



**STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
HONOLULU, HAWAII**

**SPECIAL PROVISIONS
PROPOSAL, CONTRACT,
BOND AND PLANS**

FOR

**FARRINGTON HIGHWAY WIDENING
VICINITY OF NANAKULI AVENUE TO
VICINITY OF MOHIHI STREET**

FEDERAL AID PROJECT NO. NH-093-1(035)

DISTRICT OF EWA

ISLAND OF OAHU

FY 2026

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

The receiving of bids for **FARRINGTON HIGHWAY WIDENING, VICINITY OF NANAKULI AVENUE TO VICINITY OF MOHIHI STREET, DISTRICT OF EWA, ISLAND OF OAHU, FEDERAL-AID PROJECT NO. NH-093-1(035)**, will begin as of the HiePRO Release Date. Bidders shall register and submit complete bids through HiePRO only. Refer to the following HiePRO link for important information on Vendor Registration:

<https://hiepro.ehawaii.gov/welcome.html>.

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

HiePRO OFFER DUE DATE AND TIME is October 27, 2026, at 2:00 p.m., Hawaii Standard Time (HST). **Bidders shall submit and upload the complete proposal to HiePRO prior to the offer due date and time. Proposals received after said due date and time shall not be considered. Any additional support documents explicitly designated as confidential and/or proprietary shall be uploaded as a separate file to HiePRO. Bidders shall not include confidential and/or proprietary documents as part of their proposal. The record of each bidder and their respective proposal shall be open to public inspection. FAILURE TO UPLOAD THE PROPOSAL TO HiePRO SHALL BE GROUNDS FOR REJECTION.**

The scope of work consists of developing an auxiliary lane to improve safety at various intersections. The work includes excavation, cold-planing, paving, striping, signing, drainage structure modifications, installing new drainage, installing retaining wall, utility relocation and installation and monitoring of temporary best management practices. The estimated cost of

construction is between \$35,000,000.00 and \$37,000,000.00.

To be eligible for award, bidders shall possess a valid State of Hawaii General Engineering "A" license **prior to the award of contract.**

A virtual pre-bid conference is scheduled for September 22, 2026, at 9:00 a.m., HST. Interested bidders shall contact Evan Kimoto, Project Manager, directly at evan.kimoto@hawaii.gov, no later than five working days prior to the scheduled pre-bid conference to receive the meeting invitation. All prospective bidders and/or their respective representatives are encouraged to attend; however, attendance is not mandatory. All information presented at the pre-bid conference shall be provided for clarification and information only. Any amendments to the solicitation shall be made by formal addendum and posted in HiePRO.

All Request for Information (RFI) questions and Substitution Requests shall be submitted in HiePRO **no later than October 6, 2026, at 2:00 p.m., HST.** RFI questions received after the stated deadline shall not be addressed. Substitution Requests received after the stated deadline shall not be considered. Verbal RFI(s) shall not receive a response. All responses to RFI questions shall be provided for clarification and information only and issued by formal addendum. Any amendments to the solicitation shall be made by formal addendum and posted in HiePRO.

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

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

Campaign Spending Commission at (808) 586-0285.

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

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

The U.S. Department of Transportation Regulation entitled “Nondiscrimination in Federally Assisted Programs of the U.S. Department of Transportation,” Title 49, Code of Federal Regulations (CFR), Part 21, is applicable to this project. Bidders are hereby notified that the Department of Transportation shall affirmatively ensure that the contract entered into pursuant to this advertisement shall be awarded to the lowest responsible bidder without discrimination on the grounds of race, color, national origin, or sex (as directed by 23 CFR Part 200).

Disadvantaged Business Enterprise. The U.S. Department of Transportation Regulations entitled "Participation by Disadvantaged Business Enterprise in Department of Transportation Financial Assistance Programs", Title 49, CFR, Part 26, is applicable to this project. Bidders are hereby notified that the Department of Transportation shall enforce compliance with the applicable requirements of the Disadvantaged Business Enterprise program with respect to this project.

Bidders shall read the following included in the solicitation:

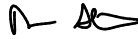
1. “CIVIL RIGHTS COMPLIANCE AND DISADVANTAGED BUSINESS ENTERPRISE SPECIAL PROVISIONS”

Driving While Impaired (DWI) Education. The Hawaii Department of Transportation (HDOT) encourages all organizations contracted with HDOT 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.

For additional information, contact Evan Kimoto, Project Manager, by phone at (808) 692-7551, or by email at evan.kimoto@hawaii.gov.

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



ROBIN K. SHISHIDO
Deputy Director of Transportation for Highways

HlePRO RELEASE DATE: September 11, 2026

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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.

CIVIL RIGHTS COMPLIANCE AND DISADVANTAGED BUSINESS ENTERPRISE SPECIAL PROVISIONS

I. GENERAL

This project is subject to Title 49 Code of Federal Regulations (CFR), 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, as revised by the United States Department of Transportation's (USDOT) DBE Interim Final Rule (IFR) issued October 3, 2025 (hereinafter referred to as IFR). The following shall be incorporated as part of the contract documents for compliance. If any requirements herein 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

The Hawai'i Department of Transportation's (HDOT) and its political subdivision's Disadvantaged Business Enterprise (DBE) program will operate in a nondiscriminatory manner and without regard to race or sex, while maximizing efficiency of service.

Bidders/offerors, subcontractors, consultants, vendors, suppliers, distributors, manufacturers, trucking companies, service providers, etc. shall fully inform themselves with respect to the requirements of the DBE Regulations.

HDOT's DBE program remains in effect pursuant to 49 CFR Parts 23 and 26. However, consistent with the USDOT's IFR effective October 3, 2025, HDOT has suspended race-conscious measures including DBE contract goals, counting of DBE participation, and associated special provisions, pending the completion of HDOT's DBE certification reevaluation. Where indicated, HDOT reserves the right to reinstate or amend DBE special provisions at a later date, subject to approval by the appropriate USDOT operating administration.

HDOT reserves the right to reimplement, revise, or otherwise modify any reserved provisions, in whole or in part, following its reevaluation period or upon receipt of additional federal guidance. Upon such reimplementation, contractors will be notified in writing and shall comply with the updated requirements as directed by HDOT.

III. NON-DISCRIMINATION POLICY

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, as revised by the

DBE IFR, 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 (RESERVED)**
- V. **PROPOSAL REQUIREMENTS (RESERVED)**
- VI. **COUNTING DBE PARTICIPATION TOWARDS CONTRACT GOAL (RESERVED)**
- VII. **USE OF JOINT CHECKS UNDER THE DBE PROGRAM (RESERVED)**
- VIII. **DEMONSTRATION OF GOOD FAITH EFFORTS FOR CONTRACT AWARD (RESERVED)**
- IX. **ADMINISTRATIVE RECONSIDERATION (RESERVED)**
- X. **AWARD OF CONTRACT (RESERVED)**
- XI. **REPLACEMENT OF A DBE ON A PROJECT WITH A CONTRACT GOAL (RESERVED)**
- 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 Vendor Management System (hereafter referred to as “online tracking system”). The prime contractor shall report the date payment was made by HDOT and shall report payment to all subcontractors for the audit period. 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. HDOT 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. HDOT will not withhold any amount from any payment to the contractor, including retainage.
- B. The contractor shall pay all subcontractors within 10 calendar days after receipt of any progress payments from HDOT. This clause applies to all subcontractors, and all tiers of subcontracts. As per HRS § 103-10.5 Prompt payment, the contractor will verify that payment or retainage has been released to the subcontractors or its suppliers within the specified time through entries in HDOT'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 HDOT's satisfaction, will be reported by the Contractor or the subcontractor.

- C. 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 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 HDOT. The contractor must obtain the prior written approval from HDOT before it can continue to withhold retainage from any subcontractor who has completed its portion of the work. This clause applies all subcontractors, and all tiers of subcontracts.

XIV. RECORDS

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

The records to be kept by the contractor shall include:

1. The names, address, phone number, and contact person of consultants, subcontractors, manufacturers, suppliers, distributors, truckers and vendors;
2. The nature of work of each consultant, subcontractor, manufacturer, supplier, distributor, trucker and vendor;
3. The dollar amount contracted with each consultant, subcontractor, manufacturer, supplier, distributor, trucker and vendor; and
4. Cumulative dollar amount of all change orders to the subcontract.

XV. FAILURE TO COMPLY WITH STATED 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, suppliers, and distributors are hereby advised that failure to carry out all 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 HDOT 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. Non-segregated 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. Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion
- XI. Certification Regarding Use of Contract Funds for Lobbying
- XII. Use of United States-Flag Vessels:

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, United States Code, as required in 23 CFR 633.102(b) (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). 23 CFR 633.102(e).

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. 23 CFR 633.102(e).

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) in accordance with 23 CFR 633.102. 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 solicitation-for-bids or request-for-proposals 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). 23 CFR 633.102(b).

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. 23 CFR 633.102(d).

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. 23 U.S.C. 114(b). The term Federal-aid highway does not include roadways functionally classified as local roads or rural minor collectors. 23 U.S.C. 101(a).

II. NONDISCRIMINATION (23 CFR 230.107(a); 23 CFR Part 230, Subpart A, Appendix A; EO 11246)

The provisions of this section related to 23 CFR Part 230, Subpart A, Appendix A 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 Part 60, 29 CFR Parts 1625-1627, 23 U.S.C. 140, Section 504 of the Rehabilitation Act of 1973, as amended (29 U.S.C. 794), Title VI of the Civil Rights Act of 1964, as amended (42 U.S.C. 2000d et seq.), 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 Part 60, and 29 CFR Parts 1625-1627. The contracting agency and the FHWA have the authority and the responsibility to ensure compliance with 23 U.S.C. 140, Section 504 of the Rehabilitation Act of 1973, as amended (29 U.S.C. 794), and Title VI of the Civil Rights Act of 1964, as amended (42 U.S.C. 2000d et seq.), 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 Part 230, Subpart A, 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 (see 28 CFR Part 35, 29 CFR Part 1630, 29 CFR Parts 1625-1627, 41 CFR Part 60 and 49 CFR Part 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 Part 35 and 29 CFR Part 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. 23 CFR 230.409 (g)(4) & (5).

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, sexual orientation, gender identity, 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 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 or other knowledgeable company official.

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, sexual orientation, gender identity, national origin, age or disability. The following procedures shall be followed:

a. The contractor will conduct periodic inspections of project sites to ensure 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. 23 CFR 230.409. 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, sexual orientation, gender identity, 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, sexual orientation, gender identity, 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 thereunder. 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, sexual orientation, gender identity, 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, 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. Assurances Required:

a. The requirements of 49 CFR Part 26 and the State DOT's FHWA-approved Disadvantaged Business Enterprise (DBE) program are incorporated by reference.

b. The contractor, subrecipient 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 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.

c. The Title VI and nondiscrimination provisions of U.S. DOT Order 1050.2A at Appendixes A and E are incorporated by reference. 49 CFR Part 21.

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 more than \$10,000. 41 CFR 60-1.5.

As prescribed by 41 CFR 60-1.8, 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, sexual orientation, gender identity, 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), in accordance with 29 CFR 5.5. The requirements apply to all projects located within the right-of-way of a roadway that is functionally classified as Federal-aid highway. 23 U.S.C. 113. This excludes roadways functionally classified as local roads or rural minor collectors, which are exempt. 23 U.S.C. 101. Where applicable law requires that projects be treated as a project on a Federal-aid highway, the provisions of this subpart will apply regardless of the location of the project. Examples include: Surface Transportation Block Grant Program projects funded under 23 U.S.C. 133 [excluding recreational trails projects], the Nationally Significant Freight and Highway

Projects funded under 23 U.S.C. 117, and National Highway Freight Program projects funded under 23 U.S.C. 167.

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 (29 CFR 5.5)

a. *Wage rates and fringe benefits.* All laborers and mechanics employed or working upon the site of the work (or otherwise working in construction or development of the project under a development statute), 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 basic hourly 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. As provided in paragraphs (d) and (e) of 29 CFR 5.5, the appropriate wage determinations are effective by operation of law even if they have not been attached to the contract. Contributions made or costs reasonably anticipated for bona fide fringe benefits under the Davis-Bacon Act ([40 U.S.C. 3141\(2\)\(B\)](#)) on behalf of laborers or mechanics are considered wages paid to such laborers or mechanics, subject to the provisions of paragraph 1.e. 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 must be paid the appropriate wage rate and fringe benefits on the wage determination for the classification(s) of work actually performed, without regard to skill, except as provided in paragraph 4. of this section. 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 classifications and wage rates conformed under paragraph 1.c. of this section) and the Davis-Bacon poster (WH-1321) must 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. *Frequently recurring classifications.* (1) In addition to wage and fringe benefit rates that have been determined to be prevailing under the procedures set forth in [29 CFR part 1](#), a wage determination may contain, pursuant to § 1.3(f), wage and fringe benefit rates for classifications of laborers and mechanics for which conformance requests are regularly submitted pursuant to paragraph 1.c. of this section, provided that:

(i) The work performed by the classification is not performed by a classification in the wage determination for which a prevailing wage rate has been determined;

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

(iii) The wage rate for the classification bears a reasonable relationship to the prevailing wage rates contained in the wage determination.

(2) The Administrator will establish wage rates for such classifications in accordance with paragraph 1.c.(1)(iii) of this section. Work performed in such a classification must be paid at no less than the wage and fringe benefit rate listed on the wage determination for such classification.

c. *Conformance.* (1) The contracting officer must 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 be classified in conformance with the wage determination. Conformance of an additional classification and wage rate and fringe benefits is appropriate 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 used 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) The conformance process may not be used to split, subdivide, or otherwise avoid application of classifications listed in the wage determination.

(3) 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 will be sent by the contracting officer by email to DBAconformance@dol.gov. 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.

(4) 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 will, by email to DBAconformance@dol.gov, refer the questions, including the views of all interested parties and the recommendation of the contracting officer, to the Administrator for determination. The 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.

(5) The contracting officer must promptly notify the contractor of the action taken by the Wage and Hour Division

under paragraphs 1.c.(3) and (4) of this section. The contractor must furnish a written copy of such determination to each affected worker or it must be posted as a part of the wage determination. The wage rate (including fringe benefits where appropriate) determined pursuant to paragraph 1.c.(3) or (4) of this section must 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.

d. *Fringe benefits not expressed as an hourly rate.* 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 may either pay the benefit as stated in the wage determination or may pay another bona fide fringe benefit or an hourly cash equivalent thereof.

e. *Unfunded plans.* 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, in accordance with the criteria set forth in § 5.28, 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.

f. *Interest.* In the event of a failure to pay all or part of the wages required by the contract, the contractor will be required to pay interest on any underpayment of wages.

2. Withholding (29 CFR 5.5)

a. *Withholding requirements.* The contracting agency may, upon its own action, or must, upon written request of an authorized representative of the Department of Labor, withhold or cause to be withheld from the contractor so much of the accrued payments or advances as may be considered necessary to satisfy the liabilities of the prime contractor or any subcontractor for the full amount of wages and monetary relief, including interest, required by the clauses set forth in this section for violations of this contract, or to satisfy any such liabilities required by any other Federal contract, or federally assisted contract subject to Davis-Bacon labor standards, that is held by the same prime contractor (as defined in § 5.2). The necessary funds may be withheld from the contractor under this contract, any other Federal contract with the same prime contractor, or any other federally assisted contract that is subject to Davis-Bacon labor standards requirements and is held by the same prime contractor, regardless of whether the other contract was awarded or assisted by the same agency, and such funds may be used to satisfy the contractor liability for which the funds were withheld. In the event of a contractor's failure to pay any laborer or mechanic, including any apprentice or helper working on the site of the work all or part of the wages required by the contract, or upon the contractor's failure to submit the required records as discussed in paragraph 3.d. of this section, the contracting agency may on its own initiative and 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.

b. *Priority to withheld funds.* The Department has priority to funds withheld or to be withheld in accordance with paragraph

2.a. of this section or Section V, paragraph 3.a., or both, over claims to those funds by:

- (1) A contractor's surety(ies), including without limitation performance bond sureties and payment bond sureties;
- (2) A contracting agency for its procurement costs;
- (3) A trustee(s) (either a court-appointed trustee or a U.S. trustee, or both) in bankruptcy of a contractor, or a contractor's bankruptcy estate;
- (4) A contractor's assignee(s);
- (5) A contractor's successor(s); or
- (6) A claim asserted under the Prompt Payment Act, [31 U.S.C. 3901](#)–3907.

3. Records and certified payrolls (29 CFR 5.5)

a. Basic record requirements (1) Length of record retention. All regular payrolls and other basic records must be maintained by the contractor and any subcontractor during the course of the work and preserved for all laborers and mechanics working at the site of the work (or otherwise working in construction or development of the project under a development statute) for a period of at least 3 years after all the work on the prime contract is completed.

(2) Information required. Such records must contain the name; Social Security number; last known address, telephone number, and email address of each such worker; each worker's correct classification(s) of work actually performed; 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 [40 U.S.C. 3141\(2\)\(B\)](#) of the Davis-Bacon Act); daily and weekly number of hours actually worked in total and on each covered contract; deductions made; and actual wages paid.

(3) Additional records relating to fringe benefits. Whenever the Secretary of Labor has found under paragraph 1.e. of this section 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 [40 U.S.C. 3141\(2\)\(B\)](#) of the Davis-Bacon Act, the contractor must 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.

(4) Additional records relating to apprenticeship. Contractors with apprentices working under approved programs must maintain written evidence of the registration of apprenticeship programs, the registration of the apprentices, and the ratios and wage rates prescribed in the applicable programs.

b. Certified payroll requirements (1) Frequency and method of submission. The contractor or subcontractor must submit weekly, for each week in which any DBA- or Related Acts-covered work is performed, certified payrolls to the contracting

agency. The prime contractor is responsible for the submission of all certified payrolls by all subcontractors. A contracting agency or prime contractor may permit or require contractors to submit certified payrolls through an electronic system, as long as the electronic system requires a legally valid electronic signature; the system allows the contractor, the contracting agency, and the Department of Labor to access the certified payrolls upon request for at least 3 years after the work on the prime contract has been completed; and the contracting agency or prime contractor permits other methods of submission in situations where the contractor is unable or limited in its ability to use or access the electronic system.

(2) Information required. The certified payrolls submitted must set out accurately and completely all of the information required to be maintained under paragraph 3.a.(2) of this section, except that full Social Security numbers and last known addresses, telephone numbers, and email addresses must not be included on weekly transmittals. Instead, the certified payrolls need only include an individually identifying number for each worker (e.g., the last four digits of the worker's Social Security number). The required weekly certified payroll information may be submitted using Optional Form WH-347 or in any other format desired. Optional Form WH-347 is available for this purpose from the Wage and Hour Division website at <https://www.dol.gov/sites/dolgov/files/WHDL/legacy/files/wh347.pdf> or its successor website. It is not a violation of this section for a prime contractor to require a subcontractor to provide full Social Security numbers and last known addresses, telephone numbers, and email addresses to the prime contractor for its own records, without weekly submission by the subcontractor to the contracting agency.

(3) Statement of Compliance. Each certified payroll submitted must be accompanied by a "Statement of Compliance," signed by the contractor or subcontractor, or the contractor's or subcontractor's agent who pays or supervises the payment of the persons working on the contract, and must certify the following:

(i) That the certified payroll for the payroll period contains the information required to be provided under paragraph 3.b. of this section, the appropriate information and basic records are being maintained under paragraph 3.a. of this section, and such information and records are correct and complete;

(ii) That each laborer or mechanic (including each helper and apprentice) working 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 [29 CFR part 3](#); and

(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(s) of work actually performed, as specified in the applicable wage determination incorporated into the contract.

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

(5) *Signature.* The signature by the contractor, subcontractor, or the contractor's or subcontractor's agent must be an original handwritten signature or a legally valid electronic signature.

(6) *Falsification.* The falsification of any of the above certifications may subject the contractor or subcontractor to civil or criminal prosecution under [18 U.S.C. 1001](#) and [31 U.S.C. 3729](#).

(7) *Length of certified payroll retention.* The contractor or subcontractor must preserve all certified payrolls during the course of the work and for a period of 3 years after all the work on the prime contract is completed.

c. *Contracts, subcontracts, and related documents.* The contractor or subcontractor must maintain this contract or subcontract and related documents including, without limitation, bids, proposals, amendments, modifications, and extensions. The contractor or subcontractor must preserve these contracts, subcontracts, and related documents during the course of the work and for a period of 3 years after all the work on the prime contract is completed.

d. *Required disclosures and access* (1) *Required record disclosures and access to workers.* The contractor or subcontractor must make the records required under paragraphs 3.a. through 3.c. of this section, and any other documents that the contracting agency, the State DOT, the FHWA, or the Department of Labor deems necessary to determine compliance with the labor standards provisions of any of the applicable statutes referenced by § 5.1, available for inspection, copying, or transcription by authorized representatives of the contracting agency, the State DOT, the FHWA, or the Department of Labor, and must permit such representatives to interview workers during working hours on the job.

(2) *Sanctions for non-compliance with records and worker access requirements.* If the contractor or subcontractor fails to submit the required records or to make them available, or refuses to permit worker interviews during working hours on the job, the Federal agency may, after written notice to the contractor, sponsor, applicant, owner, or other entity, as the case may be, that maintains such records or that employs such workers, 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, or to permit worker interviews during working hours on the job, may be grounds for debarment action pursuant to § 5.12. In addition, any contractor or other person that fails to submit the required records or make those records available to WHD within the time WHD requests that the records be produced will be precluded from introducing as evidence in an administrative proceeding under [29 CFR part 6](#) any of the required records that were not provided or made available to WHD. WHD will take into consideration a reasonable request from the contractor or person for an extension of the time for submission of records. WHD will determine the reasonableness of the request and may consider, among other things, the location of the records and the volume of production.

(3) *Required information disclosures.* Contractors and subcontractors must maintain the full Social Security number and last known address, telephone number, and email address

of each covered worker, and must provide them upon request to the contracting agency, the State DOT, the FHWA, the contractor, or the Wage and Hour Division of the Department of Labor for purposes of an investigation or other compliance action.

4. Apprentices and equal employment opportunity (29 CFR 5.5)

a. *Apprentices (1) Rate of pay.* Apprentices will be permitted to work at less than the predetermined rate for the work they perform 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 (OA), or with a State Apprenticeship Agency recognized by the OA. A person who is not individually registered in the program, but who has been certified by the OA or a State Apprenticeship Agency (where appropriate) to be eligible for probationary employment as an apprentice, will be permitted to work at less than the predetermined rate for the work they perform in the first 90 days of probationary employment as an apprentice in such a program. In the event the OA or a State Apprenticeship Agency recognized by the OA withdraws approval of an apprenticeship program, the contractor will no longer be permitted to use apprentices at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

(2) *Fringe benefits.* Apprentices must 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, fringe benefits must be paid in accordance with that determination.

(3) *Apprenticeship ratio.* The allowable ratio of apprentices to journeyworkers on the job site in any craft classification must not be greater than the ratio permitted to the contractor as to the entire work force under the registered program or the ratio applicable to the locality of the project pursuant to paragraph 4.a.(4) of this section. Any worker listed on a payroll at an apprentice wage rate, who is not registered or otherwise employed as stated in paragraph 4.a.(1) of this section, must 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 this section must be paid not less than the applicable wage rate on the wage determination for the work actually performed.

(4) *Reciprocity of ratios and wage rates.* Where a contractor is performing construction on a project in a locality other than the locality in which its program is registered, the ratios and wage rates (expressed in percentages of the journeyworker's hourly rate) applicable within the locality in which the construction is being performed must be observed. If there is no applicable ratio or wage rate for the locality of the project, the ratio and wage rate specified in the contractor's registered program must be observed.

b. *Equal employment opportunity.* The use of apprentices and journeyworkers under this part must be in conformity with

the equal employment opportunity requirements of Executive Order 11246, as amended, and [29 CFR part 30](#).

c. 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. 23 CFR 230.111(e)(2). 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 journeyworkers 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 as provided in 29 CFR 5.5.

6. Subcontracts. The contractor or subcontractor must insert FHWA-1273 in any subcontracts, along with the applicable wage determination(s) and such other clauses or contract modifications as the contracting agency may by appropriate instructions require, and a clause requiring the subcontractors to include these clauses and wage determination(s) in any lower tier subcontracts. The prime contractor is responsible for the compliance by any subcontractor or lower tier subcontractor with all the contract clauses in this section. In the event of any violations of these clauses, the prime contractor and any subcontractor(s) responsible will be liable for any unpaid wages and monetary relief, including interest from the date of the underpayment or loss, due to any workers of lower-tier subcontractors, and may be subject to debarment, as appropriate. 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 as provided in 29 CFR 5.5.

9. Disputes concerning labor standards. As provided in 29 CFR 5.5, 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 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 [40 U.S.C. 3144\(b\)](#) or § 5.12(a).

b. No part of this contract shall be subcontracted to any person or firm ineligible for award of a Government contract by virtue of [40 U.S.C. 3144\(b\)](#) or § 5.12(a).

c. The penalty for making false statements is prescribed in the U.S. Code, Title 18 Crimes and Criminal Procedure, [18 U.S.C. 1001](#).

11. Anti-retaliation. It is unlawful for any person to discharge, demote, intimidate, threaten, restrain, coerce, blacklist, harass, or in any other manner discriminate against, or to cause any person to discharge, demote, intimidate, threaten, restrain, coerce, blacklist, harass, or in any other manner discriminate against, any worker or job applicant for:

a. Notifying any contractor of any conduct which the worker reasonably believes constitutes a violation of the DBA, Related Acts, this part, or [29 CFR part 1](#) or [3](#);

b. Filing any complaint, initiating or causing to be initiated any proceeding, or otherwise asserting or seeking to assert on behalf of themselves or others any right or protection under the DBA, Related Acts, this part, or [29 CFR part 1](#) or [3](#);

c. Cooperating in any investigation or other compliance action, or testifying in any proceeding under the DBA, Related Acts, this part, or [29 CFR part 1](#) or [3](#); or

d. Informing any other person about their rights under the DBA, Related Acts, this part, or [29 CFR part 1](#) or [3](#).

V. CONTRACT WORK HOURS AND SAFETY STANDARDS ACT

Pursuant to 29 CFR 5.5(b), 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 watchpersons 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. 29 CFR 5.5.

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 and interest from the date of the underpayment. 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 watchpersons and guards, employed in violation of the clause set forth in paragraph 1. of this section, in the sum currently provided in 29 CFR 5.5(b)(2)* 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.

* \$31 as of January 15, 2023 (See 88 FR 88 FR 2210) as may be adjusted annually by the Department of Labor, pursuant to the Federal Civil Penalties Inflation Adjustment Act of 1990.

3. Withholding for unpaid wages and liquidated damages

a. *Withholding process.* The FHWA or the contracting agency may, upon its own action, or must, upon written request of an authorized representative of the Department of Labor, withhold or cause to be withheld from the contractor so much of the accrued payments or advances as may be considered necessary to satisfy the liabilities of the prime contractor or any subcontractor for any unpaid wages; monetary relief, including interest; and liquidated damages required by the clauses set forth in this section on this contract, 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 that is held by the same prime contractor (as defined in § 5.2). The necessary funds may be withheld from the contractor under this contract, any other Federal contract with the same prime contractor, or any other federally assisted contract that is subject to the Contract Work Hours and Safety Standards Act and is held by the same prime contractor, regardless of whether the other contract was awarded or assisted by the same agency, and such funds may be used to satisfy the contractor liability for which the funds were withheld.

b. *Priority to withheld funds.* The Department has priority to funds withheld or to be withheld in accordance with Section IV paragraph 2.a. or paragraph 3.a. of this section, or both, over claims to those funds by:

- (1) A contractor's surety(ies), including without limitation performance bond sureties and payment bond sureties;
- (2) A contracting agency for its procurement costs;
- (3) A trustee(s) (either a court-appointed trustee or a U.S. trustee, or both) in bankruptcy of a contractor, or a contractor's bankruptcy estate;
- (4) A contractor's assignee(s);
- (5) A contractor's successor(s); or
- (6) A claim asserted under the Prompt Payment Act, [31 U.S.C. 3901](#)–3907.

4. Subcontracts. The contractor or subcontractor must insert in any subcontracts the clauses set forth in paragraphs 1. through 5. of this section and a clause requiring the subcontractors to include these clauses in any lower tier subcontracts. The prime contractor is responsible for compliance by any subcontractor or lower tier subcontractor with the clauses set forth in paragraphs 1. through 5. In the

event of any violations of these clauses, the prime contractor and any subcontractor(s) responsible will be liable for any unpaid wages and monetary relief, including interest from the date of the underpayment or loss, due to any workers of lower-tier subcontractors, and associated liquidated damages and may be subject to debarment, as appropriate.

5. Anti-retaliation. It is unlawful for any person to discharge, demote, intimidate, threaten, restrain, coerce, blacklist, harass, or in any other manner discriminate against, or to cause any person to discharge, demote, intimidate, threaten, restrain, coerce, blacklist, harass, or in any other manner discriminate against, any worker or job applicant for:

- a. Notifying any contractor of any conduct which the worker reasonably believes constitutes a violation of the Contract Work Hours and Safety Standards Act (CWHSSA) or its implementing regulations in this part;
- b. Filing any complaint, initiating or causing to be initiated any proceeding, or otherwise asserting or seeking to assert on behalf of themselves or others any right or protection under CWHSSA or this part;
- c. Cooperating in any investigation or other compliance action, or testifying in any proceeding under CWHSSA or this part; or
- d. Informing any other person about their rights under CWHSSA or this part.

VI. SUBLETTING OR ASSIGNING THE CONTRACT

This provision is applicable to all Federal-aid construction contracts on the National Highway System pursuant to 23 CFR 635.116.

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" in paragraph 1 of Section VI 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: (based on longstanding interpretation)

- (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. 23 CFR 635.102.

2. Pursuant to 23 CFR 635.116(a), 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. Pursuant to 23 CFR 635.116(c), 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. (based on long-standing interpretation of 23 CFR 635.116).

5. The 30-percent self-performance requirement of paragraph (1) is not applicable to design-build contracts; however, contracting agencies may establish their own self-performance requirements. 23 CFR 635.116(d).

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 Part 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. 23 CFR 635.108.

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 Part 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). 29 CFR 1926.10.

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 Part 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 11, 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 (42 U.S.C. 7606; 2 CFR 200.88; EO 11738)

This provision is applicable to all Federal-aid construction contracts in excess of \$150,000 and to all related subcontracts. 48 CFR 2.101; 2 CFR 200.327.

By submission of this bid/proposal or the execution of this contract or subcontract, as appropriate, the bidder, proposer, Federal-aid construction contractor, subcontractor, supplier, or vendor agrees to comply with all applicable standards, orders or regulations issued pursuant to the Clean Air Act (42 U.S.C. 7401-7671q) and the Federal Water Pollution Control Act, as amended (33 U.S.C. 1251-1387). Violations must be reported to the Federal Highway Administration and the Regional Office of the Environmental Protection Agency. 2 CFR Part 200, Appendix II.

The contractor agrees to include or cause to be included the requirements of this Section in every subcontract, and further agrees to take such action as the contracting agency may direct as a means of enforcing such requirements. 2 CFR 200.327.

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. 2 CFR 180.220 and 1200.220.

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. 2 CFR 180.320.

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. 2 CFR 180.325.

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. 2 CFR 180.345 and 180.350.

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, Subpart I, 180.900-180.1020, and 1200. "First Tier Covered Transactions" refers to any covered transaction between a recipient or subrecipient 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 recipient or subrecipient 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. 2 CFR 180.330.

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. 2 CFR 180.220 and 180.300.

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. 2 CFR 180.300; 180.320, and 180.325. A participant is responsible for ensuring that its principals are not suspended, debarred, or otherwise ineligible to participate in covered transactions. 2 CFR 180.335. 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 System for Award Management website (<https://www.sam.gov/>). 2 CFR 180.300, 180.320, and 180.325.

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 CFR 180.325.

* * * * *

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 CFR 180.335;.

(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, 2 CFR 180.800;

(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, 2 CFR 180.700 and 180.800; 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. 2 CFR 180.335(d).

(5) Are not a corporation that has been convicted of a felony violation under any Federal law within the two-year period preceding this proposal (USDOT Order 4200.6 implementing appropriations act requirements); and

(6) Are not a corporation with any unpaid Federal tax liability that has been assessed, for which all judicial and administrative remedies have been exhausted, or have lapsed, and that is not being paid in a timely manner pursuant to an agreement with the authority responsible for collecting the tax liability (USDOT Order 4200.6 implementing appropriations act requirements).

b. Where the prospective participant is unable to certify to any of the statements in this certification, such prospective participant should attach an explanation to this proposal. 2 CFR 180.335 and 180.340.

3. 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). 2 CFR 180.220 and 1200.220.

a. By signing and submitting this proposal, the prospective lower tier participant 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. 2 CFR 180.365.

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, Subpart I, 180.900 – 180.1020, 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 recipient or subrecipient of Federal funds and a participant (such as the prime or general contractor). "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 recipient or subrecipient 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. 2 CFR 1200.220 and 1200.332.

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. 2 CFR 180.220 and 1200.220.

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 System for Award Management website (<https://www.sam.gov/>), which is compiled by the General Services Administration. 2 CFR 180.300, 180.320, 180.330, and 180.335.

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. 2 CFR 180.325.

* * * * *

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

a. The prospective lower tier participant certifies, by submission of this proposal, that neither it nor its principals:

(1) is presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participating in covered transactions by any Federal department or agency, 2 CFR 180.355;

(2) is a corporation that has been convicted of a felony violation under any Federal law within the two-year period preceding this proposal (USDOT Order 4200.6 implementing appropriations act requirements); and

(3) is a corporation with any unpaid Federal tax liability that has been assessed, for which all judicial and administrative remedies have been exhausted, or have lapsed, and that is not being paid in a timely manner pursuant to an agreement with the authority responsible for collecting the tax liability. (USDOT Order 4200.6 implementing appropriations act requirements)

b. Where the prospective lower tier participant is unable to certify to any of the statements in this certification, such prospective participant should 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 Part 20, App. A.

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.

XII. USE OF UNITED STATES-FLAG VESSELS:

This provision is applicable to all Federal-aid construction contracts, design-build contracts, subcontracts, lower-tier subcontracts, purchase orders, lease agreements, or any other covered transaction. 46 CFR Part 381.

This requirement applies to material or equipment that is acquired for a specific Federal-aid highway project. 46 CFR 381.7. It is not applicable to goods or materials that come into inventories independent of an FHWA funded-contract.

When oceanic shipments (or shipments across the Great Lakes) are necessary for materials or equipment acquired for a specific Federal-aid construction project, the bidder, proposer, contractor, subcontractor, or vendor agrees:

1. To utilize privately owned United States-flag commercial vessels to ship at least 50 percent of the gross tonnage (computed separately for dry bulk carriers, dry cargo liners, and tankers) involved, whenever shipping any equipment, material, or commodities pursuant to this contract, to the extent such vessels are available at fair and reasonable rates for United States-flag commercial vessels. 46 CFR 381.7.

2. To furnish within 20 days following the date of loading for shipments originating within the United States or within 30 working days following the date of loading for shipments originating outside the United States, a legible copy of a rated, 'on-board' commercial ocean bill-of-lading in English for each shipment of cargo described in paragraph (b)(1) of this section to both the Contracting Officer (through the prime contractor in the case of subcontractor bills-of-lading) and to the Office of Cargo and Commercial Sealift (MAR-620), Maritime Administration, Washington, DC 20590. (MARAD requires copies of the ocean carrier's (master) bills of lading, certified onboard, dated, with rates and charges. These bills of lading may contain business sensitive information and therefore may be submitted directly to MARAD by the Ocean Transportation Intermediary on behalf of the contractor). 46 CFR 381.7.

**ATTACHMENT A - EMPLOYMENT AND MATERIALS
PREFERENCE FOR APPALACHIAN DEVELOPMENT
HIGHWAY SYSTEM OR APPALACHIAN LOCAL ACCESS
ROAD CONTRACTS (23 CFR 633, Subpart B, Appendix B)**

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".

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

“DIVISION 100 - GENERAL PROVISIONS

SECTION 101 - TERMS, ABBREVIATIONS, AND DEFINITIONS

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

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

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

AAN	American Association of Nurserymen
AASHTO	American Association of State Highway and 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

46	ARA	American Railway Association
47		
48	AREA	American Railway Engineering Association
49		
50	ASA	American Standards Association
51		
52	ASCE	American Society of Civil Engineers
53		
54	ASLA	American Society of Landscape Architects
55		
56	ASTM	American Society for Testing and Materials
57		
58	AWG	American Wire Gauge
59		
60	AWPA	American Wood Preserver's Association
61		
62	AWS	American Welding Society
63		
64	AWWA	American Water Works Association
65		
66	BMP	Best Management Practice
67		
68	CCO	Contract Change Order
69		
70	CFR	Code of Federal Regulations
71		
72	CRSI	Concrete Reinforcing Steel Institute
73		
74	DCAB	Disability and Communication Access Board, Department of
75		Health, State of Hawaii
76		
77	DOTAX	Department of Taxation, State of Hawaii
78		
79	EPA	U.S. Environmental Protection Agency
80		
81	FHWA	Federal Highway Administration,
82		U.S. Department of Transportation
83		
84	FSS	Federal Specifications and Standards,
85		General Services Administration, U.S. Department of Defense
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
92		Industrial Relations, State of Hawaii
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
107		Highways, FHWA, U.S. Department of Transportation
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,
120		U.S. Department of Labor
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 used in the contract documents, unless otherwise prescribed therein and without regards to the use or omission of uppercase letters, the intent and meaning shall be interpreted as follows:

Addendum (plural - Addenda) - A written or graphic document, including drawings and specifications, issued by the Director during the bidding period. This document modifies or interprets the bidding documents by additions, deletions, clarifications or corrections.

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

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

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

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

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

Bag - 94 pounds of cement.

Barrel - 376 pounds of cement.

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

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

Bid - See Proposal.

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

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

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

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

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.

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

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

Contracting Officer - See Engineer.

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

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

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

Department - The Department of Transportation of the State of Hawaii (abbreviated HDOT).

Director - The Director of the HDOT acting directly or through duly authorized representatives.

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

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

Equipment - All machinery, tools, and apparatus needed to complete the contract.

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

Final Acceptance - The Status of the project 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.

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

Final Inspection - Inspection where all contract items are accepted by the Engineer. Substantial Completion will be issued by the Engineer based on the satisfactory results of the Final Inspection.

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

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

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

Hawaii eProcurement System (HlePRO) - The State of Hawaii eProcurement System for issuing solicitations, receiving proposals and responses, and issuing notices of award.

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

Highways Division - The Highways Division of the Hawaii Department of Transportation constituted under the laws of Hawaii for the administration of highway work.

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

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

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

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

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

Liquidated Damages - The amount prescribed in Subsection 108.08 - Liquidated Damages for Failure to Complete the Work or Portions of the Work on Time, to be paid to the State or to be deducted from any payments payable to or, which may become payable to the Contractor.

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

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

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

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

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

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

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

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

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

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

Project Acceptance Date - The calendar day on which the Engineer accepts the project as completed. See Final Completion.

Proposal (Bid) - The executed document submitted by a Bidder in response to a solicitation request, to perform the work required by the proposed contract documents, for the price quoted and within the time allotted.

Public Traffic - Vehicular or pedestrian movement on a public way.

Punchlist - A list compiled by the Engineer specifying work yet to be completed or corrected by the Contractor in order to substantially complete the contract.

Questionnaire - The specified forms on which the bidder shall furnish required information as to its ability to perform and finance the work.

Request for Change Proposal - A written notice from the Engineer to the Contractor requesting that the Contractor provide a price and/or time proposal for contemplated changes preparatory to the issuance of a field order or change order.

Right-of-Way - Land, property, or property interests acquired by a government agency for, or devoted to transportation purposes.

Roadbed - The graded portion of a highway within top and side slopes, prepared as a foundation for the pavement structure and shoulders.

Roadside - The area between the outside edges of the shoulders and the right-of-way boundaries. Unpaved median areas between inside shoulders of divided highways and infield areas of interchanges are included.

Section and Subsection - Section or subsection shall be understood to refer to these specifications unless otherwise specified.

Shop Drawings - All drawings, diagrams, illustrations, schedules and other data or information which are specifically prepared or assembled by or for the Contractor and submitted by the Contractor to illustrate some portion of the work.

Shoulder - The portion of the roadway next to the traveled way for: accommodation of stopped vehicles, placement of underground facilities, emergency use, and lateral support of base and surface courses.

Sidewalk - That portion of the roadway primarily constructed for use by pedestrians.

Solicitation - An invitation to bid or request for proposals or any other document issued by the Department to solicit bids or offers to perform a contract. The solicitation may indicate the time and place to receive the bids or offers and the location, nature and character of the work, construction or materials to be provided.

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

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

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

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

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

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

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

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

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

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

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

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

Substantial Completion - The Status of the project when the Contractor has completed the work and each of the following requirements are met:

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

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

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

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

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

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

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

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

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

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

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

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

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

546 **(1)** Saturdays, Sundays, and recognized legal State holidays and such
547 other days specified by the contract documents as non-working days,
548

549 **(2)** Day in which the Engineer suspends work for four or more hours
550 through no fault of the Contractor.
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
30 faithfully and diligently previous contracts with the State.

31
32 **102.02 Contents of Proposal Forms.** The Department will furnish
33 prospective 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

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

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

102.03 (Unassigned).

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

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

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

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

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

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

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

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

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

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

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

(1) The nature and location of the work;

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

(3) The difficulties to be encountered; and

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

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

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

102.06 Preparation of Proposal. The submittal of its proposal shall be on forms furnished by the Department. The bidder shall specify in words or figures:

(1) A unit price for each pay item with a quantity given;

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

(3) The lump sum amount; and

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

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

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

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

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

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

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

- (1) The proposal is a form not furnished by the Department, altered, or detached;
- (2) The proposal contains unauthorized additions, conditions, or alternates. Also, the proposal contains irregularities that may tend to make the proposal incomplete, indefinite, or ambiguous to its meaning;
- (3) The bidder adds provisions reserving the right to accept or reject an award. Also, the bidder adds provisions into a contract before an award;
- (4) The proposal does not contain a unit price for each pay item listed except authorized optional pay items; and
- (5) Prices for some items are out of proportion to the prices for other items.
- (6) If in the opinion of the Director, the bidder and its listed subcontractors do not have the Contractor's licenses or combination of Contractor's licenses necessary to complete the work.

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

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

- (1) A deposit of legal tender; or
- (2) A valid surety bid bond, underwritten by a company licensed to issue bonds in the State of Hawaii, in the form and composed, substantially, with the same language as provided herewith and signed by both parties; or
- (3) A certificate of deposit, share certificate, cashier's check, treasurer's check, teller's check, or official check drawn by, or a certified check accepted by and payable on demand to the State by a bank, savings institution, or credit union insured by the Federal Deposit Insurance Corporation (FDIC) or the National Credit Union Administration (NCUA).
 - (a) The bidder may use these instruments only to a maximum of \$100,000.
 - (b) If the required security or bond amount totals over \$100,000 more than one instrument not exceeding \$100,000 each and issued by different financial institutions shall be acceptable.
 - (c) The instrument shall be made payable at sight to the Department.
 - (d) If bidder elects options (1) or (3) above for its bid security, said bid security shall be in its original form and shall be submitted before the bid deadline to the Contract Office, Department of Transportation, Aliiimoku Hale, 869 Punchbowl Street, Room 103, Honolulu, Hawaii 96813. Original surety bid bonds do not need to be submitted to the Contracts Office. Bidders are reminded that a copy of its surety bid bond shall be included with its bid submitted and uploaded to HlePRO.

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

102.09 Delivery of Proposal. Bidders shall submit and upload the complete proposal to HlePRO prior to the bid opening date and time. Proposals received after said due date and time shall not be considered. Any additional support documents explicitly designated as confidential and/or proprietary shall be uploaded as a separate file to HlePRO. Bidders shall not include confidential and/or proprietary documents with the proposal. The record of each bidder and respective bid shall be open to public inspection. Original (wet ink, hard copy) proposal documents are not required to be submitted. Contract award shall be based on evaluation of proposals submitted and uploaded to HlePRO.

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

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

102.10 Withdrawal or Revision of Proposals. Bids may be modified or withdrawn prior to the bid opening date and time. Withdrawal or revision of proposal shall be completed, and submitted and uploaded to HlePRO prior to the bid opening date and time.

102.11 Public Opening of Proposals. Not applicable.

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

- (1) Submittal of more than one proposal whether under the same or different name.
- (2) Evidence of collusion among bidders. The Department will not recognize participants in collusion as bidders for any future work of the Department until such participants are reinstated as qualified bidders.
- (3) Lack of proposal guaranty.
- (4) Submittal of an unsigned or improperly signed proposal.
- (5) Submittal of a proposal without a listing of subcontractors or containing only a partial or incomplete listing of subcontractors.
- (6) Submittal of an irregular proposal in accordance with Subsection 102.07 - Irregular Proposals.
- (7) Evidence of assistance from a person who has been an employee of the agency within the preceding two years and who participated while in

State office or employment in the matter with which the contract is directly concerned, pursuant to HRS Chapter 84-15.

(8) Suspended or debarred in accordance with HRS Chapter 104-25.

(9) Failure to complete the prequalification questionnaire, if applicable.

(10) Failure to attend the mandatory pre-bid meeting, if applicable.

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

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

(A) **General.** When brand names of materials or equipment are specified in the contract documents, they are to indicate a quality, style, appearance, or performance and not to limit competition. The bidder shall base its bid on one of the specified brand names unless alternate brands are qualified as equal or better in an addendum. As specified in the Notice to Bidders, all requests shall be posted as a question in HlePRO under the "Question and Answer" tab. Supporting documents for specific request shall be emailed to the Project Manager specified in the Notice to Bidders. Request must be posted in HlePRO and supporting documents received by the Project Manager no later than fourteen (14) calendar days before the bid opening date.

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

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

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

102.15 Preferences. Preferences shall not apply to this project.

319
320 **102.16 Certification for Safety and Health Program for Bids in excess of**
321 **\$100,000.** In accordance with HRS Chapter 396-18, the bidder or offeror, by
322 signing and submitting this proposal, certifies that a written safety and health plan
323 for this project will be available and implemented by the notice to proceed date
324 for this project. Details of the requirements of this plan may be obtained from the
325 State Department of Labor and Industrial Relations, Occupational Safety and
326 Health Division (HIOSH).

327
328 **102.17 Addenda.** Addenda issued shall become part of the contract
329 documents. Addenda to the bid documents will be provided to all prospective
330 bidders via HlePRO. Each addendum shall be an addition to the contract
331 documents. The terms and requirements of the bid documents (i.e., drawings,
332 specifications and other bid and contract documents) cannot be changed prior to
333 the bid opening except by a duly issued addendum.
334

335
336 **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
14 upon the furnishing and use of domestic steel or foreign steel. Manufacturing
15 processes for domestic steel shall occur in the United States.
16

17 The Department reserves the right to reject proposals, waive technicalities
18 or 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
22 made within 60 calendar days after the opening of bids, to the lowest responsible
23 and responsive bidder whose proposal complies with all the prescribed
24 requirements. The Department may request the bidders to allow the Department
25 to consider the bids for the issuance of an award beyond the 60-calendar day
26 period. Agreement to such an extension must be made by a bidder in writing. Only
27 bidders who have agreed to such an extension will be eligible for the award. No
28 response to request shall mean the bidder shall no longer be eligible for award.
29

30 **(1) Requirement for Award.** The Bidder, as proof of compliance
31 with the requirements of section 103D-310(c), HRS, upon
32 award of a contract made pursuant to section 103D-302,
33 HRS, shall provide the documents listed below. The
34 documents shall be submitted promptly to the Department. If
35 a valid certificate/clearance is not submitted on a timely basis
36 upon award, the Bidder may be deemed non-responsible.
37 See also Subsection 108.03 – Preconstruction Data
38 Submittal.
39

40 **(A) Tax Clearance.** Pursuant to §103D-310(c), 103-53 and 103D-328,
41 HRS, the bidder shall submit a tax clearance certificate from the State of
42 Hawaii Department of Taxation (DOTAX) and the Internal Revenue Service
43 (IRS), subject to section 103D-328, HRS, current within six months of
44 issuance date.
45
46

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

<https://tax.hawaii.gov/>

To receive DOTAX Forms by fax or mail, phone (808) 587-4242 or 1-800-222-3229.

The application for the Tax Clearance Certificate is the responsibility of the bidder. Bidder shall submit directly to the DOTAX or IRS. The approved certificate may then be submitted to the Department.

(B) DLIR Certificate of Compliance. Pursuant to §103D-310(c), HRS, the bidder shall submit a certificate of compliance for Hawaii Employment Security Law (Chapter 383, HRS), Workers' Compensation Law (Chapter 386, HRS), Temporary Disability Insurance (Chapter 392, HRS), and Prepaid Health Care Act (Chapter 393, HRS), from the State of Hawaii Department of Labor and Industrial Relations (DLIR), current within six months of issuance date.

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

<http://labor.hawaii.gov/>

Contact the DLIR Unemployment Insurance Division at (808) 586-8926 for additional information.

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

The application for the Certificate of Compliance is the responsibility of the bidder. Bidder shall submit directly to the DLIR. The approved certificate may then be submitted to the Department.

(C) DCCA Certificate of Good Standing. Pursuant to §103D-310(c), HRS, the bidder shall submit a certificate of good standing from the business registration division (BREG) of the State of Hawaii Department of Commerce and Consumer Affairs (DCCA), current within six months of issuance date, to demonstrate it is either:

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

A Hawaii business that is a sole proprietorship, is not required to register with the BREG, and therefore not required to submit a certificate of good standing. Bidders are advised of costs associated with registering and obtaining a Certificate of Good Standing from the DCCA.

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

<http://cca.hawaii.gov/>

The application for the Certificate of Good Standing is the responsibility of the bidder. Bidder shall submit directly to the DCCA. The approved certificate may then be submitted to the Department.

(D) Hawaii Compliance Express (HCE). In lieu of the certificates referenced in subsection A, B, and C, the bidder may make available proof of compliance through a state procurement office designated certification process.

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

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

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

(a) Legal tender;

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

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

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

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

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

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

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

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

END OF SECTION 103"

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(I) Amend **Section 104.06 Methods of Price Adjustment** as follows:

(7) In the absence of agreement by the parties:

NH-093-1(035)
104-1a

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

65
66 A contractor shall be required to submit cost or pricing data if any
67 adjustment in contract price is subject to the provisions of HAR Chapter 3-122,
68 Subchapter 15. A fully executed change order or other document permitting
69 billing for the adjustment in price under any method listed in Subsections
70 104.06(1) through 104.06(7) shall be issued within ten days after agreement on
71 the method of adjustment.”

72
73 **(II) Amend Section 104.11(B) Contractor’s Duty to Locate and Protect**
74 **Utility** by adding the following after line 291:

75
76 **“(4)** The Contractor shall contact the Hawaii One Call Center at 811 prior
77 to any execution in a public right of way or on private property.”
78
79
80
81
82
83

84
END OF SECTION 104

1 **SECTION 105 – CONTROL OF WORK**

2
3 Make the following amendments to said Section:

4
5
6 **(I)** Amend **105.01 – Authority** to read as follows:

7
8 **“105.01 Authority.**

9
10 **(A) Authority of the Engineer.** The Engineer is the representative of
11 the Director and has all the authority of the Director with respect to the
12 contract. The Engineer will make decisions on all questions that may
13 arise regarding the contract, such as, but not limited to:

14
15 **(1)** Interpretation of the contract documents.

16
17 **(2)** Acceptability of the materials furnished and work performed.

18
19 **(3)** Manner of performance and rate of progress of the work.

20
21 **(4)** Acceptable fulfillment of the contract on the part of the
22 Contractor.

23
24 **(5)** Compensation under the contract.

25
26 The Engineer's decisions on questions, claims, and disputes will be
27 final and conclusive subject to Subsection 107.15 – Disputes and Claims.

28
29 The Engineer may delegate specific authority to act for the
30 Engineer to a specific person or persons. Such delegation of authority
31 shall be established in writing and shall become effective upon delivery to
32 the Contractor.

33
34 **(B) Authority of the Inspectors.** Inspectors, as a representative of
35 the Engineer or other agencies, will inspect the work done and materials
36 furnished. Such inspection may extend to the preparation, fabrication or
37 manufacture of the materials to be used. The Inspector does not have
38 authority vested in the Engineer unless specifically delegated in writing.
39 The Inspector may not alter or waive the provisions of the contract, issue
40 instructions contrary to the contract, or act as agent or representative of
41 the Contractor.

42
43 Failure of an Inspector at any time to reject non-conforming work
44 shall not be considered a waiver of the State's right to require work in strict
45 conformity with the contract documents as a condition of final acceptance.

47 **(C) Authority of the Consultant and Construction Management.**

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

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

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

65
66 **(III) Amend Subsection 105.05 Interpretations of the Contract Documents;**
67 **Conflicts and Ambiguity** by revising the first paragraph from lines 200 to 205 to
68 read as follows:

69
70 **“105.05 Interpretations of the Contract Documents; Conflicts and**
71 **Ambiguity.** The contract documents are complementary. Any requirement
72 occurring in one document is as binding as though occurring in all. A stricter
73 requirement prevails over any less strict requirement. The stricter requirement
74 will be the requirement that provides the greater product life, durability, strength
75 and function.”

76
77 **(IV) Amend Subsection 105.08 (A) - Furnishing Drawings and Special**
78 **Provisions** to read as follows:

79
80 **“(A) Furnishing Drawings and Special Provisions.** The State will
81 furnish the Contractor an electronic set of the special provisions and
82 plans.” The Contractor shall have and maintain at least one set of plans
83 and specifications on the work site, at all times.”

84
85 **(V) Amend Subsection 105.14(D) – No Designated Storage Area** from lines
86 421 to 432 to read as follows:

87
88 **“(D) No Designated Storage Area.** If no storage area is designated
89 within the contract documents, materials and equipment may be stored
90 anywhere within the State highway right-of-way, provided such storage
91 and access to and from such site, within the sole discretion of the

Engineer, does not create a public or traffic hazard or an impediment to the movement of traffic.”

(VI) Amend **105.16(A) – Subcontract Requirements** by adding the following paragraph after line 483:

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

Section No.	Description
401	Contract Item No. 401.0100 under Section 401 – Hot Mix Asphalt Pavement
606	All Contract Items under Section 606 - Guardrail
622	All Contract Items under Section 622 – Roadway and Sign Lighting System
623	All Contract Items under Section 623 - Traffic Signal System
629	All Contract Items under Section 629 - Pavement Markings
630	All Contract Items under Section 630 - Traffic Control Guide Signs
631	All Contract Items under Section 631 - Traffic Control Regulatory, Warning, and Miscellaneous Signs
632	All Contract Items under Section 632 - Markers
645	Contract Item No. 645.0100 under Section 645 – Work Zone Traffic Control”

(VI) Amend **Subsection 105.16(B) – Substituting Subcontractors** from line 487 to line 494 to read:

“(B) Substituting Subcontractors. Under HRS Chapter 103D-302, the Contractor is required to list the names of persons or firms to be engaged by the Contractor as a subcontractor or joint contractor in the performance of the contract. No subcontractor may be added or deleted, unless authorized by the Engineer. Substitutions will be allowed only if the subcontractor:”

END OF SECTION 105

1 Make the following amendment to said Section:

2
3 **SECTION 106 – MATERIAL RESTRICTIONS AND REQUIREMENTS**
4
5

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

8
9 “Any deviations will be subject to Subsection 102.14 – Substitution of
10 Materials and Equipment Before Bid Opening.”
11

12 **(II)** Replace **106.11 – Steel and Iron Construction Material** lines 238 through
13 277 with the following:

14
15 **“106.11 Domestic Materials Procurement Preference.** Federal-aid contracts
16 are subject to the Domestic Materials Procurement Preference, as established by
17 the Buy America Act (1978 Surface Transportation Assistance Act) and the Build
18 America, Buy America (BABA) Act (2021 Infrastructure Investment and Jobs Act).
19 This requirement applies to the following categories of products and materials that
20 are permanently incorporated into the project.
21

22 **(1)** Iron or Steel Products, 23 CFR § 635.410 (Buy America).
23

24 **(2)** Construction Materials, 2 CFR Part 184 (BABA).
25

26 **(3)** Manufactured Products, 23 CFR § 635.410 (Buy America).
27

28 **(4)** Other materials, including BABA Section 70917(c) materials.
29

30 An article, material, or supply should not be considered to fall into multiple
31 categories, except for precast concrete products and ITS and electronic hardware
32 system cabinets and enclosures which are designated as falling into 2 categories:
33 Manufactured Products and Steel or Iron in accordance with 23CFR
34 635.410(c)(2)(i) and (ii) and 106.11(C). The classification of an article, material, or
35 supply into the categories must be based on its status at the time it is brought to
36 the work site for incorporation into an infrastructure project. In general, the work
37 site is the location of the infrastructure project at which the iron, steel,
38 manufactured products, and construction materials will be incorporated.
39

40 **(A) Iron and Steel Products.** For Federal-aid projects, steel and iron
41 products permanently incorporated into the project shall be melted and
42 manufactured in the United States in accordance with 23 CFR § 635.410
43 Buy America Requirements.
44

Steel or iron products means articles, materials, or supplies that consist wholly or predominantly of iron or steel or a combination of both and the cost of the iron and steel content exceeds 50 percent of the total cost of all its components. The cost of iron and steel is the cost of the iron or steel mill products (such as bar, billet, slab, wire, plate, or sheet), castings, or forgings utilized in the manufacture of the product, and a good faith estimate of the cost of iron or steel components.

Manufacturing includes any process that modifies the chemical content, physical shape or size, or final finish of a product. The manufacturing process begins with initial melting and mixing and continues through fabrication (cutting, drilling, welding, bending, etc.) and coating. Coating includes epoxy coating, galvanizing, aluminizing, painting, and any other coating that protects or enhances the value of steel or iron.

(B) Construction Materials. Construction materials mean articles, materials, or supplies that consist of only one of the items listed below, except as provided in Subsection 106.11(C) – Manufactured Products subparagraphs (1) and (2). All manufacturing processes, as defined in 2 CFR § 184.6 for these construction materials, must occur in the United States.

- (1) Non-ferrous metals.
- (2) Plastic and polymer-based products such as:
 - (a) Polyvinylchloride.
 - (b) Composite building materials.
 - (c) Polymers used in fiber optic cables.
- (3) Glass (including optic glass).
- (4) Fiber optic cable (including drop cable).
- (5) Optical fiber.
- (6) Lumber.
- (7) Engineered wood.
- (8) Drywall.

BABA Section 70917(c) materials, as defined in 2 CFR § 184.3, do not require domestic sourcing or domestic material certification. BABA Section 70917(c) materials means:

- (1) Cement and cementitious materials.
- (2) Aggregates such as stone, sand, or gravel.
- (3) Aggregate binding agents or additives.

(C) Manufactured Products. Buy America requirements apply to manufactured products. Manufactured products are defined as articles, materials, or supplies that have been processed into a specific form and shape or combined with other articles, materials, or supplies to create a product with different properties than the individual articles, materials, or supplies. For Federal-aid projects, all manufactured products must be produced in the United States.

For projects let on or after October 1, 2025, manufactured products shall be manufactured, including final assembly, in the United States.

For projects let on or after October 1, 2026, manufactured products shall be manufactured, including final assembly, in the United States. The cost of the components of the manufactured product that are mined, produced, or manufactured in the United States shall be greater than 55 percent of the total cost of all components of the manufactured product.

(1) **Precast Concrete** – Precast Concrete products that are classified as manufactured products, components of precast concrete products that consist wholly or predominantly of iron or steel or a combination of both, shall also meet the requirements of Subsection 106.11(A) – Iron and Steel Products.

(2) **Intelligent Transportation and Electronic Hardware Systems** – Intelligent transportation systems and other electronic hardware systems that are installed in the highway right of way or other real property and classified as manufactured products. The cabinets or other enclosures of such systems that consist wholly or predominantly of iron or steel or a combination of both shall also meet the requirements of Subsection 106.11(A) – Iron and Steel Products.

131 **(D) Contractor Domestic Materials Preference (DMP) Form.** The
132 Prime Contractor shall provide a Contractor Domestic Materials Preference
133 Form using the E-Construction platform. A DMP form must be submitted for
134 iron, steel, construction materials, and manufactured products delivered to
135 the project and permanently incorporated into the work. The Prime
136 Contractor shall provide supporting documentation to assure the article,
137 material, or supply meets the Domestic Materials Procurement Preference
138 requirements as established in the Buy America Act (1978 Surface
139 Transportation Assistance Act) and the Build America, Buy America (BABA)
140 Act (2021 Infrastructure Investment and Jobs Act).”



STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS

Contractor Domestic Materials Preference (DMP) Form

(Required by Subsection 106.11)

Project Name:	
Project Number:	
Prime Contractor:	

Type of Material: ☐ Iron or Steel Product ☐ Construction Material ☐ Manufactured Product
Specify Main Type of Construction Material: ☐ Non-ferrous Metal ☐ Plastic & polymer-based products
☐ Glass ☐ Fiber optic cable ☐ Optical fiber ☐ Lumber ☐ Engineered wood ☐ Drywall

Description of Material or Product:

Pay Item No.:
Pay Item Name:
Description:

The following certification establishes the acceptance of materials or products according to the Contract Provisions, 2 CFR Part 184 and 23 CFR § 635.410.

- ☐ **Iron or Steel Product:** The materials furnished under this certification were produced in the United States, including all manufacturing processes, from the initial melting stage through the application of coatings.
- ☐ **Construction Material:** All manufacturing processes for the materials furnished under this certification occurred in the United States.
- ☐ **Manufactured Product:** The products furnished under this certification were produced in the United States.

The Prime Contractor shall provide supporting documentation to assure the article, material, or supply meets requirements. I understand that submitting false statements and/or information may result in civil and criminal penalties.

Prime Contractor's Authorized Representative Signature	Date
Printed Name	Title

*****NOTE***** Contractor DMP Form must be filled out in ACC and submitted in ACC Forms module. Reference the form in the materials submittal.



STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS

Domestic Materials Reference Guide

Iron and Steel Products

- "Produced in the United States" means all manufacturing processes — from initial melting through application of coatings — must occur within the United States.

Construction Materials

For the materials listed below, all manufacturing processes must take place in the United States:

1. Non-Ferrous Metals (e.g., aluminum, copper): Smelting, melting thru shaping, coating, and assembly must all occur in the U.S.
2. Plastic and Polymer-Based Products: Every step — from mixing the raw plastic materials all the way to creating the final product — must occur in the U.S.
3. Glass: From raw material melting through annealing, cooling, and cutting, all processes must occur the U.S.
4. Fiber Optic Cable (including drop cable): All steps — starting with ribboning (if needed), then buffering, stranding the fibers together, and adding the outer jacket must occur in the US. Plus, the fiber optic cable must also meet the same U.S. manufacturing standards for making glass and optical fiber, but it doesn't have to follow the standards for non-ferrous metals, plastics and polymer- based products, or any others.
5. Optical Fiber: From the first step of making the preform (the solid glass rod) all the way through pulling it into thin fiber (the "draw" process), all must occur in the U.S.
6. Lumber: From debarking through treatment and planing, all processes must occur in the U.S.
7. Drywall: Blending gypsum and additives through panel cutting and drying must occur in the U.S.
8. Engineered Wood Products: Combining materials and creating the final form must occur in the U.S.

Manufactured Products

To qualify as "produced in the United States," two conditions must be met:

1. The product must be manufactured (including final assembly) in the U.S.
2. The cost of U.S.-mined, produced, or manufactured components must be greater than 55% of the total cost of all components.

Component cost determination:

- Purchased components: Includes purchase price, transport to manufacturing site, and duties.
- Manufacturer-made components: Include all production and transport costs (excluding profit).

Important Dates:

- For projects let on or after October 1, 2025: Products must be manufactured (including final assembly) in the U.S.
- For projects let on or after October 1, 2026: Products must meet both the U.S. manufacturing requirement and the greater than 55% U.S. components cost requirement. This means the cost of the components of the manufactured product that are mined, produced, or manufactured in the United States shall be greater than 55 percent of the total cost of all components of the manufactured product.

•

*****NOTE***** Contractor DMP Form must be filled out in ACC and submitted in ACC Forms module. Reference the form in the materials submittal.

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.

47
48 Certificates shall contain a provision that coverages being certified
49 will not be cancelled or materially changed without giving the Engineer at
50 least thirty (30) days prior written notice. Contractor will immediately
51 provide written notice to the Director should any of the insurance policies
52 evidenced on its Certificate of Insurance form be cancelled, reduced in
53 scope or coverage, or not renewed upon expiration. Should any policy be
54 canceled before final acceptance of the work by the State, and the
55 Contractor fails to immediately procure replacement insurance as
56 specified, the State, in addition to all other remedies it may have for such
57 breach, reserves the right to procure such insurance and deduct the cost
58 thereof from any money due or to become due to the Contractor.
59

60 Nothing contained in these insurance requirements is to be
61 construed as limiting the extent of Contractor's responsibility for payment
62 of damages resulting from its operations under this contract, including the
63 Contractor's obligation to pay liquidated damages, nor shall it affect the
64 Contractor's separate and independent duty to defend, indemnify and hold
65 the State harmless pursuant to other provisions of this contract. In no
66 instance will the State's exercise of an option to occupy and use
67 completed portions of the work relieve the Contractor of its obligation to
68 maintain the required insurance until the date of final acceptance of the
69 work.
70

71 All insurance described herein shall be primary and cover the
72 insured for all work to be performed under the contract, all work performed
73 incidental thereto or directly or indirectly connected therewith, including
74 but not limited to traffic detour work, barricades, warnings, diversions, lane
75 closures, and other work performed outside the work area and all change
76 order work.
77

78 The Contractor shall, from time to time, furnish the Engineer, when
79 requested, satisfactory proof of coverage of each type of insurance
80 required covering the work. Failure to comply with the Engineer's request
81 may result in suspension of the work, and shall be sufficient grounds to
82 withhold future payments due the Contractor and to terminate the contract
83 for Contractor's default.
84

85 **(B) Types of Insurance.** Contractor shall purchase and maintain
86 insurance described below which shall provide coverage against claims
87 arising out of the Contractor's operations under the contract, whether such
88 operations be by the Contractor itself or by any subcontractor or by
89 anyone directly or indirectly employed by any of them or by anyone for
90 whose acts any of them may be liable.
91

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 **(b)** Personal & Advertising Injury, and

113 **(c)** Bodily Injury & Property Damage
114
115
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
136

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 1460 calendar days after the Notice
13 to 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.

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

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

- (1) List of the Superintendent and other Supervisory Personnel, and their contact information.
- (2) Name of person(s) authorized to sign for the Contractor.
- (3) Work Schedule including hours of operation.
- (4) Initial Progress Schedule (See Subsection 108.06 – Progress Schedule).
- (5) Water Pollution and Siltation Control Submittals, including Site-Specific Best Management Practice Plan.
- (6) Solid Waste Disposal form.
- (7) Tax Rates.
- (8) Insurance Rates.
- (9) Certificate of Insurance, satisfactory to the Engineer, indicating that the Contractor has in place all insurance coverage required by the contract documents.
- (10) Schedule of agreed prices.
- (11) List of suppliers.
- (12) Traffic Control Plan, if applicable.

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

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

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

108.05 Contract Time.

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

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

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

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

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

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

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

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

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.

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.

(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

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.

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

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

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

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

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

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

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

(g) Identify responsible subcontractor, supplier, and others for their respective activity.

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

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

(j) Incorporate all physical access and availability restraints.

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

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

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

- (1) Four sets of the TSLD schedule.
- (2) All the software files and data to re-create the TSLD in a computerized software format as specified by the Engineer.
- (3) A listing of equipment that is anticipated to be used on the project. Including the type, size, make, year of manufacture, and all information necessary to identify the equipment in the Rental Rate Blue Book for Construction Equipment.
- (4) An anticipated manpower requirement graph plotting contract time and total manpower requirement. This may be superimposed over the payment graph.

(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,

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

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

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

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

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

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

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

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

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

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

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

The Contractor shall bring to weekly meetings a detailed work schedule showing the next three weeks' work. Number of copies of the detailed work schedule to be submitted will be determined by the Engineer. The three-week schedule is in addition to the TSLD and shall in no way be considered as a substitute for the TSLD or vice versa. The three-week schedule shall show:

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

(b) The duration of all events and delays.

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

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

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

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

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

When the Contractor fails to reach substantial completion of the work for which liquidated damages are specified, within the time or times fixed in the contract or any extension thereof, in addition to all other remedies for breach that may be available to the State, the Contractor shall pay liquidated damages to the State, in the amount of \$ 14,000 per working day.

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

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

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

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

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

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

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

108.09 Rental Fees for Unauthorized Lane Closure or Occupancy. In addition to all other remedies available to the State for Contractor's breach of the terms of the contract, the Engineer will assess the rental fees in the amount of \$500 for every one-to fifteen-minute increment for each roadway lane closed to public use or occupied beyond the time periods authorized in the contract or by the Engineer. The maximum amount assessed per day shall be \$10,000. The State may, at its discretion, deduct the amount from monies due or that may become due under the contract. The rental fee may be waived in whole or part if the Engineer determines that the unauthorized period of lane closure or occupancy was due to factors beyond the control of the Contractor. Equipment breakdown is not a cause to waive liquidated damages.

108.10 Suspension of Work.

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

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

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

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

(4) Failure on the part of the Contractor to:

(a) Correct conditions unsafe for the general public or for the workers.

(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.

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

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

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

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

108.11 Termination of Contract for Cause.

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

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

(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.

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

(1) Any completed work.

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

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

(D) Compensation.

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

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

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

(a) The cost of all contract work performed prior to the effective date of the notice of termination work plus a 5 percent markup on the actual direct costs, including amounts paid to subcontractor, less amounts paid or to be paid for 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.
- (6)** Certificate of Soil and Wood Treatments.
- (7)** Certificate of Water System Chlorination.

(8) Certificate of Elevator Inspection, Boiler and Pressure Pipe Inspection.

(9) Maintenance Service Contract and two copies of a list of all equipment installed.

(10) Current Tax clearance. The contractor will be required to submit an additional tax clearance certificate when the final payment is made.

(11) And any other final items and submittals required by the contract documents.

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

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

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

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

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

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

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

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

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

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

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

108.14 Substantial Completion and Final Acceptance.

(A) Substantial Completion. When the Engineer finds that the Contractor has satisfactorily completed all work for the project in compliance with the contract, 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.

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

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

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

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

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

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

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

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

(2) Any extension of time.

(3) Any possession taken by the Engineer.

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

108.19 Final Settlement of Contract.

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

- 1083 (1) All written guarantees required by the contract.
1084
1085 (2) Complete and certified weekly payrolls for the Contractor and
1086 its subcontractor's.
1087
1088 (3) Certificate of plumbing and electrical inspection.
1089
1090 (4) Certificate of building occupancy.
1091
1092 (5) Certificate for soil treatment and wood treatment.
1093
1094 (6) Certificate of water system chlorination.
1095
1096 (7) Certificate of elevator inspection, boiler and pressure pipe
1097 installation.
1098
1099 (8) Tax clearance.
1100
1101 (9) All other documents required by the Contract or by law.
1102

1103 **(B) Failure to Meet Closing Requirements.** The Contractor shall meet
1104 the applicable closing requirements within 60 days from the date of Project
1105 Acceptance or the agreed to Punchlist complete date. Should the
1106 Contractor fail to comply with these requirements, the Engineer may
1107 terminate the contract for cause.
1108
1109
1110
1111
1112

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

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

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END OF SECTION 109

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(I) Amend **201.04 – Measurement** by revising lines 167 to 168 to read as follows:

(II) Amend **201.05 – Payment** by revising lines 170 to 179 to read as follows:

The Engineer will pay for the following pay item when included in the proposal schedule:

Pay Item	Pay Unit
Clearing and Grubbing	Square Yard"

NH-093-1(035)
201-1a

7/1/18

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

2
3 Make the following amendments to said Section:

4
5 **(I)** Amend **202.03(B) Removal of Concrete Structures** by revising
6 paragraphs one and two between lines 68 to 75 to read as follows:

7
8 **(B) Removal of Concrete Structures.** Remove existing concrete slabs,
9 foundations, old pavements within roadbed areas contained inside project limits,
10 and portions of reinforced concrete box culverts, and channel walls, unless
11 otherwise indicated in the contract documents.

12
13 Cut, with power-driven abrasive saw, a 1-1/2- inch-deep joint at interface
14 of concrete curbs, gutters, sidewalks, aprons, driveways, reinforced concrete box
15 culverts, channel walls or pavements that are to remain and that are to be
16 removed. Cut neat and true with no shattering or spalling of concrete to remain
17 in place. Demolition equipment shall be hand-held tools 15 pounds or less.”

18
19 **(II)** Add the following paragraphs to Subsection **202.03(C) Removal of**
20 **Bridges**, line 118, to read as follows:

21
22 “All concrete and/or reinforcing steel removed shall be recycled by an
23 appropriately licensed or certified concrete recycling facility.”

24
25 **(III)** Amend **202.04 – Measurement** by revising lines 119 to 120 to read as
26 follows:

27
28 **“202.04 Measurement.** If the proposal provides a contract item for the removal
29 of structure and obstructions, the Engineer will measure the removal of structures
30 and obstructions by the square yard or linear foot.

31
32 The Engineer will not measure the removal of structures and obstructions
33 when contracted on a lump sum basis.”

34
35 **(IV)** Amend **202.05 – Payment** by revising lines 122 to 131 to read as follows:

36
37 **“202.05 Payment.** The Engineer will pay for the removal of structures and
38 obstructions on a contract square yard, linear foot or lump sum basis. Payment
39 will be full compensation for the work prescribed in this section and the contract
40 documents.

41
42 The Engineer will pay for specific items stipulated for demolition, removal
43 and disposal. The price shall be full compensation for removal and disposal of
44 that items, excavation, backfill, salvage of materials removed. Salvaging of
45 materials removed includes their custody, preservation, storage on the right-of-

way. Also, the price shall be full compensation for equipment, tools, labor materials and incidentals necessary to complete the work.

The Engineer will pay for the following pay item when included in the proposal schedule.

Pay Item	Pay Unit
Removal of Portion of Retaining Wall	Lump Sum
Removal of Concrete Curb and Gutter	Linear Foot
Removal of Concrete Sidewalk	Square Yard
Removal of Curb Ramp	Lump Sum
Removal of AC Curb	Linear Foot
Removal of Existing Traffic Signal Structures	Lump Sum
Removal of Concrete Parapet	Lump Sum
Removal of Guardrail	Linear Foot
Removal of CMU Wall	Lump Sum
Removal of Chain Link Fence	Linear Foot"

END OF SECTION 202

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

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

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

“203.05 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:

The Engineer will pay for:

(1) 15 percent of the contract bid price upon completion of
obliterating old roadways and hauling.

(2) 30 percent of the contract bid price upon completion of
preparing subgrade.

(3) 40 percent of the contract bid price upon completion of placing
selected material in final position, rounding of slopes, and using water
for compaction.

(4) 15 percent of the contract bid price upon completion of
disposing of surplus excavation material.

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

The Engineer will pay for accepted quantities of unlined gutter excavation
as roadway excavation at the contract unit price per cubic yard, when gutter is
located as follows: within median area of a divided highway; and between
roadbed shoulder and adjacent cut slope. Payment will be full compensation for
removing and disposing of excavated material; backfilling and compacting; and
for the work prescribed in the contract documents.

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

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

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

END OF SECTION 203

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

The Engineer will measure trench excavation per cubic yard in accordance with the contract documents.

“	Pay Item	Pay Unit
	Trench Excavation for Traffic Signal	Cubic Yard”

NH-093-1(035)
204-1a

3/18/26

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

3
4 Make the following amendments to said Section:

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

8
9 **“(A)** Excavating and backfilling to depths and lines established for
10 bridge, overhead-mounted expressway sign, retaining (reinforced concrete
11 or cement rubble masonry) structures, foundations, and box culverts.”

12
13 **(II)** Amend **205.03(A)(1) General** by adding the following paragraph after
14 line 47 to read as follows:

15
16 “The Contractor shall be responsible for protecting the sides of the
17 excavations from cave-ins. The Contractor shall submit shop drawings and
18 calculations for any bracing or shoring to be installed. The shop drawings and
19 calculations shall be stamped by a registered Hawaii Structural Engineer and a
20 registered Civil Engineer specializing in Geotechnical Engineering in the State of
21 Hawaii. If the Contractor decides not to brace the cut slope, the Contractor shall
22 submit when requested by the Engineer, calculations, showing the stability of the
23 slope, stamped by a registered Civil Engineer specializing in Geotechnical
24 Engineer in the State of Hawaii. The shop drawings and calculations shall be
25 reviewed and accepted by the Engineer before proceeding with the construction.”

26
27 **(III)** Amend **205.03(B) Structure Backfill** by revising the lines 151 to 155 to
28 read as follows:

29
30 **“(B) Structure or CLSM Backfill.** Place structure or CLSM backfill
31 material A behind bridge abutments, wingwalls, and retaining structures. Do not
32 deposit fill material against back of concrete abutments, piers, concrete box
33 culverts, retaining structures, and foundations until the concrete has met the
34 requirements in Subsection 503.03(E) – Loading.”

35
36 **(IV)** Amend **205.03(B) Structures Backfill** by revising the second sentence of
37 the second paragraph at lines 158 and 159 to read as follows:

38
39 “Continue backfilling so that uneven or unsymmetrical lifts do not exceed
40 16 inches in height creating an unbalanced loading condition.”

41
42 **(V)** Amend **Section 205.03(C) Filter Material** by revising the first sentence to
43 read as follows:

44
45 “Place backfill filter material at bridge and retaining structures in
46 accordance with the contract documents.”

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

“(A) **Structure Excavation.** Structure excavation will be paid on a lump sum basis. Measurement for payment will not apply.

(B) **Structure Backfill.** Structure backfill for bridge abutments, wingwalls, and retaining walls will be paid on a lump sum basis. Measurement for payment will not apply. The Engineer will consider structure backfills not specified in the proposal or ordered incidental to structure excavation and will not measure for payment.

(C) **Filter Material.** Filter material will be paid on a lump sum basis. Measurement for payment will not apply.”

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

205.05 Payment. The Engineer will pay for the accepted pay items listed below on a contract lump sum basis, 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 of each of the following pay items when included in the proposal schedule:

<u>Pay Item</u>	<u>Pay Unit</u>
Structure Excavation for _____	Lump Sum
Structure Backfill for _____	Lump Sum
Filter Material for _____	Lump Sum

END OF SECTION 205

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(I) Amend 206.04 – Measurement by revising lines 142 to 143 to read as follows:

(II) Amend **206.05 – Payment** by revising lines 145 to 154 to read as follows:

The Engineer will pay for the following pay item when included in the proposal schedule:

END OF SECTION 206

1 Amend **Section 209 - TEMPORARY WATER POLLUTION, DUST, AND EROSION**
2 **CONTROL** to read as follows:

3
4
5 **"SECTION 209 - TEMPORARY WATER POLLUTION, DUST, AND EROSION**
6 **CONTROL**

7
8
9 **209.01 Description.** This section describes the following:

10
11 **(A)** Including detailed plans, diagrams, and written Site-Specific Best
12 Management Practices (BMP); constructing, maintaining, and repairing
13 temporary water pollution, dust, and erosion control measures at the project
14 site, including local material sources, work areas and haul roads; removing
15 and disposing hazardous wastes; control of fugitive dust (defined as
16 uncontrolled emission of solid airborne particulate matter from any source
17 other than combustion); and complying with applicable State and Federal
18 permit conditions.

19
20 **(B)** Work associated with construction stormwater, dewatering, and
21 hydrotesting activities and complying with conditions of the National Pollutant
22 Discharge Elimination System (NPDES) permit(s) authorizing discharges
23 associated with construction stormwater, dewatering, and hydrotesting
24 activities.

25
26 **(C)** Potential pollutant identification and mitigation measures are listed in
27 Appendix A for use in the development of the Contractor's Site-Specific BMP.

28
29 Requirements of this section also apply to construction support
30 activities including concrete or asphalt batch plants, rock crushing plants,
31 equipment staging yards/areas, material storage areas, excavated material
32 disposal areas, and borrow areas located outside the State Right-of-Way.
33 For areas serving multiple construction projects, or operating beyond the
34 completion of the construction project in which it supports, the Contractor
35 shall be responsible for securing the necessary permits, clearances, and
36 documents, and following the conditions of the permits and clearances, at no
37 cost to the State.

38
39 **209.02 Materials.** Comply with applicable materials described in Chapters 2 and
40 3 of the current HDOT "Construction Best Management Practices Field Manual". In
41 addition, the materials shall comply with the following:

42
43 **(A) Grass.** Grass shall be a quick growing species such as rye grass,
44 Italian rye grass, or cereal grasses. Grass shall be suitable to the area and
45 provide a temporary cover that will not compete later with permanent cover.
46 Alternative grasses are allowable if acceptable to the Engineer.

47 **(B) Fertilizer and Soil Conditioners.** Fertilizer and soil conditioners shall
48 be a standard commercial grade acceptable to the Engineer. Fertilizer shall
49 conform to Subsection 619.02(H)(1) - Commercial Fertilizer.
50

51 **(C) Hydro-mulching.** Hydro-mulching used as a temporary vegetative
52 stabilization measure shall consist of materials in Subsections 209.02(A) -
53 Grass, and 209.02(B) – Fertilizer and Soil Conditioners. Mulches shall be
54 recycled materials including bagasse, hay, straw, wood cellulose bark, wood
55 chips, or other material acceptable to the Engineer. Mulches shall be clean
56 and free of noxious weeds and deleterious materials. Potable water shall
57 meet the requirements of Subsection 712.01 - Water. Submit alternate
58 sources of irrigation water for the Engineer's acceptance if deviating from
59 712.01 - Water. Installation and other requirements shall be in accordance
60 with portions of Section 641- Hydro-Mulch Seeding including 641.02(D) - Soil
61 and Mulch Tackifier, 641.03(A) – Seeding, and 641.03(B) - Planting Period.
62 Install non-vegetative controls including mulch or rolled erosion control
63 products while the vegetation is being established. Water and fertilize grass.
64 Apply fertilizer as recommended by the manufacturer. Replace grass the
65 Engineer considers unsuitable or sick. Remove and dispose of trash and
66 debris. Remove invasive species. Mow as needed to prevent site or signage
67 obstructions, fire hazard, or nuisance to the public. Do not remove down
68 stream sediment control measures until the vegetation is uniformly
69 established, including no large bare areas, and provides 70 percent of the
70 density of pre-disturbance vegetation. Temporary vegetative stabilization
71 shall not be used longer than one year.
72

73 **(D) Silt Fences.** Comply with ASTM D6462, Standard Practice for Silt
74 Fence Installation.
75

76 Alternative materials or methods to control, prevent, remove and dispose
77 pollution are allowable if acceptable to the Engineer.
78

79 **209.03 Construction.**

80 **(A) Preconstruction Requirements.**

81 **(1) Water Pollution, Dust, and Erosion Control Meeting.**
82 Schedule a water pollution, dust, and erosion control meeting with the
83 Engineer after Site-Specific BMP is accepted in writing by the
84 Engineer. Meeting shall be scheduled a minimum of 7 calendar days
85 prior to the Start Work Date. Discuss sequence of work, plans and
86 proposals for water pollution, dust, and erosion control.
87
88
89

(2) Water Pollution, Dust, and Erosion Control Submittals.

Submit a Site-Specific BMP Plan within 21 calendar days of date of award. Submission of complete and acceptable Site-Specific BMP Plan is the sole responsibility of the Contractor and additional contract time will not be issued for delays due to incompleteness. Include the following:

(a) Written description of activities to minimize water pollution and soil erosion into State waters, drainage or sewer systems. BMP shall include the following:

- 1.** An identification of potential pollutants and their sources.
- 2.** A list of all materials and heavy equipment to be used during construction.
- 3.** Descriptions of the methods and devices used to minimize the discharge of pollutants into State waters, drainage or sewer systems.
- 4.** Details of the procedures used for the maintenance and subsequent removal of any erosion or siltation control devices.
- 5.** Methods of removing and disposing hazardous wastes encountered or generated during construction.
- 6.** Methods of removing and disposing concrete and asphalt pavement cutting slurry, concrete curing water, and hydrodemolition water.
- 7.** Spill Control and Prevention and Emergency Spill Response Plan.
- 8.** Fugitive dust control, including dust from grinding, sweeping, or brooming off operations or combination thereof.
- 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.

- 136 **12.** Concrete waste control.
- 137
- 138 **13.** Fueling and maintenance of vehicles and other
- 139 equipment.
- 140
- 141 **14.** Tracking of sediment offsite from project entries
- 142 and exits.
- 143
- 144 **15.** Litter management.
- 145
- 146 **16.** Toilet facilities.
- 147
- 148 **17.** Other factors that may cause water pollution, dust
- 149 and erosion control.
- 150

151 **(b)** Provide plans indicating location of water pollution, dust

152 and erosion control devices; provide plans and details of BMPs

153 to be installed or utilized; show areas of soil disturbance in cut

154 and fill, indicate areas used for construction staging and

155 storage including items (1) through (17) above, storage of

156 aggregate (indicate type of aggregate), asphalt cold mix, soil or

157 solid waste, equipment and vehicle parking, and show areas

158 where vegetative practices are to be implemented. Indicate

159 intended drainage pattern on plans. Include flow arrows.

160 Include separate drawing for each phase of construction that

161 alters drainage patterns. Indicate approximate date when

162 device will be installed and removed.

163

164 **(c)** Construction schedule.

165

166 **(d)** Name(s) of specific individual(s) designated responsible

167 for water pollution, dust, and erosion controls on the project

168 site. Include home, cellular, and business telephone numbers,

169 fax numbers, and e-mail addresses.

170

171 **(e)** Description of fill material to be used.

172

173 **(f)** For projects with an NPDES Permit for Construction

174 Activities, submit information to address all sections in the

175 Storm Water Pollution Prevention Plan (SWPPP).

176

177 **(g)** For projects with an NPDES Permit, information required

178 for compliance with the conditions of the Notice of General

179 Permit Coverage (NGPC)/NPDES Permit.

180

181 (h) Site-Specific BMP Review Checklist. The checklist may
182 be downloaded from HDOT's Stormwater Management
183 website at <http://stormwaterhawaii.com>.
184

185 Date and sign Site-Specific BMP Plan. Keep accepted
186 copy on site or at an accessible location so that it can be made
187 available at the time of an on-site inspection or upon request by
188 the Engineer, HDOT Third-Party Inspector, and/or DOH/EPA
189 Representative. Amendments to the Site-Specific BMP Plan
190 shall be included with original Site-Specific BMP Plan. Modify
191 SWPPP if necessary to conform to revisions. Include date of
192 installation and removal of Site-Specific BMP measures.
193 Obtain written acceptance by the Engineer before
194 implementing revised Site-Specific BMPs in the field.
195

196 Follow the guidelines in the current HDOT "Construction
197 Best Management Practices Field Manual", in developing,
198 installing, and maintaining Site-Specific BMPs for all projects.
199 For any conflicting requirements between the Manual and
200 applicable bid documents, the applicable bid documents will
201 govern. Should a requirement not be clearly described within
202 the applicable bid documents, notify the Engineer immediately
203 for interpretation. For the purposes of clarification "applicable
204 bid documents" include the construction plans, standard
205 specifications, special provisions, Permits, and the SWPPP
206 when applicable.
207

208 Follow Honolulu's City and County "Rules for Soil
209 Erosion Standards and Guidelines" for all projects on Oahu.
210 Use respective Soil Erosion Guidelines for Maui, Kauai and
211 Hawaii projects.
212

213 **(B) Construction Requirements.** Do not begin work until submittals
214 detailed in Subsection 209.03(A)(2) - Water Pollution, Dust, and Erosion
215 Control Submittals are completed and accepted in writing by the Engineer.
216

217 Install, maintain, monitor, repair and replace site-specific BMP
218 measures, such as for water pollution, dust and erosion control; installation,
219 monitoring, and operation of hydrotesting activities; removal and disposal of
220 hazardous waste indicated on plans, concrete cutting slurry, concrete curing
221 water; or hydrodemolition water. Site-Specific BMP measures shall be in
222 place, functional and accepted by HDOT personnel prior to initiating any
223 ground disturbing activities.
224

If necessary, 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.

Modify and resubmit plans and construction schedules to correct conditions that develop during construction which were unforeseen during the design and pre-construction stages.

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.

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.

For projects with an NPDES Permit for Construction activities:

268 (1) For construction areas discharging into waters not impaired for
269 nutrients or sediments, complete initial stabilization within 14 calendar
270 days after the temporary or permanent cessation of earth-disturbing
271 activities.

272
273 (2) For construction areas discharging into nutrient or sediment
274 impaired waters, complete initial stabilization within 7 calendar days
275 after the temporary or permanent cessation of earth-disturbing
276 activities.

277
278 For projects without an NPDES Permit for Construction activities,
279 complete initial stabilization within 14 calendar days after the temporary or
280 permanent cessation of earth-disturbing activities.

281
282 Any of the following types of activities constitutes initiation of
283 stabilization:

284
285 (1) Prepping the soil for vegetative or non-vegetative stabilization;
286

287 (2) Applying mulch or other non-vegetative product to the exposed
288 area;

289
290 (3) Seeding or planting the exposed area;

291
292 (4) Starting any of the activities in items (1) – (3) above on a portion
293 of the area to be stabilized, but not on the entire area; and

294
295 (5) Finalizing arrangements to have stabilization product fully
296 installed in compliance with the deadline for completing initial
297 stabilization activities.

298
299 Any of the following types of activities constitutes completion of initial
300 stabilization activities:

301
302 (1) For vegetative stabilization, all activities necessary to initially
303 seed or plant the area to be stabilized; and/or

304
305 (2) For non-vegetative stabilization, the installation or application
306 of all such non-vegetative measures.

307
308 If the Contractor is unable to meet the deadlines above due to
309 circumstances beyond the Contractor's control, and the Contractor is using
310 vegetative cover for temporary or permanent stabilization, the Contractor
311 may comply with the following stabilization deadlines instead as agreed to by
312 the Engineer:
313

(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.

Apply fertilizer to mulches, grass seed or hydromulch per manufacturer's recommendations. Submit recommendations from a licensed Landscape Architect when deviating from the manufacturer's recommendations.

Install velocity dissipation measures when exposing erodible surfaces greater than 15 feet in height.

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.

Chemicals may be used as soil stabilizers for either or both erosion and dust control if acceptable to the Engineer.

Provide temporary slope drains of rigid or flexible conduits to carry runoff from cuts and embankments. Provide portable flume at the entrance. Shorten or extend temporary slope drains to ensure proper function.

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

- (1) Hydro-mulching the lower region of embankments in the immediate area.
- (2) Installing check dams and siltation control devices.
- (3) Other methods acceptable to the Engineer.

Provide for controlled discharge of waters impounded, directed, or controlled by project activities or erosion control measures.

Cover exposed surface of materials completely with tarpaulin or similar device when transporting aggregate, soil, excavated material or material that may be source of fugitive dust.

Cleanup and remove any pollutant that can be attributed to the Contractor.

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 accepted Site-Specific BMP or a Site-Specific BMP that replaces an accepted Site-Specific BMP that is not satisfactorily performing. Modifications to Site-Specific BMP measures shall be accepted in writing by the Engineer prior to implementation.

Properly maintain all Site-Specific BMP measures.

For projects with an NPDES Permit for Construction Activities:

(1) For construction areas discharging into nutrient or sediment impaired waters, inspect, prepare a written report, and make repairs to 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.

(2) For construction areas discharging to waters not impaired for nutrients or sediments, inspect, prepare a written report, and make repairs to BMP measures at the following intervals:

(a) Weekly.

(b) When existing erosion control measures are damaged or not operating properly as required by Site-Specific BMP.

For projects without an NPDES Permit for Construction activities, inspect, prepare a written report, and make repairs to BMP measures at the following intervals:

(a) Weekly.

(b) 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.

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.

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 Consent Decree or MS4 NPDES

Permit, whichever is more stringent. The Consent Decree timeframe requirement applies statewide. The MS4 NPDES Permit 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 7 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 7 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. The Contractor's failure 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) Discharges of Storm Water Associated with Construction Activities. If work includes disturbance of one acre or more, an NPDES Permit authorizing Discharges of Storm Water Associated with Construction Activity (CWB-NOI Form C) or Individual Permit authorizing storm water discharges associated with construction activity is required from the Department of Health Clean Water Branch (DOH-CWB).

Do not begin construction activities until all required conditions of the permit are met and submittals detailed in Subsection 209.03(A)(2) – Water Pollution, Dust, and Erosion Control Submittals are completed and accepted in writing by the Engineer.

(D) Discharges Associated with Hydrotesting Activities. If hydrotesting activities require effluent discharge into State waters or drainage systems, an NPDES Hydrotesting Waters Permit (CWB-NOI Form F) or Individual Permit authorizing discharges associated with hydrotesting from DOH-CWB is required from the DOH-CWB.

Do not begin hydrotesting activities until the DOH-CWB has issued an Individual NPDES Permit or Notice of General Permit Coverage (NGPC). Conduct Hydrotesting operations in accordance with the conditions of the permit or NGPC.

(E) Discharges Associated with Dewatering Activities. If dewatering activities require effluent discharge into State waters or drainage systems, an NPDES Dewatering Permit (CWB-NOI Form G) or Individual Permit authorizing discharges associated with dewatering from DOH-CWB is required from the DOH-CWB.

Do not begin dewatering activities until the DOH-CWB has issued an Individual NPDES Permit or Notice of General Permit Coverage (NGPC). Conduct dewatering operations in accordance with the conditions of the permit or NGPC.

(F) Solid Waste. Submit the Solid Waste Disclosure Form for Construction Sites to the Engineer within 21 calendar days of date of award. Provide a copy of all the disposal receipts from the facility permitted by the Department of Health to receive solid waste to the Engineer monthly. This should also include documentation from any intermediary facility where solid waste is handled or processed, or as directed by the Engineer.

(G) Construction BMP Training. The Contractor's representative responsible for development of the Site-Specific BMP Plan and implementation of Site-Specific BMPs in the field shall attend the State's Construction Best Management Practices Training. The Contractor shall keep training logs updated and readily available.

209.04 Measurement.

(A) Installation, maintenance, monitoring, and removal of BMP will be paid on a lump sum basis. Measurement for payment will not apply.

(B) The Engineer will only measure additional water pollution, dust and erosion control required and requested by the Engineer on a force account basis in accordance with Subsection 109.06 – Force Account Provisions and Compensation.

209.05 Payment. The Engineer will pay for 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 each of the following pay items when included in proposal schedule:

Pay Item	Pay Unit
Installation, Maintenance, Monitoring, and Removal of BMP	Lump Sum
Additional Water Pollution, Dust, and Erosion Control	Force Account

543 An estimated amount for force account is allocated in proposal schedule
544 under 'Additional Water Pollution, Dust, and Erosion Control', but actual amount to
545 be paid will be the sum shown on accepted force account records, whether this sum
546 be more or less than estimated amount allocated in proposal schedule. The
547 Engineer will pay for BMP measures requested by the Engineer that are beyond
548 scope of accepted Site-Specific BMP on a force account basis.

549
550 No progress payment will be authorized until the Engineer accepts in writing
551 Site-Specific BMP or when the Contractor fails to maintain project site in accordance
552 with accepted BMP.

553
554 For all citations or fines received by the Department for non-compliance,
555 including compliance with NPDES Permit conditions, the Contractor shall reimburse
556 State within 30 calendar days for full amount of outstanding cost State has incurred,
557 or the Engineer will deduct cost from progress payment.

558
559 The Engineer will assess liquidated damages up to \$27,500 per day for non-
560 compliance of each BMP requirement and all other requirements in this section.
561

Appendix A

The following list identifies potential pollutant sources and corresponding BMPs used to mitigate the pollutants. Each BMP is referenced to the corresponding section of the current HDOT Construction Best Management Practices Field Manual or appropriate Supplemental Sheets. The Manual may be obtained from the HDOT Statewide Stormwater Management Program Website at <http://www.stormwaterhawaii.com/resources/contractors-and-consultants/> under Construction Best Management Practices Field Manual. Supplemental BMP sheets are located at <http://www.stormwaterhawaii.com/resources/contractors-and-consultants/storm-water-pollution-prevention-plan-swppp/> under Concrete Curing and Irrigation Water.

Pollutant Source	Appropriate Site-Specific BMP to be Implemented	BMP Requirements
Construction debris, green waste, general litter	• Separate contaminated clean up materials from construction and demolition (C&D) wastes. • Provide waste containers (e.g., dumpster or trash receptacle) of sufficient size and number to contain construction and domestic wastes. • Inspect construction waste and recycling areas regularly. • Schedule solid waste collection regularly. • Schedule recycling activities based on construction/demolition phases. • Empty waste containers weekly or when they are two-thirds full, whichever is sooner. • Do not allow containers to overflow. Clean up immediately if they do. • On work days, clean up and dispose of waste in designated waste containers. • See Solid Waste Management Section SM-6 for additional requirements. • Provide Storm Drain Inlet Protection and/or Perimeter Sediment Controls as applicable. • <i>Collect and dispose of all waste materials in trash dumpsters. Place dumpsters, with secure watertight lids, away from storm water conveyances and drains, in a covered materials storage area.</i> • <i>Dispose of construction and non- construction solid waste in accordance with State DOH regs.</i> • <i>Load removed non- recyclable vegetation directly onto trucks; cover and transport to a licensed facility</i>	See Solid Waste Management Section SM-6. <i>Storm Drain Inlet Protection SC-1, and Perimeter Sediment Controls where applicable.</i>

Pollutant Source	Appropriate Site-Specific BMP to be Implemented	BMP Requirements
Materials associated with the operation and maintenance of equipment, such as oil, fuel, and hydraulic fluid leakage	• Use off-site wash racks, repair and maintenance facilities, and fueling sites when practical. • Designate bermed wash area if cleaning on site is necessary. • Place drip pans or drop cloths under vehicles and equipment to absorb spills or leaks. • Provide an ample supply of readily available spill cleanup materials. • 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 continuation of an ongoing discharge. • Inspect on-site vehicles and equipment regularly and immediately repair leaks. • 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 Storage and Handling Section SM-2 for additional requirements.	See Vehicle and Equipment Cleaning, Maintenance, and Refueling, Sections SM-11, SM-12, and SM-13, and Material Storage and Handling , Section SM-2, and Spill Prevention and Control SM-10.

Pollutant Source	Appropriate Site-Specific BMP to be Implemented	BMP Requirements
Soil erosion from the disturbed areas	• Provide Soil Stabilization, Slope Protection, Storm Drain Inlet Protection SC-1, Perimeter Controls and Sediment Barriers, Sediment Basins and Detention Ponds, Check Dams SC-3 ,Level Spreader EC-6, Paving Operations SM-20, Construction Roads and Parking Area Stabilization SC-10, Controlling Storm Water Flowing Onto and Through the Project, Post-Construction BMPs, and Non-Structural BMPs (Construction BMP Training SM-1, Scheduling SM-14, Location of Potential Sources of Sediment SM-15, Preservation of Existing Vegetation SM-17). • 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 Chapter 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 designed for steep grades. • For temporary drains and swales use velocity dissipation devices within and at the outlet to minimize erosive flow velocities.	Soil Stabilization 1. SM-22 Topsoil Management 2. EC-12 Seeding and Planting 3. EC-14 Mulching 4. EC-11 Geotextiles and Mats Slope Protection 1. EC-12 Seeding and Planting 2. EC-14 Mulching 3. EC-11 Geotextiles and Mats 4. EC-4 Slope Roughening, Terracing, and Rounding 5. EC-7 Slope Drains and Subsurface Drains 6. EC-9 Slope Interceptor or Diversion Ditches/Berms SC-1 Storm Drain Inlet Protection

<i>Pollutant Source</i>	<i>Appropriate Site-Specific BMP to be Implemented</i>	<i>BMP Requirements</i>
		<i>Perimeter Controls and Sediment Barriers</i> 1. SC-7 Silt Fence <i>or Filter Fabric Fence</i> 2. SC-2 Vegetated Filter Strips and Buffers 3. SC-6 Compost Filter Berm/<i>Sock</i> 4. SC-8 Sandbag Barrier 5. SC-9 Brush or Rock Filter <i>Sediment Basins and Detention Ponds</i> 1. SC-4 Sediment Trap 2. SC-5 Sediment Basin SC-3 Check Dams <i>EC-6 Level Spreader</i> <i>SM-20 Paving Operations</i> <i>SC-10 Construction Roads and Parking Area Stabilization</i>

<i>Pollutant Source</i>	<i>Appropriate Site-Specific BMP to be Implemented</i>	<i>BMP Requirements</i>
		Controlling Storm Water Flowing onto and Through the Project 1. EC-3 Run-On Diversion 2. EC-5 Earth Dike, Swales and Ditches Post Construction BMPs 1. EC-2 Flared Culvert End Sections 2. EC-10 Rip-Rap and Gabion Inflow Protection 3. EC-8 Outlet Protection and Velocity Dissipation Devices 4. SM-22 Topsoil Management Non-Structural BMPs 1. SM-1 Construction BMP Training 2. SM-14 Scheduling 3. SM-15 Location of Potential Sources of Sediment 4. SM-17 Preservation of Existing Vegetation

Pollutant Source	Appropriate Site-Specific BMP to be Implemented	BMP Requirements
Sediment from soil stockpiles	• 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. • Place bagged materials on pallets and under cover. • Provide physical diversion to protect stockpiles from concentrated runoff. • Cover stockpiles with plastic or comparable material when practicable. • Place silt fence, fiber filtration tubes, or straw wattles around stockpiles. • 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. • Unless infeasible, contain and securely protect stockpiles from the wind. • Provide Storm Drain Inlet Protection and/or Perimeter Sediment Controls as applicable. See Stockpile Management Section SM-3 for additional requirements.	See Stockpile Management Section SM-3. Storm Drain Inlet Protection SC-1, and Perimeter Sediment Controls where applicable.
Emulsified asphalt or prime/tack coat	• Provide training for employees and contractors on proper material delivery and storage practices and procedures. • Restrict paving operations during wet weather to prevent paving materials from being discharged. • Use asphalt emulsions such as prime coat when possible. • Protect drain inlet structures and manholes during application of tack coat, seal coat, slurry seal, and fog seal. • Keep ample supplies of drip pans and absorbent materials on site. • Inspect inlet protection devices. • See Material Storage and Handling Section SM-2 and Paving Operations Section SM-20 for additional requirements. • Provide Storm Drain Inlet Protection and/or Perimeter Sediment Controls as applicable.	See Material Storage and Handling Section SM-2, and Stockpile Management Section SM-3, Paving Operations Section SM-20, Storm Drain Inlet Protection SC-1, and Perimeter Sediment Controls where applicable.

Pollutant Source	Appropriate Site-Specific BMP to be Implemented	BMP Requirements
Materials associated with painting, such as paint and paint wash solvent	- Hazardous chemicals shall be well-labeled and stored in original containers. - Keep ample supply of cleanup materials on site. - Dispose container only after all of the product has been used. - Remove as much paint from brushes on painted surface. - Rinse from water-based paints shall be discharged into the sanitary sewer system where possible. If not, direct all wastewater 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. - 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. - Do not dump liquid wastes into the storm drainage system. - Filter and re-use solvents and thinners. - Dispose of oil-based paints and residue as a hazardous waste. - Ensure collection, removal, and disposal of hazardous waste complies with regulations. - Immediately clean up spills and leaks. - Properly store paints, solvents, and epoxy compounds. - Properly store and dispose waste materials generated from painting and structure repair and construction activities. - Mix paints in a covered and contained area, when possible, to minimize adverse impacts from spills. - Do not apply traffic paint or thermoplastic if rain is forecasted. - See Material Storage and Handling Use SM-2, Hazardous Materials and Waste Management Section SM-9, Spill Prevention and Control Section SM-10, and Structure Construction and Painting Section SM-21 for additional requirements. Provide Storm Drain Inlet Protection and/or Perimeter Sediment Controls as applicable.	See Material Storage and Handling Use Section SM-2, Stockpile Management Section SM-3, Hazardous Materials and Waste Management Section SM-9, Waste Management, Spill Prevention and Control Section SM-10, and Structure Construction and Painting Section SM-21, Storm Drain Inlet Protection SC-1, and Perimeter Sediment Controls where applicable.

Pollutant Source	Appropriate Site-Specific BMP to be Implemented	BMP Requirements
Industrial chemicals, fertilizers, and/or pesticides	• 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 safety data sheets (formerly MSDS) 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 stormwater conveyance channels with flowing water. • Comply with fertilizer and pesticide manufacturer's recommended usage and disposal instructions. Document departures from manufacturer's specifications in Attachment J. • Apply fertilizers at the appropriate time of year for the location, and preferably timed to coincide as closely as possible to the period of maximum vegetation uptake and growth. • 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.	See Material Storage and Handling Use Section SM-2, Stockpile Management Section SM-3, and Hazardous Materials and Waste Management Section SM-9, and Spill Prevention and Control SM-10

Pollutant Source	Appropriate Site-Specific BMP to be Implemented	BMP Requirements
	• 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 Storage and Handling Use SM-2, and Hazardous Materials and Waste Management Section SM-9 for additional requirements.	
Hazardous waste (Batteries, Solvents, Treated Lumber, etc.)	• Do not dispose of toxic materials 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. • 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. • 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. • 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. • 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 continuation of an ongoing discharge.	See Hazardous Materials and Waste Management Section SM-9 and Vehicle and Equipment Maintenance SM-12

Pollutant Source	Appropriate Site-Specific BMP to be Implemented	BMP Requirements
	• Ensure collection, removal, and disposal of hazardous waste complies with manufacturer's recommendations and is in compliance with federal, state, and local requirements. • See Hazardous Materials and Waste Management Section SM-9 and Vehicle and Equipment Management, Vehicle and Equipment Maintenance SM-12 for additional requirements.	
Metals and Building Materials	• Inspect construction waste and recycling areas regularly. • Schedule solid waste collection regularly. • If building materials or metals are stored on site (such as rebar or galvanized poles) store under cover under tarps or in containers. • Minimize the amount of material stored on site. • Do not stockpile uncovered metals or other building materials in close proximity to discharge points. • See Solid Waste Management Section SM-6 for additional requirements.	See Solid Waste Management Section SM-6
Contaminated Soil	• See Waste Management, Contaminated Soil Management Section SM-8 and/or Hazardous Materials and Waste Management Section SM-9 for additional requirements. • At minimum contain contaminated material soil by surrounding with impermeable lined berms or cover exposed contaminated material with plastic sheets.	See Waste Management, Contaminated Soil Management Section SM-8 and/or Hazardous Materials and Waste Management Section SM-9

Pollutant Source	Appropriate Site-Specific BMP to be Implemented	BMP Requirements
<i>Fugitive Dust Control and Dust Control Water</i>	• Do not over spray water for dust control purposes which will result in runoff from the area. • Apply water as conditions require. • Washing down of debris or dirt into drainage, sewage systems, or State waters is not allowed. • <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.</i> See Dust Control Section SM-19 for additional requirements.	See Dust Control Section SM-19
<i>Concrete Truck Wash Water</i>	• Disposal of concrete truck wash water via percolation is prohibited. • Wash concrete-coated vehicles or equipment off-site or in the designated wash area. • 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. • Runoff from the on-site concrete wash area shall be contained in a temporary pit or level bermed area where the concrete can set. • Design the area so that no overflow can occur due to inadequate wash area sizing or precipitation. • The temporary pit shall be lined with plastic to prevent seepage of wash water into the ground. • Allow wash water to evaporate or collect wash water and all concrete debris in a concrete washout system bin. • Do not dump liquid wastes into storm drainage system. • Dispose of liquid and solid concrete wastes in compliance with federal, state, and local standards. • See Waste Management, Concrete Wash and Waste Management Section SM-4 for additional requirements.	See Waste Management, Concrete Wash and Waste Management Section SM-4

Pollutant Source	Appropriate Site-Specific BMP to be Implemented	BMP Requirements
Sediment Track-Out	• Include Stabilized Construction Entrance at all points that exit onto paved roads. • A sediment trapping device is required if a wash rack is used in conjunction with the stabilized construction entrance/exit. • The pavement shall not be cleaned by washing down the street. • 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. • Use BMPs for adjacent drainage structures. • Remove sediment tracked onto the street by the end of the day in which the track-out occurs. • Restrict vehicle use to properly designated exit points. • Include additional BMPs that remove sediment prior to exit when minimum dimensions cannot be met. See Stabilized Construction Entrance/Exit Section SC-11 for additional requirements.	See Stabilized Construction Entrance/Exit Section SC-11
Irrigation Water	• 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-12 and California Stormwater BMP Handbook SD-12 Efficient Irrigation included in SWPPP Attachment A for additional requirements.	See Seeding and Planting Section EC-12 and California Stormwater BMP Handbook SD-12 Efficient Irrigation
Hydrotesting Effluent	• 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.

Pollutant Source	Appropriate Site-Specific BMP to be Implemented	BMP Requirements
<i>Dewatering Effluent</i>	<i>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-18 for additional requirements.</i>	<i>See Dewatering Operations SM-18. Site specific BMPs will be included in the NOI/NPDES Permit Form G submittal.</i>
<i>Saw-cutting Slurry</i>	• <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-20 for additional requirements.</i> <i>Provide Storm Drain Inlet Protection and/or Perimeter Sediment Controls as applicable.</i>	<i>See Paving Operations Section SM-20, Storm Drain Inlet Protection SC-1, Perimeter sediment controls where applicable</i>
<i>Concrete Curing Water</i>	• <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 Stormwater BMP Handbook NS-12 Concrete Curing included in SWPPP Attachment A for additional requirements.</i>	<i>See California Stormwater BMP Handbook NS-12 Concrete Curing</i>

Pollutant Source	Appropriate Site-Specific BMP to be Implemented	BMP Requirements
Plaster Waste Water	• 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. • 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. • 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. • Plaster waste water shall not be allowed to flow into drainage structures or State waters. See Material, Storage and Handling Use SM-2, Stockpile Management Use Section SM-3, and Hazardous Materials and Waste Management Section SM-9 for additional requirements.	See Material, Storage and Handling Use Section SM-2, Stockpile Management Use Section SM-3, and Hazardous Materials and Waste Management Section SM-9
Water-Jet Wash Water	• For Water-Jet Wash Water used to clean vehicles, use off site wash racks or commercial washing facilities when practical. • See Vehicle and Equipment Cleaning Section SM-11 for additional information. • For Water-Jet Wash Water used to clean impervious surfaces, the runoff shall not be allowed to flow into drainage structures or State Waters.	See Vehicle and Equipment Cleaning Section SM-11
Sanitary/Septic Waste	• Locate Sanitary facilities in a convenient place away from drainage facilities. • Position sanitary facilities so they are secure and will not be tipped over or knocked down. • Wastewater shall not be discharged to the ground or buried. • A licensed service provider shall maintain sanitary/septic facilities in good working order. • Schedule regular waste collection by a licensed transporter. • See Sanitary Waste Section SM-7 for additional requirements.	See Sanitary Waste Section SM-7.

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END OF SECTION 209

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1-14-22

1 Make the following Section a part of the Standard Specifications:
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3

4 **“SECTION 212 - ARCHAEOLOGICAL MONITORING**
5

6 **212.01 Description.** This work includes monitoring construction activity for
7 archaeological items as specified in the plans or as directed by the Engineer.
8 The Contractor shall be responsible for the incidental procedures and equipment
9 required for full compliance with the requirements of the provisions for
10 archaeological monitoring as outlined below.
11

12 The Contractor's attention is directed to the following requirements related
13 to the archaeological monitoring work:
14

15 **(A)** The Contractor shall obtain the services an Archaeologist or firm as
16 holding valid annual permit issued by the State of Hawaii Department of
17 Land and Natural Resources Historic Preservation Division's Archaeology
18 Branch to provide archaeological services in the State of Hawaii. A list of
19 qualified individuals/firms can be found on SHPD's Archaeology Branch
20 webpage at the link in:
21 <https://dlnr.hawaii.gov/shpd/about/branches/archaeology/>.
22

23 If the Archaeologist or firm is not on the current permit list, they
24 shall obtain an annual permit from SHPD at the time of bid opening.
25 Application for a permit may be obtained at the link in
26 <https://dlnr.hawaii.gov/shpd/forms/>
27

28 Permits are issued to consulting firm who have on staff at least one
29 principal investigator who meets the minimal professional standards for
30 archaeologist as provided in Hawaii Administrative Rules Chapter 13-281.
31

32 The archaeological firm(s) selected by the Contractor must have a
33 demonstrated history of following the applicable Hawaii Administrative
34 Rules for conducting archaeology work (HAR §275, §276, §277, §278,
35 §279, §280, §281, §282, §283, §284, §300) and successfully completing
36 archaeological reports that have been regularly accepted by SHPD. This
37 includes firms with a demonstrated history of collecting adequate field data
38 and no history of work on HDOT projects in which the project was closed
39 with any of the archaeological reporting being found inadequate.
40 Contractors shall contact HDOT for additional information.
41

42 **(B) Pre-Construction Conference:** A pre-construction conference
43 between the archaeological monitor retained by contractor, design project
44 manager, and the construction crew shall be required. The archaeological
45 monitor shall submit documentation of their compliance with requirements
46 outlined in Subsection 212.01 (C).
47

48 (C) Before work begins on the project, the Contractor shall review the
49 Archaeological Monitoring Plan (AMP) prepared by the State of Hawaii
50 Department of Transportation (HDOT) and the archaeologist shall meet
51 with the entire construction crew and explain what archaeological
52 materials may be encountered and the procedures to be followed if
53 materials are encountered in accordance with the project AMP.
54

55 (D) The archaeologist conducting the monitoring has the authority to
56 halt the construction in the immediate area of the find in accordance to the
57 AMP prepared by HDOT.
58

59 (E) Upon discovery of cultural deposits or historic property other human
60 skeletal remains, the Contractor shall immediately suspend the operation
61 and follow all of the requirements in accordance with HAR 13-279 and
62 HAR 13-280 of this section.
63

64 (F) The SHPD (Oahu office) shall be notified via telephone and/or
65 email upon the on- set and completion of the proposed undertaking.
66

67 (G) Upon completion of archaeological monitoring activities, the
68 archaeologist shall submit an Archaeological Monitoring Report in
69 accordance with HAR §13-279-5.
70

71 **212.02 Materials.** None.
72

73 **212.03 Construction.** All excavation activities related to the project shall be
74 monitored for historic remains including but not limited to artifacts, burials,
75 concentrations of shell or charcoal. Whenever the Contractor encounters
76 possible archaeological, historical or burial site findings, the contractor shall
77 immediately suspend the operation in the immediate area and inform the
78 Engineer verbally and follow up with a written letter. The Engineer will contact
79 HDOT Highways, Design, Environmental Permitting and Project Compliance
80 Section and the Department of Land and Natural Resources (DLNR) and other
81 agencies to evaluate such findings and decide the course of action.
82

83 The Contractor shall not resume suspended operations without the prior
84 written acceptance of the Engineer. The Contractor shall not count delays
85 resulting from the discovery, investigation, and handling of such findings against
86 the completion date. The Engineer will govern suspensions of work according to
87 Subsection 108.05(B)(5) - Delays for Suspension of Work. Also, the Contractor
88 shall conform to Chapter 6E, Hawaii Revised Statutes (HRS).
89

90 Failure or refusal to comply with the terms of this- Section or Chapter 6E,
91 HRS, may subject the Contractor to the penalties described in Section 6E-11,
92 HRS:
93

- 94 (1) a fine of not more than ten thousand (\$10,000) dollars for
95 each separate offense,
96
97 (2) seizure and disposition of equipment, and
98
99 (3) if the Contractor knowingly fails or refuses to comply, a
100 prohibition from participating in the construction of State or
101 County projects for ten (10) years.
102

103 Construction work and equipment shall remain within the right-of-
104 way limits of this project.
105

106 **212.04 Measurement.** The Engineer will measure Archaeological Monitoring
107 on a force account basis according to Subsection 109.06 - Force Account
108 Provisions and Compensation and as ordered by the Engineer.
109

110 **212.05 Payment.** The Engineer will pay for the accepted Archaeological
111 Monitoring on a force account basis according to Subsection 109.06 Force
112 Account Provisions and Compensation. Payment will be full compensation for
113 the work prescribed in this Section, by the Engineer and Subsection 109.04 - Full
114 Compensation; Changes.
115

116 The Engineer will pay for the following item:
117

118 Pay Item	119 Pay Unit
120 Archaeological Monitoring	121 Force Account"

122 An estimated amount for the force account is allocated in the proposal
123 schedule under Archaeological Mitigation. The actual amount to be paid will be
124 the sum shown on the accepted force account records whether this sum be more
125 or less than the estimated amount allocated in the proposal schedule.
126
127
128

129 END OF SECTION 212

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
14 **(II)** Amend **Section 301.04** **Measurement** from lines 98 to 100 to read as
15 follows:

16
17 **“301.04 Measurement.**

18
19 The Engineer will measure HMAB course per ton in accordance with
20 contract documents.”

21
22
23 **(III)** Amend **Section 301.05** **Payment**, from lines 102 to 111 to read as
24 follows:

25
26 **“301.05 Payment.** The Engineer will pay for the accepted pay items
27 listed below at the contract price per pay unit, as shown in the proposal schedule.
28 Payment will be full compensation for the work prescribed in this section and the
29 contract documents.

30
31 The Engineer will pay for one of the following pay items when included in
32 the proposal schedule:

33

Pay Item	Pay Unit
Hot Mix Asphalt Base Course	Ton
(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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The Engineer may, in lieu of requiring removal and replacement, use the sliding scale factor to accept HMAB compacted below 92.0 percent. The Engineer will make payment for the material in that production day at a reduced price arrived at by multiplying the contract unit price by the pay factor shown in Table 301.05-1.

Table 301.05-1 – Sliding Scale Pay Factor	
Percent Compaction	Percent Payment
92.0 or greater	100
90.0 – 91.9	80
<90.0	Removal

END OF SECTION 301

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(I) Amend **304.04 – Measurement** by revising lines 54 to 55 to read as follows:

The Engineer will measure aggregate base per cubic yard in accordance with the contract documents.”

“304.05 Payment. The Engineer will pay for the accepted aggregate base at the contract price per cubic yard, as shown in the proposal schedule. Payment will be full compensation for the work prescribed in this section and the contract documents.

Pay Item	Pay Unit
Aggregate Base Course	Cubic Yard"

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1 **SECTION 314 – CONTROLLED LOW STRENGTH MATERIALS (CLSM) FOR**
2 **UTILITIES AND STRUCTURES**

3
4 Make the following amendments to said Section:

5
6 **(I)** Amend **314.04 – Measurement** by revising line 83 to read as follows:

7
8 **“314.04 Measurement.**

9
10 The Engineer will measure CLSM per cubic yard in accordance
11 with the contract documents.”

12
13 **(II)** Amend **314.05 – Payment** by revising lines 85 to 90 to read as follows:

14
15 **“314.05 Payment.**

16
17
18 The Engineer will pay for the accepted CLSM at the contract unit price per
19 cubic yard, as shown in the proposal schedule. Payment will be full
20 compensation for the work prescribed in this section and the contract
21 documents.

22
23 The Engineer will pay for the following pay item when included in
24 the proposal schedule:

25
26 **Pay Item** **Pay Unit**
27
28 Controlled Low Strength Material Cubic Yard”

29
30
31
32
33 **END OF SECTION 314**
34

Amend Section 401- HOT MIX ASPHALT (HMA) PAVEMENT to read as follows:

“SECTION 401 – HOT MIX ASPHALT (HMA) PAVEMENT

401.01 Description. This section describes furnishing and placing dense graded HMA pavement (herein referred to as HMA) on a prepared surface.

401.02 Materials.

Asphalt Cement (PG 64-16) 702.01(A)

Use for non-surface mixes, unless otherwise specified in the project documents.

Asphalt Cement (PG 64E-22) 702.01(B)

Use for all surface mixes, except for on Lanai and Molokai, and unless otherwise specified in the project documents. Polymer modified asphalt (PMA) pavement refers to asphalt mix using PG 64E-22, unless otherwise indicated.

Emulsified Asphalt 702.04

Warm Mix Asphalt Additive 702.06

Aggregate for Hot Mix Asphalt Pavement 703.09

Filler 703.15

Hydrated Lime or a liquid anti-strip approved by the engineer 712.03

(A) General. HMA pavement shall be plant mixed and shall include mixture of aggregate and asphalt binder and may include reclaimed asphalt pavement (RAP) or filler, or both.

The manufacture of HMA may include warm mix asphalt (WMA) processes in accordance with these specifications. WMA processes include combinations of organic additives, chemical additives, and foaming.

HMA pavement shall include surface course and may include one or more binder courses, depending on HMA pavement thickness indicated in the contract documents.

RAP is defined as removed or reprocessed pavement materials containing asphalt and aggregates. Process RAP by crushing until 100 percent of RAP passes 3/4-inch sieve. Size, grade uniformly, and combine materials such that blend of RAP and aggregate material conforms to grading requirements of Subsection 703.09 - Aggregate for Hot Mix Asphalt

Pavement.

In surface and binder courses, aggregate for HMA may include RAP quantities up to 20 percent of total mix weight.

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	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

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.

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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.
- (2)** Design percent of asphalt binder material (type determined by type of mix) added to the aggregate (expressed as % by weight of total mix),
- (3)** Design proportion of processed RAP.
- (4)** Design temperature of mixture at point of discharge at paver.

- (5) Source of aggregate.
- (6) Grade of asphalt binder.
- (7) Test data used to develop job-mix formula.

Except for item (4) in this subsection, if design requirements are modified after the Engineer accepts job-mix formula, submit new job-mix formula before using HMA produced from modified mix design. Submit any changes to the design temperature of mixture at point of discharge for acceptance by the Engineer.

Submit a certificate of compliance for the asphalt binder, accompanied by substantiating test data from a certified testing laboratory.

(D) Range of Tolerances for HMA. Provide HMA within allowable tolerances of accepted job mix formula as specified in Table 401.02-4 - Range of Tolerances HMA. These tolerances are not to be used for the design of the job mix, they are solely to be used during the testing of the production field sample of the HMA mix.

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

The tolerances shown are the allowable variance between the physical characteristics of laboratory job mix submitted mix design and the production or operational mix, i.e., field samples.

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 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.

172 **2. Stockpiling Procedures.** Separate aggregate
173 for Mix II, Mix III and Mix IV into at least three stockpiles
174 with different gradations as follows: coarse,
175 intermediate, and fine. Separate aggregates for Mix V
176 into at least two stockpiles. Stockpile RAP separately
177 from virgin aggregates.

178
179 **3. Checking Aggregate Stockpile.** Check
180 condition of the aggregate stockpile often enough to
181 ensure that the aggregate is in optimal condition.
182

183 **(c) Batch and Continuous Mix Plants.**
184

185 **1. Hot Aggregate Bin.** Provide bin with three or
186 more separate compartments for storage of screened
187 aggregate fractions to be combined for mix. Make
188 partitions between compartments tight and of sufficient
189 height to prevent spillage of aggregate from one
190 compartment into another.
191

192 **2. Load Cells.** Calibrated load cells may be used in
193 batch plants instead of scales.
194

195 **(2) Hauling Equipment.** Use trucks that have tight, clean, smooth
196 metal beds for hauling HMA.
197

198 Thinly coat truck beds with a minimum quantity of non-stripping
199 release agent to prevent mixture from adhering to beds. Diesel or
200 petroleum-based liquid release agents, except for paraffin oil, shall not
201 be used. Drain excess release agent from truck bed before loading
202 with HMA.
203

204 Provide a designated clean up area for the haul trucks.
205

206 Equip each truck with a tarpaulin conforming to the following:
207

208 **(a)** In good condition, without tears and holes.
209

210 **(b)** Large enough to be stretched tightly over truck bed,
211 completely covering mix. The tarpaulin shall be secured in such
212 a manner that it remains stretched tightly over truck bed and
213 HMA mix until the bed is about to be raised up in preparation
214 for discharge.
215

216 **(3) Asphalt Pavers.** Use asphalt pavers that are:
217

- (a) Self-contained, power-propelled units.
- (b) Equipped with activated screed or strike-off assembly, heated if necessary.
- (c) Capable of spreading and finishing courses of HMA mixtures in lane widths applicable to typical section and thicknesses indicated in the contract documents.
- (d) Equipped with receiving hopper having sufficient capacity for uniform spreading operation.
- (e) Equipped with automatic feed controls to maintain uniform depth of material ahead of screed.
- (f) Equipped with automatic screed controls with sensors capable of sensing grade from outside reference line, sensing transverse slope of screed, and providing automatic signals to control screed grade and transverse slope.
- (g) Capable of operating at constant forward speeds consistent with satisfactory laying of mixture.
- (h) Equipped with a means of preventing the segregation of the coarse aggregate particles from the remainder of the bituminous plant mix when that mix is carried from the paver hopper back to the paver augers. The means and methods used shall be approved by the paver manufacturer and may consist of chain curtains, deflector plates, or other such devices and any combination of these.

The following specific requirements shall apply to the identified bituminous pavers:

1. **Blaw-Knox Bituminous Pavers.** Blaw-Knox bituminous pavers shall be equipped with the Blaw-Knox Materials Management Kit (MMK).
2. **Cedarapids Bituminous Pavers.** Cedarapids bituminous pavers shall be those that were manufactured in 1989 or later.

260 **3. Barber-Green/Caterpillar Bituminous Pavers.**

261 Barber-Green/Caterpillar bituminous pavers
 262 shall be equipped with deflector plates as
 263 identified in the December 2000 Service
 264 Magazine entitled "New Asphalt Deflector Kit
 265 {6630, 6631, 6640}".
 266

267 Bituminous pavers not listed above shall have similar
 268 attachments or designs that shall make them equivalent to the
 269 bituminous pavers listed above. The Engineer will solely
 270 decide if it is equal to or better than the setups described for the
 271 equipment listed above.
 272

273 Submit for review and acceptance, prior to the start of
 274 using the paver for the placing of plant mix, a full description in
 275 writing of the means and methods that will be used to prevent
 276 the bituminous paver from having both aggregate and
 277 temperature segregation. Use of any paver that has not been
 278 accepted is prohibited until acceptance of the paver is received
 279 from the Engineer. Any pavement placed with an unaccepted
 280 paver will be regarded as not compliant work and may not be
 281 paid for and may require removal.
 282

283 Supply a Certificate of Compliance that verifies that the
 284 manufacturer's approved means and methods used to prevent
 285 bituminous paver from having both aggregate and temperature
 286 segregation have been implemented on all pavers used on the
 287 project and are working in accordance with the manufacturer's
 288 requirements and Contract Documents.
 289

290 **(4) Rollers.** Rollers shall be self-propelled, steel-tired tandem,
 291 pneumatic-tired, or vibratory-type rollers capable of reversing without
 292 shoving or tearing the just placed HMA mixture. Provide sufficient
 293 number, sequencing, type, and rollers of sufficient weight to compact
 294 the mixture to required density while mixture is still in workable
 295 condition. Equipment shall not excessively crush aggregate. Operate
 296 rollers in accordance with manufacturer's recommendations and
 297 Contract Documents. The use of intelligent compaction is encouraged
 298 and may be required elsewhere in the Contract Documents.
 299

300 **(a) Steel-Tired Tandem Rollers.** Steel-tired tandem rollers
 301 used for initial breakdown or intermediate roller passes shall
 302 have minimum gross weight of 12 tons and shall provide
 303 minimum 250-pound weight per linear inch of width on drive
 304 wheel.
 305

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:

- (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.

(d) 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. 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.
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.

When requested temperature profile measurements shall be done in the presence of the Engineer.

Once adjustments are made, repeat measurement procedure for the next two placements to verify that material

placed by paver meets specified temperature requirements. Terminate paving if temperature profile requirements are not met during repeated measurement procedure. If equipment fails to meet requirements after measurement procedure is repeated once, replace equipment before conducting any further temperature profile measurements

The Engineer may perform surface temperature profile measurements at any time during project. The Engineer may in lieu of a hand-held infrared temperature device use an infrared camera or device that is capable of measuring temperatures to locate cold spots. If such cold spots exist, the Engineer may require adjustments to the MTV.

If bleeding or fat spots occur in the pavement adjust means and methods to eliminate such pavement defects and perform remedial repair to pavement acceptable to the Engineer. Bleeding is defined as excess binder occurring on the surface of the pavement. It may create a shiny, glass-like, reflective appearance and may be tacky to the touch. Fat spots are localized bleeding.

(d) Transport.

1. Trailered MTV. Transport MTV by means of truck-tractor/trailer combination in accordance with Chapter 104 of Title 19, Department of Transportation, entitled "The Movement by Permit of Oversize and Overweight Vehicles on State Highways".

2. Crossing Bridges for Self-Powered MTV. When self-powered MTV exceeds legal axle or total weight limits for vehicles under the HRS, Chapter 291, conform to the following when crossing bridges within project limits unless otherwise indicated in the Contract Documents:

- a.** Completely remove mix from MTV.
- b.** Move MTV at relatively constant speed not exceeding 5 miles per hour. MTV will not be 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, 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 aggregate. When dry, aggregate shall not contain more than 1 percent moisture by weight.

For batch plants, screen aggregates immediately after heating

and drying into three or more fractions. Convey aggregates into separate compartments ready for batching and mixing with asphalt binder.

(3) Mixing. Measure aggregate and asphalt; or aggregate, RAP, and asphalt into mixer in accordance with an accepted job-mix formula. Mix until components are completely mixed and adequately coated with asphalt binder in accordance with AASHTO M 156. Percent of coated particles shall be 95 percent when tested in accordance with AASHTO T 195.

(4) Plant Inspection. For control and acceptance testing during periods of production, provide a testing laboratory that meets the requirements of AASHTO M 156. Provide space, utilities, and equipment required for performing specified tests.

(E) Spreading and Finishing. Prior to each day's paving operation, check screed or strike-off assembly surface with straight edge to ensure straight alignment and there is no damage or wear to the machine that will affect performance. Provide screed or strike-off assembly that produces finished surface without tearing, shoving, and gouging HMA. Discontinue using spreading equipment that leaves ridges, indentations, or other marks, or combination thereof in surface that cannot be eliminated by rolling or affects the final smoothness of the pavement or be prevented by adjustment in operation.

Maintain HMA at minimum 250 degrees F temperature at discharge to paver. The Engineer shall observe the contractor measuring the temperature of mix in hauling vehicle just before depositing into spreader or paver or MTV.

Deposit HMA in a manner that minimizes segregation. Raise truck beds with tailgates closed before discharging HMA.

Lay, spread, and strike off HMA upon prepared surface. Where practical, use asphalt pavers to distribute mixture.

Where practical, control horizontal alignment using automatic grade and slope controls from reference line, slope control device. Existing pavements or features shall not be used for grade control alone.

Obtain sensor grade reference, horizontal alignment by using established grade and slope controls. For subsequent passes, substitution of one ski with joint-matching shoe riding on finished adjacent pavement is acceptable. Use of a comparable non-contact mobile reference system and joint matching shoe is acceptable.

Avoid stop-and-go operation. Maintain a constant forward speed of

paver during paving operation and minimize other methods that impact smoothness.

Offset longitudinal joint in successive lifts by approximately 6 inches. Incorporate into paving method an overlap of material of 1-inch +/- 0.5 inches at the longitudinal joint. The HMA overlap material shall be left alone when initially placed and shall not be bumped back or pushed back with a lute or any other hand-held device. If the overlap exceeds the maximum amount, remove the excess with a flat shovel, allowing recommended amount of overlap HMA material to remain in place to be compacted. Do not throw the removed excess HMA material on to the paving mat. The longitudinal joint in a surface course when total roadway width is comprised of two lanes shall be near the centerline of pavement or near lane lines when roadway is more than two lanes in width. The longitudinal joint shall not be constructed in the wheel path or under the longitudinal lane lines. Make a paving plan drawing showing how the longitudinal joint will not be located in these areas.

Control the horizontal alignment of the longitudinal edge of the HMA mat being installed so that the edge is parallel to the centerline or has a uniform alignment, e.g., the edge of the mat is straight line or uniform curve, no wavy edge, etc. to have a consistent amount of HMA material at the joint.

Check the compaction of the longitudinal joint during paving often enough to ensure that it will meet the compaction requirements.

If nuclear gauges and ground penetrating radar are used as the contractor's quality control method, they shall be properly calibrated and periodically checked by comparison to cores taken from the pavement. The use of sand as an aid in properly seating the gauge may also be considered for improving the accuracy of the gauge.

In areas where irregularities or unavoidable obstacles make use of mechanical spreading and finishing equipment impracticable, spread, rake, and lute mixture by hand tools. For such areas, deposit, spread evenly, and screed mixture to required compacted thickness.

Demonstrate competence of personnel operating grade and crown control device before placing surface courses. If automatic control system becomes inoperative during the day's work, the Engineer will permit the Contractor to finish day's work using manual controls. The Engineer may also allow additional HMA to be ordered and placed using manual controls if it will provide a safer work site for the public to travel through. Do not resume work until automatic control system is made operative. The Engineer may waive requirement for electronic screed control device when paving gores, shoulders, transitions, and miscellaneous reconstruction areas where the use of the devices is not practical.

When production of HMA can be maintained and when practicable, use pavers in echelon shall be used to place surface course in adjacent lanes.

At the end of each workday, HMA pavement that is open to traffic shall not extend beyond the panel of the adjacent new lane pavement by more than the distance normally placed in one workday. At end of each day's production, construct tapered transitions along all longitudinal and transverse pavement drop-offs; this shall apply to areas where existing pavement is to meet newly placed pavement. Use slopes of 6:1 for longitudinal taper transitions and 48:1 for transverse tapered transitions. Maximum drop-off height along the joints shall be 2 inches. Also, using a 48:1 slope provides a taper around any protruding object, e.g., manholes, drain boxes, survey monuments, inlets, etc., that may be above pavement surface when opened to the public. If the object is below the surface of the pavement then fill the depression until it is level with the surrounding pavement or raise depressed objects to the finish grade of the placed pavement. Remove and dispose of all transition tapers before placing adjoining panel or next layer of HMA. Notify traveling public of pavement drop-offs or raised objects with signs placed in every direction of traffic that may use and encounter pavement drop-offs or protruding objects or holes.

Use the same taper rates for areas where there is a difference in elevation due to construction work.

At end of each workweek, complete full width of the roadway's pavement, including shoulders, to same elevation with no drop-offs.

(F) Compaction. Immediately after spreading and striking off HMA and adjusting surface irregularities, uniformly compact mixture by rolling.

Initiate compaction at highest mix temperature allowing compaction without excessive horizontal movement. Temperature shall not be less than 220 degrees F.

Finish rolling using tandem roller while HMA temperature is at or above 175 degrees F.

On superelevated curves, begin rolling at lower edge and progress to 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 surface with minimum of two roller passes. A roller pass is defined as one trip of the roller in one direction over any one spot.

For intermediate rolling, roll entire surface with minimum of four passes of roller.

Finish rolling using steel-tired, tandem roller. Continue rolling until entire surface has been compacted with minimum of three passes of roller, and roller marks have been eliminated.

Do not use rollers that will excessively crush aggregate.

(3) HMA Pavement Courses One and a Half Inches Thick or Greater In Special Areas Not Designated For Vehicular Traffic.

For areas such as bikeways that are not part of roadway and other areas not subjected to vehicular traffic, compact to not less than 90.0 percent of maximum specific gravity determined in accordance with AASHTO T 209, modified by deletion of Supplemental Procedure for Mixtures Containing Porous Aggregate. Increase asphalt content by at least 0.5 percent above that used for HMA pavements designed for vehicular traffic. Paved shoulders shall be compacted in the same manner as pavements designed for vehicular traffic.

(G) Joints, Trimming Edges and Utility Marking. At HMA pavement connections to existing pavements, make joints vertical to depth of new pavement. Saw cut existing pavement and cold plane in accordance with Section 415 - Cold Planing of Existing Pavement to depth equal to thickness of surface course or as indicated in the Contract Documents.

At HMA connections to previously placed lifts, form transverse joints by cutting back on previous run to expose full depth of course. Dispose of material trimmed from edges. Protect end of freshly laid mixture from rollers.

Before and after paving, identify and mark location of existing utility manholes, valves, and handholes on finished surface. Adjust existing frames and covers and valve boxes to final pavement finish grade in accordance with Section 604 - Manholes, Inlets and Catch Basins and Section 626 - Manholes and Valve Boxes for Water and Sewer Systems.

(1) Longitudinal joints. Submit for review the means and methods that will be used to install longitudinal joints at the required compaction and density. Compact longitudinal joints to be not less than 91.0 percent of the maximum specific gravity determined in accordance with AASHTO T 209, modified by deletion of Supplemental Procedure for Mixtures Containing Porous Aggregate. Verify the compaction of the longitudinal joints meets requirements by using non-destructive testing methods during paving and submit the results on the daily quality control test reports.

Test for compaction and density regardless of layer thickness. Compaction and density of the longitudinal joint shall be determined by using six-inch diameter cores. For longitudinal joints made using butt joints cores

shall be taken over the joint with half of the core being on each side of the joint. For longitudinal joints using notched wedge joints, center core over the center of the wedge so that 50 percent of the material is from the most recently paved material and the remaining 50 percent of the core is from the material used to pave the previous layer. One core shall be taken at a maximum frequency of every 1,500 lineal feet (LF) of the second side of the longitudinal joint and any fraction of that length for each day of paving with a minimum of one core taken for each longitudinal joint per day. Cores taken for the testing of the longitudinal joint may be used to determine pavement thickness.

When the longitudinal joints are found to have less than 91.0 percent of the maximum specific gravity, overband all longitudinal joints within the entire lot represented by the non-compliant core, PG binder seal coat, or other type of joint enrichment accepted by the Engineer. The overband shall not decrease the skid resistance of the pavement under any ambient weather condition. Submit overband material's catalog cuts, test results and application procedure for review and acceptance by the Engineer before use. Center the overband over the longitudinal joint. The overband shall be placed in a uniform width and horizontal alignment. The overband shall have no holidays or streaking in its placement. The width of the overband shall be based on how the longitudinal joint was constructed or as directed by the Engineer. If a butt joint is used, the overband width shall be a minimum of 12-inches. For notch wedge or wedge joints the overband width shall be the width of the wedge plus an additional six-inches minimum. Replace any pavement markings damaged or soiled by the overband remedial repair process.

For longitudinal joints that have a compaction of less than 89 percent of the maximum specific gravity; removal may be required by the Engineer instead of overbanding the non-compliant joint.

Persistent low compaction results may be cause to suspend work and remove non-conforming work. During the suspension of paving, revise means and methods used in constructing longitudinal joints and submit to the Engineer for review and acceptance. Suspension may occur when:

- (1) Two or more longitudinal joints tests fail to meet the minimum compaction
- (2) One sample reveals that the joint compaction is 89 percent or less.

805 **(H) HMA Pavement Samples.** Obtain test samples from compacted
806 HMA pavement within 72 hours of lay down. Provide minimum 4-inch
807 diameter cores consisting of undisturbed, full-depth portion of compacted
808 mixture taken at locations designated by the Engineer in accordance with the
809 "Sampling and Testing Guide for Acceptance and Verification" in Hawaii DOT
810 Highways Division, *Quality Assurance Manual for Materials*, Appendix 3.
811 Cores shall be taken in the presence of the Engineer. Turn cores over to
812 Engineer immediately after cores have been taken.

813
814 For pavement samples for longitudinal joints provide 6-inch diameter
815 cores minimum. For pavement samples for other than longitudinal joints
816 4-inch diameter cores minimum shall be taken. All cores shall consist of
817 undisturbed, full-depth of the lift of the compacted mixture taken at locations
818 designated by the Engineer in accordance with the "Sampling and Testing
819 Guide for Acceptance and Verification" in Hawaii DOT Highways Division,
820 *Quality Assurance Manual for Materials*, appendix 3.

821
822 Cores that separate shall indicate to the Engineer that there is
823 insufficient bonding of layers. Modify the previously used paving means and
824 methods to prevent future debonding of layers. Debonding of a core sample
825 after adjustment of the Contractor's methods will be an indication of
826 continued non-conforming work and the Engineer may direct removal of the
827 layer at no additional cost or contract time.

828
829 Restore HMA pavement immediately after obtaining samples. Clean
830 core hole and walls of all deleterious material that will prevent the complete
831 filling of the core hole and the bonding of the new HMA to the existing. Apply
832 tack coat to vertical faces of sample holes. Fill sampled area with new HMA
833 pavement of same type as that removed. If hand compaction is used; fill in
834 layers not exceeding the minimum thickness stated in Table 401.02-1 - Limits
835 of Compacted Lift Thickness And Asphalt Content. Compact each layer to
836 compaction requirements. If Mechanical Compaction methods are used, then
837 layers may be the maximum layer thickness stated in Table 401.02-1 - Limits
838 of Compacted Lift Thickness And Asphalt Content. Using tires or hand
839 tamping to compact the HMA material to restore the pavement shall not be
840 considered as mechanical compaction.

841
842 Only sample and test leveling course if 1-1/2 inches or greater. No
843 compaction requirements for less than 1-1/2 inches.

844
845 **(I) HMA Pavement Thickness Tolerances.**

846
847 Thickness of finished HMA pavement shall be within 0.25 inch of
848 thickness indicated in the Contract Documents. Pavement not meeting the
849 thickness requirements of the Contract Documents may be required by the
850 Engineer to be removed and replaced.

Corrective methods taken on pavement exceeding specified tolerances, e.g., insufficient thickness by methods accepted by the Engineer, including removal and replacement, shall be at no increase in contract price or contract time.

The checking of pavement thickness shall be done after all remedial repairs, e.g., smoothness compliance repairs, compaction, have been completed, reviewed, and accepted by the Engineer.

(J) Quality Control Using New Technology. The Engineer and MTRB reserves the right to utilize new technology and methods to improve the detection of noncompliant work on the project. The technology or method may be used to locate defects in the work, e.g., ground penetrating radar to locate delaminations, moisture damage, thin sections, voids, non-compliant compaction, other non-destructive testing to locate flaws. The defect will be verified by the methods stated in the Contract Documents or by other established conventional means. If the technology or method has already been accepted elsewhere or has standardized testing procedures the results may be judged acceptable by the Engineer and no further testing will be required. These new technologies and methods may be used for the selection of sampling locations.

(K) Protection of HMA Pavement. Except for construction equipment directly connected with paving operations, keep traffic off HMA pavement.

Protect HMA pavement from damage until it has cooled and set.

Do not refuel equipment or clean equipment or hand tools over paved surfaces unless catch pan or device that will contain spilled fuel and other products is provided. After completion of refueling or cleaning, remove catch pan or device without spilling any of the collected content.

Do not park roller or other paving equipment on HMA pavement paved within 24 hours of laydown.

(L) Pavement Joint Adhesive

(1) Pavement Joint Adhesive on Joints. Use on all asphalt pavement construction where joints are formed at such locations but not limited to the following:

(a) Adjacent asphalt pavements, e.g., trafficked lanes, shoulders, etc.

(b) Asphalt pavement and adjacent concrete pavement or

curb and gutter or any other surface where the bonding of the asphalt pavement and concrete surface is desired,

(c) Transverse joints between asphalt pavements not placed at the same time or if the pavement's temperature on one side of the joint is below the minimum temperature the mix can be at, during asphalt pavement compaction or installation.

(d) Cut face of an existing pavement where it will have new HMA pavement placed against it, e.g., utility trenches, partial or full depth repairs, etc.

Pavement joint adhesive is not required on a longitudinal construction joint between adjacent hot mix asphalt pavements formed by echelon paving. Echelon paving is defined as paving multiple lanes side-by-side with adjacent pavers slightly offset at the same time.

A longitudinal construction joint between one shift's work and 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

(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 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 from the application wand during the first 20 minutes of placing sealant. One sample should be taken per manufacturer's batch or minimum of every 6 months on the Project in the presence of the Engineer.

Each sample shall consist of one quart in an aluminum or steel sample container. The sampling container 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. 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.

(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 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 10-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.

The finished pavement shall comply to all the following requirements:

(a) Smoothness Test using 10-Foot Straightedge (Manual or rolling) The 10-foot straightedge is used to identify the locations that vary more than 3/16 inch from the lower edge when the 10-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 3/16 inch tolerance by grinding.

The Contractor shall use a 10-foot straightedge for the following locations:

1. Longitudinal profiling parallel to centerline, when within 15 feet of a bridge approach or existing pavement which is being joined.
2. Transverse profiling of cross slopes, approaches, and as otherwise directed. Lay the straightedge in a direction perpendicular to the centerline.

3. 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.

4. Short pavement sections up to 600 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.

5. 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.

6. 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.

7. At miscellaneous areas of improvement where width is less than 11 feet, such as medians, gore areas, and shoulders.

8. As otherwise directed by the Engineer. 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.

Areas of localized roughness will be identified by using ProVAL's "Smoothness Assurance" analysis, calculating IRI with a continuous short interval of 25 feet and the 250-mm filter applied.

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 target MRI values. MRI values shall meet requirements as specified in Table 401.03-2 – Pavement Smooth Categories.

TABLE 401.03-2 – PAVEMENT SMOOTHNESS CATEGORIES		
Category	Description	MRI
Type A	Three or more opportunities for improving ride	Shall not exceed 60 in/mi
Type B	Two opportunities for improving ride	Shall not exceed 70 in/mi
Type C	One opportunity for improving ride	Shall not exceed 75 in/mi

An opportunity for improving ride is considered as one (1) lift of asphalt pavement, including but not limited to HMAB, HMA, PMA, and SMA.

For the location where a 10-foot manual straightedge is required, the surface shall not vary more than 3/16 inch from the lower edge of a straightedge.

No pre-final inspection, final inspection, and substantial completion granted will be made until the pavement meets smoothness requirement and all required profile reports are submitted to the Engineer and MTRB and are accepted.

(O) Request for Profile Testing by the Department.

For Type C, prior to pavement activities, the Engineer will measure the smoothness of the existing pavement.

The Contractor shall submit a written request to the Engineer to perform all required profile tests.

The request shall be made at least 30 days before desired testing date and shall include an approximate acceptance profile testing date, a plan view drawing of the area to be tested with the limits of the test area highlighted.

The Contractor shall reimburse HDOT for any incurred cost related to any Contractor-caused cancellation or a deduction to the monthly payment will be made.

(P) Department Requirements for Profile Testing. When a request for testing is made, the requested area to be tested shall be 100% of the total area indicated to be paved in the Contract Documents unless the requirement is waived by the Engineer and MTRB.

Clean debris and clear obstructions from area to be tested, as well as a minimum of 100 feet before and beyond the area to be tested before testing starts for use as staging areas. Provide traffic control for all profile testing.

The Engineer or MTRB or both may cancel the profile testing if the test area is not sufficiently clean, traffic control is unsatisfactory, or the area is not a safe work environment or test area does not meet Contract Document requirements. This canceled profile test will count as one profile test.

(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) Corrective work shall be required for any 25 ft interval with a localized roughness in excess of 160 in/ mi. 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 10-ft. straightedge the area around that manhole or other similar appurtenance shall not have

more than 3/16-in. variation between any 2 contacts on the straightedge.

If corrective action is not successful, the Engineer may require continued corrective action, or apply a payment adjustment of \$250 per occurrence.

(2) Corrective work shall also be required for any 0.1 mile interval with an average MRI above 95.0 in/mi for Types A and B. For Type A, correct the deficient section to an MRI of 60 in/mi or less. For Type B, correct the deficient section to an MRI of 70 in/mi or less. For Type C, corrective work may be required by the Engineer for 0.1 mile intervals that have an average MRI above the threshold shown in Table 401.03-4 Smoothness Pavement Incentives and Table 401.03 as applicable.

If corrective action does not produce the required improvement, the Engineer may require continued corrective action, or apply payment adjustment as shown in Table 401.03-4-Smoothness Pay Disincentives With MRI and Table 401.03-5-Smoothness Disincentives for Percent Improvement.

(3) 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.

(4) 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.

(5) The remedial repair areas shall be neat, rectangular areas having a uniform surface appearance.

(6) If grinding is used on HMA pavement, the surface shall have nearly invisible grinding marks to passing motorist.

(7) 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.

(8) The finished repaired pavement surface shall leave no ridges or valleys or fins of pavement other than those allowed below.

(9) Remedial repairs shall not leave any drainage structures' inlets higher than the surrounding pavement or alter the Contract Document's drainage pattern.

(10) 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.

(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) Complete corrective work before determining pavement thickness for HMA pavements in accordance with Subsection 401.03(I) – HMA Pavement Thickness Tolerances.

(13) 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.

(14) Recompacting cold HMA, i.e., HMA that has reached ambient temperature is not an acceptable remedial repair method.

(15) Replace all pavement markings damaged or discolored by remedial repairs.

(16) Reprofile the corrected area and provide the Engineer the results that show the corrective action, i.e., remedial repairs were successful.

(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.

TABLE 401.03-3 –SMOOTHNESS PAY INCENTIVES		
Category	MRI (in/mi)	Pay Adjustment \$ per 0.1 mi
Type A	<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
Type B	<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
Type C	<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

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(3) Pay Pavement Smoothness Adjustment will be based on the initial measured MRI for both left and right wheel path, prior to any corrective work for the 0.10-mile section, except for sections that the Contractor has chosen to remove and replace. For sections that are replaced, assessments will be based on the MRI determined after replacement.

(a) The Pavement Smoothness Adjustment will be computed using the plan surface area of pavement shown in the Contract Documents. This Pavement Smoothness Adjustment will apply to the total area of the 0.10-mile section for the lane width represented by MRI 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 determine the amount of adjustment to be made to the contract price. Sections shorter than 0.1 mile and longer than 50 feet shall be prorated.

(b) For 0.1 mile intervals with an average MRI above the threshold shown in Table 401.03-3-Smoothness Pay Incentives, the Engineer shall apply a disincentive payment adjustment up to the limit shown.

i. For Types A and B, payment adjustments shall be applied up to an MRI of 95.0 per Table 401.03-4 Smoothness Pay Disincentives With MRI.

ii. For Type C, the payment adjustment shall be dependent on the average MRI of the pavement prior to paving activities

1. If the MRI of the pavement prior to paving activities is 125.0 in/mi or less, the payment adjustment shall be per Table 401.03-4 Smoothness Pay Disincentives With MRI.

2. If the MRI of the pavement prior to paving activities is more than 125.0 in/mi, the disincentive payment adjustment shall be per Table 401.03-5 Smoothness Pay Disincentives for Percent Improvement, and based on the percent improvement using the following formula:

$$\% \text{ Improvement} = (\text{Initial segment MRI} - \text{Final segment MRI}) \times 100 / (\text{Initial Segment MRI})$$

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TABLE 401.03-4 –SMOOTHNESS PAY DISINCENTIVES WITH MRI		
Category	MRI (in/mi)	Pay Adjustment \$ per 0.1 mi
Type A	60.0- less than 70.0	-\$100
	70.0- less than 75.0	-\$250
	75.0- less than 80.0	-\$350
	80.0- less than 85.0	-\$450
	85.0- less than 95.0	-\$550
	> 95.0	Corrective Work
Type B	70.0- less than 75.0	-\$100
	75.0- less than 80.0	-\$200
	80.0- less than 85.0	-\$300
	85.0- less than 95.0	-\$400
	> 95.0	Corrective Work
Type C (pre-paving MRI < 125)	75.0- less than 80.0	-\$50
	80.0- less than 85.0	-\$100
	85.0- less than 90.0	-\$150
	90.0- less than 100.0	-\$200
	>100.0	-\$250

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TABLE 401.03-5 –SMOOTHNESS PAY DISINCENTIVES FOR PERCENT IMPROVEMENT		
Category	Percent Improvement %	Pay Adjustment \$ per 0.1 mi
Type C	≥ 40	\$0
(pre-paving MRI > 125)	20.0- less than 40.0	-\$100
	< 20	-\$200

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(c) Incentives will not apply to areas where payment deductions or remedial repairs 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, unless the pavement section was

replaced. All areas where corrective work was performed shall be tested again to ensure the smoothness requirements are met.

(d) 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 type of pavement on the project has failed to meet any of the Contract document requirements, e.g., smoothness, thickness, unit weight, asphalt content, pavement defects, compaction, flexural or compressive strength. Areas exempt from the smoothness requirements may not be included in the total area calculation unless it is non-compliant.

(e) For contracts using lump sum the method described in Subsection 104.06 Methods of Price Adjustment paragraph (3), will be used to calculate proportionate unit price, i.e., the Engineer's calculated theoretical unit price. This calculated proportionate unit price will be used to calculate the unit price adjustment.

401.04 Measurement.

(A) The Engineer will measure PMA pavement per ton in accordance with the Contract Documents.

(B) Engineer will measure additional State pavement profiling work when applicable on a cost-plus basis as specified in this section and as ordered by Engineer. The Engineer will issue a billing for the pavement profile work done for the time period with the invoices and receipts that the billing was based on attached to the Contractor for each contract item. The Contractor's pavement profile work required in this section will not be measured and will be considered incidental to the various paving items unless stated otherwise.

401.05 Payment. The Engineer will pay for the accepted PMA pavement 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.

(A) Price and payment in Section 401 – HMA Pavement will be full compensation for all work and materials specified in this Section including furnishing all labor, materials, tools, equipment, testing, pavement profiles and incidentals and for doing all work involved in grinding existing or new pavement, removing residue, and cleaning the pavement, including necessary disposal of residue and furnishing any water or air used in cleaning the pavement and remedial work needed to conform to the

requirements of the Contract Documents.

(B) No payment for the Contractor's pavement profile work required in this section will be made. The Contractor's pavement profile work shall be considered incidental to the various paving items unless stated otherwise.

(C) Engineer will pay or deduct for the following pay items when included in proposal schedule:

Pay Item	Pay Unit
Pavement Smoothness Incentive	Allowance
PMA Pavement, Mix No. IV (with PG 64E-22)	Ton

(1) 70% of the contract unit price or the theoretical calculated 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.

(2) 20% of the contract unit price or the theoretical calculated 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 compaction acceptance. Maintain temporary pavement markings and other temporary work zone items, maintain a clean work site.

(3) 10% of the contract unit price or calculate the unit price when the final configuration of the pavement markings is in place.

The Engineer will pay for adjusting existing frames and covers and valve boxes in accordance with and under Section 604 – Manholes, Inlets and Catch Basins. Adjustments for existing street survey monument frames and covers will be paid for as if each were a valve box frame and cover.

The Engineer may, at his sole discretion, use the sliding scale factor as specified in Table 401.05-1 – Sliding Scale Pay Factor for Compaction to accept HMA pavements compacted between 90.0 percent and 98.0 percent. If the sliding scale factor is used, the Engineer will make payment for the material in that production day at a reduced price by multiplying the contract unit price by the pay factor. The Engineer is not obligated to allow non-compliant work to remain in place and may choose to require removal of the pavement that is less than 93.0 percent or greater than 97.0 percent.

Removal of non-compliant pavement shall be in accordance with Subsection
105.12 Removal of Non-Conforming and Unauthorized Work.

Table 401.05-1 – 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

END OF SECTION 401”

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(I) Amend **Section 415.04 Measurement**, from line 67 to 68 to read as follows:

(II) Amend Section 415.05 Payment, from line 70 to 79 to read as follows:

The Engineer will pay for one of the following pay items when included in the proposal schedule:

Pay Item	Pay Unit
Cold Planing	Square Yard
(1) 80 percent of the contract bid price upon completion of removing the indicated thickness and clean and sweep before opening to public traffic; (2) 20 percent of the contract bid price upon completion of removing the material and disposing of the removed material.”	

END OF SECTION 415

Amend Section 503 – Concrete Structures to read as follows:

"SECTION 503 - CONCRETE STRUCTURES

503.01 Description. This section describes the construction of concrete bridges, grade separations, box culverts, head walls, retaining walls, and other concrete structures.

503.02 Materials.

Structural Concrete	601
Reinforcing Steel	602
Glass Fiber Reinforced Polymer Rebar	670
Joint Filler	705.01
Joint Sealer	705.04
Flashing Compound	705.05
Waterproofing	705.06
Waterstops	705.07
Roofing Felt	705.13
Dowels	709.01(E)
Curing Materials	711.01
Admixtures	711.03
Bearing Devices and Related Materials	712.09
Grout	712.04

Concrete materials and production methods must be selected so that the concrete temperature at delivery complies with the specified temperature limits. Ensure that the materials, means, and methods used prevent plastic shrinkage cracks from forming.

All concrete must comply with the concrete CO₂ footprint reduction requirements of Section 601 – Structural Concrete.

47 **503.03 Construction.**

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49 **(A) Foundation.** Excavate and backfill foundations in accordance with
50 Section 205 - Excavation and Backfill for Bridge and Retaining Structures,
51 Section 206 – Excavation and Backfill for Drainage Facilities, and as
52 indicated in the Contract Documents.
53

54 The elevation of the bottom of the footings shown is approximate only.
55 Upon completion of excavation work, request that the Engineer inspect the
56 foundation excavation. The Engineer may order changes in dimensions or
57 elevations of footings as may be necessary to secure a satisfactory
58 foundation.
59

60 Backfill unauthorized excavation made below required footing
61 elevation or beyond lines shown, with Class D concrete. When the foundation
62 requires redesign because of unauthorized excavation, the Contractor must
63 engage the services of a Hawaii Licensed Structural Engineer to prepare
64 detailed drawings of a redesigned footing. Submit a redesign proposal and
65 after the Engineer reviews and accepts the proposal, construct redesigned
66 foundation at no additional increase in the contract price or contract time.
67 Claim for delay or additional cost resulting from foundation redesign will not
68 be allowed. The State will deduct costs to review the redesign from the
69 Contractor.
70

71 Place pilings in accordance with Section 505 - Piling. Place drilled
72 shafts in accordance with Section 511 – Drilled Shafts.
73

74 **(B) Falsework, Formwork, or Centering.** Falsework, or centering is
75 temporary construction work on which other work is wholly or partially
76 supported until permanent construction is strong enough to support itself.
77 This includes form lining and sheathing, as well as necessary supporting
78 members, hardware, and bracing. Formwork is a temporary structure or mold
79 used to retain the plastic fluid concrete in its designated shape until it
80 hardens. Formwork must have enough strength to resist the fluid pressure
81 exerted by plastic concrete and any additional fluid pressure effects
82 generated by vibrations.
83

84 Submit falsework and centering erection plans including soil bearing
85 value, stress sheets, superstructure placing diagram and sequence,
86 falsework and centering removal procedures, and design calculations for
87 falsework and centering, as a complete package, stamped and signed by a
88 Hawaii Licensed Structural Engineer. Submit manufacturer's certificates or
89 perform tests, as necessary, to demonstrate the adequacy of devices
90 proposed for use or to verify design assumptions.
91

92 Do not start falsework, formwork, or centering construction until the

Engineer has accepted drawings and calculations. Acceptance of drawings or inspections of the system by the Engineer does not relieve the Contractor from the responsibility of results obtained by using such drawings and calculations.

Use AASHTO Guide Design Specifications for Bridge Temporary Works for the design of Falsework, Formwork, or Centering. For allowable stresses not specified in AASHTO, the Contractor's structural engineer may use UBC/ICBO industry specifications or codes upon acceptance. Avoid cantilevered falsework members. Limit maximum deflection due to the weight of dead and live loads to 0.4 percent of the span. Provide camber strips to compensate for deflections or other movements greater than 1/4 inch.

Take the length of spans to be the smaller of the center-to-center distance between supports or clear span plus member depth. Design formwork for the bottom slab of box girders to carry dead and live loads of both top and bottom slabs, as well as loads of webs, unless calculations indicate the bottom slab is to carry loads of top slabs temporarily imposed upon it.

Arrange a falsework system so that loads imposed produce symmetrical and approximately equal reactions. Submit falsework soil pressure, pile capacity, and ground preparation, with supporting data and documentation. Show these items on working drawings. When structures cross over waterways and other flood-prone areas, use special consideration in the design of supporting falsework to prevent the reduction in support capacity due to the effects of flood and standing water.

The design load for falsework or centering includes dead and live vertical loads, slope load of the structure, and lateral loads. The minimum vertical live load to be used in the design is 50 pounds per square foot of surface area plus 150 pounds per linear foot, applied at the outside edge of cantilevered members. Add minimum vertical live load to the actual weight of required construction equipment. Use minimum lateral load in design to be the greater of either 3 percent of total dead load or 150 pounds per linear foot. Apply minimum lateral load at the top surface of falsework support.

When falsework, scaffolding, or work is over or adjacent to existing roadways, install the aforementioned to withstand vehicle impact. Maintain falsework, scaffolding, or work until its removal. Temporary bracing shall be provided, as necessary to withstand all imposed loads during erection, construction and removal of falsework. When the aforementioned is within the clear zone install a barrier system with appropriate deflection and of sufficient length with a terminal impact attenuator. Both must have successfully passed a MASH TL-3 crash test. The falsework, formwork, centering, working platform, or work must be constructed so it does not allow

any objects, e.g., water, debris, dust, tools, or material to fall on the traveling public, pedestrians, roadway, roadside, etc.

Show stresses and deflection of load supporting members in design calculations. Show anticipated total settlements of falsework and forms on falsework drawings, including falsework footing pressure and settlement, and joint take-up. Construct deck slab form between girders with no allowance for settlement relative to girders. Do not exceed 1 inch for anticipated settlements of falsework. Provide tell-tales attached to soffit forms, readable from the ground, at sufficient locations to determine total settlements and deflections resulting from concrete placement. Check for any movement or deformation of forms and falsework that may exceed the calculated or anticipated deflection or settlement. If the movement or deformation is exceeded, take appropriate action. This action may include halting concrete placement to install additional bracing or changing the rate or sequence of concrete placement to achieve the required lines and grade. Discontinue concrete placement when settlements deviate more than $\pm 3/8$ inch from those indicated on falsework drawings. In such affected areas, provide corrective measures prior to initial set of concrete. Remove unacceptable concrete.

In designing falsework and centering, assume the weight of 160 pounds per cubic foot for concrete. Design and construct falsework to provide the necessary rigidity and to support loads without appreciable settlement or deformation. Use screw jacks or hardwood wedges to take up settlement in formwork either before or during the placement of concrete. Design falsework for support of superstructure to support loads that would be superimposed as if the entire superstructure were placed at once. Design vertical falsework members supporting spans with a single hinge, or double hinges within a span, for twice tributary falsework requirements at a distance of 10 feet on each side of hinges, measured parallel to the centerline of the girder. Apply requirements to conventionally reinforced and prestressed concrete structures. Design falsework for prestressed concrete structures for additional loads caused by prestressing.

Place falsework or centering upon footing safe against undermining and softening when footing-type foundations are to be used. Show the bearing value of soil in shop drawings of falsework or centering.

When used; space, drive, and remove falsework piling as accepted by the Engineer. Set falsework to give finished structure camber specified. Construct arch centering in accordance with centering plans accepted by the Engineer. Make provisions for the gradual lowering of centers and for rendering the arch self-supporting. Use jacks to correct slight settlements that may occur during the placement of concrete.

185 In the design of bottom slab plywood forms and timber joists for
186 concrete box girders, top slab loads may be omitted when placing the top
187 slab separately from the webs and bottom slab.
188

189 If the lost post method of concrete box girder deck forming is used, 2
190 by 6 continuous mudsills beneath posts will not be required when 2 by 4 or
191 smaller timber posts, with soft wood wedges, are used for supports.
192

193 Use manufactured items complying to AASHTO standards. When
194 items are not covered by AASHTO, use standards of nationally known
195 organizations such as AISC for steel, ACI for concrete, and NFPA for lumber.
196 In all cases, furnish data listing the manufacturer's design criteria complying
197 to design specifications and recommendations, or perform tests, as
198 necessary, to show the adequacy of the proposed device.
199

200 Install falsework lighting in accordance with Section 633 – Falsework
201 Lighting.
202

203 Stay-in-place formwork shall not be allowed, except for the top slabs
204 of box girders, unless approved by the Engineer.
205

206 **(C) Forms.**

207
208 **(1) Construction.** Use wood or metal forms that are impervious to
209 moisture, non-staining to concrete, mortar tight and sufficiently rigid to
210 prevent distortion due to pressure of concrete and other loads,
211 including vibration, incidental to construction. Construct and maintain
212 forms to prevent joints from opening. Formwork joints shall be filled
213 with approved material that is impervious to moisture, will not stain
214 concrete, and produces tight joints.
215

216 Unless otherwise indicated in the contract documents, place
217 minimum 3/4 inch by 3/4 inch chamfer at sharp edges of exposed
218 concrete surfaces. Give girder and coping forms bevels or drafts to
219 ensure easy removal.
220

221 Set and maintain forms true to lines designated. When forms
222 appear to be unsatisfactory, either before or during concrete
223 placement, the Engineer may stop work until defects are corrected.
224

225 When forms are submerged in water and concrete is placed in
226 the dry, make forms watertight below high water level.
227

228 Cover knotholes and damaged areas in wood forms with metal
229 patches.
230

Control rate of depositing concrete in forms to prevent form deflection or form panels that exceed permitted deflections. When structure height is greater than 6 feet, submit the rate of depositing concrete.

Use forms for concrete surfaces not completely enclosed or hidden below the permanent ground surface that complies with requirements, in this subsection, for exposed-surface forms. Interior surfaces of underground drainage structures will be considered completely enclosed surfaces.

Before using forming systems for exposed surfaces, submit form design and materials data for each system.

Design and construct forms for exposed concrete surfaces so that the formed surface of concrete does not undulate excessively between studs, joists, form stiffeners, form fasteners, or walls. Undulations exceeding either 3/32 inch or 1/270 of the center-to-center distance between studs, joists, form stiffeners, form fasteners, or walls will be considered to be excessive. The Engineer will reject portions of concrete structure with surface undulations over limits specified herein. The Engineer will stop the use of the forms or forming systems which produce a concrete surface with excessive undulations until the Contractor makes modification acceptable to the Engineer.

Form exposed surfaces of each concrete structure element with the same forming material or with materials that produce similar concrete surface textures, color, and appearance.

For exposed surfaces, provide form panel facing consisting of continuous sections of form facing material, unbroken by joint marks, against which concrete is placed.

(2) Form Lumber. Use form lumber, except for curved and special surfaces, of five-ply panel boards or dressed shiplap, used with or without form liners. Rough lumber may be used for unexposed surfaces in the finished structure. Three-ply panel boards may be used for forming soffit of unexposed portions of box girder top slabs. When requested by the Engineer, submit certificates verifying grade and species of any piece of lumber which does not have a grade or species stamp.

Use plywood complying to the latest edition of "United States Product Standard PS-1 for Construction and Industrial Plywood" for forms. Place form panels in uniform widths of not less than 36 inches

and of uniform lengths of not less than 6 feet, except where dimensions of members formed are less than specified panel dimensions. Place plywood panels with the grain of outer plies in direction of the span.

Place form panels in a neat, symmetrical pattern, subject to acceptance of the Engineer. Place panels with long dimensions horizontal and with horizontal joints level and continuous. Stagger and position perpendicular to vertical joints, as shown in the Contract Documents.

(3) Form Ties. Use form ties of sufficient strength and number to hold the form securely in place and prevent the spreading of forms during concrete placement. The following will not be allowed:

(a) Ties consisting of twisted wire loops to hold forms in position.

(b) Non-metallic forming ties, anchorages, forming supports, or other accessories that may be embedded permanently in concrete.

(c) Driven-type anchorages for fastening forms or form supports to concrete.

Construct form ties, anchorages, or inserts within forms to permit removal to a depth of at least 2 inch from the face, without injury to concrete. Design fittings for form ties or anchorages so that, upon removal, cavities left are of the smallest possible size. Fill cavities completely with approved corrosion inhibiting patching material and leave surface sound, smooth, even, and uniform in color.

(4) Walls. For narrow walls and columns where the bottom of the form is inaccessible, leave lower form boards loose.

(5) Surface Treatment. Immediately before each use, clean and treat forms with non-staining form oil that will permit the ready release of forms and will not discolor concrete.

(6) Metal Forms. Specifications for forms regarding design, mortar tightness, filleted corners, beveled projections, bracing, alignment, removal, reuse, and oiling apply to metal forms. The metal thickness used for forms must be such that forms will remain true to shape. Countersink bolts and rivet heads. Design clamps, pins, or other connecting devices to hold forms rigidly together and to allow removal without injury to concrete. Metal forms that are rough or crooked will

not be allowed.

(7) Reuse of Forms. Maintain shape, strength, rigidity, water tightness, and surface smoothness of reused forms. Resize warped or bulged lumber before using.

(D) Removal of Falsework and Forms. Before removing shoring beneath beams or girders, remove forms from columns to allow the Engineer to inspect the condition of column concrete.

Remove supports using a method that permits concrete to uniformly and gradually take stresses caused by its weight.

In continuous or rigid frame structures, release falsework only after the last concrete (excluding concrete above the bridge deck) in that span and the first adjoining spans on each side have been in place for 14 days. For falsework removal, consider spans with a single hinge within the span to be continuous. Consider hinges of suspended spans within a bridge, as ends of the bridge, for determining shoring requirements. In structures of these types, remove falsework gradually and uniformly over the whole length.

After placing concrete, remove or release falsework and forms no earlier than removal times specified in Table 503.03-1 – Removal of Falsework and Forms. The Engineer will determine the exact removal time.

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
Notes: - Where forms also support vertical or horizontal loads imposed on						

slab or beam soffits, use 14 days for removal time. - One day shall be defined as a 24 hour period.
--

Do not release falsework for cast-in-place prestressed portions of structures until after prestressing steel has been tensioned.

Do not release falsework supporting overhangs and girder stems that slope 45 degrees or more off vertical until 7 days after placing deck concrete. If a reshoring system is installed, falsework supporting sides of girder stems that slope less than 45 degrees off vertical may be removed before placing deck slab concrete. Design reshoring system, consisting of lateral supports, to resist rotational forces acting on the stem, including those caused by the placement of deck slab concrete. Install reshoring system immediately after each form panel is removed and before the release of supports for adjacent form panel.

Do not remove falsework and forms supporting the bottom slab of box girders until 14 days after the final top slab is placed. Remove forms for webs of box girders before placing the deck slab. Forms supporting concrete top slab of box girder may be left in place. Completely remove interior forms in box girders except those permitted to remain in place. Where minimum crawl space dimensions and unobstructed access to enclosed utilities are provided, interior forms of box girders may be left in place. Clear and sweep loose material from inside of box girder.

Removal time of falsework may be reduced to 10 days when concrete test specimens develop compressive strengths equal to or greater than the required 28-day compressive strength and with the approval of the Engineer. Cure concrete test specimen in accordance with paragraph 9.4 of AASHTO T 23.

After removing forms, protect exposed concrete surfaces from damage after form removal. An approved sealer shall be applied to all exposed concrete surfaces after form removal.

(E) Loading. Inducing loading, outside its own weight, onto any part of a structure, will not be allowed until the following conditions have been met: at least 15 days have elapsed since placing concrete; and test specimens show that concrete has developed compressive strength of either 3,000 psi or required 28-day compressive strength, whichever is greater.

Material storage of any kind on structure, within 15 days of concrete placement, will not be allowed. After a minimum of 15 days has elapsed since concrete placement, materials weighing no more than 50 percent of the design live load may be stored on the structure. Submit shop drawings showing locations and weights of stored materials.

392
393 Release falsework before placing loads on the structure.
394

395 Live loads will not be allowed on completed portions of the structure
396 when such live loads will produce more than allowable stresses permitted by
397 AASHTO LRFD *Bridge Design Specifications*.
398

399 Backfill abutment and wing walls in accordance with Section 205 -
400 Excavation and Backfill for Bridge and Retaining Structures.
401

402 **(F) Placing Concrete.**
403

404 **(1) General.** Place and consolidate concrete by methods that must
405 not cause aggregate segregation or unsound concrete and must result
406 in dense, homogeneous concrete, free of voids, rock pockets, and
407 other defects. Use concrete while it is plastic and has sufficient
408 workability for placement. Retempering or remixing concrete that has
409 partially hardened will not be allowed. Allow no more than a 30-minute
410 interval between placement of two consecutive batches or partially
411 hardened will not be allowed. Allow no more than a 30-minute interval
412 between the placement of two consecutive batches or loads of
413 concrete.
414

415 Do not deviate from the schedule for placing concrete without
416 permission from the Engineer.
417

418 The project site's addition of water to ready-mix concrete in a
419 truck mixer after the arrival at the location of concrete placement **IS**
420 **LIMITED**. The addition of water above the amount in the accepted mix
421 design mixture may affect the concrete properties, such as the
422 water/cementitious (W/C) ratio which may result in a reduction of
423 concrete strength, aggregate segregation, durability, increased
424 shrinkage, mix uniformity and the increased its susceptibility to
425 cracking. These unwanted properties may cause a reduction in
426 service life and may increase the possibility of catastrophic failure of
427 the structure. Hence, exceeding the W/C ratio is prohibited.
428

429 When a truck mixer is used for mixing or the delivery of
430 concrete, no water from the truck system or elsewhere will be allowed
431 to be added after the initial introduction of mixing water for the batch.
432 The additional water may be added to the concrete mix when all the
433 following conditions exist:
434

- 435 • Job site water must be added not later than 15 minutes
436 after the concrete ready-mix truck had arrived at the project
437 site. Parking the ready-mix truck off the project site, waiting in a

queue or both will be considered arriving on the project site.

- The addition of water later than 15 minutes may be requested only before use from the Engineer when justified with additional data. The additional time needed and justification must be stated in the request.

- The slump of the concrete is less than that specified in the accepted mix design upon arrival to the jobsite.

- The water added will not exceed the total amount of water specified in the accepted mix design or specification, i.e., exceeds the accepted water/cementitious (W/C) ratio (W=weight of water in batch, in pounds; and C= weight of cementitious materials in batch, in pounds).

- The temperature of the concrete has not exceeded the amount set in the Contract Documents.

The maximum amount of water that may be added to the concrete at the project site must be the smallest amount of water used to obtain the result of the following three restrictions:

- Bring the slump up to the accepted mix design or specified level, or

- Must not exceed 1½ gallons of water per cubic yard of concrete, or

- Must not cause the total amount of water to exceed the amount of water in the accepted mix design, i.e., change the W/C.

For example: If 1½ gallons of water per cubic yard of concrete increases the W/C beyond the accepted W/C then 1½ gallons of water must not be used. The maximum amount of water that can be added must be limited to the amount of water that would bring the mix to the accepted W/C even though the design mix slump has not been reached.

Adjustments are usually made to achieve the design mix slump requirements and must not exceed the accepted design mix's maximum slump.

The addition of water within the initial 15 minutes at the project site must be injected into the mixer under pressure and direction to assure uniformity. The drum or blades must be turned an additional 30 revolutions or more, if necessary, at mixing speed, until the uniformity of the concrete is assured. **WATER MUST NOT BE ADDED TO THE BATCH AT ANY LATER TIME!**

When macro or micro fibers are part of the mix design,

excessive rotation of the drum may cause a deleterious effect on the concrete fiber mix. The fiber manufacturer's recommendations must be followed.

Pertinent Required Controlling Measures:

- Maximum allowable slump established from the accepted concrete design mixtures and job specifications.
- The concrete slump from the first portion of concrete discharged from the truck needs to be estimated or determined. The estimated concrete discharged must be subtracted from the W/C calculation. For example, 10 cubic yards of concrete is in the truck, and 1/4 cubic yards is discharged. The delivery tag indicates 1 gal/cy can be added to the mix without exceeding the accepted W/C. The maximum amount of water that can be added is 9¾ gal providing the addition of that amount of water does not cause the slump to be more than the accepted concrete mix design's slump requirement. The addition of water to obtain workability and meet job specifications is the contractor's responsibility. However, the quantity of water added must be documented on the collected delivery tickets. The delivery tags must note the amount of water that can be added at the project site and still not exceed the total amount of water in the accepted concrete mix design, i.e., held back water. When the amount of held back water is not shown on the delivery tag it will be assumed that the concrete mix has the maximum total water allowed by the accepted mix design and no additional water will be allowed to be added at the project site.
- Do not allow water to be added to the concrete if the maximum slump is already obtained, or more than ¼ cubic yard has been discharged from the mixer.
- 1½ gallons of water or less per cubic yard may be used to obtain the desired slump. The slump must not exceed the maximum design slump and job specifications. The added water must not cause the batch's accepted W/C to increase.
- Tests for the acceptance of concrete based on slump must be made in accordance with AASHTO T 141 & T 119. Tests must be made after the addition of water at the project site to determine if the concrete's slump is compliant.
- When the concrete mix does not meet the requirements of this Section the concrete will be considered non-conforming, i.e., non-compliant. The action taken will comply with Subsection 105.12 Removal of Non-Conforming and Unauthorized Work.

This portion of the Section applies to most ready mixed

concrete delivered. Special concrete mixes, e.g., Superplasticized concrete, mixes that have conditions that do not fall in a normal range of concrete as determined by the Engineer or require a special sequence are not applicable without a prior written request with supporting documentation, e.g., the admixture manufacturers' and ready-mix supplier's recommendations and approval. The request must be submitted before its use to the Engineer for its acceptance. The Engineer has the right to unilaterally accept or reject the request and rescind its acceptance.

Water blast laitance and foreign material and moisten interface surfaces with water immediately before placing concrete over subgrade or construction joint. Leave no ponding water or have the surface glistening. Remove excess water by vacuuming or dry, oil-free compressed air.

Submit method and sequence of concrete placement. Place concrete on the structure only after forms have been cleared of debris and the Engineer has checked and accepted forms and reinforcing steel.

Place concrete for foundations, bottom slabs of box culverts, and aprons on the ground that is free from water. Dewater, sheath, place filter material, and do other work, as required by field conditions, to ensure saturated surface dry foundation bed. Costs for obtaining a saturated surface dry foundation bed will be included in the price for structure excavation.

Excavate and place sides of concrete or masonry footings not supported on piles or rock in neat lines.

Begin placing concrete at the low point and proceed in the upgrade direction. Remove struts, stays, braces, or blockings when concrete placed has reached elevation rendering them unnecessary.

Deposit concrete in approximately horizontal layers to avoid flowing along the forms. When less than a complete layer is placed in one operation, terminate the layer at a vertical bulkhead. Layer depth must not exceed 20 inches and must be such that the succeeding layer must be placed before the previous layer has attained its initial set. Place concrete in layers that can be satisfactorily consolidated with vibrators.

Thoroughly work the external surface of the concrete with a vibrator. Work to force coarse aggregate from the surface and to bring mortar against forms, producing a smooth finish, nearly free from

water and air pockets, and honeycomb.

Fill each part of the form by depositing concrete as close to the final position as possible. Work coarse aggregate back from forms and around reinforcement without displacing bars. After the initial set of concrete, do not jar forms and do not place stress on the ends of projecting reinforcing.

After concrete placement stops, remove accumulations of mortar on reinforcing steel and surfaces of forms before the next concrete placement. If concrete is wet, prevent dried mortar chips, other foreign material, and dust from falling onto the wet concrete surface. If the concrete has set, clean reinforcing steel in a manner that will not be detrimental to concrete to reinforcing steel bond.

The Contractor shall monitor the evaporation rate during concrete placement for the bridge deck, end beams, approach slabs and sleeper slabs. Evaporation rate shall comply with all provisions laid out in Subsection 503.03(F)(7) Hot Weather Concreting.

(2) Box Culverts. Place and allow base slab or footings of box culverts to set at least 12 hours before constructing the remainder of the culvert.

When constructing box culverts, place and allow concrete in walls to set at least 12 hours before placing the top slab. Provide appropriate keys in sidewalls for anchoring the top slab.

(3) Box Girder Spans. Place bottom slab of box girder spans monolithically with girder stems.

The top slab of box girders may be placed 10 days after placing bottom slabs and stems, provided concrete test specimens of the bottom slab and stem concrete have attained compressive strength equal to or greater than 3,000 psi. Cure concrete test specimens in accordance with paragraph 9.4 of AASHTO T 23.

Place concrete in columns in one continuous operation.

Allow the concrete to set at least 12 hours before placing columns, caps, or beams.

Do not place horizontal members or sections until concrete in supporting vertical members or sections has consolidated and shrinkage has occurred. When plans require construction joints, allow at least 12 hours to elapse between concrete placements.

Do not place concrete in the superstructure until column forms have been stripped sufficiently to determine the character of column concrete. Do not allow superstructure loads to be placed on bents or piers until bents have been in place for at least 14 days.

Do not place concrete in suspended span until adjacent continuous spans are complete in place.

In structures with one or two hinges in a span, place supporting ends of hinges, including top slabs, before placing the supported end.

Do not place concrete sidewalks and curbs not monolithic with bridge deck until falsework for spans has been released.

(4) Chutes and Troughs. The use of aluminum for chutes, tremies, troughs, or pipes will not be allowed. Place concrete to avoid segregation of materials and displacement of reinforcement.

When plans require steep slopes, equip chutes with baffle boards, or furnish chutes in short lengths that reverse the direction of movement.

Use of long troughs, chutes, and pipes of a minimum 6-inch diameter will be allowed only with written authorization by the Engineer. Incline chutes or pipes to allow concrete to flow at the required consistency. The addition of water to the concrete mix to promote free flow in chutes of low inclination must not be allowed.

Do not drop concrete into forms from a vertical distance of more than 5 feet unless confined by closed chutes or pipes.

Keep chutes, troughs, and pipes clean and free from coatings of hardened concrete by thoroughly flushing them with water after each run. Discharge flushing water away from in-place concrete.

(5) Vibrating. Consolidate concrete, except for concrete placed underwater, using high-frequency internal vibrators. The minimum transmitted vibration frequency must be 4,500 impulses per minute and must be such as to visibly affect the mass of concrete (radius of influence) of a 1-inch slump over a radius of at least 18 inches. Use a sufficient number of vibrators to properly consolidate incoming concrete within 15 minutes after depositing concrete in forms. Make at least two vibrators available at the structure site when placing more than 25 cubic yards of concrete. One vibrator must be used at the place where concrete is being deposited. This first vibrator must level

the poured concrete and it must follow the depositing chute as it moves. During leveling the concrete is temporarily liquefied due to the rapid oscillatory motion transmitted to the concrete by the vibrator and the concrete flows into the corners of the forms and around the reinforcement.

The second vibrator must consolidate and de-aerate the concrete removing the entrapped air bubbles making them rise to the surface and escape. Have at least one additional vibrator in reserve in addition to the two being used to level and consolidate the concrete. Apply vibrators at a center-to-center insertion spacing approximately 1.5 times the radius of influence. Minimize lift lines by totally inserting the vibrator vertically at the depth of the lift being vibrated plus 6 inches into the previous lift. Insert vibrators in a vertical position, perpendicular to the concrete surface, at a uniform spacing over the entire concrete placement area. Attaching vibrators to or holding them against forms or reinforcing steel must also not be allowed.

External vibrators accepted by the Engineer may be used to consolidate concrete when concrete is inaccessible for adequate consolidation, provided forms are constructed sufficiently rigid to resist displacement or damage from external vibration.

When required, supplement vibration by hand spading with suitable tools to ensure proper and adequate compaction. Manipulate vibrators to work concrete thoroughly around reinforcement and embedded fixtures, and into corners and angles of forms. Do not use vibrators to cause concrete to flow or run into position, instead of placing the concrete and vibrating it. Dragging vibrators through concrete will not be allowed. Vibrate concrete sufficiently to compact but avoid prolonging vibration to the point where segregation occurs.

(6) Depositing Concrete Underwater. Do not deposit concrete underwater except cofferdam seals, tremie concrete, and drilled shaft concrete. Use seal concrete complying with Section 601 – Structural Concrete unless specified otherwise, for cofferdam seal concrete deposited underwater. Deposit drilled shaft concrete underwater in accordance with Section 511 – Drilled Shafts.

Place concrete underwater in a compact mass in its final position by tremie or closed-bottom-dump bucket. Do not disturb deposited concrete after placement. Maintain still water at the point of deposit.

Tremie consists of a tube having an inside diameter at least 6 times the maximum size of aggregate used in concrete mix and not

less than 10 inches, constructed in sections having flanged couplings, fitted with gaskets. Tremie must not contain aluminum parts that will come in contact with concrete, including pump and discharge lines. Equip tube with receiving hopper at the top and device that closes discharge end to prevent water from entering the tube, while the tube is being charged with concrete. Support tremie to permit free movement of discharge end over the entire top surface of work and rapid lowering, when necessary, to retard or stop the flow of concrete.

Close and seal discharge end entirely at the start of work to prevent water from entering the tube. Keep the tremie tube full to the bottom of the hopper. When a batch is dumped into the hopper, induce concrete flow by slightly raising the discharge end, always keeping the discharge end in deposited concrete. Maintain continuous flow until work is completed.

Use an underwater bucket with open top and bottom doors that open freely outward, when tripped. Completely fill and slowly lower the bucket, to avoid backwash. Discharge bucket only when bucket rests on the surface upon which concrete is to be deposited. After discharge, raise the bucket slowly until well above concrete. The use of bottom dump buckets for the bottom seal around foundation piling will not be allowed.

Submit concrete seal design calculations and working drawings, prepared, stamped, and signed by Hawaii Licensed Structural Engineer. The exact thickness of the concrete seal must depend upon the hydrostatic head, bond, pile spacing, and cofferdam size. Construct a concrete seal after the Engineer accepts the design. Allow seal to remain in place for not less than 7 days before dewatering. After sufficient time has elapsed, dewater the cofferdam, and remove scum, laitance, and sediment from the concrete. Before depositing fresh footing concrete, remove local high spots, as necessary, to ensure proper clearance for footing reinforcing steel.

(7) Hot Weather Concreting. When the ambient temperature is expected to meet or exceed 90 degrees F or the concrete construction involves flatwork concrete construction, ACI 305 R-20 Guide to Hot Weather Concreting or its latest edition or variant must be part of the Contractor's means and methods. Handling, placing, protection, and curing procedures must limit the concrete temperatures or water evaporation, or both that can reduce the strength, serviceability, and durability of the member or structure. Submit a Hot Weather Concreting action plan to the Engineer for review and acceptance. Do not place concrete where the temperature is above 90 degrees F unless the design mix and placement method comply with ACI 305 R-

20 Guide to Hot Weather Concreting or its latest edition or variant.

Weather conditions, e.g., rain, temperature, wind, and humidity, must be monitored and addressed. Include the assumed temperature of concrete to be used in the initial calculation of the evaporation rate using the ACI 305 R's evaporation rate chart or ACPA's Evaporation Rate Calculator. Measurements of the conditions used to determine the evaporation rate must be taken at the location where the concrete is currently being placed, e.g., near the chute, the concrete bucket, the discharge nozzle of the concrete pump, etc. List make and model of weather monitoring instruments, to be used at the location of concrete placement, to measure the ambient air temperature, relative humidity, and wind velocity to determine the on-site real-time evaporation rate. All-in-one meters that utilize the ACI 305 R's chart or other accepted method for determining evaporation rate may be used if found acceptable by the Engineer. Submit catalogs of weather monitoring instruments. Submit weather reports with evaporation rates within 48 hours of the completion of the concrete pour. Weather reports must be in a format and have information acceptable to the Engineer.

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 evaporation rate. If the evaporation rate is, or is likely to become, or trending to be 0.05 lb/ft²/hr or greater, employ the measures to prevent moisture loss such as but not limited to the application of evaporation retarder, application of supplemental moisture by fogging or reduction of the concrete temperature during batching, reduction of wind velocity or other means accepted by the Engineer that was included in the accepted hot weather concreting plan. Check evaporation rate every 15 minutes during and after placement until the concrete has taken a final set or use ACI 305 R-20's or its latest edition or variant if inspection requirements are more frequent.

If the temperature of any of the surfaces the concrete may come in contact with, e.g., reinforcement, embedments, forms and has a temperature greater than 100°F, or is 10°F greater than the concrete's temperature that is being placed, use a fogger to moisten and cool the hot surfaces to below whichever temperature is lower. Remove all standing or ponding water immediately before placing concrete. If compressed air is used to remove the water the air must be oil-free.

(8) Evaporation Retarders and Finishing Aids. Evaporation

retarders and finishing aid solutions may be used when accepted by the Engineer. Adjust dilution rates to fit the local climate following the manufacturer's recommendations and receiving the Engineer's acceptance. Evaporation retarders and finishing aids must be "stand-alone" products. Products that are both evaporation retarder and finishing aid must NOT be used. They must be designed for highway pavement use. Evaporation retarders and finishing aids must not deleteriously change the water to cementitious material ratio (W/CM), i.e., water to cement ratio (W/C) of the concrete's surface, or affect the physical properties of the surface it is being applied to causing defects, e.g., chalking, color change, dusting, weaken surface, popouts, brittleness, spalling, cracking, or other unacceptable properties, submit test results that show compliance to these requirements. Evaporation retarders and finishing aid solutions must have different tints and tints must not be noticeable on the hardened cured concrete. Apply solutions with equipment that is labeled in a manner that easily identifies them from a distance.

Evaporation retarders must be allowed to form their protective film before the finishing aid solution is applied. Evaporation retarders and finishing aids must not be used interchangeably, using them interchangeably will damage the concrete surface. Misuse or adverse effects occurring to the concrete attributed to the evaporation retarders or finishing aids or both may result in the withdrawal of the Engineer's acceptance of the product and the immediate halting of the use of the product at no cost or increase in Contract time. The concrete will be considered non-compliant and must be removed or an Engineer accepted remedial repair be performed. The Engineer will solely decide what work method is to be used.

(9) Certified Concrete Flatwork Finisher Requirement. Perform the placement and finishing operations of concrete flatwork with a minimum ratio of one certified ACI Concrete Flatwork Finisher and Technician with 4,500 hours of acceptable work experience (certified craftsman) per three concrete finishers (concrete finishers without ACI Concrete Flatwork Finisher and Technician certification and 4,500 hours of acceptable work experience) at each location on the project site having flatwork done. The concrete flatwork must be under the direct supervision of a certified craftsman. Designate the certified craftsman who will be supervising and responsible for determining the quality of the finish of the concrete flatwork being performed. No flatwork must be performed without the required amount of certified craftsmen present.

(a) Flatwork concrete is defined as any concrete work that requires tools or machines to be used during the placement

and finishing operations of concrete. Concrete flatwork includes concrete work that requires a specified finishing, smoothness, or rigid surface tolerances such as sidewalks, walkways, portland cement concrete pavement, concrete white-topping, girder seats, pier caps, bridge decks, on-grade concrete slabs, approach slabs, concrete overlays, and concrete repairs which exceed one square foot per day.

(b) Areas that are not considered flatwork concrete are the top of foundations or structures that will have backfill material placed directly on the concrete surface.

(c) Submit copies of the craftsman's current ACI certification 30 days before concrete flatwork begins for the Engineer's review and acceptance. The Engineer has the right to require the removal, replacement, retraining, and re-certification of a certified craftsman if that person does not, in the opinion of the Engineer, demonstrate the ability to place and finish concrete in accordance with the practices recommended in the ACI Concrete Flatwork Finisher Certification Program and to meet the finishing standards required by the Contract Documents.

(d) Any cost or impact to the contractor in providing, training, certification, retraining, replacement, or re-certification is incidental to the contract items that require concrete flatwork.

(G) Joints. Before backfilling with earth or other materials against the joints, all construction, expansion, contraction, and control joints must be waterproofed with flashing compound waterproofing as detailed in the Standard Plans

(1) Construction Joints. Place construction joints only at locations indicated in the Contract Documents, perpendicular to principal lines of stress, and at points of minimum shear.

Before placing concrete on substrate concrete at the construction joint, the following work must be performed:

(a) Remove laitance, loose particles, dust, dirt, impervious membrane curing compound, and any other material foreign to the construction joint and the projecting reinforcement.

(b) Roughen horizontal construction joint by abrasive blast cleaning, hydrodemolition, or other Engineer accepted methods to the full amplitude of approximately ¼ inch."

898
899 Before placing new concrete, draw forms tightly against the
900 concrete already in place. Thoroughly clean, high-pressure water blast
901 laitance and foreign material, and saturate the old surface with water
902 to a saturated surface-dry condition immediately before placing new
903 concrete. Place concrete in substructures so that horizontal
904 construction joints are truly horizontal. Where possible, place joints
905 such that they will be hidden from view in the finished structure.
906 Where vertical construction joints are necessary, extend reinforcing
907 bars across joints to make the structure monolithic. Do not place
908 construction joints through paneled wing walls or other large surfaces
909 that are to be treated architecturally.

910
911 When a construction joint is necessary because of an
912 emergency, furnish and place reinforcing steel across the construction
913 joint as ordered by the Engineer, at no increase in the contract price
914 or contract time.

915
916 **(2) Expansion Joints.** Construct expansion joints of type and in
917 the location indicated in the Contract Documents. Expansion joints
918 may be of friction, open, filled compression, mortise, or special type.

919
920 **(a) Metal Friction Joints.** Metal friction joints include cast
921 iron or bronze plates. Anchor plates in the correct position.
922 Plane sliding surfaces are true and smooth by following the
923 direction of movement of the structure with the planing tool. Do
924 not impede movement by allowing surfaces to make contact,
925 except for bearing surfaces.

926
927 **(b) Open Joints.** Construct open joints of removable
928 bulkheading forms so that forms may be removed without
929 damage to concrete.

930
931 **(c) Filled Compression Joints.** Construct filled
932 compression joints with premolded expansion joint filler. Cut
933 preformed joint filler to the same shape as the area to be
934 covered. Furnish one-piece, preformed joint filler, sized to
935 leave a 1/4-inch gap along exposed surfaces. When specified,
936 punch holes to accommodate dowels. Fix preformed joint filler
937 firmly against the surface of concrete already in place with cold
938 asphalt roofing cement complying to ASTM D 4586. Do not nail
939 the premolded expansion joint filler to the concrete or use a
940 fastening method that will not compress more than the
941 thickness of the premolded expansion joint filler. When
942 necessary use more than one piece to cover the surface,
943 fasten and hold abutting ends in shape by stapling. Cover joint

944 between separate pieces with a layer of two-ply roofing felt and
945 cover one side with cold asphalt roofing cement complying to
946 ASTM D 4586. Fill 1/4-inch space along edges at exposed
947 faces with wooden strips of the same thickness as joint
948 material. Saturate wooden strips with oil and provide sufficient
949 draft to make wooden strips readily removable after placing
950 concrete. Immediately after removing forms, inspect the
951 expansion joint. Clean and remove concrete or mortar that may
952 have been sealed across the joint.
953

954 **(d) Mortised Joints.** Construct mortised joints where
955 indicated in the Contract Documents. Mortised joints include a
956 concrete or metal part sliding in a concrete or metal socket.
957 Construct joint to be watertight, rustproof, and free to move in
958 two directions.
959

960 **(e) Steel Joints.** Steel joints include plates, angles, or other
961 structural shapes. Shape steel joints accurately at the shop to
962 conform to the section of the concrete deck. Fabricate and
963 paint steel joints in accordance with requirements indicated in
964 the Contract Documents. When specified, zinc-coat material
965 instead of painting. Keep the surface of the finished plate true
966 and free of warping. Maintain joints in the correct position
967 during concrete placement. Set opening at expansion joints as
968 indicated in the Contract Documents. Avoid impairment of joint
969 clearance.
970

971 Place metal joints so that they are free from kinks. Rivet
972 and solder joints. At bends, use a one-piece strip.
973

974 Remove stones, forms, and other foreign matter that
975 might interfere with joint efficiency.
976

977 **(f) Waterstops.** When required, furnish, and install
978 waterstops as indicated in the Contract Documents. Position
979 waterstops correctly in formwork, so that bulb is aligned and
980 centered with the joint opening. Vibrate concrete surrounding
981 embedded waterstops to attain impervious concrete near
982 joints. Cut and splice waterstops at changes in direction, as
983 necessary, to avoid buckling or distortion of web or flange.
984 Field splice waterstops in accordance with Subsection 705.07 -
985 Waterstop.
986

987 **(3) Contraction Joints.** Contraction joints in walls and other
988 structures must be spaced at not more than 20 feet on centers and
989 must be spaced, at abrupt changes in height or thickness and obtuse

corners unless otherwise directed by the Engineer.

(H) Waterproofing. Make concrete surfaces smooth and free from holes and projections that might puncture the waterproofing membrane. Dry and clean surfaces thoroughly of dust and loose materials before waterproofing. Do not waterproof in wet weather or when the temperature is below 65 degrees F or does not comply with the accepted manufacturer's recommendations.

Waterproofing includes a coat of primer applied to a concrete surface, a firmly bonded membrane composed of two layers of saturated fabric complying to ASTM D 1668, and three uniform mopping coats of waterproofing asphalt or an accepted method of waterproofing.

Apply a uniform coat of primer to the surface, extending 12 inches on each side of the joint. Allow the primer to dry before the first application of asphalt. Heat asphalt to a temperature between 300 degrees F and 350 degrees F. Mop asphalt thoroughly onto the surface with no holidays.

Place an 18-inch-wide strip of fabric immediately on hot asphalt. Carefully press the fabric into place to eliminate trapped air bubbles and to obtain close complete contact with the surface.

Apply a second uniform layer of asphalt onto the fabric, 3 inches beyond the edges. Immediately following that operation, press the second layer of fabric into place on top of the first layer.

Apply a third and final uniform layer of asphalt onto the fabric, 3 inches beyond the edges. Use 12-inch laps at the ends of the fabric.

Apply the uniform coat of primer to the concrete surface at a rate of one gallon per 100 square feet. Apply a uniform coat of asphalt at a rate of 15 gallons per 100 square feet of finished work.

(I) Joint Sealing.

(1) Joint Seal (Poured) for Bridge Deck. Immediately before applying a joint sealer, clean joints thoroughly by abrasive blasting. Remove mortar, laitance, scale, dirt, dust, oil, and other foreign matter, then blow out the joint with high pressure, oil-free, dry compressed air to remove residue.

Apply joint sealer after the Engineer inspects and accepts the joint; and only when concrete and ambient temperatures are not less than 50 degrees F and no greater than the temperature allowed by the manufacturer.

1036
1037 Apply joint sealer so that joints are filled without forming air
1038 holes and discontinuities. The top of the joint sealer must be 1/4 inch
1039 below the finished surface.
1040

1041 Remove joint sealer that does not do the following: cure to
1042 homogeneous and rubber-like compound; bond to joint faces; or
1043 comply with other requirements of this section.
1044

1045 Reclean joint and remove non-compliant joint sealer then place
1046 new joint sealer at no increase in the contract price or contract time.
1047

1048 After completion of joint sealing, prohibit vehicles from traveling
1049 over joints until the Engineer grants permission.
1050

1051 **(2) Joint Seal (Preformed) for Bridge Deck.** Immediately before
1052 installing a joint sealer, clean the joint thoroughly to remove mortar,
1053 laitance, scale, dirt, dust, oil, and other foreign matter from the joint
1054 with high pressure, oil-free, dry compressed air.
1055

1056 Install seal so that it will not be abraded by traffic and will
1057 effectively keep foreign material from entering the joint. Correct spalls
1058 and protrusions in joint before installation.
1059

1060 Install preformed seal in one continuous piece without field
1061 splices.
1062

1063 Place seal so that its top edge is 1/4 inch below the riding
1064 surface, and in a plane normal to the sides of the groove.
1065

1066 Place the top edge of the gasket in contact with the vertical
1067 walls of the joint. Repair spalls and other unsound concrete. Depress
1068 seal below minor spalls so that its top edge is in contact with the
1069 vertical wall of the joint.
1070

1071 Twisting, curling, and nicking of the seal will not be allowed.
1072

1073 Protect joint from the intrusion of earth, gravel, mortar, or other
1074 foreign matter so that structure can expand, and contract as designed.
1075

1076 The groove width indicated in the Contract Documents is the
1077 width of the expansion joint at the time of concrete placement. When
1078 the width is less than the manufacturer's minimum width for proper
1079 installation of the joint seal, defer installation until the concrete has
1080 been placed. Install seal after increasing joint width to width equal to
1081 or greater than the minimum width recommended by the

1082 manufacturer.

1083
1084 Steel angle protective nosing assembly must extend beyond
1085 the curb line and must terminate 1 inch from the edge of the deck.
1086

1087 **(J) Concrete Exposed to Sea Water.** In concrete structures exposed to
1088 seawater, construction joints will not be allowed between levels of extreme
1089 low water and extreme high water, as indicated in the Contract Documents,
1090 or as found in accepted reference documents. Between these levels, leave
1091 forms in place for at least 30 days.
1092

1093 **(K) Protection and Curing.** Protect concrete from mechanical damage
1094 and damage caused by exposure to the sun, rain, and flowing water. Do not
1095 allow concrete to dry out from the time of concrete placement until the end of
1096 the minimum curing period. The minimum curing period must be as follows:
1097

1098 **(1)** Cure structures for at least 7 days. Maintain a temperature of
1099 structural concrete at not less than 45 degrees F for 72 hours after
1100 placing. Maintain temperature at not less than 40 degrees F for an
1101 additional 4 days. Submit a written outline of the proposed method for
1102 protecting concrete.
1103

1104 **(2)** Cast-in-place parts of a structure to be submerged permanently
1105 in freshwater, may be cured for a period sufficient to prevent washing
1106 out of cement, and then submerged immediately.
1107

1108 **(3)** Cast-in-place parts of a structure to be submerged in
1109 freshwater, let cure for at least 5 days. Cast-in-place parts of a
1110 structure to be submerged in brackish or seawater must leave the
1111 forms in place for at least 30 days to cure in accordance with
1112 Subsection 503.03(J) - Concrete Exposed to Sea Water.
1113

1114 **(L) Curing Methods.** Cure concrete for cast-in-place structures, other
1115 than bridge decks, by water curing, impervious membrane curing, or forms-
1116 in-place curing. Cure full width of concrete bridge decks using a combination
1117 of curing compound and plastic sheeting or approved equal. Cure concrete
1118 surfaces that are to receive Class 2 Rubbed Finish, by water curing or forms-
1119 in-place curing. Cure surfaces of construction joints by application of water
1120 curing or non-membrane curing compound that seals concrete without
1121 reducing interface bonding capacity. Submit proposed curing methods,
1122 including copies of test results and manufacturer's catalog no later than 30
1123 working days before the first concrete pour. There must be no concrete
1124 pouring until the Engineer accepts the curing method including the curing
1125 compound and its application method. The procedures for protecting and
1126 curing concrete will be considered adequate if (1) or (2) are satisfied:
1127

(1) Average strength of field-cured cylinders at test age designated for determination of f'_c is equal to or at least 85 percent of that of companion standard-cured cylinders

(2) Average strength of field-cured cylinders test age exceeds f'_c by more than 500 psi

If the curing method does not meet one of the aforementioned criteria the curing method must be modified or changed until it is compliant.

Precast concrete members may be steam cured in accordance with Subsection 504.03(G) - Curing.

The Contractor shall use curing compound SINAK LITHIUMCURE 1000 and SINAK Sealer SG or approved equal for all bridge structures. Six copies of the manufacturer's brochure and certificates of test results shall be submitted. All work shall conform with the manufacturer's recommendations.

Curing shall be applied to all surfaces. Contractor shall consult manufacturer on products being used to ensure bond at construction joints is not compromised.

(1) **Water Curing.** Water cure by keeping concrete continuously wet with fresh water, using water fogging, acceptable water-saturated coverings, or ponding. Keep wood forms that remain in place sufficiently damp to prevent opening at joints and drying of concrete.

After surface water has evaporated, apply moisture to the concrete surface using a fog spray. Continue applying moisture to the surface until regular curing begins. Use adequate water supply and sufficient moisture to fog and water cure concrete without damaging the surface or texture of concrete. The temperature of water used must be at least 50°F and not be more than 35°F colder than the surface temperature of the concrete at the time the water and concrete come in contact.

Begin water curing for bridge decks after the curing compound is applied and immediately after the concrete surface is hard enough to receive water without damaging the surface or texture of the concrete. Continue water curing until the end of the specified curing period.

Prevent curing water from falling on traveled roadways under a structure or into waterways. Channel curing water away from falsework and structure foundations.

1174 **(2) Impervious Membrane Curing.** Seal the concrete surface
1175 thoroughly with a liquid membrane-forming compound. Apply
1176 compound uniformly having no holidays or streaking in each coat. In
1177 separate applications, use two or more coats of curing compound.
1178 Use a ratio of at least 1 gallon for every 100 square feet of concrete
1179 surface per coat. Apply each coat 180 degrees in the opposite
1180 direction to the previous coat's application direction.

1181
1182 The impervious membrane curing compound must be applied
1183 to the concrete following the surface finishing operation. Start the
1184 application of the curing compound immediately before the moisture
1185 sheen disappears from the surface, but before any drying shrinkage or
1186 craze, cracks begin to appear. In the event of any drying or cracking
1187 of the surface, increase the humidity in the area by using a fog spray
1188 with an atomizing nozzle as specified in Subsection 503.03(F)(7) "Hot
1189 Weather Concreting", fogging must be started immediately, and must
1190 all be continued until the application of the compound is resumed or
1191 started; however, the compound must not be applied over any
1192 resulting freestanding water. Do not blend the free-standing water into
1193 the concrete surface, allow it to evaporate, If the free-standing water is
1194 due to the foggers, stop them and adjust the foggers so they comply
1195 with the Contract Documents. Should the film of the compound be
1196 damaged from any cause before the expiration of 7 days after the
1197 concrete is placed in the case of structures and 72 hours in the case
1198 of pavement, the damaged portion must be repaired immediately with
1199 an additional application of two coats of compound.

1200
1201 Use curing compounds that will not permanently darken
1202 concrete on exposed hardened surfaces of the concrete structure. Do
1203 not apply membrane curing compound on surfaces to which concrete
1204 is to be bonded or to which waterproofing or epoxy is to be applied or
1205 will be deleterious to future work.

1206
1207 Keep concrete surfaces moist before applying the impervious
1208 membrane. If membrane film is broken or damaged during the
1209 specified curing period, apply new treatment to the affected area,
1210 duplicating the first application.

1211
1212 **(3) Forms-In-Place Curing.** Cure formed surfaces of concrete by
1213 retaining forms in place. Maintain forms in place for a minimum period
1214 of 7 days after concrete placement. Keep all form joints and joints
1215 between the end of forms and concrete, moisture-tight during the
1216 curing period. Reseal cracks in forms and cracks between forms and
1217 concrete by methods accepted by the Engineer. After forms are
1218 removed the contractor shall apply an approved sealer over all
1219 exposed concrete surfaces.

1220
1221 (4) If the construction joint requires that it bonds with the concrete
1222 poured against it a lithium curing compound will be acceptable as a
1223 curing compound. Lithium curing compound must not be used on the
1224 horizontal surface in place of other aforementioned curing methods
1225 unless specifically called for by the Contract Document, or a waiver is
1226 granted by the Engineer. A lithium sealer will not be accepted as a
1227 curing compound. The lithium curing compound must meet or exceed
1228 the requirements of ASTM C-309, and ASTM C-1315 and be a 28-day
1229 water cure equivalent. All work must comply with the manufacturer's
1230 recommendations.

1231
1232 (M) **Finishing Concrete Surfaces.** Apply the following requirements to
1233 several classes of surface finishes that ordinarily apply to various parts of
1234 concrete structures.

1235
1236 No additional water must be applied to the concrete surfaces to aid in
1237 the finishing operation. The application of water to aid the finishing operation
1238 will result in the concrete being non-compliant with the contract requirements
1239 and result in the rejection of the concrete pour. Finishing aids or evaporation
1240 retarders may be used only with written authorization by the Engineer. Only
1241 stand-alone finishing aids must be used to finish the concrete surface and
1242 only stand-alone evaporation retarders are used to minimize the evaporation
1243 rate of the plastic concrete. These solutions must not be used
1244 interchangeably.

1245
1246 (1) **Class 1 Ordinary Surface Finish.** Apply ordinary surface
1247 finish to concrete surfaces, either as a final finish or preparatory to
1248 applying a higher-class finish. On surfaces to be buried underground
1249 or that are enclosed, such as cells of box girders, removal of fins and
1250 form marks and rubbing of mortared surfaces to obtain a uniform color
1251 will not be required.

1252
1253 After removing forms, remove form bolts and ties to a depth of
1254 at least 2 inches below the concrete surface. Clean, wet, and fill
1255 resulting holes or depressions with mortar. Mortar must consist of one
1256 part cement to two parts sand by volume. Add white cement to mortar
1257 in sufficient quantity to tint mortar a shade lighter than the surrounding
1258 concrete. Use mortar that is not more than 1 hour old and that bonds
1259 indistinguishably with concrete. After the mortar has thoroughly
1260 hardened, rub the surface with a carborundum stone to obtain the
1261 same color mortar as in the surrounding concrete. Remove fins
1262 caused by form joints and other projections. Remove stains and
1263 discolorations visible from the travel way.

1264
1265 Clean and fill pockets with mortar, except for those scattered

pockets or pinholes less than 1/2-inch long or wide and less than 3/8-inch deep or have exposed reinforcing steel. Pockets must not affect the strength of the structure or shorten the life of steel reinforcement. Fill pockets on surfaces visible to pedestrian traffic and surfaces exposed to streamflow, salt air, and saltwater. Use mortar for filling pockets, as specified for bolt and tie holes. When rock pockets affect the strength of a structure materially or shorten the life of the structure or steel reinforcement, the Engineer will declare concrete unacceptable and require removal and replacement of the affected structure.

Clean, wet, and fill with mortar, all holes or depressions in surfaces that are to receive Class 2 Rubbed Finish. Clean, wet, and fill at least 7 days before starting Class 2 Rubbed Finish.

(2) Class 2 Rubbed Finish. Apply Class 2 Rubbed Finish to the following surfaces:

(a) Surfaces of bridge superstructures, including pedestrian overpasses, except for the following: inside vertical surfaces of "T" girders; slab soffits of interior bays of "T" girders; enclosed surfaces of box girders; top surfaces of bridge decks; walkway surfaces; and median strips.

(b) Surfaces of the bridge and pedestrian overpass piers, piles, columns, pier caps, abutments, wing walls, and retaining walls above finished ground, to at least 1 foot below finished ground.

(c) Surfaces of open-spandrel arch rings, spandrel columns, and abutment towers.

(d) Surfaces above finished ground of culvert headwalls, and endwalls, when visible from a traveled way.

(e) Surfaces of inside box culvert barrels having a height of 4 feet or more, for a distance inside the barrel equal to the height of culvert or as far as is visible from a Traveled Way, whichever is greater.

(f) Surfaces of concrete railings, end posts, and curbs.

After completing Class I Ordinary Surface Finish, sand with power sanders areas that do not exhibit a smooth, even surface of uniform texture and appearance. Sand with power sanders areas to a smooth, even surface of uniform texture and appearance.

1312
1313 Use power carborundum stones or disks to remove unsightly
1314 bulges or irregularities.

1315
1316 The intent is to secure a smooth, even surface of uniform
1317 appearance and to remove unsightly bulges or depressions due to
1318 form marks and other imperfections. Scattered pockets or pinholes
1319 permitted under ordinary finish will not be considered to affect
1320 uniformity or texture. The extent of sanding and grinding must be as
1321 specified.

1322
1323 The final operation for this finish consists of removing powder
1324 on the surface resulting from sanding and grinding. When additional
1325 repairs are made after sanding and grinding, repeat sanding and
1326 grinding after a repair has cured. Leave the finished surface free from
1327 powder and other foreign matter by power washing and wiping with a
1328 clean cloth. Collect and dispose of wash water. Mortar, patching
1329 material, or any other finishing product shall not be used unless
1330 approved by the Engineer.

1331
1332 When applying approved anti-graffiti coating onto finished
1333 concrete surface no mortar, cement wash, or similar product shall be
1334 used on the concrete surface prior to application of the approved anti-
1335 graffiti coating unless directed otherwise by the Engineer. Any
1336 product that may affect the durability of the anti-graffiti coating shall
1337 not be used.

1338
1339 **(3) Class 6 Float Finish.** Attain Class 6 Float Finish as follows:

1340
1341 **(a) Finishing Bridge Decks and Bridge Approach Slabs.**
1342 For bridge decks and bridge approach slabs, obtain a smooth
1343 riding surface of uniform texture, true to the required grade and
1344 cross-section.

1345
1346 Place concrete in bridge decks and bridge approach
1347 slabs at a minimum finished deck placement rate of 20 linear
1348 feet per hour. Measure rate along the centerline of the
1349 roadway. Employ experienced operators and concrete finishers
1350 to finish the deck. Keep necessary finishing tools and
1351 equipment on hand at the worksite and in satisfactory condition
1352 for use.

1353
1354 Immediately before placing bridge deck concrete, check
1355 falsework and wedges. Minimize settlement and deflection due
1356 to added weight of bridge deck concrete. Furnish suitable
1357 instruments, such as settlement gages, to permit ready

measurement of settlement and deflection by the Engineer.

When a settlement or other unanticipated events occur, stop deck concrete placement until corrective measures have been submitted and accepted. If accepted corrective measures have not been provided before the initial concrete set, stop concrete placement, and install the bulkhead at a location designated by the Engineer. Remove concrete placed beyond the bulkhead.

Place the bridge deck and bridge approach slab concrete in a uniform heading, approximately perpendicular to the roadway centerline. Limit the rate of concrete placement to that which can be finished before the beginning of the initial set. Do not place deck surface concrete more than 10 feet ahead of strike-off. Spread concrete during its initial deposit on the deck forms to a uniform height, and it requires a strike-off that does not exceed 3 inches of concrete.

Finish bridge decks and bridge approach slabs in accordance with Subsection 503.03(M)(3)(a)1. - Machine Finishing. Finish bridge decks and bridge approach slabs with concrete wearing surfaces in accordance with Subsection 503.03(M)(3)(a)1. - Machine Finishing.

Bridge decks and bridge approach slabs with asphalt-wearing surfaces may be finished in accordance with Subsection 503.03(M)(3)(a)1. - Machine Finishing or Subsection 503.03(M)(3)(a)2. - Manual Finishing.

During the finishing operation while concrete is still plastic, test the surface with a 10-foot straight edge. Test surface from the side or from transverse finishing bridges, in presence of the Engineer. Make necessary corrections to attain the required tolerance after the concrete has hardened.

After the concrete has hardened sufficiently, test the finished surface in presence of the Engineer with a 10-foot straight edge. The surface for the concrete deck finish must not vary more than 1/8 inch from the lower edge of a straight edge.

Where concrete of bridge deck and bridge approach slab is to be covered with a minimum 1-inch-thick layer of bituminous surfacing, earth, or another cover, the surface of the concrete must not vary more than 1/4 inch from the lower edge of a 10-foot straight edge.

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Grind high areas in the hardened surface, leaving a finished texture that is not smooth or polished. Produce final surface with a uniform texture of longitudinal grooves, with tine dimensions in accordance with Subsection 503.03(M)(3)(a)1. - Machine Finishing.

Submit method of correcting low areas. Begin remediation of low spots only after the Engineer accepts remedial repair submittal.

Strike off bridge deck surfaces under curbs, railings, and sidewalks to the same plane as the roadway. Leave bridge deck surfaces under curbs, railings, and sidewalks undisturbed when future widening is shown on Plans.

When deck width is 4 feet or less, finishing methods other than those specified herein may be used, provided the completed deck surface complies to specified requirements.

Perform remedial measures on completed bridge decks and bridge approach slabs not meeting specified requirements, at no increase in the contract price or contract time.

1. Machine Finishing. Strike-off and finishing machines may be of the self-propelled types, operating on rails and complying to specified requirements. If finishing equipment is not of this type, Contractor will submit all equipment and work plan for approval.

Use elevation-adjustable screed rails. Set screed to elevations, with allowances for anticipated settlement, camber, and deflection, as required to form the surface of the bridge deck and bridge approach slab to specified line and grade. Screed rails must not deflect appreciably under applied loads.

The screed rails must be adjustable for elevations. The screed must be set to elevations, with allowances for anticipated settlement, camber, and deflection, as required to form the surface of the bridge deck to the line and grade shown in the contract. The Contractor must install screed rail type such that the rails must not deflect appreciably under the applied loads. The supports for the screed rails must not be placed within the full width of the bridge.

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The Contractor must not apply any additional water to the deck surface to aid his finishing operation. The unauthorized application of water will result in the rejection of that day's concrete placement."

Before beginning concrete operations, operate strike-off and finishing machines over the full length of the bridge segment to be paved. Test run with screed and the float-adjusted to their finishing positions. While testing machines, perform the following: check screed rails for deflection; make required adjustments; measure cover on slab reinforcement; check controlling dimensions of slab reinforcement and forms.

During the test run, use the same number of machines and finishing bridges, also, machines must be loaded with the same material and personnel that will be used during the production concrete placement, i.e., carrying production loads. Make necessary corrections at this time.

After placing and consolidating concrete, strike off the surface of concrete carefully, using the strike-off machine. Make uniform deck surface, true to required grade and cross-section.

When a strike-off machine has a wheelbase greater than 6 feet, float concrete by the following means: hand-operated longitudinal float board, or finishing machine equipped with longitudinal float, or a rotating element followed by a drag float pan.

Use longitudinal float on finishing machine not less than 8 feet or more than 12 feet long. When both strike-off and floating are to be performed by machines, provide two separate machines with separate operators, one for strike-off and one for floating. Perform final float pass as far back of strike off as concrete workability will permit.

When a strike-off machine has a wheelbase of 6 feet or less, provide two separate hand-operated float boards or a finishing machine accepted by the Engineer. Place the first, hand-operated float in operation as soon as concrete surface condition

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permits. Operate the second, hand-operated float as far back from the first float as concrete workability permits. Apply provisions in this subsection on hand-operated float boards, to the two separate float boards specified for longitudinal floating.

Use longitudinal floats, either hand-operated or machine-operated, with the long axis of float parallel to the bridge's roadway centerline. Operate longitudinal floats with combined longitudinal and transverse motion. Operate rotating float with rotational and transverse movements. Use floats to plane off high areas and float material removed into low areas. Lap each pass with the previous pass by half-length of float. Continue floating until a smooth riding surface is obtained. Meet surface tolerances as specified herein.

In place of separate machines for strike-off and finishing, a single machine equipped with a rotating auger for strike-off and rotating element followed by a drag float pan for consolidating and finishing may be used or the Contractor may request acceptance of the use of substitute machines and methods from the Engineer. Submit previous project experience demonstrating that the proposed machine is capable of meeting specified requirements for satisfactory bridge deck and bridge approach slab finishing. When requested by the Engineer, submit three copies of manufacturer's operators and parts manual for dual-purpose alternative machine or other Engineer requested information. Operate the machine in accordance with the manufacturer's manual.

Hand-operated float boards and transverse finishing bridges must meet requirements in accordance with Subsection 503.03(M)(3)(a)2. - Manual Finishing.

Use not less than two transverse finishing bridges unless directed otherwise by the Engineer. The Contractor may request a waiver from this requirement upon justification and acceptance from the Engineer.

Texture surfaces to meet skid resistance requirements. Submit proposed surface treatment methods to form skid-resistant texture. The Engineer may conduct skid resistance testing.

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After the surface sheen has disappeared; texture the pavement surface without tearing it. Texture final surface using artificial turf drag followed immediately by metal comb grooving device.

Use artificial turf made of molded polyethylene with synthetic turn blades measuring approximately 0.85 inches long and containing approximately 7,200 individual blades per square foot. Submit a sample of artificial turf at least twenty working days before placing bridge deck.

Attach artificial turf to self-propelled equipment having external alignment control. The device must be a separate piece of equipment to be used exclusively for texturing operation and must not be attached to other paving-train equipment. Artificial turf must be full bridge deck width and of sufficient size that during finishing operation, approximately 2 feet of turf, parallel to bridge deck centerline, is in constant contact with the bridge deck surface. Maintain downward pressure on bridge deck surface with turf, to achieve uniform texturing without measurable variations in bridge deck profile. The artificial turf drag must not be wavy and must be parallel to the centerline of the bridge deck.

In addition to the artificial turf drag, grooving (tining) must be done immediately after the artificial turf drag is performed. It must be done by a self-propelled mechanical device (grooving device) having an external alignment control and capable of grooving the entire width of bridge deck being paved in a single pass at a uniform speed. The grooving device must be a separate piece of self-propelled equipment to be used exclusively for texturing operation and must not be attached to other paving-train equipment. The metal comb which creates the tining marks must include a single line of evenly spaced, tempered spring steel tines of size and stiffness sufficient to produce grooves of specified dimensions in plastic concrete without edge slumping and severe surface tearing. Operate grooving device to produce a uniform pattern of grooves parallel to bridge deck centerline. The tines must not be left in the concrete when the tining machine stops. The tines must be lifted off the concrete and when ready to move in a

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forward motion lowered the tines down again. Leaving the tines in the fresh concrete can leave an indentation in the surface which must not be allowed. Attach the metal comb to a mechanical device capable of traversing the entire bridge deck width in a single pass at a uniform speed. Grooves in the hardened pavement surface must have a minimum spacing of 0.75 inches and must be 0.125 -inches wide by 0.125-inches deep. Provide hand combs with steel tines to use in event of mechanical comb breakdown. Tining may be used upon approval by the Engineer. Contractor to submit methods on tining to provide equal or better quality compared to grooving.

Ramps, tapers, and miscellaneous areas may be textured manually when requested from the Engineer and accepted. Indicate in the bridge deck paving plan the areas that will be manually textured.

Concrete bridge decks, concrete sleeper slabs, and concrete approach slabs must be textured parallel to travel way by mechanical grooving or tining. Grooves must be cut into the hardened concrete using a mechanical water-cooled diamond edge blade saw device which must produce straight uniformly spaced grooves spaced at 3/4 inch. The groove width must be 1/8 inch plus or minus 0.02 inch and the groove depth must be 1/8 inch plus 1/16 inch or minus zero inches. If grooves cannot be cut into a continuous longitudinal operation, the continuation of grooves must be aligned such that joints are not visible. If tining is accepted, then tines shall be of the same size and spacing. If the bridge deck texture is required to be Next Generation Concrete Surface (NGCS) the concrete sleeper slabs, and concrete approach slabs must be textured using NGCS texture.

Corrective grinding shall be done on the bridge deck, approach slabs, and sleeper slabs. Tines must be re-grooved before the structure is opened to traffic.

A working drawing to control, collect and dispose of run-off water at an accepted off-site facility must be submitted to the Engineer.

The requirements of Section 411.03(N) Surface

Test shall apply to concrete bridge decks and concrete approach slabs. Alternate methods (CalTrans Test Method 547) may be used if approved by the Engineer. If additional grinding is required to achieve the specified profile index, the grinding shall be performed prior to the mechanical grooving and shall be done only in the longitudinal direction.

Curing shall be immediately applied once the grinding and mechanical grooving have been completed.

2. Manual Finishing. After placing and consolidating concrete, finish providing a uniform surface. Contractor shall submit proposed equipment and methods for approval by the Engineer prior to pouring the bridge deck.

Use template or strike board to alternately tamp and strike off concrete and move forward with combined longitudinal and transverse motions. Leave uniform mortar or grout film of suitable consistency on the concrete surface after the last pass of the template or strike board. For concrete containing fibers, contractor shall adjust finish technique so that fibers are fully embedded in the concrete and minimal fibers protrude from the finished concrete surface.

Use template or strike board of rigid construction, capable of resisting deflection and distortion when in use.

Set supports or headers to required elevations to form bridge deck and bridge approach slab surfaces to line and grade indicated in the Contract Documents. Allow for anticipated settlement, camber, and deflection when computing elevations.

Furnish and install supports or headers such that they must not deflect under applied loads.

Supports or headers for concrete deck placement must be completely in place for the full length of concrete placement and must be secured before placing deck concrete.

1680 Following the completion of the preliminary finish
1681 float the deck's concrete wearing surface from
1682 transverse bridges in a direction parallel to the roadway
1683 centerline.

1684
1685 Transverse finishing bridges, from which floats
1686 are to be operated, must completely span the bridge
1687 roadway area to be floated. Provide easily moveable
1688 finishing bridges of rigid construction, free of wobble
1689 and springing during floating operation. Use a sufficient
1690 number of finishing bridges to permit the floating
1691 operation to follow preliminary finishing operations
1692 without undue delay. Use not less than two transverse
1693 finishing bridges unless otherwise allowed by the
1694 Engineer.

1695
1696 Float with two separate floats made of
1697 acceptable material, each between 12 to 16 feet long.
1698 Use float boards 1 inch thick and 4 to 8 inches wide,
1699 with rigid ribs. Provide adjusting screws at not more
1700 than 24-inch centers between rib and float board.
1701 Maintain float board flat and true. Equip each float with
1702 adjustable handles at each end. Rib and truss each
1703 float, as necessary, to ensure the float board has a true,
1704 rigid surface. The Engineer has the option of waiving
1705 this requirement.

1706
1707 Operate floats with combined longitudinal and
1708 transverse motions, planing off high areas and floating
1709 material removed into low areas. Lap each pass with
1710 the previous pass by half-length of float. Continue
1711 floating until a smooth surface is obtained.

1712
1713 Place the first float into operation as soon as the
1714 concrete surface condition permits. Keep the first float in
1715 continuous operation until subsidence has taken place.

1716
1717 Operate the second float as far back of the first
1718 float as concrete workability permits.

1719
1720 After completing the floating operation, the
1721 texture deck surface must be tined having the same
1722 dimensions and spacing as detailed in Subsection
1723 503.03(M)(3)(a)1. - Machine Finishing.

1724
1725 **(b) Sidewalks and Median Strips.** Provide final finish for

concrete sidewalks and median strips using wooden float and broom finish. Do not plaster the surface. Use an edging tool with a ¼-inch radius to finish the outside edges of the sidewalk. Finish sidewalk as a plane surface with 2-percent (allowable construction tolerance of plus or minus 0.4 percent maximum) cross slope towards the roadway or as shown in the Contract Documents. Test surface of concrete sidewalk with 12-foot straightedge. Correct any deviation above ¼ inch.

Wet down the base or ground onto which the concrete will be placed just before concrete placement. Remove any ponds or puddles or standing water before placing concrete.

For top surfaces of decks, ramps, and approach ramps for pedestrian structures and top surfaces of sidewalks provide an abrasive coating to the surface.

Create abrasive coating by sprinkling 1/4 pound of grain per square foot, uniformly, on fresh concrete. Finish the surface with a wooden float.

If reinforcement is required, the reinforcement must be supported off the base or ground to the location shown in the Contract Documents before the concrete placement starts. Enough support must be given so there is no sag in the reinforcement. Pulling up the reinforcement during the concrete placement or supporting the reinforcement with piles of concrete is not an acceptable method of support and all concrete placed in such a manner must be removed and replaced at the Contractor's cost.

(N) Cleaning Up. Upon completion of finishing operation and before prefinal inspection of the structure, remove falsework, excavated or useless material, rubbish, temporary structures, facilities, and temporary buildings. Replace or restore public or private fences or property damaged during prosecution of work. Leave bridge site and adjacent highway in neat and presentable condition. Remove excavated material or falsework placed in the stream channel during construction before the pre-final inspection.

(O) Tolerance for Concrete Construction and Materials. Comply with the stricter tolerances specified in the specifications, ACI 117 Standard Specifications for Tolerance for Concrete Construction and Materials, PCI Tolerance for Precast and Prestressed Concrete, and PCI MNL-116 Manual for Quality Control of Plants and Production of Structural Precast Concrete Products

503.04 Measurement. Concrete will be paid on a lump sum basis. Measurement for payment will not apply.

The Engineer will not make deductions for the volume occupied by reinforcing steel, piles, floor drains, weepholes, pipes less than eight (8) inches, conduits, or expansion joint materials.

503.05 Payment. The Engineer will pay for the accepted quantities of concrete complete in place at the contract lump sum price for the pay items listed below and contained in the proposal.

The contract lump sum amount paid shall be full compensation for the concrete; for placing, curing and finishing; for sealers; for furnishing materials including admixtures and cement (including extra cement added to concrete deposited under water); for furnishing and installing drains, scuppers, premolded joint fillers, joint seals, waterproofing at construction joints, weepholes, waterstops, pipes and conduits; for furnishing and installing metal rockers, anchor bolts, structural shapes for expansion joints and other similar items; for non-shrink grout, bonding agent, forms, form lining and falsework or centering, bearing pads, structural steel bearing plates; temporary structures capable of supporting HL-93 loads for the maintenance of traffic for all structural parts during construction; for reinforcing bars conforming to ASTM A1035 Type CS Grade 100; for anti-graffiti coating; and for equipment, tools, labor, materials and incidentals necessary to complete the work.

The Engineer will pay for the following pay item when included in the proposal schedule:

<u>Pay Item</u>	<u>Pay Unit</u>
Concrete for _____ (Class _____ if applicable)	Lump Sum

The Engineer will pay for excavation and backfill for foundations in accordance with and under Section 205 – Excavation and Backfill for Bridge and Retaining Structures and Section 206 – Excavation and Backfill for Drainage Facilities.

Temporary structures supporting HL-93 loads during construction shall not be detrimental to any structural parts and shall not cause any damage during construction.”

END OF SECTION 503

Amend **Section 507 – Railings** to read as follows:

“SECTION 507 - RAILINGS

507.01 Description. This section describes furnishing and installing concrete and Fiberglass Reinforced Plastics (FRP) Pedestrian railings for retaining walls or other locations indicated in the contract documents.

507.02 Materials.

Concrete Structures	503
Structural Concrete	601
Fiberglass Reinforced Plastics (FRP)	720

507.03 Construction. Before constructing railings, place required backfills and release falsework.

Submit 10 sets of shop drawings of all FRP fabricated structural systems and accessories to the Engineer for acceptance.

Shop drawings shall clearly show material sizes, types, complete details for the fabrication of and erection of components including, but not limited to, location, lengths, type and sizes of fasteners, clip angles, member sizes, connection details, and location of wall control joints.

Submit the manufacturer's published literature including structural design data, structural properties data, corrosion resistance tables, certificates of compliance, test reports as applicable, and design calculations. For systems not sized or designed in the contract documents, submittals shall be signed and sealed by a Structural Professional Engineer licensed in the State of Hawaii.

Samples may be requested of each item specified herein for acceptance by the Engineer as to quality and color. Sample pieces shall be manufactured by the method to be used in the work.

Fabrication shall not begin until acceptance is given by the Engineer.

Delivery and storage of products shall be carefully handled in such a way to prevent them from abrasion, cracking, chipping, twisting, and other types of damage. Store adhesives, resins and their catalysts and hardeners in dry indoor storage facilities between 70 and 85 degrees Fahrenheit until they are required.

Construct railings true to line and grade in accordance with details indicated in the contract documents. Unless otherwise indicated in the contract documents, construct railings vertically.

(A) Concrete Railing. When ordered by the Engineer, adjust height of concrete railings to compensate for camber and dead load deflection of superstructure. The Engineer will determine amount of adjustment and will order adjustment before concrete is placed.

Construct cast-in-place portion of railing or parapet in accordance with Section 503 – Concrete Structures and this subsection.

Construct expansion joints before finishing concrete. Provide Class 2 concrete finish for railing surfaces in accordance with Subsection 503.03(M)(2) – Class 2 Rubbed Finish. After completing other work, carefully remove with a sharp chisel, loose or thin shells of mortar likely to spall under expansion joint movement.

Concrete parapet under FRP bridge railing and end posts shall be considered concrete railing and shall conform to requirements of this section.

(B) Fiberglass Reinforced Plastic (FRP) Bike Railings.

(1) Storage of Materials. Store FRP railing materials at work site acceptable to the Engineer, on platforms, pallets or other above ground supports. Keep railing materials free from grease and dirt and protected from moisture and other deleterious conditions until railings are installed.

(2) Condition of Materials. Railing material, before being laid out or worked, shall be straight.

(3) Layout. Space posts as indicated in the contract documents.

(4) Fabrication and Erection.

(a) General. Join materials as indicated in the contract documents. Match-mark sections to ensure that they will be erected in same position in which they were fabricated. Adjust railings to ensure the following: proper matching at abutting joints; and correct alignment, curvature, and camber throughout their lengths. Cover exposed ends of bridge rails with terminal caps or seals acceptable to the Engineer. Installed railings shall have smooth, uniform appearance.

The recommendations of the Manufacturer shall be followed for work involving the FRP railings.

(5) Hardware. All hardware shall be Type 316 stainless steel and shall follow manufacturer's recommendations and shall be submitted to the Engineer for acceptance.

(6) Painting. All FRP members shall receive one coat of primer and one coat of paint. Both shall be grey. Primer, paint, and their application shall follow both the railing manufacturer's and the paint manufacturer's recommendations and shall be submitted to the Engineer for acceptance."

507.04 Measurement.

(A) Fiberglass reinforced plastic (FRP) railing will be paid on a lump sum basis. Measurement for payment will not apply.

(B) The Engineer will measure Bridge End Post per each in accordance with the contract documents.

507.05 Payment. The Engineer will pay for accepted (FRP) railing on a contract lump sum basis. Concrete for the railing will be paid under Section 503 Concrete Structures. Reinforcing steel for the railing will be under Section 602 Reinforcing Steel. Payment will be full compensation for work prescribed in this section and the contract documents.

The Engineer will pay for Bridge End Post at the contract price per pay unit, as shown in the proposal schedule.

The Engineer will pay for the following pay items when included in the proposal schedule:

Pay Item	Pay Unit
Fiberglass Reinforced Plastic (FRP) Railing	Lump Sum
Bridge End Post	Each"

END OF SECTION 507

1 Amend **Section 511 - Drilled Shafts** to read as follows:
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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 0.45.
17

18 An amine carboxylate corrosion inhibiting water-based admixture such as
19 Cortec 2005 NS or approved equal shall be added at a dosage of 24 ounces per
20 cubic yard of concrete.
21

22 Proportion the concrete mix designs to get properties of high workability,
23 compaction under self-weight, resistance to segregation, and resistance to
24 excessive bleeding. The maximum nominal aggregate size shall be 3/4 inch.
25 The slump range shall be 7.0 inches $\pm$ 1.0 inch for concrete poured into a water
26 free borehole and 8.0 inches $\pm$ 1.0 inch for concrete placed under water or under
27 drilling slurry. Slump for the concrete shall be a minimum of four inches after four
28 hours from initial mixing or after the completion of the concrete placement,
29 whichever occurs later.
30

31 The Engineer will permit superplasticizers.
32

33 At the time of placement, the concrete temperature shall not exceed 90°F.
34

35 The final concrete mix design shall be based on field trial batches to
36 determine the most suitable materials and proportions that will provide a concrete
37 mixture having the least amount of segregation and bleeding, and at the same
38 time provide the necessary workability to meet placing requirements.
39

40 All concrete must comply with the CO2 footprint reduction requirements of
41 Section 601 – Structural Concrete.
42

43 **(B) Reinforcing Steel.** Reinforcing steel shall conform to Section 602 -
44 Reinforcing Steel.
45

46 **(C) Casings.** Casings shall have inside diameters not less than the
47 required diameter of the shafts and wall thicknesses specified or adequate to
48 withstand construction loads and stresses.
49

50 **(D) Cement Grout.** Cement grout used for setting the expandable load
51 cells and for filling the access tubes after completion of crosshole sonic logging
52 tests and cored holes, shall be prepackaged, non-shrink, and non-metallic grout
53 with the same strength as the drilled shaft concrete. The grout shall contain 10
54 grams of water-based migrating amine carboxylate corrosion inhibitor per 0.5
55 cubic feet. Cement grout used to fill cored holes shall be extended with 3/8 inch
56 pea gravel per manufacturer's recommendations.
57

58 **511.03 Construction Requirements**

59

60 **(A) Qualifications of Drilled Shaft Contractor.** Be capable of installing
61 drilled shafts, conducting load tests and other related work as specified in the
62 contract and shall have the following minimum experience requirements below.
63

64 **(1) Drilled Shaft Experience.** Because of the expertise required to
65 successfully complete the drilled shafts according to the contract, a
66 qualified drilled shaft Contractor shall install the drilled shaft. The drilled
67 shaft Contractor shall have at least three projects completed in the last
68 three years on which the Contractor has installed a minimum of five drilled
69 shafts per project of a diameter and length similar to those shown in the
70 contract.
71

72 **(B) Preconstruction Requirements.**

73

74 **(1) Experience Information.** Submit the following information to the
75 Engineer within 30 days after award of contract for acceptance by the
76 Engineer:
77

78 **(a)** List of drilled shaft projects completed in the past 10 years.
79 The list of projects shall contain the names and phone numbers of
80 owner's representatives who can verify participation on that project.
81 The drilled shaft Contractor shall have installed at least three
82 projects completed in the last three years on which the Contractor
83 has installed a minimum of five drilled shafts per project of a
84 diameter and length similar to those shown in the contract.
85

86 **(b)** Name and experience record of the drilled shaft
87 superintendent who will be in charge of drilled shaft operations for
88 this project. Drilled shaft superintendent shall have minimum three
89 years' experience within the last 10 years in drilled shaft
90 construction similar to type proposed. Drilled shaft superintendent
91 shall remain on the project for the duration of the drilled shaft work.
92 Drilled shaft superintendent who leaves the project shall be

replaced with personnel with equal or better experience. Submit proposed 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,

(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,

(f) Details of reinforcement placement including lifting, support, and centralization methods,

(g) Details of concrete placement including proposed operational procedures for pumping method,

(h) Proposed concrete mix design, including expected strengths at 3, 7, 14 and 28 days. Concrete mix design shall minimize segregation and bleed. Submit test results of both a trial mix and a slump loss test, conducted by State-accepted 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

141 highest expected ambient air temperature (two separate slump loss
142 tests required), and

143
144 The Engineer will evaluate the drilled shaft installation plan
145 for conformance with the contract documents. Within 30 days after
146 receipt of the plan, the Engineer will notify the Contractor of
147 additional information required including if applicable, changes
148 necessary to meet the contract requirements. The Engineer will
149 reject parts of the installation plan that are unacceptable. The
150 Contractor shall resubmit changes for re-evaluation within 15 days.
151 The Engineer will have another 30 days to review all resubmittals.
152 Procedural acceptance given by the Engineer shall be subject to
153 trial in the field. The acceptance shall not relieve the Contractor of
154 the responsibility to complete the work according to the contract.
155

156 **(C) Construction Sequence.** Complete the excavation to footing
157 elevations before shaft construction begins. Repair the disturbances caused by
158 shaft installation to the footing area before pouring the footing.
159

160 When installing drilled shafts with embankment placement, construct
161 drilled shafts after the placement of fills.
162

163 Do not cap the drilled shafts before placing the fills as near to final grade
164 as possible. Only leave room for construction of the caps.
165

166 **(D) Construction Methods.** Excavate for shafts to the dimensions and
167 elevations shown in the contract. Its methods and equipment shall be suitable
168 for the intended purpose and materials met. Use the permanent casing method
169 only when required by the contract or authorized by the Engineer. Blasting shall
170 not be permitted.
171

172 **(1) Dry Construction Method.** The dry method includes drilling the
173 shaft excavation, removing accumulated water and loose material from the
174 excavation, and placing the reinforcing cage and shaft concrete in a dry
175 excavation. Use this method only at sites where the groundwater table
176 and soil conditions are suitable to permit construction of the shaft in a dry
177 excavation. The Engineer will inspect the sides and bottom of the shaft
178 visually before placing the concrete. Dry excavation is defined as an
179 excavation where maximum depth of water does not exceed 3 inches.
180

181 **(2) Wet Construction Method.** This method includes using water,
182 mineral, or polymer slurry to maintain stability of the hole perimeter while
183 advancing the excavation to final depth, placing the reinforcing cage, and
184 concreting the shaft. Use this method at sites where a dry excavation for
185 placement of the shaft concrete cannot be maintained
186

187 Reuse drilling water only if permitted by the Engineer and
188 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.

(3) 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.

(E) Excavation.

(1) 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:

(a) Excavation diameters;

(b) Equipment used;

(c) Type of material excavated with the elevations of the material;

(d) Rate of excavation including time drilling started, when different material is encountered, tool changes, finish of shaft excavation, and difficulties encountered;

(e) The description of and approximate top and bottom elevation of each soil or rock material encountered.

(f) Elevation and approximate rate of any seepage or groundwater; and

(g) Remarks, including temporary stoppages

Drilling of shafts within a horizontal distance of 3.0 times the shaft diameter to the hole being drilled shall not commence until a minimum of 24 hours after the drilled shaft has been completed by placement of concrete to the top of shaft elevation in order to avoid interaction effects between adjacent shafts.

On projects with cofferdams, provide a qualified diver to inspect the cofferdam conditions when the contract requires a seal for construction. Before placing the concrete seal, the diver shall inspect the cofferdam interior periphery. The cofferdam interior periphery inspection includes each sheeting indentation and around each drilled shaft.

Any drilled shaft concrete over the theoretical amount required to fill any excavations for the shafts dimensioned on the plans shall be furnished at no additional cost.

Dispose the excavated material according to Section 203 - Excavation and Embankment.

Furnish drilled shaft concrete required to fill excavations for shafts dimensioned in the contract documents.

Do not permit workers to enter the shaft excavation unless:

- (a) A suitable casing is in place.
- (b) The water level is lowered and stabilized below the level the workers will occupy, and
- (c) Adequate safety equipment and procedures are provided, performed and in place.

(2) 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.

282
283 **(a) Special Drilling Equipment.** When conventional earth
284 augers and/or underreaming tools cannot be used for drilling,
285 provide special drilling equipment including rock core barrels, rock
286 tools, air tools and other equipment as necessary to construct the
287 shaft excavation to the size and depth required. The use of special
288 drilling equipment and/or procedures will be necessary to drill
289 through the cobbles and boulders, and cost shall be incidental to
290 unclassified shaft excavation.

291
292 **(b) Sidewall Overreaming.** When the sidewall of the hole
293 has softened, swelled, or degraded, sidewall overreaming will be
294 required by the Engineer. Overreaming thickness shall be a
295 minimum of 0.5 inch and a maximum of 3.0 inches. The Contractor
296 may overream with a grooving tool or overreaming bucket. The
297 thickness and elevation of sidewall overreaming shall be according
298 to the contract or as directed by the Engineer. Overream sidewall
299 and place additional shaft concrete at no cost to the State.

300
301 **(3) Unclassified Excavation.** All excavation for the production
302 drilled shafts shall be designated as unclassified. The Contractor shall
303 anticipate the presence of cobbles and boulders within the depths of the
304 drilled shafts. The Contractor shall provide the necessary equipment to
305 remove and dispose of materials met in forming the drilled shaft
306 excavation, including installation of temporary casing and/or use of slurry,
307 as necessary. The Engineer will not make separate payment for
308 excavation of materials of different densities and character (hardness) or
309 employment of special tools and procedures necessary to excavate. The
310 Engineer will pay for obstruction removal separately.

311
312 **(4) Obstructions Removal.** Remove obstructions at drilled shafts
313 locations when authorized by the Engineer. Obstructions shall include
314 man-made materials such as but not limited to old concrete foundations
315 not shown on the Plans.

316
317 The Contractor shall employ special procedures and/or tools after
318 the Contractor cannot advance the hole using conventional augers fitted
319 with soil or rock teeth, drilling buckets, core barrels and/or underreaming
320 tools. Such special procedures/tools may include: chisels, boulder
321 breakers, air tools, hand excavation, temporary casing, and increasing the
322 hole diameter.

323
324 Drilling tools and any other equipment, lost in excavation, are not
325 considered obstructions. Remove the drilling tools and any other
326 equipment promptly. The cost due to tools lost in the excavation shall be
327 at no additional cost to the State including costs associated with hole
328 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.

(F) Casings.

(1) General. Casings shall be steel conforming to ASTM A252, Grade 3, 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 responsible for maintaining the tip elevation of the permanent casing at the specified elevations.

When the shaft extends above ground or through a body of water, the shaft may be formed with removable casing except when the casing is permanent. Remove the casing carefully, where specified, so that the casing will not damage the cured concrete. When the casing needs to be removed after the concrete hardens in open water, design and submit the special system for acceptance by the Engineer. The Contractor may remove the casings only when the concrete attains sufficient strength provided:

(a) The curing of the concrete continues for the full 72 hour period,

(b) The shaft concrete is not exposed to salt water or moving water for a minimum of 7 days after placement, and

(c) The concrete reaches a compressive strength of at least 2,500 pounds per square inch.

(2) Temporary Casing. The Engineer will consider subsurface casing temporary unless shown in the contract as permanent casing. Remove the temporary casing before completing the placing of concrete in the drilled shaft. The Contractor may require telescoping, predrilling with

376 slurry, and/or overreaming to beyond the outside diameter of the casing to
377 install casing.

378
379 When choosing to remove a casing and substituting a longer or
380 larger diameter casing through caving soils, stabilize the excavation with
381 slurry or backfill before installing the new casing.

382
383 Before withdrawing the casing, the level of fresh concrete in the
384 casing shall be the higher of the following:

385
386 (a) Minimum of five feet above the hydrostatic water level, or

387
388 (b) Level of drilling fluid, outside the casing.

389
390 While withdrawing the casing, maintain an adequate level of
391 concrete within the casing to:

392
393 (a) Displace the fluid trapped behind the casing upward and

394
395 (b) Discharge the fluid at the ground surface without
396 contaminating or displacing the shaft concrete.

397
398 When temporary casings become bound or fouled during shaft
399 construction and cannot be removed, the Engineer will consider the drill
400 shaft defective. Improve such defective shafts according to the contract or
401 submit remedial repair for acceptance by the Engineer. Such
402 improvement may consist of removing the shaft concrete and extending
403 the shaft deeper, providing straddle shafts to compensate for capacity
404 loss, or providing a replacement shaft. Do corrective measures including
405 redesign of footings caused by defective shafts according to the contract
406 at no cost to the State or extension of the contract time. Any redesign of
407 the footing shall be submitted to the Engineer for acceptance. The
408 redesign shall be performed by a structural engineer and a civil engineer
409 specializing in the geotechnical practice both licensed in the State of
410 Hawaii. All remedial repairs shall have drawings and calculations signed
411 and stamped by both of the above licensed engineers. The Engineer will
412 not pay for the casing remaining in place as well as any redesign or
413 remedial repair.

414
415 **(G) Slurry.** If required, use only polymer slurry in the drilling process. The
416 polymer slurry shall have sufficient viscosity and gel characteristics to transport
417 excavated material to suitable screening system. The percentage and specific
418 gravity shall be sufficient to maintain the stability of the excavation and to allow
419 proper concrete placement.

420
421 During construction, maintain the level of the slurry at a height sufficient to
422 prevent caving of the hole. When a sudden significant loss of slurry occurs,

423 delay the construction of that foundation until an alternate construction procedure
424 is submitted for acceptance by the Engineer.
425

426 Premix the polymer slurry thoroughly with clean fresh water in slurry tanks
427 and adequate time (as prescribed by the manufacturer) allotted for dehydration
428 before introducing the slurry by pumping into the shaft excavation. The slurry
429 tanks shall have capacity for adequate slurry circulation, storage, and treatment.
430 Excavated slurry pits in lieu of slurry tanks will not be allowed without the written
431 permission of the Engineer.
432

433 Use desanding equipment to control slurry sand content to less than 0.5%
434 by volume in the borehole for polymer slurry. The Engineer will not require
435 desanding equipment for setting temporary casing, sign post, or lighting mast
436 foundations.
437

438 Prevent the slurry from "setting up" in the shaft, such as: agitation,
439 circulation and/or adjusting the properties of the slurry. Dispose of slurry in
440 suitable areas off from the project site.
441

442 The Contractor shall have the representative from the manufacturer of the
443 slurry product on site providing the technical support for the slurry preparation,
444 placement, testing and other quality control. Carry out the control tests using
445 suitable apparatus on the polymer or mineral slurry to resolve the density,
446 viscosity, pH, and sand content. Acceptable range of values for those physical
447 properties for two types of polymer slurries is in Tables 511-1 - Shore Pac GCV
448 (CETCO Drilling Products Group) IN FRESH WATER and 511-2 - SLURRYPRO
449 CDP (KB Technologies Ltd.) IN FRESH WATER.
450

451 Test the density, viscosity, and pH value during the shafts excavation to
452 establish a consistent working pattern. Make a minimum of four sets of tests
453 during the first 8 hours of slurry use. When the results show consistent behavior,
454 decrease the testing frequency to one set every four hours of slurry use.
455

456
457

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
* At 20⁰ C ** 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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461
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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 20⁰ C ** 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 shown on Tables 511-1 - Shore Pac

GCV (CETCO Drilling Products Group) IN FRESH WATER and 511-2 - SLURRYPRO CDP (KB Technologies Ltd.) IN FRESH WATER).

Ensure that the bottom of the shaft does not accumulate heavily contaminated slurry suspension. The heavily contaminated slurry suspension could impair the free flow of concrete. When finding unacceptable slurry samples, take actions necessary to bring the slurry as specified in the contract. Do not pour the concrete until re-sampling and testing results produce acceptable values.

Furnish the reports of tests required above to the Engineer on completion of each drilled shaft. An authorized person of the Contractor shall sign the reports.

During construction, maintain at the level of slurry not less than five feet above the highest piezometric water pressure along the depth of a shaft. When the slurry construction method fails, stop this method and propose an alternate method for acceptance by the Engineer

The Contractor shall use and dispose of slurry in accordance with applicable Federal, State, and County requirements.

(H) Excavation Inspection. Provide equipment for checking the dimensions and alignment of each permanent shaft excavation. Determine the dimensions and alignment according to the contract. Measure the final shaft depths with a suitable weighted tape after final cleaning.

A minimum of 50% of the base of each shaft shall have less than 0.5 inch of sediment at the time the concrete is placed. The maximum depth of sediment or debris on the base of the shaft shall not exceed 1.5 inches. The Contractor will measure the shaft cleanliness in the presence of the Engineer by methods deemed appropriate to the Engineer.

Also, for dry excavations the maximum depth of water shall not exceed 3 inches before pouring the concrete.

(I) Reinforcing Steel Cage Construction and Placement. Assemble and place the reinforcing steel cage immediately after the Engineer inspects and accepts the shaft excavation before pouring the concrete. To prevent deformation of the cage while lifting, brace the reinforcing steel cage until the cage is set in it's final position. The reinforcing steel cage includes longitudinal bars, ties, cage stiffener bars, spacers, centralizers, and other necessary appurtenances to acceptably complete and place the cage.

Tie and support the reinforcing steel in the shaft so that the reinforcing steel will remain within allowable tolerances given in Subsection 511.03(K) – Construction Tolerances. Use the concrete spacers or other approved non-

corrosive spacing devices at sufficient intervals (near the bottom and at intervals not exceeding 10 feet up the shaft) to ensure concentric spacing for the entire cage length. Use minimum of four spacers, equally spaced around circumference, at each vertical interval. The spacers shall be constructed of accepted material equal in quality and durability to concrete specified for the shaft, and shall be of adequate dimension to insure a minimum of four inches annular space between the outer portion of the reinforcing steel cage and the side of the excavated hole. Provide accepted cylindrical concrete bottom supports to maintain the proper distance between bottom of the cage and base of the shaft excavation.

Check the elevation of the top of the steel reinforcing cage and center of cage location before, during and after pouring the concrete. When not maintaining the rebar within the specified tolerances, make the corrections needed to bring to within tolerances of the contract. Do not construct additional shafts until after modifying the reinforcing steel cage support according to the contract.

When the excavation at the bottom of the constructed shaft elevation is lower than shown in the contract, extend at least half of the longitudinal bars required in the upper portion of the shaft the additional length. Continue the tie bars for the extra depth, spaced two-foot on center measured along the circumference of the reinforcing steel cage. Extend the stiffener bars to the final depth. These bars may be lap spliced or unspliced bars of the proper length. The Engineer will not permit welding to the reinforcing steel. Unless the extra depth of the drilled shaft is required due to modifications by the Engineer, the additional reinforcing bars shall be at no additional cost to the State.

(J) Concrete Placement.

(1) General. Place the concrete through a concrete pump or other means as accepted by the Engineer using accepted methods as described below.

Concrete shall be placed in the shaft immediately after placing the reinforcing steel.

Concrete placement for the drilled shaft shall be continuous from the bottom to at least the top of shaft cutoff 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 production drilled shafts shall be poured above the cutoff elevation and until good quality concrete is evident one foot above top of shaft cutoff elevation. For the production drilled shafts, the drilled shaft concrete above the cutoff elevation shall be removed no sooner than final set and 48 hours after the completion of the production drilled shafts concrete pour. Final set shall be when the concrete has reached a

compressive strength of 1000 psi. 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 above the cutoff elevation shall be removed using jack hammers no heavier than 15 pound maximum.

The elapsed time from the beginning of concrete placement in the shaft to the completion of the placement shall not exceed four hours. Adjust admixtures accepted by the Engineer so that concrete remains in a workable plastic state throughout 4-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 4-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. Supply a concrete mix that will maintain a slump of four inches or greater after four hours from initial mixing. Conduct the trial mix and slump loss tests using concrete and under ambient temperatures appropriate for the site conditions. The ambient temperature used shall be the temperature at the elevation of existing ground before any excavation started.

Drilled shaft mix design shall minimize segregation and bleeding. The top surface of the drilled shafts shall be leveled, cleaned, and roughened prior to concrete placement for the footing.

(2) Monitoring Concrete Volume. For each drilled shaft, prepare and submit a monitoring record the next working day after concrete placement has been completed. All monitoring shall be performed in the presence of the Engineer or his representative. As a minimum, the monitoring record shall consist of the following:

(a) A chart that is made up after drilled shaft excavation has been completed and accepted by the Engineer and before concrete placement has commenced. Indicated on the chart, depth of hole plotted with theoretical volume of concrete to fill drilled shaft hole. Plot concrete elevation (surface) along the vertical axis and concrete volume along the horizontal axis.

(b) As concrete is being place, measure concrete surface at an interval of approximately each cubic yard of concrete discharged. Plot concrete volume actually placed at each elevation point. Use

611 this chart to determine if any necking down or enlargement of shaft
612 has occurred during concrete placement.

613
614 **(c)** Keep records of steel and concrete movement to document
615 the following conditions:

616
617 **(1)** When removing temporary or permanent casing,
618 elevation of the top of reinforcing cage shall not rise more
619 than 2 inches from its original elevation;

620
621 **(2)** As temporary casing is extracted, static level of fluid
622 concrete shall not rise.

623
624 **(3) Concreting by Pump.** Concrete pumps and discharge lines for
625 concrete placement in wet or dry excavations shall be used. Pumps and
626 pump lines used to place concrete shall be of sufficient length, weight, and
627 diameter to discharge concrete at the shaft base elevation. The pump and
628 pump lines that will come in contact with concrete shall not contain
629 aluminum parts. Discharge line shall have a minimum diameter of 4 inches
630 and watertight joints. Concrete placement shall not begin until the pump
631 line discharge orifice is at the shaft base elevation.

632
633 For wet excavations, use a plug to separate the concrete from the
634 fluid in the hole until pumping begins. Remove the plug from the
635 excavation or use plugs, made from a material accepted by the Engineer
636 that will not cause a defect, if not removed.

637
638 The discharge orifice shall remain at least five feet below the
639 surface of the fluid concrete. When lifting the pump line during concreting,
640 reduce the line pressure temporarily until the orifice at a higher level in the
641 excavation has been repositioned.

642
643 Upon removal of the pumpline orifice from the fluid concrete column
644 and/or discharging concrete above the rising concrete level during the
645 concrete pour, the Engineer will consider the shaft defective. In such a
646 case, remove the reinforcing cage and concrete, the necessary sidewall
647 removal specified by the Engineer, and repour the shaft. Costs of
648 replacement of defective shafts shall be at no costs to the State and no
649 additional time will be granted.

650
651 **(K) Construction Tolerances.** The following construction tolerances apply
652 to drilled shafts:

653
654 **(1)** The center of the drilled shaft concrete and reinforcing bars shall be
655 within 1/12 of the shaft diameter or 3 inches, whichever is less, in the
656 horizontal plane at the plan elevation for the top of the shaft.

(2) 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.

(3) 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.

(4) The cutoff (top) elevation of the shaft shall have a tolerance of ± 0.5 inch from the plan top of shaft elevation.

(5) The dimensions of casing are subject to American Pipe Institute tolerances applicable to regular steel pipe.

(6) Design the excavation equipment and methods so that the completed shaft excavation will have a flat bottom. The cutting edges of excavation equipment shall be normal to the vertical axis of the equipment within a tolerance of $\pm 3/8$ inch per foot of diameter.

(7) When accepted by the Engineer, a casing larger in diameter than shown in the contract documents may be provided to facilitate meeting this requirement. When using a series of telescoping casings, size casing to maintain shaft diameters.

Drilled shaft excavations that cannot be completed within the required tolerances are unacceptable. When accepted by the Engineer, corrections may be made to an unacceptable drilled shaft excavation by accepted combination of the following methods:

(1) Overdrill the shaft excavation to a larger diameter to permit accurate placement of the reinforcing steel cage with the required minimum concrete cover.

(2) Increase the number, size, or length of the reinforcing steel.

(3) Redesign the foundation.

(4) Other methods accepted by the Engineer.

The acceptance of correction procedures is dependent on analysis of the effect of the degree of misalignment and improper positioning. The Contractor is solely responsible to submit remedial repair procedures that shall make the structure equal to or better than the original design. The Engineer will solely determine if the remedial repair meets the requirements and is acceptable. A Hawaii Licensed Professional Structural Engineer and a Hawaii Licensed Professional Civil Engineer

who specializes in Geotechnical Engineering shall stamp and sign the redesign drawings and computations. Correct out of tolerance drilled shaft excavations including engineering analysis and redesign at no cost to the State. No time extension will be granted for any impact to the critical path due to the Contractor's incorrect installation of the drilled shaft.

(L) As-Built Drilled Shaft Location. The Contractor shall provide survey ties to all as-built location of all drilled shafts.

The Contractor shall notify the Engineer prior to performing the survey work and the Contractor shall survey the drilled shafts under the supervision of the Engineer or the Engineer's representative. A copy of the survey notes and the scaled plan locating all the completed drilled shafts in a given footing shall be submitted to the Engineer for review and approval. Submit accepted copy of the survey notes and the scaled plan as an electronic file, the Engineer will determine the acceptable format and media.

No form work for any footing shall proceed until the drilled shafts are found acceptable by the Engineer.

(M) Integrity Testing. Drilled shafts shall be visually inspected and tested for density, strength and soundness. Integrity testing will be performed on drilled shafts as determined by the Engineer. Integrity testing shall consist of partial or full depth concrete coring at drilled shafts determined by the Engineer. Coring shall be performed by the Contractor at the locations designated by the Engineer in the presence of the Engineer. The Engineer will solely determine if the cored shaft is acceptable or defective. Defective shafts shall be replaced and drawings and computations by a Hawaii Licensed Professional Engineer in the Structural Branch and Civil Branch (specializing in the Geotechnical field) stamped and signed shall be submitted for acceptance by the Engineer. The Contractor shall core vertical holes at locations and depths determined by the Engineer. The number of core holes to be done shall be determined by the Engineer. The core hole shall be accepted by the Engineer. The recovered core samples shall have a minimum diameter of 3.75 inches or 3 times the nominal maximum aggregate size of the concrete mix, use whichever is larger

The air-dry core samples with a unit weight that is less than two pounds per cubic foot of the air-dry unit weight of acceptable concrete test cylinders will be considered defective.

Provide concrete cores properly marked in a core box with labels of the drilled depth at each interval of core recovery to the Engineer for evaluation and testing. The Engineer will be allowed a minimum of 7 working days for evaluation and testing of the core samples. The cored holes shall be filled with prepackaged, non-shrink, non-metallic, grout. Grout shall have at least the same minimum strength as the drilled shaft. Cement grout used to fill cored holes shall be extended with 3/8 inch pea gravel per manufacturer's recommendations.

Cost of coring performed on acceptable production drilled shafts with no defects will be borne by the State. Cost of full depth coring of trial shaft shall be borne by the Contractor. Cost of coring performed on any drilled shaft that has defects shall be borne by the Contractor. If the drilled shaft in question is on the critical path, a time extension and the linear foot payment for coring will be the sole remedy given if the drilled shaft has no defects. The delay will be calculated from the end of the 20 working days review period of the cores to when the last core was taken. Contractor shall submit a corrective methods plan for the defective shafts to the Engineer for review and approval prior to their use. The corrective methods plan shall restore the defective drilled shaft to a condition equal or better than that of a drilled shaft that had no defects. Do not begin repair operations until receiving the Engineer's acceptance of the corrective methods plan for that defective drilled shaft.

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 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.

(D) 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.

(E) 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.

801	Pay Item	Pay Unit
802		
803	Furnishing Drilled Shaft Drilling Equipment	Lump Sum
804		
805	The Engineer will pay for:	
806		
807	(A) 60 percent of the contract bid price when drilling equipment is on job site,	
808	assembled, and ready to drill foundation shafts.	
809		
810	(B) 40 percent of the contract bid price upon completion of drilling shafts, and	
811	placing shaft concrete up to top of shafts.	
812		
813	Obstructions	Hour
814		
815	The Engineer will pay for:	
816		
817	(A) 80 percent of the contract bid price upon completion of removing the	
818	obstruction.	
819		
820	(B) 20 percent of the contract bid price upon removing and disposing of the	
821	obstruction.	
822		
823	The maximum payment per designated obstruction shall not exceed 20	
824	times the unit cost for unclassified excavation.	
825		
826	Unclassified Shaft Excavation (48-inch Diameter)	Linear Foot
827		
828	The Engineer will pay for:	
829		
830	(A) 60 percent of the contract bid price upon completion of using drilling	
831	equipment, using special tools and drilling equipment to excavated shaft.	
832		
833	(B) 20 percent of the contract bid price upon completion of furnishing and	
834	installing temporary casing.	
835		
836	(C) 20 percent of the contract bid price upon completion of removing and	
837	disposing of excavated material.	
838		
839	Drilled Shaft (48-inch Diameter)	Linear Foot
840		
841	The Engineer will pay for:	
842		
843	(A) 60 percent of the contract bid price upon completion of drilling.	
844		
845	(B) 15 percent of the contract bid price upon completion of furnishing,	
846	assembling, and placing steel cage.	
847		

848 (C) 15 percent of the contract bid price upon completion of furnishing and
849 placing concrete.

850
851 (D) 10 percent of the contract bid price upon completion of removing and
852 disposing of excavated material.

853
854 Coring for Integrity Testing for Acceptable Drilled Shaft Linear Foot

855
856 The Engineer will pay for:

857
858 (A) 70 percent of the contract bid price upon completion of concrete coring.

859
860 (B) 20 percent of the contract bid price upon completion of filling cored holes
861 with non-shrink grout of the same minimum strength as drilled shaft.

862
863 (C) 10 percent of the contract bid price upon completion of packaging the core
864 samples and delivering them to the Engineer.”

865
866
867
868 **END OF SECTION 511,**

Amend Section 601 – Structural Concrete to read as follows:

SECTION 601 - STRUCTURAL CONCRETE

601.01 Description. This section describes structural concrete, which consists of Portland Cement, fine aggregate, coarse aggregate, and water. It may also include adding admixtures for the purpose of entraining air, retarding or accelerating set, tinting, and other purposes as required or permitted. All concrete designs for structural concrete to be placed on HDOT Highway projects must use technology to reduce the embodied carbon footprint of concrete used in the highway infrastructure. e.g., carbon dioxide mineralization or equivalent technology such as C-S-H nanoparticle-based strength-enhancing admixture (CSH-SEA), or technology or material that allows the reduction in the size of the carbon footprint of the mix, e.g., strength improving admixtures, supplementary cementitious materials (SCMs), or blended hydraulic cements such as Portland-limestone cement, or other Engineer accepted methods that can reduce the embodied carbon footprint of the concrete.

601.02 Materials.

Portland Cement	701.01
Fine Aggregate for Concrete	703.01
Coarse Aggregate for Portland Cement Concrete	703.02
Admixtures	711.03
Water	712.01

Use coarse aggregate for lightweight concrete conforming to ASTM C330 except for Sections 5, 7, and 9.

601.03 Construction.

(A) Quality Control. Portland Cement concrete production requires the Contractor's responsibility for quality control of materials during handling, blending, mixing, placement, and curing operations.

Sample, test, and inspect concrete to ensure the quality of the components, materials, and concrete using quality control methods and testing. Sampling and testing for quality control must be performed by certified ACI Concrete Field Technician Grade I following the requirements of the standard test methods. Perform quality control tests for the slump, air content, temperature, unit weight, a Box Test for slip form concrete, or other required properties during the production of structural concrete other than concrete for incidental construction. Submit quality control test results.

(B) Design and Designation of Concrete. Design concrete mixture for concrete work specified. Submit mix design using State Highways Division form DOT 4-151 or an equivalent form accepted by the Engineer. Do not start work until the Engineer accepts the mix design. The Engineer will accept a concrete mix design complying with the information given in Table 601.03-1 - Design of Concrete, and other pertinent requirements.

Whenever the concrete's 28-day compressive strength, f'_c , is 4,000 psi or greater, designate concrete by the required minimum 28-day compressive strength.

The concrete's 28-day compressive strength, f'_c , which is less than 4,000 psi listed in Table 601.03-1 – Design of Concrete, is for design information and designation of a class.

Proportion concrete that is designated by a compressive strength so that the concrete conforms to the required strength.

Design concrete placed in bridge decks and pavements exposed to traffic wear, with air content of 3 percent, unless otherwise specified, including entrapped and entrained air. Maintain air content for plastic concrete within a tolerance of 1 percent, plus or minus, during the work.

Use concrete Type SBD where specified in the plans with special requirements as listed below:

(a) A shrinkage reducing admixture (SRA), Master Life SRA35 by BASF or Eclipse by W.R. Grace & Co., or approved equal shall be added to the concrete. The minimum dosage requirement shall be 128 ounces per cubic yard of concrete.

(b) A migrating, corrosion-inhibiting, amine-carboxylate, water-based admixture shall be added to the concrete. The minimum dosage shall be 24 ounces per cubic yards of concrete.

(c) The concrete shall have a maximum water to cement ratio of 0.40. The weight of the SRA shall be included in the total water when computing the water to cement ratio. The maximum amount of water shall be 280 pounds per cubic yard.

(d) The 28 day compressive strength of the concrete shall be not less than 6,000 psi.

(e) The concrete shall contain 15 pounds of alkali resistant structural glass fiber such as CEMFIL ANTI-CRAK HP67/36 or approved equal per

cubic yard.

(f) The concrete shall have a maximum shrinkage strain of .00006 at 28 days and .000145 at 56 days according to ASTM C512.

(g) The final concrete mix design shall be based on field trial batches to determine the most suitable materials and proportions that will provide a concrete mixture having the least amount of segregation and bleeding, and at the same time provide the necessary workability to meet placing requirements

Class A concrete must be used when the type of concrete is not indicated in the contract documents.

Design concrete as specified in Table 601.03-1 – Design of Concrete.

TABLE 601.03-1 - DESIGN OF CONCRETE (800 Maximum Cement Content lbs. /c.y.)							
Class of Concrete	28-Day Strength f'_c , psi.	Minimum Cement Content lbs. /c.y.	Maximum Water-Cement Ratio, lb./lb.	Minimum Cement Content with Mineralized CO_2 lbs./c.y.	Maximum Water-Cement Ratio with Mineralized CO_2 lb./lb.	Minimum Cement Content with SCM lbs. /c.y.	Maximum Water-Cement Ratio with SCM lb./lb.
A	3000	532	0.59	504	0.62	NA	NA
B	2500	475	0.66	450	0.70		
C	2000	418	0.75	396	0.79		
D	1500	380	0.85	360	0.87		
BD	3750	610	0.49	NA	NA		
SEAL	3000	610	0.55	NA	NA	NA	NA
Designated by Strength f'_c or $*f'_r$	As Specified	610	0.49	NA	NA		
$*f'_r$ = Specified Modulus of Rupture							

Structural Concrete Design – The Carbon Dioxide mineralization process is our preferred method for CO_2 footprint reduction for structural concrete. Other Carbon Dioxide reduction options, materials, or technologies may be considered for structural concrete mix designs if a Carbon Dioxide mineralization system on

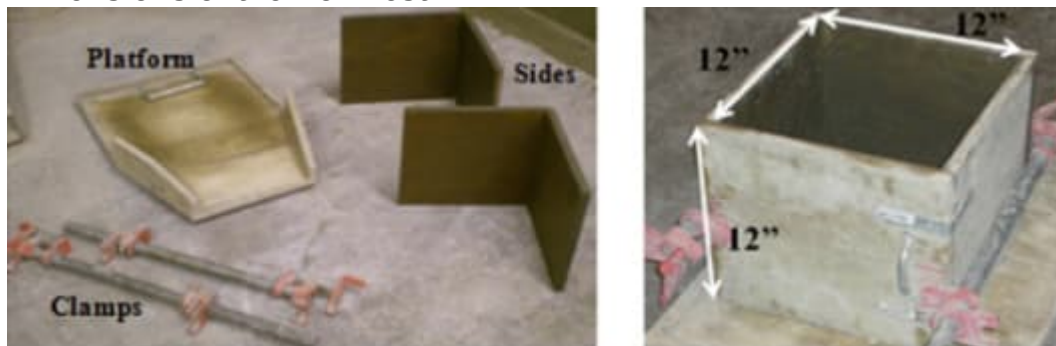
the island is unavailable, or Carbon Dioxide is in short supply. Other options to reduce concrete's Carbon Dioxide footprint includes but are not limited to adding Supplementary Cementitious Materials, admixtures, blended hydraulic cements, or a combination thereof. Additional means and methods of CO₂ footprint reduction not listed herein may be used if their use can be justified and accepted by the Engineer.

The reduced carbon footprint concrete mix design for all islands must have a reduction of Portland Cement content and still comply with the concrete design strength and other durability requirements as specified. See Table 601.03-1 Design of Concrete's specified limits for cement content, water cement ratio, and other properties when using CO₂ mineralization.

It should be noted that in some cases the use of SCMs in mixes may not result in it having the same strength curve as their cement counterpart and more curing time will be needed to meet and exceed the design strength. In such cases, the Contractor may request a waiver from the 28-day limit. Submit laboratory test data with the request to the Engineer. The waiver may be granted on a case-by-case basis, e.g., mass concrete. The Engineer reserves the right to limit the amount of SCMs in the mix or reject the mix design.

Slipform Concrete Design – The Box Test method measures the response of a slip form concrete mixture to vibration and the ability of the concrete to hold a vertical edge, thus determining the workability and suitability of the concrete mixture for slip-formed paving applications

Dimensions of the Box Test



The Figure above shows the components and the constructed inside dimensions. The Box Test used:

4 pcs - ½" nominal thickness or greater HDO Plyform with a hard, semi-opaque surface of thermosetting phenolic resin-impregnated material for the Test Box form, with a length, width, and height such that when the Test Box is constructed must have internal dimensions of 12" X12" X 12".

1 pc - ½" nominal thickness or greater HDO Plyform with a hard, semi-opaque surface of thermosetting phenolic resin-impregnated material approximately 24" X 24" or greater for the platform. It is optional that the platform is constructed as shown in the photos.

4 pcs- 2" X 2" L-brackets to be attached at two opposite external corners to hold the two Plyform pieces in an L-shape. (More brackets may be used if determined it is needed to keep the Test Box forms square, ridged, and in an L-shape.) Screws, glue, etc. if used must not cause bulges or protrude into the interior of the form.

Two each - 1.5ft pipe clamps

1 each - hand scoop

1 each - 1" square head pencil vibrator that must be able to vibrate at a minimum of 12,500 vibrations per minute. Provide a power source for the vibrator. Round-headed or larger vibrators must not be used.

1 each - ruler

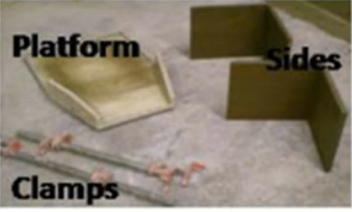
1 each – 16-inch by 24-inch L-shaped steel framing square.

1 each – 18 or 24-inch I-Beam Level Spirit Level Tool

The Box Test Steps

Sample concrete according to AASHTO R 60 Standard Practice for Sampling Freshly Mixed Concrete.

Dampen the forms and platform with form oil and assemble the Box Test components (forms, platform, and clamps) on a flat and level surface. The assembled 1 ft³ Test Box is held together by the pipe clamps and L-brackets on the platform. Scoop into the box the fresh concrete, each scoop must be uniformly distributed in the box, so each layer is approximately uniformly level. Stop the concrete placement when it reaches a height of approximately 9.5". Do not do any compaction during the placement of the concrete except for the dropping of concrete in the Test Box. With the vibrator at 12,500 vibrations per minute and keeping the head of the vibrator perpendicular to the platform and centered in the box, consolidate the concrete by inserting the 1" square head pencil vibrator. Take three seconds to lower the vibrator into the concrete until it almost reaches the bottom of the box. Do not touch the platform with the vibrator. Upon reaching the proximity of the bottom of the box immediately start raising the vibrator upward taking three seconds to remove the vibrator from the concrete. Do not do any further compaction or finishing of the concrete. Immediately, and carefully remove the pipe clamps from the side of the box, and then carefully with minimal disturbance of the concrete, remove the Box Test forms in an ascending vertical direction. Care must be taken to ensure the concrete will not stick to the L-shaped side wall forms. Immediately do a surface void evaluation and edge slump measurement of the concrete sample.

	Step 1	Gather the different components of the Box Test.
	Step 2	Construct box and place clamps tightly around box. Hand scoop mixture into box until the concrete height is 9.5" (241.3 mm).
	Step 3	Insert vibrator downward for 3 seconds and upward for 3 seconds. Remove vibrator.
	Step 4	After removing clamps and the forms, inspect the sides for surface voids and edge slumping.

Surface Void Evaluations

The grading of the response of a mixture to vibration must be assessed by comparing the surface voids observed on the sides of the box using Figure 3.

The void area for any of the four sides must not exceed what is shown in photo 2 of Figure 3, i.e., the void area must not be similar to the void areas shown in photos 3 and 4 or exceed them, to be considered an acceptable mix design for slip form pavement concrete.

If a mixture responded well to vibration, the overall surface voids should be minimal because the mortar was able to flow and fill these voids, hence the surface would have a small total void area. However, if the sides of the concrete formed by the box test had large amounts of surface voids, the mixture did not acceptably respond to the vibration. If the concrete did not respond acceptably to the vibration the mix design must be adjusted until the voids do not exceed the voids shown in photo 2 of Figure 3.

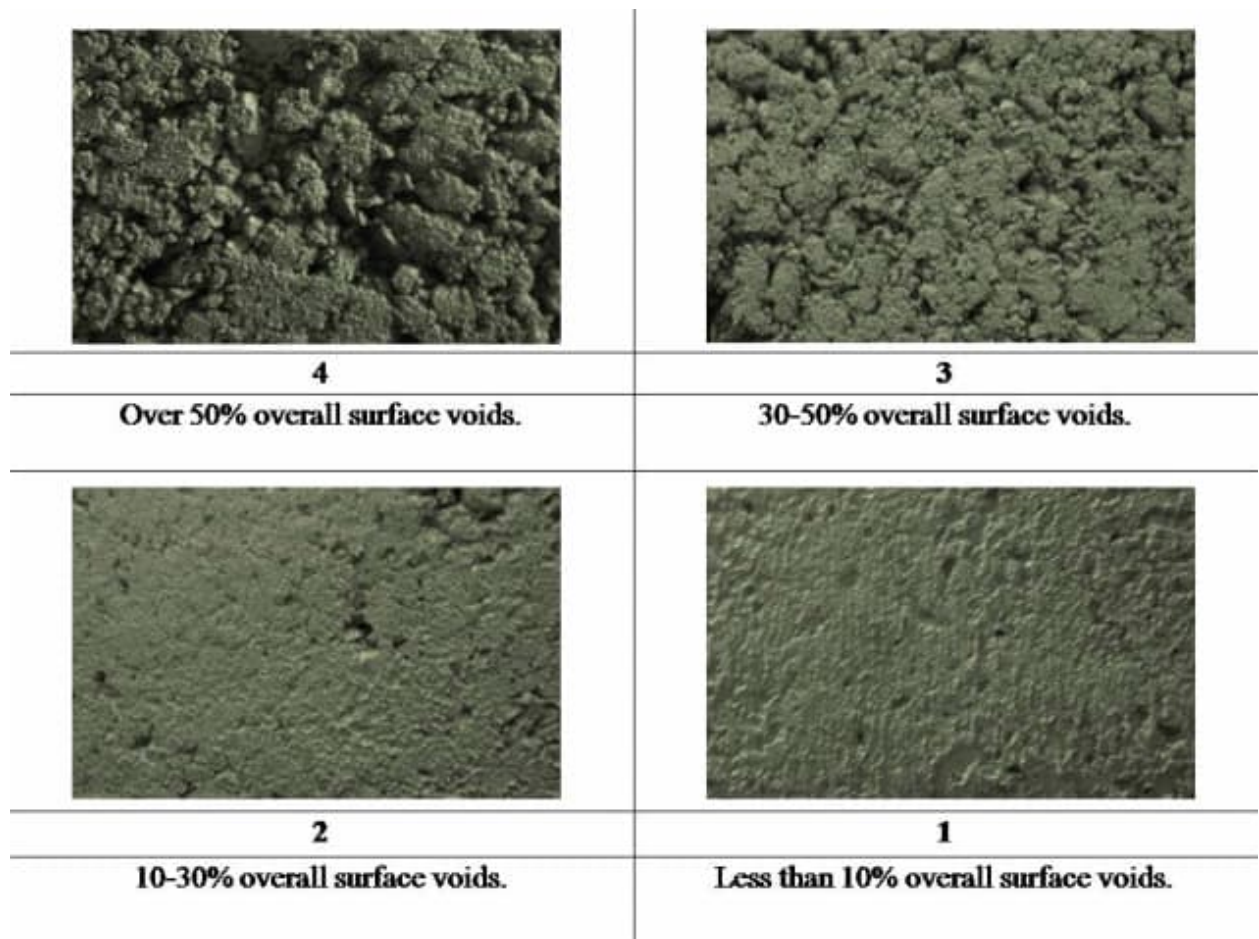


Figure 3 shows the estimated surface voids.

Top or Bottom Edge Slumping

The top or bottom edge slumping must be measured by placing an L-shaped steel framing square straightedge at the point the concrete sample protrudes at each face the most. Use the I-Beam Spirit Level and a tape measure or ruler with the L-shaped steel framing square to measure the distance between the I-Beam Level Spirit Level and the upper surface of the concrete sample along its edge. that is not protruding and is vertical to find the length of the longest extruding point for each face. Do a measurement on each of the four sides, measuring the top and bottom slump of the test sample.

If no vertical face can be found on a side the concrete mix design is not suitable for use in slip forming. If the top or bottom edge slumping exceeds $\frac{1}{4}$ " for any side, the concrete mix design is not suitable for use in slip forming.

Videos of Box Test

<https://youtu.be/XnKbxs3bAoQ>

<https://youtu.be/P6MKXltCiU8>

Verify that the concrete is an acceptable concrete mix design by performing a

minimum of two more acceptable consecutive Box Tests that did not exceed the maximum void area and edge slump requirements. If the two acceptable consecutive Box Tests cannot be accomplished, then adjust the concrete mix design and start the testing process over again.

In addition to the Box Test performed during the testing of the mix design in the Contractor's material testing laboratory perform additional Box Tests on production concrete in the field during the test strip or first production pour whichever is earliest. Adjust the mix if the results indicate the concrete does not meet the above requirements. Perform Box Test in the field once a month if pouring is continuous or when the Engineer requests it to be performed.

Use the absolute volume method to proportion concrete materials in accordance with requirements of concrete designated by class, cement content in pounds per cubic yards, or specified 28-day compressive strength. Use absolute volumetric proportioning methods as outlined in the American Concrete Institute (ACI) Standard 211.1, "Recommended Practices for Selecting Proportions for Normal and Heavyweight Concrete".

Use coarse aggregate size No. 57 (one inch to No. 4) or No. 67 (3/4 inch to No. 4) for concrete. For concrete placed in bottom slabs and stems of box girders, use No. 67 size aggregate. Smaller size aggregates may be permitted when encountering limited space between forms and reinforcement or between reinforcement when accepted by the Engineer in writing. Maximum aggregate size must not be greater than 1/3 of the space between reinforcing steel bars or reinforcing steel and the form.

Use the following standard methods in Table 601.03-2 – Standard Methods for determining compliance with requirements indicated in this subsection:

TABLE 601.03-2 – STANDARD METHODS	
Sampling Fresh Mixed Concrete	AASHTO T 141
Mass Per Cubic Meter (Cubic Foot) Yield and Air Content (Gravimetric) of Concrete	AASHTO T 121
Slump of Hydraulic Cement Concrete	AASHTO T 119
Air Content of Freshly Mixed Concrete by the Pressure Method	AASHTO T 152
Specific Gravity and Absorption of Fine Aggregate	AASHTO T 84
Specific Gravity and Absorption of Coarse Aggregate	AASHTO T 85
Temperature of Freshly Mixed Portland Cement Concrete	ASTM C1064
Making and Curing Concrete Test Specimens in the Field	AASHTO T 23
Compressive Strength of Molded Concrete Cylindrical Specimens	AASHTO T 22 (4-inch by 8-inch or 6-inch by 12-inch cylinders)
Flexural Strength of Concrete (Using Simple Beam with Third-Point Loading)	AASHTO T 97

When concrete is designated by compressive strength, f'_c , or flexural strength, f'_r , or includes CO₂ Mineralization technology, CSH-SEA, or SCMs, prequalification of materials and mix proportions proposed for use before placing such concrete is mandatory. The Engineer will prequalify concrete based when data is available based on past performance records using statistical computations of population sizes and (n-1) weighting, or trial batch test reports in compliance with computed minimum average strength for material and mix proportions. The Engineer will determine the minimum average strength on the probability of not more than one in 20 tests falling below the specified strength for the following conditions:

(1) When past performance records are available, furnish the following documented performance records:

(a) Minimum of 15 consecutive 28-day strength tests from projects having the same materials and mix proportions.

(b) Two groups totaling 30 or more test results representing similar materials in which mix proportion strengths are within 20 percent of specified strength, from data obtained within one year of the proposed use.

The Engineer will analyze performance records to establish the standard deviation.

(2) When sufficient past performance records are not provided, the Engineer will assume the current standard deviation to be 500 psi for compressive strength, f'_c , and 50 psi for flexural strength, f'_r .

Unless sufficient performance records are available from other projects at DOT Materials Testing and Research Branch (MTRB), submit test performance records or trial test reports for prequalifications, based on data of the most recent tests made on the concrete of the proposed mix design. The data must be from tests that have been performed within one year of the proposed use and done at an accredited material testing laboratory by certified material testing personnel.

Include the following information in test data and trial batch test reports: date of mixing; mixing equipment and procedures used; the size of batch in cubic yards and weight, type, and source of ingredients used; slump of concrete; air content of concrete when using an air-entraining agent; the age of the sample at the time of testing; and strength of concrete cylinders or beams tested.

Show that concrete strength tests equal or exceed minimum average strength in trial test reports. The test is an average of 28-day test results of five consecutive concrete cylinders or concrete beams taken from a single batch. No cylinder or beam must have a strength less than 85 percent of the minimum average strength.

Submit test data and trial test reports signed by an official of an accredited laboratory that performed tests.

The Engineer reserves the right to stop work when a series of low-strength tests occur. Do not continue concrete work until the cause is established and the Engineer is informed of and accepts, the necessary corrective action to be taken.

(C) Batching. Measure and batch materials in accordance with the following provisions:

(1) Portland Cement. Either sacked or bulk cement may be used. Do not use a fraction of the sack of cement in the concrete batch unless cement is weighed.

Weigh bulk cement on weighing device accepted by the Engineer. Seal and vent bulk cement-weighing hopper properly to preclude dusting during

operation. Do not suspend the discharge chute from the weighing hopper. Arrange the discharge chute so that cement will not lodge in the hopper or leak from the hopper.

Batching accuracy must be within 1 percent, plus or minus, of the required weight.

(2) Water. Measure water by volume or by weight. Use a readily adjustable device for measurement of water, with accuracy within 1 percent, plus or minus, of the quantity of water required for a batch. Arrange the device so that variable pressure in the water supply line does not affect measurements. Equip measuring tanks with outside taps and valves or other accepted means to allow for checking calibration.

(3) Aggregates. When storing and stockpiling aggregates, avoid separation of coarse and fine particles within each size, and do not intermix various sizes before proportioning. Protect stored or stockpiled aggregates from dust or other foreign matter. Do not stockpile together, aggregates from different sources and of different gradations.

When transporting aggregates from stockpiles or other sources to batching plant, ensure uniform grading of material is maintained. Do not use aggregates that have become segregated or mixed with earth or foreign matter. Stockpile or bin aggregates at least 12 hours before batching. Produce or handle aggregates by hydraulic methods and wash and drain aggregates. If aggregates exhibit high or non-uniform moisture content, the Engineer may order storage or stockpiling for more than 12 hours or remixing of the stockpile, or other remedial methods. Keep using remedial methods until moisture content problems are resolved. When there is clay or dirt on the aggregate wash the aggregate until they are in a quantity that no longer affects the concrete mix and is accepted by the Engineer.

Proportion aggregates by weight, with an exception being that aggregates in concrete for minor structures, curbs, and sidewalks may be proportioned by either volume or weight. For volumetric proportioning, use measuring boxes of known capacity to measure the quantity of each aggregate size.

Use batch weight based on dry materials plus the total weight of moisture (both absorbed and surface) contained in aggregate. Measure individual aggregates to within 2 percent, plus or minus, of required weight, and the total weight of aggregates to within 1 percent, plus or minus, of the required weight.

(4) Admixtures. Ensure that all admixtures used are compatible with all the other admixtures used in the concrete mix. Admixtures which

significantly increase the drying shrinkage or creep in the concrete may be rejected by the Engineer. Store, proportion, and dispense admixtures in accordance with the following provisions:

(a) Liquid Admixtures. Dispense chemical admixtures, in liquid form, e.g., air-entraining admixtures, and corrosion inhibiting admixtures. Use mechanical dispensers for liquid admixtures with sufficient capacity to measure the prescribed quantity for each batch of concrete. Include a graduated measuring unit in each dispenser to measure liquid admixtures to within 5 percent, plus or minus, of the prescribed quantity for each batch. Read graduations accurately from point of measuring unit, and control proportioning operations to permit a visual check of batch accuracy before discharging. Mark each measuring unit clearly for type and quantity of admixture.

Arrange with the supplier to provide a sampling device consisting of a valve located in a safe and accessible location for sampling admixtures. Sampling is not required if not otherwise provided.

When using more than one liquid admixture for concrete mix, use a separate measuring unit for each liquid admixture and dispense separately to avoid interaction that may interfere with admixture efficiency and adversely affect concrete. Dispense liquid admixture by injecting so as not to mix admixture at high concentrations.

When using liquid admixtures in concrete that are completely mixed in paving or continuous mixers, operate dispensers automatically with batching control equipment. Equip such dispensers with an automatic warning system that will provide visible or audible signals at the point where proportioning operations are controlled, when the following occurs: quantity of admixture measured for each batch of concrete varies from pre-selected dosage by more than 5 percent, or the entire contents of measuring unit from the dispenser are not emptied into each batch of concrete.

Unless liquid admixtures are added to the batch with pre-measured water, discharge liquid admixtures into the stream of water that disperses admixtures uniformly throughout the batch. An exception is that air-entraining admixtures may be dispensed directly into moist sand in batching bins, provided adequate control of concrete air content can be maintained.

Measure and disperse special admixtures, as recommended by the admixture manufacturer, and as accepted by the Engineer.

Special admixtures include high-range water reducers requiring dosages greater than the capacity of conventional dispensing equipment. For site added, high-range water reducers, use calibrated, portable dispenser supplied by the manufacturer.

(b) Mineral Admixtures. Protect mineral admixtures from exposure to moisture or other deleterious conditions until used. Pile sacked material of each shipment to permit access for tally, inspection, and identification.

Provide adequate facilities to ensure that mineral admixtures meeting specified requirements are kept separate from other mineral admixtures and that only specified mineral admixtures can enter the work's concrete mix. Provide safe and suitable facilities for sampling mineral admixtures at weigh hopper or in the feed line immediately in advance of the hopper.

Incorporate mineral admixtures into the concrete using equipment complying with the requirements for Portland Cement weigh hoppers and charging and discharging mechanisms specified in ASTM C94 and Subsection 601.03(C) - Batching.

When concrete is completely mixed in stationary paving or continuous mixers, weigh mineral admixture in a separate weigh hopper. Introduce mineral admixture and cement simultaneously into the mixer, proportionately with aggregate.

When interlocks are required for cement-charging mechanisms, and cement and mineral admixtures are weighed cumulatively, interlock their charging mechanisms to prevent the introduction of mineral admixture until the mass of cement in the weighing hopper is within tolerances specified in Subsection 601.03(C)(1) - Portland Cement.

In determining the maximum quantity of free water that may be used in concrete, consider mineral admixture to be cement.

(5) Bins and Scales. At the batching plant, use individual bins, hoppers, and scales for each aggregate size. Include a separate bin, hopper, and scale for bulk cement and fly ash.

Except when proportioning bulk cement for pavement or structures, the cement weigh hopper may be attached to a separate scale for individual weighing or to an aggregate scale for cumulative weighing. If cement is weighed cumulatively, weigh cement before other ingredients.

When proportioning for pavement or structures, keep bulk cement scale and weigh hopper separate and distinct from aggregate weighing equipment.

Use a springless-dial or beam-type batching scales. When using beam-type scales, make provisions to show the operator that the required load in the weighing hopper is approaching. Use devices that show conditions within the last 200 pounds of load and within 50 pounds of overload.

Maintain scale accuracy to 0.5 percent throughout the range of use. Design poises to lock to prevent an unauthorized change of position. Use scales inspected by the State Measurement Standards Branch of the Department of Agriculture to ensure their continued accuracy. Provide not less than ten 50-pound weights for testing scales.

Batching plants may be equipped to proportion aggregates and bulk cement by automatic weighing devices.

(6) Batching and Hauling. When mixing is to be performed at the work site, transport aggregates from batching plant to the mixer in batch boxes, vehicle bodies, or other containers of adequate capacity and construction. Use partitions to separate batches and prevent spilling from one compartment to another while in transit or during dumping.

Transport bulk cement to the mixer in tight compartments carrying the full quantity of cement required for the batch. Once the cement is placed in contact with aggregates, batches must be mixed and placed within 1-1/2 hours of contact. Cement in original shipping packages may be transported on top of aggregates. Ensure that each batch contains the number of sacks required by the job mix.

Deliver batches to mixer intact. Charge each batch into the mixer without loss of cement. When carrying more than one batch on a truck, charge the batch into the mixer without spilling material from one batch compartment into another.

(D) Mixing. Mix concrete in mechanically operated mixers. When accepted by the Engineer, batches that do not exceed 1/3 cubic yard may be hand-mixed in accordance with methods described at end of this subsection.

Use stationary or truck mixers that distribute materials thoroughly and produce concrete uniform in color and appearance. When there is variation in mixed concrete attributable to worn pickup or throw-over blades, the Engineer will inspect the mixer. If the inspection reveals that blades are worn more than one inch below the original height of the manufacturer's design, or are damaged repair or replace blades. Upon request, make a copy of the manufacturer's design,

showing the dimensions and arrangement of blades.

Charge batches into central or truck mixers so that portion of mixing water enters ahead of cement and aggregates. Deliver a uniform flow of water. Place the entire amount of batch water in the mixer by end of the first quarter of the mixing period. When mixers with multiple compartment drums are used, the time required to transfer material between compartments will be included as mixing time. Use drum rotation speed as designated by the manufacturer. If mixing does not produce concrete of uniform and smooth texture, provide additional revolutions at the same speed until thorough mixing of each concrete batch is attained. Begin measuring mixing time from the time cement, aggregates, and 60 percent of water are in the drum. Do not exceed the manufacturer's rated capacity for the volume of concrete mixed in each batch.

Equip central or truck mixers with an attachment for automatically timing the mixing of each concrete batch. The timing device must include an automatic feature for locking the discharge chute and a device for warning the operator when the required mixing duration has been met. If the timing or locking device fails to operate, immediately furnish a clock or watch that indicates seconds, to the mixer operator. If the timing device is not repaired within three days after becoming inoperative, shut down batching operation until the timing device is repaired.

For stationary mixers, use mixing time between 50 seconds and 5 minutes. Select mixing time, as necessary, to produce concrete that meets uniformity criteria when tested in accordance with Section 11.3.3 of ASTM C94. The Contractor may designate mixing time for which uniformity tests are to be performed, provided mixing time is not less than 50 seconds or more than 5 minutes. Before using concrete for pavements or structures, mix concrete to meet specified uniformity requirements. The Contractor must furnish labor, sampling equipment, and materials required for conducting uniformity tests, including the Box Test, and the Contractor's quality control for the concrete mixture. The Engineer will not furnish for the Contractor's quality control, testing equipment, e.g., scales, cubic measure, and air meter; and will not perform the Contractor's quality control tests. The Engineer will not pay separately for the Contractor's quality control, e.g., labor, equipment, materials, or testing, but will consider the costs incidental to concrete. After batching and mixing operational procedures are established, the Engineer will not allow changes in procedures without the Contractor re-establishing procedures by conducting uniformity tests. Repeat mixer performance tests whenever the appearance of concrete or coarse aggregate content of samples is not complying with the requirements of ASTM C94. For truck mixers, add four seconds to the specified mixing time if timing starts as soon as the skip reaches its maximum raised position.

Unless otherwise indicated in the Contract Documents or accepted by the Engineer, concrete must be mixed at proportioning plant. Operate mixer at agitating speed while in transit. Concrete may be truck-mixed only when cement

or cement and mixing water are added at the point of delivery. Begin mixing truck-mixed concrete immediately after the introduction of mixing water to cement and aggregates, or introduction of cement to aggregates.

Inclined-axis, revolving drum truck mixers must comply with Truck Mixer, Agitator and Front Discharge Concrete Carrier Standards TMMB 100-01, 15th Revision, or later published by Truck Mixer Manufacturers Bureau. Truck mixers must produce a thoroughly mixed and uniform mass of concrete and must discharge concrete without segregation.

The manufacturer's standard metal rating plate must be attached to each truck mixer, stating maximum rating capacity in terms of volume of mixed concrete for various uses, and maximum and minimum mixing speeds. When using truck mixers for mixing, adhere to the maximum capacity shown on the metal rating plate for the volume of concrete in each batch.

Operate truck mixers at the mixing speed designated by the manufacturer, but at not less than 6 or more than 18 revolutions per minute. Mix truck-mixed concrete initially between 70 and 100 revolutions at manufacturer-designated mixing speed, after ingredients, including water, are in the mixer. Water may be added to the mixture not more than two times after the initial mixing is completed. The addition of water at the project site must comply with the requirements of Subsection 503.03 Construction. Each time that water is added, turn the drum an additional 30 revolutions or more at mixing speed until the concrete is mixed uniformly.

When furnishing shrink-mixed concrete, transfer partially mixed concrete at the central plant to a truck mixer. Apply requirements for truck-mixed concrete. The Engineer will not credit the number of revolutions at mixing speed for partial mixing in the central plant.

When accepted by the Engineer, concrete batches not exceeding 1/3 cubic yard may be hand-mixed on a watertight, level platform. Measure the proper amount of coarse aggregate in measuring boxes and spread it on the platform. Spread fine aggregate on that coarse aggregate layer. Limit coarse and fine aggregate layers to a total depth of one foot. Spread dry cement on this mixture. Turn whole mass not less than two times dry. Add sufficient clean water, and distributed it evenly. Turn whole mass again, not less than three times, not including placing in carriers or forms. Mortar mixers of appropriate size may be used when accepted by the Engineer.

(E) Transporting Mixed Concrete. Transport central-mixed concrete to the delivery point in truck agitators or truck mixers operating at speed designated by the equipment manufacturer as agitating speed; or in non-agitating hauling equipment, provided consistency and workability of mixed concrete upon discharge at the delivery point suitable for placement and consolidation in place.

The mixed concrete after hauling to the delivery point must comply with the uniformity criteria when tested as specified in Section 12.5 of ASTM C94.

For revolving drum truck mixers transporting central-mixed concrete, limit concrete volume to the manufacturer's rated capacity for agitator operation. Maintain agitating speed for both revolving drum mixers and revolving blade type agitators as designated on the manufacturer's metal data plate. Equip truck mixers or truck agitators with electrically or mechanically actuated counters. Activate counters after introducing cement to aggregates.

Bodies of non-agitating hauling equipment must be smooth, watertight, metal containers equipped with gates to permit control of concrete discharge. Protect open-topped haul vehicle against the weather and wind with cover accepted by the Engineer.

When hauling concrete in non-agitating trucks, complete discharge within 30 minutes after introducing mixing water to cement and aggregates.

When a truck mixer or agitator is used for transporting central-mixed concrete to the delivery point, complete discharge within 1-1/2 hours, after the introduction of mixing water to cement and aggregates, or cement to aggregates. For truck-mixed concrete, complete concrete discharge within 1-1/2 hours. This time limitation is permitted to be waived by the Engineer if after the 1-1/2-hour time limit has been reached, the concrete has a slump that it can be placed, without the addition of water to the batch and hydration of the concrete has not started, i.e., the temperature of the concrete is less than 90 degrees F or the required maximum temperature of the concrete. Also, the set time is increased by the use of a retarder in the mix design and acceptance of the increased set time is obtained before use from the Engineer.

Submit delivery tickets from manufacturers of truck-mixed concrete and central-mixed concrete with each truckload of concrete before unloading at the jobsite. Printed, stamped, or written delivery ticket must include the following information:

- (1) Name of concrete plants.
- (2) Serial number of the ticket.
- (3) Date and truck number.
- (4) Name of Contractor.
- (5) Specific project, route, or designation of job (name and location).
- (6) Specific class or designation of concrete in accordance with Contract

Documents.

(7) Quantity of concrete in cubic yards.

(8) Time of loading batch or mixing of cement and aggregates.

(9) Water added by the receiver of concrete and receiver's initials.

(10) Information that is necessary to calculate the total mixing water added by the producer. Total mixing water includes free water on aggregates, water, and water added by the truck operator from the mixer tank at the project site.

(11) The amount of water held back from the batched concrete mix that can be added to the concrete mix at the project and still not cause the mix to exceed the accepted mix design water to cement ratio.

(12) Readings of non-resettable revolution counters of truck mixers after the introduction of cement to aggregates, or introduction of mixing water to cement aggregates

(13) Supplier's mix number or code and include the mix design name.

Furnish additional information designated by the Engineer and required by job specifications upon request.

(F) Consistency. Regulate the quantity of water and admixtures used in concrete mixes so that concrete consistency, as determined by the AASHTO T 119 test method, is within the nominal slump range specified in Table 601.03-3 - Slump for Concrete. If the concrete slump exceeds the nominal slump, adjust subsequent batches of the mixture. If slump exceeds maximum slump, the Engineer will reject concrete unless it is solely deemed by the Engineer as satisfactory for use.

The Engineer will also reject harsh or unworkable concrete that cannot be properly placed. Remove rejected concrete at no increase in the contract price or contract time.

Slump for concrete must be as specified in "Table 601.03-3 – Slump for Concrete".

TABLE 601.03-3 - SLUMP FOR CONCRETE		
Type of Work	Nominal Slump Inches	*Maximum Slump Inches
Concrete Pavements	0 – 3	3-1/2
Reinforced Concrete Structures:		
Sections Over 12 Inches	0 – 4	5
Sections 12 Inches Thick or Less	2 – 5	6
Non-Reinforced Concrete Facilities	1 – 3	4
Concrete Placed Underwater	6 – 8	9
Bridge Decks	0 – 3	3-1/2

If the slump of the ready-mix concrete upon delivery is below the design slump, water may be added provided:

(1) Water shall not be added to the concrete if more than ¼ cubic of concrete has been discharged from the mixer.

(2) Water may be added only up to 30 minutes after the average travel time to the jobsite.

(3) The maximum slump, the maximum water/cement ratio, and the maximum water per cubic yard shall not be exceeded.

(4) Not more than 1 ½ gallons of water per cubic yard shall be added to the concrete, but not more than the amount of “held-back” water.

(5) The amount of “held-back” water from the approved mix design shall be shown on the delivery ticket.

*A waiver to the maximum slump requirement may be requested from the Engineer. Submit justification for the granting of the waiver request along with how the mix design’s components ensure that the mix will not segregate.

In adverse or difficult conditions that may affect the placement of concrete, the above slump limitations may be exceeded for placement workability, with the addition of admixture conforming to Subsection “711.03 – Admixtures”, if the design mix redesign is accepted by the Engineer in writing and the water-cement ratio is complies with Contract Documents requirements. Provide additional cement and water, or admixture at no increase in the contract price or contract time.

(G) **Forms.** Construct forms in accordance with applicable sections.

712 **(H) Placing Concrete.** Place concrete in accordance with applicable sections.

713
714 **(I) Finishing Concrete Surfaces.** Finish concrete surfaces in accordance
715 with applicable sections.

716
717 **(J) Curing Concrete.** Cure concrete in accordance with applicable sections.

718
719 **601.04 Measurement.** The Engineer will measure concrete in accordance with the
720 applicable sections.

721
722 **601.05 Payment.** The Engineer will pay for the accepted concrete under the
723 applicable Sections.

724
725
726
727
728 **END OF SECTION 601**

SECTION 602 - REINFORCING STEEL

Make the following amendments to said Section:

(I) Amend **Subsection 602.03(D) Placing and Fastening** by revising the first sentence of the first paragraph between lines 58 and 60 to read as follows:

“Unless otherwise indicated in the contract documents, place and fasten reinforcing steel in accordance with the CRSI Placing Reinforcing Bars and the CRSI *Manual of Standard Practice*.”

(II) Amend **Subsection 602.03(D) Placing and Fastening** by adding the following sentence to Note 1 in Table 602.03-1 Placement Tolerances at line 68:

“Note 1 is not applicable for deck slabs, approach slabs, and sleeper slabs.”

(III) Amend **Subsection 602.03(D) Placing and Fastening** by amending the last sentence of paragraph three at line 79 and 80 to read as follows:

“All plastic bar supports will be allowed only in prestressed concrete members and for vertical positions in drilled shafts.”

(IV) Amend **Subsection 602.03(E)(1)(b)** by revising the number 33 to read 50 at line 159.

(V) Amend **Subsection 602.03(E)(3) Butt-Joined Splices** by replacing the last sentence of the first paragraph between lines 262 and 263 with the following sentence:

“Completed butt splices shall develop not less than the specified tensile strength of the unspliced bars.”

(VI) Amend **Subsection 602.03(E)(3)(b) 1. General** by deleting the words “of 125 percent of specified yield strength” in subparagraph d. at lines 443 and 444.”

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 The Engineer will measure reinforced concrete pipe per linear foot in
20 accordance with contract documents.

21
22 The Engineer will measure cleaning of existing culverts on a force account
23 basis in accordance with Subsection 109.06 - Force Account Provisions
24 and Compensation and as ordered by the Engineer.”

25
26 **(III)** Amend **603.05 – Payment** by revising lines 294 to 349 to read as follows:

27
28 **“603.05 Payment.** The Engineer will pay for the accepted pay items listed
29 below at the contract price per pay unit, as shown in the proposal schedule.
30 Payment will be full compensation for the work prescribed in this section and
31 contract documents.

32
33 The Engineer will pay for each of the following pay items when included in
34 the proposal schedule:

35
36

Pay Item	Pay Unit
24" Reinforced Concrete Pipe	Linear Foot
Clean Existing Culverts	Force Account"

37
38
39
40
41
42 **END OF SECTION 603**

1 **SECTION 604 – MANHOLES, INLETS, AND CATCH BASINS**

2
3 Make the following amendments to said Section:

4
5 **(I)** Amend **604.04 – Measurement** by revising lines 118 to 124 to read as
6 follows:

7
8 **“604.04 Measurement.**

9
10 **(A)** Engineer will measure Reconstructed Manholes, and Grated Drop
11 Inlets, per each in accordance with contract documents.

12
13 **(B)** The Engineer will measure Vegetated Swale per linear foot in
14 accordance with the contract documents.”

15
16 **(II)** Amend **604.05 – Payment** by revising lines 126 to 128 to read as follows:

17
18 **“604.05 Payment.** The Engineer will pay for the accepted pay items listed
19 below at the contract price per pay unit, as shown in the proposal schedule.
20 Payment will be full compensation for the work prescribed in this section and
21 contract documents.

22
23 The Engineer will pay for each of the following pay items when included in
24 the proposal schedule:

25

Pay Item	Pay Unit
Type 61214 “Modified” GDI	Each
Reconstructed Type _____ Manhole	Each
Vegetated Swale	Linear Foot
Adjusting Storm Drain Manhole, Frame, and Cover	Each”

35
36 **END OF SECTION 604**

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(I) Amend 606.04 - Measurement by replacing lines 116 to 118 to read:

The Engineer will measure from center to center of end posts. If the Contractor makes end connections to masonry or steel structures, the Engineer will measure to the face of such structures.

(1) as units of each kind when specified in the proposal or

(II) Amend **606.05 – Payment** by revising lines 120 to 138 to read as follows:

The Engineer will pay for the following pay items when included in the proposal schedule:

Pay Item	Pay Unit
Guardrail Type MGS with Standard 8" Offset Block	Linear Foot
Terminal Section-MFLEAT	Each"

NH-093-1(035)
606-1a

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(I) Amend Section 622.03(C)(5) – Pull Boxes by adding the following after line 153:

The lift slots shall not penetrate through the pull box cover as to allow water to enter the pull box through the opening.”

“622.04 Measurement. The Engineer will not measure roadway lighting systems when contracted on a lump sum basis.”

“622.05 Payment. The Engineer will pay for the roadway lighting systems on a lump sum basis if specified in the proposal.

The Engineer will consider full compensation for additional materials and labor not shown in the contract that are necessary to complete the installation of the various systems incidental to the various contract items. The Engineer will not allow additional compensation.

Pay Item

Pay Unit

Lump Sum”

NH-093-1(035)
622-1a

8/05/26

1 **SECTION 623 – TRAFFIC SIGNAL SYSTEM**
2

3 Make the following amendment to said Section:
4

5 **(I)** Amend **Section 623.03(C)(6) – Pull Boxes** by adding the following after
6 line 254:
7

8 “For polymer concrete pull boxes, the polymer concrete cover shall have
9 lift slots with integral lifting pin/latch centered within the slot, as shown in 2008
10 HDOT Highways Standard Plan TE-37.
11

12 The lift slots shall not penetrate through the pull box cover as to allow
13 water to enter the pull box through the opening.”
14

15 **(II) “623.04 Measurement.** The Engineer will not measure software for
16 controller, or electrical risers for payment.
17

18 **(A)** The Engineer will measure the controller assembly, traffic signal
19 standard, pedestrian push button post, foundation for traffic signal
20 controller cabinet, Closed-Circuit Television Cabinet and
21 foundation, foundation for pedestrian push button post, pedestrian
22 or traffic signal assembly, APS pedestrian pushbutton with
23 instruction sign, pedestrian pushbutton post, pullbox, loop detector
24 sensing unit, emergency vehicle preemption optical receiver,
25 Uninterruptible Power Supply (UPS), and battery panel per each in
26 accordance with the contract documents.
27

28 **(B)** The Engineer will measure camera cable, traffic signal interconnect
29 subduct, traffic signal ductline, secondary electrical ductline, and
30 conductors per linear foot in accordance with the contract
31 documents.
32

33 **(C)** Service metering and equipment assembly, verification of existing
34 underground utilities, remove traffic signal conduits, cables, and
35 equipment will be paid on a lump sum basis. Measurement for
36 payment will not apply.
37

38 **(D)** The Engineer will measure Hawaiian Electric Company service
39 connection fees and transformer installation on a force account
40 basis according to Subsection 109.06 – Force Account Provisions
41 and Compensation.”
42

43 **(III)** Amend **Section 623.05 – Payment** by replacing lines 581 to 594 to read:
44

45 **“623.05 Payment.** The Engineer will pay for the controller assembly at the
46 contract unit price per each complete in place. The price includes full
47 compensation for submitting the equipment list and drawing; furnishing and

48 mounting the traffic signal controller cabinet; furnishing, assembling, wiring,
49 software, and housing the controller and auxiliary equipment; painting the traffic
50 signal controller cabinet; testing; providing turn-on service; submitting warranty;
51 and furnishing equipment, tools, labor, materials and other incidentals necessary
52 to complete the work.

53
54 The Engineer will pay for the traffic signal standard and pedestrian push
55 button post at the contract unit price per each complete in place. The price
56 includes full compensation for submitting the equipment list and drawing;
57 furnishing and installing the traffic signal standard or pedestrian push button post;
58 wiring; bonding and grounding; testing; providing turn-on service; submitting
59 warranty; and furnishing equipment, tools, labor, materials; and other incidentals
60 necessary to complete the work.

61
62 The Engineer will pay for the foundation for controller cabinet and
63 pedestrian pushbutton post at the contract unit price per each complete in place.
64 The price includes full compensation for excavating and backfilling; forming;
65 furnishing and placing the reinforcing steel; mixing, placing, and curing the
66 concrete; furnishing and setting the anchor bolts; restoring the pavement; and
67 furnishing equipment, tools, materials and other incidentals necessary to
68 complete the work.

69
70 The Engineer will pay for the pedestrian and traffic signal assembly at the
71 contract unit price per each complete in place. The price includes full
72 compensation for submitting the equipment list and drawing; furnishing and
73 installing the signal assembly; wiring; bonding and grounding; painting the signal
74 head mounting; testing; providing turn-on service; submitting warranty; and
75 furnishing equipment, tools, labor, materials and other incidentals necessary to
76 complete the work.

77
78 The Engineer will pay for the APS pedestrian push button with sign and
79 pedestrian push button post at the contract unit price per each complete in place.
80 The price includes full compensation for submitting the equipment list and
81 drawing; furnishing and installing the pedestrian push button with the instruction
82 sign; push button post; wiring; bonding and grounding; testing; providing turn-on
83 service; submitting warranty; and furnishing equipment, tools, labor, materials;
84 and other incidentals necessary to complete the work.

85
86 The Engineer will pay for the pullbox at the contract unit price per each
87 complete in place. The price includes full compensation for submitting the
88 equipment list and drawing; furnishing and installing the pullbox at the designated
89 locations; saw cutting; excavating and backfilling; restoration of concrete
90 sidewalks, asphalt concrete pavement and landscaping; coating the frames and
91 covers; and furnishing equipment, tools, labor, materials and other incidentals
92 necessary to complete the work.

94 The Engineer will pay for the loop detector sensing unit at the contract unit
95 price per each complete in place. The price includes full compensation for saw
96 cutting; cleaning and blowing the saw cut areas; furnishing and inserting the loop
97 cable; splicing in the pullbox; filling the saw cut groove with epoxy sealer or hot
98 applied rubberized sealant; and furnishing equipment, tools, labor, materials and
99 other incidentals necessary to complete the work.

100
101 The Engineer will not pay for the interconnect or electrical risers. The
102 work includes furnishing and installing the riser; and furnishing equipment, tools,
103 labor, materials, and other incidentals necessary to complete the work. The
104 Engineer will consider the cost for electrical risers as included in the contract
105 price for the various contract items.

106
107 The Engineer will pay for the emergency vehicle preemption (EVP) optical
108 receiver at the contract unit price per each complete in place. The price includes
109 full compensation for submitting the equipment list and drawing; furnishing and
110 installing the EVP; wiring; bonding and grounding; testing; providing turn-on
111 service; submitting warranty; and furnishing equipment, tools, labor, materials;
112 and other incidentals necessary to complete the work.

113
114 The Engineer will pay for the Uninterruptible Power Supply (UPS) and
115 battery panel at the contract unit price per each complete in place. The price
116 includes full compensation for submitting the equipment list and drawing;
117 furnishing and mounting the equipment; furnishing, assembling, and wiring;
118 testing; submitting warranty; and furnishing equipment, tools, labor, materials and
119 other incidentals necessary to complete the work.

120
121 The Engineer will pay for the traffic signal ductlines at the contract unit
122 price per linear foot complete in place. The price includes full compensation for
123 saw cutting; trenching; excavating and backfilling, including asphalt concrete
124 pavement, aggregate base course and aggregate subbase course for trench
125 repair; concrete curb and/or gutter and concrete sidewalk repair; furnishing,
126 installing, bonding, and grounding the conduits and interconnect subducts; and
127 furnishing equipment, tools, labor, materials and other incidentals necessary to
128 complete the work.

129
130 The Engineer will pay for the traffic signal cables at the contract unit price
131 per linear foot complete in place. The price includes full compensation for
132 furnishing, installing, splicing, and taping the cable; furnishing and installing
133 interconnect fabric subducts; making the connections; providing turn-on service;
134 and furnishing equipment, tools, labor, materials and other incidentals necessary
135 to complete the work.

136
137 The Engineer will pay for Hawaiian Electric Company service connection
138 fees and transformer installation on a force account basis according to
139 Subsection 109.06 – Force Account Provisions and Compensation. An estimate
140 amount for the force account is allocated in the proposal schedule under HEC

Service Connection. The account amount to be paid will be the sum shown on the accepted force account records whether this sum be more or less than the estimated amount allocated in the proposal schedule.

The Engineer will consider full compensation for additional materials and labor not shown in the contract that are necessary to complete the installation of the various systems incidental to the various contract items. The Engineer will not allow additional compensation.

The Engineer will pay for the following pay items when included in the proposal schedule:

Pay Item	Pay Unit
HECO Service Connection	Force Account
Verify Location of Existing Underground Utilities	Lump Sum
Controller Assembly with Software (Controller, Cabinet, and Auxiliary Equipment)	Each
Type I Traffic Signal Standard, H=8'	Each
Type I Traffic Signal Standard, H=10'	Each
Type II Traffic Signal Standard with 16'-20' Mast Arm	Each
Type II Traffic Signal Standard with 21'-25' Mast Arm	Each
Type II Traffic Signal Standard with 36'-40' Mast Arm	Each
Foundation for Type I Traffic Signal Standard	Each
Foundation for Controller Cabinet	Each
Closed-Circuit Television (CCTV) Cabinet and Foundation	Each
Traffic Signal Assembly 1-Way, 12-inch, 1-3 Section Vertical, Type VI Mounting with Retroreflective Backplate (Mast Arm Mount)	Each
Traffic Signal Assembly, 2-Way, 12-inch, 1-3 Section Vertical, Type V Mounting (Bracket Mount)	Each
Traffic Signal Assembly, 1-Way, 12-inch, 1-3 Section Vertical, Type I Mounting (Slipfitter Mount)	Each

188	Traffic Signal Assembly, 2-Way, 12-inch, 1-3 Section Vertical,	Each
189	Type II Mounting (Slipfitter Mount)	
190		
191	Pedestrian Signal Assembly, 1-Way, 12-inch, One Vertical	Each
192	with Type IV Mounting (Bracket Mount)	
193		
194	Pedestrian Signal Assembly, 1-Way, 12-inch, One Vertical	Each
195	with Type I Mounting (Slipfitter Mount)	
196		
197		
198	Pedestrian Signal Assembly, 2-Way, 12-inch, One Vertical	Each
199	with Type II Mounting (Slipfitter Mount)	
200		
201	Accessible Pedestrian Signal Push button Assembly	Each
202	with Instruction Sign	
203		
204	Type A Pullbox	Each
205		
206	Type B Pullbox	Each
207		
208	Type C Pullbox	Each
209		
210	Penetrate Existing Pullbox	Each
211		
212	Loop Detector Sensing Unit (6 ft x 6 ft) One Loop	Each
213		
214	Loop Detector Sensing Unit (6 ft x 6 ft) Two Loops	Each
215		
216	Loop Detector Sensing Unit (6 ft x 6 ft) Six Loops	Each
217		
218	EVP Optical Receiver (with Mast Arm Mounting)	Each
219		
220	Traffic Signal Ductline, 1-2" Conduit, Sch. 40 PVC, Conc. Encased)	Lin. Ft.
221		
222	Traffic Signal Ductline, 2-2" Conduit, Sch. 40 PVC, Conc. Encased)	Lin. Ft.
223		
224	Traffic Signal Ductline, 3-2" Conduit, Sch. 40 PVC, Conc. Encased)	Lin. Ft.
225		
226	Traffic Signal Ductline, 4-2" Conduit, Sch. 40 PVC, Conc. Encased)	Lin. Ft.
227		
228	Traffic Signal Ductline, 5-2" Conduit, Sch. 40 PVC, Conc. Encased)	Lin. Ft.
229		
230	Traffic Signal Ductline, 6-2" Conduit, Sch. 40 PVC, Conc. Encased)	Lin. Ft.
231		
232	Traffic Signal Ductline, 7-2" Conduit, Sch. 40 PVC, Conc. Encased)	Lin. Ft.
233		
234	Traffic Signal Ductline, 8-2" Conduit, Sch. 40 PVC, Conc. Encased)	Lin. Ft.

235	Traffic Signal Ductline, 10-2" Conduit, Sch. 40 PVC, Conc. Encased)	Lin. Ft.
236		
237	Type 1 Signal Control Cable (26C #14)	Lin. Ft.
238		
239	Type 2 PPB/Loop Detector Cable (2C #14)	Lin. Ft.
240		
241	Type 6 Power Service (3C#6)	Lin. Ft.
242		
243	Type 7 Opticom Cable (3C #20)	Lin. Ft.
244		
245	Fiber Optic Cable, 72-Strand, Single Mode	Lin. Ft.
246		
247	Interconnect Fabric Subduct	Lin. Ft.
248		
249	Service and Metering Equipment Assembly	Lump Sum
250		
251	Remove Traffic Signal Conduits, Cables, and Equipment	Lump Sum
252		
253	Traffic Signal Hardware Modification	Force Account"
254		
255		
256		
257	END OF SECTION 623	

SECTION 626 – MANHOLES AND VALVE BOXES FOR WATER AND SEWER SYSTEMS

Make the following amendment to said Section:

(I) Amend 626.04 - Measurement by replacing lines 172 to 173 to read:

“626.04 Measurement. The Engineer will measure manholes and valve boxes per each for water and sewer systems.”

(II) Amend 626.05 – Payment by revising lines 174 to 192 to read as follows:

“626.05 Payment. The Engineer will pay for the accepted pay items listed below on a contract per each basis, as shown in proposal schedule. Payment will be full compensation for work prescribed in this section and in contract documents.

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

Pay Item	Pay Unit
Adjusting Fire Hydrants	Each
Adjusting Water Manhole, Frame and Cover	Each
Adjusting Sewer Manhole, Frame and Cover	Each
Adjusting Standard Valve Box	Each

The Engineer will pay for excavation and backfill in accordance with and under Section 204 -- Excavation and Backfill for Miscellaneous Facilities."

END OF SECTION 626

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, per lane, or per each according to the contract.

30
31 The Engineer will measure crosswalk markings per each according
32 to the contract.

33
34 The Engineer will not measure temporary pavement markings
35 including flexible delineator posts with reflector markers or Type I
36 Barricades and temporary signs installed for the longitudinal guidance
37 of public traffic over reconstructed areas, cold planed surfaces, newly
38 paved surfaces or other unmarked or scarified areas for payment.

39
40 The Engineer will measure the temporary pavement markings and
41 temporary signs installed as ordered by the Engineer for special
42 temporary traffic patterns on a force account basis, if the contract
43 specifies payment in the proposal.

44
45 The Contractor shall consider the work required for the removal of
46 pavement markings incidental to the various contract items, except as
47 provided in the proposal or elsewhere in the contract. If the contract
48 stipulates that the Engineer will make payment for the removal of
49 pavement markings, the Engineer will measure the removal of
50 pavement markings.

51
52 (B) The Engineer will measure the pavement markers per each for the
53 types shown in the proposal.

54
55 (C) The Engineer will measure the painted stripes that are twelve (12)
56 inches wide or less as a single stripe. The Engineer will measure the
57 painted stripes over twelve (12) inches wide as two (2) stripes. The
58 Engineer will measure the double stripes that are twelve (12) inches or
59 less in total width including the transverse space between the stripes
60 as a single stripe.

The Engineer will measure the longitudinal pavement markings by the linear foot according to the contract. Longitudinal gaps for skip striping that are 30 feet or less will be included in the measurement.

(IV) Amend **629.05 – Payment** by revising lines 296 to 330 to read as follows:

“629.05 Payment.

(A) The Engineer will pay for thermoplastic and preformed pavement marking tape at the contract price per linear foot basis according to the contract, complete in place, including primers.

The Engineer will pay for double six (6) 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 crosswalk markings at the contract price per each 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.

If the contract specifies payment for temporary pavement markings installed as ordered by the Engineer for special temporary traffic patterns, the Engineer will pay from an allowance for “Temporary Construction Zone Markings”.

The Engineer will compute the actual amount paid to the Contractor for force account work according to Subsection 109.06 – Force Account Provisions and Compensation.

If the contact specifies payment for removal of pavement markings under unit price pay items, the Engineer will pay for the accepted

quantities at the contract unit prices bid. The prices shall be full compensation for removing such items according to the contract.

(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 quantities of crosswalk marking at the contract price per each basis 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
6-Inch White Guide Lines (Tape, Type III or Thermoplastic Extrusion except for bus bays)	Linear Foot
10-Foot White Profiled Thermoplastic Stripe (6 Inch Wide)	Linear Foot
6-Inch Double Solid Yellow Stripes (with 4 Inch Space) Tape, Type I or Thermoplastic Extrusion)	Linear Foot
6-Inch White Edge Stripe (Tape, Type I, or Thermoplastic Extrusion)	Linear Foot
8-Inch White Stripe (Tape, Type I, or Thermoplastic Extrusion)	Linear Foot
12-Inch White Stop Bar (Tape, Type III, or Thermoplastic Extrusion)	Linear Foot
Lane Change Restriction Marking 10-Foot White Profiled Thermoplastic Stripe (6 Inch Wide) (Tape, Type I, or Thermoplastic)	Linear Foot
12-Inch Yellow Transverse Stripe (Tape, Type III, or Thermoplastic Extrusion)	Linear Foot

158	Crosswalk Marking (Tape, Type III or	Each
159	Thermoplastic Extrusion)	
160		
161	Pavement Arrow (Tape, Type III, or	Each
162	Thermoplastic Extrusion)	
163		
164	Pavement Word (Tape, Type III or	Each
165	Thermoplastic Extrusion)	
166		
167	Type ____ Pavement Marker	Each"
168		
169	END OF SECTION 629	

1 **SECTION 630 – TRAFFIC CONTROL GUIDE SIGNS**

2
3 Make the following amendment to said Section:

4
5 **(I)** Amend **Section 630.02 - Materials**, by replacing lines 28 to 29 to read:

6
7 “Retroreflective sheeting shall conform to criteria listed in ASTM D 4956
8 for the applicable type and class, or as amended in accordance with Subsection
9 750.01 - Signs.”

10
11 **(II)** Amend **Section 630.04 - Measurement**, by replacing lines 204 to 221 to
12 read:

13
14 **“630.04 Measurement.** The Engineer will measure street name sign on mast
15 arm by each.

16
17 Measurement of contract items for construction of footings for overhead
18 mounted expressway signs will be as follows:

19
20 (1) The Engineer will measure excavation according to Section 204 –
21 Excavation and Backfill for Miscellaneous Facilities.

22
23 (2) The Engineer will measure concrete according to Section 503 –
24 Concrete Structures.

25
26 (3) The Engineer will measure reinforcing steel according to Section
27 602 – Reinforcing Steel.

28
29 When the Engineer accepts an alternative design, the method of measurement
30 for the various contract items affected by the design shall be identical with the
31 various original contract items shown in the contract. The Engineer will not
32 measure the additional items that the Contractor requires for the alternate
33 design.

34
35 The Engineer will not measure removal and disposal and storing of existing
36 and temporary signs and markers that the Contractor will not incorporate in the
37 completed highway for payment.”

38
39 **(III)** Amend **630.05 – Payment** by revising lines 223 to 303 to read as follows:

40
41 **“630.05 Payment.** The Engineer will pay for street name sign on mast arm at
42 the contract price per each for the type specified complete in place. Payment
43 shall be full compensation for the work prescribed in this section and the contract
44 documents.

The Engineer will not pay for removing and disposing or storing of existing and temporary signs that the Contractor will not incorporate in the completed highway separately. The Engineer will consider them incidental to the various contract items.

The Engineer will not make payment other than those specified herein for the construction of footings for overhead mounted expressway signs. The Engineer will pay for the work, materials, tools, equipment and incidentals required in the construction of the footings for overhead mounted expressway signs under the following contract items:

- (1) Footing Excavation. The Engineer will make payment for footing excavation according to Section 204 – Excavation and Backfill for Miscellaneous Facilities.
- (2) Concrete. The Engineer will make payment for concrete in footings according to Section 503 – Concrete Structures.
- (3) Reinforcing Steel. The Engineer will make payment for reinforcing steel according to Section 602 – Reinforcing Steel.

The Engineer will pay for the following pay items when included in the proposal schedule:

Pay Item	Pay Unit
Street Name Sign on Mast Arm	Each

When the Engineer accepts an alternate design, the total amount paid shall be full compensation for furnishing and installing materials and furnishing equipment, tools, labors, and incidentals necessary to complete the work. The Engineer will not make payment for additional materials, equipment, tools, labor and other incidentals that might become necessary to complete the installation due to the alternate design.

END OF SECTION 630

1 **SECTION 631 – TRAFFIC CONTROL, REGULATORY, WARNING, AND**
2 **MISCELLANEOUS SIGNS**

4 Make the following amendment to said Section:

6 **(I)** Amend Section 631.03(C) Labeling of Signs, from lines 42 to 51 to read:

8 **“(C) Labeling of Signs.** Label back of each sign with sign stickers as
9 directed by the State. Sign stickers will be provided by the State.”

11 (II) Amend **Section 631.04 – Measurement** by replacing lines 67 to 69 to read:

13 **“631.04 Measurement.** The Engineer will measure regulatory signs as
14 complete units of the type and design specified in the proposal.

16 The Engineer will not measure removal and disposal and storing of existing and
17 temporary signs that the Contractor will not incorporate in the completed highway
18 for payment.”

20 (III) Amend **Section 631.05 – Payment** by replacing lines 71 to 99 to read as
21 follows:

23 **"631.05 Payment.** The Engineer will pay for regulatory signs at the
24 contract price per each for the type and design specified complete in place.
25 Payment will be full compensation for excavating and backfilling, furnishing and
26 installing materials, furnishing equipment, tools, labors and incidentals necessary
27 to complete the work.

29 The Engineer will not pay for removing and disposing or storing of existing
30 and temporary signs that the Contractor will not incorporate in the completed
31 highway separately. The Engineer will consider them incidental to the various
32 contract items.

34 The Engineer will pay for the following pay items when included in the
35 proposal schedule:

	Pay Item	Pay Unit
37		
38		
39	Regulatory Sign (10 Square Feet or Less) with New Post	Each
40		
41	Regulatory Sign(s) on New Traffic Signal Mast Arm	Each
42		
43	Relocation of Existing Sign	Each"

47 **END OF SECTION 631**

NH-093-1(035)
631-1a

7/30/26

SECTION 634 – PORTLAND CEMENT CONCRETE SIDEWALKS

Make the following amendment to said Section:

(I) Amend Section 634.04 - Measurement by replacing lines 60 to 61 to read:

“634.04 Measurement. The Engineer will measure Portland cement concrete sidewalks by the square yard of finished surface.”

(II) Amend Section 634.05 – Payment by replacing lines 62 to 72 to read:

“634.05 Payment. The Engineer will pay for the accepted quantities of Portland cement concrete sidewalk at the contract unit price per square yard complete in place as shown in the proposal.

Payment will be full compensation for work prescribed in this section and contract documents.

The Engineer will pay for following pay item when included in proposal schedule:

Pay Item

Pay Unit

Portland Cement Concrete Sidewalk

Square Yard

The Engineer will pay for excavation of unsuitable material and backfill with material acceptable to the Engineer under Section 203 – Excavation and Embankment. If no pay item exists, refer to Subsection 104.02 – Changes.”

END OF SECTION 634

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 specifies requirements for performing the
7 Project in a “paperless” manner, using electronic tools for all submittals,
8 communications, quantity tracking, testing and sampling, scheduling, quality
9 control, and performance monitoring.

10
11 **636.02 General Requirements.** The Contractor shall implement the use of the
12 E-Construction platform, as provided by the HDOT and directed by the Engineer,
13 for use throughout the project. Paper-based or hard copy submittals will not be
14 accepted.

15
16 This Special Provision shall take precedence over all other Specification
17 sections with respect to providing and receiving paper copy communications,
18 submittals, and any project records. Where conflicts exist, and a decision between
19 a hard-copy item and a corresponding electronic version is needed, the electronic
20 version shall be selected, unless otherwise directed by the Engineer.

21
22 **636.03 Construction**
23

24 **(A) Plans and Specifications.** Project drawings will not be provided to
25 the Contractor in hard copy format. An electronic version will be provided
26 in the E-Construction platform for use during the project.

27
28 The Contractor shall note all changes to the work, including all
29 subcontractor’s work, in electronic format using the E-Construction
30 platform. Red annotations shall be used to note changes. Blue annotations
31 shall be used for any additional notes that will be helpful for the State in
32 interpreting the field posted drawings. Other drafting standards may be
33 implemented by the Engineer and shall be adhered to by the Contractor.
34 Changes shall be input by the Contractor and reviewed by the Engineer
35 monthly. The Contractor shall make any changes that the Engineer
36 requires.

37
38 **(B) Submittals.** The Contractor shall provide all required submittals, as
39 listed within the contract documents, via the E-Construction platform. All
40 review, approval, and resubmittal regarding submittals shall also be
41 documented within the E-Construction platform.

42
43 **(C) Correspondence.** Electronic mail (email) shall be the preferred
44 method of electronic communication. All communications that affect project
45 scope, schedule, cost, or quality, including changes and requests for
46 information, shall be submitted as directed by the Engineer.

(D) Prosecution and Progress. The Contractor shall provide all administrative, management, and project support documents required by various specification sections, using the E-Construction platform. These elements include, but are not limited to:

- (1)** Preconstruction Data Submittal (Section 108.03)
- (2)** Correspondence regarding Contract Time (Section 108.05) and Delays
- (3)** Progress Schedules (Section 108.06)
- (4)** Weekly Meeting preparatory materials (Section 108.07)
- (5)** Samples, certifications, material data, installation instructions, and shop drawings (Sections 105 – Control of Work and 106 -Material Restrictions and Requirements)
- (6)** Field-posted Drawings (Section 648)
- (7)** Pre-Final and Final Inspection submittals (Section 108.13)
- (8)** Warranty documentation – Guarantee of Work (Section 108.17)
- (9)** Project Closing Documents – Final Settlement of Contract (Section 108.19)

In addition to the foregoing, the Contractor shall provide any other materials, correspondence, and submittals using the E-Construction platform as directed by the Engineer.

(E) Resources. The Contractor shall provide a comprehensive list of Contractor labor and equipment, including all subcontractor labor and equipment, that will be deployed on the project, using spreadsheet-based templates provided in the E-Construction platform. All template fields shall be completed. The submitted information shall comply with the requirements of Specification Section 108 – Prosecution and Progress (identification of labor and equipment resources) and Specification Section 109 - Measurement and Payment (cost data) and represent all individual personnel with labor categories and rates, and all equipment owned or rented, with associated rates, on this project. Updates for additional personnel or equipment shall be accomplished by the Contractor at will and shall be completed when directed by the Engineer.

(F) Electronic Ticketing. The Contractor/supplier shall provide electronic material tickets for all loads of Asphalt Mix (Hot Mix Asphalt Concrete, Hot Mix Asphalt Base Course, or Stone Matrix Asphalt), Portland Cement Concrete (PCC), or Construction Aggregates delivered to the project.

The Contractor/supplier may use the plant ticketing system of their choice to create the material ticket data.

Digital material records created, altered, or voided by a person with direct knowledge of the event (the weighmaster or batch person) must be transmitted directly from the plant computer system (scale and batch) to the Department of Transportation at or near the time of the event.

Should digital material records be transmitted to the Department of Transportation through other methods, the weighmaster or batch person must certify the digital material records received by the Department of Transportation daily.

The Department's minimum service level expectation is to receive tickets no later than 5 minutes from when they were created, 99.5% of the time. The Department of Transportation may reject any ticket(s) received later than 5 minutes from when the ticket was created.

(1) Ticket data shall include the following:

(a) Material ticket data will be submitted to the agency via direct connection or a Hypertext Transfer Protocol (HTTPS) post as JavaScript Object Notation (JSON) documents.

(b) Material suppliers must test to confirm that ticketing data can be shared from the originating system no less than 10 days before the project starts. The topic shall be discussed at the pre-construction meeting.

(c) Ticket data must be available immediately upon project start so that tickets can be viewed without delay.

(d) Provide the same data currently accessible and viewed by agency users previously on printed tickets for state projects.

(2) The Contractor shall submit material ticket data in accordance with the plant manufacturer's system recommendations to provide the following unless otherwise directed by the Engineer:

(a) Net weight (or volume for ready mix concrete) of material being transported to the nearest 0.01 ton or cubic yard.

(b) Running daily total of net weight of material (or volume for ready mix concrete) being transported to the nearest 0.01 ton or cubic yard.

(c) Each material ticket shall contain the following:

a. General Ticket information (All Materials)

1. Date
2. State Project Name
3. State Project Number
4. Name of Contractor
5. Name of Material Supplier
6. Customer Name
7. Hauler
8. Unique Truck ID
9. Plant/scale name (source)
10. Unit of Measure
11. Ticketed time
12. Ticket Number

b. Asphalt Mix

1. Material Name/Description
2. Gross Weight (if not automatic)
3. Tare Weight (if not automatic)
4. Net weight
5. Mix Design Number
6. Weighmaster

c. Portland Cement Concrete

1. Loaded time (water/cement time)
2. Wet and dry batch weights (if computer generated)
3. Water:
 - i. In aggregate
 - ii. Total water
 - iii. Water/cement ratio
 - iv. Allowable water to add
4. Admixtures (including brand names if available):
 - i. Retarder and weights
 - ii. Water reducer and weights
 - iii. Air entrainment and weights
 - iv. Special performance admixtures and weights
 - v. Concrete fibers
5. Mix Design
6. Slump

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7. Truck Revolution

d. Construction Aggregates:

1. Material Name/Description
2. Gross Weight (if not automatic)
3. Tare Weight (if not automatic)
4. Net weight
5. Mix Design Number
6. Weighmaster

e. Optional Additional Truck Status (Will be accepted when available – All Materials)

1. Left plant
2. Arrive at project
3. Begin unload
4. Finish unload
5. Leave project

636.04 Measurement. The Engineer will measure additional E-Construction programs, additional licenses, or additional equipment, if ordered by the Engineer, on a force account basis in accordance with Subsection 109.06 – Force Account Provisions and Compensation.

636.05 Payment. The Engineer will pay for the additional E-Construction programs, additional licenses, or additional equipment, on a force account basis in accordance with Subsection 109.06 – Force Account Provisions and Compensation.

The Engineer may withhold progress payment until the Contractor is in compliance with all E-Construction requirements.

Pay Item	Pay Unit
Additional E-Construction Programs, additional licenses or additional equipment	Force Account

An estimated amount for force account may be allocated in the proposal schedule under “Additional E-Construction Programs, additional licenses or additional equipment.” The actual amount to be paid will be the sum shown on accepted force account records.

END SECTION 636

1 **SECTION 638 – PORTLAND CEMENT CONCRETE CURB AND GUTTER**

2
3 Make the following amendments to said Section:

4
5 **(I)** Amend **638.04 – Measurement** by revising lines 130 to 131 to read as
6 follows:

7
8 **“638.04 Measurement.** The Engineer will measure curb and/or gutter, both
9 new and reset, by the linear foot. The Engineer will measure along the front face
10 of the curb at the finished grade elevation. If the Engineer measures gutter
11 separately, the Engineer will measure gutter along the front face of the gutter.
12 The Engineer will not make deduction in gutter length for drainage
13 appurtenances installed such as catch basins and drop inlets.

14
15 The Engineer will measure curb and/or gutter transition for payment as
16 follows:

17

From	To	Measurement for Payment
Cast-in-place Curb or Precast Curb	Cast-in-place Curb and Gutter	Cast-in-place Curb and Gutter
Cast-in-place Curb and Gutter	Precast Curb and Cast-in-place Gutter	Cast-in-place Curb and Gutter
Cast-in-place Curb and Gutter Type _____	Cast-in-place Curb and Gutter Type _____	Cast-in-place Curb and Gutter 1/2 of Transition to each type
Cast-in-place Curb Type _____	Cast-in-place Curb Type _____	Cast-in-place Curb 1/2 of Transition to each type

18
19 The Engineer will measure precast concrete drop curb and driveway curb
20 or cast-in-place integral driveway curb and gutter under the adjacent normal curb
21 and/or gutter.”

22
23 **(II)** Amend **638.05 – Payment** by revising lines 133 to 148 to read as follows:

24
25 **“638.05 Payment.** The Engineer will pay for the accepted quantities of curb
26 and/or gutter at the contract unit price per linear foot for each type of curb and/or
27 gutter specified.

29 Payment will be full compensation for 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 proposal schedule:

34	35 Pay Item	36 Pay Unit
37	Curb, Type 2D	Linear Foot
38		
39	Curb and Gutter, Type 2DG	Linear Foot
40		

41
42 **END OF SECTION 638**

1 **SECTION 641 – HYDRO-MULCH SEEDING**
2

3 Make the following amendments to said Section:
4

5 **(I)** Amend **Subsection 641.02(B) – Fertilizer** by revising the section from
6 line 33 to 36 to read:
7

8 **“(B) Fertilizer.** Proper fertilizer shall be used in hydro-mulch mix,
9 depending on condition of soil. Apply at rates and in amounts consistent
10 with manufacturer’s specifications. Contractor shall provide a Soil Analysis
11 Report, if requested by Engineer, and shall use report to determine
12 quantity and ratio of fertilizer for sustained growth of grass. Submit
13 recommendations from a licensed Landscape Architect when deviating
14 from the application rates and amounts above.”
15

16
17 **(II)** Amend **Subsection 641.03(A) – Seeding** by revising the first paragraph
18 from line 100 to 103 to read:
19

20 **“(A) Seeding.** Apply seeded mulch within the timeframe in Subsection
21 209.03(B), if temporary stabilization will not be utilized, after completion of
22 slopes or portion of slope when exposed face attains height of 15 feet.
23 Notify Engineer not less than 24 hours ahead of hydro-mulch seeding
24 operation. Do not hydro-mulch until the Engineer inspects and accepts
25 areas for planting.”
26

27 **END OF SECTION 641**

SECTION 645 - WORK ZONE TRAFFIC CONTROL

645.01 Description. This section describes the following:

(A) Furnishing, installing, maintaining, and subsequently removing work zone traffic control devices, and personnel. Work zone traffic control shall include providing flaggers and police officers.

(B) Keeping roads for public traffic open and in passable condition; providing and maintaining temporary access crossings for trails, businesses, parking lots, garages, residences, farms, parks, and other driveways; taking necessary work precautions for the protection, safety, and convenience of the public; should pedestrian facilities exist, taking necessary measures for safe and accessible passage, with route information and ADAAG compliance, for pedestrians traveling through or near work zone; taking necessary precautions to protect work zone workers from situations that place workers at increased risk from motorized traffic.

(C) Taking safety and precautionary measures, such as illuminating roadway obstructions during hours of darkness, in accordance with Chapter 286, HRS; Title 19, Subtitle 5, Chapters 127, 128, and 129, HAR; and *MUTCD*.

645.02 Materials.

Signs	750.01
Sign Posts	750.02
Fasteners for Signs and Route Markers	750.03
Reflector Marker	750.07
Flexible Delineator Posts and Reflectors	750.08
Traffic Delineators	750.09
Preformed Pavement Marking Tape	755.04

Submit electronic crashworthy documentation, including but not limited to, drawings in pdf and CADD, crash test reports, and FHWA eligibility letters certifying compliance with MASH 2016, for signs, sign supports, barricades, tubular markers, cones, vertical panels, and other traffic control devices. Only devices that are deemed crashworthy will be allowed.

Upon request of the Engineer, furnish self-certified MASH 2016 compliant letter from vendor(s) for each type of Category 1 traffic control device, as defined by FHWA and/or AASHTO, including single-piece traffic cone, single-piece drum, and tubular marker.

Traffic control devices, including signs, barricades, warning lights, arrow boards, portable changeable message signs, cones, tubular markers, and temporary concrete barriers shall conform to the American Traffic Safety Services Association (ATSSA), *Quality Guidelines for Temporary Traffic Control Devices and Features* and the *MUTCD*.

Protective devices including barricades, warning signs, lights, and temporary signals shall conform to Title 19, Subtitle 5, Chapters 127, 128, and 129, HAR. Retroreflectorization for protective devices such as barricades, tubular markers, and warning signs shall conform to Subsection 750.01 – Signs.

645.03 Construction. Furnish, install, and maintain barricades, signs, cones, tubular markers, lights, flashing signals, and other traffic control devices.

Furnish two police officers for each location that requires work zone traffic control. If the Traffic Control Plan (TCP) is included in the contract documents, furnish number of police officers indicated in the TCP, whichever is greater.

When directing traffic, flaggers, or police officers, or both shall be in direct communication with each other.

TCP for lane closure on two-lane road will consider intersections and driveway access. Maximum length of a lane closure on a two-lane road is 1,000 feet.

Submit TCP and schedule at least 15 working days before work starts. Submit modifications and deviations from accepted TCP and schedule at least 15 working days before start of work requiring modification or deviation. Illegible TCP will not be accepted.

Include the following in TCP and schedule:

- (1) Signs (type, size, designation, and placement).
- (2) Traffic movements shown by arrows.
- (3) Positions of flaggers and police officers.

(4) Barricades, cones, tubular markers, and additional traffic control devices and measures necessary for protection of work and public safety; and placement, spacing, distances, and reference points for traffic control devices.

(5) Layout, drawn to scale, of traffic control devices, including information needed to layout TCP.

(6) Brief description of work.

(7) Dates of work.

(8) Times of day affected.

(9) Proposed public information sign.

(10) Proposed news release.

Place sign or device situated farthest upstream from work zone first. Then place others progressively downstream toward work zone.

Extend cones or tubular markers to point where cones or tubular markers are visible to approaching traffic.

For signs with messages on both faces, cover inapplicable message before placement.

Keep barricades, construction and warning signs, and other traffic control devices in good condition. Repair, clean, or replace barricades, signs, or other devices as required to maintain effectiveness and appearance. The Engineer alone will decide suitable condition of each barricade, sign, or other traffic control device.

Remove or cover regulatory and warning signs that conflict with TCP. Restore signs upon completion of work or as ordered by the Engineer. Affix object markers to post(s) of covered sign.

Promptly remove or cover construction and warning signs that are not applicable or not in use.

For sign covers, fully covers signs as indicated in the Acceptable category of the ATSSA Quality Guidelines for Temporary Traffic Control Devices and Features. Covers that are deemed to be in the Marginal or Unacceptable categories will not be accepted. Covers that are fabricated from rigid materials will also not be accepted unless it is certified to be MASH 2016 compliant.

Promptly remove traffic control devices that are no longer needed.

Remove traffic control devices in reverse order of installation, starting closest to work zone and continuing away from work zone.

Maintain abutting owners' existing access until replacement access is usable. Obtain permission from abutting owners, including conditions for closing existing access. Submit copy of agreement with abutting owners before beginning work in the affected area.

When working on existing facility that will be kept open to traffic, provide smooth and even surface for public traffic use. Only work on a portion of roadway at one time, and stage construction from one side to other while routing traffic over opposite side.

During subgrade and paving operations, paved shoulders may be used for public traffic.

Do not store material or equipment where it will interfere with public traffic. Remove equipment and other obstructions out of right-of-way or clear zone to permit free and safe passage of public traffic during non-working hours or suspension of work. For storage of materials and equipment, see Subsection 105.14 – Storage and Handling of Materials and Equipment.

Notify Fire Department, in writing, at least 24 hours before blocking or closing road access. Keep fire hydrants accessible to Fire Department by not placing material or other obstructions within five feet of fire hydrant or closer than permitted by applicable ordinances, rules, and regulations.

Notify the Engineer and County, including Bus Systems Division, Police Department, Fire Department, Emergency Medical Services, and Department of Health in writing at least five days before start of construction.

(A) Signs. Install signs sufficiently ahead of location where operations may interfere with use of road by traffic and at intermediate points where new work crosses or coincides with existing road.

Place signs in accordance with TCP as accepted by the Engineer.

(B) Construction Signs. Erect construction signs at the beginning of project and at the end of project at the location indicated by the Engineer. These signs shall remain for the duration of the highway project. Maintain these signs. Place these signs besides the required traffic control signs called for herein.

The construction signs shall be new and become the property of the Contractor.

(C) **Barricades.**

(1) **General.** Provide, erect, and maintain necessary barricades suitable for protection of work and safety of the public.

Barricades shall be in good condition. Barricade application and installation shall be in accordance with accepted TCP.

Provide sand bags if required or ordered by the Engineer. Sand bags and installation method shall comply with *MUTCD* and be accepted by the Engineer prior to use. Do not place sand bags on striped barricade rail.

During hours of darkness, install steady burn or flashing lamps on barricades selected by the Engineer. Attach lamps on barricade ends closest to traveled way and visible to oncoming traffic.

Do not install signs on barricades unless signs and barricades have been crash tested as a unit and accepted under NCHRP Report 350.

(2) **Retroreflectorization.** Retroreflectorize barricade rails and attachment with retroreflective sheeting in accordance with Subsection 750.01(C)(4) - Type III or IV Retroreflective Sheeting (High Intensity) or Subsection 750.01(C)(5) - Hardened Aluminum-Backed Retroreflective Sheeting.

Retroreflectorize both vertical faces of each barricade rail.

(3) **Color.** Provide white colored rails, frames, and braces with front and back rail faces having 6-inch-wide alternating orange or red and white stripes sloping downward toward traveled way at angle of 45 degrees from vertical. Use stripe colors in accordance with the following:

(a) Use orange and white stripes for the following conditions:

1. Construction work.
2. Detours.
3. Maintenance work.

(b) Use red and white stripes for the following conditions:

1. On roadways with no outlet, such as dead-ends and cul-de-sacs.

2. Ramps or lanes closed for operational purposes.

3. Permanent or semi-permanent closure or termination of roadway.

(4) Maintenance. Keep barricades in good condition. Repair, repaint, clean, or replace barricades to maintain effectiveness and appearance. Immediately replace missing or damaged barricades, lamps, sandbags, and other accepted weights.

Clean and repair barricades before relocating to other locations.

(D) Traffic Delineators. Install traffic delineators in accordance with accepted TCP.

Maintain traffic delineators in good condition. Immediately replace missing or damaged tubular markers.

Clean delineators prior to relocating to new location.

(E) Cones. Install traffic cones in accordance with accepted TCP.

Maintain traffic cones. Keep traffic cones clean and in good repair. Immediately replace lost, stolen, or damaged traffic cones.

Clean cones prior to relocating to new location.

(F) Lane Closures. Lane closures will be allowed only from 8:30 a.m. to 3:00 p.m., Monday through Friday. Exceptions to lane closure hours specified require written acceptance by the Engineer. Placement and removal of all work zone devices within the travel lanes, such as arrow boards, cones, etc., are restricted to allowable closure times. No increase in contract price or contract time will be given for lane closure restrictions specified.

For island of Oahu, no lane closures will be allowed during 24-hour periods as follows:

(1) Day preceding holiday (3:00 p.m. to Midnight), except as otherwise specified.

(2) Holidays (Midnight to Midnight).

(3) Day before and day after Thanksgiving Day (Midnight to Midnight).

(4) Three-week holiday period for Christmas and New Years (Midnight to Midnight).

(5) Three-week "Beat-the-School-Jam" period, to be determined, (Midnight to Midnight) beginning approximately third week of August.

(6) Other dates of events indicated in the contract documents.

No time extension will be given for the above restrictions. The contract time for the project has accounted for any loss of time due to the above restrictions.

Closure of only one lane of traffic will be allowed during lane-closure hours. Keep lanes open to traffic and allow flow at posted speed limit during non-lane closure hours.

If applicable, coordinate lane closures with adjacent project(s) at no increase in contract price or contract time.

Rental fees will be assessed in accordance with Subsection 108.10 – Rental Fees for Unauthorized Lane Closure or Occupancy, for failure to open lanes to traffic during peak hours. Morning and afternoon peak hours shall be from 5:30 a.m. to 8:30 a.m. and 3:00 p.m. to 6:00 p.m., respectively, Monday through Friday.

Before scheduling work, submit requests for detours and lane closures as follows:

(1) Detours - 8 weeks before implementing detours.

(2) Lane closures - 6 weeks before implementing lane closures.

Include the following with detour and lane closure requests:

(1) Explanation of proposed changes to existing traffic pattern.

(2) Installation schedule for informational and traffic control signs.

(3) Publication schedule for legal notices.

(4) Plan showing proposed informational signs.

(5) Plan showing lane changes or detours in accordance with accepted TCP, including details at beginning of multi-lane highway lane changes and detours.

Detours or lane closures will not be allowed before the Engineer accepts detour or lane closure request.

TABLE 645-I - FOR TRAFFIC CONTROL PLAN							
POSTED SPEED LIMIT (M.P.H.)	SIGN SPACING (D) (FEET)	TAPER LENGTH (T) (FEET)		LONGI- TUDINAL BUFFER SPACE (B) (FEET)	SPACING OF CONES OR TUBULAR MARKERS (FEET)		
		W = 12' OR LESS	W = GREATER THAN 12' *		TAPER	TANGENT	WORK AREA
20	250	200	W x 17	35	20	20	10
25	250	200	W x 17	55	25	25	10
30	250	250	W x 20	85	30	30	10
35	250	250	W x 20	120	35	35	10
40	500	350	W x 30	170	40	40	10
45	500	550	W x 45	220	45	45	10
50	1000	600	W x 50	280	50	50	10
55	1000	700	W x 55	335	55	55	10
* W = width of lane or shoulder							

(G) **Advisory Signs.** Submit advisory sign shop drawings. Construct, install, maintain, and remove two advisory signs as ordered by the Engineer. Place signs at locations designated by the Engineer. Provide signs, minimum 8 feet wide by 4 feet high, with black letters on orange background, and with three 4.00 pounds/foot flanged channel posts for each sign.

Include starting date and hours of construction in sign message. Use letter heights of 8 inches, Series D. The Engineer will review and accept advisory signs' wording before fabrication. Install advisory signs two weeks before start of construction. Remove advisory signs immediately after construction has been completed or as ordered by the Engineer.

(H) **Advertisement.** Place advertisement in newspaper, as ordered by the Engineer, for the following traffic pattern changes or night work:

- (1) Detours.
- (2) Lane closure.

(3) Permanent road closure.

(4) Permanent new route that changes previous route.

Include the following information:

(1) Map of traffic pattern change limits.

(2) Map showing lane(s) closure and detour pattern.

(3) Notice of starting and ending dates and duration.

(4) Explanation of lane(s) closure or detours in "Notice To Motorist".

Quality of map shall conform to the following requirements:

(1) No freehand printing or penciling.

(2) Highlight important features by darkening, cross-hatching, crossing-out, or coloring important words, as necessary.

(3) Provide maps with minimum size of five columns wide and four columns deep. Lesser width columns may be considered to balance against size of drawing.

(4) Text specifications.

(a) Work being featured - 3/16-inch text.

(b) Major roads and features - 1/8-inch text.

(c) Other roads and features- first letter of sentence upper case.

(d) "NOTICE TO MOTORIST" in upper case.

(e) Message - first letter of sentence upper case.

(5) Line Thickness.

(a) Important feature being advertised - line thicker than rest of map.

(b) Directional arrow - bolder than rest of lines shown on map, when important, to show route traffic should use.

(6) Show reference direction such as "TO HONOLULU" with arrow
Submit the following:

(a) "Notice to Motorists" before placement in newspaper, six weeks before start of work.

(b) Actual size of notice to be published in newspaper. The Engineer will not allow size reduction of notices once accepted. Submit final, camera-ready "Notice to Motorists" advertisement.

Place advertisement for three consecutive days and within one week before traffic pattern changes, in publication as ordered by the Engineer.

645.04 Measurement.

(A) Traffic control as specified in Subsection 645.03 - Construction will be measured on a contract lump sum (LS) basis and will not include any work performed under other specific traffic control contract bid items. Measurement for payment will not apply.

(B) If the proposal specifies "Arrow Board", the Engineer will measure the arrow board per EACH furnished, installed and maintained per day.

(C) If the proposal specifies "Changeable Portable Message Sign", the Engineer will measure the arrow board per EACH furnished, installed and maintained per day.

(D) "Cones" will be considered incidental to traffic control Measurement for payment will not apply.

(E) "Traffic Delineators" will be considered incidental to traffic control. Measurement for payment will not apply.

(F) "Construction Signs" will be considered incidental to traffic control.

(G) The Engineer will measure additional police officers, additional traffic control devices, and advertisement, if ordered by the Engineer, on a force account basis, in accordance with Subsection 109.08 - Force Account Provisions and Compensation.

(H) If the proposal specifies "Drum", they will be considered incidental to traffic control.

645.05 Payment. The Engineer will pay for the accepted traffic control, traffic control device, police officers, flaggers, additional traffic control devices, specific traffic control contract bid items and advertisement 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.

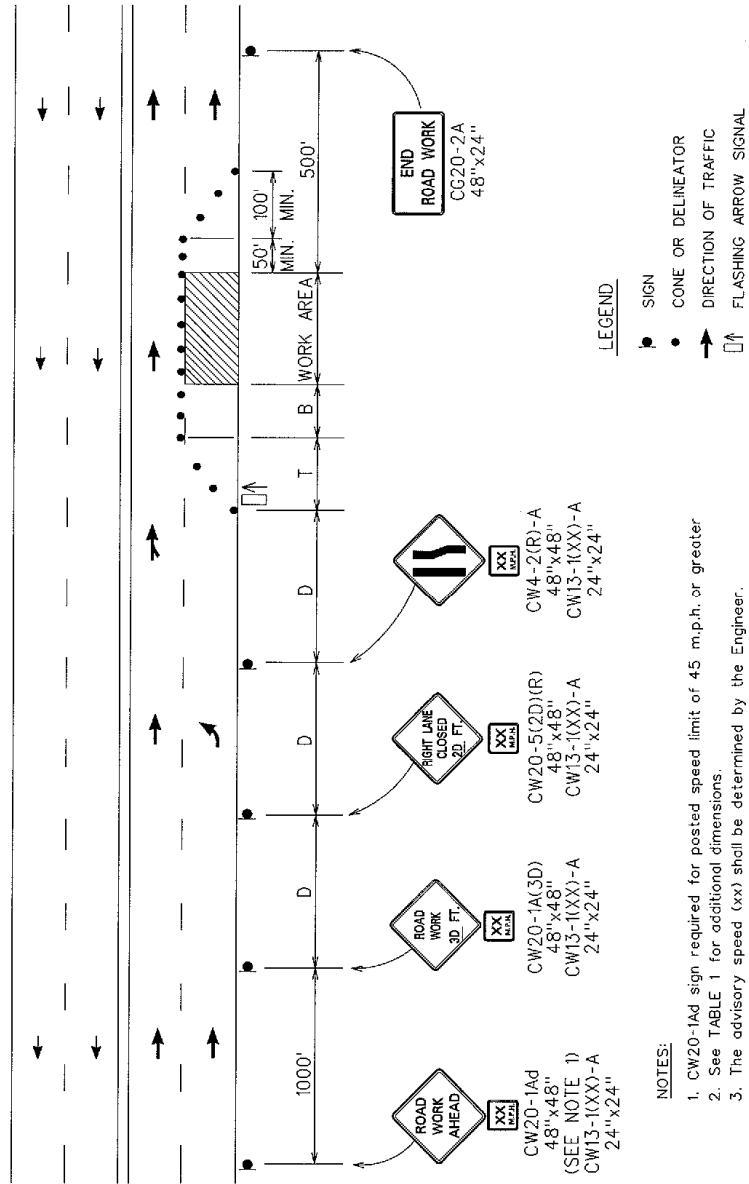
Costs associated with the provision of uniformed law enforcement to maintain safe and efficient travel through highway work zones and their payment terms are explained in more detail in Section III. D. of HDOT's WORK ZONE SAFETY MANAGEMENT GUIDELINES.

The Engineer will pay for the following pay items when included in the proposal schedule:

Pay Item	Pay Unit
Traffic Control	LS
Additional Police Officers, Traffic Control Devices, and Advertisement	FA

An estimated amount for the force account may be allocated in the proposal schedule under "Additional Police Officers And Additional Traffic Control Devices", but the actual amount to be paid will be the sum shown on the accepted force account records, whether this sum be more or less than the estimated amount allocated in the proposal schedule.

The Engineer will not pay for request submittals. The Engineer will not consider claims for additional compensation of late submittals or requests by Contractor.

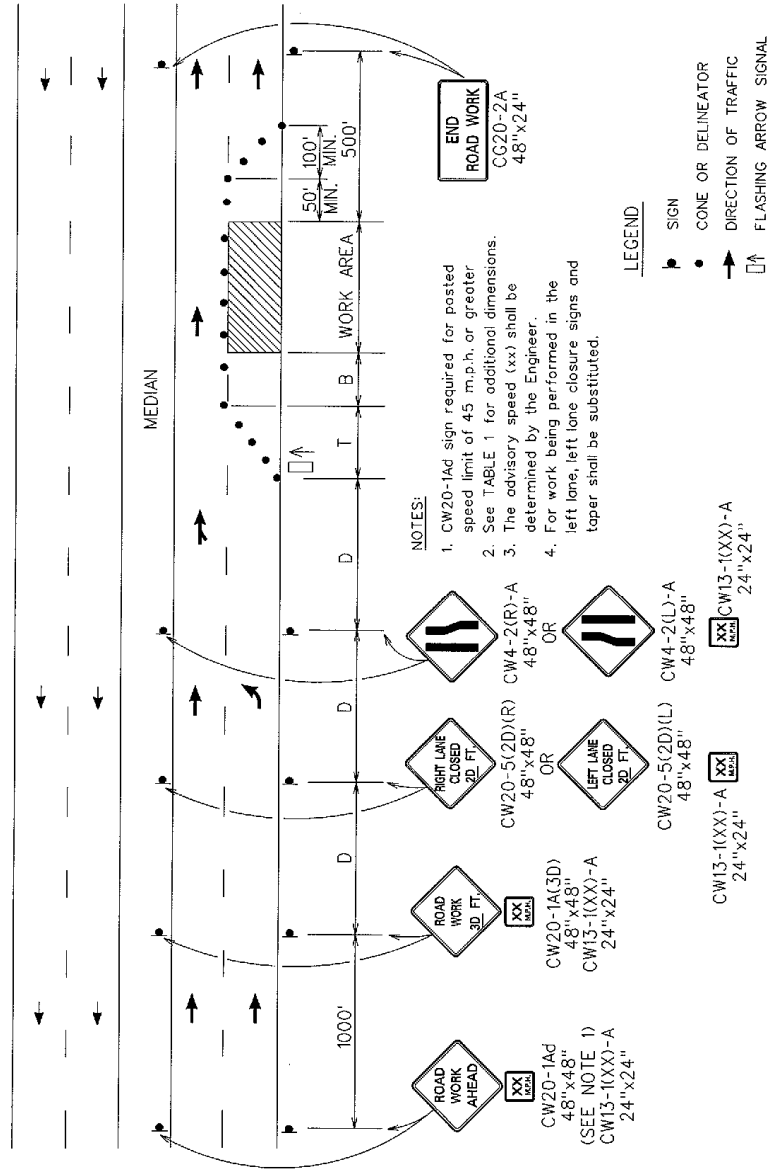


MULTILANE UNDIVIDED HIGHWAY - RIGHT LANE CLOSED

FIGURE 2 - TRAFFIC CONTROL PLAN

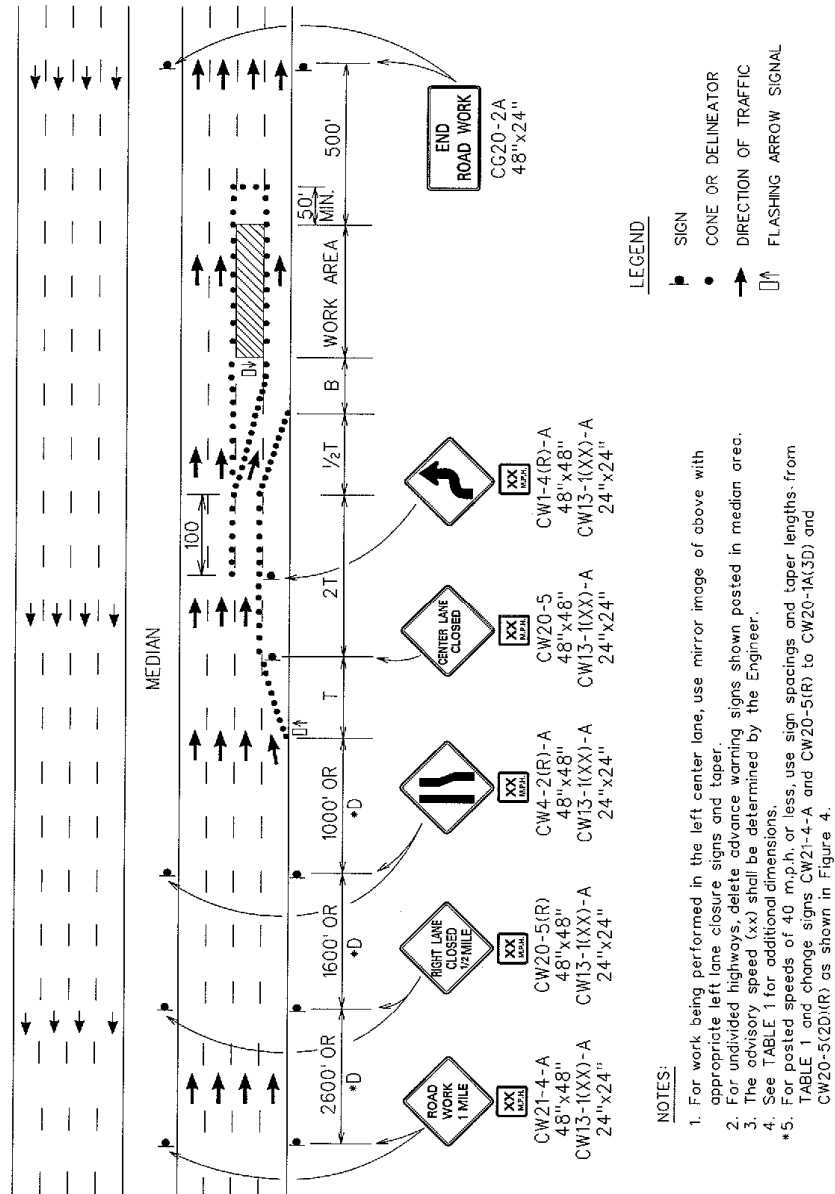


FIGURE 3 - TRAFFIC CONTROL PLAN



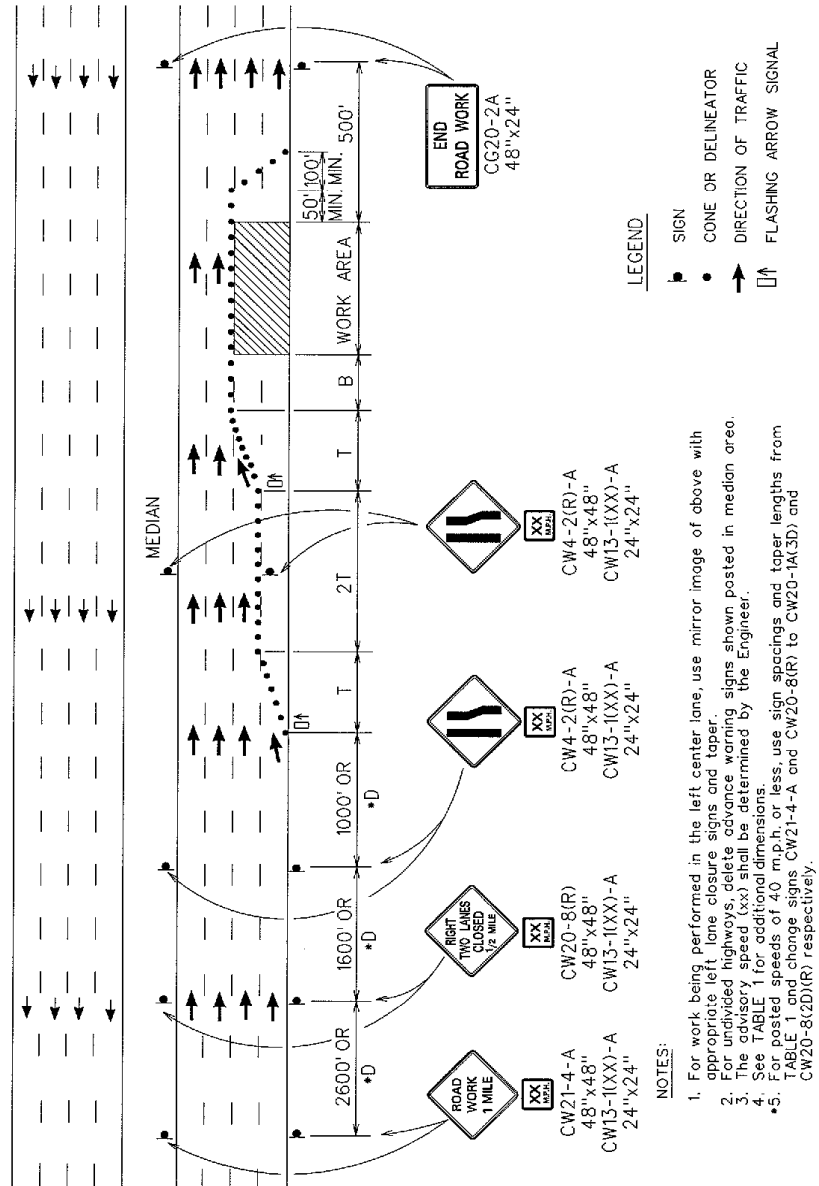
MULTILANE DIVIDED HIGHWAY - ONE LANE CLOSED

FIGURE 4 - TRAFFIC CONTROL PLAN



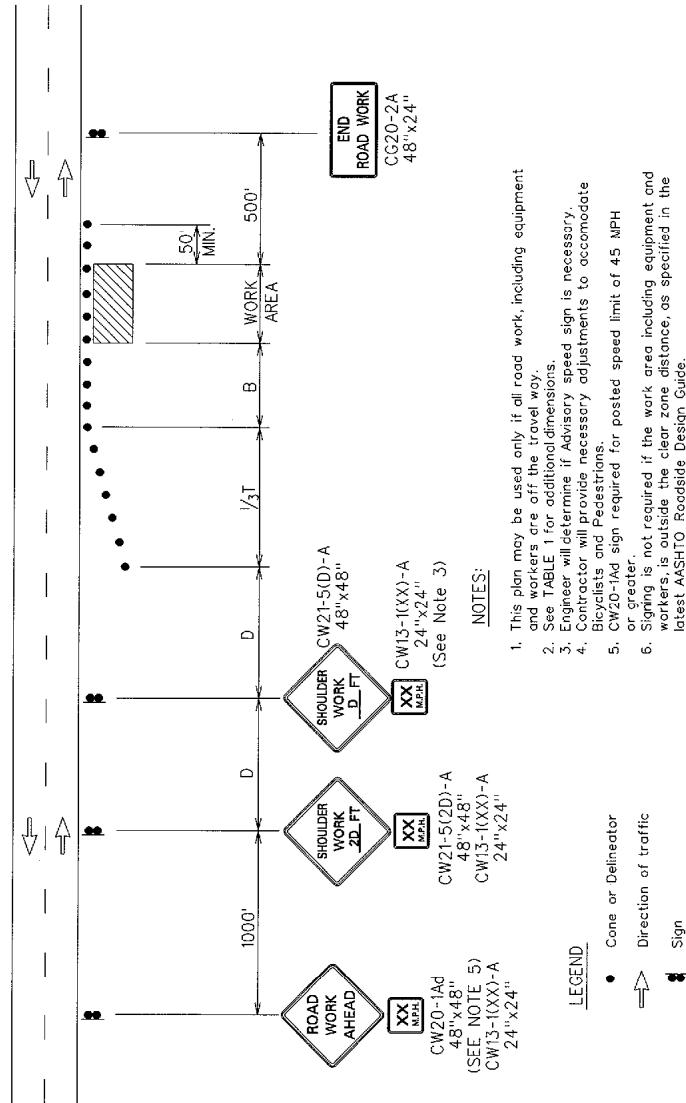
MULTILANE HIGHWAY - CENTER LANE CLOSED

FIGURE 5 - TRAFFIC CONTROL PLAN



MULTILANE HIGHWAY - MULTIPLE LANE CLOSED

FIGURE 6 - TRAFFIC CONTROL PLAN



WORKING ON SHOULDER OR ROADSIDE
FIGURE 7 - TRAFFIC CONTROL PLAN

END OF SECTION 645

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12/24/25

1 Delete Section 647 in its entirety and replace with the following:

2
3 **“SECTION 647 – FIBER OPTIC CABLE**

4
5 **647.01 Description.** This work includes furnishing labor, materials, tools,
6 machinery, and equipment necessary to install fiber optic cable according to the
7 contract.

8
9 There shall be a fiber optic cable Subcontractor, who shall have at least 3
10 (three) years experience in installing fiber optic systems over \$250,000,
11 specifically for outdoor overhead joint-pole and underground in traffic-highway
12 applications. They shall also have installed at least two fiber optic networks,
13 totaling at least 10 miles of fiber optic cable in outdoor conduits, and where those
14 networks have been in continuous satisfactory operation for at least two years.
15 The fiber optic cable Subcontractor shall be responsible for testing all fiber optic
16 cables to provide a documented optical budget loss analysis for each link to
17 and from a hub station. The fiber optic cable Subcontractor shall be responsible
18 for all hookup, assignments, dedication, testing, matching, and splicing of the
19 fiber optic cables, unless otherwise indicated. All fiber optic splice points shall be
20 spliced color-for-color whenever matching pairs are available. The fiber optic
21 cable Subcontractor shall be fully responsible for all splices, budget loss,
22 attenuators, appropriate fiber hardware, accessories, and pigtail connections for
23 a fully operational system. All other hardware, equipment, and labor necessary
24 shall be considered incidental.

25
26 **647.02 Materials.** The fiber optic cables, which will be used to transmit video
27 and data signals, will consist of single-mode fibers. Cables will be installed in
28 existing and new conduits. The Contractor shall furnish and install fiber optic
29 cable suitable, and meeting standards, for underground and aerial lashing
30 installations. The fiber optic cables shall meet the following specifications:

31
32 The cable shall meet the requirements of the United States Department of
33 Agriculture (USDA) Rural Utilities Service (RUS) 7 CFR 1755.900 and shall be
34 included in the most current “USDA List Of Acceptable Materials For Use On
35 Telecommunications Systems Of RUS Borrowers”.

36
37 **(A) Single-mode Fiber.** The single-mode fiber utilized in the cable
38 specified herein shall be dispersion unshifted and conform to the following
39 specifications:

40
41 Cladding diameter: $125\ \mu\text{m} \pm 1.0\ \mu\text{m}$

42 Core-to-cladding offset: $< 0.6\ \mu\text{m}$

43 Cladding Non-circularity: $< 1.0\%$

44 Coating diameter: $245 \pm 10\ \mu\text{m}$

45 Colored fiber diameter: Nominal $250\ \mu\text{m}$

46 Attenuation uniformity: No point discontinuity greater than 0.10 dB at

either 1310 nm or 1550 nm.

Attenuation at the water peak: The attenuation at 1388 ± 3 nm shall not exceed 2.1 dB/kM.

Cutoff wavelength: The cabled fiber cutoff wavelength shall be < 1260 nm.

Mode-field diameter: 9.30 ± 0.50 μm at 1310 nm
 10.50 ± 1.00 μm at 1550 nm

Zero Dispersion wavelength: < 1301.5 nm

Zero Dispersion Slope: < 0.092 ps/(nm²kM)

Fiber polarization mode dispersion: < 0.5 ps/kM

Personnel involved in the installation, splicing, and termination of the fiber optic cables shall have a minimum of three years experience in the installation of fiber optic cables, including, splicing, terminating, and testing of single mode fibers. They shall also have installed at least two fiber optic networks, totaling at least 10 miles of fiber optic cable in outdoor conduits, and where those networks have been in continuous satisfactory operation for at least two years.

The coating shall be a dual layered, UV cured acrylate applied by the fiber manufacturer. The coating shall be mechanically strippable.

(B) Fiber Specification Parameters.

Required fiber grade: Maximum individual fiber attenuation.

Single mode – The maximum dispersion shall be ≤ 3.2 ps/nm·kM from 1285 to 1330 nm and shall be < 18 ps/nm·kM at 1550 nm.

All optical fibers shall be proof tested by the fiber manufacturer to a minimum load of 0.7 GN.m² (100 kpsi). Fibers shall contain no factory splices.

(C) Specifications for Outdoor Cable Construction. Optical fibers shall be tight buffered in groups of 12. Optical fibers shall be mechanically strippable. Gel filled cables shall not be used. The fiber shall be colored with ultraviolet (UV) curable links. Each fiber shall be distinguishable by means of color coding in accordance with TIA/EIA-598-A, "Optical Fiber Cable Color Coding".

Tight buffered cable shall also be colored with distinct and recognizable colors in accordance with TIA/EIA-598-A, "Optical Fiber Cable Color Coding" and shall be marked Singlemode. Fillers may be included in the cable core to lend symmetry to the cable cross section where needed. Cable construction shall utilize dielectric strength members.

Cable shall be armored with a cable jacket. Cable jacket shall be a PVC material that is fungus, water and UV resistant. The PVC cable jacket shall also have a yellow color. The jacket shall be marked with the manufacturer's name, sequential meter or foot marking, month and year of manufacture.

The maximum pulling tension shall be 2700 N (608 lbft) during installation (short term) and 890 N (200 lbft) long term installed.

The shipping, storage, and operating temperature range of the cable shall be -40C to +70C.

(D) Quality Assurance Provision. All cabled optical fibers > 1000 meters in length shall be 100% attenuation tested. Attenuation of each fiber shall be provided with each cable reel.

The cable manufacturer shall be ISO 9001 registered.

(E) Packaging. Top and bottom ends of the cable shall be available for testing.

Both ends of the cable shall be sealed to prevent the ingress of moisture. Each reel shall have a weather resistant reel tag attached identifying the reel and cable.

The reel tag shall include the following information:

Cable number	Gross Weight
Shipped length in meters	Job order number
Product Number	Date cable tested

Each cable shall be accompanied by a cable data sheet. Cable data shall include manufacturer number, billable length, bandwidth specs and measured attenuation of each fiber.

647.03 Construction Requirements.

(A) Material Sample and Certificate of Compliance. The Contractor shall submit material samples according to Subsection 106.04 – Material Sample, and any certificates of compliance according to Subsection 106.07 – Certificate of Compliance.

The Contractor shall submit a fiber optic cable pulling plan for review and approval by the Engineer prior to beginning fiber optic cable installation. The fiber optic cable pulling plan shall include:

- (1) Location of start and end of pulls,
- (2) Location of cable reel trailers during installation,
- (3) Location of any "figure-eight" of fiber optic cable, and
- (4) Location of staged equipment.

Upon completion of the work, submit an "As Built" or corrected plan showing in detail the following:

- (1) Construction changes,
- (2) Location and attenuation of every event along the installed fiber optic cable,
- (3) Index of refraction of installed fiber,
- (4) Fiber optic cable index of refraction, and
- (5) Sequential fiber optic cable markings at each pullbox, cabinet, and splice closure.

(B) Excavation and Backfill. Excavation and backfill shall conform to Section 204 – Excavation and Backfill for Miscellaneous Facilities.

The Contractor shall be responsible for the repair of any damage to pavements, sidewalks and other improvements. Place the material from the excavation to prevent damage and obstruction to vehicular and pedestrian traffic and interference with surface drainage.

(C) Fiber Optic Cable. The fiber optic cable Subcontractor shall install the new fiber optic cable underground in conduits as shown on the plans. The Contractor will be responsible for furnishing and pulling the new fiber in PVC ductlines using a breakaway swivel to prevent exceeding the tensile load during installation.

All fiber optic splices shall be fusion splices. Mechanical splices shall not be used. Fiber optic splice locations are permitted only at splice points where splice cabinets are shown on the plans. Fiber optic fibers shall be spliced in every splice cabinet location, and it is the responsibility of the Contractor to maintain a continuous run throughout the system. The Contractor shall leave a minimum of 20-feet of cable service loops at every cabinet or splice location.

Provide documented historical cable pulling data indicating tensile forces exerted on the cable during the installation. Any tension

measurements, which exceed the manufacturer's recommendation, will be considered means for the cable rejection. The fiber optic cable Subcontractor shall be fully responsible for the quality and integrity of the installed cable and the operability of the final fiber optic cable product. All fibers shall be spliced at camera cabinets, hubs, and splice cabinets and shall have no more than 0.07 dB loss per splice based on the appropriate system operating wavelength.

The Contractor shall complete all required fiber optic splices prior to final testing and acceptance. As part of the final testing and acceptance, submit optical time domain reflectometer (OTDR) readings in both hardcopy and electronic formats (such that it can be examined using the manufacturer's OTDR software) to the Engineer for review. Testing shall be conducted on all singlemode fibers at 1310 nm and 1550 nm. Powermeter attenuation testing should be performed at dual wavelength, bi-directionally.

All necessary equipment and plug-in, fiber optic pigtails, fittings, splice tags, enclosures, and work to complete an operational system shall be furnished and installed by the Contractor, unless otherwise indicated, at no added cost, and will be considered included in the cost of the contract items in this Section.

(E) Restoring Pavements and Other Improvements. Restore the existing pavements and other improvements such as driveways, sidewalks, curbs and gutters disturbed by excavation to their original condition according to the contract. Materials used for restoration work shall be equal to or better in quality than the materials the Contractor will replace, and matching in thickness, texture, and color whenever applicable. The grades of the restored surfaces shall conform to the existing grades.

(F) Warranty. Materials and equipment installed for permanent construction shall be new. The contract contemplates the use of first-class material and equipment throughout the performance of the contract.

Secure from the manufacturer(s), a warranty or warranties guaranteeing equipment from defects in materials, design and workmanship for not less than 12 months from the date of acceptance.

When requiring adjustments or repairs during the warranty period, adjust or repair the existing unit within 24 hours from the time of notification.

When requiring repairs that need factory corrections during the warranty period, replace the existing unit with an accepted temporary

232 operational replacement unit within 24 hours from the time of notification
233 until the Contractor can install the new unit. Install the new, identical non-
234 defective unit within 30 days from the time of notification.
235

236 **647.04 Method of Measurement.** The Engineer will measure the fiber optic
237 cables per linear foot in accordance with the contract documents. Splice will be
238 measured and paid under Section 681 – CCTV System.
239

240 **647.05 Basis of Payment.** The Engineer will pay for the accepted fiber optic
241 cable underground at the contract unit price per linear foot complete in place.
242 The price includes full compensation for messenger cable both, existing and
243 new, and all other materials required to complete a fully functioning fiber optic
244 infrastructure; submitting the equipment list and drawing; furnishing, installing,
245 and taping the cable, as required; making the connections; providing turn-on
246 service, restoring pavements and other improvements; testing and furnishing
247 equipments, tools, labor, materials and other incidentals necessary to complete
248 the work. Payment will be full compensation for the work prescribed in this
249 section and the contract documents.
250

251 The Engineer will pay for the following pay item when included in the
252 proposal schedule:
253

254	Pay Item	Pay Unit
255		
256	Fiber Optic Cable in Conduit	L.F.
257		
258		
259		
260		

END OF SECTION 647

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(I) Amend **650.04 – Measurement** by revising lines 41 to 42 to read as follows:

The Engineer will measure accepted curb ramps and detectable warning mats per each in accordance with the contract documents.”

"650.05 Payment.

The Engineer will pay for the following pay item when included in the proposal schedule:

Pay Item	Pay Unit
Curb Ramp, Type _____	Each
Detectable Warning Mat	Each"

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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 ASTM D 7957 – "Solid Round Glass Fiber Reinforced Polymer Bars
10 for Concrete Reinforcement", ACI 440.11 – "Building Code Requirements for
11 Structural Concrete Reinforced with Glass Fiber-Reinforced Polymer (GFRP)
12 Bars", and AASHTO "LRFD Bridge Design Guide Specifications for GFRP –
13 Reinforced Bridge Deck and Traffic Railings."

14
15 The product shall be non-magnetic, non-conducting and corrosion
16 resistant. The use of ferrous materials is prohibited. The product shall exhibit
17 chemical resistance to salts, acids and concrete chemistries.

18
19 **(A)** Materials shall be obtained from a manufacturer regularly engaged
20 in the production of GFRP rebars. Six copies of the manufacturer's
21 brochures shall be submitted.

22
23 **(B)** A copy of the manufacturer's Quality Assurance Manual shall be
24 provided prior to delivery of any product to the site.

25
26 **(C)** Tensile test reports from the manufacturer shall be provided for
27 every 3,000 feet of product supplied in accordance with ASTM D-3916-84.

28
29 **(D)** Assigned Lot traceability numbers from the manufacturer with each
30 shipment shall be provided. These numbers shall change with each
31 production shift.

32
33 **(E)** Daily resin impregnation test results shall be provided at the
34 request of the Engineer.

35
36 **(F)** Certified test results of material properties shall be provided.

37
38 **670.03 Construction Requirements.**

39
40 **(A) General.**

41
42 **(1) Straight Bars.** All GFRP reinforcing bars shall consist of
43 uniformly pretensioned continuous longitudinal fibers encapsulated
44 in the matrix material. The outer surface shall be deformed by a
45 helical wrap of glass and sand coating providing a mechanical bond
46 between the bar and concrete. The GFRP reinforcing bars shall
47 not be cut or taken from the production line until an initial curing
48 state has been reached and the bars exhibit dimensional stability.

49
50 **(2) Fabricated Bends.** All bends shall be fabricated in the
51 factory and straight thermal curing shall not take place until all
52 fabrication has been completed. Such fabrication shall always be
53 executed with the use of molds. Each radius shall transfer no less
54 than 40% of ultimate tensile strength. ACI 318 minimum radius
55 shall be adhered to unless otherwise permitted by the Engineer.
56 Field bends shall not be permitted.

57
58 **(B) Installation.** The product shall be field cut with masonry blades.
59 A dust mask or other suitable protection shall be used during the cutting
60 process. Due to the rebar's very low specific gravity, it may tend to float in
61 concrete during vibration; therefore, care should be exercised to
62 adequately secure GFRP in formwork using chairs, plastic coated wire ties
63 or nylon zip ties.

64
65 **(C) Order Lists and Bending Diagrams.** The Contractor shall
66 submit six (6) copies of the GFRP rebars order lists and bending
67 diagrams to the Engineer. The Contractor shall be wholly and completely
68 responsible for the accuracy of the lists and diagrams.

69
70 **(D) Storage, Surface Condition and Protection of Reinforcement.**
71 The Contractor shall store the GFRP rebars above the surface of the
72 ground upon platforms, skids, or other supports. GFRP rebars shall be
73 covered to protect them from ultraviolet exposure, high temperatures, and
74 chemical substances. The Contractor shall protect the GFRP rebars from
75 other surface damage. The GFRP rebars shall be free of mortar, oil, dirt,
76 and other coatings that would destroy or reduce the bond. GFRP rebar
77 shall not be dropped on the ground by workers at any time. The GFRP
78 rebars shall also be free from injurious defects including cracks and
79 delaminations.

80
81 **670.04 Measurement.** The Engineer will not measure GFRP bars for
82 payment.

83
84 **670.05 Payment.** The Engineer will not pay for the accepted GFRP bars
85 separately. The Engineer shall consider the cost for the accepted GFRP bars as
86 included in the contract price of the various contract items. The cost is for the
87 work prescribed in this section and the contract documents.”

88
89
90 **END OF SECTION 670**

1 Make the following section a part of the Standard Specifications:

2
3 **"SECTION 675 – BUS SHELTER**
4

5
6 **675.01 Description.** This section describes furnishing and placing bus shelters
7 according to the contract.
8

9 **675.02 Materials.**

10		
11	Steel Structures	501
12		
13	Aggregate for Untreated Base	703.06
14		
15	Joint Fillers	705.01
16		
17	Reinforcing Steel	709.01
18		
19	Epoxy Grout	712.04(B)
20		
21	Cullet Materials for Roadways	717.02
22		

23 Roof underlayment: ASTM D 1970. 1 mm thick, self-adhering, waterproofing
24 membrane composed of reinforcement that is impregnated and coated with
25 rubberized SBS modified sand finish.
26

27 Plywood sheathing: Comply with DOC PS 1 for softwood plywood, Group 1,
28 Douglas Fir, Exterior Grade only. ¾-inch thick. Plywood shall be termite treated.
29

30 Dutch gutter shall be copper sheathing and shall conform to the requirements
31 in this specification.
32

33 Copper Sheet and Strips: ASTM B 370, cold-rolled temper, 16 ounces per
34 square foot.
35

36 Paint shall include mildew resistant solution 2X the recommended
37 manufacturer's requirements.
38

39 Concrete for concrete pad shall conform to Section 601 Structural Concrete
40 and must be Class B complying with the CO2 footprint reduction requirements in
41 Section 601 Structural Concrete.
42

43 Concrete mixes will be subject to inspection and tests at the mixing plants for
44 compliance with quality requirements.
45

The condition of materials will be subject to inspection for acceptance before or during incorporation of materials into the work.

675.03 Construction Requirements

(A) Existing Bus Shelter. Prior to removal of existing bus shelter the Contractor shall notify the Engineer of work to be performed and coordinate the work with the City and County of Honolulu Department of Transportation Services (DTS). Bus stops shall be operational and accessible at all times.

(B) Bus Shelter Concrete Pad. Place reinforced concrete pad four inches thick including thickened areas for foundations and edges as shown in the contract.

(1) Preparation. Shape and compact the foundation to a firm even surface conforming to the section shown in the contract. Remove and replace soft and yielding materials with acceptable material.

(2) Forms. Forms shall be of wood or metal and shall extend for the full depth of the concrete. Forms shall be straight, free from warp and of sufficient strength to resist the pressure of the concrete without springing. Bracing and staking of forms shall be such that the forms remain in both horizontal and vertical alignment until their removal.

(3) Placing Concrete. Moisten the foundation thoroughly immediately before placing the concrete. Place the concrete according to Section 503 - Concrete Structures.

(4) Finishing. Work the surface with a wooden float and broom finished. The Engineer will not permit plastering of the surface.

Edge the outside edges of the slab and joints with a 0.25 inch radius edging tool.

The surface of the sidewalk shall be a true plane with a 0.25 to 12 slope toward the roadway.

(5) Joints. Divide the slab between expansion or construction joints into sections approximately five feet in length by transverse weakened plane joints formed by a jointing tool. Also, provide transverse weakened plane joints when the time period between consecutive concrete placements is more than 45 minutes. Form

the weakened plane joints into the concrete to a depth of 0.25 of the thickness and approximately 0.125 inch in width with a scoring tool which will leave the edges round. Where slabs are more than 7 feet in width, form weakened plane joints longitudinally to obtain secure uniform blocks that are approximately square.

Match joints with the curb or pavement joints.

(6) Curing. Cure the concrete for at least 72 hours. Curing shall be by moist burlap or mats or by other accepted methods. During the curing period, exclude pedestrian and vehicular traffic. Exclude the vehicular traffic for such additional time as the Engineer may specify.

(C) Foundation Connection. Drill 1 inch diameter by 5 inch deep holes. Place 5/8 inch diameter by 6-3/4 inch long threaded rods into the drilled holes and fill the annular spaces with epoxy grout. Let the epoxy grout set according to the manufacturer's recommendation.

Install the tube posts with base plate. The tube posts shall be plumb. Place the leveling epoxy grout.

Paint foundation connections according to Subsection 501.03(F) Painting. Paint color shall match existing bus shelter color.

655.04 Measurement. The Engineer will measure accepted bus shelters per each in accordance with the contract documents.

Removal and disposal of existing bus shelters will be paid on a lump sum basis. Measurement for payment will not apply.

655.05 Payment. The Engineer will pay for accepted bus shelters at the contract unit price per each complete in place. Payment will be full compensation for the work prescribed in this section and the contract documents.

The Engineer will pay for the removal of existing bus shelters on a contract lump sum basis. Payment will be full compensation for the removal and disposal of all materials associated with existing bus shelters.

Engineer will pay for following pay item when included in proposal schedule:

Pay Item	Pay Unit
Type A Bus Shelter	Each
Removal of Existing Bus Shelter	Lump Sum

END OF SECTION 675

1 Make the following Section a part of the Standard Specifications:

2
3 **“SECTION 680 – RAILROAD RECONSTRUCTION**

4
5 **680.01 Description.** This work includes the removal and relocation of existing
6 railroad tracks according to the contract.

7
8 **680.02 Materials.** Materials and construction for the railroad shall conform to
9 the current edition of the American Railway Engineering Association (A.R.E.A.)
10 manual for Railway Engineering.

11
12 Aggregate Base Course shall conform to Section 304 Aggregate Base Course.

13
14 **680.03 Construction Requirements.**

15
16 **(A) Salvage and Removal.** The Contractor shall expose the existing
17 wooden ties and rail by hand excavation. Care shall be taken to minimize
18 damage to existing rail and wooden tie material, which shall be salvaged
19 for relocation in accordance with the contract documents.

20
21 **(B) Track Installation.** New bolts, nuts, washers and spikes shall
22 be used. Bolts, nuts and washers for splices shall match existing and
23 shall conform to the A.R.E.A. manual. Length of rail between splices shall
24 not exceed 33 feet.

25
26 Steel cut track spikes shall be 9/16-inch reinforced throat track spike with
27 5-1/2-inch underhead. There shall be four (4) spikes per tie placed inside
28 and outside of the rail in a staggered pattern.

29
30 **(C) Track Alignment.** Relocate existing railroad tracks and ties along
31 the edge of highway right-of-way. The existing track alignment is not
32 contiguous. Existing breaks in continuity shall be duplicated. Where
33 existing track is found to be unsupported by wooden ties, bent or
34 otherwise damaged, the track shall be relocated in kind and placed
35 without any wooden ties.

36
37 **680.04 Measurement.** The Engineer will measure railroad relocation on a
38 force account basis according to Subsection 109.06 – Force Account Provisions
39 and Compensation.

40
41 **680.05 Payment.** The Engineer will pay for the accepted railroad
42 relocation on a force account basis in accordance with Subsection 109.6 – Force
43 Account Provisions and Compensation.

44
45 The Engineer will not pay for the salvaging or removal of the existing
46 railroad tracks. The Engineer will consider them included in the bid price of the
47 various contract items. The price includes full compensation for salvaging; saw

cutting; excavating and backfilling; disposal; and furnishing equipments, tools, labor, materials and other incidentals necessary to complete the work.

The Engineer will consider full compensation for additional materials and labor not specifically shown or called for that are necessary to complete the work incidental to the various contract items in the proposal.

The Engineer will make payment under:

Pay Item	Pay Unit
Railroad Relocation	Force Account"

END OF SECTION 680

1 Make this Section a part of the Standard Specifications:

2
3 **“SECTION 681 – CCTV SYSTEM**

4
5 **681.01 Description.** This project involves the installation of 5 closed circuit
6 television (CCTV) cameras, and associated electrical and communications, along
7 Farrington Highway between Mohihi Street and Haleakala Avenue on the Island
8 of Oahu.
9

10 There shall be a locally based Contractor or Subcontractor of the CCTV
11 system components, fiber optic cables, fiber optic hardware and networking
12 equipment who shall have at least three years of experience in installing systems
13 over \$250,000, specifically for outdoor highway and traffic applications. The firm
14 shall be responsible for testing all fiber optic hardware and cables to provide a
15 documented optical budget loss analysis for each link to and from a hub station.
16 The Contractor will be responsible for all hookup, assignments, dedication,
17 testing, matching, and splicing of the fiber optic cables. Pigtails shall be spliced
18 on all fiber optic members and attached to fiber optic hardware, patch panels and
19 components with ST- or LC-connectors. The Contractor shall be fully
20 responsible for all splices, budget loss, attenuators, appropriate fiber hardware,
21 accessories, and pigtail connections for a fully operational system. All other
22 hardware, equipment, and labor necessary shall be considered incidental to the
23 items in this Section. The Contractor shall furnish and install new Ethernet
24 switches, and modify new and existing switches as required, to enable
25 communications as shown in the contract documents.
26

27 In general, this installation consists of the following components:

- 28
29 (A) CCTV cabinet on the ground, and equipment pad,
30
31 (B) CCTV camera attached to mast arm, power supply in the CCTV
32 cabinet,
33
34 (C) Ethernet switches in the CCTV cabinet, and at the H-3 Tunnel
35 Control Room and at the City TMC.
36
37 (D) Installation of underground (in duct), fiber optic cable,
38
39 (E) Splicing of fiber optic cable,
40
41 (F) Use of Digital Subscriber Line (DSL) for communications at various
42 sites,
43
44 (G) Electrical power supply and distribution, and
45
46 (H) Testing and checkout of equipment.

47
48 HDOT currently operates (24 x 7) a monitoring and traffic operations
49 center at the Honolulu portal of the H-3 tunnel. The CCTV cameras installed by
50 this project will be monitored and operated from this H-3 tunnel operations
51 center. These CCTV cameras will be an expansion of the existing HDOT
52 systems installed on the freeways.

53
54 The CCTV cameras installed on this project will be connected to the H-3
55 tunnel operations center via fiber optic cable from the operations center to a
56 communications hub at the H-3 Halawa interchange or via digital subscriber line.
57 From the Halawa interchange hub, the cameras will be connected via fiber optic
58 cables and wireless communications equipment to the existing H-3 fiber optic
59 cable. Additionally, cameras at several locations will be connected to existing
60 City and County of Honolulu fiber optic cables. The communications of video
61 images and camera control commands will be via a digital switched Ethernet
62 network. A detailed graphical depiction of the connectivity between the various
63 components of the system is shown in the "Communications Plan" on the
64 Contract documents Plans.

65
66 Contractor shall be responsible for physically installing the equipment on
67 the pole, or in the CCTV cabinet, connecting power and communications cables,
68 and the testing the equipment and communications network and providing a fully
69 operational CCTV system.

70
71 Portions of the work on this project will require access to communications
72 hubs, fiber splice cabinets, communications ducts and pull boxes, and other
73 existing system components that support currently operational equipment. The
74 Contractor shall maintain communications with, and all normal operation of, all
75 existing equipment and systems throughout the construction of this project. The
76 design of this project will require disruption of, or splicing into, existing, active
77 fiber optic cables. It also involves splicing into "dark" fibers within existing
78 cabinets and splice trays. During these splicing operations, the Contractor shall
79 coordinate with the appropriate agency to notify them about possible disruptions
80 and minimize down time to existing communications to the fullest extent possible.

81
82 Portions of the work on this project will involve connecting to existing
83 electrical power circuits that provide power to roadway lighting, sign lighting, or
84 similar circuits. All access to these electrical circuits shall be coordinated through
85 the Engineer, and shall be done only during daylight hours; and all circuits shall
86 be returned to fully operational condition before nightfall. Other portions of the
87 work will involve connecting to, or routing power conductors through conduits
88 associated with, arterial controllers, and shall be coordinated through the
89 Engineer. If such activities require disabling the arterial controller, the Contractor
90 shall comply with Section 645 – Work Zone Traffic Control.

91
92 When working in the H-3 tunnel control room, City control center, or a

City-owned field cabinet, notify the appropriate agency at least 72 hours prior to beginning any work.

Compliance with Other Specifications and Standards. All electrical equipment must conform to the standards *NEMA Standards Publication TS 1-1989*), the Underwriters' Laboratories, Inc. UL, and the EIA, wherever applicable. All materials and workmanship must conform to the requirements of the MUTCD; NEC; NESC; *Standard Specifications For Structural Supports For Highway Signs, Luminaires And Traffic Signals*, a publication of AASHTO, and any State of Hawaii legislation, codes and ordinances which may apply. Wherever reference is made to any such specification, manual, code, or standard, the reference is construed to mean the version, as revised, that is in effect on the date of advertising for bids for this project.

Definition of Terms.

(A) Abbreviations. Wherever the following abbreviations are used in these Special Provisions or on the Plans, they shall have the following meaning:

SBW System Bond Wire

FM Factory Mutual

IEEE Institute of Electrical and Electronics Engineers

City City and County of Honolulu

(B) Provide. Where used in these Special Provisions, unless otherwise indicated, this shall mean "furnish and install, complete, including any required electrical connection and testing."

647.02 Materials. The design of traffic signal standards and appurtenances shall conform to AASHTO publication *Standard Specifications for Structural Supports for Highway Signs, Luminaires and Traffic Signals*, 2009 and all applicable interims.

(A) CCTV Camera.

(1) Welding. All welding shall be performed by qualified welding operators and shall conform to the requirements of Sections 1 through 8 of the American Welding Society (AWS) D1.1, Structural Welding Code. Longitudinal seam welds shall be performed with automatic processes, be free of cracks and excessive undercut, and be visually inspected. All circumferential butt-welded pole and arm splices shall be ultrasonically and

radiographically inspected. If, in the evaluation of the Engineer, any welds are of questionable quality, all such welds shall be tested radiographically as directed by the Engineer.

(2) Handholes. Handholes shall have steel reinforcing frame securely welded into the shaft, complete with gasketed aluminum covers and captive stainless steel attachment screws. Finish handholes smoothly and neatly without rough edges and with a reinforcing frame and cover designed to maintain the required pole strength. Handhole covers shall be connected to the pole with rustproof chain that connects the inside of the cover to an attachment point inside the pole, just below the handhole. The chain shall be long enough to permit the cover to dangle 3 inches below the handhole opening.

(3) Weatherhead. Weatherhead shall be galvanized 2 inch weather head compatible with the threaded nipple and coupling on the pole.

(4) Galvanizing. The entire pole assembly shall be galvanized inside and outside in accordance with ASTM A123. No double dipping will be allowed. All miscellaneous hardware shall be galvanized per ASTM A153. Prior to galvanizing, all weld flux shall be mechanically removed and the surface shall be prepared by immersion in a series of baths: caustic; sulfuric acid; water; and zinc ammonium chloride flux. After drying, the pole shall be galvanized by dipping in molten zinc, with the pole totally immersed. Flux ash shall be skimmed from the bath prior to immersion and again prior to extraction from the bath.

(5) Identification Tag. The pole shall have an identification tag permanently attached. The tag shall state the length of the pole.

(6) Grounding. The Contractor shall bond the bottom of the pole to one or more ground rods, using exothermic welding at each end of the ground wire (unless the pole has a suitable grounding lug). The Contractor shall use a device that measures resistance to ground using the three-point fall-of-potential method to ensure that the resistance from the sign's ground bar to ground does not exceed 10 ohms. The Contractor shall add more ground rods if necessary to achieve this requirement.

(7) Anchor Bolt Assembly. Anchor bolt material shall conform to the requirements of ASTM F1554 Grade 55. The bolts shall be galvanized in accordance with ASTM A153. Anchor plates

shall match the hole pattern for each type standard and be clearly marked. The strength of the nuts shall equal or exceed the proof load of the bolts. Anchor bolt assembly shall be delivered partly assembled. The anchor bolts or rods shall come with all nuts, flat washers and split washers on each rod with templates. The six anchors bolts shall then be matched with two plates and delivered as a bundled unit.

(8) Material Certifications. All materials shall comply with the American Society for Testing and Materials (ASTM) specifications. The supplier shall furnish two copies of mill certificates reflecting the physical and chemical properties of the base metal of the pole, mast arm shafts, base plates and anchor bolts. Two certified copies of the galvanizing test report shall be furnished.

(9) Certification and Mill Test Reports. Certification and mill test reports shall be submitted with the following information:

(a) List of component parts including the following:

1. Description of each part.
2. Material manufacturing location (including ASTM number where applicable).
3. Certificate of compliance.

(b) Shop drawings, accompanied by complete and detailed engineering computations that justify selection of dimensions and material. Hawaii Licensed Professional Engineer (Structural) shall certify computations.

(c) Copy of mill test report for structural members (posts), including physical and chemical descriptions of material incorporated.

(10) Construction. Perform work in accordance with requirements of the contract documents and the following: General Order Nos. 6 and 10 of the 82 Hawaii Public Utilities Commission; ASTM; ANSI; local utility company rules; and 83 local ordinances that may apply.

(11) Equipment List and Drawings. Submit within seven days following contract award, 10 copies of materials and equipment list. Include name of manufacturer, size and identifying number of each item, detailed scale drawings, wiring diagrams of special

equipment, and proposed deviations from the contract. If required, submit samples of materials. Upon completion and acceptance of work, submit construction as-built drawings showing detailed construction changes. See section 648 – Field Posted Drawings.

(D) Cable and Hardware.

(1) CCTV Cable. The Contractor shall provide a CCTV control cable between the cabinet and the contact unit on the lowering device.

CCTV control cables shall be composite cables consisting of one outdoor rated cables as recommended by the CCTV manufacturer. On the cabinet end, the video cable shall be terminated compatible with the interface on the CCTV camera, and the power shall be terminated and connected to the camera power supply. On the camera end, all wires shall be terminated on an MS style connector with gold pins. The Contractor shall coordinate with the camera manufacturer to ensure proper connectivity.

Applicable Specifications: UL/NEC/CEC CATV or CM.
Flame Resistance: UL 1581 Vertical Tray.

Connectors shall be installed as necessary, and shall match the connector interface requirements for the equipment being connected. Adapters are not acceptable.

(2) Fiber Optic Cable. See Section 647 – Fiber Optic Cable.

(3) Pigtails and Jumpers. Pigtails shall be factory-made, buffered, and strengthened with aramid yarn to reduce the possibility that accidental mishandling will damage the fiber or connection. Pigtails shall be yellow. They must use a connector that is ST compatible, with ceramic ferrules and suitable for use in traffic cabinets and shall be designed for single mode fibers. Each pigtail must contain one fiber. Length shall suffice to provide 2 feet of slack after installation.

Jumpers shall meet the requirements for pigtails, but shall have a connector on each end. The second connector shall be as specified above except where a different connector is required for compatibility with the equipment to which the jumper connects. Length shall suffice to provide approximately two feet of slack after installation.

(4) Rack Mounted Interconnect Center. The fiber splice enclosure shall have brackets and all other hardware required for rack mounting in an EIA standard 19-inch equipment rack. The enclosure shall take up no more than five rack units in the cabinet. It shall be made of powder-coated aluminum. The enclosure shall have provisions for cable strain-relief. It shall have hinged front and rear doors.

The enclosure shall include aluminum splice trays with clear plastic covers, designed for outdoor use. Each shall accommodate 12 fusion splices. The trays shall have a black powder coat finish. The trays shall have both perforations for cable ties and crimpable metal tabs for buffer tube strain relief. The Contractor shall provide enough splice trays for all the splices made in the enclosure. The enclosure shall include a splice tray holder with capacity for 22 trays. It shall be mounted on a sliding shelf inside the enclosure so that individual trays can be removed from the enclosure without disturbing the other trays or removing the enclosure itself from the cabinet. The patch panel modules shall have ST connectors on both sides and have 12 fiber slots in a 2 by 6 configuration. The Contractor shall provide enough patch panels for all of the connections made in the enclosure plus two spare 2 by 6 units.

(5) Cable Attachment Hardware. Cable attachment hardware and strandvices shall be hot-dipped galvanized, shall be new, and shall be approved by the Engineer.

(E) Air Terminal. Furnish a solid aluminum rod, $\frac{3}{4}$ inch in diameter. The length of the rod shall be such that it projects 5 feet above the top of the lowering device. Attachment hardware shall not interfere with the lowering device cables within the pole.

(F) CCTV Cabinets. Furnish a cabinet meeting the requirements for a Model 334 cabinet in the latest edition of Traffic Signal Control Equipment Specifications published by Caltrans, except as specified below:

(1) Cabinets shall be fabricated from 0.125-inch-thick anodized aluminum.

(2) C2 terminal blocks shall be protected from current surges by EDCO PC642 or equal.

(3) Power supply surge protector shall be furnished.

(4) Front and back fluorescent lights shall be activated upon

opening either door.

(5) Convenience ground-fault circuit interrupter (GFCI) receptacles shall be provided.

(6) Door locks shall be of solid brass rim Best Lock Series 516RL3XA7559-606 and include two keys.

(7) Labeling shall be by silk screening only.

(8) One each 24-inch by 36-inch cabinet print shall be attached in weatherproof plastic jacket to front and back cabinet doors.

The manufacturer must be on the list of the Department-Accepted manufacturers of controller cabinets and racks.

The following components are required:

(1) **Sunshields.** On all sides and the top.

(2) **Housing.** 1A or 1B, Mounting Cage 1, and Service Panel # 1.

(3) **Rack-mounted,** slide out shelf with storage tray.

(4) **Mounting panel.** For terminal blocks, surge protectors, and other small items on a side wall.

(5) **Terminal blocks.** For all conductors entering the cabinet. The blocks shall be the barrier type with nickel-plated brass screw terminals and solid backs. Each terminal shall be clearly and permanently labeled on a contiguous surface using silk screening or other approved method. Terminal blocks for conductors carrying more than 60 volts must be covered by a clear acrylic shield.

(6) **Two interior fluorescent lights.** One above each door switch. Each door shall have a door switch. When either door is opened, both lights shall light.

(7) **Door switch.** If this is the same switch used to control the lights, then there must be separate, electrically isolated contacts for detecting an open door.

(8) **Duplex ground fault interrupt outlet.** For use by technicians.

369
370 **(9) Thermostatically controlled fan.** The fan shall move 100
371 CFM through vents at the top of the cabinet. The air intake shall be
372 through louvers in the door, and the air shall pass through a
373 replaceable filter as it enters the cabinet.
374

375 **(10) Anchor Bolts, Nuts, and Washers.** Shall be stainless
376 steel. For installation in a concrete foundation.
377

378 **(11) Electrical Distribution System.** Provide breaker panels
379 for all cabinets. The circuit breaker panel shall be 120/240 volt,
380 split phase, equipped with a solid neutral. The panel shall be UL
381 listed.
382

383 Equip the panel with 30 amp main breakers and two 15 amp
384 branch circuit breakers. Connect one branch circuit to the second
385 stage of the surge suppressor and to at least eight outlets for the
386 equipment. A second branch circuit shall power auxiliary devices
387 in the cabinet, such as the fan, light, and GFCI outlet.
388

389 All cabinets shall include a grounding system. Connection
390 to ground must be bare, solid AWG 1 #6 copper wire or equivalent
391 bonding strap.
392

393 Provide a lightning arrestor designed to protect 120/240
394 VAC split phase breaker panels. The protector shall use metal
395 oxide varistors as the protective elements. The response time
396 shall be under five nanoseconds and the maximum surge current
397 shall be at least 40,000 amps. The clamping voltage shall not
398 exceed 400 volts. The device shall protect line-to-line and line-to-
399 neutral.
400

401 **(12) Miscellaneous.** All doors shall have cabinet identification
402 labels displaying the cabinet identifier. The Engineer will provide
403 a list of the identifiers for each location, as well as the format for the
404 labels.
405

406 All seams shall be continuously welded and ground smooth.
407

408 All fasteners must be stainless steel.
409

410 All cabinets shall have an unfinished anodized aluminum
411 finish, free from blemishes.
412

413 **(G) Conduit.** Provide conduit from CCTV cabinet to mast arm. Lay
414 polyvinyl chloride (PVC) conduits carefully in trenches prepared to receive
conduits. Concrete encase PVC Schedule 40 conduits.

(H) Tracer Cable. Tracer cable shall conform to Section 623 – Traffic Signal System. Tracer cable shall be No. 14 AWG bare, stranded copper wire.

(I) High Speed Communication Services, DSL services shall be obtained with a minimum upload speed of 1.544 Megabits per second bandwidth for CCTV locations shown on plans.

681.03 Construction Requirements

(A) Submittals

(1) Submittal Data. Prior to the purchase or fabrication of any equipment or material for use on this project, submit for review by the Engineer catalog cut sheets and specifications for all standard, off-the-shelf items, and shop drawings for all custom items. These documents shall contain sufficient technical data for the Engineer to evaluate the system proposed. The quality, function, and capability of each deliverable item shall be described. Documents shall be originals or copies equal to originals. Shop drawings for each fabricated item shall also be submitted. These drawings shall contain all information required for complete fabrication in accordance with the Contract Documents, such as: materials, welds, finish, etc. Shop drawings shall be on sheets 24 inches in height and 36 inches long.

Furnish four copies of 8 ½-inch x 11-inch submittals, and four copies of shop drawings. One of these will be returned to the Contractor with appropriate notations within 30 calendar days.

The purpose of the submittal data is to show specifically and in detail how the Contractor intends to satisfy the requirements of the Contract Documents. If preprinted literature is utilized to satisfy some or all of these requirements, no statements on the literature should conflict with the Contract Documents. Cross off and initial any such statements and attach an appropriate statement clearly indicating how the requirements of the Contract Documents will be fulfilled. Clearly label each item of submittal data with the bid item number or other description of the item(s) to which it applies.

Each submittal must contain sufficient information and details to permit the Engineer to fully evaluate the particular component. Submittals which are, in the judgment of the Engineer, insufficient to permit proper evaluation will not be reviewed. Do not deviate from submittals marked "Review Completed" or "Correct as

461 Noted" without the prior written consent of the Engineer. The
462 Department will not be liable for any material purchased, labor
463 performed, or delay to the work prior to the approval of the
464 equipment.

465
466 Because of the nature of this work, unusually detailed
467 submittal data is required prior to approval of most of the items in
468 order to avoid nonconformance, which does not become apparent
469 until it is too late to correct without serious consequences. In
470 addition, because certain groups of items as set forth below are
471 closely interrelated, it is required that the submittals be made in
472 groups. If more than one submittal is required, complete information
473 from the entire group must be resubmitted. Plan the submittal data
474 effort accordingly.

475
476 In order to expedite the submittal data process and
477 equipment review, take care to address all of the requirements of
478 the Contract Documents in the submittal data, leaving nothing to
479 assumption, and clearly addressing the functional and technical
480 interrelationships among the various items. In general, detailed
481 wiring diagrams are not required as part of the submittal data, nor
482 will they be reviewed unless specifically required by these Project
483 Special Provisions or by the Engineer's request.

484
485 Plan for any given package of submittal data to be in the
486 possession of the Engineer for 30 calendar days. The Engineer will
487 date stamp the letters of transmittal for all such data and return a
488 copy of the stamped letters to the Contractor with the submittal data
489 for his records. Following review of the submittal data, the Engineer
490 will return to the Contractor one copy of the submittal marked "No
491 Exceptions Taken", "Correct as Noted", "Correct and Resubmit", or
492 "Rejected". Proceed with any items marked "Review Completed"
493 and items marked "Correct as Noted". Do not proceed with any
494 items which are marked "Rejected" or "Correct and Resubmit", but
495 proceed immediately to correct said items and resubmit them for
496 review. No time extensions will be granted to the Contractor as a
497 result of the need to resubmit items for review.

498
499 Develop a submittal data transmittal form and submit same
500 to the Engineer for approval as to format. Assign a submittal
501 number to each submittal package, to be transmitted under the
502 cover of the approved form. The numbering system must be logical
503 and ascending. Specifically list on the transmittal sheet each item
504 or element included and the bid item and Special Provision section
505 to which that element belongs. (An element is one part of several
506 parts of information related to the same bid item.) When drawings

are submitted, list each separately. Completely fill out all portions of the transmittal sheet except those reserved for use by the Engineer. The transmittal sheet will be used by the Engineer to indicate the action taken on the submittal package, and a copy of the transmittal sheet showing these actions will be returned to the Contractor. Transmit only clearly related items under the same transmittal sheet.

Approval by the Engineer of a catalog cut sheet and/or shop drawing does not relieve the Contractor of any of his responsibility under the contract for the successful completion of the work in conformity with the requirements of the Contract Documents in providing a fully integrated operational system.

(2) Equipment Manuals Two manuals for each individual component of the system. The manuals supplied for the off-the-shelf items shall be those supplied by the equipment manufacturer.

(B) Documentation. Provide two types of documentation for this project: submittal data and field-posted documentation. All documentation, except as specifically approved by the Engineer, shall be no smaller than 8 1/2-inches x 11-inches and no larger than 24-inches x 36-inches. Electronic documentation shall be provided on a CD-ROM.

All 8 1/2 x 11-inch documentation, except standard bound manuals, shall be bound in logical groupings in 3-ring loose-leaf binders or plastic slide-ring, loose-leaf binders. Such binders may also include 11-inch x 17-inch documentation, if "Z-folded". Each bound grouping of documentation shall be permanently and appropriately labeled.

Electronic documentation shall conform to the following file formats: tables shall be provided in current versions of Microsoft Excel or Microsoft Word file format; manuals, reports and other narrative text documents shall be provided in Microsoft Word file format; and drawings shall be provided as CAD files in data exchange (.DXF) file format compatible with the most recent version of Microstation.

All literature from manufacturers shall be original documents provided by the manufacturers or copies equal to originals. All documentation will be paid for under the item Field-Posted Drawings, as described in Section 648 of the Standard Specifications.

(1) Field-Posted Drawings. Provide the field-posted drawings in accordance with Section 648 – Field-Posted Drawings.

(C) Installation. Install equipment in new roadside cabinets, the

Department H-3 Tunnel Control Room, and the City and County of Honolulu Traffic Management Center: 740 Kinalau Place, Honolulu, HI 96813, (808) 527-6988. Supply all cables, mounting hardware, and incidental equipment required to make these items operational. Contractor shall coordinate with the appropriate agency to gain access to the H-3 TOC or the City TMC or existing field cabinets. Connect equipment to power, communication, and ground cables, and test the completed installation and report any problems to the Engineer.

(1) CCTV Camera. Install the CCTV camera on the mast arm using the orientation details shown in the contract documents. Configure the CCTV camera using the network information shown on contract documents to provide a fully operational system. Install the CCTV camera power supply in the CCTV cabinet, as shown in the contract documents. Connect the camera power supply to AC power. Connect the camera to the camera power supply and Ethernet Switch using a test cable. Power up the camera. Using a laptop computer plugged into the Ethernet Switch, test the camera

Install the camera power supply in the cabinet. Bring all the cables into the cabinet and terminate them on surge protectors. Connect the camera power circuit to the power supply.

(2) Fiber Optic Cable. See Section 647 - Fiber Optic Cable.

(3) Cabinets. Prior to bolting the cabinet to the foundation, apply silicone sealant to the mating surface of the cabinet to prevent water from seeping between the cabinet and foundation. The silicone sealant shall be guaranteed by the manufacturer to last the lifetime of the cabinet without peeling or cracking. Ensure that the cabinet is plumb, using shims if necessary, and ensure that it is properly seated on the foundation.

For equipment installed in cabinets, mount the equipment in the rack as shown in the approved cabinet layout diagram or, for indoor locations, as directed by the Engineer, and connect the power cables and ground wires. Connect the communication cables as shown on the connection diagrams in the Plans. All equipment will be configured by the Department and therefore do not require any change in configuration settings.

(4) Fiber Optic Splice. All optical fibers, including spares, shall be spliced to provide continuous runs except where shown in the contract documents. Splices shall be allowed only in CCTV or splice cabinets.

599 All splices shall be made using a fusion splicer that
600 automatically positions the fibers using a system of light injection
601 and detection. Provide all equipment and consumable supplies.
602

603 Package each spliced fiber in a protective housing. Re-coat
604 bare fibers completely with a protective room temperature
605 vulcanizing (RTV) coating, gel or similar substance, prior to
606 insertion in the housing.
607

608 Prior to splicing to a fiber installed by others, measure and
609 record the optical loss over that fiber.
610

611 Use a different splice tray for each buffer tube color. If an
612 enclosure contains multiple buffer tubes of the same color, but
613 none of the fibers in one of the tubes are spliced to fibers in other
614 tubes of the same color, use a separate splice tray for that tube.
615

616 **(5) Modifications In Existing Cabinets.** The Contractor shall
617 coordinate with the appropriate agency to gain access to existing
618 field cabinets. The Contractor shall coordinate with the appropriate
619 agency to gain access to the H-3 TOC or the City TMC.
620

621 The Contractor shall establish an optical path on existing
622 fiber optic cables where existing trunk fiber may not be spliced
623 through as noted on Plans. The Contractor shall use an optical test
624 set and or optical time-domain reflectometer test (OTDR) to verify
625 the optical path between cabinets as required to determine fiber
626 assignments to complete the specified optical path to make the
627 system operational. The Contractor shall coordinate with DTS to
628 gain access to City cabinets and verify with DTS and the Engineer
629 prior to performing any splicing or notification of possible disruption
630 to the existing system.
631

632 **(D) Testing.** Testing of all equipment, cables and materials
633 purchased by the Contractor under this contract shall be the responsibility
634 of the Contractor and shall be conducted in the presence of the Engineer.
635 Document all testing, and provide the results to the Engineer in hard copy
636 and electronic format. The Engineer reserves the right to perform any
637 inspections deemed necessary to assure that the equipment, cables and
638 materials conform to the requirements specified herein.
639

640 **(1) CCTV Camera Testing.** Connect the camera to the
641 camera power supply and the Ethernet Switch using a test cable.
642 Power up the camera. Using a laptop computer running the camera
643 manufacturer's control software, and plugged into the Ethernet
644 Switch, test all cameras including spares.

The Contractor shall test the CCTV system using a Contractor-supplied NTSC-compatible video monitor and a Contractor-supplied camera control device. The control device may be a compatible laptop computer with a suitable converter running Vendor-supplied software. The control device and monitor shall remain the property of the Contractor. All test cables and connections shall be the responsibility of the Contractor.

During each testing phase, the Contractor shall repair, replace, or reconfigure each CCTV camera installation as necessary, at no additional cost to the State.

The Contractor shall perform a bench test on all cameras, including spares, pan-and-tilt unit, and camera controller prior to installation. A field test shall also be performed at the cabinet and a remote test from the H-3 TOC. The Contractor shall demonstrate the following features of the camera installation for each test:

- Display camera video on Contractor-provided monitor
- Program I.D. generator
- Pan and tilt camera
- Zoom and focus camera in both fast and slow modes
- Turn camera off and on
- Change iris between auto and manual

(2) Cabinet Testing. The Contractor shall develop a proposed test procedure for the cabinets and submit it to the Engineer for approval. It shall include visual inspection, testing of lights, fan, heater, air conditioner, power outlets and alarm sensors. It shall also include a test in which each branch circuit is shorted to the cabinet wall to confirm that the breaker trips. The Contractor shall revise the proposed test procedure until it is acceptable to the Engineer.

The Contractor shall provide all equipment and personnel needed to safely conduct the tests, arrange for the Engineer's representative to witness the tests, and give the Engineer a report documenting the result of every visual inspection and test. The Contractor shall include a summary indicating whether the cabinet passed every test. The cabinet must pass every test to be accepted.

If the cabinet fails, the Contractor shall correct the problems and arrange for a new test. If the test of the breakers reveals breakers that do not trip, the resistance to ground is too high; lower

the resistance by adding more ground rods and improving the connections in the ground system.

(3) Fiber Optic Link Testing. Fiber optic links shall be tested as follows.

(a) Test the fiber after installation; including all splicing and termination, is complete. Note, however, that this test procedure involves measuring the loss of fiber installed by others before splicing to it.

(b) For each fiber optic link, including spare fibers, determine whether the optical loss is within the limits permitted by these specifications. A link is a continuous segment of fiber between one connector (or unterminated end) and another connector (or unterminated end).

(c) When testing links that do not have connectors on both ends, use a mechanical splice to attach a pigtail to the unterminated fiber for the duration of the test. Mechanical splices will not be measured for separate payment

(d) For each fiber link, follow this procedure:

1. If the link includes fiber installed by others, use an optical loss test set to measure and record the optical loss over that portion of the link before it is spliced to new fiber.

2. Calculate the maximum allowable loss for the completed link, both at 1310 nm and at 1550 nm. Use the following formula:

Maximum link loss =

Measured loss over portion installed by others
+ (Fiber length in km) x (0.35 for 1310 nm
and 0.25 for 1550 nm)
+ (Number of fusion splices) x (0.05)
+ (Number of mechanical splices [for temp.
connection]) x (0.3)
+ (Number of connections) x (0.3)

Provide this calculation to the Engineer along with the test results

3. Calibrate an optical loss test set and provide

evidence satisfactory to the Engineer that the set produces accurate results at both wavelengths. This can be a demonstration that the set correctly measures the loss of a test fiber whose loss is known.

4. Use the test set to measure the loss of the link under test. Record the results at both 1310 nm and 1550 nm.

5. If the measured loss exceeds the calculated maximum, use an optical time domain reflectometer and other test equipment to troubleshoot the link. Take whatever corrective action is required, including cable replacement, to achieve a loss less than the calculated maximum.

(e) Documentation. Prepare a diagram showing all of the links tested in this project. For the portions installed in this project, show the CCTV or VMS cabinets, splices, and pigtails. On each line representing a link, show the maximum allowable loss and the actual loss. The actual loss shall be the one measured after all corrective actions have been taken.

(4) **Network Testing.** Test the per-VLAN spanning tree protocol (PVST) of each Ethernet switch to verify the redundancy of the network if there is a link failure.

(5) **Fiber Optic Cable Testing.** See Section 647 - Fiber Optic Cable.

(E) **Warranty.** See Subsection 108.17 – Guaranty of Work.

681.04 Measurement. Measurement for payment of equipment and materials in this contract will be made as follows.

(A) **CCTV Camera** will be measured by each CCTV camera configured, installed and operational from the H-3 tunnel control room.

(B) **CCTV Cabinet** will be measured by each cabinet fully installed and wired for internal power and communications, including necessary circuit breakers, surge protectors, and all materials for the ground system.

(C) **Cabinet Foundation** will be measured and paid for in units of each. This price shall include concrete, reinforcing steel, anchor bolts, bolt circle templates, stub poles, grounding equipment, conduits and any

miscellaneous hardware necessary for mounting a cabinet, excavating, backfilling, compacting, disposing of surplus and unsuitable material, and restoring existing areas.

(D) Fiber Optic Pigtail. The Engineer will not measure Fiber Optic Pigtail separately. The Engineer shall consider the cost for all the accepted Fiber Optic Pigtail as included in the contract price of the various contract items.

(E) Fiber Optic Jumper. The Engineer will not measure Fiber Optic Jumper separately. The Engineer shall consider the cost for all the accepted Fiber Optic Jumper as included in the contract price of the various contract items.

(F) Fiber Optic Splice. The Engineer will not measure Fiber Optic Splice separately. The Engineer shall consider the cost for all the accepted Fiber Optic Splice as included in the contract price of the various contract items.

(G) Rack Mounted Interconnect Center will be measured by each center installed, which will include all necessary mounting hardware, patch panels, and splice trays installed in new CCTV and Splice Cabinets.

(H) High Speed Communication Services, DSL services will be measured on a force account basis per site for 36 months of service after system acceptance. Payment for 36 months of service for each site shall be made as a single disbursement to the company providing DSL services.

(I) Conduit Concrete Encased, of the type and size specified, will be measured as a lump sum, which will include all trenching and backfill, and landscaping restoration, conduit couplers, and elbows, and end bushings, and concrete between the CCTV cabinet and CCTV pole and will include all conduit couplers, and elbows, and end bushings.

(J) Modifications in Existing Cabinets, will be measured as lump sum per facility. The Contractor shall verify if fiber is spliced through at existing cabinets. If fibers are not spliced through, the Contractor shall test and determine fiber assignment and splice fibers.

This item shall include: modifications in existing facilities or cabinets, testing and identifying existing fiber optic cables to determine fiber assignments between cabinets to complete the optical path, modification of existing splice enclosures, splice trays, patch panel modules, pigtails, fiber optic jumper cables to existing ES, and fiber optic jumper cables to other fiber optic equipment installed in existing cabinets

required to make the system operational. Testing to determine the fiber assignment such as performing optical test sets and OTDR shall be included in this item. This item shall also include modification of existing ES including testing, configuration, copying and documenting existing and modified configuration files and include any necessary mounting hardware, Ethernet patch cables, power cables, power supplies, fiber SFP modules, attenuators and connectors to enable a fully operational system.

Fusion splicing in existing cabinets or facilities will be measured under "Fiber Optic Splice."

(K) Additional Testing, Splicing and Equipment the Engineer will measure additional splicing, testing and fiber optic equipment such as patch panels, media converters, SFP modules, attenuators, pigtails and jumper cables, if ordered by the Engineer on a force account basis, in accordance with Subsection 109.06 – Force Account Provisions and Compensation.

(L) Testing, the Engineer will not pay for testing separately. The Engineer shall consider the cost for all of the accepted testing as included in the contract price of the various contract items.

The Contractor shall reprogram the existing Ethernet switches, CCTV cameras and wireless bridges with the information provided by the Engineer as a new IP address schema will be generated for all devices. This item shall also include testing the system, copying and documenting the modified configuration files used in this effort.

(M) Network Monitoring, the Contractor shall input the network information used in this project in to the State's existing SolarWinds network monitoring system. The Engineer will measure this work on a force account basis in accordance with Subsection 109.06 – Force Account Provisions and Compensation.

(N) Electrical and communication systems, including fiber splice cabinets, conduit mounted on structures, and innerduct, will not be measured for payment.

(O) Fiber Optic Cable. Measurement for fiber optic cable will be in accordance and under Section 647 – Fiber Optic Cable.

(P) Ethernet Switch. The Engineer will not measure Ethernet Switch separately. The Engineer shall consider the cost for Ethernet Switch as included in the contract price of the various contract items.

681.05 Payment. The Engineer will pay for the accepted pay items listed below at the contract price per pay unit. Payment will be full compensation for work prescribed in this section and the contract documents.

Pay Item	Pay Unit
CCTV Camera	Each
CCTV Cabinet	Each
Cabinet Foundation	Each
Rack Mounted Interconnect Center	Each
High Speed Communication Services	Force Account
Two 2-Inch Conduit, SCH 40 PVC, Concrete Encased	Lump Sum
Modifications In Existing Cabinets	Lump Sum
Additional Testing, Splicing and Equipment	Force Account
Network Monitoring	Force Account

The Engineer will consider electrical and communication systems modifications and fiber splice cabinets, conduit mounted on structure and innerduct as incidental to the various pay items in this section, and no separate payment will be made.

The Engineer will pay for fiber optic cable in accordance and under Section 647 – Fiber Optic Cable.

The Engineer will consider the costs for Ethernet Switch as incidental to the various pay items, and no separate payment will be made.

END OF SECTION 681

1 Make the following section a part of the Standard Specifications:

2
3 **“SECTION 694 – PROTECTION OF ENDANGERED SPECIES**

4
5 **694.01 Description.** The Endangered Species Act (ESA) listed species
6 Hawaiian Hoary Bat (*Lasiurus cinereus semotus*), Hawaiian goose (*Branta*
7 *sandvicensis*), Hawaiian petrel (*Pterodroma sandwichensis*), band-rumped storm-
8 petrel (*Oceanodroma castro*), the threatened Newell's shearwater (*Puffinus newelli*),
9 and the Hawaiian Stilt Bird (*Himantopus mexicanus knudseni*) are in the general
10 vicinity of the proposed project that may transit or visit the proposed project. The
11 State listed species, and the State listed species, Hawaiian Hawk (*Buteo solitaries*),
12 is also in the general vicinity of the proposed project that may transit or visit the
13 proposed project. The contractor shall protect these endangered species
14 throughout the construction duration. The Contractor shall also minimize the spread
15 of Rapid Ohia Death (ROD).

16
17 **694.02 Materials.** None

18
19 **694.03 Construction.**

20
21 **(A) Pre-Construction and Construction Requirements.** Comply with
22 the following conditions:

- 23
24 **(1)** Hawaiian Hoary Bats nest in both exotic and native woody
25 vegetation. To minimize impacts to the Hawaiian Hoary Bat,
26 there will be no disturbance, removal, or trimming of woody
27 plants greater than 15 feet (4.6 meters) tall during the birthing
28 and pup rearing season (June 1 through September 14

29
30 Additionally, barbed wire will not be used for fencing and for
31 any construction.

- 32
33 **(2)** If any Hawaiian Goose are present during construction
34 activities, then all activities within 100 feet (30 meters) should
35 cease, and the bird should not be approached, fed or disturbed
36 in any way. Work may continue after the bird leaves the area of
37 its own accord.

38
39 If Hawaiian Goose are observed loafing or foraging within the
40 project area during the breeding season (September 1 through
41 April 30), all work will cease and a nest survey will be
42 conducted in and around the project area by a biologist familiar
43 with the nesting behavior of Hawaiian Goose prior to the
44 resumption of any work. Surveys will be repeated after any
45 delay of work of three or more days. If a nest is identified

46 within 150 feet of the work area, all work will cease and the
47 United States Department of Interior Fish and Wildlife Service
48 (USFWS) and the State of Hawai'i Department of Land and
49 Natural Resources, Division of Forestry and Wildlife .will be
50 contacted immediately for further guidance.

51
52 In areas where Hawaiian Goose are known to be present,
53 reduced speed limits will be posted and implemented and
54 project personnel and contractors will be informed of the
55 presence of endangered species on-site.

- 56
57 **(3)** Hawaiian seabirds, Newell's shearwater, and band-rumped
58 storm-petrel may traverse the project area at night. If night
59 time work will be required in conjunction with the development
60 of the project, all lights will be fully shielded so the bulb can
61 only be seen from below bulb height to reduce the potential for
62 interactions of nocturnally flying seabirds with external lights
63 and man-made structures. All outdoor lights will be turned off
64 when human activity is not occurring in the lighted area.

65
66 On all islands except Oahu, no night time construction will
67 occur during the peak seabird fledging period (September 15
68 through December 15).

69
70 Any streetlights that are installed, as part of this action, will be
71 shielded. This minimization measure would serve the dual
72 purpose of minimizing the threat of disorientation of downing of
73 seabirds, while at the same time complying with the Hawaii
74 County Code Section 14-50 et seq. which requires the
75 shielding of exterior lights so as to lower the ambient glare
76 caused by unshielded lighting to the astronomical
77 observatories located on Maunakea

- 78
79 **(4)** Hawaiian Stilt Birds – A biological monitor familiar with the
80 species' biology and approved by the FHWA will conduct
81 Hawaiian Stilt Bird nest surveys where appropriate habitat
82 occurs within the proposed maintenance site prior to cleaning
83 culverts and drainage structures. Survey will take place within
84 three days of project initiation and after any subsequent delay
85 of work of three or more days (during which the birds may
86 attempt to nest). If a nest or active brood is found, cease work
87 and contact the USFWS.

- 88
89 **(5)** Hawaiian Hawks nest in both exotic and native woody
90 vegetation. To minimize potential impact to Hawaiian Hawks

91 during the breeding season (March 1 through September 30), a
92 nest search will be conducted of the project footprint and
93 surrounding areas immediately prior to the start of construction
94 activities by a biologist familiar with the species. No trees
95 containing a nest will be trimmed or cut regardless of the time
96 of year as nests may be reused during consecutive breeding
97 seasons.
98

99 **(6)** For ROD, ensure that all work will be completed within the
100 existing, pre-disturbed right of way and implement the following
101 minimization measures should tree clearing occur to minimize
102 the potential spread of ROD:
103

104 **(a)** A survey of any locations where tree cutting may occur
105 will be conducted within two weeks prior to tree cutting
106 to determine if there are infected ohia trees.
107

108 **(b)** If infected trees are identified, the following measures
109 will be implemented:
110

111 i. The USFWS, the University of Hawaii
112 Cooperative Extension Service, the U.S.
113 Department of Agriculture (USDA) Forest
114 Service, and the USDA Agricultural Research
115 Service will be contacted for further guidance.
116

117 **(c)** Both prior to cutting and after the project is complete,
118 the following measures will be implemented:
119

120 i. Tools used for cutting infected ohia trees will be
121 cleaned with a 70% rubbing alcohol solution or a
122 freshly-prepared 10% solution of chlorine bleach
123 and water as long as the tools are oiled
124 afterwards. Chainsaw blades will be brushed
125 clean.
126

127 ii. Vehicles used off-road in infected areas will be
128 thoroughly cleaned and tires and the
129 undercarriage will be pressure washed with
130 detergent.
131

132 iii. Shoes and clothing worn in infected area will be
133 cleaned by dipping shoe soles in 70% alcohol
134 and washing clothing in hot water with detergent.
135

iv. All cut wood will be left on-site to avoid spreading ROD.

(B) Compliance Requirements. The Contractor shall protect Hawaiian Hoary Bats, Hawaii Goose and Hawaiian seabirds, Newell's shearwater, band-rumped storm-petrel, Hawaiian Stilt Bird, and Hawaiian Hawks for the duration of construction. Failure to comply with the construction requirements, harm, or taking of an individual during the construction duration shall be enforceable by the USFWS as set forth by the ESA and DOFAW. Resultant penalties and/or fines shall be at the Contractor's expense without cost or liability to the State.

694.04 Measurement. The Engineer will measure the work required for the protection of endangered species on a force account basis in accordance with Subsection 109.06 – Force Account Provisions and Compensation and as ordered by the Engineer.

The Engineer will not measure the work required for minimizing spread of Rapid Ohia Death for payment.

694.05 Payment. The Engineer will pay for the accepted protection of endangered species on a force account basis in accordance with Subsection 109.06 – Force Account Provisions and Compensation. Payment will be full compensation for the work prescribed in this section, by the Engineer, and in the contract documents.

The Engineer shall consider the cost for minimizing the spread of ROD as included in the contract price of the various contract items.

The Engineer will pay for the following pay item when included in the proposal schedule:

Pay Item	Pay Unit
Protection of Endangered Species	Force Account

An estimated amount may be allocated in the proposal schedule under "Protection of Endangered Species," but the actual amount to be paid will be the sum shown on the accepted force account records, whether this sum be more or less than the estimated amount allocated in the proposal schedule."

END OF SECTION 694

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(I) Amend **699.03 Applicability** by revising from lines 21 to 24 to read as follows:

(II) Amend 699.05 Payment by revising from lines 44 to 47 to read as follows:

“Mobilization (Not to exceed 6 percent of the sum of all items excluding the bid price of this item) Lump Sum”

NH-093-1(035)
699-1a

10/03/11

1 **SECTION 702 – BITUMINOUS MATERIALS**
2

3 Make the following amendments to said Section:
4

5 **(I)** Amend **Subsection 702.01 Asphalt Cement** by replacing lines 4 to 5 to
6 read:

7
8 **“702.01 Asphalt Cement.** Performance-graded asphalt binder shall conform to
9 5 AASHTO M 320.
10

11 **702.01(A) Asphalt Cement (PG 64-16).** Use for non-surface mixes, unless
12 otherwise specified in the project documents.
13

14 **702.01(B) Asphalt Cement (PG 64E-22).** Use for all surface mixes, except for
15 on Lanai and Molokai, and unless otherwise specified in the project documents.
16 Polymer modified asphalt (PMA) pavement refers to asphalt mix using PG 64E-
17 22, unless otherwise indicated.
18

19 **(II)** Amend **Subsection 702.06 (Unassigned)** by replacing line 23 to read:
20

21 **“702.06 Warm Mix Asphalt (WMA) Additive.** Additives for WMA shall be
22 approved by the Engineer.”
23
24
25

26 **END OF SECTION 702**
27

SECTION 703 – AGGREGATES

Make the following amendments to said Section:

(I) Amend TABLE 703.01-3 FINE AGGREGATE GRADING REQUIREMENTS, HAWAII AND KAUAI to read as follows:

“

TABLE 703.01-3 - FINE AGGREGATE GRADING REQUIREMENTS, HAWAII AND KAUAI		
Sieve Sizes	Percent Passing by Weight	
	Calcareous Sand	Crusher Screenings
3/8 Inch	100	100
No. 4	95 – 100	95 - 100
No. 8	-	50 - 85
No. 16	-	32 - 60
No. 30	-	-
No. 50	-	15 - 30
No. 100	0 – 5	5 - 20

”

END OF SECTION 703

1 **SECTION 705 – JOINT MATERIALS FOR CONCRETE STRUCTURES**
2
3

4 Make the following amendment to said Section:
5
6

7 **(l)** Amend **705.13 Roofing Felt.** Roofing felt shall conform to ASTM D6380
8 class S Type III or ASTM D226 Type II.
9

10
11 **END OF SECTION 705**
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(I) Amend 712.02(A) Epoxy – Resin Adhesive to read as follows:
 “Submit six copies of product brochures. The use of the epoxy resin adhesive shall conform to the manufacturer’s recommendations. The Contractor shall also submit a certificate of compliance from the manufacturer or supplier affirming that the proposed material conforms to ASTM C 881 and is appropriate for the intended use. The color for exposed surfaces shall closely match the surrounding material. “Fast Set” epoxy adhesives will not be acceptable.”

“Non-shrink grout shall be portland cement base, prepackaged, non-metallic, non-gaseous ready to use grout mix and shall be applied as recommended by the manufacturer. A manufacturer’s certificate of compliance shall be submitted.”

(IV) Amend 712.04(B) Epoxy Grout between lines 59 and 69 to read as follows:

“Submit six copies of product brochures and a certificate of compliance from manufacturer or supplier affirming that proposed material conforms to ASTM C 881 and is appropriate for the intended use. The epoxy grout shall be able to support and carry sustained creep tensile loads. The use of the epoxy grout shall conform to the manufacturer’s recommendations. The color of the exposed materials shall closely match the surrounding material.”

NH-093-1(035)
712-1a

10/03/25

1 Make the following section a part of the Standard Specifications:
2
3

4 **"SECTION 720 - Fiberglass Reinforced Plastic (FRP)**
5
6

7 **720.01 General**
8

9 **(A) Structural Shapes.** All structural shapes are to be manufactured
10 by the pultrusion process with a glass content minimum of 45%, maximum
11 of 55% by weight. The structural shapes shall be composed of fiberglass
12 reinforcement and resin in qualities, quantities, properties, arrangements
13 and dimensions as necessary to meet the design requirements and
14 dimensions as specified in the Contract Documents.
15

16 **(B) Fiberglass Reinforcement.** Fiberglass reinforcement shall be a
17 combination of continuous roving, continuous strand mat, and surfacing
18 veil in sufficient quantities as needed by the application and/or physical
19 properties required.
20

21 **(C) Resin.** Resins shall be fire retardant vinyl ester, with chemical
22 formulation necessary to provide the corrosion resistance, strength and
23 other physical properties as required.
24

25 **(D) Finished Surfaces.** All finished surfaces of FRP items and
26 fabrications shall be smooth, resin-rich, free of voids and without dry
27 spots, cracks, crazes or unreinforced areas. All glass fibers shall be well
28 covered with resin to protect against their exposure due to wear or
29 weathering.
30

31 **(E) Ultraviolet Protection.** All pultruded structural shapes shall be
32 further protected from ultraviolet (UV) attack with 1) integral UV inhibitors
33 in the resin and 2) a synthetic surfacing veil to produce a resin rich
34 surface.
35

36 **(F) Flame Spread Rating.** All FRP products shall have a tested
37 flame spread rating of 25 or less per ASTM E-84 Tunnel Test.
38

39 **(G) Mechanical Properties.** Pultruded structural shapes are to have
40 the minimum longitudinal mechanical properties listed below:
41

42
43

Property	ASTM Method	Value	Units
Tensile Strength	D-638	30,000 (206)	psi (MPa)
Tensile Modulus	D-638	2.5 x 10 ⁶ (17.2)	psi (GPa)
Flexural Strength	D-790	30,000 (206)	psi (MPa)
Flexural Modulus	D-790	1.8 x 10 ⁶ (12.4)	psi (GPa)
Flexural Modulus(Full Section)	N/A	2.8 x 10 ⁶ (19.3)	psi (GPa)
Short Beam Shear (Transverse)	D-2344	4,500 (31)	psi (MPa)
Shear Modulus (Transverse)	N/A	4.5 x 10 ⁵ (3.1)	psi (GPa)
Coefficient of Thermal Expansion	D-696	4.4 x 10 ⁻⁶ (8.0 x 10 ⁻⁶)	In/in/°F (cm/cm/°C)
Flame Spread	E-84	25 or less	N/A

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(H) Measurements. Structural Shapes supplied shall meet the minimum dimensional requirements as shown or specified. The Contractor shall provide and/or verify measurements in field for work fabricated to fit field conditions as required by manufacturer to complete the work. Determine correct size and locations of required holes or coping from field dimensions before structural shape fabrication.

(I) Sealing. All shop fabricated cuts or drilling shall be coated with vinyl ester resin to provide maximum corrosion resistance. All field fabricated cuts or drilling shall be coated similarly by the contractor in accordance with the manufacturer's instructions."

END OF SECTION 720

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(B) Backing** by replacing lines 72 through 73
30 to read:

31
32 “Aluminum sheet shall conform to ASTM B 209, alloy 5052-H38 or 6061-
33 T6 flat sheet.”

34
35 **(III)** Amend **Subsection 750.01(E) Retroreflective Sheeting Materials** by
36 replacing lines 1126 through 1137 to read:

37
38 **“(E) Retroreflective Sheeting Materials.** Retroreflective sheeting
39 includes white or colored sheeting having smooth outer surface.

40
41 Retroreflective sheeting shall be classified in accordance with ASTM D
42 4956.

43
44 The coefficient of retroreflection shall meet the minimum requirements of
45 ASTM D 4956 for the type of reflective sheeting specified.

47 The color shall conform to the latest appropriate standard color tolerance
48 chart issued by the U.S. Department of Transportation, Federal Highway
49 Administration and to the daytime and nighttime color requirements of ASTM D
50 4956.

51
52 Test methods and procedures shall be in accordance with ASTM.

53
54 **(IV) Amend Subsection 750.02 Sign Posts** by replacing lines 1168 through
55 1172 to read:

56
57 **“(C) Square Tube Posts.** Square and other tube posts shall conform to ASTM
58 A 653 for cold-rolled, carbon steel sheet, commercial quality; or ASTM A 787 for
59 electric-resistance-welded, metallic-coated carbon steel mechanical tubing.”
60
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END OF SECTION 750

1 **SECTION 755 – PAVEMENT MARKING MATERIALS**

2
3 Make the following amendments to said Section:

4
5 **(I)** Amend **Subsection 755.02 (C) Retroreflective Pavement Markers** by
6 revising lines 223 to 236 to read:

7
8 “Exterior surface of shell shall be smooth and contain one or two
9 retroreflective faces of specified color.”

10
11 **(II)** Amend **Subsection 755.05 (C)(1) Glass Beads** by adding the following
12 after line 869:

13
14 **“(f)** The glass spheres shall not contain more than 200 ppm (total)
15 arsenic, 200 ppm (total) antimony nor more than 200 ppm (total)
16 lead, when tested according to EPA Methods 3052 and 6010C.
17 Other suitable x-ray fluorescence spectrometry analysis methods
18 may be used to screen samples of glass spheres for arsenic and
19 lead content.”

20
21
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25
26 **END OF SECTION 755**
27

1 **SECTION 770 – TRAFFIC SIGNAL MATERIALS**

2
3 Make the following amendments to said Section:

4
5 **(I)** Amend **Subsection 770.02(A) – Standard Traffic Signal Heads** by
6 revising the first paragraph from line 211 to 216 to read:

7
8 “(b) To ensure quality and performance, LED head shall have prior
9 history of testing and use by CALTRANS and shall exceed ITE standards.
10 Failure on one LED shall not affect other LED’s. LED head shall have fully-
11 encapsulated electronic circuitry and configuration for 12-inch ball.”

12
13 **(II)** Amend **Subsection 770.02(A)(4) – Back Plates** from line 285 to 290 to
14 read:

15
16 **“(4) Back Plates.** Louvered back plates shall be furnished and
17 installed on mast arm mounted signal heads. Back plates shall be
18 constructed of aluminum alloy 3003-H14 sheet having minimum
19 thickness of 0.058 inch and minimum dimensions equal to signal head
20 size plus five-inch border, with a one-inch retro-reflective border around
21 the outside edge of the front surface. Back plates shall be dull black in
22 color.”

23
24 **(III)** Amend **Subsection 770.04 – Pedestrian Signal** from line 444 to 600
25 to read:

26
27 **“770.04 Pedestrian Signal.**

28
29 **(A) Purpose.**

30
31 The purpose of this specification is to provide the minimum
32 requirements for the LED “walking person” and “hand” icon
33 pedestrian signal modules with countdown. This specification is
34 only for the nominal overall message-bearing surface of 16 x 18 in.
35 This specification is not intended to impose restrictions upon
36 specific designs and materials that conform to the purpose and the
37 intent of this specification. This specification refers to
38 definitions and practices described in “Pedestrian Traffic Control
39 Signal Indications” published in the *Equipment and Materials*
40 *Standards of the Institute of Transportation Engineers*, (referred
41 to in this document as “PTCSI”) and in the Applicable Sections of
42 Manual on Uniform Traffic Control Devices (MUTCD) 2009 Section
43 4E.

44
45 **(B) Physical and Mechanical Requirements.**

46 The modules shall fit into existing pedestrian signal housings built for
47

the PTC SI sizes stated in Section 1 of the “walking person” and “hand” icon pedestrian signal indication Standard without modification to the housing and shall not require special tools for installation.

Installation of a retrofit replacement module into existing pedestrian signal housing shall only require the removal of the existing optical unit components, shall be weather tight and fit securely in the housing; and shall connect directly to existing electrical wiring. The LED module shall have a visual appearance similar to that of an incandescent lamp (i.e.: Smooth and non-pixelated). Screwed on lenses are not allowed. Only modules with internal mask shall be utilized. No external silk-screen shall be permitted.

When not illuminated, the WALKING PERSON, UPRAISED HAND, and COUNTDOWN DIGITS shall not be readily visible. The countdown digits of the pedestrian signal module shall be located to the right of the associated UPRAISED HAND. The display of the number of remaining seconds shall begin only at the beginning of the pedestrian change interval. After the countdown displays zero, the display shall remain dark until the beginning of the next countdown. The walking person, hand icons and countdown digits shall be incandescent looking.

The units shall not have any external attachments, dip switches, toggle switches or options that will allow the mode to be changed from counting the clearance cycle, to the full walk/don't walk cycle or any other modification to the icons or digits.

For each nominal module, use the corresponding minimum H (height) and W (width) measurements:

Module Size	Icon Height	Icon Width	Countdown Height	Countdown Width	Countdown Segment Width
(16 x 18 in)	11 in	7 in	9 in	7 in	0.7 in

All exposed components of a module shall be suitable for prolonged exposure to the environment. As a minimum, the module shall be rated for use in the ambient operating temperature range, measured at the exposed rear of the module, of -40°C to +74°C (-40°F to +165°F).

The module shall be a single, self-contained device, not requiring on-site assembly for installation into an existing pedestrian signal housing. The power supply shall be located inside the pedestrian signal module. The assembly and manufacturing process for the

module shall be designed to assure all internal LED and electronic components are adequately supported to withstand mechanical shock and vibration from high winds and other sources.

The front window shall be a transparent polycarbonate material with internal masking to prevent the icons and digits from being visible when not in operation. External masking or silk-screen technology shall not be permitted.

Each module shall be identified on the backside with the manufacturer's name, model, serial number and operating characteristics. The operating characteristics shall include the nominal operating voltage and stabilized power consumption, in watts and/or Volt-Amperes.

(C) Photometric Requirements

For a minimum period of 60 months, the maintained minimum luminance values for the modules under operating conditions, when measured normal to the plane of the icon surface, shall not be less than:

- Walking person: 2,200 cd/m²
- Hand: 1,400 cd/m²
- Countdown digits: 1,400 cd/m²

The luminance of the emitting surface, measured at angles from the normal of the surface, may decrease linearly to a value of 50% of the values listed above at an angle of 15 degrees. The LED module shall have a visual appearance similar to that of an incandescent lamp (i.e.: Smooth and non-pixelated).

Maximum permissible luminance: When operated within the temperature range, the actual luminance for a module shall not exceed three times the required peak value of the minimum maintained luminance. Luminance uniformity: The uniformity of the signal output across the emitting section of the module lens (i.e., the hand, person or countdown icon) shall not exceed a ratio of 5 to 1 between the maximum and minimum luminance values (cd/m²).

The standard colors for the LED Pedestrian Signal Module shall be White for the walking person and Portland Orange for the hand icon and the countdown digits.

(D) Electrical Requirements

All wiring and terminal blocks shall meet the requirements of Section 13.02 of the VTCSH Standard. Maximum of three secured, color coded, 1 meter (39 in) long 600 V, 16 AWG minimum,

jacketed wires, conforming to the National Electrical Code, rated for service at +105°C, are to be provided for electrical connection. The conductors shall be color coded with orange for the hand, blue for the walking person and white as the common lead.

LED modules shall operate from a 60 ± 3 Hertz ac line power over a voltage range from 80 to 135 VAC RMS. Nominal operating voltage for all measurements shall be 120 ± 3 VAC RMS. Fluctuations in line voltage over the range of 80 to 135 VAC RMS shall not affect luminous intensity by more than $\pm 10\%$. To prevent the appearance of flicker, the module circuitry shall drive the LEDs at frequencies greater than 100 Hz when modulated, or at DC, over the voltage range specified.

Low Voltage Turn Off: There should be no illumination of the module when the applied voltage is less than 35 VAC RMS. To test for this condition, each icon must first be fully illuminated at the nominal operating voltage. The applied voltage shall then be reduced to the point where there is no illumination. This point must be greater than 35 VAC RMS.

Turn-ON and Turn-OFF Time: A module shall reach 90% of full illumination (turn-ON) within 75 msec of the application of the nominal operating voltage. The signal shall cease emitting visible illumination (turn-OFF) within 75 msec of the removal of the nominal operating voltage.

Default Condition: For abnormal conditions when nominal voltage is applied to the unit across the two-phase wires (rather than being applied to the phase wire and the neutral wire) the pedestrian signal unit shall default to the hand symbol. The on-board circuitry of a module shall include voltage surge protection:

- To withstand high-repetition noise transients and low-repetition high-energy transients as specified in NEMA Standard TS-2 2003; Section 2.1.8
- Section 8.2 IEC 1000-4-5 & Section 6.1.2 ANSI/IEEE C62.41.2-2002, 3kV, 2 ohm
- Section 8.0 IEC 1000-4-12 & Section 6.1.1 ANSI/IEEE C62.41.2-2002, 6kV, 30 ohm

The LED signal and associated on-board circuitry shall meet the requirements of the Federal Communications Commission (FCC) Title 47, Subpart B, Section 15 regulations concerning the emission of electronic noise by Class A digital devices. The modules shall provide a power factor of 0.90 or greater when operated at nominal operating voltage, and 25°C (77°F). Total harmonic distortion

induced into an AC power line by the module, operated at nominal operating voltage, and at 25°C (77°F) shall not exceed 20%.

The current draw shall be sufficient to ensure compatibility and proper triggering and operation of load current switches and conflict monitors in signal controller units. Off State Voltage Decay: When the module is switched from the On state to the Off state the terminal voltage shall decay to a value less than 10 VAC RMS in less than 100 milliseconds when driven by a maximum allowed load switch leakage current of 10 milliamps peak (7.1 milliamps AC).

(E) Module Functions

The module shall operate in one mode: *Clearance Cycle Countdown Mode Only*. The module shall start counting when the flashing don't walk turns on and will countdown to "0" and turn off when the steady "Don't Walk" signal turns on. *The module shall not have user accessible switches or controls for the purpose of modifying the cycle, icons or digits.* At power on, the module enters a single automatic learning cycle. During the automatic learning cycle, the countdown display shall remain dark. The unit shall re-program itself if it detects any increase or decrease of Pedestrian Timing. The digits shall go blank once a change is detected and then take one complete pedestrian cycle (with no counter during this cycle) to adjust its buffer timer.

The module shall allow for consecutive cycles without displaying the steady Hand icon ("Don't Walk"). The module shall recognize preemption events and temporarily modify the crossing cycle accordingly. If the controller preempts during the walking man, the countdown shall follow the controller's directions and shall adjust from walking man to flashing hand. It shall start to count down during the flashing hand. If the controller preempts during the flashing hand, the countdown shall continue to count down without interruption. The next cycle, following the preemption event, shall use the correct, initially programmed values. This specification is worded such that the flashing don't walk time is not modified.

If the controller output displays Don't Walk steady condition or if both the hand /person go dark and the unit has not arrived to zero, the unit suspends any timing and the digits shall go dark.

(F) Warranty

Manufacturers will provide the following warranty provisions.
Replacement or repair of an LED signal module that fails to function

as intended due to workmanship or material defects within the first 5 years (60 months) from the date of project acceptance.”

(IV) Amend **Subsection 770.05(A) - Controller Assembly** from line 617 to 625 to read:

“(1) Model 332A controller cabinet refers to latest Model 332LS controller cabinet listed on CALTRANS QPL.

(2) The traffic signal controller shall be a 2070 LX on CALTRANS QPL. Each controller shall be furnished with the latest firm ware. Each controller shall be able to communicate with HDOT’s traffic signal central server via Contractor provided cellular modem. (See Section 627.02 for cellular modem)

(3) Each controller assembly listed in Table 770.05-1 – Controller Assembly Requirements contains sufficient equipment for full 8-vehicle, 4-pedestrian, and 4-preemption phase intersection, even though the contract documents may not require it.

TABLE 770.05-1 – CONTROLLER ASSEMBLY	
REQUIREMENTS	
<u>Item</u>	<u>Quantity</u>
Model 2070 LX Controller	1
332LS Aluminum Cabinet	1
Model 200 Load Switches	12
Model 204 Flasher	All
Model 242 Isolators	2
Model FS/ST Isolator	All
Flash Transfer Relays	All
Firmware	1
Model 2010ECL Conflict Monitor (Crimp and Poke Type, such as Molex Dualcon TM Straight/on Edge Dual Position Connectors, or approved equal)	1
Model 262C Detector Amplifiers (Rotary Sw Type)	8
Model M762 Preempt. Car (Non-QPL) with M768 Auxiliary Input Panel	2

(V) Amend **Subsection 770.05(B) - Model 170E Controller** by deleting line 643.

(VI) Amend **Subsection 770.05(C)(5) - Cabinet** by deleting lines 660 to 665.

(VII) Amend **Subsection 770.05(D) - Auxiliary Equipment** from line 697 to 741 to read:

“(1) Model M762 Optical Preemption Module with M768 Auxiliary Input Panel. M762 shall be card-type and shall interface with Model 170 cabinet preemption slots of input file. Each M762 Module shall have two channels of preemption. M762 shall include firmware to discriminate between two valid priority signals, to prioritize valid same priority signals on a first come, first served basis, and to override low priority signal if high priority is received. M762 Module shall receive input signals (9.639 and 14.035 Hz) to permit priority preemption operation within 170 local intersection program. M762 shall optically isolate output signals and shall trigger active low signal to controller for high priority and pulsed active low signal for low priority. M768 Auxiliary Input Panel shall be used to interconnect M762 with the terminals inside the traffic cabinet. The State’s preemption systems employ the 3M/Global Traffic Technologies Opticom System. New preemption equipment shall be 3M/Global Traffic Technologies Opticom or accepted equal that is fully compatible with 3M/Global Traffic Technologies Opticom.

(2) Security Tumbler for Signal Cabinet. The signal control cabinet door locks (2 locks for each cabinet) are keyed to take Best Lock Series tumblers. The contractor shall furnish and install 2 lock cylinders that will fit in the current locks on the signal cabinet. The lock cylinders keys shall be one of a kind, licensed to HDOT, and each cylinder shall have 2 sets of keys with “do not duplicate” stamped on each key.”

(VIII) Delete Subsection 770.06(C) - Type 3 – Interconnect Cable Tie-in Signalized Intersection to Another.

(IX) Amend Subsection 770.06(G) – Type 7 Preemption Detector (Opticom) Cables from line 788 to 798 to read:

“(G) Type 7 - Preemption Detector (Opticom) Cables. Preemption detector (Opticom) cables are specific cables that run continuously from optical detectors mounted on traffic signal standards to terminal blocks for M762 phase module located in controller cabinet. Each detector shall be furnished with its own cable running back to controller cabinet. 3M/Global Traffic Technologies’ M138 Optical Detector Cable shall be furnished for detector cable because it is compatible and consistent with requirements for Opticom Preemption System. M138 cable shall be furnished that is BerkTek Type B, shield jacket, three - insulated conductor cable, 20 AWG, one - 20 AWG bare stranded ground, 600 Volts, orange-blue-yellow color coded and 5/16 inch diameter.”

(X) Amend **Subsection 770.11 – Preemption Detectors** from line 997 to 1009 to read:

“(A) Description. Preemption Detectors shall be located on traffic signal standards to convert optical signals emitted from an emergency vehicle to electrical pulses for emergency preemption of traffic signals. Electrical signals from optical detector shall be transmitted by 4-conductor cable to preemption module M762 located in input slot of controller cabinet. M762 preemption module shall direct and hold controller in preemption mode until signal disappears. Preprogrammed selection of phases and signal displays shall be controlled by Local Intersection Program. The State’s preemption system employ 3M/Global Traffic Technologies Opticom System. New preemption equipment shall be by 3M/Global Traffic Technologies Opticom or equal accepted by the Engineer, that is fully compatible with 3M/Global Traffic Technologies Opticom. Astro-mini brackets or similar device for attaching preemption detector to poles shall be included.”

(XI) Amend **Subsection 770.11 – Preemption Detectors** from line 1012 to 1021 to read:

“(1) Type 7 Cable. Type 7 preemption detector (Opticom) cables shall be specific cables that run continuously from optical detectors mounted on traffic signal standards to terminal blocks for M762 phase module in controller cabinet. Type 7 preemption detector cable shall be compatible with 3M/Global Traffic Technologies’ M138 Optical Detector cable and shall be consistent with requirements for Opticom Preemption System. M138 cable shall be BerkTek Type B, shield jacket, 3-insulated conductor, 20AWG stranded copper, 1-20AWG bare stranded ground, 600 volts, orange-blue-yellow color coded, and 5/16-inch diameter.”

(XII) Add **Subsection 770.12 – Pedestrian Signal Push Button With Integral Sign** to read:

“(A) Description. The pedestrian push button unit shall consist of an assembly that can be secured to traffic poles with standard screws, be tamper proof, weatherproof, and constructed so that electrical shocks are impossible to receive.

(B) Materials.

- (1)** The housing for the push button assembly shall be of cast and/or machined aluminum. The push button assembly shall be weatherproof with a water diverting groove set in the outside diameter of the actuator button receptor. The housing shall be designed to reduce vandalism and

shall mount on the side or top of a pole with a minimum 2-inch diameter button. The push button housing shall be capable of mounting in an 'up button' or 'down button' configuration. All wire connections shall be accessible from the back of the assembly.

(2) An ADA acceptable raised directional sign shall be installed with stainless steel fasteners to the housing. The sign shall consist of a raised walking person and a raised arrow indication. Paint the unit black and paint the raised walking person and arrow white. The sign shall be capable of mounting in an 'up button' or 'down button' configuration. The raised walking person and arrows shall be directional and match the indication as shown in the plans.

(3) The pushbutton shall extend from the sign faceplate approximately three inches. The pushbutton actuator shall be convex in design having a flat area on the face for uses of a stylus, ADA acceptable, two inches in diameter, and have a tension of less than five pounds when pressed. The button shall be manufactured in a way that it cannot be stuck in a closed (constant call) position.

The pedestrian push button shall be a piezo electric type and be UL listed. The button shall have a stainless steel actuator and shall be mounted within the housing with stainless steel, non-corrosive, tamper proof fasteners. The unit shall operate between 12-24V DC or AC, 3-inch round mounts with 4 mounting bolts. The pedestrian button shall give an audio and visual signal each time the pedestrian button is activated."

END OF SECTION 770

Requirements of Chapter 104, HRS

Wages and Hours of Employees on Public Works Law

Chapter 104, HRS, applies to every public works construction project over \$2,000, regardless of the method of procurement or financing (purchase order, voucher, bid, contract, lease arrangement, warranty, SPRB).

Rate of Wages for Laborers and Mechanics

- Minimum prevailing wages (basic hourly rate plus fringe benefits), as determined by the Director of Labor and Industrial Relations and published in wage rate schedules, shall be paid to the various classes of laborers and mechanics working on the job site. [§104-2(a), (b), Hawaii Revised Statutes (HRS)]
- If the Director of Labor determines that prevailing wages have increased during the performance of a public works contract, the rate of pay of laborers and mechanics shall be raised accordingly. [§104-2(a) and (b), HRS; §12-22-3(d) Hawaii Administrative Rules (HAR)]

Overtime

- Laborers and mechanics working on a Saturday, Sunday, or a legal holiday of the State or more than eight hours a day on any other day shall be paid overtime compensation at not less than one and one-half times the basic hourly rate plus the cost of fringe benefits for all hours worked. If the Director of Labor determines that a prevailing wage is defined by a collective bargaining agreement, the overtime compensation shall be at the rates set by the applicable collective bargaining agreement [§§104-1, 104-2(c), HRS; §12-22-4.1, HAR]

Weekly Pay

- Laborers and mechanics employed on the job site shall be paid their full wages at least once a week, without deduction or rebate, except for legal deductions, within five working days after the cutoff date. [§104-2(d), HRS]

Posting of Wage Rate Schedules

- Wage rate schedules with the notes for prevailing wages and special overtime rates, shall be posted by the contractor in a prominent and easily accessible place at the job site. A copy of the entire wage rate schedule shall be given to each laborer and mechanic employed under the contract, except when the employee is covered by a collective bargaining agreement. [§104-2(d), HRS]

Withholding of Accrued Payments

- If necessary, the contracting agency may withhold accrued payments to the contractor to pay to laborers and mechanics employed by the contractor or subcontractor on the job site any difference between the wages required by the public works contract or specifications and the wages received. [§104-2(e), HRS]

Certified Weekly Payrolls and Payroll Records

- A certified copy of all payrolls shall be submitted weekly to the contracting agency. [§104-3(a), HRS; §12-22-10, HAR]
- The contractor is responsible for the submission of certified copies of the payrolls of all subcontractors. The certification shall affirm that the payrolls are correct and complete, that the wage rates listed are not less than the applicable rates contained in the applicable wage rate schedule, and that the classifications for each laborer or mechanic conform with the work the laborer or mechanic performed. [§104-3(a), HRS; §12-22-10, HAR]
- Payroll records shall be maintained by the contractor and subcontractors for three years after completion of construction. The records shall contain: [§104-3(b), HRS; §12-22-10, HAR]
 - the name and home address of each employee
 - the last four digits of social security number
 - a copy of the apprentice's registration with DLIR
 - the employee's correct classification
 - rate of pay (basic hourly rate + fringe benefits)
 - itemized list of fringe benefits paid
 - daily and weekly hours worked
 - weekly straight time and overtime earnings
 - amount and type of deductions
 - total net wages paid
 - date of payment
- Records shall be made available for examination by the contracting agency, the Department of Labor and Industrial Relations (DLIR), or any of its authorized representatives, who may also interview employees during working hours on the job. [§§104-3(c), 104-22(a), HRS; §12-22-10, HAR]

Termination of Work on Failure to Pay Wages

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

Apprentices

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

Enforcement

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



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

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

"General Decision Number: HI20260001 05/27/2026

State: Hawaii

Construction Types: Building, Heavy, Highway and Residential

Counties: Hawaii Counties of
Hawaii, Honolulu, Kalawao, Kauai and
Maui

BUILDING CONSTRUCTION PROJECTS

RESIDENTIAL CONSTRUCTION PROJECTS (consisting of single family homes and apartments up to and including 4 stories)

HIGHWAY CONSTRUCTION PROJECTS

HEAVY CONSTRUCTION PROJECTS

Modification Number	Publication Date
1	01/16/2026
2	05/18/2026
3	05/27/2026

ASBE0132-001 09/07/2025

	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.).....	\$ 46.90	29.75

BOIL0627-005 01/01/2025

	Rates	Fringes
BOILERMAKER.....	\$ 49.37	31.25

BRHI0001-001 09/05/2023

	Rates	Fringes
BRICKLAYER: POINTERS, CAULKERS AND WEATHERPROOFERS..	\$ 48.28	32.23
BRICKLAYERS AND STONEMASONS.....	\$ 48.03	32.23

BRHI0001-002 09/05/2023

	Rates	Fringes
TILE, MARBLE & TERRAZZO WORKER (TERRAZZO BASE GRINDERS).....	\$ 44.69	33.00
TILE, MARBLE & TERRAZZO WORKER (TERRAZZO FLOOR GRINDERS AND TENDERS).....	\$ 43.14	33.00
TILE, MARBLE & TERRAZZO WORKER (TILE, MARBLE AND TERRAZZO WORKERS).....	\$ 46.50	33.00

CARP0745-001 09/01/2025

	Rates	Fringes
CARPENTERS: (CARPENTERS; HARDWOOD FLOOR LAYERS; PATENT SCAFFOLD ERECTORS (14 FT. AND OVER); PILEDRIERS; PNEUMATIC NAILERS; WOOD SHINGLERS AND TRANSIT AND/OR LAYOUT MAN).....	\$ 55.50	29.81
CARPENTERS: MILLWRIGHTS AND MACHINE ERECTORS.....	\$ 55.75	29.81
CARPENTERS: POWER SAW OPERATORS (2 H.P. AND OVER)...	\$ 55.65	29.81

CARP0745-002 09/01/2025

	Rates	Fringes
DRYWALL AND ACOUSTICAL WORKERS AND LATHERS.....	\$ 55.75	29.81

ELEC1186-001 08/24/2025

	Rates	Fringes
ELECTRICIANS.....	\$ 56.55	33.16
ELECTRICIANS: CABLE SPLICERS.....	\$ 63.90	33.38
ELECTRICIANS: TELECOMMUNICATION WORKER.....	\$ 41.00	16.28

ELEC1186-002 08/24/2025

	Rates	Fringes
LINE CONSTRUCTION: CABLE SPLICERS.....	\$ 63.90	33.38
LINE CONSTRUCTION: GROUND MEN/TRUCK DRIVERS.....	\$ 42.41	27.14
LINE CONSTRUCTION: HEAVY EQUIPMENT OPERATORS.....	\$ 50.90	30.75
LINE CONSTRUCTION: LINEMEN.....	\$ 56.55	33.16
LINE CONSTRUCTION: TELECOMMUNICATION WORKER.....	\$ 41.00	16.28

ELEV0126-001 01/01/2025

	Rates	Fringes
ELEVATOR MECHANIC 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.....	\$ 73.85	38.44

ENGI0003-002 09/01/2025

	Rates	Fringes
DIVER TENDER: OTHER THAN AQUA LUNG.....	\$ 59.94	35.68
DIVER: (AQUA LUNG) (SCUBA) (over 30 feet).....	\$ 81.72	35.68
DIVER: (AQUA LUNG) (SCUBA) (up to 30 feet).....	\$ 72.35	35.68
DIVER: OTHER THAN AQUA LUNG.....	\$ 81.72	35.68
HELICOPTER WORK, AIRBORNE HOIST OPERATOR FOR HELICOPTER.....	\$ 61.52	35.68
HELICOPTER WORK: CO-PILOT OF HELICOPTER.....	\$ 61.66	35.68
HELICOPTER WORK: PILOT OF HELICOPTER.....	\$ 62.83	35.68
POWER EQUIPMENT OPERATOR - TUNNEL WORK, GROUP 1: FORK LIFT (UP TO AND INCLUDING 10 TONS); PARTSMAN (HEAVY DUTY REPAIR SHOP PARTS ROOM WHEN NEEDED). 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.....	\$ 57.96	35.68
POWER EQUIPMENT OPERATOR - TUNNEL WORK, GROUP 2: CONVEYOR OPERATOR (HANDLING BUILDING MATERIAL); HYDRAULIC MONITOR; MIXER BOX OPERATOR (CONCRETE PLANT). 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.....\$ 58.07

35.68

POWER EQUIPMENT OPERATOR - TUNNEL WORK, 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. 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.....\$ 58.24

35.68

POWER EQUIPMENT OPERATOR - TUNNEL WORK, 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 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.....\$ 58.51

35.68

POWER EQUIPMENT OPERATOR - TUNNEL WORK, 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. 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.....\$ 58.82

35.68

POWER EQUIPMENT OPERATOR - TUNNEL WORK, 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). 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.....\$ 59.47

35.68

POWER EQUIPMENT OPERATOR - TUNNEL WORK, 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). 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.....\$ 59.79

35.68

POWER EQUIPMENT OPERATOR - TUNNEL WORK, 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). 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.....\$ 59.90

35.68

POWER EQUIPMENT OPERATOR - TUNNEL WORK, GROUP 9:
COMBINATION MIXER AND COMPRESSOR (GUNIT); 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.). 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.....\$ 60.01

35.68

POWER EQUIPMENT OPERATOR - TUNNEL WORK, 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). 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.....\$ 60.24

35.68

POWER EQUIPMENT OPERATOR - TUNNEL WORK, 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. 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.....\$ 60.30

35.68

POWER EQUIPMENT OPERATOR - TUNNEL WORK, 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). 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.....\$ 60.45

35.68

POWER EQUIPMENT OPERATOR - TUNNEL WORK, 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 TIERED EARTHMOVING MACHINE (WITH TANDEM SCRAPER); TANDEM CATS; TRENCHER (PULLING ATTACHED SHIELD). 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.....\$ 60.60

35.68

POWER EQUIPMENT OPERATOR - TUNNEL WORK, 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-TIERED 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).\$ 60.96

35.68

POWER EQUIPMENT OPERATOR - TUNNEL WORK, 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. 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.....\$ 61.32

35.68

POWER EQUIPMENT OPERATORS:, GROUP 1: FORK LIFT (UP
TO AND INCLUDING 10 TONS); PARTSMAN (HEAVY DUTY
REPAIR SHOP PARTS ROOM WHEN NEEDED). 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.....\$ 57.66

35.68

POWER EQUIPMENT OPERATORS:, GROUP 2: CONVEYOR
OPERATOR (HANDLING BUILDING MATERIAL); HYDRAULIC
MONITOR; MIXER BOX OPERATOR (CONCRETE PLANT).
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.....\$ 57.77

35.68

POWER EQUIPMENT OPERATORS:, 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. 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.....\$ 57.94

35.68

POWER EQUIPMENT OPERATORS:, 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). 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.....\$ 58.21

35.68

POWER EQUIPMENT OPERATORS:, 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 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.....\$ 58.52

35.68

POWER EQUIPMENT OPERATORS:, 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). 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.....\$ 59.17

35.68

POWER EQUIPMENT OPERATORS:, 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). 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.....\$ 59.49

35.68

POWER EQUIPMENT OPERATORS:, 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). 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.....\$ 59.60

35.68

POWER EQUIPMENT OPERATORS:, 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.). 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.....\$ 59.71

35.68

POWER EQUIPMENT OPERATORS:, 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). 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.....\$ 59.94

35.68

POWER EQUIPMENT OPERATORS:, 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. 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.....\$ 60.00

35.68

POWER EQUIPMENT OPERATORS:, 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). 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.....\$ 60.15

35.68

POWER EQUIPMENT OPERATORS:, 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 TIED EARTHMOVING MACHINE (WITH TANDEM SCRAPER); TANDEM CATS; TRENCHER (PULLING ATTACHED SHIELD). 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.....\$ 60.30

35.68

POWER EQUIPMENT OPERATORS:, 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, PILEDRIERS 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). 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.....\$ 60.66

35.68

POWER EQUIPMENT OPERATORS:, 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. 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.....	\$ 61.02	35.68
POWER EQUIPMENT OPERATORS:, GROUP 13: TRUCK DRIVER (UTILITY, FLATBED, ETC.).....	\$ 57.94	35.68
POWER EQUIPMENT OPERATORS:, GROUP 13A: DUMP TRUCK, 8 CU.YDS. AND UNDER (WATER LEVEL); WATER TRUCK (UP TO AND INCLUDING 2,000 GALLONS).....	\$ 58.21	35.68
POWER EQUIPMENT OPERATORS:, GROUP 13B: WATER TRUCK (OVER 2,000 GALLONS); TANDEM DUMP TRUCK, OVER 8 CU. YDS. (WATER LEVEL).....	\$ 58.52	35.68
POWER EQUIPMENT OPERATORS:, GROUP 13C: TRUCK DRIVER (SEMI-TRAILER. ROCK CANS, SEMI-DUMP OR ROLL-OFFS)...	\$ 59.17	35.68
POWER EQUIPMENT OPERATORS:, GROUP 13D: TRUCK DRIVER (SLIP-IN OR PUP).....	\$ 59.49	35.68
POWER EQUIPMENT OPERATORS:, GROUP 13E: END DUMPS, UNLICENSED (EUCLID, MACK, CATERPILLAR OR SIMILAR); TRACTOR TRAILER (HAULING EQUIPMENT); TANDEM TRUCKS HOOKED UP TO TRAILER (HAULING EQUIPMENT)	\$ 59.60	35.68
STAND-BY DIVER: (AQUA LUNG) (SCUBA).....	\$ 62.97	35.68
STAND-BY DIVER: OTHER THAN AQUA LUNG.....	\$ 62.97	35.68

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	Rates	Fringes
DREDGING (BOAT OPERATORS): BOAT DECKHAND.....	\$ 57.94	35.68
DREDGING (BOAT OPERATORS): BOAT OPERATOR.....	\$ 60.15	35.68
DREDGING (BOAT OPERATORS): MASTER BOAT OPERATOR....	\$ 60.30	35.68
DREDGING:, CLAMSHELL OR DIPPER DREDGING: GROUP 1: CLAMSHELL OR DIPPER OPERATOR.....	\$ 60.66	35.68
DREDGING:, CLAMSHELL OR DIPPER DREDGING: GROUP 2: MECHANIC OR WELDER; WATCH ENGINEER.....	\$ 60.00	35.68
DREDGING:, CLAMSHELL OR DIPPER DREDGING: GROUP 3: BARGE MATE; DECKMATE.....	\$ 59.60	35.68
DREDGING:, CLAMSHELL OR DIPPER DREDGING: GROUP 4: BARGEMAN; DECKHAND; FIREMAN; OILER. HYDRAULIC SUCTION DREDGING CLASSIFICATIONS.....	\$ 57.94	35.68
DREDGING:, DERRICKS: GROUP 1: OPERATORS (DERRICKS, PILEDRIERS AND CRANES).	\$ 60.66	35.68
DREDGING:, DERRICKS: GROUP 2: SAURMAN TYPE DRAGLINE (OVER 5 CUBIC YARDS).	\$ 60.00	35.68
DREDGING:, DERRICKS: GROUP 3: DECKMATE; SAURMAN TYPE DRAGLINE (UP TO AND INCLUDING 5 YARDS).	\$ 59.60	35.68
DREDGING:, DERRICKS: GROUP 4: DECKHAND, FIREMAN, OILER.....	\$ 57.94	35.68
DREDGING:, HYDRAULIC SUCTION DREDGES: GROUP 1: LEVERMAN.	\$ 60.30	35.68
DREDGING:, HYDRAULIC SUCTION DREDGES: GROUP 2: WATCH ENGINEER (STEAM OR ELECTRIC).	\$ 60.15	35.68
DREDGING:, HYDRAULIC SUCTION DREDGES: GROUP 3: MECHANIC OR WELDER.	\$ 60.00	35.68
DREDGING:, HYDRAULIC SUCTION DREDGES: GROUP 4: DOZER OPERATOR.	\$ 59.94	35.68
DREDGING:, HYDRAULIC SUCTION DREDGES: GROUP 5: DECKMATE.	\$ 59.60	35.68
DREDGING:, HYDRAULIC SUCTION DREDGES: GROUP 6: WINCHMAN (STERN WINCH ON DREDGE).....	\$ 59.49	35.68
DREDGING:, HYDRAULIC SUCTION DREDGES: GROUP 7: DECKHAND (CAN OPERATE ANCHOR SCOW UNDER DIRECTION OF DECKMATE); FIREMAN; LEVEEMAN; OILER.....	\$ 57.94	35.68

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	Rates	Fringes
POWER EQUIPMENT OPERATORS (PAVING): ASPHALT CONCRETE MATERIAL TRANSFER.....	\$ 58.67	34.86
POWER EQUIPMENT OPERATORS (PAVING): ASPHALT PLANT OPERATOR.....	\$ 59.07	34.86
POWER EQUIPMENT OPERATORS (PAVING): ASPHALT RAKER...	\$ 57.68	34.86

POWER EQUIPMENT OPERATORS (PAVING): ASPHALT SPREADER OPERATOR.....	\$ 59.16	34.86
POWER EQUIPMENT OPERATORS (PAVING): COLD PLANER.....	\$ 59.47	34.86
POWER EQUIPMENT OPERATORS (PAVING): COMBINATION LOADER/BACKHOE (OVER 3/4 CU.YD.).....	\$ 57.68	34.86
POWER EQUIPMENT OPERATORS (PAVING): COMBINATION LOADER/BACKHOE (UP TO 3/4 CU.YD.).....	\$ 56.70	34.86
POWER EQUIPMENT OPERATORS (PAVING): CONCRETE SAWS AND/OR GRINDER (SELF-PROPELLED UNIT ON STREETS, HIGHWAYS, AIRPORTS AND CANALS).....	\$ 58.64	34.86
POWER EQUIPMENT OPERATORS (PAVING): GRADER.....	\$ 59.47	34.86
POWER EQUIPMENT OPERATORS (PAVING): LABORER, HAND ROLLER.....	\$ 57.18	34.86
POWER EQUIPMENT OPERATORS (PAVING): LOADER (2 1/2 CU. YDS. AND UNDER).....	\$ 58.64	34.86
POWER EQUIPMENT OPERATORS (PAVING): LOADER (OVER 2 1/2 CU. YDS. TO AND INCLUDING 5 CU. YDS.).....	\$ 58.96	34.86
POWER EQUIPMENT OPERATORS (PAVING): ROLLER OPERATOR (FIVE TONS AND UNDER).....	\$ 57.41	34.86
POWER EQUIPMENT OPERATORS (PAVING): ROLLER OPERATOR (OVER FIVE TONS).....	\$ 58.84	34.86
POWER EQUIPMENT OPERATORS (PAVING): SCREED PERSON...	\$ 58.64	34.86
POWER EQUIPMENT OPERATORS (PAVING): SOIL STABILIZER.	\$ 59.47	34.86

IRON0625-001 09/01/2025

	Rates	Fringes
IRONWORKERS 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.....	\$ 50.50	43.46

LAB00368-001 09/02/2024

	Rates	Fringes
LABORERS: DRILLER.....	\$ 44.75	25.96
LABORERS: FINAL CLEAN UP.....	\$ 31.40	21.37
LABORERS: GUNITE/SHOTCRETE OPERATOR AND HIGH SCALER.	\$ 42.25	25.96
LABORERS: MASON TENDER/HOD CARRIER.....	\$ 42.25	25.96
LABORERS: POWDERMAN.....	\$ 42.75	25.96
LABORERS: WINDOW WASHER (BOSUN CHAIR).....	\$ 41.25	25.96
SEE LABORERS: LABORER I IN FOOTER.....	\$ 41.75	25.96
SEE LABORERS: LABORER II IN FOOTER.....	\$ 39.15	25.96

LAB00368-002 09/03/2024

	Rates	Fringes
LANDSCAPE & IRRIGATION LABORERS, 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).:\$ 28.40

17.15

LANDSCAPE & IRRIGATION LABORERS, 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.....\$ 23.00

17.15

LANDSCAPE & IRRIGATION LABORERS, 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).....	\$ 29.40	17.15
LANDSCAPE & IRRIGATION LABORERS: 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).....	\$ 29.40	17.15

LAB00368-003 09/02/2024

	Rates	Fringes
UNDERGROUND LABORER, GROUP 1: WATCHMEN; CHANGE HOUSE ATTENDANT.....	\$ 42.35	25.91
UNDERGROUND LABORER, GROUP 2: SWAMPER; BRAKEMAN; BULL GANG-MUCKERS, TRACKMEN; DUMPMEN (ANY METHOD); CONCRETE CREW (INCLUDES RODDING AND SPREADING); GROUT CREW; REBOUNDMEN.....	\$ 43.85	25.91
UNDERGROUND LABORER, GROUP 3: CHUCKTENDERS AND CABLETENDERS; POWDERMAN (PRIME HOUSE); VIBRATORMAN, PAVEMENT BREAKERS.....	\$ 44.35	25.91
UNDERGROUND LABORER, 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.....	\$ 45.35	25.91
UNDERGROUND LABORER, GROUP 5: SHAFT WORK & RAISE (BELOW ACTUAL OR EXCAVATED GROUND LEVEL); DIAMOND DRILLER; GUNITE OR SHOTCRETE NOZZLEMAN; RODMAN; GROUNDMAN.....	\$ 45.70	25.91
UNDERGROUND LABORER, GROUP 6: SHIFTER.....	\$ 45.95	25.91
UNDERGROUND LABORER, GROUP 7: SHIFTER (SHAFT WORK & RAISER).....	\$ 46.40	25.91

PAIN1791-001 07/01/2025

	Rates	Fringes
PAINTERS: BRUSH.....	\$ 44.05	30.05
PAINTERS: SANDBLASTER; SPRAY.....	\$ 44.05	30.05

PAIN1889-001 07/01/2025

	Rates	Fringes
GLAZIERS.....	\$ 48.50	40.20

PAIN1926-001 03/02/2025

	Rates	Fringes
SOFT FLOOR LAYERS.....	\$ 43.27	35.18

PAIN1944-001 01/01/2025

	Rates	Fringes
TAPER.....	\$ 47.36	32.00

PLAS0630-001 09/04/2023

	Rates	Fringes
PLASTERER.....	\$ 46.12	34.53

PLAS0630-002 09/04/2023

	Rates	Fringes
CEMENT MASONS.....	\$ 44.12	33.63
CEMENT MASONS: TROWEL MACHINE OPERATORS.....	\$ 44.27	33.63

PLUM0675-001 07/06/2025

	Rates	Fringes
PLUMBER, PIPEFITTER, STEAMFITTER & SPRINKLER FITTER.....	\$ 53.83	33.19

ROOF0221-001 11/06/2022

	Rates	Fringes
ROOFERS (INCLUDING BUILT UP, COMPOSITION AND SINGLE PLY).....	\$ 43.15	21.21

SHEE0293-001 03/02/2025

	Rates	Fringes
SHEET METAL WORKER.....	\$ 50.16	33.32

SUHI1997-002 09/15/1997

	Rates	Fringes
DRAPERY INSTALLER.....	\$ 13.60	1.20
FENCE ERECTOR (CHAIN LINK FENCE).....	\$ 9.33	1.65

LABORERS: LABORER I: AIR BLASTING RUN BY ELECTRIC OR PNEUMATIC COMPRESSOR; ASPHALT
LABORER, IRONER, RAKER, LUTEMAN, & HANDROLLER, AND ALL TYPES OF ASPHALT SPREADER
BOXES; ASPHALT SHOVELER; ASSEMBLY & INSTALLATION OF MULTIPLATES, LINER PLATES, RINGS,
MESH, MATS; BATCHING PLANT (PORTABLE & TEMPORARY); BORING MACHINE OPERATOR
(UNDER STREETS & SIDEWALKS); BUGGYMOBILE; BURNING & WELDING; CHAINSAW, FALLER,
LOGLOADER, & BUCKER; COMPACTORS (JACKSON JUMPING JACK & 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, & SIDEWALKS); CONCRETE CORE CUTTER (WALLS, FLOORS, & 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 & CLEANING OF EQUIPMENT); 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 & THE POURING OF CONCRETE TO SECURE THE HOLE; CRIBBERS, SHORER, LAGGING, SHEETING, & TRENCH JACKING & BRACING, HAND-GUIDED LAGGING HAMMER WHALING BRACING; CURBING (CONCRETE & ASPHALT); CURING OF CONCRETE (IMPERVIOUS MEMBRANE & FORM OILER) MORTAR & OTHER MATERIALS BY ANY MODE OR METHOD; CUT GRANITE CURB SETTER (SETTING, LEVELING & GROUTING OF ALL PRECAST CONCRETE OR STONE CURBS); CUTTING & BURNING TORCH (DEMOLITION); DRI PAK-IT MACHINE; ENVIRONMENTAL ABATEMENT: REMOVAL OF ASBESTOS, LEAD, & BIO HAZARDOUS MATERIALS (EPA &/OR OSHA CERTIFIED); FALLING, BUCKING, YARDING, LOADING OR BURNING OF ALL TREES OR TIMBER ON CONSTRUCTION SITE; FORKLIFT (9 FT. & UNDER); GAS, PNEUMATIC, & ELECTRIC TOOLS; GRATING & GRILL WORK FOR DRAINS OR OTHER PURPOSES; GREEN CUTTER OF CONCRETE OR AGGREGATE IN ANY FORM, BY HAND, MECHANICAL MEANS, GRINDSTONE OR AIR &/OR WATER; GROUT: SPREADING FOR ANY PURPOSE; GUINEA CHASER (GRADE CHECKER) FOR GENERAL UTILITY TRENCHES, SITEWORK, & EXCAVATION; HEADERBOARD MAN (ASPHALT OR CONCRETE); HEAT WELDER OF PLASTIC (LABORERS' AGC CERTIFIED WORKERS) (WHEN WORK INVOLVES WATERPROOFING FOR WATERPONDS, ARTIFICIAL LAKES & RESERVOIR) HEAT WELDING FOR SEWER PIPES & FUSION OF HDPE PIPES; HEAVY HIGHWAY LABORER (RIGGING, SIGNALING, HANDLING, & INSTALLATION OF PRE-CAST CATCH BASINS, MANHOLES, CURBS & GUTTERS); HIGH PRESSURE NOZZLEMAN - HYDRAULIC MONITOR (OVER 100# PRESSURE); JACKHAMMER OPERATOR; JACKING OF SLIP FORMS: ALL SEMI & UNSKILLED WORK CONNECTED THEREWITHIN; LAYING OF ALL MULTI-CELL CONDUIT OR MULTI-PURPOSE PIPE; MAGNESITE & MASTIC WORKERS (WET OR DRY) (INCLUDING MIXER OPERATOR); MORTAR MAN; MORTAR MIXER (BLOCK, BRICK, MASONRY, & PLASTERING); NOZZLEMAN (SANDBLASTING &/OR WATER BLASTING): HANDLING, PLACING & OPERATION OF NOZZLE; OPERATION, MANUAL OR HYDRAULIC JACKING OF SHIELDS & THE USE OF SUCH OTHER MECHANICAL EQUIPMENT AS MAY BE NECESSARY; PAVEMENT BREAKERS; PAVING, CURBING & SURFACING OF STREETS, WAYS, COURTS, UNDER & OVERPASSES, BRIDGES, APPROACHES, SLOPE WALLS, & ALL OTHER LABOR CONNECTED THEREWITH; PILECUTTERS; PIPE ACCESSMENT IN PLACE, BOLTING & LINING UP OF SECTIONAL METAL OR OTHER PIPE INCLUDING CORRUGATED PIPE; PIPELAYER PERFORMING ALL SERVICES IN THE LAYING & INSTALLATION OF PIPE FROM THE POINT OF RECEIVING PIPE IN THE DITCH UNTIL COMPLETION OF OPERATION, INCLUDING ANY & ALL FORMS OF TUBULAR MATERIAL, WHETHER PIPE, HDPE, METALLIC OR NON-METALLIC, CONDUIT, & 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 & WITHOUT REGARD TO THE NATURE OF MATERIAL FROM WHICH TUBULAR MATERIAL IS FABRICATED; NO-JOINT PIPE & STRIPPING OF SAME, PIPEWRAPPER, CAULKER, BANDER, KETTLEMEN, & MEN APPLYING ASPHALT, LAYKOLD, TREATING CREOSOTE & SIMILAR-TYPE MATERIALS (6-INCH) PIPE & OVER); PIPING: RESURFACING & 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 & MARKING OF THE JOINT USED FOR MAIN OR SIDE SEWERS & STORM SEWERS; LAYING OF ALL CLAY, TERRA COTTA, IRONSTONE, VITRIFIED CONCRETE, HDPE OR OTHER PIPE FOR DRAINAGE; PLACING & SETTING OF WATER MAINS, GAS MAINS & ALL PIPE INCLUDING REMOVAL OF SKIDS; PLASTER MORTAR MIXER/PUMP; PNEUMATIC IMPACT WRENCH; PORTABLE SAWMILL OPERATION: CHOKER SETTERS, OFF BEARERS, & LUMBER HANDLERS CONNECTED WITH CLEARING; POSTHOLE DIGGER (HAND HELD, GAS, AIR & ELECTRIC); POWDERMAN'S TENDER; POWER BROOM SWEEPERS (SMALL); PREPARATION & COMPACTION OF ROADBEDS FOR RAILROAD TRACK LAYING, HIGHWAY CONSTRUCTION, & 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 & 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 & SIGNALING OF BUILDING MATERIALS INTO HIGH RISE UNITS; RIPRAP, STONEPAVER, & ROCK SLINGER (INCLUDES PLACEMENT OF STACKED CONCRETE, WET OR DRY & LOADING, UNLOADING, SIGNALING, SLINGING & 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 & HANGING) INCLUDING MAINTENANCE THEREOF; SCALER; SEPTIC TANK/CESSPOOL & DRAIN FIELDS DIGGER & INSTALLER; SHREDDER/CHIPPER (TREE

BRANCHES, BRUSH, ETC.); STRIPPING & SETTING FORMS; STRIPPING OF FORMS: OTHER THAN PANEL FORMS WHICH ARE TO BE RE-USED IN THEIR ORIGINAL FORM, & STRIPPING OF FORMS ON ALL FLAT ARCH WORK; TAMPERS (BARKO, WACKER, & SIMILAR TYPE); TANK SCALER & CLEANERS; TARMAN; TREE CLIMBERS & TRIMMERS; TRENCHER (INCLUDES HAND-HELD, DAVIS T-66 & SIMILAR TYPE); TRUCKS (FLATBED UP TO & INCLUDING 2 1/2 TONS WHEN USED IN CONNECTION WITH ON-SITE LABORERS' WORK; TRUCKS (REFUSE & 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.

LABORERS: LABORER II: ASPHALT PLANT LABORER; BORING MACHINE TENDER; BRIDGE LABORER; BURNING OF ALL DEBRIS (CRATES, BOXES, PACKAGING WASTE MATERIALS); CHAINMAN, RODMEN, & GRADE MARKERS; CLEANING, CLEARING, GRADING &/OR REMOVAL FOR STREETS, HIGHWAYS, ROADWAYS, APRONS, RUNWAYS, SIDEWALKS, PARKING AREAS, AIRPORTS, APPROACHES, & OTHER SIMILAR INSTALLATIONS; CLEANING OR RECONDITIONING OF STREETS, WAYS, SEWERS & WATERLINES, ALL MAINTENANCE WORK & WORK OF AN UNSKILLED & SEMI-SKILLED NATURE; CONCRETE BUCKET TENDER (GROUNDMAN) HOOKING & UNHOOKING OF BUCKET; CONCRETE FORMS; MOVING, CLEANING, OILING & CARRYING TO THE NEXT POINT OF ERECTION OF ALL FORMS; CONCRETE PRODUCTS PLANT LABORERS; CONVEYOR TENDER (CONVEYING OF BUILDING MATERIALS); CRUSHED STONE YARDS & GRAVEL & SAND PIT LABORERS & ALL OTHER SIMILAR PLANTS; DEMOLITION, WRECKING & SALVAGE LABORERS: WRECKING & DISMANTLING OF BUILDINGS & ALL STRUCTURES, WITH USE OF CUTTING OR WRECKING TOOLS, BREAKING AWAY, CLEANING & 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 & FILLING OF SHE-BOLT HOLES); FENCE &/OR GUARDRAIL ERECTOR: DISMANTLING &/OR RE-INSTALLATION OF ALL FENCE; FINEGRADER; FIREWATCHER; FLAGMAN (CONING, PREPARING, STABLISHING & 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 & ALL OTHER LABOR CONNECTED THEREWITH; DIGGING OF TRENCHES, DITCHES & MANHOLES & THE LEVELING, GRADING & OTHER PREPARATION PRIOR TO LAYING PIPE OR CONDUIT FOR ANY PURPOSE; EXCAVATIONS & FOUNDATIONS FOR BUILDINGS, PIERS, FOUNDATIONS & HOLES, & ALL OTHER CONSTRUCTION. PREPARATION OF STREET WAYS & BRIDGES; GENERAL LABORER: CLEANING & CLEARING OF ALL DEBRIS & SURPLUS MATERIAL. CLEAN-UP OF RIGHT-OF-WAY. CLEARING & SLASHING OF BRUSH OR TREES BY HAND OR MECHANICAL CUTTING. GENERAL CLEAN UP: SWEEPING, CLEANING, WASH-DOWN, WIPING OF CONSTRUCTION FACILITY & EQUIPMENT (OTHER THAN ""LIGHT CLEAN UP (JANITORIAL) LABORER. GARBAGE & DEBRIS HANDLERS & CLEANERS. APPLIANCE HANDLING (JOB SITE) (AFTER DELIVERY UNLADING IN STORAGE AREA); GROUND & 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 WATERPOND, ARTIFICIAL LAKES & RESERVOIRS); LIMBERS, BRUSH LOADERS, & PILERS; LOADING, UNLOADING, CARRYING, DISTRIBUTING & HANDLING OF ALL RODS & 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 & DISTRIBUTION OF WATER MAINS, GAS MAINS & ALL PIPES; LOADING & UNLOADING OF ALL MATERIALS, FIXTURES, FURNISHINGS & APPLIANCES FROM POINT OF DELIVERY TO STOCKPILE TO POINT OF INSTALLATION; HOOKING & SIGNALING FROM TRUCK, CONVEYANCE OR STOCKPILE; MATERIAL YARD LABORERS; PIPELAYER TENDER; PIPEWRAPPER, CAULKER, BANDER, KETTLEMEN, & MEN APPLYING ASPHALT, LAYKOLD, CREOSOTE, & SIMILAR-TYPE MATERIALS (PIPE UNDER 6 INCHES); PLASTERER LABORER; PREPARATION, CONSTRUCTION & MAINTENANCE OF ROADBEDS & SUB-GRADE FOR ALL PAVING, INCLUDING EXCAVATION, DUMPING, & 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, & RAIL TRANSIT MAINTENANCE & REPAIR; ROUSTABOUT; RUBBISH TRUCKS IN CONNECTION WITH BUILDING CONSTRUCTION PROJECTS (EXCLUDING CLEARING, GRUBBING, & EXCAVATING); SALVAGE YARD: ALL WORK CONNECTED WITH CUTTING, CLEANING, STORING, STOCKPILING OR HANDLING OF MATERIALS, ALL CLEANUP, REMOVAL OF DEBRIS, BURNING, BACK-FILLING & LANDSCAPING OF THE SITE; SANDBLASTING TENDER (POT TENDER): HOSES & POTS OR MARKERS; SCAFFOLDS: ERECTION, PLANKING & REMOVAL OF ALL SCAFFOLDS USED FOR SUPPORT FOR LATHERS, PLASTERS, BRICK LAYERS, MASONS, & OTHER CONSTRUCTION TRADES CRAFTS; SCAFFOLDS: (SPECIALLY DESIGNED BY CARPENTERS) LABORERS SHALL TEND SAID CARPENTER ON ERECTION & DISMANTLING THEREOF, PREPARATION FOR FOUNDATION OR MUDSILLS, MAINTENANCE; SCRAPING OF FLOORS; SCREEDS: HANDLING OF ALL SCREEDS TO BE REUSED; HANDLING, DISMANTLING & CONVEYANCE OF SCREEDS; SETTING, LEVELING & SECURING OR BRACING OF METAL OR OTHER ROAD FORMS & EXPANSION JOINTS; SHEETING PILING/TRENCH SHORING (HANDLING & PLACING OF SKIP SHEET OR WOOD PLANK TRENCH SHORING); SHIP SCALERS; SHIPWRIGHT TENDER; SIGN ERECTOR (SUBDIVISION TRAFFIC, REGULATORY, & STREET-NAME SIGNS); SLOPER; SLURRY SEAL CREWS (MIXER OPERATOR, APPLICATOR, SQUEEGEE MAN, SHUTTLE MAN, TOP MAN); SNAPPING OF WALL TIES & REMOVAL OF TIE RODS; SOIL TEST OPERATIONS OF SEMI & 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 & 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 & HANDLING CONCRETE FORMS AN FALSE WORK.

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 <https://www.dol.gov/agencies/whd/government-contracts>.

Note: Executive Order 13658 generally applies to contracts subject to the Davis-Bacon Act that were awarded on or between January 1, 2015 and January 29, 2022, and that have not been renewed or extended on or after January 30, 2022. Executive Order 13658 does not apply to contracts subject only to the Davis-Bacon Related Acts regardless of when they were awarded. If a contract is subject to Executive Order 13658, the contractor must pay all covered workers at least \$13.65 per hour (or the applicable wage rate listed on this wage determination, if it is higher) for all hours spent performing on the contract from May 11, 2026, through December 31, 2026. The applicable Executive Order minimum wage rate will be adjusted annually. Additional information on contractor requirements and worker protections under Executive Order 13658 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) (iii)).

The body of each wage determination lists the classifications and wage rates that have been found to be prevailing for the type(s) of construction and geographic area covered by the wage determination. The classifications are listed in alphabetical order under rate identifiers indicating whether the particular rate is a union rate (current union negotiated rate), a survey rate, a weighted union average rate, a state adopted rate, or a supplemental classification rate.

Union Rate Identifiers

A four-letter identifier beginning with characters other than **⬢SU⬢**, **⬢UAVG⬢**, **⬢SA⬢**, or **⬢SC⬢** denotes that a union rate was prevailing for that classification in the survey. Example: PLUM0198-005 07/01/2024. PLUM is an identifier of the union whose collectively bargained rate 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. The date, 07/01/2024 in the

example, is the effective date of the most current negotiated rate.

Union prevailing wage rates are updated to reflect all changes over time that are reported to WHD in the rates in the collective bargaining agreement (CBA) governing the classification.

Union Average Rate Identifiers

The UAVG identifier indicates that no single rate prevailed for those classifications, but that 100% of the data reported for the classifications reflected union rates. EXAMPLE: UAVG-OH-0010 01/01/2024. UAVG indicates that the rate is a weighted union average rate. OH indicates the State of Ohio. The next number, 0010 in the example, is an internal number used in producing the wage determination. The date, 01/01/2024 in the example, indicates the date the wage determination was updated to reflect the most current union average rate.

A UAVG rate will be updated once a year, usually in January, to reflect a weighted average of the current rates in the collective bargaining agreements on which the rate is based.

Survey Rate Identifiers

The ♦SU♦ identifier indicates that either a single non-union rate prevailed (as defined in 29 CFR 1.2) for this classification in the survey or that the rate was derived by computing a weighted average rate based on all the rates reported in the survey for that classification. As a weighted average rate includes all rates reported in the survey, it may include both union and non-union rates. Example: SUFL2022-007 6/27/2024. SU indicates the rate is a single non-union prevailing rate or a weighted average of survey data for that classification. FL indicates the State of Florida. 2022 is the year of the 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. The date, 6/27/2024 in the example, indicates the survey completion date for the classifications and rates under that identifier.

♦SU♦ wage rates typically remain in effect until a new survey is conducted. However, the Wage and Hour Division (WHD) has the discretion to update such rates under 29 CFR 1.6(c)(1).

State Adopted Rate Identifiers

The ♦SA♦ identifier indicates that the classifications and prevailing wage rates set by a state (or local) government were adopted under 29 C.F.R 1.3(g)-(h). Example: SAME2023-007 01/03/2024. SA reflects that the rates are state adopted. ME refers to the State of Maine. 2023 is the year during which the state completed the survey on which the listed classifications and rates are based. The next number, 007 in the example, is an internal number used in producing the wage determination. The date, 01/03/2024 in the example, reflects the date on which the classifications and rates under the ♦SA♦ identifier took effect under state law in the state from which the rates were adopted.

WAGE DETERMINATION APPEALS PROCESS

1) Has there been an initial decision in the matter? This can be:

- a) a survey underlying a wage determination
- b) an existing published wage determination
- c) an initial WHD letter setting forth a position on a wage determination matter
- d) an initial conformance (additional classification and rate) determination

On survey related matters, initial contact, including requests for summaries of surveys, should be directed to the WHD Branch of Wage Surveys. Requests can be submitted via email to

davisbaconinfo@dol.gov or by mail to:
Branch of Wage Surveys
Wage and Hour Division
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

Regarding any other wage determination matter such as conformance decisions, requests for initial decisions should be directed to the WHD Branch of Construction Wage Determinations. Requests can be submitted via email to BCWD-Office@dol.gov or by mail 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 an initial decision has been issued, then any interested party (those affected by the action) that disagrees with the decision can request review and reconsideration from the Wage and Hour Administrator (See 29 CFR Part 1.8 and 29 CFR Part 7). Requests for review and reconsideration can be submitted via email to dba.reconsideration@dol.gov or by mail 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 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.

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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: Farrington Highway Widening
Vicinity of Nanakuli Avenue to
Vicinity of Mohihi Street
District of Ewa, Island of Oahu

**FEDERAL-AID
PROJECT NO.:** NH-093-1(035)

COMPLETION TIME: 780 Calendar days from the Start Work Date from the
Department.

DBE PROJECT GOAL: None specified.

DESIGN PROJECT MANAGER:

NAME	Evan Kimoto
PHONE NO.	(808) 692-7551
EMAIL	evan.kimoto@hawaii.gov

ELECTRONIC SUBMITTAL: Bidders shall submit and upload the complete proposal to HlePRO prior to the bid opening date and time. Any additional support documents explicitly designated as confidential and/or proprietary shall be uploaded as a separate file to HlePRO. See SPECIAL PROVISIONS 102.09 DELIVERY OF PROPOSALS for complete details. FAILURE TO UPLOAD THE COMPLETE PROPOSAL TO HlePRO SHALL BE GROUNDS FOR REJECTION OF THE BID.

Director of Transportation
869 Punchbowl Street
Honolulu, Hawaii 96813

Dear Sir:

The undersigned Bidder declares the following:

1. It has not, either directly or indirectly, entered into any agreement, participated in any collusion, or otherwise taken any action in restraint of free competitive bidding in connection with this proposal.
2. It has not been assisted or represented on this matter by any individual who has, in a State capacity, been involved in the subject matter of this contract within the past two years.
3. It has not and will not, either directly or indirectly offered or given a gratuity (i.e., an entertainment or gift) to any State or County employee to obtain a contract or favorable treatment under a contract.
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 1032D-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.
7. The undersigned Bidder further agrees to the following: Pursuant to HRS §103D-405(d), any contractor (including consultants) paid for services to develop or prepare specifications or work statements shall be precluded from submitting an offer or receiving a contract for that particular solicitation. This includes the preparation of reports relied upon by HDOT in the development of the project scope.

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, and/or the General Provisions for Construction Projects for AIR and WATER Transportation Facilities Division dated 2016, as applicable, the Notice to Bidders, Special Provisions, Proposal, Contract, Bond Forms, and 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 Subcontractor or Joint Contractor and the nature of work to be done by each on the following page. The Bidder must adequately and unambiguously disclose the unique nature and scope of the work to be performed by each Subcontractor or Joint Contractor. For each listed firm, the Bidder declares the respective firm is a Subcontractor or Joint Contractor and is subject to evaluation as a Subcontractor or Joint Contractor. It is understood that failure to comply with the aforementioned requirements may be cause for rejection of the bid submitted.

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 . _____	_____
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 joint contractors

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

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

Bidder (Company Name)

Authorized Signature

Title

Business Address

Business Telephone

Email

Date

Contact Person (If different from above.)

Phone: _____ Email: _____

NOTE:

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

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

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

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

PROPOSAL SCHEDULE

ITEM NO.	ITEM	APPROX. QUANTITY	UNIT	UNIT PRICE	AMOUNT
201.0100	Clearing and Grubbing	6850	S.Y.	\$ _____	\$ _____
202.0100	Removal of Portion of Retaining Wall	L.S.	L.S.	L.S.	\$ _____
202.0200	Removal of Concrete Curb and Gutter	387	L.F.	\$ _____	\$ _____
202.0300	Removal of Concrete Sidewalk	453	S.Y.	\$ _____	\$ _____
202.0400	Removal of Curb Ramp	L.S.	L.S.	L.S.	\$ _____
202.0400	Removal of AC Curb	2150	L.F.	\$ _____	\$ _____
202.0500	Removal of Existing Traffic Signal Structures	L.S.	L.S.	L.S.	\$ _____
202.0600	Removal of Concrete Parapet	L.S.	L.S.	L.S.	\$ _____
202.0700	Removal of Guardrail	137	L.F.	\$ _____	\$ _____
202.0800	Removal of CMU Wall	L.S.	L.S.	L.S.	\$ _____
202.0900	Removal of Chain Link Fence	80	L.F.	\$ _____	\$ _____
203.0100	Roadway Excavation	6400	C.Y.	\$ _____	\$ _____
204.0100	Trench Excavation for Traffic Signal	700	C.Y.	\$ _____	\$ _____
205.0100	Structure Excavation for Retaining Wall-Makai (2000 CY)	L.S.	L.S.	L.S.	\$ _____
205.0200	Structure Excavation for Retaining Wall-Mauka	L.S.	L.S.	L.S.	\$ _____

PROPOSAL SCHEDULE

ITEM NO.	ITEM	APPROX. QUANTITY	UNIT	UNIT PRICE	AMOUNT
205.0300	Structure Backfill for Retaining Wall-Makai (2000 CY)	L.S.	L.S.	L.S.	\$ _____
205.0400	Structural Backfill for Retaining Wall-Mauka	L.S.	L.S.	L.S.	\$ _____
205.0500	Filter Material for Retaining Wall-Makai (180 CY)	L.S.	L.S.	L.S.	\$ _____
205.0600	Filter Material for Retaining Wall-Mauka	L.S.	L.S.	L.S.	\$ _____
206.0100	Excavation for Drainage System	200	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.	\$ <u>50,000.00</u>
212.0100	Archaeological Monitoring	F.A.	F.A.	F.A.	\$ <u>20,000.00</u>
219.0100	Determination and Characterization of Fill Material	L.S.	L.S.	L.S.	\$ _____
301.0100	Hot Mix Asphalt Base Course	3420	Ton	\$ _____	\$ _____
304.0100	Aggregate Base Course	950	C.Y.	\$ _____	\$ _____
314.0100	Controlled Low Strength Material	650	C.Y.	\$ _____	\$ _____
401.0100	PMA Pavement, Mix No. IV (with PG 64E-22)	1820	Ton	\$ _____	\$ _____
401.0200	Pavement Smoothness Incentive	Allowance	Allowance	Allowance	\$ <u>250,000.00</u>
415.0100	Cold Planing	21,710	S.Y.	\$ _____	\$ _____

PROPOSAL SCHEDULE

ITEM NO.	ITEM	APPROX. QUANTITY	UNIT	UNIT PRICE	AMOUNT
503.0100	Concrete for Drilled Shafts	L.S.	L.S.	L.S.	\$ _____
503.0200	Concrete for Retaining Wall Footing – Makai (210 CY)	L.S.	L.S.	L.S.	\$ _____
503.0300	Concrete for Retaining Wall Stem – Makai (250 CY)	L.S.	L.S.	L.S.	\$ _____
503.0400	Concrete for Retaining Wall Footing - Mauka	L.S.	L.S.	L.S.	\$ _____
503.0500	Concrete for Retaining Stem - Mauka	L.S.	L.S.	L.S.	\$ _____
507.0100	Fiberglass Reinforced Plastic (FRP) Railing	L.S.	L.S.	L.S.	\$ _____
507.0200	Bridge End Post	2	Each	\$ _____	\$ _____
511.0100	Furnishing Drilled Shaft Equipment	L.S.	L.S.	L.S.	\$ _____
511.0200	Obstructions	40	Hour	\$ _____	\$ _____
511.0300	Drilled Shaft (48-Inch Diameter Shaft)	240	L.F.	\$ _____	\$ _____
511.0400	Unclassified Shaft Excavation (48-Inch Diameter Shaft)	240	L.F.	\$ _____	\$ _____
511.0500	Coring for Integrity testing for Acceptable Drilled Shaft	110	L.F.	\$ _____	\$ _____
602.0100	Reinforcing Steel for Drilled Shaft Pedestal	L.S.	L.S.	L.S.	\$ _____
602.0200	Reinforcing Steel for Retaining Wall Footing – Makai (24,000 lbs)	L.S.	L.S.	L.S.	\$ _____

PROPOSAL SCHEDULE

ITEM NO.	ITEM	APPROX. QUANTITY	UNIT	UNIT PRICE	AMOUNT
602.0300	Reinforcing Steel for Retaining Wall Stem – Makai (22,000 lbs)	L.S.	L.S.	L.S.	\$ _____
602.0400	Reinforcing Steel for Retaining Wall-Mauka	L.S.	L.S.	L.S.	\$ _____
603.0100	24" Reinforced Concrete Pipe	213	LF	\$ _____	\$ _____
603.0200	Clean Existing Culverts	F.A.	F.A.	F.A.	\$ <u>10,000.00</u>
604.0100	Type 61214 "Modified" GDI	21	Each	\$ _____	\$ _____
604.0200	Reconstructed Type _____ Manhole	21	Each	\$ _____	\$ _____
604.0300	Vegetated Swale	3723	L.F.	\$ _____	\$ _____
606.0100	Guardrail Type MGS with Standard 8" Offset Block	137	L.F.	\$ _____	\$ _____
606.0200	Terminal Section-MFLEAT	2	Each	\$ _____	\$ _____
617.0100	Imported Planting Soil	L.S.	L.S.	L.S.	\$ _____
622.0100	Roadway Lighting System	L.S.	L.S.	L.S.	\$ _____
623.0100	HECO Service Connection	F.A.	F.A.	F.A.	\$ <u>43,200.00</u>
623.0200	Verify Location of Existing Underground Utilities	L.S.	L.S.	L.S.	\$ _____
623.0300	Controller Assembly with Software (Controller, Cabinet, and Auxiliary Equipment)	3	Each	\$ _____	\$ _____

PROPOSAL SCHEDULE

ITEM NO.	ITEM	APPROX. QUANTITY	UNIT	UNIT PRICE	AMOUNT
623.0400	Type I Traffic Signal Standard, H=8'	16	Each	\$ _____	\$ _____
623.0500	Type I Traffic Signal Standard, H=10'	10	Each	\$ _____	\$ _____
623.0600	Type II Traffic Signal Standard with 16'-20' Mast Arm	1	Each	\$ _____	\$ _____
623.0700	Type II Traffic Signal Standard with 21'-25' Mast Arm	3	Each	\$ _____	\$ _____
623.0800	Type II Traffic Signal Standard with 36'-40' Mast Arm	4	Each	\$ _____	\$ _____
623.0900	Foundation for Type I Traffic Signal Standard	16	Each	\$ _____	\$ _____
623.1000	Foundation for Controller Cabinet	3	Each	\$ _____	\$ _____
623.1100	Closed-Circuit Television (CCTV) Cabinet and Foundation	3	Each	\$ _____	\$ _____
623.1200	Traffic Signal Assembly, 1-Way, 12-inch, 1-3 Section Vertical, Type VI Mounting with Retroreflective Backplate (Mast Arm Mount)	26	Each	\$ _____	\$ _____
623.1300	Traffic Signal Assembly, 2-Way, 12-inch, 1-3 Section Vertical, Type V Mounting (Bracket Mount)	3	Each	\$ _____	\$ _____
623.1400	Traffic Signal Assembly, 1-Way, 12-inch, 1-3 Section Vertical, Type I Mounting (Slipfitter Mount)	8	Each	\$ _____	\$ _____
623.1500	Traffic Signal Assembly, 2-Way, 12-inch, 1-3 Section Vertical, Type II Mounting (Slipfitter Mount)	2	Each	\$ _____	\$ _____

PROPOSAL SCHEDULE

ITEM NO.	ITEM	APPROX. QUANTITY	UNIT	UNIT PRICE	AMOUNT
623.1600	Pedestrian Signal Assembly, 1-Way, 12-inch, One Vertical with Type IV Mounting (Bracket Mount)	9	Each	\$ _____	\$ _____
623.1700	Pedestrian Signal Assembly, 1-Way, 12-inch, One Vertical with Type I Mounting (Slipfitter Mount)	2	Each	\$ _____	\$ _____
623.1800	Pedestrian Signal Assembly, 2-Way, 12-inch, One Vertical with Type II Mounting (Slipfitter Mount)	4	Each	\$ _____	\$ _____
623.1900	Accessible Pedestrian Signal Push Button Assembly with Instruction Sign	18	Each	\$ _____	\$ _____
623.2000	Type A Pullbox	33	Each	\$ _____	\$ _____
623.2100	Type B Pullbox	24	Each	\$ _____	\$ _____
623.2200	Type C Pullbox	4	Each	\$ _____	\$ _____
623.2300	Penetrate Existing Pullbox	20	Each	\$ _____	\$ _____
623.2400	Loop Detector Sensing Unit (6 ft x 6 ft) One Loop	18	Each	\$ _____	\$ _____
623.2500	Loop Detector Sensing Unit (6 ft x 6ft) Two Loops	24	Each	\$ _____	\$ _____
623.2600	Loop Detector Sensing Unit (6 ft x 6ft) Six Loops	5	Each	\$ _____	\$ _____
623.2700	EVP Optical Receiver (with Mast Arm Mounting)	5	Each	\$ _____	\$ _____

PROPOSAL SCHEDULE

ITEM NO.	ITEM	APPROX. QUANTITY	UNIT	UNIT PRICE	AMOUNT
623.2800	Traffic Signal Ductline, 1-2" Conduit, Sch. 40 PVC, Conc. Encased	468	L.F.	\$ _____	\$ _____
623.2900	Traffic Signal Ductline, 2-2" Conduit, Sch. 40 PVC, Conc. Encased	1710	L.F.	\$ _____	\$ _____
623.3000	Traffic Signal Ductline, 3-2" Conduit, Sch. 40 PVC, Conc. Encased	198	L.F.	\$ _____	\$ _____
623.3100	Traffic Signal Ductline, 4-2" Conduit, Sch. 40 PVC, Conc. Encased	555	L.F.	\$ _____	\$ _____
623.3200	Traffic Signal Ductline, 5-2" Conduit, Sch. 40 PVC, Conc. Encased	205	L.F.	\$ _____	\$ _____
623.3300	Traffic Signal Ductline, 6-2" Conduit, Sch. 40 PVC, Conc. Encased	334	L.F.	\$ _____	\$ _____
623.3400	Traffic Signal Ductline, 7-2" Conduit, Sch. 40 PVC, Conc. Encased	3	L.F.	\$ _____	\$ _____
623.3500	Traffic Signal Ductline, 8-2" Conduit, Sch. 40 PVC, Conc. Encased	7	L.F.	\$ _____	\$ _____
623.3600	Traffic Signal Ductline, 10-2" Conduit, Sch. 40 PVC, Conc. Encased	1	L.F.	\$ _____	\$ _____
623.3700	Type I Signal Control Cable (26C#14)	2272	L.F.	\$ _____	\$ _____
623.3800	Type 2 PPB/Loop Detector Cable (2C#14)	9086	L.F.	\$ _____	\$ _____
623.3900	Type 6 Power Service (3C#6)	944	L.F.	\$ _____	\$ _____
623.4000	Type 7 Opticom Cable (3C#20)	371	L.F.	\$ _____	\$ _____
623.4100	Fiber Optic Cable, 72-Strand, Single Mode	5934	L.F.	\$ _____	\$ _____

PROPOSAL SCHEDULE

ITEM NO.	ITEM	APPROX. QUANTITY	UNIT	UNIT PRICE	AMOUNT
623.4200	Interconnect Fabric Subduct	5934	L.F.	\$ _____	\$ _____
623.4300	Service and Metering Equipment Assembly	4	Each	\$ _____	\$ _____
623.4400	Remove Traffic Signal Conduit, Cables, and Equipment	L.S.	L.S.	L.S.	\$ _____
623.4500	Traffic Signal Hardware Modification	F.A.	F.A.	F.A.	\$ <u>75,000.00</u>
626.0100	Adjusting Fire Hydrants	13	Each	\$ _____	\$ _____
626.0200	Adjusting Water Manhole, Frame, and Cover	22	Each	\$ _____	\$ _____
626.0300	Adjusting Sewer Manhole, Frame, and Cover	15	Each	\$ _____	\$ _____
626.0400	Adjusting Standard Valve Box	63	Each	\$ _____	\$ _____
629.0100	6-Inch White Guide Lines (Tape, Type III or Thermoplastic Extrusion except for Bus Bays)	300	L.F.	\$ _____	\$ _____
629.0200	10-Foot White Profiled Thermoplastic Stripe (6 Inch Wide)	1590	L.F.	\$ _____	\$ _____
629.0300	6-Inch Double Solid Yellow Stripes (with 4 Inch Space) (Tape, Type I or Thermoplastic Extrusion)	5523	L.F.	\$ _____	\$ _____
629.0400	6-Inch White Edge Stripe (Tape, Type I or Thermoplastic Extrusion)	3888	L.F.	\$ _____	\$ _____
629.0500	8-Inch White Stripe (Tape, Type I or Thermoplastic Extrusion)	1154	L.F.	\$ _____	\$ _____

PROPOSAL SCHEDULE

ITEM NO.	ITEM	APPROX. QUANTITY	UNIT	UNIT PRICE	AMOUNT
629.0600	12-Inch White Stop Bar (Tape, Type III or Thermoplastic Extrusion)	234	L.F.	\$ _____	\$ _____
629.0700	Lane Change Restriction Marking 10-Foot White Profiled Thermoplastic Stripe (6 Inch Wide) (Tape, Type I or Thermoplastic)	800	L.F.	\$ _____	\$ _____
629.0800	12-Inch Yellow Transverse Stripe (Tape, Type III or Thermoplastic Extrusion)	1414	L.F.	\$ _____	\$ _____
629.0900	Crosswalk Marking (Tape, Type III or Thermoplastic Extrusion)	4	Each	\$ _____	\$ _____
629.1000	Pavement Arrow (Tape, Type III or Thermoplastic Extrusion)	12	Each	\$ _____	\$ _____
629.1100	Pavement Word (Tape, Type III or Thermoplastic Extrusion)	12	Each	\$ _____	\$ _____
629.1200	Type C Pavement Marker	97	Each	\$ _____	\$ _____
629.1300	Type D Pavement Marker	208	Each	\$ _____	\$ _____
629.1400	Type H Pavement Marker	204	Each	\$ _____	\$ _____
630.0100	Street Name Sign on Mast Arm	16	Each	\$ _____	\$ _____
631.0100	Regulatory Sign (10 Square feet or Less) with New Post	1	Each	\$ _____	\$ _____
631.0200	Regulatory Sign(s) on New Traffic Signal Mast Arm	21	Each	\$ _____	\$ _____

PROPOSAL SCHEDULE

ITEM NO.	ITEM	APPROX. QUANTITY	UNIT	UNIT PRICE	AMOUNT
631.0300	Relocation of Existing Sign	7	Each	\$ _____	\$ _____
632.0100	Reflector Marker RM-5	6	Each	\$ _____	\$ _____
632.0200	Milepost Marker with Post (Bi-Directional)	1	Each	\$ _____	\$ _____
634.0100	Portland Cement Concrete Sidewalk	1865	S.Y.	\$ _____	\$ _____
636.0100	Additional E-Construction Programs, Additional Licenses or Additional Equipment	F.A.	F.A.	F.A.	\$ <u>20,000.00</u>
638.0100	Curb, Type 2D	4700	L.F.	\$ _____	\$ _____
639.0200	Curb & Gutter, Type 2DG	361	L.F.	\$ _____	\$ _____
641.0100	Hydro-Mulch Seeding	L.S.	L.S.	L.S.	\$ _____
645.0100	Traffic Control (750 Days)	L.S.	L.S.	L.S.	\$ _____
645.0200	Additional Police Officers, Additional Traffic Control Devices and Advertisement	F.A.	F.A.	F.A.	\$ <u>100,000.00</u>
647.0100	Fiber Optic Camera Cable (CCTV)	371	L.F.	\$ _____	\$ _____
648.0100	Field-Posted Drawings	L.S.	L.S.	L.S.	\$ _____
650.0100	Curb Ramp, Type "B"	6	Each	\$ _____	\$ _____
650.0200	Curb Ramp, Type "D"	10	Each	\$ _____	\$ _____

PROPOSAL SCHEDULE					
ITEM NO.	ITEM	APPROX. QUANTITY	UNIT	UNIT PRICE	AMOUNT
650.0300	Curb Ramp, Type "Combination"	3	Each	\$ _____	\$ _____
650.0400	Detectable Warning Mat	19	Each	\$ _____	\$ _____
675.0100	Type A Bus Shelter	2	Each	\$ _____	\$ _____
675.0200	Removal of Existing Bus Shelter	L.S.	L.S.	L.S.	\$ _____
680.0100	Railroad Relocation	F.A.	F.A.	F.A.	\$ <u>351,826.00</u>
681.0100	CCTV Camera	5	Each	\$ _____	\$ _____
681.0200	CCTV Cabinet	5	Each	\$ _____	\$ _____
681.0300	CCTV Cabinet Foundation	5	Each	\$ _____	\$ _____
681.0400	Rack-Mounted Interconnect Center	5	Each	\$ _____	\$ _____
681.0500	High Speed Communication Services	F.A.	F.A.	F.A.	\$ <u>10,000.00</u>
681.0600	Two 2-Inch Conduit, SCH 40 PVC, Concrete Encased	L.S.	L.S.	L.S.	\$ _____
681.0700	Modifications in Existing Cabinets	L.S.	L.S.	L.S.	\$ _____
681.0800	Additional Testing, Splicing, and Equipment	F.A.	F.A.	F.A.	\$ <u>10,000.00</u>
681.0900	Network Monitoring	F.A.	F.A.	F.A.	\$ <u>10,000.00</u>

PROPOSAL SCHEDULE

ITEM NO.	ITEM	APPROX. QUANTITY	UNIT	UNIT PRICE	AMOUNT
694.0100	Protection of Endangered Species	F.A.	F.A.	F.A.	\$ <u>20,000.00</u>
699.1000	Mobilization (Not to Exceed 6 Percent of the Sum of All Items Excluding Bid Price of this Item)	L.S.	L.S.	L.S.	\$ _____
Total Amount for Comparison of Bids					\$ _____
.....					
NOTE: Bidders shall complete all unit prices and amounts. Failure to do so shall be grounds for rejection of bid.					

PROPOSAL SCHEDULE NOTE

1. Bids shall include all Federal, State, County and other applicable taxes and fees.
2. The TOTAL AMOUNT FOR COMPARISON OF BIDS shall be used to determine the lowest responsible bidder.
3. Bidders shall complete all unit prices and amounts. Failure to do so shall be grounds for rejection of bid.
4. **Bidders shall submit and upload the complete proposal to HlePRO prior to the bid opening date and time. Proposals received after said due date and time shall not be considered. Any additional support documents explicitly designated as confidential and/or proprietary shall be uploaded as a separate file to HlePRO. Bidders shall not include confidential and/or proprietary documents with the proposal. The record of each bidder and respective bid shall be open to public inspection. Original (wet ink, hard copy) proposal documents are not required to be submitted. Contract award shall be based on evaluation of proposals submitted and uploaded to HlePRO.**

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

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

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.

SURETY BID BOND

Bond No. _____

KNOW TO ALL BY THESE PRESENTS:

That we, _____

(full name or legal title of offeror)

as Offeror, hereinafter called the Principal, and

(name of bonding company)

as Surety, hereinafter called Surety, a corporation authorized to transact business as a Surety in the State of Hawaii, are held and firmly bound unto

(State/county entity)

as Owner, hereinafter called Owner, in the penal sum of

(required amount of bid security)

Dollars(\$ _____), lawful money of the United States of America, for the payment of which sum well and truly to be made, the said Principal and the said Surety bind ourselves, our heirs, executors, administrators, successors and assigns, jointly and severally, firmly by these presents.

WHEREAS:

The Principal has submitted an offer for

(project by number and brief description)

NOW, THEREFORE:

The condition of this obligation is such that if the Owner shall reject said offer, or in the alternate, accept the offer of the Principal and the Principal shall enter into a contract with the Owner in accordance with the terms of such offer, and give such bond or bonds as may be specified in the solicitation or Contract Documents with good and sufficient surety for the faithful performance of such Contract and for the prompt payment of labor and material furnished in the prosecution thereof as specified in the solicitation then this obligation shall be null and void, otherwise to remain in full force and effect.

Signed this _____ day of _____, _____

Name of Principal (Offeror) (Seal)

Signature

Print Name and Title

Name of Surety (Seal)

Signature

Print Name and 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 _____, by and between the
STATE OF HAWAII, by its Director of Transportation, hereinafter referred to as "STATE",
and «CONTRACTOR», «STATE_OF_INCORPORATON», whose business/post office
address is «ADDRESS» hereinafter referred to as "CONTRACTOR",

WITNESSETH: That for and in consideration of the payments hereinafter mentioned, the
CONTRACTOR hereby covenants and agrees with the STATE to complete in place, furnish
and pay for all labor and materials necessary for

“«PROJECT_NAME_AND_NO»”,

or such a part thereof as shall be required by the STATE, the total amount of which labor,
materials and construction shall be computed at the unit and/or lump sum prices set forth in the
attached proposal schedule and shall be the sum of «BASIC»----- DOLLARS

(\$«BASIC_NUMERIC») as follows:

TOTAL AMOUNT FOR COMPARISON OF BIDS.....\$«BASIC_NUMERIC»

which shall be provided from the following funds:

Federal Funds.....
State Funds.....
TOTAL AMOUNT.....

all in accordance with the specifications, the special provisions, if any, the notice to bidders, the instructions to bidders, the proposal and plans for «PROJECT NO ONLY», and any supplements thereto, on file in the office of the Director of Transportation. These documents, together with all alterations, amendments, and additions thereto and deductions therefrom, are attached hereto or incorporated herein by reference and made a part of this contract.

The CONTRACTOR hereby covenants and agrees to complete such construction within «WORKING DAYS», from the date indicated in the notice to proceed from the STATE, subject, however, to such extensions as may be provided for under the specifications.

For and in consideration of the covenants, undertakings and agreements of the CONTRACTOR herein set forth and upon the full and faithful performance thereof by the CONTRACTOR, the STATE hereby agrees to pay the CONTRACTOR the sum of «BASIC»-----DOLLARS (\$«BASIC NUMERIC») in lawful money, but not more than such part of the same as is actually earned according to the STATE's determination of the actual quantities of work performed and materials furnished by the CONTRACTOR at the unit or lump sum prices set forth in the attached proposal schedule. Such payment, including any extras, shall be made, subject to such additions or deductions hereto or hereafter made in the manner and at the time prescribed in the specifications and this contract.

An additional sum of «EXTRAS»-----DOLLARS (\$«EXTRA NUMERIC») is hereby provided for extra work and shall be provided from the following funds:

Federal Funds.....
State Funds.....
Total.....

Where Federal funds are involved, it is covenanted and agreed by and between the parties hereto that the sum of ----«FEDERAL_BASIC»----DOLLARS (\$«FEDERAL_BASIC_NUMERIC») and ----«FEDERAL_EXTRAS»----DOLLARS (\$«FEDERAL_EXTRAS_NUMERIC»), a portion of the contract price and extras, respectively, shall be paid out of the applicable Federal funds, and that this contract shall be construed to be an agreement to pay said sums to the Contractor only out of the aforesaid Federal funds if and when such Federal funds shall be received from the Federal Government, and that this contract shall not be construed to be a general agreement to pay said portions at all events out of any funds other than those which may be so received from the Federal Government; provided, that if the Federal share of the cost of the project is not immediately forthcoming from the Federal Government, the STATE may advance the CONTRACTOR the anticipated Federal reimbursement of the cost of the completed portions of the work from funds which have been appropriated by the STATE for its pro rata share.

All words used herein in the singular shall extend to and include the plural. All words used in the plural shall extend to and include the singular. The use of any gender shall extend to and include all genders.

IN WITNESS WHEREOF, the parties hereto have caused this instrument to be duly
executed the day and year first above written.

STATE OF HAWAII

Director of Transportation

«CONTRACTOR»

Signature

Print name

Print Title

Date

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

KNOW TO ALL BY THESE PRESENTS:

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

as Contractor, hereinafter called Principal, and _____

(Name and Street Address of Bonding Company)

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

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

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

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

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

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

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

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

In the event of Default by the Principal, of the obligations under the Contract, then after written Notice of Default from the Obligee to the Surety and the Principal and subject to the limitation of the penal sum of this bond, Surety shall remedy the Default, or take over the work to be performed under the Contract and complete such work, or pay moneys to the Obligee in satisfaction of the surety's performance obligation on this bond.

Signed this _____ day of _____, _____.

(Seal)

Name of Principal (Contractor)

*

Signature

Title

(Seal)

Name of Surety

*

Signature

Title

*ALL SIGNATURES MUST BE ACKNOWLEDGED
BY A NOTARY PUBLIC

PERFORMANCE BOND

KNOW 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

(Dollar amount of Contract) DOLLARS (\$ _____),

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 _____ a
drawn on _____
bank, savings institution or credit union insured by the Federal Deposit Insurance
Corporation or the National Credit Union Administration, payable at sight or unconditionally
assigned to _____;
- ☐ **Cashier's Check No.** _____, dated _____
drawn on _____ a
bank, savings institution or credit union insured by the Federal Deposit Insurance
Corporation or the National Credit Union Administration, payable at sight or unconditionally
assigned to _____;
- ☐ **Teller's Check No.** _____, dated _____
drawn on _____ a
bank, savings institution or credit union insured by the Federal Deposit Insurance
Corporation or the National Credit Union Administration, payable at sight or unconditionally
assigned to _____;
- ☐ **Treasurer's Check No.** _____, dated _____
drawn on _____ a
bank, savings institution or credit union insured by the Federal Deposit Insurance
Corporation or the National Credit Union Administration, payable at sight or unconditionally
assigned to _____;
- ☐ **Official Check No.** _____, dated _____
drawn on _____ a
bank, savings institution or credit union insured by the Federal Deposit Insurance
Corporation or the National Credit Union Administration, payable at sight or unconditionally
assigned to _____;
- ☐ **Certified Check No.** _____, dated _____
accepted by a bank, savings institution or credit union insured by the Federal Deposit
Insurance Corporation or the National Credit Union Administration, payable at sight or
unconditionally assigned to _____;

WHEREAS:

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

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

NOW THEREFORE,

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

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

The amount of this bond may be reduced by and to the extent of any payment or payments made in good faith hereunder.

Signed and sealed this _____ day of _____, _____.

(Seal)

Name of Contractor

*

Signature

Title

*ALL SIGNATURES MUST BE
ACKNOWLEDGED BY A NOTARY PUBLIC

LABOR AND MATERIAL PAYMENT BOND (SURETY)
(6/21/07)

KNOW TO ALL BY THESE PRESENTS:

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

as Contractor, hereinafter called Principal, and _____

_____,
(Name and Street Address of Bonding Company)

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

its successors and assigns, hereinafter called Obligor, 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 Obligor 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

(Dollar amount of Contract) DOLLARS (\$ _____),

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

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

WHEREAS:

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

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

NOW THEREFORE,

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

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

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

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

Signed this _____ day of _____, _____.

(Seal) _____
Name of Contractor

* _____
Signature

Title

*ALL SIGNATURES MUST BE
ACKNOWLEDGED BY A NOTARY PUBLIC

Complete this form to disclose lobbying activities pursuant to 31 U.S.C. 1352
(See reverse for public burden disclosure.)

1. Type of Federal Action: ☐ a. contract ☐ b. grant ☐ c. cooperative agreement ☐ d. loan ☐ e. loan guarantee ☐ f. loan insurance		2. Status of Federal Action: ☐ a. bid/offer/application ☐ b. initial award ☐ c. post-award		3. Report Type: ☐ a. initial filing ☐ b. material change For Material Change Only: year _____ quarter _____ date of last report _____	
4. Name and Address of Reporting Entity: ☐ Prime ☐ Subawardee Tier _____, if known: Congressional District, if known:			5. If Reporting Entity in No. 4 is Subawardee, Enter Name and Address of Prime Congressional District, if known:		
6. Federal Department/Agency:			7. Federal Program Name/Destination:		
			CFDA Number, if applicable:		
8. Federal Action Number, if known:			9. Award Amount, if known: \$		
10. a. Name and address of Lobbying Entity (if individual, last name, first name, MI):			b. Individuals Performing Services (including address if different from No. 10a) (last name, first name, MI):		
(attach Continuation Sheet(s) SF-LLL-A, if necessary)					
11. Amount of Payment (check all that apply): \$ _____ ☐ actual ☐ planned			13. Type of Payment (check all that apply): ☐ a. retainer ☐ b. one-time fee ☐ c. commission ☐ d. contingent fee ☐ e. deferred ☐ f. other; specify: _____		
12. Form of Payment (check all that apply): ☐ a. cash ☐ b. in-kind; specify: nature _____ value _____					
14. Brief Description of Services Performed or to be Performed and Date(s) of Service, including officer(s), employees(s) or Member(s) contacted, for Payment Indicated in Item 11:					
(attach Continuation Sheet(s) SF-LLL-A, if necessary)					
15. Continuation Sheet(s) SF-LLL-A attached: ☐ Yes ☐ No					
16. Information requested through this form is authorized by title 31 U.S.C. section 1352. This disclosure of lobbying activities is a material representation of fact upon which reliance was placed by the tier above when this transaction was made or entered into. This disclosure is required pursuant to 31 U.S.C. 1352. This information will be reported to the Congress semi-annually and will be available for public inspection. Any person who fails to file the required disclosure shall be subject to a civil penalty of not less than \$10,000 and not more than \$100,000 for each such failure.			Signature: _____ Print Name: _____ Title: _____ Telephone No.: _____ Date: _____		
Federal Use Only:			Authorized for Local Reproduction Standard Form - LLL		

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.
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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. 2760, 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
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 _____, 20__.

«CONTRACTOR»

Name of Corporation, Partnership, or Individual

Signature and Title of Signer

Notary Seal
NOTARY ACKNOWLEDGEMENT

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

Notary Seal
NOTARY CERTIFICATION

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

Notary signature _____
Date _____