporary pavement markings including flexible delineator posts with reflector markers or Type I Barricades and temporary signs installed for the longitudinal guidance of public traffic over reconstructed areas, cold planed surfaces, newly paved surfaces or other unmarked or scarified areas for payment if not shown in the proposal separately. The Engineer will consider them incidental to the various contract items.

(B) The Engineer will pay for the various types of pavement markers at the contract price per each according to the contract, complete in place, including adhesives.

(C) The Engineer will pay for painted pavement striping at the contract price per linear foot according to the contract.

The Engineer will pay for pavement arrows (single or multiple arrow heads), symbols, and words at the contract price per each according to the contract.

The Engineer will pay for the following pay items when included in the proposal schedule:

Pay Item	Pay Unit
_____ - Inch Pavement Striping _____	Linear Foot
Pavement Arrow _____	Each
Pavement Word _____	Each

112
113
114
115
116

Type ____ Pavement Marker

Each”

END OF SECTION 629

1 Make the following Section a part of the Standard Specifications:

2
3 **“SECTION 636 – E-CONSTRUCTION**

4
5
6 **636.01 Description.** This section is for furnishing e-construction software for the
7 Project.

8
9 **636.02 General Requirements.** The Contractor shall:

10
11 (A) Provide licenses for the E-Construction platform designated by HDOT.

12
13 **636.03 Not used.**

14
15 **636.04 Measurement.** The Engineer will measure the fee for the license(s)
16 associated with the “E-Construction Program” on a force account basis in
17 accordance with Subsection 109.06 – Force Account Provisions and Compensation.

18
19 **636.05 Payment.** The Engineer will pay for the fee for the license for the E-
20 construction Program on a force account basis in accordance with Subsection
21 109.06 – Force Account Provisions and Compensation. Payment will be full
22 compensation for the “E-Construction” licensing fee as prescribed in this section
23 and contract documents. The actual amount to be paid will be the sum shown on
24 the accepted force account records whether this sum be more or less than the
25 estimated amount allocated in the proposal schedule.”

Pay Item	Pay Unit
E-Construction license	Force Account”

26
27
28
29
30
31
32
33
34 **END SECTION 636**

49 Contractor shall be responsible for obtaining and maintain all necessary
50 permits and agreements for the source of water for the irrigation system.”

51
52 **(VII)** Amend **Subsection 641.03(D) – Acceptance** by revising line 168:

53
54 “percent coverage with healthy, well-established grass, at least two
55 inches”

56
57 **(VIII)** Amend **Subsection 641.04 – Measurement** by revising lines 173 to 174
58 to read:

59
60 **“641.04 Measurement.** Hydro-mulch seeding will be paid on a per
61 square yard basis in accordance with the contract documents.”

62
63 **(IX)** Amend **Subsection 641.05 – Payment** by revising lines 176 to 199 to
64 read:

65
66 **“641.05 Payment.** The Engineer will pay for the accepted pay items
67 listed below at contract price per pay unit, as shown in the proposal schedule.
68 Payment will be full compensation for the work prescribed in this section and the
69 contract documents.

70
71 The Engineer will pay for the following pay items when included in the
72 proposal schedule:

73

74 Pay Item	75 Pay Unit
76 Hydro-mulch seeding (Seashore Paspalum)	77 Square Yard

78 The initial 3-month planting period will be paid under **Section 642 –**
79 **Landscape Maintenance.**”

80
81
82
83
84

END OF SECTION 641

1 Make the following section a part of the Standard Specifications:

2
3 **“SECTION 651 – ELECTRIC UTILITY SYSTEM**

4
5 **651.01 Description.** This work includes constructing electric underground
6 structures and facilities, and ductlines required for the relocation of Hawaiian
7 Electric Company (HECO) facilities according to the contract or as specified by the
8 Engineer. HECO will furnish, install, connect and test all proposed overhead and
9 underground wire and cable as may be required, including guy wires. HECO will
10 also remove and/or install utility poles and anchors.

11
12 **651.02 Materials.** Furnish all materials for the pullboxes and ductlines unless
13 otherwise indicated. Materials shall conform to the following:

14
15 Structure Backfill Material 703.20

16
17 Trench Backfill Material 703.21

18
19 Concrete shall conform to Section 601 - Structural Concrete. The maximum
20 size of coarse aggregates shall be three-quarter inch in lieu of the one inch to No.
21 4 specified. Concrete duct banks shall be Class A concrete.

22
23 Bricks for pullboxes shall conform to Subsection 704.02 - Concrete Brick.
24 The Engineer will not permit use of broken bricks.

25
26 Materials used in the cement mortar for setting brick shall conform to
27 Section 601 - Structural Concrete. Cement mortar shall be one to three volumetric
28 mix of Portland cement and a combined fine aggregate.

29
30 Miscellaneous metals and appurtenances for pullboxes shall conform to
31 Section 713 - Structural Steel and Related Materials.

32
33 Underground conduit and fittings shall be rigid polyvinylchloride (PVC),
34 Schedule 40. Conduit risers shall be zinc-coated rigid steel. Schedule 40 rigid
35 PVC conduit shall be extruded standard wall electrical conduit and each length
36 shall bear the label of Underwriter's Laboratory, Inc. Adhere to the requirements
37 of U.S. Department of Commerce, Commercial Standard CS207-60.

38
39 **651.03 Construction Requirements.**

40
41 **(A) General.** Avoid disturbing existing facilities. Remove and dispose
42 of all demolished or excess material from the job site.

43
44 Notify HECO's inspection division at least 48 hours in advance of
45 intent to commence concreting operations for duct lines.

46 Construction of HECO's underground facilities shall be in
47 accordance with the latest revisions of HECO Specifications CS7001,
48 CS7003, CS7202, CS9301, CS9401 and applicable HECO standards.
49 Refer to the plans for additional requirements relating to HECO facilities.

50
51 **(B) Existing Utilities.** Existing HECO facilities shown on the plans are
52 approximate locations. Utility facilities to be constructed are shown on the
53 plans in approximate locations for the convenience of the Contractor.

54
55 It shall be the Contractor's responsibility to ascertain the location of
56 all existing utilities which may be subject to damage by reason of its
57 operations. The Contractor shall be responsible for and shall pay for all
58 damages to existing utilities of all types.

59
60 The Contractor shall:

61
62 **(1)** Support and/or protect as required all facilities during
63 construction,

64
65 **(2)** Notify the Engineer immediately of any damage to any facility
66 caused by construction under this Contract, and

67
68 **(3)** Reconstruct damaged portions of any utility system according
69 to the contract and as specified by the Engineer at no cost to the
70 State.

71
72 **(C) HECO Facilities.** Provide HECO with 24-hour access to all existing
73 HECO facilities that are to remain, or until they are removed, and to all new
74 HECO facilities after they are installed. The Contractor shall be responsible
75 for any delays in company work due to its failure to provide access to
76 company facilities. All existing HECO facilities shall remain in place until
77 after completing and energizing the proposed permanent and/or temporary
78 facilities, unless otherwise noted on the plans. Any cost of temporary
79 relocations arising during construction for the Contractor's benefit shall be
80 at no cost to the State and HECO.

81
82 Electrical equipment or conductors, whether electrically energized or
83 not, shall remain in place at all times during construction unless otherwise
84 indicated. HECO shall perform the handling and moving of electrical
85 equipment or conductors, when required by the Engineer. Work by the
86 Contractor in areas with energized electrical equipment or conductors shall
87 be performed with extreme caution to prevent accidents and to avoid
88 disturbing or damaging the equipment or conductors or any temporary
89 supports or protective guards that are constructed. Unless otherwise
90 permitted by HECO, all work by the Contractor in areas with energized
91 equipment or conductors shall be performed in the presence of a company

92 inspector and/or standby man. The Contractor shall have the sole
93 responsibility for maintaining safe and efficient working conditions and
94 procedures in these areas.

95
96 HECO shall replace any existing or new company facilities, including
97 equipment or conductors damaged by the Contractor during construction,
98 at the Contractor's expense.

99
100 The Contractor shall give HECO 60 calendar days advance notice
101 for any work to be done by HECO on its facilities. Unless otherwise
102 indicated on the plans or otherwise directed by the Engineer, HECO, will:

103
104 (1) Remove the concrete envelope from existing underground
105 ducts containing electrical cables.

106
107 (2) Construct temporary supports and protective barriers for bare
108 duct and electrical cables immediately after removal of the concrete
109 envelope is completed.

110
111 (3) Remove temporary supports and protective barriers
112 constructed under (2) above.

113
114 (4) Remove existing joint utility poles and anchors and install new
115 joint utility poles and anchors.

116
117 **(D) Excavation and Backfill.** All excavation and backfill for electric
118 underground structures and trenches shall conform to Section 204 -
119 Excavation and Backfill for Miscellaneous Facilities, modified as follows:

120
121 **(1) Excavation.**

122
123 **(a)** The width of trenches for duct banks shall not be less
124 than the width of the encasement nor more than that required
125 to properly and safely execute the work.

126
127 **(b)** Excavate the trenches at least 40 feet ahead of duct
128 placement so that any obstruction to the duct line can be
129 avoided through gradual alignment. The Engineer may adjust
130 the profile grade to increase or decrease the excavation depth
131 (up to 3 feet) as a result of unforeseen obstruction at no
132 additional cost.

133
134 **(c)** Excavation for each handhole, plus 50 feet of trenching
135 for all ducts connected to these structures shall be complete
136 before starting construction on these structures. Backfill all

137 cuts in excess of depths required with compacted bed course
138 material at no cost to the State and HECO.

139
140 **(d)** All excavation shall be inspected by the Engineer and
141 HECO before placing any ducts or conduits or before
142 constructing any structures and foundations.

143
144 **(e)** Widen the trenches at handholes to permit proper entry
145 of the ducts and conduits.

146
147 **(f)** Do not excavate for handholes and ductlines until after
148 staking out and verifying the locations for these structures
149 correctly by HECO through the Engineer.

150
151 **(2) Backfill.** Do not place backfill until after verifying the duct and
152 conduit installations by HECO through the Engineer.

153
154 Trench backfill material placed below a horizontal plane 12
155 inches above the top of the duct bank shall conform to Subsection
156 703.21 (A) - Trench Backfill Material A.

157
158 Backfill the remainder of the trench with structure backfill
159 material according to Section 703.20 - Structure Backfill Material with
160 structure backfill material B or with trench backfill material according
161 to Subsection 703.21(B) - Trench Backfill Material B.

162
163 **(E) Construction of Handholes.** HECO inspectors will verify and
164 approve the locations and depths of handholes before construction or
165 installation. Do not place concrete for handholes until after the HECO
166 inspector inspects the work and the concrete specifications have been
167 approved by the Engineer. Clean and keep all completed facilities free of
168 loose concrete, lumber, debris and other extraneous matter.

169
170 **(F) Installation of Ducts Encased in Concrete Jacket.** Install all
171 plastic ducts installed in trench for HECO with concrete jacket or cover
172 unless otherwise indicated. All joints shall be watertight.

173
174 **(1) Plastic Conduit (PVC).**

175
176 **(a)** Refer to HECO Drawing No. 30-1035 for installation
177 details and for dimensions of plastic conduit accessories
178 installed in trench.

179
180 **(b)** The accessories shall be of the same type material as
181 the conduit selected.

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(2) Plastic Conduit Storage and Transportation.

(a) Conduits that are to be stored for more than 2 weeks shall be covered.

(b) Provide support for the full length of the conduit when transporting or storing long lengths. The Engineer will not permit unsupported overhang.

(c) Plastic Conduit Installation.

(i) Conduit shall be square cut with a fine-tooth wood saw. Remove all burrs.

(ii) Wipe all foreign matter off the sockets of the fittings and the edges of the conduit with a clean cloth.

(3) Plastic Conduit Solvent-Cemented Joints.

(a) The cement for PVC conduits should be obtained from the conduit manufacturer. Use a clean paper paint pot for containing the cement during use. The Engineer will not permit adding of thinners to the cement.

(b) Apply a liberal and uniform coat of cement to the conduit for a length equal to the depth of the socket. Also apply sufficient cement to set the socket of the fitting. Avoid excess cement on the fitting as it is wiped into the joint and tends to weaken the pipe. Do not use plastic bristle brushes. The brush size shall be approximately equal to joint depth, for example, a two- inch brush for a four- inch conduit.

(c) Slip the conduit into the socket of the fitting with a slight twist until the conduit bottoms.

Hold the joint for 15 seconds so the conduit does not push out of the fitting. Do not twist or drive the pipe after the insertion is complete.

(d) Cure the joined members for at least five minutes before disturbing or applying stress to the joint. After this initial cure, do not twist or pull the joint. In damp weather, increase this interval to allow for slower evaporation of the solvent. Assemble all conduits above ground and allow the conduit to lie undisturbed while curing before lowering it into the trench or installing on bridges.

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(e) Wipe off excess cement left on the outer shoulder of the fitting.

(f) Another fitting or section of conduit may be added to the opposite end within two or three minutes if care is exercised in handling so that strain is not placed on the previous assembly.

(g) Return the brush to the cement pot after covering the joint surfaces. When stopping work, place the brush in a solvent; pour unused cement back in the can and cover tightly. When re-using the brush, shake out the excess solvent before dipping it into the cement.

(h) Assemble any joint, included in a section of conduit to be bent, above ground and allow to lie undisturbed for at least two hours before installation in a trench. In cases where a plastic connection is made with the union under stress due to misalignment or other factors, stake out the union to relieve stress on the joint until after backfilling or encasing the conduit.

(i) Cover all open trenches at the end of each work day to minimize accidental mechanical damage to conduits.

(4) Plastic Conduit Temperature.

(a) All conduits shall be cool prior to placing in trenches and when the concrete jacket is being poured.

(b) Due to expansion and contraction of the plastic conduit of 1-1/2 inches per 100 feet for every 20 degrees F change in the temperature, allow extra conduit footage at each tie-in for contraction when the conduit temperature is higher than that of the earth; or extra room for expansion if the converse condition exists.

(5) Plastic Conduit Spacers. Refer to HECO Drawing No. 30-1035.

(a) Place spacers for plastic conduit along the length of the conduit at a maximum spacing of six feet on center.

(b) The terminated ends of the conduit in an underground structure shall be free of support for a distance of at least 10 feet from the structure. Align and support the conduit inside

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the structure with proper spacing and cut to length after the concrete envelope has cured.

(c) Seal the ends of the conduit with a plastic cap or plug at the end of each day's work, when work on duct installation has to be interrupted, where ducts may be submerged in water, or in stub-outs.

(d) Test, in the presence of HECO inspectors, the completed ducts provided for HECO's use by passing a bullet shaped test mandrel about 12 inches long with a diameter 1/2 inch less than the inside diameter of the ducts through the length of each duct run. Scars in the mandrel deeper than 1/32 inch, other than that caused by normal abrasion between the duct line and bottom of mandrel are an indication of the presence of burrs and/or obstructions in the duct run. Remove such burrs and/or obstructions, after which the test mandrel will be passed through again. Repeat the process until approved by the HECO inspector.

(e) After testing, furnish and install a 1800# tensile strength muletape pull line in all ducts and plug both ends of each duct with plastic plugs.

(f) Restoration of Existing Streets and Other Improvements. Restore streets, sidewalks, driveways, walkways, curbs, gutters, walls, fences, buildings and all other improvements inside and outside of the right-of-way, publicly or privately owned, which are damaged by the Contractor's operations to their original condition, or better, at no cost to the State or HECO. Materials and workmanship shall conform to the applicable sections in these specifications.

651.04 Measurement. The Engineer will measure the HECO handhole, HECO pole riser and removal of HECO pole riser per each.

The Engineer will not measure the HECO ductline for payment. Measurement for payment will not apply

651.05 Payment. The Engineer will pay for the accepted HECO ductline on a contract lump sum basis. The price includes full compensation for furnishing and installing the ductline, excavating, pouring concrete, backfilling, furnishing and installing conduit, making required handhole penetrations, placing aggregate subbase, asphalt concrete base, paving asphalt concrete pavement, restoring sidewalks, salvaging existing materials, making required tests and furnishing labor, materials, equipment, tools, and incidentals necessary to complete the work.

320 The Engineer will pay for the accepted handhole on a contract unit price per
321 each. The price includes full compensation for furnishing and installing the
322 handhole frame and cover, intercepting existing ductlines, restoring
323 appurtenances damaged or destroyed during construction, salvaging existing
324 materials, furnishing labor, materials, equipment, tools, and incidentals necessary
325 to complete the work.

326

327 The Engineer will pay for the accepted pole riser on a contract unit price per
328 each. The price includes full compensation for furnishing and installing the conduit,
329 restoring appurtenances damaged or destroyed during construction, salvaging
330 existing materials, furnishing labor, materials, equipment, tools, and incidentals
331 necessary to complete the work.

332

333 The Engineer will pay for the accepted removal of pole riser on a contract
334 unit price per each. The price includes full compensation for removal of the conduit
335 as required, restoring appurtenances damaged or destroyed during construction,
336 salvaging existing materials, furnishing labor, materials, equipment, tools, and
337 incidentals necessary to complete the work.

338

339 The Engineer will consider additional materials and labor, needed to
340 complete the installation of the system and not shown in the contract as included
341 in the bid price of the various contract items.

342

343 The Engineer will pay for each of the pay items when included in the
344 proposal schedule:

345

Pay Item	Pay Unit
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346

HECO Ductline _____	Lump Sum
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347

HECO Handhole _____	Each
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348

HECO Pole Riser _____	Each
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349

Remove HECO Pole Riser	Each"
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END OF SECTION 651

1 Make the following Section a part of the Standard Specifications:
2

3 **“SECTION 652 – TELECOMMUNICATIONS SYSTEM**
4

5 **652.01 Description.** This work includes constructing telephone and cable
6 television underground structures, facilities and ductline work required for the
7 installation and relocation of the Hawaiian Telcom (HT), Spectrum, and U. S. Army
8 Signal Corps Joint Trunking System (JTS) facilities according to the contract or as
9 specified by the Engineer.

10
11 HT and/or Spectrum will furnish, install, connect, and test all proposed
12 overhead and underground wires and cables as may be required.
13

14 **652.02 Materials.** Furnish materials unless otherwise indicated. Materials
15 shall conform to the following requirements:
16

17 Structure Backfill Material 703.20
18

19 Trench Backfill Material 703.21
20

21 Concrete shall conform Section 601 - Structural Concrete, except use
22 coarse aggregate No. 67, 3/4-inch to No. 4 for concrete duct banks. Plain concrete
23 duct banks shall be Class A concrete.
24

25 Underground ducts and conduits shall be of rigid polyvinylchloride (PVC),
26 Type GT-42 or Schedule 40. Rigid PVC ducts and conduits shall be extruded
27 standard wall, according to NEMA standard TC-6 and HT GT80 specifications.
28 Conduits exposed to the sunlight shall be PVC-Type D meeting specifications GTS
29 8343.
30

31 Pulling irons, fittings, ground rods, and miscellaneous hardware shall be
32 according to HT standard details.
33

34 **652.03 Construction Requirements.**
35

36 **(A) General.** Avoid disturbing existing facilities. Remove and dispose
37 of all demolished or excess material from the job site.
38

39 Notify HT, Spectrum and U.S. Army at least 48 hours in advance of
40 intent to commence concreting operations for that utility's duct lines.
41

42 Construction of HT underground facilities shall be in accordance with
43 HT's "Standard Specifications for Placing Underground Systems," dated
44 January 2007, and all subsequent amendments and additions.

45 **(B) Existing Utilities.** Existing utilities and utility facilities to be
46 constructed are shown on the plans in approximate locations for the
47 convenience of the Contractor. Any utility not shown on the plans shall not
48 relieve the Contractor of his/her responsibility under this Section. Ascertain
49 the location of all existing utilities which may be subject to damage. The
50 Contractor shall be responsible for and shall pay all damages to existing
51 utilities of all types.

52
53 Expose and remove the concrete envelope from the existing
54 ductlines containing HT or Spectrum cables.

55
56 Provide HT and Spectrum with 24-hour access to all existing HT and
57 Spectrum facilities that are to remain or until they are removed and to all
58 new HT and Spectrum facilities after they are installed. The Contractor shall
59 be responsible for any delays in HT and Spectrum work due to his failure to
60 provide access to HT and Spectrum facilities. All existing HT and Spectrum
61 facilities shall remain in place until after the proposed permanent and/or
62 temporary facilities are completed and operational. Any cost of temporary
63 relocations arising during construction for the Contractor's benefit shall be
64 at no cost to the State.

65
66 **(C) Excavation and Backfill.** All excavation and backfill for telephone
67 and cablevision underground ductlines shall conform to Section 204 -
68 Excavation and Backfill for Miscellaneous Facilities, and modified as
69 follows:

70
71 **(1) Excavation.**

72
73 **(a)** The width of trenches for duct banks shall be not less
74 than the width of the duct bank nor more than that required to
75 properly and safely execute the work.

76
77 **(b)** Excavate the trenches at least 30 feet ahead of duct
78 placement so that any obstruction to the ductline can be
79 avoided through gradual alignment. The Engineer may adjust
80 the profile grade to increase or decrease the excavation depth
81 (up to 3 feet) as a result of unforeseen obstruction at no
82 additional cost.

83
84 **(c)** Excavation for each handhole plus 50 feet of trenching
85 for all ducts connected to these structures shall be complete
86 before starting construction on these structures. Backfill all
87 cuts in excess of depths required with compacted bed course
88 material at no cost to the State.

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(d) All excavation shall be inspected by the Engineer before any ducts are placed or any structures are constructed.

(e) Do not excavate for handholes and ductlines until HT and Spectrum stake out and verify the locations for these structures through the Engineer.

(2) **Backfill.** Do not backfill until after the utility company inspects the duct installations through the Engineer.

Trench backfill material placed below a horizontal plane 12 inches above the top of the duct bank shall conform to the requirements of Subsection 703.21 (A) - Trench Backfill Material A.

Backfill the remainder of the trench with structure backfill material according to Subsection 703.20 - Structure Backfill Material with structure backfill material B or with trench backfill material according to Subsection 703.21(B) - Trench Backfill Material B.

(D) Construction of Handholes. HT and Spectrum inspectors will verify and approve the locations and depths of handholes before construction or installation. Do not place concrete for handholes until the utility company inspects the work and the concrete specifications are accepted by the Engineer. Ensure that all completed facilities are clean and kept free of loose concrete, lumber, debris and other extraneous matter.

(E) Installation of Underground Ducts Encased in Concrete Jackets. All joints shall be water tight.

(1) **Plastic Duct Joints.** Perform field cutting of plastic ducts only with the use of a miter box.

Remove burrs by filing before the joint is made. All connections shall be of the solvent weld type.

Make solvent weld joints according to the conduit manufacturer's recommendations and as approved. The Engineer will not permit thinning of the cement. Apply the cement with a natural bristle brush to the inside of the coupling and to the outside of the duct end. Immediately thereafter, place the coupling over the duct and half-twist the coupling to ensure a good bond. Wipe off the excess cement.

All ducts shall be cool prior to placing in trenches and when the concrete jacket is being poured.

134 Due to expansion and contraction of the plastic conduit of 1-1/2
135 inches per 100 feet for every 20 degrees F change in the temperature,
136 allow extra conduit footage at each tie-in for contraction when the
137 conduit temperature is higher than that of the earth; or extra room for
138 expansion if the converse condition exists.

139
140 **(2) Plastic Duct Installation.** Construct duct banks as follows:

141
142 **(a)** Duct alignment shall be as straight as feasible. Make
143 directional changes, as necessary to clear obstructions, with
144 curved segments using plastic duct couplings or deflection
145 couplings, except where otherwise indicated. The deflection
146 angle between 2 adjacent lengths of duct shall not exceed 4
147 degrees, unless otherwise indicated.

148
149 **(b)** Provide at least one set of duct spacers for each length
150 of duct run with a maximum spacing between spacers of 6 feet
151 for a straight run. Tie the ducts securely at each set of duct
152 spacers.

153
154 **(c)** Do not place concrete for duct encasement until after
155 the utility company inspects the work through the Engineer.
156 Use only hand spades in compacting the concrete. Cure the
157 concrete for at least 72 hours before permitting vehicular
158 traffic to run over it.

159
160 **(d)** Seal the end of ducts plastic plugs at the end of each
161 day of work, whenever the work of duct installation must be
162 interrupted, or whenever ducts may be subjected to
163 submergence in water.

164
165 **(e)** After completing ductline, pull a wooden mandrel not
166 less than 12 inches long and having a diameter 1/4-inch less
167 than inside diameter of duct, through each duct after which
168 pull a brush with stiff bristles through to make certain that no
169 particles of earth, sand, or gravel have been left in the duct.

170
171 **(f)** Furnish and install muletape, in each new duct, in
172 accordance with HT and Spectrum standards.

173
174 **(F) Restoration of Existing Streets and Other Improvements.**
175 Restore streets, sidewalks, driveways, walkways, curbs, gutters, traffic
176 detection loops, walls, fences, buildings and all other improvements inside
177 and outside of the right-of-way, publicly or privately owned, which are
178 damaged by the Contractor's operations to their original condition, or better,

179 at not cost to the State. Materials and workmanship shall conform to the
180 applicable sections in these specifications.

181

182 **(G)** Place a 4-inch wide warning tape, orange in color with a black
183 imprinted message "WARNING STOP DIGGING CALL HAWAIIAN
184 TELCOM, COMMUNICATIONS CABLE BURIED BELOW, FAILURE TO
185 COMPLY COULD RESULT IN LEGAL ACTION", 12-inch below finish grade
186 over telephone ducts or the concrete jacket for telephone ducts for the entire
187 length of ductline installation. See HT Standard Drawing 34028.

188

189 **652.04 Measurement.** The Engineer will measure the HT handholes, JTS
190 manholes, pole riser, and removal of pole riser per each.

191

192 The Engineer will not measure conduit and ductline for payment.

193

194 **652.05 Payment.** The Engineer will pay for the accepted ductline on a contract
195 lump sum basis. The price includes full compensation for furnishing and installing
196 the ductline, removal of existing ductline, excavating, warning tape, muletape,
197 pouring concrete, backfilling, furnishing and installing conduit, making required
198 handhole penetrations, placing aggregate subbase, asphalt concrete base,
199 asphalt concrete pavement, restoring sidewalks, salvaging existing materials,
200 making required tests and furnishing labor, materials, equipment, tools, and
201 incidentals necessary to complete the work.

202

203 The Engineer will pay for the accepted conduit on a contract lump sum
204 basis. The price includes full compensation for furnishing and installing the conduit
205 and associated conduit supports, removal of existing conduit, salvaging existing
206 materials, making required tests and furnishing labor, materials, equipment, tools,
207 and incidentals necessary to complete the work.

208

209 The Engineer will pay for the accepted pole riser on a contract unit price per
210 each. The price includes full compensation for furnishing and installing the conduit,
211 restoring appurtenances damaged or destroyed during construction, salvaging
212 existing materials, furnishing labor, materials, equipment, tools, and incidentals
213 necessary to complete the work.

214

215 The Engineer will pay for the accepted handhole on a contract unit price per
216 each. The price includes full compensation for submitting the equipment list and
217 drawing, furnishing and installing the handhole, excavating and backfilling,
218 restoring appurtenances damaged or destroyed during construction and furnishing
219 labor, materials, equipment, tools and incidentals necessary to complete the work.

220

221 The Engineer will pay for the accepted manhole on a contract unit price per
222 each. The price includes full compensation for submitting the equipment list and
223 drawing, furnishing and installing the handhole, excavating and backfilling,

224 restoring appurtenances damaged or destroyed during construction and furnishing
225 labor, materials, equipment, tools and incidentals necessary to complete the work.

226
227 The Engineer will pay for the accepted removal of pole riser on a contract
228 unit price per each. The price includes full compensation for removal of the conduit
229 as required, removal of associated wiring, demolition of associated pullboxes,
230 restoring appurtenances damaged or destroyed during construction, salvaging
231 existing materials, furnishing labor, materials, equipment, tools, and incidentals
232 necessary to complete the work.

233
234 The Engineer will consider additional materials and labor, needed to
235 complete the installation of the system and not shown in the contract as included
236 in the bid price of the various contract items.

237
238 The Engineer will pay for each of the pay times when included in the
239 proposal schedule:

240	Pay Item	Pay Unit
241		
242		
243	HT Ductline _____	Lump Sum
244		
245	JTS Ductline _____	Lump Sum
246		
247	JTS Conduit _____	Lump Sum
248		
249	HT Handhole _____	Each
250		
251	JTS Manhole _____	Each
252		
253	HT Pole Riser _____	Each
254		
255	Remove HT Pole Riser	Each”
256		

257
258

END OF SECTION 652

1 Make the following section a part of the Standard Specifications:

2
3 **“SECTION 657 – HANDLING AND DISPOSAL OF HAZARDOUS ITEMS**
4 **AND MATERIAL**

5
6 **657.01 Description.** This section is for the handling and disposal of hazardous
7 items and material in accordance with the contract documents as specified in **107.16**
8 **– Contaminated or Hazardous Items and Material; Regulated Items and**
9 **Material; Waste** as determined by the Engineer.

10
11 **657.02 Materials.** Not applicable.

12
13 **657.03 Construction.** Not applicable.

14
15 **657.04 Measurement.** The Engineer will only measure Disposal of
16 Contaminated or Hazardous Items and Material required and requested by the
17 Engineer on a force account basis in accordance with Subsection 109.06 – Force
18 Account Provisions and Compensation.

19
20 **657.05 Payment.** The Engineer will pay for accepted pay items listed below at
21 contract price per pay unit, as shown in the proposal schedule. Payment will be full
22 compensation for work prescribed in this section and contract documents.

23
24 The Engineer will pay for each of the following pay items when included in
25 proposal schedule:

26 Pay Item	27 Pay Unit
28 29 Handling and Disposal of Hazardous Items and Material 30 from Existing Bridge and Pedestrian Walkway	Force Account
31 32 Handling and Disposal of Hazardous Excavated Items 33 and Material	Force Account

34
35 An estimated amount for force account is allocated in proposal schedule
36 under ‘Handling and Disposal of Contaminated or Hazardous Items and Material’,
37 but actual amount to be paid will be the sum shown on accepted force account
38 records, whether this sum be more or less than estimated amount allocated in
39 proposal schedule. The Engineer will pay for measures requested by the Engineer
40 that are beyond scope of work described in Section 107.16 on a force account
41 basis.

42
43 For all citations or fines received by the Department for non-compliance,
44 including compliance with State or Federal regulations and permits, the Contractor
45 shall reimburse State within 30 calendar days for full amount of outstanding cost
46 State has incurred, or the Engineer will deduct cost from progress payment.”

47
48
49

END OF SECTION 657

1 Make the following Section a part of the Standard Specification:
2

3 **“SECTION 665 – PEST CONTROL**
4

5 **665.01 Description.** This section describes the pest control services to
6 be performed for the properties designated as TMK (1) 5-4-18:03, TMK (1) 5-4-
7 11:20. The work includes Pest Control Services, Carcass Disposal measures
8 and Environmental Protection in accordance with these specifications, plans,
9 and/or as specified by the Engineer during the life of the project.
10

11 **665.02 Materials.** None Specified.
12

13
14 **665.03 Construction Requirements.** Perform pest control services a
15 minimum of two weeks prior to demolition of existing structures.
16

17 **(A) License and Certificate.** The Contractor shall be licensed by
18 the State of Hawaii to provide pest control services. Certified,
19 responsible individuals shall perform all work in accordance to federal,
20 state, and local laws and regulations.
21

22 **(B) Pest Control Services.** Control is defined as keeping areas free
23 of pest infestation until the demolition of existing structures. The
24 Contractor shall be responsible for disposing of all rodents and/or rats
25 currently located in the project area during pest control and ensuring that it
26 does not habitate in residential locations outside the project area.
27 Provide pest control services on a scheduled basis for the control of
28 specifically rats. Methods shall include trapping, pesticidal bait
29 application, or other minimal application of the least toxic formulations.
30 Place pesticides for rodents only in distinctly marked, spill proof, tamper-
31 proof bait stations, which are inaccessible to children and pets. Do not
32 place bait stations in food service and/or food preparation areas.
33 Physical signs of rodent activity, such as active droppings, urine stains,
34 etc. shall be evidence of lack of control. Perform follow-up inspection
35 and, if necessary repeat procedure at no cost to the State until the
36 acceptable level of control is achieved.
37

38 **(C) Carcass Disposal.** Noxious odors indicate the presence of
39 dead rodents resulting from Contractor operations. When this occurs,
40 locate, remove and dispose all dead or dying rodents or other animals in
41 accordance with federal, state, and local laws and regulations. Place all
42 carcasses and transport in securely tied, heavy-duty bags.
43

44 **(D) Environmental Protection.** Comply with applicable federal,
45 state, and local laws and regulations. In the event a regulatory agency
46 assesses a monetary fine against the State for violations caused by

47 Contractor negligence, reimburse the State for the amount of the fine and
48 other costs.

49
50 **(E) Disposal.** Dispose of debris, rubbish, and hazardous waste
51 resulting from the work under this section at his/her expense off State
52 property. All hazardous wastes must be disposed of in accordance with
53 federal, state and local laws and regulations.

54
55 **(F) Accessibility to Structure.** Contractor shall be responsible
56 for the accessibility and security of all treated structures. Contractor
57 shall be responsible for arranging adequate security of the structures at
58 the end of each work day. Warning, construction, danger signs and
59 other applicable signs shall be visibly installed.

60
61 **(G) Permits.** Obtain all licenses and permits required for the
62 prosecution of work at no cost to the State. Comply with all applicable
63 federal, state, and local laws. Submit approved permits and licenses to
64 the Engineer prior to commencing work.

65
66 **665.04 Method of Measurement.** The Engineer will measure pest control
67 on a lump sum basis.

68
69 **665.05 Basis of Payment.** The Engineer will pay for the accepted pest
70 control measures on a lump sum basis according to Subsection 109.04 – Full
71 Compensation; Changes. The work includes full compensation for installing and
72 furnishing equipment, tools labor, materials, and incidentals necessary to
73 complete the work prescribed in this section and the contract documents.

74
75 The Engineer will pay for the following pay item when included in the proposal
76 schedule:

77

Pay Item	Pay Unit
Pest Control	Lump Sum”

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END OF SECTION 665

1 Make the following Section a part of the Standard Specifications:

2
3 **“SECTION 670 - GLASS FIBER REINFORCED POLYMER REBAR**

4
5 **670.01 Description.** This work includes the furnishing and placing of Glass
6 Fiber Reinforced Polymer (GFRP) Rebar according to the contract.

7
8 **670.02 Materials.** Materials and construction for the GFRP rebars shall
9 conform to ACI 440.1 R-01 “Guide for the Design and Construction of Concrete
10 Reinforced with FRP Bars” and AASHTO “LRFD Bridge Design Guide
11 Specifications for GFRP – Reinforced Bridge Deck and Traffic Railings.” GFRP
12 rebars shall also meet the following conditions and properties:

13
14 Tensile Strength: 21.6 kips, min. for #4 bar; 29.1 kips, min. for #5
15 bar.

16
17 Modulus of Elasticity: 6,500,000 psi, min.

18
19 Barcol Hardness: 60 min.

20
21 Bond stress between the rebar and concrete shall exceed 1100 psi.

22
23 Glass content by weight: 70% min. Per ASTM D2584.

24
25 Allowable tensile stress: 25% of minimum ultimate tensile strength.

26
27 The product shall be non-magnetic, non-conducting and corrosion
28 resistant. The use of ferrous materials is prohibited. The product shall exhibit
29 chemical resistance to salts, acids and concrete chemistries.

30
31 **(A)** Materials shall be obtained from a manufacturer regularly engaged
32 in the production of GFRP rebars. Six copies of the manufacturer's
33 brochures shall be submitted.

34
35 **(B)** A copy of the manufacturer's Quality Assurance Manual shall be
36 provided prior to delivery of any product to the site.

37
38 **(C)** Tensile test reports from the manufacturer shall be provided for
39 every 3,000 feet of product supplied in accordance with ASTM D-3916-84.

40
41 **(D)** Assigned Lot traceability numbers from the manufacturer with each
42 shipment shall be provided. These numbers shall change with each
43 production shift.

44
45 **(E)** Daily resin impregnation test results shall be provided at the
46 request of the Engineer.

47
48 **(F)** Certified test results of material properties shall be provided.

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670.03 Construction Requirements.

(A) General.

(1) Straight Bars. All GFRP reinforcing bars shall consist of uniformly pretensioned continuous longitudinal fibers encapsulated in the matrix material. The outer surface shall be deformed by a helical wrap of glass and sand coating providing a mechanical bond between the bar and concrete. The GFRP reinforcing bars shall not be cut or taken from the production line until an initial curing state has been reached and the bars exhibit dimensional stability.

(2) Fabricated Bends. All bends shall be fabricated in the factory and straight thermal curing shall not take place until all fabrication has been completed. Such fabrication shall always be executed with the use of molds. Each radius shall transfer no less than 40% of ultimate tensile strength. ACI 318 minimum radius shall be adhered to unless otherwise permitted by the Engineer. Field bends shall not be permitted.

(B) Installation. The product shall be field cut with masonry blades. A dust mask or other suitable protection shall be used during the cutting process. Due to the rebar's very low specific gravity, it may tend to float in concrete during vibration; therefore, care should be exercised to adequately secure GFRP in formwork using chairs, plastic coated wire ties or nylon zip ties.

(C) Order Lists and Bending Diagrams. The Contractor shall submit six (6) copies of the GFRP rebars order lists and bending diagrams to the Engineer. The Contractor shall be wholly and completely responsible for the accuracy of the lists and diagrams.

(D) Storage, Surface Condition and Protection of Reinforcement. The Contractor shall store the GFRP rebars above the surface of the ground upon platforms, skids, or other supports. GFRP rebars shall be covered to protect them from ultraviolet exposure, high temperatures, and chemical substances. The Contractor shall protect the GFRP rebars from other surface damage. The GFRP rebars shall be free of mortar, oil, dirt, and other coatings that would destroy or reduce the bond. GFRP rebar shall not be dropped on the ground by workers at any time. The GFRP rebars shall also be free from injurious defects including cracks and laminations.

670.04 Measurement. The Engineer will not measure GFRP bars for payment.

96 **670.05 Payment.** The Engineer will not pay for the accepted GFRP bars
97 separately. The Engineer shall consider the cost for the accepted GFRP bars as
98 included in the contract price of the various contract items covered in Section 503
99 Concrete Structures. The cost is for the work prescribed in this section and the
100 contract documents.”

101

102

103

END OF SECTION 670

1 Make the following Section a part of the Standard Specification:
2

3 **SECTION 688 - REMOVAL AND DISPOSAL OF ASBESTOS CONTAINING**
4 **MATERIALS (ACM)**
5

6 **688.01 Description.**
7

8 **(A)** This Section specifies the requirements for protection of
9 workers, prevention of contamination of adjacent areas, performing
10 asbestos abatement, post-abatement cleaning, and appropriate
11 disposal of removed materials.
12

13 **(B)** In performing this project, all possible safeguards,
14 precautions and protective measures shall be utilized to
15 prevent exposure of any individual to asbestos particulates.
16

17 **(C)** Furnish all labor, materials, and equipment necessary to
18 carry out the safe removal, abatement and disposal of ACM in
19 compliance with all applicable Federal, State and Local laws and
20 regulations from the areas affected by the Demolition Project for the
21 single-story structures adjacent to the Kaipapau Stream Bridge in
22 Hauula, Oahu, Hawaii, TMK: 5-4-11:020 and TMK: 5-4-18:003.
23

24 **(D)** ACM is identified in the April 26, 2019 *Hazardous*
25 *Materials Survey Report, Kaipapau Stream Bridge Replacement,*
26 *Hauula, Oahu, Hawaii, TMK: 5-4-18:003, 43 pages, and in the May*
27 *28, 2019 Limited Hazardous Materials Survey Report, Kaipapau*
28 *Stream Bridge Replacement, TMK: 5-4-11: Parcel 020, 21 pages,*
29 both reports prepared by EnviroServices & Training Center, LLC.
30 The asbestos abatement work shall include, but may not be
31 limited to:
32

33 **(1)** Removal and disposal of asbestos containing
34 black mastic on pipe penetrations on the roof of Building B,
35 studio.
36

37 **(2)** Removal and disposal of asbestos containing black
38 mastic under the white caulking on pipe penetrations on the
39 roof of Building B, studio.
40

41 **(3)** Removal and disposal of asbestos containing black
42 mastic under the white caulking on pipe penetrations on the
43 roof of Building B, studio.
44

45 **(4)** The Contractor is responsible for conducting his own
46 site visit to verify all quantities and material locations. There
47 will be no change orders issued for the abatement of

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additional ACM discovered in the course of the abatement activities.

(5) The Contractor is responsible for conducting all work without disturbing ACM to remain in place.

(E) Cleaning shall include the pre-cleaning, wet wiping and HEPA vacuuming of surfaces where abatement will take place.

(F) Contractor shall notify his employees, subcontractors and all other persons engaged in the demolition work of the presence of asbestos in accordance with the requirements of Chapter 110, Article 12-110-2 (f) (1) (B) of the Occupational Safety and Health Standards, State of Hawaii.

(G) In the event that work is required in any area on the site other than those designated in the project scope, the Contractor shall request copies of the asbestos survey results for each such area from the authorized representative of the Engineer. Based on the information contained in the additional survey(s), notify all persons on the project as indicated in paragraph 688.01 (F).

(H) Contractor shall comply with all Federal, State and local regulations pertaining to asbestos removal. If there is a conflict with the Specifications, the more stringent requirement shall apply.

(I) In general, the principal items of the asbestos removal work shall be as follows:

- (1)** Worker protection
- (2)** Decontamination system
- (3)** Preparation of work area
- (4)** Removal and disposal of ACM
- (5)** Encapsulation and enclosure of ACM
- (6)** Removal of protective sheeting

688.02 Applicable Regulations and Industry Standards.

(A) The publications listed below form a part of this Specification to the extent referenced. The publications are referred to in the text by the basic designation only, and include but are not limited to, the following:

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(B) CODE OF FEDERAL REGULATIONS (CFR)

- 29 CFR 1926.103 Respiratory Protection
- 29 CFR 1926.59 Hazard Communication
- 29 CFR 1926.1101 Asbestos, Tremolite,
Anthophyllite, Actinolite
- 29 CFR 1910. 134 Respiratory Protection
- 40 CFR 61-SUBPART A General Provisions
- 40 CFR 61-SUBPART M National Emission
Standard for Asbestos
- 40 CFR 763 Asbestos Containing Material in
Schools

(C) HAWAII DEPARTMENT OF HEALTH (HIDOH)

- 11-501 to 504 Asbestos

(D) HAWAII OCCUPATIONAL SAFETY AND HEALTH (HIOSH)

- 12-145.1 Asbestos

(E) AMERICAN NATIONAL STANDARDS INSTITUTE (ANSI)

- ANSI Z9.2 (1979; R 1991) Fundamentals Governing the
Design and Operation of Local
Exhaust Systems
- ANSI Z88.2 (1992) Respiratory Protection

**(F) AMERICAN SOCIETY FOR TESTING AND MATERIALS
(ASTM)**

- ASTM D 1331 (1989; R 1995) Surface and Interfacial
Tension of Solutions of
Surface-Active Agents

(G) UNDERWRITERS LABORATORIES INC. (UL)

- UL 586 (1990) High-Efficiency, Particulate, Air
Filter Units

688.03 Construction Requirements.

(A) Definitions

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(1) Abatement: Procedure to control fiber release from asbestos containing material, including removal, encapsulation, enclosure, repair, and operations & maintenance programs.

(a) Removal: Shall adhere to all specified procedures herein and shall include the proper removal and disposal of asbestos containing material as per all applicable Federal, State and local rules, regulations, and industry standards.

(b) Encapsulation: Treating asbestos containing material with an encapsulant; a material that surrounds or embeds asbestos fibers in an adhesive matrix and prevents the release of fibers.

(c) Enclosure: The construction of an air tight, impermeable, permanent barrier around ACM to control the release of asbestos fibers from the material and also eliminate access to the material.

(2) Amended Water: Water containing a wetting agent or surfactant with a maximum surface tension of 2.9 Pa (29 dynes per square centimeter) when tested in accordance with ASTM D 1331.

(3) Area Sampling: Sampling of asbestos fiber concentrations which approximates the concentrations of asbestos in the theoretical breathing zone but is not actually collected in the breathing zone of an employee.

(4) Asbestos: The term asbestos includes chrysotile, amosite, crocidolite, tremolite asbestos, anthophyllite asbestos, and actinolite asbestos and any of these minerals that has been chemically treated or altered.

(5) Asbestos Containing Material (ACM): Materials that contain more than one percent asbestos as determined by Polarized Light Microscopy or Transmission Electron Microscopy.

(6) Asbestos Containing Building Material (ACBM): ACM located on the interior structural members or other parts of a school building.

(7) Asbestos Control Area: That area where asbestos removal operations are performed which is isolated by

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physical boundaries which assist in the prevention of the uncontrolled release of asbestos dust, fibers, or debris.

(8) Asbestos Fibers: Those fibers having an aspect ratio of at least 3:1 and longer than 5 micrometers as determined by NIOSH Method 7400.

(9) Asbestos Permissible Exposure Limit (PEL): 0.1 fibers per cubic centimeter of air as an 8-hour time weighted average measured in the breathing zone as defined by 29 CFR 1926.1101 or other Federal legislation having legal jurisdiction for the protection of workers health.

(10) Authorized representative of the Engineer: the person or persons designated by the Engineer to act on its behalf.

(11) Background: The ambient airborne asbestos concentration in an uncontaminated area as measured prior to any asbestos hazard abatement efforts. Background concentrations for other (contaminated) areas are measured in similar but asbestos free locations.

(12) Certified Clean: Certification that a work area has no visible signs of fibrous materials or other contamination, and does not have levels of airborne fibers above the defined air clearance criteria.

(13) Competent Person: As used in this section, refers to a person employed by the Contractor who is trained in the recognition and control of asbestos hazards in accordance with current federal, State, and local regulations and has the authority to take prompt corrective actions to control the asbestos hazards.

(14) Contractor: The Contractor is that individual, or entity engaged under contract to the Engineer or General Contractor to remove, encapsulate and/or dispose of ACM.

(15) Decontamination Facility (DF) or Area: A series of connected rooms or spaces including Clean, Shower, and Contaminated Equipment Areas, used for both the decontamination of all workers, equipment and their personal protective equipment upon departing an asbestos removal work area, and for access to such work areas.

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(16) Fixed Object: A unit of equipment or furniture in the work area which cannot be removed from the work area without dismantling.

(17) Friable Asbestos Material: ACM that can be crumbled, pulverized, or reduced to powder by hand pressure when dry.

(18) High Efficiency Particulate Air (HEPA) Filter Equipment: HEPA filtered vacuum and/or exhaust ventilation equipment with a filter system capable of collecting and retaining asbestos fibers. Filters shall retain 99.97 percent of particles 0.3 microns or larger as indicated in UL 586.

(19) Monitoring Specialist: The monitoring specialist enters the work area to set up air monitoring devices and then collects the various air samples to be sent to the laboratory for analysis. The monitoring specialist has working experience in the asbestos abatement industry and a working knowledge of all applicable State and Federal occupational safety and health regulations and formal training in occupational safety and health. The Monitoring Specialist shall have currently attended and passed the Hawaii Department of Health Project Monitor course as specified in Hawaii Administrative Rules, Title 11, 504 and be currently certified by the State of Hawaii as an asbestos Project Monitor. This course shall be approved by a State of Hawaii Accreditation Program. The Monitoring Specialist shall also have demonstrable experience in asbestos air monitoring techniques and respiratory protection.

(20) Non-Friable ACM: ACM in which the asbestos fibers have been immobilized by a bonding agent, coating, binder, or other material so that the asbestos is well bound and will not normally release asbestos fibers during any appropriate use, handling, storage or transportation. **It is understood that Non-Friable ACM may release asbestos fibers under other conditions such as demolition, removal, or mishap.**

(21) Personal Sampling: Air sampling which is performed to determine asbestos fiber concentrations within the breathing zone of a specific employee, as performed in accordance with 29 CFR 1926.1101.

(22) Post-Removal Encapsulant: A liquid material applied to surfaces from which ACM has been removed, to control

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the possible release of residual fibers, either by creating a membrane over the surface (bridging encapsulant) or by penetrating into the material and binding its components (penetrating encapsulant).

(23) Surfactant: A chemical wetting agent added to water to improve penetration, thus reducing the quantity of water required for a given operation or area.

(24) Wetting Agent: A chemical added to water to reduce the water's surface tension thereby increasing the water's ability to soak into the material to which it is applied.

(B) Authority to Stop Work

(1) The authorized representative of the Engineer has the authority to stop the abatement work at any time they determine that conditions are not within the drawing/ specification requirements and applicable regulations. The work stoppage shall continue until corrective steps have been taken and specified conditions restored to the satisfaction of the authorized representative of the Engineer. Standby time required to resolve violations shall be at the Contractor's expense. Stop Work Orders may be issued for, but shall not be limited to the following:

(a) Excessive airborne fibers inside (>0.5 f/cc) and/or outside (>0.01 f/cc) the work area.

(b) Visible emissions of dust or debris going beyond the work area boundaries.

(C) Submittals:

(1) Detailed Schedule: Submit the actual start date and completion dates for each phase of the asbestos removal.

(2) Notices: As regulated by each agency and before commencement of any on-site project activity sends written notice of the proposed asbestos abatement work as early as possible but at least 10 working days prior to commencement of work in accordance with Hawaii Administrative Rules, Title 11, 501. Send notice with copies to the authorized representative of the Engineer and to the following agencies:

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State of Hawaii, Department of Health, "Notification of Demolition and Renovation" form. Send to: Noise, Radiation and Indoor Air Quality Branch, Asbestos Abatement Office, State of Hawaii, 99-945 Halawa Valley Street, Aiea, Hawaii 96701.

Permits and Licenses: Submit copies of all permits, licenses and arrangement for removal, transportation and disposal of ACM no later than 20 consecutive working days from notice of award unless otherwise instructed in writing by the authorized representative of the Engineer.

(3) Landfill Approval: Submit written evidence that the landfill for disposal is approved for asbestos disposal by the EPA and Hawaii regulatory agency(s).

(4) Manufacturer's Data: Submit copies of manufacturer's specifications, installation instructions and field test materials for all equipment related to asbestos handling and abatement, including any other data that may be required to demonstrate compliance with these Specifications and proposed uses.

(5) Samples: Submit samples of the following items for approval prior to ordering materials:

(a) Asbestos encapsulant(s): Copies of manufacturer's literature including all laboratory data, MSDS, and application instructions.

(b) Plastic sheeting: Three 8-1/2 by 11-inch pieces of each thickness and type with labels indicating actual mil thickness.

(c) Surfactant: Copies of manufacturer's literature including all laboratory data, MSDS, and mixing and application instructions.

(d) Tapes and adhesives: Copies of manufacturer's literature including all laboratory data.

(e) Warning labels and signs.

(f) Protective clothing: Copies of manufacturer's literature on all protective clothing and one sample of each item. Samples submitted will be returned to the Contractor.

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(g) Respiratory equipment: Copies of manufacturer's literature on all respiratory equipment and one sample of each item along with a description of where and how each item will be used. Samples submitted will be returned to the Contractor.

(6) Shop Drawings: Submit no later than 10 consecutive working days from award notice, copies of shop drawings for the following items as a minimum:

(a) Description of any equipment to be employed not discussed in this Section.

(b) Security provisions, if any, in and around the project area.

(c) Outline of work procedures to be employed.

(d) Location and construction of all airtight barriers.

(e) Staging of the work.

(f) Entrances and exits to the work place.

(g) Location and construction of worker and equipment decontamination units.

(h) Type of respiratory protection to be used.

(i) Water filtration system for all contaminated water.

(j) Existence and location of negative air exhaust ports and containment.

(7) Asbestos Abatement Plan: Contractor shall develop, submit for approval to the authorized representative of the Engineer no later than 15 consecutive days from notice of award, and implement a work procedure for abatement work describing work practices and engineering controls to be used to prevent emissions of asbestos from the work site, ensure maximum site safety and safeguard the public, workers and the environment from asbestos exposure. The Asbestos Abatement Plan will be a detailed plan of the safety precautions such as lockout-tagout, fall protection,

421 and equipment, and work procedures to be used in the
422 abatement of ACM. The plan shall be prepared, signed, and
423 sealed by a State of Hawaii Certified Project Designer. Such
424 plan shall include but not be limited to the precise personal
425 protective equipment protection, the location of asbestos
426 control areas including clean and dirty areas, buffer zones,
427 showers, storage areas, change rooms, removal method,
428 interface of trades involved in the construction, sequencing
429 of asbestos related work, disposal plan, type of wetting
430 agent and asbestos sealer to be used, locations of local
431 exhaust equipment, and a detailed description of the method
432 to be employed in order to control environmental pollution.
433 This plan must be approved in writing prior to starting any
434 asbestos work. The Contractor and the authorized
435 representative of the Engineer shall meet prior to the start of
436 work to discuss in detail the standard operating procedures.
437 Once approved by the authorized representative of the
438 Engineer, the plan will be enforced as if an addition to the
439 Specification.

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441 **(8)** Documentation of Training: Submit no later than 10
442 consecutive working days from notice of award,
443 documentation that each and every individual, including
444 foreman, supervisors, other company personnel or agents,
445 and any other individual who may be exposed to airborne
446 asbestos fibers and who may be responsible for any aspects
447 of abatement activities which may occur, has currently
448 attended and passed the AHERA Abatement Worker and/or
449 AHERA Abatement Contractor/Supervisor course, whichever
450 is relevant to that workers responsibilities, as specified in
451 Hawaii Administrative Rules, Title 11, 504 and 40 CFR Part
452 763, "Asbestos Materials in Schools". These courses shall
453 be approved by the State of Hawaii Department of Health in
454 the most current listing of the Federal Register. Also submit
455 documentation that all individuals have current certification
456 for the appropriate course from the State of Hawaii. No
457 worker shall be allowed on site if they are found to have
458 either an expired certification or do not comply with the
459 requirements set forth in Hawaii Administrative Rules, Title
460 11, 501-504 and 40 CFR Part 763 on training. The
461 Contractor shall be responsible for keeping the
462 documentation up to date and submitting subsequent
463 documentation to the authorized representative of the
464 Engineer before any additional employee or individual, not
465 currently on the list, is allowed within the project site.

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(9) Documentation of Instructions: Submit no later than 10 consecutive working days from notice of award, documentation that all personnel or agents who may be exposed to airborne asbestos fibers and who may be responsible for any aspects of abatement activities which may occur have had instructions on the nature of the activities and operations which create a risk of asbestos exposure and the necessary protective steps, on use and fitting of respirators in accordance with qualitative procedures as detailed in HIOSH 12-145.1 Appendix C, Qualitative and Quantitative Fit Testing.

(10) Monitoring Specialist Qualifications: The Contractor shall submit no later than 10 consecutive working days from notice of award the Contractor's monitoring specialist's name, contact information, valid qualifications, and current certification as a Project Monitor as specified in Hawaii Administrative Rules, Title 11, 504 and 40 CFR Part 763.SUBPART E "Asbestos Model Accreditation Plan for States".

(11) Documentation From Physician: Submit no later than 10 consecutive working days from notice of award, documentation from a licensed medical doctor that all employees or agents who may be required to wear a respirator have been provided with an opportunity to be medically monitored to determine whether they are physically capable of working while wearing the required respirator without suffering adverse health effects. In addition, document that all individuals permitted within the project site have received medical monitoring or had such monitoring made available to them as required in HIOSH 12-145.1. The Contractor must be aware of and provide information to the examining physician about unusual conditions in the work place environment (e.g. high temperatures, humidity, chemical contaminants) that may impact the employee's ability to perform work activities. The Contractor shall keep and make available to all affected individuals a record and the results of such examinations.

(12) Medical Surveillance Program: Submit no later than 10 consecutive days from notice of award, all medical examinations for employees to be used on this project and a copy of the Contractor's medical surveillance program prepared in accordance with all applicable Federal, State and local laws.

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(13) Respiratory Protection Program: Submit no later than 10 consecutive working days from notice of award, a copy of the Contractor's Respiratory Protection Program prepared in accordance with all applicable laws. The Contractor shall also submit fit test records on all employees to be used on this project who may be required to wear a respirator.

(14) Hazard Communication Program: Submit no later than 10 consecutive working days from notice of award, a copy of the Contractor's Hazard Communication Program prepared in accordance with all applicable laws.

(15) Safety Program: Submit no later than 10 consecutive working days from notice of award, a copy of the Contractor's Health and Safety Plan prepared in accordance with all applicable laws. Include a detailed description of fall protection.

(16) HEPA Vacuums: Submit no later than 10 consecutive working days from notice of award, manufacturer's certification that vacuums conform to ANSI Z9.2-79, Fundamentals Governing the Design and Operation of Local Exhaust Systems as applicable to this project.

(17) Rental Equipment: When rental equipment is to be used in abatement areas or to transport asbestos contaminated waste, a written notification concerning intended use of the rental equipment must be provided to the rental agency with a copy submitted to the authorized representative of the Engineer.

(18) Testing Laboratory: Submit no later than 10 consecutive working days from notice of award name, address and telephone number of testing laboratory responsible for analysis and report of airborne fiber concentration for compliance with HIOSH 12-145.1, along with evidence that the air monitoring testing laboratory is accredited and a successful participant in the American Industrial Hygiene Association's (AIHA) Proficiency Analytical Testing (PAT) program for phase contrast microscopy (PCM).

(19) Emergency Planning and Procedures: The Contractor shall submit an emergency plan prior to abatement initiation for review and acceptance by the authorized representative of the Engineer.

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(a) Emergency procedures shall be in written form and prominently posted adjacent to the Health and Safety Plan. Prior to entering the work area, everyone must read and sign these procedures to acknowledge receipt of emergency exits and emergency procedures.

(b) Emergency planning shall include notification of police, fire, and emergency medical personnel of the work schedule of the planned abatement activities, and of the layout of the work area, particularly any barriers that may affect response capabilities.

(c) Emergency planning shall include considerations of fire, explosion, toxic atmosphere, electrical hazards, slips, trips and falls, confined spaces, and heat related injury. Written procedures shall be developed and employee training procedures shall be provided in the Contractor's plan.

(20) Visitor/Worker Entry Log: Maintain a log of all personnel including the Contractor's employees and agents who enter the work area while asbestos abatement operations are in progress, until final clearance is passed. The log shall contain the following information as a minimum and certified copies shall be submitted to the authorized representative of the Engineer weekly:

(a) Date of visit.

(b) Visitor's name, employer, business address, and telephone number.

(c) Time of entry and exit from work area.

(d) Purpose of visit.

(e) Type of protective clothing and respirator worn.

(f) Certificate of release signed and filed with the Contractor.

(21) Field Test Reports

(a) Employee Exposure Sampling Results: Submit test results to the authorized representative of the

608 Engineer and the affected Contractor's employees
609 within three (3) working days, signed by the testing
610 laboratory employee performing the analysis.

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612 **(b)** Asbestos Disposal Quantity Report.

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614 **(22)** Waste Disposal Manifest Forms: Submit copies of all
615 transport manifests, trip tickets and disposal receipts for all
616 asbestos containing waste materials no later than 10
617 consecutive working days from the date the waste is
618 removed from the work area during the abatement process.

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620 **(D)** Product Handling - Deliver materials to the site in original
621 packaging, containers or bags fully identified with manufacturer's
622 name, brand and lot number. Store materials in a dry well-
623 ventilated space, under cover, off the ground and away from
624 surfaces subject to dampness or condensation as approved by the
625 authorized representative of the Engineer. Material that becomes
626 contaminated with asbestos shall be disposed of in accordance
627 with applicable regulations. Replacement materials shall be stored
628 outside the contaminated work area until abatement is completed.

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630 **(E)** Protection

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632 **(1)** Site Security:

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634 **(a)** The work area is to be restricted only to
635 authorized, trained, and protected personnel. These
636 may include the Contractor's employees, the
637 authorized representative of the Engineer, State and
638 local inspectors and any other designated individuals.
639 A list of authorized personnel shall be established
640 prior to job start.

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642 **(b)** Entry to the work area by unauthorized
643 individuals shall not be permitted without the express
644 approval of the authorized representative of the
645 Engineer and any such entry shall be reported
646 immediately to the authorized representative of the
647 Engineer by the Contractor.

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649 **(c)** A Visitor/Worker Entry Log shall be maintained.

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651 **(d)** The Contractor shall have control, subject to
652 approval of the authorized representative of the
653 Engineer, of security in the work area and in proximity
654 of Contractor's equipment and materials.

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(2) Site Protection and Safety: As a minimum, follow the requirements of all applicable Federal, State and local regulations. Take all necessary precaution to ensure there is no asbestos contamination to those areas not included in the work schedule.

(3) Protective Covering: The Contractor shall provide and install protective covering as required or upon request by the authorized representative of the Engineer. Protective covering shall be unused plastic sheets.

(4) Safeguarding of Property: The Contractor shall take whatever steps necessary to safeguard his work area, any property of the Engineer, and all other individuals in the vicinity of his work area during the execution of this Contract. The Contractor shall be responsible for and shall compensate to the injured party's satisfaction any and all damages resulting from their employee's negligence.

(F) General Requirements

(1) The Contractor shall examine and have at all times in his possession at his office (one copy) and in view at each job site office (one copy) the following materials:

(a) Hawaii Administrative Rules, Title 11, Chapters 501, 502, 503 and 504;

(b) Title 29 Code of Federal Regulations Part 1926.62; Safety and Health Standards;

(c) Title 29 Code of Federal Regulations Part 1926.1101; Asbestos;

(d) Title 29 Code of Federal Regulations Part 1910.134; Respiratory Protection;

(e) Title 40 Code of Federal Regulations Part 261; Identification and Listing of Hazardous Waste;

(f) Title 40 Code of Federal Regulations Part 262; Standards Applicable to Generators of Hazardous Waste;

(g) Title 40 Code of Federal Regulations Part 263; Hazardous Waste Transporters;

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(h) Copies of any other applicable Federal, State and local regulations, standards, documents and codes;

(i) Documentation of the adequacy of compressed air systems and respiratory protection system including a list of compatible components and specifications of the types and maximum number of respirators that may be used with the system;

(j) Copies of the procedures for the use of the decontamination enclosure system or any other procedures which have been established to prevent contamination or areas outside the work area;

(k) Copies of procedures to be followed during medical emergencies, including phone numbers of the nearest hospital or other emergency facility, which shall be posted by the nearest telephone;

(l) Copies of the Contractor's Respiratory Protection Program, Hazardous Communication Program, Safety Program and Asbestos Abatement Plan;

(m) Copies of Material Safety Data Sheets for all chemicals used;

(n) Copies of all relevant certificates held by abatement workers and abatement contractors/supervisors actively engaged in the abatement project;

(o) Certification of the Project Designer who wrote procedures for the job;

(p) Copies of bulk sampling results, including inspector and laboratory names, of all suspect material to be disturbed that is not assumed to be asbestos-containing; and

(q) Records of all air sampling as required in HIOSH section 12-145.1-5.

(2) The Contractor shall comply with the above requirements and any applicable Federal, State and local

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regulations. Where there is any conflict or inconsistency among requirements, the more stringent requirement shall apply. Ignorance of the above requirements and any applicable State and City & County Regulation resulting in additional cost to the Contractor shall not be reimbursable or billable to the Engineer.

(3) All regulations shall govern over these Specifications, except when the Specification is providing greater protection against asbestos exposure, injury, loss or liability. Any question regarding conflict or inconsistency between Specification and/or regulations should be directed to the authorized representative of the Engineer.

(4) Whenever approval of the authorized representative of the Engineer is required prior to proceeding with other work, the Contractor shall comply with the following:

(a) The Contractor shall give, at a minimum, five (5) days notification to the authorized representative of the Engineer prior to the start of any asbestos work.

(b) The Contractor shall not begin any work without the authorized representative of the Engineer present onsite.

(c) The Contractor shall allow the authorized representative of the Engineer 24 hours from notification to respond to the request for site inspection(s).

(d) The Contractor shall designate one person (either a foreman or superintendent) who will be authorized to request inspections. The name of the designated person shall be submitted in writing to the authorized representative of the Engineer prior to commencing work. Requests from any other person will not be considered official requests.

(e) The designated person requesting an inspection shall provide the following information:

(i) Name of caller.

(ii) Building and rooms to be inspected.

796 (iii) Work phase of inspection, as specified.

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798 (f) Products

799

800 (G) Materials

801

802 (1) Plastic Sheeting: 6-millimeter-minimum-thickness
803 polyethylene film.

804

805 (2) 6-mil Plastic Bags: Transparent, 6-millimeter minimum
806 thickness, seamless bottomed polyethylene bags. All bags
807 used to transport ACM must carry the DOT class 9 label, a
808 space for generator information and the following warning:

809

810 DANGER CONTAINS ASBESTOS FIBERS

811 AVOID CREATING DUST

812 CANCER AND LUNG DISEASE HAZARD

813

814 (3) Tape: Tape shall be capable of sealing joints of
815 adjacent sheets of polyethylene, attaching polyethylene
816 sheeting to finished or unfinished surfaces of dissimilar
817 materials and adhering under both dry and wet conditions
818 such as when amended water is used.

819

820 (4) Adhesives: Adhesive shall be capable of sealing joints
821 of adjacent sheets of polyethylene, attaching polyethylene
822 sheeting to finished or unfinished surfaces of dissimilar
823 materials and adhering under both dry and wet conditions
824 such as when amended water is used.

825

826 (5) Encapsulant: The encapsulant shall be capable of
827 being applied to surfaces of ACM and surfaces from which
828 ACM has been removed to control the possible release of
829 asbestos fibers. The encapsulant shall be capable of either
830 creating a membrane over the surface (i.e. a bridging
831 encapsulant) or penetrating into the material and binding its
832 components (i.e. a penetrating encapsulant) and shall be
833 compatible with the existing finishes.

834

835 (6) Surfactant (Wetting Agent): 50 percent polyoxy-
836 ethylene ester and 50 percent polyoxyethylene ether, or
837 equivalent, and shall be mixed with water to provide a
838 minimum concentration of one ounce of surfactant to five (5)
839 gallons of water.

840

841 (7) Warning Labels, Tape and Signs: As required by
842 OSHA 29 CFR 1926.1101 and HIOSH regulation 12-145.1.

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(8) Protective Clothing: The Contractor shall have all the coveralls required for this project on site prior to the start of work.

(9) Other Products: Provide all other materials including but not limited to, lumber, plywood, nails, fasteners, metal studs, hardware, sealants, and caulking which may be required to properly prepare and complete this project.

(H) Tools and Equipment

(1) Provide sufficient and suitable tools for the asbestos abatement procedures, including but not limited to:

(a) Water Sprayer: Airless or pressure sprayer for amended water application as applicable.

(b) Paint/Encapsulant Sprayer: Airless type only.

(c) HEPA vacuum.

(d) Negative Air Pressure Units: Portable “exhaust units with air purification equipment in accordance with “Guidance for Controlling Asbestos Containing Materials in Buildings” (the Purple Book) EPA 560/5-85-024 June 1985, Appendix J - Recommended Specifications and Operating Systems - Procedures for the Use of Negative Air Pressure Systems for Asbestos Abatement. Ensure that at least one functional back-up negative air pressure unit is on-site.

(e) Ladders or Scaffolds: All ladders and scaffolds shall be OSHA approved, and shall be of sufficient dimensions and quantities so that all work surfaces can be easily and safely accessed by the workers, the authorized representative of the Engineer and other inspectors. Scaffold joints and ends shall be sealed with tape to prevent migration of asbestos fibers.

(f) Electrical Equipment: All electrical equipment shall be Underwriter’s Laboratory listed and approved, and shall have ground fault circuit interrupter protection, installed by a licensed electrician.

889 (g) Hand Power Tools: All hand power tools shall
890 be equipped with HEPA-filtered local exhaust
891 ventilation if used to drill, cut or otherwise disturb
892 ACM.

893
894 (h) Other tools and equipment as necessary.

895
896 (I) Electrical Equipment Protection

897
898 (1) Non-current carrying metal parts of the Contractor's
899 fixed, portable and plug-connected equipment shall be
900 grounded. Portable tools and appliances protected by a UL
901 approved system of double insulation need not be grounded.
902 All light and power circuits in the asbestos removal area
903 shall be protected by ground fault circuit interrupters.

904
905 (2) Extension cords shall be the 3-wire type, protected
906 from damage, and shall not be fastened with staples, hung
907 from nails, or suspended with wires. Splices shall have
908 soldered wire connections with insulation equal to the cable.
909 Worn or frayed cords shall not be used.

910
911 (3) As necessary, safe lighting equipment for each work
912 area shall be provided by the use of wire guard protected
913 floodlights. Temporary wiring shall be properly insulated and
914 substantially supported. Circuits shall be properly designed
915 and fused. All temporary lighting inside the asbestos
916 removal area shall be weather-proofed.

917
918 (J) Personal Protection Requirements

919
920 (1) The contractor acknowledges that he alone is
921 responsible for instruction and for enforcement of personal
922 protection requirements and that these specifications provide
923 only a minimum acceptable standard.

924
925 (2) Personal Protective Equipment (PPE)

926
927 (a) Respirators: Provide personnel engaged in
928 pre-cleaning, cleanup, handling, removal and
929 demolition of asbestos materials with respiratory
930 protection as indicated in 29 CFR 1926.1101, - 29
931 CFR 1926.103 and 29 CFR 1910.134. Respirators
932 shall be worn at all times within the work area and any
933 other areas where workers may be exposed to
934 asbestos.

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(b) Outer protective clothing: Provide personnel exposed to asbestos with disposal “non-breathable,” whole body outer protective clothing, head coverings, gloves, and foot coverings. Provide disposal plastic or rubber gloves to protect hands. Cloth gloves may be worn inside the plastic or rubber gloves for comfort, but shall not be used alone. Make sleeves secure at the wrists, make foot coverings secure at the ankles, and make clothing secure at the neck by the use of tape. Reusable whole body outer protective clothing shall not be used.

(c) Additional safety equipment (e.g. hardhats meeting the requirements of ANSI Z89.11981, eye protection meeting the requirements of ANSI Z41.1-1967, disposable PVC gloves), as necessary, shall be provided to all workers.

(K) Decontamination Area

(1) The decontamination area as outlined below shall be employed during removal work involving only exterior materials that do not extend to the interior, where all work is performed from the exterior and the work area is fully sealed off from the interior.

(2) General: The Contractor shall construct the decontamination area, acceptable to the Engineer’s authorized representative, adjacent to the work area. The decontamination area shall consist of an area covered by an impermeable drop cloth on the floor or horizontal working surface. The area must be of sufficient size as to accommodate cleaning of equipment without spreading contamination beyond the area.

(3) Access: In all cases, access between contaminated rooms or areas and clean rooms or areas shall be through the decontamination system.

(4) Cleaning: Work clothing and personal protective equipment must be cleaned in the decontamination area with a HEPA vacuum prior to removal. All equipment and surfaces or containers filled with ACM must be cleaned in the decontamination area prior to removal.

(5) Clean Area: The Contractor shall establish a clean area adjacent to the decontamination area with sufficient

983 space for storage of any worker's and agent's street clothes,
984 personal effects and other non-contaminated items.

985
986 **(L)** Wastewater Filtering System

987
988 **(1)** All wastewater that will be discharged into the sanitary
989 sewer system shall be treated as contaminated with
990 asbestos and shall be filtered using two in-line filter
991 cartridges with 2" inlets and outlets. The outlet of the first
992 cartridge shall connect to the inlet of the second cartridge.
993 The first cartridge shall contain six 100-micron prefilters and
994 the second cartridge shall contain six 0.5-micron filters or
995 equivalent staging according to type of filtering.
996

997 **(2)** One spare set of 100-micron prefilters shall be
998 maintained at the site at all times to replace prefilters during
999 cleaning. Maintain at least one set of 0.5-micron or
1000 equivalent filters at the site at all times for replacements as
1001 necessary.
1002

1003 **(3)** When prefilters become clogged, replace with spares,
1004 and wash out the prefilters in the Wash Area allowing
1005 drainage from the cleaning operation to go through the
1006 filtering system.
1007

1008 **(4)** When the final filters become clogged, remove the
1009 filters, replace with new, and dispose of the clogged filters as
1010 contaminated waste.
1011

1012 **(5)** Provide a holding tank for contaminated wastewater
1013 as required to prevent backup of water into the shower when
1014 the amount of water generated exceeds the flow rate of the
1015 filters.
1016

1017 **(M)** Work Area Preparation

1018
1019 **(1)** Posting of Danger Signs: Post danger signs in and
1020 around the work area to comply with 29 CFR 1926.1101,
1021 HIOSH 12-145.1 and all other Federal, State and local
1022 requirements. Signs shall be posted at a distance
1023 sufficiently far enough away from the work area to permit a
1024 person to read the sign and take the necessary protective
1025 measure to avoid exposure.
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1027 **(2)** Inspection of Building Openings: At the beginning of
1028 each work day, the Contractor shall inspect and ensure that

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all doors, windows and other openings of affected buildings are closed and locked.

(3) Critical Barrier Enclosures: Cover all openings including, but not limited to, glazed openings, doors, corridors, ducts, grilles, floor drains or plates, diffusers, vents, windows, electrical outlets, and any other penetrations to the work areas with two layers of 6-mil plastic and seal with tape.

(4) Decontamination Area: Provide a decontamination area as described in section 3.01 for exterior work.

(5) Pre-Cleaning/Wet-Wiping:

(a) Pre-clean fixed objects within the work area by using HEPA vacuum equipment and then wet-wiping as appropriate. All such fixed object will then be covered in 6 -mil plastic sheeting and sealed with tape.

(b) Clean the work area using HEPA vacuum equipment and the wet-wiping as appropriate. Do not use dust generating methods such as dry sweeping or non-HEPA vacuuming.

(6) Plastic: Objects which may be contaminated during abatement or will be difficult to clean after abatement shall be taped and sealed in 6 mil plastic.

(7) Temporary Electricity: Existing Electrical service to the facility may be used for temporary electrical power during abatement and replacement work. However, the electrical power within the work area must be shut off. The contractor shall verify the locations of available electrical service or use generators as needed.

(8) Temporary Light: Provide a minimum of 35 foot-candles of illumination on surfaces for finishing operations and 100 foot -candles of illumination for removal operations. Provide 24-volt safety lighting.

(9) Temporary Water: Existing water services to the facility may be used as a temporary water source during construction. Locations of line tie-ins must be approved by the authorized representative of the Engineer.

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(10) Temporary Sanitation Facilities: The Contractor shall provide toilet facilities for the use of Contractor personnel and agents during abatement work. Maintain toilet facilities in a clean and sanitary condition in compliance with all applicable Federal, State and local regulations.

(11) Temporary Fire Protection: The Contractor shall provide and maintain temporary fire protection equipment during the asbestos abatement operations. Equipment shall be of the appropriate type to fight fires associated with the materials to be found within the work area.

(12) Work Area Isolation and Protection: The Contractor shall isolate the work area for the duration of the project. The work area shall be protected subject to the approval of the authorized representative of the Engineer.

(13) Warning Signs: The Contractor shall post warning signs that meet the requirements of OSHA 29 CFR 1926.1101 (k)(1) and (k)(2)(ii) at the outside door to the Decontamination System. The authorized representative of the Engineer may also require that the Contractor post additional warning signs around the work area or at other potential exposure points.

AFTER THE POSTING, SEALING AND TEMPORARY FACILITY WORK HAS BEEN COMPLETED, NOTIFY THE AUTHORIZED REPRESENTATIVE OF THE ENGINEER FOR APPROVAL BEFORE PROCEEDING WITH THE ABATEMENT.

(N) Work Procedure

(1) Perform asbestos related work in accordance with 29 CFR 1926.1101, Hawaii Administrative Rules, Title 11, 501, and as specified herein. Personnel shall wear and utilize protective clothing and equipment as specified herein. Eating, smoking, drinking, chewing gum, using tobacco, or applying cosmetics shall not be permitted in asbestos work or regulated area. Personnel of other trades not engaged in the removal of ACM shall not be exposed at any time to airborne asbestos unless all the personal protection and training provisions of this Specification are complied with. Establish critical barriers over all openings and penetrations which may lead to areas outside the asbestos control area. If an asbestos fiber release or spill occurs outside the asbestos control area, stop work immediately,

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correct the condition to the satisfaction of the authorized representative of the Engineer prior to resumption of work.

(O) Abatement of Asbestos Containing Materials

(1) Surfaces to remain in areas where asbestos containing materials will be removed shall be covered with one layer of 6-mil plastic sheeting. Ventilation intake air sources shall be isolated or the system shall be shut down.

(2) Wet the asbestos containing materials with a wetting agent (amended water) using a fine mist sprayer prior to the start of abatement. Wetting agent shall continuously be applied to control the release of asbestos fibers from the ACM prior to and during removal.

(3) Carefully remove asbestos containing materials by lifting them in whole and unbroken pieces to the greatest extent possible. Continue to apply the wetting agent during removal to control dust. Avoid breaking and pulverizing the material.

(4) The Contractor is prohibited from using methods or removal that create excessive amounts of dust and debris.

(5) Waste debris shall be double bagged and sealed leak-tight in properly labeled 6-mil plastic bags immediately after removal. The Contractor shall not allow removed ACM to accumulate in work area. All gross debris created by the removal process shall be bagged and sealed before the main break and again at the end of each workday.

(6) Asbestos containing roof material that has been removed from the roof shall not be dropped or thrown to the ground. Material shall be carried or passed to the ground by hand or lowered to the ground via covered, dust-tight chute, crane or hoist.

(7) Intact asbestos containing roof materials and any debris that is not intact shall be lowered to the ground as soon as is practicable, but in no event later than the end of the work shift. While the material is on the roof it shall either be kept wet, placed in an impermeable waste bag, or wrapped in plastic sheeting. Once lowered, unwrapped material shall be transferred to a closed receptacle.

(8) After inspection and approval by the authorized

1170 representative of the Engineer, the Contractor shall seal all
1171 abated and cleaned surfaces with at least one (1) coat of an
1172 approved penetrating encapsulant.
1173
1174 **(9)** The Contractor shall minimize contamination of the
1175 work floor, the exterior of disposal containers, and all other
1176 surfaces within the work area.
1177
1178 **(P)** Cleanup
1179
1180 **(1)** All contaminated equipment and tools used for
1181 abatement work shall be washed and cleaned in the work
1182 area prior to removing them from the work area. No washing
1183 of contaminated equipment and tools will be allowed outside
1184 the work area.
1185
1186 **(Q)** Clearance of Exterior Removal Work Area
1187
1188 **(1)** Remove all visible accumulation of ACM and debris
1189 by HEPA vacuums, sponging, and wet-wiping.
1190
1191 **(2)** The Engineer's authorized representative will visually
1192 inspect the affected areas for residual asbestos debris and
1193 waste. The Contractor shall re-clean areas showing
1194 asbestos debris and waste. If re-cleaning is required, the
1195 Engineer's authorized representative will visually inspect for
1196 asbestos debris and waste after re-cleaning. This process
1197 will be repeated until the Engineer's authorized
1198 representative deems the area free of visible asbestos
1199 debris and waste.
1200
1201 **(3)** The work area shall be totally visibly clean before the
1202 remaining material is encapsulated. After the visual
1203 inspection has been passed, encapsulate all remaining
1204 materials.
1205
1206 **(4)** The Contractor shall remove all signs, temporary
1207 barriers and materials when their use is no longer required.
1208
1209 **(R)** Air Sampling
1210
1211 **(1)** Sampling for airborne concentrations of asbestos
1212 fibers shall be performed by the authorized representative of
1213 the Engineer. Sampling of airborne concentrations of
1214 asbestos fibers shall be performed in accordance with 29
1215 CFR 1926.1101 and as specified herein. Unless otherwise

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specified, NIOSH Method 7400 will be followed for all sampling and analysis.

(a) Sampling Prior to Asbestos Work: Baseline air sampling may be conducted by the authorized representative of the Engineer one-day prior to the masking and sealing operations for each removal site.

(b) Sampling During Asbestos Work: The performance and execution of the Contractor's work shall be closely and continuously monitored by the authorized representative of the Engineer. Air monitoring and inspection by the authorized representative of the Engineer shall be performed inside the work area, in the work area surroundings and in any occupied adjacent buildings to ensure full compliance with the Specification and all applicable regulations. The Contractor shall provide full cooperation and support to the authorized representative of the Engineer and to their technicians throughout the work.

(2) Air Monitoring With Respect To Contractor's Employees

(a) The Contractor shall be responsible for all personal air monitoring as required by OSHA regulations. All personal air monitoring will be conducted by an agent of the Contractor who is currently certified by the Hawaii Department of Health to conduct personal air sampling.

(b) The Contractor shall provide own personal sampling of 25% of his workers or minimum of two workers, whichever is greater as indicated in 29 CFR 1926.1101 and governing environmental regulations.

(c) Laboratory performing analysis shall be an independent party, not financially or managerially connected with the Contractor.

(d) Results of sample analysis shall be provided to the authorized representative of the Engineer within forty-eight (48) hours of collection.

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(3) All other air sampling for compliance with the Specification shall be performed by the authorized representative of the Engineer.

(S) Disposal of Asbestos Containing Material

(1) Collect asbestos waste, asbestos contaminated water, scrap, debris, bags, containers, equipment, and asbestos contaminated clothing which may produce airborne concentrations of asbestos fibers and place them in properly labeled transparent 6-mil plastic seamless bottomed bags. Wastes within the bags must be adequately wet in accordance with 40 CFR 61-SUBPART M.

(2) Affix a warning and Department of Transportation (DOT) label to each bag or use bags preprinted with the approved warnings and DOT labeling. The name of the waste generator and the location at which the waste was generated shall be clearly indicated on the outside of each container.

(3) Vehicles used for transporting waste to the disposal sites shall have a completely enclosed, lockable storage compartment. Storage compartments shall be covered and sealed with a minimum of one layer of 6-mil plastic sheeting on the sides and top and two layers of 6-mil plastic sheeting on the floor. The compartments shall be thoroughly wet-cleaned and HEPA vacuumed following the disposal of each load at the approved disposal sites.

(4) Workers unloading bags at the disposal sites shall wear full body protective clothing and dual HEPA cartridge full-face air purifying respirators.

(5) Waste disposal manifest forms shall be properly completed to verify custody and ensure disposal of all ACM and asbestos contaminated waste at approved disposal sites. Forms shall be kept on file as directed by the authorized representative of the Engineer. Copies shall be submitted to the authorized representative of the Engineer no later than the next working day after each trip. It is the Contractor's responsibility to assure that any landfill used for disposal of asbestos containing or asbestos contaminated waste is approved for that purpose.

688.04 Measurement.

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(A) The Engineer will not measure removal of asbestos containing materials and asbestos removal monitoring.

(B) Engineer will only measure asbestos removal monitoring required and requested by Engineer on a force account basis in accordance with Subsection 109.06 – Force Account Provisions and Compensation.

688.05 Payment.

(A) The Engineer will pay for removal of asbestos containing materials on a lump sum basis.

(B) The Engineer will measure additional asbestos removal procedures or measures required and requested by the Engineer on a force account basis in accordance with Subsection 109.06 – Force Account Provisions and Compensation.

(C) The Engineer will pay for asbestos removal monitoring on a force account basis.

(D) Payment will be full compensation for the work prescribed in this section, by the Engineer, and in the contract documents.

(E) The Engineer will pay for the following pay item when included in the proposal schedule:

Pay Item	Pay Unit
Asbestos Removal	Lump Sum
Additional Asbestos Removal	Force Account
Asbestos Removal Monitoring	Force Account"

END OF SECTION 688

1 Make the following section a part of the Standard Specifications:

2
3 **“SECTION 691 – ARCHAEOLOGICAL MONITORING**

4
5 **691.01 Description.** This work includes monitoring construction activity for
6 archaeological items at the location shown on the plans and as directed by the
7 Engineer.

8
9 **691.02 Materials.** None.

10
11 **691.03 Construction.** In addition to the requirements of **Subsection 107.13 (B)**
12 **– Archaeological, Historical, and Burial Sites**, the Contractor shall obtain the
13 services of a qualified Archaeologist or firm to investigate the site prior to clearing
14 and grubbing and to monitor during the clearing and grubbing and excavation
15 actives for historic remains such as artifacts, burials, concentrations of shell or
16 charcoal. The archaeologist shall conduct monitoring in accordance with the
17 Archaeological Monitoring Plan and Archaeological Preservation Plan that were
18 prepared for the project and approved by the State Historic Preservation Division.

19
20 If remains are found, work shall cease in the immediate vicinity of the find and
21 the find shall be protected from further damage. The Contractor shall immediately
22 contact the State Historic Preservation Division (692-8015), which will assess the
23 significance of the find and recommend appropriate mitigation measures, if
24 necessary.

25
26 **691.04 Measurement.** The Engineer will not measure the Archaeological
27 Monitoring for excavation activities for bridge construction, channel shaping,
28 waterline and utility work and will consider this incidental to the various sections of
29 the contract documents.

30
31 In the event that archaeological significant items are encountered, the
32 Engineer will measure work with implementing the archaeological monitoring plan
33 on a force account basis in accordance with **Subsection 109.06 - Force Account**
34 **Provisions and Compensation** and as ordered by the Engineer.

35
36 **691.05 Payment.** The Engineer will pay for the accepted pay item listed below
37 at the contract price per pay unit. Payment will be full compensation for the work
38 prescribed in this section by the Engineer, and the contract documents.

39
40 The Engineer will pay for the following item when included in the proposal
41 schedule:

Pay Item	Pay Unit
Archaeological Monitoring	Force Account

47 An estimated amount for the force account is allocated in the proposal
48 schedule under Archaeological Monitoring. The actual amount to be paid will be the
49 sum shown on the accepted force account records whether this sum be more or less
50 than the estimated amount allocated in the proposal schedule.

51
52 The Engineer will not pay for work required that is due to the Contractor's
53 convenience, negligence, carelessness, or failure to properly monitor excavation
54 activity.”

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57

END OF SECTION 691

1 **SECTION 693 – TERMINAL IMPACT ATTENUATOR**

2
3 Make the following amendment to said Section:

4
5 **(I)** Amend **693.04 - Measurement** by replacing lines 58 to 61 to read:

6
7 **“693.04 Measurement.** The Engineer will measure terminal impact
8 attenuators per each in accordance with the contract documents.”

9
10 **(II)** Amend **693.05 – Payment** by revising lines 63 to 79 to read as follows:

11
12 **“693.05 Payment.** The Engineer will pay for the accepted pay items
13 listed below at contract price per pay unit, as shown in the proposal schedule.
14 Payment will be full compensation for the work prescribed in this section and the
15 contract documents.

16
17 The Engineer will pay for the following pay items when included in the
18 proposal schedule:

19

Pay Item	Pay Unit
Terminal Impact Attenuator _____	Each”

20
21
22 **END OF SECTION 693**
23
24
25

1 Make the following section a part of the Standard Specifications:
2

3 **"SECTION 695 - PUBLIC EDUCATIONAL CAMPAIGN**
4

5 **695.01 Description.** This Section describes the development of the project
6 web page and hotline in accordance with the contract documents. The Section
7 also describes the public outreach campaign to inform the public of the project
8 and its purpose and goals in accordance with the contract documents.
9

10 **695.02 Materials.** Not applicable.
11

12 **695.03 Construction.** The Department's goal is to minimize inconvenience
13 and provide up-to-date information to highway users, businesses and
14 neighborhoods that abut, or are serviced by, the highways that comprise the
15 project. It will be the responsibility of the Contractor to provide the following
16 services for the well-being of the affected highway users, residents, and
17 businesses.
18

19 **(A) Project Web Page.** Develop a project web page that contains the
20 information listed below:
21

	Information	Update Frequency
22		
23		
24	(1) Project Work Scope/Description	At Notice-to-Proceed (NTP)
25		
26	(2) Project Site Map with description	At NTP of information needed
27		
28	(3) Contractor's 24 hour 7 day a	At NTP
29	week Phone Number for	
30	Complaints (Hotline)	
31		
32	(4) Project Schedule/Milestones	At NTP and when schedule
33		is adjusted or updated.
34		Submit schedule changes
35		to the Engineer for review
36		and acceptance prior to
37		posting
38		
39	(5) Work Progress Narrative	Every 14 calendar days
40	with Sketches	
41		

42 Work progress narrative with sketches may be provided in PDF
43 format. Graphics images posted on the project web page shall not
44 exceed 100k bytes per image and 300k bytes per page to facilitate public
45 viewing. Enlarged images such as maps and information provided in
46 PDF format may be linked to the project web page. Information on linked

47 pages has no size limits. Web technologies that require an extended
48 waiting period for loading like Flash shall not be used.

49
50 **(6)** Scheduled Road/Lane 14 calendar days prior to closure
51 Closures changes. Provide 14 calendar
52 days notice to the Engineer for any
53 road/lane closures or changes to
54 road lane/closures.
55

56 The Engineer may link this project web page to the Department
57 website.

58
59 Include the web page address on a construction advisory sign that will
60 be visible to the public in a format and location as directed by the Engineer.

61
62 Establish the webpage 14 calendar days prior to construction notice-to-
63 proceed. Maintain the web page until all lane closures, road closures, or
64 traffic detours are completed.

65
66 **(B) Hotline.** Maintain a 24-hour telephone hotline to handle public
67 inquiries and complaints. The hotline telephone number shall be visible
68 throughout the project limits and on the project website. Responses to
69 inquiries and/or complaints shall be logged and coordinated with the Engineer
70 and be provided within a 24-hour period.

71
72 **(C)** Attend all public informational meetings to assist the Engineer in
73 answering questions from the public regarding the Contractor's activities.
74 The Contractor's representative shall be knowledgeable in the Contractor's
75 schedule of activities.

76
77 **(D) Public Education Materials or Services.** When requested by the
78 Engineer, furnish the following public educational materials or services:

- 79
80 1. 24 hours / 7 days a week live chat website for questions and
81 complaints
82
83 2. Project fact sheet
84
85 3. Project brochures, informational cards, flyers, mailers, posters,
86 displays, PowerPoint presentations, mass e-mail notifications,
87 and other forms of distributions
88
89 4. Production of 30-second public service announcements for
90 television and radio
91
92 5. Media time on television and radio

1 Amend **SECTION 702 – BITUMINOUS MATERIALS** to read as follows:

2
3 **“SECTION 702 – BITUMINOUS MATERIALS**

4
5 **702.01 Asphalt Cement.**

6
7 **702.01A PG 64-16.** Performance-graded asphalt binder shall conform to
8 AASHTO M 320.

9
10 **702.01B PG 64E-22.** Performance Graded (PG) Binder. Performance graded
11 binder shall conform to Performance Graded Asphalt Binder Specifications,
12 AASHTO M 332 and meet the following additional requirement:

13
14 AASHTO T 315 Determining the Rheological Properties of Asphalt Binder
15 Using a Dynamic Shear Rheometer (DSR). Phase angle on original
16 binder shall be less than 77 degrees.

17
18 **702.01C Submittals.** Submit, before usage, a Certificate of Compliance,
19 accompanied by substantiating test data, showing conformance with
20 Performance Graded Asphalt Binder Specification. The Engineer will not accept
21 the PG binder without adequate documentation.

22
23 **702.02 (Unassigned)**

24
25 **702.03 Liquid Asphalt.** Liquid asphalt shall conform to AASHTO M 82 for
26 medium curing type.

27
28 **702.04 Emulsified Asphalt.** Anionic emulsified asphalt shall conform to
29 AASHTO M 140, except penetration on residue for Type SS-1 and Type RS-1
30 shall be 50-120.

31
32 Cationic emulsified asphalt shall conform to AASHTO M 208, except
33 penetration on residue for Type CSS-1 and Type CRS-1 shall be 50-150.

34
35 **702.05 Application Temperatures.** Bituminous materials shall be applied in
36 accordance with Table 702.05-1 – Application Temperatures.

TABLE 702.05-1 – APPLICATION TEMPERATURES		
Bituminous Material	Spraying Temperatures (degrees F)	Mixing Temperatures (degrees F)
Liquid Asphalt (MC)		
Grade 30	50 - 120	--
Grade 70	100 – 170	--
Grade 250	140 – 220	135 – 175
Grade 800	175 – 250	170 – 200
Grade 3000	215 - 280	200 - 240
Emulsified Asphalt	75 – 130	75 – 130
Asphalt Cement	350 Maximum	By Temperature / Viscosity Graph

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702.06 Warm Mix Asphalt (WMA) Additive. The Contractor may use WMA processes in the production of HMA. Submit to the Engineer for acceptance, the proposed process and how it will be used in the manufacture of HMA. The process submittal shall include the temperature range of the WMA.

702.07 Asphalt Filler. Asphalt for use as filler between pipes and manhole walls shall conform to ASTM D 449, Type III.”

END OF SECTION 702

1 **SECTION 717 – CULLET AND CULLET-MADE MATERIALS**

2
3 Make the following amendments to said Section:

4
5 **(I) Amend Subsection 717.01 – Cullet and Cullet-Aggregate Mixtures as**
6 **Construction Materials** by revising the third paragraph from line 16 to 20 to
7 read:

8
9 “Debris shall not exceed values specified in Tables 717.02-1 - Cullet in
10 Roadway Applications, 717.03-1 - Cullet in Utility Applications, and 717.04-1 -
11 Cullet in Drainage Applications. Debris is defined as deleterious material that
12 includes plastics, papers, and non-ceramic constituents of cullet. Hazardous
13 material will not be allowed in cullet such as but not limited to, TV or other
14 cathode ray tubes, fluorescent light bulbs, and any toxic or hazardous materials.
15 Test cullet stockpile for toxic or hazardous materials every 90 days and submit
16 the results to the Engineer.”

17
18 **(II) Amend Subsection 717.01 – Cullet and Cullet-Aggregate Mixtures as**
19 **Construction Materials** by adding the following paragraph after line 21:

20
21 “Cullet shall not be used in concrete.”

22
23 **(III) Amend Table 717.03-1 – Cullet in Utility Applications** from line 37 to
24 line 39 to read:

25

TABLE 717.03-1 - CULLET IN UTILITY APPLICATIONS		
Utility Trench Bedding and Backfill Applications	Maximum Cullet Content (Percent By Weight)	Maximum Debris Level (Percent By Weight Of Cullet)
Sewer Pipes	25	0.3
Electrical Conduits	25	0.3
Fiber Optic Lines	25	0.3

26
27

28
29
30
31

(IV) Amend **Table 717.04-1 – Cullet in Drainage Applications** from line 47 to line 49 to read:

“

TABLE 717.04-1 - CULLET IN DRAINAGE APPLICATIONS		
Drainage Fill Applications	Maximum Cullet Content (Percent By Weight)	Maximum Debris Level (Percent By Weight Of Cullet)
Retaining Walls	25	0.2
Foundation Drains	25	0.2
Drainage Blankets	25	0.2
French Drains	25	0.2

32
33
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36
37

”

END OF SECTION 717

1 **SECTION 750 – TRAFFIC CONTROL SIGN AND MARKER MATERIALS**

2
3 Make the following amendments to said Section:

4
5 **(I)** Amend **Subsection 750.01(A)(1) Retroreflectorization** by replacing lines
6 8 through 31 to read:

7
8 **“(1) Retroreflectorization.** The following shall be retroreflectorized:

9
10 **(a)** Background for illuminated guide signs and exit number panels (“E”
11 designation) with ASTM D 4956 Type XI retroreflective sheeting.

12
13 **(b)** Background for non-illuminated guide signs and exit number panels
14 (“D” designation) with ASTM D 4956 Type XI retroreflective sheeting.

15
16 **(c)** Messages, arrows, and borders of guide signs and exit number
17 panels (“D” and “E” designations) with ASTM D 4956 Type XI
18 retroreflective sheeting.

19
20 **(d)** Regulatory and warning signs, directional signs (“DIR” designation),
21 route and auxiliary markers, shield symbols, yellow “EXIT ONLY” panels,
22 construction warning signs, and barricade rails, completely, with Type III,
23 IV, or IX retroreflective sheeting.

24
25 **(e)** Pedestrian, school, bicycle crossing series, completely with Type IX
26 fluorescent yellow green retroreflective sheeting.”

27
28
29 **(II)** Amend **Subsection 750.01(E) Retroreflective Sheeting Materials** by
30 replacing lines 1126 through 1137 to read:

31
32 **“(E) Retroreflective Sheeting Materials.** Retroreflective sheeting
33 includes white or colored sheeting having smooth outer surface.

34
35 Retroreflective sheeting shall be classified in accordance with ASTM D
36 4956.

37
38 The coefficient of retroreflection shall meet the minimum requirements of
39 ASTM D 4956 for the type of reflective sheeting specified.

40
41 The color shall conform to the latest appropriate standard color tolerance
42 chart issued by the U.S. Department of Transportation, Federal Highway
43 Administration and to the daytime and nighttime color requirements of ASTM D
44 4956.

45
46 Test methods and procedures shall be in accordance with ASTM.

47 **(III)** Amend **Subsection 750.02 Sign Posts** by replacing lines 1168 through
48 1172 to read:

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“(C) Square Tube Posts. Square and other tube posts shall conform to ASTM A 653 for cold-rolled, carbon steel sheet, commercial quality; or ASTM A 787 for electric-resistance-welded, metallic-coated carbon steel mechanical tubing.”

END OF SECTION 750

1 **SECTION 760 - ROADWAY AND SIGN LIGHTING SYSTEMS MATERIALS**

2
3 Make the following amendments to said Section:

4
5 **(I) Amend 760.03 (A) Luminaires for Roadway, Underpass, Sign and**
6 **Pedestrian Stairways Lighting** to read as follows:

7
8 **“(A) Luminaires for Roadway Lighting.** Luminaires for roadway lighting
9 shall be LED lamps, UL listed for wet locations.

10
11 **(1) Housing.** Housing shall be rear-entry, low copper, one-piece
12 die-cast aluminum with integral heat sink fins, two-inch slipfitter for
13 inner wiring, polished aluminum reflector of snap-in design and
14 pressed flat glass refractor optical assembly. A solid barrier wall
15 shall separate the optical and electrical compartments.

16
17 **(2) Door Assembly.** The door assembly shall be a one-piece die
18 cast, low copper aluminum alloy assembly for bottom entry. The
19 door assembly shall use a stainless-steel tool-less screw or cam-
20 latch and have a secondary stainless-steel safety latch to prevent the
21 door from falling when opening. The door assembly shall have hinge
22 latches that do not require tools for removal from the housing.

23
24 **(3) Photoelectric Cell Receptacle.** Luminaire shall have a 7-pin
25 photoelectric control receptacle per ANSI C136.41. The
26 photoelectric receptacle socket shall rotate without tools. Luminaire
27 housing shall not interfere with the operation of the photocell.

28
29 **(4) Electronic Driver.** One-piece unit pre-wired and installed in
30 the electrical compartment of the luminaire and mounted to the
31 luminaire housing.

32
33 **(a)** Rated lifetime of 100,000 hours at less than 60 degrees
34 C.

35
36 **(b)** Maximum allowable case temperature of 80 degrees C
37 with built-in thermal protection.

38
39 **(c)** Input Voltage: 120-277 volts.

40
41 **(d)** Input Frequency: 50/60 Hz.

42
43 **(e)** Full Load Efficiency at 120 volts: Greater than 88
44 percent.

45
46 **(f)** Total Harmonic Distortion: Less than 20 percent.

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- (g) Power Factor: Greater than 90 percent.
- (h) Operating Temperature: -40 degrees C to 80 degrees C.
- (i) Surge Protection: 10 kV/5 kA per IEEE/ANSI C136.2-2015 Location C.

(5) LED Light Source. 4000K nominal correlated color temperature (CCT) per ANSI C78.377-2011.

- (a) CRI: Greater than 70 at 4000K.
- (b) Lumen Depreciation: Light source shall deliver a minimum of 85 percent of initial lumens after a minimum of 50,000 hours.
- (c) Lumen output and wattage shall be as indicated in the contract documents.

(6) Illumination: Luminaires shall provide the roadway with minimum average maintained illumination values in accordance with manufacturer’s specifications and IES light distribution type indicated in the contract documents. Photometric data with certification of conformance shall be submitted.

(7) Luminaire shall be provided with a flat translucent tempered glass lens beneath the LED optical assembly to minimize direct view of the LEDs. Exposed optics and internal shields will not be allowed.

(8) Networked Highway Lighting Controls. Lighting control nodes shall be provided at each roadway lighting luminaire. Control node shall be mechanically and electrically attached to the luminaire via the twistlock photocell receptacle on the luminaire. Node shall have an internal GPS device and shall be capable of responding to any command received from the DOT Highways Division’s existing wireless lighting control network. Lighting control nodes shall be GE Light Grid and compatible with DOT Highway Division’s existing wireless lighting control system network.”

END OF SECTION 760

HAZARDOUS MATERIALS SURVEY REPORT

**KAIPAPAU STREAM BRIDGE REPLACEMENT
HAU'ULA, OAHU, HAWAII**

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ETC Project No. 19-4007

April 26, 2019

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1.0 CERTIFICATIONS AND LIMITATIONS

EnviroServices & Training Center, LLC (ETC) has completed a Limited Hazardous Materials Survey (Survey) for R.M. Towill Corporation at Kaipapau Buildings located at buildings identified by Tax Map Key (TMK) 5-4-18: Parcel 003, Kamehameha Highway, Oahu, Hawaii (Subject Site). ETC's findings and recommendations contained herein are based on site observations, government regulations and laboratory data, which were gathered at the time and location of the study. Opinions stated in this report do not apply to changes that may have occurred after the services were performed.

ETC has performed specified services for this project with the degree of care, skill and diligence ordinarily exercised by professional consultants performing the same or similar services. No other warranty, guarantee, or representation, expressed or implied, is included or intended; unless otherwise specifically agreed to in writing by both ETC and ETC's Client.

This report is intended for the sole use of R.M. Towill Corporation, exclusively for the Subject Site. R.M. Towill Corporation may use and release this report, including making and retaining copies, provided such use is limited to the particular site and project for which this report is provided. However, the services performed may not be appropriate for satisfying the needs of other users. Release of this report to third-parties will be at the sole risk of ETC's Client and/or said user, and ETC shall not be liable for any claims or damages resulting from or connected with such release or any third party's use or reuse of this report.

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State of Hawaii Asbestos Building Inspector # HIASB-0315
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EXECUTIVE SUMMARY

EnviroServices & Training Center, LLC (ETC) conducted a Limited Hazardous Materials Survey (Survey) and compiled this report for R.M. Towill Corporation at Kaipapau Buildings located at buildings identified by Tax Map Key (TMK) 5-4-18: Parcel 003, Kamehameha Highway, Oahu, Hawaii (Subject Site). The following hazardous materials were identified during ETC's survey of buildings A (main house) and B (studio):

1.1 Summary of Asbestos Containing Materials Survey

Laboratory analysis determined that the following material contains asbestos above the regulatory limit of 1%:

- Black mastic on pipe penetration on roof B
- Black Mastic under white caulking on pipe penetration on roof B
- Rolled on roofing on roof B

1.2 Summary of Lead Paint Survey

Laboratory analysis determined that the sampled paints do not contain detectable levels of lead above the laboratory detection limit and are considered to be non-lead-containing.

1.3 Summary of Arsenic Survey

None of the materials sampled were found to contain detectable levels of arsenic.

2.0 INTRODUCTION/PURPOSE

The purpose of this Survey was to inspect the Subject Site for the presence of suspected hazardous materials that may be affected by the project. The Survey was conducted on April 15, 2019 and limited to the areas specified by R.M. Towill Corporation. Specifically, ETC completed the following tasks:

- Performed site reconnaissance at the Subject Site;
- Collected sixty (60) samples of suspected Asbestos-Containing Material (ACM) from the Subject Site;
- Submitted the 60 samples of suspected ACM to EMC Labs, Inc. (EMC) for analysis of asbestos via Polarized Light Microscopy (PLM) in accordance with the Environmental Protection Agency (EPA) Method 600/R-93/116;
- Collected four(4) paint chip samples from the Subject Site;
- Submitted the 4 paint chip samples to EMC for analysis by flame atomic absorption spectroscopy (FAAS) via EPA Method 7000 for total lead content;
- Conducted a visual inspection for suspect arsenic-containing materials, and
- Collected one (1) arsenic sample from the Subject Site;
- Prepared this report documenting the field activities and the results of the investigation including analytical results, conclusions, and recommendations.

3.0 METHODOLOGY

3.1 Asbestos

ETC personnel collected 60 samples of suspected ACM for asbestos analysis. Samples were collected from various areas of the Subject Site in accordance with EPA guidelines and recommendations.

The suspected ACM were wetted with amended water before sample collection. A small piece was then carefully cut out and placed into a labeled, re-sealable plastic bag. The sampling equipment was cleaned between each sample collection to avoid cross-contamination between samples. The approximate quantity of each suspected ACM was noted. Sample locations were randomly selected in accordance with EPA protocols and recommendations.

Samples were properly logged and recorded following strict chain-of-custody procedures, and sent to EMC located in Phoenix, Arizona, for analysis by PLM in accordance with EPA Method 600/R-93/116. EMC is accredited for bulk asbestos analysis through successful participation in the National Voluntary Lab Accreditation Program (NVLAP).

3.2 Lead Paint

ETC personnel collected and had 4 paint chip samples analyzed in accordance with the EPA guidelines and recommendations.

The suspected lead-containing paints were wetted with amended water before sample collection. Paint was carefully scraped and placed into a labeled re-sealable plastic bag. The sampling equipment was cleaned between each sample collection to avoid cross-contamination between samples. Samples were properly logged and recorded following strict chain of custody procedure and submitted to EMC for analysis by FAAS, in accordance with EPA Method 7420. EMC is an Environmental Lead Laboratory Accreditation Program (ELLAP)-accredited laboratory.

3.3 Arsenic

ETC personnel collected 1 sample of fiberboard material, suspected of being treated with arsenic, from the Subject Site. The suspected arsenic treated samples were collected in accordance with EPA guidelines and recommendations.

The suspected arsenic treated materials were wetted with amended water before sample collection. Small pieces were then carefully cut out and placed into a labeled, re-sealable plastic bag. The samples were logged and recorded following strict chain of custody procedure and submitted to NVL Laboratories, Inc. for analysis by EPA Method 6010.

4.0 RESULTS

4.1 Asbestos

Laboratory analysis determined that the following material contains asbestos above the regulatory limit of 1%:

- Black mastic on pipe penetration on roof B
- White Caulking on pipe penetration with black mastic on roof B
- Rolled on roofing on roof B

In accordance with federal and state regulations and industry standard practice, ETC determined homogenous areas of each suspect material and collected multiple representative samples of the material from each homogenous area. Typically, all samples for a suspect material will have similar laboratory results. When the results differ, a single result above the regulatory limit is sufficient to determine that the material within the homogenous area is ACM and the entirety of the homogenous area should be treated as ACM. Thus, ETC may request that the laboratory stops analyzing when the first sample in the set is determined to have asbestos content above one percent.

In addition, six (6) materials were found to contain glass fibers. Although materials containing such fibers are not specifically regulated, it is ETC's recommendation to handle materials containing glass fibers with appropriate protective equipment.

The asbestos analytical laboratory report is included in Appendix II.

4.2 Lead Paint

The sampled paints did not contain detectable levels of lead and are considered to be non-lead-containing.

The lead analytical laboratory report is included in Appendix II.

4.3 Arsenic

The sampled suspect arsenic containing material did not contain detectable levels of arsenic.

The arsenic analytical laboratory report is included in Appendix II.

5.0 DISCUSSION AND RECOMMENDATIONS

The findings and recommendations of ETC's limited hazardous material survey extended only to those areas that were accessible at the time of the site reconnaissance. Any areas that were inaccessible either due to physical restraints (i.e. areas within walls, excessive heights, hidden materials, etc.) are not covered under the scope of this survey and should be evaluated for hazardous materials separately prior to any disturbance.

Based on ETC's visual inspection of the facility and laboratory data, ETC recommends the following:

- Manage and/or remove and dispose of hazardous and regulated materials in accordance with applicable federal, state, and local regulations, prior to renovation and/or demolition activities that may disturb these materials.
- Any material that is suspected to contain a hazardous contaminant but was not tested as part of this survey should be tested prior to disturbance.
- All ACM must be removed and disposed of by a qualified asbestos abatement contractor.
- Handle materials containing glass fibers with appropriate protective equipment to prevent inhalation or ingestion of fibers and contact with skin and mucous membranes.
- Any abatement and demolition contractor(s) must take appropriate measures to comply with applicable EPA, Occupational Safety and Health Administration (OSHA), and Hawaii Occupational Safety and Health (HIOSH) regulations pertaining to the handling of asbestos containing materials and worker protection. Note that OSHA and HIOSH regulate activities that disturb materials containing any detectable concentrations of these contaminants.
- Retain the services of a qualified consultant to monitor and inspect the removal activities to ensure compliance with applicable EPA, OSHA and HIOSH regulations pertaining to the handling of hazardous materials.
- Conduct air monitoring for asbestos fibers by qualified personnel during abatement and general renovation/demolition activities in areas that were determined to contain asbestos.

Appendix **I**

RESULTS TABLES

Table 1
Asbestos Survey Results
Kaipapau Stream Bridge Replacement

Sample ID	Homogeneous Area	Material	Condition	Category	Friability	Analysis Layer	Asbestos Content	Estimated Quantity
1907-003A-A01	Building A (Main Building) Living Room, Kitchen, Restroom	16"x16" White Ceramic Tile with Grout	Good	Not Applicable	Not Applicable	All	Not Applicable	Not Applicable
1907-003A-A02								
1907-003A-A03								
1907-003A-A04	Building A (Main Building) Throughout	White Drywall Walls and Ceilings with Joint Compound	Good	Not Applicable	Not Applicable	All	Not Applicable	Not Applicable
1907-003A-A05								
1907-003A-A06								
1907-003A-A07	Building A (Main Building) Throughout	White Fiberboard Ceiling Panels	Good	Not Applicable	Not Applicable	All	Not Applicable	Not Applicable
1907-003A-A08								
1907-003A-A09								
1907-003A-A10	Building A (Main Building) Throughout	Carpet Material with Adhesive	Good	Not Applicable	Not Applicable	All	Not Applicable	Not Applicable
1907-003A-A11								
1907-003A-A12								
1907-003A-A13	Building A (Main Building) Roof	Shingles on Roof A	Good	Not Applicable	Not Applicable	All	Not Applicable	Not Applicable
1907-003A-A14								
1907-003A-A15								
1907-003A-A16	Building A (Main Building) Kitchen	Grey Sink Insulation	Good	Not Applicable	Not Applicable	All	Not Applicable	Not Applicable
1907-003A-A17								
1907-003A-A18								
1907-003A-A19	Building A (Main Building) Bathroom	Beige Caulking around Bathroom Tub with Adhesive	Good	Not Applicable	Not Applicable	All	Not Applicable	Not Applicable
1907-003A-A20								
1907-003A-A21								
1907-003A-A22	Building A (Main Building) Kitchen	Off-White Caulking around Kitchen Counter	Good	Not Applicable	Not Applicable	All	Not Applicable	Not Applicable
1907-003A-A23								
1907-003A-A24								
1907-003A-A25	Building A (Main Building) Bathroom	White Caulking around Bathroom Sink	Good	Not Applicable	Not Applicable	All	Not Applicable	Not Applicable
1907-003A-A26								
1907-003A-A27								

Table 2
Asbestos Survey Results
Kaipapau Stream Bridge Replacement

Sample ID	Homogeneous Area	Material	Condition	Category	Friability	Analysis Layer	Asbestos Content	Estimated Quantity
1907-003B-A01	Building B Studio	12" 12" Ceramic Floor Tile with Grout	Good	Not Applicable	Not Applicable	All Layers	None Detect	Not Applicable
1907-003B-A02								
1907-003B-A03								
1907-003B-A04	Building B Studio	Black Mastic on Pipe Penetration on Roof	Fair	Misc	Category II Non-Friable	Black Mastic	ChyrsoTile 5%	2 square ft.
1907-003B-A05						Not Analyzed	Not Applicable	
1907-003B-A06						Not Analyzed	Not Applicable	
1907-003B-A07	Building B Studio	White Caulking Around Toilet	Good	Not Applicable	Not Applicable	All Layers	None Detect	Not Applicable
1907-003B-A08								
1907-003B-A09								
1907-003B-A10	Building B Studio	Grey Sink Insulation	Good	Not Applicable	Not Applicable	All Layers	None Detect	Not Applicable
1907-003B-A11								
1907-003B-A12								
1907-003B-A13	Building B Studio	Grey Felt on Perimeter of Roof	Good	Not Applicable	Not Applicable	All Layers	None Detect	Not Applicable
1907-003B-A14								
1907-003B-A15								

Table 2
Asbestos Survey Results
Kaipapau Stream Bridge Replacement

Sample ID	Homogeneous Area	Material	Condition	Category	Friability	Analysis Layer	Asbestos Content	Estimated Quantity
1907-003B-A16	Building B Studio	Black Felt on Perimeter of Roof	Good	Not Applicable	Not Applicable	All Layers	None Detect	Not Applicable
1907-003B-A17								
1907-003B-A18								
1907-003B-A19	Building B Studio	White Caulking on Pipe Penetration with Black Mastic on Roof	Good	Misc	Category II Non-Friable	White Caulking	None Detect	3 square ft.
						Black Mastic	4% Chrysotile	
1907-003B-A20						Not Analyzed	Not Applicable	
1907-003B-A21						Not Analyzed	Not Applicable	
1907-003B-A22	Building B Studio	White Door Caulking	Good	Not Applicable	Not Applicable	All Layers	None Detect	Not Applicable
1907-003B-A23								
1907-003B-A24								
1907-003B-A25	Building B Studio	Drywall Wall and Ceiling w/ Joint Compound	Good	Not Applicable	Not Applicable	All Layers	None Detect	Not Applicable
1907-003B-A26								
1907-003B-A27								
1907-003B-A28	Building B Studio	Beige Mastic on Electric Cable Pole on Roof	Good	Not Applicable	Not Applicable	All Layers	None Detect	Not Applicable
1907-003B-A29								
1907-003B-A30								

Table 2
Asbestos Survey Results
Kaipapau Stream Bridge Replacement

Sample ID	Homogeneous Area	Material	Condition	Category	Friability	Analysis Layer	Asbestos Content	Estimated Quantity
1907-003B-A31	Building B Studio	Rolled on Roofing Material	Good	Misc	Category II Non-Friable	Black Roofing	8% Chrysotile	150 square ft.
1907-003B-A32						Black/Off-White Roofing	None Detect	
1907-003B-A33						Not Analyzed	Not Applicable	
						Not Analyzed	Not Applicable	

**Table 3
Lead Survey Results
Kaipapau Stream Bridge Replacement**

<i>Sample ID</i>	<i>Location</i>	<i>Interior/ Exterior</i>	<i>Color</i>	<i>Substrate</i>	<i>Description</i>	<i>Condition</i>	<i>Reporting Limit (% Pb by weight)</i>	<i>Results (% Pb by weight)</i>
1907-L01	Throughout	Interior	White	Drywall	Walls, Ceilings	Intact	0.010	BRL
				Wood	Door, Door Frame, Window, Baseboard			
1907-L02	Garage Port, Exterior of Main Building and Studio	Exterior	White	Concrete	Walls, Building Foundation	Intact	0.010	BRL
1907-L03	Exterior of Main Building and Studio	Exterior	Brown	Wood	Fence, Railings, Steps, Porch, Window Frame	Intact	0.010	BRL
				Metal	Flashing			
1907-L04	Garage Port, Exterior of Main Building and Studio	Exterior	Beige	Wood	Walls, Beams, Eaves, Overhang	Intact	0.013	BRL
				Concrete	Support Poles			

Table 4
Arsenic Survey Results
Kaipapau Stream Bridge Replacement

Sample ID	Location	Material Description	Condition	Color	Reporting Limit (mg/kg)	Results (mg/kg)
1907-003A-Ars01	Building A Main Building	Fiber Board Ceiling Panel	Good	White	20.0	<20.0

Appendix **II**

LABORATORY ANALYTICAL REPORTS AND CHAIN-OF-CUSTODY FORMS

EMC LABS, INC.

9830 S. 51st Street, Suite B109, Phoenix, AZ 85044
Phone: 800-362-3373 or 480-940-5294 - Fax: (480) 893-1726

Laboratory Report
0218703

Bulk Asbestos Analysis by Polarized Light Microscopy

NVLAP#101926-0

Client: ENVIROSERVICES & TRAINING CENTER Job# / P.O. #: 19-4007
Address: 505 WARD AVE, STE 202 Date Received: 04/17/2019
HONOLULU HI 96814 Date Analyzed: 04/24/2019
Collected: 04/15/2019 Date Reported: 04/24/2019
Project Name: KAIPAPAU TMK 5-4-18:03 BLDG A EPA Method: EPA 600/R-93/116
Address: Submitted By: JACOB VALENCIA
Collected By:

Lab ID Client ID	Sample Location	Layer Name / Sample Description	Asbestos Detected	Asbestos Type (%)	Non-Asbestos Constituents	
0218703-001 1907-003A-A01		16x16 Ceramic Tile/ Grout, Beige/ Gray Note: No Ceramic Tile Present	No	None Detected	Cellulose Fiber Quartz Gypsum Mica Carbonates Binder/Filler	<1% 99%
0218703-002 1907-003A-A02		16x16 Ceramic Tile/ Grout, Beige/ Gray Note: No Ceramic Tile Present	No	None Detected	Quartz Gypsum Mica Carbonates Binder/Filler	 100%
0218703-003 1907-003A-A03		16x16 Ceramic Tile/ Grout, Beige/ Gray Note: No Ceramic Tile Present	No	None Detected	Quartz Gypsum Mica Carbonates Binder/Filler	 100%
0218703-004 1907-003A-A04		LAYER 1 Drywall, Off White/ Brown	No	None Detected	Cellulose Fiber Fibrous Glass Gypsum Mica Quartz Carbonates	10% 2% 88%
		LAYER 2 Texture, White/ Off White	No	None Detected	Carbonates Mica Quartz Perlite Binder/Filler	 100%

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Project Name: KAIPAPAU TMK 5-4-18:03 BLDG A EPA Method: EPA 600/R-93/116
Address: Submitted By: JACOB VALENCIA
Collected By:

Lab ID Client ID	Sample Location	Layer Name / Sample Description	Asbestos Detected	Asbestos Type (%)	Non-Asbestos Constituents	
0218703-005 1907-003A-A05		LAYER 1 Drywall, Off White/ Brown	No	None Detected	Cellulose Fiber Fibrous Glass Gypsum Mica Quartz Carbonates	10% 2% 88%
		LAYER 2 Texture, White/ Off White	No	None Detected	Carbonates Quartz Gypsum Perlite Binder/Filler	 100%
0218703-006 1907-003A-A06		Drywall/ Texture, Off White/ Brown Note: No Texture Present	No	None Detected	Cellulose Fiber Fibrous Glass Gypsum Mica Quartz Carbonates	10% 2% 88%
0218703-007 1907-003A-A07		LAYER 1 Fiberboard, White/ Brown	No	None Detected	Cellulose Fiber Carbonates Gypsum Binder/Filler	90% 10%
		LAYER 2 Texture/ Paint, White/ Tan	No	None Detected	Cellulose Fiber Carbonates Mica Quartz Perlite Binder/Filler	1% 99%

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Project Name: KAIPAPAU TMK 5-4-18:03 BLDG A EPA Method: EPA 600/R-93/116
Address: Submitted By: JACOB VALENCIA
Collected By:

Lab ID Client ID	Sample Location	Layer Name / Sample Description	Asbestos Detected	Asbestos Type (%)	Non-Asbestos Constituents	
0218703-008 1907-003A-A08		LAYER 1 Fiberboard, White/ Brown	No	None Detected	Cellulose Fiber Carbonates Gypsum Binder/Filler	90% 10%
		LAYER 2 Texture/ Paint, White/ Tan	No	None Detected	Cellulose Fiber Carbonates Mica Quartz Perlite Binder/Filler	<1% 99%
0218703-009 1907-003A-A09		LAYER 1 Fiberboard, White/ Brown	No	None Detected	Cellulose Fiber Carbonates Gypsum Binder/Filler	90% 10%
		LAYER 2 Texture/ Paint, White/ Tan	No	None Detected	Cellulose Fiber Carbonates Mica Quartz Perlite Binder/Filler	<1% 99%
0218703-010 1907-003A-A10		LAYER 1 Carpet, White	No	None Detected	Synthetic Fiber Carbonates Binder/Filler	85% 15%
		LAYER 2 Adhesive, White/ Yellow	No	None Detected	Synthetic Fiber Carbonates Quartz Binder/Filler	<1% 99%

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	HONOLULU HI 96814	Date Analyzed:	04/24/2019
Collected:	04/15/2019	Date Reported:	04/24/2019
Project Name:	KAIPAPAU TMK 5-4-18:03 BLDG A	EPA Method:	EPA 600/R-93/116
Address:		Submitted By:	JACOB VALENCIA
		Collected By:	

Lab ID Client ID	Sample Location	Layer Name / Sample Description	Asbestos Detected	Asbestos Type (%)	Non-Asbestos Constituents	
0218703-011 1907-003A-A11		LAYER 1 Carpet, White	No	None Detected	Synthetic Fiber	85%
					Carbonates Binder/Filler	15%
		LAYER 2 Adhesive, White/ Yellow	No	None Detected	Carbonates Quartz Binder/Filler	100%
0218703-012 1907-003A-A12		LAYER 1 Carpet, White	No	None Detected	Synthetic Fiber	85%
					Carbonates Binder/Filler	15%
		LAYER 2 Adhesive, White/ Yellow	No	None Detected	Carbonates Quartz Binder/Filler	100%
0218703-013 1907-003A-A13		LAYER 1 Shingle, Black	No	None Detected	Fibrous Glass	20%
					Carbonates Quartz Binder/Filler	80%
		LAYER 2 Shingle, Black/ Red	No	None Detected	Fibrous Glass Cellulose Fiber	20% <1%
					Carbonates Quartz Binder/Filler	79%
		LAYER 3 Felt, Black	No	None Detected	Cellulose Fiber	40%
					Carbonates Gypsum Binder/Filler	60%

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Project Name: KAIPAPAU TMK 5-4-18:03 BLDG A EPA Method: EPA 600/R-93/116
Address: Submitted By: JACOB VALENCIA
Collected By:

Lab ID Client ID	Sample Location	Layer Name / Sample Description	Asbestos Detected	Asbestos Type (%)	Non-Asbestos Constituents
0218703-014 1907-003A-A14		LAYER 1 Shingle, Black	No	None Detected	Fibrous Glass 20% Carbonates Quartz Binder/Filler 80%
		LAYER 2 Shingle, Black/ Red	No	None Detected	Fibrous Glass 20% Carbonates Quartz Binder/Filler 80%
		LAYER 3 Felt, Black	No	None Detected	Cellulose Fiber 40% Carbonates Gypsum Binder/Filler 60%
0218703-015 1907-003A-A15		LAYER 1 Shingle, Black	No	None Detected	Fibrous Glass 20% Carbonates Quartz Binder/Filler 80%
		LAYER 2 Shingle, Black/ Red	No	None Detected	Fibrous Glass 20% Carbonates Quartz Binder/Filler 80%
		LAYER 3 Felt, Black	No	None Detected	Cellulose Fiber 40% Carbonates Gypsum Binder/Filler 60%
0218703-016 1907-003A-A16		Sink Insulation, Gray	No	None Detected	Carbonates Mica Quartz Binder/Filler 100%

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Address: Submitted By: JACOB VALENCIA
Collected By:

Lab ID Client ID	Sample Location	Layer Name / Sample Description	Asbestos Detected	Asbestos Type (%)	Non-Asbestos Constituents	
0218703-017 1907-003A-A17		Sink Insulation, Gray	No	None Detected	Carbonates Mica Quartz Binder/Filler	100%
0218703-018 1907-003A-A18		Sink Insulation, Gray	No	None Detected	Cellulose Fiber Carbonates Mica Quartz Binder/Filler	<1% 99%
0218703-019 1907-003A-A19		Caulking, Beige/ Off White	No	None Detected	Carbonates Quartz Binder/Filler	100%
0218703-020 1907-003A-A20		Caulking, Beige/ Off White	No	None Detected	Carbonates Quartz Binder/Filler	100%
0218703-021 1907-003A-A21		Caulking, Beige/ Off White	No	None Detected	Carbonates Quartz Binder/Filler	100%
0218703-022 1907-003A-A22		Caulking, Off White	No	None Detected	Cellulose Fiber Carbonates Quartz Binder/Filler	<1% 99%

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Bulk Asbestos Analysis by Polarized Light Microscopy

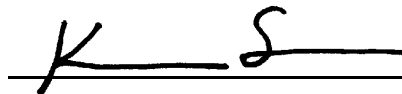
NVLAP#101926-0

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	HONOLULU HI 96814	Date Analyzed:	04/24/2019
Collected:	04/15/2019	Date Reported:	04/24/2019
Project Name:	KAIPAPAU TMK 5-4-18:03 BLDG A	EPA Method:	EPA 600/R-93/116
Address:		Submitted By:	JACOB VALENCIA
		Collected By:	

Lab ID Client ID	Sample Location	Layer Name / Sample Description	Asbestos Detected	Asbestos Type (%)	Non-Asbestos Constituents	
0218703-023 1907-003A-A23		Caulking, Off White	No	None Detected	Cellulose Fiber Carbonates Quartz Binder/Filler	<1% 99%
0218703-024 1907-003A-A24		Caulking, Off White	No	None Detected	Carbonates Quartz Binder/Filler	 100%
0218703-025 1907-003A-A25		Caulking, White	No	None Detected	Carbonates Quartz Binder/Filler	 100%
0218703-026 1907-003A-A26		Caulking, White	No	None Detected	Carbonates Quartz Binder/Filler	 100%
0218703-027 1907-003A-A27		Caulking, White	No	None Detected	Carbonates Quartz Binder/Filler	 100%



Analyst - Kurt Kettler



Signatory - Lab Manager - Ken Scheske

Distinctly stratified, easily separable layers of samples are analyzed as subsamples of the whole and are reported separately for each discernible layer. All analyses are derived from calibrated visual estimate and measured in area percent unless otherwise noted. The report applies to the standards or procedures identified and to the sample(s) tested. The test results are not necessarily indicative or representative of the qualities of the lot from which the sample was taken or of apparently identical or similar products, nor do they represent an ongoing quality assurance program unless so noted. These reports are for the exclusive use of the addressed client and that they will not be reproduced wholly or in part for advertising or other purposes over our signature or in connection with our name without special written permission. The report shall not be reproduced except in full, without written approval by our laboratory. The samples not destroyed in testing are retained a maximum of thirty days. The laboratory measurement of uncertainty for the test method is approximately less than 1 by area percent. Accredited by the National Institute of Standards and Technology, Voluntary Laboratory Accreditation Program for selected test method for asbestos. The accreditation or any reports generated by this laboratory in no way constitutes or implies product certification, approval, or endorsement by the National Institute of Standards and Technology. The report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the Federal Government. Polarized Light Microscopy may not be consistently reliable in detecting asbestos in floor coverings and similar non-friable organically bound materials.

CHAIN OF CUSTODY
 EMC Labs, Inc.
 9830 S. 51st St., Ste B-109
 Phoenix, AZ 85044
 (800) 362-3373 Fax (480) 893-1726

LAB#: 218703
 TAT: 35 days
 Rec'd: APR 17 P.M.

COMPANY NAME: ENVIROSERVICES & TRAINING CENTER, LLC
505 Ward Ave. Suite #202
Honolulu, HI 96814
 CONTACT: Daniel Woo, Jacob Valencia, Vel Roberts
 Phone/Fax: (808) 839-7222 ext 225 / (619) 495-6559
 Email: dwoo@gotoetc.com, jvalencia@gotoetc.com

BILL TO: (If Different Location)
Trina Oshiro

Now Accepting: **VISA - MASTERCARD** Price Quoted: \$ _____ / Sample \$ _____ / Layers

COMPLETE ITEMS 1-4: (Failure to complete any items may cause a delay in processing or analyzing your samples)

1. **TURNAROUND TIME:** [Same Day RUSH] [1-Day] [2-Day] 3-4-5 Day [6-10 Day]

****Prior confirmation of turnaround time is required

****Additional charges for rush analysis (please call marketing department for pricing details)

****Laboratory analysis may be subject to delay if credit terms are not met

2. **TYPE OF ANALYSIS:** Bulk-PLM [Air-PCM] [Lead] [Point Count] [Fungi: AOC, W-C, Bulk, Swab, Tape]

3. **DISPOSAL INSTRUCTIONS:** [Dispose of samples at EMC] / [Return samples to me at my expense]

(If you do not indicate preference, EMC will dispose of samples 60 days from analysis.)

4. **Project Name:** Kaipapaw TML 5-4-18-003 bldg. A **Project Number:** 19-4007

EMC SAMPLE #	CLIENT SAMPLE #	DATE & TIME SAMPLED	LOCATION/MATERIAL TYPE	Samples Accepted Yes / No
1, 2, 3	1907-003A-A01-A03	4/15/19	^{white} 16"x16" ceramic tile w/grout; Liv/Kit/Restroom	Y N
4, 5, 6	1907-003A-A04-A06	}	^{white} Drywall walls and ceiling w/joint compound	Y N
7, 8, 9	1907-003A-A07-A09		^{white} Fiberboard ceiling panels	Y N
10, 11, 12	1907-003A-A10-A12		Carpet material w/adhesive	Y N
13, 14, 15	1907-003A-A13-A15		Shingles on roof A	Y N
16, 17, 18	1907-003A-A16-A18		Gray sink insulation in kitchen	Y N
19, 20, 21	1907-003A-A19-A21		Beige caulking around bathroom tub w/adhesive	Y N
22, 23, 24	1907-003A-A22-A24		Off-white caulking around kitchen counter	Y N
25, 26, 27	1907-003A-A25-A27	white caulking around bathroom sink	Y N	
				Y N
				Y N
				Y N

SPECIAL INSTRUCTIONS: Stop at first positive

Sample Collector: (Print) Jacob Valencia, Daniel Woo (Signature) Jacob Val

Relinquished by D.Woo Date/Time 4/15/19 Received by: Diana Federico Date/Time: 4/17/19 9:50

Relinquished by: Diana Federico Date/Time: 4/17/19 3:55 PM Received by: [Signature] Date/Time: 4/17/19 5:35

Relinquished by: _____ Date/Time _____ Received by: _____ Date/Time: _____

** In the event of any dispute between the above parties for these services or otherwise, parties agree that jurisdiction and venue will be in Phoenix, Arizona and prevailing party will be entitled to attorney's fees and court costs.

EMC LABS, INC.

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Address: Submitted By: JACOB VALENCIA
Collected By:

Lab ID Client ID	Sample Location	Layer Name / Sample Description	Asbestos Detected	Asbestos Type (%)	Non-Asbestos Constituents
0218704-001 1907-003B-A01		LAYER 1 Ceramic Floor Tile, White/ Red	No	None Detected	Quartz Gypsum Binder/Filler 100%
		LAYER 2 Grout, Beige/ Gray	No	None Detected	Quartz Gypsum Mica Carbonates Binder/Filler 100%
0218704-002 1907-003B-A02		LAYER 1 Ceramic Floor Tile, White/ Red	No	None Detected	Quartz Gypsum Binder/Filler 100%
		LAYER 2 Grout, Beige/ Gray	No	None Detected	Cellulose Fiber <1% Quartz Gypsum Mica Carbonates Binder/Filler 99%
0218704-003 1907-003B-A03		LAYER 1 Ceramic Floor Tile, White/ Red	No	None Detected	Quartz Gypsum Binder/Filler 100%
		LAYER 2 Grout, Beige/ Gray	No	None Detected	Cellulose Fiber <1% Quartz Gypsum Binder/Filler 99%
0218704-004 1907-003B-A04		Mastic, Black	Yes	Chrysotile 5%	Fibrous Glass 3% Gypsum Carbonates Quartz Binder/Filler 92%

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Lab ID Client ID	Sample Location	Layer Name / Sample Description	Asbestos Detected	Asbestos Type (%)	Non-Asbestos Constituents
0218704-005 1907-003B-A05		Mastic, Black Note: *Not analyzed per client request			
0218704-006 1907-003B-A06		Mastic, Black Note: *Not analyzed per client request			
0218704-007 1907-003B-A07		Caulking, White/ Off White	No	None Detected	Silicone 100%
0218704-008 1907-003B-A08		Caulking, White/ Off White	No	None Detected	Silicone 100%
0218704-009 1907-003B-A09		Caulking, White/ Off White	No	None Detected	Silicone 100%
0218704-010 1907-003B-A10		Sink Insulation, Gray	No	None Detected	Cellulose Fiber <1% Carbonates Mica Quartz Binder/Filler 99%
0218704-011 1907-003B-A11		Sink Insulation, Gray	No	None Detected	Cellulose Fiber <1% Carbonates Mica Quartz Binder/Filler 99%
0218704-012 1907-003B-A12		Sink Insulation, Gray	No	None Detected	Carbonates Mica Quartz Binder/Filler 100%

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Address: Submitted By: JACOB VALENCIA
Collected By:

Lab ID Client ID	Sample Location	Layer Name / Sample Description	Asbestos Detected	Asbestos Type (%)	Non-Asbestos Constituents	
0218704-013 1907-003B-A13		Felt, Gray	No	None Detected	Fibrous Glass Carbonates Quartz Gypsum Binder/Filler	1% 99%
0218704-014 1907-003B-A14		Felt, Gray	No	None Detected	Fibrous Glass Cellulose Fiber Carbonates Quartz Gypsum Binder/Filler	1% <1% 98%
0218704-015 1907-003B-A15		Felt, Gray	No	None Detected	Fibrous Glass Cellulose Fiber Carbonates Quartz Gypsum Binder/Filler	1% <1% 98%
0218704-016 1907-003B-A16		LAYER 1 Felt, Black	No	None Detected	Fibrous Glass Carbonates Quartz Binder/Filler	20% 80%
		LAYER 2 Coating, White/ Black	No	None Detected	Cellulose Fiber Carbonates Quartz Binder/Filler	<1% 99%

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Collected By:

Lab ID Client ID	Sample Location	Layer Name / Sample Description	Asbestos Detected	Asbestos Type (%)	Non-Asbestos Constituents	
0218704-017 1907-003B-A17		LAYER 1 Felt, Black	No	None Detected	Fibrous Glass	20%
				Carbonates Quartz Binder/Filler	80%	
		LAYER 2 Felt, Black	No	None Detected	Fibrous Glass	20%
				Carbonates Quartz Binder/Filler	80%	
0218704-018 1907-003B-A18		LAYER 3 Coating, White/ Black	No	None Detected	Cellulose Fiber	<1%
				Quartz Carbonates Gypsum Mica Binder/Filler	99%	
		LAYER 1 Felt, Black	No	None Detected	Fibrous Glass	20%
				Carbonates Quartz Binder/Filler	80%	
0218704-019 1907-003B-A19		LAYER 2 Felt, Black	No	None Detected	Fibrous Glass	20%
				Carbonates Quartz Binder/Filler	80%	
		LAYER 3 Coating, White/ Black	No	None Detected	Carbonates Quartz Binder/Filler	100%
0218704-019 1907-003B-A19		LAYER 1 Caulking, White/ Off White	No	None Detected	Cellulose Fiber	<1%
				Carbonates Quartz Binder/Filler	99%	
		LAYER 2 Mastic, Black	Yes	Chrysotile 4%	Cellulose Fiber	1%
					Carbonates Quartz Binder/Filler	95%

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Collected By:

Lab ID Client ID	Sample Location	Layer Name / Sample Description	Asbestos Detected	Asbestos Type (%)	Non-Asbestos Constituents
0218704-020 1907-003B-A20		LAYER 1 Caulking, White/ Off White Note: *Not analyzed per client request LAYER 2 Mastic, Black Note: *Not analyzed per client request			
0218704-021 1907-003B-A21		LAYER 1 Caulking, White/ Off White Note: *Not analyzed per client request LAYER 2 Mastic, Black Note: *Not analyzed per client request			
0218704-022 1907-003B-A22		Door Caulking, White/ Off White	No	None Detected	Cellulose Fiber <1% Carbonates Quartz Binder/Filler 99%
0218704-023 1907-003B-A23		Door Caulking, White/ Off White	No	None Detected	Cellulose Fiber <1% Carbonates Quartz Binder/Filler 99%
0218704-024 1907-003B-A24		Door Caulking, White/ Off White	No	None Detected	Carbonates Quartz Binder/Filler 100%

EMC LABS, INC.

9830 S. 51st Street, Suite B109, Phoenix, AZ 85044
Phone: 800-362-3373 or 480-940-5294 - Fax: (480) 893-1726

Laboratory Report
0218704

Bulk Asbestos Analysis by Polarized Light Microscopy

NVLAP#101926-0

Client: ENVIROSERVICES & TRAINING CENTER Job# / P.O. #: 19-4007
Address: 505 WARD AVE, STE 202 Date Received: 04/17/2019
HONOLULU HI 96814 Date Analyzed: 04/22/2019
Collected: 04/15/2019 Date Reported: 04/22/2019
Project Name: KAIPAPAU TMK 5-4-18:03 BLDG B EPA Method: EPA 600/R-93/116
Address: Submitted By: JACOB VALENCIA
Collected By:

Lab ID Client ID	Sample Location	Layer Name / Sample Description	Asbestos Detected	Asbestos Type (%)	Non-Asbestos Constituents	
0218704-025 1907-003B-A25		LAYER 1 Drywall, Off White/ Brown	No	None Detected	Cellulose Fiber Gypsum Mica Quartz Carbonates	12% 88%
		LAYER 2 Texture, White/ Off White	No	None Detected	Cellulose Fiber Carbonates Quartz Perlite Binder/Filler	1% 99%
0218704-026 1907-003B-A26		LAYER 1 Drywall, Off White/ Brown	No	None Detected	Cellulose Fiber Gypsum Mica Quartz Carbonates	12% 88%
		LAYER 2 Texture, White/ Off White	No	None Detected	Carbonates Mica Quartz Perlite Binder/Filler	 100%
0218704-027 1907-003B-A27		LAYER 1 Drywall, Off White/ Brown	No	None Detected	Cellulose Fiber Gypsum Mica Quartz Carbonates	12% 88%
		LAYER 2 Texture, White/ Off White	No	None Detected	Cellulose Fiber Carbonates Quartz Perlite Binder/Filler	1% 99%

EMC LABS, INC.

9830 S. 51st Street, Suite B109, Phoenix, AZ 85044
Phone: 800-362-3373 or 480-940-5294 - Fax: (480) 893-1726

Laboratory Report
0218704

Bulk Asbestos Analysis by Polarized Light Microscopy

NVLAP#101926-0

Client: ENVIROSERVICES & TRAINING CENTER Job# / P.O. #: 19-4007
Address: 505 WARD AVE, STE 202 Date Received: 04/17/2019
HONOLULU HI 96814 Date Analyzed: 04/22/2019
Collected: 04/15/2019 Date Reported: 04/22/2019
Project Name: KAIPAPAU TMK 5-4-18:03 BLDG B EPA Method: EPA 600/R-93/116
Address: Submitted By: JACOB VALENCIA
Collected By:

Lab ID Client ID	Sample Location	Layer Name / Sample Description	Asbestos Detected	Asbestos Type (%)	Non-Asbestos Constituents
0218704-028 1907-003B-A28		Mastic/ Caulking, Beige/ Off White	No	None Detected	Quartz Gypsum Binder/Filler 100%
0218704-029 1907-003B-A29		Mastic/ Caulking, Beige/ Off White	No	None Detected	Quartz Gypsum Binder/Filler 100%
0218704-030 1907-003B-A30		Mastic/ Caulking, Beige/ Off White	No	None Detected	Cellulose Fiber Quartz Gypsum Binder/Filler <1% 99%
0218704-031 1907-003B-A31		LAYER 1 Coating, White/ Gray	No	None Detected	Carbonates Quartz Binder/Filler 100%
		LAYER 2 Roofing, Black/ Off White	No	None Detected	Synthetic Fiber Fibrous Glass Carbonates Quartz Binder/Filler 15% 5% 80%
		LAYER 3 Roofing, Black	No	None Detected	Cellulose Fiber Carbonates Gypsum Quartz Binder/Filler 20% 80%
		LAYER 4 Roofing, Black	No	None Detected	Fibrous Glass Carbonates Quartz Binder/Filler 20% 80%

EMC LABS, INC.

9830 S. 51st Street, Suite B109, Phoenix, AZ 85044
Phone: 800-362-3373 or 480-940-5294 - Fax: (480) 893-1726

Laboratory Report
0218704

Bulk Asbestos Analysis by Polarized Light Microscopy

NVLAP#101926-0

Client:	ENVIROSERVICES & TRAINING CENTER	Job# / P.O. #:	19-4007
Address:	505 WARD AVE, STE 202	Date Received:	04/17/2019
	HONOLULU HI 96814	Date Analyzed:	04/22/2019
Collected:	04/15/2019	Date Reported:	04/22/2019
Project Name:	KAIPAPAU TMK 5-4-18:03 BLDG B	EPA Method:	EPA 600/R-93/116
Address:		Submitted By:	JACOB VALENCIA
		Collected By:	

Lab ID Client ID	Sample Location	Layer Name / Sample Description	Asbestos Detected	Asbestos Type (%)	Non-Asbestos Constituents
0218704-032 1907-003B-A32	ADDITIONAL LAYERS	LAYER 1 Coating, White/ Gray Note: *Not analyzed per client request LAYER 2 Roofing, Black/ Off White Note: *Not analyzed per client request LAYER 3 Roofing, Black Note: *Not analyzed per client request LAYER 4 Roofing, Black Note: *Not analyzed per client request			
0218704-033 1907-003B-A33		LAYER 1 Coating, White/ Gray Note: *Not analyzed per client request LAYER 2 Roofing, Black/ Off White Note: *Not analyzed per client request LAYER 3 Roofing, Black Note: *Not analyzed per client request LAYER 4 Roofing, Black Note: *Not analyzed per client request			

EMC LABS, INC.

9830 S. 51st Street, Suite B109, Phoenix, AZ 85044
Phone: 800-362-3373 or 480-940-5294 - Fax: (480) 893-1726

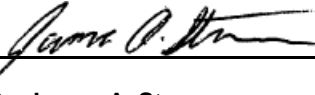
Laboratory Report
0218704

Bulk Asbestos Analysis by Polarized Light Microscopy

NVLAP#101926-0

Client:	ENVIROSERVICES & TRAINING CENTER	Job# / P.O. #:	19-4007
Address:	505 WARD AVE, STE 202	Date Received:	04/17/2019
	HONOLULU HI 96814	Date Analyzed:	04/22/2019
Collected:	04/15/2019	Date Reported:	04/22/2019
Project Name:	KAIPAPAU TMK 5-4-18:03 BLDG B	EPA Method:	EPA 600/R-93/116
Address:		Submitted By:	JACOB VALENCIA
		Collected By:	

Lab ID Client ID	Sample Location	Layer Name / Sample Description	Asbestos Detected	Asbestos Type (%)	Non-Asbestos Constituents
0218704-034 1907-003B-A31		LAYER 1 Roofing, Black	Yes	Chrysotile 8%	Gypsum Carbonates Quartz Binder/Filler 92%
		LAYER 2 Roofing, Black/ Off White	No	None Detected	Fibrous Glass 20% Carbonates Quartz Binder/Filler 80%



Analyst - James A. Storm



Signatory - Lab Director - Kurt Kettler

Distinctly stratified, easily separable layers of samples are analyzed as subsamples of the whole and are reported separately for each discernible layer. All analyses are derived from calibrated visual estimate and measured in area percent unless otherwise noted. The report applies to the standards or procedures identified and to the sample(s) tested. The test results are not necessarily indicated or representative of the qualities of the lot from which the sample was taken or of apparently identical or similar products, nor do they represent an ongoing quality assurance program unless so noted. These reports are for the exclusive use of the addressed client and that they will not be reproduced wholly or in part for advertising or other purposes over our signature or in connection with our name without special written permission. The report shall not be reproduced except in full, without written approval by our laboratory. The samples not destroyed in testing are retained a maximum of thirty days. The laboratory measurement of uncertainty for the test method is approximately less than 1 by area percent. Accredited by the National Institute of Standards and Technology, Voluntary Laboratory Accreditation Program for selected test method for asbestos. The accreditation or any reports generated by this laboratory in no way constitutes or implies product certification, approval, or endorsement by the National Institute of Standards and Technology. The report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the Federal Government. Polarized Light Microscopy may not be consistently reliable in detecting asbestos in floor coverings and similar non-friable organically bound materials.

CHAIN OF CUSTODY
 EMC Labs, Inc.
 9830 S. 51st St., Ste B-109
 Phoenix, AZ 85044
 (800) 362-3373 Fax (480) 893-1726

LAB#: 218704
 TAT: 3 Day
 Rec'd: APR 17 PM

COMPANY NAME: ENVIROSERVICES & TRAINING CENTER, LLC
505 Ward Ave. Suite #202
Honolulu, HI 96814
 CONTACT: Daniel Woo
 Phone/Fax: (808) 839-7222 ext 225 / (619) 495-6559
 Email: dwoo@gotoetc.com

BILL TO: (If Different Location)
Trina Oshiro

Now Accepting: **VISA - MASTERCARD** Price Quoted: \$ _____ / Sample \$ _____ / Layers

COMPLETE ITEMS 1-4: (Failure to complete any items may cause a delay in processing or analyzing your samples)

1. **TURNAROUND TIME:** [Same Day RUSH] [1-Day] [2-Day] [3-4-5 Day] [6-10 Day]
 ****Prior confirmation of turnaround time is required
 ****Additional charges for rush analysis (please call marketing department for pricing details)
 ****Laboratory analysis may be subject to delay if credit terms are not met
2. **TYPE OF ANALYSIS:** [Bulk-PLM] [Air-PCM] [Lead] [Point Count] [Fungi: AOC, W-C, Bulk, Swab, Tape]
3. **DISPOSAL INSTRUCTIONS:** [Dispose of samples at EMC] / [Return samples to me at my expense]
 (If you do not indicate preference, EMC will dispose of samples 60 days from analysis.)

4. **Project Name:** Kaipapau TMK 5-4-18 bldg B **Project Number:** 19-4007

EMC SAMPLE #	CLIENT SAMPLE #	DATE & TIME SAMPLED	LOCATION/MATERIAL TYPE	Samples Accepted Yes / No
1,2,3	1907-003B-A01-A03	4/15/19	12" x 12" Ceramic Floor tile with grout	Y N
4,5,6	1907-003B-A04-A06	↓	Black mastic on pipe penetration on roof	Y N
7,8,9	1907-003B-A07-A09		White caulking around toilet	Y N
10,11,12	1907-003B-A10-A12		Grey shik insulation	Y N
13,14,15	1907-003B-A13-A15		Grey felt on perimeter of roof	Y N
16,17,18	1907-003B-A16-A18		Black felt on perimeter of roof	Y N
19,20,21	1907-003B-A19-A21		White caulking on pipe penetration with black mastic seal	Y N
22,23,24	1907-003B-A22-A24		door caulking white	Y N
25,26,27	1907-003B-A25-A27		Drywall wall and ceiling joint compound	Y N
28,29,30	1907-003B-A28-A30		Biège mastic on electric cable pole on roof	Y N
31,32,33	1907-003B-A31-A33		↓	Rolled on roofing on roof
				Y N

SPECIAL INSTRUCTIONS: Stop after 1st positive
 Sample Collector: (Print) Daniel W / Jacob V (Signature) Daniel Woo
 Relinquished by D.Woo Date/Time 4/15/19 Received by: Diana Federico Date/Time: 4/17/19 9:50
 Relinquished by: Diana Federico Date/Time: 4/17/19 3:55pm Received by: [Signature] Date/Time: 4/17/19 1:55
 Relinquished by: _____ Date/Time _____ Received by: _____ Date/Time: _____

** In the event of any dispute between the above parties for these services or otherwise, parties agree that jurisdiction and venue will be in Phoenix, Arizona and prevailing party will be entitled to attorney's fees and court costs.
 Rev. 09/27/08



9830 South 51st Street, Suite B-109 / PHOENIX, ARIZONA 85044 / 480-940-5294 or 800-362-3373 / FAX 480-893-1726
emclab@emclabs.com

LEAD (Pb) IN PAINT CHIP SAMPLES
EMC SOP METHOD #L01/1 EPA SW-846 METHOD 7420

EMC LAB #: L74587		DATE RECEIVED: 04/17/19	
CLIENT: Enviroservices & Training Center, LLC		REPORT DATE: 04/22/19	
		DATE OF ANALYSIS: 04/19/19	
CLIENT ADDRESS: 505 Ward Ave. Suite #202 Honolulu, HI 96814		P.O. NO.:	
PROJECT NAME: Kaipapau Buildings – Kaipopou Stream Bridge Replacement		PROJECT NO.: 19-4007	


EMC # L74587-	SAMPLE DATE /19	CLIENT SAMPLE #	DESCRIPTION	REPORTING LIMIT (%Pb by weight)	%Pb BY WEIGHT
1	04/15	1907-L01	Interior – White – On Drywall – Ceiling/ Walls-/ Wood Door and Door Frames/ Window Frames/ Baseboard	0.010	BRL
2	04/15	1907-L02	Exterior – White on Concrete Wall and Building Foundation	0.010	BRL
3	04/15	1907-L03	Exterior – Brown – Wood Fence, Railings Steps, Porch/ Window Frames and Roof Metal	0.010	BRL
4	04/15	1907-L04	Exterior – Beige – Wood, Walls, Beams, Eaves, Overhang – Concrete Support Poles	0.010	BRL

^ = Dilution Factor Changed * = Excessive Substrate May Bias Sample Results **BRL** = Below Reportable Limits # = Very Small Amount Of Sample Submitted, May Affect Result

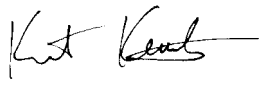
This report applies to the standards or procedures identified and to the samples tested only. The test results are not necessarily indicative or representative of the qualities of the lot from which the sample was taken or of apparently identical or similar products, nor do they represent an ongoing quality assurance program unless so noted. Unless otherwise noted, all quality control analyses for the samples noted above were within acceptable limits.

Where it is noted that a sample with excessive substrate was submitted for laboratory analysis, such analysis may be biased. The lead content of such sample may, in actuality, be greater than reported. EMC makes no warranty, express or implied, as to the accuracy of the analysis of samples noted to have been submitted with excessive substrate. Resampling is recommended in such situations to verify original laboratory results.

These reports are for the exclusive use of the addressed client and are rendered upon the condition that they will not be reproduced wholly or in part for advertising or other purposes over our signature or in connection with our name without special written permission. Samples not destroyed in testing are retained a maximum of sixty (60) days.

ANALYST: 

Jason Thompson

QA COORDINATOR: 

Kurt Kettler

CHAIN OF CUSTODY
 EMC Labs, Inc.
 9830 S. 51st St., Ste B-109
 Phoenix, AZ 85044
 (800) 362-3373 Fax (480) 893-1726

LAB#: 274587
 TAT: 3 day
 Rec'd: 4/17/19

COMPANY NAME: ENVIROSERVICES & TRAINING CENTER, LLC
505 Ward Ave. Suite #202
Honolulu, HI 96814
 CONTACT: Daniel Woo
 Phone/Fax: (808) 839-7222 ext 225 / (619) 495-6559
 Email: dwoo@gotoetc.com

BILL TO: (If Different Location)
Trina Oshiro

Now Accepting: **VISA - MASTERCARD** Price Quoted: \$ _____ / Sample \$ _____ / Layers

COMPLETE ITEMS 1-4: (Failure to complete any items may cause a delay in processing or analyzing your samples)

1. **TURNAROUND TIME:** [Same Day RUSH] [1-Day] [2-Day] [3-4-5 Day] [6-10 Day]

****Prior confirmation of turnaround time is required
 ****Additional charges for rush analysis (please call marketing department for pricing details)
 ****Laboratory analysis may be subject to delay if credit terms are not met

2. **TYPE OF ANALYSIS:** [Bulk-PLM] [Air-PCM] [Lead] [Point Count] [Fungi: AOC, W-C, Bulk, Swab, Tape]

3. **DISPOSAL INSTRUCTIONS:** [Dispose of samples at EMC] / [Return samples to me at my expense]
 (If you do not indicate preference, EMC will dispose of samples 60 days from analysis.)

4. **Project Name:** Kaipapau Buildings - Kaipapau Stream Bridge Replacement **Project Number:** 19-4007

EMC SAMPLE #	CLIENT SAMPLE #	DATE & TIME SAMPLED	LOCATION/MATERIAL TYPE	Samples Accepted Yes / No
	1907-L01	04/15/19	Interior - White - on Drywall - ceilings/Walls/Wood Door and Door Frames / Door Window Frames / Baseboard	Y N
	1907-L02	04/15/19	Exterior - White on concrete Wall and Building Foundation	Y N
	1907-L03	04/15/19	Exterior - Brown - Wood Fence, Railings, Steps, Porch	Y N
	1907-L04		Window Frame and Roof Metal Flashings	Y N
	1907-L04	04/15/19	Exterior - Beige - Dood, walls, Beams, eaves, overhang - Concrete Support Posts Poles	Y N
				Y N
				Y N
				Y N
				Y N
				Y N

SPECIAL INSTRUCTIONS: _____
 Sample Collector: (Print) Val Roberts (Signature) Val Roberts
 Relinquished by D. Woo Date/Time 4-15-19 Received by: _____ Date/Time: _____
 Relinquished by: D. Woo Date/Time: _____ Received by: [Signature] Date/Time: 4/17/19 9:50
 Relinquished by: [Signature] Date/Time: 4/17/19 10:10 Received by: [Signature] Date/Time: 4/17/19 10:20

** In the event of any dispute between the above parties for these services or otherwise, parties agree that jurisdiction and venue will be in Phoenix, Arizona and prevailing party will be entitled to attorney's fees and court costs.



April 18, 2019

Vel Roberts

EnviroServices & Training Center, LLC

505 Ward Avenue, Suite 202

Honolulu, HI 96814

RE: Metals Analysis; NVL Batch # 1907712.00

Dear Ms. Roberts,

Enclosed please find the test results for samples submitted to our laboratory for analysis. Preparation of these samples was conducted following protocol outlined in EPA Method SW 846 -3051 unless stated otherwise. Analysis of these samples was performed using analytical instruments in accordance with U.S. EPA, NIOSH, OSHA and other ASTM methods.

For matrix materials submitted as paint, dust wipe, soil or TCLP samples, analysis for the presence of total metals is conducted using published U.S. EPA Methods. Paint and soil results are usually expressed in mg/Kg which is equivalent to parts per million (ppm). Lead (Pb) in paint is usually expressed in mg/Kg (ppm), Percent (%) or mg/cm² by area. Dust wipe sample results are usually expressed in ug/wipe and ug/ft². TCLP samples are reported in mg/L (ppm). For air filter samples, analyses are conducted using NIOSH and OSHA Methods. Results are expressed in ug/filter and ug/m³. Other matrix materials are analyzed accordingly using published methods or specified by client. The reported test results pertain only to items tested and are not blank corrected.

For recent regulation updates pertaining to current regulatory levels or permissible exposure levels, please call your local regulatory agencies for more details.

This report is considered highly confidential and will not be released without your approval. Samples are archived for two weeks following analysis. Samples that are not retrieved by the client are discarded after two weeks.

Thank you for using our laboratory services. If you need further assistance please feel free to call us at 206-547-0100 or 1-888-NVLLABS.

Yasuyuki Hida, Laboratory Analyst

Enc.: Sample results



LAB # 101861

Phone: 206 547.0100 | Fax: 206 634.1936 | Toll Free: 1.888.NVL.LABS (685.5227)
4708 Aurora Avenue North | Seattle, WA 98103-6516

Analysis Report

Total Metals



Client: EnviroServices & Training Center, LLC
 Address: 505 Ward Avenue, Suite 202
 Honolulu, HI 96814

Batch #: 1907712.00

Matrix: Bulk

Method: EPA 3051/6010C

Client Project #: 19-4007 Kaipapau TMK 5-4-18

Date Received: 4/17/2019

Samples Received: 1

Samples Analyzed: 1

Attention: Ms. Vel Roberts
 Project Location: 54-260 Kamehameha Hwy

Lab ID	Client Sample #	Elements	Sample wt (g)	RL mg / kg	Results in mg / kg	Results in ppm
19039792	1907-003A-Ars01	Arsenic (As)	0.1997	20.0	< 20.0	< 20.0

Sampled by: Client
 Analyzed by: Shalini Patel
 Reviewed by: Yasuyuki Hida

Date Analyzed: 04/18/2019
 Date Issued: 04/18/2019

Yasuyuki Hida, Laboratory Analyst

mg/ kg = Milligrams per kilogram

ppm = Parts per million

Note : Method QC results are acceptable unless stated otherwise.

Unless otherwise indicated, the condition of all samples was acceptable at time of receipt.

RL = Reporting Limit

'<' = Below the reporting Limit

METAL LABORATORY SERVICES



Company EnviroServices & Training Center, LLC **NVL Batch Number** **1907712.00**
Address 505 Ward Avenue, Suite 202 **TAT** 5 Days **AH** No
 Honolulu, HI 96814 **Rush TAT** _____
Project Manager Ms. Vel Roberts **Due Date** 4/24/2019 **Time** 9:35 AM
Phone (808) 839-7222 **Email** vel@gotoetc.com
Cell (808) 384-9590 **Fax** (808) 839-4455

Project Name/Number: 19-4007 Kaipapau **Project Location:** 54-260 Kamehameha Hwy
 TMK 5-4-18

Subcategory Inductively Coupled Plasma (ICP) - Group Tests
Item Code ICP-M2 EPA 6010 (price per analyte) <paint>
Metals Arsenic (As)

Total Number of Samples 1 **Rush Samples** _____

	Lab ID	Sample ID	Description	A/R
1	19039792	1907-003A-Ars01		A

	Print Name	Signature	Company	Date	Time
Sampled by	Client				
Relinquished by	Federal Express				

Office Use Only	Print Name	Signature	Company	Date	Time
Received by	Emily Schubert		NVL	4/17/19	935
Analyzed by	Shalini Patel		NVL	4/18/19	
Results Called by					
<input type="checkbox"/> Faxed <input type="checkbox"/> Emailed					

Special Instructions: _____

Date: 4/17/2019
 Time: 12:43 PM
 Entered By: Kelly AuVu



METALS CHAIN OF CUSTODY

Turn Around Time

- 2 Hour 4 Hours 24 Hours
- 2 Days 3 Days 4 Days
- 5 Days 6-10 Days

Please call for TAT less than 24 Hours

Laboratory | Management | Training

Company EnviroServices & Training Center, LLC
 Address 505 Ward Avenue, Suite 202
Honolulu, Hawaii 96814
 Phone (808) 839-7222

Project Manager Vel Roberts
 Cell (808) 398 - 2174
 Email _____
 Fax () -

Project Name/Number 19-4007 Kaipapau TMK 5-4-18 Project Location 54-260 Kamehameha Hwy

- | | | | | | | |
|--|---|---|--|-------------------------------|--|--------------------------------------|
| <input checked="" type="checkbox"/> Total Metals | <input type="checkbox"/> FAA (ppm) | <input type="checkbox"/> Air Filter | <input type="checkbox"/> Paint Chips (%) | <input type="checkbox"/> Soil | RCRA 8 | RCRA 11 |
| <input type="checkbox"/> TCLP | <input checked="" type="checkbox"/> ICP (PPM) | <input type="checkbox"/> Paint Chips (cm) | <input type="checkbox"/> Dust Wipes | | <input type="checkbox"/> Barium <input type="checkbox"/> Chromium <input type="checkbox"/> Silver | <input type="checkbox"/> Copper |
| | <input type="checkbox"/> GFAA (ppb) | <input type="checkbox"/> Drinking Water | <input type="checkbox"/> Waste Water | | <input checked="" type="checkbox"/> Arsenic <input type="checkbox"/> Mercury <input type="checkbox"/> Lead | <input type="checkbox"/> Zinc |
| | <input type="checkbox"/> CVAA (ppb) | <input checked="" type="checkbox"/> Other _____ | | | <input type="checkbox"/> Selenium <input type="checkbox"/> Cadmium | <input type="checkbox"/> Other _____ |

Reporting Instructions _____
 Call () * Fax () * Email vel@gotoetc.com

Total Number of Samples 1

Sample ID	Description	A/R
1	1907-003A-Ars01 Fiber board ceiling panel	
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		
14		
15		

Print Name	Signature	Company	Date	Time
Sampled by Daniel Woo		ETC	4/15/19	
Relinquish by Ververdee Roberts		ETC	4/15/19	

Office Use Only

Print Name	Signature	Company	Date	Time
Received by Emelius		NVL	4/17/19	9:35 Pdedee
Analyzed by				
Called by				
Faxed/Email by				

Appendix **III**

PHOTO DOCUMENTATION



1907-003B-A04: Black Mastic on Pipe Penetration
Building B Studio Roof



1907-003B-A19: White Caulking on Pipe Penetration with Black
Mastic
Building B Studio Roof



1907-003B-A31: Rolled on Roofing
Building B Studio Roof

LIMITED HAZARDOUS MATERIALS SURVEY REPORT

**KAIPAPAU STREAM BRIDGE REPLACEMENT
NICHOLL PROPERTY
TMK (1) 5-4-11: PARCEL 020
HAU'ULA, OAHU, HAWAII**

Prepared for:
R.M. TOWILL CORPORATION
2024 North King Street, Suite 200
Honolulu, HI 96819

Prepared by:
ENVIROSERVICES & TRAINING CENTER, LLC
505 Ward Avenue, Suite 202
Honolulu, Hawaii 96814
tel: (808) 839-7222

ETC Project No. 19-4007

May 28, 2019

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APPENDICES

APPENDIX I:DATA TABLES

APPENDIX II:LABORATORY ANALYTICAL REPORTS AND CHAIN-OF-CUSTODY FORMS

1.0 CERTIFICATIONS AND LIMITATIONS

EnviroServices & Training Center, LLC (ETC) has completed a Limited Hazardous Materials Survey (Survey) for R.M. Towill Corporation at the Nicholl property, identified as Tax Map Key (TMK) 5-4-11: Parcel 020, Kamehameha Highway, Oahu, Hawaii (Subject Site). ETC's findings and recommendations contained herein are based on site observations, government regulations and laboratory data, which were gathered at the time and location of the study. Opinions stated in this report do not apply to changes that may have occurred after the services were performed.

ETC has performed specified services for this project with the degree of care, skill and diligence ordinarily exercised by professional consultants performing the same or similar services. No other warranty, guarantee, or representation, expressed or implied, is included or intended; unless otherwise specifically agreed to in writing by both ETC and ETC's Client.

This report is intended for the sole use of R.M. Towill Corporation, exclusively for the Subject Site. R.M. Towill Corporation may use and release this report, including making and retaining copies, provided such use is limited to the particular site and project for which this report is provided. However, the services performed may not be appropriate for satisfying the needs of other users. Release of this report to third-parties will be at the sole risk of ETC's Client and/or said user, and ETC shall not be liable for any claims or damages resulting from or connected with such release or any third party's use or reuse of this report.

Surveyed/
Prepared By:



Daniel Woo
State of Hawaii Asbestos Building Inspector # HIASB-4697
State of Hawaii Lead Building Inspector # PB-1075

Surveyed/
Prepared By:



Jacob Valencia
State of Hawaii Asbestos Building Inspector # HIASB-4696
State of Hawaii Lead Building Inspector # PB-1074

EXECUTIVE SUMMARY

EnviroServices & Training Center, LLC (ETC) conducted a Limited Hazardous Materials Survey (Survey) and compiled this report for R.M. Towill Corporation at the Nicholl property, identified as Tax Map Key (TMK) 5-4-11: Parcel 020, Kamehameha Highway, Oahu, Hawaii (Subject Site). The following suspect hazardous materials were identified during ETC's survey of the garage, roof, and main house of the Nicholl property:

1.1 Summary of Asbestos Containing Materials Survey

None of the samples analyzed were determined to contain asbestos above the regulatory limit of 1%.

1.2 Summary of Lead Paint Survey

Laboratory analysis determined that the sampled paints do not contain detectable levels of lead above the laboratory detection limit and are considered to be non-lead-containing.

1.3 Summary of Arsenic Survey

No suspect arsenic containing materials were found at the subject site.

2.0 INTRODUCTION/PURPOSE

The purpose of this Survey was to inspect the Subject Site for the presence of suspected hazardous materials that may be affected by the project. The Survey was conducted on May 10, 2019 and limited to the areas specified by R.M. Towill Corporation. Specifically, ETC completed the following tasks:

- Performed site reconnaissance at the Subject Site;
- Collected twenty-one (21) samples of suspected Asbestos-Containing Materials (ACM) from the Subject Site;
- Submitted the 21 samples of suspected ACM to EMC Labs, Inc. (EMC) for analysis of asbestos via Polarized Light Microscopy (PLM) in accordance with the Environmental Protection Agency (EPA) Method 600/R-93/116;
- Collected five (5) paint chip samples from the Subject Site;
- Submitted the 5 paint chip samples to EMC for analysis by flame atomic absorption spectroscopy (FAAS) via EPA Method 7000 for total lead content;
- Conducted a visual inspection for suspect arsenic-containing materials, and
- Prepared this report documenting the field activities and the results of the investigation including analytical results, conclusions, and recommendations.

3.0 METHODOLOGY

3.1 Asbestos

ETC personnel collected 21 samples of suspected ACM for asbestos analysis. Samples were collected from various areas of the Subject Site in accordance with EPA guidelines and recommendations.

The suspected ACM were wetted with amended water before sample collection. A small piece was then carefully cut out and placed into a labeled, re-sealable plastic bag. The sampling equipment was cleaned between each sample collection to avoid cross-contamination between samples. The approximate quantity of each suspected ACM was noted. Sample locations were randomly selected in accordance with EPA protocols and recommendations.

Samples were logged and recorded following strict chain-of-custody procedures, and sent to EMC located in Phoenix, Arizona, for analysis by PLM in accordance with EPA Method 600/R-93/116. EMC is accredited for bulk asbestos analysis through successful participation in the National Voluntary Lab Accreditation Program (NVLAP).

3.2 Lead Paint

ETC personnel collected and had 5 paint chip samples analyzed in accordance with the EPA guidelines and recommendations.

The suspected lead-containing paints were wetted with amended water before sample collection. Paint was carefully scraped and placed into a labeled re-sealable plastic bag. The sampling equipment was cleaned between each sample collection to avoid cross-contamination between samples. Samples were properly logged and recorded following strict chain of custody procedure and submitted to EMC for analysis by FAAS, in accordance with EPA Method 7420. EMC is an Environmental Lead Laboratory Accreditation Program (ELLAP)-accredited laboratory.

3.3 Arsenic

No suspect arsenic containing materials were found at the subject site.

4.0 RESULTS

4.1 Asbestos

None of the samples analyzed were determined to contain asbestos above the regulatory limit of 1%.

However, the roof tiles and the white drywall ceiling in the garage were found to contain glass fibers. Although materials containing such fibers are not specifically regulated, it is ETC's recommendation to handle materials containing glass fibers with appropriate protective equipment.

The asbestos analytical laboratory report is included in Appendix II.

4.2 Lead Paint

The sampled paints did not contain detectable levels of lead and are considered to be non-lead-containing.

The lead analytical laboratory report is included in Appendix II.

4.3 Arsenic

No suspect arsenic containing materials were found at the subject site.

5.0 DISCUSSION AND RECOMMENDATIONS

The findings and recommendations of ETC's limited hazardous material survey extended only to those areas that were accessible at the time of the site reconnaissance. Any areas that were inaccessible either due to physical restraints (i.e. areas within walls, excessive heights, hidden materials, etc.) are not covered under the scope of this survey and should be evaluated for hazardous materials separately prior to any disturbance.

Based on ETC's visual inspection of the facility and laboratory data, ETC recommends the following:

- Manage and/or remove and dispose of hazardous and regulated materials in accordance with applicable federal, state, and local regulations, prior to renovation and/or demolition activities that may disturb these materials.
- Any material that is suspected to contain a hazardous contaminant but was not tested as part of this survey should be tested prior to disturbance.
- Handle materials containing glass fibers with appropriate protective equipment to prevent inhalation or ingestion of fibers and contact with skin and mucous membranes.

Appendix **I**

DATA TABLES

Table 1
Asbestos Survey Results
Kaipapau Stream Bridge Replacement

Sample ID	Homogeneous Area	Material	Condition	Category	Friability	Analysis Layer	Asbestos Content	Estimated Quantity
1907-020MH-A01	Throughout Interior	Drywall Wall and Ceiling	Good	Not Applicable	Not Applicable	All	None Detected	Not Applicable
1907-020MH-A02								
1907-020MH-A03								
1907-020MH-A04	Throughout Interior	Wood Floor with Adhesive	Good	Not Applicable	Not Applicable	All	None Detected	Not Applicable
1907-020MH-A05								
1907-020MH-A06								
1907-020MH-A07	Living Room	Black Door Sealant	Good	Not Applicable	Not Applicable	All	None Detected	Not Applicable
1907-020MH-A08								
1907-020MH-A09								
1907-020MH-A10	Bathroom	Off-White Counter Caulking	Good	Not Applicable	Not Applicable	All	None Detected	Not Applicable
1907-020MH-A11								
1907-020MH-A12								
1907-020GR-A01	Roof	Shingles on Roof	Good	Not Applicable	Not Applicable	All	None Detected*	Not Applicable
1907-020GR-A02								
1907-020GR-A03								
1907-020GR-A04	Garage	White Drywall Ceiling	Good	Not Applicable	Not Applicable	All	None Detected*	Not Applicable
1907-020GR-A05								
1907-020GR-A06								
1907-020GR-A07	Throughout Exterior	White Window Caulking	Good	Not Applicable	Not Applicable	All	None Detected	Not Applicable
1907-020GR-A08								
1907-020GR-A09								

* = Fibrous Glass Detected

**Table 2
Lead Survey Results
Kaipapau Stream Bridge Replacement**

<i>Sample ID</i>	<i>Location</i>	<i>Interior/ Exterior</i>	<i>Color</i>	<i>Substrate</i>	<i>Description</i>	<i>Condition</i>	<i>Reporting Limit (% Pb by weight)</i>	<i>Results (% Pb by weight)</i>
1907-020-L01	Throughout	Interior	White	Drywall	Walls, Ceilings	Intact	0.010	BRL
1907-020-L02	Garage, Exterior of Main House	Exterior	White	Wood	Panels, Beams	Intact	0.010	BRL
				Drywall	Ceiling			
				Plastic	Sewage Pipes			
				Metal	Elec. Conduits, Pipes, Box			
1907-020-L03	Garage, Exterior of Main House	Exterior	Tan	Wood	Walls, Beams	Intact	0.010	BRL
				CMU	Pillar			
				Metal	Elec. Conduits, Pipes, Box			
1907-020-L04	Exterior of Main House	Exterior	Blue	Wood	Trim, Beams, Door	Intact	0.010	BRL
1907-020-L05	Exterior of Main House (Rear)	Exterior	Pink	CMU	Wall	Intact	0.010	BRL

Appendix **II**

LABORATORY ANALYTICAL REPORTS AND CHAIN-OF-CUSTODY FORMS

EMC LABS, INC.

9830 S. 51st Street, Suite B109, Phoenix, AZ 85044
Phone: 800-362-3373 or 480-940-5294 - Fax: (480) 893-1726

Laboratory Report
0220101

Bulk Asbestos Analysis by Polarized Light Microscopy

NVLAP#101926-0

Client: ENVIROSERVICES & TRAINING CENTER Job# / P.O. #: 19-4007
Address: 505 WARD AVE, STE 202 Date Received: 05/15/2019
HONOLULU HI 96814 Date Analyzed: 05/20/2019
Collected: 05/10/2019 Date Reported: 05/20/2019
Project Name: KAIPAPAU, NICHOLLS PROPERTY EPA Method: EPA 600/R-93/116
Address: GARAGE/ROOF Submitted By: JACOB VALENCIA
Collected By:

Lab ID Client ID	Sample Location	Layer Name / Sample Description	Asbestos Detected	Asbestos Type (%)	Non-Asbestos Constituents	
0220101-001 1907-020GR- A01		Roof Tile, Black/ Tan	No	None Detected	Fibrous Glass Carbonates Quartz Binder/Filler	20% 80%
0220101-002 1907-020GR- A02		Roof Tile, Black/ Tan	No	None Detected	Fibrous Glass Carbonates Quartz Binder/Filler	20% 80%
0220101-003 1907-020GR- A03		Roof Tile, Black/ Tan	No	None Detected	Fibrous Glass Carbonates Quartz Binder/Filler	20% 80%
0220101-004 1907-020GR- A04		Drywall/ Plaster, Off White/ Brown Note: No Plaster Present	No	None Detected	Cellulose Fiber Fibrous Glass Gypsum Mica Quartz Carbonates	10% 2% 88%
0220101-005 1907-020GR- A05		LAYER 1 Drywall/ Plaster, Off White/ Brown Note: No Plaster Present	No	None Detected	Cellulose Fiber Fibrous Glass Gypsum Mica Quartz Carbonates	10% 2% 88%
		LAYER 2 Texture, White/ Off White	No	None Detected	Cellulose Fiber Carbonates Mica Quartz Binder/Filler	1% 99%

EMC LABS, INC.

9830 S. 51st Street, Suite B109, Phoenix, AZ 85044
Phone: 800-362-3373 or 480-940-5294 - Fax: (480) 893-1726

Laboratory Report
0220101

Bulk Asbestos Analysis by Polarized Light Microscopy

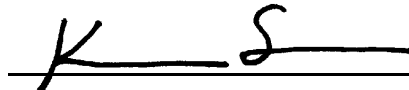
NVLAP#101926-0

Client:	ENVIROSERVICES & TRAINING CENTER	Job# / P.O. #:	19-4007
Address:	505 WARD AVE, STE 202	Date Received:	05/15/2019
	HONOLULU HI 96814	Date Analyzed:	05/20/2019
Collected:	05/10/2019	Date Reported:	05/20/2019
Project Name:	KAIPAPAU, NICHOLLS PROPERTY	EPA Method:	EPA 600/R-93/116
Address:	GARAGE/ROOF	Submitted By:	JACOB VALENCIA
		Collected By:	

Lab ID Client ID	Sample Location	Layer Name / Sample Description	Asbestos Detected	Asbestos Type (%)	Non-Asbestos Constituents
0220101-006 1907-020GR- A06		LAYER 1 Drywall/ Plaster, Off White/ Brown Note: No Plaster Present	No	None Detected	Cellulose Fiber 10% Fibrous Glass 2% Gypsum Mica Quartz Carbonates 88%
		LAYER 2 Texture, White/ Off White	No	None Detected	Cellulose Fiber <1% Carbonates Mica Quartz Binder/Filler 99%
0220101-007 1907-020GR- A07		Window Caulk, White/ Tan	No	None Detected	Cellulose Fiber <1% Carbonates Quartz Binder/Filler 99%
0220101-008 1907-020GR- A08		Window Caulk, White/ Tan	No	None Detected	Cellulose Fiber <1% Carbonates Quartz Binder/Filler 99%
0220101-009 1907-020GR- A09		Window Caulk, White/ Tan	No	None Detected	Cellulose Fiber 1% Carbonates Quartz Binder/Filler 99%



Analyst - Kurt Kettler



Signatory - Lab Manager - Ken Scheske

Distinctly stratified, easily separable layers of samples are analyzed as subsamples of the whole and are reported separately for each discernible layer. All analyses are derived from calibrated visual estimate and measured in area percent unless otherwise noted. The report applies to the standards or procedures identified and to the sample(s) tested. The test results are not necessarily indicated or representative of the qualities of the lot from which the sample was taken or of apparently identical or similar products, nor do they represent an ongoing quality assurance program unless so noted. These reports are for the exclusive use of the addressed client and that they will not be reproduced wholly or in part for advertising or other purposes over our signature or in connection with our name without special written permission. The report shall not be reproduced except in full, without written approval by our laboratory. The samples not destroyed in testing are retained a maximum of thirty days. The laboratory measurement of uncertainty for the test method is approximately less than 1 by area percent. Accredited by the National Institute of Standards and Technology, Voluntary Laboratory Accreditation Program for selected test method for asbestos. The accreditation or any reports generated by this laboratory in no way constitutes or implies product certification, approval, or endorsement by the National Institute of Standards and Technology. The report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the Federal Government. Polarized Light Microscopy may not be consistently reliable in detecting asbestos in floor coverings and similar non-friable organically bound materials.

CHAIN OF CUSTODY
 EMC Labs, Inc.
 9830 S. 51st St., Ste B-109
 Phoenix, AZ 85044
 (800) 362-3373 Fax (480) 893-1726

LAB#: 220101
 TAT: 3 day
 Rec'd: MAY 15 AM

COMPANY NAME: ENVIROSERVICES & TRAINING CENTER, LLC
505 Ward Ave. Suite #202
Honolulu, HI 96814
 CONTACT: J Valencia, D Woo
 Phone/Fax: (808) 839-7222 ext 232/(808) 839-4455
 Email: jvalencia@gotoetc.com, dwoo@gotoetc.com

BILL TO: (If Different Location)
Trina Oshiro

Now Accepting: **VISA - MASTERCARD** Price Quoted: \$ _____ / Sample \$ _____ / Layers

COMPLETE ITEMS 1-4: (Failure to complete any items may cause a delay in processing or analyzing your samples)

1. **TURNAROUND TIME:** [Same Day RUSH] [1-Day] [2-Day] [3-4-5 Day] [6-10 Day]

****Prior confirmation of turnaround time is required

****Additional charges for rush analysis (please call marketing department for pricing details)

****Laboratory analysis may be subject to delay if credit terms are not met

2. **TYPE OF ANALYSIS:** [Bulk-PLM] [Air-PCM] [Lead] [Point Count] [Fungi: AOC, W-C, Bulk, Swab, Tape]

3. **DISPOSAL INSTRUCTIONS:** [Dispose of samples at EMC] / [Return samples to me at my expense]

(If you do not indicate preference, EMC will dispose of samples 60 days from analysis.)

4. **Project Name:** Kaipapau, Nicholls Property Garage/Roof **Project Number:** 19-4007

EMC SAMPLE #	CLIENT SAMPLE #	DATE & TIME SAMPLED	LOCATION/MATERIAL TYPE	Samples Accepted Yes / No
1-2-3	1907-020GR-A01-A03	5/10/19	Roof tiles	Y N
4-5-6	1907-020GR-A04-A06	↓	White plaster ceiling	Y N
7-8-9	1907-020GR-A07-A09	↓	White window caulking	Y N
				Y N
				Y N
				Y N
				Y N
				Y N
				Y N
				Y N
				Y N

SPECIAL INSTRUCTIONS: Stop at first positive
 Sample Collector: (Print) Jacob Valencia, Daniel Woo (Signature) [Signature]
 Relinquished by J. Valencia Date/Time 5/14/19 Received by: Diana Federico Date/Time: 5/15/19
 Relinquished by Diana Federico Date/Time: 5/15/19 Received by: [Signature] Date/Time: 5/15/19
 Relinquished by: _____ Date/Time: _____ Received by: _____ Date/Time: _____

** In the event of any dispute between the above parties for these services or otherwise, parties agree that jurisdiction and venue will be in Phoenix, Arizona and prevailing party will be entitled to attorney's fees and court costs.

EMC LABS, INC.

9830 S. 51st Street, Suite B109, Phoenix, AZ 85044
Phone: 800-362-3373 or 480-940-5294 - Fax: (480) 893-1726

Laboratory Report
0220102

Bulk Asbestos Analysis by Polarized Light Microscopy

NVLAP#101926-0

Client:	ENVIROSERVICES & TRAINING CENTER	Job# / P.O. #:	19-4007
Address:	505 WARD AVE, STE 202	Date Received:	05/15/2019
	HONOLULU HI 96814	Date Analyzed:	05/20/2019
Collected:	05/10/2019	Date Reported:	05/20/2019
Project Name:	KAIPAPAU, NICHOLLS PROPERTY	EPA Method:	EPA 600/R-93/116
Address:	MAIN HOUSE	Submitted By:	JACOB VALENCIA
		Collected By:	

Lab ID Client ID	Sample Location	Layer Name / Sample Description	Asbestos Detected	Asbestos Type (%)	Non-Asbestos Constituents		
0220102-001 1907-020MH- A01		Joint Compound, White	No	None Detected	Carbonates Mica Quartz Perlite Binder/Filler	100%	
0220102-002 1907-020MH- A02		LAYER 1 Joint Compound, White	No	None Detected	Carbonates Mica Quartz Perlite Binder/Filler	100%	
		LAYER 2 Paint, Off White	No	None Detected	Carbonates Quartz Perlite Binder/Filler	100%	
0220102-003 1907-020MH- A03		Joint Compound, White	No	None Detected	Carbonates Mica Quartz Perlite Binder/Filler	100%	
0220102-004 1907-020MH- A04		LAYER 1 Wood Floor, Brown/ Black	No	None Detected	Carbonates Quartz Binder/Filler	100%	
		LAYER 2 Adhesive, Yellow	No	None Detected	Cellulose Fiber Carbonates Quartz Gypsum Binder/Filler	1%	99%

EMC LABS, INC.

9830 S. 51st Street, Suite B109, Phoenix, AZ 85044
Phone: 800-362-3373 or 480-940-5294 - Fax: (480) 893-1726

Laboratory Report
0220102

Bulk Asbestos Analysis by Polarized Light Microscopy

NVLAP#101926-0

Client: ENVIROSERVICES & TRAINING CENTER Job# / P.O. #: 19-4007
Address: 505 WARD AVE, STE 202 Date Received: 05/15/2019
HONOLULU HI 96814 Date Analyzed: 05/20/2019
Collected: 05/10/2019 Date Reported: 05/20/2019
Project Name: KAIPAPAU, NICHOLLS PROPERTY EPA Method: EPA 600/R-93/116
Address: MAIN HOUSE Submitted By: JACOB VALENCIA
Collected By:

Lab ID Client ID	Sample Location	Layer Name / Sample Description	Asbestos Detected	Asbestos Type (%)	Non-Asbestos Constituents
0220102-005 1907-020MH- A05		LAYER 1 Wood Floor, Brown/ Black	No	None Detected	Carbonates Quartz Binder/Filler 100%
		LAYER 2 Adhesive, Yellow	No	None Detected	Cellulose Fiber 1% Carbonates Quartz Gypsum Binder/Filler 99%
0220102-006 1907-020MH- A06		LAYER 1 Wood Floor, Brown/ Black	No	None Detected	Carbonates Quartz Binder/Filler 100%
		LAYER 2 Adhesive, Yellow	No	None Detected	Cellulose Fiber <1% Carbonates Quartz Gypsum Binder/Filler 99%
0220102-007 1907-020MH- A07		Door Sealant, Black	No	None Detected	Carbonates Gypsum Binder/Filler 100%
0220102-008 1907-020MH- A08		Door Sealant, Black	No	None Detected	Carbonates Gypsum Binder/Filler 100%
0220102-009 1907-020MH- A09		Door Sealant, Black	No	None Detected	Cellulose Fiber <1% Carbonates Gypsum Binder/Filler 99%

EMC LABS, INC.

9830 S. 51st Street, Suite B109, Phoenix, AZ 85044
Phone: 800-362-3373 or 480-940-5294 - Fax: (480) 893-1726

Laboratory Report
0220102

Bulk Asbestos Analysis by Polarized Light Microscopy

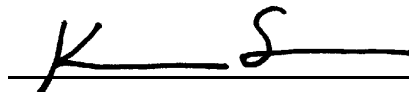
NVLAP#101926-0

Client:	ENVIROSERVICES & TRAINING CENTER	Job# / P.O. #:	19-4007
Address:	505 WARD AVE, STE 202	Date Received:	05/15/2019
	HONOLULU HI 96814	Date Analyzed:	05/20/2019
Collected:	05/10/2019	Date Reported:	05/20/2019
Project Name:	KAIPAPAU, NICHOLLS PROPERTY	EPA Method:	EPA 600/R-93/116
Address:	MAIN HOUSE	Submitted By:	JACOB VALENCIA
		Collected By:	

Lab ID Client ID	Sample Location	Layer Name / Sample Description	Asbestos Detected	Asbestos Type (%)	Non-Asbestos Constituents	
0220102-010 1907-020MH- A10		Counter Caulking, Off White	No	None Detected	Cellulose Fiber Carbonates Quartz Binder/Filler	<1% 99%
0220102-011 1907-020MH- A11		Counter Caulking, Off White	No	None Detected	Carbonates Quartz Binder/Filler	 100%
0220102-012 1907-020MH- A12		Counter Caulking, Off White	No	None Detected	Carbonates Quartz Binder/Filler	 100%



Analyst - Kurt Kettler



Signatory - Lab Manager - Ken Scheske

Distinctly stratified, easily separable layers of samples are analyzed as subsamples of the whole and are reported separately for each discernible layer. All analyses are derived from calibrated visual estimate and measured in area percent unless otherwise noted. The report applies to the standards or procedures identified and to the sample(s) tested. The test results are not necessarily indicated or representative of the qualities of the lot from which the sample was taken or of apparently identical or similar products, nor do they represent an ongoing quality assurance program unless so noted. These reports are for the exclusive use of the addressed client and that they will not be reproduced wholly or in part for advertising or other purposes over our signature or in connection with our name without special written permission. The report shall not be reproduced except in full, without written approval by our laboratory. The samples not destroyed in testing are retained a maximum of thirty days. The laboratory measurement of uncertainty for the test method is approximately less than 1 by area percent. Accredited by the National Institute of Standards and Technology, Voluntary Laboratory Accreditation Program for selected test method for asbestos. The accreditation or any reports generated by this laboratory in no way constitutes or implies product certification, approval, or endorsement by the National Institute of Standards and Technology. The report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the Federal Government. Polarized Light Microscopy may not be consistently reliable in detecting asbestos in floor coverings and similar non-friable organically bound materials.

CHAIN OF CUSTODY
 EMC Labs, Inc.
 9830 S. 51st St., Ste B-109
 Phoenix, AZ 85044
 (800) 362-3373 Fax (480) 893-1726

LAB#: 220102
 TAT: 3 day
 Rec'd: MAY 15 AM.

COMPANY NAME: ENVIROSERVICES & TRAINING CENTER, LLC
505 Ward Ave. Suite #202
Honolulu, HI 96814
 CONTACT: J Valencia, D Woo
 Phone/Fax: (808) 839-7222 ext 232/(808) 839-4455
 Email: jvalencia@gotoetc.com, dwoo@gotoetc.com

BILL TO: (If Different Location)
Trina Oshiro

Now Accepting: **VISA - MASTERCARD** Price Quoted: \$ _____ / Sample \$ _____ / Layers

COMPLETE ITEMS 1-4: (Failure to complete any items may cause a delay in processing or analyzing your samples)

1. **TURNAROUND TIME:** [Same Day RUSH] [1-Day] [2-Day] [3-4-5 Day] [6-10 Day]
 ****Prior confirmation of turnaround time is required
 ****Additional charges for rush analysis (please call marketing department for pricing details)
 ****Laboratory analysis may be subject to delay if credit terms are not met
2. **TYPE OF ANALYSIS:** [Bulk-PLM] [Air-PCM] [Lead] [Point Count] [Fungi: AOC, W-C, Bulk, Swab, Tape]
3. **DISPOSAL INSTRUCTIONS:** [Dispose of samples at EMC] / [Return samples to me at my expense]
 (If you do not indicate preference, EMC will dispose of samples 60 days from analysis.)

4. **Project Name:** Kaipapau, Nichols Property Main House **Project Number:** 19-4007

EMC SAMPLE #	CLIENT SAMPLE #	DATE & TIME SAMPLED	LOCATION/MATERIAL TYPE	Samples Accepted Yes / No
<u>1-23</u>	<u>1A07-020MH-A01-A03</u>	<u>5/10/19</u>	<u>Drywall wall, ceiling</u>	<u>N</u>
<u>4-5-6</u>	<u>-A04-A06</u>		<u>Wood floor w/ adhesive</u>	<u>N</u>
<u>7-8-9</u>	<u>-A07-A09</u>		<u>Black door sealant</u>	<u>N</u>
<u>10-11-12</u>	<u>-A10-A12</u>	<u>6</u>	<u>Dark off-white counter caulking</u>	<u>N</u>
				Y N
				Y N
				Y N
				Y N
				Y N
				Y N
				Y N
				Y N

SPECIAL INSTRUCTIONS: Stop at first positive
 Sample Collector: (Print) J. Valencia D. Woo (Signature) [Signature]
 Relinquished by J. Valencia Date/Time 5/14/19 Received by: Diana Federico Date/Time: 5/15/19
 Relinquished by Diana Federico Date/Time: 5/15/19 1135 Received by: [Signature] Date/Time: 5/16/19
 Relinquished by: _____ Date/Time: 5/15/19 Received by: [Signature] Date/Time: _____

** In the event of any dispute between the above parties for these services or otherwise, parties agree that jurisdiction and venue will be in Phoenix, Arizona and prevailing party will be entitled to attorney's fees and court costs.



9830 South 51st Street, Suite B-109 / PHOENIX, ARIZONA 85044 / 480-940-5294 or 800-362-3373 / FAX 480-893-1726
emclab@emclabs.com

LEAD (Pb) IN PAINT CHIP SAMPLES
EMC SOP METHOD #L01/1 EPA SW-846 METHOD 7420


EMC LAB #: L75044		DATE RECEIVED: 05/15/19			
CLIENT: Enviroservices & Training Center, LLC		REPORT DATE: 05/20/19			
		DATE OF ANALYSIS: 05/17/19			
CLIENT ADDRESS: 505 Ward Ave. Suite #202 Honolulu, HI 96814		P.O. NO.:			
PROJECT NAME: Kaipapau House Demo, - Nicholl Property		PROJECT NO.: 19-4007			
EMC # L75044-	SAMPLE DATE /19	CLIENT SAMPLE #	DESCRIPTION	REPORTING LIMIT (%Pb by weight)	%Pb BY WEIGHT
1	05/10	1907-020-L01	Interior, White Paint on Drywall Wall and Ceiling	0.010	BRL
2	05/10	1907-020-L02	Exterior, White Paint on Wood Panels and Beam, Plaster Ceiling, Plastic Sewage Pipes, Metal Elec. Cond. Pipes and Box	0.010	BRL
3	05/10	1907-020-L03	Exterior, Tan Paint Wood Wall, CMU Pillar, Metal Elec. Pipes and Box, Wood Supp. Beam	0.010	BRL
4	05/10	1907-020-L04	Exterior, Blue Paint Over Tan Paint on Wood Trim, Beams, and Door	0.010	BRL
5	05/10	1907-020-L05	Exterior, Pink on CMU Wall (Rear)	0.010	BRL

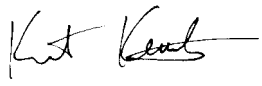
^ = Dilution Factor Changed * = Excessive Substrate May Bias Sample Results **BRL** = Below Reportable Limits # = Very Small Amount Of Sample Submitted, May Affect Result

This report applies to the standards or procedures identified and to the samples tested only. The test results are not necessarily indicative or representative of the qualities of the lot from which the sample was taken or of apparently identical or similar products, nor do they represent an ongoing quality assurance program unless so noted. Unless otherwise noted, all quality control analyses for the samples noted above were within acceptable limits.

Where it is noted that a sample with excessive substrate was submitted for laboratory analysis, such analysis may be biased. The lead content of such sample may, in actuality, be greater than reported. EMC makes no warranty, express or implied, as to the accuracy of the analysis of samples noted to have been submitted with excessive substrate. Resampling is recommended in such situations to verify original laboratory results.

These reports are for the exclusive use of the addressed client and are rendered upon the condition that they will not be reproduced wholly or in part for advertising or other purposes over our signature or in connection with our name without special written permission. Samples not destroyed in testing are retained a maximum of sixty (60) days.

ANALYST: 
Jason Thompson

QA COORDINATOR: 
Kurt Kettler

CHAIN OF CUSTODY

EMC Labs, Inc.
9830 S. 51st St., Ste B-109
Phoenix, AZ 85044
(800) 362-3373 Fax (480) 893-1726

LAB#: 875044
TAT: 3 day
Rec'd: 5/15/19

COMPANY NAME: **ENVIROSERVICES & TRAINING CENTER, LLC**
505 Ward Ave. Suite #202
Honolulu, HI 96814
CONTACT: Daniel Woo
Phone/Fax: (808) 839-7222 ext 225 / (619) 495-6559
Email: dwoo@gotoetc.com

BILL TO: (If Different Location)
Trina Oshiro

Now Accepting: **VISA - MASTERCARD** Price Quoted: \$ _____ / Sample \$ _____ / Layers

COMPLETE ITEMS 1-4: (Failure to complete any items may cause a delay in processing or analyzing your samples)

1. **TURNAROUND TIME:** [Same Day RUSH] [1-Day] [2-Day] [3-5 Day] [6-10 Day]

****Prior confirmation of turnaround time is required

****Additional charges for rush analysis (please call marketing department for pricing details)

****Laboratory analysis may be subject to delay if credit terms are not met

2. **TYPE OF ANALYSIS:** [~~Bulk/PAH~~] [Air-PCM] [Lead] [Point Count] [Fungi: AOC, W-C, Bulk, Swab, Tape]

3. **DISPOSAL INSTRUCTIONS:** [Dispose of samples at EMC] / [Return samples to me at my expense]

(If you do not indicate preference, EMC will dispose of samples 60 days from analysis.)

4. **Project Name:** ~~Maui~~ Kaipua House Demo; Nichol property **Project Number:** 19-4007

EMC SAMPLE #	CLIENT SAMPLE #	DATE & TIME SAMPLED	LOCATION/MATERIAL TYPE	Samples Accepted Yes / No
1	1907-020-L01	5/10/19	Interior, white paint on drywall wall and ceiling	Y N
2	1907-020-L02		Exterior, white paint on wood panels and beams, plaster ceiling, plastic sewage pipes, metal elec. cond. pipes and box	Y N
3	1907-020-L03		Exterior, Tan paint wood wall, CMU pillar, metal elec. pipes and box, wood supp. beam	Y N
4	1907-020-L04		Exterior, Blue paint over tan paint on wood trim, beams, and door.	Y N
5	1907-020-L05		Exterior, Pink on CMU wall (rear)	Y N
				Y N
				Y N

SPECIAL INSTRUCTIONS: ~~8~~

Sample Collector: (Print) Jacob Valencia, Daniel Woo (Signature) [Signature]
Relinquished by D. Woo Date/Time 5/13/19 Received by: [Signature] Date/Time: 5/15/19
Relinquished by: [Signature] Date/Time: 5/15/19 Received by: [Signature] Date/Time: 5/15/19
Relinquished by: _____ Date/Time _____ Received by: _____ Date/Time: _____

** In the event of any dispute between the above parties for these services or otherwise, parties agree that jurisdiction and venue will be in Phoenix, Arizona and prevailing party will be entitled to attorney's fees and court costs.

Requirements of Chapter 104, HRS
Wages and Hours of Employees on Public Works Law

Chapter 104, HRS, applies to every public works construction project over \$2,000, regardless of the method of procurement or financing (purchase order, voucher, bid, contract, lease arrangement, warranty, SPRB).

Rate of Wages for Laborers and Mechanics

- Minimum prevailing wages (basic hourly rate plus fringe benefits), as determined by the Director of Labor and Industrial Relations and published in wage rate schedules, shall be paid to the various classes of laborers and mechanics working on the job site. [§104-2(a), (b), Hawaii Revised Statutes (HRS)]
- If the Director of Labor determines that prevailing wages have increased during the performance of a public works contract, the rate of pay of laborers and mechanics shall be raised accordingly. [§104-2(a) and (b), HRS; §12-22-3(d) Hawaii Administrative Rules (HAR)]

Overtime

- Laborers and mechanics working on a Saturday, Sunday, or a legal holiday of the State or more than eight hours a day on any other day shall be paid overtime compensation at not less than one and one-half times the basic hourly rate plus the cost of fringe benefits for all hours worked. If the Director of Labor determines that a prevailing wage is defined by a collective bargaining agreement, the overtime compensation shall be at the rates set by the applicable collective bargaining agreement [§§104-1, 104-2(c), HRS]

Weekly Pay

- Laborers and mechanics employed on the job site shall be paid their full wages at least once a week, without deduction or rebate, except for legal deductions, within five working days after the cutoff date. [§104-2(d), HRS]

Posting of Wage Rate Schedules

- Wage rate schedules with the notes for prevailing wages and special overtime rates, shall be posted by the contractor in a prominent and easily accessible place at the job site. A copy of the entire wage rate schedule shall be given to each laborer and mechanic employed under the contract, except when the employee is covered by a collective bargaining agreement. [§104-2(d), HRS]

Withholding of Accrued Payments

- If necessary, the contracting agency may withhold accrued payments to the contractor to pay to laborers and mechanics employed by the contractor or subcontractor on the job site any difference between the wages required by the public works contract or specifications and the wages received. [§104-2(e), HRS]

Certified Weekly Payrolls and Payroll Records

- A certified copy of all payrolls shall be submitted weekly to the contracting agency.
- The contractor is responsible for the submission of certified copies of the payrolls of all subcontractors. The certification shall affirm that the payrolls are correct and complete, that the wage rates listed are not less than the applicable rates contained in the applicable wage rate schedule, and that the classifications for each laborer or mechanic conform with the work the laborer or mechanic performed. [§104-3(a), HRS]
- Payroll records shall be maintained by the contractor and subcontractors for three years after completion of construction. The records shall contain: [HAR §12-22-10]
 - the name and home address of each employee
 - the employee's correct classification
 - rate of pay (basic hourly rate + fringe benefits)
 - itemized list of fringe benefits paid
 - daily and weekly hours worked
 - weekly straight time and overtime earnings
 - amount and type of deductions
 - actual wages paid
 - date of payment
- Records shall be made available for inspection by the contracting agency, the Department of Labor and Industrial Relations, and any of its authorized representatives, who may also interview employees during working hours on the job. [§104-3(b), HRS]

Termination of Work on Failure to Pay Wages

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

Apprentices and Trainees

- In order to be paid apprentice or trainee rates, apprentices and trainees must be parties to an agreement either registered with or recognized as a USDOL nationally approved apprenticeship program by the Department of Labor and Industrial Relations, Workforce Development Division, (808) 586-8877. [§12-22-6(1), HAR]
- The number of apprentices or trainees on any public work in relation to the number of journeyworkers in the same craft classification as the apprentices or trainees employed by the same employer on the same public work may not exceed the ratio allowed under the apprenticeship or trainee standards registered with or recognized by the Department of Labor and Industrial Relations. A registered or recognized apprentice receiving the journeyworker rate will not be considered a journeyworker for the purpose of meeting the ratio requirement. [§12-22-6(2), HAR]

Enforcement

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

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



Oahu (Wage Standards Division).....	(808) 586-8777
Hawaii Island	(808) 322-4808
Kauai	(808) 274-3351
Maui	(808) 243-5322

"General Decision Number: HI20210001 05/07/2021

Superseded General Decision Number: HI20200001

State: Hawaii

Construction Types: Building, Heavy (Heavy and Dredging), Highway and Residential

Counties: Hawaii Statewide.

BUILDING CONSTRUCTION PROJECTS; RESIDENTIAL CONSTRUCTION PROJECTS (consisting of single family homes and apartments up to and including 4 stories); HEAVY AND HIGHWAY CONSTRUCTION PROJECTS AND DREDGING

Note: Under Executive Order (EO) 13658, an hourly minimum wage of \$10.95 for calendar year 2021 applies to all contracts subject to the Davis-Bacon Act for which the contract is awarded (and any solicitation was issued) on or after January 1, 2015. If this contract is covered by the EO, the contractor must pay all workers in any classification listed on this wage determination at least \$10.95 per hour (or the applicable wage rate listed on this wage determination, if it is higher) for all hours spent performing on the contract in calendar year 2021. If this contract is covered by the EO and a classification considered necessary for performance of work on the contract does not appear on this wage determination, the contractor must pay workers in that classification at least the wage rate determined through the conformance process set forth in 29 CFR 5.5(a)(1)(ii) (or the EO minimum wage rate, if it is higher than the conformed wage rate). The EO minimum wage rate will be adjusted annually. Please note that this EO applies to the above-mentioned types of contracts entered into by the federal government that are subject to the Davis-Bacon Act itself, but it does not apply to contracts subject only to the Davis-Bacon Related Acts, including those set forth at 29 CFR 5.1(a)(2)-(60). Additional information on contractor requirements and worker protections under the EO is available at www.dol.gov/whd/govcontracts.

Modification Number	Publication Date
0	01/01/2021
1	01/08/2021
2	01/22/2021
3	02/12/2021
4	02/19/2021
5	03/19/2021
6	05/07/2021

ASBE0132-001 08/30/2020

Rates Fringes

Asbestos Workers/Insulator
Includes application of all insulating materials, protective coverings, coatings and finishes to all types of mechanical systems. Also the application of

firestopping material for
 wall openings and
 penetrations in walls,
 floors, ceilings and
 curtain walls.....\$ 41.90 25.65

 BOIL0627-005 01/01/2013

	Rates	Fringes
BOILERMAKER.....	\$ 35.20	27.35

 BRHI0001-001 08/31/2020

	Rates	Fringes
BRICKLAYER		
Bricklayers and Stonemasons.....	\$ 45.95	29.59
Pointers, Caulkers and Weatherproofers.....	\$ 46.21	29.59

 BRHI0001-002 08/31/2020

	Rates	Fringes
Tile, Marble & Terrazzo Worker		
Terrazzo Base Grinders.....	\$ 41.69	28.11
Terrazzo Floor Grinders and Tenders.....	\$ 40.14	28.11
Tile, Marble and Terrazzo Workers.....	\$ 43.50	28.11

 CARP0745-001 08/31/2020

	Rates	Fringes
Carpenters:		
Carpenters; Hardwood Floor Layers; Patent Scaffold Erectors (14 ft. and over); Piledrivers; Pneumatic Nailers; Wood Shinglers and Transit and/or Layout Man.....	\$ 50.50	23.59
Millwrights and Machine Erectors.....	\$ 50.75	23.59
Power Saw Operators (2 h.p. and over).....	\$ 50.65	23.59

 CARP0745-002 08/31/2020

	Rates	Fringes
Drywall and Acoustical Workers and Lathers.....	\$ 50.50	23.59

 ELEC1186-001 08/23/2020

	Rates	Fringes
Electricians:		
Cable Splicers.....	\$ 56.71	31.16
Electricians.....	\$ 51.55	29.58
Telecommunication worker....	\$ 32.69	12.96

	Rates	Fringes
Line Construction:		
Cable Splicers.....	\$ 56.71	31.16
Groundmen/Truck Drivers.....	\$ 38.66	25.63
Heavy Equipment Operators...	\$ 46.40	28.00
Linemen.....	\$ 51.55	29.58
Telecommunication worker....	\$ 32.69	12.96

 ELEV0126-001 01/01/2021

	Rates	Fringes
ELEVATOR MECHANIC.....	\$ 63.18	35.825+a+b

a. VACATION: Employer contributes 8% of basic hourly rate for 5 years service and 6% of basic hourly rate for 6 months to 5 years service as vacation pay credit.

b. PAID HOLIDAYS: New Year's Day, Memorial Day, Independence Day, Labor Day, Veterans' Day, Thanksgiving Day, the Friday after Thanksgiving Day and Christmas Day.

 ENGI0003-002 09/03/2018

	Rates	Fringes
Diver (Aqua Lung) (Scuba))		
Diver (Aqua Lung) (Scuba) (over a depth of 30 feet)...	\$ 66.00	31.26
Diver (Aqua Lung) (Scuba) (up to a depth of 30 feet)..	\$ 56.63	31.26
Stand-by Diver (Aqua Lung) (Scuba).....	\$ 47.25	31.26
Diver (Other than Aqua Lung)		
Diver (Other than Aqua Lung).....	\$ 66.00	31.26
Diver Tender (Other than Aqua Lung).....	\$ 44.22	31.26
Stand-by Diver (Other than Aqua Lung).....	\$ 47.25	31.26
Helicopter Work		
Airborne Hoist Operator for Helicopter.....	\$ 45.80	31.26
Co-Pilot of Helicopter.....	\$ 45.98	31.26
Pilot of Helicopter.....	\$ 46.11	31.26
Power equipment operator - tunnel work		
GROUP 1.....	\$ 42.24	31.26
GROUP 2.....	\$ 42.35	31.26
GROUP 3.....	\$ 42.52	31.26
GROUP 4.....	\$ 42.79	31.26
GROUP 5.....	\$ 43.10	31.26
GROUP 6.....	\$ 43.75	31.26
GROUP 7.....	\$ 44.07	31.26
GROUP 8.....	\$ 44.18	31.26
GROUP 9.....	\$ 44.29	31.26
GROUP 9A.....	\$ 44.52	31.26
GROUP 10.....	\$ 44.58	31.26
GROUP 10A.....	\$ 44.73	31.26
GROUP 11.....	\$ 44.88	31.26
GROUP 12.....	\$ 45.24	31.26

GROUP 12A.....	\$ 45.60	31.26
Power equipment operators:		
GROUP 1.....	\$ 41.94	31.26
GROUP 2.....	\$ 42.05	31.26
GROUP 3.....	\$ 42.22	31.26
GROUP 4.....	\$ 42.49	31.26
GROUP 5.....	\$ 42.80	31.26
GROUP 6.....	\$ 43.45	31.26
GROUP 7.....	\$ 43.77	31.26
GROUP 8.....	\$ 43.88	31.26
GROUP 9.....	\$ 43.99	31.26
GROUP 9A.....	\$ 44.22	31.26
GROUP 10.....	\$ 44.28	31.26
GROUP 10A.....	\$ 44.43	31.26
GROUP 11.....	\$ 44.58	31.26
GROUP 12.....	\$ 44.94	31.26
GROUP 12A.....	\$ 45.30	31.26
GROUP 13.....	\$ 42.22	31.26
GROUP 13A.....	\$ 42.49	31.26
GROUP 13B.....	\$ 42.80	31.26
GROUP 13C.....	\$ 43.45	31.26
GROUP 13D.....	\$ 43.77	31.26
GROUP 13E.....	\$ 43.88	31.26

POWER EQUIPMENT OPERATORS CLASSIFICATIONS

GROUP 1: Fork Lift (up to and including 10 tons); Partsman (heavy duty repair shop parts room when needed).

GROUP 2: Conveyor Operator (Handling building material); Hydraulic Monitor; Mixer Box Operator (Concrete Plant).

GROUP 3: Brakeman; Deckhand; Fireman; Oiler; Oiler/Gradechecker; Signalman; Switchman; Highline Cableway Signalman; Bargeman; Bunkerman; Concrete Curing Machine (self-propelled, automatically applied unit on streets, highways, airports and canals); Leveeman; Roller (5 tons and under); Tugger Hoist.

GROUP 4: Boom Truck or dual purpose "A" Frame Truck (5 tons or less); Concrete Placing Boom (Building Construction); Dinky Operator; Elevator Operator; Hoist and/or Winch (one drum); Straddle Truck (Ross Carrier, Hyster and similar).

GROUP 5: Asphalt Plant Fireman; Compressors, Pumps, Generators and Welding Machines ("Bank" of 9 or more, individually or collectively); Concrete Pumps or Pumpcrete Guns; Lubrication and Service Engineer (Grease Rack); Screedman.

GROUP 6: Boom Truck or Dual Purpose "A" Frame Truck (over 5 tons); Combination Loader/Backhoe (up to and including 3/4 cu. yd.); Concrete Batch Plants (wet or dry); Concrete Cutter, Groover and/or Grinder (self-propelled unit on streets, highways, airports, and canals); Conveyor or Concrete Pump (Truck or Equipment Mounted); Drilling Machinery (not to apply to waterliners, wagon drills or jack hammers); Fork Lift (over 10 tons); Loader (up to and including 3 and 1/2 cu. yds); Lull High Lift (under 40 feet); Lubrication and Service Engineer (Mobile); Maginnis Internal Full Slab Vibrator (on airports, highways, canals and warehouses); Man or Material Hoist; Mechanical Concrete Finisher (Large Clary, Johnson Bidwell, Bridge Deck and similar); Mobile Truck Crane Driver; Portable Shotblast Concrete Cleaning Machine; Portable Boring Machine (under

streets, highways, etc.); Portable Crusher; Power Jumbo Operator (setting slip forms, etc., in tunnels); Rollers (over 5 tons); Self-propelled Compactor (single engine); Self-propelled Pavement Breaker; Skidsteer Loader with attachments; Slip Form Pumps (Power driven by hydraulic, electric, air, gas, etc., lifting device for concrete forms); Small Rubber Tired Tractors; Trencher (up to and including 6 feet); Underbridge Personnel Aerial Platform (50 feet of platform or less).

GROUP 7: Crusher Plant Engineer, Dozer (D-4, Case 450, John Deere 450, and similar); Dual Drum Mixer, Extend Lift; Hoist and/or Winch (2 drums); Loader (over 3 and 1/2 cu. yds. up to and including 6 yards.); Mechanical Finisher or Spreader Machine (asphalt), (Barber Greene and similar) (Screedman required); Mine or Shaft Hoist; Mobile Concrete Mixer (over 5 tons); Pipe Bending Machine (pipelines only); Pipe Cleaning Machine (tractor propelled and supported); Pipe Wrapping Machine (tractor propelled and supported); Roller Operator (Asphalt); Self-Propelled Elevating Grade Plane; Slusher Operator; Tractor (with boom) (D-6, or similar); Trencher (over 6 feet and less than 200 h.p.); Water Tanker (pulled by Euclids, T-Pulls, DW-10, 20 or 21, or similar); Winchman (Stern Winch on Dredge).

GROUP 8: Asphalt Plant Operator; Barge Mate (Seagoing); Cast-in-Place Pipe Laying Machine; Concrete Batch Plant (multiple units); Conveyor Operator (tunnel); Deckmate; Dozer (D-6 and similar); Finishing Machine Operator (airports and highways); Gradesetter; Kolman Loader (and similar); Mucking Machine (Crawler-type); Mucking Machine (Conveyor-type); No-Joint Pipe Laying Machine; Portable Crushing and Screening Plant; Power Blade Operator (under 12); Saurman Type Dragline (up to and including 5 yds.); Stationary Pipe Wrapping, Cleaning and Bending Machine; Surface Heater and Planer Operator, Tractor (D-6 and similar); Tri-Batch Paver; Tunnel Badger; Tunnel Mole and/or Boring Machine Operator Underbridge Personnel Aerial Platform (over 50 feet of platform).

GROUP 9: Combination Mixer and Compressor (gunite); Do-Mor Loader and Adams Elegrader; Dozer (D-7 or equal); Wheel and/or Ladder Trencher (over 6 feet and 200 to 749 h.p.).

GROUP 9A: Dozer (D-8 and similar); Gradesetter (when required by the Contractor to work from drawings, plans or specifications without the direct supervision of a foreman or superintendent); Push Cat; Scrapers (up to and including 20 cu. yds); Self-propelled Compactor with Dozer; Self-Propelled, Rubber-Tired Earthmoving Equipment (up to and including 20 cu. yds) (621 Band and similar); Sheep's Foot; Tractor (D-8 and similar); Tractors with boom (larger than D-6, and similar).

GROUP 10: Chicago Boom; Cold Planers; Heavy Duty Repairman or Welder; Hoist and/or Winch (3 drums); Hydraulic Skooper (Koehring and similar); Loader (over 6 cu. yds. up to and including 12 cu. yds.); Saurman type Dragline (over 5 cu. yds.); Self-propelled, rubber-tired Earthmoving Equipment (over 20 cu. yds. up to and including 31 cu. yds.) (637D and similar); Soil Stabilizer (P & H or equal); Sub-Grader (Gurries or other automatic type); Tractors (D-9 or equivalent, all attachments); Tractor (Tandem Scraper); Watch Engineer.

GROUP 10A: Boat Operator; Cable-operated Crawler Crane (up to and including 25 tons); Cable-operated Power Shovel, Clamshell, Dragline and Backhoe (up to and including 1 cu. yd.); Dozer D9-L; Dozer (D-10, HD41 and similar) (all attachments); Gradall (up to and including 1 cu. yd.); Hydraulic Backhoe (over 3/4 cu. yds. up to and including 2 cu. yds.); Mobile Truck Crane Operator (up to and including 25 tons) (Mobile Truck Crane Driver Required); Self-propelled Boom Type Lifting Device (Center Mount) (up to and including 25 tons) (Grove, Drott, P&H, Pettibone and similar); Trencher (over 6 feet and 750 h.p. or more); Watch Engineer (steam or electric).

GROUP 11: Automatic Slip Form Paver (concrete or asphalt); Band Wagon (in conjunction with Wheel Excavator); Cable-operated Crawler Cranes (over 25 tons but less than 50 tons); Cable-operated Power Shovel, Clamshell, Dragline and Backhoe (over 1 cu. yd. up to 7 cu. yds.); Gradall (over 1 cu. yds. up to 7 cu. yds.); DW-10, 20, etc. (Tandem); Earthmoving Machines (multiple propulsion power units and 2 or more Scrapers) (up to and including 35 cu. yds., "struck" m.r.c.); Highline Cableway; Hydraulic Backhoe (over 2 cu. yds. up to and including 4 cu. yds.); Leverman; Lift Slab Machine; Loader (over 12 cu. yds); Master Boat Operator; Mobile Truck Crane Operator (over 25 tons but less than 50 tons); (Mobile Truck Crane Driver required); Pre-stress Wire Wrapping Machine; Self-propelled Boom-type Lifting Device (Center Mount) (over 25 tons m.r.c); Self-propelled Compactor (with multiple-propulsion power units); Single Engine Rubber Tired Earthmoving Machine (with Tandem Scraper); Tandem Cats; Trencher (pulling attached shield).

GROUP 12: Clamshell or Dipper Operator; Derricks; Drill Rigs; Multi-Propulsion Earthmoving Machines (2 or more Scrapers) (over 35 cu. yds "struck" m.r.c.); Operators (Derricks, Piledrivers and Cranes); Power Shovels and Draglines (7 cu. yds. m.r.c. and over); Self-propelled rubber-tired Earthmoving equipment (over 31 cu. yds.) (657B and similar); Wheel Excavator (up to and including 750 cu. yds. per hour); Wheel Excavator (over 750 cu. yds. per hour).

GROUP 12A: Dozer (D-11 or similar or larger); Hydraulic Excavators (over 4 cu. yds.); Lifting cranes (50 tons and over); Pioneering Dozer/Backhoe (initial clearing and excavation for the purpose of providing access for other equipment where the terrain worked involves 1-to-1 slopes that are 50 feet in height or depth, the scope of this work does not include normal clearing and grubbing on usual hilly terrain nor the excavation work once the access is provided); Power Blade Operator (Cat 12 or equivalent or over); Straddle Lifts (over 50 tons); Tower Crane, Mobile; Traveling Truss Cranes; Universal, Liebherr, Linden, and similar types of Tower Cranes (in the erection, dismantling, and moving of equipment there shall be an additional Operating Engineer or Heavy Duty Repairman); Yo-Yo Cat or Dozer.

GROUP 13: Truck Driver (Utility, Flatbed, etc.)

GROUP 13A: Dump Truck, 8 cu.yds. and under (water level); Water Truck (up to and including 2,000 gallons).

GROUP 13B: Water Truck (over 2,000 gallons); Tandem Dump Truck, over 8 cu. yds. (water level).

GROUP 13C: Truck Driver (Semi-trailer. Rock Cans, Semi-Dump or Roll-Offs).

GROUP 13D: Truck Driver (Slip-In or Pup).

GROUP 13E: End Dumps, Unlicensed (Euclid, Mack, Caterpillar or similar); Tractor Trailer (Hauling Equipment); Tandem Trucks hooked up to Trailer (Hauling Equipment)

BOOMS AND/OR LEADS (HOURLY PREMIUMS):

The Operator of a crane (under 50 tons) with a boom of 80 feet or more (including jib), or of a crane (under 50 tons) with leads of 100 feet or more, shall receive a per hour premium for each hour worked on said crane (under 50 tons) in accordance with the following schedule:

Booms of 80 feet up to but not including 130 feet or Leads of 100 feet up to but not including 130 feet	0.50
Booms and/or Leads of 130 feet up to but not including 180 feet	0.75
Booms and/or Leads of 180 feet up to and including 250 feet	1.15
Booms and/or Leads over 250 feet	1.50

The Operator of a crane (50 tons and over) with a boom of 180 feet or more (including jib) shall receive a per hour premium for each hour worked on said crane (50 tons and over) in accordance with the following schedule:

Booms of 180 feet up to and including 250 feet	1.25
Booms over 250 feet	1.75

ENGI0003-004 09/04/2017

	Rates	Fringes
Dredging: (Boat Operators)		
Boat Deckhand.....	\$ 41.22	30.93
Boat Operator.....	\$ 43.43	30.93
Master Boat Operator.....	\$ 43.58	30.93
Dredging: (Clamshell or Dipper Dredging)		
GROUP 1.....	\$ 43.94	30.93
GROUP 2.....	\$ 43.28	30.93
GROUP 3.....	\$ 42.88	30.93
GROUP 4.....	\$ 41.22	30.93
Dredging: (Derricks)		
GROUP 1.....	\$ 43.94	30.93
GROUP 2.....	\$ 43.28	30.93
GROUP 3.....	\$ 42.88	30.93
GROUP 4.....	\$ 41.22	30.93
Dredging: (Hydraulic Suction Dredges)		
GROUP 1.....	\$ 43.58	30.93
GROUP 2.....	\$ 43.43	30.93
GROUP 3.....	\$ 43.28	30.93
GROUP 4.....	\$ 43.22	30.93
GROUP 5.....	\$ 37.88	26.76

Group 5.....	\$ 42.88	30.93
GROUP 6.....	\$ 37.77	26.76
Group 6.....	\$ 42.77	30.93
GROUP 7.....	\$ 36.22	26.76
Group 7.....	\$ 41.22	30.93

CLAMSHELL OR DIPPER DREDGING CLASSIFICATIONS

- GROUP 1: Clamshell or Dipper Operator.
- GROUP 2: Mechanic or Welder; Watch Engineer.
- GROUP 3: Barge Mate; Deckmate.
- GROUP 4: Bargeman; Deckhand; Fireman; Oiler.

HYDRAULIC SUCTION DREDGING CLASSIFICATIONS

- GROUP 1: Leverman.
- GROUP 2: Watch Engineer (steam or electric).
- GROUP 3: Mechanic or Welder.
- GROUP 4: Dozer Operator.
- GROUP 5: Deckmate.
- GROUP 6: Winchman (Stern Winch on Dredge)
- GROUP 7: Deckhand (can operate anchor scow under direction of Deckmate); Fireman; Leveeman; Oiler.

DERRICK CLASSIFICATIONS

- GROUP 1: Operators (Derricks, Piledrivers and Cranes).
- GROUP 2: Saurman Type Dragline (over 5 cubic yards).
- GROUP 3: Deckmate; Saurman Type Dragline (up to and including 5 yards).
- GROUP 4: Deckhand, Fireman, Oiler.

 ENGI003-044 09/03/2018

	Rates	Fringes
Power Equipment Operators (PAVING)		
Asphalt Concrete Material Transfer.....	\$ 42.92	32.08
Asphalt Plant Operator.....	\$ 43.35	32.08
Asphalt Raker.....	\$ 41.96	32.08
Asphalt Spreader Operator...\$	43.44	32.08
Cold Planer.....	\$ 43.75	32.08
Combination Loader/Backhoe (over 3/4 cu.yd.).....	\$ 41.96	32.08
Combination Loader/Backhoe (up to 3/4 cu.yd.).....	\$ 40.98	32.08
Concrete Saws and/or Grinder (self-propelled unit on streets, highways, airports and canals).....	\$ 42.92	32.08
Grader.....	\$ 43.75	32.08
Laborer, Hand Roller.....	\$ 41.46	32.08
Loader (2 1/2 cu. yds. and under).....	\$ 42.92	32.08
Loader (over 2 1/2 cu. yds. to and including 5 cu. yds.).....	\$ 43.24	32.08
Roller Operator (five tons and under).....	\$ 41.69	32.08
Roller Operator (over five tons).....	\$ 43.12	32.08
Screed Person.....	\$ 42.92	32.08

Soil Stabilizer.....\$ 43.75 32.08

IRON0625-001 09/01/2020

	Rates	Fringes
Ironworkers:.....	\$ 42.50	36.84
a. Employees will be paid \$.50 per hour more while working in tunnels and coffer dams; \$1.00 per hour more when required to work under or are covered with water (submerged) and when they are required to work on the summit of Mauna Kea, Mauna Loa or Haleakala.		

LAB00368-001 09/02/2020

	Rates	Fringes
Laborers:		
Driller.....	\$ 39.70	22.68
Final Clean Up.....	\$ 29.65	18.17
Gunite/Shotcrete Operator and High Scaler.....	\$ 39.20	22.68
Laborer I.....	\$ 38.70	22.68
Laborer II.....	\$ 36.10	22.68
Mason Tender/Hod Carrier....	\$ 39.20	22.68
Powderman.....	\$ 39.70	22.68
Window Washer (bosun chair).\$	38.20	22.68

LABORERS CLASSIFICATIONS

Laborer I: Air Blasting run by electric or pneumatic compressor; Asphalt Laborer, Ironer, Raker, Luteman, and Handroller, and all types of Asphalt Spreader Boxes; Asphalt Shoveler; Assembly and Installation of Multiplates, Liner Plates, Rings, Mesh, Mats; Batching Plant (portable and temporary); Boring Machine Operator (under streets and sidewalks); Buggymobile; Burning and Welding; Chainsaw, Faller, Logloader, and Bucker; Compactors (Jackson Jumping Jack and similar); Concrete Bucket Dumpman; Concrete Chipping; Concrete Chuteman/Hoseman (pouring concrete) (the handling of the chute from ready-mix trucks for such jobs as walls, slabs, decks, floors, foundations, footings, curbs, gutters, and sidewalks); Concrete Core Cutter (Walls, Floors, and Ceiling); Concrete Grinding or Sanding; Concrete: Hooking on, signaling, dumping of concrete for treme work over water on caissons, pilings, abutments, etc.; Concrete: Mixing, handling, conveying, pouring, vibrating, otherwise placing of concrete or aggregates or by any other process; Concrete: Operation of motorized wheelbarrows or buggies or machines of similar character, whether run by gas, diesel, or electric power; Concrete Placement Machine Operator: operation of Somero Hammerhead, Copperheads, or similar machines; Concrete Pump Machine (laying, coupling, uncoupling of all connections and cleaning of equipment); Concrete and/or Asphalt Saw (Walking or Handtype) (cutting walls or flatwork) (scoring old or new concrete and/or asphalt) (cutting for expansion joints) (streets and ways for laying of pipe, cable or conduit for all purposes); Concrete Shovelers/Laborers (Wet or Dry); Concrete Screeding for Rough Strike-Off: Rodding or striking-off, by hand or mechanical means prior to finishing; Concrete Vibrator Operator; Coring Holes: Walls, footings, piers or other obstructions for passage of pipes or conduits for any purpose and the pouring of concrete to secure the hole; Cribbers, Shorer, Lagging, Sheeting, and

Trench Jacking and Bracing, Hand-Guided Lagging Hammer
Whaling Bracing; Curbing (Concrete and Asphalt); Curing of
Concrete (impervious membrane and form oiler) mortar and
other materials by any mode or method; Cut Granite Curb
Setter (setting, leveling and grouting of all precast
concrete or stone curbs); Cutting and Burning Torch
(demolition); Dri Pak-It Machine; Environmental Abatement:
removal of asbestos, lead, and bio hazardous materials (EPA
and/or OSHA certified); Falling, bucking, yarding, loading
or burning of all trees or timber on construction site;
Forklift (9 ft. and under); Gas, Pneumatic, and Electric
tools; Grating and Grill work for drains or other purposes;
Green Cutter of concrete or aggregate in any form, by hand,
mechanical means, grindstone or air and/or water; Grout:
Spreading for any purpose; Guinea Chaser (Grade Checker)
for general utility trenches, sitework, and excavation;
Headerboard Man (Asphalt or Concrete); Heat Welder of
Plastic (Laborers' AGC certified workers) (when work
involves waterproofing for waterpools, artificial lakes and
reservoir) heat welding for sewer pipes and fusion of HDPE
pipes; Heavy Highway Laborer (Rigging, signaling, handling,
and installation of pre-cast catch basins, manholes, curbs
and gutters); High Pressure Nozzleman - Hydraulic Monitor
(over 100# pressure); Jackhammer Operator; Jacking of slip
forms: All semi and unskilled work connected therewithin;
Laying of all multi-cell conduit or multi-purpose pipe;
Magnesite and Mastic Workers (Wet or Dry)(including mixer
operator);Mortar Man; Mortar Mixer (Block, Brick, Masonry,
and Plastering); Nozzleman (Sandblasting and/or Water
Blasting): handling, placing and operation of nozzle;
Operation, Manual or Hydraulic jacking of shields and the
use of such other mechanical equipment as may be necessary;
Pavement Breakers; Paving, curbing and surfacing of
streets, ways, courts, under and overpasses, bridges,
approaches, slope walls, and all other labor connected
therewith; Pilecutters; Pipe Assessment in place, bolting
and lining up of sectional metal or other pipe including
corrugated pipe; Pipelayer performing all services in the
laying and installation of pipe from the point of receiving
pipe in the ditch until completion of operation, including
any and all forms of tubular material, whether pipe, HDPE,
metallic or non-metallic, conduit, and any other
stationary-type of tubular device used for conveying of any
substance or element, whether water, sewage, solid, gas,
air, or other product whatsoever and without regard to the
nature of material from which tubular material is
fabricated; No-joint pipe and stripping of same,
Pipewrapper, Caulker, Bander, Kettlemen, and men applying
asphalt, Laykold, treating Creosote and similar-type
materials (6-inch) pipe and over); Piping: resurfacing and
paving of all ditches in preparation for laying of all
pipes; Pipe laying of lateral sewer pipe from main or side
sewer to buildings or structure (except Contactor may
direct work be done under proper supervision); Pipe laying,
leveling and marking of the joint used for main or side
sewers and storm sewers; Laying of all clay, terra cotta,
ironstone, vitrified concrete, HDPE or other pipe for
drainage; Placing and setting of water mains, gas mains and
all pipe including removal of skids; Plaster Mortar
Mixer/Pump; Pneumatic Impact Wrench; Portable Sawmill
Operation: Choker setters, off bearers, and lumber handlers
connected with clearing; Posthole Digger (Hand Held, Gas,
Air and Electric); Powderman's Tender; Power Broom Sweepers
(Small); Preparation and Compaction of roadbeds for
railroad track laying, highway construction, and the

preparation of trenches, footings, etc., for cross-country transmission by pipelines, electrical transmission or underground lines or cables (by mechanical means); Raising of structure by manual or hydraulic jacks or other methods and resetting of structure in new locations, including all concrete work; Ramming or compaction; Rigging in connection with Laborers' work (except demolition), Signaling (including the use of walkie talkie) Choke Setting, tag line usage; Tagging and Signaling of building materials into high rise units; Riprap, Stonepaver, and Rock Slinger (includes placement of stacked concrete, wet or dry and loading, unloading, signaling, slinging and setting of other similar materials); Rotary Scarifier (including multiple head concrete chipping Scarifier); Salamander Heater, Drying of plaster, concrete mortar or other aggregate; Scaffold Erector Leadman; Scaffolds: (Swing and hanging) including maintenance thereof; Scaler; Septic Tank/Cesspool and Drain Fields Digger and Installer; Shredder/Chipper (tree branches, brush, etc.); Stripping and Setting Forms; Stripping of Forms: Other than panel forms which are to be re-used in their original form, and stripping of forms on all flat arch work; Tampers (Barko, Wacker, and similar type); Tank Scaler and Cleaners; Tarman; Tree Climbers and Trimmers; Trencher (includes hand-held, Davis T-66 and similar type); Trucks (flatbed up to and including 2 1/2 tons when used in connection with on-site Laborers' work; Trucks (Refuse and Garbage Disposal) (from job site to dump); Vibra-Screed (Bull Float in connection with Laborers' work); Well Points, Installation of or any other dewatering system.

Laborer II: Asphalt Plant Laborer; Boring Machine Tender; Bridge Laborer; Burning of all debris (crates, boxes, packaging waste materials); Chainman, Rodmen, and Grade Markers; Cleaning, clearing, grading and/or removal for streets, highways, roadways, aprons, runways, sidewalks, parking areas, airports, approaches, and other similar installations; Cleaning or reconditioning of streets, ways, sewers and waterlines, all maintenance work and work of an unskilled and semi-skilled nature; Concrete Bucket Tender (Groundman) hooking and unhooking of bucket; Concrete Forms; moving, cleaning, oiling and carrying to the next point of erection of all forms; Concrete Products Plant Laborers; Conveyor Tender (conveying of building materials); Crushed Stone Yards and Gravel and Sand Pit Laborers and all other similar plants; Demolition, Wrecking and Salvage Laborers: Wrecking and dismantling of buildings and all structures, with use of cutting or wrecking tools, breaking away, cleaning and removal of all fixtures, All hooking, unhooking, signaling of materials for salvage or scrap removed by crane or derrick; Digging under streets, roadways, aprons or other paved surfaces; Driller's Tender; Chuck Tender, Outside Nipper; Dry-packing of concrete (plugging and filling of she-bolt holes); Fence and/or Guardrail Erector: Dismantling and/or re-installation of all fence; Finegrader; Firewatcher; Flagman (Coning, preparing, stablishing and removing portable roadway barricade devices); Signal Men on all construction work defined herein, including Traffic Control Signal Men at construction site; General Excavation; Backfilling, Grading and all other labor connected therewith; Digging of trenches, ditches and manholes and the leveling, grading and other preparation prior to laying pipe or conduit for any purpose; Excavations and foundations for buildings, piers, foundations and holes, and all other construction.

Preparation of street ways and bridges; General Laborer: Cleaning and Clearing of all debris and surplus material. Clean-up of right-of-way. Clearing and slashing of brush or trees by hand or mechanical cutting. General Clean up: sweeping, cleaning, wash-down, wiping of construction facility and equipment (other than "Light Clean up (Janitorial) Laborer. Garbage and Debris Handlers and Cleaners. Appliance Handling (job site) (after delivery unloading in storage area); Ground and Soil Treatment Work (Pest Control); Gunite/Shotcrete Operator Tender; Junk Yard Laborers (same as Salvage Yard); Laser Beam "Target Man" in connection with Laborers' work; Layout Person for Plastic (when work involves waterproofing for waterpools, artificial lakes and reservoirs); Limbers, Brush Loaders, and Pilers; Loading, Unloading, carrying, distributing and handling of all rods and material for use in reinforcing concrete construction (except when a derrick or outrigger operated by other than hand power is used); Loading, unloading, sorting, stockpiling, handling and distribution of water mains, gas mains and all pipes; Loading and unloading of all materials, fixtures, furnishings and appliances from point of delivery to stockpile to point of installation; hooking and signaling from truck, conveyance or stockpile; Material Yard Laborers; Pipelayer Tender; Pipewrapper, Caulker, Bander, Kettlemen, and men applying asphalt, Laykold, Creosote, and similar-type materials (pipe under 6 inches); Plasterer Laborer; Preparation, construction and maintenance of roadbeds and sub-grade for all paving, including excavation, dumping, and spreading of sub-grade material; Prestressed or precast concrete slabs, walls, or sections: all loading, unloading, stockpiling, hooking on of such slabs, walls or sections; Quarry Laborers; Railroad, Streetcar, and Rail Transit Maintenance and Repair; Roustabout; Rubbish Trucks in connection with Building Construction Projects (excluding clearing, grubbing, and excavating); Salvage Yard: All work connected with cutting, cleaning, storing, stockpiling or handling of materials, all cleanup, removal of debris, burning, back-filling and landscaping of the site; Sandblasting Tender (Pot Tender): Hoses and pots or markers; Scaffolds: Erection, planking and removal of all scaffolds used for support for lathers, plasters, brick layers, masons, and other construction trades crafts; Scaffolds: (Specially designed by carpenters) laborers shall tend said carpenter on erection and dismantling thereof, preparation for foundation or mudsills, maintenance; Scraping of floors; Screeds: Handling of all screeds to be reused; handling, dismantling and conveyance of screeds; Setting, leveling and securing or bracing of metal or other road forms and expansion joints; Sheeting Piling/trench shoring (handling and placing of skip sheet or wood plank trench shoring); Ship Scalers; Shipwright Tender; Sign Erector (subdivision traffic, regulatory, and street-name signs); Sloper; Slurry Seal Crews (Mixer Operator, Applicator, Squeegee Man, Shuttle Man, Top Man); Snapping of wall ties and removal of tie rods; Soil Test operations of semi and unskilled labor such as filling sand bags; Striper (Asphalt, Concrete or other Paved Surfaces); Tool Room Attendant (Job Site); Traffic Delineating Device Applicator; Underpinning, lagging, bracing, propping and shoring, loading, signaling, right-of-way clearance along the route of movement, The clearance of new site, excavation of foundation when moving a house or structure from old site to new site; Utilities employees; Water Man; Waterscape/Hardscape Laborers; Wire Mesh Pulling (all concrete pouring operations); Wrecking,

stripping, dismantling and handling concrete forms an false work.

LAB00368-002 09/01/2020

	Rates	Fringes
Landscape & Irrigation Laborers		
GROUP 1.....	\$ 26.40	14.25
GROUP 2.....	\$ 27.40	14.25
GROUP 3.....	\$ 21.70	14.25

LABORERS CLASSIFICATIONS

GROUP 1: Installation of non-potable permanent or temporary irrigation water systems performed for the purposes of Landscaping and Irrigation architectural horticultural work; the installation of drinking fountains and permanent or temporary irrigation systems using potable water for Landscaping and Irrigation architectural horticultural purposes only. This work includes (a) the installation of all heads, risers, valves, valve boxes, vacuum breakers (pressure and non-pressure), low voltage electrical lines and, provided such work involves electrical wiring that will carry 24 volts or less, the installation of sensors, master control panels, display boards, junction boxes, conductors, including all other components for controllers, (b) and metallic (copper, brass, galvanized, or similar) pipe, as well as PVC or other plastic pipe including all work incidental thereto, i.e., unloading, handling and distribution of all pipes fittings, tools, materials and equipment, (c) all soldering work in connection with the above whether done by torch, soldering iron, or other means; (d) tie-in to main lines, thrust blocks (both precast and poured in place), pipe hangers and supports incidental to installation of the entire irrigation system, (e) making of pressure tests, start-up testing, flushing, purging, water balancing, placing into operation all irrigation equipment, fixtures and appurtenances installed under this agreement, and (f) the fabrication, replacement, repair and servicing of landscaping and irrigation systems. Operation of hand-held gas, air, electric, or self-powered tools and equipment used in the performance of Landscape and Irrigation work in connection with architectural horticulture; Choke-setting, signaling, and rigging for equipment operators on job-site in the performance of such Landscaping and Irrigation work; Concrete work (wet or dry) performed in connection with such Landscaping and Irrigation work. This work shall also include the setting of rock, stone, or riprap in connection with such Landscape, Waterscape, Rockscape, and Irrigation work; Grubbing, pick and shovel excavation, and hand rolling or tamping in connection with the performance of such Landscaping and Irrigation work; Sprigging, handseeding, and planting of trees, shrubs, ground covers, and other plantings and the performance of all types of gardening and horticultural work relating to said planting; Operation of flat bed trucks (up to and including 2 1/2 tons):.

GROUP 2. Layout of irrigation and other non-potable irrigation water systems and the layout of drinking fountains and other potable irrigation water systems in connection with such Landscaping and Irrigation work. This

includes the layout of all heads, risers, valves, valve boxes, vacuum breakers, low voltage electrical lines, hydraulic and electrical controllers, and metallic (coppers, brass, galvanized, or similar) pipe, as well as PVC or other plastic pipe. This work also includes the reading and interpretation of plans and specifications in connection with the layout of Landscaping, Rockscape, Waterscape, and Irrigation work; Operation of Hydro-Mulching machines (sprayman and driver), Drillers, Trenchers (riding type, Davis T-66, and similar) and fork lifts used in connection with the performance of such Landscaping and Irrigation work; Tree climbers and chain saw tree trimmers, Sporadic operation (when used in connection with Landscaping, Rockscape, Waterscape, and Irrigation work) of Skid-Steer Loaders (Bobcat and similar), Cranes (Bantam, Grove, and similar), Hoptos, Backhoes, Loaders, Rollers, and Dozers (Case, John Deere, and similar), Water Trucks, Trucks requiring a State of Hawaii Public Utilities Commission Type 5 and/or type 7 license, sit-down type and "gang" mowers, and other self-propelled, sit-down operated machines not listed under Landscape & Irrigation Maintenance Laborer; Chemical spraying using self-propelled power spraying equipment (200 gallon capacity or more).

GROUP 3: Maintenance of trees, shrubs, ground covers, lawns and other planted areas, including the replanting of trees, shrubs, ground covers, and other plantings that did not "take" or which are damaged; provided, however, that re-planting that requires the use of equipment, machinery, or power tools shall be paid for at the rate of pay specified under Landscape and Irrigation Laborer, Group 1; Raking, mowing, trimming, and runing, including the use of "weed eaters", hedge trimmers, vacuums, blowers, and other hand-held gas, air, electric, or self-powered tools, and the operation of lawn mowers (Note: The operation of sit-down type and "gang" mowers shall be paid for at the rate of pay specified under Landscape & Irrigation Laborer, Group 2); Guywiring, staking, propping, and supporting trees; Fertilizing, Chemical spraying using spray equipment with less than 200 gallon capacity, Maintaining irrigation and sprinkler systems, including the staking, clamping, and adjustment of risers, and the adjustment and/or replacement of sprinkler heads, (Note: the cleaning and gluing of pipe and fittings shall be paid for at the rate of pay specified under Landscape & Irrigation Laborer(Group 1); Watering by hand or sprinkler system and the performance of other types of gardening, yardman, and horticultural-related work.

 LAB00368-003 09/02/2020

	Rates	Fringes
Underground Laborer		
GROUP 1.....	\$ 39.30	22.68
GROUP 2.....	\$ 40.80	22.68
GROUP 3.....	\$ 41.30	22.68
GROUP 4.....	\$ 42.30	22.68
GROUP 5.....	\$ 42.65	22.68
GROUP 6.....	\$ 42.90	22.68
GROUP 7.....	\$ 43.35	22.68

GROUP 1: Watchmen; Change House Attendant.

GROUP 2: Swamper; Brakeman; Bull Gang-Muckers, Trackmen; Dumpmen (any method); Concrete Crew (includes rodding and spreading); Grout Crew; Reboundmen

GROUP 3: Chucktenders and Cabletenders; Powderman (Prime House); Vibratorman, Pavement Breakers

GROUP 4: Miners - Tunnel (including top and bottom man on shaft and raise work); Timberman, Retimberman (wood or steel or substitute materials thereof); Blasters, Drillers, Powderman (in heading); Microtunnel Laborer; Headman; Cherry Pickerman (where car is lifted); Nipper; Grout Gunmen; Grout Pumpman & Potman; Gunite, Shotcrete Gunmen & Potmen; Concrete Finisher (in tunnel); Concrete Screed Man; Bit Grinder; Steel Form Raisers & Setters; High Pressure Nozzleman; Nozzleman (on slick line); Sandblaster-Potman (combination work assignment interchangeable); Tugger

GROUP 5: Shaft Work & Raise (below actual or excavated ground level); Diamond Driller; Gunite or Shotcrete Nozzleman; Rodman; Groundman

GROUP 6: Shifter

GROUP 7: Shifter (Shaft Work & Raiser)

 PAIN1791-001 01/01/2021

	Rates	Fringes
Painters:		
Brush.....	\$ 38.90	30.09
Sandblaster; Spray.....	\$ 38.90	30.09

 PAIN1889-001 07/01/2020

	Rates	Fringes
Glaziers.....	\$ 39.50	34.85

 * PAIN1926-001 02/28/2021

	Rates	Fringes
Soft Floor Layers.....	\$ 37.77	32.07

 PAIN1944-001 01/05/2020

	Rates	Fringes
Taper.....	\$ 43.10	29.90

 * PLAS0630-001 08/31/2020

	Rates	Fringes
PLASTERER.....	\$ 43.69	31.68

 * PLAS0630-002 08/31/2020

	Rates	Fringes
Cement Masons:		
Cement Masons.....	\$ 42.65	32.29

Trowel Machine Operators....\$ 42.80 32.29

PLUM0675-001 01/03/2021

Rates Fringes

Plumber, Pipefitter,
Steamfitter & Sprinkler Fitter...\$ 51.43 24.55

ROOF0221-001 09/06/2020

Rates Fringes

Roofers (Including Built Up,
Composition and Single Ply).....\$ 41.80 20.50

SHEE0293-001 09/02/2018

Rates Fringes

Sheet metal worker.....\$ 42.55 27.44

SUHI1997-002 09/15/1997

Rates Fringes

Drapery Installer.....\$ 13.60 1.20

FENCE ERECTOR (Chain Link
Fence).....\$ 9.33 1.65

WELDERS - Receive rate prescribed for craft performing
operation to which welding is incidental.

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Note: Executive Order (EO) 13706, Establishing Paid Sick Leave
for Federal Contractors applies to all contracts subject to the
Davis-Bacon Act for which the contract is awarded (and any
solicitation was issued) on or after January 1, 2017. If this
contract is covered by the EO, the contractor must provide
employees with 1 hour of paid sick leave for every 30 hours
they work, up to 56 hours of paid sick leave each year.
Employees must be permitted to use paid sick leave for their
own illness, injury or other health-related needs, including
preventive care; to assist a family member (or person who is
like family to the employee) who is ill, injured, or has other
health-related needs, including preventive care; or for reasons
resulting from, or to assist a family member (or person who is
like family to the employee) who is a victim of, domestic
violence, sexual assault, or stalking. Additional information
on contractor requirements and worker protections under the EO
is available at www.dol.gov/whd/govcontracts.

Unlisted classifications needed for work not included within
the scope of the classifications listed may be added after
award only as provided in the labor standards contract clauses
(29CFR 5.5 (a) (1) (ii)).

The body of each wage determination lists the classification

and wage rates that have been found to be prevailing for the cited type(s) of construction in the area covered by the wage determination. The classifications are listed in alphabetical order of ""identifiers"" that indicate whether the particular rate is a union rate (current union negotiated rate for local), a survey rate (weighted average rate) or a union average rate (weighted union average rate).

Union Rate Identifiers

A four letter classification abbreviation identifier enclosed in dotted lines beginning with characters other than ""SU"" or ""UAVG"" denotes that the union classification and rate were prevailing for that classification in the survey. Example: PLUM0198-005 07/01/2014. PLUM is an abbreviation identifier of the union which prevailed in the survey for this classification, which in this example would be Plumbers. 0198 indicates the local union number or district council number where applicable, i.e., Plumbers Local 0198. The next number, 005 in the example, is an internal number used in processing the wage determination. 07/01/2014 is the effective date of the most current negotiated rate, which in this example is July 1, 2014.

Union prevailing wage rates are updated to reflect all rate changes in the collective bargaining agreement (CBA) governing this classification and rate.

Survey Rate Identifiers

Classifications listed under the ""SU"" identifier indicate that no one rate prevailed for this classification in the survey and the published rate is derived by computing a weighted average rate based on all the rates reported in the survey for that classification. As this weighted average rate includes all rates reported in the survey, it may include both union and non-union rates. Example: SULA2012-007 5/13/2014. SU indicates the rates are survey rates based on a weighted average calculation of rates and are not majority rates. LA indicates the State of Louisiana. 2012 is the year of survey on which these classifications and rates are based. The next number, 007 in the example, is an internal number used in producing the wage determination. 5/13/2014 indicates the survey completion date for the classifications and rates under that identifier.

Survey wage rates are not updated and remain in effect until a new survey is conducted.

Union Average Rate Identifiers

Classification(s) listed under the UAVG identifier indicate that no single majority rate prevailed for those classifications; however, 100% of the data reported for the classifications was union data. EXAMPLE: UAVG-OH-0010 08/29/2014. UAVG indicates that the rate is a weighted union average rate. OH indicates the state. The next number, 0010 in the example, is an internal number used in producing the wage determination. 08/29/2014 indicates the survey completion date for the classifications and rates under that identifier.

A UAVG rate will be updated once a year, usually in January of each year, to reflect a weighted average of the current negotiated/CBA rate of the union locals from which the rate is based.

WAGE DETERMINATION APPEALS PROCESS

1.) Has there been an initial decision in the matter? This can be:

- * an existing published wage determination
- * a survey underlying a wage determination
- * a Wage and Hour Division letter setting forth a position on a wage determination matter
- * a conformance (additional classification and rate) ruling

On survey related matters, initial contact, including requests for summaries of surveys, should be with the Wage and Hour Regional Office for the area in which the survey was conducted because those Regional Offices have responsibility for the Davis-Bacon survey program. If the response from this initial contact is not satisfactory, then the process described in 2.) and 3.) should be followed.

With regard to any other matter not yet ripe for the formal process described here, initial contact should be with the Branch of Construction Wage Determinations. Write to:

Branch of Construction Wage Determinations
Wage and Hour Division
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

2.) If the answer to the question in 1.) is yes, then an interested party (those affected by the action) can request review and reconsideration from the Wage and Hour Administrator (See 29 CFR Part 1.8 and 29 CFR Part 7). Write to:

Wage and Hour Administrator
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

The request should be accompanied by a full statement of the interested party's position and by any information (wage payment data, project description, area practice material, etc.) that the requestor considers relevant to the issue.

3.) If the decision of the Administrator is not favorable, an interested party may appeal directly to the Administrative Review Board (formerly the Wage Appeals Board). Write to:

Administrative Review Board
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

4.) All decisions by the Administrative Review Board are final.

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END OF GENERAL DECISION"

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
HONOLULU, HAWAII

P R O P O S A L

6/02/98

**PROPOSAL TO THE
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION**

PROJECT: Kamehameha Highway
Kaipaupau Stream Bridge Replacement
District of Koolauloa
Island of Oahu

PROJECT NO.: BR-083-1(48)

COMPLETION TIME: 625 Working days from the Start Work Date from the Department.

DBE PROJECT GOAL: 4.8%

DESIGN PROJECT MANAGER:

NAME	Jennifer Russell
ADDRESS	601 Kamokila Boulevard, Room 609 Kapolei, Hawaii 96707
PHONE NO.	(808) 692-7572
FAX NO.	(808) 692-7590

Director of Transportation
869 Punchbowl Street
Honolulu, Hawaii 96813

Dear Sir:

The undersigned bidder declares the following:

1. It has not, either directly or indirectly, entered into any agreement, participated in any collusion, or otherwise taken any action in restraint of free competitive bidding in connection with this proposal.
2. It has not been assisted or represented on this matter by any individual who has, in a State capacity, been involved in the subject matter of this contract within the past two years.
3. It has not and will not, either directly or indirectly offered or given a gratuity (i.e., an entertainment or gift) to any State or County employee to obtain a contract or favorable treatment under a contract.
4. It will not maintain for its employees any segregated facilities at any of its establishments.
5. Does not and will not permit its employees to perform their services at any location under its control, where segregated facilities are maintained.

The undersigned bidder further agrees to the following:

1. If this proposal is accepted, it shall execute a contract with the Department to provide all necessary labor, machinery, tools, equipment, apparatus and any other means of construction, to do all the work and to furnish all the materials specified in the contract in the manner and within the time therein prescribed in the contract, and that it shall accept in full payment therefore the sum of the unit and/or lump sum prices as set forth in the attached proposal schedule for the actual quantities of work performed and materials furnished and furnish satisfactory security in accordance with Section 103D-324, Hawaii Revised Statutes, within 10 days after the award of the contract or within such time as the Director of Transportation may allow after the undersigned has received the contract documents for execution, and is fully aware that non-compliance with the aforementioned terms will result in the forfeiture of the full amount of the bid guarantee required under Section 103D-323, Hawaii Revised Statutes.

2. That the quantities given in the attached proposal schedule are approximate only and are intended principally to serve as a guide in determining and comparing the bids.
3. That the Department does not either expressly or by implication, agree that the actual amount of work will correspond therewith, but reserves the right to increase or decrease the amount of any class or portion of the work, or to omit portions of the work, as may be deemed necessary or advisable by the Director of Transportation, and that all increased or decreased quantities of work shall be performed at the unit prices set forth in the attached proposal schedule except as provided for in the specifications.
4. In case of a discrepancy between unit prices and the totals in said Proposal Schedule, the unit prices shall prevail.
5. Unless amended by Special Provision, agrees to begin work within 10 working days after the date of notification to commence with the work, which date is in the notice to proceed, and shall finish the entire project within the time prescribed.
6. The Director of Transportation reserves the right to reject any or all bids and to waive any defects when in the Director's opinion such rejections or waiver will be for the best interest of the public.

The bidder acknowledges receipt of and certifies that it has completely examined the following listed items: Hawaii Standard Specifications for Road and Bridge Construction, 2005, the Notice to Bidders, the Special Provisions, the Technical Provisions, the Proposal, the Contract and Bond Forms, and the Project Plans.

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

_____ Surety Bid Bond (Use standard form),

_____ Cash,

_____ Cashier's Check,

_____ Certified Check, or

_____ (Fill in other acceptable security.)

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

Addendum No. 1 _____ Addendum No. 3 _____

Addendum No. 2 _____ Addendum No. 4 _____

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

The undersigned bidder asserts that affirmative action has been taken to seek out and consider Disadvantaged Business Enterprises (DBEs) for portions of the work which can be subcontracted, and the affirmative actions of the bidder are fully documented in its records and are available upon request by the Department. It is also understood that it must meet or exceed the DBE contact goal listed on page P-1 or demonstrate that it made good faith efforts to meet the DBE project goal. The undersigned as bidder, agrees to utilize each participating DBE that it submitted to meet the contract goal of _____% (percentage to be completed by bidder) DBE participation if the contract is awarded to it, and shall maintain such DBE participation during the construction of this project.

SUBCONTRACTOR LISTING
(Attach additional sheets if necessary.)

	NAME OF FIRM	NATURE OF WORK
SUBCONTRACTOR:		
1.	_____	_____
1a ¹ .	_____	_____
2.	_____	_____
2a.	_____	_____
3.	_____	_____
3a.	_____	_____
4.	_____	_____
4a.	_____	_____
5.	_____	_____
5a.	_____	_____
6.	_____	_____
6a.	_____	_____
7.	_____	_____
7a.	_____	_____

NOTES:

The Name of Firm and Nature of Work shall be indicated for all listed firms. The Bidder must adequately and unambiguously disclose the unique nature and scope of the work to be performed by each Sub- or Joint Contractor.

For each listed firm, the Bidder declares the respective firm is a Sub- or Joint Contractor and subject to evaluation as a Sub- or Joint Contractor.

¹ Second tier subcontractors

JOINT CONTRACTOR LISTING
 (Attach additional sheets if necessary.)

	NAME OF FIRM	NATURE OF WORK
JOINT CONTRACTOR:		
1.	_____	_____
	1a ¹ . _____	_____
1.	_____	_____
	2a. _____	_____
2.	_____	_____
	3a. _____	_____
3.	_____	_____
	4a. _____	_____
4.	_____	_____
	5a. _____	_____
5.	_____	_____
	6a. _____	_____
6.	_____	_____
	7a. _____	_____

NOTES:

The Name of Firm and Nature of Work shall be indicated for all listed firms. The Bidder must adequately and unambiguously disclose the unique nature and scope of the work to be performed by each Sub- or Joint Contractor.

For each listed firm, the Bidder declares the respective firm is a Sub- or Joint Contractor and subject to evaluation as a Sub- or Joint Contractor.

¹ Second tier subcontractors

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

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

Bidder

BY _____
Authorized Signature

Title

Business Address

E-mail Address

Business Telephone

Date

Contact Person (If different from above.)

Phone Number & E-mail Address

NOTE:

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

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

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

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

PROPOSAL SCHEDULE

	ITEM	APPROX QUANTITY	UNIT	UNIT PRICE	AMOUNT
201.0000	Clearing and Grubbing	L.S.	L.S.	L.S.	\$ _____
201.0100	Removal of Trees	L.S.	L.S.	L.S.	\$ _____
202.0420	Removal of Guardrails	122	L.F.	\$ _____	\$ _____
202.0430	Removal of AC Pavement	1,837	S.Y.	\$ _____	\$ _____
202.0435	Removal of AC Pavement Driveways	65	S.Y.	\$ _____	\$ _____
202.0440	Removal of Existing Concrete Bridge and Pedestrian Walkway	L.S.	L.S.	L.S.	\$ _____
202.0442	Removal of Concrete Pavement	10	S.Y.	\$ _____	\$ _____
202.0444	Removal of Concrete and CRM Retaining Walls	L.S.	L.S.	L.S.	\$ _____
202.0446	Removal of Miscellaneous Retaining Walls and CMU Walls With Wood Fence Panels	L.S.	L.S.	L.S.	\$ _____
202.0460	Removal of Riprap	25	S.Y.	\$ _____	\$ _____
202.0470	Removal of Pavement Striping and Markers	L.S.	L.S.	L.S.	\$ _____
202.0510	Removal of 6-Inch, 8-Inch, 12-Inch and 16-Inch Water line	264	L.F.	\$ _____	\$ _____
202.0520	Removal of gate valves, valve boxes, reaction blocks, fire hydrants, concrete jacket, and any other waterline appurtenances and incidentals.	L.S.	L.S.	L.S.	\$ _____

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PROPOSAL SCHEDULE

	ITEM	APPROX QUANTITY	UNIT	UNIT PRICE	AMOUNT
202.0600	Removal of Cesspools and Septic Tanks	F.A.	F.A.	F.A.	\$20,000.00
202.0700	Removal of Excavated Material	L.S.	L.S.	L.S.	\$_____
202.0800	Removal of Houses	L.S.	L.S.	L.S.	\$_____
202.0910	Removal of Chain Link Fencing and Salvaging at 5-4-18:3, 5-4-11:20 and 5-4-11:21	370	L.F.	\$_____	\$_____
202.0920	Removal of Chain Link Fencing and Salvaging at 5-4-11:4	200	L.F.	\$_____	\$_____
203.0100	Roadway Excavation	600	C.Y.	\$_____	\$_____
203.0300	Borrow Excavated Material	553	C.Y.	\$_____	\$_____
204.0100	Trench Excavation for 6-inch Water line	11	C.Y.	\$_____	\$_____
204.0110	Trench Backfill for 6-inch Water line	6	C.Y.	\$_____	\$_____
204.0200	Trench Excavation for 8-inch Water line	111	C.Y.	\$_____	\$_____
204.0210	Trench Backfill for 8-inch Water line	38	C.Y.	\$_____	\$_____
204.0300	Trench Excavation for 12-Inch Water line	134	C.Y.	\$_____	\$_____
204.0310	Trench Backfill for 12-inch Water line	108	C.Y.	\$_____	\$_____

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PROPOSAL SCHEDULE

	ITEM	APPROX QUANTITY	UNIT	UNIT PRICE	AMOUNT
204.0400	Trench Excavation for 16-inch Water line	222	C.Y.	\$ _____	\$ _____
204.0410	Trench Backfill for 16-inch Water line	171	C.Y.	\$ _____	\$ _____
205.6101	Structure Excavation for Bridge Abutment, Wingwalls, Return Wall and Barrier Walls	850	C.Y.	\$ _____	\$ _____
205.7201	Structure Backfill for Bridge Abutments, Wingwalls, Return Wall and Barrier Wall	400	C.Y.	\$ _____	\$ _____
205.8200	Filter Material	50	C.Y.	\$ _____	\$ _____
206.1000	Excavation for 4-inch Drain line	25	C.Y.	\$ _____	\$ _____
206.2000	Excavation for Dumped Riprap	700	C.Y.	\$ _____	\$ _____
209.0100	Installation, Maintenance, Monitoring, and Removal of BMP	L.S.	L.S.	L.S.	\$ _____
209.0200	Additional Water Pollution, Dust, and Erosion Control	F.A.	F.A.	F.A.	\$ 175,000.00
209.0300	Water Quality Sampling	L.S.	L.S.	L.S.	\$ _____
219.1000	Determination and Characterization of Fill Material	L.S.	L.S.	L.S.	\$ _____
301.1000	Hot Mix Asphalt Base Course	130	C.Y.	\$ _____	\$ _____
304.1000	Aggregate Base	115	C.Y.	\$ _____	\$ _____

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PROPOSAL SCHEDULE

	ITEM	APPROX QUANTITY	UNIT	UNIT PRICE	AMOUNT
305.1000	Aggregate Subbase	310	C.Y.	\$ _____	\$ _____
401.1000	HMA Pavement, Mix No. IV	392	TON	\$ _____	\$ _____
401.2000	Pavement Smoothness Incentive	Allowance	Allowance	Allowance	\$ 2,700.00
411.0100	6-Inch Concrete Pavement	16	C.Y.	\$ _____	\$ _____
503.1091	Concrete for Abutments, Wingwalls, Return Wall and Barrier Walls	300	C.Y.	\$ _____	\$ _____
503.1093	Concrete for Bridge Deck, Topping over End Beam and Concrete encasing ducts with bridge	280	C.Y.	\$ _____	\$ _____
503.1095	Concrete for Approach Slabs and Sleeper Slabs	140	C.Y.	\$ _____	\$ _____
503.1096	Concrete for W16 Cradles	5	C.Y.	\$ _____	\$ _____
503.1097	Concrete for Diaphragms	20	C.Y.	\$ _____	\$ _____
503.1099	Concrete for Reaction Blocks at Wing Wall No. 3 and No. 4	30	C.Y.	\$ _____	\$ _____
503.2050	Concrete for Reaction Blocks, Test Blocks, Jackets and Reaction Beams	122	C.Y.	\$ _____	\$ _____
503.8000	Mechanical Grooving	6,500	S.F.	\$ _____	\$ _____
504.7400	Precast Prestressed Concrete Girder	1,227	L.F.	\$ _____	\$ _____

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PROPOSAL SCHEDULE

	ITEM	APPROX QUANTITY	UNIT	UNIT PRICE	AMOUNT
504.7401	Inspections in a State other than Hawaii	F.A.	F.A.	F.A.	\$ 100,000.00
507.1501	Metal Railing	231	L.F.	\$ _____	\$ _____
507.7000	Concrete Barrier (Including End Posts)	280	L.F.	\$ _____	\$ _____
507.7001	Aesthetic Bridge Railing (Including End Posts)	231	L.F.	\$ _____	\$ _____
511.0100	Furnishing Drilled Shaft Drilling Equipment	L.S.	L.S.	L.S.	\$ _____
511.0200	Obstructions	120	Hour	\$ _____	\$ _____
511.0300	Load Test	1	EA	\$ _____	\$ _____
511.0310	Trial Shaft	100	LF	\$ _____	\$ _____
511.0400	Drilled Shaft (48-Inch Diameter)	600	LF	\$ _____	\$ _____
511.0510	Unclassified Shaft Excavation (48-Inch Diameter)	600	LF	\$ _____	\$ _____
511.1100	Coring for Integrity Testing for Acceptable Drilled Shaft	154	LF	\$ _____	\$ _____
512.0200	Installing Prefabricated Steel Beam Bridge Abutments and Piers	1	EA	\$ _____	\$ _____
512.0300	Installing Prefabricated Steel Beam Bridge	1	EA	\$ _____	\$ _____

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PROPOSAL SCHEDULE

	ITEM	APPROX QUANTITY	UNIT	UNIT PRICE	AMOUNT
512.0500	Removal of Prefabricated Steel Beam Bridge, Prefabricated Steel Beam Bridge Abutments and Piers	1	EA	\$ _____	\$ _____
540.1000	VESLMC (Bridge Deck Closure)	10	C.Y.	\$ _____	\$ _____
540.1001	VESLMC (End Beam Closures)	5	C.Y.	\$ _____	\$ _____
602.1091	Reinforcing Steel for Abutments, Wingwalls, Return Wall and Barrier Walls	80,000	LBS	\$ _____	\$ _____
602.1093	Reinforcing Steel for Bridge Deck, Topping over End Beam and Concrete encasing ducts with bridge	85,000	LBS	\$ _____	\$ _____
602.1095	Reinforcing Steel for Approach Slabs and Sleeper Slabs	48,000	LBS	\$ _____	\$ _____
602.1097	Reinforcing Steel for Diaphragms	7,000	LBS	\$ _____	\$ _____
602.1099	Reinforcing Steel for Reaction Blocks	4,000	LBS	\$ _____	\$ _____
602.1100	Reinforcing Steel (Epoxy Coated) for Corbels	600	LBS	\$ _____	\$ _____
603.1000	Bed Course Material for Culvert	10	C.Y.	\$ _____	\$ _____
603.2000	4-Inch High Density Polyethylene Pipe, Type S	70	L.F.	\$ _____	\$ _____
606.3000	Guardrail Type MGS with Standard 8" Offset Block	175	L.F.	\$ _____	\$ _____
607.0140	6-Feet, Chain Link Fence	55	L.F.	\$ _____	\$ _____

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PROPOSAL SCHEDULE

	ITEM	APPROX QUANTITY	UNIT	UNIT PRICE	AMOUNT
607.0150	8-Feet, Chain Link Fence With Barbed Wire	610	L.F.	\$ _____	\$ _____
607.0160	Chain Link Gate, 8 Feet High and 20 feet Wide	2	Each	\$ _____	\$ _____
614.0100	Adjusting Street Survey Monuments	1	Each	\$ _____	\$ _____
617.1000	Imported Planting Soil	64	C.Y.	\$ _____	\$ _____
621.1000	Security Guard Services	L.S.	L.S.	L.S.	\$ _____
621.1100	Rodent Control	L.S.	L.S.	L.S.	\$ _____
622.1000	Highway Lighting Luminaire and Bracket Arm, 84W LED	4	Each	\$ _____	\$ _____
622.8000	Temporary Highway Lighting	L.S.	L.S.	L.S.	\$ _____
624.1003	Temporary Water Systems	L.S.	L.S.	L.S.	\$ _____
624.1004	Permanent Water Systems	L.S.	L.S.	L.S.	\$ _____
626.1000	Type A Manhole, 3.0 feet to 4.0 feet	1	Each	\$ _____	\$ _____
626.1100	Type A Manhole, 4.0 feet to 5.0 feet	1	Each	\$ _____	\$ _____
626.3100	6-Inch Standard Valve Box	1	Each	\$ _____	\$ _____

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PROPOSAL SCHEDULE

	ITEM	APPROX QUANTITY	UNIT	UNIT PRICE	AMOUNT
626.3200	8-Inch Standard Valve Box	2	Each	\$ _____	\$ _____
627.1000	Lightweight Concrete	10	C.Y.	\$ _____	\$ _____
628.0100	Shotcrete for Stream Lining	L.S.	L.S.	L.S.	\$ _____
629.1010	4-Inch Pavement Striping (Thermoplastic) (Diversion Road)	3,419	L.F.	\$ _____	\$ _____
629.1012	4-Inch Pavement Striping (Thermoplastic) (Final)	2,163	L.F.	\$ _____	\$ _____
629.1014	8-Inch Pavement Striping (Thermoplastic) (Diversion Road)	25	L.F.	\$ _____	\$ _____
629.1016	12-Inch Pavement Striping (Thermoplastic) (Diversion Road)	14	L.F.	\$ _____	\$ _____
629.1018	12-Inch Pavement Striping (Thermoplastic) (Final)	17	L.F.	\$ _____	\$ _____
629.1020	Pavement Arrow (Thermoplastic) (Diversion Road)	1	Each	\$ _____	\$ _____
629.1022	Pavement Word (Thermoplastic) (Diversion Road)	2	Each	\$ _____	\$ _____
629.2010	Type C Pavement Marker	54	Each	\$ _____	\$ _____
629.2020	Type D Pavement Marker	58	Each	\$ _____	\$ _____
631.3000	New "No Jumping From Bridge" Sign	4	Each	\$ _____	\$ _____

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PROPOSAL SCHEDULE

	ITEM	APPROX QUANTITY	UNIT	UNIT PRICE	AMOUNT
631.4000	New "Unlawful to Litter \$1000 Fine" Sign	2	Each	\$ _____	\$ _____
631.5000	New "The Bus" Sign	1	Each	\$ _____	\$ _____
631.6000	New Stop and Street Sign	1	Each	\$ _____	\$ _____
631.7000	New "No Parking" and Supplemental Signs	2	Each	\$ _____	\$ _____
636.1000	E-Construction license	F.A.	F.A.	F.A.	\$ 234,800.00
641.1000	Hydro-mulch seeding (Seashore Paspalum)	580	S.Y.	\$ _____	\$ _____
642.1000	Plant Maintenance	3	Month	\$ _____	\$ _____
643.1000	Maintenance of Existing Landscape Areas	F.A.	F.A.	F.A.	\$ 70,000.00
645.1000	Traffic Control	L.S.	L.S.	L.S.	\$ _____
645.2000	Additional Police Officers, Additional Traffic Control Devices and Advertisements	F.A.	F.A.	F.A.	\$ 100,000.00
648.1000	Field Posted Drawings	L.S.	L.S.	L.S.	\$ _____
651.1000	HECO Ductline, One 3-Inch PVC, Schedule 40, Concrete Encased	L.S.	L.S.	L.S.	\$ _____
651.2000	HECO Handhole, 2' x 4'	1	Each	\$ _____	\$ _____

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PROPOSAL SCHEDULE

	ITEM	APPROX QUANTITY	UNIT	UNIT PRICE	AMOUNT
651.3001	HECO Pole Riser, One 3-Inch	4	Each	\$ _____	\$ _____
651.3005	Remove HECO Pole Riser	4	Each	\$ _____	\$ _____
652.1001	HT Ductline, One 2-Inch, Type GT 42, Concrete Encased	L.S.	L.S.	L.S.	\$ _____
652.1002	HT Ductline, One 1-Inch, Type GT 42, Concrete Encased	L.S.	L.S.	L.S.	\$ _____
652.1008	JTS Ductline, Two 4-Inch, PVC Schedule 40, Concrete Encased	L.S.	L.S.	L.S.	\$ _____
652.1009	JTS Conduit In Bridge Structure, Two 4-Inch, PVC Schedule 40	L.S.	L.S.	L.S.	\$ _____
652.2001	HT Handhole, 2' x 4'	1	Each	\$ _____	\$ _____
652.2005	JTS Manhole, 4' x 6'	2	Each	\$ _____	\$ _____
652.3001	HT Pole Riser, One 2-Inch	2	Each	\$ _____	\$ _____
652.3002	HT Pole Riser, One 1-Inch	2	Each	\$ _____	\$ _____
652.3005	Remove HT Pole Riser	5	Each	\$ _____	\$ _____
655.0100	Dumped Riprap	700	C.Y.	\$ _____	\$ _____
657.1000	Handling and Disposal of Hazardous Items and Material from Existing Bridge and Pedestrian Walkway	F.A.	F.A.	F.A.	\$ 20,000.00

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PROPOSAL SCHEDULE

	ITEM	APPROX QUANTITY	UNIT	UNIT PRICE	AMOUNT
657.2000	Handling and Disposal of Hazardous Excavated Items and Material	F.A.	F.A.	F.A.	\$ 20,000.00
665.1000	Pest Control	L.S.	L.S.	L.S.	\$ _____
688.1000	Asbestos Removal	L.S.	L.S.	L.S.	\$ _____
688.2000	Additional Asbestos Removal	F.A.	F.A.	F.A.	\$ 5,000.00
688.3000	Asbestos Removal Monitoring	F.A.	F.A.	F.A.	\$ 10,000.00
691.1000	Archaeological Monitoring	F.A.	F.A.	F.A.	\$ 100,000.00
693.1000	Terminal Impact Attenuator - Quadguard	4	Each	\$ _____	\$ _____
693.3000	Terminal Impact Attenuator - Quadguard (Diversion Road)	6	Each	\$ _____	\$ _____
695.1000	Public Education Materials or Services	F.A.	F.A.	F.A.	\$ 50,000.00
696.0200	Field Office Trailer (Not to Exceed \$32,000)	L.S.	L.S.	L.S.	\$ _____
696.1000	Project Site Laboratory Trailer (Not to Exceed \$22,000)	L.S.	L.S.	L.S.	\$ _____
696.2000	Maintenance of Trailers	F.A.	F.A.	F.A.	\$ 80,000.00
699.1000	Mobilization (Not to Exceed 6% of the Sum of All Items Excluding the Bid Price of This Item).	L.S.	L.S.	L.S.	\$ _____

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PROPOSAL SCHEDULE

	ITEM	APPROX QUANTITY	UNIT	UNIT PRICE	AMOUNT
TOTAL AMOUNT FOR COMPARISON OF BIDS					\$ _____
NOTES:	<ol style="list-style-type: none"> 1. Bids shall include all Federal, State, County and other applicable taxes. 2. The TOTAL AMOUNT FOR COMPARISON OF BIDS will be used to determine the lowest responsible bidder. 3. In case of a discrepancy between unit price and the total in said bid, the unit price shall prevail. 4. Bidders must complete all unit prices and amounts. Failure to do so may be grounds for rejection of bid. 				

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1 **PROPOSAL SCHEDULE**

2
3 The bidder is directed to Subsection 105.16 – Subcontracts.

4
5 The bidder's attention is directed to Sections 696 - Field Office and Project
6 Site Laboratory and 699 - Mobilization for the limitation of the amount bidders are
7 allowed to bid.

8
9 If the bid price for any proposal item having a maximum allowable bid
10 indicated therefore in any of the contract documents is in excess of such a
11 maximum amount, the bid price for such proposal item shall be adjusted to reflect
12 the limitation thereon. The comparison of bids to determine the successful
13 bidder and the amount of contract to be awarded shall be determined after such
14 adjustments are made, and such adjustments shall be binding upon the bidder.

15
16 The bidder is directed to Section 717 – Cullet and Cullet-Made Materials
17 regarding recycling of waste glass.

Summary of Good Faith Efforts (GFE)

As required by the specifications "*Disadvantaged Business Enterprise Requirements*," if the DBE goal is not met, documentation of GFE shall be submitted within five (5) days of bid opening. The bidder is required to respond to the following questions and describe efforts to obtain DBE participation. Each item will require an explanation. Copies of correspondence return receipts, telephone logs, or other documentation will be required to support GFE. Attach additional sheets, if necessary. Based on responses given, HDOT shall make a determination of the bidders' GFE. **Failure to provide required information shall be cause for bid/proposal rejection.**

1. Did you submit the required information five days after bid opening (i.e. DBE name, address, NAICS code, description of work, project name, and number)?
2. Explain your GFE if any, to solicit through all reasonable and available means (e.g. attendance at pre-bid meetings, advertising and/or written notices) the interest of all certified DBEs who have the capability to perform part or all of the work to be included under the contract.
 - a. Explain your GFE if any, to solicit the participation of potential DBEs as early in the procurement process as practicable.
 - b. Explain your GFE if any, to allow sufficient time for the DBEs to properly inquire about the project and respond to the solicitation.
 - c. Explain your GFE if any, to take appropriate steps to follow up with interested DBEs in a timely manner to facilitate participation by DBEs in this project.
3. Explain your GFE if any, to identify and break up portions of work that can be performed by DBEs in order to increase the likelihood that a DBE will be able to participate, and that the DBE goal could be achieved (e.g. breaking out contract items into economically feasible units to facilitate DBE participation even when you might otherwise prefer to self-perform these work items).
4. Explain your GFE if any, to make available or provide interested DBEs with adequate information about the plans, specifications, and requirements of the project in a timely manner, and assist them in responding to your solicitation.
5. Explain your GFE if any, to negotiate in good faith with interested DBEs. Evidence of such negotiations includes documenting: a) the names, addresses and telephone numbers of DBEs that were contacted; b) a description of the information that was provided to DBEs regarding the plans and specifications; and c) detailed explanation for not utilizing individual DBEs on the project.
6. Did you solely rely on price in determining whether to use a DBE? If yes please explain. The fact that there may be additional or higher costs associated with finding and utilizing DBEs are not, by themselves, sufficient reasons for your refusal to utilize a DBE or failure to meet the DBE goal, provided that such additional costs are not unreasonable. Also, the ability or desire to perform a portion of the work with your own forces, that could have been undertaken by an available DBE, does not relieve you of the responsibility to make good faith efforts to meet the DBE goal, and to make available and solicit DBE participation in other areas of the project to meet the DBE goal.
7. Did you reject DBEs as being unqualified without sound reasons based on a thorough investigation of their capabilities? If yes, please explain. The DBEs standing within the industry, membership in specific groups, organizations or associates, and political or social affiliation are not legitimate basis for the rejection or non-solicitation of bids from particular DBEs.

8. Explain your GFE to assist interested DBEs in obtaining bonding, lines of credit, or insurance.

9. Explain your GFE if any, to assist interested DBEs in obtaining necessary equipment, supplies, materials or related assistance or services.

10. If you selected a non-DBE over a DBE subcontractor, please provide the quotes of each DBE and non-DBE subcontractor submitted to you for work on the contract; and for each DBE that was contacted but not utilized for a contract, provide a detailed written explanation for each DBE detailing the reasons for not utilizing or allowing the DBE to participate in the contract.

11. Explain your GFE if any, to effectively use the services of available minority/women community organizations, minority/women business groups, contractors' groups, and local, state and federal minority/women business assistance offices or other organizations to provide assistance in recruitment and placement of DBEs.



**Disadvantaged Business Enterprise (DBE)
Contract Goal Verification and Good Faith Efforts (GFE)
Documentation
For Construction
INSTRUCTIONS**

Project #	Self-explanatory
County	County where project is located
DBE Project Goal	Indicate DBE goal listed in the proposal on P-1
Prime Contractor	Name of prime contractor
Name of Subcontractor, Supplier, Manufacturer, and Trucking Company	Company name of subcontractor, supplier, manufacturer, or trucking firm
DBE (Y/N)	Y for yes and N for no
Bid Item Number and Description	Pay item and description
Approx. Quantity/ Hours	Self-explanatory
Unit	Unit of measure
Unit Price/ Rate	Self-explanatory
Dollar Amount	Total dollar amount committed to subcontractor, supplier, manufacturer, or trucking firm
A. Dollar amount of the work to be performed by DBE subcontractors, manufacturers, and trucking companies, plus 60% of the dollar amount of DBE suppliers	Total amount of DBE participation
B. Sum of all work items less mobilization, force account items, allowance items	Total of work items minus mobilization, force accounts and allowances
A/B = DBE contract goal	Self-explanatory
Name and Signature of Authorized Representative of Prime Contractor	Self-explanatory
Date	Date form is signed
Summary of Good Faith Efforts (GFE)	Complete by answering each question in detail and providing documentation to support your GFE



Disadvantaged Business Enterprise (DBE) Confirmation and Commitment Agreement Trucking Company

This commitment is subject to the award and receipt of a signed contract from the Hawaii Department of Transportation (HDOT) for the subject project. DBEs must be certified by the bid opening date.

Project #:	County:
NAICS CODE/DESCRIPTION OF WORK:	SECONDARY NAICS CODE:

*All quantities and units should match the bid tab item whenever possible.

The prime contractor shall inform HDOT the dates when the trucking firm starts and completes all work under the subcontract.

Estimated Beginning Date (Month/Year):	Estimated Completion Date (Month/Year):
---	--

TRUCKING COMPANY:	Item No.	Item Description	Unit	Unit Price / Rate	Amount
				\$	\$
				\$	\$
				\$	\$
TOTAL COMMITMENT AMOUNT					\$

1. Number of hours contracted or quantities to be hauled: _____
2. Number of fully operational trucks to be used: _____ Tractor/trailers: _____ Dump trucks: _____
3. Number of fully operational trucks owned by DBE: _____ Dump trucks: _____ Tractors/trailers: _____

4. If Owner Operators or additional trucking companies are to be used answer the following:			
Name of Trucking Company	DBE Y/N	Estimated. Dollar Amount to be Contracted	Number and Type of Trucks (specify)
		\$	
		\$	

The prime contractor certifies by signature on this agreement to utilize the DBE trucking company as listed on the agreement form. If a DBE trucking company is unable to perform the work as listed on this agreement form, the prime contractor will follow the substitution/replacement approval process as outlined in the contract DBE requirements. **IMPORTANT! The signatures of the DBE, prime contractor, and subcontractor (only if the DBE will be a second tier sub) confirms that all information on this Agreement is true and correct. Parties should sign Agreement in the order in which they are listed.**

DBE NAME:	Name/Title (please print):
Address:	Signature:
Phone: Fax:	Date:
Email:	Name/Title (please print):
Prime Contractor:	Signature:
Address:	Date:
Phone: Fax:	Name/Title (please print):
Email:	Signature:
Subcontractor (only if the DBE will be a second tier sub):	Date:
Address:	Signature:
Phone: Fax:	Date:
Email:	Date:

HDOT retains the information collected through this form. With few exceptions, you are entitled on request to be informed about the information that we collect about you.



Disadvantaged Business Enterprise (DBE) Confirmation and Commitment Agreement Trucking Company INSTRUCTIONS

The purpose of this agreement is to secure the commitment of the bidder/offeror to utilize the listed DBE trucking company, and the DBE's confirmation that it will perform work for the bidder/offeror on this project. The information on this form shall be provided by the DBE.

Project #	Self-explanatory
County	County where project is located
NAICS Code/Description of Work	Primary North American Industry Classification System code under which DBE is certified to perform and description of work to be done
Secondary NAICS Code	List other NAICS codes firm is certified to perform
Estimated Beginning Date (Month/Year)	Date DBE shall begin work on the project
Estimated Completion Date (Month/Year)	Date DBE's work will be completed
Trucking Company	Name of DBE trucking company
Item No.	List pay item number
Item Description	Description of item
Unit	Unit of measure – e.g. weight or hours
Unit Price/Rate	Cost per unit or hourly rate
Amount	Total amount per pay item
Total Commitment Amount	Sum of all pay items and total commitment of bidder/offeror to DBE
Number of hours contracted or quantities to be hauled	Approximate number of hours or tonnage to be hauled
Number of fully operational trucks to be used:	Total number of trucks to be used for the project
Tractor/Trailers	Number of tractor trailers to be used
Dump Trucks	Number of dump trucks to be used
Number of fully operational trucks owned by DBE	Number of listed DBE's trucks to be used on this project
Name of Trucking Company	If other trucking companies (DBE or non-DBE) are to be leased, list name and information about type of trucks in this section
Estimated Dollar Amount to be Contracted	Provide information about estimated cost to lease trucks
Number of Dump Trucks, Tractor/Trailer	Self-explanatory
DBE NAME	DBE Company name
Name/Title	Name and title of DBE's representative
Address	Self-explanatory
Phone	Self-explanatory
Fax	Self-explanatory
Email	Self-explanatory
Signature	Signature of DBE's representative
Date	Date agreement is signed
Prime Contractor	Company name

Name/Title	Name and title of prime contractor's representative
Address	Self-explanatory
Phone	Self-explanatory
Fax	Self-explanatory
Email	Self-explanatory
Signature	Signature of prime contractor's representative
Date	Date agreement is signed
Subcontractor (only if the DBE will be a second tier sub):	Name of subcontractor only if the listed DBE trucking company will be performing work under this subcontractor
Name/Title	Name and title of the subcontractor's representative
Address	Self-explanatory
Phone	Self-explanatory
Fax	Self-explanatory
Email	Self-explanatory
Signature	Signature of subcontractor
Date	Date agreement is signed



Disadvantaged Business Enterprise (DBE) Confirmation and Commitment Agreement

Subcontractor, Manufacturer, or Supplier

This commitment is subject to the award and receipt of a signed contract from the Hawaii Department of Transportation (HDOT) for the subject project. DBEs must be certified by the bid opening date.

Project #:	County:
NAICS CODE/DESCRIPTION OF WORK:	SECONDARY NAICS CODE:

*All quantities and units should match the bid tab item whenever possible.

The prime contractor shall inform HDOT of the dates when the subcontractor starts and completes all work under the subcontract.

Estimated Beginning Date (Month/Year):	Estimated Completion Date (Month/Year):
---	--

SUBCONTRACTOR:	Item No.	Item	Approx. Quantity	Unit	Unit Price	Amount
					\$	\$
					\$	\$
					\$	\$
					\$	\$
TOTAL COMMITMENT AMOUNT						\$

MANUFACTURER:	Item No.	Item	Approx. Quantity	Unit	Unit Price	Amount
					\$	\$
					\$	\$
TOTAL COMMITMENT AMOUNT						\$

SUPPLIER:	Item No.	Item	Approx. Quantity	Unit	Unit Price	Amount
					\$	\$
					\$	\$
TOTAL COMMITMENT AMOUNT						\$

The prime contractor certifies by signature on this agreement that subcontracts will be executed between the prime contractor and the DBE subcontractors as listed on the agreement form. If a DBE subcontractor is unable to perform the work as listed on this agreement form, the prime contractor will follow the substitution/replacement approval process as outlined in the contract DBE requirements. **IMPORTANT! The signatures of the DBE, prime contractor, and subcontractor (only if the DBE will be a second tier sub) confirms that all information on this Agreement is true and correct. Parties should sign Agreement in the order in which they are listed.**

DBE NAME:	Name/Title (please print):
Address:	Signature:
Phone: Fax:	Date:
Email:	Name/Title (please print):
Prime Contractor:	Signature:
Address:	Date:
Phone: Fax:	Name/Title (please print):
Email:	Signature:
Subcontractor (only if the DBE will be a second tier sub):	Date:
Address:	Signature:
Phone: Fax:	Date:
Email:	Date:

HDOT retains the information collected through this form. With few exceptions, you are entitled on request to be informed about the information that we collect about you.



Disadvantaged Business Enterprise (DBE) Confirmation and Commitment Agreement Subcontractor, Manufacturer, or Supplier INSTRUCTIONS

The purpose of this agreement is to secure the commitment of the bidder/offeror to utilize the listed DBE, and the DBE's confirmation that it will perform work for the bidder/offeror on this project. The information on this form shall be provided by the DBE.

Project #	Self-explanatory
County	County where project is located
NAICS Code/Description of Work	Primary North American Industry Classification System code under which DBE is certified to perform and description of work to be done
Secondary NAICS Code	List other NAICS codes firm is certified to perform
Estimated Beginning Date (Month/Year)	Date DBE shall begin work on the project
Estimated Completion Date (Month/Year)	Date DBE's work will be completed
Subcontractor	Name of DBE subcontractor (company name)
Item No.	List pay item number
Item	Description of item
Approx. Quantity	Self-explanatory
Unit	List unit of measure
Unit Price	Cost per unit
Amount	Total amount per pay item
Total Commitment Amount	Sum of all pay items and total commitment of bidder/offeror to DBE
Manufacturer	Name of DBE manufacturer
Supplier	Name of DBE supplier (aka regular dealer)
DBE NAME	DBE Company name
Name/Title	Name and title of DBE's representative
Address	Self-explanatory
Phone	Self-explanatory
Fax	Self-explanatory
Email	Self-explanatory
Signature	Signature of DBE's representative
Date	Date agreement is signed
Prime Contractor	Company name
Name/Title	Name and title of prime contractor's representative
Address	Self-explanatory
Phone	Self-explanatory
Fax	Self-explanatory
Email	Self-explanatory
Signature	Signature of prime contractor's representative
Date	Date agreement is signed
Subcontractor (only if the DBE will be a second tier sub):	Name of subcontractor only if the listed DBE will be performing work under this subcontractor as a second tier subcontractor/supplier/manufacturer

Name/Title	Name and title of the subcontractor's representative that the listed DBE will work under as a second tier subcontractor/supplier/manufacturer
Address	Self-explanatory
Phone	Self-explanatory
Fax	Self-explanatory
Email	Self-explanatory
Signature	Signature of subcontractor's representative
Date	Date agreement is signed

SURETY BID BOND

Bond No. _____

KNOW ALL BY THESE PRESENTS:

That we, _____
(Full name or legal title of offeror)

as Offeror, hereinafter called the Principal, and

(Name of bonding company)

as Surety, hereinafter called Surety, a corporation authorized to transact business as a
Surety in the State of Hawaii, are held and firmly bound unto

(State/county entity)

as Owner, hereinafter called Owner, in the penal sum of

(Required amount of bid security)

Dollars (\$ _____), lawful money of the United States of
America, for the payment of which sum well and truly to be made, the said Principal and
the said Surety bind ourselves, our heirs, executors, administrators, successors and
assigns, jointly and severally, firmly by these presents.

WHEREAS:

The Principal has submitted an offer for _____

(Project by number and brief description)

NOW, THEREFORE:

The condition of this obligation is such that if the Owner shall reject said offer, or
in the alternate, accept the offer of the Principal and the Principal shall enter into a
contract with the Owner in accordance with the terms of such offer, and give such bond
or bonds as may be specified in the solicitation or Contract Documents with good and
sufficient surety for the faithful performance of such Contract and for the prompt
payment of labor and material furnished in the prosecution thereof as specified in the
solicitation then this obligation shall be null and void, otherwise to remain in full force
and effect.

Signed this _____ day of _____, _____

(Seal) _____
Name of Principal (Offeror)

Signature

Title

(Seal) _____
Name of Surety

Signature

Title

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HONOLULU, HAWAII

SAMPLE FORMS

Contract

Performance Bond (Surety)

Performance Bond

Labor and Material Payment Bond (Surety)

Labor and Material Payment Bond

Disclosure of Lobbying Activities (Standard Form - LLL and LLL-A)

Statement of Compliance (Form WH-348)

Chapter 104, HRS Compliance Certificate

C O N T R A C T

THIS AGREEMENT, made this _____ day _____ 19_____, by and between the STATE OF HAWAII, by its Director of Transportation, hereinafter referred to as "STATE," and _____ whose business and/or post office address is _____

_____ hereafter referred to as "CONTRACTOR":

WITNESSETH: That for and in consideration of the payments hereinafter mentioned, the CONTRACTOR hereby covenants and agrees with the STATE to complete in place, furnish and pay for all labor and materials necessary for

or such a part thereof as shall be required by the STATE, the total amount of which labor, material and construction shall be computed at the unit and/or lump sum prices set forth in the attached proposal schedule and shall be the sum of _____ DOLLARS (\$ _____) as follows:

which sum shall be provided from the following fund(s):

all in accordance with the specifications, the special provisions, if any, the notice to bidders, the instructions to bidders, the proposal, and plans for _____, on file in the office of the Director of Transportation. These documents, together with all alterations, amendments, and additions thereto and deductions therefrom, are attached hereto or incorporated herein by reference and made a part of this contract.

The CONTRACTOR hereby covenants and agrees to complete such construction within _____ (_____) working days from the date indicated in the notice to proceed from the STATE subject, however, to such extensions as may be provided for under the specifications.

For and in consideration of the covenants, undertaking and agreements of the CONTRACTOR herein set forth and upon the full and faithful performance thereof by the CONTRACTOR, the STATE hereby agrees to pay the CONTRACTOR the sum of _____ DOLLARS (\$ _____) in lawful money, but not more than such part of the same as is actually earned according to the STATE'S determination of the actual quantities of work performed and materials furnished by the CONTRACTOR at the unit or lump sum prices set forth in the attached proposal schedule. Such payment, including any extras, shall be made, subject to such additions or deductions hereto or hereafter made in the manner and at the time prescribed in the specifications and this contract. In any event, extras shall not exceed _____ DOLLARS (\$ _____) in lawful money and shall be provided from the following fund(s):

Where Federal funds are involved, it is covenanted and agreed by and between the parties hereto that the sums of

shall be paid out of the applicable Federal funds, and that this contract shall be construed to be an agreement to pay said sums to the Contractor only out of the aforesaid Federal funds if and when such Federal funds shall be received from the Federal Government, and that this contract shall not be construed to be a general agreement to pay said portions at all events out of any funds other than those which may be so received from the Federal Government; provided, that if the Federal share of the cost of the project is not immediately forthcoming from the Federal Government, the STATE may advance the CONTRACTOR the anticipated Federal reimbursement of the cost of the completed portions of the work from funds which have been appropriated by the STATE for its pro rata share.

The CONTRACTOR further agrees to execute the attached non-gratuity affidavit form prior to payment of the final estimate by the STATE.

All words used herein in the singular number shall extend to and include the plural. All words used in the plural number shall extend to and include the singular. The use of any gender shall extend to and include all genders.

IN WITNESS WHEREOF, the parties hereto have caused this instrument to be duly executed the day and year first above written.

STATE OF HAWAII

By _____
Director of Transportation

By _____

By _____

APPROVED AS TO FORM

Deputy Attorney General

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

KNOW TO ALL BY THESE PRESENTS:

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

as Contractor, hereinafter called Principal, and _____

(Name and Street Address of Bonding Company)

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

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

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

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

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

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

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

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

In the event of Default by the Principal, of the obligations under the Contract, then after written Notice of Default from the Oblige to the Surety and the Principal and subject to the limitation of the penal sum of this bond, Surety shall remedy the Default, or take over the work to be performed under the Contract and complete such work, or pay moneys to the Oblige in satisfaction of the surety's performance obligation on this bond.

Signed this _____ day of _____, _____.

(Seal)

Name of Principal (Contractor)

*

Signature

Title

(Seal)

Name of Surety

*

Signature

Title

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

PERFORMANCE BOND

KNOW ALL BY THESE PRESENTS:

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

as Contractor, hereinafter called Contractor, is held and firmly bound unto the

(State/County entity)

its successors and assigns, as Obligee, hereinafter called Obligee, in the amount

_____ DOLLARS (\$ _____),
(Dollar amount of Contract)

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

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

WHEREAS:

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

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

NOW THEREFORE,

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

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

The amount of this bond may be reduced by and to the extent of any payment or payments made in good faith hereunder.

Signed and sealed this _____ day of _____, _____.

(Seal) _____
Name of Contractor

* _____
Signature

Title

*ALL SIGNATURES MUST BE
ACKNOWLEDGED BY A NOTARY PUBLIC

LABOR AND MATERIAL PAYMENT BOND (SURETY)
(6/21/07)

KNOW TO ALL BY THESE PRESENTS:

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

as Contractor, hereinafter called Principal, and _____,
(Name and Street Address of Bonding Company)

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

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

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

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

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

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

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

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

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

Signed this _____ day of _____, _____.

(Seal)

Name of Principal (Contractor)

* _____
Signature

Title

(Seal)

Name of Surety

* _____
Signature

Title

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

LABOR AND MATERIAL PAYMENT BOND

KNOW ALL BY THESE PRESENTS:

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

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

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

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

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

WHEREAS:

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

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

NOW THEREFORE,

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

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

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

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

Signed this _____ day of _____, _____.

(Seal) _____
Name of Contractor

* _____
Signature

Title

*ALL SIGNATURES MUST BE
ACKNOWLEDGED BY A NOTARY PUBLIC

INSTRUCTIONS FOR COMPLETION OF SF-LLL, DISCLOSURE OF LOBBYING ACTIVITIES

This disclosure form shall be completed by the reporting entity, whether subawardee or prime Federal recipient, at the initiation or receipt of a covered Federal action, or a material change to a previous filing, pursuant to title 31 U.S.C. section 1352. The filing of a form is required for each payment or agreement to make payment to any lobbying entity for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with a covered Federal action. Use the SF-LLL-A Continuation Sheet for additional information if the space on the form is inadequate. Complete all items that apply for both the initial filing and material change report. Refer to the implementing guidance published by the Office of Management and Budget for additional information.

1. Identify the type of covered Federal action for which lobbying activity is and/or has been secured to influence the outcome of a covered Federal action.
2. Identify the status of the covered Federal action.
3. Identify the appropriate classification of this report. If this is a followup report caused by a material change to the information previously reported, enter the year and quarter in which the change occurred. Enter the date of the last previously submitted report by this reporting entity for this covered Federal action.
4. Enter the full name, address, city, state and zip code of the reporting entity. Include Congressional District, if known. Check the appropriate classification of the reporting entity that designates if it is, or expects to be, a prime or subaward recipient. Identify the tier of the subawardee, e.g., the first subawardee of the prime is the 1st tier. Subawards include but are not limited to subcontracts, subgrants and contract awards under grants.
5. If the organization filing the report in item 4 checks "Subawardee", then enter the full name, address, city, state and zip code of the prime Federal recipient. Include Congressional District, if known.
6. Enter the name of the Federal agency making the award or loan commitment. Include at least one organizational level below agency name, if known. For example, Department of Transportation, United States Coast Guard.
7. Enter the Federal program name or description for the covered Federal action (item 1). If known, enter the full Catalog of Domestic Assistance (CFDA) number for grants, cooperative agreements, loans, and loan commitments.
8. Enter the most appropriate Federal identifying number available for the Federal action identified in item 1 (e.g., Request for Proposal (RFP) number; Invitation for Bid (IFB) number; grant announcement number; the contract, grant, or loan award number; the application/proposal control number assigned by the Federal Agency). Include prefixes, e.g., "RFP-DE-90-001."
9. For a covered Federal action where there has been an award or loan commitment by the Federal agency, enter the Federal amount of the award/loan commitment for the prime entity identified in item 4 or 5.
10. (a) Enter the full name, address, city, state and zip code of the lobbying entity engaged by the reporting entity identified in item 4 to influence the covered Federal action.
(b) Enter the full names of the individual(s) performing services, and include full address if different from 10(a). Enter Last Name, First Name, and Middle Initial (MI).
11. Enter the amount of compensation paid or reasonably expected to be paid by the reporting entity (item 4) to the lobbying entity (item 10). Indicate whether the payment has been made (actual) or will be made (planned). Check all boxes that apply. If this is a material change report, enter the cumulative amount of payment made or planned to be made.
12. Check the appropriate box(es). Check all boxes that apply. If payment is made through an in-kind contribution, specify the nature and value of the in-kind payment.
13. Check the appropriate box(es). Check all boxes that apply. If other, specify nature.
14. Provide a specific and detailed description of the services that the lobbyist has performed, or will be expected to perform, and the date(s) of any services rendered. Include all preparatory and related activity, not just time spent in actual contact with Federal officials. Identify the federal official(s) or employee(s) contacted or the officer(s), employee(s), or Member(s) or Congress that were contacted.
15. Check whether or not a SF-LLL-A Continuation Sheet(s) is attached.
16. The certifying official shall sign and date the form, print his/her name, title, and telephone number.

Public reporting burden for this collection of information is estimated to average 30 minutes per response, including time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding the burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to the Office of Management and Budget, Paperwork Reduction (0348-0046), Washington, D.C. 20503.

DISCLOSURE OF LOBBYING ACTIVITIES
CONTINUATION SHEET

Approved by
0348-0046

Reporting Entity: _____ Page _____ of _____

STATEMENT OF COMPLIANCE

Date _____

I, _____ do hereby state:
(Name of signatory party) (Title)

(1) That I pay or supervise the payment of the persons employed by _____ on
(Contractor or subcontractor)
the _____; that during the payroll period commencing on the _____ day of _____,
(Building or work)
and ending the _____ day of _____, all persons employed on said project have been paid the
full weekly wages earned, that no rebates have been or will be made either directly or indirectly to or on behalf of said
_____ from the full weekly wages earned by any person and that no deductions have

(Contractor or subcontractor)
been made either directly or indirectly from the full wages earned by any person, other than permissible deductions as defined in
Regulations, Part 3 (29 CFR Subtitle A), issued by the Secretary of Labor under the Copeland Act, as amended (48 Stat. 948.63
Stat. 108, 72 Stat. 967; 76 Stat. 357; 40 U.S.C. 276), and described below:

(2) That any payrolls otherwise under this contract required to be submitted for the above period are correct and complete; that
the wage rates for laborers or mechanics contained therein are not less than the applicable wage rates contained in any wage
determination incorporated into the contract; that the classifications set forth therein for each laborers or mechanic conform with
the work he performed.

(3) That any apprentices employed in the above period are duly registered in a bona fide apprenticeship program registered
with a State apprenticeship agency recognized by the Bureau of Apprenticeship and Training, United States Department of Labor,
or if no such recognized agency exists in a State, are registered with the Bureau of Apprenticeship and Training, United States
Department of Labor.

(4) That:

(a) WHERE FRINGE BENEFITS ARE PAID TO APPROVED PLANS, FUNDS, OR PROGRAMS
 In addition to the basic hourly wage rates paid to each laborer or mechanic listed in the above-
Referenced payroll, payments of fringe benefits as listed in the contract have been or will be made to
appropriate program for the benefit of such employees, except as noted in Section 4(c) below.

(b) WHERE FRINGE BENEFITS ARE PAID IN CASH
 Each Laborer or mechanic listed in the above referenced payroll has been paid as indicated on the payroll, an
amount not less than the sum of the applicable basic hourly wage rate plus the amount of the required fringe
benefits as listed in the contract, except as noted in Section 4(c) below.

(c) EXCEPTIONS

EXCEPTION (CRAFT)	EXPLANATION

REMARK

NAME AND TITLE	SIGNATURE
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THE WILFUL FALSIFICATION OF ANY OF THE ABOVE STATEMENTS MAY SUBJECT THE CONTRACTOR OR SUBCONTRACTOR TO CIVIL OR
CRIMINAL PROSECUTION. SEE SECTION 1001 OF TITLE 18 AND SECTION 231 OF TITLE 31 OF THE UNITED STATES CODE.

INSTRUCTIONS FOR PREPARATION OF STATEMENT OF COMPLIANCE

This statement of compliance meets needs resulting from the amendment of the Davis-Bacon Act to include fringe benefits provisions. Under this amended law, the contractor is required to pay fringe benefits as predetermined by the Department of Labor, in addition to payment of the minimum rates. The contractor's obligation to pay fringe benefits may be met by payment of the fringes to the various plans, funds, or programs or by making these payments to the employees as cash in lieu of fringes.

The contractor should show on the face of his payroll all monies paid to the employees whether as basic or as cash in lieu of fringes. The contractor shall represent in the statement of compliance that he is paying to others fringes required by the contract and not paid as cash in lieu of fringes. Detailed instructions follow:

Contractors who pay all required fringe benefits:

A contractor who pays fringe benefits to approved plans, funds, or programs in amounts not less than were determined in the applicable wage decision of the Secretary of Labor shall continue to show on the face of his payroll the basic cash hourly rate and overtime rate paid to his employees, just as he has always done. Such a contractor shall check paragraph 4(a) of the statement to indicate that he is also paying to approved plans, funds, or programs not less than the amount predetermined as fringe benefits for each craft. Any exception shall be noted in Section 4(c).

Contractors who pay no fringe benefits:

A contractor who pays no fringe benefits shall pay to the employee and insert in the straight time hourly rate column of his payroll an amount not less than the predetermined rate for each classification plus the amount of fringe benefits determined for each classification in the applicable wage decision. Inasmuch as it is not necessary to pay time and a half on cash paid in lieu of fringes, the overtime rate shall be not less than the sum of the basic predetermined rate, plus the half time premium on the basic or regular rate plus the required cash in lieu of fringes at the straight time rate. To simplify computation of overtime, it is suggested that the straight time basic rate and cash in lieu of fringes be separately stated in the hourly rate column, thus \$3.25/.40. In addition, the contractor shall check paragraph 4(b) of the statement to indicate that he is paying fringe benefits in cash directly to his employees. Any exceptions shall be noted in Section 4(c).

Use of Section 4(c), Exceptions

Any contractor who is making payment to approved plans, funds, or programs in amounts less than the wage determination requires is obliged to pay the deficiency directly to the employees as cash in lieu of fringes. Any exceptions to Section 4(a) or 4(b), whichever the contractor may check, shall be entered in Section 4(c). Enter in the Exception column the craft, and enter in the Explanation column the hourly amount paid the employees as cash in lieu of fringes, and the hourly amount paid to plans, funds, or programs as fringes.

CHAPTER 104, HRS COMPLIANCE CERTIFICATE

The undersigned bidder does hereby certify to the following:

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

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

Name of Corporation, Partnership, or Individual

Signature and Title of Signer

Subscribed and sworn before me this _____ day of _____.

Notary Public, _____ Judicial Circuit,
State of Hawaii
My Commission Expires: _____

Doc. Date: _____ # Pages: _____.

Notary Name: _____ Circuit
Doc. Description: _____

Notary Signature Date
NOTARY CERTIFICATION