STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

ADDENDUM NO. 1
for
Traffic Management Center
Island of Kauai
PROJECT NO. HWY-K-03-18

The following amendments shall be made to the Bid Documents:

A. NOTICE TO BIDDERS

1. The deadline to submit bids is extended from Monday, June 15, 2020, at 2:00 P.M., Hawaii Standard Time (HST) to Thursday, July 2, 2020, at 2:00 P.M., Hawaii Standard Time (HST).

2. Delete "To be eligible for award, bidders must possess a valid State of Hawaii General Engineering Contractor's "A" license or Specialty Contractor's "C-13" license at the time of bidding."

3. Add "An optional second pre-bid conference is scheduled for June 15, 2020, at 10:00 A.M. HST. Attending the second pre-bid conference will satisfy the mandatory pre-bid conference requirements. Contact Eric Fujikawa, Project Manager, by phone, at (808) 241-3015, by facsimile at (808) 241-3011 or email at eric.i.fujikawa@hawaii.gov to obtain the venue for the second pre-bid conference."

B. SPECIFICATIONS

1. Replace Section 102 — Bidding Requirements and Conditions dated 5/22/20 with the attached Section 102 — Bidding Requirements and Conditions dated r05/22/20.

2. Replace Section 103 — Award and Execution of Contract dated 5/22/20 with the attached Section 103 — Award and Execution of Contract dated r05/15/20.

3. Replace Section 108 — Scope of Work dated 10/01/17 with the attached Section 108 — Scope of Work dated r05/28/20.

4. Replace Section 623 — Traffic Signal System dated 4/14/20 with the attached Section 623 — Traffic Signal System dated r06/01/20.

5. Replace Section 770 — Traffic Signal Materials dated 4/14/20 with the attached Section 770 — Traffic Signal Materials dated r06/01/20.

C. PROPOSAL

1. Replace Proposal page P-1 dated 3/27/20 with the attached Proposal page P-1 dated r06/01/20.

D. PRE-BID MEETING MINUTES

1. Attached are the May 27, 2020 Pre-Bid Meeting Minutes and Attendance Sheet for your Information.

Please acknowledge receipt of this Addendum No. 1 by recording the date of its receipt in the space provided on page P-4 of the Proposal.

JADE T. BUTAY
Director of Transportation

Make this section a part of the Standard Specifications:

"**SECTION 102 - BIDDING REQUIREMENTS AND CONDITIONS**

102.01 Prequalification of Bidders. Prospective bidders shall be capable of performing the work for which they are bidding.

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

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

102.02 Contents of Proposal Forms. The Department will furnish prospective bidders with proposal forms posted in HIePRO stating:

(1) The location,

(2) Description of the proposed work,

(3) The approximate quantities,

(4) Items of work to be done or materials to be furnished,

(5) A schedule of items, and

(6) The time in which the work shall be completed.

Documents attached to the proposal submittal are part of the proposal. The bidder shall not detach or alter the documents bound with or attached to the proposal when the bidder submits its proposal through HIePRO.

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

102.03 Issuance of Proposal Forms. Not applicable.

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.

Due to the impacts of COVID 19, bidders must schedule their site visit with the Project Manager. **ALL PERSONS** examining the site of the proposed work will be **REQUIRED** to wear a mask for the entire duration of their stay. **NO PERSONS** will be allowed to enter the work site without a mask.

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 Contactor'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.

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. The bidder shall submit the proposal in HIePRO. Bids received after said due date and time shall not be considered.

102.10 Withdrawal or Revision of Proposals. A bidder may withdraw or revise a proposal after the bidder submits the proposal in HIePRO. Withdrawal or revision of proposal must be completed before the time set for the receiving of bids.

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

(10) Uncompleted work that might hinder or prevent the prompt completion of additional work if awarded;

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

(12) Failure to comply with qualification regulations of the Department;

(13) Default under previous contracts; or

(14) Lack of responsibility and cooperation from past work.

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

(16) 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. Qualification of such proposed alternate brands shall be submitted in HIePRO. The request must be posted in HIePRO no later than 14 calendar days before the bid opening date, not including 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.

(A) Preference for Hawaii Products. The bidder's attention is directed to Sections 103D-1001 and 103D-1002, HRS and Subchapter 1, Chapter 124, Subtitle 11 of Title 3, HAR which provide preferences for Hawaii Products. According to Section 103D-1002, HRS, the bidder may examine the Hawaii Products List at the State Procurement Office, State Office Building, 1151 Punchbowl Street, Honolulu, Hawaii 96813.

If a product listed in the Hawaii Products List is available and meets project specifications, such product will be designated in the contract documents as a qualified product which may be used in the performance of the project.

If the bidder intends to claim preference for products on the Hawaii Product List and such is not listed, the bidder shall immediately notify the Contracts Office, Department of Transportation, so the Engineer may take corrective or other appropriate actions.

It is further understood by the bidder that if the bidder elects to furnish qualified Hawaii Products, and is awarded the contract, then fails to use such products or meet the requirements of such preference, the bidder shall be subject to the statutory penalties, provided in HRS Chapter 103D-1002, and such other remedies as may be available to the State.

For the purpose of determining the lowest bid price only, the provisions of HRS Chapter 103D-1002 shall apply. Any contract awarded or executed in violation of HRS Chapter 103D-1002 shall be void and no payment shall be made on account of such contract.

(B) Preferences for Apprenticeship Programs. In accordance with ACT 17, SLH 2009 – Apprenticeship Program, a 5% bid adjustment for bidders that are parties to apprenticeship agreements pursuant to Hawaii Revised Statutes (HRS) Section 103-55.6 may be applied to the bidder's price for evaluation purposes. These procedures apply to public works projects with estimated cost of $250,000 or more and entered into under the provisions of HRS Chapter 103.

The following provisions apply to this Apprenticeship Program.

(1) Definitions

(a) “Apprenticeable trade”, HRS Section 103-55.6 (c), shall have the same meaning as ‘apprenticeable occupation’ pursuant to Hawaii Administrative Rules (HAR) Section 30-1-5.

(b) “Department” means the department of labor and industrial relations.

(c) “Director” means the director of labor and industrial relations.

(d) “Employ” means the employment of a person in an employer-employee relations.

(e) “Governmental body” means as defined in HRS Section 103D-104.

(f) “Party to an apprenticeship agreement” means party to a registered apprenticeship program with the department of labor and industrial relations.

(g) “Preference” means the 5% by which the qualified bidder's offer amount would be decreased for evaluation purposes.

(h) "Public work" shall be as defined in HRS Section 104-2 and HAR Section 12-22-1.

(i) "Registered apprenticeship program" means a construction trade program approved by the department pursuant to HAR Section 12-30-1 and Section 12-30-4.

(j) "Sponsor" means an operator of an apprenticeship program and in whose name the program is approved and registered with the department of labor and industrial relations pursuant to HAR Section 12-30-1.

(k) Offeror – Entity/bidder submitting a proposal to undertake a project.

(l) Procurement Officer – Director of Transportation or his authorized representative.

(2) Qualification Procedures

(a) Any bidder seeking the preference must be a party to an apprenticeship agreement registered with the department at the time the offer is made for each apprenticeable trade the bidder will employ to construct the public works projects for which the offer is being made.

1. The apprenticeship agreement shall be registered and conform to the requirements of HRS Chapter 372.

2. Subcontractors do not have to be a party to an apprenticeship agreement for the bidder to obtain the preference.

3. The bidder is not required to have apprentices in its employ at the time of submittal of an offer to qualify for the preference.

(b) The department shall:

1. Develop and maintain a list of construction trades in registered apprenticeship programs which conform to HRS Chapter 372; and

2. Electronically post the list; including any amendments, on the department website (http://hawaii.gov/labor/wdd).

(c) Bidder is responsible to comply with all submission requirements for registration of its apprenticeship program before requesting a preference.

(d) Bidder shall provide a certification by the sponsor of the respective registered apprenticeship programs covering the relevant trade(s) for the public works project.

(e) *Certification Form 1* issued by the department shall include:

1. Contractor information;

2. Solicitation reference;

3. Trade(s);

4. Date and name of apprenticeship program;

5. Signature of authorized training coordinator or training trust fund administrator certifying that the contractor is a participant in the program, and that the program is registered with the department;

6. Contract information for sponsor's authorized representative signing the form;

7. Number of apprentices enrolled in the program, number who successfully completed the apprenticeship program in the past 12 months, including whether the contractor is signatory to a collective bargaining agreement for that trade, or if not, provide for attachment of a copy of the agreement between the contractor and the program.

(3) Solicitation Procedures

(a) If the NTB indicates that this project is covered by this preference, and the offer is less than $250,000 this preference will still be applicable in determining the lowest bidder.

(b) A claim for this preference must include the following:

1. Allow bidder seeking to claim the preference to state the trades the bidder will employ to perform the work;

2. For each trade to be employed to perform the work, the bidder shall submit a completed signed original *Certification Form 1* verifying participation in an apprenticeship program registered with the department.

3. The *Certification Form 1* shall be authorized by an apprenticeship sponsor of the department's list of registered apprenticeship programs. The authorization shall be an original signature by an authorized official of the apprenticeship sponsor; and

4. The completed *Certification Form 1* for each trade must be submitted by the bidder with the offer. Previous certifications shall not apply unless allowed by the solicitation.

(c) Upon receiving *Certification Form 1*, the procurement officer will verify with the department that the apprenticeship program is on the list of apprenticeship programs registered with the department. If the programs are not confirmed by the department, the bidder will not qualify for the preference.

(4) Evaluation and Contract Award

(a) If the bidder certifies participation in an apprenticeship program for each trade which will be employed by the bidder for the project, the procurement officer shall apply the preference and decrease the bidder's total bid amount by five per cent (5%) for evaluation purposes.

(b) Should the bidder qualify for other statutory preferences (for example, Hawaii products), all applicable preferences shall be applied to the bidder's price.

(c) The contract amount shall be the original offer amount, exclusive of any preference; the preference is only for evaluation purposes.

(d) Any claims challenging a bidder's representation that the bidder is a participant in an apprenticeship program(s) as claimed, shall be submitted to the procurement officer. The procurement officer will refer the challenge to the department of labor and industrial relations who shall investigate any such claims and shall make a determination.

(5) Contract Administration

(a) For the duration of a contract awarded utilizing the apprenticeship preference, the contractor shall certify each month that work is being conducted on the project, that it continues to be a participant in the relevant apprenticeship program for each trade it employs.

(b) Monthly certification shall be made on *Monthly Certification Form 2* prepared and made available by the department, be a signed original by the respective apprenticeship program sponsors authorized official, and submitted by the contractor with its monthly payment requests.

(c) Should the contractor fail or refuse to submit its monthly certification forms, or at any time during the construction of the project, cease to be a part to a registered apprenticeship agreement for each apprenticeable trades the contractor employs, or will employ, the contractor will be subject to the following sanctions:

1. Withholding of the requested payment until the required form(s) are submitted;

2. Temporary or permanent cessation of work on the project , without recourse to breach of contract claims by the contractor; provided the agency shall be entitled to restitution for nonperformance or liquidated damages claims; or

3. Proceed to debar or suspend pursuant to HRS Section 103D-702.

(d) If events such as "acts of God," acts of a public enemy, acts of the State or any other governmental body in its sovereign or contractual capacity, fires, floods, epidemics, freight embargoes, unusually severe weather, or strikes or other labor disputes prevent the contractor from submitting the certification forms, the contractor shall not be penalized as provided herein, provided the contractor completely and expeditiously complies with the certification process when the event is over.

This subsection shall not apply when its application will disqualify the State from receiving federal funds or aid.

(C) Preference for Recycled Products. Recycled Products shall not apply to this project.

(D) Evaluation Procedures and Contract Award. For bid evaluation, the Engineer will evaluate the bids by applying the applicable preferences selected by the bidders according to the contract. The Engineer will base the calculations for adjustments upon the original bid prices offered. If more than one preference applies, the evaluated bid price shall be the sum of the original bid price plus applicable preference adjustments.

If a bidder has designated use of a Hawaii Product and fails to provide the product, the contract will become void and no payments will be made.

The Engineer will award the contract to the responsible bidder submitting the responsive bid with the lowest evaluated bid price. The contract amount of the contract awarded shall be the original bid price offered exclusive of any preference.

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

102.17 Addenda. Addenda issued shall become part of the contract documents. Addenda to the bid documents will be provided to all prospective bidders via HIePRO. Each addendum shall be an addition to the contract documents. The terms and requirements of the bid documents (i.e. drawings, specifications and other bid and contract documents) cannot be changed prior to the bid opening except by a duly issued addendum."

END OF SECTION 102

Make this section a part of the Standard Specifications:

"SECTION 103 - AWARD AND EXECUTION OF CONTRACT

103.01 Consideration of Proposals. The Department will compare the proposals in terms of the summation of the products of the approximate quantities and the unit bid prices after the submittal date and time established in HIePRO. If a discrepancy occurs between the unit bid price and the bid price, the unit bid price shall govern.

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

103.02 Award of Contract. The award of contract, if it be awarded, will be made within 60 calendar days after the opening of bids, to the lowest responsible bidder whose proposal complies with all the requirements. The successful bidder will be notified by letter mailed to the address shown in its proposal, that its proposal has been accepted, and that it has been awarded the contract.

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

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

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

http://www.hawaii.gov/tax/

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

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

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

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

www.hawaii.gov/labor

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

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 and must be submitted directly to the DLIR. The approved certificate may then be submitted to the Department.

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

The Certificate of Good Standing is valid for six (6) months from the approval date on the certificate and must be valid on the bid's first legal advertisement date or any date thereafter up to the bid opening date. A Hawaii business that is a sole proprietorship, however, is not required to register with the BREG, and therefore not required to submit a Certificate of Good Standing. Bidders are advised that there are 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:

www.hawaii.gov/dcca/

The application for the Certificate of Good Standing is the responsibility of the bidder and must be submitted 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 above, the bidder may make available proof of compliance through the Hawaii Compliance Express or any other designated certification process. Bidders may apply and register at the "Hawaii Compliance Express" website:

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 inure 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 bidder or the Department may readvertise and construct the work under contract."

END OF SECTION 103

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

"108 – PROSECUTION AND PROGRESS

108.01 Notice to Proceed (NTP). A Notice To Proceed will be issued to the Contractor not more 3 working days after the contract certification date. The Engineer may suspend the contract before issuing the Notice To Proceed, in which case the Contractor's remedies are exclusively those set forth in Subsection 108.10 – Suspension of Work.

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

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

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

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

In the event that the Engineer establishes, in writing, a Start Work Date that is beyond 14 calendar days from the Notice to Proceed date, the Contractor may submit a claim in accordance with, Subsection 107.15 – Disputes and Claims for increased labor and material costs which are directly attributable to the delay beyond the first 14 calendar days after the Notice to Proceed date.

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

Once physical work has begun, the Contractor shall work expeditiously and pursue the work diligently to completion with the contract time. If a portion of the work is to be done in stages, the Contractor shall leave the area safe and usable 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 14 calendar days from notice to proceed. 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:

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

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

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

4. State either that the above circumstances have been cleared and normal working conditions restored

as of a certain day or that the above circumstances will continue to prevent completion of the project.

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

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

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

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

1. State specifically all reasons for the delay. Explain in a detailed chronology the effect of the delay 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) and 108.05(B)(4).

(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.

108.05

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 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.

(I) 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.

108.06

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 $ _____ 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.

108.08

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 $5,000. 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.

108.10

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, with the exception of the planting period and the plant establishment period, the Engineer will notify the Contractor, in writing, of the project's substantial completion, effective as of the date of the final inspection. The substantial completion date shall determine end

of contract time and relieve contractor of any additional accumulation of liquidated damages for failure to complete the punchlist.

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

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

108.15

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:

(1) All written guarantees required by the contract.

(2) Complete and certified weekly payrolls for the Contractor and its subcontractor's.

(3) Certificate of plumbing and electrical inspection.

(4) Certificate of building occupancy.

(5) Certificate for soil treatment and wood treatment.

(6) Certificate of water system chlorination.

(7) Certificate of elevator inspection, boiler and pressure pipe installation.

(8) Tax clearance.

(9) All other documents required by the Contract or by law.

(B) Failure to Meet Closing Requirements. The Contractor shall meet the applicable closing requirements within 60 days from the date of Project Acceptance or the agreed to Punchlist complete date. Should the Contractor fail to comply with these requirements, the Engineer may terminate the contract for cause."

END OF SECTION 108

SECTION 623 – TRAFFIC SIGNAL SYSTEM

Make the following amendments to said Section:

(I) Amend **Subsection 623.02 Materials**, by replacing lines 99 to line 131 to read as follows:

"Traffic Management Center (TMC)	770.01
Signal Performance Measures (SPM)	770.02
Cellular Communications	770.03
Conflict Monitor Unit (CMU)	770.04
Video Detection System	770.05"

(II) Remove lines 188-192 in its entirety.

(III) Remove lines 196-327 in its entirety.

(IV) Remove lines 437-451 in its entirety.

(V) Amend **Subsection 623.03(C) Installation** by adding the following after line 451 to read as follows:

"**(15) Traffic Management Center (TMC).** Install a traffic management center in a select room at the Department of Transportation Kauai Baseyard, as directed by the Engineer. The traffic management system will consist of servers, monitors, workstations and all necessary hardware including, but not limited to, network switches, and hardwiring to operate existing Centracs software in accordance with the contract documents. Contractor to coordinate with HDOT to configure TMC software and traffic signal system communication and ensure that all components are operating accordingly.

A general layout of the TMC is shown in Figure 2 and is subject to change upon approval by the Engineer. Furniture shall be office-modular with quality similar to existing, installed to maximize space as shown in Figure 2. The Contractor shall provide a submittal layout of the TMC room to the Engineer for approval.

(16) Signal Performance Measures (SPM). Install a supplemental traffic data collection and analytics software for signal optimization applications.

(17) Cellular Communications. Install cellular communication devices connected through a priority network service to select signalized intersections as directed by the Engineer.

(18) Conflict Monitor Unit (CMU) Install conflict monitor units to select signalized intersections as directed by the Engineer.

(19) Video Detection System. Install video detection systems to select signalized intersections as directed by the Engineer."

(VI) Remove lines 453-465 in its entirety.

(VII) Amend **Subsection 623.03(G) Other Services** from line 493 to line 494 to read as follows:

"**(1)** The contractor shall perform the following upon submittal of a work plan and approval by the Engineer:"

(VIII) Remove line 505 in its entirety.

(IX) Amend **Subsection 623.03(G) Other Services** from line 507 to line 508 to read as follows:

"**(2)** Upon approval of the Engineer, the Contractor shall perform the following:"

(X) Amend **Subsection 623.04 Measurement** from line 578 to line 579 to read as follows:

"**623.04 Measurement.** The TMC system and SPM software will be paid per Lump Sum. Other traffic signal system items will be paid per each in accordance with the contract documents."

(XI) Amend **Subsection 623.05 Payment** from line 581 to line 590 to read as follows:

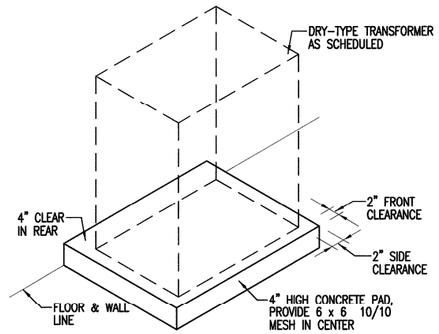
"**623.05 Payment.** The Engineer will pay for accepted items listed below at the contract price per pay unit, as shown in the proposal schedule. Payment will be full compensation for the work prescribed in this section and the contract documents.

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

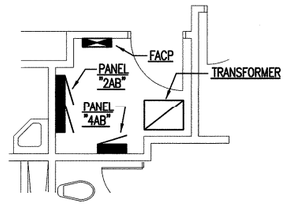
Pay Item		Pay Unit
(A)	Traffic Management Center (TMC)	Lump Sum
(B)	Signal Performance Measures (SPM)	Lump Sum
(C)	Cellular Communication	Each
(D)	Conflict Monitor Unit (CMU)	Each
(E)	Video Detection System – 3-Leg Intersection	Each
(F)	Video Detection System – 4-Leg Intersection	Each”

END OF SECTION 623

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	HWY-K-03-98	2001	141	150

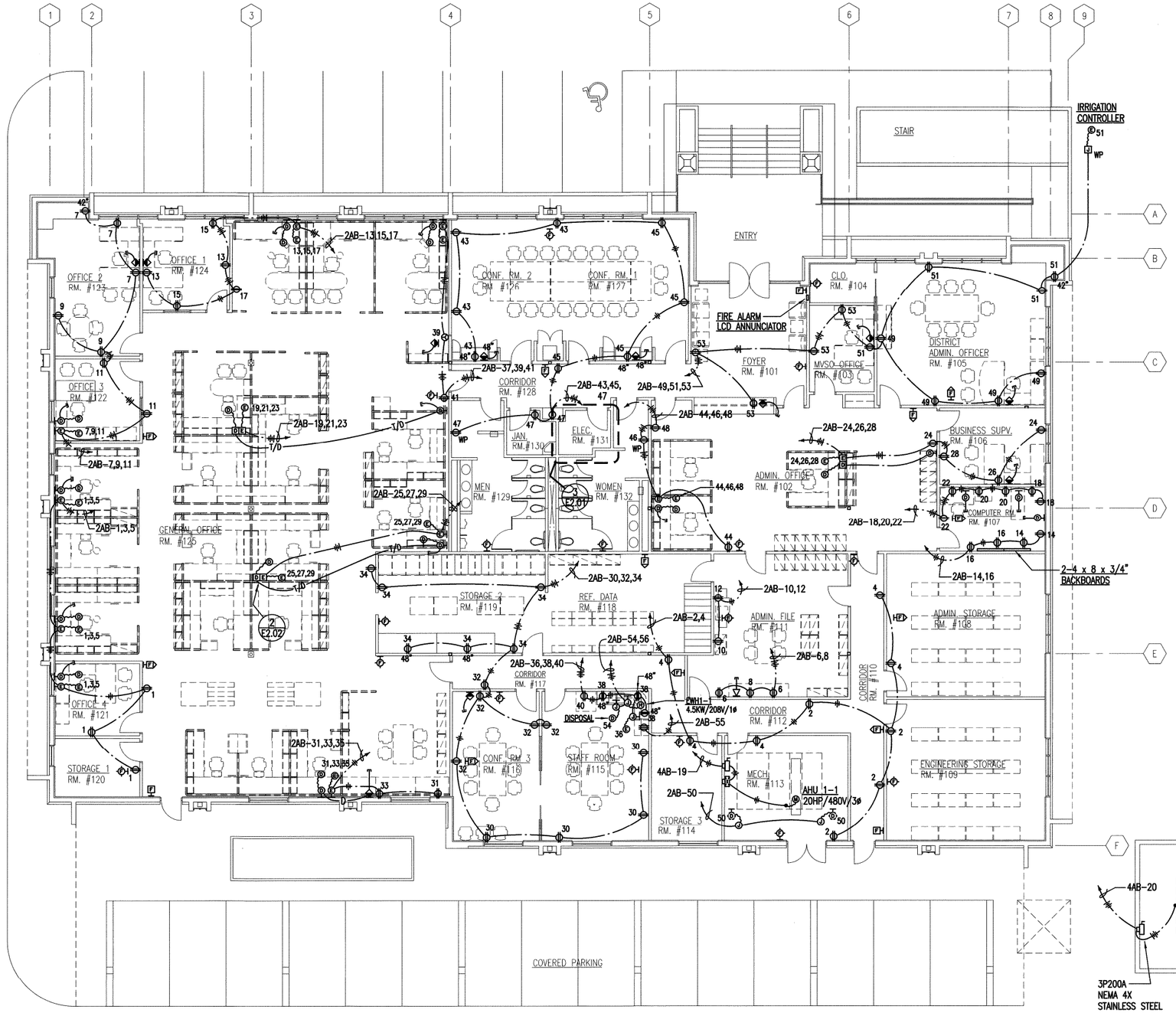


2 / E2.01 DETAIL – DRY-TYPE TRANSFORMER PAD
NOT TO SCALE



3 / E2.01 PLAN – ELECTRIC ROOM
SCALE: 1/4" = 1' – 0"

NOTE:
CONTRACTOR SHALL SUBMIT SHOP DRAWINGS FOR INTERCONNECTION OF FIRE ALARM SYSTEM DEVICES.



NORTH

1 / E2.01 ADMINISTRATION BUILDING ELECTRICAL PLAN
SCALE: 1/8" = 1' – 0"

BRIAN T. ITOZAKI LICENSED PROFESSIONAL ENGINEER No. 9058-E HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

CENTRALIZED DISTRICT OFFICE AND BASEYARD COMPLEX

LIHUE, KAUAI
PROJECT NO. HWY-K-03-98

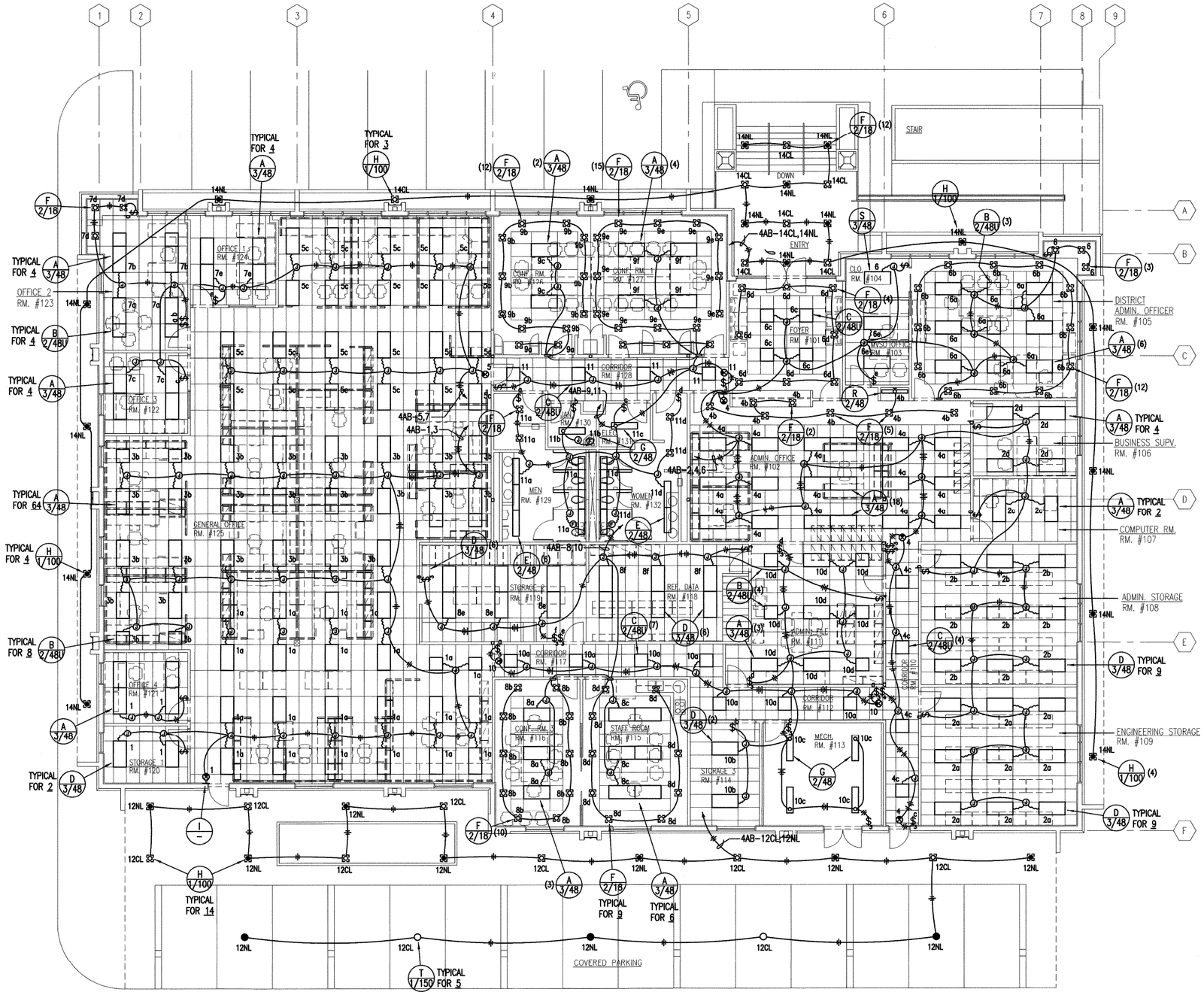
ADMINISTRATION BUILDING ELECTRICAL PLAN

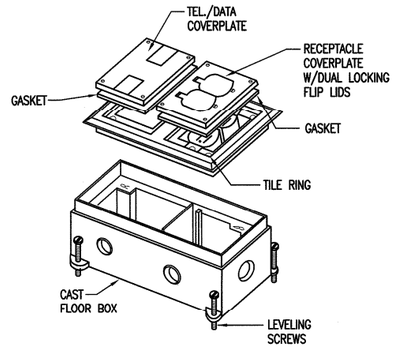
SCALE: AS SHOWN
DATE: MAR. 30, 01

SHEET NO. E2.01 OF 150 SHEETS

Z25.064

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	HWY-K-03-98	2001	142	150





2-GANG SYMBOL ON PLAN: D E

MANUFACTURER:
WALKER OMNIBOX
FLOOR BOX: 880 CM2, 2 7/16"H
BRASS TILE RING: # 827T
BRASS COVERPLATE:
POWER: 828R
TEL./DATA: 829S
WALKER, STEEL CITY OR APPROVED EQUAL

2 / E2.02 FLOOR MOUNTED OUTLET BOX
NOT TO SCALE

NORTH

1 / E2.02 ADMINISTRATION BUILDING LIGHTING PLAN
SCALE: 1/8" = 1' - 0"

BRIAN T. ITOZAKI LICENSED PROFESSIONAL ENGINEER No. 9058-E HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

CENTRALIZED DISTRICT OFFICE AND BASEYARD COMPLEX

LIHUE, KAUAI
PROJECT NO. HWY-K-03-98

ADMINISTRATION BUILDING LIGHTING PLAN

SCALE: AS SHOWN DATE: MAR. 30, 01

SHEET NO. E2.02 OF 150 SHEETS

225.064

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	HWY-K-03-98	2001	143	150

PANEL "2AB" SCHEDULE
(SECTION 1)

208Y/120 VOLTS, 3 PHASES, 4 WSN
BREAKER MIN. A.I.C. 10,000
SURFACE MTG. 225A MAIN BKR.

CKT. NO.	USE	CIRCUIT BREAKER POLES	CIRCUIT BREAKER AMPS	CONNECTED LOAD (KVA) A	B	C	WIRE SIZE
1	RECEPTACLES	1	20	1.2			12
2	RECEPTACLES	1	20	1.2			12
3	RECEPTACLES	1	20		1.2		12
4	RECEPTACLES	1	20		1.2		12
5	RECEPTACLES	1	20			1.2	12
6	RECEPTACLES	1	20			1.2	12
7	RECEPTACLES	1	20	1.2			12
8	RECEPTACLES	1	20	1.2			12
9	RECEPTACLES	1	20		1.2		12
10	RECEPTACLES	1	20		1.2		12
11	RECEPTACLES	1	20			1.2	12
12	RECEPTACLES	1	20			1.2	12
13	RECEPTACLES	1	20	1.2			12
14	RECEPTACLES	1	20	1.2			12
15	RECEPTACLES	1	20		1.2		12
16	RECEPTACLES	1	20		1.2		12
17	RECEPTACLES	1	20			1.2	12
18	RECEPTACLES	1	20			1.2	12
19	RECEPTACLES	1	20	1.2			12
20	RECEPTACLES	1	20	1.2			12
21	RECEPTACLES	1	20		1.2		12
22	RECEPTACLES	1	20		1.2		12
23	RECEPTACLES	1	20			1.2	12
24	RECEPTACLES	1	20			1.2	12
25	RECEPTACLES	1	20	1.2			12
26	RECEPTACLES	1	20	1.2			12
27	RECEPTACLES	1	20		1.2		12
28	RECEPTACLES	1	20		1.2		12
29	RECEPTACLES	1	20			1.2	12
30	RECEPTACLES	1	20			1.2	12
31	RECEPTACLES	1	20	1.2			12
32	RECEPTACLES	1	20	1.2			12
33	RECEPTACLES	1	20		1.2		12
34	RECEPTACLES	1	20		1.2		12
35	RECEPTACLES	1	20			1.2	12
36	RECEPTACLES	1	20			1.2	12
37	RECEPTACLES	1	20	1.2			12
38	RECEPTACLES	1	20	1.2			12
39	RECEPTACLES	1	20		1.2		12
40	RECEPTACLES	1	20		1.2		12
41	RECEPTACLES	1	20			1.2	12
42	RECEP. - REFRIG.	1	20			1.2	12
	TOTAL LOAD/ PHASE			-	-	-	
	TOTAL LOAD			KVA			
	DEMAND FACTOR						
	DEMAND LOAD			KVA			

PANEL "2AB" SCHEDULE
(SECTION 2)

208Y/120 VOLTS, 3 PHASES, 4 WSN
BREAKER MIN. A.I.C. 10,000
SURFACE MTG. 225A MAIN BKR.

CKT. NO.	USE	CIRCUIT BREAKER POLES	CIRCUIT BREAKER AMPS	CONNECTED LOAD (KVA) A	B	C	WIRE SIZE
43	RECEPTACLES	1	20	1.2			12
44	RECEPTACLES	1	20	1.2			12
45	RECEPTACLES	1	20		1.2		12
46	RECEPTACLES	1	20		1.2		12
47	RECEPTACLES	1	20			1.2	12
48	RECEPTACLES	1	20			1.2	12
49	RECEPTACLES	1	20	1.2			12
50	DUCT SMOKE DETECTORS	1	20	1.0			12
51	RECEPTACLES	1	20		1.2		12
52	SPARE	1	20		1.0		---
53	RECEPTACLES	1	20			1.2	12
54	DISPOSAL	1	20			1.0	12
55	RANGE	2	50	4.0	4.0		6
56	EWH	2	30	2.3	2.3		10
57	SPARE	2	30	1.0		1.0	---
58	SPARE	2	30	1.0		1.0	---
59	SPARE	1	20		1.0		---
60	SPARE	1	20		1.0		---
61	SPARE	1	20			1.0	---
62	SPARE	1	20			1.0	---
63	SPARE	1	20	1.0			---
64	SPARE	1	20	1.0			---
65	SPARE	1	20		1.0		---
66	SPARE	1	20		1.0		---
67	SPARE	1	20			1.0	---
68	SPARE	1	20			1.0	---
69	PFB	1	50	---			---
70	PFB	1	50	---			---
71	PFB	1	50		---		---
72	PFB	1	50		---		---
73	PFB	1	50			---	---
74	PFB	1	50			---	---
75	PFB	1	50	---			---
76	PFB	1	50	---			---
77	PFB	1	50		---		---
78	PFB	1	50		---		---
79	PFB	1	50			---	---
80	PFB	1	50			---	---
	TOTAL LOAD/ PHASE			31.7	31.7	27.4	
	TOTAL LOAD			90.8 KVA			
	DEMAND FACTOR			0.75			
	DEMAND LOAD			68.1 KVA			

PFB - PROVISION FOR FUTURE BREAKER

PANEL "4AB" SCHEDULE

480Y/277 VOLTS, 3 PHASES, 4 WSN
BREAKER MIN. A.I.C. 10,000
SURFACE MTG. 225A MAIN BKR.

CKT. NO.	USE	CIRCUIT BREAKER POLES	CIRCUIT BREAKER AMPS	CONNECTED LOAD (KVA) A	B	C	WIRE SIZE
1	LIGHTS	1	20	4.1			12
2	LIGHTS	1	20	3.3			12
3	LIGHTS	1	20		3.8		12
4	LIGHTS	1	20		3.5		12
5	LIGHTS	1	20			3.3	12
6	LIGHTS	1	20			2.8	12
7	LIGHTS	1	20	2.1			12
8	LIGHTS	1	20	3.6			12
9	LIGHTS	1	20		1.8		12
10	LIGHTS	1	20		2.5		12
11	LIGHTS	1	20			1.5	12
12	NIGHT LIGHTS, CURFEW LIGHTS	1	20			1.9	10
13	SPARE	1	20	1.5			---
14	NL/CL	1	20	2.4			10
15	SPARE	1	20		1.5		---
16	SPARE	1	20		1.5		---
17	SPARE	1	20			1.5	---
18	SPARE	1	20			1.5	---
19	AHU 1-1	3	60	7.5	7.5	7.5	8
20	ACCU 1-1	3	125	21.6	21.6	21.6	2
21	PANEL "2AB"	3	110	25.0	25.0	25.0	2
22	PFB	3	50	1.0	1.0	1.0	---
23	PFB	3	50				---
24	PFB	3	50				---
25	PFB	3	50				---
26	PFB	3	50				---
	TOTAL LOAD/ PHASE			72.0	69.7	67.6	
	TOTAL LOAD			209.3 KVA			
	DEMAND FACTOR			0.65			
	DEMAND LOAD			136.0 KVA			

BRIAN T. ITOZAKI
LICENSED PROFESSIONAL ENGINEER
No. 9058-E
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

CENTRALIZED DISTRICT OFFICE AND BASEYARD COMPLEX

LIHUE, KAUAI
PROJECT NO. HWY-K-03-98

PANEL SCHEDULES AND DETAILS (ADMIN. BLDG.)

SCALE: AS SHOWN
DATE: MAR. 30, 01

SHEET NO. E2.03 OF 150 SHEETS

225.064

SECTION 770 — TRAFFIC SIGNAL MATERIALS

Make the following amendments to said Section:

(l) **Replace Section 770 — Traffic Signal Materials in its entirety:**

770.01 Traffic Management Center (TMC)

(A) The TMC shall;

(1) Have all servers and necessary hardware to operate existing Centracs software, be server based with cloud backup, and maintained by the supplier. Troubleshooting, repair, and maintenance of the TMC shall be the responsibility of the supplier for the duration of the contract.

(2) Have a platform that allows remote access.

(3) Communicate to the latest version of the current controller software for the life of the system. The existing system consists of 32 Cobalt controllers. The Contractor shall incorporate any additional controllers in the existing system if needed.

(4) Have a Warranty period of five (5) years that begins upon final acceptance by the State. Warranty to include the following:

a. Servicing of system/replacement of any parts necessary until the end of the warranty period. Hardware replacement shall be completed within 7 calendar days of notification. If a Contractor is needed, this cost shall be considered incidental to this work.

b. Offer an additional three (3), twelve (12) month renewal periods.

c. Training shall be available in the application design, operation, and setup of the TMC Software. Full client technical support shall be available for the duration of the warranty period. Client support shall respond within 24 hours of notification.

(5) The system shall support launching EDI conflict monitor.

(B) TMC Hardware shall;

(1) Include all necessary components to optimize the full operation of the Centracs software. All wiring for the TMC shall be concealed as best as possible.

(2) The Traffic Management Center (TMC) shall consist of:

a. One (1) core server

1. The core server located at the Kauai Baseyard Traffic Signal Technician office shall be relocated to the HWY-K server room.

b. One (1) database server

1. The database server shall be rack-based and installed in the HWY-K server room.

2. The database server shall be rack-based.

c. Two (2) workstations

1. Workstations shall include all necessary hardware such as, but not limited to, keyboard, mouse, cables, etc.

d. One (1) mobile workstation

e. Four (4) wall-mounted monitors

1. Three (3) monitors shall be installed in the main Traffic Management Center (TMC) room.

i. Monitors shall include all necessary mounting hardware and be sized to optimize the length of the display wall shown in Figure 2 upon approval by the Engineer.

2. One (1) monitor shall be installed in the District Engineer office room.

i. Monitor shall include all necessary mounting hardware and be sized at a minimum of 75” upon approval by the Engineer.

770.02 Signal Performance Measures (SPM)

(A) The Signal Performance Measure (SPM) shall;

(1) Be a cloud-based traffic, web-hosted data collection and analytics software.

(2) Provide the means to compare various performance metrics over user definable date ranges providing tabular comparison results with indications of improvement or degradation of the performance scores.

(3) Collect and analyze “High-Resolution” data which shall be gathered from traffic controllers

(4) Be compatible with existing Cobalt controllers and Centracs software.

(5) Provide all services and software necessary for retrieving high-resolution controller data. The “On-Premise” data collection service shall push the data to the cloud host for storage and processing.

(6) Collect controller level high-resolution data via FTP or other protocols from the controllers, or through SQL data queries to a Centracs database licensed to store high-resolution data.

(7) Have communication of high-resolution data to the cloud host be performed via a “push” the cloud host from the On-premise data service. The On-premise data service shall not require an inbound port for these communications.

(9) User Management

a. The system shall support authentication of individual users via user names and passwords.

b. The system shall not limit the number of user accounts that can be created to allow and grant access.

c. The system shall employ https to ensure user login names and passwords are encrypted prior to transmitting them over the internet.

(10) General Display Features

a. The user web interface shall consist of a front-page dashboard providing an overview of general traffic system health.

b. The system shall be capable of showing locations for degraded signal performance as a ‘Heat Map’.

c. Dashboard views shall include an indication of overall system health or performance.

d. The dashboard shall provide a list of signals with possible performance concerns.

(11) Map Display

a. The system shall incorporate a map view.

b. The map shall provide heat-map views that highlight problem areas.

c. The map shall allow a user to zoom and pan to identify specific intersections in more detail.

d. The user shall be able to click on an intersection to drill down to access a variety of SPM charts relating to the intersection.

e. The map shall include a control to be enable/disable the following layers: heat map, travel times, incidents, individual signal status icons and counting stations.

(12) Be able to compare specific SPM metrics between two date ranges.

(13) Detector Diagnostic Analysis

a. The system shall be capable of providing a separate list of intersections with degraded detector performance.

b. The system shall apply statistical data science in analyzing detector performance in order to identify detectors that may not be fully operational.

(14) Arrivals on Green

a. The system shall track and report metrics relating to the volumes of traffic arriving at an intersection during the green interval.

b. The system shall provide an Arrival on Green chart, which graphs the volume (vehicles per hour), volume of vehicles arriving at the intersection on green and the percent of vehicles arriving on green for each cycle during a 1-day/24-hour period.

c. The system shall provide the Arrivals on Green chart for each phase of a signal that meets detection requirements.

(15) Pedestrian Events

a. The system shall track and report metrics relating to pedestrian activity at each intersection.

b. The system shall provide a Pedestrian Delays chart, which graphs cycles during the day that experiences a pedestrian actuation on a phase. The chart will indicate the time during the day when the event took place and the amount of delay introduced by the pedestrian actuation.

c. The system shall provide the Pedestrian Delays chart for individual approaches of a signal or as a combined report for al approaches of a signal.

(16) Power Failures

a. The system shall track and report metrics relating to power failures.

b. The system shall highlight individual intersections and corridors that have experienced power failures over a user specified date

(17) Preemption Events

a. The system shall track and report metrics relating to preemption.

b. The system shall provide a table, which indicates each preemption event, the start time, and duration and cause of transition for a selected intersection.

c. The system shall provide preemption information on a corridor level and signal level indicating the total amount of time spent in preemption, average preemption

duration, total number of preemption requests and total number of preemptions serviced.

(18) Incident Reports

a. The system shall display a list of incidents that have been detected. It shall categorize these incidents by type (congestion, construction, etc.) and include the number of incidents of each type.

b. The system shall represent incidents on the map via an icon. The icon shall identify the type of incident

c. If the cursor is positioned over an incident icon, details of that incident shall be displayed in a tool tip.

d. The system shall also display the location of individual incidents in reverse chronological order (newest first). Clicking on an incident shall display the location of the incident on the map as well as the details of the incident such as type, length, priority and delay caused by the incident (if available).

e. Incident data shall be obtained from Microsoft Azure Maps Services Traffic API.

(19) Embedded Travel Time

a. The system shall include a package to utilize GPS for measuring travel time.

b. The system map shall display travel time information where available. Roadway links shall be color-coded to indicate whether travel times are normal, slower or much slower.

c. Travel time data shall be obtained from Microsoft Azure Maps Services Route API

(20) Purdue Coordination Diagram (PCD) Report

a. The system shall provide a PCD, which graphs the volume (vehicles per hour), start of green, start of yellow, and start of red along with predicted vehicle arrivals based on detector actuations during each cycle throughout a day.

b. The system shall provide the PCD chart for each

coordinated phase of a signal that meets detection requirements.

(21) ROR_5/GOR

a. The system shall provide an ROR_5/GOR chart, which can be used to identify split failures when the ROR and GOR are both above 85% during the phase of a cycle. This scatter diagram shall cover all cycles for a phase during 1-day/24-hour period.

b. The system shall provide the ROR_5/GOR chart for each phase of a signal that meets detection requirements.

(22) Split Failures

a. The system shall track and report metrics relating to split failures.

b. The system shall provide a Split Failures Report for each phase, which plots by percentages the ROR and GOR phase terminations for each cycle during a day.

c. The system shall provide the Split Failures Report for each phase of a signal that meets detection requirements.

(23) Split Monitor Report

a. The system shall provide a Split Monitor chart, which, for each phase, plots by phase duration the phase termination reason for each cycle during the day. Reasons include Gap Out, Max Out, Force Off, Pedestrian call, and Unknown.

b. The system shall provide the Split Monitor chart for each phase of a signal that meets detection requirements.

(24) Transitions

a. The system shall provide a table, which indicates each transition event, the start time, duration and cause of transition for a selected signal.

b. The system shall provide transition information on a corridor level and signal level indicating the total amount of time spent in transition, average transition durations for Add, Subtract, Dwell, and combined transition types.

c. The system shall provide a signal level view of transitions allowing a user to investigate individual transition events.

d. For transitions due to pattern change, the report will also indicate the new pattern causing the transition.

e. For transitions due to Pedestrian events, the report will also indicate the phase for which the pedestrian transition was generated.

(25) Vehicle Delays

a. The system shall provide a vehicle delay chart, which, for each phase graphs the combined amount of time, in seconds for all detected vehicles over all cycles throughout the day.

b. This report shall include the average delay per vehicle and the total amount of day for the entire day.

c. The system shall provide the Vehicle Delay report for each phase of a signal that meets detection requirements.

(26) Volume/Capacity Ratio Report

a. The system shall provide a Volume/Capacity Ratio chart, which graphs the volume (vehicles per hour) against the theoretical capacity of the approach. Values are plotted for each cycle during a 1-day/24-hour period.

b. The system shall provide the Volume/Capacity Ratio chart for each phase of a signal that meets detection requirements.

(27) Volumes

a. The system shall report metrics relating to vehicle delays at the system, corridor and intersection levels.

(28) Service and Support

a. Service

1. SPM software shall be subscription-based with a service period of five (5) years.

b. Support

1. Training shall be available in application design, operation, and setup of the SPM software.

770.03 Cellular Communications

(A) Cellular Router shall;

(1) Include all hardware, antennae, and other components necessary to ensure communication between the controller and the TMC.

(2) Include a priority network service subscription from a cellular provider for a period of twenty-four (24) months. Cellular provider shall manage and service the router for the duration of the subscription period.

770.04 Conflict Monitoring Unit (CMU)

(A) Conflict Monitoring Unit shall be;

(1) An Eberle Design Inc. (EDI) model 2010ECLip Signal Monitor equal or better.

(2) Meets all requirements of the CalTrans "TSCE Specifications 1/89".

770.05 Video Detection System

This specification sets forth the minimum requirements for a video detection system that detects vehicles, bicycles, and motorcycles on a roadway by processing video images and that provides vehicle presence, traffic flow data, event alarms, and full-motion video for real-time traffic control and management systems.

(A) System Hardware

The video detection system shall be comprised of two major hardware components: a video sensor and a communications interface panel. An optional wired input/output card shall be available for certain cabinet types.

(1) Video Sensor

The video detection system shall include a video sensor that integrates a high-definition (HD) camera with an embedded processor for analyzing the video and performing detection.

a. Camera and Processor

1. The camera shall be a color CMOS imaging array.
2. The camera shall have HD resolution of at least 720p (1280x720 pixels).
3. The camera shall include a minimum 10X optical zoom.
4. It shall be possible to zoom the lens as required to satisfy across-the-intersection detection objectives, including stop line and advance detection.
5. It shall be possible to zoom the lens remotely from the TMC for temporary traffic surveillance operations or to inspect the cleanliness of the faceplate.
6. The camera shall have direct, real-time iris and shutter speed control by the integrated processor.
7. The processor shall support H.264 video compression for streaming output.

b. Video Sensor Enclosure Assembly

1. The camera and processor shall be housed in a sealed IP-67 enclosure.
2. The faceplate of the enclosure shall be glass and shall have hydrophilic coating on the exterior surface to reduce debris accumulation and maintenance.
3. The faceplate shall have a thermostatically-controlled indium tin oxide (ITO) heater applied directly on the interior surface to keep the faceplate clear of condensation.
4. An adjustable aluminum visor shall shield the faceplate from the sun and extraneous light sources.
5. An integral aiming sight shall assist in aiming the camera for the detection objectives.
6. A removable rear cap and cable strain relief shall seal the power connection.
7. The rear cap shall be tethered to the enclosure to avoid dropping the cap during installation.
8. The rear cap shall be fastened to the body of the video sensor with a single, captive bolt.
9. The rear cap and enclosure shall include Gore breathers to equalize internal and external pressure.

10. The sensor shall be self-supporting on manufacturer's mounting brackets for easier fastening during installation.

11. It shall be possible to rotate the field-of-view 360° without changing the angle of the visor.

c. Power and Communications

1. Power and communications for the video sensor shall be carried over a single three-conductor cable.

2. Termination of the three-conductor cable shall be inside the rear cap of the enclosure on a three-position, removable Phoenix terminal block. Each conductor shall be attached to the Phoenix plug via a screw connection.

3. The video sensor shall operate normally over an input voltage range of 89 to 265 VAC at 50 or 60 Hz.

4. Power consumption shall be no more than 16 watts typical.

5. No supplemental surge suppression shall be required outside the cabinet.

6. All communications to the video sensor shall be broadband-over-power via the same three-conductor cable that powers the unit. Coaxial cable shall not be required.

(2) Communications Interface Panel

The video detection system shall include an interface panel in the traffic cabinet that manages communications between the video sensors, the traffic management center (TMC), a maintenance technician, and the traffic cabinet itself.

a. Video Sensor Connection

1. The communications interface panel shall provide connection points for four video sensors.

   i. Each sensor connection shall be a 3-pole terminal block, which supplies power and broadband-over-power communications to the sensor.

   ii. The broadband-over-power communications shall provide a throughput of 70 to 90 Mbps.

   iii. The broadband-over-power connection shall support at least 1,000 feet of cabling to the video sensor.

iv. Each video sensor connection shall include a power switch.

v. There shall be an LED for each video sensor to indicate the state of the power to the sensor and an LED for each video sensor to indicate the status of communications.

vi. Each video sensor connection shall contain a resettable fuse.

vii. Each video sensor connection shall provide high-energy transient protection.

b. Traffic Management Center (TMC) Communications

1. An Ethernet port shall be provided to connect to a remote Traffic Management Center (TMC).

i. The TMC connection shall support 10/100/1000 Mbps Ethernet communication.

ii. A security protocol shall be set up to restrict communication to the main TMC and all components to prevent any unauthorized access.

iii. The communications interface panel shall proxy all network requests that arrive on the TMC connection to avoid unwanted network traffic from reaching the broadband-over-power network between the communications interface panel and the video sensors.

iv. All communications to the video detection system through the TMC connection shall be to a single IP address.

c. Local User Communications

1. A wired Ethernet port shall be provided to connect the technician at the cabinet to the video detection system for setup and maintenance purposes.

i. The maintenance port shall support 10/100/1000 Mbps Ethernet communication.

ii. All communications to the video detection system through the maintenance port shall be to a single IP address.

iii. The maintenance port shall support DHCP to automatically assign an IP address to the user's computer, if desired.

2. An 802.11g Wi-Fi access point shall allow wireless connection to the video detection system at the cabinet for setup and maintenance purposes.
    i. All communications to the video detection system through the Wi-Fi access point shall be to a single IP Address.
    ii. The Wi-Fi access point shall support DHCP to automatically assign an IP Address to the user's computer.
    iii. The Wi-Fi access point shall include a dipole, omnidirectional antenna.
    iv. A momentary pushbutton shall allow the user to turn the Wi-Fi access point on or off.
    v. The Wi-Fi access point shall turn itself off automatically after a period of inactivity from connected devices.
    vi. An LED shall indicate when the Wi-Fi access point is enabled.
    vii. The Wi-Fi access point shall operate simultaneously with the wired maintenance port and with the TMC connection.

d. Traffic Controller Connection

The communications interface panel shall provide one connection to communicate to the traffic controller through the cabinet.

1. The traffic controller connection shall support a TS2 Type 1 compatible SDLC interface.
    i. The traffic controller connector shall be a 15-pin female metal shell D sub-miniature type connector to support a standard NEMA TS2 or TEES SDLC cable.
    ii. The traffic controller connection shall support a protocol interface to SDLC-capable traffic controllers (NEMA or TEES).
    iii. The traffic controller connection shall support the NEMA TS2 SDLC protocol to include up to 64 detector outputs and 32 inputs.
2. The traffic controller connection shall be able to connect to a wired input/output card, which supports wired I/O in cabinets without a SDLC-capable controller.

i. The wired I/O data communications link shall support at least 24 outputs and 16 inputs.

ii. It shall be possible to connect and use both SDLC communications and communication to the wired input/output card simultaneously.

e. USB Ports

1. The communications interface panel shall include two USB 2.0 ports.

   i. If a communications interface panel fails to start and run due to a software or operating system failure, it shall be possible to reinstall all system and application software from a USB memory stick without necessitating removal of the communications interface panel from the cabinet.

f. Power

1. The communications interface panel shall accept input voltage in the range of 89-265 VAC, 50/60 Hz power from the transient-protected side of the cabinet.
2. The communications interface panel shall be protected by two slow blow fuses. Spares shall be attached to the panel.

(3) Wired Input/Output Card

The video detection system shall support an optional wired input/output card that communicates with the communications interface panel for real-time detection states and other I/O to the traffic controller. The card may reside in a standard detector rack or shelf-mount enclosure with power module.

a. The optional wired input/output card shall comply with the form factor and electrical characteristics to plug directly into a NEMA type C or D detector rack or Caltrans TEES Input File.

1. The card shall occupy two slots of the detector rack.
2. The card shall provide four detector outputs on its rear-edge connector.
3. A front connector shall provide communication to the communications interface panel.
4. A front connector shall allow 16 inputs and 24 contact-closure detector outputs for wiring into the cabinet.

i. A front panel LED for each of the 16 inputs and 24 outputs shall indicate the state of the input or output.

5. The wired input/output card shall support optional expansion cards in other slots. Each expansion card shall support 4 outputs to the back edge of the card.

6. The wired input/output card shall support optional harnesses for connection to Input Files or C1, C4, C11, and C12 ports to support Type 170 or Type 2070 controllers.

(B) System Software

The video detection system shall include management software for configuration, monitoring and data collection purposes.

(1) Management Software

a. Management software shall be a Windows-based application.

1. The software shall be compatible with Windows 7 and Windows 10 operating systems.

2. The software shall communicate with the video detection system via Ethernet.

b. The management software shall automatically determine all video sensors and communications interface panels available on the local network and populate a list of all devices.

c. The management software shall provide the user a means to name individual video sensors and communications interface panels.

d. The management software shall provide a means for the user to zoom the camera optics while viewing a live video stream.

e. The management software shall provide a means for the user to calibrate distances in the field of view.

f. The management software shall provide the user a means to create 4-sided detection zones in the field of view using either a still snapshot or live video.

1. The management software will overlay an outline of each detection zone over the background image.

2. It shall be possible for the user to place detection zones anywhere in the field of view for stop line detection and/or advance detection.

3. It shall be possible for the user to set the desired color of both the on and off states of the detection zone overlay.
4. It shall be possible for the user to alter the size and shape of any previously created zone.
5. It shall be possible for the user to overlap zones, either partially or fully.
6. It shall be possible for the user to name each zone uniquely.
7. It shall be possible for the user to assign each zone to detect vehicles, to detect bicycles, or to detect both, and to specify different outputs for each type.
8. It shall be possible for the user to assign the same output to multiple zones such that the output will be on if any of the zones are detecting a vehicle or bicycle.
9. It shall be possible for the user to assign a single zone to more than one output such that if a vehicle or bicycle is detected, all the assigned outputs shall be turned on.
10. The management software shall be capable of creating at least 99 detection zones per video sensor.

g. It shall be possible for the management software to retrieve all configuration parameters from video sensors or communications interface panels.

1. It shall be possible for the user to save all the settings for a video sensor or a communications interface panel to a laptop file.
2. The management software shall provide a means to read or import all the settings from a previously saved configuration file for a video sensor or a communications interface panel.

h. The management software shall be able to download a new version of the application software into a communications interface panel and its attached video sensors.

i. The management software shall provide a screen to monitor operation of a video sensor.

1. The monitoring screen shall include a live video stream from the video sensor with at least HD 1280x720 pixel resolution.
2. The monitoring screen shall show indications of detection in real time by changing the color of the detection zone.

3. It shall be possible for the user to configure different indications for vehicle detections vs. bicycle detections when both are configured for the same zone.

4. The monitoring screen shall include the following optional, configurable objects. It shall be possible for the user to size and position them anywhere on the screen and to change the color and size of text.

    i. An indication of when an output is on or off, along with a user-configurable name for that indicator.

    ii. The current time in the video sensor.

    iii. A user-configurable title or name.

    iv. The version number of the video sensor software.

5. It shall be possible for the user to turn the overlay graphics on or off with a single setting.

j. The management software shall provide a screen to monitor operation of the intersection with a quad-view video stream from the communications interface panel.

1. The quad-view video stream shall have a resolution of at least HD 1280x720 pixels, where each of the sensor videos comprising the quad-view shall be at least 640x360 pixels.

2. It shall be possible for the user to configure the order that the sensor videos appear in the quad-view.

3. The real-time quad-view video stream shall be capable of displaying the overlay graphics for all four sensors simultaneously.

k. While monitoring the video of a single video sensor or of the quad-view, it shall be possible for the user to request a "snapshot" or single-frame image to save to a named file on a laptop.

l. While monitoring the video of a single video sensor or of the quad-view, it shall be possible for the user to record a period of the video to save to a named file on a laptop.

(C) System Functionality

The video detection system shall provide the following features and functionality.

(1) Detection Performance

a. The video detection system shall detect the presence of vehicles in defined zones and turn on the assigned output when the vehicle is present in the zone.

1. Stop Line Detection

   i. For detection zones placed at the stop line, the probability of not detecting the presence of a vehicle shall be 1% or less under all operating conditions when the video sensor is installed and configured properly.

   ii. For detection zones placed at the stop line, the probability of falsely detecting a vehicle that is not present shall be 3% or less under all operating conditions when the video sensor is installed and configured properly.

2. Advance Detection

   i. It shall be possible to place advance detector zones such that the farthest point of the zone is up to 600 feet from the video sensor. Advance detector zone placement shall include 2-3 car lengths of field-of-view beyond the farthest point of the zone.

b. To ensure statistical significance for the above detection performance specifications, the data shall be collected over 24-hour time intervals (so as to avoid a single lighting condition) and will contain a minimum of one hundred (100) vehicles per lane. The calculations of detection performance will not include turning movements where vehicles do not pass through the detectors, vehicle lane-change anomalies, or where they stop short or stop beyond the combined detection zones.

(2) Failsafe Mode

a. The video detection system shall provide a failsafe mode for each video sensor. If the failsafe mode is enabled, all programmed presence detection outputs for the video sensor shall be turned on, thus placing constant calls to the controller. When failsafe mode is disabled, all outputs revert to normal on/off operations.

b. The video sensor shall continuously monitor the overall contrast in the video. If the overall contrast falls below a preset level (such as caused by dirty faceplate, severe

glare, or extreme fog on the faceplate), the sensor shall enable the failsafe mode. When sufficient contrast is restored in the video, the sensor will disable the failsafe mode.

c. The communications interface panel shall continuously monitor the connectivity status of the attached video sensors. If any video sensor goes offline due to either electrical failure or internal software failure, the communications interface panel shall enable the failsafe mode for that video sensor. If the video sensor comes back online, failsafe mode shall be disabled.

(3) Data Collection

a. The video detection system shall automatically collect and store traffic flow data in non-volatile memory for later retrieval and analysis. No additional hardware or software shall be necessary. The data shall include:

1. Vehicle counts per phase.
2. Vehicle average speeds.

b. All data shall be stored in a cloud-based storage indefinitely.

c. The management software shall be able to retrieve collected data for a specified period of time or for all currently stored data and save into a standard CSV file.

(4) Operations Log

a. The communications interface panel and each video sensor shall maintain a time-stamped operations log of routine and special events in non-volatile memory for later retrieval and analysis.

(5) Time Synchronization

a. The video detection system and management software shall provide three methods to synchronize the time of day clocks in the communication interface panel and the video sensors, as follows:

1. Manual time synchronization operation by the user, which sets the time to the current time on the laptop where the management software is running.
2. A configuration setting to allow the communications interface panel to automatically obtain time from the NEMA TS2 protocol on the SDLC channel and broadcast it to the video sensors.

3. A configuration setting to allow the communications interface panel to automatically obtain time from up to five Network Time Protocol (NTP) sources and broadcast it to the video sensors.

(6) Video Streaming

In addition to the ability to view video streams in the management software, it shall be possible to view video from individual sensors or to view the quad-view from the communications interface panel using a third-party video player application on a tablet, smartphone or laptop computer.

(D) Installation and Setup

The video detection system hardware shall be designed for flexible, fast and easy installation and setup.

(1) It shall be possible to mount the video sensor on an intersection pole, mast arm, or luminaire arm.

(2) No special tools or extra equipment, other than a laptop for configuration, will be required.

(3) Once all hardware is installed, connected and functional, it shall be possible to configure the video detection system for a typical 4-approach, 8-phase intersection in 15 minutes or less.

(E) Warranty, Service and Support

The video detection system shall be provided with the following warranty, service and support options.

(1) Warranty

a. The manufacturer shall warrant the video detection system for a minimum of three (3) years that begins upon final acceptance by the State. An option for up to six (6) years of warranty shall be available.

(2) Service

b. Ongoing software support by the manufacturer will include software updates of the video sensor, communications interface panel, and management software. These updates will be provided free of charge during the warranty period. The manufacturer will maintain a program for technical support and software updates following expiration of the warranty period. This program will be available to the

contracting agency in the form of a separate agreement for continuing support.

(3) Support

a. A quick-start guide, installation guide, application notes, and other materials shall be available from the manufacturer to assist in product installation and setup for various applications. In addition, training online or in person shall be available.

b. Training shall be available in application design, operation, setup, and maintenance of the video detection system.

c. Manufacturer shall provide a tech support website and an 800 number for technical support.

END OF SECTION 770

PROPOSAL TO THE

STATE OF HAWAII

DEPARTMENT OF TRANSPORTATION

PROJECT: **TRAFFIC MANAGEMENT CENTER**
ISLAND OF KAUAI

PROJECT NO.: **HWY-K-03-18**

COMPLETION TIME: **120 Working Days from the Start Work Date**

DESIGN PROJECT MANAGER:

NAME:	**Eric I. Fujikawa**
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MINUTES OF THE PRE-BID MEETING

PROJECT: Traffic Management Center
Island of Kauai

PROJECT NO.: HWY-K-03-18

LOCATION: Microsoft Teams video conference

DATE & TIME: May 27, 2020 at 10:00 A.M.

IN ATTENDANCE:

Jeff Aguinaldo	HDOT-HWY-K
Eric Fujikawa	HDOT-HWY-K
Larry Dill	HDOT-HWY-K
Edward (Rusty) Lantry	HDOT-HWY-K
Ryan Adachi	Paul's Electrical Contracting, LLC
Neal Adachi	Paul's Electrical Contracting, LLC
Paul Adachi	Paul's Electrical Contracting, LLC
Jamie Okazaki	The Audio Visual Company
Cody Navarro	The Audio Visual Company
Keoni Wasano	Goldwing Supply Service, Inc.
Syed Shah	Shah and Associates
Danny Smoot	Phoenix Pacific Inc.

The meeting started at 10:00 A.M. Project Engineer, Jeff Aguinaldo began the meeting with an introduction and gave a brief overview of the project.

Anything said at this meeting is for clarification purposes only, the bid documents shall govern over anything said today and discrepancies shall be clarified by addendum.

All questions that resulted from this meeting were directed to be submitted through HIePRO and will be formally answered through the addendum.

<u>The following questions were raised at the meeting:</u>

Question #1: What kind of furniture is required for the Traffic Management Center room? Free Standing, prefabricated?

Response: We will specify this in the upcoming addendum.

Question #2: What is the current contract time for this project?

Response: The contract time is set for 120 Working Days.

Question #3: Are there any drawings that show the electrical system of the Traffic Management Center room?

Response: Yes, we will provide as-builts of the room in the next addendum.

Question #4: Will we have to work your IT department to configure the system?

Response: Yes, will clarify in the addendum.

The minutes of the meeting will be distributed in Addendum No. 1 on the Contract Plans. Contractors will be notified via HIePRO when the addendum will be available.

Traffic Management Center, Island of Kauai
Project No. HWY-K-03-18

Pre-Bid Meeting 5/27/2020, 10:00 AM, Microsoft Teams Video Conference