

IFB-14-HHL-001
East Kapolei II Development, Increment IIB
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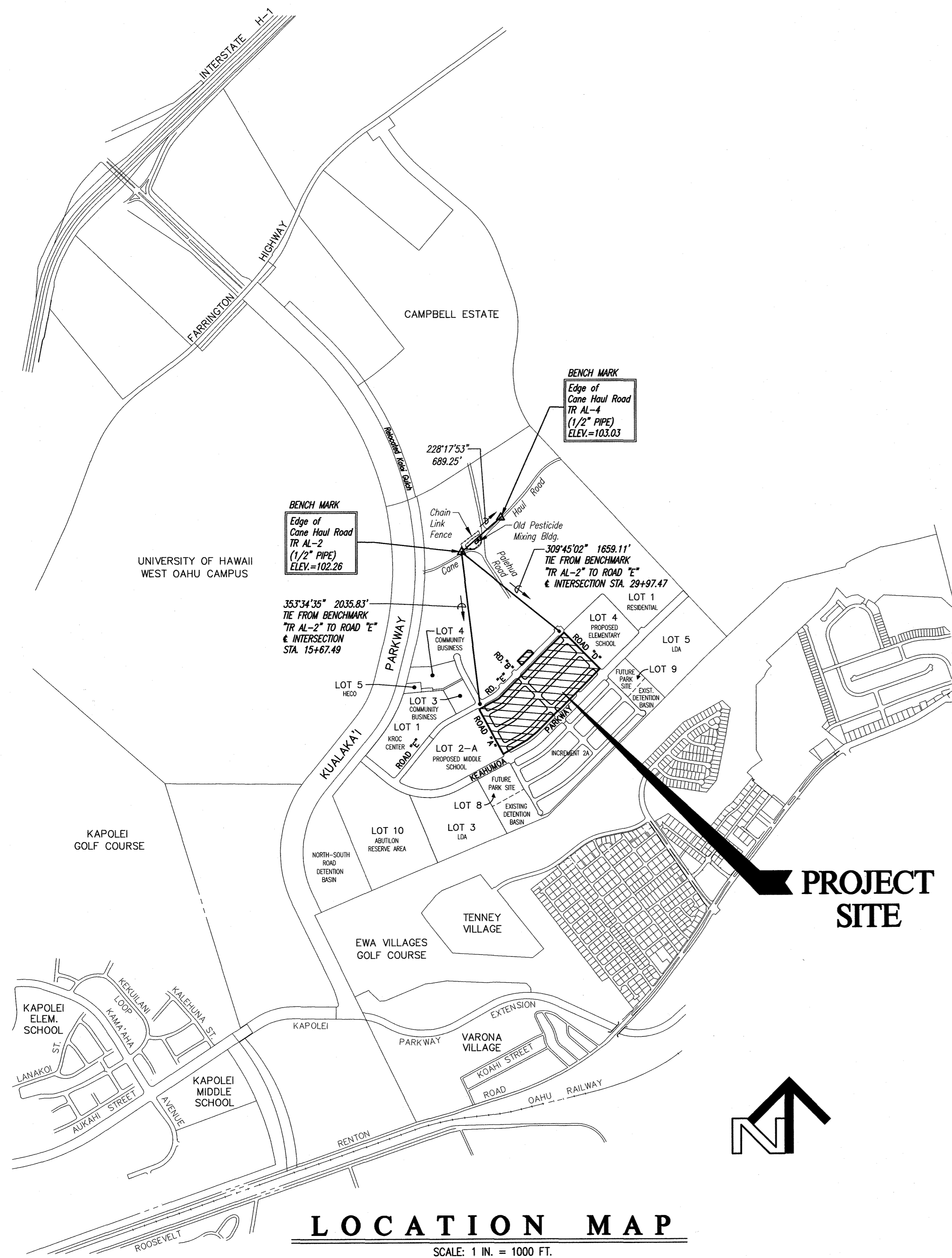
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CONSTRUCTION PLANS FOR EAST KAPOLEI II DEVELOPMENT INCREMENT 2B

HONOULIULI, EWA, OAHU, HAWAII

(DPP SUBD. FILE NO. 2011/SUB-155)

OWNER & DEVELOPER: DEPARTMENT OF HAWAIIAN HOME LANDS

TAX MAP KEY: 9-1-17: Portion 110



Community Planning and Engineering, Inc.
Engineering Design | Construction Management | Infrastructure Planning
1286 Queen Emma Street
Honolulu, Hawaii

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APPROVED

gh1 Muzoti

CHAIRMAN, HAWAIIAN HOMES COMMISSION
DEPARTMENT OF HAWAIIAN HOME LANDS
STATE OF HAWAII

6/17/13
DATE

M. J. Lee
DIRECTOR, DEPARTMENT OF PLANNING AND PERMITTING
CITY & COUNTY OF HONOLULU

7/16/2013
DATE

Joanna O'Neil
MANAGER AND CHIEF ENGINEER, BOARD OF WATER SUPPLY M.V., CO.
CITY & COUNTY OF HONOLULU
(FOR WORK AFFECTING BWS FACILITIES IN CITY/STATE
RIGHT-OF-WAY AND BWS EASEMENTS ONLY)

9-20-2013
DATE

Joanna O'Neil
CITY & COUNTY OF HONOLULU

DATE

Joanna O'Neil
CHIEF ENVIRONMENTAL MANAGEMENT DIVISION
DEPARTMENT OF HEALTH, STATE OF HAWAII

5-15-13
DATE

Advertisement for Bids

Owner: Department of Hawaiian Home Lands
Address: P.O. Box 1879
Honolulu, Hawaii 96805

Sealed Bids for IFB-14-HHL-001 for the construction of on-site infrastructure and lot grading for East Kapolei Development, Increment IIB Subdivision, Honouliuli, Ewa, Oahu, Hawaii (TMK: 9-1-17: portion 110) will be received by the Department of Hawaiian Home Lands (DHHL), Land Development Division at the 91-5420 Kapolei Parkway, Kapolei, Hawaii 96707 until **2:00 p.m., Hawaii Standard Time, February 5, 2014**, and then at said office publicly opened and read aloud. Bids received after the time fixed for opening or delivered elsewhere other than specified herein, will not be considered.

The project covered by this solicitation is lot grading and construction of roads and appurtenant utility improvements for a 160-lot residential subdivision in East Kapolei, as set forth in the plans and specifications. The project consists of three portions: (1) DHHL Work, consisting of lot grading, roadway, mailbox center, drainage system, traffic control, and exterior electrical work; (2) Na Kupaa Work, consisting of sewer and water system work; and (3) Sandwich Isle Communications ("SIC") Work, consisting of telecommunications infrastructure work. These three portions of work are set forth on pages 4 to 26 of the Bid Form.

It is in the best interests of the State for one contractor to be responsible for construction on the Project. Therefore, a single bidder shall be selected to perform all three portions of work identified in the plans and specifications. The winning responsive and responsible bidder shall have the lowest, combined bid for all three portions of work.

The winning bidder shall be required to enter into three separate contracts for the Project: (1) a contract with the State of Hawaii, Department of Hawaiian Home Lands covering the DHHL Work; (2) a contract with Na Kupaa o Kuhio for the Na Kupaa Work; and (3) a contract with Sandwich Isle Communications for the SIC Work. The contract amounts shall be as set forth in the bids for those respective portions of work. The contracts shall be in forms substantially similar to those included in the Bid Documents, subject to any additional State and Federal requirements that may apply.

The Contract Documents may be examined at the following location:
DHHL at Hale Kalaniana'ole, 91-5420 Kapolei Parkway, Kapolei, Hawaii 96707

A file containing the Bidding Documents, construction plans, specifications, instructions, terms and conditions, and geotechnical report may be downloaded from the DHHL website: <http://www.hawaiianhomelands.org/procurement/> on or after January 6, 2014.

A PRE-BID INFORMATIONAL MEETING will be held on Wednesday, January 15, 2014 at 9:00 a.m., at the DHHL offices at 91-5420 Kapolei Parkway, Kapolei, Hawaii 96707. A PROJECT-SITE VISIT shall be conducted immediately following the informational meeting. All potential interested bidders, offerors, subcontractors, and union representatives are invited to attend. Attendance by potential interested bidders is mandatory. Persons needing special

accommodations due to a disability may contact DHHL Land Development Division via facsimile at (808) 620-9299.

Written NOTICE OF INTENT TO BID is required and must be received by the DHHL, Land Development Division, no later than ten (10) days prior to the date/time advertised for opening of bids. Submittal of Notice of Intent to Bid by facsimile at (808) 620-9299 is acceptable.

To be eligible to submit a bid, the Bidder and/or his subcontractors must possess all required valid State of Hawaii licenses and specialty licenses needed to perform the work for this project. A surety bid bond will be required for this IFB.

This project is subject to Section 103D, Hawaii Revised Statutes, to the requirements for Equal Employment Opportunity, and to the payment of not less than the prevailing salaries and wages promulgated by the State of Hawaii, Department of Labor and Industrial Relations.

A properly executed and notarized STANDARD QUALIFICATION QUESTIONNAIRE FOR OFFERORS SPO-21 form ("Questionnaire"), must be submitted to the DHHL for evaluation no later than ten (10) working days prior to the date advertised for the opening of bids. The Questionnaire can be downloaded at the State Procurement Office website: www.spo.hawaii.gov, under Forms for Vendors/Contractors.

This solicitation is subject to Section 103D-1002, Hawaii Revised Statutes (HRS), regarding preference for Hawaii products. For products not currently on the Hawaii products list, the manufacturers and producers must complete and submit form SPO-38 to DHHL. The form must be received by DHHL no later than 2:00 p.m., January 22, 2014. Submittal by facsimile (808 620-9299) or e-mail (darrell.h.ing@hawaii.gov) is acceptable.

Bids must comply with the requirements of the IFB. Bids that do not comply with the IFB may be subject to disqualification. DHHL reserves the right to amend the IFB by written addenda, to reject any and all proposal or to waive any defects in said proposals where DHHL deems it is in the best interest of the State.

Questions regarding this project may be directed in writing to Darrell Ing, DHHL Land Development Division, P.O. Box 1879, Honolulu, HI 96805, via fax at (808) 620-9299, or by e-mail to darrell.h.ing@hawaii.gov.

DEPARTMENT OF HAWAIIAN HOME LANDS



Jobie M. K. Masagatani, Chairman
Hawaiian Homes Commission

Posted on the internet at: www.spo.hawaii.gov

Instructions to Bidders

Overview of Solicitation

The project covered by this solicitation is lot grading and construction of roads and appurtenant utility improvements for a 160-lot residential subdivision in East Kapolei, Oahu. The project consists of three portions: (1) DHHL Work, consisting of mass grading, roadway, drainage system, traffic control, and exterior electrical work; (2) Na Kupaa Work, consisting of sewer and water system work; and (3) Sandwich Isle Communications (“SIC”) Work, consisting of telecommunications infrastructure work. These three portions of work are set forth on pages 4 to 26 of the Bid Form.

It is in the best interests of the State for one contractor to be responsible for construction of the Project. Therefore, a single bidder shall be selected to perform all three portions of work identified in the plans and specifications. The winning responsive and responsible bidder shall have the lowest, combined bid for all three portions of work.

The winning bidder shall be required to enter into three separate contracts for the Project: (1) a contract with the State of Hawaii, Department of Hawaiian Home Lands covering the DHHL Work; (2) a contract with Na Kupaa o Kuhio for the Na Kupaa Work; and (3) a contract with Sandwich Isle Communications for the SIC Work. The contract amounts shall be as set forth in the bids for those respective portions of work. The contracts shall be in forms substantially similar to those included in the Bid Documents, subject to any additional State and Federal requirements that may apply. Unless specified otherwise, references to sections of the Contract, General Conditions, or Supplementary Conditions mean those for the contract for the Na Kupa work.

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ARTICLE 1 - DEFINED TERMS

- 1.01 Terms used in these Instructions to Bidders will have the meanings indicated in the General Conditions (EJCDC C-700) and Supplementary Conditions. Additional terms used in these Instructions to Bidders have the meanings indicated below:

A. Issuing Office--The office from which the Bidding Documents are to be issued and where the bidding procedures are to be administered.

ARTICLE 2 - COPIES OF BIDDING DOCUMENTS

- 2.01 A file containing the Bidding Documents, construction plans, specifications, instructions, terms and conditions, and geotechnical report may be downloaded from the DHHL website: <http://hawaiianhomelands.org/procurement/> on or after January 6, 2014.
- 2.02 Complete sets of Bidding Documents must be used in preparing Bids; neither Owner nor Engineer assumes any responsibility for errors or misinterpretations resulting from the use of incomplete sets of Bidding Documents.
- 2.03 Owner and Engineer in making copies of Bidding Documents available on the above terms do so only for the purpose of obtaining Bids for the Work and do not confer a license or grant for any other use.

ARTICLE 3 - QUALIFICATIONS OF BIDDERS

- 3.01 Prospective Bidders must be capable of performing the work for which bids are invited, and must be capable of entering into a public contract of \$25,000 (twenty five thousand dollars) or more.
- 3.02 Notice of Intention to Bid
- A. In accordance with Section 103D-310, Hawaii Revised Statutes, and Section 3-122-108, Hawaii Administrative Rules, a written notice of intention to bid must be submitted to the Chairman, who is the officer charged with letting the contract. The notice may be faxed, hand carried or mailed to the office indicated in the Notice to Contractors.

- B. The written notice must be received by the office indicated in the Notice to Contractors no later than 2:00 p.m. on the 10th calendar day prior to the day designated for opening bids. If the 10th calendar day prior to the day designated for opening bids is a Saturday, Sunday, or legal State holiday, then the written notice must be received by the Department no later than 2:00 p.m. on the last working day immediately prior to said Saturday, Sunday, or legal State holiday. The written notice will be time stamped when received by said office. The time designated by the time stamping device in said office shall be official. If the written notice is hand carried, then the bearer is responsible to ensure that the notice is time stamped by said office. If the notice is faxed, the time of receipt by the Department fax machine shall be official.
- C. It is the responsibility of the prospective Bidder to ensure that the written notice of intention to bid is received in time and the Department assumes no responsibility for failure of timely delivery caused by the prospective Bidder or by any method of conveyance chosen by the prospective Bidder.
- D. If two (2) or more prospective Bidders desire to bid jointly as a joint venture on a single project, they must file an affidavit of joint venture with their notice of intention to bid. Such affidavit of joint venture will be valid only for the specific project for which it is filed. No further license is required when all parties to the joint venture possess current and appropriate contractor's licenses. Joint ventures are required to be licensed in accordance with Chapter 444 of the Hawaii Revised Statutes, as amended, and the rules and regulations of the Contractor's License Board when any party to the joint venture agreement does not hold a current or appropriate contractor's license. The joint venture must be registered with the office of the Director of Commerce and Consumer Affairs in accordance with Chapter 425 of the Hawaii Revised Statutes, as amended.
- E. No persons, 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 any payment owed to the State of Hawaii or any of its political subdivisions or is in default of any obligation to the State of Hawaii or to all or to any of its political subdivisions, including default as a surety or failure to perform faithfully and diligently any previous contract with the Department.

3.03 STANDARD QUALIFICATION QUESTIONNAIRE FOR OFFERORS

- A. Prospective Bidders shall submit answers to questions contained in the STANDARD QUALIFICATION QUESTIONNAIRE FOR OFFERORS (SPO Form-21), 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, no later than 2:00 p.m. on the tenth calendar day prior to the day designated for opening bids. If the tenth calendar day prior to the day designated for opening bids is a Saturday, Sunday, or legal State holiday, then the questionnaire

must be received by the Department no later than 2:00 p.m. on the last working day immediately prior to said Saturday, Sunday, or legal State holiday. The questionnaire will be time stamped when received by said office. The time designated by the time stamping device in said office shall be official. If the questionnaire is hand carried, then the bearer is responsible to ensure that the notice is time stamped by said office. E-mail and facsimile (FAX) transmissions are not acceptable in whole or in part, under any circumstances. If the information in the questionnaire proves satisfactory, the Bidder's proposal will be received. All information contained in the answers to the questionnaire shall be kept confidential. The questionnaire will be returned to the Bidder after it has served its purpose.

- B. If upon review of the Questionnaire, or otherwise, the Bidder appears not fully qualified or able to perform the intended work, the Chairman shall, after affording the 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 to consider any bid offered by the prospective Bidder.
- C. Failure to complete and submit the prequalification questionnaire by the designated deadline will be sufficient cause for the Department to disqualify a prospective Bidder.

ARTICLE 4 - EXAMINATION OF BIDDING DOCUMENTS, OTHER RELATED DATA, AND SITE

4.01 Subsurface and Physical Conditions

- A. The Supplementary Conditions identify:
 - 1. Those reports of explorations and tests of subsurface conditions at or contiguous to the Site that Engineer has used in preparing the Bidding Documents.
 - 2. Those drawings of physical conditions in or relating to existing surface and subsurface structures at or contiguous to the Site (except Underground Facilities) that Engineer has used in preparing the Bidding Documents.
- B. Copies of reports and drawings referenced in paragraph 4.01.A will be made available by Owner to any Bidder on request. Those reports and drawings are not part of the Contract Documents, but the "technical data" contained therein upon which Bidder is entitled to rely as provided in paragraph 4.02 of the General Conditions has been identified and established in paragraph 4.02 of the Supplementary Conditions. Bidder is responsible for any interpretation or conclusion Bidder draws from any "technical data" or any other data, interpretations, opinions, or information contained in such reports or shown or indicated in such drawings.

4.02 Underground Facilities

- A. Information and data shown or indicated in the Bidding Documents with respect to existing Underground Facilities at or contiguous to the Site is based upon information and data furnished to Owner and Engineer by owners of such Underground Facilities, including Owner, or others.

4.03 Hazardous Environmental Condition

- A. The Supplementary Conditions identify those reports and drawings relating to a Hazardous Environmental Condition identified at the Site, if any, that ENGINEER has used in preparing the Bidding Documents.
- B. Copies of reports and drawings referenced in paragraph 4.03.A will be made available by Owner to any Bidder on request. Those reports and drawings are not part of the Contract Documents, but the “technical data” contained therein upon which Bidder is entitled to rely as provided in paragraph 4.06 of the General Conditions has been identified and established in paragraph 4.06 of the Supplementary Conditions. Bidder is responsible for any interpretation or conclusion Bidder draws from any “technical data” or any other data, interpretations, opinions, or information contained in such reports or shown or indicated in such drawings.

4.04 Provisions concerning responsibilities for the adequacy of data furnished to prospective Bidders with respect to subsurface conditions, other physical conditions and Underground Facilities, and possible changes in the Bidding Documents due to differing or unanticipated conditions appear in paragraphs 4.02, 4.03, and 4.04 of the General Conditions. Provisions concerning responsibilities for the adequacy of data furnished to prospective Bidders with respect to a Hazardous Environmental Condition at the Site, if any, and possible changes in the Contract Documents due to any Hazardous Environmental Condition uncovered or revealed at the Site which was not shown or indicated in the Drawings or Specifications or identified in the Contract Documents to be within the scope of the Work appear in paragraph 4.06 of the General Conditions.

4.05 (Reserved)

4.06 Additional Owner Provided Information:

- A. Reference is made to Article 7 of the Supplementary Conditions for the identification of the general nature of other work that is to be performed at the Site by Owner or others (such as utilities and other prime contractors) that relates to the Work contemplated by these Bidding Documents. On request, Owner will provide to each Bidder for examination access to or copies of Contract Documents (other than portions thereof related to price) for such other work.
- B. Paragraph 6.13.C of the General Conditions states that if an Owner safety program exists it will be noted in the Supplementary Conditions.

4.07 It is the responsibility of each Bidder before submitting a Bid to:

- A. Examine and carefully study the Bidding Documents, the other related data identified in the Bidding Documents, and any Addenda;
- B. Visit the Site and become familiar with and satisfy Bidder as to the general, local, and Site conditions that may affect cost, progress, and performance of the Work;
- C. Become familiar with and satisfy Bidder as to all Federal, State, and local Laws and Regulations that may affect cost, progress, or performance of the Work;
- D. Carefully study all: (1) reports of explorations and tests of subsurface conditions at or contiguous to the Site and all drawings of physical conditions in or relating to existing surface or subsurface structures at or contiguous to the Site (except Underground Facilities) which have been identified in the Supplementary Conditions as provided in paragraph 4.02 of the General Conditions, and (2) reports and drawings of Hazardous Environmental Conditions at the Site which have been identified in the Supplementary Conditions as provided in paragraph 4.06 of the General Conditions;
- E. Obtain and carefully study (or accept consequences for not doing so) all additional or supplementary examinations, investigations, explorations, tests, studies, and data concerning conditions (surface, subsurface, and Underground Facilities) at or contiguous to the Site which may affect cost, progress, or performance of the Work or which relate to any aspect of the means, methods, techniques, sequences, and procedures of construction to be employed by Bidder, including applying any specific means, methods, techniques, sequences, and procedures of construction expressly required by the Bidding Documents, and safety precautions and programs incident thereto;
- F. Agree at the time of submitting its Bid that no further examinations, investigations, explorations, tests, studies, or data are necessary for the determination of its Bid for performance of the Work at the price(s) bid and within the times and in accordance with the other terms and conditions of the Bidding Documents;
- G. Become aware of the general nature of the work to be performed by Owner and others at the Site that relates to the Work as indicated in the Bidding Documents;
- H. Correlate the information known to Bidder, information and observations obtained from visits to the Site, reports and drawings identified in the Bidding Documents, and all additional examinations, investigations, explorations, tests, studies, and data with the Bidding Documents;
- I. Promptly give Engineer written notice of all conflicts, errors, ambiguities, or discrepancies that Bidder discovers in the Bidding Documents and confirm that the written resolution thereof by Engineer is acceptable to Bidder; and

- J. Determine that the Bidding Documents are generally sufficient to indicate and convey understanding of all terms and conditions for the performance of the Work.
- 4.08 The submission of a Bid will constitute an incontrovertible representation by Bidder that Bidder has complied with every requirement of this Article 4, that without exception the Bid is premised upon performing and furnishing the Work required by the Bidding Documents and applying any specific means, methods, techniques, sequences, and procedures of construction that may be shown or indicated or expressly required by the Bidding Documents, that Bidder has given Engineer written notice of all conflicts, errors, ambiguities, and discrepancies that Bidder has discovered in Bidding Documents and the written resolutions thereof by Engineer are acceptable to Bidder, and that the Bidding Documents are generally sufficient to indicate and convey understanding of all terms and conditions for performing and furnishing the Work.

ARTICLE 5 - PRE-BID CONFERENCE

- 5.01 A pre-Bid conference will be held at 9:00 a.m. on January 15, 2014 at the DHHL offices at 91-5420 Kapolei Parkway, Kapolei, Hawaii 96707. Representatives of Owner and Engineer will be present to discuss the Project. Bidders are required to attend and participate in the conference. Engineer will transmit to all prospective Bidders of record such Addenda as Engineer considers necessary in response to questions arising at the conference. Oral statements may not be relied upon and will not be binding or legally effective.

ARTICLE 6 - SITE AND OTHER AREAS

- 6.01 The Site is identified in the Bidding Documents. Easements for permanent structures or permanent changes in existing facilities are to be obtained and paid for by Owner unless otherwise provided in the Bidding Documents. All additional lands and access thereto required for temporary construction facilities, construction equipment, or storage of materials and equipment to be incorporated in the Work are to be obtained and paid for by Contractor.

ARTICLE 7 - INTERPRETATIONS AND ADDENDA

- 7.01 All questions about the meaning or intent of the Bidding Documents are to be submitted to Engineer in writing. Interpretations or clarifications considered necessary by Engineer in response to such questions will be issued by Addenda mailed or delivered to all parties recorded by Engineer as having submitted an Intent to Bid. Questions received less than eight days prior to the date for opening of Bids may not be answered. Only questions answered by Addenda will be binding. Oral and other interpretations or clarifications will be without legal effect.
- 7.02 Addenda may be issued to clarify, correct, or change the Bidding Documents as deemed advisable by Owner or Engineer.

ARTICLE 8 - BID SECURITY

- 8.01 A Bid must be accompanied by Bid security made payable to Owner in an amount of at least 5 % of Bidder's maximum Bid price and in the form of legal tender, or a Bid bond (EJCDC No. C-430, 2007 Edition) issued by a surety meeting the requirements of paragraphs 5.01 and 5.02 of the General Conditions, or surety bid bond underwritten by a company licensed to issue bonds in this State which shall be substantially in the form of the Surety Bid Bond form in Procurement Circular No. 2007-05.
- 8.02 The Bid security of the Successful Bidder will be retained until such Bidder has executed the Contract Documents, furnished the required contract security and met the other conditions of the Notice of Award, whereupon the Bid security will be returned. If the Successful Bidder fails to execute and deliver the Contract Documents and furnish the required contract security within 15 days after the Notice of Award, Owner may annul the Notice of Award and the Bid security of that Bidder will be forfeited. The Bid security of other Bidders whom Owner believes to have a reasonable chance of receiving the award may be retained by Owner until the earlier of seven days after the Effective Date of the Agreement or 61 days after the Bid opening, whereupon Bid security furnished by such Bidders will be returned.
- 8.03 Bid security of other Bidders whom OWNER believes do not have a reasonable chance of receiving the award will be returned within seven days after the Bid opening.

ARTICLE 9 - CONTRACT TIMES

- 9.01 The number of days within which, or the dates by which, the Work is to be substantially completed and ready for final payment are set forth in the Agreement.

ARTICLE 10 -LIQUIDATED DAMAGES

- 10.01 Provisions for liquidated damages are set forth in the Agreement.

ARTICLE 11 - SUBSTITUTE AND "OR-EQUAL" ITEMS

- 11.01 The Contract, if awarded, will be on the basis of materials and equipment specified or described in the Bidding Documents, or "or-equal" materials and equipment as defined in paragraph 6.05 of the General Conditions, or those substitute materials and equipment approved by the Engineer and identified by Addendum. The materials and equipment described in the Bidding Documents establish a standard of required type, function and quality to be met by any proposed substitute or "or-equal" item. Request for Engineer's clarification of materials and equipment considered "or-equal" prior to the Effective Date of the Agreement must be received by the Engineer at least 5 days prior to the date for receipt of Bids. No item of material or equipment will be considered by Engineer as a substitute unless written request for approval has been submitted by Bidder and has been received by Engineer at least 15 days prior to the date for receipt of Bids. Each request

shall conform to the requirements of paragraph 6.05 of the General Conditions. The burden of proof of the merit of the proposed item is upon the Bidder. engineer's decision of approval or disapproval of a proposed item will be final. If Engineer approves any proposed substitute item, such approval will be set forth in an Addendum issued to all prospective Bidders. Bidders shall not rely upon approvals made in any other manner.

11.02 Substitution requests submitted by facsimile are not acceptable.

ARTICLE 12 - SUBCONTRACTORS, SUPPLIERS, AND OTHERS

12.01 Pursuant to the requirements of Section 103D-302, HRS, each Bidder shall include in its bid the name of each person or firm to be engaged by the Bidder on the project as joint contractor or subcontractor indicating also the nature and scope of work to be performed by such joint contractor and/or subcontractor and their respective contractor's license number. A joint contractor or subcontractor performing less than or equal to one percent of the total bid amount is not required to be listed in the proposal. The Bidder shall be solely responsible for verifying that their joint contractor or subcontractor has the proper license at the time of the submitted bid. If Owner or Engineer, after due investigation, has reasonable objection to any proposed Subcontractor, Supplier, individual, or entity, Owner may, before the Notice of Award is given, request apparent Successful Bidder to submit a substitute, without an increase in the Bid.

12.02 If apparent Successful Bidder declines to make any such substitution, Owner may award the Contract to the next lowest responsible Bidder that proposes to use acceptable Subcontractors, Suppliers, individuals, or entities. Declining to make requested substitutions will not constitute grounds for forfeiture of the Bid security of any Bidder. Any Subcontractor, Supplier, individual, or entity so listed and against which Owner and Engineer makes no written objection prior to the giving of the Notice of Award will be deemed acceptable to Owner and Engineer subject to revocation of such acceptance after the Effective Date of the Agreement as provided in paragraph 6.06 of the General Conditions.

12.03 Contractor shall not be required to employ any Subcontractor, Supplier, individual, or entity against whom Contractor has reasonable objection.

12.04 The Contractor shall not award work to Subcontractor(s) in excess of the limits stated in SC 6.06.

ARTICLE 13 - PREPARATION OF BID

13.01 The Bid form is included with the Bidding Documents.

13.02 All blanks on the Bid form shall be completed in ink and the Bid signed in ink. Erasures or alterations shall be initialed in ink by the person signing the Bid Form. A Bid price shall be indicated for each section, Bid item, alternative, adjustment unit price item, and unit price item listed therein.

- 13.03 A Bid by a corporation shall be executed in the corporate name by the president or a vice-president or other corporate officer accompanied by evidence of authority to sign. The corporate seal shall be affixed and attested by the secretary or an assistant secretary. The corporate address and state of incorporation shall be provided on the Bid Form.
- 13.04 A Bid by a partnership shall be executed in the partnership name and signed by a partner (whose title must appear under the signature), accompanied by evidence of authority to sign. The official address of the partnership shall be provided on the Bid Form.
- 13.05 A Bid by a limited liability company shall be executed in the name of the firm by a member and accompanied by evidence of authority to sign. The state of formation of the firm and the official address of the firm shall be shown.
- 13.06 A Bid by an individual shall show the Bidder's name and business address.
- 13.07 A Bid by a joint venture shall be executed by each joint venturer in the manner indicated on the Bid form. The official address of the joint venture must be provided on the Bid Form.
- 13.08 All names shall be printed in ink below the signatures.
- 13.09 The Bid shall contain an acknowledgment of receipt of all Addenda, the numbers and dates of which shall be filled in on the Bid form.
- 13.10 The postal and email addresses and telephone number for communication regarding the Bid shall be shown.
- 13.11 The Bid shall contain evidence of Bidder's authority and qualification to do business in the state or locality where the Project is located or Bidder shall covenant in writing to obtain such qualification prior to award of the Contract and attach such covenant to the Bid. Bidder's state contractor license number, if any, shall also be shown on the Bid Form.

ARTICLE 14 - BASIS OF BID; COMPARSION OF BIDS

14.01 Unit Price

- A. Bidders shall submit a Bid on a unit price basis for each item of Work listed in the Bid schedule.
- B. The total of all bid prices will be the sum of the products of the estimated quantity of each item and the corresponding unit price. The final quantities and Contract Price will be determined in accordance with paragraph 11.03 of the General Conditions.

- C. Discrepancies between the multiplication of units of Work and unit prices will be resolved in favor of the unit prices. Discrepancies between the indicated sum of any column of figures and the correct sum thereof will be resolved in favor of the correct sum. Discrepancies between words and figures will be resolved in favor of the words.
- D. When quantities for individual items of work are listed in the proposal form for which respective unit prices are asked, said quantities are estimated or approximate and are to be used by the Department only for the purpose of comparing on a uniform basis bids offered for the work. The Department does not, expressly or by implication agree that the actual quantity of work will correspond therewith.
- E. The Basis of Award shall be to the lowest responsible and responsive bidder for the Total Sum Bid (DHHL work, Na Kupaa work, and SIC work). The DHHL shall maintain the right to reject any and/or all bids or negotiate with the lowest responsible and responsive bidder if it is in the best interest of DHHL as determined by the Chairman.
- F. It is understood and agreed that the Contractor shall make no claim for anticipated profit, loss of profit or unabsorbed field, branch or home office overhead and impact losses due to the exercise of the Departments right to eliminate entire portions of the work or to increase or decrease any or all the quantities shown in the proposal form.

14.02 Allowances

- A. For cash allowances the Bid price shall include such amounts as the Bidder deems proper for Contractor's overhead, costs, profit, and other expenses on account of cash allowances, if any, named in the Contract Documents, in accordance with Paragraph 11.02.B of the General Conditions.

ARTICLE 15 - SUBMITTAL OF BID

- 15.01 With each copy of the Bidding Documents, a Bidder is furnished the Bid Form, and the Bid bond form. The Bid Form is to be completed and submitted with all the attachments outlined in Article 7 of the Bid Form.
- 15.02 A Bid shall be submitted no later than the date and time prescribed and at the place indicated in the Advertisement for Bids and shall be enclosed in an opaque sealed envelope plainly marked with the Project title, the name and address of Bidder, and shall be accompanied by the Bid security and other required documents. If a Bid is sent by mail or other delivery system, the sealed envelope containing the Bid shall be enclosed in a separate envelope plainly marked on the outside with the notation "BID ENCLOSED." When using the mail or other delivery system, the Bidder is totally responsible for the mail or other delivery system delivering the Bid at the place and prior to the time indicated in the Advertisement for Bid. A mailed Bid shall be addressed to Owner at address in Article 1.01 of Bid Form. Proposals will be received up to the time fixed in

the public notice for opening of bids and must be in the hands of the official by the time indicated. The time designated by the time stamping device in DHHL shall be official.

ARTICLE 16 - MODIFICATION AND WITHDRAWAL OF BID

- 16.01 A Bid may be modified or withdrawn by an appropriate document duly executed in the manner that a Bid must be executed and delivered to the place where Bids are to be submitted prior to the date and time for the opening of Bids.
- 16.02 If within 24 hours after Bids are opened any Bidder files a duly signed written notice with Owner and promptly thereafter demonstrates to the reasonable satisfaction of Owner that there was a material and substantial mistake in the preparation of its Bid, that Bidder may withdraw its Bid, and the Bid security will be returned. Thereafter, if the Work is rebid or negotiated, that Bidder will be disqualified from further bidding on the Work. This provision to withdraw a Bid without forfeiting the Bid security does not apply to Bidder's errors in judgment in preparing the Bid.

ARTICLE 17 - OPENING OF BIDS

- 17.01 Bids will be opened at the time and place indicated in the Advertisement for Bids and, unless obviously non-responsive, read aloud publicly. Bidders, their authorized agents and other interested parties are invited to be present. An abstract of the amounts of the Bids and major alternates, if any, will be made available to Bidders after the opening of Bids.

ARTICLE 18 - BIDS TO REMAIN SUBJECT TO ACCEPTANCE

- 18.01 All Bids will remain subject to acceptance for the period of time stated in the Bid Form, but Owner may, at its sole discretion, release any Bid and return the Bid security prior to the end of this period.

ARTICLE 19 - EVALUATION OF BIDS AND AWARD OF CONTRACT

- 19.01 Owner reserves the right to reject any or all Bids, including without limitation, nonconforming, nonresponsive, unbalanced, or conditional Bids. Owner further reserves the right to reject the Bid of any Bidder whom it finds, after reasonable inquiry and evaluation, to be non-responsible. Owner also reserves the right to waive all informalities not involving price, time, or changes in the Work and to negotiate contract terms with the Successful Bidder.
- 19.02 More than one Bid for the same Work from an individual or entity under the same or different names will not be considered. Reasonable grounds for believing that any Bidder has an interest in more than one Bid for the Work may be cause for disqualification of that Bidder and the rejection of all Bids in which that Bidder has an interest.

- 19.03 In evaluating Bids, Owner will consider whether or not the Bids comply with the prescribed requirements, and such alternates, unit prices and other data, as may be requested in the Bid Form or prior to the Notice of Award.
- 19.04 In evaluating Bidders, Owner will consider the qualifications of Bidders and may consider the qualifications and experience of Subcontractors, Suppliers, and other individuals or entities proposed for those portions of the Work for which the identity of Subcontractors, Suppliers, and other individuals or entities must be submitted as provided in the Supplementary Conditions.
- 19.05 Owner may conduct such investigations as Owner deems necessary to establish the responsibility, qualifications, and financial ability of Bidders, proposed Subcontractors, Suppliers, individuals, or entities to perform the Work in accordance with the contract Documents.
- 19.06 If the Contract is to be awarded, Owner will award the Contract to the responsible Bidder whose Bid, conforming with all the material terms and conditions of the Instructions to Bidders, is lowest, price and other factors considered. If detailed in the bid form, factors such as discounts, transportation costs, and life cycle costs may be used to determine which bidder, if any, is to offered the award.
- 19.07 Any one or more of the following causes will be considered as sufficient for the disqualification of a Bidder and the rejection of its proposal or proposals:
- A. Non-compliance with ARTICLE 3 - QUALIFICATION OF BIDDERS;
 - B. Evidence of collusion among Bidders;
 - C. Lack of responsibility and cooperation as shown by past work such as failing to complete all of the requirements to close the project within a reasonable time or engaging in a pattern of unreasonable or frivolous claims for extra compensation;
 - D. Being in arrears on existing contracts with the State of Hawaii, or having defaulted on a previous contract with the State of Hawaii;
 - E. Lack of proper equipment and/or sufficient experience to perform the work contemplated, as revealed by the Standard Questionnaire and Financial Statement for Bidders;
 - F. No contractor's license or a contractor's license which does not cover type of work contemplated;
 - G. More than one proposal for the same work from an individual, firm, partnership, corporation or joint venture under the same or different name;
 - H. Delivery of bids after the deadline specified in the advertisement calling for bids;

- I. Failure to pay, or satisfactorily settle, all bills overdue for labor and materials of former contracts in force at the time of issuance of proposal forms; and/or
- J. Debarment or suspension pursuant to the provisions of Chapters 103D, 104 and 444, Hawaii Revised Statutes, as amended.

19.08 Proposals will be considered irregular and may be rejected for the following reasons:

- A. If the proposal is unsigned.
- B. If bid security is not in accordance with Section 2.9, BID SECURITY.
- C. If proposal is on a form other than that furnished by the Department; or if the form is altered or any part thereof detached.
- D. If the proposal shows any non-compliance with applicable law, alteration of form, additions not called for, conditional bids, incomplete bids, non-initialed erasures, other defects, or if the prices are obviously unbalanced.
- E. If the Bidder adds any provisions reserving the right to accept or reject an award.
- F. If the Bidder adds any provisions reserving the right to enter into a contract pursuant to an award.
- G. When a proposal is signed by an officer or officers of a corporation and a currently certified corporate resolution authorizing such signer(s) to submit such proposal is not submitted with the proposal or when the proposal is signed by an agent other than the officer or officers of a corporation or a member of a partnership and a power of attorney is not submitted with the proposal.
- H. Where there is an incomplete or ambiguous listing of joint contractors and/or subcontractors the proposal may be rejected. All work which is not listed as being performed by joint contractors and/or subcontractors must be performed by the Bidder with its own employees. Additions to the list of joint contractors or subcontractors will not be allowed. Whenever there is a doubt as to the completeness of the list, the Bidder will be required to submit within five (5) working days, a written confirmation that the work in question will be performed with its own work force. Whenever there is more than one joint contractor and/or subcontractor listed for the same item of work, the Bidder will be required to either confirm in writing within five (5) working days that all joint contractors or subcontractors listed will actually be engaged on the project or obtain within five (5) working days written releases from those joint contractors and/or subcontractors who will not be engaged.
- I. If in the opinion of the Chairman, the Bidder and/or its listed subcontractors do not have the contractor's licenses or combination of contractor's licenses necessary to complete all of the work.

- 19.09 In evaluating Bids, Owner will consider applicable preferences as required by the Hawaii Public Procurement Code (Hawaii Revised Statutes, Section 103D).
- 19.10 Until the award of the contract, the Department may cancel the solicitation, reject any and all proposals in whole or part and may waive any defects or technicalities whenever such action is deemed to be in the best interest of the Department.
- 19.11 **PROTESTS**
- A. Protests shall be governed by Section 103D-701, Hawaii Revised Statutes, and amended hereafter, and its implementing rules set forth in Title 3, Chapter 126, Subchapter 1, of the Hawaii Administrative Rules, and as amended hereafter. [2.14.1]
 - B. The Chairman is the Department's chief procurement officer to whom protests shall be addressed unless specified otherwise in the solicitation. [2.14.2]
- 19.12 In the event the Chairman, for any reason, wrongfully refuses to accept what would otherwise be a responsive and responsible lowest bid, the exclusive remedy for such lowest Bidder shall be the recovery of the reasonable actual costs of preparing the bid. No other Bidder shall have any claim for damages.

ARTICLE 20 - CONTRACT SECURITY AND INSURANCE

- 20.01 Article 5 of the General Conditions, as may be modified by the Supplementary Conditions, sets forth Owner's requirements as to performance and payment bonds and insurance. When the Successful Bidder delivers the executed Agreement to Owner, it shall be accompanied by such bonds.

ARTICLE 21 - SIGNING OF AGREEMENT

- 21.01 When Owner gives a Notice of Award to the Successful Bidder, it shall be accompanied by the required number of unsigned counterparts of the Agreement with the other Contract Documents which are identified in the Agreement as attached thereto. Within 15 days thereafter, Successful Bidder shall sign and deliver the required number of counterparts of the Agreement and attached documents to Owner. Within ten days thereafter, Owner shall deliver one fully signed counterpart to Successful Bidder with a complete set of the Drawings with appropriate identification.
- 21.02 This Contract is expected to be funded in part with funds provided by the United States Department of Agriculture, Rural Utilities Service (RUS). Refer to Supplementary General Conditions for Federal requirements.
- 21.03 Concurrence by RUS in the award of the Contract is required before the Contract is effective.

ARTICLE 22 - STATE OF HAWAII GENERAL EXCISE TAX

- 22.01 The DHHL and Na Kupa'a portions of this project are exempt from the State of Hawaii General Excise Tax. The Contractor's bid for the DHHL and Na Kupa'a portions shall **not** include the General Excise Tax. The bid for the SIC portion shall include the General Excise Tax.
- 22.02 Contractor shall submit Form G-37 for itself and all subcontractors and suppliers for the DHHL and Na Kupa'a portions of work to DHHL for processing and certification.

ARTICLE 23 – WAGE RATE REQUIREMENTS

- 23.01 This project is subject to Section 103D, Hawaii Revised Statutes, to the requirements for Equal Employment Opportunity, and to the payment of not less than the prevailing salaries and wages promulgated by the State of Hawaii, Department of Labor and Industrial Relations.
- 23.02 The contractor must comply with the minimum rates for wages for laborers and mechanics as determined by the Secretary of Labor in accordance with the provisions of the Davis-Bacon and Related Acts.

ARTICLE 24 – FAILURE TO EXECUTE THE CONTRACT

- A. Before the Award - If a low Bidder without legal justification withdraws its bid after the opening of bids but before the award of the contract, the Department shall be entitled to retain as damages the amount established as bid security, and may take all appropriate actions to recover the damages sum from the property or third-party obligations deposited as bid security.
- B. After the Award. If the Bidder to which a contract is awarded shall fail or neglect to enter into the contract and to furnish satisfactory security within ten (10) calendar days after such award or within such further time as the Chairman may allow, the Department shall be entitled to recover from such Bidder its actual damages, including but not limited to the difference between the bid and the next lowest responsive bid, as well as personnel and administrative costs, consulting and legal fees and other expenses incurred in arranging a contract with the next low responsible and responsive Bidder or calling for new bids. The Department may apply all or part of the amount of the bid security to reduce its damages. If upon determination by the Department that the bid security exceeds the amount of its damages, it shall release or return the excess to the person who provided same.
- C. Chairman's Options. Upon a withdrawal of the lowest responsive bid, or upon a refusal or failure of the lowest Bidder to execute the contract, the Chairman may thereupon award the contract to the next lowest responsible and responsive Bidder or may call for new bids, whichever method the Chairman may deem to be in the best interests of the Department.

Department of Hawaiian Home Lands - Land Development Division

SIGN-IN SHEET

IFB- 14 -HHL- 001	Project Description: East Kapolei Development, Increment IIB Subdivision, Honouliuli, Ewa, Oahu, Hawaii. Lot grading and construction of roads and appurtenant utility improvements for a 160-lot residential subdivision.
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INSTRUCTIONS

Read this packet carefully. If you have any questions, please call Darrell Ing, LDD Project Manager, at 620-9276 or email to darrell.h.ing@hawaii.gov.

Note: Please fax this sheet to 620-9299, mail or email to darrell.h.ing@hawaii.gov after downloading this document from the Department of Hawaiian Home Lands website.

Pre-Bid Conference/Site Inspection:	Date: Wednesday, January 15, 2014 Time: 9:00 a.m. Location: DHHL offices at 91-5420 Kapolei Parkway, Kapolei, Hawaii 96707
Notice Of Intention To Bid Must Be Received By:	Date: Friday, January 24, 2014 Time: 2:00 p.m. Location: DHHL offices at 91-5420 Kapolei Parkway, Kapolei, Hawaii 96707 Submittal of a Notice of Intention to Bid via facsimile at (808)620-9299 is acceptable.
Bid Offer Form Due Back:	Date: Wednesday, February 5, 2014 Time: 2:00 p.m. Location: DHHL offices at 91-5420 Kapolei Parkway, Kapolei, Hawaii 96707
Bid Opening:	Time: 2:00 p.m. Date: February 5, 2014 Location: DHHL offices at 91-5420 Kapolei Parkway, Kapolei, Hawaii 96707
Date: _____	
Company: _____	
Address: _____	

Phone No. _____	Cell No. _____
Fax No. _____	
Email Address: _____	
Contact Person: _____	

Signature of Person Downloading Packet (Print Name & Title after signature)

State of Hawaii
DEPARTMENT OF LABOR AND INDUSTRIAL RELATIONS
Princess Ruth Ke`elikolani Building
830 Punchbowl Street
Honolulu, Hawaii 96813

September 16, 2013
WAGE RATE SCHEDULE BULLETIN NO. 482

This schedule of wage rates contained herein is recognized by the Director of Labor and Industrial Relations to be prevailing on public construction work for the purposes of Chapter 104, Hawaii Revised Statutes. The schedule of wage rates determines the applicable wage determination for each classification and does not impose any staffing requirements for any classification. The schedule of wage rates is applicable only to those laborers and mechanics employed at the site of work.

As required by law, future wage rates for laborers and mechanics are incorporated into this bulletin based on available information and are subject to change. Whenever the Director determines that the prevailing wage has increased as shown in the wage rate schedule, the contractor must increase the wages accordingly during the performance of the contract. For addenda or additional wage rate schedules, please consult the Internet at <http://labor.hawaii.gov/rs>.

The Apprentice Schedule is available on the Internet or upon request from the Research and Statistics Office. Pursuant to Section 12-22-6 (1), Hawaii Administrative Rules, the Apprentice Schedule is applicable only to apprentices who are parties to apprenticeship agreements registered with or recognized by the Department of Labor and Industrial Relations.

Questions on the schedule should be referred to the Research and Statistics Office at (808) 586-9019.

The next regular schedule will be issued on or about February 15, 2014.

DWIGHT TAKAMINE
Director



STATE OF HAWAII
NEIL ABERCROMBIE, Governor

DEPARTMENT OF LABOR AND INDUSTRIAL RELATIONS
DWIGHT TAKAMINE, Director
AUDREY HIDANO, Deputy Director

RESEARCH AND STATISTICS OFFICE
PHYLLIS DAYAO, Research & Statistics Officer

OPERATIONS MANAGEMENT INFORMATION STAFF
Elienne Yoshida, Supervisor
Myra Oshiro
Janet Kaya
Mirasol Valdez

In cooperation with:
WAGE STANDARDS DIVISION
PAMELA MARTIN, Administrator

WAGE RATE SCHEDULE BULLETIN NO. 482

Classification	Current			2013			2014			2015			Remarks See Pg 6-7
	Prevailing Wage Total	Basic Hourly Rate	Fringe Hourly Rate	Prevailing Wage Total	Basic Hourly Rate	Fringe Hourly Rate	Prevailing Wage Total	Basic Hourly Rate	Fringe Hourly Rate	Prevailing Wage Total	Basic Hourly Rate	Fringe Hourly Rate	
* ASPHALT PAVING GROUP:	9/16/13												
Asphalt Concrete Material Transfer	\$65.49	\$37.42	\$28.07	-	-	-	-	-	-	-	-	-	
Asphalt Raker	\$64.53	\$36.46	\$28.07	-	-	-	-	-	-	-	-	-	
Asphalt Spreader Operator	\$66.01	\$37.94	\$28.07	-	-	-	-	-	-	-	-	-	
Laborer, Hand Roller	\$61.76	\$33.69	\$28.07	-	-	-	-	-	-	-	-	-	
Roller Operator (5 tons and under)	\$64.26	\$36.19	\$28.07	-	-	-	-	-	-	-	-	-	
Roller Operator (over 5 tons)	\$65.69	\$37.62	\$28.07	-	-	-	-	-	-	-	-	-	
Screed Person	\$65.49	\$37.42	\$28.07	-	-	-	-	-	-	-	-	-	
EQUIPMENT OPERATOR:													
Combination Loader/Backhoe (over 3/4 cu. yd.)	\$64.53	\$36.46	\$28.07	-	-	-	-	-	-	-	-	-	
Combination Loader/Backhoe (up to 3/4 cu. yd.)	\$63.55	\$35.48	\$28.07	-	-	-	-	-	-	-	-	-	
Concrete saws and/or Grinder (self-propelled unit on streets, highways, airports and canals)	\$65.49	\$37.42	\$28.07	-	-	-	-	-	-	-	-	-	
Grader, Soil Stabilizer, Cold Planer	\$66.32	\$38.25	\$28.07	-	-	-	-	-	-	-	-	-	
Loader (2-1/2 cu. yds. and under)	\$65.49	\$37.42	\$28.07	-	-	-	-	-	-	-	-	-	
Loader (over 2-1/2 cu. yds. to and including 5 cu. yds.)	\$65.81	\$37.74	\$28.07	-	-	-	-	-	-	-	-	-	
TRUCK DRIVER:													
Assistant to Engineer	\$64.26	\$36.19	\$28.07	-	-	-	-	-	-	-	-	-	
Oil Tanker (double), Hot Liquid Asphalt Tanker	\$65.81	\$37.74	\$28.07	-	-	-	-	-	-	-	-	-	
Semi-Trailer, Semi-Dump, Asphalt Distributor	\$65.49	\$37.42	\$28.07	-	-	-	-	-	-	-	-	-	
Slip-in or Pup	\$65.81	\$37.74	\$28.07	-	-	-	-	-	-	-	-	-	
Single or Rock Cans Tandem Dump Truck (8 cu. yds. & under, water level)	\$64.53	\$36.46	\$28.07	-	-	-	-	-	-	-	-	-	
Single or Rock Cans Tandem Dump Truck (over 8 cu. yds., water level)	\$64.84	\$36.77	\$28.07	-	-	-	-	-	-	-	-	-	
Tractor Trailer (hauling equipment)	\$65.92	\$37.85	\$28.07	-	-	-	-	-	-	-	-	-	
Utility, Flatbed	\$64.26	\$36.19	\$28.07	-	-	-	-	-	-	-	-	-	
BOILERMAKER	2/18/13												
	\$62.88	\$35.20	\$27.68	-	-	-	-	-	-	-	-	-	
* CARPENTER:	9/16/13												
Carpenter; Patent Scaffold Erector (Over 14 feet); Piledriver; Pneumatic Nailer	\$61.17	\$40.75	\$20.42	-	-	-	-	-	-	-	-	-	1
Millwright	\$61.42	\$41.00	\$20.42	-	-	-	-	-	-	-	-	-	1
Power Saw Operator (2 h.p. & above)	\$61.32	\$40.90	\$20.42	-	-	-	-	-	-	-	-	-	1
* CEMENT FINISHER:	9/16/13												
Cement Finisher; Curb Setter; Precast Panel Setter; Manhole Builder	\$60.27	\$36.80	\$23.47	-	-	-	-	-	-	-	-	-	2
Trowel Machine Operator	\$60.42	\$36.95	\$23.47	-	-	-	-	-	-	-	-	-	2
CHAIN-LINK FENCE ERECTOR	2/18/13			9/30/13									
	\$25.75	\$16.75	\$9.00	\$29.17	\$18.00	\$11.17	-	-	-	-	-	-	13
* CHLORINATOR	9/16/13												
	\$27.74	\$25.31	\$2.43	-	-	-	-	-	-	-	-	-	

WAGE RATE SCHEDULE BULLETIN NO. 482

Classification	Current			2013			2014			2015			Remarks See Pg 6-7
	Prevailing Wage Total	Basic Hourly Rate	Fringe Hourly Rate	Prevailing Wage Total	Basic Hourly Rate	Fringe Hourly Rate	Prevailing Wage Total	Basic Hourly Rate	Fringe Hourly Rate	Prevailing Wage Total	Basic Hourly Rate	Fringe Hourly Rate	
* DIVER:	9/16/13												
Diver (Aqua Lung) (Scuba) - Up to a depth of 30 feet	\$78.64	\$51.13	\$27.51	-	-	-	-	-	-	-	-	-	
Diver (Aqua Lung) (Scuba) - Over a depth of 30 feet	\$88.01	\$60.50	\$27.51	-	-	-	-	-	-	-	-	-	
Stand-By Diver (Aqua Lung) (Scuba)	\$69.26	\$41.75	\$27.51	-	-	-	-	-	-	-	-	-	
Diver (Other than Aqua Lung)	\$88.01	\$60.50	\$27.51	-	-	-	-	-	-	-	-	-	3
Stand-By Diver (Other than Aqua Lung)	\$69.26	\$41.75	\$27.51	-	-	-	-	-	-	-	-	-	3
Tender (Other than Aqua Lung)	\$66.23	\$38.72	\$27.51	-	-	-	-	-	-	-	-	-	
* DRAPERY INSTALLER	9/16/13												
	\$21.64	\$19.93	\$1.71	-	-	-	-	-	-	-	-	-	
* DRYWALL INSTALLER	9/16/13												
	\$61.42	\$41.00	\$20.42	-	-	-	-	-	-	-	-	-	
* ELECTRICIAN: (Note: 2 increases per year)	8/25/13						2/23/14			2/22/15			
Cable Splicer (inside/outside)	\$72.60	\$45.71	\$26.89	-	-	-	\$73.34	\$46.09	\$27.25	\$75.03	\$46.92	\$28.11	4
Ground Worker (outside)	\$53.59	\$31.16	\$22.43	-	-	-	\$54.20	\$31.43	\$22.77	\$55.53	\$31.99	\$23.54	4
Heavy Equipment Operator (outside)	\$61.75	\$37.40	\$24.35	-	-	-	\$62.40	\$37.71	\$24.69	\$63.89	\$38.39	\$25.50	4
Line Installer (outside); Wire Installer (inside)	\$67.17	\$41.55	\$25.62	-	-	-	\$67.88	\$41.90	\$25.98	\$69.46	\$42.65	\$26.81	4
Technician (inside/outside)	\$68.79	\$42.80	\$25.99	-	-	-	\$69.52	\$43.16	\$26.36	\$71.13	\$43.93	\$27.20	4
							8/24/14			8/23/15			
Cable Splicer (inside/outside)	-	-	-	-	-	-	\$74.27	\$46.53	\$27.74	\$75.89	\$47.36	\$28.53	4
Ground Worker (outside)	-	-	-	-	-	-	\$54.94	\$31.73	\$23.21	\$56.22	\$32.29	\$23.93	4
Heavy Equipment Operator (outside)	-	-	-	-	-	-	\$63.22	\$38.07	\$25.15	\$64.66	\$38.75	\$25.91	4
Line Installer (outside); Wire Installer (inside)	-	-	-	-	-	-	\$68.75	\$42.30	\$26.45	\$70.27	\$43.05	\$27.22	4
Technician (inside/outside)	-	-	-	-	-	-	\$70.40	\$43.57	\$26.83	\$71.95	\$44.34	\$27.61	4
Telecommunication Worker	9/1/13												
Licensed Technician	\$37.04	\$25.60	\$11.44	-	-	-	-	-	-	-	-	-	
Technician I / Splicer	\$35.63	\$24.38	\$11.25	-	-	-	-	-	-	-	-	-	
ELEVATOR CONSTRUCTOR MECHANIC	2/18/13												
	\$76.395	\$51.21	\$25.185	-	-	-	-	-	-	-	-	-	
* EQUIPMENT OPERATOR:	9/16/13												
Group 1	\$63.95	\$36.44	\$27.51	-	-	-	-	-	-	-	-	-	5
Group 2	\$64.06	\$36.55	\$27.51	-	-	-	-	-	-	-	-	-	5
Group 3	\$64.23	\$36.72	\$27.51	-	-	-	-	-	-	-	-	-	5
Group 4	\$64.50	\$36.99	\$27.51	-	-	-	-	-	-	-	-	-	5
Group 5	\$64.81	\$37.30	\$27.51	-	-	-	-	-	-	-	-	-	5
Group 6	\$65.46	\$37.95	\$27.51	-	-	-	-	-	-	-	-	-	5
Group 7	\$65.78	\$38.27	\$27.51	-	-	-	-	-	-	-	-	-	5
Group 8	\$65.89	\$38.38	\$27.51	-	-	-	-	-	-	-	-	-	5
Group 9	\$66.00	\$38.49	\$27.51	-	-	-	-	-	-	-	-	-	5
Group 9A	\$66.23	\$38.72	\$27.51	-	-	-	-	-	-	-	-	-	5
Group 10	\$66.29	\$38.78	\$27.51	-	-	-	-	-	-	-	-	-	5
Group 10A	\$66.44	\$38.93	\$27.51	-	-	-	-	-	-	-	-	-	5
Group 11	\$66.59	\$39.08	\$27.51	-	-	-	-	-	-	-	-	-	5
Group 12	\$66.95	\$39.44	\$27.51	-	-	-	-	-	-	-	-	-	5
Group 12A	\$67.31	\$39.80	\$27.51	-	-	-	-	-	-	-	-	-	5

WAGE RATE SCHEDULE BULLETIN NO. 482

Classification	Current			2013			2014			2015			Remarks See Pg 6-7
	Prevailing Wage Total	Basic Hourly Rate	Fringe Hourly Rate	Prevailing Wage Total	Basic Hourly Rate	Fringe Hourly Rate	Prevailing Wage Total	Basic Hourly Rate	Fringe Hourly Rate	Prevailing Wage Total	Basic Hourly Rate	Fringe Hourly Rate	
FENCE ERECTOR (CHAIN-LINK TYPE)													
See Chain-Link Fence Erector	-	-	-	-	-	-	-	-	-	-	-	-	
* FLOOR LAYER (CARPET, LINOLEUM & SOFT TILE)	9/16/13												
	\$52.05	\$29.14	\$22.91	-	-	-	-	-	-	-	-	-	12
* GLAZIER	9/16/13												
	\$59.73	\$33.65	\$26.08	-	-	-	-	-	-	-	-	-	6
* HELICOPTER WORK:	9/16/13												
Airborne Hoist Operator	\$67.81	\$40.30	\$27.51	-	-	-	-	-	-	-	-	-	
Co-Pilot	\$67.95	\$40.44	\$27.51	-	-	-	-	-	-	-	-	-	
Pilot	\$68.12	\$40.61	\$27.51	-	-	-	-	-	-	-	-	-	
INSULATOR	3/3/13												
	\$61.05	\$37.65	\$23.40	-	-	-	-	-	-	-	-	-	7
IRONWORKER:	9/17/12												
Reinforcing, Structural	\$63.16	\$34.75	\$28.41	-	-	-	-	-	-	-	-	-	8
LABORER:	9/2/13												
Driller	\$49.26	\$33.30	\$15.96	-	-	-	-	-	-	-	-	-	1
Gunite Operator	\$48.76	\$32.80	\$15.96	-	-	-	-	-	-	-	-	-	1
High Scaler (Working Suspended)	\$48.76	\$32.80	\$15.96	-	-	-	-	-	-	-	-	-	
Laborer I	\$48.26	\$32.30	\$15.96	-	-	-	-	-	-	-	-	-	1
Laborer II	\$45.66	\$29.70	\$15.96	-	-	-	-	-	-	-	-	-	1
Light Clean-up (Janitorial) Laborer	\$35.47	\$23.70	\$11.77	-	-	-	-	-	-	-	-	-	1
Powder Blaster	\$49.26	\$33.30	\$15.96	-	-	-	-	-	-	-	-	-	1
Window Washer (Outside) (On bosun's chair, cable-suspended scaffold or work platform)	\$47.76	\$31.80	\$15.96	-	-	-	-	-	-	-	-	-	
LANDSCAPER:	9/2/13						9/1/14						
Landscape & Irrigation Laborer A	\$32.16	\$22.65	\$9.51	-	-	-	\$33.31	\$23.20	\$10.11	-	-	-	
Landscape & Irrigation Laborer B	\$32.66	\$23.15	\$9.51	-	-	-	\$33.81	\$23.70	\$10.11	-	-	-	
Landscape & Irrigation Maintenance Laborer	\$28.66	\$19.15	\$9.51	-	-	-	\$29.81	\$19.70	\$10.11	-	-	-	
* LATHER	9/16/13												
	\$61.42	\$41.00	\$20.42	-	-	-	-	-	-	-	-	-	
* MASON; Bricklayer;	9/16/13												
Cement Blocklayer; Stone Mason; Precast Sill Setter	\$60.32	\$36.85	\$23.47	-	-	-	-	-	-	-	-	-	2
Pointer-Caulker-Weatherproofer	\$60.57	\$37.10	\$23.47	-	-	-	-	-	-	-	-	-	2
* PAINTER:	9/16/13						7/1/14			1/1/15			
Painter; Spray Painter; Sandblaster or Waterblaster	\$60.15	\$34.10	\$26.05	-	-	-	\$60.40	\$34.35	\$26.05	\$60.65	\$34.60	\$26.05	12
										7/1/15			
Painter; Spray Painter; Sandblaster or Waterblaster	-	-	-	-	-	-	-	-	-	\$60.90	\$34.85	\$26.05	12

WAGE RATE SCHEDULE BULLETIN NO. 482

Classification	Current			2013			2014			2015			Remarks See Pg 6-7
	Prevailing Wage Total	Basic Hourly Rate	Fringe Hourly Rate	Prevailing Wage Total	Basic Hourly Rate	Fringe Hourly Rate	Prevailing Wage Total	Basic Hourly Rate	Fringe Hourly Rate	Prevailing Wage Total	Basic Hourly Rate	Fringe Hourly Rate	
* PLASTERER	9/16/13												
	\$61.11	\$37.64	\$23.47	-	-	-	-	-	-	-	-	-	2
* PLUMBER:	7/7/13						1/5/14						
Plumber; Pipefitter; Refrigeration Fitter; Heating & Air Conditioning Fitter; Sprinkler Fitter; Steamfitter	\$61.86	\$38.10	\$23.76	-	-	-	\$62.11	\$38.35	\$23.76	-	-	-	9,12
ROOFER:	9/1/13						9/7/14			9/6/15			
Shingle, Tile, Built-up Roofing	\$53.98	\$37.10	\$16.88	-	-	-	\$55.23	\$38.10	\$17.13	\$55.98	\$38.85	\$17.13	12
Coal Tar Pitch	\$91.08	\$74.20	\$16.88	-	-	-	\$93.33	\$76.20	\$17.13	\$94.83	\$77.70	\$17.13	12
SANDBLASTER OR WATERBLASTER:													
Use wages of craft to which sand or water blasting is incidental.													
* SHEETMETAL WORKER	9/16/13												
	\$59.98	\$37.25	\$22.73	-	-	-	-	-	-	-	-	-	10
TAPER	2/18/13												
	\$58.65	\$40.00	\$18.65	-	-	-	-	-	-	-	-	-	12
* TERMITE TREATER	9/16/13												
	\$17.20	\$13.85	\$3.35	-	-	-	-	-	-	-	-	-	
* TERRAZZO:	9/16/13												
Terrazzo Setter	\$60.57	\$37.10	\$23.47	-	-	-	-	-	-	-	-	-	2
Terrazzo Base Grinder	\$58.76	\$35.29	\$23.47	-	-	-	-	-	-	-	-	-	2
Certified Terrazzo Floor Grinder and Tender	\$57.21	\$33.74	\$23.47	-	-	-	-	-	-	-	-	-	2
Terrazzo Floor Grinder	\$55.71	\$32.24	\$23.47	-	-	-	-	-	-	-	-	-	2
* TILE SETTER:	9/16/13												
Ceramic Hard Tile; Marble Setter	\$60.57	\$37.10	\$23.47	-	-	-	-	-	-	-	-	-	2
Certified Ceramic Tile & Marble Helper	\$57.21	\$33.74	\$23.47	-	-	-	-	-	-	-	-	-	2
* TRUCK DRIVER:	9/16/13												
Concrete Mixer	\$34.62	\$28.87	\$5.75	-	-	-	-	-	-	-	-	-	
Concrete Mixer/Booster	\$43.05	\$30.53	\$12.52	-	-	-	-	-	-	-	-	-	
Dump Truck, 8 cu. yds. & under (water level); Water Truck (up to & including 2,000 gallons)	\$64.50	\$36.99	\$27.51	-	-	-	-	-	-	-	-	-	
Flatbed, Utility, etc.	\$64.23	\$36.72	\$27.51	-	-	-	-	-	-	-	-	-	
End Dump, Unlicensed (Euclid, Mack, Caterpillar, or similar); Tractor Trailer (hauling equipment)	\$65.89	\$38.38	\$27.51	-	-	-	-	-	-	-	-	-	
Semi-Trailer, Rock Cans, or Semi-Dump	\$65.46	\$37.95	\$27.51	-	-	-	-	-	-	-	-	-	
Slip-in or Pup	\$65.78	\$38.27	\$27.51	-	-	-	-	-	-	-	-	-	
Tandem Dump Truck, over 8 cu. yds. (water level); Water Truck (over 2,000 gallons)	\$64.81	\$37.30	\$27.51	-	-	-	-	-	-	-	-	-	

WAGE RATE SCHEDULE BULLETIN NO. 482

Classification	Current			2013			2014			2015			Remarks See Pg 6-7
	Prevailing Wage Total	Basic Hourly Rate	Fringe Hourly Rate	Prevailing Wage Total	Basic Hourly Rate	Fringe Hourly Rate	Prevailing Wage Total	Basic Hourly Rate	Fringe Hourly Rate	Prevailing Wage Total	Basic Hourly Rate	Fringe Hourly Rate	
UNDERGROUND LABORER:	9/2/13												
Worker in a raise, shaft, or tunnel.													
Group 1	\$48.86	\$32.90	\$15.96	-	-	-	-	-	-	-	-	-	
Group 2	\$50.36	\$34.40	\$15.96	-	-	-	-	-	-	-	-	-	
Group 3	\$50.86	\$34.90	\$15.96	-	-	-	-	-	-	-	-	-	
Group 4	\$51.86	\$35.90	\$15.96	-	-	-	-	-	-	-	-	-	
Group 5	\$52.11	\$36.15	\$15.96	-	-	-	-	-	-	-	-	-	
Group 6	\$52.21	\$36.25	\$15.96	-	-	-	-	-	-	-	-	-	
Group 7	\$52.46	\$36.50	\$15.96	-	-	-	-	-	-	-	-	-	
Group 8	\$52.91	\$36.95	\$15.96	-	-	-	-	-	-	-	-	-	
* WATER FRONT CONSTRUCTION (DREDGING):	9/16/13												
CLAMSHELL OR DIPPER DREDGES:													
Clamshell or Dipper Operator	\$66.95	\$39.44	\$27.51	-	-	-	-	-	-	-	-	-	11
Mechanic; Welder; Watch Engineer	\$66.29	\$38.78	\$27.51	-	-	-	-	-	-	-	-	-	
Deckmate; Bargemate	\$65.89	\$38.38	\$27.51	-	-	-	-	-	-	-	-	-	
Fire Person; Oiler; Deckhand; Barge Worker	\$64.23	\$36.72	\$27.51	-	-	-	-	-	-	-	-	-	
HYDRAULIC SUCTION DREDGES:													
Lever Operator	\$66.59	\$39.08	\$27.51	-	-	-	-	-	-	-	-	-	
Mechanic; Welder	\$66.29	\$38.78	\$27.51	-	-	-	-	-	-	-	-	-	
Watch Engineer (steam or electric)	\$66.44	\$38.93	\$27.51	-	-	-	-	-	-	-	-	-	
Dozer Operator	\$66.23	\$38.72	\$27.51	-	-	-	-	-	-	-	-	-	
Deckmate	\$65.89	\$38.38	\$27.51	-	-	-	-	-	-	-	-	-	
Winch Operator (stern winch on dredge)	\$65.78	\$38.27	\$27.51	-	-	-	-	-	-	-	-	-	
Fire Person; Oiler; Deckhand (can operate anchor scow under direction of deckmate); Levee Operator	\$64.23	\$36.72	\$27.51	-	-	-	-	-	-	-	-	-	
DERRICKS:													
Operator: Derrick, Piledriver, Crane	\$66.95	\$39.44	\$27.51	-	-	-	-	-	-	-	-	-	
Deckmate; Saurman Type Dragline (up to & including 5 yds.)	\$65.89	\$38.38	\$27.51	-	-	-	-	-	-	-	-	-	
Saurman Type Dragline (over 5 cu. yds.)	\$66.29	\$38.78	\$27.51	-	-	-	-	-	-	-	-	-	
Fire Person; Oiler; Deckhand	\$64.23	\$36.72	\$27.51	-	-	-	-	-	-	-	-	-	
BOAT OPERATORS:													
Master Boat Operator	\$66.59	\$39.08	\$27.51	-	-	-	-	-	-	-	-	-	
Boat Operator	\$66.44	\$38.93	\$27.51	-	-	-	-	-	-	-	-	-	
Boat Deckhand	\$64.23	\$36.72	\$27.51	-	-	-	-	-	-	-	-	-	
* WATER WELL DRILLER:	9/16/13												
Water Well Driller	\$32.90	\$28.00	\$4.90	-	-	-	-	-	-	-	-	-	
Water Well Driller Helper	\$24.58	\$20.00	\$4.58	-	-	-	-	-	-	-	-	-	
WELDER:													
Use wages of craft to which welding is incidental, except for Chain-Link Fence Erector. See remark.													13

Comments: Overtime must be paid at one and one-half times the basic hourly rate plus the hourly cost of required fringe benefits.

* Indicates a wage, fringe benefit, remark, or title change from the previous bulletin.

REMARKS

1. Carpenter, Laborer (excluding High Scaler, Window Washer): \$.50 per hour shall be added to the regular straight-time rate for height pay for each hour while working from a bosun's chair and/or from a cable-suspended scaffold or work platform which is free swinging (not attached to building) for each hour worked on said rig.
2. Cement Finisher, Mason, Plasterer, Terrazzo, Tile Setter: \$1.00 per hour shall be added to the regular straight-time rate for height pay for each hour while working from a bosun's chair and/or from a cable-suspended scaffold or work platform which is free swinging (not attached to building) for each hour worked on said rig.
3. Diver (Other than Aqua Lung), Stand-By Diver (Other than Aqua Lung):
 - A. On any dive exceeding 50 feet, the diver shall in addition be paid the following amount of "depth money":

50 feet to 100 feet	\$1.50 per foot in excess of 50 feet
100 feet to 150 feet	\$100.00 plus \$2.00 per foot in excess of 100 feet
150 feet to 200 feet	\$200.00 plus \$3.00 per foot in excess of 150 feet
 - B. When it is necessary for a Diver to enter any pipe, tunnel or other enclosure, the said Diver shall in addition to the hourly rate, receive a premium in accordance with the following schedule for distance traveled from the entrance of the pipe, tunnel or other enclosure:
 - 1) When able to stand erect, but in which there is no vertical ascent:

5 feet to 50 feet	\$5.00 per day
50 feet to 100 feet	\$7.50 per day
100 feet to 150 feet	\$12.50 per day
Greater than 150 feet	The premium shall be increased an additional \$7.50 for each succeeding 50 feet.
 - 2) When unable to stand erect and in which there is no vertical ascent:

5 feet to 50 feet	\$5.00 per day
50 feet to 100 feet	\$7.50 per day
100 feet to 150 feet	\$12.50 per day
150 feet to 200 feet	\$36.75 per day
200 feet to 300 feet	\$1.00 per foot
300 feet to 450 feet	\$1.50 per foot
450 feet to 600 feet	\$2.50 per foot
4. Electrician:
 - A. One and one-half times the straight-time rate while working in a tunnel under construction; under water with aqualung equipment; in a completed tunnel which has only one entrance or exit providing access to safety and where no other personnel are working; or in an underground structure having no access to safety or where no other personnel are working.
 - B. Double the straight-time rate shall be paid for the following types of hazardous work regardless if fall prevention devices are used:
 - 1) While working from poles, trusses, stacks, towers, tanks, bosun's chairs, swinging or rolling scaffolds, supporting structures, and open platforms, over 70 feet from the ground where the employee is subject to a free fall; provided, however, that when work is performed on stacks, towers or permanent platforms where the employees are on a firm footing within an enclosure, a hazardous condition does not exist regardless of height;
 - 2) While working outside of a railing or enclosure, or temporary platforms extending outside of a building, or from scaffolding or ladder within an enclosure where an employee's footing is within one foot of the top of such railing, and the employee is subject to a free fall of over 70 feet;
 - 3) Working on buildings while leaning over the railing or edge of the building, and is subject to a free fall of 70 feet; or
 - 4) Two hours minimum hazardous pay per day shall be paid while climbing to a stack, tower or permanent platform which exceeds 70 feet from the ground but where the employee is on a firm footing within an enclosure.
 - C. Five percent per hour shall be added to the hourly wage for height pay while working above 9,000 feet elevation.

REMARKS

5. Equipment Operator:

- A. Operators and Assistants to Engineer (climbing a boom) of cranes (under 50 tons) with booms of eighty feet or more (including jib) or of cranes (under 50 tons) with leads of one hundred feet or more, shall receive additional premium according to the following schedule:

	Per Hour
Booms of 80 feet up to, or leads of 100 feet up to, but not including 130 feet	\$0.50
Booms and/or leads of 130 feet up to, but not including 180 feet	\$0.75
Booms and/or leads of 180 feet up to and including 250 feet	\$1.15
Booms and/or leads over 250 feet	\$1.50

Operators and Assistants to Engineer (climbing a boom) of cranes (50 tons and over) with booms of 180 feet or more (including jib) shall receive additional premium according to the following schedule:

	Per Hour
Booms of 180 feet up to and including 250 feet	\$1.25
Booms over 250 feet	\$1.75

Note: The boom shall be measured from the center of the heel pin to the center of the boom or jib point sheave.

- B. \$1.25 per hour shall be added to the hourly wage while operating a rig suspended by ropes or cables or to perform work on a Yo-Yo Cat.
- C. In a raise or shaft, a premium of \$.40 per hour will be paid in addition to the regular straight time wage.
A raise is defined to be an underground excavation (lined or unlined) whose length exceeds its width and the inclination of the grade from the excavation is greater than 20 degrees from the horizontal.
A shaft is defined to be an excavation (lined or unlined) made from the surface of the earth, generally vertical in nature, but may decline up to 75 degrees from the vertical, and whose depth is greater than 15 feet and its largest horizontal dimension. Includes an underground silo.
- D. In a tunnel, a premium of \$.30 per hour will be paid in addition to the regular straight time wages.
A tunnel is defined to be an underground excavation (lined or unlined) whose length exceeds its width and the inclination of the grade from the excavation is no greater than 20 degrees from the horizontal.
6. Glazier: Effective 9/16/13 - \$1.00 per hour shall be added to the hourly wage for height pay for exterior glazing work performed in a walking/working surface with an unprotected side or edge 10 feet or more above a lower level which requires protection from fall hazards by guardrail systems, safety net systems, personal fall arrest systems, position devise systems, fall restraint systems, perimeter safety cables or controlled decking zones.
7. Insulator: Six percent per hour shall be added to the hourly wage for hazardous pay while working from a boatswain chair, staging or free standing scaffolding erected from the ground up or mezzanine floor subject to a free fall and skyclimber suspended from a permanent structure and when working above 40 feet.
8. Ironworker: \$.50 per hour shall be added to the hourly wage while working in tunnels or coffer dams. \$1.00 per hour shall be added to the hourly wage while working under or covered with water (submerged), or on the summits of Mauna Kea, Mauna Loa or Haleakala.
9. Plumber: One and one-half times the straight-time rate for height pay while working from OSHA approved trusses, stacks, towers, tanks, bosun's chair, swinging or rolling scaffolding, supporting structures or on open platforms where the employee is subject to a direct fall of 40 feet or more. Provided, however, that when said work is performed where the employee is on a firm footing within an enclosure, a hazardous condition does not exist regardless of height. \$1.00 per hour shall be added to the straight-time rate while working with flame cutting or any type of welding equipment on any galvanized material or product for at least an hour.
10. Sheetmetal Worker: Add \$.01 to the total fringe benefit hourly rate per Hawaii Revised Statutes, Section 104-2 (b)(2).
11. Water Front Construction: Clamshell or Dipper Operator: \$.50 per hour shall be added to the straight-time rate while working with boom (including jib) over 130 feet.
12. Possible wage/fringe option increases:
Floor Layer: Effective 3/2/14 - \$1.75; 3/1/15 - \$2.00
Painter: Effective 7/1/14 - \$0.25; 1/1/15 - \$0.50; 7/1/15 - \$0.75
Plumber: Effective WRS 483 - \$0.25
Roofer: Effective 9/6/15 - \$0.40
Taper: Effective WRS 483 - \$2.00
13. Chain-Link Fence Erector: \$1.00 per hour shall be added to the hourly wage while performing welding services.

APPRENTICE SCHEDULE BULLETIN NO. 482 September 16, 2013

Rates are applicable only to apprentices who are parties to agreements registered with the Department of Labor
and where the journeyworker to apprentice ratio is met.

Apprentice Classifications	Interval Hrs	BASIC HOURLY RATE										FRINGE BENEFIT HOURLY RATE	Remarks See Pg 7
		1st	2nd	3rd	4th	5th	6th	7th	8th	9th	10th	Total	
BOILERMAKER	1000	\$24.64	\$26.40	\$28.16	\$29.92	\$31.68	\$33.44					\$27.68	
* CARPENTER													
Indentured Prior to 9/1/02	1000	\$16.30										\$12.02	1
"	1000		\$18.34	\$20.38	\$24.45	\$28.53	\$32.60	\$36.68	\$38.71			\$20.42	1
Indentured After 9/1/02	1000	\$16.30										\$8.02	1
"	1000		\$18.34									\$11.72	1
"	1000			\$20.38	\$24.45							\$14.22	1
"	1000					\$28.53	\$32.60					\$16.22	1
"	1000							\$36.68	\$38.71			\$18.22	1
* CEMENT FINISHER													
Indentured Prior to 9/1/03	1000	\$18.40										\$7.12	2
"	1000		\$20.24	\$22.08	\$25.76	\$27.60	\$29.44	\$31.28	\$33.12			\$23.47	2
Indentured On or After 9/1/03	1000	\$18.40	\$20.24	\$22.08	\$25.76	\$27.60	\$29.44	\$31.28	\$33.12			\$10.87	2
CONSTRUCTION CRAFT LABORER (LABORER I)													
Indentured On or After 9/3/02	1000	\$16.15										\$5.60	1
"	1000		\$19.38	\$22.61	\$25.84							\$11.77	1
* CONSTRUCTION EQUIPMENT OPERATOR													
Indentured On or After 9/1/02	1000	\$19.36										\$6.75	3
"	1000		\$21.30									\$16.24	3
"	1000			\$23.23								\$17.11	3
"	1000				\$27.10							\$18.84	3
"	1000					\$30.98						\$20.56	3
"	1000						\$34.85					\$22.29	3
* DRYWALL INSTALLER													
Indentured Prior to 9/1/02	1000	\$16.40										\$12.02	
"	1000		\$18.45	\$20.50	\$24.60	\$28.70	\$32.80	\$36.90	\$38.95			\$20.42	
Indentured After 9/1/02	1000	\$16.40										\$8.02	
"	1000		\$18.45									\$11.72	
"	1000			\$20.50	\$24.60							\$14.22	
"	1000					\$28.70	\$32.80					\$16.22	
"	1000							\$36.90	\$38.95			\$18.22	

APPRENTICE SCHEDULE BULLETIN NO. 482 September 16, 2013

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Apprentice Classifications	Interval Hrs	BASIC HOURLY RATE										FRINGE BENEFIT HOURLY RATE	Remarks See Pg 7
		1st	2nd	3rd	4th	5th	6th	7th	8th	9th	10th	Total	
* ELECTRICIAN (WIRE & LINE INSTALLER)	1000	\$14.54										\$8.88	
" "	1000		\$16.62									\$9.18	
" "	1000			\$18.70								\$15.24	4
" "	1000				\$20.78							\$16.18	4
" "	1000					\$22.85						\$17.12	4
" "	1000						\$24.93					\$18.07	4
" "	1000							\$27.01				\$19.01	4
" "	1000								\$29.09			\$19.95	4
" "	1000									\$33.24		\$21.85	4
" "	1000										\$37.40	\$23.74	4
(Effective 2/23/14)													
* ELECTRICIAN (WIRE & LINE INSTALLER)	1000	\$14.67										\$9.14	
" "	1000		\$16.76									\$9.44	
" "	1000			\$18.86								\$15.54	4
" "	1000				\$20.95							\$16.49	4
" "	1000					\$23.05						\$17.43	4
" "	1000						\$25.14					\$18.39	4
" "	1000							\$27.24				\$19.34	4
" "	1000								\$29.33			\$20.28	4
" "	1000									\$33.52		\$22.18	4
" "	1000										\$37.71	\$24.08	4
ELEVATOR CONSTRUCTOR	850	\$25.605										-	
" "	850		\$28.17									\$25.185	
" "	1700			\$33.29	\$35.85	\$40.97						\$25.185	
* FLOOR LAYER													
Indentured After 2/27/94	1000	\$11.66	\$13.11									\$13.91	
" "	1000			\$14.57	\$16.03							\$18.91	
" "	1000					\$17.48	\$18.94	\$21.86	\$24.77			\$22.91	

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Apprentice Classifications	Interval Hrs	BASIC HOURLY RATE										FRINGE BENEFIT HOURLY RATE	Remarks See Pg 7
		1st	2nd	3rd	4th	5th	6th	7th	8th	9th	10th	Total	
* GLAZIER													
Indentured Prior to 7/1/99	1000	\$18.51										\$24.10	5
"	1000		\$20.19									\$24.32	5
"	1000			\$23.56								\$24.76	5
"	1000				\$25.24							\$24.98	5
"	1000					\$26.92						\$25.20	5
"	1000						\$28.60					\$25.42	5
"	1000							\$30.29				\$25.64	5
"	1000								\$31.97			\$25.86	5
Indentured On or After 7/1/99	1000	\$15.14										\$23.66	5
"	1000		\$16.83									\$23.88	5
"	1000			\$18.51								\$24.10	5
"	1000				\$20.19							\$24.32	5
"	1000					\$23.56						\$24.76	5
"	1000						\$25.24					\$24.98	5
"	1000							\$26.92				\$25.20	5
"	1000								\$28.60			\$25.42	5
"	1000									\$30.29		\$25.64	5
"	1000										\$31.97	\$25.86	5
* HEAVY DUTY REPAIRER & WELDER (EQUIP. OPR 9A)													
Indentured Prior to 9/1/02	1000	\$19.36										\$6.75	3
"	1000		\$21.30	\$23.23	\$27.10	\$30.98	\$32.91	\$34.85	\$36.78			\$27.51	3
Indentured On or After 9/1/02	1000	\$19.36										\$6.75	3
"	1000		\$21.30									\$16.24	3
"	1000			\$23.23								\$17.11	3
"	1000				\$27.10							\$18.84	3
"	1000					\$30.98						\$20.56	3
"	1000						\$32.91					\$21.43	3
"	1000							\$34.85				\$22.29	3
"	1000								\$36.78			\$23.16	3
INSULATOR													
Hired After 5/3/95	2000	\$18.83										\$7.70	6
"	2000		\$18.83									\$17.21	6
"	2000			\$22.59								\$17.49	6
"	2000				\$26.36							\$17.78	6
"	2000					\$30.12						\$18.06	6

APPRENTICE SCHEDULE BULLETIN NO. 482 September 16, 2013

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Apprentice Classifications	Interval Hrs	BASIC HOURLY RATE										FRINGE BENEFIT HOURLY RATE	Remarks See Pg 7
		1st	2nd	3rd	4th	5th	6th	7th	8th	9th	10th	Total	
IRONWORKER (REINFORCING & STRUCTURAL)													
Indentured After 10/31/93	1000	\$17.37										\$23.67	7
"	1000		\$19.11									\$24.14	7
"	1000			\$20.85								\$24.61	7
"	1000				\$24.32							\$25.56	7
"	1000					\$27.80						\$26.51	7
"	1000						\$31.27					\$27.46	7
MASON													
BRICKLAYER													
Indentured On or After 9/1/03	1000	\$18.43	\$20.27	\$22.11	\$25.80	\$27.64	\$29.48	\$31.32	\$33.17			\$10.87	2
STONE MASON													
Indentured On or After 9/1/03	1000	\$20.27	\$22.11	\$23.95	\$25.80	\$27.64	\$29.48	\$31.32	\$33.17			\$10.87	2
POINTER-CAULKER-WEATHERPROOFER													
Indentured On or After 9/1/03	1000	\$18.55	\$20.41	\$22.26	\$25.97	\$29.68	\$33.39					\$10.87	2
Painter													
"	1000	\$15.35										\$6.85	
"	1000		\$17.05	\$18.76	\$20.46	\$22.17						\$10.35	
"	1000						\$23.87					\$11.35	
"	1000							\$27.28	\$30.69			\$12.10	
(Effective 1/1/14)													
* PAINTER	1000	\$15.35										\$7.10	
"	1000		\$17.05	\$18.76	\$20.46	\$22.17						\$10.60	
"	1000						\$23.87					\$11.60	
"	1000							\$27.28	\$30.69			\$12.35	
* PAVING EQUIPMENT OPERATOR	1000	\$20.58										\$6.75	
"	1000		\$26.19									\$16.70	
"	1000			\$29.94								\$19.42	
"	1000				\$33.68							\$23.04	
PLASTERER													
Indentured On or After 9/1/03	1000	\$15.06	\$16.94	\$18.82	\$20.70	\$22.58	\$26.35	\$30.11	\$33.88			\$10.87	2

APPRENTICE SCHEDULE BULLETIN NO. 482 September 16, 2013

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Apprentice Classifications	Interval Hrs	BASIC HOURLY RATE										FRINGE BENEFIT HOURLY RATE	Remarks See Pg 7
		1st	2nd	3rd	4th	5th	6th	7th	8th	9th	10th	Total	
PLUMBER:													
PLUMBER; FIRE SPRINKLER FITTER; REFRIGERATION													
AIR CONDITIONING; STEAMFITTER-WELDER													
Indentured Prior to 9/2/85	1000	\$13.34										\$17.81	8
"	1000		\$15.24									\$18.26	8
"	1000			\$17.15								\$18.72	8
"	1000				\$19.05							\$19.18	8
"	1000					\$20.96						\$19.64	8
"	1000						\$22.86					\$20.10	8
"	1000							\$24.77				\$20.55	8
"	1000								\$26.67			\$21.01	8
"	1000									\$28.58		\$21.47	8
"	1000										\$30.48	\$21.93	8
Indentured On or After 9/2/85	1000	\$15.32										\$1.40	8
"	1000		\$15.32									\$1.45	8
"	1000			\$18.10								\$2.93	8
"	1000				\$18.10							\$2.93	8
"	1000					\$20.96						\$3.75	8
"	1000						\$20.96					\$3.75	8
"	1000							\$24.77				\$4.58	8
"	1000								\$24.77			\$4.58	8
"	1000									\$28.58		\$5.28	8
"	1000										\$28.58	\$5.28	8
(Effective 1/5/14)													
* PLUMBER:													
PLUMBER; FIRE SPRINKLER FITTER; REFRIGERATION													
AIR CONDITIONING; STEAMFITTER-WELDER													
Indentured Prior to 9/2/85	1000	\$13.42										\$17.81	8
"	1000		\$15.34									\$18.26	8
"	1000			\$17.26								\$18.72	8
"	1000				\$19.18							\$19.18	8
"	1000					\$21.09						\$19.64	8
"	1000						\$23.01					\$20.10	8
"	1000							\$24.93				\$20.55	8
"	1000								\$26.85			\$21.01	8
"	1000									\$28.76		\$21.47	8
"	1000										\$30.68	\$21.93	8
Indentured On or After 9/2/85	1000	\$15.42										\$1.40	8
"	1000		\$15.42									\$1.45	8
"	1000			\$18.22								\$2.93	8
"	1000				\$18.22							\$2.93	8
"	1000					\$21.09						\$3.75	8
"	1000						\$21.09					\$3.75	8
"	1000							\$24.93				\$4.58	8
"	1000								\$24.93			\$4.58	8
"	1000									\$28.76		\$5.28	8
"	1000										\$28.76	\$5.28	8

APPRENTICE SCHEDULE BULLETIN NO. 482 September 16, 2013

Rates are applicable only to apprentices who are parties to agreements registered with the Department of Labor
and where the journeyworker to apprentice ratio is met.

Apprentice Classifications	Interval Hrs	BASIC HOURLY RATE										FRINGE BENEFIT HOURLY RATE	Remarks See Pg 7
		1st	2nd	3rd	4th	5th	6th	7th	8th	9th	10th	Total	
* ROOFER													
Indentured Prior to 11/1/98	1000	\$16.70	\$18.55	\$22.26								\$12.63	9
"	1000				\$25.97	\$29.68	\$33.39	\$35.25				\$16.88	
Indentured On or After 11/1/98 and Prior to 11/4/12	1000	\$16.70	\$18.55	\$22.26								\$12.63	9
"	1000				\$25.97	\$29.68	\$31.54	\$33.39	\$35.25			\$16.88	
Indentured On or After 11/4/12	2000	\$16.70	\$22.26									\$12.63	9
"	2000			\$29.68	\$33.39							\$16.88	9
* SHEETMETAL WORKER													
"	1000	\$14.90										\$11.04	
"	1000		\$16.76									\$11.20	
"	1000			\$18.63								\$18.13	
"	1000				\$20.49							\$18.58	
"	1000					\$22.35						\$19.03	
"	1000						\$24.21					\$19.50	
"	1000							\$26.08				\$19.96	
"	1000								\$27.94			\$20.43	
"	1000									\$29.80		\$20.88	
"	1000										\$31.66	\$21.35	
TAPER													
"	1000	\$16.00	\$18.00	\$20.00	\$22.00	\$24.00						\$7.25	
"	1000						\$26.00					\$7.75	
"	1000							\$30.00	\$34.00			\$8.25	
TELECOMMUNICATION WORKER (TECHNICIAN I / SPICER)													
"	1000	\$14.63										\$9.60	
"	1000		\$15.85									\$9.79	
"	1000			\$17.07								\$10.00	
"	1000				\$18.29							\$10.21	
"	1000					\$19.50						\$10.42	
"	1000						\$21.94					\$10.83	
* TILE SETTER													
CERAMIC & HARD TILE													
Indentured Prior to 9/1/03	1000	\$18.55										\$7.12	2
"	1000		\$20.41	\$22.26	\$25.97	\$27.83	\$29.68	\$31.54	\$33.39			\$23.47	2
Indentured On or After 9/1/03	1000	\$18.55	\$20.41	\$22.26	\$25.97	\$27.83	\$29.68	\$31.54	\$33.39			\$10.87	2

* Indicates a wage, fringe benefit, remark, or title change from the previous bulletin.

REMARKS:

1. Carpenter, Construction Craft Laborer: \$.50 per hour shall be added to the regular straight-time rate for height pay for each hour while working from a bosun's chair and/or from a cable-suspended scaffold or work platform which is free swinging (not attached to building) for each hour worked on said rig.
2. Cement Finisher, Mason, Plasterer, Tile Setter: \$1.00 per hour shall be added to the regular straight-time rate for height pay for each hour while working from a bosun's chair and/or from a cable-suspended scaffold or work platform which is free swinging (not attached to building) for each hour worked on said rig.
3. Construction Equipment Operator, Heavy Duty Repairer & Welder: \$1.25 per hour shall be added to the hourly wage while operating a rig suspended by ropes or cables or to perform work on a Yo-Yo Cat.
4. Electrician:
 - A. One and one-half times the straight-time rate while working in a tunnel under construction; under water with aqualung equipment; in a completed tunnel which has only one entrance or exit providing access to safety and where no other personnel are working; or in an underground structure having no access to safety or where no other personnel are working.
 - B. Double the straight-time rate shall be paid for the following types of hazardous work regardless if fall prevention devices are used:
 - 1) While working from poles, trusses, stacks, towers, tanks, bosun's chairs, swinging or rolling scaffolds, supporting structures, and open platforms, over 70 feet from the ground where the employee is subject to a free fall; provided, however, that when work is performed on stacks, towers or permanent platforms where the employees are on a firm footing within an enclosure, a hazardous condition does not exist regardless of height;
 - 2) While working outside of a railing or enclosure, or temporary platforms extending outside of a building, or from scaffolding or ladder within an enclosure where an employee's footing is within one foot of the top of such railing, and the employee is subject to a free fall of over 70 feet;
 - 3) Working on buildings while leaning over the railing or edge of the building, and is subject to a free fall of 70 feet; or
 - 4) Two hours minimum hazardous pay per day shall be paid while climbing to a stack, tower or permanent platform which exceeds 70 feet from the ground but where the employee is on a firm footing within an enclosure.
 - C. Five percent per hour shall be added to the hourly wage for height pay while working above 9,000 feet elevation.
5. Glazier: Effective 9/16/13 - \$1.00 per hour shall be added to the hourly wage for height pay for exterior glazing work performed in a walking/working surface with an unprotected side or edge 10 feet or more above a lower level which requires protection from fall hazards by guardrail systems, safety net systems, personal fall arrest systems, position devise systems, fall restraint systems, perimeter safety cables or controlled decking zones.
6. Insulator: Six percent per hour shall be added to the hourly wage for hazardous pay while working from a boatswain chair, staging or free standing scaffolding erected from ground up or mezzanine floor subject to a free fall and skyclimber suspended from a permanent structure and when working above 40 feet.
7. Ironworker: \$.50 per hour shall be added to the hourly wage while working in tunnels or coffer dams. \$1.00 per hour shall be added to the hourly wage while working under or covered with water (submerged), or on the summits of Mauna Kea, Mauna Loa or Haleakala.
8. Plumber: One and one-half times the straight-time rate for height pay while working from OSHA approved trusses, stacks, towers, tanks, bosun's chair, swinging or rolling scaffolding, supporting structures or on open platforms where the employee is subject to a direct fall of 40 feet or more. Provided, however, that when said work is performed where the employee is on a firm footing within an enclosure, a hazardous condition does not exist regardless of height. \$1.00 per hour shall be added to the straight-time rate while working with flame cutting or any type of welding equipment on any galvanized material or product for at least an hour.
9. Roofer: When an apprentice has accumulated 2500 hours, \$4.25 will be added to his/her pension/annuity plan.
The apprenticeship program for apprentices indentured on or after November 4, 2012, consists of four steps with 2,000 hours for each step.

General Decision Number: HI130001 09/13/2013 HI1

Superseded General Decision Number: HI20120001

State: Hawaii

Construction Types: Building, Heavy (Heavy and Dredging),
Highway and Residential

Counties: Hawaii Statewide.

BUILDING CONSTRUCTION PROJECTS; RESIDENTIAL CONSTRUCTION
PROJECTS (consisting of single family homes and apartments up
to and including 4 stories); HEAVY AND HIGHWAY CONSTRUCTION
PROJECTS AND DREDGING

Modification Number	Publication Date
0	01/04/2013
1	01/11/2013
2	02/15/2013
3	03/15/2013
4	03/29/2013
5	04/05/2013
6	04/19/2013
7	05/17/2013
8	05/24/2013
9	07/26/2013
10	08/23/2013
11	08/30/2013
12	09/13/2013

ASBE0132-001 08/29/2010

Rates	Fringes
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Asbestos Workers/Insulator

Includes application of
all insulating materials,
protective coverings,
coatings and finishes to
all types of mechanical
systems. Also the
application of
firestopping material for
wall openings and
penetrations in walls,
floors, ceilings and
curtain walls.....\$ 36.65 22.24

BOIL0627-005 01/01/2013

Rates	Fringes
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BOILERMAKER.....\$ 35.20 27.35

BRHI0001-001 09/03/2012

Rates	Fringes
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BRICKLAYER

Bricklayers and Stonemasons.\$ 35.35 22.92
Pointers, Caulkers and
Weatherproofers.....\$ 35.60 22.92

BRHI0001-002 09/03/2012

Rates	Fringes
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Tile, Marble & Terrazzo Worker
Terrazzo Base Grinders.....\$ 33.79 22.92
Terrazzo Floor Grinders
and Tenders.....\$ 30.74 22.92
Tile, Marble and Terrazzo
Workers.....\$ 35.60 22.92

* CARP0745-001 09/02/2013

Rates	Fringes
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Carpenters:

Carpenters; Hardwood Floor

Layers; Patent Scaffold Erectors (14 ft. and over); Piledrivers; Pneumatic Nailers; Wood Shinglers and Transit and/or Layout Man.....	\$ 40.75	20.42
Millwrights and Machine Erectors.....	\$ 41.00	20.42
Power Saw Operators (2 h.p. and over).....	\$ 40.90	20.42

* CARP0745-002 09/02/2013

	Rates	Fringes
Drywall and Acoustical Workers and Lathers.....	\$ 41.00	20.42

* ELEC1186-001 08/23/2013

	Rates	Fringes
Electricians:		
Cable Splicers.....	\$ 45.71	26.89
Electricians.....	\$ 41.55	25.69
Telecommunication worker....	\$ 23.20	17%+6.35

* ELEC1186-002 08/23/2013

	Rates	Fringes
Line Construction:		
Cable Splicers.....	\$ 45.71	26.89
Groundmen/Truck Drivers....	\$ 31.16	22.43
Heavy Equipment Operators...	\$ 37.40	24.35
Linemen.....	\$ 41.55	25.69
Telecommunication worker....	\$ 23.20	17%+\$6.35

ELEV0126-001 01/01/2013

	Rates	Fringes
ELEVATOR MECHANIC.....	\$ 51.21	25.185+a+b

a. VACATION: Employer contributes 8% of basic hourly rate for 5 years service and 6% of basic hourly rate for 6 months to 5 years service as vacation pay credit.

b. PAID HOLIDAYS: New Year's Day, Memorial Day, Independence Day, Labor Day, Veterans' Day, Thanksgiving Day, the Friday after Thanksgiving Day and Christmas Day.

* ENGI0003-002 09/02/2013

	Rates	Fringes
Diver (Aqua Lung) (Scuba))		
Diver (Aqua Lung) (Scuba) (over a depth of 30 feet)...	\$ 60.50	26.98
Diver (Aqua Lung) (Scuba) (up to a depth of 30 feet)...	\$ 51.13	26.98
Stand-by Diver (Aqua Lung) (Scuba).....	\$ 41.75	26.98
Diver (Other than Aqua Lung)		
Diver (Other than Aqua Lung).....	\$ 60.50	26.98
Diver Tender (Other than Aqua Lung).....	\$ 38.72	26.98
Stand-by Diver (Other than Aqua Lung).....	\$ 41.75	26.98
Helicopter Work		
Airborne Hoist Operator for Helicopter.....	\$ 40.30	26.98
Co-Pilot of Helicopter.....	\$ 40.44	26.98
Pilot of Helicopter.....	\$ 40.61	26.98
Power equipment operator - tunnel work		
GROUP 1.....	\$ 36.74	26.98
GROUP 2.....	\$ 36.85	26.98
GROUP 3.....	\$ 37.02	26.98
GROUP 4.....	\$ 37.29	26.98
GROUP 5.....	\$ 37.60	26.98

GROUP 6.....	\$ 38.25	26.98
GROUP 7.....	\$ 38.57	26.98
GROUP 8.....	\$ 38.68	26.98
GROUP 9.....	\$ 38.79	26.98
GROUP 9A.....	\$ 39.02	26.98
GROUP 10.....	\$ 39.08	26.98
GROUP 10A.....	\$ 39.23	26.98
GROUP 11.....	\$ 39.38	26.98
GROUP 12.....	\$ 39.74	26.98
GROUP 12A.....	\$ 40.10	26.98
Power equipment operators:		
GROUP 1.....	\$ 36.44	26.98
GROUP 2.....	\$ 36.55	26.98
GROUP 3.....	\$ 36.72	26.98
GROUP 4.....	\$ 36.99	26.98
GROUP 5.....	\$ 37.30	26.98
GROUP 6.....	\$ 37.95	26.98
GROUP 7.....	\$ 38.27	26.98
GROUP 8.....	\$ 38.38	26.98
GROUP 9.....	\$ 38.49	26.98
GROUP 9A.....	\$ 38.72	26.98
GROUP 10.....	\$ 38.78	26.98
GROUP 10A.....	\$ 38.93	26.98
GROUP 11.....	\$ 39.08	26.98
GROUP 12.....	\$ 39.44	26.98
GROUP 12A.....	\$ 39.80	26.98
GROUP 13.....	\$ 36.72	26.98
GROUP 13A.....	\$ 36.99	26.98
GROUP 13B.....	\$ 37.30	26.98
GROUP 13C.....	\$ 37.95	26.98
GROUP 13D.....	\$ 38.27	26.98
GROUP 13E.....	\$ 38.38	26.98

POWER EQUIPMENT OPERATORS CLASSIFICATIONS

GROUP 1: Fork Lift (up to and including 10 tons); Partsman (heavy duty repair shop parts room when needed).

GROUP 2: Conveyor Operator (Handling building material); Hydraulic Monitor; Mixer Box Operator (Concrete Plant).

GROUP 3: Brakeman; Deckhand; Fireman; Oiler; Oiler/Gradechecker; Signalman; Switchman; Highline Cableway Signalman; Bargeman; Bunkerman; Concrete Curing Machine (self-propelled, automatically applied unit on streets, highways, airports and canals); Leveeman; Roller (5 tons and under); Tugger Hoist.

GROUP 4: Boom Truck or dual purpose "A" Frame Truck (5 tons or less); Concrete Placing Boom (Building Construction); Dinky Operator; Elevator Operator; Hoist and/or Winch (one drum); Straddle Truck (Ross Carrier, Hyster and similar).

GROUP 5: Asphalt Plant Fireman; Compressors, Pumps, Generators and Welding Machines ("Bank" of 9 or more, individually or collectively); Concrete Pumps or Pumpcrete Guns; Lubrication and Service Engineer (Grease Rack); Screedman.

GROUP 6: Boom Truck or Dual Purpose "A"Frame Truck (over 5 tons); Combination Loader/Backhoe (up to and including 3/4 cu. yd.); Concrete Batch Plants (wet or dry); Concrete Cutter, Groover and/or Grinder (self-propelled unit on streets, highways, airports, and canals); Conveyor or Concrete Pump (Truck or Equipment Mounted); Drilling Machinery (not to apply to waterliners, wagon drills or jack hammers); Fork Lift (over 10 tons); Loader (up to and including 3 and 1/2 cu. yds); Lull High Lift (under 40 feet); Lubrication and Service Engineer (Mobile); Maginnis Internal Full Slab Vibrator (on airports, highways, canals and warehouses); Man or Material Hoist; Mechanical Concrete Finisher (Large Clary, Johnson Bidwell, Bridge Deck and similar); Mobile Truck Crane Driver; Portable Shotblast Concrete Cleaning Machine; Portable Boring Machine (under streets, highways, etc.); Portable Crusher; Power Jumbo Operator (setting slip forms, etc., in tunnels); Rollers (over 5 tons); Self-propelled Compactor (single engine); Self-propelled Pavement Breaker; Skidsteer Loader with attachments; Slip Form Pumps (Power driven by hydraulic, electric, air, gas, etc., lifting device for concrete forms); Small Rubber Tired Tractors; Trencher (up to and including 6 feet); Underbridge Personnel Aerial Platform (50 feet of platform or less).

GROUP 7: Crusher Plant Engineer, Dozer (D-4, Case 450, John Deere 450, and similar); Dual Drum Mixer, Extend Lift; Hoist and/or Winch (2 drums); Loader (over 3 and 1/2 cu. yds. up to and including 6 yards.); Mechanical Finisher or Spreader Machine (asphalt), (Barber Greene and similar) (Screedman required); Mine or Shaft Hoist; Mobile Concrete Mixer (over 5 tons); Pipe Bending Machine (pipelines only); Pipe Cleaning Machine (tractor propelled and supported); Pipe Wrapping Machine (tractor propelled and supported); Roller Operator (Asphalt); Self-Propelled Elevating Grade Plane; Slusher Operator; Tractor (with boom) (D-6, or similar); Trencher (over 6 feet and less than 200 h.p.); Water Tanker (pulled by Euclids, T-Pulls, DW-10, 20 or 21, or similar); Winchman (Stern Winch on Dredge).

GROUP 8: Asphalt Plant Operator; Barge Mate (Seagoing); Cast-in-Place Pipe Laying Machine; Concrete Batch Plant (multiple units); Conveyor Operator (tunnel); Deckmate; Dozer (D-6 and similar); Finishing Machine Operator (airports and highways); Gradesetter; Kolman Loader (and similar); Mucking Machine (Crawler-type); Mucking Machine (Conveyor-type); No-Joint Pipe Laying Machine; Portable Crushing and Screening Plant; Power Blade Operator (under 12); Saurman Type Dragline (up to and including 5 yds.); Stationary Pipe Wrapping, Cleaning and Bending Machine; Surface Heater and Planer Operator, Tractor (D-6 and similar); Tri-Batch Paver; Tunnel Badger; Tunnel Mole and/or Boring Machine Operator Underbridge Personnel Aerial Platform (over 50 feet of platform).

GROUP 9: Combination Mixer and Compressor (gunite); Do-Mor Loader and Adams Elegrader; Dozer (D-7 or equal); Wheel and/or Ladder Trencher (over 6 feet and 200 to 749 h.p.).

GROUP 9A: Dozer (D-8 and similar); Gradesetter (when required by the Contractor to work from drawings, plans or specifications without the direct supervision of a foreman or superintendent); Push Cat; Scrapers (up to and including 20 cu. yds); Self-propelled Compactor with Dozer; Self-Propelled, Rubber-Tired Earthmoving Equipment (up to and including 20 cu. yds) (621 Band and similar); Sheep's Foot; Tractor (D-8 and similar); Tractors with boom (larger than D-6, and similar).

GROUP 10: Chicago Boom; Cold Planers; Heavy Duty Repairman or Welder; Hoist and/or Winch (3 drums); Hydraulic Skooper (Koehring and similar); Loader (over 6 cu. yds. up to and including 12 cu. yds.); Saurman type Dragline (over 5 cu. yds.); Self-propelled, rubber-tired Earthmoving Equipment (over 20 cu. yds. up to and including 31 cu. yds.) (637D and similar); Soil Stabilizer (P & H or equal); Sub-Grader (Gurries or other automatic type); Tractors (D-9 or equivalent, all attachments); Tractor (Tandem Scraper); Watch Engineer.

GROUP 10A: Boat Operator; Cable-operated Crawler Crane (up to and including 25 tons); Cable-operated Power Shovel, Clamshell, Dragline and Backhoe (up to and including 1 cu. yd.); Dozer D9-L; Dozer (D-10, HD41 and similar) (all attachments); Gradall (up to and including 1 cu. yd.); Hydraulic Backhoe (over 3/4 cu. yds. up to and including 2 cu. yds.); Mobile Truck Crane Operator (up to and including 25 tons) (Mobile Truck Crane Driver Required); Self-propelled Boom Type Lifting Device (Center Mount) (up to and including 25 tons) (Grove, Drott, P&H, Pettibone and similar); Trencher (over 6 feet and 750 h.p. or more); Watch Engineer (steam or electric).

GROUP 11: Automatic Slip Form Paver (concrete or asphalt); Band Wagon (in conjunction with Wheel Excavator); Cable-operated Crawler Cranes (over 25 tons but less than 50 tons); Cable-operated Power Shovel, Clamshell, Dragline and Backhoe (over 1 cu. yd. up to 7 cu. yds.); Gradall (over 1 cu. yds. up to 7 cu. yds.); DW-10, 20, etc. (Tandem); Earthmoving Machines (multiple propulsion power units and 2 or more Scrapers) (up to and including 35 cu. yds., "struck" m.r.c.); Highline Cableway; Hydraulic Backhoe (over 2 cu. yds. up to and including 4 cu. yds.); Leverman; Lift Slab Machine; Loader (over 12 cu. yds); Master Boat Operator; Mobile Truck Crane Operator (over 25 tons but less than 50 tons); (Mobile Truck Crane Driver required); Pre-stress Wire Wrapping Machine; Self-propelled

Boom-type Lifting Device (Center Mount) (over 25 tons m.r.c.); Self-propelled Compactor (with multiple-propulsion power units); Single Engine Rubber Tired Earthmoving Machine (with Tandem Scraper); Tandem Cats; Trencher (pulling attached shield).

GROUP 12: Clamshell or Dipper Operator; Derricks; Drill Rigs; Multi-Propulsion Earthmoving Machines (2 or more Scrapers) (over 35 cu. yds "struck"m.r.c.); Operators (Derricks, Piledrivers and Cranes); Power Shovels and Draglines (7 cu. yds. m.r.c. and over); Self-propelled rubber-tired Earthmoving equipment (over 31 cu. yds.) (657B and similar); Wheel Excavator (up to and including 750 cu. yds. per hour); Wheel Excavator (over 750 cu. yds. per hour).

GROUP 12A: Dozer (D-11 or similar or larger); Hydraulic Excavators (over 4 cu. yds.); Lifting cranes (50 tons and over); Pioneering Dozer/Backhoe (initial clearing and excavation for the purpose of providing access for other equipment where the terrain worked involves 1-to-1 slopes that are 50 feet in height or depth, the scope of this work does not include normal clearing and grubbing on usual hilly terrain nor the excavation work once the access is provided); Power Blade Operator (Cat 12 or equivalent or over); Straddle Lifts (over 50 tons); Tower Crane, Mobile; Traveling Truss Cranes; Universal, Liebherr, Linden, and similar types of Tower Cranes (in the erection, dismantling, and moving of equipment there shall be an additional Operating Engineer or Heavy Duty Repairman); Yo-Yo Cat or Dozer.

GROUP 13: Truck Driver (Utility, Flatbed, etc.)

GROUP 13A: Dump Truck, 8 cu.yds. and under (water level); Water Truck (up to and including 2,000 gallons).

GROUP 13B: Water Truck (over 2,000 gallons); Tandem Dump Truck, over 8 cu. yds. (water level).

GROUP 13C: Truck Driver (Semi-trailer. Rock Cans, Semi-Dump or Roll-Offs).

GROUP 13D: Truck Driver (Slip-In or Pup).

GROUP 13E: End Dumps, Unlicensed (Euclid, Mack, Caterpillar or similar); Tractor Trailer (Hauling Equipment); Tandem Trucks hooked up to Trailer (Hauling Equipment)

BOOMS AND/OR LEADS (HOURLY PREMIUMS):

The Operator of a crane (under 50 tons) with a boom of 80 feet or more (including jib), or of a crane (under 50 tons) with leads of 100 feet or more, shall receive a per hour premium for each hour worked on said crane (under 50 tons) in accordance with the following schedule:

Booms of 80 feet up to but not including 130 feet or Leads of 100 feet up to but not including 130 feet	0.50
Booms and/or Leads of 130 feet up to but not including 180 feet	0.75
Booms and/or Leads of 180 feet up to and including 250 feet	1.15
Booms and/or Leads over 250 feet	1.50

The Operator of a crane (50 tons and over) with a boom of 180 feet or more (including jib) shall receive a per hour premium for each hour worked on said crane (50 tons and over) in accordance with the following schedule:

Booms of 180 feet up to and including 250 feet	1.25
Booms over 250 feet	1.75

* ENGI0003-004 09/02/2013

	Rates	Fringes
Dredging: (Boat Operators)		
Boat Deckhand.....	\$ 36.72	26.98

Boat Operator.....	\$ 38.93	26.98
Master Boat Operator.....	\$ 39.08	26.98
Dredging: (Clamshell or Dipper Dredging)		
GROUP 1.....	\$ 39.44	26.98
GROUP 2.....	\$ 38.78	26.98
GROUP 3.....	\$ 38.38	26.98
GROUP 4.....	\$ 36.72	26.98
Dredging: (Derricks)		
GROUP 1.....	\$ 39.44	26.98
GROUP 2.....	\$ 38.78	26.98
GROUP 3.....	\$ 38.38	26.98
GROUP 4.....	\$ 36.72	26.98
Dredging: (Hydraulic Suction Dredges)		
GROUP 1.....	\$ 39.08	26.98
GROUP 2.....	\$ 38.93	26.98
GROUP 3.....	\$ 38.78	26.98
GROUP 4.....	\$ 38.72	26.98
GROUP 5.....	\$ 37.88	26.76
Group 5.....	\$ 38.38	26.98
GROUP 6.....	\$ 37.77	26.76
Group 6.....	\$ 38.27	26.98
GROUP 7.....	\$ 36.22	26.76
Group 7.....	\$ 36.72	26.98

CLAMSHELL OR DIPPER DREDGING CLASSIFICATIONS

GROUP 1: Clamshell or Dipper Operator.
GROUP 2: Mechanic or Welder; Watch Engineer.
GROUP 3: Barge Mate; Deckmate.
GROUP 4: Bargeman; Deckhand; Fireman; Oiler.

HYDRAULIC SUCTION DREDGING CLASSIFICATIONS

GROUP 1: Leverman.
GROUP 2: Watch Engineer (steam or electric).
GROUP 3: Mechanic or Welder.
GROUP 4: Dozer Operator.
GROUP 5: Deckmate.
GROUP 6: Winchman (Stern Winch on Dredge)
GROUP 7: Deckhand (can operate anchor scow under direction of
Deckmate); Fireman; Leveeman; Oiler.

DERRICK CLASSIFICATIONS

GROUP 1: Operators (Derricks, Piledrivers and Cranes).
GROUP 2: Saurman Type Dragline (over 5 cubic yards).
GROUP 3: Deckmate; Saurman Type Dragline (up to and
including 5 yards).
GROUP 4: Deckhand, Fireman, Oiler.

* ENGI0003-044 09/02/2013

	Rates	Fringes
Power Equipment Operators (PAVING)		
(10) Cold Planer.....	\$ 38.25	26.98
(10) Loader (2 1/2 cu. yds. and under).....	\$ 37.42	26.98
(10) Soil Stabilizer.....	\$ 38.25	26.98
(11) Loader (over 2 1/2 cu. yds. to and including 5 cu. yds.).....	\$ 37.74	26.98
(3) Roller Operator (five tons and under).....	\$ 36.19	26.98
(5) Screed Person.....	\$ 37.42	26.98
(6) Combination Loader/Backhoe (up to 3/4 cu.yd.).....	\$ 35.48	26.98
(6) Concrete Saws and/or Grinder (self-propelled unit on streets, highways, airports and canals).....	\$ 37.42	26.98
(6) Roller Operator (over five tons).....	\$ 37.62	26.98
(7) Combination Loader/Backhoe (over 3/4 cu.yd.).....	\$ 36.46	26.98
(8) Asphalt Plant Operator..	\$ 37.89	26.98
Asphalt Concrete Material		

Transfer.....	\$ 37.42	26.98
Asphalt Raker.....	\$ 36.46	26.98
Asphalt Spreader Operator...	\$ 37.94	26.98
Grader.....	\$ 38.25	26.98
Laborer, Hand Roller.....	\$ 35.96	26.98

IRON0625-001 09/01/2012

	Rates	Fringes
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Ironworkers:.....	\$ 34.75	28.41
a. Employees will be paid \$.50 per hour more while working in tunnels and coffer dams; \$1.00 per hour more when required to work under or are covered with water (submerged) and when they are required to work on the summit of Mauna Kea, Mauna Loa or Haleakala.		

LABO0368-001 09/03/2012

	Rates	Fringes
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Laborers:		
Driller.....	\$ 32.30	15.96
Final Clean Up.....	\$ 22.70	11.67
Gunite Operator & High		
Scaler.....	\$ 31.80	15.96
Laborer I.....	\$ 31.30	15.96
Laborer II.....	\$ 28.70	15.96
Powderman.....	\$ 32.30	15.96
Window Washer (bosun chair)...	\$ 30.80	15.96

LABORERS CLASSIFICATIONS

Laborer I: Asbestos Removal Worker (EPA certified workers); Asphalt Laborer, Ironer, Raker, Luteman, and Handroller, and all types of Asphalt Spreader Boxes; Asphalt Shoveler; Assembly and Installation of Multiplates, Liner Plates, Rings, Mesh, Mats; Batching Plant (portable and temporary); Boring Machine Operator (under streets and sidewalks); Buggymobile; Burning, Welding, Signalling, Choke Setting, and Rigging in connection with Laborers' work (except demolition); Chainsaw, Faller, Logloader, and Bucker; Compactors (Jackson Jumping Jack and similar); Concrete Bucket Dumpman; Concrete Chipping; Concrete Chuteman/Hoseman (pouring concrete) (the handling of the chute from ready-mix trucks for such jobs as walls, slabs, decks, floors, foundations, footings, curbs, gutters, and sidewalks); Concrete Core Cutter (Walls, Floors, and Ceiling); Concrete Grinding or Sanding; Concrete: Hooking on, signaling, dumping of concrete for treme work over water on caissons, pilings, abutments, etc.; Concrete: Mixing, handling, conveying, pouring, vibrating, otherwise placing of concrete or aggregates or by any other process; Concrete: Operation of motorized wheelbarrows or buggies or machines of similar character, whether run by gas, diesel, or electric power; Concrete Placement Machine Operator: operation of Somero Hammerhead, Copperheads, or similar machines; Concrete Pump Machine (laying, coupling, uncoupling of all connections and cleaning of equipment); Concrete and/or Asphalt Saw (Walking or Handtype) (cutting walls or flatwork) (scoring old or new concrete and/or asphalt) (cutting for expansion joints) (streets and ways for laying of pipe, cable or conduit for all purposes); Concrete Shovelers/Laborers (Wet or Dry); Concrete Screeding for Rough Strike-Off: Rodding or striking-off, by hand or mechanical means prior to finishing; Concrete Vibrator Operator; Coring Holes: Walls, footings, piers or other obstructions for passage of pipes or conduits for any purpose and the pouring of concrete to secure the hole; Curbing (Concrete and Asphalt); Curing of Concrete (impervious membrane and form oiler) mortar and other materials by any mode or method; Cut Granite Curb Setter (setting, leveling and grouting of all precast concrete or stone curbs); Cutting and Burning Torch (demolition); Dri Pak-It Machine; Falling, bucking, yarding, loading or burning of all trees or timber on construction site; Forklift (9 ft. and under); Grating and Grill work for drains or other purposes; Green Cutter of concrete or aggregate in any form, by hand, mechanical means, grindstone or air and/or water; Grout: Spreading for any purpose; Guinea Chaser (Grade Checker) for general utility trenches, sitework, and excavation; Headerboard Man (Asphalt or Concrete); Heat Welder of Plastic (Laborers'

AGC certified workers) (when work involves waterproofing for waterponds, artificial lakes and reservoir, or heat welding for sewer pipes); Heavy Highway Laborer (Rigging, signaling, handling, and installation of pre-cast catch basins, manholes, curbs and gutters); High Pressure Nozzleman - Hydraulic Monitor (over 100# pressure); Installation of lightweight backfill; Jackhammer Operator; Jacking of slip forms: All semi and unskilled work connected therewith; Laying of all multi-cell conduit or multi-purpose pipe; Lead base paint abatement laborers (EPA certified workers); Magnesite and Mastic Workers (Wet or Dry) (including mixer operator); Mason Tender, Mortar Man; Mortar Mixer (Block, Brick, Masonry, and Plastering); Nozzleman (Sandblasting and/or Water Blasting): handling, placing and operation of nozzle; Operation, Manual or Hydraulic jacking of shields and the use of such other mechanical equipment as may be necessary; Pavement Breakers; Paving, curbing and surfacing of streets, ways, courts, under and overpasses, bridges, approaches, slope walls, and all other labor connected therewith; Pilecutters; Pipe Accessment in place, bolting and lining up of sectional metal or other pipe including corrugated pipe; Pipelayer performing all services in the laying and installation of pipe from the point of receiving pipe in the ditch until completion of operation, including any and all forms of tubular material, whether pipe, metallic or non-metallic, conduit, and any other stationary-type of tubular device used for conveying of any substance or element, whether water, sewage, solid, gas, air, or other product whatsoever and without regard to the nature of material from which tubular material is fabricated; No-joint pipe and stripping of same, Pipewrapper, Caulker, Bander, Kettlemen, and men applying asphalt, Laykold, treating Creosote and similar-type materials (6-inch) pipe and over); Piping: resurfacing and paving of all ditches in preparation for laying of all pipes; Pipe laying of lateral sewer pipe from main or side sewer to buildings or structure (except Contactor may direct work be done under proper supervision); Pipe laying, leveling and marking of the joint used for main or side sewers and storm sewers; Laying of all clay, terra cotta, ironstone, vitrified concrete or other pipe for drainage; Placing and setting of water mains, gas mains and all pipe including removal of skids; Plaster Mortar Mixer/Pump; Pneumatic Impact Wrench; Portable Sawmill Operation: Choker setters, off bearers, and lumber handlers connected with clearing; Posthole Digger (Hand Held, Gas, Air and Electric); Power Broom Sweepers (Small); Preparation and Compaction of roadbeds for railroad track laying, highway construction, and the preparation of trenches, footings, etc., for cross-country transmission by pipelines, electrical transmission or underground lines or cables (by mechanical means); Raising of structure by manual or hydraulic jacks or other methods and resetting of structure in new locations, including all concrete work; Ramming or compaction; Riprap, Stonepaver, and Rock Slinger (includes placement of stacked concrete, wet or dry and loading, unloading, signaling, slinging and setting of other similar materials); Rotary Scarifier (including multiple head concrete chipping Scarifier); Salamander Heater, Drying of plaster, concrete mortar or other aggregate; Scaffold Erector Leadman; Scaffolds: (Swing and hanging) including maintenance thereof; Scaler; Septic Tank/Cesspool and Drain Fields Digger and Installer; Shredder/Chipper (tree branches, brush, etc.); Stripping and Setting Forms; Stripping of Forms: Other than panel forms which are to be re-used in their original form, and stripping of forms on all flat arch work; Tampers (Barko, Wacker, and similar type); Tank Scaler and Cleaners; Tarman; Tree Climbers and Trimmers; Trencher (includes hand-held, Davis T-66 and similar type); Trucks (flatbed up to and including 2 1/2 tons when used in connection with on-site Laborers' work; Trucks (Refuse and Garbage Disposal) (from job site to dump); Vibra-Screed (Bull Float in connection with Laborers' work); Well Points, Installation of or any other dewatering system.

Laborer II: Air Blasting; Appliance Handling (job site) (after delivery and unloading in storage area); Asphalt Plant Laborer; Backfilling, Grading and all other labor connected therewith; Boring Machine; Bridge Laborer; Burning of all debris (crates, boxes, packaging waste materials); Chainman, Rodmen, and Grade Markers; Cleaning and Clearing of all debris; Cleaning, clearing, grading

and/or removal for streets, highways, roadways, aprons, runways, sidewalks, parking areas, airports, approaches, and other similar installations; Cleaning or reconditioning of streets, ways, sewers and waterlines, all maintenance work and work of an unskilled and semi-skilled nature; Cleanup of Grounds and Buildings (other than "Light Clean-Up") (Janitorial Laborer); Clean-up of right-of-way; Clearing and slashing of brush or trees by hand or mechanical cutting; Concrete Bucket Tender (Groundman) hooking and unhooking of bucket; Concrete Forms; moving, cleaning, oiling and carrying to the next point of erection of all forms; Concrete Products Plant Laborers; Conveyor Tender (conveying of building materials); Cribbers, Shorer, Lagging, Sheeting, and Trench Jacking and Bracing, Hand-Guided Lagging Hammer Whaling Bracing; Crushed Stone Yards and Gravel and Sand Pit Laborers and all other similar plants; Demolition, Wrecking and Salvage Laborers: Wrecking and dismantling of buildings and all structures, with use of cutting or wrecking tools, burning or cutting, breaking away, cleaning and removal of all masonry, wood or metal fixtures for salvage or scrap, All hooking, unhooking, signaling of materials for salvage or scrap removed by crane or derrick; Digging under streets, roadways, aprons or other paved surfaces; Chuck Tender, Outside Nipper; Dry-packing of concrete (plugging and filling of she-bolt holes); Excavation, Preparation of street ways and bridges; Fence and/or Guardrail Erector: Dismantling and/or re-installation of all fence; Finegrader; Firewatcher; Flagman (Coning, preparing, establishing and removing portable roadway barricade devices); Signal Men on all construction work defined herein, including Traffic Control Signal Men at construction site; Garbage and Debris Handlers and Cleaners; Gas, Pneumatic, and Electric Tools, not listed Group 1 (except Rototiller); General Clean-up: sweeping, cleaning, washdown, wiping of construction facility, and equipment (other than "Light Clean-up" [Janitorial] Laborer); General Excavation and Grading (all labor connected therewith); Digging of trenches, ditches and manholes and the leveling, grading and other preparation prior to laying pipe or conduit for any purpose; Excavations and foundations for buildings, piers, foundations and holes, and all other construction; General Laborer; Ground and Soil Treatment Work (Pest Control); Junk Yard Laborers (same as Salvage Yard); Landscape Nursery Laborers; Laser Beam "Target Man" in connection with Laborers' work; Layout Person for Plastic (when work involves waterproofing for waterponds, artificial lakes and reservoirs); Limbers, Brush Loaders, and Pilers; Loading, Unloading, carrying, distributing and handling of all rods and material for use in reinforcing concrete construction (except when a derrick or outrigger operated by other than hand power is used); Loading, unloading, sorting, stockpiling, handling and distribution of water mains, gas mains and all pipes; Loading and unloading of all materials, fixtures, furnishings and appliances from point of delivery to stockpile to point of installation; hooking and signalling from truck, conveyance or stockpile; Material Yard Laborers; Pipelayer Tender; Pipewrapper, Caulker, Bander, Kettlemen, and men applying asphalt, Laykold, Creosote, and similar-type materials (pipe under 6 inches); Plasterer Laborer (including Hod Carrier); Preparation, construction and maintenance of roadbeds and sub-grade for all paving, including excavation, dumping, and spreading of sub-grade material; Prestressed or precast concrete slabs, walls, or sections: all loading, unloading, stockpiling, hooking on of such slabs, walls or sections; Quarry Laborers; Railroad, Streetcar, and Rail Transit Maintenance and Repair; Removal of surplus material; Roustabout; Rubbish Trucks in connection with Building Construction Projects (excluding clearing, grubbing, and excavating); Salvage Yard: All work connected with cutting, cleaning, storing, stockpiling or handling of materials, all cleanup, removal of debris, burning, back-filling and landscaping of the site; Sandblasting (Pot Tender): Hoses and pots or markers; Scaffolds: Erection, planking and removal of all scaffolds used for support for lathers, plasters, brick layers, masons, and other construction trades crafts; Scaffolds: (Specially designed by carpenters) laborers shall tend said carpenter on erection and dismantling thereof, preparation for foundation or mudsills, maintenance; Scraping of floors; Screeds: Handling of all screeds to be reused; handling, dismantling

and conveyance of screeds; Setting, leveling and securing or bracing of metal or other road forms and expansion joints; Sheet piling/trench shoring (handling and placing of skip sheet or wood plank trench shoring); Ship Scalers; Sign Erector (subdivision traffic, regulatory, and street-name signs); Sloper; Slurry Seal Crews (Mixer Operator, Applicator, Squeegee Man, Shuttle Man, Top Man); Snapping of wall ties and removal of tie rods; Soil Test operations of semi and unskilled labor such as filling sand bags; Stripper (Asphalt, Concrete or other Paved Surfaces); Tagging and Signaling of all building materials into high-rise units; Tool Room Attendant (Job Site); Traffic Delineating Device Applicator; Underpinning, lagging, bracing, propping and shoring, loading, signaling, right-of-way clearance along the route of movement, The clearance of new site, excavation of foundation when moving a house or structure from old site to new site; Utilities employees; Water Man; Waterscape/Hardscape Laborers; Wire Mesh Pulling (all concrete pouring operations); Wrecking, stripping, dismantling and handling concrete forms and false work.

LABO0368-002 09/03/2012

	Rates	Fringes
Landscape & Irrigation Laborers		
GROUP 1.....	\$ 22.15	8.99
GROUP 2.....	\$ 22.65	8.99
GROUP 3.....	\$ 18.65	8.99

LABORERS CLASSIFICATIONS

GROUP 1: Installation of non-potable permanent or temporary irrigation water systems performed for the purposes of Landscaping and Irrigation architectural horticultural work; the installation of drinking fountains and permanent or temporary irrigation systems using potable water for Landscaping and Irrigation architectural horticultural purposes only. This work includes (a) the installation of all heads, risers, valves, valve boxes, vacuum breakers (pressure and non-pressure), low voltage electrical lines and, provided such work involves electrical wiring that will carry 24 volts or less, the installation of sensors, master control panels, display boards, junction boxes, conductors, including all other components for controllers, (b) and metallic (copper, brass, galvanized, or similar) pipe, as well as PVC or other plastic pipe including all work incidental thereto, i.e., unloading, handling and distribution of all pipes fittings, tools, materials and equipment, (c) all soldering work in connection with the above whether done by torch, soldering iron, or other means; (d) tie-in to main lines, thrust blocks (both precast and poured in place), pipe hangers and supports incidental to installation of the entire irrigation system, (e) making of pressure tests, start-up testing, flushing, purging, water balancing, placing into operation all irrigation equipment, fixtures and appurtenances installed under this agreement, and (f) the fabrication, replacement, repair and servicing of landscaping and irrigation systems. Operation of hand-held gas, air, electric, or self-powered tools and equipment used in the performance of Landscape and Irrigation work in connection with architectural horticulture; Choke-setting, signaling, and rigging for equipment operators on job-site in the performance of such Landscaping and Irrigation work; Concrete work (wet or dry) performed in connection with such Landscaping and Irrigation work. This work shall also include the setting of rock, stone, or riprap in connection with such Landscape, Waterscape, Rockscape, and Irrigation work; Grubbing, pick and shovel excavation, and hand rolling or tamping in connection with the performance of such Landscaping and Irrigation work; Sprigging, handseeding, and planting of trees, shrubs, ground covers, and other plantings and the performance of all types of gardening and horticultural work relating to said planting; Operation of flat bed trucks (up to and including 2 1/2 tons):.

GROUP 2. Layout of irrigation and other non-potable irrigation water systems and the layout of drinking fountains and other potable irrigation water systems in

connection with such Landscaping and Irrigation work. This includes the layout of all heads, risers, valves, valve boxes, vacuum breakers, low voltage electrical lines, hydraulic and electrical controllers, and metallic (coppers, brass, galvanized, or similar) pipe, as well as PVC or other plastic pipe. This work also includes the reading and interpretation of plans and specifications in connection with the layout of Landscaping, Rockscape, Waterscape, and Irrigation work; Operation of Hydro-Mulching machines (sprayman and driver), Drillers, Trenchers (riding type, Davis T-66, and similar) and fork lifts used in connection with the performance of such Landscaping and Irrigation work; Tree climbers and chain saw tree trimmers, Sporadic operation (when used in connection with Landscaping, Rockscape, Waterscape, and Irrigation work) of Skid-Steer Loaders (Bobcat and similar), Cranes (Bantam, Grove, and similar), Hoptos, Backhoes, Loaders, Rollers, and Dozers (Case, John Deere, and similar), Water Trucks, Trucks requiring a State of Hawaii Public Utilities Commission Type 5 and/or type 7 license, sit-down type and "gang" mowers, and other self-propelled, sit-down operated machines not listed under Landscape & Irrigation Maintenance Laborer; Chemical spraying using self-propelled power spraying equipment (200 gallon capacity or more).

GROUP 3: Maintenance of trees, shrubs, ground covers, lawns and other planted areas, including the replanting of trees, shrubs, ground covers, and other plantings that did not "take" or which are damaged; provided, however, that re-planting that requires the use of equipment, machinery, or power tools shall be paid for at the rate of pay specified under Landscape and Irrigation Laborer, Group 1; Raking, mowing, trimming, and runing, including the use of "weed eaters", hedge trimmers, vacuums, blowers, and other hand-held gas, air, electric, or self-powered tools, and the operation of lawn mowers (Note: The operation of sit-down type and "gang" mowers shall be paid for at the rate of pay specified under Landscape & Irrigation Laborer, Group 2); Guywiring, staking, propping, and supporting trees; Fertilizing, Chemical spraying using spray equipment with less than 200 gallon capacity, Maintaining irrigation and sprinkler systems, including the staking, clamping, and adjustment of risers, and the adjustment and/or replacement of sprinkler heads, (Note: the cleaning and gluing of pipe and fittings shall be paid for at the rate of pay specified under Landscape & Irrigation Laborer(Group 1); Watering by hand or sprinkler system and the peformance of other types of gardening, yardman, and horticultural-related work.

LABO0368-003 09/03/2012

	Rates	Fringes
Underground Laborer		
GROUP 1.....	\$ 31.90	15.96
GROUP 2.....	\$ 33.40	15.96
GROUP 3.....	\$ 33.90	15.96
GROUP 4.....	\$ 34.90	15.96
GROUP 5.....	\$ 35.25	15.96
GROUP 6.....	\$ 35.50	15.96
GROUP 7.....	\$ 35.95	15.96

GROUP 1: Watchmen; Change House Attendant.

GROUP 2: Swamper; Brakeman; Bull Gang-Muckers, Trackmen; Dumpmen (any method); Concrete Crew (includes rodding and spreading); Grout Crew; Reboundmen

GROUP 3: Chucktenders and Cabletenders; Powderman (Prime House); Vibratorman, Pavement Breakers

GROUP 4: Miners - Tunnel (including top and bottom man on shaft and raise work); Timberman, Retimberman (wood or steel or substitute materials thereof); Blasters, Drillers, Powderman (in heading); Microtunnel Laborer; Headman; Cherry Pickerman (where car is lifted); Nipper; Grout Gunmen; Grout Pumpman & Potman; Gunite, Shotcrete Gunmen & Potmen; Concrete Finisher (in tunnel); Concrete Screed Man; Bit Grinder; Steel Form Raisers & Setters; High Pressure Nozzleman; Nozzleman (on slick line); Sandblaster-Potman (combination work assignment interchangeable); Tugger

GROUP 5: Shaft Work & Raise (below actual or excavated ground level); Diamond Driller; Guniting or Shotcrete Nozzleman; Rodman; Groundman

GROUP 6: Shifter

GROUP 7: Shifter (Shaft Work & Raiser)

PAIN1791-001 05/01/2013

	Rates	Fringes
Painters:		
Brush.....	\$ 34.10	25.95
Sandblaster; Spray.....	\$ 34.10	25.95

PAIN1889-001 07/01/2012

	Rates	Fringes
Glaziers.....	\$ 32.65	25.27

PAIN1926-001 02/24/2013

	Rates	Fringes
Soft Floor Layers.....	\$ 29.14	22.91

PAIN1944-001 01/01/2013

	Rates	Fringes
Taper.....	\$ 40.00	18.65

PLAS0630-001 09/03/2012

	Rates	Fringes
PLASTERER.....	\$ 36.14	22.92

PLAS0630-002 09/03/2012

	Rates	Fringes
Cement Masons:		
Cement Masons.....	\$ 35.30	22.72
Trowel Machine Operators....	\$ 35.45	22.72

PLUM0675-001 07/07/2013

	Rates	Fringes
Plumber, Pipefitter, Steamfitter & Sprinkler Fitter...	\$ 38.10	23.76

ROOF0221-001 11/04/2012

	Rates	Fringes
Roofers (Including Built Up, Composition and Single Ply).....	\$ 36.10	16.73

SHEE0293-001 09/02/2012

	Rates	Fringes
Sheet metal worker.....	\$ 36.10	22.21

SUHI1997-002 09/15/1997

	Rates	Fringes
Drapery Installer.....	\$ 13.60	1.20
FENCE ERECTOR (Chain Link Fence).....	\$ 9.33	1.65

WELDERS - Receive rate prescribed for craft performing operation to which welding is incidental.

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Unlisted classifications needed for work not included within the scope of the classifications listed may be added after award only as provided in the labor standards contract clauses (29CFR 5.5 (a) (1) (ii)).

The body of each wage determination lists the classification and wage rates that have been found to be prevailing for the cited type(s) of construction in the area covered by the wage determination. The classifications are listed in alphabetical order of "identifiers" that indicate whether the particular rate is union or non-union.

Union Identifiers

An identifier enclosed in dotted lines beginning with characters other than "SU" denotes that the union classification and rate have found to be prevailing for that classification. Example: PLUM0198-005 07/01/2011. The first four letters , PLUM, indicate the international union and the four-digit number, 0198, that follows indicates the local union number or district council number where applicable , i.e., Plumbers Local 0198. The next number, 005 in the example, is an internal number used in processing the wage determination. The date, 07/01/2011, following these characters is the effective date of the most current negotiated rate/collective bargaining agreement which would be July 1, 2011 in the above example.

Union prevailing wage rates will be updated to reflect any changes in the collective bargaining agreements governing the rates.

0000/9999: weighted union wage rates will be published annually each January.

Non-Union Identifiers

Classifications listed under an "SU" identifier were derived from survey data by computing average rates and are not union rates; however, the data used in computing these rates may include both union and non-union data. Example: SULA2004-007 5/13/2010. SU indicates the rates are not union majority rates, LA indicates the State of Louisiana; 2004 is the year of the survey; and 007 is an internal number used in producing the wage determination. A 1993 or later date, 5/13/2010, indicates the classifications and rates under that identifier were issued as a General Wage Determination on that date.

Survey wage rates will remain in effect and will not change until a new survey is conducted.

WAGE DETERMINATION APPEALS PROCESS

1.) Has there been an initial decision in the matter? This can be:

- * an existing published wage determination
- * a survey underlying a wage determination
- * a Wage and Hour Division letter setting forth a position on a wage determination matter
- * a conformance (additional classification and rate) ruling

On survey related matters, initial contact, including requests for summaries of surveys, should be with the Wage and Hour Regional Office for the area in which the survey was conducted because those Regional Offices have responsibility for the Davis-Bacon survey program. If the response from this initial contact is not satisfactory, then the process described in 2.) and 3.) should be followed.

With regard to any other matter not yet ripe for the formal process described here, initial contact should be with the Branch of Construction Wage Determinations. Write to:

Branch of Construction Wage Determinations
Wage and Hour Division
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

2.) If the answer to the question in 1.) is yes, then an interested party (those affected by the action) can request review and reconsideration from the Wage and Hour Administrator (See 29 CFR Part 1.8 and 29 CFR Part 7). Write to:

Wage and Hour Administrator
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

The request should be accompanied by a full statement of the interested party's position and by any information (wage payment data, project description, area practice material, etc.) that the requestor considers relevant to the issue.

3.) If the decision of the Administrator is not favorable, an interested party may appeal directly to the Administrative Review Board (formerly the Wage Appeals Board). Write to:

Administrative Review Board
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

4.) All decisions by the Administrative Review Board are final.

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END OF GENERAL DECISION



STATE OF HAWAII
DEPARTMENT OF LABOR AND INDUSTRIAL RELATIONS

List of Construction Trades in Registered Apprenticeship Programs

Apprenticeship programs for the following construction trades were approved and registered by the State Department of Labor and Industrial Relations in accordance with Chapter 372, Hawaii Revised Statutes, and Title 12, Chapter 30, Hawaii Administrative Rules. Union and non-union programs are listed separately. The minimum requirements are not exclusive as a program sponsor may add other requirements in their selection procedures.

Trade	Sponsor	Union	Non-Union	Date of Approval/Registration	No. of Hours of On-the-Job Training	Minimum Requirements	Contact Information
Boilermaker	Western State Area Joint Apprenticeship Committee						Business Manager
	(International Brotherhood of Boilermakers, Iron Ship Builders, Blacksmith, Forgers, and Helpers and Subordinate, Lodge No. 627, AFL-CIO, and the Western States Joint Apprenticeship Committee, and Association of Boilermaker Employers)	x		03/18/1991	6,000	<ul style="list-style-type: none"> At least 18 years old High school graduate or GED equivalent 	Address: 1414 Dillingham Blvd, Room 205 Honolulu, HI 96817 Phone: (808) 848-7744 Fax: (808) 848-0311
Bricklayer-Mason	Joint Apprenticeship Committee for Bricklayer-Mason						Director of Training or Training Coordinator
	(Masonry Contractors Association of Hawaii and Other Signatory Employers and Local 1 of Hawaii of the Bricklayers and Allied Craftsmen International Union, AFL-CIO)	x		02/10/64	8,000	<ul style="list-style-type: none"> At least 16 years old Physically able to perform duties of the trade 	Address: 2251 N. School Street Honolulu, HI 96819 Phone: (808) 845-5949 Fax: (808) 847-7068 Website: http://www.opcmia.org/

Trade	Sponsor	Union	Non-Union	Date of Approval/Registration	No. of Hours of On-the-Job Training	Minimum Requirements	Contact Information
Carpenter	<p>Carpenters Joint Apprenticeship Committee aka Hawaii Carpenters Apprenticeship and Training Program</p> <p>(General Contractors Association of Hawaii and Building Industry Labor Association and Other Signatory Contractors and the United Brotherhood of Carpenters and Joiners of America, Local 745 AFL-CIO)</p>	x		04/01/64	8,000	<ul style="list-style-type: none"> At least 17 years old High school diploma or equivalent education, or equivalent work experience Pass basic math test Complete questionnaire Able to lift 75 lbs. 	<p>Director of Training</p> <p>Address: 1311 Houghtailing Street Room 201 Honolulu, HI 96817</p> <p>Phone: (808) 848-0794 Ext. 5 Fax: (808) 841-5961 (808) 841-0300 Website: http://www.carpenters.org/</p>
Carpenter	Associated Builders and Contractors Apprenticeship Committee		x	02/08/90	8,000	<ul style="list-style-type: none"> At least 18 years old High school diploma or GED Full-time employee of a member company for a period of not less than six continuous weeks Legally able to work Physically able to perform duties of the trade 	<p>Director of Training</p> <p>Address: 1375 Dillingham Blvd. Suite 200 Honolulu, HI 96817</p> <p>Phone: (808) 845-4887 Fax: (808) 847-7876 Website: http://www.abchawaii.org/</p>
Cement Finisher	<p>Joint Apprenticeship Committee for Cement Finishers</p> <p>(Operative Plasterers and Cement Finishers International Association, Local 630, AFL-CIO, and Local 1 of the International Union of Bricklayers and Allied Craftsmen, AFL-CIO)</p>	x		04/01/61	8,000	<ul style="list-style-type: none"> At least 16 years old Physically able to perform duties of the trade 	<p>Director of Training or Training Coordinator</p> <p>Address: 2251 N. School Street Honolulu, HI 96819</p> <p>Phone: (808) 845-5949 Fax: (808) 847-7068 Website: http://www.opcmia.org/</p>
Construction Craft Laborer	<p>Hawaii Laborers' Joint Apprenticeship Committee</p> <p>(International Union of North America, Local 368, and Signatory Contractors Association)</p>	x		02/11/00	4,000	<ul style="list-style-type: none"> At least 18 years old High school diploma or GED Driver's license Successfully complete Pre-Construction Apprentice Evaluation Course 	<p>Apprenticeship Coordinator</p> <p>Address: 96-138 Farrington Hwy. Pearl City, HI 96782</p> <p>Phone: (808) 455-7979 Fax: (808) 456-8689 Website: http://www.liuna.org/</p>

Trade	Sponsor	Union	Non-Union	Date of Approval/Registration	No. of Hours of On-the-Job Training	Minimum Requirements	Contact Information
Construction Equipment Operator	Hawaii Joint Apprenticeship Committee for Operating Engineers (General Contractors Labor Association and the Building Industry Labor Association and International Union of Operating Engineers, Local Union #3, AFL-CIO)	x		11/14/67	6,000	<ul style="list-style-type: none"> At least 18 years old High school diploma or GED or C-based test Physically able to perform duties of the trade School transcripts Driver's license Current State DOT PUC physical Pass industry or general knowledge test Have reliable transportation 	<p>State Administrator</p> <p>Address: P.O. Box 428 Kahuku, HI 96731-0428</p> <p>Phone: (808) 232-2001 Fax: (808) 232-2217 Website: http://oe3.org/training/</p>
Drywall	Carpenters Joint Apprenticeship Committee aka Hawaii Carpenters Apprenticeship and Training Program (General Contractors Association of Hawaii and Building Industry Labor Association and Other Signatory Contractors and the United Brotherhood of Carpenters and Joiners of America, Local 745, AFL-CIO)	x		04/06/88	8,000	<ul style="list-style-type: none"> At least 17 years old High school diploma or GED Complete questionnaire Pass industry test (8th grade math) Able to lift 100 lbs. 	<p>Director of Training</p> <p>Address: 1311 Houghtailing Street Room 201 Honolulu, HI 96817</p> <p>Phone: (808) 848-0794 Ext. 5 Fax: (808) 848-5961 (808) 841-0300 Website: http://www.carpenters.org/</p>
Electrical Wireperson	PECA-HEW Joint Apprenticeship Committee (Pacific Electrical Contractors Association and the Hawaii Electrical Workers Division of Laborers International, Local 368)	x		11/20/91	10,000	<ul style="list-style-type: none"> At least 16 years old High school diploma or GED Pass color code test Transcript of high school or post high school courses Pass one-year high school Algebra 1 (not pre-Algebra) or higher 	<p>Training Coordinator</p> <p>Address: 1130 Nimitz Highway Suite 204 Honolulu, HI 96817</p> <p>Phone: (808) 845-1986 Fax: (808) 847-7829 Website: N/A</p>

Trade	Sponsor	Union	Non-Union	Date of Approval/Registration	No. of Hours of On-the-Job Training	Minimum Requirements	Contact Information
Electrician	Associated Builders and Contractors Apprenticeship Committee		x	02/08/90	10,000	<ul style="list-style-type: none"> At least 18 years old High school diploma or GED Full-time employee of a member company for a period of not less than six continuous weeks Legally able to work Physically able to perform duties of the trade Pass eye examination for color blindness Completed one-year high school algebra (not pre-algebra) 	<p>Director of Training</p> <p>Address: 1375 Dillingham Blvd. Suite 200 Honolulu, HI 96817</p> <p>Phone: (808) 845-4887 Fax: (808) 847-7876 Website: http://www.abchawaii.org/</p>
(Electrician) Wireperson	<p>Hawaii Electricians Joint Apprenticeship Committee</p> <p>(International Brotherhood of Electrical Workers (IBEW) Local 1186, AFL-CIO, and Signatory Employers)</p>	x		04/08/47	10,000	<ul style="list-style-type: none"> At least 18 years old High school diploma or GED Complete the National Joint Apprenticeship and Training Committee Math Course or one-year high school Algebra 1 Transcript of high school or post high school courses Pass industry aptitude test to qualify for oral interview Application fee (non-refundable) 	<p>Apprenticeship or Training Coordinator</p> <p>Address: 1935 Hau Street Room 301 Honolulu, HI 96819</p> <p>Phone: (808) 847-0629 Fax: (808) 843-8818 Website: http://www.njatc.org/</p>
Elevator Constructor	<p>International Union of Elevator Constructors Local 126 Joint Apprenticeship Committee</p> <p>(International Union of Elevator Constructors, Local 126 and Signatory Employers)</p>	x		03/27/03	6,800	<ul style="list-style-type: none"> At least 18 years old High school diploma or GED School transcripts Pass aptitude test (math, reading) Pass medical exam Physically able to perform duties of the trade 	<p>Business Representative</p> <p>Address: 707 Alakea Street Room 314 Honolulu, HI 96813</p> <p>Phone: (808) 536-8653 Fax: (808) 537-3779 Website: http://iuec.org/</p>

Trade	Sponsor	Union	Non-Union	Date of Approval/Registration	No. of Hours of On-the-Job Training	Minimum Requirements	Contact Information
Fire Sprinkler Fitter	Honolulu Joint Apprenticeship and Training Committee for the Plumbing and Pipefitting Industry <i>aka</i> JATC of UA Plumbers and Fitters, Local 675, AFL-CIO, and PAMCAH (Plumbing and Mechanical Contractors Association of Hawaii and United Association of Plumbers and Pipefitters Local 675, AFL-CIO)	x		10/19/92	10,000	<ul style="list-style-type: none"> At least 17 years old High school diploma or GED School transcripts Pass placement evaluation with minimum score of 70% Driver's license 	Training Coordinator Address: 97-731 B Kamehameha Hwy. Pearl City, HI 96782 Phone: (808) 456-0585 Fax: (808) 456-7131 Website: http://www.ua.org/
Floor Layer	Joint Apprenticeship and Training Committee for Floor Layers (Hawaii Floor Covering Association and Carpet, Linoleum, and Soft Tile Union Local 1926, AFL-CIO)	x		02/17/66	8,000	<ul style="list-style-type: none"> At least 17 years old Driver's license Pass color vision test 	Training Coordinator Address: 2240 Young Street Honolulu, HI 96826 Phone: (808) 942-3988 Fax: (808) 946-6667 Website: http://www.iupat.org/
Glazier	Joint Apprenticeship Committee for Glaziers, Architectural Metal and Glassworkers Industry <i>aka</i> Glaziers, Architectural Metal and Glassworkers JATC (Glass/Metal Contractors Association of Hawaii and Other Signatory Contractors and the Glaziers, Architectural Metal and Glassworkers Union Local 1889, AFL-CIO)	x		04/01/01	10,000	<ul style="list-style-type: none"> At least 16 years old High school diploma or GED Driver's license Physically able to perform duties of the trade 	Training Coordinator Address: 2240 Young Street Honolulu, HI 96826 Phone: (808) 946-3329 (808) 943-0757 Fax: (808) 946-8736 Website: http://www.iupat.org/
Heat and Frost Asbestos Insulator	Honolulu Joint Apprenticeship Committee for the Heat and Frost Asbestos Insulator Trade (Heat and Frost Insulators and Asbestos Workers, Local 132, and Signatory Participating Employers)	x		07/23/71	10,000	<ul style="list-style-type: none"> At least 16 years old High school diploma or GED Physically able to perform duties of the trade 	Training Coordinator Address: 1019 Lauia Street Bay #4 Kapolei, HI 96707 Phone: (808) 521-6405 Fax: (808) 523-9861 Website: http://www.insulators.org/

Trade	Sponsor	Union	Non-Union	Date of Approval/Registration	No. of Hours of On-the-Job Training	Minimum Requirements	Contact Information
Heavy Duty Repairman and Welder	Hawaii Joint Apprenticeship Committee for Operating Engineers (General Contractors Labor Association and the Building Industry Labor Association and International Union of Operating Engineers, Local Union #3, AFL-CIO)	x		11/14/67	8,000	<ul style="list-style-type: none"> At least 18 years old High school diploma or GED or C-based test Physically able to perform duties of the trade School transcripts Driver's license Current State DOT PUC physical Pass industry or general knowledge test Have reliable transportation 	<p>State Administrator</p> <p>Address: P.O. Box 428 Kahuku, HI 96731-0428</p> <p>Phone: (808) 232-2001 Fax: (808) 232-2217 Website: http://oe3.org/training/</p>
Ironworker Shop Fabricator / Welder	Hawaii Shopmen's Local 803 Joint Apprenticeship and Training Committee (International Association of Bridge, Structural and Ornamental Ironworkers, Local 803, AFL-CIO, and Participating Employers)	x		12/31/63	8,000	<ul style="list-style-type: none"> At least 18 years old High school diploma or GED Physically able to perform duties of the trade Must be sponsored by employer who is signatory to the Shopmen's Local 803 collective bargaining agreement 	<p>Training Coordinator</p> <p>Address: 94-497 Ukee Street Waipahu, HI 96797</p> <p>Phone: (808) 671-4344 Fax: (808) 676-1144 Website: http://www.ironworkers.org/</p>
Ironworker (Reinforcing)	Joint Apprenticeship Committee for Ironworker (Reinforcing) aka Ironworkers Joint Apprenticeship Committee (Reinforcing) (International Association of Bridge, Structural and Ornamental Ironworkers, Local 625, AFL-CIO and Participating Employers)	x		06/26/53	6,000	<ul style="list-style-type: none"> At least 16 years old Physically able to perform duties of the trade 	<p>Training Coordinator</p> <p>Address: 94-497 Ukee Street Waipahu, HI 96797</p> <p>Phone: (808) 671-8225 Fax: (808) 676-1144 Website: http://www.ironworkers.org/</p>

Trade	Sponsor	Union	Non-Union	Date of Approval/Registration	No. of Hours of On-the-Job Training	Minimum Requirements	Contact Information
Ironworker (Structural)	Joint Apprenticeship Committee for Ironworker (Structural) aka Ironworkers Joint Apprenticeship Committee (Structural) (International Association of Bridge, Structural and Ornamental Ironworkers, Local 625, AFL-CIO and Participating Employers)	x		03/01/61	6,000	<ul style="list-style-type: none"> At least 16 years old Physically able to perform duties of the trade 	Training Coordinator Address: 94-497 Ukee Street Waipahu, HI 96797 Phone: (808) 671-8225 Fax: (808) 676-1144 Website: http://www.ironworkers.org/
Painter	Joint Apprenticeship and Training Committee for Painters (Painting and Decorating Contractors of Hawaii (PDCA) and the International Union of Painters and Allied Trades (IUPAT) Local 1791, AFL-CIO)	x		09/01/61	8,000	<ul style="list-style-type: none"> At least 16 years old High school diploma or GED Driver's license Physically able to perform the duties of the trade Pass color code vision test 	Training Coordinator Address: 2240 Young Street Honolulu, HI 96826 Phone: (808) 947-6606 Fax: (808) 942-0195 Websites: http://www.dc50.org/ http://www.iupat.org/
Painter	Associated Builders and Contractors Apprenticeship Committee		x	05/02/90	8,000	<ul style="list-style-type: none"> At least 18 years old Full-time employee of a member company for a period of not less than six continuous weeks Legally able to work Physically able to perform duties of the trade Pass physical examination if required by Committee 	Director of Training Address: 1375 Dillingham Blvd. Suite 200 Honolulu, HI 96817 Phone: (808) 845-4887 Fax: (808) 847-7876 Website: http://www.abchawaii.org/
Painter	Color Dynamics, Inc.		x	12/01/89	8,000	<ul style="list-style-type: none"> At least 16 years old Physically fit to perform duties of the trade Must not be color blind 	President Address: 816 Gulick Avenue Honolulu, HI 96819 Phone: (808) 848-7000 Fax: (808) 842-0800 Website: http://www.colordynamics.com

Trade	Sponsor	Union	Non-Union	Date of Approval/Registration	No. of Hours of On-the-Job Training	Minimum Requirements	Contact Information
Painter	Kawika's Painting		x	10/01/84	8,000	<ul style="list-style-type: none"> At least 16 years old Physically fit to perform duties of the trade Must not be color blind 	<p>President</p> <p>Address: 2147 Eluwene Street Honolulu, HI 96819</p> <p>Phone: (808) 848-0003 Fax: (808) 842-1908 Website: http://www.kawikaspainting.com</p>
Paving Equipment Operator	<p>Hawaii Joint Apprenticeship Committee for Operating Engineers</p> <p>(General Contractors Labor Association and the Building Industry Labor Association and International Union of Operating Engineers, Local Union #3, AFL-CIO)</p>	x		04/29/10	4,000	<ul style="list-style-type: none"> At least 18 years old High school diploma or GED or C-based test Physically able to perform duties of the trade School transcripts Driver's license Current State DOT PUC physical Pass industry or general knowledge test Have reliable transportation 	<p>State Administrator</p> <p>Address: P.O. Box 428 Kahuku, HI 96731-0428</p> <p>Phone: (808) 232-2001 Fax: (808) 232-2217 Website: http://oe3.org/training/</p>
Plasterer	<p>Joint Apprenticeship Committee for Plasterers</p> <p>(Pacific Bureau for Lathing and Plastering and the Operative Plasterers and Cement Finishers Association of the U.S. and Canada, Local 630, AFL-CIO)</p>	x		06/30/59	8,000	<ul style="list-style-type: none"> At least 16 years old Physically able to perform duties of the trade 	<p>Director of Training</p> <p>Address: 2251 N. School Street Honolulu, HI 96819</p> <p>Phone: (808) 845-5949 Fax: (808) 847-7068 Website: http://www.opcmia.org/</p>
Plumber	<p>Honolulu Joint Apprenticeship and Training Committee for the Plumbing and Pipefitting Industry <i>aka</i> JATC of UA Plumbers and Fitters, Local 675, AFL-CIO, and PAMCAH</p> <p>(Plumbing and Mechanical Contractors Association of Hawaii and United Association of Plumbers and Pipefitters Local 675, AFL-CIO)</p>	x		11/14/52	10,000	<ul style="list-style-type: none"> At least 17 years old High school diploma or GED School transcripts Pass placement evaluation with a minimum score of 70% Driver's license 	<p>Training Coordinator</p> <p>Address: 97-731 B Kamehameha Hwy. Pearl City, HI 96782</p> <p>Phone: (808) 456-0585 Fax: (808) 456-7131 Website: http://www.ua.org/</p>

Trade	Sponsor	Union	Non-Union	Date of Approval/Registration	No. of Hours of On-the-Job Training	Minimum Requirements	Contact Information
Plumber	Associated Builders and Contractors Apprenticeship Committee		x	02/02/99	10,000	<ul style="list-style-type: none"> At least 18 years old Full-time employee of a member company for a period of not less than six continuous weeks Legally able to work Physically able to perform duties of the trade Pass physical examination if required by Committee 	<p>Director of Training</p> <p>Address: 1375 Dillingham Blvd. Suite 200 Honolulu, HI 96817</p> <p>Phone: (808) 845-4887</p> <p>Fax: (808) 847-7876</p> <p>Website: http://www.abchawaii.org/</p>
Pointer-Caulker-Weatherproofer	Joint Apprenticeship Committee for Pointer-Caulker-Weatherproofer (Pointing, Caulking and Weatherproofing Contractors and the International Union of Bricklayers and Allied Crafts, Local 1, AFL-CIO)	x		08/23/95	6,000	<ul style="list-style-type: none"> At least 16 years old Physically able to perform duties of the trade 	<p>Director of Training or Training Coordinator</p> <p>Address: 2251 N. School Street Honolulu, HI 96819</p> <p>Phone: (808) 845-5949</p> <p>Fax: (808) 847-7068</p> <p>Website: http://www.opcmia.org/</p>
Refrigeration Air-Conditioning	Honolulu Joint Apprenticeship and Training Committee for the Plumbing and Pipefitting Industry aka JATC of UA Plumbers and Fitters, Local 675, AFL-CIO, and PAMCAH (Plumbing and Mechanical Contractors Association of Hawaii and United Association of Plumbers and Pipefitters Local 675, AFL-CIO)	x		09/04/62	10,000	<ul style="list-style-type: none"> At least 17 years old High school diploma or GED School transcripts Pass placement evaluation with a minimum score of 70% Driver's license 	<p>Training Coordinator</p> <p>Address: 97-731 B Kamehameha Hwy. Pearl City, HI 96782</p> <p>Phone: (808) 456-0585</p> <p>Fax: (808) 456-7131</p> <p>Website: http://www.ua.org/</p>
Roofer	Joint Apprenticeship and Training Committee for Roofers (United Union of Roofers, Waterproofers and Allied Workers, AFL-CIO, Local 221, and All Participating Employers)	x		01/13/68	8,000	<ul style="list-style-type: none"> At least 16 years old High school diploma or GED Driver's license Physically able to perform duties of the trade Able to lift 100 lbs. 	<p>Training Director</p> <p>Address: 2045 Kamehameha IV Rd. Room 203 Honolulu, HI 96819</p> <p>Phone: (808) 847-5757</p> <p>Fax: (808) 848-8707</p> <p>Website: http://www.unionroofers.com</p>

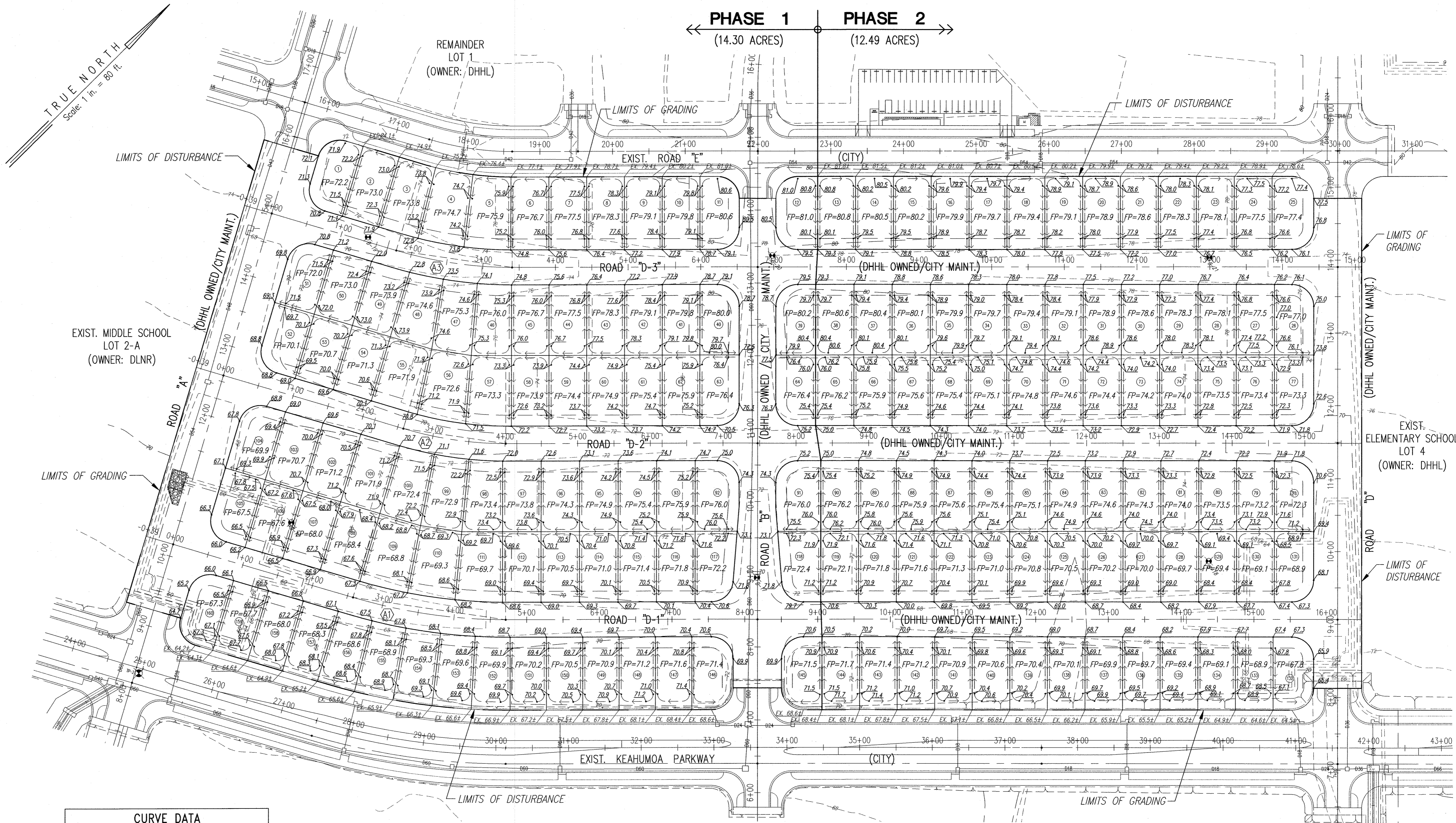
Trade	Sponsor	Union	Non-Union	Date of Approval/Registration	No. of Hours of On-the-Job Training	Minimum Requirements	Contact Information
Roofer	Associated Builders and Contractors Apprenticeship Committee		x	01/09/96	7,000	<ul style="list-style-type: none"> At least 18 years old Full-time employee of a member company for a period of not less than six continuous weeks Legally able to work Physically able to perform duties of the trade Pass physical examination if required by Committee 	Director of Training Address: 1375 Dillingham Blvd. Suite 200 Honolulu, HI 96817 Phone: (808) 845-4887 Fax: (808) 847-7876 Website: http://www.abchawaii.org/
Sheet Metal Worker	Hawaii Joint Apprenticeship Committee for the Sheet Metal Industry (Sheet Metal Contractor's Association and Sheet Metal Workers' International Association, Local 293)	x		01/02/58	10,000	<ul style="list-style-type: none"> At least 18 years old High school diploma or GED Driver's license 	Apprenticeship Coordinator Address: 1405 North King Street Room 403 Honolulu, HI 96817 Phone: (808) 841-6106 Fax: (808) 841-1842 Website: http://www.smwia.org/
Steamfitter/Welder	Honolulu Joint Apprenticeship and Training Committee for the Plumbing and Pipefitting Industry <i>aka</i> JATC of UA Plumbers and Fitters, Local 675, AFL-CIO, and PAMCAH (Plumbing and Mechanical Contractors Association of Hawaii and United Association of Plumbers and Pipefitters Local 675, AFL-CIO)	x		02/05/02	10,000	<ul style="list-style-type: none"> At least 17 years old High school diploma or GED School transcripts Pass placement evaluation with a minimum score of 70% Driver's license 	Training Coordinator Address: 97-731 B Kamehameha Hwy. Pearl City, HI 96782 Phone: (808) 456-0585 Fax: (808) 456-7131 Website: http://www.ua.org/
Stone Mason	Joint Apprenticeship Committee for Stone Mason Industry (Masonry Contractors Association of Hawaii and Local 1 of Hawaii of the Bricklayers and Allied Craftsmen International Union, AFL-CIO, and Other Signatory Employers)	x		02/10/64	8,000	<ul style="list-style-type: none"> At least 16 years old Physically able to perform duties of the trade 	Director of Training or Training Coordinator Address: 2251 N. School Street Honolulu, HI 96819 Phone: (808) 845-5949 Fax: (808) 847-7068 Website: http://www.opcmia.org/

Trade	Sponsor	Union	Non-Union	Date of Approval/Registration	No. of Hours of On-the-Job Training	Minimum Requirements	Contact Information
Taper	Joint Apprenticeship Committee for Tapers (Gypsum Drywall Contractors Association of Hawaii and the International Brotherhood of Painters and Allied Trades Tapers Local Union 1944, AFL-CIO)	x		09/01/67	8,000	<ul style="list-style-type: none"> At least 16 years old Physically able to perform duties of the trade 	Chairman Address: 2240 Young Street Honolulu, HI 96826 Phone: (808) 946-6621 Fax: (808) 946-6623 Website: http://www.dc50.org/
Telecommunication / CATV Installer Technician	Hawaii Electricians Joint Apprenticeship Committee aka Joint Apprenticeship Committee for Telecommunications (International Brotherhood of Electrical Workers Local Union 1186, AFL-CIO, and Signatory Employers)	x		09/16/98	6,000	<ul style="list-style-type: none"> At least 16 years old High school diploma or equivalent or GED High school transcript Pass color code test Physically fit to perform duties of the trade One-year satisfactory completion of high school algebra (not Pre-Algebra) 	Apprenticeship or Training Coordinator Address: 1935 Hau Street Room 301 Honolulu, HI 96819 Phone: (808) 847-0629 Fax: (808) 843-8818 Website: http://www.njatc.org/
Tile Setter	Joint Apprenticeship Committee for Tile Setters (Tile, Marble and Terrazo Contractors Association of Hawaii and Local 1 of Hawaii of the Bricklayers, and Allied Craftsmen International Union of America, AFL-CIO)	x		06/24/58	8,000	<ul style="list-style-type: none"> At least 16 years old Physically able to perform duties of the trade 	Director of Training or Training Coordinator Address: 2251 N. School Street Honolulu, HI 96819 Phone: (808) 845-5949 Fax: (808) 847-7068 Website: http://www.opcmia.org/

Trade	Sponsor	Union	Non-Union	Date of Approval/Registration	No. of Hours of On-the-Job Training	Minimum Requirements	Contact Information
Truck Operator and Driver	Hawaii Joint Apprenticeship Committee for Operating Engineers (General Contractors Labor Association and the Building Industry Labor Association and International Union of Operating Engineers, Local Union #3, AFL-CIO)	x		03/01/91	2,000	<ul style="list-style-type: none"> • At least 18 years old • High school diploma or GED or C-based test • Physically able to perform duties of the trade • School transcripts • Driver's license • Current State DOT PUC physical • Pass industry or general knowledge test • Have reliable transportation 	<p>State Administrator</p> <p>Address: P.O. Box 428 Kahuku, HI 96731-0428</p> <p>Phone: (808) 232-2001 Fax: (808) 232-2217 Website: http://oe3.org/training/</p>

GRADING NOTES

1. ALL GRADING WORK SHALL BE IN ACCORDANCE WITH CHAPTER 14, ARTICLES 13, 14, 15 AND 16, AS RELATED TO GRADING, SOIL EROSION AND SEDIMENT CONTROL, OF THE REVISED ORDINANCES OF HONOLULU, 1990, AS AMENDED, AND SOILS REPORT ENTITLED "REVISED PRELIMINARY GEOTECHNICAL EXPLORATION REPORT PROPOSED EAST KAPOLEI PHASE II DEVELOPMENT STUDY AREA I, KAPOLEI, OAHU, HAWAII" DATED JUNE 2009, SOILS REPORT ENTITLED, "REVISED PRELIMINARY GEOTECHNICAL EXPLORATION REPORT PROPOSED EAST KAPOLEI PHASE II DEVELOPMENT STUDY AREA II, KAPOLEI, OAHU, HAWAII" DATED JUNE 2009, SUPPLEMENTAL RECOMMENDATIONS LETTER DATED SEPTEMBER 12, 2012 AND PAVEMENT SECTION LETTER DATED MARCH 22, 2012, BY PSC CONSULTANTS, LLC.
2. NO CONTRACTOR SHALL PERFORM ANY GRADING OPERATION SO AS TO CAUSE FALLING ROCKS, SOIL, OR DEBRIS IN ANY FORM TO FALL, SLIDE OR FLOW ONTO ADJOINING PROPERTIES, STREETS OR NATURAL WATERCOURSES. SHOULD SUCH VIOLATIONS OCCUR, THE CONTRACTOR MAY BE CITED AND THE CONTRACTOR SHALL MAKE ALL REMEDIAL ACTIONS NECESSARY.
3. THE CONTRACTOR, AT HIS OWN EXPENSE, SHALL KEEP THE PROJECT AREA AND SURROUNDING AREA FREE FROM DUST NUISANCE. THE WORK SHALL BE IN CONFORMANCE WITH THE AIR POLLUTION CONTROL STANDARDS CONTAINED IN THE HAWAII ADMINISTRATIVE RULES, TITLE 11, CHAPTER 60.1, "AIR POLLUTION CONTROL."
4. THE UNDERGROUND PIPES, CABLES OR DUCTLINES KNOWN TO EXIST BY THE ENGINEER FROM HIS SEARCH OF RECORDS ARE INDICATED ON THE PLANS. THE CONTRACTOR SHALL VERIFY THE LOCATIONS AND DEPTHS OF THE FACILITIES AND EXERCISE PROPER CARE IN EXCAVATING IN THE AREA WHEREVER CONNECTIONS OF NEW UTILITIES ARE SHOWN ON THE PLANS, THE CONTRACTOR SHALL EXPOSE THE EXISTING LINES AT THE PROPOSED CONNECTIONS TO VERIFY THEIR LOCATIONS AND DEPTHS PRIOR TO EXCAVATION FOR THE NEW LINES.
5. ADEQUATE PROVISIONS SHALL BE MADE TO PREVENT SURFACE WATERS FROM DAMAGING THE CUT FACE OF AN EXCAVATION OR THE SLOPED SURFACES OF A FILL. FURTHERMORE, ADEQUATE PROVISIONS SHALL BE MADE TO PREVENT SEDIMENT-LOADED RUNOFF FROM LEAVING THE SITE.
6. ALL SLOPES AND EXPOSED AREAS SHALL BE CHEMICALLY STABILIZED AS SOON AS FINAL GRADES HAVE BEEN ESTABLISHED. CHEMICAL STABILIZATION SHALL NOT BE DELAYED UNTIL ALL GRADING WORK HAS BEEN COMPLETED. GRADING TO FINAL GRADE SHALL BE CONTINUOUS, AND ANY AREA WITHIN WHICH WORK HAS BEEN INTERRUPTED OR DELAYED SHALL BE CHEMICALLY STABILIZED.
7. FILLS ON SLOPES STEEPER THAN 5:1 SHALL BE KEYED.
8. THE CITY SHALL BE INFORMED OF THE LOCATION OF THE BORROW/DISPOSAL SITE FOR THE PROJECT WHEN THE APPLICATION FOR A GRADING PERMIT IS MADE. THE BORROW/DISPOSAL SITE MUST ALSO FULFILL THE REQUIREMENTS OF THE GRADING ORDINANCE.
9. NO GRADING WORK SHALL BE DONE ON SATURDAYS, SUNDAYS AND HOLIDAYS AT ANY TIME WITHOUT PRIOR NOTICE TO THE DIRECTOR, D.P.P., PROVIDED SUCH GRADING WORK IS ALSO IN CONFORMANCE WITH THE COMMUNITY NOISE CONTROL STANDARDS CONTAINED IN THE HAWAII ADMINISTRATIVE RULES, TITLE 11, CHAPTER 46, "COMMUNITY NOISE CONTROLS".
10. THE LIMITS OF THE AREA TO BE GRADED SHALL BE FLAGGED BEFORE THE COMMENCEMENT OF THE GRADING WORK.
11. ALL GRADING OPERATIONS SHALL BE PERFORMED IN CONFORMANCE WITH THE APPLICABLE PROVISIONS OF THE WATER QUALITY AND WATER POLLUTION CONTROL STANDARDS CONTAINED IN HAWAII ADMINISTRATIVE RULES, TITLE 11, CHAPTER 54, "WATER QUALITY STANDARDS", AND TITLE 11, CHAPTER 55, "WATER POLLUTION CONTROL," AND IF APPLICABLE, THE NPDES PERMIT FOR THE PROJECT. BEST MANAGEMENT PRACTICES SHALL BE EMPLOYED AT ALL TIMES DURING THE CONSTRUCTION PERIOD.
12. WHERE APPLICABLE AND FEASIBLE THE MEASURES TO CONTROL EROSION AND OTHER POLLUTANTS SHALL BE IN PLACE BEFORE ANY EARTH MOVING PHASE OF THE GRADING IS INITIATED.
13. TEMPORARY EROSION CONTROLS SHALL NOT BE REMOVED BEFORE PERMANENT EROSION CONTROLS ARE IN-PLACE AND ESTABLISHED.
14. TEMPORARY EROSION CONTROL PROCEDURES SHALL BE SUBMITTED FOR APPROVAL PRIOR TO APPLICATION FOR A GRADING PERMIT.
15. IF THE GRADING WORK INVOLVES CONTAMINATED SOIL, THEN ALL GRADING WORK SHALL BE DONE IN CONFORMANCE WITH APPLICABLE STATE AND FEDERAL REQUIREMENTS.
16. FOR NON-CITY PROJECTS, THE CONTRACTOR SHALL NOTIFY THE CIVIL ENGINEERING BRANCH, D.P.P. AT 768-8084 TO ARRANGE FOR INSPECTORIAL SERVICES AND SUBMIT TWO (2) SETS OF APPROVED CONSTRUCTION PLANS SEVEN (7) DAYS PRIOR TO COMMENCEMENT OF CONSTRUCTION WORK. FOR CITY PROJECTS, THE CONTRACTOR SHALL COORDINATE INSPECTORIAL SERVICES WITH THE RESPONSIBLE CITY AGENCY.
17. PURSUANT TO CHAPTER 6E, HRS, IN THE EVENT ANY ARTIFACTS OR HUMAN REMAINS ARE UNCOVERED DURING CONSTRUCTION OPERATIONS, THE CONTRACTOR SHALL IMMEDIATELY SUSPEND WORK AND NOTIFY THE HONOLULU POLICE DEPARTMENT, THE STATE DEPARTMENT OF LAND AND NATURAL RESOURCES-HISTORIC PRESERVATION DIVISION (692-8015). IN ADDITION, FOR NON-CITY PROJECTS, THE CONTRACTOR SHALL INFORM THE CIVIL ENGINEERING BRANCH, D.P.P. (768-8084); AND FOR CITY PROJECTS, NOTIFY THE RESPONSIBLE CITY AGENCY.
18. FOR ALL PROJECTS, WHICH WILL DISTURB ONE (1) ACRE OR MORE OF LAND, THE CONTRACTOR SHALL NOT START CONSTRUCTION UNTIL A NOTICE OF GENERAL PERMIT COVERAGE (NGPC) IS RECEIVED FROM THE DEPARTMENT OF HEALTH, STATE OF HAWAII, AND HAS SATISFIED ANY OTHER APPLICABLE REQUIREMENTS OF THE NPDES PERMIT PROGRAM. ALSO, FOR NON-CITY AND OTHER NON-GOVERNMENTAL AGENCY PROJECTS, THE CONTRACTOR SHALL PROVIDE A WRITTEN COPY OF THE NGPC TO THE PERMITTING AND INSPECTION SECTION, CIVIL ENGINEERING BRANCH, DPP, AT LEAST SEVEN (7) CALENDAR DAYS BEFORE THE START OF THE CONSTRUCTION. FOR CITY OR OTHER GOVERNMENTAL PROJECTS, THE CONTRACTOR SHOULD PROVIDE A WRITTEN COPY OF THE NGPC TO THE APPROPRIATE CITY DEPARTMENT OR GOVERNMENTAL AGENCY PER THEIR REQUIREMENTS.
19. ALL GRADING AND CONSTRUCTION WORK SHALL IMPLEMENT MEASURES TO ENSURE THAT THE DISCHARGE OF POLLUTANTS FROM THE CONSTRUCTION SITE WILL BE REDUCED TO THE MAXIMUM EXTENT PRACTICABLE AND WILL NOT CAUSE OR CONTRIBUTE TO AN EXCEEDANCE OF WATER QUALITY STANDARDS.
20. NON-COMPLIANCE TO ANY OF THE ABOVE REQUIREMENTS SHALL MEAN IMMEDIATE SUSPENSION OF ALL WORK, AND REMEDIAL WORK SHALL COMMENCE IMMEDIATELY. ALL COSTS INCURRED SHALL BE BILLED TO THE VIOLATOR. FURTHERMORE, VIOLATORS SHALL BE SUBJECTED TO ADMINISTRATIVE, CIVIL AND/OR CRIMINAL PENALTIES.
21. FOR BENCH MARK, SEE SHEET T-1.



GENERAL SITE PLAN AND BORING LOCATIONS

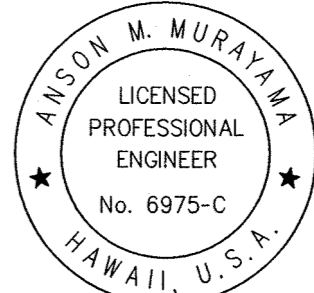
SCALE: 1" = 80'

EARTHWORK QUANTITIES
(FOR PERMIT PURPOSES ONLY)

AREA TO BE GRADED	26.79 ACS.
AREA OF DISTURBANCE PER DOH DEFINITION	26.79 ACS.
EXCAVATION (NON EXPANSIVE MATERIAL)	5,500 CY
EMBANKMENT (NON EXPANSIVE MATERIAL)	16,500 CY
GENERAL FILL MATERIAL	11,500 CY
TOTAL FILL MATERIAL	28,000 CY

LEGEND

---	EXISTING CONTOUR
---	PROPERTY LINE / ROAD RIGHT-OF-WAY
---	LIMITS OF DISTURBANCE PER DOH DEFINITION
---	CENTERLINE OF ROADWAY
---	LIMITS OF GRADING
---	SET BACK LINE
---	FINISH GRADE SWALE PATTERN
FP	FINISHED PAD
⑩	LOT NUMBER
53.7	FINISH SPOT ELEVATION
B-6	BORING LOCATION



THIS WORK WAS PREPARED BY
ME OR UNDER MY SUPERVISION.
CONSTRUCTION OF THIS PROJECT
WILL BE UNDER MY OBSERVATION.
LICENSE EXPIRATION DATE: 04/30/14

REVISION DATE	DESCRIPTION	MADE BY	APPROVED
Community Planning and Engineering, Inc. Engineering Design Construction Management Infrastructure Planning 1286 Queen Emma Street Honolulu, Hawaii			
EAST KAPOLEI II DEVELOPMENT INCREMENT 2B HONOLULU, EWA, OAHU, HAWAII (DPP SUBD. FILE NO. 2011/SUB-155) OWNER & DEVELOPER: DEPARTMENT OF HAWAIIAN HOME LANDS TAX MAP KEY: 9-1-17: Portion 110			
LOT GRADING NOTES, GENERAL SITE PLAN AND BORING LOCATIONS			
DRAWN BY: LUT	ENGINEER: FC	CHECKED BY: AMM	APPROVED:
M. Ferguson 6/28/13 CHIEF, CIVIL ENGINEERING BRANCH, D.P.P.			
FILE	POCKET	FOLDER	NO.

Bid Form

Project Identification: **East Kapolei II Development, Increment IIB**

Contract Identification and Number: **IFB-14-HHL-001**

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ARTICLE 1 - BID RECIPIENT

- 1.01 This Bid Is Submitted To: Department of Hawaiian Home Lands, 91-5420 Kapolei Parkway, Kapolei, Hawaii 96707
- 1.02 The undersigned Bidder proposes and agrees, if this Bid is accepted, to enter into an Agreement with Owner in the form included in the Bidding Documents to perform all Work as specified or indicated in the Bidding Documents for the prices and within the times indicated in the Bid and in accordance with the other terms and conditions of the Bidding Documents.

ARTICLE 2 - BIDDER'S ACKNOWLEDGMENTS

- 2.01 Bidder accepts all of the terms and conditions of the Advertisement and Instructions to Bidders, including without limitations those dealing with the dispositions of Bid security. The Bid will remain subject to acceptance for 120 days after the Bid opening, or for such longer period of time that Bidder may agree to in writing upon request of Owner.

ARTICLE 3 - BIDDER'S REPRESENTATIONS

- 3.01 In submitting this Bid, Bidder represents that:
- A. Bidder has examined and carefully studied the Bidding Documents, the other related data identified in the Bidding Documents, and the following Addenda, receipt of which is hereby acknowledged:

Addendum No.	Addendum Date
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____

- B. Bidder has visited the Site and become familiar with and is satisfied as to the general, local, and Site conditions that may affect cost, progress, and performance of the Work.
- C. Bidder is familiar with and is satisfied as to all Federal, state, and local Laws and Regulations that may affect cost, progress, and performance of the Work.
- D. Bidder has carefully studied all: (1) reports of explorations and tests of subsurface conditions at or contiguous to the Site and all drawings of physical conditions in or relating to existing surface or subsurface structures at or contiguous to the Site (except Underground Facilities) which have been identified in SC-4.02, and (2) reports and drawings of Hazard Environmental Conditions, if any, at the Site that have been identified in SC-4.06 as containing reliable “technical data.”
- E. Bidder has considered the information known to Bidder; information commonly known to contractors doing business in the locality of the Site; information and observations obtained from visits to the Site; the Bidding Documents; and the Site-related reports and drawings identified in the Bidding Documents, with respect to the effect of such information, observations, and documents on (1) the cost, progress, and performance of the Work; (2) the means, methods, techniques, sequences, and procedures of construction to be employed by Bidder, including applying the specific means, methods, techniques, sequences, and procedures of construction expressly required by the Bidding Documents; and (3) Bidder’s safety precautions and programs.
- F. Based on the information and observations referred to in Paragraph 3.01.E above, Bidder does not consider that any further examinations, investigations, explorations, tests, studies, or data are necessary for the determination of this Bid for performance of the Work at the price(s) bid and within the times and in accordance with the other terms and conditions of the Bidding Documents.
- G. Bidder is aware of the general nature of the Work to be performed by Owner and others at the Site that relates to the Work as indicated in the Bidding Documents.
- H. Bidder has given Engineer written notice of all conflicts, errors, ambiguities, or discrepancies that Bidder has discovered in the Bidding Documents, and the written resolution thereof by Engineer is acceptable to Bidder.
- I. The Bidding Documents are generally sufficient to indicate and convey understanding of all terms and conditions for the performance of the Work for which this Bid is submitted.
- J. Bidder will submit written evidence of its authority to do business in the State or

other jurisdiction where the Project is located not later than the date of its execution of the Agreement.

ARTICLE 4 - BIDDER'S CERTIFICATION

4.01 Bidder further represents that:

- A. This Bid is genuine and not made in the interest of or on the behalf of any undisclosed individual or entity and is not submitted in conformity with any agreement or rules of any group, association, organization, or corporation;
- B. Bidder has not directly or indirectly induced or solicited any other Bidder to submit a false or sham Bid;
- C. Bidder has not solicited or induced any individual or entity to refrain from bidding; and
- D. Bidder has not engaged in corrupt, fraudulent, collusive, or coercive practices in competing for the Contract. For the purposes of this Paragraph 4.01.D:
 - 1. "corrupt practice" means the offering, giving, receiving, or soliciting of any thing of value likely to influence the action of a public official in the bidding process;
 - 2. "fraudulent practice" means an intentional misrepresentation of facts made (a) to influence the bidding process to the detriment of Owner, (b) to establish bid prices at artificial non-competitive levels, or (c) to deprive Owner of the benefits of free and open competition;
 - 3. "collusive practice" means a scheme or arrangement between two or more Bidders, with or without the knowledge of Owner, a purpose of which is to establish bid prices at artificial, non-competitive levels; and
 - 4. "coercive practice" means harming or threatening to harm, directly or indirectly, persons or their property to influence their participation in the bidding process or affect the execution of the Contract.

ARTICLE 5 - BASIS OF BID

5.01 Bidder will complete the Work in accordance with the Contract Documents for the following price(s):

Item No.	Estimated Quantity	Description	Unit Price	Total
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I. MASS GRADING

1.	L.S.	Mass grading of existing Sediment Basins #1 and #2, including placing and compacting (per the recommendations in the soils report) approximately 11,500 c.y. of embankment.	Lump Sum. \$	\$
2.	92,000	Sq. Yds., Fine grading of lot areas, including placing and compacting (per the recommendations in the soils report) approximately 3,100 c.y. of imported non-expansive material at existing Sediment Basins #1 and #2.	\$	\$
SUB-TOTAL FOR MASS GRADING (Items 1 to 2 inclusive)				\$

II. ROADWAYS

The prices bid herein for the following items shall include all materials, labor, tools, equipment, machinery and all incidentals necessary to install or to construct these items in place complete, all in accordance with the plans and specifications.

3.	18	Each, Sediment control filter at catch basins, including installation, maintenance, and removal, in place complete.	Per Each \$	\$
4.	662	Lin. Ft., Dust fence including construction, maintenance, and removal, to be used only as directed or approved by the Engineer, in place complete. Contingent item.	Per Lin. Ft. \$	\$
5.	1,792	Lin. Ft., Silt fence including construction, maintenance, and removal, to be used only as directed or approved by the Engineer, in place complete. Contingent item.	Per Lin. Ft. \$	\$
6.	L.S.	Temporary erosion control, inclusive of maintenance of existing temporary ingress/egress; maintenance of existing Sediment Basins #1 and #2 constructed under "East Kapolei II Portion of Lot 6A Mass Grading Plans," and NPDES permit requirements, in place complete.	Lump Sum	\$

7.	L.S.	Mobilization including obtaining insurance, bonds, permits, scheduling, submittals and other activities to mobilize the project, in place complete. (Maximum \$50,000)	Lump Sum	\$
8.	L.S.	Construct temporary ingress/egress construction entrance at Road B with 82 cubic yards of No. 2 crushed rock on Dupont TYPAR fabric 3401 or equal.	Lump Sum	\$
9.	8,815	Sq. Yds., Fine grading of road area, in place complete.	Per Sq. Yd.	\$
10.	3,161	Cu. Yds., 6" asphalt treated base course, in place complete.	Per Cu. Yd.	\$
11.	12,568	Sq. Yds., 2" asphaltic concrete pavement, in place complete.	Per Sq. Yd.	\$
12.	6,320	Sq. Yds., 2 1/2" asphaltic concrete pavement, in place complete.	Per Sq. Yd.	\$
13.	72	Sq. Yds., 2" to 2 1/2" asphaltic concrete pavement transition, in place complete.	Per Sq. Yd.	\$
14.	116	Sq. Yds., Smooth riding connection A.C. Pavement.	Per Sq. Yd.	\$
15.	16,593	Cu. Yds., aggregate subbase course, in place complete.	Per Cu. Yd.	\$
16.	10,907	Lin. Ft., Standard cast-in-place integral curb and gutter, per DPW Standard Detail R-4, in place complete.	Per Lin. Ft.	\$
17.	1,342	Lin. Ft., Standard cast-in-place integral curb and gutter, per DPW Standard Detail R-4A (revised), in place complete.	Per Lin. Ft.	\$
18.	2,640	Sq. Ft., 6" thick, Class "A" concrete driveway apron, reinforced with 6"x 6"-6/6 galvanized wire fabric, broom finished, in place complete.	Per Sq. Ft.	\$
19.	48,088	Sq. Ft., Plain Class "B" concrete sidewalk, 4" thick, in place complete.	Per Sq. Ft.	\$

20.	44,048	Sq. Ft. Reinforced 4" thick concrete driveway apron, reinforced with 6"x6"-W2.9xW2.9 galvanized welded wire fabric, broom finished, in place complete.	Per Sq. Ft.	\$	\$
21.	3,575	Sq. Ft. Concrete Curb Ramps, 4" thick, in place complete.	Per Sq. Ft.	\$	\$
22.	49	Each, Traffic sign with post, in place complete.	Per Each	\$	\$
23.	47	Each, Traffic sign without post, including straps, in place complete.	Per Each	\$	\$
24.	15	Each, Standard City and County street survey monument, in place complete.	Per Each	\$	\$
25.	9	Each, Standard street name sign, in place complete.	Per Each	\$	\$
26.	L.S.	Pavement markings, including striping, words, stop bars and reflective markers, in place complete.	Lump Sum		\$
27.	L.S.	Project sign, including installation and removal, in place complete.	Lump Sum		\$
28.	L.S.	Field office, including installation and removal, in place complete.	Lump Sum		\$
29.	559	Cu. Yds., Planter strip, 4" thick topsoil and grass.	Per Cu. Yd.	\$	\$
30.	6	Each, Remove existing concrete header and temporary wooden barricade.	Per Each	\$	\$
SUB-TOTAL FOR ROADWAY (Items 3 to 30 inclusive)					\$

III. MAILBOX CENTER

The prices bid herein for the following items shall include all materials, labor, tools, equipment, machinery and all incidentals necessary to install or to construct these items in place complete, all in accordance with the plans and specifications.

31.	1465	Sq. Yds., 2" asphaltic concrete pavement, in place complete.	Per Sq. Yd.	\$	\$
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32.	244	Cu. Yds., 6" asphalt treated base course, in place complete.	Per Cu. Yd.	\$	\$
33.	403	Cu. Yds., 8" aggregate subbase course, in place complete.	Per Cu. Yd.	\$	\$
34.	718	Sq. Ft., Reinforced concrete pad for mailbox area, (8'x 89.75'x 8") in place complete.	Per Sq. Ft.	\$	\$
35.	88	Sq. Ft., Plain Class "B" concrete sidewalk, 4" thick, in place complete.	Per Sq. Ft.	\$	\$
36.	22	Each, Pre-cast Wheel Stops.	Per Each	\$	\$
37.	2	Each, Handicap sign with post in place complete.	Per Each	\$	\$
38.	1	Each, Access aisle sign with post in place complete.	Per Each	\$	\$
39.	2	Each, Traffic sign with post, in place complete.	Per Each	\$	\$
40.	2	Each, Traffic sign without post, including straps, in place complete.	Per Each	\$	\$
41.	446	Lin. Ft. 2"x 6" Wooden Header.	Per Lin. Ft.	\$	\$
42.	56	Cu. Yds., Planter strip, 4" thick topsoil and grass.	Per Cu. Yd.	\$	\$
43.	1,968	Sq. Yds., Fine Grading of Mailbox Center area.	Per. Sq. Yd.	\$	\$
44.	10	Each, Mail Box, "Vital Type III Cluster Box Units (CBUs), Model #1570-PG" by Florence Manufacturing Company, or approved equal, in place complete.	Per Each	\$	\$

SUB-TOTAL FOR MAILBOX CENTER
(Items 31 to 44 inclusive)

\$

IV. DRAINAGE SYSTEM

The prices bid herein for the following items shall include furnishing all labor, equipment, tools, materials and all incidental work necessary to construct the drainage system in place complete, including excavating for catch basins and manholes, trenching for pipes, removing and disposing unsuitable material and replacing with select material for pipe cushion, sheeting and shoring as required, backfilling, all in accordance with the plans and specifications.

45.	4,628	Cu. Yds., Unclassified excavation for drain lines, catch basins and DMH, including backfill and pipe cushion, in place complete.	Per Cu. Yd.	\$	\$
46.	58	Lin. Ft., 60" Reinforced concrete drainpipe, Class III, in place complete.	Per Lin. Ft.	\$	\$
47.	111	Lin. Ft., 54" Reinforced concrete drainpipe, Class III, in place complete.	Per Lin. Ft.	\$	\$
48.	55	Lin. Ft., 36" Reinforced concrete drainpipe, Class III, in place complete.	Per Lin. Ft.	\$	\$
49.	69	Lin. Ft., 30" Reinforced concrete drainpipe, Class III, in place complete.	Per Lin. Ft.	\$	\$
50.	922	Lin. Ft., 24" Reinforced concrete drainpipe, Class III, in place complete.	Per Lin. Ft.	\$	\$
51.	3,588	Lin. Ft., 18" Reinforced concrete drainpipe, Class III, in place complete.	Per Lin. Ft.	\$	\$
52.	14	Each, Standard reinforced concrete catch basin, Type "A", 4.00' to 4.99' deep, in place complete.	Per Each	\$	\$
53.	14	Each, Standard reinforced concrete catch basin, Type "A", 5.00' to 5.99' deep, in place complete.	Per Each	\$	\$
54.	16	Each, Standard reinforced concrete catch basin, Type "B", 5.00' to 5.99' deep, in place complete.	Per Each	\$	\$
55.	5	Each, Standard reinforced concrete catch basin, Type "B", 6.00' to 6.99' deep, in place complete.	Per Each	\$	\$

56.	1	Each, Standard reinforced concrete catch basin, Type "B", 7.00' to 7.99' deep, in place complete.	Per Each	\$	\$
57.	1	Each, Special reinforced concrete catch basin, Type "B", "A- 1" 9.00' to 9.99' deep, in place complete.	Per Each	\$	\$
58.	3	Each, Standard shallow drain manhole for pavement area, 5.00' to 5.99' deep, in place complete.	Per Each	\$	\$
59.	1	Each, drain manhole for pavement area, 6.00' to 6.99' deep, in place complete.	Per Each	\$	\$
60.	1	Each, drain manhole for pavement area, 7.00' to 7.99' deep, in place complete.	Per Each	\$	\$
61.	1	Each, cast in place Top Slab (unfinished SDMH) Road "B" existing DMH "B-1".	Per Each	\$	\$
62.	1	Each, Connect 60" RCP to existing stub, in place complete.	Per Each	\$	\$
63.	1	Each, Connect 54" RCP to existing stub, in place complete.	Per Each	\$	\$
64.	1	Each, Connect 36" RCP to existing stub, in place complete.	Per Each	\$	\$

<p>SUB-TOTAL FOR DRAINAGE SYSTEM (Items 45 to 64 inclusive)</p>

\$

V. LANDSCAPING

The prices bid herein for the following items shall include all labor, tools and equipment, materials, appurtenances, and incidentals necessary to install or to construct the following items in place and complete in accordance with the plans, specifications, and to the satisfaction of the Owner. The prices do not include bonding costs.

65.	19	Each, Installation of 25 gallon Rainbow Shower Tree (2" caliper, 6'-8' height), in place complete.	Per Each	\$	\$
66.	36	Each, Installation of 25 gallon Silver Botton Wood Tree (2" min. caliper, 6'-8' height), in place complete.	Per Each	\$	\$
67.	35	Each, Installation of 25 gallon Tulipwood tree (2" min. caliper, 6'-8' height), in place complete.	Per Each	\$	\$
68.	52	Each, Installation of 25 gallon Silver Trumpet tree (2" min. caliper, 6'-8' height), in place complete.	Per Each	\$	\$
69.	17	Each, Installation of 3 gallon White Kauai Hibiscus (3' O.C.), in place complete.	Per Each	\$	\$
70.	45,513	Sq. Ft., Installation of Seashore Paspalum (hydroseed), in place complete.	Per Sq. Ft	\$	\$
71.	3,555	Lin. Ft., Installation of Root Barrier (24" depth), in place complete.	Per Lin. Ft	\$	\$
72.	51	Lin. Ft., Installation of Plastic Header, in place complete.	Per Lin. Ft	\$	\$
73.	454,871	Sq. Ft., Installation of Soil Amendments, 2" overall depth, in place complete.	Per Sq. Ft	\$	\$
74.	566	Cu. Yds., Installation of 4" layer imported screened soil under all planting areas, in place complete.	Per Cu.Yds.	\$	\$
75.	2	Cu. Yds., Installation of 4" layer black cinder mulch, in place complete.	Per Cu.Yds.	\$	\$
76.	3	Months, Formal Landscape Maintenance Period, in place complete.	Per Month	\$	\$

SUB-TOTAL FOR LANDSCAPING (Items 65 to 76 inclusive)	\$
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VI. ELECTRICAL

The prices bid herein for the following items shall include all labor, tools and equipment, materials except that to be supplied by the utility companies, appurtenances and incidentals necessary to install or to construct the following items in place and complete in accordance with the drawings and specifications and standard practices of Hawaiian Electric Co. (HECO), Sandwich Isles Communications, Inc. (SIC), the City & County of Honolulu Department of Design & Construction, and to the satisfaction of the DHHL.

77.	3,700	Lin. Ft., Furnish and Install One 2-Inch Direct Buried HECO Conduit. Work shall consist of excavation and providing 2" diameter conduit, with spacers, couplings, and appurtenances, backfilled per HECO requirements, complete and in place.	Per Lin. Ft.	\$	\$
78.	2,500	Lin. Ft., Furnish and Install One 2-Inch Concrete Encased HECO Conduit. Work shall consist of excavation and providing 2" diameter conduit, with spacers, couplings, appurtenances, and concrete jacket, backfilled per HECO requirements, complete and in place.	Per Lin. Ft.	\$	\$
79.	700	Lin. Ft., Furnish and Install Two 2-Inch Direct Buried HECO Conduits. Work shall consist of excavation and providing 2" diameter conduits, with spacers, couplings, and appurtenances, backfilled per HECO requirements, complete and in place.	Per Lin. Ft.	\$	\$
80.	1,200	Lin. Ft., Furnish and Install Two 2-Inch Concrete Encased HECO Conduits. Work shall consist of excavation and providing 2" diameter conduits, with spacers, couplings, appurtenances, and concrete jacket, backfilled per HECO requirements, complete and in place.	Per Lin. Ft.	\$	\$
81.	350	Lin. Ft., Furnish and Install Four 2-Inch Concrete Encased HECO Conduits. Work shall consist of excavation and providing 2" diameter conduits, with spacers, couplings, appurtenances, and concrete jacket, backfilled per HECO requirements, complete and in place.	Per Lin. Ft.	\$	\$
82.	100	Lin. Ft., Furnish and Install Six 2-Inch Concrete Encased HECO Conduits. Work shall consist of excavation and providing 2" diameter conduits, with spacers, couplings, appurtenances, and concrete jacket, backfilled per HECO requirements, complete and in place.	Per Lin. Ft.	\$	\$
83.	4,300	Lin. Ft., Furnish and Install One 3-Inch Direct Buried HECO Conduit. Work shall consist of excavation and providing 3" diameter conduit, with spacers, couplings, and appurtenances, backfilled per HECO requirements, complete and in place.	Per Lin. Ft.	\$	\$

84.	4,200	Lin. Ft., Furnish and Install One 3-Inch Concrete Encased HECO Conduit. Work shall consist of excavation and providing 3" diameter conduit, with spacers, couplings, appurtenances, and concrete jacket, backfilled per HECO requirements, complete and in place.	Per Lin. Ft.	\$	\$
85.	650	Lin. Ft., Furnish and Install Two 4-Inch Concrete Encased HECO Conduits. Work shall consist of excavation and providing 4" diameter conduits, with spacers, couplings, appurtenances, and concrete jacket, backfilled per HECO requirements, complete and in place.	Per Lin. Ft.	\$	\$
86.	10	Lin. Ft., Furnish and Install Two 5-Inch Direct Buried HECO Conduits. Work shall consist of excavation and providing 5" diameter conduits, with spacers, couplings, and appurtenances, backfilled per HECO requirements, complete and in place.	Per Lin. Ft.	\$	\$
87.	500	Lin. Ft., Furnish and Install Two 5-Inch Concrete Encased HECO Conduits. Work shall consist of excavation and providing 5" diameter conduits, with spacers, couplings, appurtenances, and concrete jacket, backfilled per HECO requirements, complete and in place.	Per Lin. Ft.	\$	\$
88.	700	Lin. Ft., Furnish and Install Six 5-Inch Concrete Encased HECO Conduits. Work shall consist of excavation and providing 5" diameter conduits, with spacers, couplings, appurtenances, and concrete jacket, backfilled per HECO requirements, complete and in place.	Per Lin. Ft.	\$	\$
89.	30	Lin. Ft., Furnish and Install One 2-Inch Direct Buried CATV Conduit. Work shall consist of excavation and providing 2" diameter conduits, with spacers, couplings, and appurtenances, backfilled per Oceanic Time Warner Cable requirements, complete and in place.	Per Lin. Ft.	\$	\$
90.	20	Lin. Ft., Furnish and Install One 4-Inch Direct Buried CATV Conduit. Work shall consist of excavation and providing 4" diameter conduits, with spacers, couplings, and appurtenances, backfilled per Oceanic Time Warner Cable requirements, complete and in place.	Per Lin. Ft.	\$	\$
91.	1,500	Lin. Ft., Furnish and Install One 1-1/4" Direct Buried Street Light PVC Schedule 80 Type Conduit. Work shall consist of excavation and providing 1-1/4" diameter conduit, with spacers, couplings and appurtenances, backfilled as required, complete and in place.	Per Lin. Ft.	\$	\$

92.	800	Lin. Ft., Furnish and Install One 1½" Direct Buried Street Light PVC Schedule 80 Type Conduit. Work shall consist of excavation and providing 1½" diameter conduit, with spacers, couplings, and appurtenances, backfilled as required, complete and in place.	Per Lin. Ft.	\$	\$
93.	400	Lin. Ft., Furnish and Install One 1½" Concrete Encased Street Light PVC Schedule 40 Type Conduit. Work shall consist of excavation and providing 1½" diameter conduit, with spacers, couplings, appurtenances, and concrete jacket, backfilled as required, complete and in place.	Per Lin. Ft.	\$	\$
94.	300	Lin. Ft., Furnish and Install One 2" Direct Buried Street Light PVC Schedule 80 Type Conduit. Work shall consist of excavation and providing 2" diameter conduit, with spacers, couplings, and appurtenances, backfilled as required, complete and in place.	Per Lin. Ft.	\$	\$
95.	500	Lin. Ft., Furnish and Install One 2" Concrete Encased Street Light PVC Schedule 40 Type Conduit. Work shall consist of excavation and providing 2" diameter conduit, with spacers, couplings, appurtenances, and concrete jacket, backfilled as required, complete and in place	Per Lin. Ft.	\$	\$
96.	300	Lin. Ft., Furnish and Install One 2" Concrete Encased Traffic Signal PVC Schedule 40 Type Conduit. Work shall consist of excavation and providing 2" diameter conduits, with spacers, couplings, appurtenances, and concrete jacket, backfilled as required, complete and in place.	Per Lin. Ft.	\$	\$
97.	700	Lin. Ft., Furnish and Install Two 2" Concrete Encased Traffic Signal PVC Schedule 40 Type Conduits. Work shall consist of excavation and providing 2" diameter conduit, with spacers, couplings, appurtenances, and concrete jacket, backfilled as required, complete and in place.	Per Lin. Ft.	\$	\$
98.	50	Lin. Ft., Furnish and Install One 1-1/4" Direct Buried Secondary Power PVC Schedule 80 Type Conduit. Work shall consist of excavation and providing 1-1/4" diameter conduit, with spacers, couplings and appurtenances, backfilled as required, complete and in place.	Per Lin. Ft.	\$	\$
99.	250	Lin. Ft., Furnish and Install One 1-1/4" Concrete Encased Secondary Power PVC Schedule 40 Type Conduit. Work shall consist of excavation and providing 1-1/4" diameter conduit, with spacers, couplings appurtenances, and concrete jacket, backfilled as required, complete and in place.	Per Lin. Ft.	\$	\$

100.	10	Lin. Ft., Furnish and Install 2" Direct Buried Secondary Power PVC Schedule 80 Type Conduit. Work shall consist of excavation and providing 3" diameter conduit, with spacers, couplings, and appurtenances, backfilled as required, complete and in place.	Per Lin. Ft.	\$	\$
101.	250	Lin. Ft., Furnish and Install Two 2" Concrete Encased Secondary Power PVC Schedule 40 Type Conduits. Work shall consist of excavation and providing 2" diameter conduit, with spacers, couplings, appurtenances, and concrete jacket, backfilled as required, complete and in place.	Per Lin. Ft.	\$	\$
102.	20	Lin. Ft., Furnish and Install Three 2" Concrete Encased Secondary Power PVC Schedule 40 Type Conduits. Work shall consist of excavation and providing 2" diameter conduits, with spacers, couplings, appurtenances, and concrete jacket, backfilled as required, complete and in place.	Per Lin. Ft.	\$	\$
103.	30	Lin. Ft., Furnish and Install One 3" Concrete Encased Secondary Power PVC Schedule 40 Type Conduit. Work shall consist of excavation and providing 3" diameter conduit, with spacers, couplings, appurtenances, and concrete jacket, backfilled as required, complete and in place.	Per Lin. Ft.	\$	\$
104.	18	Each, Furnish and Install 13" x 24" Non-Concrete Pullbox , cover with locking device and extension, provided in accordance with HECO standard drawing No. 30-2006, complete and in place.	Per Each	\$	\$
105.	33	Each, Furnish and Install 17" x 30" Non- Concrete Pullbox, cover with locking device, provided in accordance with HECO standard drawing No. 30-2006 and 011314, complete and in place.	Per Each	\$	\$
106.	31	Each, Furnish and Install 2' x 4' Reinforced Concrete Pullbox with precast concrete covers, provided in accordance with HECO standard drawing No. 30-2005, complete and in place.	Per Each	\$	\$
107.	20	Each, Furnish and Install 3' x 5' Reinforced Concrete Handhole with precast concrete covers, provided in accordance with HECO standard drawing No. 101020, complete and in place.	Per Each	\$	\$
108.	4	Each, Furnish and Install 4' x 7' Reinforced Concrete Handhole with precast concrete covers, provided in accordance with HECO standard drawing No. 101024, complete and in place.	Per Each	\$	\$

109.	1	Each, Furnish and Install 5' x 8' Reinforced Concrete Handhole with precast concrete covers, provided in accordance with HECO standard drawing No. 100907, complete and in place.	Per Each	\$	\$
110.	3	Each, Furnish and Install 6' x 11' Reinforced Concrete Manhole with traffic rated frame and cover, provided in accordance with HECO standard drawing No. 100726, complete and in place.	Per Each	\$	\$
111.	12	Each, Furnish and Install Type "B" Precast Concrete Pullbox (City - Street Light) with polymer concrete covers, provided in accordance with the City & County of Honolulu Mechanical/Electrical Division Standard Drawing, complete and in place.	Per Each	\$	\$
112.	3	Each, Furnish and Install Type "B" Precast Concrete Pullbox (City - Traffic Signal) with polymer concrete covers, provided in accordance with the City & County of Honolulu Dept. of Transportation Services Type "B" Standard Drawing, complete and in place.	Per Each	\$	\$
113.	5	Each, Furnish and Install 24" x 36" Secondary Power Non-Concrete Pullbox, cover with locking device, as indicated in the drawings, complete and in place	Per Each	\$	\$
114.	18	Each, 6' x 7' Transformer Pad Lot. Work shall consist of reinforced concrete transformer pad and ground rod, provided as indicated on the drawings and in accordance with HECO standard drawing No. 30-5001 and 011249, complete and in place.	Per Each	\$	\$
115.	1	Each, 10' x 14' Switching Equipment Pad Lot. Work shall consist of reinforced concrete pad and ground rod, provided as indicated on the drawings and in accordance with HECO standard drawing No. 30-5040, complete and in place.	Per Each	\$	\$
116.	1	Each, Furnish and Install CATV Power Supply as indicated on the drawings, complete and in place.	Per Each	\$	\$
117.	1	Each, Furnish and Install Metering Equipment and Cabinet with service conduits, reinforced concrete pad, ground rod, metering equipment, load center, wiring, receptacle, stainless steel enclosure, and accessories, provided as indicated on the drawings, complete and in place.	Per Each	\$	\$

118.	57	Each, Furnish and Install Street Lighting Standard (70W), Type II. Work shall consist of excavating, constructing reinforced concrete foundation, backfilling, and providing street lighting standard, luminaire and bracket arm in accordance with the City & County of Honolulu Mechanical/Electrical Division Standard and as indicated on the drawings, complete and in place.	Per Each	\$	\$
119.	15	Each, Furnish and Install Street Lighting Standard (100W), Type II. Work shall consist of excavating, constructing reinforced concrete foundation, backfilling, and providing street lighting standard, luminaire and bracket arm in accordance with the City & County of Honolulu Mechanical/Electrical Division Standard and as indicated on the drawings, complete and in place.	Per Each	\$	\$
120.	6	Each, Furnish and Install Street Lighting Standard (150W), Type III. Work shall consist of excavating, constructing reinforced concrete foundation, backfilling, and providing street lighting standard, transformer base, luminaire and bracket arm in accordance with the City & County of Honolulu Mechanical/Electrical Division Standards and as indicated on the drawings, complete and in place.	Per Each	\$	\$
121.	3,500	Lin. Ft., Street Lighting Circuit(s) (Multiple System). Work shall consist of providing cables and accessories from street lighting standards to nearest HECO secondary cables, complete and in place.	Per Lin. Ft.	\$	\$
122.	8	Each, Furnish and Install Parking Area Light (70W), Type III. Work shall consist of excavating, constructing reinforced concrete foundation, backfilling, and providing parking light standard, luminaire and bracket arm, provided as indicated on the drawings, complete and in place.	Per Each	\$	\$
123.	600	Lin. Ft., Secondary Power Circuit(s) (Metered System). Work shall consist of providing cables and accessories from parking light standards to metering equipment as indicated in the drawings, complete and in place.	Per Lin. Ft.	\$	\$

SUB-TOTAL FOR EXTERIOR ELECTRICAL WORK (Items 77 to 123 inclusive)
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\$

VII. IRRIGATION WATER SYSTEM

The prices bid herein for the following items shall include furnishing all labor, equipment, tools, materials and all incidental work necessary to construct the irrigation water system in place complete, including excavating for water lines and appurtenances, pipe cushion, backfilling, sheeting and shoring as required, all in accordance with the plans and specifications.

124.	302	Cu. Yds., Unclassified excavation for water mains, manholes and appurtenances, including backfill and pipe cushion, in place complete.	Per Cu. Yd.	\$	\$
125.	587	Lin. Ft., 8" Polyvinyl chloride Purple colored pipe, Class "150", DR=18, in place complete.	Per Lin. Ft.	\$	\$
126.	65	Lin Ft. reinforced concrete jacket. including 8" DIP, Class 52, fittings and appurtenances, in place complete.	Per Lin. Ft.	\$	\$
127.	1	Each, 8" Gate valve, Class 150, including anchor valve block, in place complete.	Per Each	\$	\$
128.	1	Each, Gate valve box with modified cover.	Per Each	\$	\$
129.	1	Each, 8" Polyvinyl chloride purple colored deflection coupling, Class "150",DR=18", in place complete.	Per Each	\$	\$
130.	555	Lbs., Ductile iron fittings, in place complete.	Per Lb.	\$	\$
		2 - 8" sleeve, 12" long.....170#			
		3 - 8" bossed tee tapped for ¾" ball285#			
		2 - 8" Plug with 2 ½" C.O.....100#			
131.	3	Each, ¾" ARV, 150# W.P. including appurtenances, in place complete.	Per Each	\$	\$
132.	3	Each, ARV box, including frame and modified cover and concrete base, in place complete.	Per Each	\$	\$
133.	?	Cu. Yds., Class "B" concrete including reinforcing steel wherever necessary to pipe bracing, reaction and test blocks, etc., in place complete.	Per Cu. Yd.	\$	\$
134.	8	Each, Electronic markers, including all necessary labor, materials and equipment, in place complete.	Per Each	\$	\$

135.	2	Each, 8" Connection to existing water main, including pressure testing and chlorination, in place complete.	Per Each	\$	\$
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SUB-TOTAL FOR IRRIGATION WATER SYSTEM (Items 124 to 135 inclusive)
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The prices bid herein for the following items shall include furnishing all labor, equipment, tools, materials and all incidental work necessary to construct the sewer system in place complete, including excavating for pipes and manholes, crushed rock cradle, rungs, frame and cover for manholes, sheeting and shoring as required, backfilling, all in accordance with the plans and specifications.

136.	6,330	Cu. Yds., Unclassified excavation for sewer lines, cradles and manholes, including backfill, in place complete.	Per Cu. Yd.	\$	\$
137.	3,870	Lin. Ft., Crushed rock cradle for 6" sewer pipe, in place complete.	Per Lin. Ft.	\$	\$
138.	3,618	Lin. Ft., Crushed rock cradle for 8" sewer pipe, in place complete.	Per Lin. Ft.	\$	\$
139.	1,999	Lin. Ft., Crushed rock cradle for 10" sewer pipe, in place complete.	Per Lin. Ft.	\$	\$
140.	3,870	Lin. Ft., 6" Polyvinyl chloride sewer pipe, Class 150, DR=18, in place complete.	Per Lin. Ft.	\$	\$
141.	3,618	Lin. Ft., 8" Polyvinyl chloride sewer pipe, Class 150, DR=18, in place complete.	Per Lin. Ft.	\$	\$
142.	1,999	Lin. Ft., 10" Polyvinyl chloride sewer pipe, Class 150, DR=18, in place complete.	Per Lin. Ft.	\$	\$
143.	30	Lin. Ft., Reinforced concrete jacket for 6" PVC pipe, in place complete.	Per Lin. Ft.	\$	\$
144.	33	Lin. Ft., Reinforced concrete jacket for 10" PVC pipe, in place complete.	Per Lin. Ft.	\$	\$
145.	55	Each, 8"x 6" PVC sewer pipe wye.	Per Each	\$	\$
146.	32	Each, 8"x 6" PVC sewer pipe double wye.	Per Each	\$	\$

147.	6	Each, 10"x 6" PVC sewer pipe wye.	Per Each	\$	\$
148.	11	Each, 10"x 6" PVC sewer pipe double wye.	Per Each	\$	\$
149.	160	Each, 2" Polyvinyl chloride marker, in place complete.	Per Each	\$	\$
150.	160	Each, 6" PVC 1/8 Bend.	Per Each	\$	\$
151.	160	Each, 6"x 4" C.I. reducer with 4" C.O.	Per Each	\$	\$
152.	11	Each, Plain manhole (pre-cast concrete), 7.00' to 7.99', including manhole frame, walls and base, in place complete.	Per Each	\$	\$
153.	6	Each, Plain manhole (pre-cast concrete), 8.00' to 8.99', including manhole frame, walls and base, in place complete.	Per Each	\$	\$
154.	8	Each, Plain manhole (pre-cast concrete), 9.00' to 9.99', including manhole frame, walls and base, in place complete.	Per Each	\$	\$
155.	L.S.	Connection to existing 10" sewer in Road A at station 9+27.66 o/s 5' & 15+79.12 o/s 5.5' and Road B at station 14+11 o/s 6' and Road D at station 8+17.56 o/s 4' including removing existing plug, excavating and back filling	Lump Sum		\$
156.	L.S.	Connection to existing 8" sewer in Road D at station 14+79.41 o/s 4' including removing existing plug, excavating and back filling	Lump Sum		\$
SUB-TOTAL FOR SEWER SYSTEM (Items 136 to 156 inclusive)					\$

IX. WATER SYSTEM

The prices bid herein for the following items shall include furnishing all labor, equipment, tools, materials and all incidental work necessary to construct the water system in place complete, including excavating for water lines and appurtenances, pipe cushion, backfilling, sheeting and shoring as required, all in accordance with the plans and specifications.

157.	2,361	Cu. Yds., Unclassified excavation for water mains, manholes and appurtenances, including backfill and pipe cushion, in place complete.	Per Cu. Yd.	\$	\$
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158.	584	Lin. Ft., 16" Polyvinyl chloride pipe, Class 150, in place complete.	Per Lin. Ft.	\$	\$
159.	602	Lin. Ft., 12" Polyvinyl chloride pipe, Class 150, in place complete.	Per Lin. Ft.	\$	\$
160.	4,603	Lin. Ft., 8" Polyvinyl chloride pipe, Class 150, in place complete.	Per Lin. Ft.	\$	\$
161.	301	Lin. Ft., 6" Polyvinyl chloride pipe, Class 150, in place complete.	Per Lin. Ft.	\$	\$
162.	13	Each, 8" Polyvinyl chloride deflection coupling, Class "150", in place complete.	Per Each	\$	\$
163.	6	Each, 16" Bevel gear gate valve, Class 150, FE including ball corps, by-pass valves and appurtenances, in place complete.	Per Each	\$	\$
164.	6	Each, 16" Dismantling joint, FE, in place complete.	Per Each	\$	\$
165.	3	Each, 12" Gate valve, Class 150, including anchor valve block, in place complete.	Per Each	\$	\$
166.	15	Each, 8" Gate Valve, Class 150 including anchor valve block, in place complete.	Per Each	\$	\$
167.	16	Each, 6" Gate Valve, Class 150 including anchor valve block, in place complete.	Per Each	\$	\$
168.	14,105	Lbs., Ductile iron pipe fittings, in place complete.	Per Lb.	\$	\$
		3 – 16"x8" Tee.....1,650#			
		2 - 16" Sleeve, 15" long.....480#			
		3 – 16" Sleeve tapped for ¾" ball corp.....720#			
		6 – 16" Sleeve (Defl.).....1,440 #			
		2 – 16" Cap with 4"C.O.....290#			
		6 – 8" 1/8 Bend.....660#			
		3 – 8" Cross.....550#			
		2 – 8" Sleeve, 12" long.....170#			
		33 – 8" Bossed Tee tapped for ¾" ball3,135#			

		2 – 8” Plug with 2 ½” C.O.....100#		
		3-12”x8” Tee.....1,020 #		
		2-12” Sleeve, 12” long.....290#		
		1-12” Defl. coupling.....165#		
		3 – 12” Bossed Tee tapped for ¾” ball.....495#		
		2 – 12” Cap with 4” C.O.....150#		
		16 – 8”x6” (Tee FH).....2,800#		
169.	39	Each, ¾” Air relief valve, 150# W.P. including appurtenances, in place complete.	Per Each	\$ _____ \$ _____
170.	39	Each, Air relief box, including frame and cover and concrete base, in place complete.	Per Each	\$ _____ \$ _____
171.	?	Each, 4” Cleanout including appurtenances, in place complete.	Per Each	\$ _____ \$ _____
172.	4	Each, Fire hydrant, 4.5’ curb to invert, including concrete slab and blue reflective markers, in place complete.	Per Each	\$ _____ \$ _____
173.	11	Each, Fire hydrant, 5.0’ curb to invert, including concrete slab and blue reflective markers, in place complete.	Per Each	\$ _____ \$ _____
174.	1	Each, Fire hydrant, 5.5’ curb to invert, including concrete slab and blue reflective markers, in place complete.	Per Each	\$ _____ \$ _____
175.	3	Each, Type “A” Manholes “modified”, height = 7.0’, in place complete.	Per Each	\$ _____ \$ _____
176.	3	Each, Type “A” Manholes “modified”, height = 6.0’, in place complete.	Per Each	\$ _____ \$ _____
177.	12	Each, 16” capping collars, including BXFL ductile iron pipe adapters, in place complete.	Per Each	\$ _____ \$ _____
178.	13	Each, 8” valve box including cast iron frame and cover, pipe sleeve and concrete anchor pad, in place complete.	Per Each	\$ _____ \$ _____
179.	3	Each, 12” valve box including cast iron frame and cover, pipe sleeve and concrete anchor pad, in place complete.	Per Each	\$ _____ \$ _____

180.	60	Each, 1 ½" Service lateral with Type C-1 service connection.	Per Each	\$	\$
181.	40	Each, 1" Service lateral with Type A service connection.	Per Each	\$	\$
182.	2	Each, 16" Connection to existing main.	Per Each	\$	\$
183.	2	Each, 12" Connection to existing main.	Per Each	\$	\$
184.	2	Each, 8" Connection to existing main.	Per Each	\$	\$
185.	?	Cu. Yds., Class "B" concrete including reinforcing steel wherever necessary to pipe bracing, reaction and test blocks, etc., in place complete.	Per Cu. Yd.	\$	\$
186.	67	Lin. Ft., Standard reinforced concrete jacket for 16" water main, inclusive of ductile iron pipe and fittings, in place complete.	Per Lin. Ft.	\$	\$
187.	61	Lin. Ft., Standard reinforced concrete jacket for 8" water main, inclusive of ductile iron pipe and fittings, in place complete.	Per Lin. Ft.	\$	\$
188.	597	Lin. Ft., Standard reinforced concrete jacket for 8" water main, inclusive of ductile iron pipe and fittings, in place complete.	Per Lin. Ft.	\$	\$
189.	?	Each, Concrete thrust beam with D.I. reverse bell pipe for 16" polyvinyl chloride pipe, in place complete.	Per Each	\$	\$
190.	164	Each, Electronic markers, blue color, including all necessary labor, materials and equipment, in place complete.	Per Each	\$	\$
191.	6	Each, 12" Connection to existing water main, including pressure testing and chlorination, in place complete.	Per Each	\$	\$
SUB-TOTAL FOR WATER SYSTEM (Items 157 to 191 inclusive)					\$

X. SANDWICH ISLE COMMUNICATIONS

The prices bid herein for the following items shall include all labor, tools and equipment, materials except that to be supplied by Sandwich Isles Communications, Inc. (SIC), appurtenances and incidentals necessary to install or to construct the following items in place and complete in accordance with the drawings and specifications and standard practices of Sandwich Isles Communications, Inc., the City & County of Honolulu Department of Public Works, and to the satisfaction of the DHHL.

192.	2,772	Lin. Ft., Furnish and Install Two 1-Inch Direct Buried SIC Conduits – UD (1X2-1"). Work shall consist of excavation and providing 1" diameter conduits, with spacers, couplings, and appurtenances, backfilled per SIC requirements, complete and in place	Per Lin. Ft.	\$	\$
193.	584	Lin. Ft., Furnish and Install Two 1-Inch Concrete Encased SIC Conduits – UD (1X2-1") E. Work shall consist of excavation and providing 1" diameter conduits, with spacers, couplings, appurtenances, and concrete jacket, backfilled per SIC requirements, complete and in place.	Per Lin. Ft.	\$	\$
194.	64	Lin. Ft., Furnish and Install Four 1-Inch Direct Buried SIC Conduits – UD (2X2-1"). Work shall consist of excavation and providing 1" diameter conduits, with spacers, couplings, and appurtenances, backfilled per SIC requirements, complete and in place.	Per Lin. Ft.	\$	\$
195.	1,408	Lin. Ft., Furnish and Install Four 1-Inch Concrete Encased SIC Conduits – UD (2X2-1") E. Work shall consist of excavation and providing 1" diameter conduits, with spacers, couplings, appurtenances, and concrete jacket, backfilled per SIC requirements, complete and in place.	Per Lin. Ft.	\$	\$
196.	50	Lin. Ft., Furnish and Install Eight 1-Inch Concrete Encased SIC Conduits – UD (2X4-1") E. Work shall consist of excavation and providing 1" diameter conduits, with spacers, couplings, appurtenances, and concrete jacket, backfilled per SIC requirements, complete and in place	Per Lin. Ft.	\$	\$
197.	2,262	Lin. Ft., Furnish and Install Two 4-Inch Direct Buried SIC Conduits – UD (1X2-4"). Work shall consist of excavation and providing 4" diameter conduits, with spacers, couplings, and appurtenances, backfilled per SIC requirements, complete and in place.	Per Lin. Ft.	\$	\$
198.	496	Lin. Ft., Furnish and Install Two 4-Inch & Two 1-Inch Direct Buried SIC Conduits – UD (1X2-4") & UD (1X2-1") D. Work shall consist of excavation and providing 4" & 1" diameter conduits, with spacers, couplings, and appurtenances, backfilled per SIC requirements, complete and in place	Per Lin. Ft.	\$	\$

199.	1,284	Lin. Ft., Furnish and Install Two 4-Inch & Four 1-Inch Direct Buried SIC Conduits – UD (1X2-4") & UD (2X2-1") D. Work shall consist of excavation and providing 4" & 1" diameter conduits, with spacers, couplings, and appurtenances, backfilled per SIC requirements, complete and in place.	Per Lin. Ft.	\$	\$
200.	226	Lin. Ft., Furnish and Install Two 4-Inch & Six 1-Inch Direct Buried SIC Conduits – UD (1X2-4") & UD (2X3-1") D. Work shall consist of excavation and providing 4" & 1" diameter conduits, with spacers, couplings, and appurtenances, backfilled per SIC requirements, complete and in place.	Per Lin. Ft.	\$	\$
201.	20	Lin. Ft., Furnish and Install Two 4-Inch & Ten 1-Inch Direct Buried SIC Conduits – UD (1X2-4") & UD (2X5-1") D. Work shall consist of excavation and providing 4" & 1" diameter conduits, with spacers, couplings, and appurtenances, backfilled per SIC requirements, complete and in place.	Per Lin. Ft.	\$	\$
202.	632	Lin. Ft., Furnish and Install Two 4-Inch Concrete Encased SIC Conduits – UD (1X2-4") E. Work shall consist of excavation and providing 4" diameter conduits, with spacers, couplings, appurtenances, and concrete jacket, backfilled per SIC requirements, complete and in place.	Per Lin. Ft.	\$	\$
203.	210	Lin. Ft., Furnish and Install Two 4-Inch & Six 1-Inch Concrete Encased SIC Conduits – UD (1X2-4") & UD (3X2-1") ED. Work shall consist of excavation and providing 4" & 1" diameter conduits, with spacers, couplings, appurtenances, and concrete jacket, backfilled per SIC requirements, complete and in place.	Per Lin. Ft.	\$	\$
204.	24	Lin. Ft., Furnish and Install Two 4-Inch & Eight 1-Inch Concrete Encased SIC Conduits – UD (1X2-4") & UD (2X4-1") ED. Work shall consist of excavation and providing 4" & 1" diameter conduits, with spacers, couplings, appurtenances, and concrete jacket, backfilled per SIC requirements, complete and in place.	Per Lin. Ft.	\$	\$
205.	18	Lin. Ft., Furnish and Install Four 4-Inch Direct Buried SIC Conduits – UD (2X2-4"). Work shall consist of excavation and providing 4" diameter conduits, with spacers, couplings, and appurtenances, backfilled per SIC requirements, complete and in place.	Per Lin. Ft.	\$	\$

206.	20	Lin. Ft., Furnish and Install Six 4-Inch Direct Buried SIC Conduits – UD (3X2-4"). Work shall consist of excavation and providing 4" diameter conduits, with spacers, couplings, and appurtenances, backfilled per SIC requirements, complete and in place.	Per Lin. Ft.	\$	\$
207.	224	Lin. Ft., Furnish and Install Six 4-Inch Concrete Encased SIC Conduits – UD (3X2-4") E. Work shall consist of excavation and providing 4" diameter conduits, with spacers, couplings, appurtenances, and concrete jacket, backfilled per SIC requirements, complete and in place.	Per Lin. Ft.	\$	\$
208.	30	Each, Furnish and Install 30"x 48" x 33" Type UH30X48X33 Polymer Concrete Pullbox with 20K "traffic" rated polymer concrete covers and cable racks, provided in accordance with SIC standard requirements, complete and in place.	Per Each	\$	\$
209.	3	Each, Furnish and Install 3'x 5' Type UH3X5 Reinforced Concrete Handhole, with traffic rated frame and covers, and cable racks, provided in accordance with SIC standard requirements, complete and in place.	Per Each	\$	\$
210.	1	Each, Furnish and Install 4'x 6' Type UH4X6 Reinforced Concrete Handhole, with traffic rated frame and covers, and cable racks, provided in accordance with SIC standard requirements, complete and in place.	Per Each	\$	\$
211.	3	Each, Furnish and Install Housing Ground Assembly Unit BM 2 (5/8) (8), with copper clad ground rod, ground rod clamp and the required length of bare #6 AWG tinned copper ground wire connected to an auxiliary grounding connector within the housing, provided in accordance with SIC standard requirements, complete and in place.	Per Each	\$	\$
212.	4	Each, Rearrangement of Existing Conduit(s) - W-UD. Provide labor and materials necessary to locate, expose and connect existing conduits to new conduits, complete and in place. All miscellaneous items and labor such as conduit sweeps, joints, etc. to make the conduit whole from manhole to manhole shall be included in this unit. All testing, rodding and cleaning of existing conduits per SIC specifications.	Per Each	\$	\$
SUB-TOTAL FOR SANDWICH ISLES COMMUNICATIONS (Items 192 to 212 inclusive)					\$

RECAPITULATION

DHHL Work

I. Mass Grading (Items 1 to 2, inclusive)	\$ _____
II. Roadways (Items 3 to 30, inclusive)	\$ _____
III. Mailbox Center (Items 31 to 44, inclusive)	\$ _____
IV. Drainage System (Items 45 to 64, inclusive)	\$ _____
V. Landscaping (Items 65 to 76, inclusive)	\$ _____
VI. Electrical (Items 77 to 123, inclusive)	\$ _____
VII. Irrigation System (Items 124 to 135, inclusive)	\$ _____

TOTAL DHHL WORK \$ _____

Na Kupaa Work

VIII. Sewer System (Items 136 to 156, inclusive)	\$ _____
IX. Water System (Items 157 to 191, inclusive)	\$ _____

TOTAL NA KUPAA WORK \$ _____

Sandwich Isles Communications, Inc. Work

Section X (Items 192 to 212, inclusive)	\$ _____
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TOTAL SUM BID \$ _____

The prices herein for the above items shall include all materials, labor, tools, equipment, machinery and all incidentals necessary to install or to construct these items in place complete and in accordance with the plans and specifications contained in this IFB. Prices are exclusive of general excise tax (GET) for DHHL and Na Kupaa work; and inclusive of GET for SIC Work..

Unit Prices have been computed in accordance with paragraph 11.03.B of the General Conditions.

Bidder acknowledges that estimated quantities are not guaranteed, and are solely for the purpose of comparison of Bids, and final payment for all Unit Price Bid items will be based on actual quantities, determined as provided in the contract Documents.

ARTICLE 6 - TIME OF COMPLETION

6.01 Bidder agrees that the Work will be substantially complete and will be completed and ready for final payment in accordance with paragraph 4.02 of the Agreement Between Owner and Contractor for Construction Contract and Section SC-03 of the DHHL Special Conditions on or before the dates or within the number of calendar days indicated in the Agreement.

6.02 Bidder accepts the provisions of the Agreement as to liquidated damage.

ARTICLE 7 - ATTACHMENTS TO THIS BID

7.01 The following documents are attached to and made a condition of the Bid:

- A. Required Bid security in the form of a
 - Bid Bond (EJCDC No. C-430)
 - Surety bond underwritten by a company licensed to issue bonds in this State
 - Certified Check(indicate type of security provided);
- B. List of Joint Contractors or Subcontractors;
- C. Hawaii Products Preference schedule.
- D. If applicable, Certification Form 1 verifying the participation in an apprenticeship program registered with the State Department of Labor and Industrial Relations (DLIR).
- E. If Bid amount exceeds \$10,000, signed Compliance Statement (RD 400-6). Refer to specific equal opportunity requirements set forth in paragraph 18.10 of the General Conditions;
- F. If Bid amount exceeds \$25,000, signed Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion - Lower Tier Covered Transactions (AD-1048);
- G. If Bid amount exceeds \$100,000, signed RD Instruction 1940-Q, Exhibit A-1, Certification for Contracts, Grants, and Loans.

ARTICLE 8 - DEFINED TERMS

8.01 The terms used in this Bid with the initial capital letters have the meanings indicated in the Instructions to Bidders, the General Conditions, and the Supplementary Conditions.

ARTICLE 9 - BID SUBMITTAL

9.01 This Bid is submitted by:

* _____

Exact Legal Name of Company (Bidder)

The Bidder represents that it is: **(Check ☒ one only)**

☐ A **Hawaii business** incorporated or organized under the laws of the State of Hawaii; **OR**

☐ A **Compliant Non-Hawaii business** not incorporated or organized under the laws of the State of Hawaii, is or shall be registered at the State of Hawaii Department of Commerce and Consumer Affairs Business Registration Division (DCCA-BREG) to do business in the State of Hawaii.

State of incorporation: _____

Bidder is:

☐ Sole Proprietor ☐ Partnership ☐ Corporation ☐ Joint Venture ☐ Other: _____

Federal I.D. No.:

Hawaii General Excise Tax ID No.:

State Contractor License No. _____.

Business address

(Street Address, City, State, Zip Code)

Payment address (other than street address above)

(Street Address, City, State, Zip Code)

Telephone No.: ()

Fax No.: ()

E-Mail address:

If Bidder is:

An Individual

Name (typed or printed): _____

SEAL,
if required
by State

By: _____

(Individual's signature)

Doing business as:

A Partnership

Partnership Name: _____

SEAL,
if required
by State

By: _____

(Signature of general partner -- attach evidence of authority to sign)

Name (typed or printed):

A Corporation

Corporation Name:

State or Jurisdiction of Incorporation: _____

Type (General Business, Profession, Service, Limited Liability):

By: _____

(Signature -- attach evidence of authority to sign)

Name (typed or printed):

Title: _____

CORPORATE
SEAL,
if required by State

Attest _____

(Signature of Corporate Secretary)

Date of Qualification to do business in _____ [State or other jurisdiction where
Project is located] is ____/____/____

A Joint Venture

Name of Joint Venture:

First Joint Venture Name: _____

SEAL,
if required
by State

By: _____
(Signature of joint venture partner -- attach evidence of authority to sign)

Name (typed or printed):

Title: _____

Second Joint Venture Name:

SEAL,
if required
by State

By: _____
(Signature of joint venture partner -- attach evidence of authority to sign)

Name (typed or printed):

Title: _____

(Each joint venturer must sign. The manner of signing for each individual, partnership, and corporation that is party to the venture should be in the manner indicated above.)

Phone and FAX Numbers, and Address for receipt of official communications, if different from Business contact information:

9.02 Bid submitted on _____, 20__.

**ALL JOINT CONTRACTORS OR SUBCONTRACTORS TO BE
ENGAGED ON THIS PROJECT**

The Bidder certifies that the following is a complete listing of all joint Contractors or Subcontractors covered under Chapter 444, Hawaii Revised Statutes, who will be engaged by the Bidder on this project to perform the nature and scope of work indicated pursuant to Section 103D-302, Hawaii Revised Statutes, and understands that failure to comply with this requirement shall be just cause for rejection of the bid.

The Bidder further understands that only those joint Contractors or Subcontractors listed shall be allowed to perform work on this project and that all other work necessary shall be performed by the Bidder with his own employees. If no joint Contractor or Subcontractor is listed, it shall be construed that all of the work shall be performed by the Bidder with his own employees.

The Bidders must be sure that they possess and that the Subcontractors listed in the proposal possess all the necessary licenses needed to perform the work for this project. The bidder shall be solely responsible for assuring that all the specialty licenses required to perform the work are covered in his bid.

The Bidder shall include the license number of the joint Contractors or Subcontractors listed below. Failure to provide the correct names and license numbers as registered with the Contractor's Licensing Board may cause rejection of the bid submitted.

Complete Firm Name of Joint Contractor or Subcontractor for Total Sum Bid	License Number	Nature and Scope of Work to be Performed

(Add additional sheets if necessary)

HAWAII PRODUCTS PREFERENCE

In accordance with HRS §103D-1002, the Hawaii products preference is applicable to this solicitation. Hawaii Products [are / may be] available for those items noted on the offer form. The Hawaii products list is available on the SPO webpage at <http://hawaii.gov/spo>, under Toolbox/QuickLinks click on Goods, Services and Construction, then click on Goods, Services and Construction for Vendors, Contractors and Service Providers, under Preferences, click on Preferences pursuant to HRS 103D Part X including Hawaii Products, then click on Preference for Hawaii Products, and select *Hawaii Products List* to view.

Offeror submitting a Hawaii Product (HP) shall identify the HP on the solicitation offer page(s). Any person desiring a Hawaii product preference shall have the product(s) certified and qualified if not currently on the Hawaii products list, prior to the deadline for receipt of offer(s) specified in the procurement notice and solicitation. The responsibility for certification and qualification shall rest upon the person requesting the preference.

Persons desiring to qualify their product(s) not currently on the Hawaii product list shall complete form SPO-038, *Certification for Hawaii Product Preference* and submit to the Procurement Officer issuing the solicitation (IFB or RFP), and provide all additional information required by the Procurement Officer. For each product, one form shall be completed and submitted (i.e. 3 products should have 3 separate forms completed). Form SPO-038 is available on the SPO webpage at <http://hawaii.gov/spo> under the 'Toolbox/QuickLinks' menu; click on 'SPO Forms' then click on 'Forms for Vendors, Contractors, and Service Providers'. The manufacturers and producers must complete and submit SPO-38 to DHHL. The form must be received by DHHL no later than **2:00 p.m., January 22, 2014**. Submittal by facsimile (808 620-9299) is acceptable. If DHHL receives and approves SPO-38s relating to this solicitation DHHL will issue an addendum listing the additional certified and qualified Hawaii products by **4:30 p.m., January 28, 2014**.

Bidders may claim a Hawaii product preference for products that it manufactures or produces with its own workforce and equipment. The SPO-38, *Certification for Hawaii Product Preference*, must be submitted in accordance with the procedures described above in order for Bidder to claim a Hawaii product preference for such Hawaii products Bidder intends to use in this work.

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

Change in Availability of Hawaii product. In the event of any change that materially alters the offeror's ability to supply Hawaii products, the offeror shall notify the procurement officer in writing no later than five working days from when the offeror knows of the change and the parties shall enter into discussions for the purposes of revising the contract or terminating the contract for convenience.

DESIGNATION OF HAWAII PRODUCTS TO BE USED		
Description	Manufacturer	Cost FOB Jobsite, Unloaded Including Applicable General Excise and Use Taxes
		\$
		\$
		\$
		\$
		\$
		\$
		\$
		\$
		\$
		\$
		\$
		\$
		\$
		\$

(Add additional sheets if necessary)

It is further understood by the Bidder that if upon being granted Hawaii Products, and being awarded the contract, if the Bidder fails to use such products or meet the requirements of such preference, the Bidder shall be subject to penalties, if applicable.

APPRENTICESHIP AGREEMENT PREFERENCE

Hawaii Revised Statutes §103-55.6 provides for a Hawai'i Apprenticeship Preference for public works contracts having an estimated value of \$250,000.00 or more. The preference shall be in the form of a 5% bid adjustment applied to the bidder's amount for bidders that are parties to apprenticeship agreements. The estimated value of this public works contract is \$250,000 or more and the apprenticeship agreement preference shall apply.

To be eligible for the preference, the bidder shall:

1. Be a party to an apprenticeship agreement registered with the DLIR at the time the bid is made for each apprenticeable trade the bidder will employ to construct the public works project for which the bid is being made.
 - a. The apprenticeship agreement shall be registered and conform to the requirements of HRS Chapter 372.
 - b. Subcontractors do not have to be a party to an apprenticeship agreement for the bidder to obtain the preference.
 - c. The bidder is not required to have apprentices in its employ at the time the bid is submitted to qualify for the preference.
2. State the trades the bidder will employ to perform the work;
3. Submit a completed signed original *CERTIFICATION OF BIDDER'S PARTICIPATION IN APPROVED APPRENTICESHIP PROGRAM UNDER ACT 17 (Certification Form 1)* for each trade to be employed to perform the work, verifying the participation in an apprenticeship program registered with the State Department of Labor and Industrial Relations (DLIR);
 - a. The *Certification Form 1* shall be authorized by an apprenticeship sponsor of the DLIR list of registered apprenticeship programs. The authorization shall be an original signature by an authorized official of the apprenticeship sponsor; and
 - b. The completed *Certification Form 1* for each trade must be submitted by the bidder with the offer. A facsimile or copy is acceptable to be submitted with the offer; however, the completed signed original must be submitted within five (5) working days of the due date of the offer. If the signed original is not received within this timeframe, the preference may be denied. Previous certifications shall not apply.

Failure to comply with ALL of the conditions noted above, without exception, shall disqualify the Bidder from qualifying for, and thus receiving, benefit of the Hawai'i Apprenticeship Preference.

The *Certification Form 1* and the List of Construction Trades in Registered Apprenticeship Programs are available on the DLIR website at: <http://hawaii.gov/labor/wdd>

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

If the bidder is certified to participate in an apprenticeship program for each trade which will be employed by the bidder for the project, a preference will be applied to decrease the bidder's total bid amount by five per cent (5%) for evaluation purposes.

Should the bidder qualify for other preferences (for example, Hawaii Products Preference), all applicable preferences shall be applied to the bid amount.

While preference for Hawai'i Apprenticeship will be taken into consideration to determine the low bidder, the contract awarded shall be the original bid amount, exclusive of any preferences. The preference is only for evaluation purposes.

The bidder hereby certifies that it will employ the following apprenticeable trades to perform the work for this project:

<u>LIST OF APPRENTICEABLE TRADES TO BE EMPLOYED</u>	
<u>TRADE</u>	<u>APPRENTICESHIP PROGRAM SPONSOR</u>

(Add additional sheets if necessary)

COMPLIANCE STATEMENT

This statement relates to a proposed contract with _____

(Name of borrower or grantee)

who expects to finance the contract with assistance from either the Rural Housing Service (RHS), Rural Business-Cooperative Service (RBS), or the Rural Utilities Service (RUS) or their successor agencies, United States Department of Agriculture (whether by a loan, grant, loan insurance, guarantee, or other form of financial assistance). I am the undersigned bidder or prospective contractor, I represent that:

1. ☐ I have, ☐ have not, participated in a previous contract or subcontract subject to Executive Order 11246 (regarding equal employment opportunity) or a preceding similar Executive Order.
2. If I have participated in such a contract or subcontract, ☐ I have, ☐ have not, filed all compliance reports that have been required to file in connection with the contract or subcontract.

If the proposed contract is for \$50,000 or more and I have 50 or more employees, I also represent that:

3. ☐ I have, ☐ have not previously had contracts subject to the written affirmative action programs requirements of the Secretary of Labor.
4. If I have participated in such a contract or subcontract, ☐ I have, ☐ have not developed and placed on file at each establishment affirmative action programs as required by the rules and regulations of the Secretary of Labor.

I understand that if I have failed to file any compliance reports that have been required of me, I am not eligible and will not be eligible to have my bid considered or to enter into the proposed contract unless and until I make an arrangement regarding such reports that is satisfactory to either the RHS, RBS or RUS, or to the office where the reports are required to be filed.

I also certify that I do not maintain or provide for my employees any segregated facilities at any of my establishments, and that I do not permit my employees to perform their services at any location, under my control, where segregated facilities are maintained. I certify further that I will not maintain or provide for my employees any segregated facilities at any of my establishments, and that I will not permit my employees to perform their services at any location, under my control, where segregated facilities are maintained. I agree that a breach of this certification is a violation of the Equal Opportunity clause in my contract. As used in this certification, the term "segregated facilities" means any waiting rooms, work areas, restrooms and wash rooms, restaurants and other eating areas time clocks, locker rooms and other storage or dressing areas, parking lots, drinking fountains, recreation or entertainment areas, transportation, and housing facilities provided for employees which are segregated by explicit directive or are in fact segregated on the basis of race, creed, color, or national origin, because of habit, local custom, or otherwise. I further agree that (except where I have obtained identical certifications for proposed subcontractors for specific time periods) I will obtain identical certifications from proposed subcontractors prior to the award of subcontracts exceeding \$10,000 which are not exempt from the provisions of the Equal Opportunity clause; that I will retain such certifications in my files; and that I will forward the following notice to such proposed subcontractors (except where the proposed subcontractors have submitted identical certifications for specific time periods): (See Reverse).

According to the Paperwork Reduction Act of 1995, an agency may not conduct or sponsor, and a person is not required to respond to a collection of information unless it displays the valid OMB control number. The valid OMB control number for this information collection is 0575-0018. The time required to complete this information collection is estimated to average 10 minutes per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information.

**NOTICE TO PROSPECTIVE SUBCONTRACTORS OF REQUIREMENTS FOR
CERTIFICATIONS OF NON-SEGREGATED FACILITIES**

A certification of Nonsegregated Facilities, as required by the May 9, 1967, order (32F.R. 7439, may 19, 1967) on Elimination of Segregated Facilities, by the Secretary of Labor, must be submitted prior to the award of a subcontract exceeding \$ 10,000 which is not exempt from the provisions of the Equal Opportunity clause. The certification may be submitted either for each subcontract or for all subcontracts during a period (i.e., quarterly, semiannually, or annually).

NOTE: The penalty for making false statements in offers is prescribed in 18 U.S.C. 1001.

Date _____

(Signature of Bidder or Prospective Contractor)

Address (including Zip Code)

U.S. DEPARTMENT OF AGRICULTURE

CERTIFICATION REGARDING DEBARMENT, SUSPENSION, INELIGIBILITY AND VOLUNTARY EXCLUSION - LOWER TIER COVERED TRANSACTIONS

This certification is required by the regulations implementing Executive Order 12549, Debarment and Suspension, 7 CFR Part 3017, Section 3017.510, Participants' responsibilities. The regulations were published as Part IV of the January 30, 1989, Federal Register (pages 4722-4733). Copies of the regulations may be obtained by contacting the Department of Agriculture agency with which this transaction originated.

(BEFORE COMPLETING CERTIFICATION, READ INSTRUCTIONS ON REVERSE)

- (1) The prospective lower tier participant certifies, by submission of this proposal, that neither it nor its principals is presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participation in this transaction by any Federal department or agency.
- (2) Where the prospective lower tier participant is unable to certify to any of the statements in this certification, such prospective participant shall attach an explanation to this proposal.

Organization Name

PR/Award Number or Project Name

Name(s) and Title(s) of Authorized Representative(s)

Signature(s)

Date

Instructions for Certification

1. By signing and submitting this form, the prospective lower tier participant is providing the certification set out on the reverse side in accordance with these instructions.
2. The certification in this clause is a material representation of fact upon which reliance was placed when this transaction was entered into. If it is later determined that the prospective lower tier participant knowingly rendered an erroneous certification, in addition to other remedies available to the Federal Government, the department or agency with which this transaction originated may pursue available remedies, including suspension and/or debarment.
3. The prospective lower tier participant shall provide immediate written notice to the person to which this proposal is submitted if at any time the prospective lower tier participant learns that its certification was erroneous when submitted or has become erroneous by reason of changed circumstances.
4. The terms "covered transactions," "debarred," "suspended," "ineligible," "lower tier covered transactions," "participant," "person," "primary covered transaction," "principal," "proposal," and "voluntarily excluded," as used in this clause, have the meanings set out in the Definitions and Coverage sections of rules implementing Executive Order 12549. You may contact the person to which this proposal is submitted for assistance in obtaining a copy of those regulations.
5. The prospective lower tier participant agrees by submitting this form that, should the proposed covered transaction be entered into, it shall not knowingly enter into any lower tier covered transaction with a person who is debarred, suspended, declared ineligible, or voluntarily excluded from participation in this covered transaction, unless authorized by the department or agency with which this transaction originated.
6. The prospective lower tier participant further agrees by submitting this form that it will include this clause titled "Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion - Lower Tier Covered Transactions," without modification, in all lower tier covered transactions and in all solicitations for lower tier covered transactions.
7. A participant in a covered transaction may rely upon a certification of a prospective participant in a lower tier covered transaction that it is not debarred, suspended, ineligible, or voluntarily excluded from the covered transaction, unless it knows that the certification is erroneous. A participant may decide the method and frequency by which it determines the eligibility of its principals. Each participant may, but is not required to, check the Nonprocurement List.
8. Nothing contained in the foregoing shall be construed to require establishment of a system of records in order to render in good faith the certification required by this clause. The knowledge and information of a participant is not required to exceed that which is normally possessed by a prudent person in the ordinary course of business dealings.
9. Except for transactions authorized under paragraph 5 of these instructions, if a participant in a covered transaction knowingly enters into a lower tier covered transaction with a person who is suspended, debarred, ineligible, or voluntarily excluded from participation in this transaction, in addition to other remedies available to the Federal Government, the department or agency with which this transaction originated may pursue available remedies, including suspension and/or debarment.

CERTIFICATION FOR CONTRACTS, GRANTS AND LOANS

The undersigned certifies, to the best of his or her knowledge and belief, that:

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

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

3. The undersigned shall require that the language of this certification be included in the award documents for all subawards at all tiers (including contracts, subcontracts, and subgrants under grants and loans) and that all subrecipients shall certify and disclose accordingly.

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

(name)

(date)

(title)

oOo

DEPARTMENT OF HAWAIIAN HOME LANDS

**EAST KAPOLEI DEVELOPMENT,
INCREMENT IIB SUBDIVISION**

HONOULIULI, EWA, OAHU

IFB-14-HHL-001

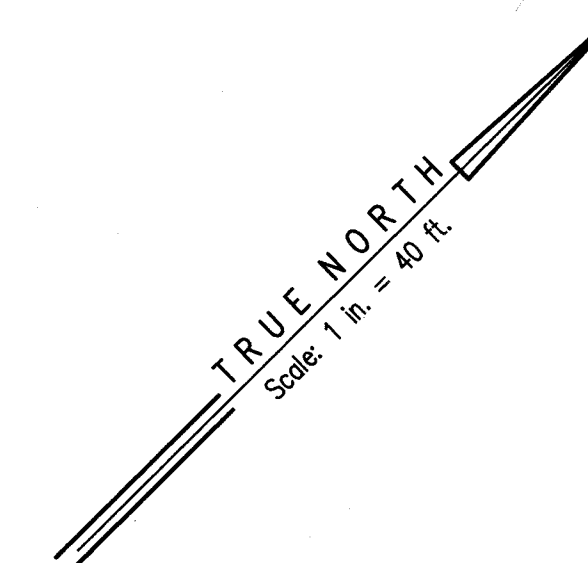
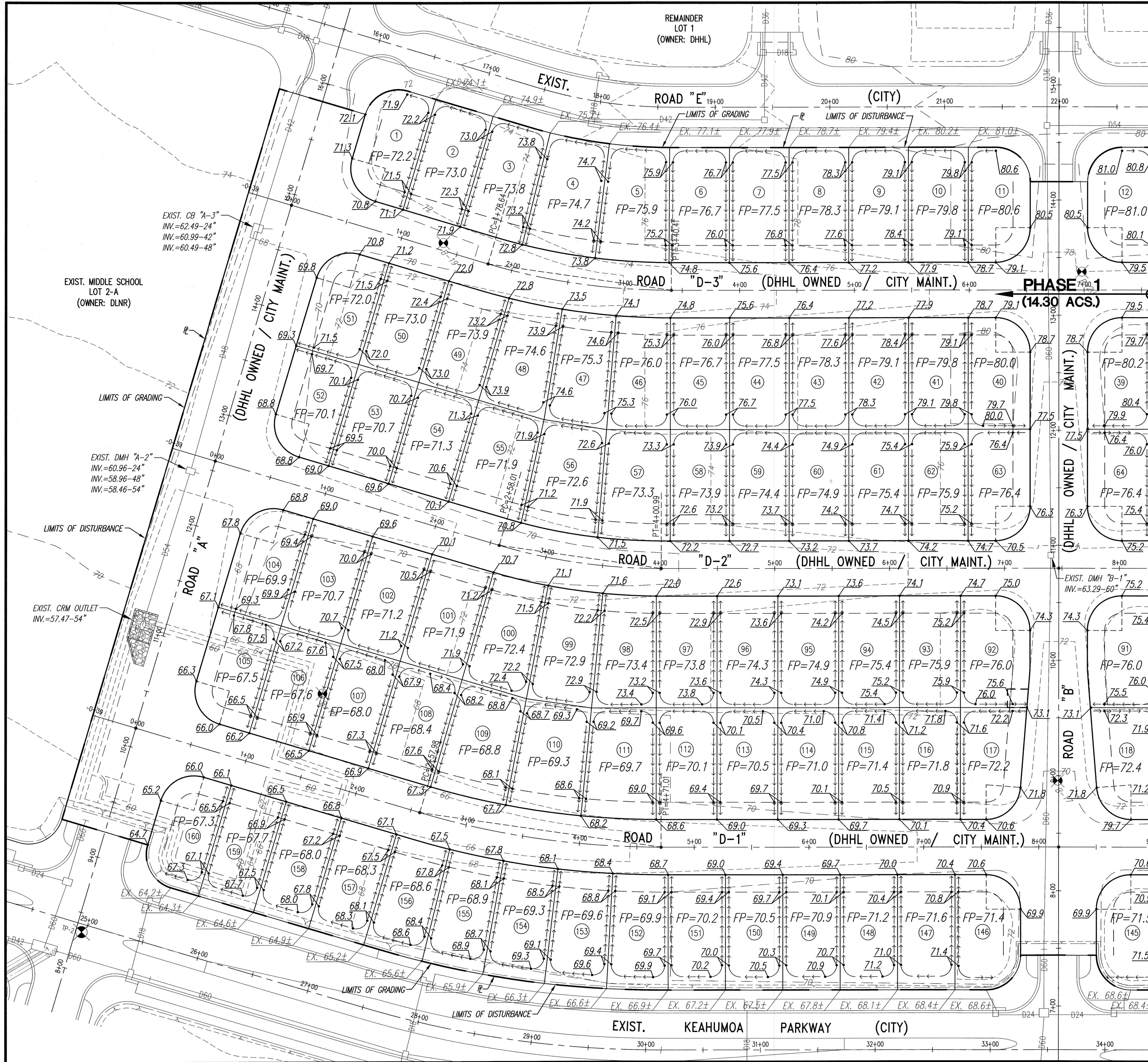
SEALED BID

Submitted by: _____

Address: _____

Date: _____

Bid Package Envelope Cover



LEGEND

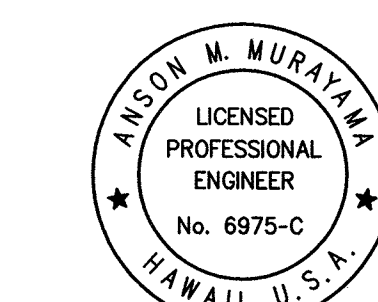
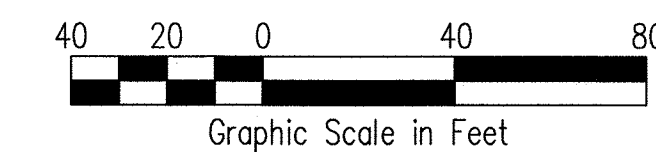
- 78 --- EXISTING CONTOUR
- CENTERLINE OF ROADWAY
- SET BACK LINE
- PROPERTY LINE
- LIMITS OF GRADING
- LIMITS OF DISTURBANCE PER DOH DEFINITION
- FINISH GRADE SWALE PATTERN
- FP FINISHED PAD
- (40) LOT NUMBER
- 73.7 FINISH SPOT ELEVATION
- B-6 BORING LOCATION
- D60 EXIST. DRAIN LINE W/ SIZE

SEE DWG. NO. C-3

MATCHLINE

LOT GRADING PLAN - PHASE 1

SCALE: 1"=40'



THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION. CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION. LICENSE EXPIRATION DATE: 04/30/14

REVISION DATE	DESCRIPTION	MADE BY	APPROVED
Community Planning and Engineering, Inc. Engineering Design Construction Management Infrastructure Planning 1286 Queen Emma Street Honolulu, Hawaii			
EAST KAPOLEI II DEVELOPMENT INCREMENT 2B HONOLULU, EWA, OAHU, HAWAII (DPP SUBD. FILE NO. 2011/SUB-155) OWNER & DEVELOPER: DEPARTMENT OF HAWAIIAN HOME LANDS TAX MAP KEY: 9-1-17: Portion 110			
LOT GRADING PLAN - PHASE 1			
DRAWN BY: LELT	ENGINEER: FC	CHECKED BY: AMM	
APPROVED: (FOR GRADING ONLY)			
M. J. 6/28/13 CHIEF, CIVIL ENGINEERING DIVISION, DPP, HHS			
FILE	PROJECT	FOLDER	NO.



STATE OF HAWAII
CONTRACT FOR GOODS OR SERVICES
BASED UPON
COMPETITIVE SEALED BIDS

This Contract, executed on the respective dates indicated below, is effective as of _____, _____, between _____ Department of Hawaiian Home Lands _____,
(Insert name of state department, agency, board or commission)
State of Hawaii ("STATE"), by its _____ Chairman, Hawaiian Homes Commission _____,
(Insert title of person signing for State)
(hereafter also referred to as the HEAD OF THE PURCHASING AGENCY or designee ("HOPA")),
whose address is 91-5420 Kapolei Parkway, Kapolei, Hawaii 96707
_____ and _____
("CONTRACTOR"), a _____
(Insert corporation, partnership, joint venture, sole proprietorship, or other legal form of the Contractor)
under the laws of the State of _____, whose business address and federal
and state taxpayer identification numbers are as follows: _____

RECITALS

A. The STATE desires to retain and engage the CONTRACTOR to provide the goods or services, or both, described in this Contract and its attachments, and the CONTRACTOR is agreeable to providing said goods or services, or both.

B. The STATE has issued an invitation for competitive sealed bids, and has received and reviewed bids submitted in response to the invitation.

C. The solicitation for bids and the selection of the CONTRACTOR were made in accordance with section 103D-302, Hawaii Revised Statutes ("HRS"), Hawaii Administrative Rules, Title 3, Department of Accounting and General Services, Subtitle 11 ("HAR"), Chapter 122, Subchapter 5, and applicable procedures established by the appropriate Chief Procurement Officer ("CPO").

D. The CONTRACTOR has been identified as the lowest responsible and responsive bidder whose bid meets the requirements and criteria set forth in the invitation.

E. Pursuant to _____ HHCA of 1920, as amended _____, the STATE
(Legal authority to enter into this Contract)
is authorized to enter into this Contract.

F. Money is available to fund this Contract pursuant to:

(1) Hawaiian Homes Trust Fund

(Identify state sources)

or (2) HUD NAHASDA Block Grant

(Identify federal sources)

or both, in the following amounts: State \$ _____

Federal \$ _____

NOW, THEREFORE, in consideration of the promises contained in this Contract, the STATE and the CONTRACTOR agree as follows:

1. Scope of Services. The CONTRACTOR shall, in a proper and satisfactory manner as determined by the STATE, provide all the goods or services, or both, set forth in the Invitation for Bids number IFB-14-HHL-001 ("IFB") * and the CONTRACTOR'S accepted bid ("Bid"), both of which, even if not physically attached to this Contract, are made a part of this Contract.

2. Compensation. The CONTRACTOR shall be compensated for goods supplied or services performed, or both, under this Contract in a total amount not to exceed
* and summarized in Attachment S-1

TBD DOLLARS

(\$ TBD), including approved costs incurred and taxes, at the time and in the manner set forth in the IFB and CONTRACTOR'S Bid. And generally described in Attachment S-2.

3. Time of Performance. The services or goods required of the CONTRACTOR under this Contract shall be performed and completed in accordance with the Time of Performance set forth in Attachment-S3, which is made a part of this Contract.

4. Bonds. The CONTRACTOR ☒ is required to provide or ☐ is not required to provide: ☐ a performance bond, ☐ a payment bond, ☒ a performance and payment bond in the amount of _____ DOLLARS (\$ _____).

5. Standards of Conduct Declaration. The Standards of Conduct Declaration of the CONTRACTOR is attached to and made a part of this Contract.

6. Other Terms and Conditions. The General Conditions and any Special Conditions are attached to and made a part of this Contract. In the event of a conflict between the General Conditions and the Special Conditions, the Special Conditions shall control. In the event of a conflict among the documents, the order of precedence shall be as follows: (1) this Contract, including all attachments and addenda; (2) the IFB, including all attachments and addenda; and (3) the CONTRACTOR'S Bid.

7. Liquidated Damages. Liquidated damages shall be assessed in the amount of ONE THOUSAND and 00/100 DOLLARS (\$ 1,000.00) per day, in accordance with the terms of paragraph 9 of the General Conditions.

8. Notices. Any written notice required to be given by a party to this Contract shall be (a) delivered personally, or (b) sent by United States first class mail, postage prepaid. Notice to the STATE shall be sent to the HOPA'S address indicated in the Contract. Notice to the CONTRACTOR shall be sent to the CONTRACTOR'S address indicated in the Contract. A notice shall be deemed to have been received three (3) days after mailing or at the time of actual receipt, whichever is earlier. The CONTRACTOR is responsible for notifying the STATE in writing of any change of address.

IN VIEW OF THE ABOVE, the parties execute this Contract by their signatures, on the dates below, to be effective as of the date first above written.

STATE

(Signature)

Jobie M. K. Masagatani

(Print Name)

Chairman, Hawaiian Homes Commission

(Print Title)

(Date)

CONTRACTOR

CORPORATE SEAL
(If available)

(Name of Contractor)

(Signature)

(Print Name)

(Print Title)

(Date)

APPROVED AS TO FORM:

Deputy Attorney General

* Evidence of authority of the CONTRACTOR'S representative to sign this Contract for the CONTRACTOR must be attached.



STATE OF HAWAII

CONTRACTOR'S ACKNOWLEDGMENT

STATE OF _____)
) SS.
_____ COUNTY OF _____)

On this _____ day of _____, _____ before me appeared
_____ and _____, to me
known, to be the person(s) described in and, who, being by me duly sworn, did say that he/she/they is/are
_____ and _____ of
_____, the
CONTRACTOR named in the foregoing instrument, and that he/she/they is/are authorized to sign said
instrument on behalf of the CONTRACTOR, and acknowledges that he/she/they executed said
instrument as the free act and deed of the CONTRACTOR.

(Notary Stamp or Seal)

(Signature)

(Print Name)

Notary Public, State of _____

My commission expires: _____

Doc. Date: _____ # Pages: _____

Notary Name: _____ Circuit _____

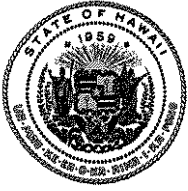
Doc. Description: Contract for Goods or Services Based Upon
Competitive Sealed Bids

(Notary Stamp or Seal)

Notary Signature

Date

NOTARY CERTIFICATION



STATE OF HAWAII
**CONTRACTOR'S
STANDARDS OF CONDUCT DECLARATION**

For the purposes of this declaration:

"Agency" means and includes the State, the legislature and its committees, all executive departments, boards, commissions, committees, bureaus, offices; and all independent commissions and other establishments of the state government but excluding the courts.

"Controlling interest" means an interest in a business or other undertaking which is sufficient in fact to control, whether the interest is greater or less than fifty per cent (50%).

"Employee" means any nominated, appointed, or elected officer or employee of the State, including members of boards, commissions, and committees, and employees under contract to the State or of the constitutional convention, but excluding legislators, delegates to the constitutional convention, justices, and judges. (Section 84-3, HRS).

On behalf of _____, CONTRACTOR, the undersigned does declare as follows:

1. CONTRACTOR ☐ is* ☒ is not a legislator or an employee or a business in which a legislator or an employee has a controlling interest. (Section 84-15(a), HRS).
2. CONTRACTOR has not been represented or assisted personally in the matter by an individual who has been an employee of the agency awarding this Contract within the preceding two years and who participated while so employed in the matter with which the Contract is directly concerned. (Section 84-15(b), HRS).
3. CONTRACTOR has not been assisted or represented by a legislator or employee for a fee or other compensation to obtain this Contract and will not be assisted or represented by a legislator or employee for a fee or other compensation in the performance of this Contract, if the legislator or employee had been involved in the development or award of the Contract. (Section 84-14 (d), HRS).
4. CONTRACTOR has not been represented on matters related to this Contract, for a fee or other consideration by an individual who, within the past twelve (12) months, has been an agency employee, or in the case of the Legislature, a legislator, and participated while an employee or legislator on matters related to this Contract. (Sections 84-18(b) and (c), HRS).

CONTRACTOR understands that the Contract to which this document is attached is voidable on behalf of the STATE if this Contract was entered into in violation of any provision of chapter 84, Hawaii Revised Statutes, commonly referred to as the Code of Ethics, including the provisions which are the source of the declarations above. Additionally, any fee, compensation, gift, or profit received by any person as a result of a violation of the Code of Ethics may be recovered by the STATE.

* Reminder to Agency: If the "is" block is checked and if the Contract involves goods or services of a value in excess of \$10,000, the Contract must be awarded by competitive sealed bidding under section 103D-302, HRS, or a competitive sealed proposal under section 103D-303, HRS. Otherwise, the Agency may not award the Contract unless it posts a notice of its intent to award it and files a copy of the notice with the State Ethics Commission. (Section 84-15(a), HRS).

CONTRACTOR

By _____
(Signature)

Print Name _____

Print Title _____

Name of Contractor _____

Date _____



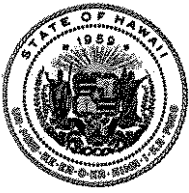
STATE OF HAWAII

SCOPE OF SERVICES

Project: East Kapolei II Development, Increment IIB
Location: Honouliuli, Ewa, Oahu
Contractor: TBD

Pursuant to 103D, Hawaii Revised Statutes, the CONTRACTOR shall perform and provide the Scope of Services listed below and detailed in Invitation for Bids IFB-13-HHL-001 and in CONTRACTOR's proposal submitted _____, 2013, in a proper and satisfactory manner as determined by the STATE and in accordance with all Federal, State and local laws, both of which are incorporated by reference.

- I. Mass Grading (Items 1 to 2, inclusive)
- II. Roadways (Items 3 to 30, inclusive)
- III. Mailbox Center (Items 31 to 44, inclusive)
- IV. Drainage System (Items 45 to 64, inclusive)
- V. Landscaping (Items 65 to 76, inclusive)
- VI. Electrical (Items 77 to 123, inclusive)
- VII. Irrigation System (Items 124 to 135, inclusive)



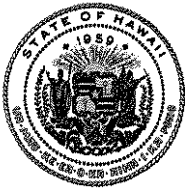
STATE OF HAWAII

COMPENSATION AND PAYMENT SCHEDULE

Project: East Kapolei II Development, Increment IIB
Location: Honouliuli, Ewa, Oahu
Contractor: TBD

The State shall pay the CONTRACTOR a sum not to exceed _____ AND ___/100 DOLLARS (\$_____) for the satisfactory completion of the work under this contract.

I.	Mass Grading (Items 1 to 2, inclusive)	\$
II.	Roadways (Items 3 to 30, inclusive)	
III.	Mailbox Center (Items 31 to 44, inclusive)	
IV.	Drainage System (Items 45 to 64, inclusive)	
V.	Landscaping (Items 65 to 76, inclusive)	
VI.	Electrical (Items 77 to 123, inclusive)	
VII.	Irrigation System (Items 124 to 135, inclusive)	
TOTAL		\$

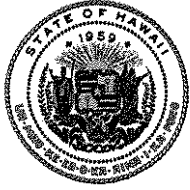


STATE OF HAWAII

TIME OF PERFORMANCE

Project: East Kapolei II Development, Increment IIB
Location: Honouliuli, Ewa, Oahu
Contractor: TBD

1. The Time of Performance for this Contract shall be two hundred forty (240) Calendar Days from the effective date specified in the Notice to Proceed, unless extended by delays excused by the STATE as documented in writing. The Notice to Proceed shall be issued by the STATE separately to the CONTRACTOR.
2. This Contract shall expire on the date on which the later of the following occurs: (a) the State makes final payment to the CONTRACTOR in accordance with (1) paragraph 17(d) of the General Conditions (AG-008 103D General Conditions) and (2) no dispute between the parties hereto as to the Work or other obligations of the CONTRACTOR hereunder is outstanding or (b) the STATE issues a Final Acceptance letter to the CONTRACTOR.
3. The Contract expiration date is for administrative purposes only and not to be confused with the Time of Performance which refers to the time in which the CONTRACTOR is required to complete the work, or with any continuing obligations on the part of the CONTRACTOR.



STATE OF HAWAII

**CERTIFICATE OF EXEMPTION
FROM CIVIL SERVICE****1. By Heads of Departments Delegated by the Director of the Department of Human Resources Development ("DHRD").***

Pursuant to a delegation of the authority by the Director of DHRD, I certify that the services to be provided under this Contract, and the person(s) providing the services under this Contract are exempt from the civil service, pursuant to § 76-16, Hawaii Revised Statutes (HRS).

(Signature)

Jobie M. K. Masagatani

(Print Name)

Chairman, Hawaiian Homes Commission

(Print Title)

(Date)

* This part of the form may be used by all department heads and the heads of attached agencies to whom the Director of DHRD expressly has delegated authority to certify § 76-16, HRS, civil service exemptions. The specific paragraph(s) of § 76-16, HRS, upon which an exemption is based should be noted in the contract file. If an exemption is based on § 76-16(b)(15), the contract must meet the following conditions:

- (1) It involves the delivery of completed work or product by or during a specific time;
- (2) There is no employee-employer relationship; and
- (3) The authorized funding for the service is from other than the "A" or personal services cost element.

NOTE: Not all attached agencies have received a delegation under § 76-16(b)(15). If in doubt, attached agencies should check with the Director of DHRD prior to certifying an exemption under § 76-16(b)(15). Authority to certify exemptions under §§ 76-16(b)(2), and 76-16(b)(12), HRS, has not been delegated; only the Director of DHRD may certify §§ 76-16(b)(2), and 76-16(b)(12) exemptions.

2. By the Director of DHRD, State of Hawaii.

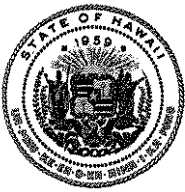
I certify that the services to be provided under this Contract, and the person(s) providing the services under this Contract are exempt from the civil service, pursuant to §76-16, HRS.

(Signature)

(Date)

(Print Name)

(Print Title, if designee of the Director of DHRD)



STATE OF HAWAII
SPECIAL CONDITIONS

Project: East Kapolei II Development, Increment IIB
Location: Honouliuli, Ewa, Oahu
Contractor: TBD

SC-01: INTERCHANGEABLE TERMS

The following terms are one and the same:

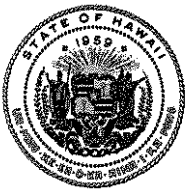
- a. "Contract" and "Agreement".
- b. "Department of Hawaiian Home Lands" "Department" "DHHL" and "STATE".

SC-02 INSURANCE COVERAGE

The CONTRACTOR shall obtain separate insurance coverage for this project that complies with the requirements set forth in the DHHL Construction General Conditions, Article 7, Section 7.3, as amended. Payment for all work required to comply with this item will not be paid for separately but shall be considered incidental to the various contract items.

CONTRACTOR shall maintain insurance acceptable to the STATE in full force and effect throughout the term of this Contract. The policies of insurance maintained by CONTRACTOR shall provide the following minimum coverage:

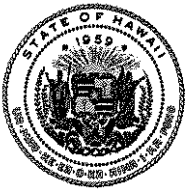
<u>Coverage</u>	<u>Limit</u>
General Liability Insurance (occurrence form)	Bodily Injury and Property Damage (combined single limit): <u>\$1,000,000</u> per occurrence and <u>\$2,000,000</u> aggregate Personal Injury: <u>\$1,000,000</u> per occurrence and <u>\$2,000,000</u> aggregate
Automobile Insurance (covering all owned, non-owned and hired automobiles)	Bodily Injury: <u>\$1,000,000</u> per person and <u>\$1,000,000</u> per occurrence. Property Damage: <u>\$1,000,000</u> per accident or combined single limit of <u>\$2,000,000</u> .
Workers Compensation (statutory limit is required by laws of the State of Hawaii)	Insurance to include Employer's Liability. Both such coverages shall apply to all employees of the CONTRACTOR and, in case any sub-contractor fails to provide adequate similar protection for all his employees, to all employees of subcontractors.
Builder's Risk covering the CONTRACTOR and all subcontractors	100% Replacement Value



STATE OF HAWAII
SPECIAL CONDITIONS

Fire and extended coverage	100% Replacement Value
Malicious Mischief	100% Replacement Value
Flood Insurance, if applicable	Maximum Coverage available

- a. The State of Hawaii, Department of Hawaiian Home Lands, its elected and appointed officials, officers, employees, and agents shall be named as additional insured with respect to operations, services or products provided to the State of Hawaii. CONTRACTOR agrees to provide to the DHHL, before the effective date of the Contract, certificate(s) of insurance necessary to evidence compliance with insurance provisions of this Contract. CONTRACTOR shall keep such insurance in effect and the certificate(s) on deposit with DHHL during the entire term of this Contract. Upon request by the STATE, CONTRACTOR shall furnish a copy of the policy or policies.
- b. Failure of CONTRACTOR to provide and keep in force such insurance shall be regarded as a material default under this Contract. The STATE shall be entitled to exercise any or all of the remedies provided in this Contract for default of CONTRACTOR.
- c. The procuring of such required policy or policies of insurance shall not be construed to limit CONTRACTOR's liability under this Contract or to fulfill the indemnification provisions and requirements of this Contract. Notwithstanding said policy or policies of insurance, CONTRACTOR shall be obliged for the full and total amount of any damage, injury, or loss caused by negligence or neglect connected with this Contract.
- d. CONTRACTOR shall immediately provide written notice to the contracting department or agency should any of the insurance policies evidenced on its Certificate of Insurance form be cancelled, limited in scope, or not renewed upon expiration.
- e. DHHL is a self insured State agency. CONTRACTOR's insurance shall be primary. Any insurance maintained by the State of Hawaii shall apply in excess of, and shall not contribute with, insurance provided by CONTRACTOR.
- f. The CONTRACTOR shall require all subcontractors to have in full force and effect the same insurance coverage as required of the CONTRACTOR. Such insurance shall name the State of Hawaii, Department of Hawaiian Home Lands, its elected and appointed officials, officers, employees, and agents as additional insured with respect to operations, services or products provided to the State of Hawaii. The CONTRACTOR shall be responsible to enforce its subcontractors' compliance with these insurance requirements and CONTRACTOR shall, upon request, provide the STATE a copy of the policy or policies of insurance for any subcontractor.



STATE OF HAWAII

SPECIAL CONDITIONS

SC-03: COMPLETION SCHEDULE AND LIQUIDATED DAMAGES

The CONTRACTOR shall complete all work as specified or indicated in the Contract Documents on or before two hundred forty calendar days after receiving written Notice to Proceed, subject to extensions, as may be granted.

In case of failure on the part of the CONTRACTOR to complete the work within the time specified, the CONTRACTOR shall pay to DHHL as liquidated damages, and not as a penalty, \$1,000.00 per calendar day for each day that the project, in its entirety, remains incomplete.

SC-04: PROCESS THROUGH DHHL

Any and all submittals, reports, requests, claims and notices under the contract shall be processed through Land Development Division Project Manager, at Hale Kalanianaʻole, 91-5420 Kapolei Parkway, Kapolei, Hawaii 96707.

SC-05: SURVEYING SERVICES

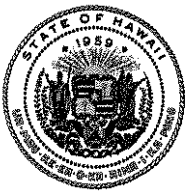
Any surveying services required shall be the responsibility of the contractor and considered incidental to the scope of work under this contract and therefore covered under the terms of this contract. No separate payment shall be made.

Upon completion, the CONTRACTOR shall prepare an as-built plan for the project site in which the finished grades are certified by a Registered Land Surveyor. Six (6) copies of the as-built plan shall be submitted to the Construction Manager and Engineer. The as-built plan shall be incidental to the contract. No separate payment shall be made.

SC-06: ALLOWANCES

The proposal may contain payment items designated as allowances. Funds listed in allowance items are to be spent at the direction of DHHL. The allowance is an estimate only and is subject to increase or decrease depending on the actual cost of the item. The funds are for the direct costs of an item and all pricing, submittal and review, overhead, installation, profit, insurance, surety, processing of the issuance of checks for payment to other parties, and all other costs will be included. No payment will be made for incidental costs.

Allowances specifically set aside for construction work and materials will be negotiated when the scope of work is determined. Any unspent allowance costs will be deducted from the contract by change order prior to final payment.



STATE OF HAWAII

SPECIAL CONDITIONS

SC-07: PERMITS AND FEES

Contractor shall apply and pay for all permits and inspection fees as required by all governmental agencies having jurisdiction over this project.

SC-08: COORDINATION WITH OTHER PARTIES

The CONTRACTOR shall coordinate all the necessary work for temporary utility services, permanent service and appurtenances with the appropriate agencies, including but not limited to the Honolulu Board of Water Supply, Hawaiian Electric Company, Oceanic Cable, and Sandwich Isles Communications.

SC-09: CONTRACTOR'S LICENSING

It is the CONTRACTOR's sole responsibility to review the requirements of this project and determine the appropriate contractor's licenses that are required to complete the project. If the CONTRACTOR does not hold all of the licenses required to perform a particular item of work on this project with its own workers, when bidding, he must list subcontractors that hold the appropriate licenses in its proposal.

SC-10: WATER CHARGES AND REQUIREMENTS

The CONTRACTOR shall be solely responsible for obtaining water to meet any requirements of the contract. Unless otherwise indicated or provided for, any work, costs, charges and fees necessary to obtain water for this contract shall not be paid for separately but shall be considered incidental to the various contract items; no separate or additional payment will be made therefore.

SC-11: SOIL AND DUST CONTROL

To control the dust during construction, the CONTRACTOR shall have an adequate supply of water for dust control and if necessary, moisture conditioning of fill material at all times. The CONTRACTOR shall institute an erosion control program and dust control program to minimize soil erosion and wind erosion and airborne fugitive dust nuisance, respectively for the entire duration of this project.

SC-12: COMPLIANCE WITH COPELAND "ANTI-KICKBACK" ACT

The CONTRACTOR shall comply with the Copeland Anti-Kickback Act (18 USC 874 and 40 USC 276c) as supplemented by Department of Labor regulations (29 CFR Part 3, "Contractors and Subcontractors on Public Buildings or Public Works Financed in Whole or in Part by Loans or Grants of the United States"). The Act provides that Contractor or subcontractor shall be prohibited from inducing, by any means, any person employed in the construction, completion, or repair of public facilities, to give up any part of the compensation to which they are otherwise entitled.



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SC-13: ENERGY EFFICIENCY

The Contractor shall comply with the Energy Policy and Conservation Act (P.L. 94-163). Mandatory standards and policies relating to energy efficiency, contained in any applicable State Energy Conservation Plan, shall be utilized.

SC-14: FINAL INSPECTION

Throughout the construction period, the work may be subject to periodic inspection by the Department, designated Construction Inspector, the City and County of Honolulu, and other applicable government agencies. Once work has been satisfactorily completed, the County, accompanied by the Department and Construction Inspector, will make the final inspection of the work to determine whether all work has been done in complete compliance with the requirements of the plans and these specifications.

The CONTRACTOR shall therefore schedule the final inspection with the Department of Public Works of the City and County of Honolulu and notify the Department's Project Manager one week prior to said inspection.

Neither the scheduling nor the conduct of the aforementioned final inspection shall be deemed a waiver of the Department's right to subsequently require CONTRACTOR to complete all unfinished or defective work to the satisfaction of the Department.

SC-15: APPRENTICESHIP AGREEMENT PREFERENCE – CONTRACTOR'S RESPONSIBILITY

1. For the duration of the contract awarded utilizing the Hawai'i 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.
2. Monthly certification shall be made on *MONTHLY REPORT OF CONTRACTOR'S PARTICIPATION IN APPROVED APPRENTICESHIP PROGRAM UNDER ACT 17 (Monthly Certification Form 2)* prepared and made available by the DLIR. *Monthly Certification Form 2* shall be a signed original by the respective apprenticeship program sponsor's authorized official, and submitted by the Contractor with its monthly payment requests. *Monthly Certification Form 2* is available on the DLIR website at: <http://hawaii.gov/labor/wdd>
3. 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 party to a registered apprenticeship agreement for each apprenticeable trade the Contractor employs, the Contractor will be subject to the following sanctions:
 - a. Withholding of the requested payment until the required form(s) are submitted;



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- b. Temporary or permanent cessation of work on the project, without recourse to breach of contract claims by the Contractor; provided the DHHL shall be entitled to restitution for nonperformance or liquidated damages claims; or
 - c. Proceed to debar pursuant to HRS §103D-702.
4. 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.

SC-16: STATE GENERAL EXCISE TAX

This project is exempt from the State of Hawaii General Excise Tax. The Contractor’s bid shall not include the General Excise Tax for all work. Contractor shall submit Form G-37 for itself and all subcontractors to DHHL through the CM for processing and certification.

SC-17: ENGINEERING WORK

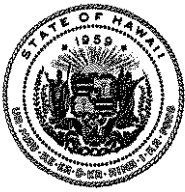
The DHHL may engage the consultants for limited construction observations to supplement the inspections performed by the State and respective Counties. The Consultant’s authority shall be as described in General Conditions 5.4.

SC-18: CAMPAIGN CONTRIBUTIONS BY STATE AND COUNTY CONTRACTORS

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

SC-19: STANDARD SPECIFICATIONS AND STANDARD DETAILS

The “STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION, SEPTEMBER 1986,” of the Departments of Public Works, County of Kauai, City and County of Honolulu, County of Maui, and County of Hawaii, of the State of Hawaii, and the “STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION, SEPTEMBER 1984,” of the Departments of Public Works, County of Kauai, City and County of Honolulu, County of Maui, and County of Hawaii, of the State of Hawaii, and all subsequent amendments and additions, are by reference incorporated herein and made a part of these specifications. The term “DPW Standard Specifications” used hereinafter refers to “STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION, SEPTEMBER 1986,” and the term “DPW Standard Details” used hereinafter refers to “STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION, SEPTEMBER



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1984.” Copies of the DPW Standard Specifications and DPW Standard Details may be purchased at the Division of Purchasing during regular business hours of the City.

The work embraced herein shall be done in accordance with the DPW Standard Specifications and DPW Standard Details, insofar as they may apply.

SC-20: WATER SYSTEM SPECIFICATIONS

The “WATER SYSTEM STANDARDS” of the Board of Water Supply, City and County of Honolulu, dated 2002, and the “WATER SYSTEM EXTERNAL CORROSION CONTROL STANDARDS,” Volume 3, of the Board of Water Supply, City and County of Honolulu dated 1991, and all subsequent amendments and additions, are by reference incorporated herein and made a part of these contract documents. The work embraced herein shall be performed by the Contractor in accordance with the “WATER SYSTEM STANDARDS,” the “WATER SYSTEM EXTERNAL CORROSION CONTROL STANDARDS,” Volume 3, and the various sections of the Special Provisions.

The term “BWS Standards” and BWS Standard Details used in these contract documents refers to the “WATER SYSTEM STANDARDS” of the Board of Water Supply, City and County of Honolulu, dated 2002, the “WATER SYSTEM EXTERNAL CORROSION CONTROL STANDARDS,” Volume 3, of the Board of Water Supply, City and County of Honolulu dated 1991, and all subsequent amendments and additions.

SC-21: STATE STANDARD SPECIFICATIONS

The “Hawaii Standard Specifications for Road, Bridge and Public Works Construction,” Highways Division, Department of Transportation, State of Hawaii, 2005, as amended, and hereinafter referred to as the “State Standard Specifications” is by reference incorporated herein and made a part of these contract documents.

SC-22: PLANS AND SPECIFICATIONS TO BE FURNISHED BY THE OWNER

Owner shall furnish six (6) sets of approved plans and one (1) set of specifications to the Contractor upon award of contract. Additional sets of approved plans and specifications may be purchased by the Contractor at the cost for printing the plans and specifications. Upon Contractor’s request, approved plans and specification originals will be sent to Contractor’s choice of The Blue Print Company or HonBlue for printing and billed to the Contractor’s account.

SC-23: PROJECT SIGN

The Contractor shall furnish, erect, maintain and remove one project sign.

The project signboard shall be 3/4 inch thick, “AC” exterior grade fir plywood, 4 feet in height and 7 feet long. All lettering type and size and color selection shall be as specified by DHHL.



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All paints used shall be exterior enamel paints manufactured either by Ameritone-Devoe, Boysen, DuPont, Dutch Boy Fuller-O'Brien, Glidden, Pittsburg, Sherwin—Williams, Sinclair, or approved equal, and made primarily for the purpose for which they are used, and shall be prepared and applied strictly in accordance with the manufacturer's directions. Sign shall be painted with one prime coat and two finish coats.

Final layout shall be based upon sign plans submitted by the Contractor and approved by the DHHL.

The Project Sign shall be erected at a location directed by the DHHL and shall be adequately braced in such a way that does not interfere with the viewing of the sign. The sign shall be maintained in good condition throughout the progress of the work until final completion of the project. The project sign shall be erected within five (5) days after approval of the sign layout. After the final approval of the construction work by the DHHL, the project sign shall be removed from the site and shall become the property of the Contractor.

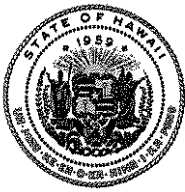
Payment will be made for one project sign painted, with lettering specified by DHHL, in place complete (see attachment). Payment for sign removal shall be incidental to said item.

SC-24: FIELD OFFICE AND FIELD TELEPHONE

The Contractor shall provide a field office for exclusive use and entry of the Construction Manager and DHHL personnel, or their representatives, at a location approved by the Engineer within the Project limits. It shall be available within thirty (30) calendar days after the Notice to Proceed date of the Contract.

The field office shall:

1. Be separated by a soundproof wall if it adjoins the Contractor's office.
2. Have security measures (i. e., window bars) to discourage illegal entry into the field office and theft and vandalism of the contents.
3. Be weatherproof.
4. Have a minimum gross floor area of 45 feet by 12 feet.
5. Have a monitored wireless security alarm system.
6. Have an aggregate window area not less than 10 percent of the floor area.
7. Have two exterior doors with a keyed cylinder type lock.
8. Be furnished with a conference room table with sufficient chairs, one plan rack holding a minimum of 10 sets of plans, two new executive desks of minimum 36 inch x 72 inch size, two new executive type black chairs, one new 3-tier shelf with each tier a minimum of 13 inches high and 12 inches deep, one broom, telephone service, electric lighting, one new 4-drawer (legal size) file cabinet, one facsimile machine



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with automatic document feeder, hot/cold bottled drinking water dispenser unit, bottled water delivery service, and sewer system (as necessary).

9. Window-type air conditioning unit(s) capable of keeping the field office at 76°F. or cooler.
10. Have three telephone exchange lines to the field office. One line shall be dedicated for a facsimile machine. One exchange line for telephone, complete with 2-line handsets with touch-tone and call forwarding capability. The third telephone exchange line shall be dedicated to modem/e-mail.
11. Have a high-speed cable or DSL modem with wireless capability compatible with the internet service account. Contractor to pay for internet services.
12. Be provided with potable water service, water closet, lavatory, paper towels, toilet paper, paper cups, and soap. If the office cannot be equipped with a water closet and lavatory, the Contractor shall make other arrangements to provide such facilities for the construction management personnel as approved by the Engineer.
13. Be provided with electrical service and lighting.

At the discretion of the Engineer: 1) the field office may be located outside of the Project limits; and 2) the above requirements for the field office may be reduced.

The Contractor shall maintain the field office in good repair and clean and sanitary condition and shall provide disposable items (paper towels, toilet paper, paper cups, soap, etc.) to the satisfaction of the Engineer throughout the duration of the Project. Should the Engineer, in his judgment, feel that the office is not being adequately maintained, operated or repaired, partial or full retention of the Contractor's monthly progress payment may be enforced until such inadequacies are corrected.

The field office, equipment, and telephone shall be maintained in good repair and in a clean and sanitary condition by the Contractor until final payment or an earlier date as determined by the Engineer. The ownership of the field office and equipment shall remain with the Contractor and shall not be removed until instructed by the Engineer.

Payment for furnishing and maintaining the Project field office, equipment, furnishings, supplies, and all appurtenances shall be made at the lump sum price bid as provided for in the Proposal Schedule.

SC-25: CONSTRUCTION YARD AND RIGHT-OF-ENTRY

Contractor's staging area may be located on a portion of Lot 4 or Lot 2-A, as approved by the Construction Manager. Should the staging area measure more than 1 acre, the Contractor will be responsible to apply for and obtain a National General Permit Coverage (NGPC) for Stormwater Associated with Construction Activities from the State Department of Health, Clean Water Branch, including associated fees, before starting any work.



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Access to the project site will be from North-South Road (Kualaka'i Parkway)/East-West Road/Road "E." However, should the Contractor desire to access from Farrington Highway/Palehua Road, the Contractor shall be responsible for obtaining a right-of-entry from the respective landowner(s).

SC-26: FIRE PREVENTION PLAN

The site is dry and subject to fires. As such, the Contractor shall prepare a Comprehensive Fire Prevention Plan, submit a copy to the Construction Manager, inform all workers, including subcontractor personnel assigned, post the regulations on the walls of the field office or home office, and enforce the plan.

Special care must be taken in the vicinity of the Abutilon Contingency Reserve Area (CRA), as these plants have been designated endangered species by the Federal government and any damage to them is subject to harsh penalties.

SC-27: GEOTECHNICAL ENGINEER

The services of a geotechnical engineering firm will be retained by DHHL. The Contractor shall notify the Construction Manager whenever the geotechnical engineering firm's presence is needed at the site. The geotechnical engineer shall be present to observe site grading and other work concerning excavation, placing and compacting soil materials, and to take field density tests. Also, the geotechnical engineer shall perform laboratory testing of all imported soils or on-site soils to determine its acceptability for its intended use as select material or general fill material. The geotechnical engineer shall compile the daily observations, test data, test results and recommendations into a weekly submittal to the Construction Manager. The geotechnical engineer shall ensure that the geotechnical work complies with the specifications and drawings.

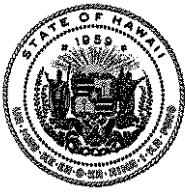
Upon completion of the grading operation, the geotechnical engineer shall provide the information needed to complete the "Report after Grading" as required by the Revised Ordinances of Honolulu (ROH), Section 14-15.1(n). As a minimum, six (6) copies of compaction data with 11"x17" location map, moisture content at the time of compaction, and certification letter (stamped and signed by a license engineer in the State of Hawaii) that the work was done in conformity to the specifications.

SC-28: EXISTING GROUND ELEVATIONS

The existing ground elevations as shown on the plans shall be presumed as being correct prior to the grading work.

SC-29: EARTHWORK QUANTITIES

Prior to any grading operations, the Contractor shall submit to the Engineer a list of estimated quantities for excavation and embankment. The Contractor shall also estimate a reasonable percentage for loss/shrinkage and percentage of unsuitable excavated materials. The percentages shall be updated as the grading work progresses.



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SC-30: MEASUREMENT OF QUANTITIES

All quantities expressed in the proposal are computed and will be paid based on the horizontal plane. The quantities are for bidding purposes only and not intended to represent actual quantity installed.

The Contractor shall record, on a daily basis, the graded stations, depths, widths and other data to accurately compute the quantities. The Contractor's surveyor shall furnish adequate reference points and stations to the satisfaction of the Construction Manager and to enable the Construction Manager to easily verify the stations. The Contractor shall submit three (3) copies of the report to the Construction Manager on a daily basis for record keeping and payment purposes.

SC-31: ARCHAEOLOGICAL SITES

The Contractor should be aware that archaeological sites may be encountered during the construction of this project. If the Contractor encounters a potential archaeological site during construction, he shall immediately cease all operations in the area and contact the Construction Manager.

SC-32: INADVERTENT DISCOVERY OF HUMAN BURIALS

Although not expected, in the event human burials are inadvertently discovered, the Contractor shall immediately stop work in the vicinity of the burial and contact the following parties and agencies immediately: State Historic Preservation Division, the Construction Manager, the Consultant, the Office of Hawaiian Affairs.

DHHL shall provide the Contractor with a Supplemental Agreement for additional time added to the Contractor's performance schedule for the mitigation of any inadvertent discovery of human remains.

SC-33: RECORD DRAWINGS

Field Posted As-Built Drawings, the intent of which is to record the actual in-place construction so that any future renovations or tie-ins can be anticipated accurately, shall be prepared and submitted by the Contractor. To accomplish this, the following procedure shall be followed by the Contractor:

1. A full-size set of field posted as-built drawings shall be neatly maintained at the job site. All changes made by addenda, submittals, shop drawings, change orders, or field adjustments to alignments, elevations and dimensions stipulated on the drawings and authorizations by the Engineer shall be clearly and accurately recorded by the Contractor on this set of field posted as-built drawings.
2. Changes shall be recorded immediately after they are constructed in place to assure they are not forgotten. Record the changes using erasable colored pencil and refer to



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the authorizing document (RFI, Shop Drawing, Field Modification) or Change Order. The following color codes shall be used to document these changes on the drawings:

Additions	-	RED
Deletions	-	GREEN
Comments	-	BLUE
Dimensions	-	GRAPHITE*

* Legibly mark to record actual depths, horizontal and vertical location of utilities and structures relative to permanent surface improvements.

The field posted as-built drawings shall be made available to the Construction Manager and Engineer during normal working hours at the Contractor's field office so that its clarity and accuracy can be monitored.

A monthly log of all the record changes shall be submitted with each progress payment request. The Contractor shall not be entitled to any progress payment until he has provided a completed log which accurately reflects the work that was done. The log shall identify each revision by drawing number and a description of the revision. The Contractor and Construction Manager shall schedule a day each month to meet and review the log and drawings together.

3. The words "FIELD POSTED AS-BUILT" shall be labeled on the title sheet and certified by the Contractor as to accuracy and completeness as shown below:

FIELD POSTED AS-BUILT

Certified By: _____ Date: _____
Contractor (Include name and company)

4. The words "FIELD POSTED AS-BUILT" shall be labeled on all sheets in the margin space to the right of the sheet number written from the bottom upward.
5. The Index to Drawings shall be revised with the label "FIELD POSTED AS-BUILT" for each sheet. The index shall conclude with the following note: "A COMPLETE SET CONTAINS ____ SHEETS" with the total number of sheets comprising the set to be placed in the blank.
6. Any "FIELD POSTED AS-BUILT" drawing which the Construction Manager or Engineer determines does not accurately record the deviation, or is not legible, will be rejected and returned to the Contractor for corrections. Drawings that are ripped or has excessive eraser marks from changes shall be replaced with a clean set of drawings.
7. Submit the set of approved "FIELD POSTED AS-BUILT" drawings to the Engineer no later than five (5) calendar days prior to the date of final inspection.



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8. "RECORD DRAWINGS" will be prepared by the design consultant using the "FIELD POSTED AS-BUILT." Both sets of drawings will be sent to the Contractor for review and approval. The Contractor will have one (1) week to review and approve the drawings. After the Contractor is satisfied the Record Drawings are correct, the Contractor shall certify changes by signing the tracings.

SC-34: ACCEPTANCE

The term "acceptance" as used in the Contract Documents means that the work of improvement is acceptable to Owner and shall occur when each and all of the following events have been accomplished:

1. All labor has been performed and all materials supplied and incorporated into the work of improvement as provided in the Contract Documents in a good and workmanlike manner.
2. The project and the job site are in a "clean" condition completely free of all trash, rubbish, debris, dirt, smudges, etc., and all of Contractor's and subcontractors' tools and equipment, as well as any leftover materials and inventory, have been removed from the project and the job site.
3. All persons, firms and corporations, including all laborers, materialmen, suppliers and subcontractors who have furnished equipment, supplied materials or performed work for or in connection with the construction, including, but not limited to, all persons who could file a claim of lien, have been paid in full and have submitted their final statements (Final Contractor's, Subcontractor's, and/or Materialmen's Voucher Release and Waiver of Lien) with a waiver of all rights to mechanic's lien, stop notice or recourse against the surety on the bond, if any, in form and substance acceptable to the Owner in its sole discretion.
4. Contractor submits to the Department an affidavit that such waiver of lien rights or releases includes all of the labor and materials for which any lien could be filed.
5. All work requiring inspection by any governmental authority has been duly inspected and written approval by such authority is received by the Construction Manager.
6. All requisite certificates of occupancy and other governmental approvals, letters of acceptance, licenses and permits have been issued and received by the Construction Manager.
7. The Department has received one complete set of "as-built" drawings and Contractor's certification.
8. The Department and/or Construction Manager have certified the completion of the project is in accordance with the plans and specifications.



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SC-35 FINAL SETTLEMENT OF CONTRACT

The following shall be made additional conditions of compliance with DHHL Construction General Conditions, Section 7.33:

1. The contractor shall coordinate with all government agencies and utility companies on behalf of DHHL to obtain letter(s) from each respective government agency or utility company indicating that acceptance of the contract work for the project, East Kapolei IIB Subdivision, has been granted to DHHL. Copies of the letters shall be submitted to DHHL.
2. Signature, execution, and return of the "Record Drawing" Title tracings.

Payment for all work required to comply with the above items will not be paid for separately but shall be considered incidental to the various contract items.



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ATTACHMENT 1 (SC-29: PROJECT SIGN)

PROJECT SIGN SPECIFICATIONS

LETTER STYLE

COPY IS CENTERED AND SET IN ADOBE TYPE FUTURA HEAVY. IF THIS SPECIFIC TYPE IS NOT AVAILABLE, FUTURA DEMI BOLD MAY BE SUBSTITUTED. COPY SHOULD BE SET AND SPACED BY A PROFESSIONAL TYPESETTER AND ENLARGED PHOTOGRAPHICALLY FOR PHOTO STENCIL SCREEN PROCESS.

ART WORK

CONSTANT ELEMENTS OF THE SIGN LAYOUTS -- FRAME, OUTLINE, STRIPE, AND OFFICIAL STATE INFORMATION -- MAY BE DUPLICATED FOLLOWING WORKING DRAWING MEASUREMENTS OR BE REPRODUCED AND ENLARGED PHOTOGRAPHICALLY USING A LAYOUT TEMPLATE IF PROVIDED. THE STATE OF HAWAII" MASTHEAD SHOULD BE REPRODUCED AND ENLARGED AS INDICATED USING THE ARTWORK PROVIDED.

TITLES

THE SPECIFIC MAJOR WORK OF THE PROJECT UNDER CONSTRUCTION IS EMPHASIZED BY USING 3-3/4" TYPE (OR AS SPECIFIED BY DHHL), ALL CAPITALS. SECONDARY INFORMATION SUCH AS LOCATIONS OR BUILDING USES 2-1/4" TYPE, ALL CAPITALS. OTHER RELATED INFORMATION OF LESSER IMPORTANCE USES 2-1/4" (CAPITAL HEIGHT) TYPE IN LOWER CASE LETTERS. ALL LINES OF TYPE SHOULD NOT EXCEED THE WIDTH OF THE 6"—2" STRIPE.

MATERIALS

PANEL IS 3/4" THICK, "AC" EXTERIOR GRADE FIR PLYWOOD WITH RESIN BONDED SURFACES ON BOTH SIDES.

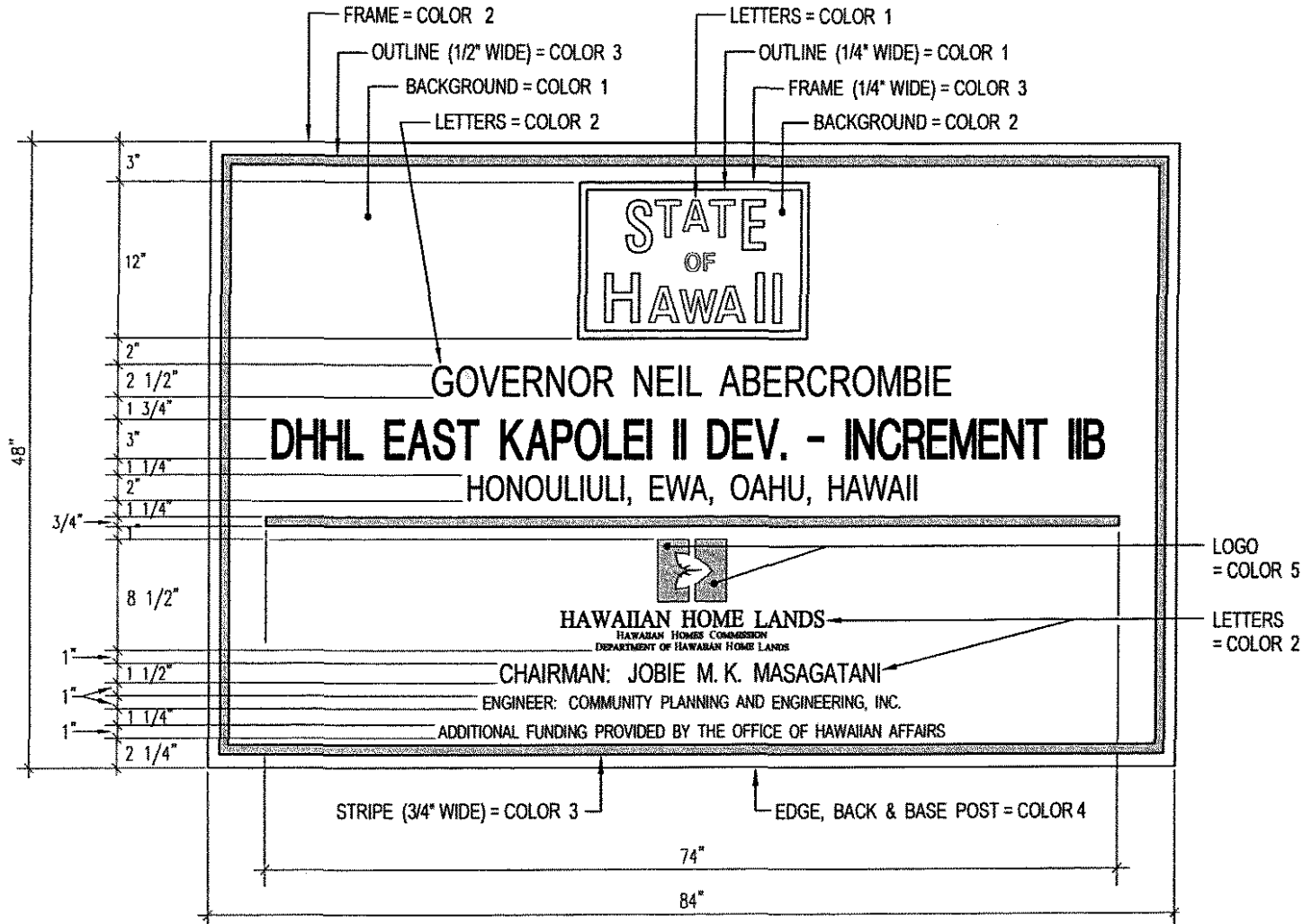
PAINT AND INKS

SCREEN PAINT INKS ARE MATTE FINISH. PAINTS ARE SATIN FINISH, EXTERIOR GRADE. REFERENCE TO AMERITONE COLOR KEY PAINT IS FOR COLOR WHICH MATCH ONLY.

- | | | |
|--------|----|-----------------------|
| COLOR: | 1. | 1BL10A BOHEMIAN BLUE |
| | 2. | 2H16P SOFTLY (WHITE) |
| | 3. | 2VR2A HOT TANGO (RED) |
| | 4. | 1M52E TOKAY (GRAY) |

REFERENCE TO PPG COLOR KEY PAINT IS FOR COLOR WHICH MATCH ONLY.

- | | | |
|--------|----|--------------------|
| COLOR: | 5. | 455-7 DEEP EMERALD |
|--------|----|--------------------|



NOTE: Number of signs required 1

SIGN LAYOUT DETAIL

NOT TO SCALE

COLORS:

1. 1BL10A Bohemian Blue
2. 2H16P Softly (White)
3. 2VR2A Hot Tango (Red)
4. 1M52E Tokay (Grey)
5. 455-7 Deep Emerald



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Attachment - S5

GENERAL CONDITIONS

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GENERAL CONDITIONS

1. Coordination of Services by the STATE. The head of the purchasing agency ("HOPA") (which term includes the designee of the HOPA) shall coordinate the services to be provided by the CONTRACTOR in order to complete the performance required in the Contract. The CONTRACTOR shall maintain communications with HOPA at all stages of the CONTRACTOR'S work, and submit to HOPA for resolution any questions which may arise as to the performance of this Contract. "Purchasing agency" as used in these General Conditions means and includes any governmental body which is authorized under chapter 103D, HRS, or its implementing rules and procedures, or by way of delegation, to enter into contracts for the procurement of goods or services or both.
2. Relationship of Parties: Independent Contractor Status and Responsibilities, Including Tax Responsibilities.
 - a. In the performance of services required under this Contract, the CONTRACTOR is an "independent contractor," with the authority and responsibility to control and direct the performance and details of the work and services required under this Contract; however, the STATE shall have a general right to inspect work in progress to determine whether, in the STATE'S opinion, the services are being performed by the CONTRACTOR in compliance with this Contract. Unless otherwise provided by special condition, it is understood that the STATE does not agree to use the CONTRACTOR exclusively, and that the CONTRACTOR is free to contract to provide services to other individuals or entities while under contract with the STATE.
 - b. The CONTRACTOR and the CONTRACTOR'S employees and agents are not by reason of this Contract, agents or employees of the State for any purpose, and the CONTRACTOR and the CONTRACTOR'S employees and agents shall not be entitled to claim or receive from the State any vacation, sick leave, retirement, workers' compensation, unemployment insurance, or other benefits provided to state employees.
 - c. The CONTRACTOR shall be responsible for the accuracy, completeness, and adequacy of the CONTRACTOR'S performance under this Contract. Furthermore, the CONTRACTOR intentionally, voluntarily, and knowingly assumes the sole and entire liability to the CONTRACTOR'S employees and agents, and to any individual not a party to this Contract, for all loss, damage, or injury caused by the CONTRACTOR, or the CONTRACTOR'S employees or agents in the course of their employment.
 - d. The CONTRACTOR shall be responsible for payment of all applicable federal, state, and county taxes and fees which may become due and owing by the CONTRACTOR by reason of this Contract, including but not limited to (i) income taxes, (ii) employment related fees, assessments, and taxes, and (iii) general excise taxes. The CONTRACTOR also is responsible for obtaining all licenses, permits, and certificates that may be required in order to perform this Contract.
 - e. The CONTRACTOR shall obtain a general excise tax license from the Department of Taxation, State of Hawaii, in accordance with section 237-9, HRS, and shall comply with all requirements thereof. The CONTRACTOR shall obtain a tax clearance certificate from the Director of Taxation, State of Hawaii, and the Internal Revenue Service, U.S. Department of the Treasury, showing that all delinquent taxes, if any, levied or accrued under state law and the Internal Revenue Code of 1986, as amended, against the CONTRACTOR have been paid and submit the same to the STATE prior to commencing any performance under this Contract. The CONTRACTOR shall also be solely responsible for meeting all requirements necessary to obtain the tax clearance certificate required for final payment under sections 103-53 and 103D-328, HRS, and paragraph 17 of these General Conditions.
 - f. The CONTRACTOR is responsible for securing all employee-related insurance coverage for the CONTRACTOR and the CONTRACTOR'S employees and agents that is or may be required by law, and for payment of all premiums, costs, and other liabilities associated with securing the insurance coverage.

- g. The CONTRACTOR shall obtain a certificate of compliance issued by the Department of Labor and Industrial Relations, State of Hawaii, in accordance with section 103D-310, HRS, and section 3-122-112, HAR, that is current within six months of the date of issuance.
- h. The CONTRACTOR shall obtain a certificate of good standing issued by the Department of Commerce and Consumer Affairs, State of Hawaii, in accordance with section 103D-310, HRS, and section 3-122-112, HAR, that is current within six months of the date of issuance.
- i. In lieu of the above certificates from the Department of Taxation, Labor and Industrial Relations, and Commerce and Consumer Affairs, the CONTRACTOR may submit proof of compliance through the State Procurement Office's designated certification process.

3. Personnel Requirements.

- a. The CONTRACTOR shall secure, at the CONTRACTOR'S own expense, all personnel required to perform this Contract.
- b. The CONTRACTOR shall ensure that the CONTRACTOR'S employees or agents are experienced and fully qualified to engage in the activities and perform the services required under this Contract, and that all applicable licensing and operating requirements imposed or required under federal, state, or county law, and all applicable accreditation and other standards of quality generally accepted in the field of the activities of such employees and agents are complied with and satisfied.

4. Nondiscrimination. No person performing work under this Contract, including any subcontractor, employee, or agent of the CONTRACTOR, shall engage in any discrimination that is prohibited by any applicable federal, state, or county law.

5. Conflicts of Interest. The CONTRACTOR represents that neither the CONTRACTOR, nor any employee or agent of the CONTRACTOR, presently has any interest, and promises that no such interest, direct or indirect, shall be acquired, that would or might conflict in any manner or degree with the CONTRACTOR'S performance under this Contract.

6. Subcontracts and Assignments. The CONTRACTOR shall not assign or subcontract any of the CONTRACTOR'S duties, obligations, or interests under this Contract and no such assignment or subcontract shall be effective unless (i) the CONTRACTOR obtains the prior written consent of the STATE, and (ii) the CONTRACTOR'S assignee or subcontractor submits to the STATE a tax clearance certificate from the Director of Taxation, State of Hawaii, and the Internal Revenue Service, U.S. Department of Treasury, showing that all delinquent taxes, if any, levied or accrued under state law and the Internal Revenue Code of 1986, as amended, against the CONTRACTOR'S assignee or subcontractor have been paid. Additionally, no assignment by the CONTRACTOR of the CONTRACTOR'S right to compensation under this Contract shall be effective unless and until the assignment is approved by the Comptroller of the State of Hawaii, as provided in section 40-58, HRS.

- a. Recognition of a successor in interest. When in the best interest of the State, a successor in interest may be recognized in an assignment contract in which the STATE, the CONTRACTOR and the assignee or transferee (hereinafter referred to as the "Assignee") agree that:

- (1) The Assignee assumes all of the CONTRACTOR'S obligations;
- (2) The CONTRACTOR remains liable for all obligations under this Contract but waives all rights under this Contract as against the STATE; and
- (3) The CONTRACTOR shall continue to furnish, and the Assignee shall also furnish, all required bonds.

- b. Change of name. When the CONTRACTOR asks to change the name in which it holds this Contract with the STATE, the procurement officer of the purchasing agency (hereinafter referred to as the "Agency procurement officer") shall, upon receipt of a document acceptable or satisfactory to the

Agency procurement officer indicating such change of name (for example, an amendment to the CONTRACTOR'S articles of incorporation), enter into an amendment to this Contract with the CONTRACTOR to effect such a change of name. The amendment to this Contract changing the CONTRACTOR'S name shall specifically indicate that no other terms and conditions of this Contract are thereby changed.

- c. Reports. All assignment contracts and amendments to this Contract effecting changes of the CONTRACTOR'S name or novations hereunder shall be reported to the chief procurement officer (CPO) as defined in section 103D-203(a), HRS, within thirty days of the date that the assignment contract or amendment becomes effective.
 - d. Actions affecting more than one purchasing agency. Notwithstanding the provisions of subparagraphs 6a through 6c herein, when the CONTRACTOR holds contracts with more than one purchasing agency of the State, the assignment contracts and the novation and change of name amendments herein authorized shall be processed only through the CPO's office.
- 7. Indemnification and Defense. The CONTRACTOR shall defend, indemnify, and hold harmless the State of Hawaii, the contracting agency, and their officers, employees, and agents from and against all liability, loss, damage, cost, and expense, including all attorneys' fees, and all claims, suits, and demands therefore, arising out of or resulting from the acts or omissions of the CONTRACTOR or the CONTRACTOR'S employees, officers, agents, or subcontractors under this Contract. The provisions of this paragraph shall remain in full force and effect notwithstanding the expiration or early termination of this Contract.
 - 8. Cost of Litigation. In case the STATE shall, without any fault on its part, be made a party to any litigation commenced by or against the CONTRACTOR in connection with this Contract, the CONTRACTOR shall pay all costs and expenses incurred by or imposed on the STATE, including attorneys' fees.
 - 9. Liquidated Damages. When the CONTRACTOR is given notice of delay or nonperformance as specified in paragraph 13 (Termination for Default) and fails to cure in the time specified, it is agreed the CONTRACTOR shall pay to the STATE the amount, if any, set forth in this Contract per calendar day from the date set for cure until either (i) the STATE reasonably obtains similar goods or services, or both, if the CONTRACTOR is terminated for default, or (ii) until the CONTRACTOR provides the goods or services, or both, if the CONTRACTOR is not terminated for default. To the extent that the CONTRACTOR'S delay or nonperformance is excused under paragraph 13d (Excuse for Nonperformance or Delay Performance), liquidated damages shall not be assessable against the CONTRACTOR. The CONTRACTOR remains liable for damages caused other than by delay.
 - 10. STATE'S Right of Offset. The STATE may offset against any monies or other obligations the STATE owes to the CONTRACTOR under this Contract, any amounts owed to the State of Hawaii by the CONTRACTOR under this Contract or any other contracts, or pursuant to any law or other obligation owed to the State of Hawaii by the CONTRACTOR, including, without limitation, the payment of any taxes or levies of any kind or nature. The STATE will notify the CONTRACTOR in writing of any offset and the nature of such offset. For purposes of this paragraph, amounts owed to the State of Hawaii shall not include debts or obligations which have been liquidated, agreed to by the CONTRACTOR, and are covered by an installment payment or other settlement plan approved by the State of Hawaii, provided, however, that the CONTRACTOR shall be entitled to such exclusion only to the extent that the CONTRACTOR is current with, and not delinquent on, any payments or obligations owed to the State of Hawaii under such payment or other settlement plan.
 - 11. Disputes. Disputes shall be resolved in accordance with section 103D-703, HRS, and chapter 3-126, Hawaii Administrative Rules ("HAR"), as the same may be amended from time to time.
 - 12. Suspension of Contract. The STATE reserves the right at any time and for any reason to suspend this Contract for any reasonable period, upon written notice to the CONTRACTOR in accordance with the provisions herein.
 - a. Order to stop performance. The Agency procurement officer may, by written order to the CONTRACTOR, at any time, and without notice to any surety, require the CONTRACTOR to stop all or any part of the performance called for by this Contract. This order shall be for a specified

period not exceeding sixty (60) days after the order is delivered to the CONTRACTOR, unless the parties agree to any further period. Any such order shall be identified specifically as a stop performance order issued pursuant to this section. Stop performance orders shall include, as appropriate: (1) A clear description of the work to be suspended; (2) Instructions as to the issuance of further orders by the CONTRACTOR for material or services; (3) Guidance as to action to be taken on subcontracts; and (4) Other instructions and suggestions to the CONTRACTOR for minimizing costs. Upon receipt of such an order, the CONTRACTOR shall forthwith comply with its terms and suspend all performance under this Contract at the time stated, provided, however, the CONTRACTOR shall take all reasonable steps to minimize the occurrence of costs allocable to the performance covered by the order during the period of performance stoppage. Before the stop performance order expires, or within any further period to which the parties shall have agreed, the Agency procurement officer shall either:

- (1) Cancel the stop performance order; or
 - (2) Terminate the performance covered by such order as provided in the termination for default provision or the termination for convenience provision of this Contract.
- b. Cancellation or expiration of the order. If a stop performance order issued under this section is cancelled at any time during the period specified in the order, or if the period of the order or any extension thereof expires, the CONTRACTOR shall have the right to resume performance. An appropriate adjustment shall be made in the delivery schedule or contract price, or both, and the Contract shall be modified in writing accordingly, if:
- (1) The stop performance order results in an increase in the time required for, or in the CONTRACTOR'S cost properly allocable to, the performance of any part of this Contract; and
 - (2) The CONTRACTOR asserts a claim for such an adjustment within thirty (30) days after the end of the period of performance stoppage; provided that, if the Agency procurement officer decides that the facts justify such action, any such claim asserted may be received and acted upon at any time prior to final payment under this Contract.
- c. Termination of stopped performance. If a stop performance order is not cancelled and the performance covered by such order is terminated for default or convenience, the reasonable costs resulting from the stop performance order shall be allowable by adjustment or otherwise.
- d. Adjustment of price. Any adjustment in contract price made pursuant to this paragraph shall be determined in accordance with the price adjustment provision of this Contract.

13. Termination for Default.

- a. Default. If the CONTRACTOR refuses or fails to perform any of the provisions of this Contract with such diligence as will ensure its completion within the time specified in this Contract, or any extension thereof, otherwise fails to timely satisfy the Contract provisions, or commits any other substantial breach of this Contract, the Agency procurement officer may notify the CONTRACTOR in writing of the delay or non-performance and if not cured in ten (10) days or any longer time specified in writing by the Agency procurement officer, such officer may terminate the CONTRACTOR'S right to proceed with the Contract or such part of the Contract as to which there has been delay or a failure to properly perform. In the event of termination in whole or in part, the Agency procurement officer may procure similar goods or services in a manner and upon the terms deemed appropriate by the Agency procurement officer. The CONTRACTOR shall continue performance of the Contract to the extent it is not terminated and shall be liable for excess costs incurred in procuring similar goods or services.
- b. CONTRACTOR'S duties. Notwithstanding termination of the Contract and subject to any directions from the Agency procurement officer, the CONTRACTOR shall take timely, reasonable, and

necessary action to protect and preserve property in the possession of the CONTRACTOR in which the STATE has an interest.

- c. Compensation. Payment for completed goods and services delivered and accepted by the STATE shall be at the price set forth in the Contract. Payment for the protection and preservation of property shall be in an amount agreed upon by the CONTRACTOR and the Agency procurement officer. If the parties fail to agree, the Agency procurement officer shall set an amount subject to the CONTRACTOR'S rights under chapter 3-126, HAR. The STATE may withhold from amounts due the CONTRACTOR such sums as the Agency procurement officer deems to be necessary to protect the STATE against loss because of outstanding liens or claims and to reimburse the STATE for the excess costs expected to be incurred by the STATE in procuring similar goods and services.
- d. Excuse for nonperformance or delayed performance. The CONTRACTOR shall not be in default by reason of any failure in performance of this Contract in accordance with its terms, including any failure by the CONTRACTOR to make progress in the prosecution of the performance hereunder which endangers such performance, if the CONTRACTOR has notified the Agency procurement officer within fifteen (15) days after the cause of the delay and the failure arises out of causes such as: acts of God; acts of a public enemy; acts of the State and any other governmental body in its sovereign or contractual capacity; fires; floods; epidemics; quarantine restrictions; strikes or other labor disputes; freight embargoes; or unusually severe weather. If the failure to perform is caused by the failure of a subcontractor to perform or to make progress, and if such failure arises out of causes similar to those set forth above, the CONTRACTOR shall not be deemed to be in default, unless the goods and services to be furnished by the subcontractor were reasonably obtainable from other sources in sufficient time to permit the CONTRACTOR to meet the requirements of the Contract. Upon request of the CONTRACTOR, the Agency procurement officer shall ascertain the facts and extent of such failure, and, if such officer determines that any failure to perform was occasioned by any one or more of the excusable causes, and that, but for the excusable cause, the CONTRACTOR'S progress and performance would have met the terms of the Contract, the delivery schedule shall be revised accordingly, subject to the rights of the STATE under this Contract. As used in this paragraph, the term "subcontractor" means subcontractor at any tier.
- e. Erroneous termination for default. If, after notice of termination of the CONTRACTOR'S right to proceed under this paragraph, it is determined for any reason that the CONTRACTOR was not in default under this paragraph, or that the delay was excusable under the provisions of subparagraph 13d, "Excuse for nonperformance or delayed performance," the rights and obligations of the parties shall be the same as if the notice of termination had been issued pursuant to paragraph 14.
- f. Additional rights and remedies. The rights and remedies provided in this paragraph are in addition to any other rights and remedies provided by law or under this Contract.

14. Termination for Convenience.

- a. Termination. The Agency procurement officer may, when the interests of the STATE so require, terminate this Contract in whole or in part, for the convenience of the STATE. The Agency procurement officer shall 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 performance and on the date(s) set in the notice of termination the CONTRACTOR will stop performance to the extent specified. The CONTRACTOR shall also terminate outstanding orders and subcontracts as they relate to the terminated performance. The CONTRACTOR shall settle the liabilities and claims arising out of the termination of subcontracts and orders connected with the terminated performance subject to the STATE'S approval. The Agency procurement officer 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 performance not terminated by the notice of termination and may incur obligations as necessary to do so.

- c. Right to goods and work product. The Agency procurement officer may require the CONTRACTOR to transfer title and deliver to the STATE in the manner and to the extent directed by the Agency procurement officer:

- (1) Any completed goods or work product; and
- (2) The partially completed goods and materials, parts, tools, dies, jigs, fixtures, plans, drawings, information, and contract rights (hereinafter called "manufacturing material") as the CONTRACTOR has specifically produced or specially acquired for the performance of the terminated part of this Contract.

The CONTRACTOR shall, upon direction of the Agency procurement officer, protect and preserve property in the possession of the CONTRACTOR in which the STATE has an interest. If the Agency procurement officer does not exercise this right, the CONTRACTOR shall use best efforts to sell such goods and manufacturing materials. Use of this paragraph in no way implies that the STATE has breached the Contract by exercise of the termination for convenience provision.

- d. Compensation.

- (1) The CONTRACTOR shall submit a termination claim specifying the amounts due because of the termination for convenience together with the cost or pricing data, submitted to the extent required by chapter 3-122, HAR, bearing on such claim. If the CONTRACTOR fails to file a termination claim within one year from the effective date of termination, the Agency procurement officer may pay the CONTRACTOR, if at all, an amount set in accordance with subparagraph 14d(3) below.
- (2) The Agency procurement officer 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 goods and manufacturing materials under subparagraph 14c, and the Contract price of the performance not terminated.
- (3) Absent complete agreement under subparagraph 14d(2) the Agency procurement officer shall pay the CONTRACTOR the following amounts, provided payments agreed to under subparagraph 14d(2) shall not duplicate payments under this subparagraph for the following:
 - (A) Contract prices for goods or services accepted under the Contract;
 - (B) Costs incurred in preparing to perform and performing the terminated portion of the performance plus a fair and reasonable profit on such portion of the performance, such profit shall not include anticipatory profit or consequential damages, less amounts paid or to be paid for accepted goods or services; provided, however, that if it appears that the CONTRACTOR would have sustained a loss if the entire Contract would have been completed, no profit shall be allowed or included and the amount of compensation shall be reduced to reflect the anticipated rate of loss;
 - (C) Costs of settling and paying claims arising out of the termination of subcontracts or orders pursuant to subparagraph 14b. These costs must not include costs paid in accordance with subparagraph 14d(3)(B);
 - (D) The reasonable settlement costs of the CONTRACTOR, including accounting, legal, clerical, and other expenses reasonably necessary for the preparation of settlement claims and supporting data with respect to the terminated portion of the Contract and for the termination of subcontracts thereunder, together with reasonable storage, transportation, and other costs incurred in connection with the protection or disposition of property allocable to the terminated portion of this Contract. The total sum to be paid the CONTRACTOR under this subparagraph shall not exceed the

total Contract price plus the reasonable settlement costs of the CONTRACTOR reduced by the amount of payments otherwise made, the proceeds of any sales of supplies and manufacturing materials under subparagraph 14d(2), and the contract price of performance not terminated.

- (4) Costs claimed, agreed to, or established under subparagraphs 14d(2) and 14d(3) shall be in accordance with Chapter 3-123 (Cost Principles) of the Procurement Rules.

15. Claims Based on the Agency Procurement Officer's Actions or Omissions.

- a. Changes in scope. If any action or omission on the part of the Agency procurement officer (which term includes the designee of such officer for purposes of this paragraph 15) requiring performance changes within the scope of the Contract constitutes the basis for a claim by the CONTRACTOR for additional compensation, damages, or an extension of time for completion, the CONTRACTOR shall continue with performance of the Contract in compliance with the directions or orders of such officials, but by so doing, the CONTRACTOR shall not be deemed to have prejudiced any claim for additional compensation, damages, or an extension of time for completion; provided:

- (1) Written notice required. The CONTRACTOR shall give written notice to the Agency procurement officer:

- (A) Prior to the commencement of the performance involved, if at that time the CONTRACTOR knows of the occurrence of such action or omission;
- (B) Within thirty (30) days after the CONTRACTOR knows of the occurrence of such action or omission, if the CONTRACTOR did not have such knowledge prior to the commencement of the performance; or
- (C) Within such further time as may be allowed by the Agency procurement officer in writing.

- (2) Notice content. This notice shall state that the CONTRACTOR regards the act or omission as a reason which may entitle the CONTRACTOR to additional compensation, damages, or an extension of time. The Agency procurement officer, upon receipt of such notice, may rescind such action, remedy such omission, or take such other steps as may be deemed advisable in the discretion of the Agency procurement officer;

- (3) Basis must be explained. The notice required by subparagraph 15a(1) describes as clearly as practicable at the time the reasons why the CONTRACTOR believes that additional compensation, damages, or an extension of time may be remedies to which the CONTRACTOR is entitled; and

- (4) Claim must be justified. The CONTRACTOR must maintain and, upon request, make available to the Agency procurement officer within a reasonable time, detailed records to the extent practicable, and other documentation and evidence satisfactory to the STATE, justifying the claimed additional costs or an extension of time in connection with such changes.

- b. CONTRACTOR not excused. Nothing herein contained, however, shall excuse the CONTRACTOR from compliance with any rules or laws precluding any state officers and CONTRACTOR from acting in collusion or bad faith in issuing or performing change orders which are clearly not within the scope of the Contract.

- c. Price adjustment. Any adjustment in the price made pursuant to this paragraph shall be determined in accordance with the price adjustment provision of this Contract.

16. Costs and Expenses. Any reimbursement due the CONTRACTOR for per diem and transportation expenses under this Contract shall be subject to chapter 3-123 (Cost Principles), HAR, and the following guidelines:

- a. Reimbursement for air transportation shall be for actual cost or coach class air fare, whichever is less.
- b. Reimbursement for ground transportation costs shall not exceed the actual cost of renting an intermediate-sized vehicle.
- c. Unless prior written approval of the HOPA is obtained, reimbursement for subsistence allowance (i.e., hotel and meals, etc.) shall not exceed the applicable daily authorized rates for inter-island or out-of-state travel that are set forth in the current Governor's Executive Order authorizing adjustments in salaries and benefits for state officers and employees in the executive branch who are excluded from collective bargaining coverage.

17. Payment Procedures; Final Payment; Tax Clearance.

- a. Original invoices required. All payments under this Contract shall be made only upon submission by the CONTRACTOR of original invoices specifying the amount due and certifying that services requested under the Contract have been performed by the CONTRACTOR according to the Contract.
- b. Subject to available funds. Such payments are subject to availability of funds and allotment by the Director of Finance in accordance with chapter 37, HRS. Further, all payments shall be made in accordance with and subject to chapter 40, HRS.
- c. Prompt payment.
 - (1) Any money, other than retainage, paid to the CONTRACTOR shall be disbursed to subcontractors within ten (10) days after receipt of the money in accordance with the terms of the subcontract; provided that the subcontractor has met all the terms and conditions of the subcontract and there are no bona fide disputes; and
 - (2) Upon final payment to the CONTRACTOR, full payment to the subcontractor, including retainage, shall be made within ten (10) days after receipt of the money; provided that there are no bona fide disputes over the subcontractor's performance under the subcontract.
- d. Final payment. Final payment under this Contract shall be subject to sections 103-53 and 103D-328, HRS, which require a tax clearance from the Director of Taxation, State of Hawaii, and the Internal Revenue Service, U.S. Department of Treasury, showing that all delinquent taxes, if any, levied or accrued under state law and the Internal Revenue Code of 1986, as amended, against the CONTRACTOR have been paid. Further, in accordance with section 3-122-112, HAR, CONTRACTOR shall provide a certificate affirming that the CONTRACTOR has remained in compliance with all applicable laws as required by this section.

18. Federal Funds. If this Contract is payable in whole or in part from federal funds, CONTRACTOR agrees that, as to the portion of the compensation under this Contract to be payable from federal funds, the CONTRACTOR shall be paid only from such funds received from the federal government, and shall not be paid from any other funds. Failure of the STATE to receive anticipated federal funds shall not be considered a breach by the STATE or an excuse for nonperformance by the CONTRACTOR.

19. Modifications of Contract.

- a. In writing. Any modification, alteration, amendment, change, or extension of any term, provision, or condition of this Contract permitted by this Contract shall be made by written amendment to this Contract, signed by the CONTRACTOR and the STATE, provided that change orders shall be made in accordance with paragraph 20 herein.
- b. No oral modification. No oral modification, alteration, amendment, change, or extension of any term, provision, or condition of this Contract shall be permitted.

- c. Agency procurement officer. By written order, at any time, and without notice to any surety, the Agency procurement officer may unilaterally order of the CONTRACTOR:
 - (A) Changes in the work within the scope of the Contract; and
 - (B) Changes in the time of performance of the Contract that do not alter the scope of the Contract work.
 - d. Adjustments of price or time for performance. If any modification increases or decreases the CONTRACTOR'S cost of, or the time required for, performance of any part of the work under this Contract, an adjustment shall be made and this Contract modified in writing accordingly. Any adjustment in contract price made pursuant to this clause shall be determined, where applicable, in accordance with the price adjustment clause of this Contract or as negotiated.
 - e. Claim barred after final payment. No claim by the CONTRACTOR for an adjustment hereunder shall be allowed if written modification of the Contract is not made prior to final payment under this Contract.
 - f. Claims not barred. In the absence of a written contract modification, nothing in this clause shall be deemed to restrict the CONTRACTOR'S right to pursue a claim under this Contract or for a breach of contract.
 - g. Head of the purchasing agency approval. If this is a professional services contract awarded pursuant to section 103D-303 or 103D-304, HRS, any modification, alteration, amendment, change, or extension of any term, provision, or condition of this Contract which increases the amount payable to the CONTRACTOR by at least \$25,000.00 and ten per cent (10%) or more of the initial contract price, must receive the prior approval of the head of the purchasing agency.
 - h. Tax clearance. The STATE may, at its discretion, require the CONTRACTOR to submit to the STATE, prior to the STATE'S approval of any modification, alteration, amendment, change, or extension of any term, provision, or condition of this Contract, a tax clearance from the Director of Taxation, State of Hawaii, and the Internal Revenue Service, U.S. Department of Treasury, showing that all delinquent taxes, if any, levied or accrued under state law and the Internal Revenue Code of 1986, as amended, against the CONTRACTOR have been paid.
 - i. Sole source contracts. Amendments to sole source contracts that would change the original scope of the Contract may only be made with the approval of the CPO. Annual renewal of a sole source contract for services should not be submitted as an amendment.
20. Change Order. The Agency procurement officer may, by a written order signed only by the STATE, at any time, and without notice to any surety, and subject to all appropriate adjustments, make changes within the general scope of this Contract in any one or more of the following:
- (1) Drawings, designs, or specifications, if the goods or services to be furnished are to be specially provided to the STATE in accordance therewith;
 - (2) Method of delivery; or
 - (3) Place of delivery.
- a. Adjustments of price or time for performance. If any change order increases or decreases the CONTRACTOR'S cost of, or the time required for, performance of any part of the work under this Contract, whether or not changed by the order, an adjustment shall be made and the Contract modified in writing accordingly. Any adjustment in the Contract price made pursuant to this provision shall be determined in accordance with the price adjustment provision of this Contract. Failure of the parties to agree to an adjustment shall not excuse the CONTRACTOR from proceeding with the Contract as changed, provided that the Agency procurement officer promptly and duly makes the provisional adjustments in payment or time for performance as may be reasonable. By

proceeding with the work, the CONTRACTOR shall not be deemed to have prejudiced any claim for additional compensation, or any extension of time for completion.

- b. Time period for claim. Within ten (10) days after receipt of a written change order under subparagraph 20a, unless the period is extended by the Agency procurement officer in writing, the CONTRACTOR shall respond with a claim for an adjustment. The requirement for a timely written response by CONTRACTOR cannot be waived and shall be a condition precedent to the assertion of a claim.
- c. Claim barred after final payment. No claim by the CONTRACTOR for an adjustment hereunder shall be allowed if a written response is not given prior to final payment under this Contract.
- d. Other claims not barred. In the absence of a change order, nothing in this paragraph 20 shall be deemed to restrict the CONTRACTOR'S right to pursue a claim under the Contract or for breach of contract.

21. Price Adjustment.

- a. Price adjustment. Any adjustment in the contract price pursuant to a provision in this Contract shall be made in one or more of the following ways:
 - (1) By agreement on a fixed price adjustment before commencement of the pertinent performance or as soon thereafter as practicable;
 - (2) By unit prices specified in the Contract or subsequently agreed upon;
 - (3) By the costs attributable to the event or situation covered by the provision, plus appropriate profit or fee, all as specified in the Contract or subsequently agreed upon;
 - (4) In such other manner as the parties may mutually agree; or
 - (5) In the absence of agreement between the parties, by a unilateral determination by the Agency procurement officer of the costs attributable to the event or situation covered by the provision, plus appropriate profit or fee, all as computed by the Agency procurement officer in accordance with generally accepted accounting principles and applicable sections of chapters 3-123 and 3-126, HAR.
- b. Submission of cost or pricing data. The CONTRACTOR shall provide cost or pricing data for any price adjustments subject to the provisions of chapter 3-122, HAR.

22. Variation in Quantity for Definite Quantity Contracts. Upon the agreement of the STATE and the CONTRACTOR, the quantity of goods or services, or both, if a definite quantity is specified in this Contract, may be increased by a maximum of ten per cent (10%); provided the unit prices will remain the same except for any price adjustments otherwise applicable; and the Agency procurement officer makes a written determination that such an increase will either be more economical than awarding another contract or that it would not be practical to award another contract.

23. Changes in Cost-Reimbursement Contract. If this Contract is a cost-reimbursement contract, the following provisions shall apply:

- a. The Agency procurement officer may at any time by written order, and without notice to the sureties, if any, make changes within the general scope of the Contract in any one or more of the following:
 - (1) Description of performance (Attachment 1);
 - (2) Time of performance (i.e., hours of the day, days of the week, etc.);
 - (3) Place of performance of services;

- (4) Drawings, designs, or specifications when the supplies to be furnished are to be specially manufactured for the STATE in accordance with the drawings, designs, or specifications;
 - (5) Method of shipment or packing of supplies; or
 - (6) Place of delivery.
- b. If any change causes an increase or decrease in the estimated cost of, or the time required for performance of, any part of the performance under this Contract, whether or not changed by the order, or otherwise affects any other terms and conditions of this Contract, the Agency procurement officer shall make an equitable adjustment in the (1) estimated cost, delivery or completion schedule, or both; (2) amount of any fixed fee; and (3) other affected terms and shall modify the Contract accordingly.
 - c. The CONTRACTOR must assert the CONTRACTOR'S rights to an adjustment under this provision within thirty (30) days from the day of receipt of the written order. However, if the Agency procurement officer decides that the facts justify it, the Agency procurement officer may receive and act upon a proposal submitted before final payment under the Contract.
 - d. Failure to agree to any adjustment shall be a dispute under paragraph 11 of this Contract. However, nothing in this provision shall excuse the CONTRACTOR from proceeding with the Contract as changed.
 - e. Notwithstanding the terms and conditions of subparagraphs 23a and 23b, the estimated cost of this Contract and, if this Contract is incrementally funded, the funds allotted for the performance of this Contract, shall not be increased or considered to be increased except by specific written modification of the Contract indicating the new contract estimated cost and, if this contract is incrementally funded, the new amount allotted to the contract.
24. Confidentiality of Material.
- a. All material given to or made available to the CONTRACTOR by virtue of this Contract, which is identified as proprietary or confidential information, will be safeguarded by the CONTRACTOR and shall not be disclosed to any individual or organization without the prior written approval of the STATE.
 - b. All information, data, or other material provided by the CONTRACTOR to the STATE shall be subject to the Uniform Information Practices Act, chapter 92F, HRS.
25. Publicity. The CONTRACTOR shall not refer to the STATE, or any office, agency, or officer thereof, or any state employee, including the HOPA, the CPO, the Agency procurement officer, or to the services or goods, or both, provided under this Contract, in any of the CONTRACTOR'S brochures, advertisements, or other publicity of the CONTRACTOR. All media contacts with the CONTRACTOR about the subject matter of this Contract shall be referred to the Agency procurement officer.
26. Ownership Rights and Copyright. The STATE shall have complete ownership of all material, both finished and unfinished, which is developed, prepared, assembled, or conceived by the CONTRACTOR pursuant to this Contract, and all such material shall be considered "works made for hire." All such material shall be delivered to the STATE upon expiration or termination of this Contract. The STATE, in its sole discretion, shall have the exclusive right to copyright any product, concept, or material developed, prepared, assembled, or conceived by the CONTRACTOR pursuant to this Contract.
27. Liens and Warranties. Goods provided under this Contract shall be provided free of all liens and provided together with all applicable warranties, or with the warranties described in the Contract documents, whichever are greater.

28. Audit of Books and Records of the CONTRACTOR. The STATE may, at reasonable times and places, audit the books and records of the CONTRACTOR, prospective contractor, subcontractor, or prospective subcontractor which are related to:
- a. The cost or pricing data, and
 - b. A state contract, including subcontracts, other than a firm fixed-price contract.
29. Cost or Pricing Data. Cost or pricing data must be submitted to the Agency procurement officer and timely certified as accurate for contracts over \$100,000 unless the contract is for a multiple-term or as otherwise specified by the Agency procurement officer. Unless otherwise required by the Agency procurement officer, cost or pricing data submission is not required for contracts awarded pursuant to competitive sealed bid procedures.
- If certified cost or pricing data are subsequently found to have been inaccurate, incomplete, or noncurrent as of the date stated in the certificate, the STATE is entitled to an adjustment of the contract price, including profit or fee, to exclude any significant sum by which the price, including profit or fee, was increased because of the defective data. It is presumed that overstated cost or pricing data increased the contract price in the amount of the defect plus related overhead and profit or fee. Therefore, unless there is a clear indication that the defective data was not used or relied upon, the price will be reduced in such amount.
30. Audit of Cost or Pricing Data. When cost or pricing principles are applicable, the STATE may require an audit of cost or pricing data.
31. Records Retention.
- (1) Upon any termination of this Contract or as otherwise required by applicable law, CONTRACTOR shall, pursuant to chapter 487R, HRS, destroy all copies (paper or electronic form) of personal information received from the STATE.
 - (2) The CONTRACTOR and any subcontractors shall maintain the files, books, and records that relate to the Contract, including any personal information created or received by the CONTRACTOR on behalf of the STATE, and any cost or pricing data, for at least three (3) years after the date of final payment under the Contract. The personal information shall continue to be confidential and shall only be disclosed as permitted or required by law. After the three (3) year, or longer retention period as required by law has ended, the files, books, and records that contain personal information shall be destroyed pursuant to chapter 487R, HRS or returned to the STATE at the request of the STATE.
32. Antitrust Claims. The STATE and the CONTRACTOR recognize that in actual economic practice, overcharges resulting from antitrust violations are in fact usually borne by the purchaser. Therefore, the CONTRACTOR hereby assigns to STATE any and all claims for overcharges as to goods and materials purchased in connection with this Contract, except as to overcharges which result from violations commencing after the price is established under this Contract and which are not passed on to the STATE under an escalation clause.
33. Patented Articles. The CONTRACTOR shall defend, indemnify, and hold harmless the STATE, and its officers, employees, and agents from and against all liability, loss, damage, cost, and expense, including all attorneys fees, and all claims, suits, and demands arising out of or resulting from any claims, demands, or actions by the patent holder for infringement or other improper or unauthorized use of any patented article, patented process, or patented appliance in connection with this Contract. The CONTRACTOR shall be solely responsible for correcting or curing to the satisfaction of the STATE any such infringement or improper or unauthorized use, including, without limitation: (a) furnishing at no cost to the STATE a substitute article, process, or appliance acceptable to the STATE, (b) paying royalties or other required payments to the patent holder, (c) obtaining proper authorizations or releases from the patent holder, and (d) furnishing such security to or making such arrangements with the patent holder as may be necessary to correct or cure any such infringement or improper or unauthorized use.

34. Governing Law. The validity of this Contract and any of its terms or provisions, as well as the rights and duties of the parties to this Contract, shall be governed by the laws of the State of Hawaii. Any action at law or in equity to enforce or interpret the provisions of this Contract shall be brought in a state court of competent jurisdiction in Honolulu, Hawaii.
35. Compliance with Laws. The CONTRACTOR shall comply with all federal, state, and county laws, ordinances, codes, rules, and regulations, as the same may be amended from time to time, that in any way affect the CONTRACTOR'S performance of this Contract.
36. Conflict Between General Conditions and Procurement Rules. In the event of a conflict between the General Conditions and the procurement rules, the procurement rules in effect on the date this Contract became effective shall control and are hereby incorporated by reference.
37. Entire Contract. This Contract sets forth all of the agreements, conditions, understandings, promises, warranties, and representations between the STATE and the CONTRACTOR relative to this Contract. This Contract supersedes all prior agreements, conditions, understandings, promises, warranties, and representations, which shall have no further force or effect. There are no agreements, conditions, understandings, promises, warranties, or representations, oral or written, express or implied, between the STATE and the CONTRACTOR other than as set forth or as referred to herein.
38. Severability. In the event that any provision of this Contract is declared invalid or unenforceable by a court, such invalidity or unenforceability shall not affect the validity or enforceability of the remaining terms of this Contract.
39. Waiver. The failure of the STATE to insist upon the strict compliance with any term, provision, or condition of this Contract shall not constitute or be deemed to constitute a waiver or relinquishment of the STATE'S right to enforce the same in accordance with this Contract. The fact that the STATE specifically refers to one provision of the procurement rules or one section of the Hawaii Revised Statutes, and does not include other provisions or statutory sections in this Contract shall not constitute a waiver or relinquishment of the STATE'S rights or the CONTRACTOR'S obligations under the procurement rules or statutes.
40. Pollution Control. If during the performance of this Contract, the CONTRACTOR encounters a "release" or a "threatened release" of a reportable quantity of a "hazardous substance," "pollutant," or "contaminant" as those terms are defined in section 128D-1, HRS, the CONTRACTOR shall immediately notify the STATE and all other appropriate state, county, or federal agencies as required by law. The Contractor shall take all necessary actions, including stopping work, to avoid causing, contributing to, or making worse a release of a hazardous substance, pollutant, or contaminant, and shall promptly obey any orders the Environmental Protection Agency or the state Department of Health issues in response to the release. In the event there is an ensuing cease-work period, and the STATE determines that this Contract requires an adjustment of the time for performance, the Contract shall be modified in writing accordingly.
41. Campaign Contributions. The CONTRACTOR is hereby notified of the applicability of 11-355, HRS, which states that campaign contributions are prohibited from specified state or county government contractors during the terms of their contracts if the contractors are paid with funds appropriated by a legislative body.
42. Confidentiality of Personal Information.
- a. Definitions.
- "Personal information" means an individual's first name or first initial and last name in combination with any one or more of the following data elements, when either name or data elements are not encrypted:
- (1) Social security number;
 - (2) Driver's license number or Hawaii identification card number; or

- (3) Account number, credit or debit card number, access code, or password that would permit access to an individual's financial information.

Personal information does not include publicly available information that is lawfully made available to the general public from federal, state, or local government records.

"Technological safeguards" means the technology and the policy and procedures for use of the technology to protect and control access to personal information.

b. Confidentiality of Material.

- (1) All material given to or made available to the CONTRACTOR by the STATE by virtue of this Contract which is identified as personal information, shall be safeguarded by the CONTRACTOR and shall not be disclosed without the prior written approval of the STATE.
- (2) CONTRACTOR agrees not to retain, use, or disclose personal information for any purpose other than as permitted or required by this Contract.
- (3) CONTRACTOR agrees to implement appropriate "technological safeguards" that are acceptable to the STATE to reduce the risk of unauthorized access to personal information.
- (4) CONTRACTOR shall report to the STATE in a prompt and complete manner any security breaches involving personal information.
- (5) CONTRACTOR agrees to mitigate, to the extent practicable, any harmful effect that is known to CONTRACTOR because of a use or disclosure of personal information by CONTRACTOR in violation of the requirements of this paragraph.
- (6) CONTRACTOR shall complete and retain a log of all disclosures made of personal information received from the STATE, or personal information created or received by CONTRACTOR on behalf of the STATE.

c. Security Awareness Training and Confidentiality Agreements.

- (1) CONTRACTOR certifies that all of its employees who will have access to the personal information have completed training on security awareness topics relating to protecting personal information.
- (2) CONTRACTOR certifies that confidentiality agreements have been signed by all of its employees who will have access to the personal information acknowledging that:
 - (A) The personal information collected, used, or maintained by the CONTRACTOR will be treated as confidential;
 - (B) Access to the personal information will be allowed only as necessary to perform the Contract; and
 - (C) Use of the personal information will be restricted to uses consistent with the services subject to this Contract.

d. Termination for Cause. In addition to any other remedies provided for by this Contract, if the STATE learns of a material breach by CONTRACTOR of this paragraph by CONTRACTOR, the STATE may at its sole discretion:

- (1) Provide an opportunity for the CONTRACTOR to cure the breach or end the violation; or
- (2) Immediately terminate this Contract.

In either instance, the CONTRACTOR and the STATE shall follow chapter 487N, HRS, with respect to notification of a security breach of personal information.

e. Records Retention.

- (1) Upon any termination of this Contract or as otherwise required by applicable law, CONTRACTOR shall, pursuant to chapter 487R, HRS, destroy all copies (paper or electronic form) of personal information received from the STATE.
- (2) The CONTRACTOR and any subcontractors shall maintain the files, books, and records that relate to the Contract, including any personal information created or received by the CONTRACTOR on behalf of the STATE, and any cost or pricing data, for at least three (3) years after the date of final payment under the Contract. The personal information shall continue to be confidential and shall only be disclosed as permitted or required by law. After the three (3) year, or longer retention period as required by law has ended, the files, books, and records that contain personal information shall be destroyed pursuant to chapter 487R, HRS or returned to the STATE at the request of the STATE.

Department of Hawaiian Home Lands
CONSTRUCTION GENERAL CONDITIONS
Dated August 2013

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ARTICLE 1: DEFINITIONS AND ABBREVIATIONS

- 1.1 DEFINITIONS.** Whenever the following terms or pronouns are used in these Construction General Conditions, or in any contract documents or instruments where these Construction General Conditions govern, the intent and meaning shall be interpreted as follows:

ADDENDUM (*plural - Addenda*). A written or graphic document, including Drawings and Specifications, issued by the Chairman during the bidding period which modifies or interprets the bidding documents, by additions, deletions, clarifications or corrections, which shall be considered and made a part of the bid proposal and the contract.

ADDITION (*to the contract sum*). Amount added to the contract sum by Change Order.

ADMINISTRATIVE RULES. Hawaii Administrative Rules for Chapter 103-D of the Hawaii Revised Statutes.

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

BAD WEATHER DAY. When weather or other conditions prevent a minimum of four hours of work with the Contractor's normal work force on controlling items of work at the site. (See excess bad weather day.)

BENEFICIAL OCCUPANCY. The point of project completion when the Department can use the constructed facility in whole or in part for its intended purpose even though substantial completion may not be achieved.

BID. See PROPOSAL.

BID SECURITY. The security furnished by the Bidder from which the Department may recover its damages in the event the Bidder breaches its promise to enter into a contract with the Department and fails to execute the required bonds covering the work contemplated, if its proposal is accepted.

BIDDER. Any individual, partnership, firm, corporation, joint venture, or other legal entity submitting, directly or through a duly authorized representative or agent, a proposal for the work contemplated.

BIDDING DOCUMENTS. The advertisement "Notice to Contractors", or invitation to bid, instructions to Bidders, proposal requirements, the bid form and the proposed Contract Documents including all addenda issued prior to receipt of Bids.

BULLETIN. A written notice to the Contractor requesting a price and / or time proposal for contemplated changes preparatory to the issuance of a field order or change order.

BY OR TO THE PROJECT MANAGER. To avoid cumbersome and confusing repetition of expressions in these General Conditions, it is provided that whenever the following words or words of like import are used, they shall be understood as if they were followed by the words "by the Project Manager" or "to the Project Manager", unless the context clearly indicates another meaning: contemplated, required, determined, directed, specified, authorized, ordered, given, designated, indicated, considered necessary, deemed necessary, permitted, reserved, suspended, established, approval, approved, disapproved, acceptable, unacceptable, suitable, accepted, satisfactory, unsatisfactory, sufficient, insufficient, rejected or condemned.

CALENDAR DAY. Any day shown on the calendar beginning at midnight and ending at midnight the following day. If no designation of calendar or working day is made, “day” shall mean calendar day.

CHAIRMAN. The Chairman of the Hawaiian Homes Commission, Department of Hawaiian Home Lands.

CHANGE ORDER. A written order signed by the Chairman that establishes the full payment and final settlement of all claims for direct, indirect and consequential costs, including costs of delays, and establishes any adjustments to contract time related to the work covered and affected by one or more field orders, or for change work done or agreed to be done without issuance of a separate field order. A change order signed by all the parties to the contract constitutes a supplemental agreement.

COMPLETION. See SUBSTANTIAL COMPLETION and FINAL COMPLETION.

CONSULTANT. A person, firm or corporation having a contract with the Department to furnish services with respect to the project.

CONTRACT. The written agreement between the Contractor and the Department by its Chairman, by which the Contractor is bound to furnish all labor, equipment, and materials and to perform the specified work within the contract time stipulated, and by which DHHL is obligated to compensate the Contractor therefor at the prices set forth therein. The contract shall include the Contract Documents, also any and all amendments, and change orders, which are required to complete the construction in an acceptable manner.

CONTRACT COMPLETION DATE. The calendar day on which all work on the project, required by the contract, must be completed. See CONTRACT TIME and FINAL COMPLETION.

CONTRACT DOCUMENTS. The Contract, Addenda (which pertain to the Contract Documents, Contractor’s Proposal (including Wage Schedule, List of Subcontractors and other documentation accompanying the Bid and any post bid documentation submitted prior to the Notice of Award) when attached as an exhibit to the contract, the Notice to Proceed, the Bonds, these General Conditions, the SPECIAL CONDITIONS, the Specifications and the Drawings as the same are more specifically identified in the contract together with all written Amendments, Change Orders, Field Orders, any written order for minor changes in the work and Project Manager’s written interpretations and clarifications issued on or after the effective date of the contract.

CONTRACT PRICE. The amount designated on the face of the contract for the performance of work including allowances, if any.

CONTRACT TIME. The number of working or calendar days provided in the contract for completion of the contract, exclusive of authorized time extensions. The number of days shall begin running on the effective date in the Notice to Proceed. If in lieu of providing a number of working or calendar days, the contract requires completion by a certain date, the work shall be completed by that date.

CONTRACTOR. Any individual, partnership, firm, corporation, joint venture, or other legal entity undertaking the execution of the work under the terms of the contract with the State of Hawaii, and acting directly or through its agents, or employees.

DEPARTMENT. The Department of Hawaiian Home Lands (abbreviated DHHL).

DRAWINGS (or Plans). The contract drawings in graphic or pictorial form, which show the design, location, character, dimensions and details of the work to be done and which shall be a part of the Contract Documents.

EQUAL OR APPROVED EQUAL. Whenever this term is used in the drawings or specifications, it shall be interpreted to mean a brand or article, prequalified in accordance with Section 6.3 SUBSTITUTION OF MATERIALS AND EQUIPMENT AFTER BID OPENING, that may be used in place of the one specified.

EXCESS BAD WEATHER DAY. A working day on which inclement weather prevents work on the contract and is beyond the average weather for the location of the project and the time of the year.

FIELD ORDER. A written order issued by the Project Manager to the Contractor requiring the contract work to be performed in accordance with a change or changes in the work. A field order may (1) establish a price adjustment and/or time adjustment in an amount the Project Manager believes is reasonable for the change; or (2) may declare that the Project Manager does not intend to adjust contract time or price for the work; or (3) may request the Contractor to submit a proposal for an adjustment to the contract time and/or price by a certain date.

FINAL COMPLETION. The date set by the Chairman that all work required by the contract and any amendments or changes thereto is in full compliance with the contract.

FORCE ACCOUNT. Term used when work is ordered to be done at the sole option of the Department and is to be billed for at cost of labor, materials and equipment, insurance(s), taxes, etc., plus a percentage for overhead and profit.

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

HAZARDOUS MATERIALS. Any and all radioactive materials, asbestos, polychlorinated biphenyls, petroleum, crude oil, chemicals known to cause cancer or reproductive toxicity, pollutants, contaminants, toxic substances or materials cited in Hazardous Material Laws. Abandoned motor vehicles or parts thereof are not hazardous material.

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

INSPECTOR. The person assigned by the Department to make detailed inspections of contract performance and materials supplied for the work.

LAWS. All Federal, State, City and County Laws, ordinances, rules and regulations, and standard specifications, including any amendments thereto effective as of the date of the call for sealed bids.

LETTER OF AWARD. A written notice from the Chairman to the successful Bidder(s) stating that the Department has accepted its proposal.

LIQUIDATED DAMAGES. The amount prescribed in the Special Conditions, LIQUIDATED DAMAGES to be paid to the Department or to be deducted from any payments due or to become due the Contractor for each working day or calendar day (as applicable) delay in completing the whole or any specified portion of the work beyond the Contract Time.

MAJOR UNIT PRICE ITEM. A unit price item which, when extended on its estimated quantities in the proposal form, exceeds five percent (5%) of the total base bid proposal less any allowance and contingent items included in the proposal.

NON-CONFORMING WORK. Work that does not meet the requirements of the Contract Documents.

NOTICE TO PROCEED. A written notice from the Project Manager to the Contractor advising it of the date on which it is to begin the prosecution of the work, which date shall also be the beginning of Contract Time.

POST CONTRACT DRAWINGS. Drawings issued after the award of the contract for the purpose of clarification and / or changes to the work indicated in the original drawings and which may be made a part of the contract.

PROJECT ACCEPTANCE DATE. The calendar day on which the Project Manager accepts the project as sufficiently completed in compliance with the contract so that the Department can occupy or utilize the work for its intended use. See SUBSTANTIAL COMPLETION.

PROJECT CONTRACT LIMITS (or CONTRACT ZONE). The portion of the site as delineated on the drawings which define the Contractor's primary area of operation for the prosecution of the work. It does not define the exact limits of all construction that may be required under the contract.

PROJECT MANAGER. The Department's Contract Administrator as described in ARTICLE 5, CONTROL OF WORK.

PROJECT GUARANTEE. A guarantee issued by the Contractor to the Department. See GUARANTEE.

PROPOSAL (BID). The executed document submitted by a Bidder in the prescribed manner, in response to a request for proposals or invitation to Bid, to perform at the prices quoted, for the work specified under the contract, within the time prescribed for performance.

PROPOSAL FORM. The form prepared by the Department on which the written offer or formal bid for the work to be done is submitted by the Bidder. By submitting a bid on the proposal form, a Bidder adopts the language therein as its own.

PUNCHLIST. A list compiled by the Project Manager (or Contractor) stating work yet to be completed or corrected by the Contractor in order to substantially complete or finally complete the contract requirements.

SHOP DRAWINGS/SUBMITTALS. All drawings, diagrams illustrations, schedules and other data or information which are prepared or assembled by the Contractor and submitted by Contractor to illustrate some portion of the work.

SPECIAL CONDITIONS. The specific clauses that supplements or modify the standard clauses of the GENERAL CONDITIONS setting forth conditions or requirements peculiar to the individual project under consideration, which are not thoroughly or satisfactorily covered, described or explained in these GENERAL CONDITIONS.

SPECIFICATIONS. That portion of the Contract Documents consisting of written descriptions for materials, equipment, construction systems, standards, workmanship, directions, provisions and

requirements that pertain to the method and manner of performing the work and certain administrative requirements applicable thereto.

STATE. The State of Hawaii acting through its authorized representative.

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

SUBCONTRACTOR. An individual, partnership, firm, corporation, joint venture or other legal entity, as covered in Chapter 444, Hawaii Revised Statutes, which enters into an agreement with the Contractor to perform a portion of the work for the Contractor.

SUBSTANTIAL COMPLETION. The status of the project when the Contractor has completed all the work and (1) all utilities and services are connected and working; (2) all equipment is in acceptable working condition; (3) additional activity by the Contractor to correct punchlist items as described herein will not prevent or disrupt use of the work or the facility in which the work is located; and 4) the building, structure, improvement or facility can be used for its intended purpose.

SUPERINTENDENT. The employee of the Contractor, authorized to receive and fulfill instructions from the Project Manager, who is charged with the responsibility of all the work.

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

UNUSUALLY SEVERE WEATHER. Uncommonly harsh weather including but not limited to hurricanes, tornadoes, tropical storms and tropical depressions.

WORK. The furnishing of all labor, materials, equipment, and other incidentals necessary or convenient for the successful completion of the project and the execution of all the duties and obligations imposed by the contract.

WORKING DAY. A calendar day, exclusive of Saturdays, Sundays and State-recognized legal holidays for the month in question.

1.2 ABBREVIATIONS

DHHL	Department of Hawaiian Home Lands.
HAR	Hawaii Administrative Rules
HRS	Hawaii Revised Statutes
VECP	Value Engineering Cost Proposal

~ END OF ARTICLE 1~

ARTICLE 2: [reserved]

ARTICLE 3: CONTRACT

3.1 NOTICE TO PROCEED

3.1.1 After the contract is fully executed and signed by the Chairman, the Contractor will be sent a formal Notice to Proceed letter advising the Contractor of the date on which it may proceed with the work. The Contractor shall be allowed ten (10) consecutive working days from said date to begin its work. In the event that the Contractor refuses or neglects to start the work, the Chairman may terminate the contract in accordance with Section 7.27, TERMINATION OF CONTRACT FOR CAUSE.

3.1.2 The Contractor may commence its operations strictly at its own risk prior to receipt of the formal notice to proceed, provided it makes a written request and has received approval from the Chairman in writing. All work performed shall be conducted in accordance with Section 7.1, PROSECUTION OF THE WORK.

3.1.3 In certain cases, the Department, with agreement of the Contractor, may issue a Notice to Proceed before full execution of the contract by the Chairman and it may further issue a Notice to Proceed concurrently with the Notice of Award.

3.1.4 In the event the Notice to Proceed is not issued within one hundred eighty (180) days after (1) the date the contract is executed by all parties; or (2) for projects funded with State Capital Improvement Project (CIP) funds, the date that the written certificate that funds are available is issued, whichever is later, the Contractor may submit a claim for increased labor and material costs (but not overhead costs) which are directly attributable to the delay beyond the first one hundred eighty (180) days. Such claims shall be accompanied with the necessary documentation to justify the claim. No payment will be made for assumed escalation costs.

3.2 RELATIONSHIP OF PARTIES. Independent Contractor Status and Responsibilities, including Tax Responsibilities.

3.2.1 In the performance of services required under this Contract, the CONTRACTOR is an “independent contractor,” with the authority and responsibility to control and direct the performance and details of the work and services required under this Contract; however, the STATE shall have a general right to inspect work in progress to determine whether, in the STATE’s opinion, the services are being performed by the CONTRACTOR in compliance with this Contract. Unless otherwise provided by special condition, it is understood that the STATE does not agree to use the CONTRACTOR exclusively, and that the CONTRACTOR is free to contract to provide services to other individuals or entities while under contract with the STATE.

3.2.2 The CONTRACTOR and the CONTRACTOR’s employees and agents are not by reason of this Contract, agents or employees of the State for any purpose, and the CONTRACTOR and the CONTRACTOR’s employees and agents shall not be entitled to claim or receive from the STATE any vacation, sick leave, retirement, workers’ compensation, unemployment insurance, or other benefits provided to state employees.

3.2.3 The CONTRACTOR shall be responsible for the accuracy, completeness, and adequacy of the CONTRACTOR’s performance under this Contract. Furthermore, the CONTRACTOR intentionally, voluntarily, and knowingly assumes the sole and entire liability to the CONTRACTOR’s employees

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and agents, and to any individual not a party to this Contract, for all loss, damage, or injury caused by the CONTRACTOR, or the CONTRACTOR's employees or agents in the course of their employment.

- 3.2.4 The CONTRACTOR shall be responsible for payment of all applicable federal, state, and county taxes and fees which may become due and owing by the CONTRACTOR by reason of this Contract, including but not limited to (i) income taxes, (ii) employment related fees, assessments, and taxes, and (iii) general excise taxes. The CONTRACTOR also is responsible for obtaining all licenses, permits, and certificates that may be required in order to perform this Contract.
- 3.2.5 The CONTRACTOR shall obtain a general excise tax license from the Department of Taxation, State of Hawaii, in accordance with Section 237-9, HRS, and shall comply with all requirements thereof.
- 2.2.6 The CONTRACTOR is responsible for securing all employee-related insurance coverage for the CONTRACTOR and the CONTRACTOR's employees and agents that is or may be required by law, and for payment of all premiums, costs, and other liabilities associated with securing the insurance coverage.
- 3.3 PERSONNEL REQUIREMENTS:
- 3.3.1 The CONTRACTOR shall secure, at the CONTRACTOR's own expense, all personnel required to perform this Contract.
- 3.3.2 The CONTRACTOR shall ensure that the CONTRACTOR's employees or agents are experienced and fully qualified to engage in the activities and perform the services required under this Contract, and that all applicable licensing and operating requirements imposed or required under federal, state, or county law, and all applicable accreditation and other standards of quality generally accepted in the field of the activities of such employees and agents are complied with and satisfied.
- 3.4 NONDISCRIMINATION. No person performing work under this Contract, including any subcontractor, employee, or agent of the Contractor, shall engage in any discrimination that is prohibited by any applicable federal, state, or county law.
- 3.5 CONFLICTS OF INTEREST. The CONTRACTOR represents that neither the CONTRACTOR, nor any employee or agent of the CONTRACTOR, presently has any interest, and promises that no such interest, direct or indirect, shall be acquired, that would or might conflict in any manner or degree with the CONTRACTOR's performance under this Contract.
- 3.6 EMPLOYMENT OF STATE RESIDENTS (§103B-3 HRS). The Contractor shall ensure that Hawaii residents comprise not less than eighty per cent of the workforce employed to perform the contract work on the project. The 80% requirement shall be determined by dividing the total number of hours worked on the contract by Hawaii residents, by the total number of hours worked on the contract by all employees of the Contractor in the performance of the contract. The hours worked by any Subcontractor of the Contractor shall count towards the calculation for this section. The hours worked by employees within shortage trades, as determined by the Department of Labor and Industrial Relations (DLIR), shall not be included in the calculation for this section.

~END OF ARTICLE 3~

ARTICLE 4: SCOPE OF WORK

- 4.1 INTENT OF CONTRACT, DUTY OF CONTRACTOR. The intent of the Contract is to provide for the construction, complete in every detail, of the work described at the accepted bid price and within the time established by the contract. The Contractor has the duty to furnish all labor, materials, equipment, tools, transportation, incidentals and supplies and to determine the means, methods and schedules required to complete the work in accordance with the drawings, specifications and terms of the contract.
- 4.1.1 ENTIRE CONTRACT. This Contract sets forth all of the Contract, conditions, understandings, promises, warranties, and representations between the STATE and the CONTRACTOR relative to this Contract. This Contract supersedes all prior Contracts, conditions, understandings, promises, warranties and representations, which shall have no further force or effect. There are no Contracts, conditions, understandings, promises, warranties, or representations, oral or written, express or implied, between the STATE and the CONTRACTOR other than as set forth or as referred to herein.
- 4.2 CHANGES. The Project Manager may at any time, during the progress of the work, by written order, and without notice to the sureties, make changes in the work as may be found to be necessary or desirable. Such changes shall not invalidate the Contract nor release the Surety, and the Contractor will perform the work as changed, as though it had been a part of the original Contract.
- 4.2.1 MINOR CHANGES. Minor changes in the work may be directed by the Project Manager with no change in contract price or time of performance. Minor changes are consistent with the intent of the Contract Documents and do not substantially alter the type of work to be performed or involve any adjustment to the contract sum or extension of the contract time.
- 4.2.2 ORAL ORDERS
- 4.2.2.1 Any oral order, direction, instruction, interpretation or determination from the Chairman or any other person which in the opinion of the Contractor causes any change, shall be considered as a change only if the Contractor gives the Chairman written notice of its intent to treat such oral order, direction, instruction, interpretation or determination as a change directive. Such written notice must be delivered to both the Chairman and the Project Manager before the Contractor acts in conformity with the oral order, direction, instruction, interpretation or determination, but not more than five (5) days after delivery of the oral order to the Contractor. The written notice shall state the date, circumstances, whether a time extension will be requested, and source of the order that the Contractor regards as a change. Such written notice may not be waived and shall be a condition precedent to the filing of any claim by the Contractor. Unless the Contractor acts in accordance with this procedure, any such oral order shall not be treated as a change for which the Contractor may make a claim for an increase in the contract time or contract price related to such work.
- 4.2.2.2 No more than five (5) days after receipt of the written notice from the Contractor, a Field Order shall be issued for the subject work if the Department agrees that it constitutes a change. If no Field Order is issued in the time established, it shall be deemed a rejection of Contractor's claim for a change. If the Contractor objects to the failure to issue a Field Order, it shall file a written protest with the Chairman within thirty (30) days after delivery to the Chairman of the Contractor's written notice of its intention to treat the oral order as a change. In all cases, the Contractor shall proceed with the work. The protest shall be determined as provided in Section 7.25, DISPUTES AND CLAIMS.
- 4.2.3 FIELD ORDERS. All changes will be set forth in a field order or change order. Upon receipt of a field order, the Contractor shall proceed with the changes as ordered. If the Contractor does not agree

with any of the terms or conditions or in the adjustment or non-adjustment to the contract time and/or contract price set forth therein, it shall file with the Chairman a written protest setting forth its reasons in detail within thirty (30) days after receipt of the field order. In all cases, the Contractor shall proceed with the work as changed. The protest shall be determined as provided in Section 7.25, DISPUTES AND CLAIMS. Failure to file such a protest within the time specified shall constitute agreement on the part of the Contractor with the terms, conditions, amounts and adjustments or non-adjustment to the contract price and/or contract time set forth in the field order.

4.2.4 CHANGE ORDERS

4.2.4.1 The Department will issue sequentially numbered change orders at times it deems appropriate during the contract period. A change order may contain the adjustment in contract price and / or time for a number of Field Orders. No payment for any change will be made until the change order is issued.

4.2.4.2 The penal sum of the Surety Performance and Payment Bonds will be adjusted by the amount of each and every change order.

4.3 DUTY OF CONTRACTOR TO PROVIDE PROPOSAL FOR CHANGES

4.3.1 A Field Order may request the Contractor to supply the Department with a proposal for an adjustment to the contract time or contract price for the work described therein. Any such request for a proposal shall not affect the duty of the Contractor to proceed as ordered with the work described in the Field Order.

4.3.2 The Project Manager from time to time may issue a Bulletin to the Contractor requesting price and / or time adjustment proposals for contemplated changes in the work. A Bulletin is not a directive for the Contractor to perform the work described therein.

4.3.3 Within seven (7) days after receipt of a Bulletin or Field Order containing a request for proposal, the Contractor shall submit to the Project Manager a detailed written statement setting forth all charges the Contractor proposes for the change and the proposed adjustment of the contract time, all properly itemized and supported by sufficient substantiating data to permit evaluation. No time extension will be granted for delays caused by late Contractor pricing of changes or proposed changes. If the project is delayed because Contractor failed to submit the cost proposal within the seven (7) days, or longer as allowed by the Project Manager, liquidated damages will be assessed in accordance with Section 7.26, FAILURE TO COMPLETE THE WORK ON TIME.

4.3.4 No payment shall be allowed to the Contractor for pricing or negotiating proposed or actual changes. No time extension will be granted for delay caused by late Contractor pricing of changes or proposed changes.

4.3.5 The Chairman may accept the entire proposal, or any discreet cost item contained within the proposal or the proposed adjustment to contract time by a notice in writing to the Contractor delivered to the Contractor within thirty (30) days after receipt of the proposal. The written acceptance by the Chairman of all or part of the Contractor's proposal shall create a binding agreement between the parties for that aspect of the change.

4.3.6 If the Department refuses to accept the Contractor's entire proposal, the Chairman may issue a Field Order for the work; or if a Field Order has already been issued, the Department may issue a supplemental Field Order establishing the remaining adjustments to contract price and/or contract time for the ordered changes. If the Contractor disagrees with any term, condition or adjustment

contained in such Field Order or supplemental Field Order, it shall follow the protest procedures set forth in and be subject to the other terms of Subsection 4.2.3, FIELD ORDERS.

4.4 PRICE ADJUSTMENT (§3-125-13 HAR)

4.4.1 Any adjustment in the contract price pursuant to a change or claim in this contract shall be made in one or more of the following ways:

4.4.1.1 By agreement on a fixed price adjustment before commencement of the pertinent performance or as soon thereafter as practicable;

4.4.1.2 By unit prices specified in the contract or subsequently agreed upon;

4.4.1.3 Whenever there is a variation in quantity for any work covered by any line item in the schedule of costs submitted as required by Section 7.2, COMMENCEMENT REQUIREMENTS, by the Department at its discretion, adjusting the lump sum price proportionately;

4.4.1.4 In such other manner as the parties may mutually agree;

4.4.1.5 At the sole option of the Project Manager, by the costs attributable to the event or situation covered by the change, plus appropriate profit or fee, all as specified in Section 4.5, ALLOWANCES FOR OVERHEAD AND PROFIT and the force account provision of Section 8.3, PAYMENT FOR ADDITIONAL WORK; or

4.4.1.6 In the absence of an agreement between the two parties, by a unilateral determination by the Department of the reasonable and necessary costs attributable to the event or situation covered by the change, plus appropriate profit or fee, all as computed in accordance with applicable Sections of Chapters 3-123 and 3-126 of the Hawaii Administrative Rules and Regulations, and Section 4.5, ALLOWANCES FOR OVERHEAD AND PROFIT.

4.5 ALLOWANCES FOR OVERHEAD AND PROFIT (§3-125-13 HAR)

4.5.1 In determining the cost or credit to the Department resulting from a change, the allowances for all overhead, including, extended overhead resulting from adjustments to contract time (including home office, branch office and field overhead, and related delay impact costs) and profit combined, shall not exceed the percentages set forth below:

4.5.1.1 For the Contractor, for any work performed by its own labor forces, twenty percent (20%) of the direct cost;

4.5.1.2 For each subcontractor involved, for any work performed by its own forces, twenty percent (20%) of the direct cost;

4.5.1.3 For the Contractor or any subcontractor, for work performed by their subcontractors, ten percent (10%) of the amount due the performing subcontractor.

4.5.1.4 Field overhead includes, but is not limited to all costs of supervision, engineering, clerical, layout, temporary facilities, improvements and structures, all general condition expenditures, storage, transport and travel, housing, small tools (as defined in 8.3.4.5(h)), pickup trucks and automobiles.

- 4.5.2 Not more than three markup allowance line item additions not exceeding the maximum percentage shown above will be allowed for profit and overhead, regardless of the number of tier subcontractors.
- 4.5.3 The allowance percentages will be applied to all credits and to the net increase of direct costs where work is added and deleted by the changes.
- 4.6 PAYMENT FOR DELETED MATERIAL
- 4.6.1 CANCELED ORDERS. If acceptable material was ordered by the Contractor for any item deleted by an ordered change in the work prior to the date of notification of such deletion by the Project Manager, the Contractor shall use its best efforts to cancel the order. The Department shall pay reasonable cancellation charges required by the supplier excluding any markup for overhead and profit to the Contractor.
- 4.6.2 RETURNED MATERIALS - If acceptable deleted material is in the possession of the Contractor or is ultimately received by the Contractor, if such material is returnable to the supplier and the Project Manager so directs, the material shall be returned and the Contractor will be paid for the reasonable charges made by the supplier for the return of the material, excluding any markup for overhead and profit to the Contractor. The cost to the Contractor for handling the returned material will be paid for as provided in Section 4.4, PRICE ADJUSTMENT.
- 4.6.3 UNCANCELLED MATERIALS. If orders for acceptable deleted material cannot be canceled at a reasonable cost, it will be paid for at the actual cost to the Contractor including an appropriate markup for overhead and profit as set forth in Section 4.5, ALLOWANCES FOR OVERHEAD AND PROFIT. In such case, the material paid for shall become the property of the Department and the cost of further storage and handling shall be paid for as provided in Section 4.4, PRICE ADJUSTMENT.
- 4.7 VARIATIONS IN ESTIMATED QUANTITIES (§3-125-10 HAR)
- 4.7.1 Where the quantity of a major unit price item in this contract is estimated on the proposal form and where the actual quantity of such pay item varies more than fifteen percent (15%) above or below the estimated quantity stated in this contract, an adjustment in the contract price shall be made upon demand of either party. The adjustment shall be based upon any increase or decrease in costs due solely to the variation above one hundred fifteen percent (115%) or below eighty-five percent (85%) of the estimated quantity. The adjustment shall be subject to Section 4.4 PRICE ADJUSTMENT and Section 4.5, ALLOWANCES FOR OVERHEAD AND PROFIT. If the quantity variation is such as to cause an increase in the time necessary for completion, the Chairman shall, upon receipt of a written request for an extension of time within thirty (30) days of the item's completion, ascertain the facts and make such adjustment to the completion date as the Chairman finds justified.
- 4.8 VARIATIONS IN BOTTOM ELEVATIONS. The Contractor shall plan and construct to the bottom elevations of footings, piles, drilled shafts, or cofferdams as shown on the drawings. When the bottom of a footing, pile, drilled shaft, or cofferdam is shown as an estimated or approximate elevation, the Contractor shall plan and construct to that elevation or to any deeper elevation required by the drawings or direction of the Project Manager. In the event the bottom elevation is lowered, the Contractor shall be entitled to additional payment in accordance with Sections 4.4 PRICE ADJUSTMENT and 4.5 ALLOWANCES FOR OVERHEAD AND PROFIT. In the event the bottom elevation is raised, the Department shall be entitled to a credit in accordance with Sections 4.2 CHANGES, 4.4, PRICE ADJUSTMENT and 4.5, ALLOWANCES FOR OVERHEAD AND PROFIT.

- 4.9 DIFFERING SITE CONDITIONS (§3-125-11 HAR)
- 4.9.1 During the progress of the work, if the Contractor encounters conditions at the site differing materially from those shown in the drawings and specifications, Contractor shall promptly, and before any such conditions are disturbed or damaged (except in an emergency as required by Subsection 7.17.8. EMERGENCIES), notify the Project Manager in writing of:
- 4.9.1.1 Subsurface or latent physical conditions at the site differing materially from those indicated in the contract; or
- 4.9.1.2 Unknown physical conditions at the site, of an unusual nature differing materially from those ordinarily encountered and generally recognized as inherent in work of the character provided for in this contract. Unclaimed motor vehicles or parts thereof and discarded materials or unclaimed items are not unknown or unforeseen physical conditions. (See also Section 5.8, EXAMINATION OF DRAWINGS, SPECIFICATIONS, PROJECT SITE).
- 4.9.2 After receipt of written notice, the Chairman shall promptly investigate the site, and if it is found that such conditions do materially differ and cause an increase in the Contractor's cost of, or the time required to, perform any part of the work, whether or not changed as a result of such conditions, an adjustment shall be made and the contract modified accordingly. Any adjustment in contract price made pursuant to this Section 4.9. DIFFERING SITE CONDITIONS (§3-125-11 HAR) shall be determined in accordance with Sections 4.4, PRICE ADJUSTMENT and 7.25, DISPUTES AND CLAIMS.
- 4.9.3 Nothing contained in this Section 4.9, DIFFERING SITE CONDITONS shall be grounds for an adjustment in compensation if the Contractor had actual knowledge or should have known of the existence of such conditions prior to the submission of bids.
- 4.10 COSTS AND EXPENSES. Any reimbursement due the CONTRACTOR for per diem and transportation expenses under this Contract shall be subject to Chapter 3-123 (Cost Principles) of the Procurement Rules and the following guidelines:
- 4.10.1 Reimbursement for air transportation shall be actual cost or coach class air fare, whichever is less.
- 4.10.2 Reimbursement for ground transportation costs shall not exceed the actual cost of renting an intermediate-sized vehicle.
- 4.10.3 Unless prior written approval of the CHAIRMAN is obtained, reimbursement for subsistence allowance (i.e., hotel and meals, etc.) shall not exceed the applicable daily authorized rates for interisland or out-of-state travel that are set forth in the current Governor's Executive Order authorizing adjustments in salaries and benefits for state officers and employees in the Chairman branch who are excluded from collective bargaining coverage.

~END OF ARTICLE 4~

ARTICLE 5: CONTROL OF WORK

- 5.1 **AUTHORITY OF THE CHAIRMAN** - The Chairman shall make final and conclusive decisions on all questions which may arise relating to the quality and acceptability of the materials furnished and work performed, the manner of performance and the rate of progress of the work, the interpretation of the plans and specifications, the acceptable fulfillment of the contract on the part of the Contractor, the compensation under the contract and the mutual rights of the parties to the contract. The Chairman shall have the authority to enforce and make effective such decisions and orders at the Contractor's expense when the Contractor fails to carry such decisions and orders out promptly and diligently. The Chairman shall have the authority to suspend the work wholly or in part as provided in Section 7.24, SUSPENSION OF WORK.
- 5.2 **AUTHORITY OF THE PROJECT MANAGER.** The Project Manager has the authority to act on behalf of the Department on all matters regarding the contract and the work that are not reserved for the Chairman. The Project Manager's authority is vested exclusively in the Project Manager except when specific authority to act for the Project Manager has been delegated to a specific person or persons. Such delegation of authority may be established by the Contract Documents; otherwise, it is not effective or binding upon the Department until such written notification of the delegation is received by the Contractor. The Administrator of the Land Development Division of the Department, or his designee, shall also have authority to act on behalf of the Department on all matters regarding the contract that are not reserved for the Chairman.
- 5.3 **AUTHORITY OF THE INSPECTOR**
- 5.3.1 The Inspector shall observe and inspect the contract performance and materials. The Inspector does not have any authority vested in the Project Manager unless specifically delegated in writing.
- 5.3.2 The Inspector may offer advice and recommendations to the Contractor, but any such advice or recommendations are not directives from the Project Manager.
- 5.3.3 The Inspector has no authority to allow deviations from the Contract Documents and may reject any and all work that the Inspector deems is not in conformity with the contract requirements. Failure of an Inspector at any time to reject non-conforming work shall not be considered a waiver of the Department's right to require work in strict conformity with the Contract Documents as a condition of final acceptance.
- 5.4 **AUTHORITY OF CONSULTANT(S).** The Department may engage Consultant(s) for limited or full observation to supplement the inspections performed by the Department and respective Counties. Unless otherwise specified in writing to the Contractor, such retained Consultant(s) will have the authority of an Inspector.
- 5.5 **SHOP DRAWINGS AND OTHER SUBMITTALS.** The following documents shall be submitted where required by the Contract Documents:
- 5.5.1 **SHOP DRAWING**
- (a) The Contractor shall prepare, thoroughly check, and approve all shop drawings, including those prepared by subcontractors or any other persons. The Contractor shall indicate its approval by stamping and signing each drawing. Any shop drawing submitted without being reviewed, stamped and signed will be considered as not having been submitted, and any delay caused thereby shall be the Contractor's responsibility.

- (b) Shop drawings shall indicate in detail all parts of an item of work, including erection and setting instructions and engagements with work of other trades or other separate contractors. Shop drawings for structural steel, millwork and pre-cast concrete shall consist of calculations, fabrication details, erection drawings and other working drawings to show the details, dimensions, sizes of members, anchor bolt plans, insert locations and other information for the complete fabrication and erection of the structure to be constructed.
- (c) The Contractor shall be responsible for the design of all structural curtain walls, all connections and fasteners for structural steel and architectural and structural precast concrete. Curtain walls, connections and fasteners shall be designed by a licensed professional engineer to carry the indicated or necessary loads. The precast concrete pieces shall be designed to withstand erection, transportation and final loading stresses. All calculations shall be performed by a licensed professional engineer and submitted to the Project Manager for review.
- (d) The cost of shop drawings or any other submittal shall not be a separate or individual pay item. All costs of furnishing shop drawings required by the contract shall be included in the price agreed to be paid for the various contract items of work, and no additional allowances will be made therefor.
- (e) All shop drawings as required by the contract, or as determined by the Project Manager to be necessary to illustrate details of the work shall be submitted to the Project Manager with such promptness as to cause no delay in the work or in that of any other Contractor. Delay caused by the failure of the Contractor to submit shop drawings on a timely basis to allow for review, possible resubmittal and acceptance will not be considered as a justifiable reason for a contract time extension. Contractor, at its own risk, may proceed with the work affected by the shop drawings before receiving acceptance; however the Department shall not be liable for any costs or time required for the correction of work done without the benefit of accepted shop drawings.
- (f) It is the Contractor's obligation and responsibility to check all of its and its subcontractor's shop drawings and be fully responsible for them and for coordination with connecting and other related work. The Contractor shall prepare, and submit to the Project Manager coordination drawings showing the installation locations of all plumbing, piping, duct and electrical work including equipment throughout the project. By approving and submitting shop drawings, the Contractor thereby represents that it has determined and verified all field measurements and field construction criteria, or will do so, and that it has checked and coordinated each shop drawing with the requirements of the work and the contract documents. When shop drawings are prepared and processed before field measurements and field construction criteria can be or have been determined or verified, the Contractor shall make all necessary adjustments in the work or resubmit further shop drawings, all at no change in contract price or time.

5.5.1.1 **SHOP DRAWING FORM.** Each drawing and/or series of drawings submitted must be accompanied by a letter of transmittal giving a list of the titles and number of the drawings. Each series shall be numbered consecutively for ready reference and each drawing shall be marked with the following information:

- (a) Date of Submission
- (b) Name of Project
- (c) Project Number
- (d) Location of Project
- (e) Name of submitting Contractor and Subcontractor
- (f) Revision Number
- (g) Specification and/or any drawing reference by article or sheet number.

- 5.5.1.2 No shop drawing shall be smaller than 24" x 36" nor larger than 28" x 42". At the determination of the Project Manager, each sheet of drawings for the submittal shall consist of either (1) reproducible transparency and three ozalid prints; or (2) six ozalid prints.
- 5.5.1.3 The Department will not be responsible for any cost of modifying/adjusting precast structures to fit the final as-built design, actual field conditions and finished work. To this end, the Contractor shall follow the following procedures:
- (a) Submit shop drawings for general design conformity for approval. Delay precasting operations.
 - (b) Start infrastructure work. Expose, check grade and install improvements requiring precast structures. Resubmit shop drawings with schedule for all structures indicating required deviations, correct and final inverts, depths, openings, special reinforcing and details, alignments, correct configurations, tops, grating, etc. The Contractor shall submit a schedule for the precasting work. Precast operations may commence based on approved shop drawings. During precast operations, the Project Manager may inspect the operations at least once per differing group of structures. The Contractor shall assume all risks and costs associated with modifying/adjusting the precast structures due to incomplete field verification, premature analysis and shop drawings.
- 5.5.2 **DESCRIPTIVE SHEETS AND OTHER SUBMITTALS.** When a submittal is required by the contract, the Contractor shall submit to the Project Manager eight (8) complete sets of descriptive sheets such as brochures, catalogs, illustrations, etc., which will completely describe the material, product, equipment, furniture or appliances to be used in the project as shown in the drawings and specifications. Prior to the submittal, the Contractor will review and check all descriptive sheets for conformity to the contract requirements and indicate such conformity by marking or stamping and signing each sheet. It is the responsibility of the Contractor to submit descriptive sheets for review and acceptance by the Project Manager as required at the earliest possible date after the date of award in order to meet the construction schedule. Delays caused by the failure of the Contractor to submit descriptive sheets as required will not be considered as justifiable reasons for contract time extension. The submittal shall list the seven (7) items of information as listed in Subsection 5.5.1, Shop Drawing.
- 5.5.3 **MATERIAL SAMPLES AND COLOR SAMPLES.** Prior to their submittal, all color samples and material shall be assembled and presented as required by the Department. When sample submittals are required by the contract, the Contractor shall review, approve, indicate its approval and submit to the Project Manager samples of the materials to be used in the project and color selection samples. It is the responsibility of the Contractor to submit material and color samples for review as required at the earliest possible date after the date of award in order to meet the construction schedule. Delays caused by the failure of the Contractor to submit material and color samples will not be considered as justifiable reasons for contract time extension. The submittal shall list the seven (7) items of information as listed in Subsection 5.5.1, Shop Drawing.
- 5.5.4 **SUBMITTAL VARIANCES.** The Contractor shall include with the submittal, written notification clearly identifying all deviations or variances from the contract drawings, specifications and other Contract Documents. The notice shall be in a written form separate from the submittal. The variances shall also be clearly indicated on the shop drawing, descriptive sheet, material sample or color sample. Failure to so notify of and identify such variances shall be grounds for the subsequent rejection of the related work or materials, notwithstanding that the submittal was accepted by the Project Manager. If the variances are not acceptable to the Project Manager, the Contractor will be

required to furnish the item as specified or indicated on the Contract Documents at no additional cost or time.

- 5.5.5 **REVIEW AND ACCEPTANCE PROCESS.** The Project Manager shall check shop drawings and within forty-five (45) days of receipt return them to the Contractor unless otherwise agreed between the Contractor and the Department. Submittals required for work to be installed within the first sixty days after the notice to proceed shall be returned by the Project Manager within twenty (20) days. If the volume of shop drawings submitted at any time for review is unusually large, the Contractor may inform the Project Manager of its preferred order for review and the Project Manager shall use reasonable efforts to accommodate the Contractor's priorities.
- 5.5.5.1 The acceptance by the Project Manager of the Contractor's submittal relates only to their sufficiency and compliance with the intention of the contract. Acceptance by the Project Manager of the Contractor's submittal does not relieve the Contractor of any responsibility for accuracy of dimensions, details, and proper fit, and for agreement and conformity of submittal with the Contract Drawings and Specifications. Nor will the Project Manager's acceptance relieve the Contractor of responsibility for variance from the Contract Documents unless the Contractor, at the time of submittal, has provided notice and identification of such variances required by this section. Acceptance of a variance shall not justify a contract price or time adjustment unless the Contractor requests such an adjustment at the time of submittal and the adjustment are explicitly agreed to in writing by the Department. Any such request shall include price details and proposed scheduling modifications. Acceptance of a variance is subject to all contract terms, stipulations and covenants, and is without prejudice to any and all rights under the surety bond.
- 5.5.5.2 If the Project Manager returns a submittal to the Contractor that has been rejected, the Contractor, so as not to delay the work, shall promptly make a resubmittal conforming to the requirements of the Contract Documents and indicating in writing on the transmittal and the subject submittal what portions of the resubmittal has been altered in order to meet the acceptance of the Project Manager. Any other differences between the resubmittal and the prior submittal shall also be specifically described in the transmittal.
- 5.5.5.3 No mark or notation made by the Project Manager or Consultant(s) on or accompanying the return of any submittal to the Contractor shall be considered a request or order for a change in work. If the Contractor believes any such mark or notation constitutes a request for a change in the work for which it is entitled to an adjustment in contract price and/or time, the Contractor must follow the same procedures established in Section 4.2, CHANGES for oral orders, directions, instructions, interpretations or determinations from the Project Manager or else lose its right to claim for an adjustment.
- 5.6 **COORDINATION OF CONTRACT DOCUMENTS.** It is the intent of the Contract Documents to describe a functionally complete Project (or part thereof) to be constructed in accordance with the Contract Documents. The Contract Documents are complementary: any requirement occurring in one document is as binding as though occurring in all. In the event of conflict or discrepancy the priorities stated in the following Subsections shall govern:
- 5.6.1 Addenda shall govern over all other Contract Documents. Subsequent addenda issued shall govern over prior addenda only to the extent specified.
- 5.6.2 Special Conditions and Proposal shall govern over the General Conditions and Specifications.
- 5.6.3 Specifications shall govern over drawings.

- 5.6.4 Specification Error - Should an error or conflict appear within the specification, the Contractor shall immediately notify the Project Manager. The Project Manager shall promptly issue instructions as to procedure. Any requirement occurring in one or more parts of the specification is as binding as though occurring in all applicable parts.
- 5.6.4.1 Should an error or conflict appear within a specification section, between a listed manufacturer / product and the performance requirements of the specification section, the performance requirements shall govern.
- 5.6.4.2: In the event of a conflict between AG-008 103D General Conditions (the “General Conditions”) and these DHHL Construction General Conditions, the requirements of these DHHL Construction General Conditions will apply to the extent provided by and as allowed under law.
- 5.6.5 DRAWINGS
- 5.6.5.1 Schedules shall govern over all other notes and drawings.
- 5.6.5.2 Bottom elevations of footings shown on drawings shall govern over a general note such as: “All footings shall rest on firm, undisturbed soil and extend a minimum of a certain number of feet into natural or finish grade, whichever is lower.” In the event the footing must be lowered below the bottom elevation shown, the Contractor shall be entitled to additional payment as provided in Section 4.2, CHANGES. In the event the footing is raised above the bottom elevation shown, the Department shall be entitled to a credit as provided in Section 4.2, CHANGES.
- 5.6.5.3 When a bottom of pile, drilled shaft, piling or cofferdam is shown as an estimated or approximate elevation, the Contractor shall plan and construct to that elevation or to any deeper elevation required by the plans or the direction by the Project Manager. The Project Manager, at the Project Manager’s sole discretion, may order in writing termination of all or part of the work above the estimated or approximate elevation.
- 5.6.5.4 Except for drawing schedules and bottom elevations as noted above, general notes shall govern over all other portions of the drawings:
- 5.6.5.5 Larger scale drawings shall govern over smaller scale drawings.
- 5.6.5.6 Figured or numerical dimensions shall govern over dimensions obtained by scaling. Measurements from the drawings when scaled shall be subject to the approval of the Project Manager.
- 5.6.5.7 In cases of discrepancies in the figures or drawings, the discrepancies shall be immediately referred to the Project Manager without whose decision said discrepancy shall not be corrected by the Contractor save at its own risk and in the settlement of any complications arising from such adjustment without the knowledge and consent of the Project Manager, the Contractor shall bear all extra expense involved.
- 5.6.5.8 Items shown on the drawings that are completely void in terms of description, details, quality and / or performance standards in both the Drawings and Specifications to make a price determination shall be considered an omission and the Contractor shall immediately refer same to the Project Manager for a decision.

- 5.6.5.9 Where there is a conflict between the architectural sheets and the civil or landscaping or electrical sheets, etc., the conflict shall be considered a discrepancy and the Contractor shall immediately refer same to the Project Manager for a decision.
- 5.6.5.10 Any requirement occurring in one or more of the sheets is as binding as though occurring in all applicable sheets.
- 5.7 INTERPRETATION OF DRAWINGS AND SPECIFICATIONS. The Contractor shall carefully study and compare the Contract Documents with each other, with field conditions and with the information furnished by the Department and shall at once report to the Project Manager errors, conflicts, ambiguities, inconsistencies or omissions discovered. Should an item not be sufficiently detailed or explained in the Contract Documents, Contractor shall report and request the Project Manager's clarification and interpretation. The Project Manager will issue a final clarification or final interpretation.
- 5.8 EXAMINATION OF DRAWINGS, SPECIFICATIONS, PROJECT SITE
- 5.8.1 The Contractor shall examine carefully the Project Site to become familiar with the conditions to be encountered in performing the work and the requirements of the Contract Documents.
- 5.8.1.1 No extra compensation will be given by reason of the Contractor's misunderstanding or lack of knowledge of the requirements of the work to be accomplished or the conditions to be encountered in performing the project.
- 5.8.1.2 No extra compensation will be given by reason of the Contractor's misunderstanding or lack of knowledge when the existence of differing site, subsurface or physical conditions could have been reasonably discovered or revealed as a result of any examination, investigation, exploration, test or study of the site and contiguous areas required by the bidding requirements or contract documents to be conducted by or for the Contractor.
- 5.8.2 When the contract drawings include a log of test borings showing a record of the data obtained by the Department's investigation of subsurface conditions, said log represents only the opinion of the Department as to the character of material encountered in its test borings and at only the location of each boring. The Contractor acknowledges that underground site conditions in Hawaii vary widely. There is no warranty, either expressed or implied, that the conditions indicated are representative of those existing throughout the work or any part of it, or that other conditions may not occur.
- 5.8.3 Reference is made to the Special Conditions for identification of subsurface investigations, reports, explorations and tests utilized by the Department in preparation the Contract Documents. Such reports, drawings, boring logs etc., if any, are not part of the Contract Documents.
- 5.9 COOPERATION BETWEEN THE CONTRACTOR AND THE DEPARTMENT
- 5.9.1 FURNISHING DRAWINGS AND SPECIFICATIONS. Contractor will be supplied copies of the Contract Drawings and Specifications as specified in the Special Conditions. Contractor shall have and maintain at least one unmarked copy of the Contract Drawings and Specifications on the work site, at all times. Contractor shall cooperate with the Project Manager, the Inspector(s), and other contractors in every possible way.
- 5.9.2 SUPERINTENDENT. The Contractor shall have a competent superintendent on the work site as its designated agent. The superintendent shall be able to read and understand the project plans and

specifications and shall be experienced in the type of project being undertaken and the work being performed. The superintendent shall receive instructions from the Project Manager or its authorized representative. The Contractor shall authorize the superintendent to (a) execute the orders and directions of the Project Manager or its authorized representative without delay and (b) promptly supply such materials, equipment, tools, labor and incidentals as may be required to complete the project within the prescribed contract time. The Contractor shall furnish a superintendent regardless of the amount of project work sublet.

- 5.9.2.1 If the superintendent or agent is not present at the work site, the Project Manager shall have the right to suspend the work as described under Section 7.24, SUSPENSION OF WORK.
- 5.9.2.2 The Contractor shall file with the Project Manager a written statement giving the name of the superintendent or agent assigned to the project. The Contractor shall be responsible for notifying the Project Manager in writing of any change in the superintendent or agent.
- 5.9.2.3 The requirements of this Subsection 5.9.2, SUPERINTENDENT may be waived by the Project Manager.
- 5.9.3 **ENGINEERING WORK.** The Contractor shall properly and accurately lay out the work, perform all engineering work, and furnish all engineering materials and equipment required to establish and maintain all lines, grades, dimensions and elevations called for in the drawings or required in the progress of construction, unless otherwise noted in the contract documents. The Contractor will be held definitely and absolutely responsible for any errors in lines, grades, dimensions and elevations and shall at once, on instruction from the Project Manager, correct and make good such errors or any errors, or faults in the work resulting from errors in engineering performed under the requirements of its contract to the entire satisfaction of the Project Manager. Full compensation for the work shall be included in the prices paid for contract items of work. No additional allowance will be made for the correction of incorrect engineering work.
 - 5.9.3.1 The Project Manager shall furnish the requisite bench elevations.
 - 5.9.3.2 The Contractor shall locate and verify all lines, grades, dimensions and elevations indicated on the drawings before any excavation, or construction begins. Any discrepancy shall be immediately brought to the attention of the Project Manager; any change shall be made in accordance with the Project Manager's instruction.
 - 5.9.3.3 The Contractor shall verify all street survey monuments (horizontal and vertical alignment) prior to final acceptance by the Project Manager in accordance with any governmental requirements.
 - 5.9.3.4 The Contractor shall provide a surveyor or Civil Engineer licensed in the State of Hawaii to verify and establish all lines, grades, dimensions and elevations.
- 5.9.4 **USE OF STRUCTURE OR IMPROVEMENT.** The Department shall have the right, at any time during construction of the structure or improvements, to enter same for the purpose of installing by government labor or by any other Contractor or utility any necessary work in connection with the installation of facilities, it being mutually understood and agreed, however, that the Contractors, utilities and the Department will, so far as possible work to the mutual advantage of all, where their several works in the above mentioned or in unforeseen instances touch upon or interfere with each other. As a convenience to those involved, the Project Manager shall allocate the work and designate the sequence of construction in case of controversy between Contractors on separate projects under Department jurisdiction.

- 5.9.4.1 The Department shall also have the right to use the structure, equipment, improvement or any part thereof, at any time after it is considered by the Project Manager as available. In the event that the structure, equipment or any part thereof is so used, the Department shall be responsible for all expenses incidental to such use and any damages resulting from the Department's use.
- 5.9.4.2 Equipment warranty will commence to run before the work is complete when and if the Department begins actual use of the equipment for the purpose for which the equipment was designed and installed.
- 5.9.4.3 If the Department enters the structure for construction and/or occupancy and the Contractor is delayed because of interference by the Department or by extra work resulting from damage which the Contractor is not responsible for, or by extraordinary measures the Contractor must take to accommodate the Department, the Contractor shall be granted an extension of time in accordance with Section 7.21, CONTRACT TIME. However, if such use increases the cost or delays the completion of the remaining portions of work, the Contractor shall be entitled to such extra compensation or extension of time or both, as the Department may determine to be proper. Any additional work necessary will be paid in accordance with Section 8.3, PAYMENT FOR ADDITIONAL WORK.
- 5.10 INSPECTION. The Project Manager, the Department's consultants, inspectors employed by the Department and other representatives duly authorized by the Department shall at all times have access to the work during its construction and shall be furnished with every reasonable facility for ascertaining at any time that the materials and the workmanship are in accordance with the requirements and intentions of the contract. All work done and all materials furnished shall be subject to inspection and acceptance.
- 5.10.1 Such inspection and approval may extend to all or part of the work, and to the preparation, fabrication or manufacture of the materials to be used. By entering into a contract for the supply of materials, equipment or performance of labor in connection with the work, such material and equipment supplier or labor contractor consents to and is subject to the terms of Section 5.9, COOPERATION BETWEEN THE CONTRACTOR AND THE DEPARTMENT to the same extent as the Contractor.
- 5.10.2 AUTHORITY TO SUSPEND OPERATIONS. The Project Manager shall have the authority to suspend operations of any work being improperly performed by issuing a written order giving the reason for shutting down the work. Should the Contractor disregard such written order, the work done thereafter will not be accepted nor paid for.
- 5.10.3 The inspection of the work shall not relieve the Contractor of any of its obligations to fulfill the contract as prescribed. Notwithstanding prior payment and acceptance by the Project Manager, any defective and nonconforming work shall be corrected to comply with the contract requirements. Unsuitable, unspecified or unapproved materials may be rejected.
- 5.10.4 FEDERAL AGENCY INSPECTION. Projects financed in whole or in part with Federal funds shall be subject to inspection and corrective requirements at all times by the Federal Agency involved at no cost to the Department.
- 5.11 REMOVAL OF DEFECTIVE, NON-CONFORMING AND UNAUTHORIZED WORK
- 5.11.1 All work which has been rejected as not conforming to the requirements of the Contract shall be remedied or removed and replaced by the Contractor in an acceptable manner and no compensation

will be allowed for such removal or replacement. Any work done beyond the work limits shown on the drawings and specifications or established by the Project Manager or any additional work done without written authority will be considered as unauthorized and will not be paid for. work so done may be ordered removed at the Contractor's expense.

- 5.11.2 SCHEDULING CORRECTIVE WORK. The Contractor shall perform its corrective or remedial work at the convenience of the Department and shall obtain the Project Manager's approval of its schedule.
- 5.11.3 FAILURE TO CORRECT WORK. Upon failure on the part of the Contractor to comply promptly with any order of the Project Manager made under the provisions of Section 5.10, the Project Manager shall have authority to cause defective work to be remedied or removed and replaced, and unauthorized work to be removed, at the Contractor's expense, and to deduct the costs from any monies due or to become due the Contractor.
- 5.12 VALUE ENGINEERING INCENTIVE (§3-132 HAR amended by Act 149 SLH 1999). On projects with contract amounts in excess of \$250,000 (two hundred fifty thousand dollars), the following Value Engineering Incentive Clause shall apply to allow the Contractor to share in cost savings that ensue from cost reduction proposals it submits.
 - 5.12.1 The Value Engineering Incentive Clause applies to all Value Engineering Change Proposals (cost reduction proposals, hereinafter referred to as (VECP) initiated and developed by the Contractor for changing the drawings, designs, specifications or other requirements of this contract. This clause does not however, apply to any VECP unless it is identified as such by the Contractor at the time of its submission to the Project Manager.
 - 5.12.2 VALUE ENGINEERING CHANGE PROPOSAL (VECP). All VECP must:
 - 5.12.2.1 Result in a savings to the Department of at least \$4000 (four thousand dollars) by providing less costly items and without impairing any essential functions and characteristics such as service life, reliability, economy of operation, ease of maintenance and all necessary features of the completed work;
 - 5.12.2.2 Require, in order to be applied to this Contract, a change order to this Contract; and
 - 5.12.2.3 Not adversely impact on the schedule of performance or the Contract completion date.
 - 5.12.3 VECP REQUIRED INFORMATION. The VECP will be processed expeditiously and in the same manner as prescribed for any other change order proposal. As a minimum, the following information will be submitted by the Contractor with each proposal:
 - 5.12.3.1 A description of the difference between the existing contract requirements and the VECP, and the comparative advantages and disadvantages of each including durability, service life, reliability, economy of operation, ease of maintenance, design safety standards, desired appearance, impacts due to construction and other essential or desirable functions and characteristics as appropriate;
 - 5.12.3.2 An itemization of the requirements of the contract which must be changed if the VECP is adopted and a recommendation as to how to make each such change;

- 5.12.3.3 An estimate of the reduction in performance costs that will result from adoption of the VECP taking into account the costs of implementation by the Contractor, including any amounts attributable to subcontracts, and the basis for the estimate;
- 5.12.3.4 A prediction of any effects the VECP would have on other costs to the Department, such as Department furnished property costs, costs of related items, and costs of maintenance and operation over the anticipated life of the material, equipment, or facilities as appropriate; the construction schedule, sequence and time; and bid item totals used for evaluation and payment purposes;
- 5.12.3.5 A statement of the time by which a change order adopting the VECP must be issued so as to obtain the maximum cost reduction during the remainder of this contract noting any effect on the contract time; and 5.12.3.6 The dates of any previous submissions of the VECP, the numbers of any Government contracts under which submitted and the previous actions by the Government, if known.
- 5.12.4 **REQUIRED USE OF LICENSED ARCHITECT OR ENGINEER.** When, in the judgment of the Project Manager, a VECP alters the design prepared by a registered professional architect or engineer, the Contractor shall ensure the changes to be prepared are by or under the supervision of a licensed professional architect or engineer, and stamped and so certified.
- 5.12.5 Unless and until a change order applies a VECP to a contract, the Contractor shall remain obligated to perform in accordance with the terms of the contract and the Department shall not be liable for delays incurred by the Contractor resulting from the time required for the Department's determination of the acceptability of the VECP.
- 5.12.5.1 The determination of the Project Manager as to the acceptance of any VECP under a contract shall be final.
- 5.12.6 **ACCEPTANCE OF VECP.** The Project Manager may accept in whole or in part any VECP submitted pursuant to this section by issuing a change order to the Contract. Prior to issuance of the change order, the Contractor shall submit complete final contract documents similar to those of the original Contract showing the accepted changes and the new design and features as well as the following:
- 5.12.6.1 Design calculations;
- 5.12.6.2 The design criteria used; and
- 5.12.6.3 A detailed breakdown of costs and expenses to construct or implement such revisions.
- 5.12.6.4 The change order will identify the final VECP on which it is based.
- 5.12.7 **VECP PRICE ADJUSTMENTS.** When a VECP is accepted under a contract, an adjustment in the contract price shall be made in accordance with Section 4.4, PRICE ADJUSTMENT. The adjustment shall first be established by determining the effect on the Contractor's cost of implementing the change, including any amount attributable to subcontractors and to the Department's charges to the Contractor for architectural, engineering, or other consultant services, and the staff time required to examine and review the proposal. The contract price shall then be reduced by fifty percent (50%) of the net estimated decrease in the cost of performance.

- 5.12.8 The Contractor may restrict the Department's right to use the data or information or both, on any sheet of a VECP or of the supporting data, submitted pursuant to this Subsection, if it is stated on that sheet as follows:
- 5.12.8.1 "This data or information or both shall not be disclosed outside the Department or be duplicated, used, or disclosed, in whole or in part, for any purpose other than to evaluate this VECP. This restriction shall not limit the Department's right to use this data or information or both if obtained from another source, or is otherwise available, without limitations. If this VECP is accepted by the Department by issuance of a change order after the use of this data or information or both in such an evaluation, the Department shall have the right to duplicate, use and disclose any data or information or both pertinent to the proposal as accepted in any manner and for any purpose whatsoever and have others so do."
- 5.12.9 In the event of acceptance of a VECP, the Department shall have all rights to use, duplicate or disclose in whole or in part in any manner and for any purpose whatsoever, and to have or permit others to do so, any data or information or both reasonably necessary to fully utilize such proposal.
- 5.12.10 The Contractor shall submit with each VECP all required information and provide all additional information as may be required by the Project Manager to evaluate and implement the VECP. The cost for preparing the VECP shall be the Contractor's responsibility, and any part of the Contractor's cost for implementing the change shall be due only when the proposal is accepted and a change order is issued.
- 5.12.11 If the service of the Department's architect, Project Manager or consultant is necessary to review and evaluate a VECP, the cost therefor shall be paid for by the Contractor.
- 5.12.12 Each VECP shall be evaluated as applicable to this contract, and past acceptance on another Department project for a similar item shall not be automatic grounds for approval.
- 5.12.13 The method by which the Contractor will share a portion of the cost savings from an accepted VECP shall be for this contract only, and no consideration shall be made for future acquisition, royalty type payment or collateral savings.
- 5.12.13.1 The Department may accept the proposed VECP in whole or in part. The Chairman shall issue a contract change order to identify and describe the accepted VECP.
- 5.13 SUBCONTRACTS. Nothing contained in the contract documents shall create a contractual relationship between the Department and any subcontractor.
- 5.13.1 SUBSTITUTING SUBCONTRACTORS. Contractors may enter into subcontracts only with subcontractors listed in the proposal. No subcontractor may be added or deleted and substitutions will be allowed only if the subcontractor:
- 5.13.1.1 Fails, refuses or is unable to enter into a subcontract; or
- 5.13.1.2 Becomes insolvent; or
- 5.13.1.3 Has its subcontractor's license suspended or revoked; or
- 5.13.1.4 Has defaulted or has otherwise breached the subcontract in connection with the subcontracted work; or

- 5.13.1.5 Is unable to comply with other requirements of law applicable to contractors, subcontractors and public works projects.
- 5.13.2 Requesting Approval to Substitute a Subcontractor. Requests to substitute a subcontractor shall be submitted to the Project Manager for approval. Contractor agrees to hold the Department harmless and indemnify the Department for all claims, liabilities, or damages whatsoever, including attorney's fees arising out of or related to the approval or disapproval of the substitution.
- 5.13.3 The Contractor shall cause appropriate provisions to be inserted in all subcontracts relative to the work to bind subcontractors to the Contractor by the terms of the General Conditions and the other contract documents insofar as applicable to the work of the subcontractor and to give the Contractor the same rights regarding the termination of a subcontractor as the Department may exercise over the Contractor.
- 5.13.4 The Contractor shall not sponsor any unliquidated subcontractor's claim against the Department and shall defend, indemnify and hold the Department harmless against any direct claims by its subcontractors. Any claim for additional compensation by a subcontractor in connection with the work shall be made only against the Contractor. The Contractor may not assert any such claim against the Department until the liability of the Contractor has been unconditionally established by negotiation, arbitration or litigation, and the amount due the subcontractor has been determined, save for interest due.
- 5.13.5 Once a subcontractor's claim is established, should the Contractor intend to make the claim against the Department, it shall follow the procedure set forth under Section 7.25, DISPUTES AND CLAIMS.
- 5.13.6 SUBCONTRACTING. Contractor shall perform with its own organization, work amounting to not less than twenty percent (20%) of the total contract cost, exclusive of costs for materials and equipment the Contractor purchases for installation by its subcontractors, except that any items designated by the Department in the contract as "specialty items" may be performed by a subcontractor and the cost of any such specialty items so performed by the subcontractor may be deducted from the total contract cost before computing the amount of work required to be performed by the Contractor with its own organization. For the purposes of this section, the Contractor's work is defined as: direct cost labor for contractor's forces; direct cost materials installed by the contractor's direct cost labor force; direct cost equipment, either owned or leased, used by the contractor's direct cost labor force; and field overhead cost to include: field supervision, field office trailer (if any), field office equipment and supplies, etc.

~END OF ARTICLE 5~

ARTICLE 6: CONTROL OF MATERIALS AND EQUIPMENT

- 6.1 MATERIALS AND EQUIPMENT. Contractor shall furnish, pay for and install all material and equipment as called for in the drawings and specifications. Materials and equipment shall be new and the most suitable for the purpose intended unless otherwise specified. The Department does not guarantee that the specified or pre-qualified product listed in the drawings and specifications are available at the time of bid or during the contract period.
- 6.2 SOURCE OF SUPPLY AND QUALITY OF MATERIALS
- 6.2.1 Only materials conforming to the drawings and specifications and, when required by the contract have been accepted by the Project Manager, shall be used. In order to expedite the inspection and testing of materials, at the request of the Project Manager, the Contractor shall identify its proposed sources of materials within ten (10) days after notification by the Project Manager.
- 6.2.2 At the option of the Project Manager, the materials may be accepted by the Project Manager at the source of supply before delivery is started. Representative preliminary samples of the character and quantity prescribed shall be submitted by the Contractor or producer for examination and tested in accordance with the methods referred to under samples and tests.
- 6.2.3 PROJECT MANAGER'S AUTHORIZATION TO TEST MATERIALS. Materials proposed to be used may be inspected and tested whenever the Project Manager deems necessary to determine conformance to the specified requirements. The cost of testing shall be borne by the Contractor. However, should test results show that the material(s) is in compliance with the specified requirements; the cost of the testing will be borne by the Department.
- 6.2.4 UNACCEPTABLE MATERIALS. In the event material(s) are found to be unacceptable, the Contractor shall cease their use, remove the unacceptable material(s) that have already been installed or applied, and furnish acceptable materials all at no additional cost to the Department. No material which is in any way unfit for use shall be used.
- 6.3 SUBSTITUTION OF MATERIALS AND EQUIPMENT
- 6.3.1 SUBSTITUTION OF MATERIALS AND EQUIPMENT BEFORE BID OPENING For materials and equipment submitted in compliance with Instructions to Bidders, if after installing the substituted product, an unlisted variance is discovered the Contractor shall immediately replace the product with a specified product at no cost to the Department.
- 6.3.2 SUBSTITUTION AFTER CONTRACT AWARD. Subject to the Project Manager's determination if the material or equipment is equal to the one specified or prequalified, substitution of material or equipment may be allowed after the Letter of Award is issued only:
- 6.3.2.1 If the specified or prequalified item is delayed by unforeseeable contingencies beyond the control of the Contractor which would cause a delay in the project completion; or
- 6.3.2.2 If any specified or prequalified item is found to be unusable or unavailable due to a change by the manufacturer or other circumstances; or
- 6.3.2.3 If the Contractor desires to provide a more recently developed material, equipment, or manufactured model from the same named manufacturer than the one specified or prequalified; or
- 6.3.2.4 If the specified material and / or equipment inadvertently lists only a single manufacturer.

- 6.3.3 A substitution request after the Contract is awarded shall be fully explained in writing. Contractor shall provide brochures showing that the substitute material and / or equipment is equal or better in essential features and also provide a matrix showing comparison of the essential features. Contractor shall justify its request and include quantities and unit prices involved, respective supplier's price quotations and such other documents necessary to fully support the request. Any savings in cost will be credited to the Department. Contractor shall absorb any additional cost for the substitute item(s) or for its installation. Submitting a substitution request, does not imply that substitutions, for brand name specified materials and equipment will be allowed. The Project Manager may reject and deny any request deemed irregular or not in the best interest of the Department. A request for substitution shall not in any way be grounds for an extension of contract time. At the discretion of the Project Manager, a time extension may be granted for an approved substitution.
- 6.4 ASBESTOS CONTAINING MATERIALS. The use of materials or equipment containing asbestos is prohibited under this contract. Contractor warrants that all materials and equipment incorporated in the project are asbestos-free.
- 6.5 TEST SAMPLES
- 6.5.1 The Project Manager may require any or all materials to be tested by means of samples or otherwise. Contractor shall collect and forward samples requested by the Project Manager. Contractor shall not use or incorporate any material represented by the samples until all required tests have been made and the material has been accepted. In all cases, the Contractor shall furnish the required samples without charge. Where samples are required from the completed work, the Contractor shall cut and furnish samples from the completed work. Samples so removed shall be replaced with identical material and refinished. No additional compensation will be allowed for furnishing test samples and their replacement with new materials.
- 6.5.2 Tests of the material samples will be made in accordance with the latest standards of the American Society for Testing and Materials (ASTM), as amended prior to the contract date unless otherwise provided. In cases where a particular test method is necessary or specifications and serial numbers are stipulated, the test shall be made by the method stated in the above-mentioned publication. Where the test reference is the American Association of State Highway and Transportation Officials (AASHTO), it means the specifications and serial numbers of the latest edition and amendments prior to the bid date.
- 6.5.3 The Project Manager may, at no extra cost to the Department retest any materials which have been tested and accepted at the source of supply after the same has been delivered to the work site. The Project Manager shall reject all materials which, when retested, do not meet the requirements of the Contract.
- 6.6 MATERIAL SAMPLES
- 6.6.1 The Contractor shall furnish all samples required by the drawings and specifications or that may be requested by the Project Manager of any and all materials or equipment it proposes to use. Unless specifically required, samples are not to be submitted with the bid.
- 6.6.2 No materials or equipment of which samples are required shall be used on the work until the Project Manager has received and accepted the samples. If the Contractor proceeds to use such materials before the Project Manager accepts the samples, the Contractor shall bear the risk.

- 6.6.3 Contractor shall furnish two (2) copies of a transmittal letter with each shipment of samples. The letter shall provide a list of the samples, the name of the building or work for which the materials are intended and the brands of the materials and names of the manufacturers. Also, each sample submitted shall have a label indicating the material represented, its place of origin, the names of the producer, the Contractor and the building or work for which the material is intended. Samples of finished materials shall be marked to indicate where the materials represented are required by the drawings or specifications.
- 6.6.4 Acceptance of any sample(s) shall be only for the characteristics or for the uses named in such acceptance and for no other purpose. Acceptance of samples shall not change or modify any contract requirement. All samples will be provided by the Contractor at no extra cost to the Department. See also Section 5.5, SHOP DRAWINGS AND OTHER SUBMITTALS.
- 6.7 NON-CONFORMING MATERIALS. All materials not conforming to the requirements of this contract documents, whether in place or not, shall be rejected and removed immediately from the site of work unless otherwise permitted by the Project Manager in writing. No rejected material which has subsequently been made to conform shall be used unless and until written acceptance has been given by the Project Manager. If the Contractor fails to comply forthwith with any order of the Project Manager made under the provisions of this Section 6.7, NON-CONFORMING MATERIALS the Project Manager shall have the authority to remove and replace non-conforming materials and charge the cost of removal and replacement to the Contractor.
- 6.8 HANDLING MATERIALS. Contractor shall handle all materials to preserve their quality and fitness for work. Transport aggregates from the source or storage site to the work in tight vehicles to prevent loss or segregation of materials after loading and measuring.
- 6.9 STORAGE OF MATERIALS. Contractor shall store all materials to preserve their quality and fitness for the work. Unless otherwise provided, any portion of the project site within the Project Contract Limit not required for public travel may be used for storage purposes and for the Contractor's plant and equipment. Any additional space required shall be provided by the Contractor at its expense subject to the Project Manager's acceptance. Contractor shall store materials on wooden platforms or other hard, clean surfaces and covered to protect it from the weather and damage. Stored materials shall be located to allow prompt inspection.
- 6.10 PROPERTY RIGHTS IN MATERIALS. Nothing in the contract shall be construed to vest in the Contractor any right to any materials and equipment after such materials and equipment have been attached, affixed to, or placed in the work.
- 6.11 ANTITRUST CLAIMS. The STATE and the CONTRACTOR recognized that in actual economic practice, overcharges resulting from antitrust violations are in fact usually borne by the purchaser. Therefore, the CONTRACTOR hereby assigns to STATE any and all claims for overcharges as to goods and material purchased in connection with this Contract, except as to overcharges which result from violations commencing after the price is established under this Contract and which are not passed on to the STATE under an escalation clause.

~END OF SECTION 6~

ARTICLE 7: PROSECUTION AND PROGRESS (Including Legal Relations and Responsibility)

7.1 PROSECUTION OF THE WORK

- 7.1.1 After approval of the Contract by the Chairman, a Notice to Proceed will be given to the Contractor as described in Section 3.10, NOTICE TO PROCEED. The Notice to Proceed will indicate the date the Contractor is expected to begin the construction and from which date contract time will be charged.
- 7.1.2 The Contractor shall begin work no later than ten (10) working days from the date in the Notice to Proceed and shall diligently prosecute the same to completion within the contract time allowed. The Contractor shall notify the Project Manager at least three (3) working days before beginning work.
- 7.1.3 If any subsequent suspension and resumption of work occurs, the Contractor shall notify the Project Manager at least twenty-four (24) hours before stopping or restarting actual field operations.
- 7.1.4 **WORKING PRIOR TO NOTICE TO PROCEED.** The Contractor shall not begin work before the date in the Notice to Proceed. Should the Contractor begin work before receiving the Notice to Proceed, any work performed in advance of the specified date will be considered as having been done at the Contractor's risk and as a volunteer and subject to the following conditions:
 - 7.1.4.1 Under no circumstances shall the Contractor commence work on site until it has notified the Project Manager of its intentions and has been advised by the Project Manager in writing that the project site is available to the Contractor. The project site will not be made available until the Contractor has complied with commencement requirements under Section 7.2, COMMENCEMENT REQUIREMENTS.
 - 7.1.4.2 In the event the contract is not executed, the Contractor shall, at its own expense, do such work as is necessary to leave the site in a neat condition to the satisfaction of the Project Manager. The Contractor shall not be reimbursed for any work performed.
 - 7.1.4.3 All work done prior to the Notice to Proceed shall be performed in accordance with the Contract Documents, but will only be considered authorized work and be paid for as provided in the Contract after the Notice to Proceed is issued.
- 7.1.5 For repairs and/or renovations of existing buildings, unless otherwise permitted by the Project Manager, the Contractor shall not commence with the physical construction unless all or sufficient amount of materials are available for either continuous construction or completion of a specified portion of the work. When construction is started, the Contractor shall work expeditiously and pursue the work diligently until it is complete. If only a portion of the work is to be done in stages, the Contractor shall leave the area safe and usable for the user agency at the end of each stage.
- 7.2 **COMMENCEMENT REQUIREMENTS.** Prior to beginning work on site, the Contractor shall submit the following to the Project Manager:
 - 7.2.1 Identification of the Superintendent or authorized representative on the job site. Refer to Section 5.9, COOPERATION BETWEEN THE CONTRACTOR AND THE DEPARTMENT;
 - 7.2.1.1 Identification of the surveyor who shall be licensed in the State of Hawaii and will work for it throughout the course of the project. Refer to Section 5.9.3.4.

- 7.2.2 Proposed Working Hours on the job. Refer to Section 7.5, NORMAL WORKING HOURS;
- 7.2.3 Permits and Licenses. Refer to Section 7.4, PERMITS AND LICENSES;
- 7.2.4 Schedule of Prices to be accepted for the agreed Monthly Payment Application. Unless the proposal provides unit price bids on all items in this project, the successful Bidder will be required, after the award of contract, to submit a schedule of prices for the various items of construction included in the contract. For projects involving more than a single building and / or facility, the breakdown cost shall reflect a separate schedule of prices for the various items of work for each building and/or facility. The sum of the prices submitted for the various items must equal the lump sum bid in the Bidder's proposal. This schedule will be subject to acceptance by the Project Manager who may reject same and require the Bidder to submit another or several other schedules if in the Project Manager's opinion the prices are unbalanced or not sufficiently detailed. This schedule of prices shall be used for the purpose of determining the value of monthly payments due the Contractor for work installed complete in place; and may be used as the basis for determining cost and credit of added or deleted items of work, respectively;
- 7.2.4.1 The Contractor shall estimate at the close of each month the percentage of work completed under each of the various construction items during such month and submit the Monthly Payment Application to the Project Manager for review and approval. The Contractor shall be paid the approved percentage of the price established for each item less the retention provided in Section 8.4, PROGRESS AND/OR PARTIAL PAYMENTS; and
- 7.2.5 PROOF OF INSURANCE COVERAGE. Certificate of Insurance or other documentary evidence satisfactory to the Project Manager that the Contractor has in place all insurance coverage required by the contract. Refer to Section 7.3, INSURANCE REQUIREMENTS.
- 7.2.6 Until such time as the above items are processed and approved, the Contractor shall not be allowed to commence on any operations unless authorized by the Project Manager.
- 7.3 INSURANCE REQUIREMENTS
- 7.3.1 OBLIGATION OF CONTRACTOR. Contractor shall not commence any work until it obtains, at its own expense, all required herein insurance. Such insurance shall be provided by an insurance company authorized by the laws of the State to issue such insurance in the State of Hawaii. Coverage by a "Non-Admitted" carrier is permissible provided the carrier has a Best's Rating of "A-VII" or better.
- 7.3.2 All insurance described herein will be maintained by the Contractor for the full period of the contract and in no event will be terminated or otherwise allowed to lapse prior to written certification of final acceptance of the work by the Department.
- 7.3.3 Certificate(s) of Insurance acceptable to the Department shall be filed with the Project Manager prior to commencement of the work. Certificates shall identify if the insurance company is a "captive" insurance company or a "Non-Admitted" carrier to the State of Hawaii. The Best's rating must be stated for the "Non-Admitted" carrier. Certificates shall contain a provision that coverage(s) being certified will not be cancelled or materially changed without giving the Project Manager at least thirty (30) days prior written notice. The Department is to be named as Additional Insured on any of the required insurance and it shall be so noted on the certificate. Should any policy be cancelled before final acceptance of the work by the Department, and the Contractor fails to immediately procure replacement insurance as specified, the Department, in addition to all other remedies it may have for

such breach, reserves the right to procure such insurance and deduct the cost thereof from any money due to the Contractor.

- 7.3.4 Nothing contained in these insurance requirements is to be construed as limiting the extent of Contractor's responsibility for payment of damages resulting from its operations under this Contract, including the Contractor's obligation to pay liquidated damages, nor shall it affect the Contractor's separate and independent duty to defend, indemnify and hold the Department harmless pursuant to other provisions of this Contract. In no instance will the Department's exercise of an option to occupy and use completed portions of the work relieve the Contractor of its obligation to maintain the required insurance until the date of final acceptance of the work.
- 7.3.5 All insurance described herein shall be primary and cover the insured for all work to be performed under the Contract, all work performed incidental thereto or directly or indirectly connected therewith, including traffic detour work or other work performed outside the work area and all change order work.
- 7.3.6 The Contractor shall, from time to time, furnish the Project Manager, when requested, satisfactory proof of coverage of each type of insurance required covering the work. Failure to comply with the Project Manager's request may result in suspension of the work, and shall be sufficient grounds to withhold future payments due the Contractor and to terminate the contract for Contractor's default.
- 7.3.7 TYPES OF INSURANCE. Contractor shall purchase and maintain insurance described below which shall provide coverage against claims arising out of the Contractor's operations under the Contract, whether such operations be by the Contractor itself or by any subcontractor or by anyone directly or indirectly employed by any of them or by anyone for whose acts any of them may be liable.
- 7.3.7.1 WORKER'S COMPENSATION. The Contractor shall obtain worker's compensation insurance for all persons whom they employ in carrying out the work under this contract. This insurance shall be in strict conformity with the requirements of the most current and applicable State of Hawaii Worker's Compensation Insurance laws in effect on the date of the execution of this contract and as modified during the duration of the contract.
- 7.3.7.2 COMMERCIAL GENERAL LIABILITY INSURANCE AND AUTOMOBILE INSURANCE. Contractor's commercial general liability insurance and automobile liability insurance shall both be obtained in a combined, single limit of not less than \$1,000,000 (one million dollars) unless otherwise indicated in the Special Conditions per occurrence that shall include coverage for bodily injury, sickness, disease or death of any person, arising directly or indirectly out of, in connection with, the performance of work under this contract.
- 7.3.7.3 "General Liability and Automobile Insurance. CONTRACTOR shall maintain, at its own expense, the minimum insurance coverage specified below, or as amended in the Special Conditions, throughout the term of this Contract.
- a. General Liability insurance providing coverage of no less than ONE MILLION DOLLARS (\$1,000,000.00) per occurrence and TWO MILLION DOLLARS (\$2,000,000.00) in the aggregate.
 - b. Automobile insurance providing coverage of no less than ONE MILLION DOLLARS (\$1,000,000.00) per accident."
- 7.3.7.4 The Contractor shall either (a) Require each of its subcontractors to procure and to maintain during the life of its subcontract, subcontractor's comprehensive general liability, automobile liability and

property damage liability insurance of the type and in the same amounts specified herein; or (b) Insure the activities of its subcontractors in its own policy.

- 7.3.7.5 **BUILDERS RISK INSURANCE.** Unless excluded by the Special Conditions of this contract, the Contractor shall provide builder's risk insurance during the progress of the work and until final acceptance by the Department upon completion of the contract. It shall be "All Risk" (including but not limited to earthquake, windstorm and flood damage) completed value insurance coverage on all completed work and work in progress to the full replacement value thereof. Such insurance shall include the Department as an additional named insured. The Contractor shall submit to the Project Manager for its approval all items deemed to be uninsurable. The policy may provide for a deductible in an amount of up to twenty five percent (25%) of the amount insured by the policy. With respect to all losses up to any deductible amount, the relationship between the Contractor and the Department shall be that of insurer and the additional insured respectively as if no deductible existed. The Contractor is responsible for theft, if any item of the contract is stolen prior to, or after installation, until the work is accepted by the Department. Progress payment does not constitute acceptance.

7.4 PERMITS AND LICENSES

- 7.4.1 The Department or its representative may process Federal (e.g. Army Corps of Engineers), State and county permit applications. The Contractor shall pick up the preprocessed Permits at the appropriate governmental agency and pay the required fees. Other permits necessary for the proper execution of the work such as utility connection permits, elevator installation permits etc., unless processed by the Department and paid for by the Contractor, shall be obtained and paid for by the Contractor.

- 7.4.2 Until such time as the above permits are approved, the Contractor shall not be allowed to commence any operations without written approval of the Project Manager.

- 7.4.3 The Project Manager reserves the right to waive application and processing of the building permit.

- 7.5 **NORMAL WORKING HOURS.** Prior to beginning operations, unless otherwise established by the Department, the Contractor shall notify the Project Manager in writing of the time in hours and minutes, A.M. and P.M. respectively, at which it desires to begin and end the day's work. If the Contractor desires to change the working hours, it shall request the Project Manager's approval three (3) consecutive working days prior to the date of the change.

7.6 HOURS OF LABOR (§104-2 HRS)

- 7.6.1 No laborer or mechanic employed on the job site of any public work of the Department or any political sub-division thereof shall be permitted or required to work on Saturday, Sunday or a legal holiday of the State or in excess of eight (8) hours on any other day unless the laborer or mechanic receives overtime compensation for all hours worked on Saturday, Sunday and a legal holiday of the State or in excess of eight (8) hours on any other day. For the purposes of determining overtime compensation under this Section 7.6, HOURS OF LABOR (§104-2 HRS) the basic hourly rate of any laborer or mechanic shall not be less than the basic hourly rate determined by the Department of Labor and Industrial Relations to be the prevailing basic hourly rate for corresponding classes of laborers and mechanics on projects of similar character in the Department.

- 7.6.2 Overtime compensation means compensation based on one and one-half times the laborers or mechanics basic hourly rate of pay plus the cost to an employer of furnishing a laborer or mechanic with fringe benefits.

7.7 PREVAILING WAGES (State §104-2 HRS & Federal Davis-Bacon)

7.7.1 The Contractor shall at all time observe and comply with all provisions of Chapter 104, HRS, the significant requirements of which are emphasized in the Department of Labor and Industrial Relations Publication No. H104-3 entitled "Requirements of Chapter 104, Hawaii Revised Statutes, Wages and Hours of Employees on Public Works Law". The Contractor must also comply with all provisions of Federal Davis-Bacon Act (40 U.S.C. 276-276a-5 and Code of Federal Regulation (CFR) Title 29 and related Acts.

7.7.2 WAGE RATE SCHEDULE. The wage rate schedule may not be physically enclosed in the bid documents. However, the wage rate schedule is incorporated herein by reference and made a part of the Bid and Contract Documents. The bidder must obtain and use the latest minimum rates ten (10) days prior to the date set for the bid opening of bids. The wage rate schedule may be obtained from the DHHL, Labor Compliance Specialist, Hale Kalanianaʻole, 91-5420 Kapolei Parkway, Kapolei, Hawaii, 96707 or, State Department of Labor and Industrial Relations web site:

<http://labor.hawaii.gov/rs/home/wages/72-2/>

or the Federal Department of Labor (Davis- Bacon) wage rate schedule web site:

<http://www.wdol.gov>.

7.7.3 The Contractor or its subcontractor(s) shall pay all laborers and mechanics employed on the job site, unconditionally and not less often than once a week, and without deduction or rebate on any account except as allowed by law, the full amounts of their wages including overtime, accrued to not more than five (5) working days prior to the time of payment, at wage rates not less than those stated in the contract, regardless of any contractual relationship which may be alleged to exist between the Contractor and subcontractor and such laborers and mechanics. The wages stated in the contract shall not be less than the minimum prevailing wages (basic hourly rate plus fringe benefits), as determined by the of Labor and Industrial Relations and published in wage rate schedules. Any increase in wage rates, as determined by the of Labor and Industrial Relations and issued in the wage rate schedule, shall be applicable during the performance of the contract, in accordance with Section 104-2(a) and (b), Hawaii Revised Statutes. Notwithstanding the provisions of the original contract, if the of Labor and Industrial Relations determines that prevailing wages have increased during the performance of the contract, the rate of pay of laborers and mechanics shall be raised accordingly.

7.7.4 The applicable wage rate schedule shall be physically included in the Contract Documents executed by the successful Bidder.

7.7.5 POSTING WAGE RATE SCHEDULE. The rates of wages to be paid shall be posted by the Contractor in a prominent and easily accessible place at the job site and a copy of such wages required to be posted shall be given to each laborer and mechanic employed under the contract by the Contractor at the time the person is employed thereunder, provided that where there is a collective bargaining agreement, the Contractor does not have to provide its employees the wage rate schedules. Any revisions to the schedule of wages issued by the Department of Labor and Industrial Relations during the course of the Contract shall also be posted by the Contractor and a copy provided to each laborer and mechanic employed under the Contract as required above.

7.7.6 The Chairman may withhold from the Contractor so much of the accrued payments as the Chairman may consider necessary to pay to laborers and mechanics employed by the Contractor or any

subcontractor on the job site. The accrued payments withheld shall be the difference between the wages required by this Contract and the wages actually received by such laborers or mechanics.

7.8 FAILURE TO PAY REQUIRED WAGES (§104-4, HRS or Federal Davis-Bacon). If the Department finds that any laborer or mechanic employed on the job site by the Contractor or any subcontractor has been or is being paid wages at a rate less than the required rate by the Contract, or has not received their full overtime compensation, the Department may, by written notice to the Contractor, terminate its right, or the right of any subcontractor, to proceed with the work or with the part of the work on which the required wages or overtime compensation have not been paid and may complete such work or part by contract or otherwise, and the Contractor and its sureties shall be liable to the Department for any excess costs occasioned thereby.

7.9 PAYROLLS AND PAYROLL RECORDS (§104-3 HRS)

7.9.1 A certified copy of each weekly payroll shall be submitted to the Chairman within seven (7) calendar days after the end of each weekly payroll period. Failure to do so on a timely basis shall be cause for withholding of payments, termination of the contract, and/or debarment. The Contractor shall be responsible for the timely submission of certified copies of payrolls of all subcontractors. The certification shall affirm that payrolls are correct and complete, that the wage rates contained therein are not less than the applicable rates contained in the wage determination decision, any amendments thereto during the period of the contract, and that the classifications set forth for each laborer and mechanic conform with the work they performed.

7.9.2 Payroll records for all laborers and mechanics working at the site of the work shall be maintained by the General Contractor and its subcontractors, if any, during the course of the work and preserved for a period of four (4) years thereafter. Such records shall contain the name of each employee, their address, their correct classification, rate of pay, daily and weekly number of hours worked, itemized deductions made and actual wages paid. Such records shall be made available for inspection at a place designated by the Chairman, the U.S. Department of Labor and any authorized persons who may also interview employees during working hours on the job site.

7.9.3 Note that the falsification of certifications noted in this Section 7.9, PAYROLLS AND PAYROLL RECORDS (§104-3 HRS) may subject the Contractor or subcontractor to penalties and debarment under the laws referenced in Section 7.14, LAWS TO BE OBSERVED and / or criminal prosecution.

7.10 OVERTIME AND NIGHT WORK

7.10.1 Overtime work shall be considered as work performed in excess of eight (8) hours in any one (1) day or work performed on Saturday, Sunday or legal holiday of the State. Overtime and night work are permissible when approved by the Project Manager in writing, or as called for elsewhere within these Contract Documents.

7.10.2 OVERTIME NOTIFICATION. Contractor shall inform the Project Manager in writing at least two (2) working days in advance as to exactly what specific work is to be done during any overtime and night period to ensure that proper inspection will be available.

7.10.3 In the event that work other than that contained in the above notification is performed and for which the Project Manager determines Department inspection services were necessary but not available because of the lack of notification, the Contractor may be required to remove all such work and perform the work over again in the presence of Department inspection personnel.

- 7.10.4 Any hours worked in excess of the normal eight (8) working hours per day or on Saturdays, Sundays or legal State holidays will not be considered a working day.
- 7.10.5 The Department hereby reserves the right to cancel the overtime, night, Saturday, Sunday or legal State holiday work when it is found that work during these periods is detrimental to the public welfare or the user agency.
- 7.11 OVERTIME AND NIGHT PAYMENT FOR DEPARTMENT INSPECTION SERVICE
- 7.11.1 Whenever the Contractor's operations require the Department's inspection and staff personnel to work overtime or at night, the Contractor shall reimburse the Department for the cost of such services unless otherwise instructed in the Contract. The Project Manager will notify the Contractor of the minimum number of required Department employees and other personnel engaged by the Department prior to the start of any such work. The costs chargeable to the Contractor shall include but not be limited to the following:
- 7.11.1.1 The cost of salaries which are determined by the Department and includes overtime and night time differential for the Department's staff and inspection personnel. In addition to the cost of the salaries, the Contractor shall reimburse the Department's share of contributions to the employee's retirement, medical plan, social security, vacation, sick leave, worker's compensation funds, per diem, and other applicable fringe benefits and overhead expenses;
- 7.11.1.2 The transportation cost incurred by the Department's staff and inspection personnel which are based on established rental rates or mileage allowance in use by the Department for the particular equipment or vehicle; and/or
- 7.11.1.3 Fees and other costs billed the Department by Consultants engaged on the project for overtime and/or night time work.
- 7.11.2 PAYMENT FOR INSPECTION SERVICES. The monies due the Department for staff and inspection work and use of vehicles and equipment as determined in Subsection 7.11.1, OVERTIME AND NIGHT PAYMENT FOR DEPARTMENT INSPECTION SERVICE shall be deducted from the monies due or to become due the Contractor. In any and all events, the Contractor shall not pay the Department's employees directly.
- 7.12 LIMITATIONS OF OPERATIONS
- 7.12.1 Contractor shall at all times conduct the work in such manner and in such sequence as will ensure the least practicable interference with pedestrian and motor traffic passageways. The Contractor shall furnish convenient detours and provide and plan other appropriate signs, flashers, personnel, warnings, barricades and other devices for handling pedestrian and motor traffic.
- 7.12.2 In the event that other contractors are also employed on the job site, the Contractor shall arrange its work and dispose of materials so as not to interfere with the operations of the other contractors engaged upon adjacent work. The Contractor shall join its work to that of others and existing buildings in a proper manner, and in accordance with the drawings and specifications, and perform its work in the proper sequence in relation to that of others, all as may be directed by the Project Manager.

- 7.12.3 Each Contractor shall be responsible for any damage done by it to work performed by another contractor. Each Contractor shall conduct its operations and maintain the work in such condition that no fugitive dust shall be created and adequate drainage shall be in effect at all times.
- 7.12.4 In the event that the Contractor fails to prosecute its work as provided in this Section 7.12, LIMITATIONS OF OPERATIONS or disregards the directions of the Project Manager, the Project Manager may suspend the work until such time as the Contractor provides for the prosecution of the work with minimum interference to traffic and passageways or other contractors, dust control, adequate drainage, the repair of damage and complies with the direction of the Project Manager. No payment will be made to the Contractor for the costs of such suspension.
- 7.13 ASSIGNMENT OR CHANGE OF NAME (§3-125-14 HAR)
- 7.13.1 SUBCONTRACTS AND ASSIGNMENT. The CONTRACTOR shall not assign or subcontract any of the CONTRACTOR's duties, obligations, or interests under this Contract and no such assignment or subcontract shall be effective unless (i) the CONTRACTOR obtains the prior written consent of the STATE and (ii) the CONTRACTOR's assignee or subcontractor submits to the STATE a tax clearance certificate from the of Taxation, State of Hawaii, showing that all delinquent taxes, if any, levied or accrued under state law against the CONTRACTOR's assignee or subcontractor have been paid. Additionally, no assignment by the CONTRACTOR of the CONTRACTOR's right to compensation under this Contract shall be effective unless and until the assignment is approved by the Comptroller of the State of Hawaii, as provided in Section 40-58, HRS.
- 7.13.2 RECOGNITION OF A SUCCESSOR IN INTEREST. When in the best interest of the State, a successor in interest may be recognized in an assignment Contract in which the STATE, the CONTRACTOR and the assignee or transferee (hereinafter referred to as the "Assignee") agree that:
- 7.13.2.1 The Assignee assumes all of the CONTRACTOR's obligations;
- 7.13.2.2 The CONTRACTOR remains liable for all obligations under this Contract but waives all rights under this Contract as against the STATE; and
- 7.13.2.3 The CONTRACTOR shall continue to furnish, and the Assignee shall also furnish, all required bonds.
- 7.13.3 CHANGE OF NAME. When the CONTRACTOR asks to change the name in which it holds this Contract with the STATE, the procurement officer of the purchasing agency (hereinafter referred to as the "Agency procurement officer") shall, upon receipt of a document acceptable or satisfactory to the Agency procurement officer indicating change of name (for example, an amendment to the CONTRACTOR's articles of incorporation), enter into an amendment to this Contract with the CONTRACTOR to effect such a change of name. The amendment to this Contract changing the CONTRACTOR's name shall specifically indicate that no other terms and conditions of this Contract are thereby changed.
- 7.13.4 REPORTS. All assignment Contracts and amendments to this Contract effecting changes of the CONTRACTOR's name or novations hereunder shall be reported to the CPO within thirty days of the date that the assignment Contract or amendment becomes effective.
- 7.13.5 ACTIONS AFFECTING MORE THAN ONE PURCHASING AGENCY. Notwithstanding the provisions of Subsections 7.13.2 through 7.13.4 herein, when the CONTRACTOR holds Contracts

with more than one purchasing agency of the State, the assignment Contracts and the novation and change of name amendments herein authorized shall be processed only through the CPO's office.

- 7.14 LAWS TO BE OBSERVED. The CONTRACTOR shall comply with all federal, state, and county laws, ordinances, codes, rules, and regulations, as the same may be amended from time to time, that in any way affect the CONTRACTOR's performance of this Contract.
- 7.14.1 The Contractor at all times shall observe and comply with all Federal, State and local laws or ordinances, rules and regulations which in any manner affect those engaged or employed in the work, the materials used in the work, and the conduct of the work. The Contractor shall also comply with all such orders and decrees of bodies or tribunals having any jurisdiction or authority over the work. Any reference to such laws, ordinances, rules and regulations shall include any amendments thereto before and after the date of this Contract.
- 7.14.2 The Contractor shall defend, protect, hold harmless and indemnify the State and its departments and agencies and all their officers, representatives, employees or agents against any claim or liability arising from or based on the violation of any such laws, ordinances, rules and regulations, orders or decrees, whether such violation is committed by the Contractor or its Subcontractor(s) or any employee of either or both. If any discrepancy or inconsistency is discovered in the contract for the work in relation to any such laws, ordinances, rules and regulations, orders or decrees, the Contractor shall forthwith report the same to the Project Manager in writing.
- 7.14.3 While the Contractor must comply with all applicable laws, attention is directed to: Wage and Hours of Employees on Public Works, Chapter 104, Hawaii Revised Statutes (HRS); Hawaii Public Procurement Code, Authority to debar or suspend, Section 103D-702, HRS; Hawaii Employment Relations Act, Chapter 377, HRS; Hawaii Employment Security Law, Chapter 383, HRS; Worker's Compensation Law, Chapter 386, HRS; Wage and Hour Law, Chapter 387, HRS; Occupational Safety and Health, Chapter 396, HRS; and Authority to Debar or Suspend, Chapter 126, subchapter 2, Hawaii Administrative Rules (HAR).
- 7.14.4 CONFLICT BETWEEN GENERAL CONDITIONS AND PROCUREMENT RULES. In the event of a conflict between the General Conditions and the Procurement Rules, the Procurement Rules in effect on the date this Contract became effective shall control and are hereby incorporated by reference.
- 7.15 PATENTED DEVICES, MATERIALS AND PROCESSES. If the Contractor desires to use any design, device, material, or process covered by letters of patent or copyright, the right for such use shall be procured by the Contractor from the patentee or owner. The Contractor shall defend, protect, indemnify and hold harmless the State of Hawaii, the contracting agency, and their officers, employees, and agents from and against all liability, loss, damage, cost, and expense, including attorney's fees, and all claims, suits, and demands arising out of or resulting from any claims, demands, or actions by the patent holder for infringement or other improper or unauthorized use of any patented article, patented design, patented device, patented process, patented appliance or patented material in connection with this Contract. The Contractor shall be solely responsible for correcting or curing to the satisfaction of the DHHL any such infringement or improper or unauthorized use, including, without limitation: (a) furnishing at no cost to the DHHL a substitute article, design, device, process, appliance or material acceptable to the DHHL; (b) paying royalties or other required payments to the patent holder; (c) obtaining proper authorizations or releases from the patent holder; and (d) furnishing such security to or making such arrangement with the patent holder as may be necessary to correct or cure any such infringement or improper or unauthorized use. This

section shall not apply to any article, design, device, material, appliance or process covered by letters of patent or copyright, which the Contractor is required to use by the Drawings or Specifications.

7.16 SANITARY, HEALTH AND SAFETY PROVISIONS

7.16.1 The Contractor shall provide and maintain in a neat, sanitary condition such accommodations for the use of its employees as may be necessary to comply with the requirements of the State and local boards of health, or other bodies or tribunals having jurisdiction. Unless otherwise stated in the drawings or specifications, the Contractor shall install toilet facilities conveniently located at the job site and maintain same in a neat and sanitary condition for the use of the employees on the job site for the duration of the Contract. The toilet facilities shall conform to the requirements of the State Department of Health. The cost of installing, maintaining and removing the toilet facilities shall be considered incidental to and paid for under various contract pay items for work or under the lump sum bids as the case may be, and no additional compensation will be made therefor. These requirements shall not modify or abrogate in any way the requirements or regulations of the State Department of Health.

7.16.2 Attention is directed to Federal, State and local laws, rules and regulations concerning construction safety and health standards. The Contractor shall not require any worker to work in surroundings or under conditions which are unsanitary, hazardous or dangerous to their health or safety.

7.17 PROTECTION OF PERSONS AND PROPERTY

7.17.1 SAFETY PRECAUTIONS AND PROGRAMS. The Contractor shall be responsible for initiating, maintaining and supervising all safety precautions and programs in connection with the performance of the Contract. The Contractor shall take reasonable precautions for the safety of, and shall provide reasonable protection to prevent damage, injury or loss to:

7.17.1.1 All persons on the work site or who may be affected by the work;

7.17.1.2 All the work and materials and equipment to be incorporated therein, whether in storage on or off the site, under care, custody or control of the Contractor and its subcontractors; and

7.17.1.3 Other property at the site or adjacent thereto, including trees, shrubs, lawns, walks, pavement, roadways, structures and utilities not designated for removal, relocation or replacement in the course of construction.

7.17.2 Contractor shall give notices and comply with applicable laws, ordinances, regulations, rules, and lawful orders of any public body having jurisdiction for the safety of persons or property or their protection from damage, injury or loss; and the Contractor shall erect and maintain reasonable safeguards for safety and protection, including posting danger signs, or other warnings against hazards.

7.17.3 The Contractor shall notify owners of adjacent properties and of underground (or overhead) utilities when performing work which may affect the owners; and shall cooperate with the owners in the protection, removal and replacement of their property.

7.17.4 All damage, injury or loss to any property referred to in Subsections 7.17.1.2 and 7.17.1.3 caused by the fault or negligence or damage or loss attributable to acts or omissions directly or indirectly in whole or part by the Contractor a subcontractor or any one directly or indirectly employed by them, or by anyone for whose acts they might be liable, shall be remedied promptly by the Contractor.

- 7.17.5 The Contractor shall designate a responsible member of the Contractor's organization at the site whose duty shall be the protection of accidents. This person shall be the Contractor's superintendent unless otherwise designated by the Contractor.
- 7.17.6 The Contractor shall not load or permit any part of the construction to be loaded so as to endanger its safety. The Contractor shall not injure or destroy trees or shrubs nor remove or cut them without permission of the Project Manager. Contractor shall protect all land monuments and property marks until an authorized agent has witnessed or otherwise referenced their location and shall not remove them until directed.
- 7.17.7 In the event the Contractor encounters on the site, material reasonably believed to be asbestos or other hazard material that has not been rendered harmless, the Contractor shall stop work in the area and notify the Project Manager promptly. The work in the affected area shall be resumed in the absence of hazard materials or when the hazard has been rendered harmless.
- 7.17.8 EMERGENCIES. In an emergency affecting the safety and protection of persons or the work or property at the site or adjacent thereto, Contractor without special instructions or authorization from the Project Manager, shall act, at the Contractor's discretion, to prevent threatened damage, injury or loss. Contractor shall give the Project Manager prompt written notice of the emergency and actions taken. Additional compensation or extension of time claimed by the Contractor on account of an emergency shall be determined under the provisions of Section 7.25, DISPUTES AND CLAIMS.
- 7.18 ARCHAEOLOGICAL SITES
- 7.18.1 Should historic sites such as walls, platforms, pavements and mounds, or remains such as artifacts, burials, concentration of charcoal or shells be encountered during construction, work shall cease in the immediate vicinity of the find and the find shall be protected from further damage. The Contractor shall immediately notify the Project Manager and contact the State Historic Preservation Division which will assess the significance of the find and recommend the appropriate mitigation measures, if necessary.
- 7.18.2 When required, the Contractor shall provide and install any temporary fencing to protect archaeological sites within the project. The fencing shall be installed prior to any construction activity and shall be maintained by the Contractor for the duration of the project. Fence installation and maintenance shall be to the satisfaction of the Project Manager. The Contractor shall remove the fencing upon completion of construction, or as directed by the Project Manager.
- 7.18.3 No work shall be done within the temporary fencing area. If any construction work is done within the temporary fencing, the Contractor shall notify the Project Manager immediately; and if the Contractor entered the archaeological site area without permission, it shall stop work in this area immediately. The Project Manager shall notify the archaeologist to assess any damage to the area. The Contractor shall allow the archaeologist sufficient time to perform the field investigation.
- 7.18.4 Any site requiring data recovery within the project shall not be disturbed until data recovery is completed.
- 7.19 RESPONSIBILITY FOR DAMAGE CLAIMS; INDEMNITY
- 7.19.1 The CONTRACTOR shall defend, indemnify, and hold harmless the State of Hawaii, the contracting agency, and their officers, employees, and agents from and against all liability, loss, damage, cost,

and expense, including all attorneys' fees, and all claims, suits, and demands therefor, arising out of or resulting from the acts or omissions of the CONTRACTOR or the CONTRACTOR's employees, officers, agents, or subcontractors under this Contract. The provisions of this Subsection shall remain in full force and effect notwithstanding the expiration or early termination of this Contract.

- 7.19.2 The Contractor agrees that it will not attempt to hold the State and the Department, their officers, representatives, employees or agents, liable or responsible for any losses or damages to third parties from the action of the elements, the nature of the work to be done under these Contract Documents or from any unforeseen obstructions, acts of God, vandalism, fires or encumbrances which may be encountered in the prosecution of the work.
- 7.19.3 The Contractor shall pay all just claims for materials, supplies, tools, labor and other just claims against the Contractor or any subcontractor in connection with this contract and the surety bond will not be released by final acceptance and payment by the Department unless all such claims are paid or released. The Department may, but is not obligated to, withhold or retain as much of the monies due or to become due the Contractor under this contract considered necessary by the Project Manager to cover such just claims until satisfactory proof of payment or the establishment of a payment plan is presented.
- 7.19.4 The Contractor shall defend, indemnify and hold harmless the State and the Department, their officers, representatives, employees or agents from all suits, actions or claims of any character brought on account of any claims or amounts arising out of or recovered under the Workers' Compensation Laws or violation of any other law, by-law, ordinance, order or decree.
- 7.19.5 COST OF LITIGATION. In case the STATE shall, without any fault on its part, be made a party to any litigation commenced by or against the CONTRACTOR in connection with this Contract, the CONTRACTOR shall pay all costs and expenses incurred by or imposed on the STATE, including attorneys' fees.
- 7.20 CHARACTER OF WORKERS OR EQUIPMENT
 - 7.20.1 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.
 - 7.20.2 Character and Proficiency of Workers - All workers shall possess the proper license and/or certification, job classification, skill and experience necessary to properly perform the work assigned to them. All workmen engaged in special work or skilled work, such as bituminous courses or mixtures, concrete pavement or structures, electrical installation, plumbing installation, or in any trade shall have sufficient experience in such work and in the operation of the equipment required to properly and satisfactorily perform all work. All workers shall make due and proper effort to execute the work in the manner prescribed in these Contract Documents, otherwise, the Project Manager may take action as prescribed herein.
 - 7.20.2.1 Any worker employed on the project by the Contractor or by any subcontractor who, in the opinion of the Project Manager, is not careful and competent, does not perform its work in a proper and skillful manner or is disrespectful, intemperate, disorderly or neglects or refuses to comply with directions given, or is otherwise objectionable shall at the written request of the Project Manager, be removed forthwith by the Contractor or subcontractor employing such worker and shall not be employed again in any portion of the work without the written consent of the Project Manager. Should the Contractor or subcontractor continue to employ, or again employ such person or persons on the project, the

Project Manager may withhold all payments which are or may become due, or the Project Manager may suspend the work until the Project Manager's orders are followed, or both.

- 7.20.3 **INSUFFICIENT WORKERS.** A sufficient number of workers shall be present to ensure the work is accomplished at an acceptable rate. In addition, the proper ratio of apprentice to journey worker shall be maintained to ensure the work is properly supervised and performed. In the event that the Project Manager finds insufficient workers are present to accomplish the work at an acceptable rate of progress or if a adequate number of journey workers are not present and no corrective action is taken by the Contractor after being informed in writing, the Chairman may terminate the Contract as provided for under Section 7.27, **TERMINATION OF CONTRACT FOR CAUSE.**
- 7.20.4 **EQUIPMENT REQUIREMENTS.** All equipment furnished by the Contractor and used on the work shall be of such size and of such mechanical condition that the work can be performed in an acceptable manner at a satisfactory rate of progress and the quality of work produced will be satisfactory.
- 7.20.4.1 Equipment used on any portion of the project shall be such that no injury to the work, persons at or near the site, adjacent property or other objects will result from its use.
- 7.20.4.2 If the Contractor fails to provide adequate equipment for the work, the contract may be terminated as provided under Section 7.27, **TERMINATION OF CONTRACT FOR CAUSE.**
- 7.20.4.3 In the event that the Contractor furnishes and operates equipment on a force account basis, it shall be operated to obtain maximum production under the prevailing conditions.
- 7.21 **CONTRACT TIME**
- 7.21.1 Time is of the essence for this Contract.
- 7.21.2 **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 shall be the number of working days shown in the contract plus any additional working days authorized in writing as provided hereinafter. Refer to **ARTICLE 1, DEFINITIONS** for the definition of Working Day. The count of elapsed working days to be charged against contract time shall begin from the date of the Notice to Proceed and shall continue consecutively to the date of Project Acceptance determined by the Project Manager. When the contract completion time is a fixed calendar date, it shall be the date on which all work on the project shall be completed. Maintenance periods are not included within the contract time unless specifically noted in the Contract Documents. Failure to complete the work by contract completion date shall not terminate the Contract.
- 7.21.3 **MODIFICATIONS OF CONTRACT TIME (§3-125-4 HAR)**
- 7.21.3.1 **EXTENSIONS.** For increases in the scope for work caused by alterations and additional work made under Section 4.2, **CHANGES**, the Contractor will be granted a time extension only if the changes increase the time of performance for the Contract. If the Contractor believes an extension of time is justified and is not adequately provided for in a Field Order, it must request the additional time sought in writing when the detailed cost breakdown required by Section 4.2, **CHANGES**, is submitted. The Contractor must show how the time of performance for the critical path will be affected and must also support the time extension request with schedules and statements from its subcontractors, suppliers, and/or manufacturers. Compensation for any altered or additional work will be paid as provided in Section 4.2, **CHANGES.**

- 7.21.3.2 The Department may direct changes to the work at any time until the work is finally accepted. The issuance of a Field Order at any time may alter or modify the contract duration only by the days specified therein; or if not specified therein, for the days the critical path must be extended for the change. 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 will not constitute a waiver of pre-existing Contractor delay.
- 7.21.4 DELAY FOR PERMITS. For delays beyond the control of the Contractor in obtaining necessary permits, one day extension for each day delay may be granted by the Project Manager, provided the Contractor notifies the Project Manager that the permits are not available, as soon as the delay occurs. Time extensions shall be the exclusive relief granted on account of such delays. No additional compensation will be paid for these time extensions.
- 7.21.5 DELAYS BEYOND CONTRACTOR'S CONTROL. For delays affecting the critical path caused by acts of God, or the public enemy, fire, unusually severe weather, earthquakes, floods, epidemics, quarantine restrictions, labor disputes, freight embargoes and other reasons beyond the Contractor's control, the Contractor may be granted an extension of time provided that:
- 7.21.5.1 The Contractor notifies the Project Manager in writing within five (5) work days after the occurrence of the circumstances described above and states the possible effects on the completion date of the contract.
- 7.21.5.2 No time extension will be granted for weather conditions other than unusually severe weather occurrences, and floods.
- 7.21.5.3 The Contractor, if requested, submits to the Project Manager within ten (10) work days after the request, a written statement describing the delay to the project. The extent of delay must be substantiated as follows:
- (a) State specifically the reason or reasons for the delay and fully explain in a detailed chronology the effect of this delay to the work and/or the completion date;
 - (b) Submit copies of purchase order, delivery tag, and any other pertinent documentation to support the time extension request;
 - (c) Cite the period of delay and the time extension requested; and
 - (d) A statement 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.
- 7.21.5.4 Time extensions shall be the exclusive relief granted and no additional compensation will be paid the Contractor for such delays.
- 7.21.6 DELAYS IN DELIVERY OF MATERIALS. For delays in delivery of materials and/or equipment which occur as a result of unforeseeable causes beyond the control and without fault or negligence of the Contractor, its subcontractor(s) or supplier(s), the Contractor may be granted an extension of time provided it complies with the following procedures:
- 7.21.6.1 The Contractor must notify the Project Manager in writing within five (5) consecutive working days after it first has any knowledge of delays or anticipated delays and state the effects such delays may have on the completion date of the Contract.

- 7.21.6.2 The Contractor, if requested, must submit to the Project Manager within ten (10) working days after a firm delivery date for the material and equipment is established, a written statement as to the delay to the progress of the project. The delay must be substantiated as follows:
- (a) State specifically the reason or reasons for the delay. Explain in a detailed chronology the effect of this delay to the other work and / or the completion date;
 - (b) Submit copies of purchase order(s), factory invoice(s), bill(s) of lading, shipping manifest(s), delivery tag(s) and any other pertinent correspondence to support the time extension request; and
 - (c) Cite the start and end date of the delay and the days requested therefore. The delay shall not exceed the difference between the originally scheduled delivery date versus the actual delivery date.
- 7.21.6.3 Time extensions shall be the exclusive relief granted and no additional compensation will be paid the Contractor on account of such delay.
- 7.21.7 DELAYS FOR SUSPENSION OF WORK. Delay during periods of suspension of the work by the Project Manager shall be computed as follows:
- 7.21.7.1 When the performance of the work is totally suspended for one (1) or more days (calendar or working days, as appropriate) by order of the Project Manager in accordance with Subsections 7.24.1.1, 7.24.1.2, 7.24.1.4 or 7.24.1.6 the number of days from the effective date of the Project Manager's order to suspend operations to the effective date of the Project Manager's order to resume operations shall not be counted as contract time and the contract completion date will be adjusted. Should the Contractor claim for additional days in excess of the suspension period, Contractor shall provide evidence justifying the additional time. 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 (5) 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.
- 7.21.8 CONTRACTOR CAUSED DELAYS - No time extension will be considered for the following:
- 7.21.8.1 Delays in performing the work caused by the Contractor, subcontractor and/or supplier;
 - 7.21.8.2 Delays in arrival of materials and equipment caused by the Contractor, subcontractor and / or supplier in ordering, fabricating, delivery, etc.;
 - 7.21.8.3 Delays requested for changes which the Project Manager determines unjustifiable due to the lack of supporting evidence or because the change is not on the critical path;
 - 7.21.8.4 Delays caused by the failure of the Contractor to submit for review and acceptance by the Project Manager, on a timely basis, pricing proposals, shop drawings, descriptive sheets, material samples, color samples, etc. except as covered in Subsection 7.21.5 and 7.21.6;
 - 7.21.8.5 Failure to follow the procedure within the time allowed to qualify for a time extension; and
 - 7.21.8.6 Days the Contractor is unable to work due to normal rainfall or other normal bad weather day conditions.

- 7.21.9 REDUCTION IN TIME - If the Department deletes any portion of the work, an appropriate reduction of contract time may be made in accordance with Section 4.2, CHANGES.
- 7.22 CONSTRUCTION SCHEDULE
- 7.22.1 The Contractor shall submit its detailed construction schedule to the Project Manager prior to the start of the work. The purpose of the schedule is to allow the Project Manager to monitor the Contractor's progress on the work. 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 all other pertinent factors that relate to progress.
- 7.22.2 Submittal of and the Project Manager's receipt of the construction schedule shall not imply the Department's approval of the schedule's breakdown, its individual elements, and any critical path that may be shown. Any acceptance or approval of the schedule: (1) shall be for general format only and not for sequences or durations thereon; and (2) shall not be deemed an agreement by the Department that the construction means, methods and resources shown on the schedule will result in work that conforms to the contract requirements. The Contractor has the risk of all elements (whether or not shown) of the schedule and its execution.
- 7.22.3 In the event the Contractor submits and the Department receives an accelerated schedule (shorter than the contract time), such will not constitute an agreement to modify the contract time or completion date, nor will the receipt, acceptance or approval of such a schedule incur any obligation by the Department. The Contractor shall be solely responsible for and shall accept all risks and any delays that may materialize during the construction work until the contract completion date is reached. The contract time or completion date is established for the benefit of the Department and cannot be changed without an appropriate change order issued by the Department. All float on an accelerated schedule belongs exclusively to the Department. The Department will not be responsible for or obligated to accept the work before the completion date established by the Contract.
- 7.23 STATEMENT OF WORKING DAYS - For all contracts on a working day basis, the Contractor will submit a statement of the number of working days for each month together with the Monthly Payment Application. The Monthly Payment Application will not be processed without the statement of working days.
- 7.24 SUSPENSION OF WORK (§3-125-7 HAR)
- 7.24.1 PROCEDURE TO BE FOLLOWED. The Chairman may, by written order to the Contractor, at any time and without notice to any surety, suspend the performance of the work either in whole or in part for any cause, including but not limited to:
- 7.24.1.1 Weather or excess bad weather days, considered unsuitable by the Project Manager for prosecution of the work; or
- 7.24.1.2 Soil Conditions considered unsuitable by the Project Manager for prosecution of the work; or 7.24.1.3 Failure of the Contractor to:
- (a) Correct conditions unsafe for the general public or for the workers;
 - (b) Carry out orders given by the Project Manager;
 - (c) Perform the work in strict compliance with the provisions of the contract; or
 - (d) Provide a qualified Superintendent on the jobsite as described under Subsection 5.9.2, SUPERINTENDENT.

- 7.24.1.4 When any redesign is deemed necessary by the Project Manager; or
- 7.24.1.5 Disturbance due to noise, odors or dust arising from the construction even if such disturbance does not violate the section on Environmental Protection contained in the Contract Documents; or
- 7.24.1.6 The convenience of the Department.
- 7.24.2 PARTIAL OR TOTAL SUSPENSION OF WORK. Suspension of work on some but not all items of work shall be considered a partial suspension. Suspension of work on the entire work at the job site shall be considered total suspension. The period of suspension shall be computed as set forth in Subsection 7.21.7, Delays for Suspension of Work.
- 7.24.3 PAYMENT
- 7.24.3.1 In the event that the Contractor is ordered by the Chairman in writing as provided herein to suspend all work under the contract in accordance with Subsections 7.24.1.4 or 7.24.1.6, the Contractor may be reimbursed for actual direct costs incurred on work at the jobsite, as authorized in writing by the Chairman, including costs expended for the protection of the work. Payment for equipment which must standby during such suspension of work shall be made as described in clause 8.3.4.5.(e). No payment will be made for profit on any suspension costs. An allowance of five percent (5%) will be paid on any reimbursed actual costs for indirect categories of delay costs, including extended branch and home-office overhead and delay impact costs.
- 7.24.3.2 However, no adjustment to the contract amount or time shall be made under this Section 7.24, SUSPENSION OF WORK (§3-125-7 HAR) for any suspension, delay, or interruption:
- (a) 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; or
 - (b) For which an adjustment is provided for or excluded under any other provision of this Contract.
- 7.24.3.3 Any adjustment in contract price made pursuant to this subsection shall be determined in accordance with this Section 7.24, SUSPENSION OF WORK (§3-125-7 HAR) and Section 4.2, CHANGES.
- 7.24.3.4 Claims for such compensation shall be filed with the Project Manager within ten (10) calendar days after the date of the order to resume work or such claims will be waived by the Contractor. Together with the claim, the Contractor shall submit substantiating documents supporting the entire amount shown on the claim. The Chairman may make such investigations as are deemed necessary and shall be the sole judge of the claim and the Chairman's decision shall be final.
- 7.24.4 CLAIMS NOT ALLOWED. No claim under this Section 7.24, SUSPENSION OF WORK (§3-125-7 HAR) shall be allowed:
- 7.24.4.1 For any direct costs incurred more than twenty (20) days before the Contractor shall have notified the Project Manager in writing of any suspension that the Contractor considers compensable. This requirement shall not apply as to a claim resulting from a suspension order under Subsections 7.24.1.4 or 7.24.1.6; and 7.24.4.2 Unless the claim is asserted in writing within ten (10) calendar days after the termination of such suspension, delay, or interruption, but in no case not later than the date of final payment under the contract.
- 7.24.4.2 No provision of this Section 7.24, SUSPENSION OF WORK (§3-125-7 HAR) shall be construed as entitling the Contractor to compensation for delays due to failure of surety, for suspensions made at

the request of the Contractor, for any delay required under the Contract, for partial suspension of work or for suspensions made by the Project Manager under the provisions of Subsections 7.24.1.1, 7.24.1.2, 7.24.1.3 and 7.24.1.5.

- 7.25 DISPUTES AND CLAIMS (§3-126-31 HAR). Disputes shall be resolved in accordance with Section 103D-703, HRS, and chapter 126, Procurement Rules, as the same may be amended from time to time.
- 7.25.1 REQUIRED NOTIFICATION. As a condition precedent for any claim, the Contractor must give notice in writing to the Project Manager in the manner and within the time periods stated in Section 4.2, CHANGES for claims for extra compensation, damages, or an extension of time due for one or more of the following reasons:
 - 7.25.1.1 Requirements not clearly covered in the Contract, or not ordered by the Project Manager as an extra;
 - 7.25.1.2 Failure by the Department and Contractor to agree to an Oral Order or an adjustment in price or contract time for a Field Order or a Change Order (which was not previously agreed on by a Field Order), issued by the Department;
 - 7.25.1.3 An action or omission by the Project Manager requiring performance changes beyond the scope of the Contract; and/or
 - 7.25.1.4 Failure of the Department to issue a Field Order for controversies within the scope of Section 4.2, CHANGES.
 - 7.25.1.5 For any other type of claim, the Contractor shall give notice within the time periods set forth in contract provisions pertaining to that event. If no specific contract provisions pertain to the claim, then the written notice of claim must be submitted within fifteen (15) days of the event giving rise to the claim.
- 7.25.2 CONTINUED PERFORMANCE OF WORK. The Contractor shall at all times continue with performance of the contract in full compliance with the directions of the Project Manager. Continued performance by the Contractor shall not be deemed a waiver of any claim for additional compensation, damages, or an extension of time for completion, provided that the written notice of claim is submitted in accordance with Subsection 7.25.1, REQUIRED NOTIFICATION.
- 7.25.3 The requirement for timely written notice shall be a condition precedent to the assertion of a claim.
- 7.25.4 REQUIREMENTS FOR NOTICE OF CLAIM. The notice of claim shall clearly state the Contractor's intention to make claim and the reasons why the Contractor believes that additional compensation, changes or an extension of time may be remedies to which it is entitled. At a minimum, it shall provide the following:
 - 7.25.4.1 Date of the protested order, decision or action;
 - 7.25.4.2 The nature and circumstances which caused the claim;
 - 7.25.4.3 The contract provision(s) that support the claim;
 - 7.25.4.4 The estimated dollar cost, if any, of the protested work and how that estimate was determined; and

- 7.25.4.5 An analysis of the progress schedule showing the schedule change or disruption if the Contractor is asserting a schedule change or disruption.
- 7.25.5 If the protest or claim is continuing, the information required in Subsection 7.25.4 REQUIREMENTS FOR NOTICE OF CLAIMS above shall be supplemented as requested by the Project Manager.
- 7.25.6 FINAL STATEMENT FOR CLAIM. The Contractor shall provide a final written statement of the actual adjustment in contract price and/or contract time requested for each notice of claim. Such statement shall clearly set forth that it is the final statement for that notice of claim. All such final statements shall be submitted within thirty (30) days after completion of the work that is the subject of the claim, but in no event no later than thirty (30) days after the Project Acceptance Date or the date of termination of the Contractor, whichever comes first.
- 7.25.7 All claims of any nature are barred if asserted after final payment under this Contract has been made.
- 7.25.8 Contractor may protest the assessment or determination by the Project Manager of amounts due the Department from the Contractor by providing a written notice to the Chairman within thirty (30) days of the date of the written assessment or determination. Said notice shall comply with all requirements of Subsections 7.25.4, REQUIREMENTS FOR NOTICE OF CLAIM and 7.25.6, FINAL STATEMENT FOR CLAIM above. The requirement of such notice cannot be waived and it is a condition precedent to any claim by the Contractor. Failure to comply with these notice provisions constitutes a waiver of any claim.
- 7.25.9 In addition to the requirements of Subsections 7.25.4, 7.25.6, and 7.25.8, all final written statements of claim shall be certified. This certification requirement applies to the Contractor without exception, including, but not limited to, situations involving claims of subcontractors or suppliers which meet the requirements of Subsection 5.13.4. The certification must be executed by a person duly authorized to bind the Contractor with respect to the claim. The certification shall state as follows:
- “I certify that the claim is made in good faith; that the supporting data are accurate and complete to the best of my knowledge and belief; that the amount requested accurately reflects the contract adjustment for which the Contractor believes the Department is liable; and that I am duly authorized to certify the claim on behalf of the Contractor.”
- 7.25.10 DECISION ON CLAIM/Appeal. The decision of the Chairman on the claim shall be final and conclusive, unless fraudulent, or unless the Contractor delivers to the Chairman a written appeal of the Chairman’s decision. Said appeal shall be delivered to the Chairman no later than thirty (30) days after the date of the Chairman’s decision.
- 7.25.10.1 In that event, the decision of the Chairman shall be final and conclusive, unless fraudulent or unless the Contractor brings an action seeking judicial review of the Chairman’s decision in an appropriate circuit court of this State within six (6) months from the date of the Chairman’s decision.
- 7.25.11 PAYMENT AND INTEREST. The amount determined payable pursuant to the decision, less any portion already paid, normally should be paid without awaiting Contractor action concerning appeal. Such payments shall be without prejudice to the rights of either party. Interest on amounts ultimately determined to be due to a Contractor shall be payable at the Statutory rate applicable to judgments against the State under Chapter 662, HRS from the date of receipt of a properly certified final written statement of actual adjustment required until the date of decision; except, however, that if an action is initiated in circuit court, interest under this Section 7.25, DISPUTES AND CLAIMS (§3-126-31 HAR) shall only be calculated until the time such action is initiated. Interest on amounts due the

Department from the Contractor shall be payable at the same rate from the date of issuance of the Project Manager's notice to the Contractor. Where such payments are required to be returned by a subsequent decision, interest on such payments shall be paid at the statutory rate from the date of payment.

7.25.12 Contractor shall comply with any decision of the Chairman and proceed diligently with performance of this contract pending final resolution by a circuit court of this State of any controversy arising under, or by virtue of, this Contract, except where there has been a material breach of contract by the Department; provided that in any event the Contractor shall proceed diligently with the performance of the Contract where the Project Manager has made a written determination that continuation of work under the Contract is essential to the public health and safety.

7.25.13 **WAIVER OF ATTORNEY'S FEES.** In the event of any litigation arising under, or by virtue of, this Contract, the Contractor and the Department agree to waive all claims against each other for attorney's fees and agree to refrain from seeking attorney's fees as part of any award or relief from any court.

7.26 FAILURE TO COMPLETE THE WORK ON TIME

7.26.1 Completion of the work within the required time is important because delay in the prosecution of the work will inconvenience the public and interfere with the Department's business. In addition, the Department will be damaged by the inability to obtain full use of the completed work and by increased engineering, inspection, superintendence, and administrative services in connection with the work. Furthermore, delay may detrimentally impact the financing, planning, or completion of other Department projects because of the need to devote Department resources to the project after the required completion date. The monetary amount of such public inconvenience, interference with Department business, and damages, is difficult, if not impossible, to accurately determine and precisely prove. Therefore, it is hereby agreed that the amount of such damages shall be the appropriate sum of liquidated damages.

7.26.1.1 When the Contractor fails to complete the work or any portion of the work within the time or times fixed in the contract or any extension thereof, it is agreed the Contractor shall pay liquidated damages to the Department in the amount of \$1,000 (one thousand dollars) per calendar day, unless otherwise indicated in the Special Conditions.

7.26.1.2 If the Contractor fails to correct Punchlist deficiencies as required by Section 7.32, **PROJECT ACCEPTANCE DATE**, the Department will be inconvenienced and damaged, therefore, it is agreed that the Contractor shall pay liquidated damages to the Department based upon the amount stated in Section 7.26.1.1. Liquidated damages shall accrue for all days after the Contract Completion Date or any extension thereof, until the date the Punchlist items are corrected and accepted by the Project Manager.

7.26.1.3 If the Contractor fails to submit final documents as required by Section 7.33, **FINAL SETTLEMENT OF CONTRACT**, the Department will be inconvenienced and damaged, therefore, it is agreed that the Contractor shall pay liquidated damages to the Department in the amount stated in the Section 7.26.1.1. Liquidated damages shall accrue for all days after the Contract Completion Date or any extension thereof, until the date the final documents are received by the Project Manager.

7.26.1.4 The Project Manager shall assess the total amount of liquidated damages in accordance with the amount of \$1,000 (one thousand dollars) per day, unless otherwise indicated in the Special Conditions, and provide written notice of such assessment to the Contractor.

- 7.26.2 ACCEPTANCE OF LIQUIDATED DAMAGES. The assessment of liquidated damages by the Project Manager shall be accepted by the parties hereto as final, unless the Contractor delivers a written appeal of the Project Manager's decision in accordance with Subsection 7.25.10, DECISION ON CLAIM/APPEAL REQUIREMENTS. Any allowance of time or remission of charges or liquidated damages shall in no other manner affect the rights or obligations of the parties under this contract nor be construed to prevent action under Section 7.27, TERMINATION OF CONTRACT FOR CAUSE. If the Department terminates the Contractor's right to proceed, the resulting damage will include such liquidated damages for such time as may be required for final completion of the work after the required contract completion date.
- 7.26.3 PAYMENTS FOR LIQUIDATED DAMAGES. Liquidated damages shall be deducted from monies due or that may become due to the Contractor under the contract or from other monies that may be due or become due to the Contractor from the Department.
- 7.26.4 If the Contractor contests the per diem liquidated charge, the Department may elect to recover the actual damages caused by the Contractor's delay. Should the Department claim liquidated damages for delay and if such liquidated damages are disallowed for any reason, the Department shall recover the actual damages to which it is legally entitled as a result of the Contractor's delay or other breach.
- 7.27 TERMINATION OF CONTRACT FOR CAUSE (§3-125-18 HAR)
- 7.27.1 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, fails to complete the work within such time, or commits any other material breach of this contract, and further fails within seven (7) days after receipt of written notice from the Project Manager to commence and continue correction of the refusal or failure with diligence and promptness, the Chairman 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 Department may take over the work and perform the same to completion, by contract or otherwise, and may take possession of, and utilize in completing the work, the materials, appliances, and plant as may be on the site of the work and necessary therefor. 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 Department resulting from the Contractor's refusal or failure to complete the work within the specified time.
- 7.27.2 ADDITIONAL RIGHTS AND REMEDIES. The rights and remedies of the Department provided in this contract are in addition to any other rights and remedies provided by law.
- 7.27.3 COSTS AND CHARGES
- 7.27.3.1 All costs and charges incurred by the Department, 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 Department the amount of the excess.
- 7.27.3.2 In case of termination, the Chairman shall 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 the tax clearance required by Section 8.8, FINAL PAYMENT

is submitted by the Contractor. Termination shall not relieve the Contractor or Surety from liability for liquidated damages.

- 7.27.4 **ERRONEOUS TERMINATION FOR CAUSE.** If, after notice of termination of the Contractor's right to proceed under this Section 7.27, **TERMINATION OF CONTRACT FOR CAUSE** (§3-125-18 HAR) it is determined for any reason that good cause did not exist to allow the Department 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 Section 7.28, **TERMINATION FOR CONVENIENCE**.
- 7.28 **TERMINATION FOR CONVENIENCE** (§3-125-22 HAR)
- 7.28.1 **TERMINATION.** The Chairman may, when the interests of the Department so require, terminate this contract in whole or in part, for the convenience of the Department. The Chairman shall give written notice of the termination to the Contractor specifying the part of the contract terminated and when termination becomes effective.
- 7.28.2 **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 will 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 Department's approval. The Chairman may direct the Contractor to assign the Contractor's right, title, and interest under terminated orders or subcontracts to the Department. The Contractor must still complete the work not terminated by the notice of termination and may incur obligations as necessary to do so.
- 7.28.3 **RIGHT TO CONSTRUCTION AND GOODS.** The Chairman may require the Contractor to transfer title and delivery to the Department in the manner and to the extent directed by the Chairman, the following:
- 7.28.3.1 Any completed work; and
- 7.28.3.2 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.
- 7.28.3.3 The Contractor shall protect and preserve all property in the possession of the Contractor in which the Department has an interest. If the Chairman does not elect to retain any such property, the Contractor shall use its best efforts to sell such property and construction material for the Department's account in accordance with the standards of Section 490:2-706, HRS.
- 7.28.4 **COMPENSATION**
- 7.28.4.1 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 subchapter 15, chapter 3-122, HAR. If the Contractor fails to file a termination claim within one (1) year from the effective date of termination, the Chairman may pay the Contractor, if at all, an amount set in accordance with Subsection 7.28.4.3.

- 7.28.4.2 The Chairman 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 Department, the proceeds of any sales of construction, supplies, and construction materials under Subsection 7.28.3.3 of this Section, and the contract price of the work not terminated.
- 7.28.4.3 Absent complete agreement, the Chairman shall 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 five percent (5%) markup on the actual direct costs, including amounts paid to subcontractor(s), less amounts previously 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 ten percent (10%) 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) In any case, 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.
- 7.28.4.4 Costs claimed, agreed to, or established by the Department shall be in accordance with chapter 3-123, HAR.
- 7.29 **CORRECTING DEFECTS.** If the Contractor fails to commence to correct any defects of any nature, within ten (10) working days after the correction thereof has been requested in writing by the Department, and thereafter to expeditiously complete the correction of said defects, the Project Manager may without further notice to the Contractor or surety and without termination of contract, correct the defects and deduct the cost thereof from the contract price.
- 7.30 **FINAL CLEANING.** 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, and all parts of the work must be left in a neat and presentable condition to the satisfaction of the Project Manager. However, the Contractor shall not remove any warning and directional signs prior to the formal acceptance by the Project Manager. Full compensation for final cleaning will be included in the prices paid for the various items of work or lump sum bid, as the case may be, and no separate payment will be made therefor.
- 7.31 **SUBSTANTIAL COMPLETION AND FINAL INSPECTION.** Before the Department accepts the project as being completed, unless otherwise stipulated by the Project Manager the following procedure shall be followed:
- 7.31.1 **SUBSTANTIAL COMPLETION**
- 7.31.1.1 The Contractor and its subcontractors shall inspect the project to confirm whether the Project is Substantially Complete. This inspection effort shall include the testing of all equipment and providing a Punchlist that identifies deficiencies which must be corrected. Contractor shall make the corrections and if required repeat the procedure. Also, the Contractor shall schedule final Building, Plumbing, Electrical, Elevator, Fire and other required inspections and obtain final approvals.

- (a) When in compliance with the above requirements, the Contractor shall notify the Project Manager in writing that project is Substantially Complete and ready for a Final Inspection. Along with the Substantial Completion notification, the Contractor shall provide its Punchlist(s) with the status of the deficiencies and dates when the deficiencies were corrected. The Project Inspector and / or the Project Manager shall make a preliminary determination whether project is Substantially Complete.
- (b) If the Project is not Substantially Complete, the Project Manager shall inform the Contractor. The Contractor shall identify deficiencies which must be corrected, update its Punchlist, make the necessary corrections and repeat the previous step. After completing the necessary work, the Contractor shall notify the Project Manager in writing that Punchlist deficiencies have been corrected and the project is ready for a Final Inspection.
- (c) If the Project is Substantially Complete, the Project Manager shall schedule a Final Inspection within fifteen (15) days of the Contractor's notification letter or as otherwise determined by the Project Manager.

7.31.1.2 In addition, and to facilitate closing of the project, the Contractor shall also proceed to obtain the following closing documents (where applicable) prior to the Final Inspection:

- (a) Field-Posted As-Built Drawings;
- (b) Maintenance Service Contract and two (2) copies of a list of all equipment;
- (c) Five (5) sets of operating and maintenance manuals;
- (d) Air conditioning test and balance reports; and
- (e) Any other final submittal required by the Contract.

7.31.2 **FINAL INSPECTION.** If at the Final Inspection the Project Manager determines that all work is completed, the Project Manager shall notify the Contractor in accordance with Section 7.32, **PROJECT ACCEPTANCE DATE.** Should there be remaining deficiencies which must be corrected the Contractor shall provide an updated Punchlist to the Project Manager, within five (5) days from the Final Inspection Date. The Contractor shall make the necessary corrections.

7.31.2.1 The Project Manager shall confirm the list of deficiencies noted by the Contractor's punchlist(s) and will notify the Contractor of any other deficiencies that must be corrected before final settlement.

7.31.3 The Project Manager may add to or otherwise modify the Punchlist from time to time. The Contractor shall take immediate action to correct the deficiencies.

7.31.4 **REVOKING SUBSTANTIAL COMPLETION.** At any time before final Project Acceptance is issued the Project Manager may revoke the determination of Substantial Completion if the Project Manager finds it was not warranted. The Project Manager shall notify the Contractor in writing with the reasons and outstanding deficiencies negating the declaration. Once notified, the Contractor shall make the necessary corrections and repeat the required steps noted in Subsections 7.31.1 and 7.31.2.

7.32 **PROJECT ACCEPTANCE DATE**

7.32.1 If upon Final Inspection, the Project Manager finds that the project has been satisfactorily completed in compliance with the contract, the Project Manager shall declare the project completed and accepted and will notify the Contractor in writing of the acceptance by way of the Project Acceptance Notice.

7.32.2 **PROTECTION AND MAINTENANCE.** After the Project Acceptance Date, the Contractor shall be relieved of maintaining and protecting the work except that this does not hold true for those portions of the work which have not been accepted, including Punchlist deficiencies. The Department shall be responsible for the protection and maintenance of the accepted facility.

- 7.32.3 The date of Project Acceptance shall determine:
- 7.32.3.1 End of Contract Time;
- 7.32.3.2 Commencement of all guaranty periods except as noted in Section 7.34, CONTRACTOR'S RESPONSIBILITY FOR WORK: RISK OF LOSS; and
- 7.32.3.3 Commencement of all maintenance services except as noted in Section 7.34, CONTRACTOR'S RESPONSIBILITY FOR WORK: RISK OF LOSS.
- 7.32.4 PUNCHLIST REQUIREMENTS. If a Punchlist is required under Section 7.31, SUBSTANTIAL COMPLETION AND FINAL INSPECTION, the Project Acceptance Notice will include the Project Manager's Punchlist and the date when correction of the deficiencies must be completed.
- 7.32.5 Upon receiving the Punchlist, the Contractor shall promptly devote the required time, labor, equipment, materials and incidentals necessary to correct the deficiencies expeditiously.
- 7.32.6 For those items of work that cannot be completed by the established date, the Contractor shall submit a schedule in writing to the Project Manager for approval along with documentation to justify the time required, no later than five (5) working days before the date stipulated for completion of the Punchlist work. A Proposed schedule submitted after the five (5) day period will not be considered.
- 7.32.7 FAILURE TO CORRECT DEFICIENCIES. After the Contract Completion Date, or any extension thereof, if the Contractor fails to correct the deficiencies within the established date or agreed to Punchlist completion date, the Project Manager shall assess liquidated damages as required by Section 7.26, FAILURE TO COMPLETE THE WORK ON TIME.
- 7.32.8 If the Contractor fails to correct the deficiencies and complete the work by the established or agreed to date, the Department also reserves the right to correct the deficiencies by whatever method it deems necessary and deduct the cost from the final payment due the Contractor.
- 7.32.9 The Contractor may further be prohibited from bidding in accordance with Section 2.12, DISQUALIFICATION OF BIDDERS. In addition, assessment of damages shall not prevent action under Section 7.27, TERMINATION OF CONTRACT FOR CAUSE.
- 7.33 FINAL SETTLEMENT OF CONTRACT
- 7.33.1 The contract will be considered settled after the project acceptance date and when the following items have been satisfactorily submitted, where applicable:
- 7.33.1.1 Necessary Submissions in addition to the items noted under Subsection 7.31.1.2.
- 7.33.1.2 All written guarantees required by the contract.
- 7.33.1.3 Complete and certified weekly payrolls for the Contractor and its Subcontractor(s).
- 7.33.1.4 Certificate of Plumbing and Electrical Inspection.
- 7.33.1.5 Certificate of Building Occupancy.

- 7.33.1.6 Certificate for Soil Treatment and Wood Treatment.
- 7.33.1.7 Certificate of Water System Chlorination.
- 7.33.1.8 Certificate of Elevator Inspection, Boiler and Pressure Pipe installation.
- 7.33.1.9 Certification of compliance with §103B-3 HRS, Employment of State Residents.
- 7.33.1.10 All other documents required by the Contract.
- 7.33.2 FAILURE TO SUBMIT CLOSING DOCUMENTS. The Contractor shall submit the final Payment Application and the above applicable closing documents within sixty (60) days from the date of Project Acceptance or the agreed to Punchlist completion date. Should the Contractor fail to comply with these requirements, the Chairman may terminate the Contract for cause. The pertinent provisions of Section 7.27, TERMINATION OF CONTRACT FOR CAUSE shall be applicable.
- 7.33.3 In addition, should the Contractor fail to furnish final closing documents within the required time period, the Project Manager shall assess liquidated damages as required by Section 7.26, FAILURE TO COMPLETE THE WORK ON TIME.
- 7.34 CONTRACTOR'S RESPONSIBILITY FOR WORK; RISK OF LOSS
 - 7.34.1 Until the establishment of the Project Acceptance Date or Beneficial Occupancy, whichever is sooner, the Contractor shall take every necessary precaution against injury or damage to any part of the work caused by the perils insured by an All Risk policy, whether arising from the execution or from the non-execution of the work. The Contractor shall rebuild, repair, restore and make good all injuries or damage to any portion of the work occasioned by the perils insured by an All Risk policy before the date of final acceptance and shall bear the risk and expense thereof.
 - 7.34.2 After the Project Acceptance Date or Beneficial Occupancy, whichever is sooner, the Contractor shall be relieved of maintaining and protecting the work except for those portions of the work which have not been accepted including Punchlist deficiencies.
 - 7.34.3 The risk of damage to the work from any hazard or occurrence that may be covered by a required Property Insurance policy is that of the Contractor, unless such risk of loss is placed elsewhere by express language in the Contract Documents. No claims for any loss or damage shall be recognized by the Department, nor will any such loss or damage excuse the complete and satisfactory performance of the Contract by the Contractor.
- 7.35 GUARANTEE OF WORK
 - 7.35.1 In addition to any required manufacturers warranties, all work and equipment shall be guaranteed by the Contractor against defects in materials, equipment or workmanship for one year from the Project Acceptance Date or as otherwise specified in the Contract Documents.
 - 7.35.2 REPAIR OF WORK. If, within any guarantee period, repairs or changes are required in connection with the guaranteed work, which in the opinion of the Project Manager 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 within five (5) working days and without expense to the Department commence to:

- 7.35.2.1 Place in satisfactory condition in every instance all such guaranteed work and correct all defects therein; and
- 7.35.2.2 Make good and repair or replace to new or pre-existing condition all damages to the building, facility, work or equipment or contents thereof, resulting from such defective materials, equipment or installation thereof.
- 7.35.3 MANUFACTURER'S AND INSTALLER'S GUARANTEE. Whenever a manufacturer's or installer's guarantee on any product specified in the respective Specification sections, exceeds one year, this guarantee shall become part of this contract in addition to the Contractor's guarantee. Contractor shall complete the guarantee forms in the name of the Department and submit such forms to the manufacturer within such time required to validate the guarantee. Contractor shall submit to the Department a photocopy of the completed guarantee form for the Department's record as evidence that such guarantee form was executed by the manufacturer.
- 7.35.4 If a defect is discovered during a guarantee period, all repairs and corrections to the defective items when corrected shall again be guaranteed for the original full guarantee period. The guarantee period shall be tolled and suspended for all work affected by the defect. The guarantee period for work affected by the defect shall restart for its remaining duration upon confirmation by the Project Manager that the deficiencies have been repaired or remedied.
- 7.36 WORK OF AND CHARGES BY UTILITIES
- 7.36.1 The Contractor shall be responsible for scheduling and coordinating the work with the utility companies and applicable governmental agencies for permanent service installation and connections or modifications to existing utilities. The Contractor shall make available all portions of the work necessary for the utility companies to do their work. The Department shall not bear the risk of any damage to the contract work caused by any utility company, and work of repairing such damage and delay costs must be resolved between the Contractor, the utility company, and their insurers.
- 7.36.2 Unless stated as an allowance item to be paid by the Contractor, the Department will pay the utility companies and applicable governmental agencies directly for necessary modifications and connections. Contractor charges for overhead, supervision, coordination, profit, insurance and any other incidental expenses shall be included in the Contractor's Bid whether the utility is paid directly by the Department or by an allowance item in the Contract.
- 7.37 RIGHT TO AUDIT RECORDS
- 7.37.1 The STATE may, at reasonable times and places, audit the books and records of the CONTRACTOR, prospective contractor, subcontractor or prospective subcontractor which are related to the cost or pricing data, and a State contract, including subcontracts, other than a firm fixed-price contract. The Contractor and subcontractor(s) shall maintain the books and records for a period of four (4) years from the date of final payment under the Contract.
- 7.37.2 The Contractor shall ensure that its subcontractors comply with this requirement and shall bear all costs (including attorney's fees) of enforcement in the event of its subcontractor's failure or refusal to fully cooperate.
- 7.37.3 Additionally, Sections 231-7, 235-108, 237-39 and other HRS chapters through reference, authorize the Department of Taxation to audit all taxpayers conducting business within the State. Contractors

must make available to the Department of Taxation all books and records necessary to verify compliance with the tax laws.

7.38 RECORDS MAINTENANCE, RETENTION AND ACCESS

7.38.1 The Contractor and any subcontractor whose contract for services is valued at \$25,000 (twenty five thousand) or more shall, in accordance with generally acceptable accounting practices, maintain fiscal records and supporting documents and related files, papers, and reports that adequately reflect all direct and indirect expenditures and management and fiscal practices related to the Contractor and subcontractor's performance of services under this Contract.

7.38.2 The representative of the Department, the Chairman, the Attorney General, (the Federal granting agency, the Comptroller General of the United States, and any of their authorized representatives when federal funds are utilized), and the Legislative Auditor of the State of Hawaii shall have the right of access to any book, document, paper, file, or other record of the Contractor and any subcontractor that is related to the performance of services under this Contract in order to conduct an audit or other examination and /or to make copies, excerpts and transcripts for the purposes of monitoring and evaluating the Contractor and subcontractor's performance of services and the Contractor and subcontractor's program, management, and fiscal practices to assure the proper and effective expenditure of funds and to verify all costs associated with any claims made under this Contract.

7.38.3 The right of access shall not be limited to the required retention period but shall last as long as the records are retained. The Contractor and subcontractor shall maintain and retain all books and records related to the Contractor and subcontractor's performance of services under this Contract, including any cost or pricing data for three (3) years from the date of final payment, except that if any litigation, claim, negotiation, investigation, audit or other action involving the books and records has been started before the expiration of the three (3) year period, the Contractor and subcontractors shall retain the books and records until completion of the action and resolution of all issues that arise from it, or until the end of the three (3) year retention period, whichever occurs later. Furthermore, it shall be the Contractor's responsibility to enforce compliance with this provision by any subcontractor.

7.39 COST OR PRICING DATA. Cost or pricing data must be submitted to the Agency purchasing officer and timely certified as accurate for contracts over \$100,000 unless the contract is for a multiple-term or as otherwise specified by the procurement officer. Unless otherwise required by the Agency procurement officer, cost or pricing data submission is not required for Contracts awarded pursuant to competitive sealed bid procedures. If certified cost or pricing data are subsequently found to have been inaccurate, incomplete, or noncurrent as of the date stated in the certificate, the STATE is entitled to an adjustment of the contract price, including profit or fee, to exclude any significant sum by which the price, including profit or fee, was increased because of the defective data. It is presumed that overstated cost or pricing data increased the contract price in the amount of the defect plus related overhead and profit or fee. Therefore, unless there is a clear indication that the defective data was not used or relied upon, the price will be reduced in such amount.

7.39.1 AUDIT OF COST OR PRICING DATA. When cost or pricing principles are applicable, the STATE may require an audit of cost or pricing data.

7.40 CONFIDENTIALITY OF MATERIAL

7.40.1 All material given to or made available to the CONTRACTOR by virtue of this Contract, which is identified as proprietary or confidential information, will be safeguarded by the CONTRACTOR and

shall not be disclosed to any individual or organization without the prior written approval of the STATE.

- 7.40.2 All information, data, or other material provided by the CONTRACTOR to the STATE shall be subject to the Uniform Information Practices Act, chapter 92F, HRS.
- 7.41 **PUBLICITY.** The CONTRACTOR shall not refer to the STATE, or any office, agency, or officer thereof, or any State employee, including the head of the purchasing agency, the Chief Procurement Officer, the Director, the Agency procurement officer, or to the services or goods, or both, provided under this Contract, in any of the CONTRACTOR's brochures, advertisements, or other publicity of the CONTRACTOR. All media contacts with the CONTRACTOR about the subject matter of this Contract shall be referred to the Agency procurement officer.
- 7.42 **OWNERSHIP RIGHTS AND COPYRIGHT.** The STATE shall have complete ownership of all material, both finished and unfinished which is developed, prepared, assembled, or conceived by the CONTRACTOR pursuant to this Contract, and all such material shall be considered "works made for hire." All such material shall be delivered to the STATE upon expiration or termination of this Contract. The STATE, in its sole discretion, shall have the exclusive right to copyright any product, concept, or material developed, prepared, assembled, or conceived by the CONTRACTOR pursuant to this Contract.
- 7.43 **GOVERNING LAW.** The validity of this Contract and any of its terms or provisions, as well as the rights and duties of the parties to this Contract, shall be governed by the laws of the State of Hawaii. Any action at law or in equity to enforce or interpret the provisions of this Contract shall be brought in a state court of competent jurisdiction in Honolulu, Hawaii.
- 7.44 **SEVERABILITY.** In the event that a court declares any provision of this Contract invalid or unenforceable, such invalidity or unenforceability shall not affect the validity or enforceability of the remaining terms of this Contract.
- 7.45 **WAIVER.** The failure of the STATE to insist upon the strict compliance with any term, provision, or condition of this Contract, shall not constitute or be deemed to constitute a waiver or relinquishment of the STATE's right to enforce the same in accordance with this Contract. The fact that the STATE specifically refers to one provision of the Procurement Rules or one section of the Hawaii Revised Statutes, and does not include other provisions or statutory sections in this Contract shall not constitute a waiver or relinquishment of the STATE's rights or the CONTRACTOR's obligations under the Procurement Rules or statutes.
- 7.46 **UTILITIES AND SERVICES**
- 7.46.1 Where its operations are next to or near properties of utility companies or other property, the CONTRACTOR shall not start work until the CONTRACTOR makes arrangements necessary for the protection of said property.
- 7.46.2 The CONTRACTOR shall cooperate, coordinate and schedule its work to suit the owners of underground or overhead utility lines or other property in removing or altering such lines or providing new services in order for the work to progress according to the contract. Cooperation includes rearranging the CONTRACTOR's operations and normal work schedules and realignment of work as approved by the Department in order to accommodate the operations and work of the utilities and/or other property in and around the work site at no additional cost to the Department.

- 7.46.3 The CONTRACTOR shall contact all the various utility companies before the start of the work to ascertain any existing utilities and to develop a full understanding of the utility requirements with respect to this project. The CONTRACTOR shall furnish the Project Manager with evidence that the CONTRACTOR has contacted the utility companies.
- 7.46.4 If the CONTRACTOR discovers that the existence and location of utilities in the contract plans are not correct, the CONTRACTOR shall not disturb the utilities and immediately notify the Project Manager. The Project Manager will advise the CONTRACTOR regarding actions to take.
- 7.46.5 The CONTRACTOR shall ascertain the exact location and depth of utilities within the project area. The CONTRACTOR shall mark such locations to warn workers or equipment operators of their existence and location. The CONTRACTOR shall be responsible to acquaint personnel working near utilities with the type, size, location and depth of the utilities and the consequences that might result from disturbances. The CONTRACTOR shall not start trenching or start similar operations until the CONTRACTOR has taken reasonable and appropriate precautions to protect the utilities.
- 7.46.6 Any utilities or other property that the CONTRACTOR encounters during the progress of the work, such as telephone ducts, electric ducts, water lines, sewer lines, electric lines and drainage pipes, whether shown or not on the contract plans, shall not be disturbed or damaged unless otherwise instructed in the plans and specifications.
- 7.46.7 In the event the utilities or other property are damaged or disturbed by the CONTRACTOR, the CONTRACTOR shall be liable for all such damage where the utilities or other property are:
- (a) Shown on the plan in its actual or approximate location; or
 - (b) Exposed on the job as it progresses; or
 - (c) Pointed out to the CONTRACTOR in the field.
- 7.46.8 Such utilities or other property as described above shall be “known utilities or other property.” If the CONTRACTOR encounters an unknown utility or other property, it shall not proceed until it has notified the Project Manager and receives instructions. If the Project Manager directs additional work, it shall be paid for under Section 4.2, CHANGES.
- 7.46.9 The CONTRACTOR shall repair and restore to pre-damaged condition any utilities or any other property it may damage, and it shall be liable for any and all resulting damage at no cost to the Department, the work or utility owner or property owner. Any damage claim due to the disruption of service caused by the utilities being damaged shall be paid by the CONTRACTOR who shall defend, indemnify and hold harmless the Department from all suits, actions or claims of any character brought on account of such damages, whether or not the Department may have been partially at fault. Public liability and property damage insurance to be obtained by the CONTRACTOR pursuant to Section 7.3 INSURANCE REQUIREMENTS shall cover such risk of damage.
- 7.46.10 In the event the CONTRACTOR simultaneously with the discovery of an unknown utility or other property damages that utility or other property, the CONTRACTOR shall not be held liable beyond the extent of the CONTRACTOR’s liability insurance but shall immediately notify the Project Manager. Upon instruction from the Project Manager, the CONTRACTOR shall repair all damages and execute a plan for dealing with the damaged utility or other property. This repair work shall be considered additional work as covered in Section 4.2, CHANGES.

~END OF ARTICLE 7~

ARTICLE 8: MEASUREMENT AND PAYMENT

8.1 MEASUREMENT OF QUANTITIES

8.1.1 All work completed under the Contract shall be measured by the Project Manager according to United States standard measures, or as stated in this Contract. The method of measurement and computations to be used in determination of quantities of material furnished and of work performed under the contract shall conform to good Managing practice. These measurements shall be considered correct and final unless the Contractor has protested same to the Project Manager and has demonstrated the existence of an error by actual physical measurement before the work has progressed in a manner, which would prohibit a proper check.

8.1.2 All measurements of the area of the various surfaces, pavement and base courses will be made in the horizontal projection of the actual surface and no deductions will be made for fixtures or structures having an area of nine (9) square feet or less. All measurements of headers, curbs, fences and any other type of construction which is to be paid for by its length will be made in the horizontal projection of the actual driven length from toe to top of cutoff, and for piles, which will be by actual length. All materials which are specified for measurement by the cubic yard "Loose Measurement" or "Measured in the Vehicle" shall be hauled in approved vehicles and measured therein at the point of delivery. Approved vehicles for this purpose may be of any type or size satisfactory to the Project Manager, provided that the body is of such type that the actual contents may be readily and accurately determined. Unless all approved vehicles on a job are of a uniform capacity each approved vehicle must bear a plainly legible identification mark indicating the specific approved capacity. The Inspector may reject all loads not hauled in such approved vehicles.

8.2 **NO WAIVER OF LEGAL RIGHTS.** The Project Manager shall not be precluded or estopped by any measurements, estimate or certificate made either before or after the completion and acceptance of the work and payment therefor, from showing the true amount and character of the work performed and materials furnished by the Contractor, or from showing that any such measurement estimate or certificate is untrue or incorrectly made, or rejecting the work or materials that do not conform in fact to the contract. The Project Manager shall not be precluded or estopped, notwithstanding any such measurement, estimate, or certificate and payment in accordance therewith, from recovering from the Contractor and its sureties such damages as the Department may sustain by reason of the Contractor's failure to comply with the terms of the Contract. Neither the acceptance by the Project Manager or any representative of the Project Manager, nor any payment for or acceptance of the whole or any part of the work, nor any extension of time, or any possession taken by the Project Manager, shall operate as a waiver of any portion of the contract, or of any power herein reserved, or any right to damage herein provided. A waiver of any notice requirement or breach of the contract shall not be held to be a waiver of any other notice requirement or subsequent breach.

8.3 PAYMENT FOR ADDITIONAL WORK

8.3.1 Additional work as defined in Section 4.2, **CHANGES**, when ordered, shall be paid for as defined in Section 4.4, **PRICE ADJUSTMENT** by a duly issued change order in accordance with the terms provided therein.

8.3.2 On credit proposals and proposals covering both increases and decreases, the application of overhead and profit shall be on the net change in direct costs for the performance of the work.

8.3.3 When payment is to be made for additional work directed by a Field Order, the total price adjustment as specified in the Field Order or if not specified therein for the work contained in the related change

order shall be considered full compensation for all materials, labor, insurance, taxes, equipment use or rental and overheads, both field and home office including extended home and branch office overhead and other related delay impact costs.

- 8.3.4 **FORCE ACCOUNT METHOD.** When, for the convenience of the Department, payment is to be made by the Force Account method, all work performed or labor and materials and equipment furnished shall be paid for as described below. Payment by the Force Account method will not alter any rights, duties and obligations under the contract.
- 8.3.4.1 **LABOR.** For all hourly workers, the Contractor will receive the rate of wage including fringe benefits when such amounts are required by collective bargaining agreement or other employment contract generally applicable to the classes of labor employed on the work, which shall be agreed upon in writing before beginning work for each and every hour that said labor is actually engaged in said work.
- (a) All markups for overhead and profit shall be added subject to limitations established in Section 4.5, **ALLOWANCES FOR OVERHEAD AND PROFIT.**
 - (b) No allowance for overtime compensation will be given without the written approval of the Project Manager prior to performance of such work.
- 8.3.4.2 **INSURANCE AND TAXES.** The Contractor and subcontractor(s) will also receive the actual additional costs paid for property damage, liability, worker's compensation insurance premiums, State unemployment contributions, Federal unemployment taxes, social security and Medicare taxes.
- 8.3.4.3 **MATERIALS.** For materials accepted by the Project Manager and used, the Contractor and subcontractor(s) shall receive the actual cost of such materials delivered and incorporated into work, plus a markup allowed under Section 4.5, **ALLOWANCES FOR OVERHEAD AND PROFIT.**
- 8.3.4.4 **SUBCONTRACTORS.** Subcontractor costs shall be the actual costs of the subcontractor marked up as defined in this Section 8.3, **PAYMENT FOR ADDITIONAL WORK** plus a markup allowed under Section 4.5, **ALLOWANCES FOR OVERHEAD AND PROFIT.**
- 8.3.4.5 **EQUIPMENT**
- (a) For machinery or special equipment (other than small tools as herein defined in Subsection 8.3.4.5.(h) owned or leased by the Contractor or a related entity, the use of which has been authorized by the Project Manager:
 - (1) The Contractor will be paid at the per-hour rental rates based on the monthly rate established for said machinery or equipment in the then-current edition of the Rental Rate Blue Book for Construction Equipment including the estimated operating cost per hour and regional correction provided therein.
 - (2) If no rate is listed for a particular kind, type or size of machinery or equipment, then the monthly, hourly rates shall be as agreed upon in writing by the Contractor and the Project Manager prior to the use of said machinery or equipment. If there is no agreement, the Project Manager will set a rate. The Contractor may contest the rate pursuant to Section 7.25, **DISPUTES AND CLAIMS.**
 - (3) Rental rates which are higher than those specified in the aforesaid Rental Rate Blue Book publication may be allowed where such higher rates can be justified by job conditions such as work in water and work on lava, etc. Request for such higher rates shall be submitted in writing to the Project Manager for approval prior to the use of the machinery or equipment in question.

- (b) For machinery or special equipment [other than small tools as herein defined in clause 8.3.4.5 (h)] rented by the Contractor or a related entity specifically for the Force Account work, the use of which has been authorized by the Project Manager, the Contractor will be paid the actual rental cost for the machinery or equipment, including mobilization and demobilization costs. A receipt from the equipment supplier shall be submitted to the Project Manager.
- (c) For machinery or special equipment [other than small tools as herein defined in clause 8.3.4.5 (h)] rented by the Contractor or a related entity for use in the project, but which will also be used for the Force Account work, the use of which has been authorized by the Project Manager, the Contractor will be paid the actual rental cost for the machinery or equipment. No additional mobilization and demobilization costs will be paid. A receipt from the equipment supplier shall be submitted to the Project Manager.
- (d) The rental rate for trucks not owned by the Contractor shall be those as established under the Hawaii State Public Utilities Commission, which will be paid for as an equipment item pursuant to Subsection 8.3.4.5, EQUIPMENT. Rental rates for Contractor owned trucks not listed in the Rental Rate Blue Book shall be agreed upon in writing by the Contractor and Project Manager prior to the use of said trucks. If there is no agreement, the Project Manager shall set the rate. The Contractor may contest the rate pursuant to Section 7.25, DISPUTES AND CLAIMS.
- (e) The rental period shall begin at the time equipment reaches the site of work, shall include each day that the machinery or equipment is at the site of the work and shall terminate at the end of the day on which the equipment is no longer needed. In the event the equipment must standby due to work being delayed or halted by reason of design, traffic, or other related problems uncontrollable by the Contractor, excluding Saturdays, Sundays and Legal Holidays, unless the equipment is used to perform work on such days, the rental shall be two (2) hours per day until the equipment is no longer needed.
 - (1) The rental time to be paid will be for the time actually used. The Project Manager prior to the performance of such work must approve any hours or operation in excess of eight (8) hours in any one (1) day.
 - (2) Rental time will not be allowed or credited for any day on which machinery or equipment is inoperative due to its breakdown. On such days, the Contractor will be paid only for the actual hours, if any, that the machinery or equipment was in operation.
 - (3) In the event the Force Account work is completed in less than eight (8) hours, equipment rental shall nevertheless be paid for a minimum eight (8) hours.
 - (4) For the purpose of determining the rental period the continuous and consecutive days shall be the normal eight (8) hour shift work day, Monday through Friday excluding legal holidays. Any work day to be paid less than eight (8) hours shall not be considered as continuous, except for equipment removed from rental for fuel and lubrication.
 - (5) No additional premium beyond the normal rates used will be paid for equipment over eight (8) hours per day or forty (40) hours per week.
- (f) All rental rates for machinery and equipment shall include the cost of fuel, oil, lubricants, supplies, small tools, necessary attachments, repairs, maintenance, tire wear, depreciation, storage, and all other incidentals.

- (g) All machinery and equipment shall be in good working condition and suitable for the purpose for which the machinery and equipment is to be used.
- (h) Individual pieces of equipment or tools having a replacement value of \$2,000 (two thousand dollars) or less, whether or not consumed by use, shall be considered to be small tools and included in the allowed markup for overhead and profit and no separate payment will be made therefor.
- (i) The total of all Force Account rental charges accrued over the duration of the contract for a specific item of equipment shall not exceed the replacement cost of that equipment.
 - (1) The Contractor shall provide the cost of replacement to the Project Manager prior to using the equipment. If the Project Manager does not agree with the replacement cost, the Project Manager shall set the replacement cost. The Contractor may contest the replacement cost pursuant to Section 7.25, DISPUTES AND CLAIMS.
- (j) Should the item of equipment be rented from an unrelated entity, the rental cost will be treated as equipment cost under Subsection 8.3.4.5, EQUIPMENT.
- (k) Transportation and/or Mobilization: The following provisions shall govern in determining the compensation to be paid to the Contractor for use of equipment or machinery on the Force Account method:
 - (1) The Project Manager shall approve the location from which the equipment is to be moved or transported.
 - (2) Where the equipment must be transported to the site of the Force Account work, the Department will pay the reasonable cost of mobilizing and transporting the equipment, including its loading and unloading, from its original location to the site of Force Account work. Upon completion of the work the Department will pay the reasonable cost of mobilizing and transporting the equipment back to its original location or to another location, whichever cost is less.
 - (3) The cost of transporting the equipment shall not exceed the rates established by the Hawaii State Public Utilities Commission. If such rates are nonexistent, then the rates will be determined by the Project Manager based upon the prevailing rates charged by established haulers within the locale.
 - (4) Where the equipment is self-propelled, the Department will pay the cost of moving the equipment by its own power from its original location to the site of the Force Account work. Upon completion of the work the Department will pay the reasonable cost of moving of the Equipment back to its original or another location, whichever cost is less.
 - (5) At the discretion of the Project Manager, when the Contractor desires to use such equipment for other than Force Account work, the costs of mobilization and transportation shall be prorated between the Force Account and non- Force Account work.
- (l) Pickup trucks, vans, storage trailers, unless specifically rented for the Force Account work, shall be considered incidental to the Force Account work and the costs therefor are included in the markup allowed under Section 4.5, ALLOWANCES FOR OVERHEAD AND PROFIT.

- 8.3.4.6 **STATE EXCISE (GROSS INCOME) TAX AND BOND.** A sum equal to the current percentage rate for the State excise (Gross Income) tax on the total sum determined in Subsections 8.3.4.1, 8.3.4.2, 8.3.4.3 and 8.3.4.4 above, and the bond premium shall be added as compensation to the Contractor. The actual bond premium not to exceed one percent (1%) shall be added to items covered by Subsections 8.3.4.1, 8.3.4.2, 8.3.4.3 and 8.3.4.4 when applicable.
- (a) The compensation as determined in Subsections 8.3.4.1, 8.3.4.2, 8.3.4.3, 8.3.4.4 and 8.3.4.5 above shall be deemed to be payment in full for work paid on a Force Account basis.
- 8.3.4.7 **RECORDS.** The Contractor and the Project Manager shall compare records of the labor, materials and equipment rentals paid by the Force Account basis at the end of each day. These daily records, if signed by both parties, shall thereafter be the basis for the quantities to be paid for by the Force Account method. The Contractor shall not be entitled to payment for Force Account records not signed by the Project Manager.
- 8.3.4.8 **STATEMENTS.** No payment will be made for work on a Force Account basis until the Contractor has submitted to the Project Manager, duplicate itemized statements of the cost of such Force Account work detailed as follows:
- (a) **Laborers.** Name, classification, date, daily hours, total hours, rate, and extension for each laborer and foreman and also the amount of fringe benefits payable if any.
- (b) **Equipment.** Designation, dates, daily hours, total hours, rental rate, and extension for each unit of machinery and equipment.
- (c) **Materials:**
- (1) Quantities of materials, prices and extensions.
- (2) Costs of transporting materials, if such cost is not reflected in the prices of the materials.
- (3) Statements shall be accompanied and supported by receipted invoices for all materials used and transportation charges. However, if materials used on the Force Account work are not specifically purchased for such work but are taken from the Contractor's stock, then in lieu of the invoices the Contractors shall submit an affidavit certifying that such materials were taken from stock and that the amount claimed represents the actual cost to the Contractor.
- (d) **Insurance.** Cost of property damage, liability and worker's compensation insurance premiums, unemployment insurance contributions, and social security tax.
- 8.4 **PROGRESS AND/OR PARTIAL PAYMENTS**
- 8.4.1 **PROGRESS PAYMENTS.** The Contractor will be allowed progress payments on a monthly basis upon preparing the Monthly Payment Application forms and submitting the originals to the Project Manager. The monthly payment shall be based on the items of work satisfactorily completed and the value thereof at unit prices and/or lump sum prices set forth in the contract as determined by the Project Manager and will be subject to compliance with Section 7.9, PAYROLLS AND PAYROLL RECORDS.
- 8.4.1.1 **ORIGINAL INVOICES REQUIRED.** All payments under this Contract shall be made only upon submission by the CONTRACTOR of original invoices specifying the amount due and certifying that services requested under the Contract have been performed by the CONTRACTOR according to the Contract.
- 8.4.1.2 **SUBJECT TO AVAILABLE FUNDS.** Such payments are subject to availability of funds and allotment by the Director of Finance in accordance with chapter 37, HRS. Further, all payments shall be made in accordance with and subject to chapter 40, HRS.

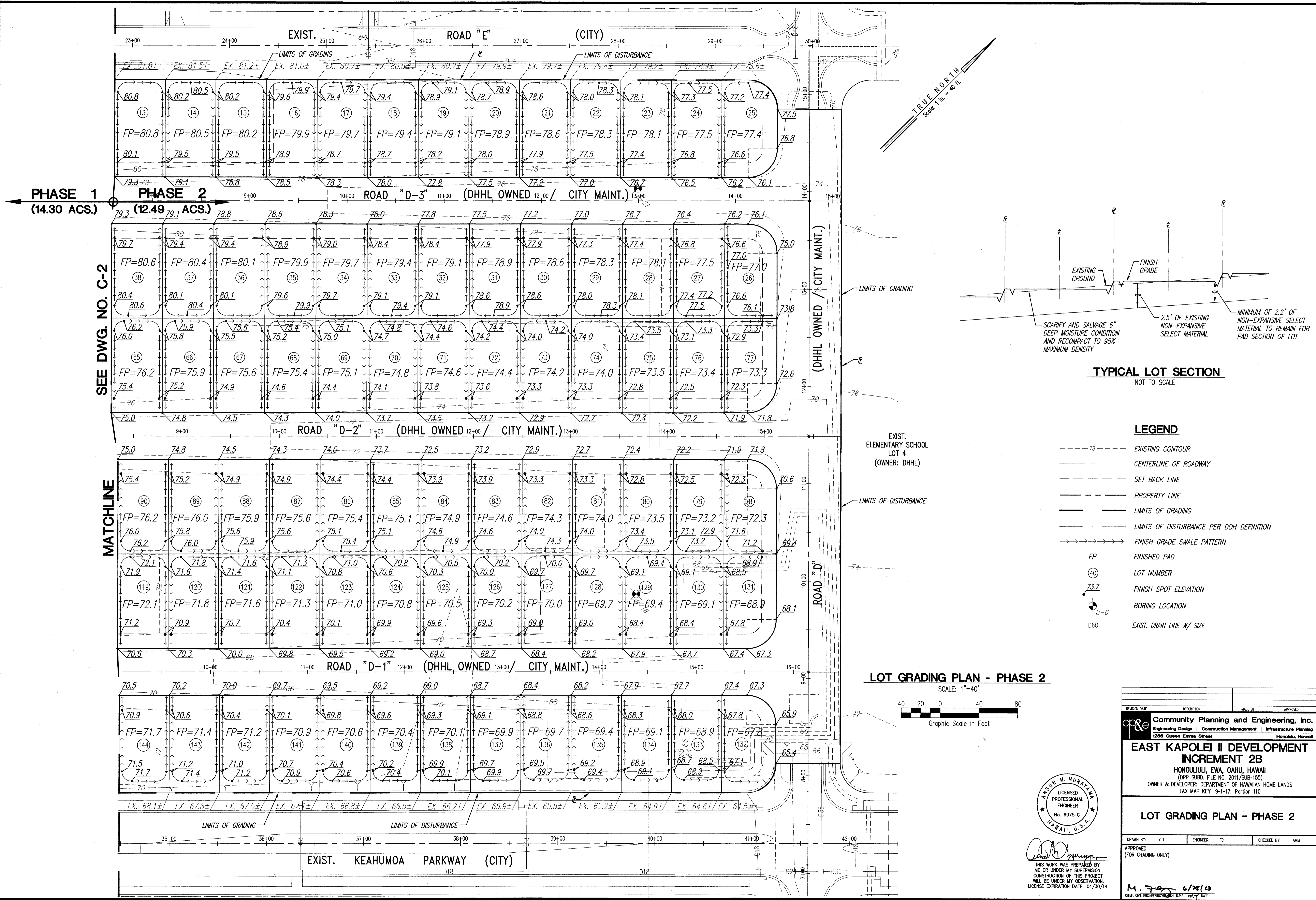
- 8.4.2 In the event the Contractor or any Subcontractor fails to submit certified copies of payrolls in accordance with the requirements of Section 7.9, PAYROLLS AND PAYROLL RECORDS, the Project Manager may retain the amount due for items of work for which payroll affidavits have not been submitted on a timely basis notwithstanding satisfactory completion of the work until such records have been duly submitted. The Contractor shall not be due any interest payment for any amount thus withheld.
- 8.4.3 PARTIAL PAYMENT FOR MATERIALS. The Contractor will also be allowed partial payments to the extent of ninety percent (90%) of the manufacturer's, supplier's, distributor's or fabricator's invoice cost of accepted materials to be incorporated in the work on the following conditions:
- 8.4.3.1 The materials are delivered and properly stored at the site of the work; or
- 8.4.3.2 For special items of materials accepted by the Project Manager, the materials are delivered to the Contractor or subcontractor(s) and properly stored in an acceptable location within a reasonable distance to the site of the work.
- 8.4.4 Partial payments shall be made only if the Project Manager finds that:
- 8.4.4.1 The Contractor has submitted bills of sale for the materials or otherwise demonstrates clear title to such materials.
- 8.4.4.2 The materials are insured for their full replacement value to the benefit of the Department against theft, fire, damages incurred in transportation to the site, and other hazards.
- 8.4.4.3 The materials are not subject to deterioration.
- 8.4.4.4 In case of materials stored off the project site, the materials are not commingled with other materials not to be incorporated into the project.
- 8.4.5 FEDERAL FUNDS. If this Contract is payable in whole or in part from federal funds, Contractor agrees that, as to the portion of the compensation under this Contract to be payable from federal funds, the Contractor shall be paid only from such funds received from the federal government, and shall not be paid from any other funds.
- 8.4.6 Final Payment Requirements (§3-122-112, HAR). Upon receipt of the Contractor's invoice for final payment, the Department shall verify compliance with Section 103D-328 HRS via Hawaii Compliance Express (HCE).
- 8.5 PROMPT PAYMENT (§3-125-23 HAR)
- 8.5.1 Any money, other than retainage, paid to the CONTRACTOR shall be dispersed to subcontractors within ten days after receipt of the money in accordance with the terms of the subcontract; provided that the subcontractor has met all the terms and conditions of the subcontract and there are no bona fide disputes; and
- 8.5.2 BONA FIDE DISPUTES. The existence of a bona fide dispute with a subcontractor or material supplier shall not release the Contractor of its prompt payment obligations as to all sums due that are not directly affected by such dispute.

- 8.5.3 FILING NON-PAYMENT COMPLAINT. Subcontractors and material suppliers may file in writing a complaint with the Chairman regarding non-payment by the Contractor. Such complaint shall include:
- 8.5.3.1 The amount past due for work performed and already paid for by the Department;
- 8.5.3.2 That all the terms, conditions or requirements of its subcontract have been met; and
- 8.5.3.3 That no bona fide dispute over its performance exists. The Department will investigate the validity of the complaint.
- 8.5.4 The Department may withhold from future progress payments amounts to cover any sums paid to the Contractor for work performed by a subcontractor if the Department finds that the subcontractor complaint regarding non-payment by the Contractor has merit.
- 8.5.5 If the Project Manager determines that the Contractor failed to make prompt payment required to a subcontractor or material supplier with whom it has no bona fide dispute, the Project Manager shall inform the Contractor of the findings and request the Contractor make payment accordingly. If the Contractor does not act promptly, the Project Manager shall take appropriate action as allowed under this Contract and/or refer the matter to the Contractor Licensing Board for appropriate action under Section 444-17, Hawaii Revised Statutes regarding the Revocation, Suspension and Renewal of (Contractor) Licenses and/or initiate a petition for debarment of the Contractor from bidding on other Department jobs.
- 8.6 RETAINAGE
- 8.6.1 The Department will retain five percent (5%) of the total amount of progress and / or partial payments until after completion of the entire Contract in an acceptable manner at which time this balance, less any previous payments, will be certified and paid to the Contractor. After fifty percent (50%) of the work is completed and progress is satisfactory, no additional sum will be withheld. If progress is not satisfactory, the Department may continue to withhold retainage sums not exceeding five percent (5%) of the amount due the Contractor.
- 8.6.1.1 Contractor may withhold from amounts due its subcontractors, only the same percentage of retainage as that of the Contractor, and only if its subcontractors have provided valid performance and payments bonds or other bond or collateral acceptable to the Contractor.
- 8.6.1.2 Contractor or Subcontractor may negotiate with, and retain from its respective subcontractors, a different retainage percentage which cannot exceed ten percent (10%).
- 8.6.2 The retainage shall not include sums deducted as liquidated damages from monies due or that may become due the Contractor under the Contract.
- 8.6.3 Subject to approval by the Chairman, and at the Chairman's sole discretion, Contractor may withdraw from time to time the whole or any portion of the sum retained after endorsing over to the Department and depositing with the Department any general obligation bond of the State or its political subdivisions suitable to the Department but in no case with a face value less than the value established by law of the amount to be withdrawn. The Department may sell the bond and use the proceeds therefrom in the same way as it may use monies directly retained from progress payments or the final payment.

- 8.7 **WARRANTY OF CLEAR TITLE.** The Contractor warrants and guarantees that all work and materials covered by progress or partial payments made thereon shall be free and clear of all liens, claims, security interests or encumbrances, and shall become the sole property of the Department. This provision shall not, however, be construed as an acceptance of the work nor shall it be construed as relieving the Contractor from the sole responsibility for all materials and work upon which payments have been made or the restoration of any damaged work, or as waiving the right of the Department to require the fulfillment of all the items of the Contract.
- 8.7.1 **LIENS AND WARRANTIES.** Goods provided under this Contract shall be provided free of all liens and provided together with all applicable warranties, or with the warranties described in the Contract documents, whichever are greater.
- 8.8 **FINAL PAYMENT**
- 8.8.1 Upon final payment to the CONTRACTOR, full payment to the subcontractor, including retainage, shall be made within ten days after receipt of the money; provided that there are no bona fide disputes over the subcontractor's performance under the subcontract.
- 8.8.2 Sums necessary to meet any claims of any kind by the Department may be retained from the sums due the Contractor until said claims have been fully and completely discharged or otherwise satisfied.
- 8.9 **STATE'S RIGHT TO OFFSET.** The STATE may offset against any monies or other obligations the STATE owes to the CONTRACTOR under this Contract, any amounts owed to the State of Hawaii by the CONTRACTOR under this Contract or any other Contracts or pursuant to any law or other obligation owed to the State of Hawaii by the CONTRACTOR, including, without limitation, the payment of any taxes or levies of any kind or nature. The STATE will notify the CONTRACTOR in writing of any offset and the nature of such offset. For purposes of this Subsection, amounts owed to the State of Hawaii shall not include debts or obligations which have been liquidated, agreed to by the CONTRACTOR, and are covered by an installment payment or other settlement plan approved by the State of Hawaii, provided, however, that the CONTRACTOR shall be entitled to such exclusion only to the extent that the CONTRACTOR is current with, and not delinquent on, any payments or obligations owed to the State of Hawaii under such payment or other settlement plan.

~END OF ARTICLE 8~

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**AGREEMENT
BETWEEN OWNER AND CONTRACTOR
FOR CONSTRUCTION CONTRACT (STIPULATED PRICE)**

THIS AGREEMENT is by and between Na Kupa'a o Kuhio (“Owner”) and
[TBD] (“Contractor”).

Owner and Contractor hereby agree as follows:

ARTICLE 1 – WORK

1.01 Contractor shall complete all Work as specified or indicated in the Contract Documents. The Work is generally described as follows:

Construction of on-site water and wastewater facilities for the East Kapolei II Development, Increment IIB, Honouliuli, Ewa, Oahu, Hawaii.

ARTICLE 2 – THE PROJECT

2.01 The Project for which the Work under the Contract Documents may be the whole or only a part is generally described as follows:

Construction of on-site infrastructure and residential lots for the East Kapolei II Development, Increment IIB, Honouliuli, Ewa, Oahu, Hawaii.

ARTICLE 3 – ENGINEER

3.01 The Project has been designed by Community Planning and Engineering (Engineer), which is to act as Owner's representative, assume all duties and responsibilities, and have the rights and authority assigned to Engineer in the Contract Documents in connection with the completion of the Work in accordance with the Contract Documents.

ARTICLE 4 – CONTRACT TIMES

4.01 *Time of the Essence*

A. All time limits for Milestones, if any, Substantial Completion, and completion and readiness for final payment as stated in the Contract Documents are of the essence of the Contract.

4.02 *Days to Achieve Substantial Completion and Final Payment*

A. The Work will be substantially completed within 240 days after the date when the Contract Times commence to run as provided in Paragraph 2.03 of the General Conditions

4.03 *Liquidated Damages*

- A. Contractor and Owner recognize that time is of the essence as stated in Paragraph 4.01 above and that Owner will suffer financial loss if the Work is not completed within the times specified in Paragraph 4.02 above, plus any extensions thereof allowed in accordance with Article 12 of the General Conditions. The parties also recognize the delays, expense, and difficulties involved in proving in a legal or arbitration proceeding the actual loss suffered by Owner if the Work is not completed on time. Accordingly, instead of requiring any such proof, Owner and Contractor agree that as liquidated damages for delay (but not as a penalty), Contractor shall pay Owner \$200.00 for each day that expires after the time specified in Paragraph 4.02 above for Substantial Completion until the Work is substantially complete.

ARTICLE 5 – CONTRACT PRICE

- 5.01 Owner shall pay Contractor for completion of the Work in accordance with the Contract Documents an amount in current funds equal to the sum of the amounts determined pursuant to Paragraphs 5.01.A, 5.01.B, and 5.01.C below:

- A. (Not Used)
- B. (Not Used)
- C. For all Work, at the prices stated in Contractor's Bid, attached hereto as an exhibit.

ARTICLE 6 – PAYMENT PROCEDURES

6.01 *Submittal and Processing of Payments*

- A. Contractor shall submit Applications for Payment in accordance with Article 14 of the General Conditions. Applications for Payment will be processed by Engineer as provided in the General Conditions.

6.02 *Progress Payments; Retainage*

- A. Owner shall make progress payments on account of the Contract Price on the basis of Contractor's Applications for Payment on or about the ____ day of each month during performance of the Work as provided in Paragraph 6.02.A.1 below. All such payments will be measured by the schedule of values established as provided in Paragraph 2.07.A of the General Conditions (and in the case of Unit Price Work based on the number of units completed) or, in the event there is no schedule of values, as provided in the General Requirements.
 - 1. Prior to Substantial Completion, progress payments will be made in an amount equal to the percentage indicated below but, in each case, less the aggregate of payments previously made and less such amounts as Engineer may determine or Owner may withhold, including but not limited to liquidated damages, in accordance with Paragraph 14.02 of the General Conditions.

- a. _____ percent of Work completed (with the balance being retainage). If the Work has been 50 percent completed as determined by Engineer, and if the character and progress of the Work have been satisfactory to Owner and Engineer, then as long as the character and progress of the Work remain satisfactory to Owner and Engineer, there will be no additional retainage; and
 - b. _____ percent of cost of materials and equipment not incorporated in the Work (with the balance being retainage).
- B. Upon Substantial Completion, Owner shall pay an amount sufficient to increase total payments to Contractor to _____ percent of the Work completed, less such amounts as Engineer shall determine in accordance with Paragraph 14.02.B.5 of the General Conditions and less _____ percent of Engineer's estimate of the value of Work to be completed or corrected as shown on the tentative list of items to be completed or corrected attached to the certificate of Substantial Completion.

6.03 *Final Payment*

- A. Upon final completion and acceptance of the Work in accordance with Paragraph 14.07 of the General Conditions, Owner shall pay the remainder of the Contract Price as recommended by Engineer as provided in said Paragraph 14.07.

ARTICLE 7 – INTEREST

- 7.01 All moneys not paid when due as provided in Article 14 of the General Conditions shall bear interest at the rate of _____ percent per annum.

ARTICLE 8 – CONTRACTOR'S REPRESENTATIONS

- 8.01 In order to induce Owner to enter into this Agreement, Contractor makes the following representations:
- A. Contractor has examined and carefully studied the Contract Documents and the other related data identified in the Bidding Documents.
 - B. Contractor has visited the Site and become familiar with and is satisfied as to the general, local, and Site conditions that may affect cost, progress, and performance of the Work.
 - C. Contractor is familiar with and is satisfied as to all federal, state, and local Laws and Regulations that may affect cost, progress, and performance of the Work.
 - D. Contractor has carefully studied all reports of explorations and tests of subsurface conditions at or contiguous to the Site and all drawings of physical conditions relating to existing surface or subsurface structures at the Site (except Underground Facilities), if any, that have been identified in Paragraph SC-4.02 of the Supplementary Conditions as containing reliable "technical data."

- E. Contractor has considered the information known to Contractor; information commonly known to contractors doing business in the locality of the Site; information and observations obtained from visits to the Site; the Contract Documents; and drawings identified in the Contract Documents, with respect to the effect of such information, observations, and documents on (1) the cost, progress, and performance of the Work; (2) the means, methods, techniques, sequences, and procedures of construction to be employed by Contractor, including any specific means, methods, techniques, sequences, and procedures of construction expressly required by the Contract Documents; and (3) Contractor's safety precautions and programs.
- F. Based on the information and observations referred to in Paragraph 8.01.E above, Contractor does not consider that further examinations, investigations, explorations, tests, studies, or data are necessary for the performance of the Work at the Contract Price, within the Contract Times, and in accordance with the other terms and conditions of the Contract Documents.
- G. Contractor is aware of the general nature of work to be performed by Owner and others at the Site that relates to the Work as indicated in the Contract Documents.
- H. Contractor has given Engineer written notice of all conflicts, errors, ambiguities, or discrepancies that Contractor has discovered in the Contract Documents, and the written resolution thereof by Engineer is acceptable to Contractor.
- I. The Contract Documents are generally sufficient to indicate and convey understanding of all terms and conditions for performance and furnishing of the Work.

ARTICLE 9 – CONTRACT DOCUMENTS

9.01 *Contents*

- A. The Contract Documents consist of the following:
 - 1. This Agreement (pages 1 to __, inclusive).
 - 2. Performance bond (pages ____ to ____, inclusive).
 - 3. Payment bond (pages ____ to ____, inclusive).
 - 4. Other bonds (pages ____ to ____, inclusive).
 - a. ____ (pages ____ to ____, inclusive).
 - b. ____ (pages ____ to ____, inclusive).
 - c. ____ (pages ____ to ____, inclusive).
 - 5. General Conditions (pages ____ to ____, inclusive).
 - 6. Supplementary Conditions (pages ____ to ____, inclusive).

7. Specifications as listed in the table of contents of the Project Manual.
 8. Drawings consisting of _____ sheets with each sheet bearing the following general title: _____ [or] the Drawings listed on attached sheet index.
 9. Addenda (numbers _____ to _____, inclusive).
 10. Exhibits to this Agreement (enumerated as follows):
 - a. Contractor's Bid (pages _____ to _____, inclusive).
 - b. Documentation submitted by Contractor prior to Notice of Award (pages _____ to _____, inclusive).
 - c. *[List other required attachments (if any), such as documents required by funding or lending agencies].*
 11. The following which may be delivered or issued on or after the Effective Date of the Agreement and are not attached hereto:
 - a. Notice to Proceed (pages _____ to _____, inclusive).
 - b. Work Change Directives.
 - c. Change Orders.
- B. The documents listed in Paragraph 9.01.A are attached to this Agreement (except as expressly noted otherwise above).
- C. There are no Contract Documents other than those listed above in this Article 9.
- D. The Contract Documents may only be amended, modified, or supplemented as provided in Paragraph 3.04 of the General Conditions.

ARTICLE 10 – MISCELLANEOUS

10.01 Terms

- A. Terms used in this Agreement will have the meanings stated in the General Conditions and the Supplementary Conditions.

10.02 Assignment of Contract

- A. No assignment by a party hereto of any rights under or interests in the Contract will be binding on another party hereto without the written consent of the party sought to be bound; and, specifically but without limitation, moneys that may become due and moneys that are due may not be assigned without such consent (except to the extent that the effect of this restriction may be limited by law), and unless specifically stated to the contrary in any written consent to an assignment, no assignment will release or discharge the assignor from any duty or responsibility under the Contract Documents.

10.03 *Successors and Assigns*

- A. Owner and Contractor each binds itself, its partners, successors, assigns, and legal representatives to the other party hereto, its partners, successors, assigns, and legal representatives in respect to all covenants, agreements, and obligations contained in the Contract Documents.

10.04 *Severability*

- A. Any provision or part of the Contract Documents held to be void or unenforceable under any Law or Regulation shall be deemed stricken, and all remaining provisions shall continue to be valid and binding upon Owner and Contractor, who agree that the Contract Documents shall be reformed to replace such stricken provision or part thereof with a valid and enforceable provision that comes as close as possible to expressing the intention of the stricken provision.

10.05 *Contractor's Certifications*

- A. Contractor certifies that it has not engaged in corrupt, fraudulent, collusive, or coercive practices in competing for or in executing the Contract. For the purposes of this Paragraph 10.05:
 - 1. "corrupt practice" means the offering, giving, receiving, or soliciting of any thing of value likely to influence the action of a public official in the bidding process or in the Contract execution;
 - 2. "fraudulent practice" means an intentional misrepresentation of facts made (a) to influence the bidding process or the execution of the Contract to the detriment of Owner, (b) to establish Bid or Contract prices at artificial non-competitive levels, or (c) to deprive Owner of the benefits of free and open competition;
 - 3. "collusive practice" means a scheme or arrangement between two or more Bidders, with or without the knowledge of Owner, a purpose of which is to establish Bid prices at artificial, non-competitive levels; and
 - 4. "coercive practice" means harming or threatening to harm, directly or indirectly, persons or their property to influence their participation in the bidding process or affect the execution of the Contract.

IN WITNESS WHEREOF, Owner and Contractor have signed this Agreement. Counterparts have been delivered to Owner and Contractor. All portions of the Contract Documents have been signed or have been identified by Owner and Contractor or on their behalf.

This Agreement will be effective on _____ (which is the Effective Date of the Agreement).

OWNER:

CONTRACTOR

Na Kupa'a o Kuhio _____

By: Patricia Brandt _____

Title: Executive Directoor _____

Attest: _____

Title: _____

Address for giving notices:

P.O. Box 1413 _____

Honolulu, Hawaii 96806 _____

(If Owner is a corporation, attach evidence of authority to sign. If Owner is a public body, attach evidence of authority to sign and resolution or other documents authorizing execution of this Agreement.)

By: _____

Title: _____

(If Contractor is a corporation, a partnership, or a joint venture, attach evidence of authority to sign.)

Attest: _____

Title: _____

Address for giving notices:

License No.: _____

(Where applicable)

Agent for service of process:

**Engineers Joint Documents Committee
Design and Construction Related Documents
Instructions and License Agreement**

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2. Make sure that you have the correct version for your word processing software.

How to Use:

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2. Similarly, your software may change the font specification if the font is not available in your system. It will choose a font that is close in appearance. In this event, the pagination may not match the control set.
3. If you modify the document, you must follow the instructions in the License Agreement about notification.
4. Also note the instruction in the License Agreement about the EJCDC copyright.

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Term:

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2. if EJCDC's selling agent is unable to deliver a replacement CD or diskette which is free of defects in materials and workmanship, you may terminate this Agreement by returning EJCDC Document and your money will be refunded.

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General:

You may not sublicense, assign, or transfer this license except as expressly provided in this Agreement. Any attempt otherwise to sublicense, assign, or transfer any of the rights, duties, or obligations hereunder is void.

This Agreement shall be governed by the laws of the State of Virginia. Should you have any questions concerning this Agreement, you may contact EJCDC by writing to:

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General Counsel

National Society of Professional Engineers
1420 King Street
Alexandria, VA 22314

Phone: (703) 684-2845
Fax: (703) 836-4875
e-mail: aschwartz@nspe.org

You acknowledge that you have read this agreement, understand it and agree to be bound by its terms and conditions. You further agree that it is the complete and exclusive statement of the agreement between us which supersedes any proposal or prior agreement, oral or written, and any other communications between us relating to the subject matter of this agreement.

This document has important legal consequences; consultation with an attorney is encouraged with respect to its use or modification. This document should be adapted to the particular circumstances of the contemplated Project and the controlling Laws and Regulations.

STANDARD GENERAL CONDITIONS OF THE CONSTRUCTION CONTRACT

Prepared by

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These General Conditions have been prepared for use with the Suggested Forms of Agreement Between Owner and Contractor (EJCDC C-520 or C-525, 2007 Editions). Their provisions are interrelated and a change in one may necessitate a change in the other. Comments concerning their usage are contained in the Narrative Guide to the EJCDC Construction Documents (EJCDC C-001, 2007 Edition). For guidance in the preparation of Supplementary Conditions, see Guide to the Preparation of Supplementary Conditions (EJCDC C-800, 2007 Edition).

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STANDARD GENERAL CONDITIONS OF THE CONSTRUCTION CONTRACT

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ARTICLE 1 – DEFINITIONS AND TERMINOLOGY

1.01 *Defined Terms*

- A. Wherever used in the Bidding Requirements or Contract Documents and printed with initial capital letters, the terms listed below will have the meanings indicated which are applicable to both the singular and plural thereof. In addition to terms specifically defined, terms with initial capital letters in the Contract Documents include references to identified articles and paragraphs, and the titles of other documents or forms.
1. *Addenda*—Written or graphic instruments issued prior to the opening of Bids which clarify, correct, or change the Bidding Requirements or the proposed Contract Documents.
 2. *Agreement*—The written instrument which is evidence of the agreement between Owner and Contractor covering the Work.
 3. *Application for Payment*—The form acceptable to Engineer which is to be used by Contractor during the course of the Work in requesting progress or final payments and which is to be accompanied by such supporting documentation as is required by the Contract Documents.
 4. *Asbestos*—Any material that contains more than one percent asbestos and is friable or is releasing asbestos fibers into the air above current action levels established by the United States Occupational Safety and Health Administration.
 5. *Bid*—The offer or proposal of a Bidder submitted on the prescribed form setting forth the prices for the Work to be performed.
 6. *Bidder*—The individual or entity who submits a Bid directly to Owner.
 7. *Bidding Documents*—The Bidding Requirements and the proposed Contract Documents (including all Addenda).
 8. *Bidding Requirements*—The advertisement or invitation to bid, Instructions to Bidders, Bid security of acceptable form, if any, and the Bid Form with any supplements.
 9. *Change Order*—A document recommended by Engineer which is signed by Contractor and Owner and authorizes an addition, deletion, or revision in the Work or an adjustment in the Contract Price or the Contract Times, issued on or after the Effective Date of the Agreement.
 10. *Claim*—A demand or assertion by Owner or Contractor seeking an adjustment of Contract Price or Contract Times, or both, or other relief with respect to the terms of the Contract. A demand for money or services by a third party is not a Claim.
 11. *Contract*—The entire and integrated written agreement between the Owner and Contractor concerning the Work. The Contract supersedes prior negotiations, representations, or agreements, whether written or oral.

12. *Contract Documents*—Those items so designated in the Agreement. Only printed or hard copies of the items listed in the Agreement are Contract Documents. Approved Shop Drawings, other Contractor submittals, and the reports and drawings of subsurface and physical conditions are not Contract Documents.
13. *Contract Price*—The moneys payable by Owner to Contractor for completion of the Work in accordance with the Contract Documents as stated in the Agreement (subject to the provisions of Paragraph 11.03 in the case of Unit Price Work).
14. *Contract Times*—The number of days or the dates stated in the Agreement to: (i) achieve Milestones, if any; (ii) achieve Substantial Completion; and (iii) complete the Work so that it is ready for final payment as evidenced by Engineer's written recommendation of final payment.
15. *Contractor*—The individual or entity with whom Owner has entered into the Agreement.
16. *Cost of the Work*—See Paragraph 11.01 for definition.
17. *Drawings*—That part of the Contract Documents prepared or approved by Engineer which graphically shows the scope, extent, and character of the Work to be performed by Contractor. Shop Drawings and other Contractor submittals are not Drawings as so defined.
18. *Effective Date of the Agreement*—The date indicated in the Agreement on which it becomes effective, but if no such date is indicated, it means the date on which the Agreement is signed and delivered by the last of the two parties to sign and deliver.
19. *Engineer*—The individual or entity named as such in the Agreement.
20. *Field Order*—A written order issued by Engineer which requires minor changes in the Work but which does not involve a change in the Contract Price or the Contract Times.
21. *General Requirements*—Sections of Division 1 of the Specifications.
22. *Hazardous Environmental Condition*—The presence at the Site of Asbestos, PCBs, Petroleum, Hazardous Waste, or Radioactive Material in such quantities or circumstances that may present a substantial danger to persons or property exposed thereto.
23. *Hazardous Waste*—The term Hazardous Waste shall have the meaning provided in Section 1004 of the Solid Waste Disposal Act (42 USC Section 6903) as amended from time to time.
24. *Laws and Regulations; Laws or Regulations*—Any and all applicable laws, rules, regulations, ordinances, codes, and orders of any and all governmental bodies, agencies, authorities, and courts having jurisdiction.
25. *Liens*—Charges, security interests, or encumbrances upon Project funds, real property, or personal property.
26. *Milestone*—A principal event specified in the Contract Documents relating to an intermediate completion date or time prior to Substantial Completion of all the Work.

27. *Notice of Award*—The written notice by Owner to the Successful Bidder stating that upon timely compliance by the Successful Bidder with the conditions precedent listed therein, Owner will sign and deliver the Agreement.
28. *Notice to Proceed*—A written notice given by Owner to Contractor fixing the date on which the Contract Times will commence to run and on which Contractor shall start to perform the Work under the Contract Documents.
29. *Owner*—The individual or entity with whom Contractor has entered into the Agreement and for whom the Work is to be performed.
30. *PCBs*—Polychlorinated biphenyls.
31. *Petroleum*—Petroleum, including crude oil or any fraction thereof which is liquid at standard conditions of temperature and pressure (60 degrees Fahrenheit and 14.7 pounds per square inch absolute), such as oil, petroleum, fuel oil, oil sludge, oil refuse, gasoline, kerosene, and oil mixed with other non-Hazardous Waste and crude oils.
32. *Progress Schedule*—A schedule, prepared and maintained by Contractor, describing the sequence and duration of the activities comprising the Contractor's plan to accomplish the Work within the Contract Times.
33. *Project*—The total construction of which the Work to be performed under the Contract Documents may be the whole, or a part.
34. *Project Manual*—The bound documentary information prepared for bidding and constructing the Work. A listing of the contents of the Project Manual, which may be bound in one or more volumes, is contained in the table(s) of contents.
35. *Radioactive Material*—Source, special nuclear, or byproduct material as defined by the Atomic Energy Act of 1954 (42 USC Section 2011 et seq.) as amended from time to time.
36. *Resident Project Representative*—The authorized representative of Engineer who may be assigned to the Site or any part thereof.
37. *Samples*—Physical examples of materials, equipment, or workmanship that are representative of some portion of the Work and which establish the standards by which such portion of the Work will be judged.
38. *Schedule of Submittals*—A schedule, prepared and maintained by Contractor, of required submittals and the time requirements to support scheduled performance of related construction activities.
39. *Schedule of Values*—A schedule, prepared and maintained by Contractor, allocating portions of the Contract Price to various portions of the Work and used as the basis for reviewing Contractor's Applications for Payment.

40. *Shop Drawings*—All drawings, diagrams, illustrations, schedules, and other data or information which are specifically prepared or assembled by or for Contractor and submitted by Contractor to illustrate some portion of the Work.
41. *Site*—Lands or areas indicated in the Contract Documents as being furnished by Owner upon which the Work is to be performed, including rights-of-way and easements for access thereto, and such other lands furnished by Owner which are designated for the use of Contractor.
42. *Specifications*—That part of the Contract Documents consisting of written requirements for materials, equipment, systems, standards and workmanship as applied to the Work, and certain administrative requirements and procedural matters applicable thereto.
43. *Subcontractor*—An individual or entity having a direct contract with Contractor or with any other Subcontractor for the performance of a part of the Work at the Site.
44. *Substantial Completion*—The time at which the Work (or a specified part thereof) has progressed to the point where, in the opinion of Engineer, the Work (or a specified part thereof) is sufficiently complete, in accordance with the Contract Documents, so that the Work (or a specified part thereof) can be utilized for the purposes for which it is intended. The terms “substantially complete” and “substantially completed” as applied to all or part of the Work refer to Substantial Completion thereof.
45. *Successful Bidder*—The Bidder submitting a responsive Bid to whom Owner makes an award.
46. *Supplementary Conditions*—That part of the Contract Documents which amends or supplements these General Conditions.
47. *Supplier*—A manufacturer, fabricator, supplier, distributor, materialman, or vendor having a direct contract with Contractor or with any Subcontractor to furnish materials or equipment to be incorporated in the Work by Contractor or Subcontractor.
48. *Underground Facilities*—All underground pipelines, conduits, ducts, cables, wires, manholes, vaults, tanks, tunnels, or other such facilities or attachments, and any encasements containing such facilities, including those that convey electricity, gases, steam, liquid petroleum products, telephone or other communications, cable television, water, wastewater, storm water, other liquids or chemicals, or traffic or other control systems.
49. *Unit Price Work*—Work to be paid for on the basis of unit prices.
50. *Work*—The entire construction or the various separately identifiable parts thereof required to be provided under the Contract Documents. Work includes and is the result of performing or providing all labor, services, and documentation necessary to produce such construction, and furnishing, installing, and incorporating all materials and equipment into such construction, all as required by the Contract Documents.
51. *Work Change Directive*—A written statement to Contractor issued on or after the Effective Date of the Agreement and signed by Owner and recommended by Engineer ordering an

addition, deletion, or revision in the Work, or responding to differing or unforeseen subsurface or physical conditions under which the Work is to be performed or to emergencies. A Work Change Directive will not change the Contract Price or the Contract Times but is evidence that the parties expect that the change ordered or documented by a Work Change Directive will be incorporated in a subsequently issued Change Order following negotiations by the parties as to its effect, if any, on the Contract Price or Contract Times.

1.02 Terminology

A. The words and terms discussed in Paragraph 1.02.B through F are not defined but, when used in the Bidding Requirements or Contract Documents, have the indicated meaning.

B. *Intent of Certain Terms or Adjectives:*

1. The Contract Documents include the terms “as allowed,” “as approved,” “as ordered,” “as directed” or terms of like effect or import to authorize an exercise of professional judgment by Engineer. In addition, the adjectives “reasonable,” “suitable,” “acceptable,” “proper,” “satisfactory,” or adjectives of like effect or import are used to describe an action or determination of Engineer as to the Work. It is intended that such exercise of professional judgment, action, or determination will be solely to evaluate, in general, the Work for compliance with the information in the Contract Documents and with the design concept of the Project as a functioning whole as shown or indicated in the Contract Documents (unless there is a specific statement indicating otherwise). The use of any such term or adjective is not intended to and shall not be effective to assign to Engineer any duty or authority to supervise or direct the performance of the Work, or any duty or authority to undertake responsibility contrary to the provisions of Paragraph 9.09 or any other provision of the Contract Documents.

C. *Day:*

1. The word “day” means a calendar day of 24 hours measured from midnight to the next midnight.

D. *Defective:*

1. The word “defective,” when modifying the word “Work,” refers to Work that is unsatisfactory, faulty, or deficient in that it:
 - a. does not conform to the Contract Documents; or
 - b. does not meet the requirements of any applicable inspection, reference standard, test, or approval referred to in the Contract Documents; or
 - c. has been damaged prior to Engineer’s recommendation of final payment (unless responsibility for the protection thereof has been assumed by Owner at Substantial Completion in accordance with Paragraph 14.04 or 14.05).

E. *Furnish, Install, Perform, Provide:*

1. The word “furnish,” when used in connection with services, materials, or equipment, shall mean to supply and deliver said services, materials, or equipment to the Site (or some other specified location) ready for use or installation and in usable or operable condition.
 2. The word “install,” when used in connection with services, materials, or equipment, shall mean to put into use or place in final position said services, materials, or equipment complete and ready for intended use.
 3. The words “perform” or “provide,” when used in connection with services, materials, or equipment, shall mean to furnish and install said services, materials, or equipment complete and ready for intended use.
 4. When “furnish,” “install,” “perform,” or “provide” is not used in connection with services, materials, or equipment in a context clearly requiring an obligation of Contractor, “provide” is implied.
- F. Unless stated otherwise in the Contract Documents, words or phrases that have a well-known technical or construction industry or trade meaning are used in the Contract Documents in accordance with such recognized meaning.

ARTICLE 2 – PRELIMINARY MATTERS

2.01 *Delivery of Bonds and Evidence of Insurance*

- A. When Contractor delivers the executed counterparts of the Agreement to Owner, Contractor shall also deliver to Owner such bonds as Contractor may be required to furnish.
- B. *Evidence of Insurance:* Before any Work at the Site is started, Contractor and Owner shall each deliver to the other, with copies to each additional insured identified in the Supplementary Conditions, certificates of insurance (and other evidence of insurance which either of them or any additional insured may reasonably request) which Contractor and Owner respectively are required to purchase and maintain in accordance with Article 5.

2.02 *Copies of Documents*

- A. Owner shall furnish to Contractor up to ten printed or hard copies of the Drawings and Project Manual. Additional copies will be furnished upon request at the cost of reproduction.

2.03 *Commencement of Contract Times; Notice to Proceed*

- A. The Contract Times will commence to run on the thirtieth day after the Effective Date of the Agreement or, if a Notice to Proceed is given, on the day indicated in the Notice to Proceed. A Notice to Proceed may be given at any time within 30 days after the Effective Date of the Agreement. In no event will the Contract Times commence to run later than the sixtieth day after the day of Bid opening or the thirtieth day after the Effective Date of the Agreement, whichever date is earlier.

2.04 *Starting the Work*

- A. Contractor shall start to perform the Work on the date when the Contract Times commence to run. No Work shall be done at the Site prior to the date on which the Contract Times commence to run.

2.05 *Before Starting Construction*

- A. *Preliminary Schedules:* Within 10 days after the Effective Date of the Agreement (unless otherwise specified in the General Requirements), Contractor shall submit to Engineer for timely review:
 - 1. a preliminary Progress Schedule indicating the times (numbers of days or dates) for starting and completing the various stages of the Work, including any Milestones specified in the Contract Documents;
 - 2. a preliminary Schedule of Submittals; and
 - 3. a preliminary Schedule of Values for all of the Work which includes quantities and prices of items which when added together equal the Contract Price and subdivides the Work into component parts in sufficient detail to serve as the basis for progress payments during performance of the Work. Such prices will include an appropriate amount of overhead and profit applicable to each item of Work.

2.06 *Preconstruction Conference; Designation of Authorized Representatives*

- A. Before any Work at the Site is started, a conference attended by Owner, Contractor, Engineer, and others as appropriate will be held to establish a working understanding among the parties as to the Work and to discuss the schedules referred to in Paragraph 2.05.A, procedures for handling Shop Drawings and other submittals, processing Applications for Payment, and maintaining required records.
- B. At this conference Owner and Contractor each shall designate, in writing, a specific individual to act as its authorized representative with respect to the services and responsibilities under the Contract. Such individuals shall have the authority to transmit instructions, receive information, render decisions relative to the Contract, and otherwise act on behalf of each respective party.

2.07 *Initial Acceptance of Schedules*

- A. At least 10 days before submission of the first Application for Payment a conference attended by Contractor, Engineer, and others as appropriate will be held to review for acceptability to Engineer as provided below the schedules submitted in accordance with Paragraph 2.05.A. Contractor shall have an additional 10 days to make corrections and adjustments and to complete and resubmit the schedules. No progress payment shall be made to Contractor until acceptable schedules are submitted to Engineer.
 - 1. The Progress Schedule will be acceptable to Engineer if it provides an orderly progression of the Work to completion within the Contract Times. Such acceptance will not impose on

Engineer responsibility for the Progress Schedule, for sequencing, scheduling, or progress of the Work, nor interfere with or relieve Contractor from Contractor's full responsibility therefor.

2. Contractor's Schedule of Submittals will be acceptable to Engineer if it provides a workable arrangement for reviewing and processing the required submittals.
3. Contractor's Schedule of Values will be acceptable to Engineer as to form and substance if it provides a reasonable allocation of the Contract Price to component parts of the Work.

ARTICLE 3 – CONTRACT DOCUMENTS: INTENT, AMENDING, REUSE

3.01 *Intent*

- A. The Contract Documents are complementary; what is required by one is as binding as if required by all.
- B. It is the intent of the Contract Documents to describe a functionally complete project (or part thereof) to be constructed in accordance with the Contract Documents. Any labor, documentation, services, materials, or equipment that reasonably may be inferred from the Contract Documents or from prevailing custom or trade usage as being required to produce the indicated result will be provided whether or not specifically called for, at no additional cost to Owner.
- C. Clarifications and interpretations of the Contract Documents shall be issued by Engineer as provided in Article 9.

3.02 *Reference Standards*

- A. Standards, Specifications, Codes, Laws, and Regulations
 1. Reference to standards, specifications, manuals, or codes of any technical society, organization, or association, or to Laws or Regulations, whether such reference be specific or by implication, shall mean the standard, specification, manual, code, or Laws or Regulations in effect at the time of opening of Bids (or on the Effective Date of the Agreement if there were no Bids), except as may be otherwise specifically stated in the Contract Documents.
 2. No provision of any such standard, specification, manual, or code, or any instruction of a Supplier, shall be effective to change the duties or responsibilities of Owner, Contractor, or Engineer, or any of their subcontractors, consultants, agents, or employees, from those set forth in the Contract Documents. No such provision or instruction shall be effective to assign to Owner, Engineer, or any of their officers, directors, members, partners, employees, agents, consultants, or subcontractors, any duty or authority to supervise or direct the performance of the Work or any duty or authority to undertake responsibility inconsistent with the provisions of the Contract Documents.

3.03 *Reporting and Resolving Discrepancies*

A. *Reporting Discrepancies:*

1. *Contractor's Review of Contract Documents Before Starting Work:* Before undertaking each part of the Work, Contractor shall carefully study and compare the Contract Documents and check and verify pertinent figures therein and all applicable field measurements. Contractor shall promptly report in writing to Engineer any conflict, error, ambiguity, or discrepancy which Contractor discovers, or has actual knowledge of, and shall obtain a written interpretation or clarification from Engineer before proceeding with any Work affected thereby.
2. *Contractor's Review of Contract Documents During Performance of Work:* If, during the performance of the Work, Contractor discovers any conflict, error, ambiguity, or discrepancy within the Contract Documents, or between the Contract Documents and (a) any applicable Law or Regulation, (b) any standard, specification, manual, or code, or (c) any instruction of any Supplier, then Contractor shall promptly report it to Engineer in writing. Contractor shall not proceed with the Work affected thereby (except in an emergency as required by Paragraph 6.16.A) until an amendment or supplement to the Contract Documents has been issued by one of the methods indicated in Paragraph 3.04.
3. Contractor shall not be liable to Owner or Engineer for failure to report any conflict, error, ambiguity, or discrepancy in the Contract Documents unless Contractor had actual knowledge thereof.

B. *Resolving Discrepancies:*

1. Except as may be otherwise specifically stated in the Contract Documents, the provisions of the Contract Documents shall take precedence in resolving any conflict, error, ambiguity, or discrepancy between the provisions of the Contract Documents and:
 - a. the provisions of any standard, specification, manual, or code, or the instruction of any Supplier (whether or not specifically incorporated by reference in the Contract Documents); or
 - b. the provisions of any Laws or Regulations applicable to the performance of the Work (unless such an interpretation of the provisions of the Contract Documents would result in violation of such Law or Regulation).

3.04 *Amending and Supplementing Contract Documents*

- A. The Contract Documents may be amended to provide for additions, deletions, and revisions in the Work or to modify the terms and conditions thereof by either a Change Order or a Work Change Directive.
- B. The requirements of the Contract Documents may be supplemented, and minor variations and deviations in the Work may be authorized, by one or more of the following ways:

1. A Field Order;
2. Engineer's approval of a Shop Drawing or Sample (subject to the provisions of Paragraph 6.17.D.3); or
3. Engineer's written interpretation or clarification.

3.05 *Reuse of Documents*

A. Contractor and any Subcontractor or Supplier shall not:

1. have or acquire any title to or ownership rights in any of the Drawings, Specifications, or other documents (or copies of any thereof) prepared by or bearing the seal of Engineer or its consultants, including electronic media editions; or
2. reuse any such Drawings, Specifications, other documents, or copies thereof on extensions of the Project or any other project without written consent of Owner and Engineer and specific written verification or adaptation by Engineer.

B. The prohibitions of this Paragraph 3.05 will survive final payment, or termination of the Contract. Nothing herein shall preclude Contractor from retaining copies of the Contract Documents for record purposes.

3.06 *Electronic Data*

- A. Unless otherwise stated in the Supplementary Conditions, the data furnished by Owner or Engineer to Contractor, or by Contractor to Owner or Engineer, that may be relied upon are limited to the printed copies (also known as hard copies). Files in electronic media format of text, data, graphics, or other types are furnished only for the convenience of the receiving party. Any conclusion or information obtained or derived from such electronic files will be at the user's sole risk. If there is a discrepancy between the electronic files and the hard copies, the hard copies govern.
- B. Because data stored in electronic media format can deteriorate or be modified inadvertently or otherwise without authorization of the data's creator, the party receiving electronic files agrees that it will perform acceptance tests or procedures within 60 days, after which the receiving party shall be deemed to have accepted the data thus transferred. Any errors detected within the 60-day acceptance period will be corrected by the transferring party.
- C. When transferring documents in electronic media format, the transferring party makes no representations as to long term compatibility, usability, or readability of documents resulting from the use of software application packages, operating systems, or computer hardware differing from those used by the data's creator.

ARTICLE 4 – AVAILABILITY OF LANDS; SUBSURFACE AND PHYSICAL CONDITIONS; HAZARDOUS ENVIRONMENTAL CONDITIONS; REFERENCE POINTS

4.01 *Availability of Lands*

- A. Owner shall furnish the Site. Owner shall notify Contractor of any encumbrances or restrictions not of general application but specifically related to use of the Site with which Contractor must comply in performing the Work. Owner will obtain in a timely manner and pay for easements for permanent structures or permanent changes in existing facilities. If Contractor and Owner are unable to agree on entitlement to or on the amount or extent, if any, of any adjustment in the Contract Price or Contract Times, or both, as a result of any delay in Owner's furnishing the Site or a part thereof, Contractor may make a Claim therefor as provided in Paragraph 10.05.
- B. Upon reasonable written request, Owner shall furnish Contractor with a current statement of record legal title and legal description of the lands upon which the Work is to be performed and Owner's interest therein as necessary for giving notice of or filing a mechanic's or construction lien against such lands in accordance with applicable Laws and Regulations.
- C. Contractor shall provide for all additional lands and access thereto that may be required for temporary construction facilities or storage of materials and equipment.

4.02 *Subsurface and Physical Conditions*

- A. *Reports and Drawings:* The Supplementary Conditions identify:
 - 1. those reports known to Owner of explorations and tests of subsurface conditions at or contiguous to the Site; and
 - 2. those drawings known to Owner of physical conditions relating to existing surface or subsurface structures at the Site (except Underground Facilities).
- B. *Limited Reliance by Contractor on Technical Data Authorized:* Contractor may rely upon the accuracy of the "technical data" contained in such reports and drawings, but such reports and drawings are not Contract Documents. Such "technical data" is identified in the Supplementary Conditions. Except for such reliance on such "technical data," Contractor may not rely upon or make any claim against Owner or Engineer, or any of their officers, directors, members, partners, employees, agents, consultants, or subcontractors with respect to:
 - 1. the completeness of such reports and drawings for Contractor's purposes, including, but not limited to, any aspects of the means, methods, techniques, sequences, and procedures of construction to be employed by Contractor, and safety precautions and programs incident thereto; or
 - 2. other data, interpretations, opinions, and information contained in such reports or shown or indicated in such drawings; or
 - 3. any Contractor interpretation of or conclusion drawn from any "technical data" or any such other data, interpretations, opinions, or information.

4.03 *Differing Subsurface or Physical Conditions*

A. *Notice:* If Contractor believes that any subsurface or physical condition that is uncovered or revealed either:

1. is of such a nature as to establish that any “technical data” on which Contractor is entitled to rely as provided in Paragraph 4.02 is materially inaccurate; or
2. is of such a nature as to require a change in the Contract Documents; or
3. differs materially from that shown or indicated in the Contract Documents; or
4. is of an unusual nature, and differs materially from conditions ordinarily encountered and generally recognized as inherent in work of the character provided for in the Contract Documents;

then Contractor shall, promptly after becoming aware thereof and before further disturbing the subsurface or physical conditions or performing any Work in connection therewith (except in an emergency as required by Paragraph 6.16.A), notify Owner and Engineer in writing about such condition. Contractor shall not further disturb such condition or perform any Work in connection therewith (except as aforesaid) until receipt of written order to do so.

B. *Engineer’s Review:* After receipt of written notice as required by Paragraph 4.03.A, Engineer will promptly review the pertinent condition, determine the necessity of Owner’s obtaining additional exploration or tests with respect thereto, and advise Owner in writing (with a copy to Contractor) of Engineer’s findings and conclusions.

C. *Possible Price and Times Adjustments:*

1. The Contract Price or the Contract Times, or both, will be equitably adjusted to the extent that the existence of such differing subsurface or physical condition causes an increase or decrease in Contractor’s cost of, or time required for, performance of the Work; subject, however, to the following:
 - a. such condition must meet any one or more of the categories described in Paragraph 4.03.A; and
 - b. with respect to Work that is paid for on a unit price basis, any adjustment in Contract Price will be subject to the provisions of Paragraphs 9.07 and 11.03.
2. Contractor shall not be entitled to any adjustment in the Contract Price or Contract Times if:
 - a. Contractor knew of the existence of such conditions at the time Contractor made a final commitment to Owner with respect to Contract Price and Contract Times by the submission of a Bid or becoming bound under a negotiated contract; or
 - b. the existence of such condition could reasonably have been discovered or revealed as a result of any examination, investigation, exploration, test, or study of the Site and

contiguous areas required by the Bidding Requirements or Contract Documents to be conducted by or for Contractor prior to Contractor's making such final commitment; or

- c. Contractor failed to give the written notice as required by Paragraph 4.03.A.
3. If Owner and Contractor are unable to agree on entitlement to or on the amount or extent, if any, of any adjustment in the Contract Price or Contract Times, or both, a Claim may be made therefor as provided in Paragraph 10.05. However, neither Owner or Engineer, or any of their officers, directors, members, partners, employees, agents, consultants, or subcontractors shall be liable to Contractor for any claims, costs, losses, or damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) sustained by Contractor on or in connection with any other project or anticipated project.

4.04 *Underground Facilities*

A. *Shown or Indicated:* The information and data shown or indicated in the Contract Documents with respect to existing Underground Facilities at or contiguous to the Site is based on information and data furnished to Owner or Engineer by the owners of such Underground Facilities, including Owner, or by others. Unless it is otherwise expressly provided in the Supplementary Conditions:

1. Owner and Engineer shall not be responsible for the accuracy or completeness of any such information or data provided by others; and
2. the cost of all of the following will be included in the Contract Price, and Contractor shall have full responsibility for:
 - a. reviewing and checking all such information and data;
 - b. locating all Underground Facilities shown or indicated in the Contract Documents;
 - c. coordination of the Work with the owners of such Underground Facilities, including Owner, during construction; and
 - d. the safety and protection of all such Underground Facilities and repairing any damage thereto resulting from the Work.

B. *Not Shown or Indicated:*

1. If an Underground Facility is uncovered or revealed at or contiguous to the Site which was not shown or indicated, or not shown or indicated with reasonable accuracy in the Contract Documents, Contractor shall, promptly after becoming aware thereof and before further disturbing conditions affected thereby or performing any Work in connection therewith (except in an emergency as required by Paragraph 6.16.A), identify the owner of such Underground Facility and give written notice to that owner and to Owner and Engineer. Engineer will promptly review the Underground Facility and determine the extent, if any, to which a change is required in the Contract Documents to reflect and document the

consequences of the existence or location of the Underground Facility. During such time, Contractor shall be responsible for the safety and protection of such Underground Facility.

2. If Engineer concludes that a change in the Contract Documents is required, a Work Change Directive or a Change Order will be issued to reflect and document such consequences. An equitable adjustment shall be made in the Contract Price or Contract Times, or both, to the extent that they are attributable to the existence or location of any Underground Facility that was not shown or indicated or not shown or indicated with reasonable accuracy in the Contract Documents and that Contractor did not know of and could not reasonably have been expected to be aware of or to have anticipated. If Owner and Contractor are unable to agree on entitlement to or on the amount or extent, if any, of any such adjustment in Contract Price or Contract Times, Owner or Contractor may make a Claim therefor as provided in Paragraph 10.05.

4.05 *Reference Points*

- A. Owner shall provide engineering surveys to establish reference points for construction which in Engineer's judgment are necessary to enable Contractor to proceed with the Work. Contractor shall be responsible for laying out the Work, shall protect and preserve the established reference points and property monuments, and shall make no changes or relocations without the prior written approval of Owner. Contractor shall report to Engineer whenever any reference point or property monument is lost or destroyed or requires relocation because of necessary changes in grades or locations, and shall be responsible for the accurate replacement or relocation of such reference points or property monuments by professionally qualified personnel.

4.06 *Hazardous Environmental Condition at Site*

- A. *Reports and Drawings:* The Supplementary Conditions identify those reports and drawings known to Owner relating to Hazardous Environmental Conditions that have been identified at the Site.
- B. *Limited Reliance by Contractor on Technical Data Authorized:* Contractor may rely upon the accuracy of the "technical data" contained in such reports and drawings, but such reports and drawings are not Contract Documents. Such "technical data" is identified in the Supplementary Conditions. Except for such reliance on such "technical data," Contractor may not rely upon or make any claim against Owner or Engineer, or any of their officers, directors, members, partners, employees, agents, consultants, or subcontractors with respect to:
 1. the completeness of such reports and drawings for Contractor's purposes, including, but not limited to, any aspects of the means, methods, techniques, sequences and procedures of construction to be employed by Contractor and safety precautions and programs incident thereto; or
 2. other data, interpretations, opinions and information contained in such reports or shown or indicated in such drawings; or
 3. any Contractor interpretation of or conclusion drawn from any "technical data" or any such other data, interpretations, opinions or information.

- C. Contractor shall not be responsible for any Hazardous Environmental Condition uncovered or revealed at the Site which was not shown or indicated in Drawings or Specifications or identified in the Contract Documents to be within the scope of the Work. Contractor shall be responsible for a Hazardous Environmental Condition created with any materials brought to the Site by Contractor, Subcontractors, Suppliers, or anyone else for whom Contractor is responsible.
- D. If Contractor encounters a Hazardous Environmental Condition or if Contractor or anyone for whom Contractor is responsible creates a Hazardous Environmental Condition, Contractor shall immediately: (i) secure or otherwise isolate such condition; (ii) stop all Work in connection with such condition and in any area affected thereby (except in an emergency as required by Paragraph 6.16.A); and (iii) notify Owner and Engineer (and promptly thereafter confirm such notice in writing). Owner shall promptly consult with Engineer concerning the necessity for Owner to retain a qualified expert to evaluate such condition or take corrective action, if any. Promptly after consulting with Engineer, Owner shall take such actions as are necessary to permit Owner to timely obtain required permits and provide Contractor the written notice required by Paragraph 4.06.E.
- E. Contractor shall not be required to resume Work in connection with such condition or in any affected area until after Owner has obtained any required permits related thereto and delivered written notice to Contractor: (i) specifying that such condition and any affected area is or has been rendered safe for the resumption of Work; or (ii) specifying any special conditions under which such Work may be resumed safely. If Owner and Contractor cannot agree as to entitlement to or on the amount or extent, if any, of any adjustment in Contract Price or Contract Times, or both, as a result of such Work stoppage or such special conditions under which Work is agreed to be resumed by Contractor, either party may make a Claim therefor as provided in Paragraph 10.05.
- F. If after receipt of such written notice Contractor does not agree to resume such Work based on a reasonable belief it is unsafe, or does not agree to resume such Work under such special conditions, then Owner may order the portion of the Work that is in the area affected by such condition to be deleted from the Work. If Owner and Contractor cannot agree as to entitlement to or on the amount or extent, if any, of an adjustment in Contract Price or Contract Times as a result of deleting such portion of the Work, then either party may make a Claim therefor as provided in Paragraph 10.05. Owner may have such deleted portion of the Work performed by Owner's own forces or others in accordance with Article 7.
- G. To the fullest extent permitted by Laws and Regulations, Owner shall indemnify and hold harmless Contractor, Subcontractors, and Engineer, and the officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to a Hazardous Environmental Condition, provided that such Hazardous Environmental Condition: (i) was not shown or indicated in the Drawings or Specifications or identified in the Contract Documents to be included within the scope of the Work, and (ii) was not created by Contractor or by anyone for whom Contractor is responsible. Nothing in this Paragraph 4.06.G shall obligate Owner to indemnify any individual or entity from and against the consequences of that individual's or entity's own negligence.

- H. To the fullest extent permitted by Laws and Regulations, Contractor shall indemnify and hold harmless Owner and Engineer, and the officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to a Hazardous Environmental Condition created by Contractor or by anyone for whom Contractor is responsible. Nothing in this Paragraph 4.06.H shall obligate Contractor to indemnify any individual or entity from and against the consequences of that individual's or entity's own negligence.
- I. The provisions of Paragraphs 4.02, 4.03, and 4.04 do not apply to a Hazardous Environmental Condition uncovered or revealed at the Site.

ARTICLE 5 – BONDS AND INSURANCE

5.01 *Performance, Payment, and Other Bonds*

- A. Contractor shall furnish performance and payment bonds, each in an amount at least equal to the Contract Price as security for the faithful performance and payment of all of Contractor's obligations under the Contract Documents. These bonds shall remain in effect until one year after the date when final payment becomes due or until completion of the correction period specified in Paragraph 13.07, whichever is later, except as provided otherwise by Laws or Regulations or by the Contract Documents. Contractor shall also furnish such other bonds as are required by the Contract Documents.
- B. All bonds shall be in the form prescribed by the Contract Documents except as provided otherwise by Laws or Regulations, and shall be executed by such sureties as are named in the list of "Companies Holding Certificates of Authority as Acceptable Sureties on Federal Bonds and as Acceptable Reinsuring Companies" as published in Circular 570 (amended) by the Financial Management Service, Surety Bond Branch, U.S. Department of the Treasury. All bonds signed by an agent or attorney-in-fact must be accompanied by a certified copy of that individual's authority to bind the surety. The evidence of authority shall show that it is effective on the date the agent or attorney-in-fact signed each bond.
- C. If the surety on any bond furnished by Contractor is declared bankrupt or becomes insolvent or its right to do business is terminated in any state where any part of the Project is located or it ceases to meet the requirements of Paragraph 5.01.B, Contractor shall promptly notify Owner and Engineer and shall, within 20 days after the event giving rise to such notification, provide another bond and surety, both of which shall comply with the requirements of Paragraphs 5.01.B and 5.02.

5.02 *Licensed Sureties and Insurers*

- A. All bonds and insurance required by the Contract Documents to be purchased and maintained by Owner or Contractor shall be obtained from surety or insurance companies that are duly licensed or authorized in the jurisdiction in which the Project is located to issue bonds or insurance policies for the limits and coverages so required. Such surety and insurance companies shall also

meet such additional requirements and qualifications as may be provided in the Supplementary Conditions.

5.03 *Certificates of Insurance*

- A. Contractor shall deliver to Owner, with copies to each additional insured and loss payee identified in the Supplementary Conditions, certificates of insurance (and other evidence of insurance requested by Owner or any other additional insured) which Contractor is required to purchase and maintain.
- B. Owner shall deliver to Contractor, with copies to each additional insured and loss payee identified in the Supplementary Conditions, certificates of insurance (and other evidence of insurance requested by Contractor or any other additional insured) which Owner is required to purchase and maintain.
- C. Failure of Owner to demand such certificates or other evidence of Contractor's full compliance with these insurance requirements or failure of Owner to identify a deficiency in compliance from the evidence provided shall not be construed as a waiver of Contractor's obligation to maintain such insurance.
- D. Owner does not represent that insurance coverage and limits established in this Contract necessarily will be adequate to protect Contractor.
- E. The insurance and insurance limits required herein shall not be deemed as a limitation on Contractor's liability under the indemnities granted to Owner in the Contract Documents.

5.04 *Contractor's Insurance*

- A. Contractor shall purchase and maintain such insurance as is appropriate for the Work being performed and as will provide protection from claims set forth below which may arise out of or result from Contractor's performance of the Work and Contractor's other obligations under the Contract Documents, whether it is to be performed by Contractor, any Subcontractor or Supplier, or by anyone directly or indirectly employed by any of them to perform any of the Work, or by anyone for whose acts any of them may be liable:
 - 1. claims under workers' compensation, disability benefits, and other similar employee benefit acts;
 - 2. claims for damages because of bodily injury, occupational sickness or disease, or death of Contractor's employees;
 - 3. claims for damages because of bodily injury, sickness or disease, or death of any person other than Contractor's employees;
 - 4. claims for damages insured by reasonably available personal injury liability coverage which are sustained:

- a. by any person as a result of an offense directly or indirectly related to the employment of such person by Contractor, or
 - b. by any other person for any other reason;
 5. claims for damages, other than to the Work itself, because of injury to or destruction of tangible property wherever located, including loss of use resulting therefrom; and
 6. claims for damages because of bodily injury or death of any person or property damage arising out of the ownership, maintenance or use of any motor vehicle.
- B. The policies of insurance required by this Paragraph 5.04 shall:
1. with respect to insurance required by Paragraphs 5.04.A.3 through 5.04.A.6 inclusive, be written on an occurrence basis, include as additional insureds (subject to any customary exclusion regarding professional liability) Owner and Engineer, and any other individuals or entities identified in the Supplementary Conditions, all of whom shall be listed as additional insureds, and include coverage for the respective officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of all such additional insureds, and the insurance afforded to these additional insureds shall provide primary coverage for all claims covered thereby;
 2. include at least the specific coverages and be written for not less than the limits of liability provided in the Supplementary Conditions or required by Laws or Regulations, whichever is greater;
 3. include contractual liability insurance covering Contractor's indemnity obligations under Paragraphs 6.11 and 6.20;
 4. contain a provision or endorsement that the coverage afforded will not be canceled, materially changed or renewal refused until at least 30 days prior written notice has been given to Owner and Contractor and to each other additional insured identified in the Supplementary Conditions to whom a certificate of insurance has been issued (and the certificates of insurance furnished by the Contractor pursuant to Paragraph 5.03 will so provide);
 5. remain in effect at least until final payment and at all times thereafter when Contractor may be correcting, removing, or replacing defective Work in accordance with Paragraph 13.07; and
 6. include completed operations coverage:
 - a. Such insurance shall remain in effect for two years after final payment.
 - b. Contractor shall furnish Owner and each other additional insured identified in the Supplementary Conditions, to whom a certificate of insurance has been issued, evidence satisfactory to Owner and any such additional insured of continuation of such insurance at final payment and one year thereafter.

5.05 *Owner's Liability Insurance*

- A. In addition to the insurance required to be provided by Contractor under Paragraph 5.04, Owner, at Owner's option, may purchase and maintain at Owner's expense Owner's own liability insurance as will protect Owner against claims which may arise from operations under the Contract Documents.

5.06 *Property Insurance*

- A. Unless otherwise provided in the Supplementary Conditions, Owner shall purchase and maintain property insurance upon the Work at the Site in the amount of the full replacement cost thereof (subject to such deductible amounts as may be provided in the Supplementary Conditions or required by Laws and Regulations). This insurance shall:
1. include the interests of Owner, Contractor, Subcontractors, and Engineer, and any other individuals or entities identified in the Supplementary Conditions, and the officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them, each of whom is deemed to have an insurable interest and shall be listed as a loss payee;
 2. be written on a Builder's Risk "all-risk" policy form that shall at least include insurance for physical loss or damage to the Work, temporary buildings, falsework, and materials and equipment in transit, and shall insure against at least the following perils or causes of loss: fire, lightning, extended coverage, theft, vandalism and malicious mischief, earthquake, collapse, debris removal, demolition occasioned by enforcement of Laws and Regulations, water damage (other than that caused by flood), and such other perils or causes of loss as may be specifically required by the Supplementary Conditions.
 3. include expenses incurred in the repair or replacement of any insured property (including but not limited to fees and charges of engineers and architects);
 4. cover materials and equipment stored at the Site or at another location that was agreed to in writing by Owner prior to being incorporated in the Work, provided that such materials and equipment have been included in an Application for Payment recommended by Engineer;
 5. allow for partial utilization of the Work by Owner;
 6. include testing and startup; and
 7. be maintained in effect until final payment is made unless otherwise agreed to in writing by Owner, Contractor, and Engineer with 30 days written notice to each other loss payee to whom a certificate of insurance has been issued.
- B. Owner shall purchase and maintain such equipment breakdown insurance or additional property insurance as may be required by the Supplementary Conditions or Laws and Regulations which will include the interests of Owner, Contractor, Subcontractors, and Engineer, and any other individuals or entities identified in the Supplementary Conditions, and the officers, directors,

members, partners, employees, agents, consultants and subcontractors of each and any of them, each of whom is deemed to have an insurable interest and shall be listed as a loss payee.

- C. All the policies of insurance (and the certificates or other evidence thereof) required to be purchased and maintained in accordance with this Paragraph 5.06 will contain a provision or endorsement that the coverage afforded will not be canceled or materially changed or renewal refused until at least 30 days prior written notice has been given to Owner and Contractor and to each other loss payee to whom a certificate of insurance has been issued and will contain waiver provisions in accordance with Paragraph 5.07.
- D. Owner shall not be responsible for purchasing and maintaining any property insurance specified in this Paragraph 5.06 to protect the interests of Contractor, Subcontractors, or others in the Work to the extent of any deductible amounts that are identified in the Supplementary Conditions. The risk of loss within such identified deductible amount will be borne by Contractor, Subcontractors, or others suffering any such loss, and if any of them wishes property insurance coverage within the limits of such amounts, each may purchase and maintain it at the purchaser's own expense.
- E. If Contractor requests in writing that other special insurance be included in the property insurance policies provided under this Paragraph 5.06, Owner shall, if possible, include such insurance, and the cost thereof will be charged to Contractor by appropriate Change Order. Prior to commencement of the Work at the Site, Owner shall in writing advise Contractor whether or not such other insurance has been procured by Owner.

5.07 *Waiver of Rights*

- A. Owner and Contractor intend that all policies purchased in accordance with Paragraph 5.06 will protect Owner, Contractor, Subcontractors, and Engineer, and all other individuals or entities identified in the Supplementary Conditions as loss payees (and the officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them) in such policies and will provide primary coverage for all losses and damages caused by the perils or causes of loss covered thereby. All such policies shall contain provisions to the effect that in the event of payment of any loss or damage the insurers will have no rights of recovery against any of the insureds or loss payees thereunder. Owner and Contractor waive all rights against each other and their respective officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them for all losses and damages caused by, arising out of or resulting from any of the perils or causes of loss covered by such policies and any other property insurance applicable to the Work; and, in addition, waive all such rights against Subcontractors and Engineer, and all other individuals or entities identified in the Supplementary Conditions as loss payees (and the officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them) under such policies for losses and damages so caused. None of the above waivers shall extend to the rights that any party making such waiver may have to the proceeds of insurance held by Owner as trustee or otherwise payable under any policy so issued.
- B. Owner waives all rights against Contractor, Subcontractors, and Engineer, and the officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them for:

1. loss due to business interruption, loss of use, or other consequential loss extending beyond direct physical loss or damage to Owner's property or the Work caused by, arising out of, or resulting from fire or other perils whether or not insured by Owner; and
 2. loss or damage to the completed Project or part thereof caused by, arising out of, or resulting from fire or other insured peril or cause of loss covered by any property insurance maintained on the completed Project or part thereof by Owner during partial utilization pursuant to Paragraph 14.05, after Substantial Completion pursuant to Paragraph 14.04, or after final payment pursuant to Paragraph 14.07.
- C. Any insurance policy maintained by Owner covering any loss, damage or consequential loss referred to in Paragraph 5.07.B shall contain provisions to the effect that in the event of payment of any such loss, damage, or consequential loss, the insurers will have no rights of recovery against Contractor, Subcontractors, or Engineer, and the officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them.

5.08 *Receipt and Application of Insurance Proceeds*

- A. Any insured loss under the policies of insurance required by Paragraph 5.06 will be adjusted with Owner and made payable to Owner as fiduciary for the loss payees, as their interests may appear, subject to the requirements of any applicable mortgage clause and of Paragraph 5.08.B. Owner shall deposit in a separate account any money so received and shall distribute it in accordance with such agreement as the parties in interest may reach. If no other special agreement is reached, the damaged Work shall be repaired or replaced, the moneys so received applied on account thereof, and the Work and the cost thereof covered by an appropriate Change Order.
- B. Owner as fiduciary shall have power to adjust and settle any loss with the insurers unless one of the parties in interest shall object in writing within 15 days after the occurrence of loss to Owner's exercise of this power. If such objection be made, Owner as fiduciary shall make settlement with the insurers in accordance with such agreement as the parties in interest may reach. If no such agreement among the parties in interest is reached, Owner as fiduciary shall adjust and settle the loss with the insurers and, if required in writing by any party in interest, Owner as fiduciary shall give bond for the proper performance of such duties.

5.09 *Acceptance of Bonds and Insurance; Option to Replace*

- A. If either Owner or Contractor has any objection to the coverage afforded by or other provisions of the bonds or insurance required to be purchased and maintained by the other party in accordance with Article 5 on the basis of non-conformance with the Contract Documents, the objecting party shall so notify the other party in writing within 10 days after receipt of the certificates (or other evidence requested) required by Paragraph 2.01.B. Owner and Contractor shall each provide to the other such additional information in respect of insurance provided as the other may reasonably request. If either party does not purchase or maintain all of the bonds and insurance required of such party by the Contract Documents, such party shall notify the other party in writing of such failure to purchase prior to the start of the Work, or of such failure to maintain prior to any change in the required coverage. Without prejudice to any other right or remedy, the other party may elect to obtain equivalent bonds or insurance to protect such other party's

interests at the expense of the party who was required to provide such coverage, and a Change Order shall be issued to adjust the Contract Price accordingly.

5.10 *Partial Utilization, Acknowledgment of Property Insurer*

- A. If Owner finds it necessary to occupy or use a portion or portions of the Work prior to Substantial Completion of all the Work as provided in Paragraph 14.05, no such use or occupancy shall commence before the insurers providing the property insurance pursuant to Paragraph 5.06 have acknowledged notice thereof and in writing effected any changes in coverage necessitated thereby. The insurers providing the property insurance shall consent by endorsement on the policy or policies, but the property insurance shall not be canceled or permitted to lapse on account of any such partial use or occupancy.

ARTICLE 6 – CONTRACTOR’S RESPONSIBILITIES

6.01 *Supervision and Superintendence*

- A. Contractor shall supervise, inspect, and direct the Work competently and efficiently, devoting such attention thereto and applying such skills and expertise as may be necessary to perform the Work in accordance with the Contract Documents. Contractor shall be solely responsible for the means, methods, techniques, sequences, and procedures of construction. Contractor shall not be responsible for the negligence of Owner or Engineer in the design or specification of a specific means, method, technique, sequence, or procedure of construction which is shown or indicated in and expressly required by the Contract Documents.
- B. At all times during the progress of the Work, Contractor shall assign a competent resident superintendent who shall not be replaced without written notice to Owner and Engineer except under extraordinary circumstances.

6.02 *Labor; Working Hours*

- A. Contractor shall provide competent, suitably qualified personnel to survey and lay out the Work and perform construction as required by the Contract Documents. Contractor shall at all times maintain good discipline and order at the Site.
- B. Except as otherwise required for the safety or protection of persons or the Work or property at the Site or adjacent thereto, and except as otherwise stated in the Contract Documents, all Work at the Site shall be performed during regular working hours. Contractor will not permit the performance of Work on a Saturday, Sunday, or any legal holiday without Owner’s written consent (which will not be unreasonably withheld) given after prior written notice to Engineer.

6.03 *Services, Materials, and Equipment*

- A. Unless otherwise specified in the Contract Documents, Contractor shall provide and assume full responsibility for all services, materials, equipment, labor, transportation, construction equipment and machinery, tools, appliances, fuel, power, light, heat, telephone, water, sanitary facilities, temporary facilities, and all other facilities and incidentals necessary for the performance, testing, start-up, and completion of the Work.

- B. All materials and equipment incorporated into the Work shall be as specified or, if not specified, shall be of good quality and new, except as otherwise provided in the Contract Documents. All special warranties and guarantees required by the Specifications shall expressly run to the benefit of Owner. If required by Engineer, Contractor shall furnish satisfactory evidence (including reports of required tests) as to the source, kind, and quality of materials and equipment.
- C. All materials and equipment shall be stored, applied, installed, connected, erected, protected, used, cleaned, and conditioned in accordance with instructions of the applicable Supplier, except as otherwise may be provided in the Contract Documents.

6.04 *Progress Schedule*

- A. Contractor shall adhere to the Progress Schedule established in accordance with Paragraph 2.07 as it may be adjusted from time to time as provided below.
 - 1. Contractor shall submit to Engineer for acceptance (to the extent indicated in Paragraph 2.07) proposed adjustments in the Progress Schedule that will not result in changing the Contract Times. Such adjustments will comply with any provisions of the General Requirements applicable thereto.
 - 2. Proposed adjustments in the Progress Schedule that will change the Contract Times shall be submitted in accordance with the requirements of Article 12. Adjustments in Contract Times may only be made by a Change Order.

6.05 *Substitutes and “Or-Equals”*

- A. Whenever an item of material or equipment is specified or described in the Contract Documents by using the name of a proprietary item or the name of a particular Supplier, the specification or description is intended to establish the type, function, appearance, and quality required. Unless the specification or description contains or is followed by words reading that no like, equivalent, or “or-equal” item or no substitution is permitted, other items of material or equipment or material or equipment of other Suppliers may be submitted to Engineer for review under the circumstances described below.
 - 1. “*Or-Equal*” Items: If in Engineer’s sole discretion an item of material or equipment proposed by Contractor is functionally equal to that named and sufficiently similar so that no change in related Work will be required, it may be considered by Engineer as an “or-equal” item, in which case review and approval of the proposed item may, in Engineer’s sole discretion, be accomplished without compliance with some or all of the requirements for approval of proposed substitute items. For the purposes of this Paragraph 6.05.A.1, a proposed item of material or equipment will be considered functionally equal to an item so named if:
 - a. in the exercise of reasonable judgment Engineer determines that:
 - 1) it is at least equal in materials of construction, quality, durability, appearance, strength, and design characteristics;

- 2) it will reliably perform at least equally well the function and achieve the results imposed by the design concept of the completed Project as a functioning whole; and
 - 3) it has a proven record of performance and availability of responsive service.
- b. Contractor certifies that, if approved and incorporated into the Work:
- 1) there will be no increase in cost to the Owner or increase in Contract Times; and
 - 2) it will conform substantially to the detailed requirements of the item named in the Contract Documents.

2. *Substitute Items:*

- a. If in Engineer's sole discretion an item of material or equipment proposed by Contractor does not qualify as an "or-equal" item under Paragraph 6.05.A.1, it will be considered a proposed substitute item.
- b. Contractor shall submit sufficient information as provided below to allow Engineer to determine if the item of material or equipment proposed is essentially equivalent to that named and an acceptable substitute therefor. Requests for review of proposed substitute items of material or equipment will not be accepted by Engineer from anyone other than Contractor.
- c. The requirements for review by Engineer will be as set forth in Paragraph 6.05.A.2.d, as supplemented by the General Requirements, and as Engineer may decide is appropriate under the circumstances.
- d. Contractor shall make written application to Engineer for review of a proposed substitute item of material or equipment that Contractor seeks to furnish or use. The application:
 - 1) shall certify that the proposed substitute item will:
 - a) perform adequately the functions and achieve the results called for by the general design,
 - b) be similar in substance to that specified, and
 - c) be suited to the same use as that specified;
 - 2) will state:
 - a) the extent, if any, to which the use of the proposed substitute item will prejudice Contractor's achievement of Substantial Completion on time,
 - b) whether use of the proposed substitute item in the Work will require a change in any of the Contract Documents (or in the provisions of any other direct contract with Owner for other work on the Project) to adapt the design to the proposed substitute item, and

- c) whether incorporation or use of the proposed substitute item in connection with the Work is subject to payment of any license fee or royalty;
 - 3) will identify:
 - a) all variations of the proposed substitute item from that specified, and
 - b) available engineering, sales, maintenance, repair, and replacement services; and
 - 4) shall contain an itemized estimate of all costs or credits that will result directly or indirectly from use of such substitute item, including costs of redesign and claims of other contractors affected by any resulting change.
- B. *Substitute Construction Methods or Procedures:* If a specific means, method, technique, sequence, or procedure of construction is expressly required by the Contract Documents, Contractor may furnish or utilize a substitute means, method, technique, sequence, or procedure of construction approved by Engineer. Contractor shall submit sufficient information to allow Engineer, in Engineer's sole discretion, to determine that the substitute proposed is equivalent to that expressly called for by the Contract Documents. The requirements for review by Engineer will be similar to those provided in Paragraph 6.05.A.2.
- C. *Engineer's Evaluation:* Engineer will be allowed a reasonable time within which to evaluate each proposal or submittal made pursuant to Paragraphs 6.05.A and 6.05.B. Engineer may require Contractor to furnish additional data about the proposed substitute item. Engineer will be the sole judge of acceptability. No "or equal" or substitute will be ordered, installed or utilized until Engineer's review is complete, which will be evidenced by a Change Order in the case of a substitute and an approved Shop Drawing for an "or equal." Engineer will advise Contractor in writing of any negative determination.
- D. *Special Guarantee:* Owner may require Contractor to furnish at Contractor's expense a special performance guarantee or other surety with respect to any substitute.
- E. *Engineer's Cost Reimbursement:* Engineer will record Engineer's costs in evaluating a substitute proposed or submitted by Contractor pursuant to Paragraphs 6.05.A.2 and 6.05.B. Whether or not Engineer approves a substitute so proposed or submitted by Contractor, Contractor shall reimburse Owner for the reasonable charges of Engineer for evaluating each such proposed substitute. Contractor shall also reimburse Owner for the reasonable charges of Engineer for making changes in the Contract Documents (or in the provisions of any other direct contract with Owner) resulting from the acceptance of each proposed substitute.
- F. *Contractor's Expense:* Contractor shall provide all data in support of any proposed substitute or "or-equal" at Contractor's expense.

6.06 *Concerning Subcontractors, Suppliers, and Others*

- A. Contractor shall not employ any Subcontractor, Supplier, or other individual or entity (including those acceptable to Owner as indicated in Paragraph 6.06.B), whether initially or as a replacement, against whom Owner may have reasonable objection. Contractor shall not be

required to employ any Subcontractor, Supplier, or other individual or entity to furnish or perform any of the Work against whom Contractor has reasonable objection.

- B. If the Supplementary Conditions require the identity of certain Subcontractors, Suppliers, or other individuals or entities to be submitted to Owner in advance for acceptance by Owner by a specified date prior to the Effective Date of the Agreement, and if Contractor has submitted a list thereof in accordance with the Supplementary Conditions, Owner's acceptance (either in writing or by failing to make written objection thereto by the date indicated for acceptance or objection in the Bidding Documents or the Contract Documents) of any such Subcontractor, Supplier, or other individual or entity so identified may be revoked on the basis of reasonable objection after due investigation. Contractor shall submit an acceptable replacement for the rejected Subcontractor, Supplier, or other individual or entity, and the Contract Price will be adjusted by the difference in the cost occasioned by such replacement, and an appropriate Change Order will be issued. No acceptance by Owner of any such Subcontractor, Supplier, or other individual or entity, whether initially or as a replacement, shall constitute a waiver of any right of Owner or Engineer to reject defective Work.
- C. Contractor shall be fully responsible to Owner and Engineer for all acts and omissions of the Subcontractors, Suppliers, and other individuals or entities performing or furnishing any of the Work just as Contractor is responsible for Contractor's own acts and omissions. Nothing in the Contract Documents:
 - 1. shall create for the benefit of any such Subcontractor, Supplier, or other individual or entity any contractual relationship between Owner or Engineer and any such Subcontractor, Supplier or other individual or entity; nor
 - 2. shall create any obligation on the part of Owner or Engineer to pay or to see to the payment of any moneys due any such Subcontractor, Supplier, or other individual or entity except as may otherwise be required by Laws and Regulations.
- D. Contractor shall be solely responsible for scheduling and coordinating the Work of Subcontractors, Suppliers, and other individuals or entities performing or furnishing any of the Work under a direct or indirect contract with Contractor.
- E. Contractor shall require all Subcontractors, Suppliers, and such other individuals or entities performing or furnishing any of the Work to communicate with Engineer through Contractor.
- F. The divisions and sections of the Specifications and the identifications of any Drawings shall not control Contractor in dividing the Work among Subcontractors or Suppliers or delineating the Work to be performed by any specific trade.
- G. All Work performed for Contractor by a Subcontractor or Supplier will be pursuant to an appropriate agreement between Contractor and the Subcontractor or Supplier which specifically binds the Subcontractor or Supplier to the applicable terms and conditions of the Contract Documents for the benefit of Owner and Engineer. Whenever any such agreement is with a Subcontractor or Supplier who is listed as a loss payee on the property insurance provided in Paragraph 5.06, the agreement between the Contractor and the Subcontractor or Supplier will contain provisions whereby the Subcontractor or Supplier waives all rights against Owner,

Contractor, Engineer, and all other individuals or entities identified in the Supplementary Conditions to be listed as insureds or loss payees (and the officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them) for all losses and damages caused by, arising out of, relating to, or resulting from any of the perils or causes of loss covered by such policies and any other property insurance applicable to the Work. If the insurers on any such policies require separate waiver forms to be signed by any Subcontractor or Supplier, Contractor will obtain the same.

6.07 *Patent Fees and Royalties*

- A. Contractor shall pay all license fees and royalties and assume all costs incident to the use in the performance of the Work or the incorporation in the Work of any invention, design, process, product, or device which is the subject of patent rights or copyrights held by others. If a particular invention, design, process, product, or device is specified in the Contract Documents for use in the performance of the Work and if, to the actual knowledge of Owner or Engineer, its use is subject to patent rights or copyrights calling for the payment of any license fee or royalty to others, the existence of such rights shall be disclosed by Owner in the Contract Documents.
- B. To the fullest extent permitted by Laws and Regulations, Owner shall indemnify and hold harmless Contractor, and its officers, directors, members, partners, employees, agents, consultants, and subcontractors from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals, and all court or arbitration or other dispute resolution costs) arising out of or relating to any infringement of patent rights or copyrights incident to the use in the performance of the Work or resulting from the incorporation in the Work of any invention, design, process, product, or device specified in the Contract Documents, but not identified as being subject to payment of any license fee or royalty to others required by patent rights or copyrights.
- C. To the fullest extent permitted by Laws and Regulations, Contractor shall indemnify and hold harmless Owner and Engineer, and the officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to any infringement of patent rights or copyrights incident to the use in the performance of the Work or resulting from the incorporation in the Work of any invention, design, process, product, or device not specified in the Contract Documents.

6.08 *Permits*

- A. Unless otherwise provided in the Supplementary Conditions, Contractor shall obtain and pay for all construction permits and licenses. Owner shall assist Contractor, when necessary, in obtaining such permits and licenses. Contractor shall pay all governmental charges and inspection fees necessary for the prosecution of the Work which are applicable at the time of opening of Bids, or, if there are no Bids, on the Effective Date of the Agreement. Owner shall pay all charges of utility owners for connections for providing permanent service to the Work.

6.09 *Laws and Regulations*

- A. Contractor shall give all notices required by and shall comply with all Laws and Regulations applicable to the performance of the Work. Except where otherwise expressly required by applicable Laws and Regulations, neither Owner nor Engineer shall be responsible for monitoring Contractor's compliance with any Laws or Regulations.
- B. If Contractor performs any Work knowing or having reason to know that it is contrary to Laws or Regulations, Contractor shall bear all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to such Work. However, it shall not be Contractor's responsibility to make certain that the Specifications and Drawings are in accordance with Laws and Regulations, but this shall not relieve Contractor of Contractor's obligations under Paragraph 3.03.
- C. Changes in Laws or Regulations not known at the time of opening of Bids (or, on the Effective Date of the Agreement if there were no Bids) having an effect on the cost or time of performance of the Work shall be the subject of an adjustment in Contract Price or Contract Times. If Owner and Contractor are unable to agree on entitlement to or on the amount or extent, if any, of any such adjustment, a Claim may be made therefor as provided in Paragraph 10.05.

6.10 *Taxes*

- A. Contractor shall pay all sales, consumer, use, and other similar taxes required to be paid by Contractor in accordance with the Laws and Regulations of the place of the Project which are applicable during the performance of the Work.

6.11 *Use of Site and Other Areas*

A. *Limitation on Use of Site and Other Areas:*

- 1. Contractor shall confine construction equipment, the storage of materials and equipment, and the operations of workers to the Site and other areas permitted by Laws and Regulations, and shall not unreasonably encumber the Site and other areas with construction equipment or other materials or equipment. Contractor shall assume full responsibility for any damage to any such land or area, or to the owner or occupant thereof, or of any adjacent land or areas resulting from the performance of the Work.
- 2. Should any claim be made by any such owner or occupant because of the performance of the Work, Contractor shall promptly settle with such other party by negotiation or otherwise resolve the claim by arbitration or other dispute resolution proceeding or at law.
- 3. To the fullest extent permitted by Laws and Regulations, Contractor shall indemnify and hold harmless Owner and Engineer, and the officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to any claim or action, legal or equitable, brought

by any such owner or occupant against Owner, Engineer, or any other party indemnified hereunder to the extent caused by or based upon Contractor's performance of the Work.

- B. *Removal of Debris During Performance of the Work:* During the progress of the Work Contractor shall keep the Site and other areas free from accumulations of waste materials, rubbish, and other debris. Removal and disposal of such waste materials, rubbish, and other debris shall conform to applicable Laws and Regulations.
- C. *Cleaning:* Prior to Substantial Completion of the Work Contractor shall clean the Site and the Work and make it ready for utilization by Owner. At the completion of the Work Contractor shall remove from the Site all tools, appliances, construction equipment and machinery, and surplus materials and shall restore to original condition all property not designated for alteration by the Contract Documents.
- D. *Loading Structures:* Contractor shall not load nor permit any part of any structure to be loaded in any manner that will endanger the structure, nor shall Contractor subject any part of the Work or adjacent property to stresses or pressures that will endanger it.

6.12 *Record Documents*

- A. Contractor shall maintain in a safe place at the Site one record copy of all Drawings, Specifications, Addenda, Change Orders, Work Change Directives, Field Orders, and written interpretations and clarifications in good order and annotated to show changes made during construction. These record documents together with all approved Samples and a counterpart of all approved Shop Drawings will be available to Engineer for reference. Upon completion of the Work, these record documents, Samples, and Shop Drawings will be delivered to Engineer for Owner.

6.13 *Safety and Protection*

- A. Contractor shall be solely responsible for initiating, maintaining and supervising all safety precautions and programs in connection with the Work. Such responsibility does not relieve Subcontractors of their responsibility for the safety of persons or property in the performance of their work, nor for compliance with applicable safety Laws and Regulations. Contractor shall take all necessary precautions for the safety of, and shall provide the necessary protection to prevent damage, injury or loss to:
 - 1. all persons on the Site or who may be affected by the Work;
 - 2. all the Work and materials and equipment to be incorporated therein, whether in storage on or off the Site; and
 - 3. other property at the Site or adjacent thereto, including trees, shrubs, lawns, walks, pavements, roadways, structures, utilities, and Underground Facilities not designated for removal, relocation, or replacement in the course of construction.
- B. Contractor shall comply with all applicable Laws and Regulations relating to the safety of persons or property, or to the protection of persons or property from damage, injury, or loss; and

shall erect and maintain all necessary safeguards for such safety and protection. Contractor shall notify owners of adjacent property and of Underground Facilities and other utility owners when prosecution of the Work may affect them, and shall cooperate with them in the protection, removal, relocation, and replacement of their property.

- C. Contractor shall comply with the applicable requirements of Owner's safety programs, if any. The Supplementary Conditions identify any Owner's safety programs that are applicable to the Work.
- D. Contractor shall inform Owner and Engineer of the specific requirements of Contractor's safety program with which Owner's and Engineer's employees and representatives must comply while at the Site.
- E. All damage, injury, or loss to any property referred to in Paragraph 6.13.A.2 or 6.13.A.3 caused, directly or indirectly, in whole or in part, by Contractor, any Subcontractor, Supplier, or any other individual or entity directly or indirectly employed by any of them to perform any of the Work, or anyone for whose acts any of them may be liable, shall be remedied by Contractor (except damage or loss attributable to the fault of Drawings or Specifications or to the acts or omissions of Owner or Engineer or anyone employed by any of them, or anyone for whose acts any of them may be liable, and not attributable, directly or indirectly, in whole or in part, to the fault or negligence of Contractor or any Subcontractor, Supplier, or other individual or entity directly or indirectly employed by any of them).
- F. Contractor's duties and responsibilities for safety and for protection of the Work shall continue until such time as all the Work is completed and Engineer has issued a notice to Owner and Contractor in accordance with Paragraph 14.07.B that the Work is acceptable (except as otherwise expressly provided in connection with Substantial Completion).

6.14 *Safety Representative*

- A. Contractor shall designate a qualified and experienced safety representative at the Site whose duties and responsibilities shall be the prevention of accidents and the maintaining and supervising of safety precautions and programs.

6.15 *Hazard Communication Programs*

- A. Contractor shall be responsible for coordinating any exchange of material safety data sheets or other hazard communication information required to be made available to or exchanged between or among employers at the Site in accordance with Laws or Regulations.

6.16 *Emergencies*

- A. In emergencies affecting the safety or protection of persons or the Work or property at the Site or adjacent thereto, Contractor is obligated to act to prevent threatened damage, injury, or loss. Contractor shall give Engineer prompt written notice if Contractor believes that any significant changes in the Work or variations from the Contract Documents have been caused thereby or are required as a result thereof. If Engineer determines that a change in the Contract Documents is

required because of the action taken by Contractor in response to such an emergency, a Work Change Directive or Change Order will be issued.

6.17 *Shop Drawings and Samples*

A. Contractor shall submit Shop Drawings and Samples to Engineer for review and approval in accordance with the accepted Schedule of Submittals (as required by Paragraph 2.07). Each submittal will be identified as Engineer may require.

1. *Shop Drawings:*

- a. Submit number of copies specified in the General Requirements.
- b. Data shown on the Shop Drawings will be complete with respect to quantities, dimensions, specified performance and design criteria, materials, and similar data to show Engineer the services, materials, and equipment Contractor proposes to provide and to enable Engineer to review the information for the limited purposes required by Paragraph 6.17.D.

2. *Samples:*

- a. Submit number of Samples specified in the Specifications.
- b. Clearly identify each Sample as to material, Supplier, pertinent data such as catalog numbers, the use for which intended and other data as Engineer may require to enable Engineer to review the submittal for the limited purposes required by Paragraph 6.17.D.

B. Where a Shop Drawing or Sample is required by the Contract Documents or the Schedule of Submittals, any related Work performed prior to Engineer's review and approval of the pertinent submittal will be at the sole expense and responsibility of Contractor.

C. *Submittal Procedures:*

1. Before submitting each Shop Drawing or Sample, Contractor shall have:

- a. reviewed and coordinated each Shop Drawing or Sample with other Shop Drawings and Samples and with the requirements of the Work and the Contract Documents;
- b. determined and verified all field measurements, quantities, dimensions, specified performance and design criteria, installation requirements, materials, catalog numbers, and similar information with respect thereto;
- c. determined and verified the suitability of all materials offered with respect to the indicated application, fabrication, shipping, handling, storage, assembly, and installation pertaining to the performance of the Work; and
- d. determined and verified all information relative to Contractor's responsibilities for means, methods, techniques, sequences, and procedures of construction, and safety precautions and programs incident thereto.

2. Each submittal shall bear a stamp or specific written certification that Contractor has satisfied Contractor's obligations under the Contract Documents with respect to Contractor's review and approval of that submittal.
3. With each submittal, Contractor shall give Engineer specific written notice of any variations that the Shop Drawing or Sample may have from the requirements of the Contract Documents. This notice shall be both a written communication separate from the Shop Drawings or Sample submittal; and, in addition, by a specific notation made on each Shop Drawing or Sample submitted to Engineer for review and approval of each such variation.

D. Engineer's Review:

1. Engineer will provide timely review of Shop Drawings and Samples in accordance with the Schedule of Submittals acceptable to Engineer. Engineer's review and approval will be only to determine if the items covered by the submittals will, after installation or incorporation in the Work, conform to the information given in the Contract Documents and be compatible with the design concept of the completed Project as a functioning whole as indicated by the Contract Documents.
2. Engineer's review and approval will not extend to means, methods, techniques, sequences, or procedures of construction (except where a particular means, method, technique, sequence, or procedure of construction is specifically and expressly called for by the Contract Documents) or to safety precautions or programs incident thereto. The review and approval of a separate item as such will not indicate approval of the assembly in which the item functions.
3. Engineer's review and approval shall not relieve Contractor from responsibility for any variation from the requirements of the Contract Documents unless Contractor has complied with the requirements of Paragraph 6.17.C.3 and Engineer has given written approval of each such variation by specific written notation thereof incorporated in or accompanying the Shop Drawing or Sample. Engineer's review and approval shall not relieve Contractor from responsibility for complying with the requirements of Paragraph 6.17.C.1.

E. Resubmittal Procedures:

1. Contractor shall make corrections required by Engineer and shall return the required number of corrected copies of Shop Drawings and submit, as required, new Samples for review and approval. Contractor shall direct specific attention in writing to revisions other than the corrections called for by Engineer on previous submittals.

6.18 *Continuing the Work*

- A. Contractor shall carry on the Work and adhere to the Progress Schedule during all disputes or disagreements with Owner. No Work shall be delayed or postponed pending resolution of any disputes or disagreements, except as permitted by Paragraph 15.04 or as Owner and Contractor may otherwise agree in writing.

6.19 *Contractor's General Warranty and Guarantee*

- A. Contractor warrants and guarantees to Owner that all Work will be in accordance with the Contract Documents and will not be defective. Engineer and its officers, directors, members, partners, employees, agents, consultants, and subcontractors shall be entitled to rely on representation of Contractor's warranty and guarantee.
- B. Contractor's warranty and guarantee hereunder excludes defects or damage caused by:
 - 1. abuse, modification, or improper maintenance or operation by persons other than Contractor, Subcontractors, Suppliers, or any other individual or entity for whom Contractor is responsible; or
 - 2. normal wear and tear under normal usage.
- C. Contractor's obligation to perform and complete the Work in accordance with the Contract Documents shall be absolute. None of the following will constitute an acceptance of Work that is not in accordance with the Contract Documents or a release of Contractor's obligation to perform the Work in accordance with the Contract Documents:
 - 1. observations by Engineer;
 - 2. recommendation by Engineer or payment by Owner of any progress or final payment;
 - 3. the issuance of a certificate of Substantial Completion by Engineer or any payment related thereto by Owner;
 - 4. use or occupancy of the Work or any part thereof by Owner;
 - 5. any review and approval of a Shop Drawing or Sample submittal or the issuance of a notice of acceptability by Engineer;
 - 6. any inspection, test, or approval by others; or
 - 7. any correction of defective Work by Owner.

6.20 *Indemnification*

- A. To the fullest extent permitted by Laws and Regulations, Contractor shall indemnify and hold harmless Owner and Engineer, and the officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to the performance of the Work, provided that any such claim, cost, loss, or damage is attributable to bodily injury, sickness, disease, or death, or to injury to or destruction of tangible property (other than the Work itself), including the loss of use resulting therefrom but only to the extent caused by any negligent act or omission of Contractor, any Subcontractor, any Supplier, or any individual or entity directly or indirectly employed by any of them to perform any of the Work or anyone for whose acts any of them may be liable .

- B. In any and all claims against Owner or Engineer or any of their officers, directors, members, partners, employees, agents, consultants, or subcontractors by any employee (or the survivor or personal representative of such employee) of Contractor, any Subcontractor, any Supplier, or any individual or entity directly or indirectly employed by any of them to perform any of the Work, or anyone for whose acts any of them may be liable, the indemnification obligation under Paragraph 6.20.A shall not be limited in any way by any limitation on the amount or type of damages, compensation, or benefits payable by or for Contractor or any such Subcontractor, Supplier, or other individual or entity under workers' compensation acts, disability benefit acts, or other employee benefit acts.
- C. The indemnification obligations of Contractor under Paragraph 6.20.A shall not extend to the liability of Engineer and Engineer's officers, directors, members, partners, employees, agents, consultants and subcontractors arising out of:
 - 1. the preparation or approval of, or the failure to prepare or approve maps, Drawings, opinions, reports, surveys, Change Orders, designs, or Specifications; or
 - 2. giving directions or instructions, or failing to give them, if that is the primary cause of the injury or damage.

6.21 *Delegation of Professional Design Services*

- A. Contractor will not be required to provide professional design services unless such services are specifically required by the Contract Documents for a portion of the Work or unless such services are required to carry out Contractor's responsibilities for construction means, methods, techniques, sequences and procedures. Contractor shall not be required to provide professional services in violation of applicable law.
- B. If professional design services or certifications by a design professional related to systems, materials or equipment are specifically required of Contractor by the Contract Documents, Owner and Engineer will specify all performance and design criteria that such services must satisfy. Contractor shall cause such services or certifications to be provided by a properly licensed professional, whose signature and seal shall appear on all drawings, calculations, specifications, certifications, Shop Drawings and other submittals prepared by such professional. Shop Drawings and other submittals related to the Work designed or certified by such professional, if prepared by others, shall bear such professional's written approval when submitted to Engineer.
- C. Owner and Engineer shall be entitled to rely upon the adequacy, accuracy and completeness of the services, certifications or approvals performed by such design professionals, provided Owner and Engineer have specified to Contractor all performance and design criteria that such services must satisfy.
- D. Pursuant to this Paragraph 6.21, Engineer's review and approval of design calculations and design drawings will be only for the limited purpose of checking for conformance with performance and design criteria given and the design concept expressed in the Contract Documents. Engineer's review and approval of Shop Drawings and other submittals (except design calculations and design drawings) will be only for the purpose stated in Paragraph 6.17.D.1.

- E. Contractor shall not be responsible for the adequacy of the performance or design criteria required by the Contract Documents.

ARTICLE 7 – OTHER WORK AT THE SITE

7.01 *Related Work at Site*

- A. Owner may perform other work related to the Project at the Site with Owner's employees, or through other direct contracts therefor, or have other work performed by utility owners. If such other work is not noted in the Contract Documents, then:
1. written notice thereof will be given to Contractor prior to starting any such other work; and
 2. if Owner and Contractor are unable to agree on entitlement to or on the amount or extent, if any, of any adjustment in the Contract Price or Contract Times that should be allowed as a result of such other work, a Claim may be made therefor as provided in Paragraph 10.05.
- B. Contractor shall afford each other contractor who is a party to such a direct contract, each utility owner, and Owner, if Owner is performing other work with Owner's employees, proper and safe access to the Site, provide a reasonable opportunity for the introduction and storage of materials and equipment and the execution of such other work, and properly coordinate the Work with theirs. Contractor shall do all cutting, fitting, and patching of the Work that may be required to properly connect or otherwise make its several parts come together and properly integrate with such other work. Contractor shall not endanger any work of others by cutting, excavating, or otherwise altering such work; provided, however, that Contractor may cut or alter others' work with the written consent of Engineer and the others whose work will be affected. The duties and responsibilities of Contractor under this Paragraph are for the benefit of such utility owners and other contractors to the extent that there are comparable provisions for the benefit of Contractor in said direct contracts between Owner and such utility owners and other contractors.
- C. If the proper execution or results of any part of Contractor's Work depends upon work performed by others under this Article 7, Contractor shall inspect such other work and promptly report to Engineer in writing any delays, defects, or deficiencies in such other work that render it unavailable or unsuitable for the proper execution and results of Contractor's Work. Contractor's failure to so report will constitute an acceptance of such other work as fit and proper for integration with Contractor's Work except for latent defects and deficiencies in such other work.

7.02 *Coordination*

- A. If Owner intends to contract with others for the performance of other work on the Project at the Site, the following will be set forth in Supplementary Conditions:
1. the individual or entity who will have authority and responsibility for coordination of the activities among the various contractors will be identified;
 2. the specific matters to be covered by such authority and responsibility will be itemized; and
 3. the extent of such authority and responsibilities will be provided.

- B. Unless otherwise provided in the Supplementary Conditions, Owner shall have sole authority and responsibility for such coordination.

7.03 *Legal Relationships*

- A. Paragraphs 7.01.A and 7.02 are not applicable for utilities not under the control of Owner.
- B. Each other direct contract of Owner under Paragraph 7.01.A shall provide that the other contractor is liable to Owner and Contractor for the reasonable direct delay and disruption costs incurred by Contractor as a result of the other contractor's wrongful actions or inactions.
- C. Contractor shall be liable to Owner and any other contractor under direct contract to Owner for the reasonable direct delay and disruption costs incurred by such other contractor as a result of Contractor's wrongful action or inactions.

ARTICLE 8 – OWNER'S RESPONSIBILITIES

8.01 *Communications to Contractor*

- A. Except as otherwise provided in these General Conditions, Owner shall issue all communications to Contractor through Engineer.

8.02 *Replacement of Engineer*

- A. In case of termination of the employment of Engineer, Owner shall appoint an engineer to whom Contractor makes no reasonable objection, whose status under the Contract Documents shall be that of the former Engineer.

8.03 *Furnish Data*

- A. Owner shall promptly furnish the data required of Owner under the Contract Documents.

8.04 *Pay When Due*

- A. Owner shall make payments to Contractor when they are due as provided in Paragraphs 14.02.C and 14.07.C.

8.05 *Lands and Easements; Reports and Tests*

- A. Owner's duties with respect to providing lands and easements and providing engineering surveys to establish reference points are set forth in Paragraphs 4.01 and 4.05. Paragraph 4.02 refers to Owner's identifying and making available to Contractor copies of reports of explorations and tests of subsurface conditions and drawings of physical conditions relating to existing surface or subsurface structures at the Site.

8.06 *Insurance*

- A. Owner's responsibilities, if any, with respect to purchasing and maintaining liability and property insurance are set forth in Article 5.

8.07 *Change Orders*

- A. Owner is obligated to execute Change Orders as indicated in Paragraph 10.03.

8.08 *Inspections, Tests, and Approvals*

- A. Owner's responsibility with respect to certain inspections, tests, and approvals is set forth in Paragraph 13.03.B.

8.09 *Limitations on Owner's Responsibilities*

- A. The Owner shall not supervise, direct, or have control or authority over, nor be responsible for, Contractor's means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or for any failure of Contractor to comply with Laws and Regulations applicable to the performance of the Work. Owner will not be responsible for Contractor's failure to perform the Work in accordance with the Contract Documents.

8.10 *Undisclosed Hazardous Environmental Condition*

- A. Owner's responsibility in respect to an undisclosed Hazardous Environmental Condition is set forth in Paragraph 4.06.

8.11 *Evidence of Financial Arrangements*

- A. Upon request of Contractor, Owner shall furnish Contractor reasonable evidence that financial arrangements have been made to satisfy Owner's obligations under the Contract Documents.

8.12 *Compliance with Safety Program*

- A. While at the Site, Owner's employees and representatives shall comply with the specific applicable requirements of Contractor's safety programs of which Owner has been informed pursuant to Paragraph 6.13.D.

ARTICLE 9 – ENGINEER'S STATUS DURING CONSTRUCTION

9.01 *Owner's Representative*

- A. Engineer will be Owner's representative during the construction period. The duties and responsibilities and the limitations of authority of Engineer as Owner's representative during construction are set forth in the Contract Documents.

9.02 *Visits to Site*

- A. Engineer will make visits to the Site at intervals appropriate to the various stages of construction as Engineer deems necessary in order to observe as an experienced and qualified design professional the progress that has been made and the quality of the various aspects of Contractor's executed Work. Based on information obtained during such visits and observations, Engineer, for the benefit of Owner, will determine, in general, if the Work is proceeding in accordance with the Contract Documents. Engineer will not be required to make exhaustive or

continuous inspections on the Site to check the quality or quantity of the Work. Engineer's efforts will be directed toward providing for Owner a greater degree of confidence that the completed Work will conform generally to the Contract Documents. On the basis of such visits and observations, Engineer will keep Owner informed of the progress of the Work and will endeavor to guard Owner against defective Work.

- B. Engineer's visits and observations are subject to all the limitations on Engineer's authority and responsibility set forth in Paragraph 9.09. Particularly, but without limitation, during or as a result of Engineer's visits or observations of Contractor's Work, Engineer will not supervise, direct, control, or have authority over or be responsible for Contractor's means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or for any failure of Contractor to comply with Laws and Regulations applicable to the performance of the Work.

9.03 *Project Representative*

- A. If Owner and Engineer agree, Engineer will furnish a Resident Project Representative to assist Engineer in providing more extensive observation of the Work. The authority and responsibilities of any such Resident Project Representative and assistants will be as provided in the Supplementary Conditions, and limitations on the responsibilities thereof will be as provided in Paragraph 9.09. If Owner designates another representative or agent to represent Owner at the Site who is not Engineer's consultant, agent or employee, the responsibilities and authority and limitations thereon of such other individual or entity will be as provided in the Supplementary Conditions.

9.04 *Authorized Variations in Work*

- A. Engineer may authorize minor variations in the Work from the requirements of the Contract Documents which do not involve an adjustment in the Contract Price or the Contract Times and are compatible with the design concept of the completed Project as a functioning whole as indicated by the Contract Documents. These may be accomplished by a Field Order and will be binding on Owner and also on Contractor, who shall perform the Work involved promptly. If Owner or Contractor believes that a Field Order justifies an adjustment in the Contract Price or Contract Times, or both, and the parties are unable to agree on entitlement to or on the amount or extent, if any, of any such adjustment, a Claim may be made therefor as provided in Paragraph 10.05.

9.05 *Rejecting Defective Work*

- A. Engineer will have authority to reject Work which Engineer believes to be defective, or that Engineer believes will not produce a completed Project that conforms to the Contract Documents or that will prejudice the integrity of the design concept of the completed Project as a functioning whole as indicated by the Contract Documents. Engineer will also have authority to require special inspection or testing of the Work as provided in Paragraph 13.04, whether or not the Work is fabricated, installed, or completed.

9.06 *Shop Drawings, Change Orders and Payments*

- A. In connection with Engineer's authority, and limitations thereof, as to Shop Drawings and Samples, see Paragraph 6.17.
- B. In connection with Engineer's authority, and limitations thereof, as to design calculations and design drawings submitted in response to a delegation of professional design services, if any, see Paragraph 6.21.
- C. In connection with Engineer's authority as to Change Orders, see Articles 10, 11, and 12.
- D. In connection with Engineer's authority as to Applications for Payment, see Article 14.

9.07 *Determinations for Unit Price Work*

- A. Engineer will determine the actual quantities and classifications of Unit Price Work performed by Contractor. Engineer will review with Contractor the Engineer's preliminary determinations on such matters before rendering a written decision thereon (by recommendation of an Application for Payment or otherwise). Engineer's written decision thereon will be final and binding (except as modified by Engineer to reflect changed factual conditions or more accurate data) upon Owner and Contractor, subject to the provisions of Paragraph 10.05.

9.08 *Decisions on Requirements of Contract Documents and Acceptability of Work*

- A. Engineer will be the initial interpreter of the requirements of the Contract Documents and judge of the acceptability of the Work thereunder. All matters in question and other matters between Owner and Contractor arising prior to the date final payment is due relating to the acceptability of the Work, and the interpretation of the requirements of the Contract Documents pertaining to the performance of the Work, will be referred initially to Engineer in writing within 30 days of the event giving rise to the question.
- B. Engineer will, with reasonable promptness, render a written decision on the issue referred. If Owner or Contractor believes that any such decision entitles them to an adjustment in the Contract Price or Contract Times or both, a Claim may be made under Paragraph 10.05. The date of Engineer's decision shall be the date of the event giving rise to the issues referenced for the purposes of Paragraph 10.05.B.
- C. Engineer's written decision on the issue referred will be final and binding on Owner and Contractor, subject to the provisions of Paragraph 10.05.
- D. When functioning as interpreter and judge under this Paragraph 9.08, Engineer will not show partiality to Owner or Contractor and will not be liable in connection with any interpretation or decision rendered in good faith in such capacity.

9.09 *Limitations on Engineer's Authority and Responsibilities*

- A. Neither Engineer's authority or responsibility under this Article 9 or under any other provision of the Contract Documents nor any decision made by Engineer in good faith either to exercise

or not exercise such authority or responsibility or the undertaking, exercise, or performance of any authority or responsibility by Engineer shall create, impose, or give rise to any duty in contract, tort, or otherwise owed by Engineer to Contractor, any Subcontractor, any Supplier, any other individual or entity, or to any surety for or employee or agent of any of them.

- B. Engineer will not supervise, direct, control, or have authority over or be responsible for Contractor's means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or for any failure of Contractor to comply with Laws and Regulations applicable to the performance of the Work. Engineer will not be responsible for Contractor's failure to perform the Work in accordance with the Contract Documents.
- C. Engineer will not be responsible for the acts or omissions of Contractor or of any Subcontractor, any Supplier, or of any other individual or entity performing any of the Work.
- D. Engineer's review of the final Application for Payment and accompanying documentation and all maintenance and operating instructions, schedules, guarantees, bonds, certificates of inspection, tests and approvals, and other documentation required to be delivered by Paragraph 14.07.A will only be to determine generally that their content complies with the requirements of, and in the case of certificates of inspections, tests, and approvals that the results certified indicate compliance with, the Contract Documents.
- E. The limitations upon authority and responsibility set forth in this Paragraph 9.09 shall also apply to the Resident Project Representative, if any, and assistants, if any.

9.10 *Compliance with Safety Program*

- A. While at the Site, Engineer's employees and representatives shall comply with the specific applicable requirements of Contractor's safety programs of which Engineer has been informed pursuant to Paragraph 6.13.D.

ARTICLE 10 – CHANGES IN THE WORK; CLAIMS

10.01 *Authorized Changes in the Work*

- A. Without invalidating the Contract and without notice to any surety, Owner may, at any time or from time to time, order additions, deletions, or revisions in the Work by a Change Order, or a Work Change Directive. Upon receipt of any such document, Contractor shall promptly proceed with the Work involved which will be performed under the applicable conditions of the Contract Documents (except as otherwise specifically provided).
- B. If Owner and Contractor are unable to agree on entitlement to, or on the amount or extent, if any, of an adjustment in the Contract Price or Contract Times, or both, that should be allowed as a result of a Work Change Directive, a Claim may be made therefor as provided in Paragraph 10.05.

10.02 *Unauthorized Changes in the Work*

- A. Contractor shall not be entitled to an increase in the Contract Price or an extension of the Contract Times with respect to any work performed that is not required by the Contract Documents as amended, modified, or supplemented as provided in Paragraph 3.04, except in the case of an emergency as provided in Paragraph 6.16 or in the case of uncovering Work as provided in Paragraph 13.04.D.

10.03 *Execution of Change Orders*

- A. Owner and Contractor shall execute appropriate Change Orders recommended by Engineer covering:
 - 1. changes in the Work which are: (i) ordered by Owner pursuant to Paragraph 10.01.A, (ii) required because of acceptance of defective Work under Paragraph 13.08.A or Owner's correction of defective Work under Paragraph 13.09, or (iii) agreed to by the parties;
 - 2. changes in the Contract Price or Contract Times which are agreed to by the parties, including any undisputed sum or amount of time for Work actually performed in accordance with a Work Change Directive; and
 - 3. changes in the Contract Price or Contract Times which embody the substance of any written decision rendered by Engineer pursuant to Paragraph 10.05; provided that, in lieu of executing any such Change Order, an appeal may be taken from any such decision in accordance with the provisions of the Contract Documents and applicable Laws and Regulations, but during any such appeal, Contractor shall carry on the Work and adhere to the Progress Schedule as provided in Paragraph 6.18.A.

10.04 *Notification to Surety*

- A. If the provisions of any bond require notice to be given to a surety of any change affecting the general scope of the Work or the provisions of the Contract Documents (including, but not limited to, Contract Price or Contract Times), the giving of any such notice will be Contractor's responsibility. The amount of each applicable bond will be adjusted to reflect the effect of any such change.

10.05 *Claims*

- A. *Engineer's Decision Required:* All Claims, except those waived pursuant to Paragraph 14.09, shall be referred to the Engineer for decision. A decision by Engineer shall be required as a condition precedent to any exercise by Owner or Contractor of any rights or remedies either may otherwise have under the Contract Documents or by Laws and Regulations in respect of such Claims.
- B. *Notice:* Written notice stating the general nature of each Claim shall be delivered by the claimant to Engineer and the other party to the Contract promptly (but in no event later than 30 days) after the start of the event giving rise thereto. The responsibility to substantiate a Claim shall rest with the party making the Claim. Notice of the amount or extent of the Claim, with supporting data

shall be delivered to the Engineer and the other party to the Contract within 60 days after the start of such event (unless Engineer allows additional time for claimant to submit additional or more accurate data in support of such Claim). A Claim for an adjustment in Contract Price shall be prepared in accordance with the provisions of Paragraph 12.01.B. A Claim for an adjustment in Contract Times shall be prepared in accordance with the provisions of Paragraph 12.02.B. Each Claim shall be accompanied by claimant's written statement that the adjustment claimed is the entire adjustment to which the claimant believes it is entitled as a result of said event. The opposing party shall submit any response to Engineer and the claimant within 30 days after receipt of the claimant's last submittal (unless Engineer allows additional time).

- C. *Engineer's Action:* Engineer will review each Claim and, within 30 days after receipt of the last submittal of the claimant or the last submittal of the opposing party, if any, take one of the following actions in writing:
1. deny the Claim in whole or in part;
 2. approve the Claim; or
 3. notify the parties that the Engineer is unable to resolve the Claim if, in the Engineer's sole discretion, it would be inappropriate for the Engineer to do so. For purposes of further resolution of the Claim, such notice shall be deemed a denial.
- D. In the event that Engineer does not take action on a Claim within said 30 days, the Claim shall be deemed denied.
- E. Engineer's written action under Paragraph 10.05.C or denial pursuant to Paragraphs 10.05.C.3 or 10.05.D will be final and binding upon Owner and Contractor, unless Owner or Contractor invoke the dispute resolution procedure set forth in Article 16 within 30 days of such action or denial.
- F. No Claim for an adjustment in Contract Price or Contract Times will be valid if not submitted in accordance with this Paragraph 10.05.

ARTICLE 11 – COST OF THE WORK; ALLOWANCES; UNIT PRICE WORK

11.01 *Cost of the Work*

- A. *Costs Included:* The term Cost of the Work means the sum of all costs, except those excluded in Paragraph 11.01.B, necessarily incurred and paid by Contractor in the proper performance of the Work. When the value of any Work covered by a Change Order or when a Claim for an adjustment in Contract Price is determined on the basis of Cost of the Work, the costs to be reimbursed to Contractor will be only those additional or incremental costs required because of the change in the Work or because of the event giving rise to the Claim. Except as otherwise may be agreed to in writing by Owner, such costs shall be in amounts no higher than those prevailing in the locality of the Project, shall not include any of the costs itemized in Paragraph 11.01.B, and shall include only the following items:

1. Payroll costs for employees in the direct employ of Contractor in the performance of the Work under schedules of job classifications agreed upon by Owner and Contractor. Such employees shall include, without limitation, superintendents, foremen, and other personnel employed full time on the Work. Payroll costs for employees not employed full time on the Work shall be apportioned on the basis of their time spent on the Work. Payroll costs shall include, but not be limited to, salaries and wages plus the cost of fringe benefits, which shall include social security contributions, unemployment, excise, and payroll taxes, workers' compensation, health and retirement benefits, bonuses, sick leave, vacation and holiday pay applicable thereto. The expenses of performing Work outside of regular working hours, on Saturday, Sunday, or legal holidays, shall be included in the above to the extent authorized by Owner.
2. Cost of all materials and equipment furnished and incorporated in the Work, including costs of transportation and storage thereof, and Suppliers' field services required in connection therewith. All cash discounts shall accrue to Contractor unless Owner deposits funds with Contractor with which to make payments, in which case the cash discounts shall accrue to Owner. All trade discounts, rebates and refunds and returns from sale of surplus materials and equipment shall accrue to Owner, and Contractor shall make provisions so that they may be obtained.
3. Payments made by Contractor to Subcontractors for Work performed by Subcontractors. If required by Owner, Contractor shall obtain competitive bids from subcontractors acceptable to Owner and Contractor and shall deliver such bids to Owner, who will then determine, with the advice of Engineer, which bids, if any, will be acceptable. If any subcontract provides that the Subcontractor is to be paid on the basis of Cost of the Work plus a fee, the Subcontractor's Cost of the Work and fee shall be determined in the same manner as Contractor's Cost of the Work and fee as provided in this Paragraph 11.01.
4. Costs of special consultants (including but not limited to engineers, architects, testing laboratories, surveyors, attorneys, and accountants) employed for services specifically related to the Work.
5. Supplemental costs including the following:
 - a. The proportion of necessary transportation, travel, and subsistence expenses of Contractor's employees incurred in discharge of duties connected with the Work.
 - b. Cost, including transportation and maintenance, of all materials, supplies, equipment, machinery, appliances, office, and temporary facilities at the Site, and hand tools not owned by the workers, which are consumed in the performance of the Work, and cost, less market value, of such items used but not consumed which remain the property of Contractor.
 - c. Rentals of all construction equipment and machinery, and the parts thereof whether rented from Contractor or others in accordance with rental agreements approved by Owner with the advice of Engineer, and the costs of transportation, loading, unloading, assembly, dismantling, and removal thereof. All such costs shall be in accordance with the terms of

said rental agreements. The rental of any such equipment, machinery, or parts shall cease when the use thereof is no longer necessary for the Work.

- d. Sales, consumer, use, and other similar taxes related to the Work, and for which Contractor is liable, as imposed by Laws and Regulations.
- e. Deposits lost for causes other than negligence of Contractor, any Subcontractor, or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable, and royalty payments and fees for permits and licenses.
- f. Losses and damages (and related expenses) caused by damage to the Work, not compensated by insurance or otherwise, sustained by Contractor in connection with the performance of the Work (except losses and damages within the deductible amounts of property insurance established in accordance with Paragraph 5.06.D), provided such losses and damages have resulted from causes other than the negligence of Contractor, any Subcontractor, or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable. Such losses shall include settlements made with the written consent and approval of Owner. No such losses, damages, and expenses shall be included in the Cost of the Work for the purpose of determining Contractor's fee.
- g. The cost of utilities, fuel, and sanitary facilities at the Site.
- h. Minor expenses such as telegrams, long distance telephone calls, telephone service at the Site, express and courier services, and similar petty cash items in connection with the Work.
- i. The costs of premiums for all bonds and insurance Contractor is required by the Contract Documents to purchase and maintain.

B. *Costs Excluded:* The term Cost of the Work shall not include any of the following items:

- 1. Payroll costs and other compensation of Contractor's officers, executives, principals (of partnerships and sole proprietorships), general managers, safety managers, engineers, architects, estimators, attorneys, auditors, accountants, purchasing and contracting agents, expeditors, timekeepers, clerks, and other personnel employed by Contractor, whether at the Site or in Contractor's principal or branch office for general administration of the Work and not specifically included in the agreed upon schedule of job classifications referred to in Paragraph 11.01.A.1 or specifically covered by Paragraph 11.01.A.4, all of which are to be considered administrative costs covered by the Contractor's fee.
- 2. Expenses of Contractor's principal and branch offices other than Contractor's office at the Site.
- 3. Any part of Contractor's capital expenses, including interest on Contractor's capital employed for the Work and charges against Contractor for delinquent payments.
- 4. Costs due to the negligence of Contractor, any Subcontractor, or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable, including but not

limited to, the correction of defective Work, disposal of materials or equipment wrongly supplied, and making good any damage to property.

5. Other overhead or general expense costs of any kind and the costs of any item not specifically and expressly included in Paragraphs 11.01.A.
- C. *Contractor's Fee:* When all the Work is performed on the basis of cost-plus, Contractor's fee shall be determined as set forth in the Agreement. When the value of any Work covered by a Change Order or when a Claim for an adjustment in Contract Price is determined on the basis of Cost of the Work, Contractor's fee shall be determined as set forth in Paragraph 12.01.C.
- D. *Documentation:* Whenever the Cost of the Work for any purpose is to be determined pursuant to Paragraphs 11.01.A and 11.01.B, Contractor will establish and maintain records thereof in accordance with generally accepted accounting practices and submit in a form acceptable to Engineer an itemized cost breakdown together with supporting data.

11.02 Allowances

- A. It is understood that Contractor has included in the Contract Price all allowances so named in the Contract Documents and shall cause the Work so covered to be performed for such sums and by such persons or entities as may be acceptable to Owner and Engineer.
- B. *Cash Allowances:*
 1. Contractor agrees that:
 - a. the cash allowances include the cost to Contractor (less any applicable trade discounts) of materials and equipment required by the allowances to be delivered at the Site, and all applicable taxes; and
 - b. Contractor's costs for unloading and handling on the Site, labor, installation, overhead, profit, and other expenses contemplated for the cash allowances have been included in the Contract Price and not in the allowances, and no demand for additional payment on account of any of the foregoing will be valid.
- C. *Contingency Allowance:*
 1. Contractor agrees that a contingency allowance, if any, is for the sole use of Owner to cover unanticipated costs.
- D. Prior to final payment, an appropriate Change Order will be issued as recommended by Engineer to reflect actual amounts due Contractor on account of Work covered by allowances, and the Contract Price shall be correspondingly adjusted.

11.03 Unit Price Work

- A. Where the Contract Documents provide that all or part of the Work is to be Unit Price Work, initially the Contract Price will be deemed to include for all Unit Price Work an amount equal to

the sum of the unit price for each separately identified item of Unit Price Work times the estimated quantity of each item as indicated in the Agreement.

- B. The estimated quantities of items of Unit Price Work are not guaranteed and are solely for the purpose of comparison of Bids and determining an initial Contract Price. Determinations of the actual quantities and classifications of Unit Price Work performed by Contractor will be made by Engineer subject to the provisions of Paragraph 9.07.
- C. Each unit price will be deemed to include an amount considered by Contractor to be adequate to cover Contractor's overhead and profit for each separately identified item.
- D. Owner or Contractor may make a Claim for an adjustment in the Contract Price in accordance with Paragraph 10.05 if:
 - 1. the quantity of any item of Unit Price Work performed by Contractor differs materially and significantly from the estimated quantity of such item indicated in the Agreement; and
 - 2. there is no corresponding adjustment with respect to any other item of Work; and
 - 3. Contractor believes that Contractor is entitled to an increase in Contract Price as a result of having incurred additional expense or Owner believes that Owner is entitled to a decrease in Contract Price and the parties are unable to agree as to the amount of any such increase or decrease.

ARTICLE 12 – CHANGE OF CONTRACT PRICE; CHANGE OF CONTRACT TIMES

12.01 *Change of Contract Price*

- A. The Contract Price may only be changed by a Change Order. Any Claim for an adjustment in the Contract Price shall be based on written notice submitted by the party making the Claim to the Engineer and the other party to the Contract in accordance with the provisions of Paragraph 10.05.
- B. The value of any Work covered by a Change Order or of any Claim for an adjustment in the Contract Price will be determined as follows:
 - 1. where the Work involved is covered by unit prices contained in the Contract Documents, by application of such unit prices to the quantities of the items involved (subject to the provisions of Paragraph 11.03); or
 - 2. where the Work involved is not covered by unit prices contained in the Contract Documents, by a mutually agreed lump sum (which may include an allowance for overhead and profit not necessarily in accordance with Paragraph 12.01.C.2); or
 - 3. where the Work involved is not covered by unit prices contained in the Contract Documents and agreement to a lump sum is not reached under Paragraph 12.01.B.2, on the basis of the Cost of the Work (determined as provided in Paragraph 11.01) plus a Contractor's fee for overhead and profit (determined as provided in Paragraph 12.01.C).

C. *Contractor's Fee*: The Contractor's fee for overhead and profit shall be determined as follows:

1. a mutually acceptable fixed fee; or
2. if a fixed fee is not agreed upon, then a fee based on the following percentages of the various portions of the Cost of the Work:
 - a. for costs incurred under Paragraphs 11.01.A.1 and 11.01.A.2, the Contractor's fee shall be 15 percent;
 - b. for costs incurred under Paragraph 11.01.A.3, the Contractor's fee shall be five percent;
 - c. where one or more tiers of subcontracts are on the basis of Cost of the Work plus a fee and no fixed fee is agreed upon, the intent of Paragraphs 12.01.C.2.a and 12.01.C.2.b is that the Subcontractor who actually performs the Work, at whatever tier, will be paid a fee of 15 percent of the costs incurred by such Subcontractor under Paragraphs 11.01.A.1 and 11.01.A.2 and that any higher tier Subcontractor and Contractor will each be paid a fee of five percent of the amount paid to the next lower tier Subcontractor;
 - d. no fee shall be payable on the basis of costs itemized under Paragraphs 11.01.A.4, 11.01.A.5, and 11.01.B;
 - e. the amount of credit to be allowed by Contractor to Owner for any change which results in a net decrease in cost will be the amount of the actual net decrease in cost plus a deduction in Contractor's fee by an amount equal to five percent of such net decrease; and
 - f. when both additions and credits are involved in any one change, the adjustment in Contractor's fee shall be computed on the basis of the net change in accordance with Paragraphs 12.01.C.2.a through 12.01.C.2.e, inclusive.

12.02 *Change of Contract Times*

- A. The Contract Times may only be changed by a Change Order. Any Claim for an adjustment in the Contract Times shall be based on written notice submitted by the party making the Claim to the Engineer and the other party to the Contract in accordance with the provisions of Paragraph 10.05.
- B. Any adjustment of the Contract Times covered by a Change Order or any Claim for an adjustment in the Contract Times will be determined in accordance with the provisions of this Article 12.

12.03 *Delays*

- A. Where Contractor is prevented from completing any part of the Work within the Contract Times due to delay beyond the control of Contractor, the Contract Times will be extended in an amount equal to the time lost due to such delay if a Claim is made therefor as provided in Paragraph 12.02.A. Delays beyond the control of Contractor shall include, but not be limited to, acts or

neglect by Owner, acts or neglect of utility owners or other contractors performing other work as contemplated by Article 7, fires, floods, epidemics, abnormal weather conditions, or acts of God.

- B. If Owner, Engineer, or other contractors or utility owners performing other work for Owner as contemplated by Article 7, or anyone for whom Owner is responsible, delays, disrupts, or interferes with the performance or progress of the Work, then Contractor shall be entitled to an equitable adjustment in the Contract Price or the Contract Times, or both. Contractor's entitlement to an adjustment of the Contract Times is conditioned on such adjustment being essential to Contractor's ability to complete the Work within the Contract Times.
- C. If Contractor is delayed in the performance or progress of the Work by fire, flood, epidemic, abnormal weather conditions, acts of God, acts or failures to act of utility owners not under the control of Owner, or other causes not the fault of and beyond control of Owner and Contractor, then Contractor shall be entitled to an equitable adjustment in Contract Times, if such adjustment is essential to Contractor's ability to complete the Work within the Contract Times. Such an adjustment shall be Contractor's sole and exclusive remedy for the delays described in this Paragraph 12.03.C.
- D. Owner, Engineer, and their officers, directors, members, partners, employees, agents, consultants, or subcontractors shall not be liable to Contractor for any claims, costs, losses, or damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) sustained by Contractor on or in connection with any other project or anticipated project.
- E. Contractor shall not be entitled to an adjustment in Contract Price or Contract Times for delays within the control of Contractor. Delays attributable to and within the control of a Subcontractor or Supplier shall be deemed to be delays within the control of Contractor.

ARTICLE 13 – TESTS AND INSPECTIONS; CORRECTION, REMOVAL OR ACCEPTANCE OF DEFECTIVE WORK

13.01 *Notice of Defects*

- A. Prompt notice of all defective Work of which Owner or Engineer has actual knowledge will be given to Contractor. Defective Work may be rejected, corrected, or accepted as provided in this Article 13.

13.02 *Access to Work*

- A. Owner, Engineer, their consultants and other representatives and personnel of Owner, independent testing laboratories, and governmental agencies with jurisdictional interests will have access to the Site and the Work at reasonable times for their observation, inspection, and testing. Contractor shall provide them proper and safe conditions for such access and advise them of Contractor's safety procedures and programs so that they may comply therewith as applicable.

13.03 *Tests and Inspections*

- A. Contractor shall give Engineer timely notice of readiness of the Work for all required inspections, tests, or approvals and shall cooperate with inspection and testing personnel to facilitate required inspections or tests.
- B. Owner shall employ and pay for the services of an independent testing laboratory to perform all inspections, tests, or approvals required by the Contract Documents except:
 - 1. for inspections, tests, or approvals covered by Paragraphs 13.03.C and 13.03.D below;
 - 2. that costs incurred in connection with tests or inspections conducted pursuant to Paragraph 13.04.B shall be paid as provided in Paragraph 13.04.C; and
 - 3. as otherwise specifically provided in the Contract Documents.
- C. If Laws or Regulations of any public body having jurisdiction require any Work (or part thereof) specifically to be inspected, tested, or approved by an employee or other representative of such public body, Contractor shall assume full responsibility for arranging and obtaining such inspections, tests, or approvals, pay all costs in connection therewith, and furnish Engineer the required certificates of inspection or approval.
- D. Contractor shall be responsible for arranging and obtaining and shall pay all costs in connection with any inspections, tests, or approvals required for Owner's and Engineer's acceptance of materials or equipment to be incorporated in the Work; or acceptance of materials, mix designs, or equipment submitted for approval prior to Contractor's purchase thereof for incorporation in the Work. Such inspections, tests, or approvals shall be performed by organizations acceptable to Owner and Engineer.
- E. If any Work (or the work of others) that is to be inspected, tested, or approved is covered by Contractor without written concurrence of Engineer, Contractor shall, if requested by Engineer, uncover such Work for observation.
- F. Uncovering Work as provided in Paragraph 13.03.E shall be at Contractor's expense unless Contractor has given Engineer timely notice of Contractor's intention to cover the same and Engineer has not acted with reasonable promptness in response to such notice.

13.04 *Uncovering Work*

- A. If any Work is covered contrary to the written request of Engineer, it must, if requested by Engineer, be uncovered for Engineer's observation and replaced at Contractor's expense.
- B. If Engineer considers it necessary or advisable that covered Work be observed by Engineer or inspected or tested by others, Contractor, at Engineer's request, shall uncover, expose, or otherwise make available for observation, inspection, or testing as Engineer may require, that portion of the Work in question, furnishing all necessary labor, material, and equipment.

- C. If it is found that the uncovered Work is defective, Contractor shall pay all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to such uncovering, exposure, observation, inspection, and testing, and of satisfactory replacement or reconstruction (including but not limited to all costs of repair or replacement of work of others); and Owner shall be entitled to an appropriate decrease in the Contract Price. If the parties are unable to agree as to the amount thereof, Owner may make a Claim therefor as provided in Paragraph 10.05.
- D. If the uncovered Work is not found to be defective, Contractor shall be allowed an increase in the Contract Price or an extension of the Contract Times, or both, directly attributable to such uncovering, exposure, observation, inspection, testing, replacement, and reconstruction. If the parties are unable to agree as to the amount or extent thereof, Contractor may make a Claim therefor as provided in Paragraph 10.05.

13.05 *Owner May Stop the Work*

- A. If the Work is defective, or Contractor fails to supply sufficient skilled workers or suitable materials or equipment, or fails to perform the Work in such a way that the completed Work will conform to the Contract Documents, Owner may order Contractor to stop the Work, or any portion thereof, until the cause for such order has been eliminated; however, this right of Owner to stop the Work shall not give rise to any duty on the part of Owner to exercise this right for the benefit of Contractor, any Subcontractor, any Supplier, any other individual or entity, or any surety for, or employee or agent of any of them.

13.06 *Correction or Removal of Defective Work*

- A. Promptly after receipt of written notice, Contractor shall correct all defective Work, whether or not fabricated, installed, or completed, or, if the Work has been rejected by Engineer, remove it from the Project and replace it with Work that is not defective. Contractor shall pay all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to such correction or removal (including but not limited to all costs of repair or replacement of work of others).
- B. When correcting defective Work under the terms of this Paragraph 13.06 or Paragraph 13.07, Contractor shall take no action that would void or otherwise impair Owner's special warranty and guarantee, if any, on said Work.

13.07 *Correction Period*

- A. If within one year after the date of Substantial Completion (or such longer period of time as may be prescribed by the terms of any applicable special guarantee required by the Contract Documents) or by any specific provision of the Contract Documents, any Work is found to be defective, or if the repair of any damages to the land or areas made available for Contractor's use by Owner or permitted by Laws and Regulations as contemplated in Paragraph 6.11.A is found to be defective, Contractor shall promptly, without cost to Owner and in accordance with Owner's written instructions:

1. repair such defective land or areas; or
 2. correct such defective Work; or
 3. if the defective Work has been rejected by Owner, remove it from the Project and replace it with Work that is not defective, and
 4. satisfactorily correct or repair or remove and replace any damage to other Work, to the work of others or other land or areas resulting therefrom.
- B. If Contractor does not promptly comply with the terms of Owner's written instructions, or in an emergency where delay would cause serious risk of loss or damage, Owner may have the defective Work corrected or repaired or may have the rejected Work removed and replaced. All claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to such correction or repair or such removal and replacement (including but not limited to all costs of repair or replacement of work of others) will be paid by Contractor.
- C. In special circumstances where a particular item of equipment is placed in continuous service before Substantial Completion of all the Work, the correction period for that item may start to run from an earlier date if so provided in the Specifications.
- D. Where defective Work (and damage to other Work resulting therefrom) has been corrected or removed and replaced under this Paragraph 13.07, the correction period hereunder with respect to such Work will be extended for an additional period of one year after such correction or removal and replacement has been satisfactorily completed.
- E. Contractor's obligations under this Paragraph 13.07 are in addition to any other obligation or warranty. The provisions of this Paragraph 13.07 shall not be construed as a substitute for, or a waiver of, the provisions of any applicable statute of limitation or repose.

13.08 *Acceptance of Defective Work*

- A. If, instead of requiring correction or removal and replacement of defective Work, Owner (and, prior to Engineer's recommendation of final payment, Engineer) prefers to accept it, Owner may do so. Contractor shall pay all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) attributable to Owner's evaluation of and determination to accept such defective Work (such costs to be approved by Engineer as to reasonableness) and for the diminished value of the Work to the extent not otherwise paid by Contractor pursuant to this sentence. If any such acceptance occurs prior to Engineer's recommendation of final payment, a Change Order will be issued incorporating the necessary revisions in the Contract Documents with respect to the Work, and Owner shall be entitled to an appropriate decrease in the Contract Price, reflecting the diminished value of Work so accepted. If the parties are unable to agree as to the amount thereof, Owner may make a Claim therefor as provided in Paragraph 10.05. If the acceptance occurs after such recommendation, an appropriate amount will be paid by Contractor to Owner.

13.09 *Owner May Correct Defective Work*

- A. If Contractor fails within a reasonable time after written notice from Engineer to correct defective Work, or to remove and replace rejected Work as required by Engineer in accordance with Paragraph 13.06.A, or if Contractor fails to perform the Work in accordance with the Contract Documents, or if Contractor fails to comply with any other provision of the Contract Documents, Owner may, after seven days written notice to Contractor, correct, or remedy any such deficiency.
- B. In exercising the rights and remedies under this Paragraph 13.09, Owner shall proceed expeditiously. In connection with such corrective or remedial action, Owner may exclude Contractor from all or part of the Site, take possession of all or part of the Work and suspend Contractor's services related thereto, take possession of Contractor's tools, appliances, construction equipment and machinery at the Site, and incorporate in the Work all materials and equipment stored at the Site or for which Owner has paid Contractor but which are stored elsewhere. Contractor shall allow Owner, Owner's representatives, agents and employees, Owner's other contractors, and Engineer and Engineer's consultants access to the Site to enable Owner to exercise the rights and remedies under this Paragraph.
- C. All claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) incurred or sustained by Owner in exercising the rights and remedies under this Paragraph 13.09 will be charged against Contractor, and a Change Order will be issued incorporating the necessary revisions in the Contract Documents with respect to the Work; and Owner shall be entitled to an appropriate decrease in the Contract Price. If the parties are unable to agree as to the amount of the adjustment, Owner may make a Claim therefor as provided in Paragraph 10.05. Such claims, costs, losses and damages will include but not be limited to all costs of repair, or replacement of work of others destroyed or damaged by correction, removal, or replacement of Contractor's defective Work.
- D. Contractor shall not be allowed an extension of the Contract Times because of any delay in the performance of the Work attributable to the exercise by Owner of Owner's rights and remedies under this Paragraph 13.09.

ARTICLE 14 – PAYMENTS TO CONTRACTOR AND COMPLETION

14.01 *Schedule of Values*

- A. The Schedule of Values established as provided in Paragraph 2.07.A will serve as the basis for progress payments and will be incorporated into a form of Application for Payment acceptable to Engineer. Progress payments on account of Unit Price Work will be based on the number of units completed.

14.02 *Progress Payments*

A. Applications for Payments:

- 1. At least 20 days before the date established in the Agreement for each progress payment (but not more often than once a month), Contractor shall submit to Engineer for review an

Application for Payment filled out and signed by Contractor covering the Work completed as of the date of the Application and accompanied by such supporting documentation as is required by the Contract Documents. If payment is requested on the basis of materials and equipment not incorporated in the Work but delivered and suitably stored at the Site or at another location agreed to in writing, the Application for Payment shall also be accompanied by a bill of sale, invoice, or other documentation warranting that Owner has received the materials and equipment free and clear of all Liens and evidence that the materials and equipment are covered by appropriate property insurance or other arrangements to protect Owner's interest therein, all of which must be satisfactory to Owner.

2. Beginning with the second Application for Payment, each Application shall include an affidavit of Contractor stating that all previous progress payments received on account of the Work have been applied on account to discharge Contractor's legitimate obligations associated with prior Applications for Payment.
3. The amount of retainage with respect to progress payments will be as stipulated in the Agreement.

B. Review of Applications:

1. Engineer will, within 10 days after receipt of each Application for Payment, either indicate in writing a recommendation of payment and present the Application to Owner or return the Application to Contractor indicating in writing Engineer's reasons for refusing to recommend payment. In the latter case, Contractor may make the necessary corrections and resubmit the Application.
2. Engineer's recommendation of any payment requested in an Application for Payment will constitute a representation by Engineer to Owner, based on Engineer's observations of the executed Work as an experienced and qualified design professional, and on Engineer's review of the Application for Payment and the accompanying data and schedules, that to the best of Engineer's knowledge, information and belief:
 - a. the Work has progressed to the point indicated;
 - b. the quality of the Work is generally in accordance with the Contract Documents (subject to an evaluation of the Work as a functioning whole prior to or upon Substantial Completion, the results of any subsequent tests called for in the Contract Documents, a final determination of quantities and classifications for Unit Price Work under Paragraph 9.07, and any other qualifications stated in the recommendation); and
 - c. the conditions precedent to Contractor's being entitled to such payment appear to have been fulfilled in so far as it is Engineer's responsibility to observe the Work.
3. By recommending any such payment Engineer will not thereby be deemed to have represented that:
 - a. inspections made to check the quality or the quantity of the Work as it has been performed have been exhaustive, extended to every aspect of the Work in progress, or

- involved detailed inspections of the Work beyond the responsibilities specifically assigned to Engineer in the Contract Documents; or
- b. there may not be other matters or issues between the parties that might entitle Contractor to be paid additionally by Owner or entitle Owner to withhold payment to Contractor.
4. Neither Engineer's review of Contractor's Work for the purposes of recommending payments nor Engineer's recommendation of any payment, including final payment, will impose responsibility on Engineer:
- a. to supervise, direct, or control the Work, or
 - b. for the means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or
 - c. for Contractor's failure to comply with Laws and Regulations applicable to Contractor's performance of the Work, or
 - d. to make any examination to ascertain how or for what purposes Contractor has used the moneys paid on account of the Contract Price, or
 - e. to determine that title to any of the Work, materials, or equipment has passed to Owner free and clear of any Liens.
5. Engineer may refuse to recommend the whole or any part of any payment if, in Engineer's opinion, it would be incorrect to make the representations to Owner stated in Paragraph 14.02.B.2. Engineer may also refuse to recommend any such payment or, because of subsequently discovered evidence or the results of subsequent inspections or tests, revise or revoke any such payment recommendation previously made, to such extent as may be necessary in Engineer's opinion to protect Owner from loss because:
- a. the Work is defective, or completed Work has been damaged, requiring correction or replacement;
 - b. the Contract Price has been reduced by Change Orders;
 - c. Owner has been required to correct defective Work or complete Work in accordance with Paragraph 13.09; or
 - d. Engineer has actual knowledge of the occurrence of any of the events enumerated in Paragraph 15.02.A.

C. Payment Becomes Due:

- 1. Ten days after presentation of the Application for Payment to Owner with Engineer's recommendation, the amount recommended will (subject to the provisions of Paragraph 14.02.D) become due, and when due will be paid by Owner to Contractor.

D. Reduction in Payment:

1. Owner may refuse to make payment of the full amount recommended by Engineer because:
 - a. claims have been made against Owner on account of Contractor's performance or furnishing of the Work;
 - b. Liens have been filed in connection with the Work, except where Contractor has delivered a specific bond satisfactory to Owner to secure the satisfaction and discharge of such Liens;
 - c. there are other items entitling Owner to a set-off against the amount recommended; or
 - d. Owner has actual knowledge of the occurrence of any of the events enumerated in Paragraphs 14.02.B.5.a through 14.02.B.5.c or Paragraph 15.02.A.
2. If Owner refuses to make payment of the full amount recommended by Engineer, Owner will give Contractor immediate written notice (with a copy to Engineer) stating the reasons for such action and promptly pay Contractor any amount remaining after deduction of the amount so withheld. Owner shall promptly pay Contractor the amount so withheld, or any adjustment thereto agreed to by Owner and Contractor, when Contractor remedies the reasons for such action.
3. Upon a subsequent determination that Owner's refusal of payment was not justified, the amount wrongfully withheld shall be treated as an amount due as determined by Paragraph 14.02.C.1 and subject to interest as provided in the Agreement.

14.03 Contractor's Warranty of Title

- A. Contractor warrants and guarantees that title to all Work, materials, and equipment covered by any Application for Payment, whether incorporated in the Project or not, will pass to Owner no later than the time of payment free and clear of all Liens.

14.04 Substantial Completion

- A. When Contractor considers the entire Work ready for its intended use Contractor shall notify Owner and Engineer in writing that the entire Work is substantially complete (except for items specifically listed by Contractor as incomplete) and request that Engineer issue a certificate of Substantial Completion.
- B. Promptly after Contractor's notification, Owner, Contractor, and Engineer shall make an inspection of the Work to determine the status of completion. If Engineer does not consider the Work substantially complete, Engineer will notify Contractor in writing giving the reasons therefor.
- C. If Engineer considers the Work substantially complete, Engineer will deliver to Owner a tentative certificate of Substantial Completion which shall fix the date of Substantial Completion. There shall be attached to the certificate a tentative list of items to be completed or corrected before

final payment. Owner shall have seven days after receipt of the tentative certificate during which to make written objection to Engineer as to any provisions of the certificate or attached list. If, after considering such objections, Engineer concludes that the Work is not substantially complete, Engineer will, within 14 days after submission of the tentative certificate to Owner, notify Contractor in writing, stating the reasons therefor. If, after consideration of Owner's objections, Engineer considers the Work substantially complete, Engineer will, within said 14 days, execute and deliver to Owner and Contractor a definitive certificate of Substantial Completion (with a revised tentative list of items to be completed or corrected) reflecting such changes from the tentative certificate as Engineer believes justified after consideration of any objections from Owner.

- D. At the time of delivery of the tentative certificate of Substantial Completion, Engineer will deliver to Owner and Contractor a written recommendation as to division of responsibilities pending final payment between Owner and Contractor with respect to security, operation, safety, and protection of the Work, maintenance, heat, utilities, insurance, and warranties and guarantees. Unless Owner and Contractor agree otherwise in writing and so inform Engineer in writing prior to Engineer's issuing the definitive certificate of Substantial Completion, Engineer's aforesaid recommendation will be binding on Owner and Contractor until final payment.
- E. Owner shall have the right to exclude Contractor from the Site after the date of Substantial Completion subject to allowing Contractor reasonable access to remove its property and complete or correct items on the tentative list.

14.05 *Partial Utilization*

- A. Prior to Substantial Completion of all the Work, Owner may use or occupy any substantially completed part of the Work which has specifically been identified in the Contract Documents, or which Owner, Engineer, and Contractor agree constitutes a separately functioning and usable part of the Work that can be used by Owner for its intended purpose without significant interference with Contractor's performance of the remainder of the Work, subject to the following conditions:
 - 1. Owner at any time may request Contractor in writing to permit Owner to use or occupy any such part of the Work which Owner believes to be ready for its intended use and substantially complete. If and when Contractor agrees that such part of the Work is substantially complete, Contractor, Owner, and Engineer will follow the procedures of Paragraph 14.04.A through D for that part of the Work.
 - 2. Contractor at any time may notify Owner and Engineer in writing that Contractor considers any such part of the Work ready for its intended use and substantially complete and request Engineer to issue a certificate of Substantial Completion for that part of the Work.
 - 3. Within a reasonable time after either such request, Owner, Contractor, and Engineer shall make an inspection of that part of the Work to determine its status of completion. If Engineer does not consider that part of the Work to be substantially complete, Engineer will notify Owner and Contractor in writing giving the reasons therefor. If Engineer considers that part of the Work to be substantially complete, the provisions of Paragraph 14.04 will apply with respect to certification of Substantial Completion of that part of the Work and the division of responsibility in respect thereof and access thereto.

4. No use or occupancy or separate operation of part of the Work may occur prior to compliance with the requirements of Paragraph 5.10 regarding property insurance.

14.06 *Final Inspection*

- A. Upon written notice from Contractor that the entire Work or an agreed portion thereof is complete, Engineer will promptly make a final inspection with Owner and Contractor and will notify Contractor in writing of all particulars in which this inspection reveals that the Work is incomplete or defective. Contractor shall immediately take such measures as are necessary to complete such Work or remedy such deficiencies.

14.07 *Final Payment*

A. *Application for Payment:*

1. After Contractor has, in the opinion of Engineer, satisfactorily completed all corrections identified during the final inspection and has delivered, in accordance with the Contract Documents, all maintenance and operating instructions, schedules, guarantees, bonds, certificates or other evidence of insurance, certificates of inspection, marked-up record documents (as provided in Paragraph 6.12), and other documents, Contractor may make application for final payment following the procedure for progress payments.
2. The final Application for Payment shall be accompanied (except as previously delivered) by:
 - a. all documentation called for in the Contract Documents, including but not limited to the evidence of insurance required by Paragraph 5.04.B.6;
 - b. consent of the surety, if any, to final payment;
 - c. a list of all Claims against Owner that Contractor believes are unsettled; and
 - d. complete and legally effective releases or waivers (satisfactory to Owner) of all Lien rights arising out of or Liens filed in connection with the Work.
3. In lieu of the releases or waivers of Liens specified in Paragraph 14.07.A.2 and as approved by Owner, Contractor may furnish receipts or releases in full and an affidavit of Contractor that: (i) the releases and receipts include all labor, services, material, and equipment for which a Lien could be filed; and (ii) all payrolls, material and equipment bills, and other indebtedness connected with the Work for which Owner might in any way be responsible, or which might in any way result in liens or other burdens on Owner's property, have been paid or otherwise satisfied. If any Subcontractor or Supplier fails to furnish such a release or receipt in full, Contractor may furnish a bond or other collateral satisfactory to Owner to indemnify Owner against any Lien.

B. *Engineer's Review of Application and Acceptance:*

1. If, on the basis of Engineer's observation of the Work during construction and final inspection, and Engineer's review of the final Application for Payment and accompanying

documentation as required by the Contract Documents, Engineer is satisfied that the Work has been completed and Contractor's other obligations under the Contract Documents have been fulfilled, Engineer will, within ten days after receipt of the final Application for Payment, indicate in writing Engineer's recommendation of payment and present the Application for Payment to Owner for payment. At the same time Engineer will also give written notice to Owner and Contractor that the Work is acceptable subject to the provisions of Paragraph 14.09. Otherwise, Engineer will return the Application for Payment to Contractor, indicating in writing the reasons for refusing to recommend final payment, in which case Contractor shall make the necessary corrections and resubmit the Application for Payment.

C. Payment Becomes Due:

1. Thirty days after the presentation to Owner of the Application for Payment and accompanying documentation, the amount recommended by Engineer, less any sum Owner is entitled to set off against Engineer's recommendation, including but not limited to liquidated damages, will become due and will be paid by Owner to Contractor.

14.08 *Final Completion Delayed*

- A. If, through no fault of Contractor, final completion of the Work is significantly delayed, and if Engineer so confirms, Owner shall, upon receipt of Contractor's final Application for Payment (for Work fully completed and accepted) and recommendation of Engineer, and without terminating the Contract, make payment of the balance due for that portion of the Work fully completed and accepted. If the remaining balance to be held by Owner for Work not fully completed or corrected is less than the retainage stipulated in the Agreement, and if bonds have been furnished as required in Paragraph 5.01, the written consent of the surety to the payment of the balance due for that portion of the Work fully completed and accepted shall be submitted by Contractor to Engineer with the Application for such payment. Such payment shall be made under the terms and conditions governing final payment, except that it shall not constitute a waiver of Claims.

14.09 *Waiver of Claims*

- A. The making and acceptance of final payment will constitute:
 1. a waiver of all Claims by Owner against Contractor, except Claims arising from unsettled Liens, from defective Work appearing after final inspection pursuant to Paragraph 14.06, from failure to comply with the Contract Documents or the terms of any special guarantees specified therein, or from Contractor's continuing obligations under the Contract Documents; and
 2. a waiver of all Claims by Contractor against Owner other than those previously made in accordance with the requirements herein and expressly acknowledged by Owner in writing as still unsettled.

ARTICLE 15 – SUSPENSION OF WORK AND TERMINATION

15.01 *Owner May Suspend Work*

- A. At any time and without cause, Owner may suspend the Work or any portion thereof for a period of not more than 90 consecutive days by notice in writing to Contractor and Engineer which will fix the date on which Work will be resumed. Contractor shall resume the Work on the date so fixed. Contractor shall be granted an adjustment in the Contract Price or an extension of the Contract Times, or both, directly attributable to any such suspension if Contractor makes a Claim therefor as provided in Paragraph 10.05.

15.02 *Owner May Terminate for Cause*

- A. The occurrence of any one or more of the following events will justify termination for cause:
 - 1. Contractor's persistent failure to perform the Work in accordance with the Contract Documents (including, but not limited to, failure to supply sufficient skilled workers or suitable materials or equipment or failure to adhere to the Progress Schedule established under Paragraph 2.07 as adjusted from time to time pursuant to Paragraph 6.04);
 - 2. Contractor's disregard of Laws or Regulations of any public body having jurisdiction;
 - 3. Contractor's repeated disregard of the authority of Engineer; or
 - 4. Contractor's violation in any substantial way of any provisions of the Contract Documents.
- B. If one or more of the events identified in Paragraph 15.02.A occur, Owner may, after giving Contractor (and surety) seven days written notice of its intent to terminate the services of Contractor:
 - 1. exclude Contractor from the Site, and take possession of the Work and of all Contractor's tools, appliances, construction equipment, and machinery at the Site, and use the same to the full extent they could be used by Contractor (without liability to Contractor for trespass or conversion);
 - 2. incorporate in the Work all materials and equipment stored at the Site or for which Owner has paid Contractor but which are stored elsewhere; and
 - 3. complete the Work as Owner may deem expedient.
- C. If Owner proceeds as provided in Paragraph 15.02.B, Contractor shall not be entitled to receive any further payment until the Work is completed. If the unpaid balance of the Contract Price exceeds all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) sustained by Owner arising out of or relating to completing the Work, such excess will be paid to Contractor. If such claims, costs, losses, and damages exceed such unpaid balance, Contractor shall pay the difference to Owner. Such claims, costs, losses, and damages incurred by Owner will be reviewed by Engineer as to their reasonableness and, when

so approved by Engineer, incorporated in a Change Order. When exercising any rights or remedies under this Paragraph, Owner shall not be required to obtain the lowest price for the Work performed.

- D. Notwithstanding Paragraphs 15.02.B and 15.02.C, Contractor's services will not be terminated if Contractor begins within seven days of receipt of notice of intent to terminate to correct its failure to perform and proceeds diligently to cure such failure within no more than 30 days of receipt of said notice.
- E. Where Contractor's services have been so terminated by Owner, the termination will not affect any rights or remedies of Owner against Contractor then existing or which may thereafter accrue. Any retention or payment of moneys due Contractor by Owner will not release Contractor from liability.
- F. If and to the extent that Contractor has provided a performance bond under the provisions of Paragraph 5.01.A, the termination procedures of that bond shall supersede the provisions of Paragraphs 15.02.B and 15.02.C.

15.03 *Owner May Terminate For Convenience*

- A. Upon seven days written notice to Contractor and Engineer, Owner may, without cause and without prejudice to any other right or remedy of Owner, terminate the Contract. In such case, Contractor shall be paid for (without duplication of any items):
 - 1. completed and acceptable Work executed in accordance with the Contract Documents prior to the effective date of termination, including fair and reasonable sums for overhead and profit on such Work;
 - 2. expenses sustained prior to the effective date of termination in performing services and furnishing labor, materials, or equipment as required by the Contract Documents in connection with uncompleted Work, plus fair and reasonable sums for overhead and profit on such expenses;
 - 3. all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) incurred in settlement of terminated contracts with Subcontractors, Suppliers, and others; and
 - 4. reasonable expenses directly attributable to termination.
- B. Contractor shall not be paid on account of loss of anticipated profits or revenue or other economic loss arising out of or resulting from such termination.

15.04 *Contractor May Stop Work or Terminate*

- A. If, through no act or fault of Contractor, (i) the Work is suspended for more than 90 consecutive days by Owner or under an order of court or other public authority, or (ii) Engineer fails to act on any Application for Payment within 30 days after it is submitted, or (iii) Owner fails for 30 days

to pay Contractor any sum finally determined to be due, then Contractor may, upon seven days written notice to Owner and Engineer, and provided Owner or Engineer do not remedy such suspension or failure within that time, terminate the Contract and recover from Owner payment on the same terms as provided in Paragraph 15.03.

- B. In lieu of terminating the Contract and without prejudice to any other right or remedy, if Engineer has failed to act on an Application for Payment within 30 days after it is submitted, or Owner has failed for 30 days to pay Contractor any sum finally determined to be due, Contractor may, seven days after written notice to Owner and Engineer, stop the Work until payment is made of all such amounts due Contractor, including interest thereon. The provisions of this Paragraph 15.04 are not intended to preclude Contractor from making a Claim under Paragraph 10.05 for an adjustment in Contract Price or Contract Times or otherwise for expenses or damage directly attributable to Contractor's stopping the Work as permitted by this Paragraph.

ARTICLE 16 – DISPUTE RESOLUTION

16.01 *Methods and Procedures*

- A. Either Owner or Contractor may request mediation of any Claim submitted to Engineer for a decision under Paragraph 10.05 before such decision becomes final and binding. The mediation will be governed by the Construction Industry Mediation Rules of the American Arbitration Association in effect as of the Effective Date of the Agreement. The request for mediation shall be submitted in writing to the American Arbitration Association and the other party to the Contract. Timely submission of the request shall stay the effect of Paragraph 10.05.E.
- B. Owner and Contractor shall participate in the mediation process in good faith. The process shall be concluded within 60 days of filing of the request. The date of termination of the mediation shall be determined by application of the mediation rules referenced above.
- C. If the Claim is not resolved by mediation, Engineer's action under Paragraph 10.05.C or a denial pursuant to Paragraphs 10.05.C.3 or 10.05.D shall become final and binding 30 days after termination of the mediation unless, within that time period, Owner or Contractor:
1. elects in writing to invoke any dispute resolution process provided for in the Supplementary Conditions; or
 2. agrees with the other party to submit the Claim to another dispute resolution process; or
 3. gives written notice to the other party of the intent to submit the Claim to a court of competent jurisdiction.

ARTICLE 17 – MISCELLANEOUS

17.01 *Giving Notice*

- A. Whenever any provision of the Contract Documents requires the giving of written notice, it will be deemed to have been validly given if:

1. delivered in person to the individual or to a member of the firm or to an officer of the corporation for whom it is intended; or
2. delivered at or sent by registered or certified mail, postage prepaid, to the last business address known to the giver of the notice.

17.02 *Computation of Times*

- A. When any period of time is referred to in the Contract Documents by days, it will be computed to exclude the first and include the last day of such period. If the last day of any such period falls on a Saturday or Sunday or on a day made a legal holiday by the law of the applicable jurisdiction, such day will be omitted from the computation.

17.03 *Cumulative Remedies*

- A. The duties and obligations imposed by these General Conditions and the rights and remedies available hereunder to the parties hereto are in addition to, and are not to be construed in any way as a limitation of, any rights and remedies available to any or all of them which are otherwise imposed or available by Laws or Regulations, by special warranty or guarantee, or by other provisions of the Contract Documents. The provisions of this Paragraph will be as effective as if repeated specifically in the Contract Documents in connection with each particular duty, obligation, right, and remedy to which they apply.

17.04 *Survival of Obligations*

- A. All representations, indemnifications, warranties, and guarantees made in, required by, or given in accordance with the Contract Documents, as well as all continuing obligations indicated in the Contract Documents, will survive final payment, completion, and acceptance of the Work or termination or completion of the Contract or termination of the services of Contractor.

17.05 *Controlling Law*

- A. This Contract is to be governed by the law of the state in which the Project is located.

17.06 *Headings*

- A. Article and paragraph headings are inserted for convenience only and do not constitute parts of these General Conditions.

Supplementary Conditions

These Supplementary Conditions amend or supplement the Standard General Conditions of the Construction Contract (No. C-700, 2007 Edition) and other provisions of the Contract Documents as indicated below. All provisions that are not so amended or supplemented remain in full force and effect.

The terms used in these Supplementary Conditions will have the meanings indicated in the General Conditions. Additional terms used in these Supplementary Conditions have the meanings stated below, which are applicable to both the singular and plural thereof.

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SC-1.01.A.2. Add the following new Paragraph after Paragraph 1.01.A.1:

The Project is financed in whole or in part by USDA Rural Utilities Service pursuant to the Consolidated Farm and Rural Development Act (7 USC Section 1921 et seq.). The Rural Utilities Service programs are administered through the USDA Rural Development offices; therefore, the Agency for these documents is USDA Rural Development. Other funding is from the Department of Hawaiian Home Lands (DHHL) Trust Funds and U.S. Housing and Urban Development (HUD) Native Hawaiian Housing and Self Determination Act (NAHASDA) block grant funds.

SC-1.01.A.3. Add the following language to the end of Paragraph 1.01.A.3:

The Application for Payment form to be used on this Project is EJCDC No. C-620. The Agency must approve all Applications for Payment before payment is made.

SC-1.01.A.9. Add the following language to the end of Paragraph 1.01.A.9:

The Change Order form to be used on this Project is EJCDC No. C-941. Agency approval is required before Change Orders are effective.

SC-1.01.A.19. Add the following language to the end of Paragraph 1.01.A.19:

The Engineer's Consultants on this project are: Engineers Surveyors Hawaii, Ronald N.S. Ho & Associates, PBR Hawaii, PSC Consultants, Tanimura & Associates.

SC-4.02. Add the following new paragraphs immediately after Paragraph 4.02.B:

C. In the preparation of Drawings and Specifications, Engineer relied upon the following reports of exploration and tests of subsurface conditions at the Site:

1. Revised Preliminary Geotechnical Exploration Report, Proposed East Kapolei Phase II Development, Study Area I, Honouliuli, Ewa, Oahu, Hawaii (PSC Consultants, LLC: June 2009)

D. In the preparation of Drawings and Specifications, Engineer relied upon the following drawings of physical conditions in or relating to existing surface and subsurface structures (except Underground Facilities) which are at or contiguous to the Site:

1. n/a

E. Copies of reports and drawings itemized in SC-4.02.C and SC-4.02.D are included with Bidding Documents. These reports and drawings are not part of the Contract Documents, but the "technical data" contained therein upon which the Contractor may rely as identified and established above are incorporated therein by reference. Contractor is not entitled to rely upon other information and data utilized by Engineer in the preparation of the Drawings and Specifications.

SC-4.06. Delete Paragraphs 4.06.A and 4.06.B in their entirety and insert the following:

A. No reports or drawings of Hazardous Environmental Conditions at or contiguous to the Site are known to the Owner or Engineer.

B. Not used.

SC-5.04. Add the following new paragraph immediately after Paragraph 5.04.B:

C. The limits of liability for insurance required by Paragraph 5.04 of the General Conditions shall provide coverage for not less than the following amounts or greater where required by Laws and Regulations:

1. Workers' Compensation, and related coverages under Paragraphs 5.04.A.1 and A.2

of the General Conditions:

- a. State: Statutory
 - b. Applicable Federal (e.g., Longshoremen's) Statutory
2. Contractor's General Liability under Paragraphs 5.04.A.3 through A.6 of the General Conditions which shall include completed operations and product liability coverages and eliminate the exclusion with respect to property under the care, custody, and control of the Contractor:
- a. General Aggregate \$ 2,000,000
 - b. Each Occurrence (Bodily Injury and Property Damage) \$ 1,000,000
 - c. Property Damage liability \$2,000,000
3. Automobile Liability under Paragraph 5.04.A.6 of the General Conditions:
- a. Bodily Injury:
 - Each Person \$ 1,000,000
 - Each Accident \$ 1,000,000
 - b. Property Damage:
 - Each Accident \$ 1,000,000
 - c. Combined Single Limit of \$ 2,000,000
4. Na Kupa'a o Kuhio and the Department of Hawaiian Home Lands are to be included on policy as additional insureds.

SC-6.05.C. Amend the paragraph by making two subparagraphs under the title C. Engineer's Evaluation. The paragraph text is retitled, 6.05.C.2 After Effective Date of Agreement. A new paragraph is added before this paragraph to read as follows:

1. During Bidding. The Contract, if awarded, will be on the basis of materials and equipment specified or described in the Bidding Documents, or "or-equal" materials and equipment as defined in paragraph 6.05 of the General Conditions, or those substitute materials and equipment approved by the Engineer and identified by Addendum. The materials and equipment described in the Bidding Documents establish a standard of required type, function, and quality to be met by any proposed substitute or "or-equal" item. Request for Engineer's clarification of materials and equipment considered "or-equal" prior to the Effective Date of the Agreement must be received by the Engineer at least 5 days prior to the date for receipt of Bids. No item of material or equipment will be considered by Engineer as a substitute unless written request for approval has been submitted by Bidder
- and

has been received by Engineer at least 15 days prior to the date for receipt of Bids. Each request shall conform to the requirements of Paragraph 6.05 of the General Conditions. The burden of proof of the merit of the proposed item is upon the Bidder. Engineer's decision of approval or disapproval of a proposed item will be final. If Engineer approves any proposed substitute item, such approval will be set forth in an Addendum issued to all prospective Bidders. Bidders shall not rely upon approvals made in any other manner.

SC-6.06 Add a new paragraph immediately after Paragraph 6.06.G:

The Contractor shall not award work valued at more than fifty (50%) percent of the Contract Price to Subcontractor(s), without prior written approval of the Owner.

SC-14.02.A.3. Add the following language at the end of paragraph 14.02.A.3:

No payments will be made that would deplete the retainage, place in escrow any funds that are required for retainage, or invest the retainage for the benefit of the Contractor.

SC-14.02.A.4. Add the following new Paragraph after Paragraph 14.02.A.3:

The Application for Payment form to be used on this Project is EJCDC No. C-620. The Agency must approve all Applications for Payment before payment is made.

SC-14.02.C.1. Delete Paragraph 14.02.C.1 in its entirety and insert the following in its place:

1. The Application for Payment with Engineer's recommendations will be presented to the Owner and Agency for consideration. If both the Owner and Agency find the Application for Payment acceptable, the recommended amount less any reduction under the provisions of Paragraph 14.02.D will become due ten days after the Application for Payment is presented to the Owner, and the Owner will make payment to the Contractor.

SC-18 Add a new Article 18, "Federal Requirements," after Article 17.

SC-18.01 Agency Not a Party.

- A. This Contract is expected to be funded in part with funds provided by Agency. Neither Agency, nor any of its departments, entities, or employees is a party to this Contract.

SC-18.02 Contract Approval.

- A. Owner and Contractor will furnish Owner's attorney such evidence as required so that Owner's attorney can complete and execute the following "Certificate of Owner's Attorney" (Exhibit GC-A) before Owner submits the executed Contract Documents to Agency for approval.

- B. Concurrence by Agency in the award of the Contract is required before the Contract is effective.

SC 18.03 Conflict of Interest.

- A. Contractor may not knowingly contract with a supplier or manufacturer if the individual or entity who prepared the plans and specifications has a corporate or financial affiliation with the supplier or manufacturer. Owner's officers, employees, or agents shall not engage in the award or administration of this Contract if a conflict of interest, real or apparent, would be involved. Such a conflict would arise when: (i) the employee, officer or agent; (ii) any member of their immediate family; (iii) their partner or (iv) an organization that employs, or is about to employ, any of the above, has a financial interest in Contractor. Owner's officers, employees, or agents shall neither solicit nor accept gratuities, favors or anything of monetary value from Contractor or subcontractors.

SC-18.04 Gratuities.

- A. If Owner finds after a notice and hearing that Contractor, or any of Contractor's agents or representatives, offered or gave gratuities (in the form of entertainment, gifts, or otherwise) to any official, employee, or agent of Owner or Agency in an attempt to secure this Contract or favorable treatment in awarding, amending, or making any determinations related to the performance of this Contract, Owner may, by written notice to Contractor, terminate this Contract. Owner may also pursue other rights and remedies that the law or this Contract provides. However, the existence of the facts on which Owner bases such findings shall be an issue and may be reviewed in proceedings under the dispute resolution provisions of this Contract.
- B. In the event this Contract is terminated as provided in paragraph 18.04.A, Owner may pursue the same remedies against Contractor as it could pursue in the event of a breach of this Contract by Contractor. As a penalty, in addition to any other damages to which it may be entitled by law, Owner may pursue exemplary damages in an amount (as determined by Owner) which shall not be less than three nor more than ten times the costs Contractor incurs in providing any such gratuities to any such officer or employee.

SC-18.05 Audit and Access to Records.

- A. Owner, Agency, the Comptroller General of the United States, or any of their duly authorized representatives, shall have access to any books, documents, papers, and records of the Engineer which are pertinent to the Agreement, for the purpose of making audits, examinations, excerpts, and transcriptions. Engineer shall maintain all required records for three years after final payment is made and all other pending matters are closed.

SC-18.06 Small, Minority and Women's Businesses.

- A. If Contractor intends to let any subcontracts for a portion of the work, Contractor shall take affirmative steps to assure that small, minority and women's businesses are used when possible as sources of supplies, equipment, construction, and services. Affirmative steps shall consist of: (1) including qualified small, minority and women's businesses on solicitation lists; (2) assuring that small, minority and women's businesses are solicited whenever they are potential sources; (3) dividing total requirements when economically feasible, into small tasks or quantities to permit maximum participation of small, minority, and women's businesses; (4) establishing delivery schedules, where the requirements of the work permit, which will encourage participation by small, minority and women's businesses; (5) using the services and assistance of the Small Business Administration and the Minority Business Development Agency of the U.S. Department of Commerce; (6) requiring each party to a subcontract to take the affirmative steps of this section; and (7) Contractor is encouraged to procure goods and services from labor surplus area firms.

SC-18.07 Anti-Kickback.

- A. Contractor shall comply with the Copeland Anti-Kickback Act (18 USC 874 and 40 USC 276c) as supplemented by Department of Labor regulations (29 CFR Part 3, "Contractors and Subcontractors on Public Buildings or Public Works Financed in Whole or in Part by Loans or Grants of the United States"). The Act provides that Contractor or subcontractor shall be prohibited from inducing, by any means, any person employed in the construction, completion, or repair of public facilities, to give up any part of the compensation to which they are otherwise entitled. Owner shall report all suspected or reported violations to Agency.

SC-18.08 Clean Air and Pollution Control Acts.

- A. If this Contract exceeds \$100,000, Compliance with all applicable standards, orders, or requirements issued under section 306 of the Clean Air Act (42 U.S.C. 1857(h) and 42 USC 7401et. seq.), section 508 of the Clean Water Act (33 U.S.C. 1368) and Federal Water Pollution Control Act (33 USC 1251 et seq.), Executive Order 11738, and Environmental Protection Agency regulations (40 CFR part 15) is required. Contractor will report violations to the Agency and the Regional Office of the EPA.

SC-18.09 State Energy Policy.

- A. Contractor shall comply with the Energy Policy and Conservation Act (P.L. 94-163). Mandatory standards and policies relating to energy efficiency, contained in any applicable State Energy Conservation Plan, shall be utilized.

SC-18.10 Equal Opportunity Requirements.

- A. If this Contract exceeds \$10,000, Contractor shall comply with Executive Order 11246, "Equal Employment Opportunity," as amended by Executive Order 11375, "Amending Executive Order 11246 Relating to Equal Employment Opportunity," and as

supplemented by regulations at 41 CFR part 60, "Office of Federal Contract Compliance Programs, Equal Employment Opportunity, Department of Labor."

- B. Contractor's compliance with Executive Order 11246 shall be based on its implementation of the Equal Opportunity Clause, specific affirmative active obligations required by the Standard Federal Equal Employment Opportunity Construction Contract Specifications, as set forth in 41 CFR Part 60-4 and its efforts to meet the goals established for the geographical area where the Contract is to be performed. The hours of minority and female employment and training must be substantially uniform throughout the length of the Contract, and in each trade, and Contractor shall make a good faith effort to employ minorities and women evenly on each of its projects. The transfer of minority or female employees or trainees from Contractor to Contractor or from project to project for the sole purpose of meeting Contractor's goals shall be a violation of the Contract, the Executive Order, and the regulations in 41 CFR Part 60-4. Compliance with the goals will be measured against the total work hours performed.
- C. Contractor shall provide written notification to the Director of the Office of Federal Contract Compliance Programs within 10 working days of award of any construction subcontract in excess of \$10,000 at any tier for construction work under the Contract resulting from this solicitation. The notification shall list the name, address, and telephone number of the subcontractor; employer identification number; estimated dollar amount of subcontract; estimated starting and completion dates of the subcontract; and the geographical area in which the Contract is to be performed.

SC-18.11 Restrictions on Lobbying.

- A. Contractor and each subcontractor shall comply with Restrictions on Lobbying (Public Law 101-121, Section 319) as supplemented by applicable Agency regulations. This Law applies to the recipients of contracts and subcontracts that exceed \$100,000 at any tier under a Federal loan that exceeds \$150,000 or a Federal grant that exceeds \$100,000. If applicable, Contractor must complete a certification form on lobbying activities related to a specific Federal loan or grant that is a funding source for this Contract. Each tier certifies to the tier above that it will not and has not used Federal appropriated funds to pay any person or organization for influencing or attempting to influence an officer or employee of any agency, a member of Congress, or an employee of a member of Congress in connection with obtaining any Federal contract, grant, or any other award covered by 31 USC 1352. Each tier shall disclose any lobbying with non-Federal funds that takes place in connection with obtaining any Federal award. Certifications and disclosures are forwarded from tier to tier up to the Owner. Necessary certification and disclosure forms shall be provided by Owner.

SC-18.12 Environmental Requirements.

When constructing a project involving trenching and/or other related earth excavations, Contractor shall comply with the following environmental constraints:

- A. Wetlands – When disposing of excess, spoil, or other construction materials on public or private property, Contractor shall not fill in or otherwise convert wetlands.
- B. Floodplains – When disposing of excess, spoil, or other construction materials on public or private property, Contractor shall not fill in or otherwise convert 100 year floodplain areas delineated on the latest Federal Emergency Management Agency Floodplain Maps, or other appropriate maps, i.e., alluvial soils on NRCS Soil Survey Maps.
- C. Historic Preservation – Any excavation by Contractor that uncovers an historical or archaeological artifact shall be immediately reported to Owner and a representative of Agency. Construction shall be temporarily halted pending the notification process and further directions issued by Agency after consultation with the State Historic Preservation Officer (SHPO).
- D. Endangered Species – Contractor shall comply with the Endangered Species Act, which provides for the protection of endangered and/or threatened species and critical habitat. Should any evidence of the presence of endangered and/or threatened species or their critical habitat be brought to the attention of Contractor, Contractor will immediately report this evidence to Owner and a representative of Agency. Construction shall be temporarily halted pending the notification process and further directions issued by Agency after consultation with the U.S. Fish and Wildlife Service.
- E. Mitigation Measures – If the project had an Environmental Report, Environmental Assessment, or Environmental Impact Statement to meet the requirements of the National Environmental Policy Act, compliance with the mitigation measures, if any, in that document are hereby included as a condition of this contract. {These mitigation measures are as follows: Insert mitigation measures if any.}

EXHIBIT GC-A

Certificate of Owner's Attorney

I, the undersigned, _____, the duly authorized and acting legal representative of _____, do hereby certify as follows:

I have examined the attached Contract(s) and performance and payment bond(s) and the manner of execution thereof, and I am of the opinion that each of the aforesaid agreements is adequate and has been duly executed by the proper parties thereto acting through their duly authorized representatives; that said representatives have full power and authority to execute said agreements on behalf of the respective parties named thereon; and that the foregoing agreements constitute valid and legally binding obligations upon the parties executing the same in accordance with the terms, conditions, and provisions thereof.

Date: _____

AGENCY CONCURRENCE

As lender or insurer of funds to defray the costs of this Contract, and without liability for any payments thereunder, the Agency hereby concurs in the form, content, and execution of this Agreement.

By: _____ Date: _____

—

Type Name: _____

CERTIFICATION FOR CONTRACTS, GRANTS AND LOANS

The undersigned certifies, to the best of his or her knowledge and belief, that:

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

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

3. The undersigned shall require that the language of this certification be included in the award documents for all subawards at all tiers (including contracts, subcontracts, and subgrants under grants and loans) and that all subrecipients shall certify and disclose accordingly.

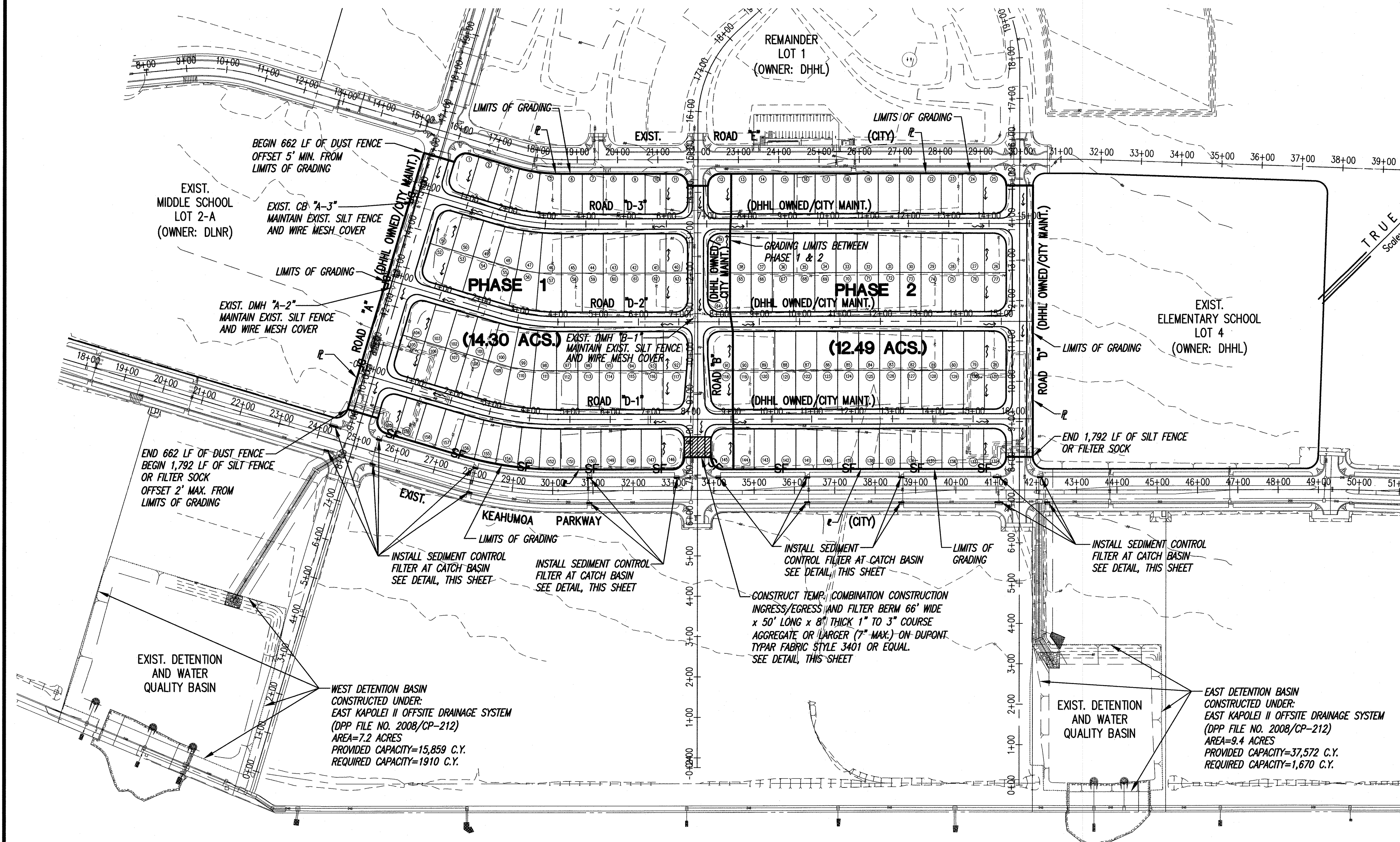
This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by section 1352, title 31, U.S. Code. Any person who fails to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

(name)

(date)

(title)

oOo





United States
Department of
Agriculture

Rural
Utilities
Service

RUS Form 515

September 2001

Telecommunications System Construction Contract (Labor and Materials)

According to the Paperwork Reduction Act of 1995, an agency may not conduct or sponsor, and a person is not required to respond to, a collection of information unless it displays a valid OMB control number. The valid OMB control number for this information collection is 0572-0059. The time required to complete this information collection is estimated to average 1.50 hours per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information.

Telecommunications System Construction Contract

(Labor and Materials)

RUS Contract Form 515

SEPTEMBER 17, 2001

U.S. Department of Agriculture
Rural Utilities Service

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TELECOMMUNICATIONS SYSTEM CONSTRUCTION CONTRACT

(Labor and Materials)

The Complete Construction Contract Consists of the Following:

- I. RUS Contract Form 515, Telecommunications System Construction Contract, which includes:
 - A. Notice to Bidders (Page 1)
 - B. Instructions to Bidders (Page 5)
 - C. Contractor's Proposal (Page 23)
 - D. Construction Agreement (Page 115)
 - E. Engineering, Construction, and Inspection Details (Page 128)
- II. One or more of the specification packets made a part of the Contract by reference as indicated on page 13.
 - A. RUS Form 515a, Specifications and Drawings for Construction of Buried Plant (RUS Bulletin 1753F-150).
 - B. RUS Form 515b, Specifications and Drawings for Underground Plant (RUS Bulletin 1753F-151).
 - C. RUS Form 515c, Specifications and Drawings for Construction of Aerial Plant (RUS Bulletin 1753F-152).
 - D. RUS Form 515d, Specifications and Drawings for Service Entrance Installations at Customer Access Locations (RUS Bulletin 1753F-153).
- III. Plans, including Maps, Construction Sheets and Special Drawings prepared by the Owner's Engineer (Current version of related forms to be utilized).

Check List of Pages to be Completed

Engineer - Prior to Release for Bids Completes:

Pages 1-3	Notice to Bidders
Pages 5-12	Paragraphs 1, 2, 5, 8, 18c, 18d, and 18g
Page 23	Contractor's Proposal
Pages 25-89	Listing of Units, Quantities and Other information as Applicable
Page 91	"Value and Disposition of Units to be Removed" Table (Columns 1-7)
Pages 93-95	List of Special Assembly Unit Drawings and Special Guide Drawings, and List of Changes
Page 97	List of Cable Plant Layout Maps
Page 99	List of Construction Sheets
Page 101	List of Special Arrangement Units
Page 110	Paragraph 14

Page 111	Paragraph 17, 18
Pages 116-117	Article II, Section 1(b)
Page 135-137	Schedule of Acceptance Tests and Measurements
Page 138	Article VI, Section 2

"W" units in RUS Forms 515a, 515b, 515c, and 515d, as Applicable.

Owner - Prior to Release for Bids Completes:

Pages 2, and 138	Liquidated Damage Amount
Pages 3, and 12	Signature and Date
Page 19	Interim Financing, as Applicable
Page 21-22	Supplement A to Construction Contract RUS Form 515, as Applicable

Bidder - Prior to Submitting Bid Completes:

Page 13	Bid Bond or Certified Check
Page 15	Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion - Lower Tier Covered Transactions
Page 17	Certification for Contracts, Grants, Loans, and Cooperative Agreements (Lobbying Certification)
Page 19	Interim Financing, as Applicable
Page 21-22	Supplement A to Construction Contract RUS Form 515, as Applicable
Pages 25-89	Unit Prices and Extensions, as Applicable
Pages 103-105	Proposal Summary
Page 109	Contractor's License, Paragraph 10
Page 112	Paragraph 21
Page 113	Signature, Address, Date and Seal

Engineer - On Acceptance Completes:

Page 115	Top of Page and Article I, Section 1 (except for date)
Page 121	Article III, Section 1(b)

Owner - On Acceptance:

Page 115	Dates Construction Agreement
Page 145	Signs Construction Agreement

Bidder - Upon Notification of Acceptance:

Page 145	Signs Construction Agreement
Pages 151-157	Inserts executed Contractor's Bond

TELECOMMUNICATIONS SYSTEM CONSTRUCTION CONTRACT (RUS FORM 515)

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NOTICE TO BIDDERS
TELECOMMUNICATIONS OUTSIDE PLANT PROJECT

Sealed proposals for the construction, including the supply of necessary Labor, materials, and equipment, of a rural telecommunications project as described below:

Project Number: _____

Company Name: _____

Exchange(s): _____

County(ies): _____

State(s): _____;

shall be received at the following location and time:

Address: _____

Bid Date: _____

Time: _____, __M, __T, at which time the proposals shall be publicly opened and read.

The project shall consist of the following miles

[kilometers (km)] of plant:

Aerial: _____ miles (_____ km);

Buried: _____ miles (_____ km);

Underground: _____ miles (_____ km);

Conduit: _____ miles (_____ km);

Service Entrances _____ miles (_____ km);

Number of Service Entrances:

Aerial _____; Buried _____.

The number of cable placement operations used at any one time shall not exceed _____. The time for Completion of Construction of the Project shall be _____ calendar days excluding Saturdays, Sundays, and legal holidays) from the contract commencement date. Liquidated damages in the amount of _____ per day shall apply for each and every day that construction is delayed after giving effect to extensions of time as provided for in the contract.

The Plans, Specifications, and Construction Sheets together with all necessary forms and other documents for Bidders may be obtained from the Owner, or from the Engineer _____, at the latter's office at _____, upon payment of \$_____ (per set). The Plans, Specifications, and Construction Sheets may be examined at the offices of the Owner or Engineer. Each set of Plans, Specifications and Construction Sheets will have a serial number, assigned by the Engineer, and the number of each set with the name of the purchasers will be recorded by the Engineer. Bids will be accepted only from original purchasers or from some other qualified Bidder to whom such a set has been transferred by the

original purchaser with the approval of the Owner, at least forty-eight (48) hours prior to the Pre-Bid Conference set for at the following location: _____

No proposals will be considered from bidders that do not attend the Pre-Bid Conference unless the bidder has been notified by the Engineer prior to the Pre-Bid Conference that such bidder's attendance is not required. Notes covering the Pre-Bid Conference will be prepared by the Engineer and distributed to all bidders attending the Pre-Bid Conference.

Bidders shall file with the Engineer at least _____ days in advance of the scheduled Pre-Bid Conference, the Bidder's Qualifications. The Owner or Engineer will not release a set of Plans, Specifications, and Construction Sheets bearing a serial number to a bidder until after the Bidder's Qualifications have been approved by the Engineer on behalf of the Owner. Questions relating to Bidder's Qualifications shall be resolved prior to the Pre-Bid Conference.

(Date)

(Borrower Name)

By _____

(Signature)

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INSTRUCTIONS TO BIDDERS

1. Sealed proposals for the construction, including the supply of necessary labor, materials, and equipment, of a rural telecommunications project to be financed pursuant to a Loan Contract between _____

(hereinafter called the "Owner") and the United States of America by the Administrator of the Rural Utilities Service, dated _____, _____, (a copy of the Loan Contract may be examined at the office of the Owner) and to be known as Project _____

_____ which is to be part of the System known as _____ will be received by the Owner on or before _____ o'clock __M., ____T, _____, 20____, at the following location: _____

_____;
at which time and place the proposals will be publicly opened and read. Any proposals received subsequent to the time specified will be promptly returned to the Bidder unopened.

2. The Project, located in the following County(ies): _____;
in the State(s) of _____, all as more fully described in the Plans, Specifications, Construction Sheets, Maps, Special Drawings, and Description of Assembly Units therefore hereinafter referred to will consist of the following miles (km) of telecommunication lines and associated facilities:

a. Buried Plant - Total Route Miles _____ (_____ km)

Construction Corridor

New Miles _____ (_____ km)

Existing Miles _____ (_____ km)

b. Underground Plant - Total Route Miles _____ (_____ km)

Conduit System:

Construction Corridor:

New Miles _____ (_____ km)

Existing Miles _____ (_____ km)

Innerducts placed in:

Conduit Miles _____ (_____ km)

Underground Cable in Conduit Systems:

New Miles _____ (_____ km)

Existing Miles _____ (_____ km)

Manholes: _____ (number)

c. New Aerial Plant - Total Route Miles _____ (_____ km)

New (Including Rebuilt Miles on Which Substantially All
Poles Are To Be Replaced)

- Route Miles _____ (_____ km)

Pole Line w/ Self Supporting Fiber Optic Cable

- Route Miles _____ (_____ km)

Pole Line with Cable

- Route Miles _____ (_____ km)

Joint Use - Electric - Cable

- Route Miles _____ (_____ km)

Joint Use - Electric - Self Supporting Fiber Optic Cable

- Route Miles _____ (_____ km)

Joint Use - Other than Electric Cable

- Route Miles _____ (_____ km)

d. Modification of Existing Aerial Plant -

- Route Miles _____ (_____ km)
(Includes all lines on which substantial number of poles
are retained and which are not included in the above
Classification)

e. Service Entrances - Route Miles _____ (_____ km)

Buried Service Entrances - Number _____

- Route Miles _____ (_____ km)

Aerial Service Entrances - Number _____

- Route Miles _____ (_____ km)

3. Proposals and all supporting instruments must be submitted in their entirety on the forms furnished by the Owner and must be delivered in a sealed envelope addressed to the Owner. The name and address of the Bidder, its license number, if a license is required by the State, and the date and hour of the opening of Bids must appear on the envelope in which the Proposal is submitted. Proposals must be filled in ink or typewritten. No alternations or interlineations will be permitted, unless made before submission, and initialed and dated.

4. Prior to the submission of the Proposal, the Bidder shall make a careful examination of the site of the Project and of the Plans, Specifications, Construction Sheets, Maps, Special Drawings, Description of Assembly Units, and forms of Construction Agreement and Contractor's Bond attached hereto, and shall become informed as to the location and nature of the proposed construction, the transportation facilities, the kind and character of the soil and terrain to be encountered, the kind of facilities required before and during the construction of the Project, general local conditions and all other matters that may affect the cost and the time of completion of the Project. Bidders will be required to comply with all applicable statutes, regulations, etc., including those pertaining to the licensing of contractors and the Anti-Kickback Acts, as amended (40 USC 276c; 41 USC 51 et seq.) and regulations issued pursuant thereto.

5. To facilitate the Bidder's meeting the requirements of Paragraph 4, a _____ day Pre-Bid Conference is scheduled at the following location _____,
on _____ commencing at _____, ____M, ____T. At the Pre-Bid
(Date) (Time)

Conference, qualified representatives of the Engineer and/or Owner, and Contractor will be prepared to discuss the project plans in detail including previous construction experience. They will also provide assistance to personnel of the Bidder for visiting existing representative cable routes and locations, if any, that may require special construction planning. All Bidders are required to attend the Pre-Bid Conference or furnish information to the satisfaction of the Engineer prior to the Pre-Bid Conference, that the Bidder, through prior visitation or previous construction work in the Area, has adequate familiarity with the site and plans for the project.

No proposal shall be accepted or considered from Bidders that do not attend the Pre-Bid Conference or have not been notified by the Engineer prior to the Pre-Bid Conference, that their attendance is not required.

6. Each Bidder shall include and shall be deemed to have included, in the price quoted in the Contractor's Proposal for each Assembly Unit, the amounts which it is estimated will be payable by the successful Bidder or by the Owner on account of taxes imposed by any taxing authority upon the sale, purchase, or use of materials, supplies and equipment, or services or labor or installation thereof, to be incorporated in the Project as part of such Assembly Unit. All taxes of the foregoing descriptions shall be payable by the Bidder which shall be awarded the Contract for the construction of the Project.

7. The Owner reserves the right to confine its consideration of the several bids to one type of design regardless of alternate types of design which may be specified in the Plans and Specifications and offered in the Proposals.

8. Where buried plant is included in the construction of the Project, the number of cable placement operations that may be used at any one time shall not exceed _____.

9. The time for Completion of Construction of the Project shall be as specified by the Owner in the Proposal.

10. Each Proposal must be accompanied by a Bid Bond in the form attached or a certified check on a bank that is a member of the Federal Deposit Insurance Corporation, payable to the order of the Owner, in an amount equal to ten percent (10%) of the maximum Bid price. Each Bidder agrees, provided its Proposal is one of the three low Proposals, that, by filing its Proposal together with such Bid Bond or check, in consideration of the Owner's receiving and considering such Proposal, said Proposal shall be firm and binding upon each such Bidder and such Bid Bond

or check shall be held by the Owner until a Proposal is accepted and a satisfactory Contractor's Bond is furnished by the successful Bidder and such acceptance has been approved by the Administrator, or for a period not to exceed ninety (90) days from the date hereinbefore set for the opening of Proposals whichever period shall be the shorter. If such Proposal is not one of the three low Proposals, the Bid Bond or check will be returned in each instance within a period of ten (10) days to the Bidder furnishing same.

11. The successful Bidder will be required to enter into a Contract with the Owner and to furnish a Contractor's Bond, in one of the forms attached hereto, with sureties listed by the United States Treasury Department as Acceptable Sureties in a penal sum not less than the Contract price.

12. Should the successful Bidder fail or refuse to execute a Contract and to furnish a Contractor's Bond within fifteen (15) days after written notification of the award of the Contract by the Owner, the Bidder will be considered to have abandoned the Proposal. In such event, the Owner shall be entitled (a) to enforce the Bid Bond in accordance with its terms, or (b) if a certified check has been delivered with the Proposal, to retain from the proceeds of the certified check the difference between the amount of the Proposal and such larger amount (up to 10% of the Proposal) for which the Owner may in good faith contract with another party to construct the Project. The term "successful Bidder" shall be deemed to include any Bidder whose Proposal is accepted after another Bidder has previously refused or has been unable to execute the Contract or to furnish a satisfactory Contractor's Bond.

13. The Contract, when executed, shall be deemed to include the entire agreement between the parties thereto, and the Contractor shall not claim any modification thereof resulting from any representation or promise made at any time by any officer, agent, or employee of the Owner or by any other person.

14. The Owner reserves the right to waive minor irregularities or minor errors in any Proposal, if it appears to the Owner that such irregularities or errors were made through inadvertence. Any such irregularities or errors so waived must be corrected on the Proposal in which they occur prior to the execution of any Contract which may be awarded thereon.

15. The Owner reserves the right to reject any or all Proposals. The attention of Bidders is specially called to the desirability of a proper balance between prices for labor and materials and between the total prices for the respective

Assembly Units. Lack of such balance may be considered as a reason for rejecting a Proposal.

16. Where the unit prices in the Contractor's Proposal are separated into three columns designated as "Labor", "Materials", and "Labor and Materials", and where a discrepancy appears between the sum shown in the "Labor and Materials" column and the correct addition of the sums appearing in the "Labor" column and the "Materials" column, the correct addition of the sums appearing in the "Labor" column and the "Materials" column shall control.

17. The terms "Administrator", "Engineer", "Supervisor" "Contractor's Proposal", "Project", "Section", "Completion of Construction", "Completion of Project", "Cleanup", "Work Sector", "Construction Corridor", "Reduced Construction Corridor", and "Construction Sheets" as used throughout this Contract shall be defined in the Construction Agreement, Article VII, Section 1.

18. The Owner represents:

- (a) If by other provisions of the contract documents the Owner shall have undertaken to furnish any materials for the construction of the Project, such materials are on hand at locations which may be determined by inquiry by Bidders from the Engineer or if such materials are not on hand they will be made available by the Owner to the successful Bidder before the time such materials are required for construction.
- (b) That all items to be accomplished by the Owner to facilitate construction have been accomplished or will be completed prior to construction activity.
- (c) Staking has been completed for the entire project, except for Service Entrances, as of _____.
(Date)
- (d) Easements and rights-of-way for the Construction Corridor used for the placement of buried cable have been obtained from property owners or public authorities. Public rights-of-way, totaling approximately _____ miles (_____ km) and private rights-of-way, totaling approximately _____ miles (_____ km) are as shown on the Construction Sheets. All rights-of-way obtained that do not provide sufficient width to meet the specifications for Construction Corridor as defined in the

specifications are designated as "Reduced Construction Corridor". The actual widths available for cable placement in the reduced areas are shown on the respective Construction Sheets. Rights-of-way not obtained are designated as "Unobtained Construction Corridor" and are shown on the Construction Sheets.

Where the placement of the cable is restricted within the Construction Corridor, these locations are designated "Restricted Construction Corridor". The nature of the restriction of the replacement of the cable is as shown on the Construction Sheets. When the cause of a restriction is the presence of existing telecommunications plant or foreign utilities, the general location of these facilities is as shown on the Construction Sheets. Since these facilities can be located definitely only by exposing them to view, all Construction Sheet representations as to their locations are approximate.

- (e) Easements and rights-of-way for placement of all Service Entrances have not been obtained. Such rights-of-way will be obtained as required to avoid delay in placement of such Service Entrances.
- (f) The Owner will have available all funds necessary for immediate payment for the construction of the Project.
- (g) Where buried plant is involved, the Owner has obtained permission from State and local highway and road authorities to bury cable and set housings on the highway and road rights-of-way in the Project Area. Notwithstanding such permission granted to the Owner, each Bidder is responsible for ascertaining that the equipment, methods of construction and repair proposed to be used on the Project will meet all requirements of public authorities having jurisdiction over highway and road rights-of-way. The successful Bidder will be required to furnish proof satisfactory to the Owner of compliance with this requirement. If required by the highway or road authorities, the successful Bidder will furnish to such authorities a bond or meet other guaranty requirements to assure the prompt repair of all damages to highways and roads and their associated rights-of-way caused by the Bidder during construction of the Project. This requirement is in addition to, and independent of, the performance bond required under this Contract. The approval of a Bidder's Qualifications by the Owner or the acceptance of a Bid from any Bidder is not to be construed as approval of the Bidder's equipment or

[illegible]

(Date)

(Owner)

(Authorized Signature)

U.S. Department of Agriculture
Rural Utilities Service

BID BOND

1. *KNOW ALL MEN that we,* _____
_____, *as Principal, and*
_____,
as Surety, are held and firmly bound unto _____
_____ *(hereafter called the "Owner")*
in the penal sum of ten percent (10%) of the amount of the bid referred to in paragraph 2 below, but not to
exceed _____ *dollars (\$ _____), as*
hereinafter set forth and for the payment of which sum well and truly to be made we bind ourselves, our
executors, administrators, successors and assigns, jointly and severally, by these presents;
2. *WHEREAS, the Principal has submitted a bid to the Owner for the construction of the Rural Utilities Service*
project known as _____.
3. *NOW, THEREFORE, the condition of this obligation is such that if the Owner shall accept the bid of the*
Principal, and
- a. *the Principal shall execute such contract documents, if any, as may be required by the terms of the bid and*
give such Contractor's Bond or Bonds for the performance of the contract and for the prompt
payment of labor and material furnished for the project as may be specified in the bid, or
- b. *in the event of the failure of the Principal to execute such contract documents, if any, and give such*
Contractor's Bond or Bonds, if the Principal shall pay to the Owner the difference, not to exceed the penal
sum hereof, between the amount specified in the bid and such larger amount for which the Owner may in
good faith contract with another party to construct the project, then this obligation shall be void,
otherwise to remain in full force and effect.

IN WITNESS WHEREOF, the undersigned have caused this instrument to be executed and their respective
corporate seals to be affixed and attested by their duly authorized representatives this

_____ day of _____, 20_____.

Principle (Seal)

ATTEST: By _____

Secretary _____
Title

Surety (Seal)

ATTEST: By _____

Secretary _____
Title

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CERTIFICATION REGARDING DEBARMENT, SUSPENSION, INELIGIBILITY
AND VOLUNTARY EXCLUSION - LOWER TIER COVERED TRANSACTIONS

This certification is required by the regulations implementing Executive Order 12549, Debarment and Suspension, 7 CFR Part 3017, Section 3017.510, Participants' responsibilities. The regulations were published as Part IV of the January 30, 1989, Federal Register (pages 4722-4733). Copies of the regulations may be obtained by contacting the Department of Agriculture agency with which this transaction originated.

(BEFORE COMPLETING CERTIFICATION, READ INSTRUCTIONS ON REVERSE)

- (1) The prospective lower tier participant certifies, by submission of this proposal, that neither it nor its principals is presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participation in this transaction by and Federal department or agency.
- (2) Where the prospective lower tier participant is unable to certify to any of the statements in this certification, such prospective participant shall attach an explanation to this proposal.

Organization Name

PR/Award Number or Project Name

Name and Title of Authorized Representative

Signature

Date

INSTRUCTIONS FOR CERTIFICATION

1. By signing and submitting this form, the prospective lower tier participant is providing the certification set out on the reverse side in accordance with these instructions.
2. The certification in this clause is a material representation of fact upon which reliance was placed when this transaction was entered into. If it is later determined that the prospective lower tier participant knowingly rendered an erroneous certification, in addition to other remedies available to the Federal Government, the department or agency with which this transaction originated may pursue available remedies, including suspension and/or debarment.
3. The prospective lower tier participant shall provide immediate written notice to the person to which this proposal is submitted if at any time the prospective lower tier participant learns that its certification was erroneous when submitted or has become erroneous by reason of changed circumstances.
4. The terms "covered transaction," "debarment," "suspended," "ineligible," "lower tier covered transaction," "participant," "person," "primary covered transaction," "principal," "proposal," and "voluntarily excluded," as used in this clause, have the meanings set out in the Definitions and Coverage sections of rules implementing Executive Order 12549. You may contact the person to which this proposal is submitted for assistance in obtaining a copy of those regulations.
5. The prospective lower tier participant agrees by submitting this form that, should the proposed covered transaction be entered into, it shall not knowingly enter into any lower tier covered transaction with a person who is debarred, suspended, declared ineligible, or voluntarily excluded from participation in this covered transaction, unless authorized by the department or agency with which this transaction originated.
6. The prospective lower tier participant further agrees by submitting this form that it will include this clause titled "Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion - Lower Tier Covered Transactions," without modification, in all lower tier covered transactions and in all solicitations for lower tier covered transactions.
7. A participant in a covered transaction may rely upon a certification of a prospective participant in a lower tier covered transaction that it is not debarred, suspended, ineligible, or voluntarily excluded from the covered transaction, unless it knows that the certification is erroneous. A participant may decide the method and frequency by which it determines the eligibility of its principals. Each participant may, but is not required to, check the Nonprocurement List.
8. Nothing contained in the foregoing shall be construed to require establishment of a system of records in order to render in good faith the certification required by this clause. The knowledge and information of a participant is not required to exceed that which is normally possessed by a prudent person in the ordinary course of business dealings.
9. Except for transactions authorized under paragraph 5 of these instructions, if a participant in a covered transaction knowingly enters into a lower tier covered transaction with a person who is suspended, debarred, ineligible, or voluntarily excluded from participation in this transaction, in addition to other remedies available to the Federal Government, the department or agency with which this transaction originated may pursue available remedies, including suspension and/or debarment.

Certification for Contracts, Grants, Loans, and Cooperative Agreements

The undersigned certifies, to the best of his or her knowledge and belief, that:

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

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

(3) The undersigned shall require that the language of this certification be included in the award documents for all subawards at all tiers (including subcontracts, subgrants, and contracts under grants, loans, and cooperative agreements) and that all subrecipients shall certify and disclose accordingly.

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

Organization Name

Name of Authorized Official

Signature

Date

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INTERIM FINANCING

If this project is financed in part by the Rural Telephone Bank, an agency of the United States of America, the references in the contract documents to "the United States of America and the Government" shall mean the "Rural Telephone Bank", as well, and the references to the "Administrator" shall mean the "Governor" of the Rural Telephone Bank as well. If the project is financed wholly by the Rural Telephone Bank, the reference to "the United States of America" and the "Government" shall mean the Rural Telephone Bank and the references to the "Administrator" shall mean the "Governor" of the Rural Telephone Bank. References to RUS loans or loan contracts shall include RUS guarantees of loans by others.

The Owner, notwithstanding the references in the contract documents to the RUS or Rural Telephone Bank financing of the work herein provided for, plans to use funds other than RUS or Rural Telephone Bank loan funds initially and expects to be reimbursed subsequently with RUS or Rural Telephone Bank loan funds in whole or in part. It is understood that:

1. An RUS, RTB, and/or FFB loan for this work ____ has ____ has not (owner to check one) been made and has not been released.
2. Arrangements have been made for other funds so that invoices may be paid promptly in accordance with the contract provisions.
3. Approval of the contract by RUS or the Rural Telephone Bank shall not be construed as a commitment to make a loan for this purpose.

Date

Owner

By _____
President

Date

Contractor

By _____

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SUPPLEMENT A TO CONSTRUCTION CONTRACT RUS FORM 515

The Bidder agrees that the following provisions shall be a part of the Proposal to which this Supplement is attached and shall supersede all provisions of the Proposal which are inconsistent herewith:

1. The following Section 24 shall be added on Page 113:

- 24(a) The Bidder understands and agrees that, if this proposal is accepted, the Owner shall furnish to the Bidder the materials set forth in the attached "List of Owner's Materials on Hand" and the Bidder will give a receipt therefore in writing to the Owner. The Bidder further agrees, at its expense and in on behalf of the Owner, to promptly receive, unload, transport and handle all materials and equipment on the "List of Materials Ordered by Owner but Not Delivered" when delivered and shall be responsible for demurrage, if any, and will promptly forward to the Owner the Bidder's receipt in writing for such materials. The materials referred to above are on hand at, or will be delivered to the locations specified in the attached Lists and the Bidder will use such materials in constructing the Project.
- (b) The Contractor's Bond shall be in a penal sum of not less than the contract price, which is the sum of all labor and materials including owner-furnished materials covered by this Supplement A.
- (c) The references in the Construction Agreement to "materials," except in Article IV Section 1(f), Page 124, shall be understood to mean only materials to be furnished by the Bidder.
- (d) The value of the completed Assembly Units certified to by the Bidder each month pursuant to article III, Section 1(a) Pages 120 and 121, of the Construction Agreement shall be reduced by an amount equal to the value of the materials installed by the Bidder during the preceding month which have been furnished by the Owner or the delivery of which has been accepted by the Bidder on behalf of the Owner. Only 95 percent of the remainder shall be paid prior to the completion of the Project. The value of such materials for the purpose of this Supplement shall be computed on the basis of the unit prices stated in the attached Lists, and not on the Bidder's material unit bid prices. Materials, if any, not required for the Project, which has been accepted by the Bidder on behalf of the Owner, shall be returned to the Owner by the Bidder upon completion of the construction of the Project. The value of all materials not installed in the Project or returned to the Owner shall be deducted from the final payment to the Bidder.

- (e) The Owner shall furnish such materials, if any, as may be required for the Project in excess of the quantities set forth in the attached Lists. In such event, the value of such excess materials shall be determined on the basis of the unit prices stated in the attached Lists and payments to the Bidder on account of such excess materials furnished by the Owner shall be reduced in the manner provided in paragraph (d) above.

2. Section 15, Page 110, shall be revised to read as follows:

15. The unit prices for Assembly Units in this Contractor's Proposal include provisions for the payment of all moneys which will be payable by the Bidder or the Owner in connection with the construction of the Project on account of taxes imposed by any taxing authority upon the sale, purchase, or use of materials, supplies and equipment or services or labor of installation thereof, to be incorporated in the Project as part of such Assembly Units. The Bidder agrees to pay all such taxes except on Owner Furnished Materials and it is understood that, as to Owner Furnished Materials, the values stated in the attached "List of Owner's Materials on Hand" and "List of Materials Ordered by Owner but Not Delivered" include such taxes, if applicable. The Bidder will furnish to the appropriate taxing authorities all required information and reports pertaining to materials used in construction of the project except as to Owner Furnished Materials.

	Bidder
	By _____

Date	

	Title

	Owner
	By _____

Date	

	Title

CONTRACTOR'S PROPOSAL
(Proposal Shall be Submitted in Ink or Typewritten)

To: _____

(hereinafter called the "Owner").

1(a) The undersigned (hereinafter called the "Bidder") hereby proposes to construct the rural telecommunications project

in strict accordance with the Plans, Specifications, and Construction Sheets and Special Drawings therefore, indicated below, and by this reference made a part hereof, and to furnish all materials, machinery, tools, equipment, labor, transportation and other means necessary therefore, for the prices hereinafter stated.

The Engineer will check the applicable Specification Packet(s) which become(s) a part of the Contract by this reference:

☐ RUS Form 515a - Specifications and Drawings for Construction of Direct Buried Plant (RUS Bulletin 1753F-150).

Dated: _____

☐ RUS Form 515b - Specifications and Drawings for Construction of Underground Plant (RUS Bulletin 1753F-151).

Dated: _____

☐ RUS Form 515c - Specifications and Drawings for Construction of Aerial Plant (RUS Bulletin 1753F-152).

Dated: _____

☐ RUS Form 515d - Specifications and Drawings for Service Installations at Customer Access Locations (RUS Bulletin 1753F-153).

Dated: _____

The following Standards are applicable: (Engineer to insert date)

RUS Bulletin 1753F-401 (PC-2)	Dated:	_____
RUS Bulletin 1753F-201 (PC-4)	Dated:	_____
RUS Bulletin 1753F-801 (PC-5A)	Dated:	_____

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1(b) CONSTRUCTION UNITS

Section A - POLE UNITS

Poles will conform to the following: (Engineer to fill in)

Pole Plan: (Check one or more if acceptable)

- (1) Insured warranted ____ (2) Independent inspected ____
 (3) Quality Assurance Program ____

Specie of Timber: _____

Kind of Preservative: _____

Method of Treatment: (Check one or more if acceptable)

- (1) Pressure ____
 (2) Thermal Process: a. Butt ____ b. Full Length ____

Note: If not indicated in the above spaces, the Bidder may select the pole plan, species, kind of preservative, and the method of treatment for supplying the poles. Poles furnished on the Project shall all be under the same pole plan, and of the same species, kind of preservative, and method of treatment, and shall meet the latest RUS specifications in effect at the time the bid is received.

Unit	No. of Units	Unit Price			Extended Price Labor and Materials
		Labor	Materials	Labor and Materials	

Total, Section A _____

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Section BA - BURIED PLANT HOUSING STUB POLE UNITS

If wood stub pole units are to be used they will conform to the following: (Engineer will fill in)

Stub Pole Plan: (Check one or more if acceptable)

- (1) Insured warranted ____ (2) Independent inspected ____
 (3) Quality Assurance Program ____

Kind of Preservative: _____

Method of Treatment: (Check one or more if acceptable)

- (1) Pressure ____ (2) Thermal Process: Full Length ____

Note: If not indicated in the above spaces, the Bidder may select the kind of preservative, and the method of treatment for supplying the stub pole units. Stub pole units furnished on the Project shall all be under the same pole plan, and of the same species, kind of preservative, and method of treatment, and shall meet the latest RUS specifications in effect at the time the bid is received.

The minimum dimensions for stub poles are:

- Round - Top 4-1/2 inches (in.) [11.3 centimeters (cm)],
 Bottom 5 in. (12.7 cm) (Diameter)
 Sawn - 4-1/2 in. (11.4 cm) x 3-1/2 in. (9.0 cm)

When Stub poles are required that exceed these minimums, indicate the required minimum in the following spaces: Round - Bottom diameter ____ in. (____ cm), Top diameter ____ in. (____ cm), Sawn ____ in. (____ cm) x ____ in. (____ cm).

Stub Poles for mounting buried plant housings shall be set 3.0 feet (ft) [0.9 meters (m)] in either soil or solid rock. If a greater depth in soil is necessary for wood stub pole units, it shall be indicated in the following space: ____ ft (____ m) (Engineer to fill in).

Unit	No. of Units	Unit Price			Extended Price Labor and Materials
		Labor	Materials	Labor and Materials	

Total, Section BA _____

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Section BD - BURIED PLANT HOUSING ASSEMBLY UNITS

Unit	No. of Units	Unit Price			Extended Price Labor and Materials
		Labor	Materials	Labor and Materials	

_____ If checked by the Engineer, sealer shall be installed in accordance with the manufacturer's instructions.

_____ If checked by the Engineer, ant repellent shall be installed in accordance with the manufacturer's instructions.

The buried plant housings shall be green in color unless otherwise specified below.

Total, Section BD _____
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Section BDO - BURIED PLANT FIBER OPTIC HOUSING ASSEMBLY UNITS

Unit	No. of Units	Unit Price			Extended Price Labor and Materials
		Labor	Materials	Labor and Materials	

_____ If checked by the Engineer, sealer shall be installed in accordance with the manufacturer's instructions.

_____ If checked by the Engineer, ant repellent shall be installed in accordance with the manufacturer's instructions.

The buried plant housings shall be green in color unless otherwise specified below.

Total, Section BDO _____

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Section BDS - SERVING AREA INTERFACE CABINET (SAIC)
ASSEMBLY UNITS

Unit	No. of Units	Unit Price			Extended Price Labor and Materials
		Labor	Materials	Labor and Materials	

_____ If checked by the Engineer, sealer shall be installed in accordance with the manufacturer's instructions.

_____ If checked by the Engineer, ant repellent shall be installed in accordance with the manufacturer's instructions.

The SAIC shall be green in color unless otherwise specified below.

_____ Total, Section BDS _____

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Section BFC - BURIED FILLED COPPER CABLE ASSEMBLY UNITS

[illegible]

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Section BFC - BURIED FILLED COPPER CABLE ASSEMBLY UNITS
(Continued)

[illegible]

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Section BFC - BURIED FILLED COPPER CABLE ASSEMBLY UNITS
(Continued)

The depth of buried cable in soil measured from the top of the cable to the surface of the ground is 24 in. (61 cm) minimum. If the cable is to be plowed for the entire project to a minimum depth greater than 24 in. (61 cm), the Engineer will indicate the required minimum depth in the following space below:

_____ in. (_____ cm).

If any section of cable is to be installed to a depth greater than the minimum depth stated above, the applicable BFC units will be suffixed by the letter "E" followed by the required depth in parentheses.

The cable to be used with the above buried filled cable units shall have a shield as indicated below:

_____ Standard, Coated Aluminum

_____ Standard, Copper

_____ Gopher Resistant, Containing Copper

_____ Gopher Resistant, Coated Aluminum/Coated Steel

The following type(s) of conductor insulation shall be used:

_____ Solid

_____ Expanded

_____ If checked by the Engineer, preconnectorized cable may be used at the option of the contractor for reel end splices.

_____ If checked by the Engineer, warning tape shall be used.

Total, Section BFC _____

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Section BFO - BURIED FILLED FIBER OPTIC CABLE ASSEMBLY UNITS

[illegible]

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Section BFO - BURIED FILLED FIBER OPTIC CABLE ASSEMBLY UNITS
(continued)

The depth of buried cable in soil measured from the top of the cable to the surface of the ground is 24 in. (61 cm) minimum. If the cable is to be plowed for the entire project to a minimum depth greater than 24in. (61 cm), the Engineer will indicate the required minimum depth in the following space below:

_____ in. (_____ cm).

If any section of cable is to be installed to a depth greater than the minimum depth stated above, the applicable BFO units will be suffixed by the letter "E" followed by the required depth in parentheses.

The cable to be used with the above fiber optic cable units shall be as specified below:

- _____ Attenuation (if other than normal specification value)
- _____ Bandwidth requirement for multimode fibers
- _____ Multiple loose tube core construction
 - _____ If checked, dry filled core
 - _____ If checked, gel filled core
- _____ Unit or central core tube construction
- _____ Metallic strength members
- _____ Non-metallic strength members

Other characteristics as required: (Define)

- 1.
- 2.
- 3.
- 4.

_____ If checked by the Engineer, preconnectorized cable may be used at the option of the contractor for reel end splices.

_____ If checked by the Engineer, warning tape shall be used.

Total, Section BFO _____

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Section BH - BURIED HANDHOLE ASSEMBLY UNITS

[illegible]

Total, Section BH _____

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Section BM - MISCELLANEOUS ASSEMBLY UNITS -
BURIED PLANT AND SERVICE ENTRANCE INSTALLATIONS

Unit	No. of Units	Unit Price			Extended Price Labor And Materials
		Labor	Materials	Labor and Materials	

Total, Section BM _____

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Section CFO - SELF SUPPORTING FILLED FIBER OPTIC CABLE
ASSEMBLY UNITS

Unit	No. of Units	Unit Price			Extended Price Labor And Materials
		Labor	Materials	Labor and Materials	

The cable to be used with the above fiber optic cable units shall be as specified below:

- _____ Attenuation (if other than normal specification value)
- _____ Bandwidth requirement for multimode fibers
- _____ Armored
- _____ Unarmored
- _____ Multiple loose tube core construction
 - _____ If checked, dry filled core
 - _____ If checked, gel filled core
- _____ Unit or central core tube construction

Other characteristics as required: (Define)

- 1.
- 2.
- 3.
- 4.

_____ If checked by the Engineer, the cable shall be spiraled around the suspension strand at all locations shown on the Construction Sheets. Spiraling of cable shall be in accordance with the Construction Guide Drawing 250-1.

_____ If checked by the Engineer, preconnectorized cable may be used at the option of the contractor for reel end splices.

Total, Section CFO _____

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Section CO - AERIAL FILLED FIBER OPTIC CABLE ASSEMBLY UNITS

Unit	No. of Units	Unit Price			Extended Price Labor And Materials
		Labor	Materials	Labor and Materials	

The cable to be used with the above fiber optic cable units shall be as specified below:

- _____ Attenuation (if other than normal specification value)
- _____ Bandwidth requirement for multimode fibers
- _____ Armored
- _____ Unarmored
- _____ Multiple loose tube core construction
 - _____ If checked, dry filled core
 - _____ If checked, gel filled core
- _____ Unit or central core tube construction
- _____ Metallic strength members
- _____ Non-metallic strength members

Other characteristics as required: (Define)

- 1.
- 2.
- 3.
- 4.

_____ If checked by the Engineer, the cable shall be spiraled around the suspension strand at all locations shown on the Construction Sheets. Spiraling of cable shall be in accordance with the Construction Guide Drawing 250.

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Section CO - AERIAL FILLED FIBER OPTIC CABLE ASSEMBLY UNITS
(continued)

_____ If checked by the Engineer, the existing lashing wire shall be removed and the new and existing cables shall be double lashed to the existing suspension strand at all locations shown on the Construction Sheets.

The lashing wire to be used with the above aerial cable shall be the size and materials indicated by the Engineer: _____ (_____) stainless steel, _____ (_____) aluminum.

_____ If checked by the Engineer, preconnectorized cable may be used at the option of the contractor for reel end splices.

_____ If checked by the Engineer, Extra High Strength (EHS) galvanized steel strand shall be used.

Total, Section CO _____

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Section CW - AERIAL FILLED COPPER CABLE ASSEMBLY UNITS

[illegible]

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Section CW - AERIAL FILLED COPPER CABLE ASSEMBLY UNITS
(Continued)

The cable to be used with the above aerial cable units shall have a shield as indicated below:

_____ Coated Aluminum

_____ Copper

The following type(s) of conductor insulation shall be used:

_____ Solid

_____ Expanded

_____ If checked by the Engineer, the cable shall be spiraled around the suspension strand at all locations shown on the Construction Sheets. Spiraling of cable shall be in accordance with the Construction Guide Drawing 250.

_____ If checked by the Engineer, the existing lashing wire shall be removed and the new and existing cables shall be double lashed to the existing suspension strand at all locations shown on the Construction Sheets.

The lashing wire to be used with the above aerial cable shall be the size and materials indicated by the Engineer: _____ (_____) stainless steel, _____ (_____) aluminum.

_____ If checked by the Engineer, preconnectorized cable may be used at the option of the contractor for reel end splices.

_____ If checked by the Engineer, Extra High Strength (EHS) galvanized steel strand shall be used.

Total, Section CW _____

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Section HA - AERIAL SPLICE CLOSURE ASSEMBLY UNITS

Unit	No. of Units	Unit Price			Extended Price Labor and Materials
		Labor	Materials	Labor and Materials	

Total, Section HA _____

Section HBF - BURIED FILLED SPLICE CLOSURE ASSEMBLY UNITS

Unit	No. of Units	Unit Price			Extended Price Labor and Materials
		Labor	Materials	Labor and Materials	

Total, Section HBF _____

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Section HC - COPPER SPLICING ASSEMBLY UNITS

Unit	No. of Units	Unit Price			Extended Price Labor and Materials
		Labor	Materials	Labor and Materials	

Total, Section HC _____

Section HO - FIBER OPTIC SPLICING ASSEMBLY UNITS

Unit	No. of Units	Unit Price			Extended Price Labor and Materials
		Labor	Materials	Labor and Materials	

Total, Section HO _____

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Section HR - READY ACCESS CLOSURE ASSEMBLY UNITS

Unit	No. of Units	Unit Price			Extended Price Labor and Materials
		Labor	Materials	Labor and Materials	

Total, Section HR _____

Section HU - UNDERGROUND SPLICE CLOSURE ASSEMBLY UNITS

Unit	No. of Units	Unit Price			Extended Price Labor and Materials
		Labor	Materials	Labor and Materials	

Total, Section HU _____

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Section NID - NETWORK INTERFACE DEVICE ASSEMBLY UNITS

[illegible]

Total, Section NID _____

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Section PE - GUY ASSEMBLY UNITS

Unit	No. of Units	Unit Price			Extended Price Labor and Materials
		Labor	Materials	Labor and Materials	

_____ If checked by the Engineer, Extra High Strength (EHS) galvanized steel strand shall be used.

Total, Section PE _____

Section PF - ANCHOR ASSEMBLY UNITS

Unit	No. of Units	Unit Price			Extended Price Labor and Materials
		Labor	Materials	Labor and Materials	

Total, Section PF _____

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Section PM - MISCELLANEOUS ASSEMBLY UNITS -
UNDERGROUND AND AERIAL PLANT

[illegible]

Total, Section PM _____

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Section R - RIGHT-OF-WAY CLEARING AND TRIMMING UNITS -
AERIAL PLANT

Unit	No. of Units	Unit Price			Extended Price Labor and Materials
		Labor	Materials	Labor and Materials	

Note 1: Trees that are felled shall be cut to commercial wood length and left on the side of the right-of-way for the landowner. Commercial wood length means the length designated by the Engineer, but in no case shall be required to be less than _____ feet (_____ meters).

Note 2: Brush, branches, and refuse from the clearing operations shall, without delay, be disposed of by one of the following methods as directed by the Engineer: (Engineer to strike out methods not to be used.)

- a. Chipped and Blown
- b. Removed from the vicinity of the right-of-way
- c. Piled on one side of the right-of-way in such manner as to not obstruct roads, ditches, etc.
- d. Other (Describe):

Total, Section R _____

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Section SE - SERVICE ENTRANCE ASSEMBLY UNITS

Unit	No. of Units	Unit Price			Extended Price Labor and Materials
		Labor	Materials	Labor and Materials	

The depth of buried service wire in soil measured from the top of the service wire to the surface of the ground is 12 in. (30.5 cm) minimum. If the service wire is to be placed for the entire project to a minimum depth greater than 12 in. (30.5 cm), the Engineer will indicate the required minimum depth in the following space below:

_____ in. (_____ cm).

If any section of service wire is to be installed to a depth greater than the minimum depth stated above, the unit will be suffixed by the letter "E" followed by the required depth in parentheses.

Total, Section SE _____

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Section UD - UNDERGROUND CONDUIT ASSEMBLY UNITS

Unit	No. of Units	Unit Price			Extended Price Labor and Materials
		Labor	Materials	Labor and Materials	

Total, Section UD _____

This page intentionally left blank.

Section UF - UNDERGROUND FILLED COPPER CABLE ASSEMBLY UNITS

Unit	No. of Units	Unit Price			Extended Price Labor and Materials
		Labor	Materials	Labor and Materials	

The cable to be used with the above underground cable units shall have a shield as indicated below:

_____ Coated Aluminum

_____ Copper

The following type(s) of conductor insulation shall be used:

_____ Solid

_____ Expanded

_____ If checked by the Engineer, preconnectorized cable may be used at the option of the contractor.

Total, Section UF _____

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Section UH - UNDERGROUND HANDHOLE ASSEMBLY UNITS

[illegible]

Total, Section UH _____

This page intentionally left blank.

Section UM - PRECAST MANHOLE ASSEMBLY UNITS

[illegible]

_____ If checked by the Engineer, poured-in-place manholes may be used.

Total, Section UM _____

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Section UO - UNDERGROUND FILLED FIBER OPTIC CABLE ASSEMBLY UNITS

Unit	No. of Units	Unit Price			Extended Price Labor and Materials
		Labor	Materials	Labor and Materials	

The cable to be used with the above fiber optic cable units shall be as specified below:

- _____ Attenuation (if other than normal specification value)
- _____ Bandwidth requirement for multimode fibers
- _____ Multiple loose tube core construction
 - _____ If checked, dry filled core
 - _____ If checked, gel filled core
- _____ Unit or central core tube construction
- _____ Metallic strength members
- _____ Non-metallic strength members

Other characteristics as required: (Define)

- 1.
- 2.
- 3.
- 4.

- _____ If checked by the Engineer, preconnectorized cable may be used at the option of the contractor for reel end splices.

Total, Section UO _____

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Section W - REARRANGEMENT UNITS

[illegible]

Total, Section W _____

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Section XX - NONREUSABLE MATERIALS REMOVAL UNITS

[illegible]

Total, Section XX _____

This page intentionally left blank.

Section XZ - REUSABLE MATERIALS REMOVAL UNITS

Unit	No. of Units	Unit Price			Extended Price Labor and Materials
		Labor	Materials	Labor and Materials	

Total, Section XZ _____

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Section XZ - REUSABLE MATERIALS REMOVAL UNITS (continued)

VALUE AND DISPOSITION OF UNITS TO BE REMOVED

Assembly Unit Designation	Assembly Unit Material Value	Charges to Contractor		No. of Assembly Units to Be Reused	Credit To Contractor For Material Turned In	
		No. of Assembly Units	Extended Value		No. of Assembly Units	Extended Value
1	2	3	4	5	6	7

Note: Columns 1 through 7 should be filled in by Engineer.

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LIST OF SPECIAL ASSEMBLY UNIT DRAWINGS AND SPECIAL GUIDE DRAWINGS

(NOTE: Engineer will indicate by listing below the special assembly unit drawings and special guide drawings which have been prepared. These drawings are considered to be a part of this Contract.)

LIST OF CHANGES, ADDITIONS, AND DELETIONS

The Bidder understands that the following changes, additions, or deletions have been made in the Contractor's Proposal, Description of Assembly Units, Engineering Details, Material and Installation Specifications, List of Construction Sheets, Assembly Unit Drawings and Guide Drawings, of the standard RUS Form 515 and the applicable Specification Packet(s) are considered to be part of this contract referred to hereof:

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LIST OF KEY AND DETAIL MAPS

Map Number	Description

This page intentionally left blank.

LIST OF CABLE PLANT LAYOUT MAPS

Map Number	Description

This page intentionally left blank.

LIST OF CONSTRUCTION SHEETS

Map Number	Description

This page intentionally left blank.

LIST OF SPECIAL ARRANGEMENT UNITS

Map Number	Description

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PROPOSAL SUMMARY

Section A	_____
Section BA	_____
Section BD	_____
Section BDO	_____
Section BDS	_____
Section BFC	_____
Section BFO	_____
Section BH	_____
Section BM	_____
Section CFO	_____
Section CO	_____
Section CW	_____
Section HA	_____
Section HBF	_____
Section HC	_____
Section HO	_____
Section HR	_____
Section HU	_____
Section NID	_____
Section PE	_____
Section PF	_____
Section PM	_____
Section R	_____

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PROPOSAL SUMMARY
(continued)

Section SE	_____
Section UD	_____
Section UF	_____
Section UH	_____
Section UM	_____
Section UO	_____
Section W	_____
Section XX	_____
Section XZ	_____

Total \$ _____

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2. The Bidder agrees to furnish and use in the construction of the Project under this Proposal, in the event the Contract is awarded to the Bidder, only such materials and equipment as are included in RUS Informational Publication (IP) 344-2, "List of Materials Acceptable for Use on Telecommunications Systems of RUS Borrowers," including revisions adopted prior to the Bid Opening, unless specific written approval has been granted by the Administrator of the Rural Utilities Service (hereinafter called the "Administrator").

3. The Bidder understands and agrees that the various Assembly Units on which bids are made in this Proposal are as set out in the "Description of Assembly Units" of the Specifications, that all said bids are on a unit basis, and that the Owner may specify any number or combination of Assembly Units that the Owner, with the approval of the Administrator, may deem necessary for the construction of the Project.

4. The Bidder has made a careful examination of the site of the Project to be constructed and of the Plans, Specifications, Descriptions of Assembly Units, Construction Sheets, and forms of Construction Agreement and Contractor's Bond attached hereto, and has become informed as to the location and nature of the proposed construction, the transportation facilities, the kind and character of soil and terrain to be encountered, and the kind of facilities required before and during the construction of the Project, and has become acquainted with the labor conditions which would affect work on the proposed construction.

5. The Bidder understands that the location shown on Construction Sheets for existing telecommunications plant and other utilities is approximate, and that the restrictions on cable placement shown on the Construction Sheets may be altered in accordance with Article V, Section A.1.3, as existing underground facilities are located by the Bidder during construction.

6. The Bidder agrees, in connection with pole and stub pole units, as follows:

- (a) To furnish poles and stub pole units, in accordance with specifications, standards and requirements of the Administrator.
- (b) That the prices for poles set forth herein include the cost of preservative treatment and inspection or insured warranty.

- (c) To obtain from the Supplier copies of the inspection and treatment reports or insured warranties and to submit such reports or warranties to the Owner as one of the prerequisites to monthly and/or final payments.

7. The Bidder agrees to make such changes in construction previously installed in the Project by the Bidder as required by the Owner for prices arrived at as follows:

- (a) For manhole units, or underground conduit units, the compensation for such change shall be as agreed upon, in writing, by the Bidder and the Owner and approved by the Administrator prior to the commencement of work in connection with such change.
- (b) For all other units, the compensation for such change shall be the reasonable cost thereof, but in no event shall it exceed two (2) times the labor price quoted in the Proposal for the installation of the unit to be changed. Such compensation shall be in lieu of any other payment for the installation and removal of the original unit. (If a new or replacing unit is installed, payment for such new or replacing unit shall be made as shown in the final inventory.)

Where changes involve plant that is abandoned in place and is not inventoried, or where additional compensation is due as per the above, a Construction Change Order (RUS Form 216) shall be prepared and included with the Closeout Documents.

No payment shall be made to the Bidder for materials or labor involved in correcting errors or omissions on the part of the Bidder which result in construction not in accordance with the Plans and Specifications.

8. The Bidder also agrees that when it is necessary to construct units not shown in the Proposal it will construct such units for a price arrived at as follows:

The cost of materials shall be determined by the invoices.

The cost of labor shall be the reasonable cost thereof but in no event shall it exceed an amount determined by calculating the ratio of the total labor costs to the total material costs in the section of the Proposal involved, and multiplying the cost of materials for the unit in question by this ratio: Provided, however, that in respect of section BM, the ratio shall be calculated

for only those units of the section which are similar to the new unit for which a price is to be determined.

9. This Proposal is made pursuant to the provisions of the Instructions to Bidders attached hereto and the Bidder agrees to the terms and conditions thereof.

10. The Bidder shall comply with all applicable construction codes.

(a) The Bidder warrants that it possesses Contractor's License No. _____ issued to it by the State of _____ in which the Project(s) is located and said license expires on _____, 20____.

(b) The Bidder warrants that no license is required in the state in which the Project(s) is located.

(Bidder shall cross out that subsection that does not apply)

11. The Bidder warrants that this Proposal is made in good faith and without collusion or connection with any person or persons bidding for the same work.

12. The Bidder agrees that in the event this Proposal is accepted it will execute a Contract in the form on file with the Owner and that if awarded the Contract, it will make available for use in connection with the proposed construction:

- a. All necessary tools and equipment.
- b. Qualified superintendent and foreman.

13. The Bidder warrants that it possesses adequate financial resources and agrees that in the event this proposal is accepted it will furnish a Contractor's Bond in one of the forms (RUS Form 168b or 168c) attached hereto and in a penal sum not less than the Contract price, which is the sum of all labor and materials including owner-furnished materials installed in the Project, with a surety or sureties listed by the United States Treasury Department as Acceptable Sureties.

In the event that the surety or sureties on the Contractor's Bond delivered to the Owner contemporaneously with the execution of the Contract or any bond or bonds delivered in substitution therefore, or in addition thereto, shall, at any time, become unsatisfactory to the Owner or the

Administrator, the Bidder agrees to deliver to the Owner another or an additional bond.

14. The Bidder agrees to commence the construction of the Project, on a date (hereinafter called the "Commencement Date") which shall be determined by the Engineer after notice, in writing, of approval of the Construction Contract by the Administrator and notice in writing from the Bidder that the Bidder has available sufficient materials to warrant commencement and continuation of construction, but in no event will the Commencement Date be later than _____ calendar days after the date of approval of the Construction Contract by the Administrator.

The Bidder agrees to strive diligently to obtain materials to commence and maintain construction of the Project and agrees to prosecute diligently and to complete construction of the Project in strict accordance with the Plans, Specifications, Construction Sheets and Special Drawings

within _____ (_____) calendar days (excluding Saturdays, Sundays, and legal holidays) after the Commencement Date. Provided, however, that the Bidder will not be required to dig holes, set poles, install anchors or install underground conduit if there are more than 6 in. (15.2 cm) of frost in the ground nor to perform any construction on such days when in the judgment of the Engineer, snow, rain, or wind or the results of snow, rain, or frost make it impracticable to perform any operation of construction; provided further that the Bidder will not perform any plowing for the installation of buried cable on public roads or highways if there are more than 2 in. (5.08 cm) of frost in the ground.

To the extent of any time lost due to the conditions described herein and approved in writing by the Engineer, the time of completion set out above will be extended if the Bidder makes a written request therefore to the Owner as provided in Article II, Section 1(a) of the Construction Agreement.

15. The unit prices for Assembly Units in this Contractor's Proposal include provisions for the payment of all moneys which will be payable by the Bidder or the Owner in connection with the construction of the Project on account of taxes imposed by a taxing authority upon the sale, purchase or use of materials, supplies and equipment, or services or labor of installation thereof, to be incorporated in the Project as part of such Assembly Units. The Bidder agrees to pay all such taxes and to furnish to the appropriate taxing

authorities all required information and reports pertaining thereto.

16. The Bidder understands and agrees that the quantities called for in this proposal are approximate, and that the total number of units upon which payment shall be made shall be as set forth in the inventory based on the Construction Sheets, both of which shall be subject to approval by the Administrator.

If the Owner changes the quantity of any Assembly Unit or Assembly Units specified in this Proposal by more than five (5) percent, and the materials cost to the Bidder is increased thereby to an extent which would not be adequately compensated by application of the unit prices in this Proposal to the revised quantity of such unit or units, such change, to the extent of the quantities of such units in excess of such five (5) percent, shall be regarded as a change in the construction within the meaning of Article II, Section 1(d) of the Construction Contract.

17. The Bidder understands and agrees that approximately _____ miles (_____ km) of proposed pole lines in the Project will be constructed along the same right-of-way as that occupied by existing telecommunications lines of the Owner. The Bidder will perform the work in such manner as not to cause interruption of service on such existing lines during the construction of the proposed lines of the Project occupying the same right-of-way. To accomplish this, the Bidder may "lean" or alter the position of the existing poles and make other temporary adjustment to line or service wires required so as to permit construction of the Project to proceed without interrupting service on the existing lines. The Bidder understands and agrees that the compensation for such temporary work is included in the unit price for Assembly Units in this Contractor's Proposal required for the construction of Project lines occupying the same right-of-way as existing telecommunications lines of the Owner and that Rearrangement (W) Units will not be applicable to such temporary work.

18. The Bidder understands and agrees that approximately _____ miles (_____ km) of proposed buried cable will be constructed along the same right-of-way and adjacent to existing buried telecommunications facilities of the Owner. The sizes and general locations of existing buried telecommunications facilities are shown on the Construction Sheets. It will be the Bidder's responsibility to perform the work in such a manner as not to cause interruption of service

on existing buried facilities during the construction of the proposed buried cable. To accomplish this, the Bidder will furnish and operate any cable locating equipment necessary to establish the actual location of existing buried facilities. The bidder will be responsible for maintaining shield continuity and proper grounding of existing cables in the time frame between housing installation and splicing operations.

19. The Bidder will furnish, prior to the commencement of buried plant construction, proof, satisfactory to the Owner, of compliance with requirements of highway and road authorities having jurisdiction, including without limitation, the furnishing of a bond or other guaranty, and approval by such authorities of the equipment and methods of construction and repair to be used by the Bidder.

20. The Bidder will not perform any work hereunder on Saturdays, Sundays, and legal holidays unless there is urgent need for such work and the Owner consents thereto in writing. The time for completion specified in Paragraph 14 hereof shall not be affected in any way by inclusion of consent to work on the days specified above.

21. The Bidder represents that:

It has ☐, does not have ☐, 100 or more employees, and if it has, that

It has ☐, has not ☐, furnished the Equal Employment Opportunity-Employers Information Report EEO-1, Standard Form 100, required of employers with 100 or more employees pursuant to Executive Order 11246 and Title VII of the Civil Rights Act of 1964.

The Bidder agrees that if it has 100 or more employees and has not submitted a report on Standard Form 100 for the current reporting year and that if this contract will amount to more than \$10,000, the Bidder will file such report, as required by law, and notify the Owner in writing of such filing prior to the Owner's acceptance of this Proposal.

The Bidder agrees that it will obtain, prior to the award of any subcontract for more than \$10,000 hereunder to a subcontractor with 100 or more employees, a statement, signed by the proposed subcontractor, that the proposed subcontractor has filed a current report on Standard Form 100.

22. The Bidder certifies that it does not maintain or provide for its employees any segregated facilities at any of its establishments, and that it does not permit its employees to perform their services at any location, under its control, where segregated facilities are maintained. The Bidder

certifies further that it will not maintain or provide for its employees any segregated facilities at any of its establishments, and that it will not permit its employees to perform their services at any location, under its control, where segregated facilities are maintained. The Bidder agrees that a breach of this certification is a violation of the Equal Opportunity Clause in this contract. As used in this certification, the term "segregated facilities" means any waiting rooms, work areas, rest rooms and washrooms, restaurants and other eating areas, timeclocks, locker rooms and other storage or dressing areas, parking lots, drinking fountains, recreation or entertainment areas, transportation, and housing facilities provided for employees which are segregated by explicit directive or are in fact segregated on the basis of race, color, religion, or national origin, because of habit, local custom, or otherwise. The Bidder agrees that (except where it has obtained identical certifications from proposed subcontractors for specific time periods) it will obtain identical certifications from proposed subcontractors prior to the award of subcontracts exceeding \$10,000 which are not exempt from the provisions of the Equal Opportunity Clause, and that it will retain such certifications in its files.

23. The Bidder represents that to the extent required by Executive Order 12549, Debarment and Suspension, and 7 CFR Part 3017, it has submitted to the Owner a duly executed Certification in the form prescribed in 7 CFR Part 3017. The Bidder shall not enter into any subcontract with any person or firm debarred from Government Contracts pursuant to Executive Order 11246.

Note: The penalty for making false statements in offers is prescribed in 18 U.S.C. 1001.

Attest:

By _____
(Signature)

(Secretary)

(Name - Type or Print)

(Date)

(Title)

(Name and Address of Bidder)

(The Proposal must be signed with the full name of the Bidder. In the case of a partnership, the Proposal must be signed in the firm name by each partner. In the case of a corporation the Proposal must be signed in the corporate name by a duly authorized officer and the Corporate seal affixed and attested by the Secretary of the Corporation.)

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CONSTRUCTION AGREEMENT

Agreement made _____, 20____, by and between

(hereinafter called the
"Owner"), a corporation organized and existing under the
laws of the State of _____
and _____
*Individual *Corporation *Partnership
*Identify applicable organization type.
(hereinafter called the "Contractor"), organized and existing
under the laws of the State of _____.

WHEREAS, the United States of America (hereinafter called
the "Government") by the Administrator of the Rural Utilities
Service has entered into a loan contract (hereinafter called
the "Loan Contract") with the Owner providing for a loan to
the Owner for the construction of a rural telecommunications
project designated by the Rural Utilities Service as
_____.

NOW, THEREFORE, in consideration of the mutual
undertakings herein contained, the parties hereto agree as
follows:

Article I - ACCEPTANCE OF PROPOSAL

Section 1. Acceptance.

The Owner accepts the Contractor's Proposal and the
parties hereto agree that the Assembly Units which shall be
used in the construction of the Project, and to which the Unit
Prices as set forth in said Proposal shall apply, are as
follows, and that the materials which shall be used in the
construction of the Project shall be as set forth in said
Proposal.

Assembly Units:

Sections, _____

For a more detailed description of said Assembly Units and materials reference shall be made to the Material and Construction Specifications, Construction Sheets and Plans, Special Drawings, and Description of Assembly Units. The Contractor shall report any error or ambiguity discovered in the Plans and Specifications to the Engineer before starting work.

Section 2. Description of Contract.

The Instructions to Bidders, the Proposal, Description of Assembly Units, Material and Construction Specifications, Construction Sheets and Plans, and Special Drawings are hereby by reference incorporated herein and together with the Construction Agreement constitute the Contract.

Article II - CONSTRUCTION

Section 1. Time and Manner of Construction.

(a) The time for Completion of Construction set forth in the Contractor's Proposal shall be extended for the period of any reasonable delay which is due exclusively to causes beyond the control and without the fault of the Contractor, including acts of God, fires, floods, inability to obtain materials, and acts or omissions of the Owner with respect to matters for which the Owner is solely responsible: Provided, however, that no such extension of time for completion shall be granted the Contractor unless within ten (10) days after the happening of any event relied upon by the Contractor for such an extension of time the Contractor shall have made a request therefore in writing to the Owner, and provided further, that no delay in such time of completion or in the progress of the work which results from any of the above causes except acts or omissions of the Owner shall result in any liability on the part of the Owner.

(b) The sequence of construction shall be as set forth below, the names being the designations of central office areas corresponding to the names shown on the maps attached hereto. For each central office area, the sequence of construction shall be designated by remote serving areas or Work Sectors shown on maps of the central office areas. If no sequence of construction is set forth below, the sequence shall be as determined by the Contractor, subject to the approval of the Engineer.

(c) The Contractor shall perform work in such a manner as to maximize preservation of beauty and conservation of natural resources and minimize marring and scarring of the landscape and silting of streams. The Contractor shall not deposit trash in streams or waterways, and shall not deposit herbicides or other chemicals or their containers in or near streams, waterways or pastures. The Owner or Engineer shall also make available such other environmental information pursuant to the project as in the Environmental Report (ER) covering the project.

(d) The Owner, acting through the Engineer, and with the approval of the Administrator, may, from time to time, during the progress of the construction of the Project, make such changes, additions to, or subtractions from the Plans, Specifications, Construction Sheets, Special Drawings and cable placement locations which are part of the Contractor's Proposal and in the sequence of construction provided for in the preceding section as conditions may warrant: Provided, however, that if any change in the construction to be done shall require an extension of time, a reasonable extension will be granted if the Contractor shall make a written request therefore to the Owner within ten (10) days after any such change is made. And provided, further, that if the cost of materials to the Contractor is increased by such change or addition, the Owner shall pay the Contractor for the reasonable cost thereof, included, if necessary, in a construction contract amendment (RUS Form 526) signed by the Owner and the Contractor, and approved by the Administrator (see 7 CFR part 1753.11). Any claim for additional compensation for a change or addition will not be considered unless the Contractor shall have made a written request therefore and approved by the Owner prior to the commencement of work in connection with such change or addition (refer to Contractor's Proposal, Paragraph 16).

(e) Except as otherwise agreed to by the Owner, all work shall be performed without interruption to or interference with existing telecommunications service, if any.

Section 2. Supervision and Inspection.

(a) The Contractor shall cause the construction work on the Project to receive constant supervision by a competent superintendent (hereinafter called the "Superintendent") who shall be present at the Project during working hours when construction is being carried on. The Contractor shall also employ, in connection with the construction of the Project, capable, experienced and reliable foremen and such skilled workmen as may be required for the various classes of work to be performed. Directions and instructions given to the Superintendent shall be binding upon the Contractor.

(b) The Owner reserves the right to require the removal from the Project of any employee of the Contractor if in the judgment of the Owner such removal shall be necessary in order to protect the interest of the Owner. The Owner shall have the right to require the Contractor to increase the number of its employees and to increase or change the amount or kind of tools and equipment if at any time the progress of the work shall be unsatisfactory to the Owner; but the failure of the Owner to give such directions shall not relieve the Contractor of its obligations to complete the work within the time and in the manner specified in this Contract.

(c) The manner of construction of the Project, and all materials and equipment used therein, shall be subject to the inspection, tests and approval of the Engineer and the Administrator, and the Contractor shall furnish all information required by the Engineer or by the Administrator concerning the nature or source of any materials incorporated or to be incorporated in the Project. The Owner and the Administrator shall have the right to inspect all payrolls, invoices of materials, and other data and records of the Contractor and of any subcontractor, relevant to the construction of the Project. The Contractor shall provide all reasonable facilities necessary for such inspection and tests and shall maintain an office at the site of Project, with telecommunications service where obtainable, and at least one office employee to whom directions and instructions may be delivered. Delivery of such directions or instructions in writing to the employee of the Contractor at such office shall constitute delivery to the Contractor. The Contractor shall have an authorized agent accompany the Engineer when final inspection is made and, if requested by the Owner, when any other inspection is made.

(d) In the event that the Owner shall determine that the construction contains or may contain numerous defects, it shall be the duty of the Contractor and the Contractor's

surety or sureties to have an inspection made by an Engineer approved by the Owner and the Administrator for the purpose of determining the exact nature, extent and location of such defects.

(e) The Engineer may recommend to the Owner that the Contractor suspend the work wholly or in part for such period or periods as may be deemed necessary due to unsuitable weather or such other conditions as are considered unfavorable for the satisfactory prosecution of the work or because of the failure of the Contractor to comply with any of the provisions of the Contract: Provided, however, that the Contractor shall not suspend work pursuant to this provision without written authority from the Owner so to do. The time of completion hereinabove set forth shall be increased by the number of days of any such suspension, except when such suspension is due to the failure of the Contractor to comply with any of the provisions of this Contract. In the event that work is suspended by the Contractor with the consent of the Owner, the Contractor before resuming work shall give the Owner at least twenty-four (24) hours notice thereof in writing.

Section 3. Defective Workmanship and Materials.

(a) The acceptance of any workmanship, materials, or equipment by the Owner or Engineer shall not preclude the subsequent rejection thereof if such workmanship, materials or equipment shall be found to be defective after delivery or installation, and any such workmanship, materials or equipment found defective before final acceptance of the construction shall be remedied or replaced, as the case may be, by and at the expense of the Contractor. Any condemned material or equipment shall be immediately removed from the site of the Project by the Contractor at the Contractor's expense. The Contractor shall not be entitled to any payment hereunder so long as any defective workmanship, materials or equipment in respect to the Project, of which the Contractor shall have had notice, shall not have been remedied or replaced, as the case may be.

(b) Notwithstanding any certificate which may have been given by the Owner or Engineer, if any workmanship, material, or equipment which does not comply with the requirements of this Contract shall be discovered within one (1) year after completion of construction of the Project or Section, the Contractor shall remedy any such defective workmanship or replace such defective materials or equipment within thirty (30) days after notice in writing of the existence thereof shall have been given by the Owner. In the event of failure by the Contractor to do so, the Owner may remedy such

defective workmanship or replace such defective materials or equipment, as the case may be, and in such event the Contractor shall pay to the Owner the cost and expense thereof. Except as otherwise agreed to by the Owner all such corrective work shall be performed by the Contractor without interruption to or interference with existing telecommunications service, if any.

Article III - PAYMENTS AND RELEASE OF LIENS

Section 1. Payments to Contractor.

(a) Within the first fifteen (15) days of each calendar month, the Owner shall make partial payment to the Contractor for construction accomplished which includes cleanup during the preceding calendar month on the basis of completed Assembly Units invoiced by and certified to by the Contractor, recommended by the Engineer and approved by the Owner solely for purposes of payment. Provided, however, that such approval shall not be deemed approval of the workmanship or materials. Only ninety-five percent (95%) of each such invoice approved during the construction of the project shall be paid by the Owner to the Contractor prior to completion of the Contract. Upon completion by the Contractor of the construction of the Project, the Engineer will prepare a Final Inventory of the project showing the total number of and character of Assembly Units and, after checking such Inventory with the Contractor, will certify it to the Owner, together with a certificate of the total cost of the construction performed. Upon the approval of such certificates by the Owner and the Administrator, the Owner shall make payment to the Contractor of all amounts to which the Contractor shall be entitled thereunder which shall not have been paid: Provided, however, that such final payment shall be made not later than ninety (90) days after the date of completion of construction of the Project, as specified in the Certificate of Completion, unless withheld because of the fault of the Contractor. For purposes of payment pursuant to this Article III, Section 1(a), "Construction Accomplished" shall not include the delivery to the Project Site of cable, wire, and conduit materials for appropriate Assembly Units. Provided, however, that payments to the Contractor for such cable, wire, and conduit materials delivered to the Project Site shall be made to the extent that the aggregate amount of all such payments shall not exceed eighty percent (80%) of the material costs, as set forth in the assembly unit prices, up to a maximum \$1,000,000. The payments shall be considered due and payable when placement of cable, wire, and conduit materials begin. When the amount of cable, wire, and conduit materials delivered to the Project Site exceed the \$1,000,000

initial payment or additional cable, wire, and conduit materials are delivered to the Project Site subsequent to the initial payment, additional payments will be made up to eighty percent (80%) of the material unit prices, only after \$100,000 or more of the cable, wire, and conduit materials have been incorporated into the Project. Payments made on account of such material shall be subtracted from the monthly estimates of completed Assembly Units.

(b) The Contractor shall be paid on the basis of the number of Assembly Units actually installed at the direction of the Owner, as shown by the inventory based on the Construction Sheets and applicable construction change orders (RUS Form 216 attached hereto): Provided, however, that the total cost shall not exceed the maximum Contract price for the construction of the Project as computed from the Proposal, unless such excess shall have been approved in writing by the Administrator. It is understood and agreed that this Contract price is

_____dollars (\$_____).

(c) Notwithstanding the provisions of Section 1(a) above, the Contractor may, by giving written notice thereof to the Owner, elect to receive payment in full for any Section of the Project upon:

- (i) completion of construction of such Section as certified by the Engineer and approved by the Owner and the Administrator;
- (ii) submission to the Owner and the Administrator of the releases of lien and the certificate referred to in Section 2 hereof;
- (iii) approval by the Owner and the Administrator of the Final Inventory in respect to such Section; and
- (iv) submission to the Owner and the Administrator of the consent in writing by the surety or sureties on the Contractor's Bond to payment in full for such Section prior to Completion of the Project.

(d) Interest at the rate of one and one-half percent (1-1/2%) per annum higher than the "Prime Rate" published in the Wall Street Journal in its first issue of the month, but in no event greater than that allowed by any Federal or State laws shall be paid by the Owner to the Contractor on all unpaid balances due on monthly estimates, commencing fifteen

(15) days after the due date; provided the delay in payment beyond the due date is not caused by any condition within the control of the Contractor. Said interest rate shall be determined as of the first date interest becomes due. The due date for purpose of such monthly payments shall be fifteen (15) days after submittal by the Contractor to the Owner of its certification of Assembly Units completed and approval by the Owner within fifteen (15) days of the Contractor's submittal. If, for reasons not due to the Contractor's fault, such approval shall have been given within fifteen (15) days of submittal, the due date for purposes of this subsection (d) shall be fifteen (15) days after submittal notwithstanding the absence of the approval of the certification.

(e) Interest at the rate of one and one-half percent (1-1/2%) per annum higher than the "Prime Rate" published in the Wall Street Journal in its first issue of the month, but in no event greater than that allowed by any Federal or State laws shall be paid by the Owner to the Contractor on the final payment for the Project or any completed Section thereof, commencing fifteen (15) days after the due date. Said interest rate shall be determined as of the first date interest becomes due. The due date for purposes of such final payment shall be the date of approval by the Administrator of all of the documents requiring such approval, as a condition precedent to the making of final payment, or ninety (90) days after the date of the completion of construction of the Project, as specified in the Certificate of Completion, unless withheld because of the fault of the Contractor, whichever date is earlier.

(f) No payment shall be due while the Contractor is in default in respect of any provisions of this Contract and the Owner may withhold from the Contractor the amount of any claim by a third party against either the Contractor or the Owner based upon an alleged failure of the Contractor to perform the work hereunder in accordance with the provisions of this Contract.

Section 2. Release of Liens and Certificate of Contractor.
(See Form 224, Waiver and Release of Lien, and Form 231,
Certificate of Contractor, attached hereto)

Upon the completion by the Contractor of the construction of the Project (or any Section thereof if the Contractor shall elect to receive payment in full for any Section when completed as provided above) but prior to payment to the Contractor of any amount in excess of ninety-five percent (95%) of the total cost of all Assembly Units comprising the completed Project or such Section, the Contractor shall

deliver to the Owner, in duplicate, releases of all liens and of rights to claim any lien, in the form attached hereto, from all manufacturers, materialmen, and subcontractors furnishing services or materials for the Project or such Section and a certificate in the form attached hereto to the effect that all labor used on or for the Project or such Section has been paid and that all such releases have been submitted to the Owner.

Section 3. Payments to Materialmen and Subcontractors.

The Contractor shall pay each materialman, and each subcontractor if any, within five (5) days after receipt of any payment from the Owner, the amount thereof allowed the Contractor for and on account of materials furnished or construction performed by each materialman or each subcontractor.

Article IV - PARTICULAR UNDERTAKINGS OF THE CONTRACTOR

Section 1. Protection to Persons and Property.

The Contractor shall at all times take all reasonable precautions for the safety of employees on the work and of the public, and shall comply with all applicable provisions of Federal, State and Municipal safety laws, environmental regulations, and building and construction codes.

The following provisions shall not limit the generality of the above requirements:

(a) The Contractor shall at no time and under no circumstances cause or permit any employee of the Contractor to perform any work upon poles carrying energized electric power lines, except on telecommunications system units having clearances from the electric power system equal to or greater than required by applicable provisions of Federal, State or Municipal laws or regulations and the National Electrical Safety Code (NESC).

(b) The Contractor shall so conduct the construction of the Project as to cause the least possible obstruction of public highways.

(c) The Contractor shall provide and maintain all such guard lights and other protection for the public as may be required by applicable statutes, ordinances and regulations or by local conditions.

(d) The Contractor shall do all things necessary or expedient to protect properly any and all parallel, converging and intersecting lines, joint line poles, highways, other utilities and any and all property of others from damage, and in the event that any such parallel, converging and intersecting lines, joint line poles, highways, other utilities or other property are damaged in the course of the construction of the Project the Contractor shall at its own expense restore any or all of such damaged property immediately to as good a state as before such damage occurred.

(e) Where the construction corridor of the Project traverses cultivated land, the Contractor shall limit the movement of its crews and equipment so as to cause as little damage as possible to crops, orchards, or property and shall endeavor to avoid marring the lands. All fences which are necessarily opened or moved during the construction of the Project shall be replaced in as good condition as they were found and precautions shall be taken to prevent the escape of livestock. Except as otherwise provided in respect of buried plant in the description of Assembly Units, the Contractor shall not be responsible for loss of or damage to crops, orchards or property (other than livestock) on the construction corridor necessarily incident to the construction of the Project and not caused by negligence or inefficient operation of the Contractor. The Contractor shall be responsible for all other loss of or damage to crops, orchards, or property, whether on or off the construction corridor and for all loss of or damage to livestock caused by the construction of the Project.

(f) The Project, from the commencement of work to completion of construction, or to such earlier date or dates when the Owner may take possession and control in whole or in part as hereinafter provided shall be under the charge and control of the Contractor and during such period of control by the Contractor all risks in connection with the construction of the Project and the materials to be used therein shall be borne by the Contractor. The Contractor shall make good and fully repair all injuries and damages to the Project or any portion thereof under the control of the Contractor by reason of any act of God or other casualty or cause whether or not the same shall have occurred by reason of the Contractor's negligence. The Contractor shall hold the Owner harmless from any and all claims for injuries to persons or for damage to property happening by reason of any negligence on the part of the Contractor or any of the Contractor's agents or employees during the control by the Contractor of the Project or any part thereof.

(g) Any and all excess earth, rock, debris, underbrush and other useless material shall be removed by the Contractor from the site of the Project or relocated (distributed) to the satisfaction of the Owner as rapidly as practicable as the work progresses.

(h) Upon violation by the Contractor of any of the provisions of this Section, after written notice of such violation given to the Contractor by the Engineer or the Owner, the Contractor shall immediately correct such violation. Upon failure of the Contractor to do so, the Owner may correct such violation at the Contractor's expense. Provided, however, that the Owner may, if it deems it necessary or advisable, correct such violation at the Contractor's expense without such prior notice to the Contractor.

(i) The Contractor shall immediately notify the Owner of any accidents, giving such data as may be prescribed by the Owner.

(j) The Contractor shall not proceed with the cutting of trees or clearing of right-of-way without written notification from the Owner that proper authorization has been received from the Owner of the Property, and the Contractor shall promptly notify the Owner whenever any landowner objects to the trimming or felling of any trees or the performance of any other work on its land in connection with the Project and shall obtain the consent in writing of the Owner before proceeding in any such case.

Section 2. Delivery of Possession and Control to Owner.

(a) Upon written request of the Owner, the Contractor shall deliver to the Owner full possession and control of any portion of the Project, provided the Contractor shall have been paid at least ninety-five percent (95%) of the cost of construction of such portion. Upon such delivery of the possession and control of any portion of the Project to the Owner, the risk and obligations of the Contractor as set forth in Article IV, Section 1(f) hereof, with respect to such portion of the Project so delivered to the Owner shall be terminated: Provided, however, that nothing herein contained shall relieve the Contractor of any liability with respect to defective workmanship or materials as contained in Article II, Section 3, hereof.

(b) Where the construction of a Section as defined in Article VII, Section 1(f) shall have been completed and tested by the Contractor, the Owner agrees, after receipt of a

written request from the Contractor, to accept delivery of possession and control of such Section upon the issuance by the Engineer of a written statement that the Section has been inspected and found acceptable by the Engineer. For the purpose of the foregoing provision only, a Section may be considered completed even if telecommunications set assembly units have not been installed because the Owner's central office (CO) equipment has not been installed at the time the Section was constructed by the Contractor. Upon such delivery of the possession and control of any such Section to the Owner, the risk and obligations of the Contractor as set forth in Article IV, Section 1(f) hereof, with respect to such Section so delivered to the Owner shall be terminated: Provided, however, that nothing herein contained shall relieve the Contractor of any liability with respect to defective workmanship or materials as contained in Article II, Section 3, hereof.

Section 3. Pre-cutover Testing of the Project.

(a) Prior to the Completion of Construction of the Project, the Owner, acting in accordance with plans of the Engineer, upon written notice to the Contractor, may perform operational tests of any portion or portions thereof. During the period of such tests, the portion or portions of the Project being so tested shall be considered as within the possession and control of the Owner and governed by the Provisions of Section 2 of this Article. Upon written notice to the Contractor by the Owner of the completion of such tests said portion or portions of the Project shall be considered as returned to the possession and control of the Contractor unless the Owner shall elect to continue possession and control in the manner provided in Section 2 of this Article.

(b) The Owner shall have the right to permanently place in service any portion or portions of the Project delivered to its possession and control pursuant to the provisions of Section 2 of this Article.

Section 4. Insurance.

During the Contractor's performance hereunder, the Contractor shall take out and maintain fully paid insurance providing not less than the minimum coverage required by 7 CFR part 1788, Subpart C.

- [] When checked by the Owner, with respect to the insurance required by 7 CFR part 1788, Subpart C, the Contractor shall include as co-insured the Owner, and their personnel, and the Engineer and their personnel. The added costs shall be included in the bid price.

The Owner shall have the right to require public liability insurance and property damage liability insurance in an amount greater than those required in 7 CFR Part 1788, Subpart C. The added costs shall be included in the bid price.

Upon request by the Administrator, the Contractor shall furnish to the Administrator a certificate in such form as the Administrator may prescribe, evidencing compliance with the foregoing requirements. (See 7 CFR part 1788.55)

Section 5. Purchase of Materials.

The Contractor shall purchase all materials and supplies outright and not subject to any conditional sales agreement, bailment lease, or other agreement reserving to the seller any right, title, or interest therein. All materials and supplies shall become the property of the Owner upon acceptance.

Section 6. Assignment of Guarantees.

All guarantees of materials and workmanship running in favor of the Contractor shall be transferred and assigned to the Owner upon completion of construction and at such time as the Contractor receives final payment.

Section 7. Patent Infringement.

The Contractor shall save harmless and indemnify the Owner from any and all claims, suits and proceedings for the infringement of any patent or patents covering any materials or equipment used in construction of the Project.

Section 8. Permits for Explosives.

All permits necessary for the handling or use of dynamite or other explosives in connection with the construction of the Project shall be obtained by and at the expense of the Contractor.

Section 9. Compliance with Statutes and Regulations.

The Contractor shall comply with all applicable statutes, ordinances, rules, and regulations pertaining to the construction of the Project.

Article V - ENGINEERING, CONSTRUCTION, AND INSPECTION DETAILS

A. Engineering and Construction.

Section 1. Staking of the Project.

1.1 The Engineer shall determine the locations and types of all unit assemblies to be installed. As a part of the release for construction, the Contractor shall receive from the Engineer five (5) complete sets of Construction Sheets including reference sketches showing the location of all assembly units.

1.2 The Construction Sheets showing the proposed plant shall be jointly reviewed in the field by the Contractor and the Engineer prior to construction. The Contractor shall at that time propose any changes or clarifications he feels desirable. These changes, if approved by the Engineer, will be made at that time and so recorded on the Construction Sheets and initialed by the Engineer and Contractor.

1.3 No changes in the construction proposed as set forth on the Construction Sheets shall be made by the Contractor without the prior approval of the Engineer. A representative of the Engineer will remain in the immediate vicinity of the construction activities at all times and will be available to consider and approve any changes proposed by the Contractor, if acceptable. The representative of the Engineer will also be available to inspect any damage to cable or wire and to approve the methods of repair or correction of such damage in accordance with the provisions of these Specifications.

1.4 Due to the necessity of making on-the-spot corrections and changes on Construction Sheets, it will not be possible for the Engineer to issue revised Construction Sheets to the Contractor in all cases. When changes are made, dated, and initialed by the Engineer on any set of the Contractor's Construction Sheets, it shall be the Contractor's responsibility to transfer these changes to all other sets of Construction Sheets being used by the Contractor for construction purposes.

Section 2. Construction Sheets and Maps.

The maps showing the location of the central offices and the general routes and locations of all lines in the Project are listed separately hereinafter and are part of the Plans and Specifications. No deviations from these maps, except for minor rerouting and minor changes dictated by field conditions and authorized by the Engineer, shall be made. The

Construction Sheets showing types and details of construction to be used for various conditions along the lines are also listed separately hereinafter and are a part of these specifications.

Section 3. Cable Schematics and Assignment Information.

3.1 The Engineer will provide the Contractor with five (5) copies of cable schematics for each central office area at the time the Contractor is furnished Construction Sheets for the area. The cable schematics will show the following:

- (a) Cable and wire sizes, gauges, and pair counts of copper cables.
- (b) Number of optical fibers.
- (c) Route designations.
- (d) Housing or splice closure numbers.
- (e) Pair counts to be terminated, spliced, or cross-connected at each housing or splice closure.
- (f) Number of optical fibers to be spliced.
- (g) Location of repeater points and electronic terminal equipment.

3.2 At a time agreed to by the Engineer and Contractor to coordinate with the Contractor's construction schedule, the Engineer shall provide the Contractor with five (5) sets of telephone numbers and cable pair assignment data.

Section 4. Outside Plant Inventory.

The Contractor shall provide a competent representative to work with the Engineer on the ongoing and final inventory and inspection of outside plant units. The wire and cable shall be inventoried immediately after the placement operation.

Section 5. Pre-installation Inspection of Cable.

5.1 The Contractor and Engineer shall jointly inspect a representative sample of cable and wire on reels prior to installation. Based on the inspection, the Engineer shall make a determination if the cable and wire are suitable for construction. Unsuitable reels of cable and wire shall be replaced by the Contractor. In the case of nonconformance of a minor nature not affecting performance of the cable, the

Contractor and Owner may negotiate a basis for the use of these nonconforming cables. In such cases, the specific characteristic being waived shall be noted in writing.

5.2 The Engineer shall determine the degree of inspection and measurements necessary to make a judgment of cable and wire suitability. This judgment should be based on past experience, current circumstances, and the results of the inspection and any measurements on the cable and wire. The following inspection guidelines are suggested:

- a. Make sure that cable and wire are identified properly on the reel identification labels. Does it contain the proper shield, number of pairs, gauge size, number of fibers, etc. Bi-metallic shields can be detected by using a magnet.
- b. Note any physical damage to the cable and wire. Pay special attention to cables and wires with damaged or weakened reels.
- c. End caps should be secured in place on both ends of the cable and wire. Also, the reel wrap, when present, shall be retained on the reel until the cable and wire are ready to be placed.
- d. Compare sequential markings with labels on reels and double check footages. Measure sequentials on a spot check basis to assure correct tolerances. Note quality and clarity of sequentials.
- e. Filled cable and wire shall be carefully checked for the presence of filling compound at the ends.
- f. Check for uniform jacket thickness and tightness of the jacket. Note any buckling of the jacket which would indicate possible problems with the shield.
- g. As the circumstances warrant, make electrical and/or optical measurements on a sample lot of cable and wire to determine that the appropriate RUS specification requirements are met. The physical inspection of the cable and past history should be used as a guide to determine (a) if any electrical or optical measurements are warranted; or (b) what degree of electrical or optical measurements are warranted. In general, extensive measurements of cable and wire are not recommended.

B. INSPECTIONS AND ACCEPTANCE TESTS

Section 1. General.

1.1 Except for the items mentioned in paragraph 1.2, the inspections and acceptance tests specified herein shall be made after the physical completion of the various types of outside plant facilities in each exchange area or work sector and shall not replace the normal supervision, inspection, and tests to be made by the Contractor and the Engineer during the progress of the construction work. Unless otherwise indicated, all inspection and acceptance tests specified herein shall be performed jointly by the Contractor and the Engineer under the direct supervision of the Engineer.

1.2 Buried splice closures shall be individually inspected during installation for proper encapsulation and flash tested when applicable. Cable and wire shield or armor continuity tests shall also be conducted on each length of cable or wire containing a buried splice immediately after installation and prior to backfilling. Tests for leakage, continuity, crosses, splits, etc., shall be made on all spliced pairs prior to backfilling.

Section 2. Inspections.

2.1 The Contractor and the Engineer shall jointly inspect splice closures, cable terminals, buried plant housings, Network Interface Devices, service entrances, and other housings applicable to the plant facilities constructed pursuant to the Contract. Except where otherwise stated these inspections shall be on a random sampling basis and the samples inspected in each instance shall consist of at least five percent (5%) of the specified assembly units installed in each exchange, but no fewer than ten (10) terminals, ready-access closures, housings, and Network Interface Device installations in each exchange. A written report giving the date, location of the plant inspected, and tabulated results of the inspections, signed by the Engineer and Contractor shall be presented to the Owner after the inspections are completed.

2.2 Where aerial copper cable is installed, a joint inspection shall be made of the sample terminals (including ready-access closures) selected at random throughout the exchange by the Engineer. This inspection shall be made to ensure that:

- a. All pairs are terminated properly.
- b. Splices are free from reversed, transposed and split pairs.
- c. Shields of aerial cables and suspension strands are properly bonded and grounded and that the bonding harnesses have been properly installed.
- d. Specified pairs have been protected and proper protectors used.
- e. Pair splicing in ready-access closures is made in accordance with pair assignment data furnished to the Contractor by the Engineer.
- f. Specifications for terminal and ready-access closure installations have been met in every aspect in accordance with RUS Splicing Standard Bulletin 1753F-401 (PC-2).
- g. Good workmanship in the pole mounted terminal or closure installations has been performed.

2.3 Where aerial fiber cable and self supporting fiber optic cable is installed, a joint inspection shall be made of the sample splice closures selected at random throughout the exchange by the Engineer. This inspection shall be made to ensure that:

- a. All optical fibers are terminated properly.
- b. When present, armors of aerial cables and suspension strands are properly bonded and grounded and that the bonding harnesses have been properly installed.
- c. The minimum bending radius of the buffer tubes is not exceeded.
- d. Good workmanship in the closure installations has been performed.

2.4 Where buried copper cable or wire is installed, a joint inspection shall be made of the sample housings and splice closures selected at random throughout the exchange by the Engineer. This inspection shall be made to ensure that:

- a. Splices are free from reversed, transposed and split pairs.
- b. Pair splicing is made in accordance with pair assignment data issued to the Contractor by the Engineer.
- c. Cable and wire directional markings are as shown in the Construction Sheets.
- d. Shields are properly bonded and grounded and that the bonding harnesses have been properly installed.
- e. Specifications for cable and wire splicing installations have been met in every respect in accordance with RUS Splicing Standard Bulletin 1753F-401(PC-2).
- f. Good workmanship in the housing installations has been performed.
- g. Warning, cable route, and buried splice signs, and housing letters and numbers are properly installed.
- h. All buried splice closures have been installed properly and splices flash tested, when applicable. These inspections may be performed during and immediately after installation as stated in Paragraph 1.2.
- i. All buried service entrances are installed properly in housings at premises.

2.5 Where buried fiber optic cable is installed, a joint inspection shall be made of the sample housings and splice closures selected at random throughout the exchange by the Engineer. This inspection shall be made to ensure that:

- a. All optical fibers are terminated properly.
- b. Armors properly bonded and grounded and that the bonding harnesses have been properly installed.
- c. The minimum bending radius of the buffer tubes is not exceeded.

- d. Cable directional markings are as shown in the Construction Sheets.
- e. Warning, cable route, and buried splice signs, and housing letters and numbers are properly installed.
- f. All buried splice closures have been installed properly. These inspections may be performed during and immediately after installation as stated in Paragraph 1.2.
- g. Good workmanship in the closure installations has been performed.

2.6 Where a cable is installed over which electronic carrier systems will operate, an inspection shall be made jointly by the Engineer and the Contractor of the entire length of cable to ensure that:

- a. All shields and armor are properly bonded and grounded and that the bonding harnesses have been properly installed.
- b. The specified gauge and size of the copper cable and the number of optical fibers are installed in accordance with the Plans and Specifications.
- c. No loading coils have been installed on the cable pairs over which the carrier equipment will operate.
- d. The housings to which the carrier repeaters are to be connected are spaced at the proper intervals. Any minor deviations shall be noted and corrected on the cable schematics.
- e. Cable directional markings are as shown on the Construction Sheets at each housing where a cable carrier repeater is to be installed.

2.7 Where Network Interface Devices are included under this Contract, a joint inspection shall be made of the sample installations selected at random throughout the exchange by the Engineer. The inspection shall be made to ensure that:

- a. All wire runs have required clearances.
- b. Aerial service wire spans have proper sags.

- c. Correct wire fasteners have been used and at required intervals.
- d. All wires on and in buildings have been installed in a neat and inconspicuous manner.
- e. The Network Interface Device (including its ground) has been properly located, installed, and wired and is of the proper type.
- f. The proper type and gauge of ground wire is used and properly routed and specified bonding is implemented.
- g. A ground rod of proper type is installed, if required.
- h. The buried service guard has been properly installed.
- i. Good workmanship has been used throughout the installation, and any damage to the premises or grounds has been adequately repaired.

Section 3. Acceptance Tests and Measurements.

All acceptance tests and measurements to be performed on the various portions of the outside plant construction pursuant to this Contract, and the party(s) who will participate in conducting the acceptance tests and measurements, shall be as checked in the Schedule of Acceptance Tests and Measurements Table listed below. All tests and measurements shall be conducted by the Engineer in accordance with RUS Bulletin 1753F-201(PC-4), "RUS Standard for Acceptance Tests and Measurements of Telecommunications Plant." A written report including the tabulated results of the acceptance tests and measurements on forms similar to those included in RUS Bulletin 1753F-201(PC-4), "RUS Standard for Acceptance Tests and Measurements of Telecommunications Plant" shall be signed by the Engineer and the Contractor and furnished to the Owner. Where Contractor participation is specified, compensation shall be included in the appropriate cable unit.

Schedule of Acceptance Tests and Measurements

Description of Test or Measurement	Test or Measurement			Participants		
	Subscriber Loop Plant		Trunk Plant	Owner	Engineer	Contractor
	Dist. Pairs	Feeder Pairs				
Copper Shield or Shield/Armor Continuity	X	X	X		P	P
Conductor Continuity	X*	X	7X		P	P
Conductor Insulation Resistance	X*	X	X		P	P
DC Loop Resistance			N/A		P	P
DC Loop Resistance Unbalance			N/A		P	P
Loop Measurements (Loop Checking)			N/A			
One-Person Open Circuit Measurement			N/A		P	P
Cable Insertion Loss at Carrier Frequencies			N/A		P	P
Fiber Armor Continuity	X	X	X		P	P
Fiber Optic Splice Loss - Field	X	X	X		P	P
Fiber Optic Splice Loss - C.O.	X	X	X		P	P
End-to-End Attenuation	X	X	X		P	P
End-to-End Fiber Signature	X	X	X		P	P
Signal-to-C Notched Noise(S/CNN)						
Signal-to-Intermodulation Distortion(S/IMD)						
Envelope Delay Distortion(EDD)						
Amplitude Jitter(AJ)						
Phase Jitter (PJ)						
Impulse Noise						
Shield or Armor Ground Resistance	X	X	X		P	P

Schedule of Acceptance Tests and Measurements
(continued)

Description of Test or Measurement	Test or Measurement	Participants		
		Owner	Engineer	Contractor
CO and Remote Switching Terminal (RST) Ground Measurement			P	P
Electronic Equipment Ground Resistance			P	P

Fiber Splice loss tests to be performed at: __1310nm __1550nm
(Engineer to check one or both wavelengths above)

Engineer to check ☐ optional tests to be made.

X - These are standard tests and measurements required on facilities as designated by the Engineer, constructed or installed under this Contract.

NA - Not Applicable.

* - These tests will not be required on distribution pairs that are not cross-connected to feeder pairs at time of acceptance testing.

P - Indicates participation in conducting acceptance tests and measurements.

Article VI - REMEDIES

Section 1. Completion of Contractor's Default.

If default shall be made by the Contractor or by any subcontractor in the performance of any of the terms of this Contract, the Owner, without in any manner limiting its legal and equitable remedies in the circumstances, may serve upon the Contractor and the surety or sureties upon the Contractor's Bond or Bonds a written notice requiring the Contractor to cause such default to be corrected forthwith. Unless within twenty (20) days after the service of such notice upon the Contractor such default shall be corrected or arrangements for the correction thereof, satisfactory to both the Owner and the Administrator, shall be made by the Contractor or its surety or sureties, the Owner may take over the construction of the Project and prosecute the same to completion by contract or otherwise for the account and at the expense of the Contractor, and the Contractor and its surety or sureties shall be liable to the Owner for any cost or expense in excess of the contract price occasioned thereby. In such event the Owner may take possession of and utilize, in completing the construction of the Project, any materials, tools, supplies, equipment, appliances, and plant belonging to the Contractor or any of its subcontractors, which may be situated at the site of the Project. The Owner in such contingency may exercise any rights, claims or demands which the Contractor may have against third persons in connection with this Contract and for such purpose the Contractor does hereby assign, transfer, and set over unto the Owner all rights, claims, and demands.

Section 2. Liquidated Damages.

The time of the Completion of the Construction of the Project is of the essence of this Contract. Should the Contractor neglect, refuse or fail to complete the construction within the time herein agreed upon, after giving effect to extensions of time, if any, herein provided, then in that event and in view of the difficulty of estimating with exactness damages caused by such delay, the Owner shall have the right to deduct from and retain out of such moneys which may be then due, or which may become due and payable to the

Contractor the sum of _____dollars

(\$_____) per day for each and every day that such construction is delayed in its completion beyond the specified time, as liquidated damages and not as a penalty; if the amount due and to become due from the Owner to the Contractor

is insufficient to pay in full any such liquidated damages, the Contractor shall pay to the Owner the amount necessary to effect such payment in full: Provided, however, that the Owner shall promptly notify the Contractor in writing of the manner in which the amount retained, deducted, or claimed as liquidated damages was computed.

Section 3. Cumulative Remedies.

Every right or remedy herein conferred upon or reserved to the Owner or the Government or the Administrator shall be cumulative, shall be in addition to every right and remedy now or hereafter existing at law or in equity or by statute and the pursuit of any right or remedy shall not be construed as an election: Provided, however, that the provisions of Section 2 of this Article VI shall be the exclusive measure of damages for failure by the Contractor to complete the construction of the Project within the time therein agreed upon.

Article VII - MISCELLANEOUS

Section 1. Definitions.

(a) The term "Administrator" shall mean the Administrator of the Rural Utilities Service of the United States of America and his duly authorized representatives or any other person in whom or authority in which may be vested the duties and functions which the Administrator is now authorized by law to perform.

(b) The term "Engineer" shall mean the engineer employed by the Owner to provide engineering services for the Project, and said Engineer's duly authorized assistants and representatives.

(c) The term "Supervisor" shall mean the person, if any, appointed by the Administrator as the representative of the Government under the provisions of the Loan Contract providing for such appointment in special cases. The term is limited to such special representative of the Government, if any, who is responsible exclusively to the Administrator and does not refer to the manager or any other person employed by the Owner and responsible to it. Every right or remedy conferred upon or reserved to the Owner hereunder may be exercised by the Supervisor, if any.

(d) The term "Contractor's Proposal" shall mean the proposal of the Contractor including all accompanying documents as therein referred to, a copy of which is attached to and made a part hereof, and upon which the award of the Contract was made.

(e) The term "Project" shall mean the rural telephone system, or portion thereof, described in the Plans and Specifications, Construction Sheets, and Maps.

(f) The term "Section" shall mean a central office area of the Project.

(g) The term "Completion of Construction" shall mean full performance by the Contractor of the Contractor's obligations under the Contract and all amendments and revisions thereof except the Contractor's obligations in respect of (i) Releases of Liens and Certificate of Contractor under Article III, Section 2, hereof; (ii) the Inventory referred to in Article III, Section 1, hereof; and (iii) other final documents. The term "Completion of the Project" or "Completion of a Section" shall mean full performance by the Contractor of the Contractor's obligations under the Contract and all amendments and revisions thereof. The Certificate of Completion, signed by the Engineer and approved in writing by the Owner and the Administrator, shall be the sole and conclusive evidence as to the date of Completion of Construction and as to the fact of Completion of the Project or Section.

(h) The term "Cleanup" shall mean all work necessary to enable the Assembly Units called for on the Construction Sheets to meet specifications as built and to restore the terrain to an acceptable condition.

(i) The term "Work Sector" shall mean a localized portion of the project for purposes of specifying sequence of construction and shall be shown on the maps.

(j) The term "Construction Corridor" shall mean a minimum width of 1 rod (5.0 meters) along the designated route for buried cable and wire placement, which permits passage and operation of the construction equipment. Construction Corridors that equal or exceed the minimum width will not be designated on the Construction Sheets.

(k) The term "Reduced Construction Corridor" shall mean widths less than the standard "Construction Corridor". The approximate width applicable to "Reduced Construction Corridor" shall be shown on the Construction Sheets.

(l) The term "Restricted Construction Corridor" shall mean a "Construction Corridor" or "Reduced Construction Corridor" where the location within the corridor of cable to be placed is specified due to the presence of existing telecommunications plant or the facilities of other utilities, right-of-way restrictions or other factors. The nature of the restriction and the approximate location of the cable placement within the "Restricted Corridor" shall be shown on the Construction Sheets.

(m) The term "Unobtained Construction Corridor" shall mean a "Construction Corridor" where the right-of-way has not been obtained. Unobtained Construction Corridors shall be shown on the Construction Sheets.

(n) The term "Construction Sheets" shall mean staking sheets, strip maps or other sheets provided by the Engineer and designated as work sheets for construction purposes.

(o) The term "Cable Placement Operation" shall mean a construction crew whose sole responsibility is the installation of telecommunications cable which requires an inspector present during the activity. Other activities not requiring an inspector, such as boring without the installation of a cable, pedestal installation, asphalt repairs, clean up, and splicing shall not be considered cable placement operations.

(p) The term "Eligible Country" shall mean any country that applies with respect to the United States an agreement insuring reciprocal access for United States products and services and United States suppliers to the markets of that country, as determined by the United States Trade Representative.

Section 2. Materials and Supplies.

In the performance of this Contract there shall be used only such unmanufactured articles, materials, and supplies as have been mined or produced in the United States or an eligible country, and only such manufactured articles, materials, and supplies as have been manufactured in the United States or an eligible country, substantially all from articles, materials, or supplies mined, produced, or manufactured, as the case may be, in the United States or an eligible country; Provided, that articles, materials, or supplies not produced or manufactured in the United States, or an eligible country, may be used in the event and to the extent that the Administrator shall expressly in writing authorize such use as pursuant to the provisions of the Rural

Electrification Act of 1938, being Title IV of Public Resolution No. 122, 75th Congress, approved June 21, 1938. The Contractor agrees to submit to the Owner such certificate or certificates (RUS Form 213, attached hereto), signed by the Contractor and all subcontractors, with respect to compliance with the foregoing provisions as the Administrator from time to time may require.

Section 3. Nonassignment of Contract.

The Contractor shall perform directly, and without subcontracting, not less than fifty percent (50%) of the labor required for the construction of the Project, to be calculated on the basis of that portion of the contract price constituting total labor costs of the Project. The Contractor shall not assign this Contract or any interest in any funds that may be due or become due hereunder or enter into any Contract with any person, firm, or corporation for the performance of the Contractor's obligations hereunder or any part thereof, without the approval in writing of the Owner and the Administrator and of the surety or sureties on any bond furnished by the Contractor for the faithful performance of the Contractor's obligations hereunder. If the Contractor, with the consent of the Owner, the Administrator, and any surety or sureties on the Contractor's Bond or Bonds, shall enter into a subcontract (RUS Form 282, attached hereto) with any subcontractor for the performance of any part of this Contract, the Contractor shall be as fully responsible to the Owner and the Government for the acts and fully responsible to the Owner and the Government for the acts and omissions of such subcontractor and of persons employed by such subcontractor as the Contractor would be for its own acts and omissions and those of persons directly employed by it.

Section 4. Equal Opportunity Clause.

During the performance of this contract, the Contractor agrees as follows:

(a) The Contractor will not discriminate against any employee or applicant for employment because of race, color, religion, sex, or national origin. The Contractor will take affirmative action to ensure that applicants are employed, and that employees are treated during employment without regard to their race, color, religion, sex, or national origin. Such action shall include, but not be limited to, the following: Employment, upgrading, demotion or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship. The Contractor agrees to post in

conspicuous places, available to employees and applicants for employment, notices to be provided setting forth the provisions of this nondiscrimination clause.

(b) The Contractor will, in all solicitations or advertisements for employees placed by or on behalf of the Contractor, state that all qualified applicants will receive consideration for employment without regard to race, color, religion, sex, or national origin.

(c) The Contractor will send to each labor union or representative of workers with which it has a collective bargaining agreement or other contract or understanding, a notice to be provided advising the said labor union workers' representative of the Contractor's commitments under this section, and shall post copies of the notice in conspicuous places available to employees and applicants for employment.

(d) The Contractor will comply with all provisions of Executive Order 11246 of September 24, 1965, and by rules, regulations, and relevant orders of the Secretary of Labor.

(e) The Contractor will furnish all information and reports required by Executive Order 11246 of September 24, 1965, and by rules, regulations, and orders of the Secretary of Labor, or pursuant thereto, and will permit access to its books, records, and accounts by the administering agency and the Secretary of Labor for purposes of investigation to ascertain compliance with such rules, regulations, and orders.

(f) In the event of the Contractor's noncompliance with the nondiscrimination clauses of this contract or with any of the said rules, regulations, or orders, this contract may be canceled, terminated, or suspended in whole or in part and the Contractor may be declared ineligible for further Government contracts or federally assisted construction contracts in accordance with procedures authorized in Executive Order 11246 of September 24, 1965, and such other sanctions may be imposed and remedies invoked as provided in Executive Order 11246 of September 24, 1965, or by rule, regulation or order of the Secretary of Labor, or as otherwise provided by law.

(g) The Contractor will include the portion of the sentence immediately preceding paragraph (a) and the provisions of paragraphs (a) through (g) in every subcontract or purchase order unless exempted by rules, regulations, or orders of the Secretary of Labor issued pursuant to Section 204 of Executive Order 11246 of September 24, 1965, so that such provisions will be binding upon each subcontractor or vendor. The Contractor will take such action with respect to

any subcontract or purchase order as the administering agency may direct as a means of enforcing such provisions, including sanctions for noncompliance: Provided, however, that in the event a Contractor becomes involved in, or is threatened with, litigation with a subcontractor or vendor as a result of such direction by the administering agency, the Contractor may request the United States of America to enter into such litigation to protect the interest of the United States.

Section 5. Anti-Kickback Acts.

The Contractor acknowledges that it is familiar with the Rural Electrification Act of 1936, as amended, the Anti-Kickback Acts, as amended (40 USC 276c; 41 USC 51 et seq.), and regulations issued pursuant thereto, and 18 USC Sections 287, 874, 1001, as amended. The Contractor understands that the obligations of the parties hereunder are subject to the applicable regulations and orders of the Governmental agencies having jurisdiction in the premises.

Section 6. Franchises and Rights-of-Way.

The Contractor shall be under no obligation to obtain or assist in obtaining: Any franchises, authorizations, permits, or approvals required to be obtained by the Owner from Federal, State, County, Municipal, or other authorities; any rights-of-way over private lands; or any agreements between the Owner and third parties with respect to the joint use of poles, crossings, or any other matter incident to the construction and operation of the Project.

Section 7. Extension to Successors and Assigns.

Each and all of the covenants and agreements herein contained shall extend to and be binding upon the successors and assigns of the parties hereto.

Section 8. Approval of This Contract by the Administrator

This Contract shall become effective only upon the approval in writing of the Administrator: Provided, however, that no obligations shall arise hereunder unless such approval is given within ninety (90) days from the date of execution by the parties as indicated herein.

Where Contractor is a Corporation, this section to be used.

IN WITNESS WHEREOF, the parties hereto have caused this Contract to be signed in their respective corporate names by their Presidents and their corporate seals to be hereunto affixed and attested by their Secretaries, all as of the day and year first above written.

Attest:

(Secretary)

By _____
(Owner)
(President)

Attest:

(Secretary)

(Contractor)
(President)

Where Contractor is an individual or a partnership this section to be used. If partnership, all parties shall sign.

IN WITNESS WHEREOF, the Owner has caused this Contract to be signed in its corporate name by its President and its corporate seal to be hereunto affixed and attested by its Secretary, and the Contractor(s) has (have) hereunto set his (their) hand(s), all as of the day and year first above written.

Attest:

(Secretary)

By _____
(Owner)
(President)

(Contractor)

(Owner or Partners)

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U.S. Department of Agriculture
Rural Utilities Service

CERTIFICATE OF CONTRACTOR

_____ certifies that he or she is the

_____ of _____ ,
TITLE OF OFFICE NAME OF CONTRACTOR

the Contractor, in a Construction Contract No. _____ ,

dated _____ , 20 _____ , entered into between the Contractor and

_____ , the Owner, for the construction of
NAME OF BORROWER

a Project, which bears the Rural Utilities Service Project Designation _____
and that he or she is authorized to and does make this certification on behalf of said Contractor in order to induce
the Owner to make payment to the Contractor, in accordance with the provisions of said Construction Contract.

Undersigned further says that all persons who have furnished labor in connection with said construction have been
paid in full, that the names of manufacturers, material suppliers, and subcontractors that furnished material or
services or both in connection with such construction and the kind or kinds of material or services or both so
furnished are:

NAME	KIND OF MATERIAL OR SERVICES
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____

and that the releases of liens executed by all such manufacturers, material suppliers, and subcontractors have been
furnished the Owner.

_____ Date

_____ Signature

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U.S. Department of Agriculture
Rural Utilities Service

WAIVER AND RELEASE OF LIEN

WHEREAS the undersigned, _____
NAME OF MANUFACTURER, MATERIAL SUPPLIER, OR SUBCONTRACTOR

has furnished to _____ the following:
NAME OF CONTRACTOR

_____ for
KIND OF MATERIAL AND SERVICES FURNISHED

use in the construction of a project belonging to _____
NAME OF BORROWER

and designated by the Rural Utilities Service as _____
RUS DESIGNATION

NOW, THEREFORE, the undersigned, _____
NAME OF MANUFACTURER, MATERIAL SUPPLIER, OR SUBCONTRACTOR

for and in consideration of \$_____ and other good and valuable consideration, the receipt whereof is hereby acknowledged, do(es) hereby waive and release any and all liens, or right to or claim of lien, on the above described project and premises, under any law, common or statutory, on account of labor or materials, or both, heretofore or hereafter furnished by the undersigned to or for the account of said _____ for said project.
NAME OF CONTRACTOR

Given under my(our) hand(s) and seal(s) this _____ day of _____, 20_____.

Name of Manufacturer, Material Supplier, or Subcontractor

By _____
President, Vice President, Partner or Owner
If signed by other than one of foregoing, accompanied by
power of attorney signed by one of the foregoing in favor of
the signer. (Use applicable designation.)

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U.S. Department of Agriculture
Rural Utilities Service

CONTRACTOR'S BOND

1. Know all men that we, _____, as
Principal, and _____, as Surety,
are held and firmly bound unto _____
(hereinafter called the "Owner") and unto the United States of America (hereinafter called the "Government")
and unto all persons, firms and corporations who or which may furnish materials for or perform labor on a
Rural Utilities Service project known as _____
and to their successors and assigns, in the penal sum of _____
dollars (\$_____), as hereinafter set forth and for the payment of which sum well
and truly to be made we bind ourselves, our executors, administrators, successors and assigns jointly and
severally by these presents. Said project is described in a certain construction contract (hereinafter called the
"Construction Contract") between the Owner and the Principal, dated _____,
20_____, pursuant and subject to a certain loan contract (hereinafter called the "Loan Contract") between the
Owner and the Government, acting through the Administrator of the Rural Utilities Service (hereinafter called
the "Administrator").
2. The condition of this obligation is such that if the Principal shall well and truly perform and fulfill all the
undertakings, covenants, terms, conditions and agreements of the Construction Contract and any amendments
thereto, whether such amendments are for additions, decreases, or changes in materials, their quantity, kind or
price, labor costs, mileage, routing or any other purpose whatsoever, and whether such amendments are made
with or without notice to the Surety, and shall fully indemnify and save harmless the Owner and the
Government from all costs and damages which they, or either of them, shall suffer or incur by reason of any
failure so to do, and shall fully reimburse and repay the Owner and the Government for all outlay and expense
which they, or either of them shall incur in making good any such failure of performance on the part of the
Principal, and shall promptly make payment to all persons working on or supplying labor or materials for use
in the construction of the project contemplated in the Construction Contract and any amendments thereto, in
respect of such labor or materials furnished and used therein, to the full extent thereof, and in respect of such
labor or materials furnished but not so used, to the extent of the quantities estimated in the Construction
Contract and any amendments thereto to be required for the construction of the project, and shall well and
truly reimburse the Owner and the Government, as their respective interests may appear, for any excess in cost
of construction of said project over the cost of such construction as provided in the Construction Contract and
any amendments thereto, occasioned by any default of the Principal under the Construction Contract and any
amendments thereto, then this obligation shall be null and void, but otherwise shall remain in full force and
effect.
3. It is expressly agreed that this bond shall be deemed amended automatically and immediately, without formal
and separate amendments hereto, upon any amendment to the Construction Contract, so as to bind the
Principal and the Surety to the full and faithful performance of the Construction Contract as so amended,
provided only that the total amount of all increases in the cost of construction shall not exceed 20 percent of the
amount of the maximum price set forth in the Construction Contract. The term "Amendment," wherever used in
this bond, and whether referring to this bond, the Construction Contract or the Loan Contract shall include any
alteration, addition, extension, modification, amendment, rescission, waiver, release or annulment, of any
character whatsoever.
4. It is expressly agreed that any amendment which may be made by agreement or otherwise between the
Principal and the Owner in the terms, provisions, covenants and conditions of the Construction Contract,
or in the terms, provisions, covenants and conditions of the Loan Contract (including, without limitation, the

granting by the Administrator to the Owner of any extension of time for the performance of the obligations of the Owner under the Loan Contract or the granting by the Administrator or the Owner to the Principal of any extension of time for the performance of the obligations of the Principal under the Construction Contract, or the failure or refusal of the Administrator or the Owner to take any action, proceeding or step to enforce any remedy or exercise any right under either the Construction Contract or the Loan Contract, or the taking of any action, proceeding or step by the Administrator or the Owner, acting in good faith upon the belief that the same is permitted by the provisions of the Construction Contract or the Loan Contract) shall not in any way release the Principal and the Surety, or either of them or their respective executors, administrators, successors or assigns, from liability hereunder. The Surety hereby acknowledges receipt of notice of any amendment, indulgence or forbearance, made, granted or permitted.

5. This bond is made for the benefit of all persons, firms and corporations who or which may furnish any materials or perform any labor for or on account of the construction to be performed under the Construction Contract and any amendments thereto, and they, and each of them, are hereby made obligees hereunder with the same force and effect as if their names were written herein as such, and they and each of them may sue hereon.

In witness whereof, the undersigned have caused this instrument to be executed and their respective corporate seals to be affixed and attested by their duly authorized representatives this

_____ day of _____, 20_____.

Principle (Seal)

ATTEST:

By _____

Secretary

Surety (Seal)

ATTEST:

By _____

Secretary

Address of Surety's Home Office

By _____
Resident Agent of Surety

Signatures: The Contractor's Bond must be signed with the full name of the Contractor. If the Contractor is a partnership the Contractor's Bond must be signed in the partnership name by a partner. If the Contractor is a corporation the Contractor's Bond must be signed in the corporate name by a duly authorized officer and the corporate seal affixed and attested by the Secretary of the corporation. A typewritten copy of all such names and signatures shall be appended.

Power of Attorney: *The Contractor's Bond must be accompanied by a power of attorney authorizing execution on behalf of the Surety and, in jurisdictions so requiring should be countersigned by a duly authorized resident agent of the Surety.*

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U.S. Department of Agriculture
Rural Utilities Service

CONTRACTOR'S BOND

(Use only when contract is less than \$1 million and Surety has accepted an SBA Guarantee)*

1. Know all men that we, _____, as
Principal, and _____, as Surety,
are held and firmly bound unto _____
(hereinafter called the "Owner") and unto the United States of America (hereinafter called the "Government")
and unto all persons, firms and corporations who or which may furnish materials for or perform labor
on a
Rural Utilities Service project known as _____
and to their successors and assigns, in the penal sum of _____
dollars (\$_____), as hereinafter set forth and for the payment of which sum well
and truly to be made we bind ourselves, our executors, administrators, successors and assigns jointly and
severally by these presents. Said project is described in a certain construction contract (hereinafter called the
"Construction Contract") between the Owner and the Principal, dated _____, 20____,
pursuant and subject to a certain loan contract (hereinafter called the "Loan Contract") between the Owner
and the Government, acting through the Administrator of the Rural Utilities Service (hereinafter called the
"Administrator").
2. The condition of this obligation is such that if the Principal shall well and truly perform and fulfill all the
undertakings, covenants, terms, conditions and agreements of the Construction Contract and any amendments
thereto, whether such amendments are for additions, decreases, or changes in materials, their quantity, kind or
price, labor costs, mileage, routing or any other purpose whatsoever, and whether such amendments are made
with or without notice to the Surety, and shall fully indemnify and save harmless the Owner and the
Government from all costs and damages which they, or either of them, shall suffer or incur by reason of any
failure so to do, and shall fully reimburse and repay the Owner and the Government for all outlay and expense
which they, or either of them shall incur in making good any such failure of performance on the part of the
Principal, and shall promptly make payment to all persons working on or supplying labor or materials for use
in the construction of the project contemplated in the Construction Contract and any amendments thereto, in
respect of such labor or materials furnished and used therein, to the full extent thereof, and in respect of such
labor or materials furnished but not so used, to the extent of the quantities estimated in the Construction
Contract and any amendments thereto to be required for the construction of the project, and shall well and
truly reimburse the Owner and the Government, as their respective interests may appear, for any excess in cost
of construction of said project over the cost of such construction as provided in the Construction Contract and
any amendments thereto, occasioned by any default of the Principal under the Construction Contract and any
amendments thereto, then this obligation shall be null and void, but otherwise shall remain in full force and
effect.
3. Provided, that the liability of the Principal and Surety hereunder to the Government shall be subject to the
same limitations and defenses as may be available to them against a claim hereunder by the Owner, provided,
however, that the Government may, at its option, perform any obligations of the Owner required by the
contract.
- 4 It is expressly agreed that this bond shall be deemed amended automatically and immediately, without formal
and separate amendments hereto, upon any amendment to the Construction Contract, so as to bind the

* Small Business Administration

Principal and the Surety to the full and faithful performance of the Construction Contract as so amended, provided only that the total amount of all increases in the cost of construction shall not exceed 20 percent of the amount of the maximum price set forth in the Construction Contract. The term "Amendment," wherever used in this bond, and whether referring to this bond, the Construction Contract or the Loan Contract shall include any alteration, addition, extension, modification, amendment, rescission, waiver, release or annulment, of any character whatsoever.

5. *It is expressly agreed that any amendment which may be made by agreement or otherwise between the Principal and the Owner in the terms, provisions, covenants and conditions of the Construction Contract, or in the terms, provisions, covenants and conditions of the Loan Contract (including, without limitation, the granting by the Administrator to the Owner of any extension of time for the performance of the obligations of the Owner under the Loan Contract or the granting by the Administrator or the Owner to the Principal of any extension of time for the performance of the obligations of the Principal under the Construction Contract, or the failure or refusal of the Administrator or the Owner to take any action, proceeding or step to enforce any remedy or exercise any right under either the Construction Contract or the Loan Contract, or the taking of any action, proceeding or step by the Administrator or the Owner, acting in good faith upon the belief that the same is permitted by the provisions of the Construction Contract or the Loan Contract) shall not in any way release the Principal and the Surety, or either of them or their respective executors, administrators, successors or assigns, from liability hereunder. The Surety hereby acknowledges receipt of notice of any amendment, indulgence or forbearance, made, granted or permitted.*
6. *This bond is made for the benefit of all persons, firms and corporations who or which may furnish any materials or perform any labor for or on account of the construction to be performed under the Construction Contract and any amendments thereto, and they, and each of them, are hereby made obligees hereunder with the same force and effect as if their names were written herein as such, and they and each of them may sue hereon.*
7. *Provided, further, that no suit or action shall be commenced hereunder by any person, firm, or corporation who performed work or labor or who furnished materials for the project: (a) Unless such person, firm, or corporation, other one having a direct contract with the Principal (or with the Government in the event the Government is performing the obligation of the Owner), shall have given detailed written notice of claim to: The Principal, and the Owner, within ninety (90) days after such person, firm, or corporation did or performed the last of the work or labor, or furnished the last of the materials for which such claim is made. (b) After the expiration of one (1) year following the date on which Principal ceased work on said contract, it being understood, however, that if any limitation embodied in the Bond is prohibited by any law controlling the construction hereof, such limitation shall be deemed to be amended so as to equal to the minimum period of limitation permitted by such law.*

In witness whereof, the undersigned have caused this instrument to be executed and their respective corporate seals to be affixed and attested by their duly authorized representatives this

_____ day of _____, 20_____.

Principal (Seal)

ATTEST:

By _____

Secretary

Surety (Seal)

ATTEST:

By _____

Secretary

Address of Surety's Home Office

By _____
Resident Agent of Surety

Signatures: *The Contractor's Bond must be signed with the full name of the Contractor. If the Contractor is a partnership the Contractor's Bond must be signed in the partnership name by a partner. If the Contractor is a corporation the Contractor's Bond must be signed in the corporate name by a duly authorized officer and the corporate seal affixed and attested by the Secretary of the corporation. A typewritten copy of all such names and signatures shall be appended.*

Power of Attorney: *The Contractor's Bond must be accompanied by a power of attorney authorizing execution on behalf of the Surety and, in jurisdictions so requiring should be countersigned by a duly authorized resident agent of the Surety.*

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U.S. Department of Agriculture
Rural Utilities Service

SUBCONTRACT

(Under Construction or Equipment Contracts)

AGREEMENT made this _____ day of _____, by and
Between _____ a (partnership, individual,
Corporation), (hereinafter called the "Contractor") and _____
_____ of _____
(hereinafter called the "Subcontractor").

WHEREAS, the Contractor has entered into a Construction Contract or Equipment Contract (hereinafter
called the "Contract") dated _____, _____, with

_____ ; and

WHEREAS, the Contractor and the Subcontractor desire that all of the Contractor's obligations with
regard to certain work under the Contract be performed by the Subcontractor;

NOW, THEREFORE, in consideration of the mutual undertakings herein contained, the parties hereto
agree as follows:

SECTION 1. The Subcontractor agrees to perform the Contractor's obligations under the Contract which,
by this reference, is made a part hereof as though set out in its entirety with respect to:

SECTION 2. The Subcontractor agrees that all of the work to be done hereunder shall be carried out as
directed by the Engineer of the Owner in full accordance with the terms and provisions of the Contract.

SECTION 3. The Subcontractor shall maintain all insurance required under the Contract and shall hold the Contractor and the Owner harmless from any and all claims for injuries to persons or for damage to property happening by reason of any negligence, default or misconduct on the part of the Subcontractor, his agents or employees during the performance of this Agreement.

SECTION 4. The Contractor agrees to pay the Subcontractor for the performance of the work

Hereunder the sum of _____

_____, \$ _____ Payable as follows:

SECTION 5. The work to be performed hereunder shall be completed to the satisfaction of the Contractor and the Owner within the time specified in the Contract. In the event additions to or alterations in the work to be performed hereunder are made necessary by changes in the Contract, the Subcontractor agrees to perform such additional or alternative work in the same manner and under the same terms and conditions as the Contractor would be required so to perform.

SECTION 6. Upon approval of this Agreement by the Owner, the surety company, if any (hereinafter called the "Surety") furnishing the Performance Bond required by the Contract, and the Administrator of the Rural Utilities Service (hereinafter called the "Administrator"), the Subcontractor shall, if required by Contractor, furnish to the Contractor a Performance Bond in form and substance satisfactory to the Contractor.

SECTION 7. This agreement shall not become effective until consented to and approved in writing by the Owner, the Surety if any, and the Administrator; provided, however, that consent to and approval hereof by the Owner and the Administrator shall in no way operate to release the Contractor from the Contractor's duties and obligations to the Owner under the Contract or operate to release the Surety if any, from its obligations under the Performance Bond required by and relating to the Contract.

IN WITNESS WHEREOF, the parties hereto have executed this Agreement the day and year first above written.

CONTRACTOR

By _____
TITLE

CONSENTED TO AND APPROVED:

☐ SEAL ☐

DATE

CONSENTED TO AND APPROVED:

☐ SEAL ☐

DATE

SUBCONTRACTOR

By _____
TITLE

OWNER

By _____
PRESIDENT

SURETY COMPANY¹

By _____

¹ Attach power of attorney in favor of person signing for Surety.

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DEPARTMENT OF AGRICULTURE RURAL UTILITIES SERVICE CONSTRUCTION CHANGE ORDER		DATE
PROJECT	LINE	SHEET NO.
ORDER NO.	POLES NO.	REFER TO ITEM NO.
CHANGE		
REASON FOR CHANGE		
CHANGE AUTHORIZED BY:		
_____ SYSTEM MANAGER		_____ BORROWER'S ENGINEER
ITEMIZED COST OF ABOVE ORDER		
_____ CONTRACTOR		

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RUS FORM 526
REV 8-66
ATTACHMENT

U.S. DEPARTMENT OF AGRICULTURE
RURAL UTILITIES SERVICE

PROJECT DESIGNATION

AMENDMENT NUMBER

CONSTRUCTION CONTRACT AMENDMENT

DETAILS OF CONTRACT AMENDMENT

ITEM NO.	ASSEMBLY UNIT DESIGNATION	QUANTITY PREVIOUSLY APPROVED	NET CHANGE NUMBER OF UNITS	*CONTRACT AMENDED TO READ				TOTAL INCREASE PRICE	TOTAL DECREASE PRICE	
				NUMBER OF UNITS	UNIT PRICE					TOTAL PRICE
					LABOR	MATERIAL	TOTAL			
**_--	-----	-----	-----	-----	-----	-----	-----			

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							NET TOTAL			

* Show quantities and prices as revised by this amendment.

**Carried forward from previous page.

U.S. Department of Agriculture
Rural Utilities Service

CERTIFICATE

With respect to compliance with the second paragraph of the Rural Electrification Act of 1938, being Title IV of the Work Relief and Public Works Appropriation Act of 1938 (Public Resolution No. 122, 75th Congress, approved June 21, 1938).

Rural Utilities Service Project _____

The undersigned, being, the _____¹,

in a certain contract No. _____ dated _____, _____ between the undersigned

and _____²,

does hereby certify that in the performance of the said contract there have been used or furnished no unmanufactured articles, materials or supplies which have not been mined or produced in the United States³ or in any eligible country and no manufactured articles, materials or supplies which have not been manufactured in the United States or in any eligible country substantially all from articles, materials or supplies mined, produced or manufactured, as the case may be, in the United States or in any eligible country, except to the extent that compliance with the second paragraph of the Rural Electrification Act of 1938, being Title IV of the Work Relief and Public Works Appropriation Act of 1938 (Public Resolution No. 122, 75th Congress, approved June 21, 1938) has been waived by the Administrator of the Rural Utilities Service. For purposes of this certificate, an "eligible country" is any country that applies with respect to the United States an agreement ensuring reciprocal access for United States products and services and suppliers to the markets of that country, as determined by the United States Trade Representative.⁴

By _____

Date _____, _____

¹ Insert "Contractor," "Subcontractor," "Seller," Or "Material Supplier," as the case may be.

² Insert the name of the RUS Borrower.

³ United States means United States, its territories and possessions.

⁴ A current list of eligible countries may be obtained by contacting RUS.

**United States
Department of
Agriculture**

Rural
Utilities
Service

RUS Bulletin 1753F-151
RUS Form 515b

September 2001



Specifications and Drawings for Construction of Underground Plant

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UNITED STATES DEPARTMENT OF AGRICULTURE
Rural Utilities Service

BULLETIN 1753F-151

SUBJECT: Specifications and Drawings for Construction of
Underground Plant, RUS Form 515b

TO: All Telecommunications Borrowers
RUS Telecommunications Staff

EFFECTIVE DATE: September 17, 2001

OFFICE OF PRIMARY INTEREST: Outside Plant Branch,
Telecommunications Standards Division.

AVAILABILITY: This bulletin supersedes RUS Bulletin 345-151,
Specifications and Drawings for Conduit and Manhole Construction,
RUS Form 515c, issued May 25, 1989; and RUS Bulletin 345-152,
Specifications and Drawings for Underground Cable Installation,
RUS Form 515d, issued May 25, 1989.

This bulletin can be accessed via the Internet at
<http://www.usda.gov/rus/telecom/publications/bulletins.htm>

PURPOSE: This specification provides Contractors, Engineers, and
RUS Borrowers with assembly unit descriptions, materials,
construction and installation, and drawings for underground plant
associated with RUS Form 515, Telecommunications System
Construction Contract.

Roberta D. Purcell

8/21/01

Roberta D. Purcell
Assistant Administrator
Telecommunications Program

Date

RUS Bulletin 1753F-151
Specifications and Drawings for Construction of
Underground Plant, RUS Form 515b

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Assembly Units

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Fiber Optic Cable Plant

Manholes

Underground Cable (Physical Plant)

Underground Conduit

SPECIFICATIONS AND STANDARDS:

Outside Plant

LIST OF CHANGES

1. Combination of RUS Form 515c and RUS Form 515d.
2. Modification of Section HC to provide compensation on a single pair basis.
3. Modification of Section HO to provide compensation for testing a fiber.
4. Modification of Section PM as follows:
 - (a) Redefined PM21 to a more generalized description;
 - (b) Added PM22 unit.
5. Elimination of Section U.
6. Modification of Section UD by elimination of suffix "P" and the adding of suffix "V" to allow placement of innerducts in new or existing conduit systems.
7. Modification of the UF and UO units to provide compensation on a per foot basis.
8. Elimination of Section UG.
9. Modification of Section UH to allow for installation in areas of vehicular traffic.
10. Modification of Section UM to indicate precast manholes as the default type.
11. In part III, section 2, added requirement that poured in place manholes are now to be constructed as specified by the Engineer. Other references to poured in place manholes were eliminated.
12. In part III, section 4, added requirement that when blowing of underground cable is specified, the installation shall be in accordance with the manufacturer of the blowing installation equipment.

For editorial or other minor technical changes, refer to the body of the document.

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**Part I - DESCRIPTION OF ASSEMBLY UNITS AND PROPOSAL AND
CONTRACT SECTIONS**

The Contractor's Proposal form is divided into sections and the sections approved for construction shall be listed in the Construction Agreement by the Owner. The sections are as follows:

- Section HC - Copper Splicing Assembly Units
- Section HO - Fiber Optic Splicing Assembly Units
- Section HU - Underground Splice Closure Assembly Units
- Section PM - Miscellaneous Assembly Units
- Section UD - Underground Conduit Assembly Units
- Section UF - Underground Filled Copper Cable Assembly Units
- Section UH - Underground Handhole Assembly Units
- Section UM - Precast Manhole Assembly Units
- Section UO - Underground Filled Fiber Optic Cable Assembly Units

Each assembly unit includes only the materials listed on the corresponding Installation and Construction Guide Drawings or description of unit where no drawing exists. The various installation and construction units, which are included in this Proposal and upon which quotations are required, are defined by the following descriptions:

Section HC - COPPER SPLICING ASSEMBLY UNITS

- HC1 Consists of the labor and material necessary in the wire work and splicing of one (1) cable pair in any cable, including any non-working pair in an existing cable in accordance with RUS Splicing Standard Bulletin 1753F-401 (PC-2) using individual mechanical splicing connectors. The splice may be straight, bridged, or pieced out and bridged. Pairs that are to be tested, capped, or tested and capped, when specified by the Engineer are considered to be part of this unit. Only those pairs on which splicing, testing, and/or capping operations are performed are counted and each pair is counted only once at each location. On aerial inserts, each end of the fuse link is considered as a splice.
- HC3 Consists of the labor and material necessary in the wire work and splicing of one (1) cable pair in any cable, including any non-working pair in an existing cable in accordance with RUS Splicing Standard Bulletin 1753F-401 (PC-2) using splicing modules. The splice may be straight, bridged or pieced out and bridged. Pairs that are to be tested, capped, or tested and capped, when specified by the Engineer are considered to be part of

this unit. Only those pairs on which splicing, testing, and/or capping operations are performed are counted and each pair is counted only once at each location. On aerial inserts, each end of the fuse link is considered as a splice.

Section HO - FIBER OPTIC SPLICING ASSEMBLY UNITS

Consists of all labor and material necessary to splice and/or test one (1) glass fiber in any cable in accordance with RUS Splicing Standard Bulletin 1753F-401(PC-2). The labor shall include initial measurement, minimizing the attenuation, splicing and stowing the spliced fiber in a fiber organizer. The labor and material for the fiber organizer is part of the appropriate splice closure unit.

<u>Suffix</u>	<u>Description</u>
H01	Fusion Splice
H02	Mechanical Splice
H03	Connector Splice

Section HU - UNDERGROUND SPLICE CLOSURE ASSEMBLY UNITS

Consists of an underground splice closure and the closure manufacturer's provided encapsulating material if required, installed in place and the labor and material for setting up in preparation for installing the closure, such as, opening the sheath or jacket of the cable, bonding of the cable shields, filling the closure if required, closing the closure, and, when applicable, pressure testing, all in accordance with the manufacturer's instructions. It also includes all necessary hardware items to support the closure and the cable adjacent to the closure on the cable racks in the manhole. Cable splicing shall be compensated under the appropriate splicing units.

The assembly units are defined as follows:

HUF()	<u>Underground Filled Closure</u> - A filled splice closure with pair count and gauge for each cable to be spliced.
HU0()	<u>Underground Filled Fiber Optic Closure</u> - A fiber optic closure and organizer with the number of fibers to be housed in the organizer.

HUP() Underground Pressurized Closure - A pressurized splice closure with pair count and gauge for each cable to be spliced.

The following illustrations indicate the method of designating the material required.

HUF(100-24) Underground filled closure enclosing two cable ends same pair count and gauge.

HUP(200-24)(100-24) Underground pressurized closure enclosing two cable ends with different pair counts.

HUF(600-24)(200-24)
(200-24)(200-22) Underground filled closure enclosing four cable ends with pair counts and gauges as shown.

HUO(24) Underground filled fiber optic splice closure and organizer capable of accommodating a minimum of 24 fibers.

Section PM - MISCELLANEOUS ASSEMBLY UNITS

Consists of all labor and materials to construct and install the units defined individually below required for the installation and construction of the underground cable portions of the Project.

PM21 Cable Entrance - Consists of the necessary labor and material to terminate copper and/or fiber optic outside plant cables as shown on the detailed drawings as specified by the Engineer.

PM22 Grounding System - Consists of the necessary labor and material to construct a grounding system as shown on the detailed drawings as specified by the Engineer. This unit shall include all ground electrodes, trenching, backfilling, bonding the auxiliary ground electrodes to each other and to the primary ground electrodes, and bonding to the master ground bar (MGB).

Section UD - UNDERGROUND CONDUIT ASSEMBLY UNITS

Consists of one (1) foot [0.305 meters (m)] of single or multiduct conduit in place. This unit includes all material and labor for the placement of the conduit to the depth indicated in the specifications.

The assembly unit is defined as follows:

UD () Underground Conduit

The number of conduits placed horizontally, and vertically, and the inside diameter (distance between opposite walls for square conduit), shall be indicated in the parentheses.

Options designated by the following suffixes apply:

<u>Suffix</u>	<u>Description</u>
E	This unit consists of necessary labor and materials to encase the conduit in concrete. (Encasement shall consist of a 2 inch (in.) [51 millimeters (mm)] minimum cover over the conduit(s), a minimum of 1-1/2 in. (38 mm) at the sides and a minimum of 2 in. (51 mm) for the base.)
S	This unit consists of the necessary labor and materials to encase the conduit in sand or fine earth. (Encasement shall consist of a 4 in. (102 mm) cover over the conduit(s), a minimum of 1-1/2 in. (38 mm) at the sides and a minimum of 3 in. (76 mm) for the base.)
B	This unit consists of the necessary labor and materials to provide a concrete base for the conduit assembly unit as determined by the Engineer. (Concrete base will be 3 in. (76 mm) in thickness for the width of the trench.)
C	This unit consists of the necessary labor and materials to provide a concrete cover for the conduit assembly unit as determined by the Engineer. (The concrete cover shall have a minimum thickness of 3 in. (76 mm) and shall be at least as wide as the conduit.)
A	This unit consists of the necessary labor and materials to remove and restore paved surfaces. All work shall be performed as required in accordance with federal, state and/or local construction standards in effect at the time of bid date.

- V This unit consists of the necessary labor and materials to place one or more vacant innerduct(s) in a conduit. The parentheses for the UD unit shall indicate the number of innerducts followed by the inside diameter of the innerduct to be placed in new or existing conduit, including rodding and cleaning of the conduit if necessary.

A. This unit also includes:

(1) All labor and material required for conduit jointing, such as, conduit bends, couplings, adapters, fittings, plugs or seals, and spacers.

(2) All material and labor required in the repair of streets, roads, sidewalks, drives, fences, lawns, shrubbery, trees, watermains, pipes, pipelines and contents, underground power and telecommunications facilities, and any other incidental property damaged during the installation of underground conduit.

(3) All labor and material for trenching, shoring, backfilling, tamping, and disposal of water and excess or unusable material.

(4) All labor required for rodding and cleaning of conduit as specified by the Engineer. When rodding and cleaning are not specified by the Engineer, these actions shall be in accordance with Part III, Section 2.10.

B. The length of conduit for compensation purposes is determined by taking the sum of distances paralleling the conduit between manholes or between manholes and termination points as specified by the Engineer.

The following illustrations indicate the method of designating the material required.

- | | |
|----------------|---|
| UD(4x4-2)E | Indicates concrete encased conduit having four ducts horizontally by four ducts vertically, (16 ducts total), with each duct having an inside diameter of 2 in. (51 mm). |
| UD(4x3-3-1/2)B | Indicates a concrete base for a conduit having 4 ducts horizontally by 3 ducts vertically, (12 ducts total), with each duct having an inside diameter of 3-1/2 in. (89 mm). |

UD(3-1.25)V Indicates 3 innerducts of 1.25 in. (31 mm) inside diameter to be placed in a new or existing conduit.

Section UF - UNDERGROUND FILLED COPPER CABLE ASSEMBLY UNITS

Consists of 1 foot (0.305 m) of underground filled copper cable installed in underground conduits and manholes. This unit also consists of setting up the cable within the manhole, providing and placing cable supports and cable rack hooks, pulling-in wires, duct seals or plugs, cable tags, manhole cable racks and rodding and cleaning of ducts all as required in accordance with the detailed plans and specifications. This unit includes bonding together of all closures, but does not include cable closure assemblies or cable splicing in manholes. The splicing and closures will be specified separately. The length of cable for compensation purposes is determined by measuring the distances paralleling the cable plus the vertical lengths of cable installed on supporting structures. This unit shall include the cleaning out and/or pumping out of manholes when specified by the Engineer in advance of bidding.

Options designated by the following suffixes apply:

<u>Suffix</u>	<u>Description</u>
H	Screened cable designated for T1 carrier systems.
H1C	Screened cable designated for T1C carrier systems.

Each underground filled copper cable assembly unit is listed in accordance with the number of pairs and gauge of conductors. Each unit is prefixed by the letters UF. The following illustration indicates the method of designating the material required.

UF600-24H1C A 600 pair, 24 gauge underground filled copper cable with a screen designated for T1C carrier systems.

Section UH - UNDERGROUND HANDHOLE ASSEMBLY UNITS

Consists of labor and material for one (1) underground handhole installed in place, including the base, top cover and mounting hardware, and pea gravel. The handhole size, amount of pea gravel and the installation shall be as specified by the Engineer. The handhole assembly unit shall be used only in areas of non-vehicular traffic. When required for use in areas of vehicular traffic, the handhole shall be rated to withstand vehicular traffic. Where specified, vehicular traffic rated handholes shall be suffixed with the letter "T".

The assembly units are defined as follows:

UHC() Underground Handhole for copper systems.
UHF() Underground Handhole for fiber optic systems.

The dimensions of length, width, and depth of the handhole shall be indicated in the parentheses in inches (millimeters).

Examples:

UHC(13x24X24) Underground handhole for copper systems with dimensions of 13 x 24 x 24 in. (330 x 610 x 610 mm)(approximate).

UHF(17x30x30)T Underground handhole for fiber optic systems with dimensions of 17 x 30 x 30 in. (432 x 762 x 762 mm) (approximate) which is rated for vehicular traffic.

Section UM - PRECAST MANHOLE ASSEMBLY UNITS

Consists of all labor and material necessary to install a precast concrete manhole in place. The unit shall include pit excavation, masonry materials, collar, manhole frame and cover, pulling-in irons, and other materials necessary to make an appropriate installation in accordance with the Construction Sheets. In addition, precast manhole assembly units also include all material and labor required in the repair and/or replacement of streets, roads, drives, fences, lawns, shrubbery, watermains, pipes, pipelines and contents, underground power and telecommunications facilities, buried sewerage and drainage facilities and any other property damaged during the construction of the manhole assembly unit. Backfilling shall include backfill compaction, removal of excess materials and site clearing. Each manhole is listed as a separate unit installed in place.

All manhole unit designations shall begin with the letters UM followed by a letter to indicate the type of the manhole and conduit arrangements shown in the unit drawings. The letters "A", "L", "T", "J", "X", or "Y" indicate rectangular manholes, and the letter "V" indicates a V-shaped manhole.

Immediately following the letter indicating the manhole type shall be a fourth letter, which shall indicate the type of frame, and cover with which the manhole is to be equipped. The letter "R" indicates a light duty frame and cover. The letter "B" indicates a heavy duty frame and cover. Following the letter indicating frame and cover type, and enclosed in parentheses shall be the nominal diameter of the frame opening in inches (millimeters).

Examples:

- UM-AR(24) Rectangular manhole equipped with a 24 in.
 (610 mm) light duty frame and cover.
- UM-VB(30) V shaped manhole equipped with a 30 in.
 (762 mm) heavy duty frame and cover.

UO - UNDERGROUND FILLED FIBER OPTIC CABLE ASSEMBLY UNITS

Consists of one (1) foot (0.305 m) of underground filled fiber optic cable installed in underground conduit and manholes. This unit also consists of setting up the cable within the manhole, providing and placing cable supports and cable rack hooks, pulling-in wires, duct seals or plugs, cable tags, manhole cable racks, and rodding and cleaning of ducts, all as required in accordance with the detailed plans and specifications. This unit does not include cable closure assembly or cable splicing. They will be specified separately. The length of cable for compensation purposes is determined by measuring the distances paralleling the cable plus the vertical lengths of cable installed on supporting structures. This unit shall include cleaning out and/or pumping out of manholes when specified by the Engineer in advance of bidding.

Each underground filled fiber optic cable assembly unit is listed in accordance with the number of optical fibers. Each unit is prefixed by the letters UO. The following illustration indicates the method of designating the material required.

- UO24 An underground filled fiber optic cable
 with 24 fibers.

Part II - SPECIFICATION FOR MATERIALS**1. SCOPE**

This part of the specification is concerned with the various materials required for the construction of underground plant of a rural telecommunications system as shown on the Plans, Specifications, and Construction Sheets.

2. GENERAL

All materials used in the construction of the rural telecommunications system except those listed in Paragraph 3 below shall be listed in RUS Informational Publication (IP) 344-2, "List of Materials Acceptable for Use on Telecommunications Systems of RUS Borrowers," unless specific written approval has been granted by the Administrator.

3. MISCELLANEOUS

Items which do not appear in RUS IP 344-2, "List of Materials Acceptable for Use on Telecommunications Systems of RUS Borrowers," shall be of a quality suitable for the application for which they are intended.

Part III - SPECIFICATIONS FOR CONSTRUCTION AND INSTALLATION**1. GENERAL**

1.1 All construction and installation work shall be done in a thorough and workmanlike manner in accordance with the Plans, Specifications and Construction Sheets and shall be subject to acceptance by the Owner and the Administrator.

1.2 All material to be used in construction of the Project shall be stored so as to be protected from deteriorating effects of the elements.

1.3 All underground cables and accessory materials used in the construction of the Project shall be handled with care. Each reel of underground cable shall be inspected for damage. Prior to installation, all damage shall be repaired to the satisfaction of the Engineer. If reel wrap is present, the reel wrap shall remain intact on the reel until the cable is ready to be placed.

1.4 Deviations from the Plans, Specifications and Construction Sheets shall not be permitted except upon written permission of the Engineer.

1.5 The latest revision of the National Electrical Safety Code (NESC) and the National Electrical Code (NEC) shall be followed in every case except where local regulations are more stringent, in which case local regulations shall govern.

2. UNDERGROUND CONDUIT AND MANHOLES

2.1 The underground conduit and manhole system shall be constructed in accordance with the instructions given herein unless otherwise specified by the Engineer or unless state or local requirements are more stringent in which case the latter requirements will govern.

2.2 The Engineer shall determine the location of all conduit and manholes and shall specify size, type, position, and depth at which they are to be constructed. The size, type and location of all main conduit and subsidiary ducts, location of foreign structures where known; and applicable right-of-way restrictions shall be shown on the Construction Sheets. The size, type, and location of all conduit entrances and size and location of the manhole frame opening shall be shown on the Construction Sheets.

2.3 All parties associated with excavations for the conduit and manhole system shall follow well-established safety rules and regulations to safeguard the public and workmen.

2.3.1 Testing shall be conducted in excavations and manholes to determine if there is an oxygen deficiency or a presence of harmful gas, in accordance with federal, state, and/or local requirements.

2.3.2 Gas and oil mains shall be given special attention and precautions shall be taken to guard against the fire hazards they present. Excavations in public streets shall always be checked for gas leakage, even though gas mains or sewers are not directly encountered. No flame of any sort shall be permitted around excavations when the odor of gas is detected. Workmen shall not be allowed to smoke; and precautions shall be taken to prevent pedestrians from throwing lighted cigars, cigarettes, or burning matches into such excavations. The owning company shall be notified when excavation involving such structures is undertaken so that a representative may be present if desired.

2.3.3 The Contractor shall provide adequate shoring, warning signs, lights, no parking signs, barricades, and removal of excess water and excavated material. Flagmen and guards shall be provided where required to maintain safe conditions for the workmen and the public.

2.3.4 Blasting shall only be permitted with approval from state or local authorities and with the warning to and protection of workmen and the public.

2.3.5 Excavations shall be closed and/or barricaded for public protection prior to leaving the job site at night with warning lights and/or guards.

2.3.6 Accessibility to fire hydrants, fire alarm boxes, and private driveways shall be maintained using temporary bridges over trenches as required.

2.4 The Contractor shall notify utilities, local authorities, regulatory bodies, and others when construction is to commence. When conflicts are encountered involving the relocation of manholes or conduits, the Engineer shall be notified.

2.5 Where deviations from the Construction Sheets are necessary or desirable, such construction shall proceed only with prior approval by the Engineer.

2.6 The depth of the trench shall be sufficient to obtain a cover of at least 24 in. (610 mm) over the conduit formation including top protection where employed unless otherwise approved by the Engineer.

2.7 The trench route and manhole locations shall be clearly marked by the Engineer before excavation is started.

2.8 In preparing the trench bed for the conduit installation, the trench bed shall be leveled to form an even base. In some cases it may be necessary to provide sand or fine earth to establish an even base. If, upon excavation, the trench bed appears to be incapable of firmly supporting the conduit, the Engineer shall determine whether a concrete base is required.

2.9 Backfilling next to the conduit shall be free from stones or other material which might damage the conduit or conduit joints. Large boulders shall not be included in any part of the backfill. In tamping the backfill at the sides of the conduit, extreme care shall be used to avoid damage to the joints or shifts in the conduit structure. Backfilling and tamping alongside the conduit shall be done in layers only an inch or two in thickness until the level of the top of the conduit is reached. Backfilling around conduit joined with mortar bandages shall proceed as soon as the joints are completed. Troweled joints shall be allowed to set at least 24 hours before backfilling.

2.10 Upon completion of conduit sections, a test mandrel 1/4 in. (6.4 mm) smaller in diameter than the inside diameter of the conduit shall be pulled through all single duct conduit and through two diagonally opposite ducts in multiduct conduit formations to ensure proper alignment. In addition, all conduits shall be cleaned of loose materials such as concrete, mud, dirt, stones, etc. Pull wire (type as specified by the Engineer) shall be placed in conduit if so indicated by the Engineer on the Construction Sheets. The ends of the conduit shall be sealed to prevent the entrance of foreign matter and to protect against water or gas from entering manholes of buildings. All conduit entering central offices or other buildings shall be kept plugged at all times. If the work extends over several days, the conduits shall be plugged at night temporarily and permanently upon completion of the work.

2.11 Where sod and/or top soil has been removed, finish off the surface of the trench with top soil and/or sod as removed. This work shall be done to the satisfaction of the property owner and authorities.

2.12 All surplus material and debris shall be promptly cleared from the job site.

2.13 All cement used in underground construction shall be Portland cement and shall conform to the latest specification for Portland cement of the American Society for Testing and Materials.

2.14 Cement shall be kept dry at all times prior to use in order to prevent deterioration. No cement shall be used which contains lumps, which will not pulverize readily in the hand. The presence of such lumps indicates that the cement has absorbed moisture and has deteriorated.

2.15 To ensure that concrete used in manhole construction will be watertight, water shall be prevented from flowing through or over the freshly placed concrete and washing away the cement paste. Admixtures shall not be used for the purpose of producing watertight concrete.

2.16 Each precast manhole shall be provided with hardware and equipment as specified below and shown in the Construction Sheets.

2.16.1 Type A, L, T, J, and V manholes shall be provided with either 37-hole or 18-hole cable racks as shown in the Construction Sheets. When 18-hole racks are used, they shall be attached to cable rack supports with three cable rack supports required for each set of two 18-hole racks. Type X and Y manholes shall be

provided with 8-hole racks as shown in the Construction Sheets. The cable racks shall be attached to the supports by means of 1/2 in. x 1-3/4 in. (12.7 mm x 44.4 mm) galvanized machine bolts and nuts. The cable rack supports shall be secured to the manhole walls by means of 1/2 in. x 2-1/2 in. (12.7 mm x 63.5 mm) galvanized machine bolts screwed into metal inserts which shall be cast in the walls when the manhole is constructed.

2.16.2 Rectangular manholes, except Type X and Y, shall be provided with four cable racks or sets of cable racks as shown in the Construction Sheets. Type Y manholes shall be provided with two racks and Type X manholes shall be provided with one rack as shown on the Construction Sheets.

2.16.3 Type V manholes shall be provided with six cable racks or sets of cable racks as shown on the Construction Sheets.

2.16.4 One pulling-in iron shall be cast in the wall opposite each conduit with which it is associated and shall be installed in accordance with the Construction Sheets.

2.17 The frame shall be supported on a collar as shown in the Construction Sheets. The collar shall be of sufficient height to bring the cover flush with the grade of the street or surrounding earth.

2.18 The sump or drain shall be located directly under the manhole cover.

2.19 Pulling-in irons shall be placed so as to extend into the manhole far enough to permit a clear opening of approximately 3 in. (76.2 mm) in the eye.

2.20 When poured-in-place manholes are specified, the construction and installation of the poured-in-place manhole shall be as specified by the Engineer.

3. UNDERGROUND HANDHOLES

3.1 The underground handholes shall be installed in accordance with the instructions given herein unless otherwise specified by the Engineer unless state or local requirements are more stringent in which case the latter requirements will govern.

3.2 The Engineer shall determine the location of the handhole and shall specify type, position and depth of installation.

3.3 A hole shall be dug large enough to accommodate the handhole.

3.4 The handhole shall be positioned and a suitable backfill shall be tamped around the handhole.

3.5 Pea gravel should be placed inside of the handhole to minimize condensation problems.

3.6 The Engineer shall ensure that the dimensions of the handhole shall be large enough to accommodate the splice case installation and when required, cable slack.

4. UNDERGROUND CABLE PLACEMENT

4.1 Prior to entry, testing shall be conducted in excavations and manholes to determine if there is an oxygen deficiency or a presence of harmful gas, in accordance with federal, state, and/or local requirements.

4.2 When working in manholes, care shall be taken to prevent damage to the cables in setting up the pulling apparatus or in placing tools or hardware. Cables shall not be stepped upon when entering or leaving the manhole.

4.3 Cable reels, which are delivered to the work location and are not set up immediately for placing operations shall be securely blocked or secured to a substantial support to prevent rolling.

4.4 The Contractor and Engineer shall jointly verify distances between splice points prior to ordering cable in specific cut lengths.

4.5 The duct assignment for each individual cable for any conduit section shall be specified on the Construction Sheets. Cables shall not be placed in ducts other than those specified on the Construction Sheets without prior approval of the Engineer.

4.6 It shall be the Contractor's responsibility to determine whether ducts assigned for occupancy shall be rodded and cleaned.

4.7 All ducts containing earth, sand or gravel shall be cleaned. Ducts, which cannot be cleaned, shall be reported to the Engineer.

4.8 Reels shall be rolled in the direction indicated by the arrows painted on the reel flanges.

4.9 Cable reels shall be set up on the same side of the manhole as the conduit section in which the cable is to be placed. The reel shall be leveled and brought into proper alignment with the conduit section so that the cable pays off from the top of the reel in a long smooth bend into the duct without twisting. Under

no circumstances shall the cable be payed off from the bottom of a reel.

4.10 The Contractor shall check the equipment set up prior to beginning the cable pulling to avoid an interruption once pulling has started.

4.11 A cable feeder guide of suitable dimensions shall be used between the cable reel and the face of the duct to protect the cable and guide it into the duct as it is payed off the reel. Copper cable shall not be bent to a radius of less than 10 times the diameter of the cable. Fiber optic cable shall not be bent to a radius of less than 20 times the diameter of the cable.

4.12 The mechanical stress placed upon a cable during installation shall not be such that the cable is twisted or stretched. During installation, the Contractor shall not exceed the maximum pulling tension of the cable as specified by the cable manufacturer.

4.13 As the cable is payed off the reel, it shall be carefully inspected for jacket defects. If defects are noticed, the pulling operations shall be stopped immediately and the Engineer will determine what corrective action shall be taken.

4.14 As the cables are payed off the reel into the cable feeder guide, they shall be sufficiently lubricated with a type of lubricant recommended by the cable manufacturer. Where the cable is pulled through a manhole it shall also be sufficiently lubricated at the intermediate manhole.

4.15 Cable placement shall be stopped immediately if the cable on a reel binds or does not pay off freely. The cause of the binding must be cleared to the satisfaction of the Engineer before the pulling operation is continued.

4.16 When blowing of underground cable is specified, the installation shall be in accordance with the manufacturer of the blowing installation equipment.

4.17 Sufficient cable shall be provided in each manhole to properly rack and splice the cables as shown on the Construction Sheets.

4.18 All cable ends, shall be protected at all times with acceptable end caps except during actual splicing. During the splicing operations, protection shall be available for immediate installation in case water.

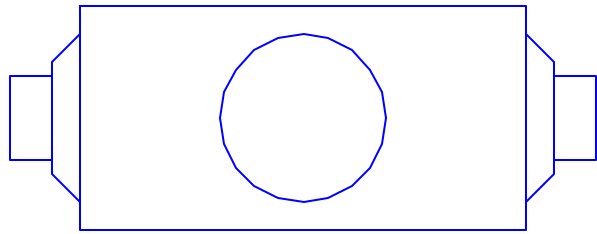
LIST OF CONSTRUCTION DRAWINGS AND PLANS

Construction Guide Drawings

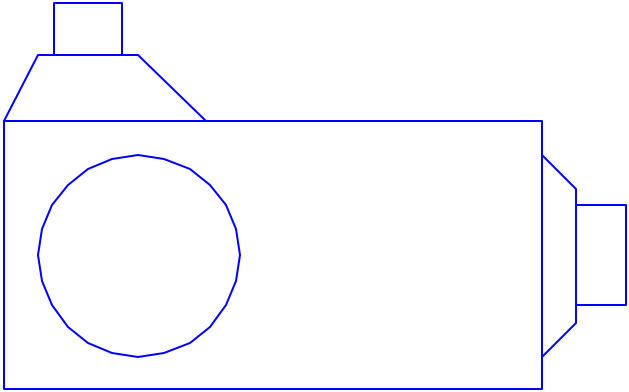
UM-A, L, T, J	Types A, L, T and J Precast Manholes
UM-V	Type V Precast Manhole
UM-X, Y	Types X and Y Precast Service Manholes

Typical Arrangements of Main Conduit
 Entrances in Rectangular Precast Manholes

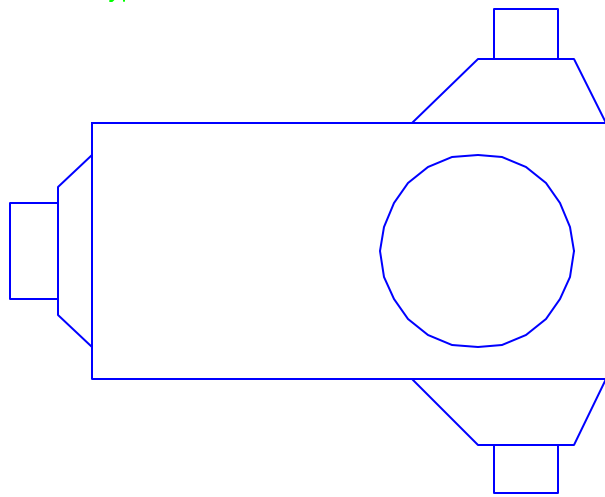
Type "A" Precast Manhole



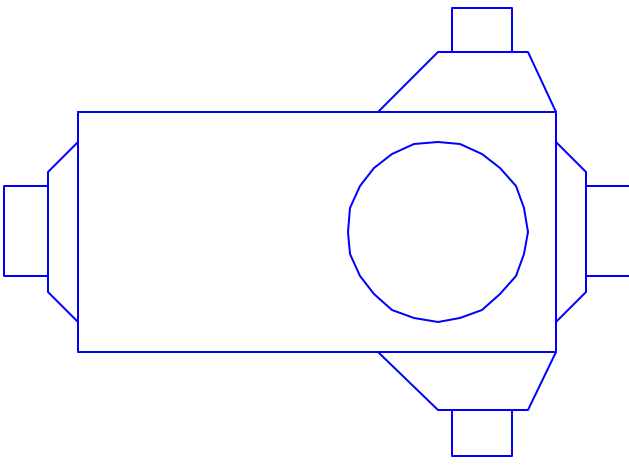
Type "L" Precast Manhole



Type "T" Precast Manhole

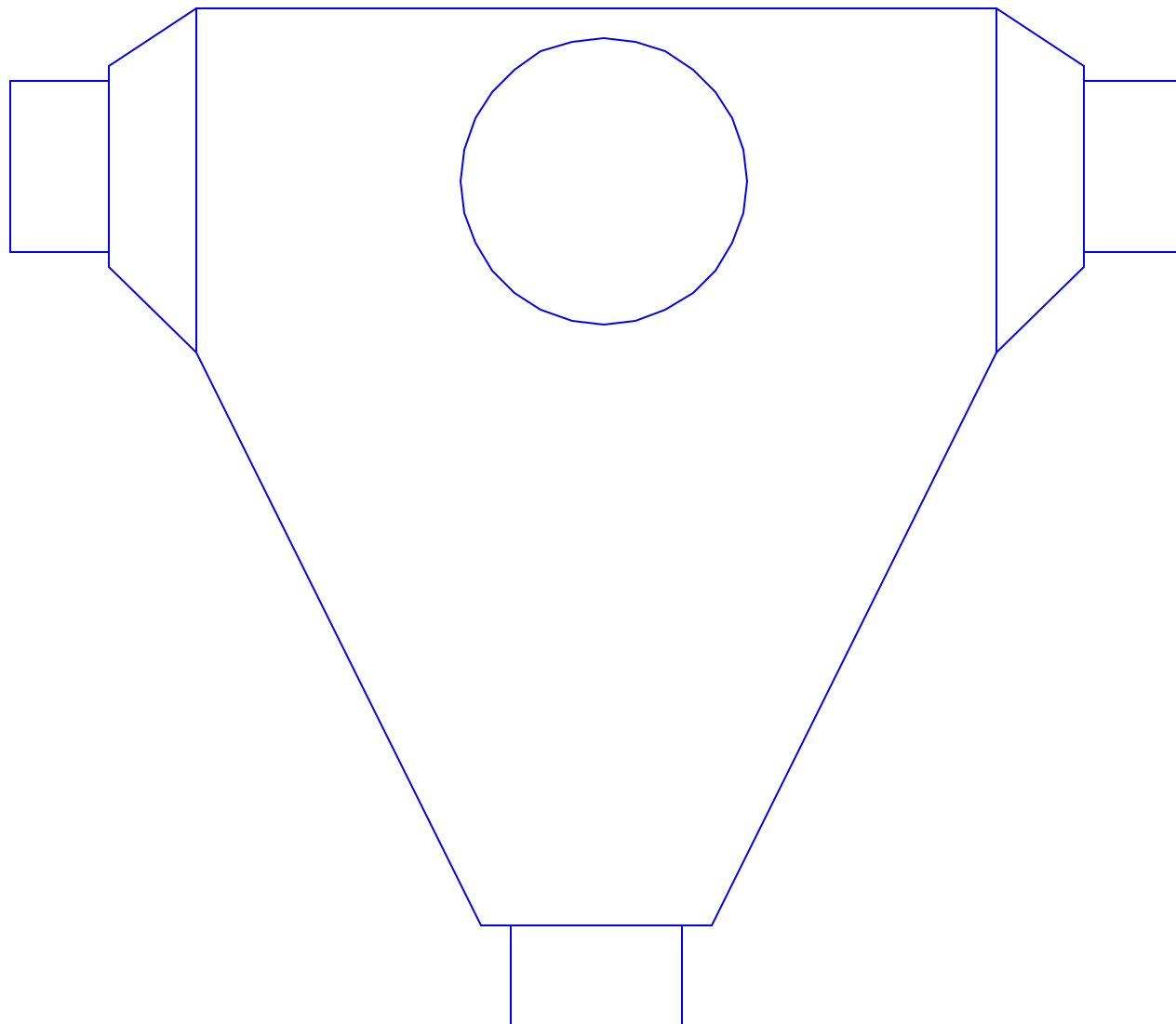


Type "J" Precast Manhole



	RURAL TELECOMMUNICATIONS CONSTRUCTION PRACTICES TYPES A, L, T AND J PRECAST MANHOLES		
	Scale: NTS		March 2001
			UM-A,-L,-T,-J

Typical Arrangement of Main Conduit Entrances in Type "V" Precast Manholes

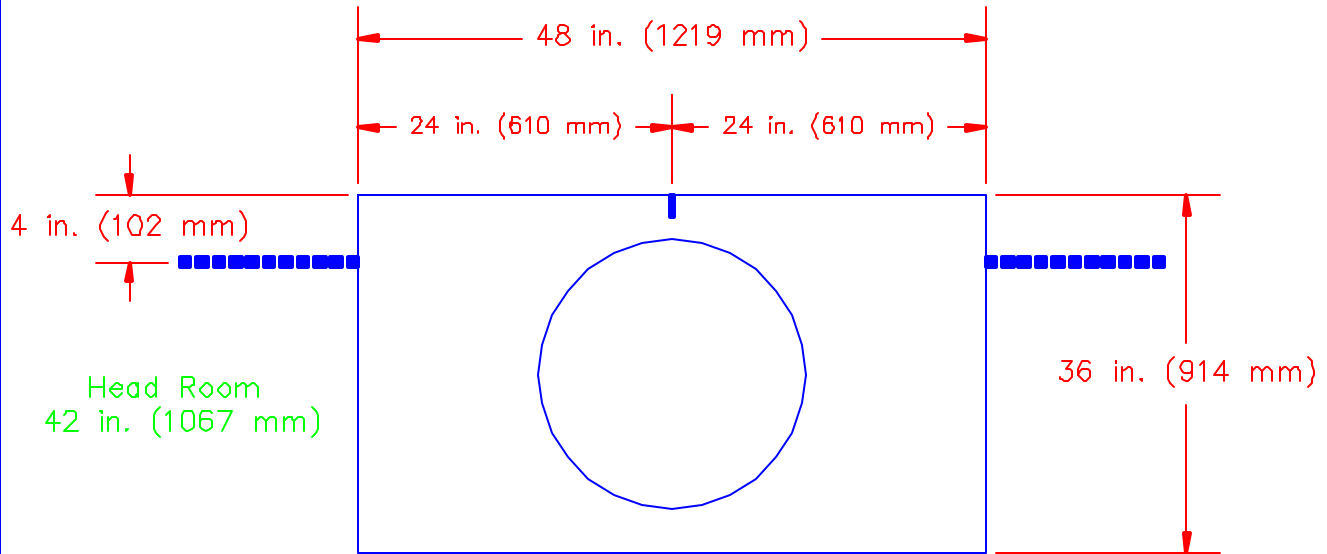


RURAL TELECOMMUNICATIONS CONSTRUCTION PRACTICES
 TYPE V PRECAST MANHOLE

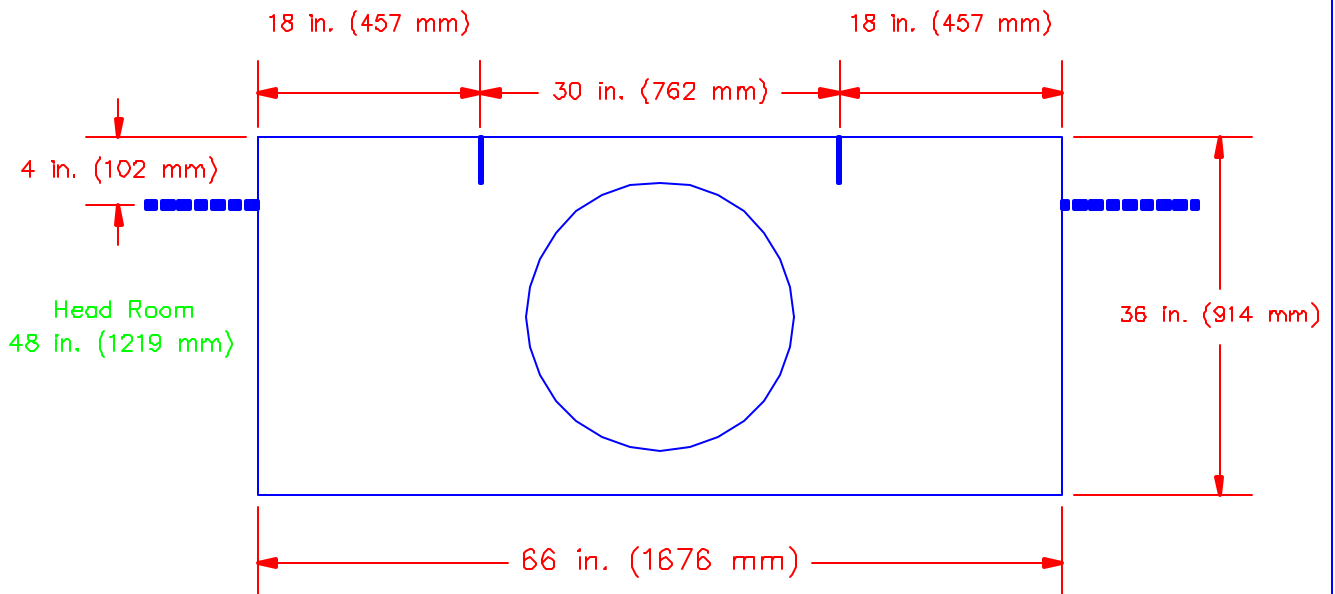
Scale: NTS

March 2001

UM-V



Type X Precast Service Manhole



Type Y Precast Service Manhole

Note: All dimensions shown are recommended minimum inside dimensions.

RURAL TELECOMMUNICATIONS CONSTRUCTION PRACTICES
TYPES X AND Y PRECAST SERVICE MANHOLES

Scale: NTS

March 2001

UM-X,-Y

GENERAL CONSTRUCTION NOTES

- THE CONTRACTOR SHALL OBSERVE AND COMPLY WITH ALL FEDERAL, STATE AND LOCAL LAWS REQUIRED FOR THE PROTECTION OF PUBLIC HEALTH, SAFETY AND ENVIRONMENTAL QUALITY.
- UTILITIES SHALL BE INSTALLED IN ACCORDANCE WITH ORDINANCE NOS. 2875 AND 3375 (UNDERGROUND UTILITIES).
- NO CONTRACTOR SHALL PERFORM ANY CONSTRUCTION OPERATION SO AS TO CAUSE FALLING ROCKS, SOIL OR DEBRIS IN ANY FORM TO FALL, SLIDE OR FLOW INTO EXISTING CITY DRAINAGE SYSTEMS, ADJOINING PROPERTIES, STREETS, OR NATURAL WATERCOURSES. SHOULD SUCH VIOLATIONS OCCUR, THE CONTRACTOR MAY BE CITED AND THE CONTRACTOR SHALL IMMEDIATELY MAKE ANY REMEDIAL ACTIONS NECESSARY.
- THE CONTRACTOR, AT HIS OWN EXPENSE, SHALL KEEP THE PROJECT AND SURROUNDING AREA FREE FROM DUST NUISANCE. THE WORK SHALL BE IN CONFORMANCE WITH THE AIR POLLUTION CONTROL STANDARDS AND REGULATIONS OF THE STATE DEPARTMENT OF HEALTH.
- THE UNDERGROUND PIPES, CABLES OR DUCTLINES KNOWN TO EXIST BY THE ENGINEER FROM HIS SEARCH OF RECORDS ARE INDICATED ON THE PLANS. THE CONTRACTOR SHALL VERIFY THE LOCATIONS AND DEPTHS OF THE FACILITIES AND EXERCISE PROPER CARE IN EXCAVATING IN THE AREA. WHEREVER CONNECTIONS OF NEW UTILITIES TO EXISTING UTILITIES ARE SHOWN ON THE PLANS, THE CONTRACTOR SHALL EXPOSE THE EXISTING LINES AT THE PROPOSED CONNECTIONS TO VERIFY THEIR LOCATIONS AND DEPTHS PRIOR TO EXCAVATION FOR THE NEW LINES.
- THE CONTRACTOR MAY SUBMIT A SUBSTITUTION REQUEST TO PRECAST ANY CITY OWNED AND/OR MAINTAINED DRAINAGE STRUCTURE (EX. CATCH BASINS, DRAIN MANHOLES, DRAIN INLETS, CULVERTS, ETC.). HOWEVER, PRIOR TO CONSTRUCTION AND INSTALLATION OF ANY PRECAST STRUCTURE, THE CONTRACTOR SHALL a) SUBMIT SIX (6) SETS OF SHOP DRAWINGS TO THE CIVIL ENGINEERING BRANCH, DEPARTMENT OF PLANNING AND PERMITTING AND OBTAIN WRITTEN APPROVAL AND (b) NOTIFY THE CIVIL ENGINEERING BRANCH, DEPARTMENT OF PLANNING AND PERMITTING AT 738-8084 TO ARRANGE FOR INSPECTIONAL SERVICES. NON-COMPLIANCE WITH ANY OF THESE REQUIREMENTS SHALL MEAN IMMEDIATE SUSPENSION OF ALL PRECAST CONSTRUCTION WORK AND REJECTION OF ALL PRECAST STRUCTURES ALREADY CONSTRUCTED.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONFORMANCE WITH THE APPLICABLE PROVISIONS OF THE WATER QUALITY AND WATER POLLUTION CONTROL STANDARDS CONTAINED IN HAWAII ADMINISTRATIVE RULES, TITLE 11, CHAPTER 64, "WATER QUALITY STANDARDS", AND TITLE 11, CHAPTER 65, "WATER POLLUTION CONTROL", AS WELL AS CHAPTER 14 OF THE REVISED ORDINANCES OF HONOLULU, AS AMENDED. BEST MANAGEMENT PRACTICES SHALL BE EMPLOYED AT ALL TIMES DURING CONSTRUCTION.
- ALL EXISTING UTILITIES, WHETHER OR NOT SHOWN ON THE PLANS, SHALL BE PROTECTED AT ALL TIMES UNLESS OTHERWISE NOTED.
- THE CONTRACTOR SHALL PROVIDE, INSTALL AND MAINTAIN ALL NECESSARY SIGNS, LIGHTS, FLARES, BARRICADES, MARKERS, CONES, AND OTHER PROTECTIVE FACILITIES, AND SHALL TAKE ALL NECESSARY PRECAUTIONS FOR THE PROTECTION, CONVENIENCE AND SAFETY OF THE PUBLIC.
- THE CONTRACTOR'S ATTENTION IS DIRECTED TO TITLE 11, CHAPTER 46, HAWAII ADMINISTRATIVE RULES, DEPARTMENT OF HEALTH, STATE OF HAWAII, "COMMUNITY NOISE CONTROL FOR OAHU", IN WHICH MAXIMUM ALLOWABLE NOISE LEVELS HAVE BEEN SET. IF THE CONSTRUCTION ACTIVITIES FOR THIS PROJECT WILL EXCEED THE ALLOWABLE NOISE LEVELS, THE CONTRACTOR WILL BE REQUIRED TO OBTAIN A PERMIT FROM THE DIRECTOR OF THE DEPARTMENT OF HEALTH. THE CONTRACTOR SHALL OBTAIN A COPY OF CHAPTER 46 AND BECOME FAMILIAR WITH THE NOISE LEVEL RESTRICTIONS AND THE PROCEDURES FOR OBTAINING A PERMIT FOR CONSTRUCTION ACTIVITIES.
- PURSUANT TO CHAPTER 6E, HRS, IN THE EVENT ANY ARTIFACTS OR HUMAN REMAINS ARE UNCOVERED DURING CONSTRUCTION OPERATIONS, THE CONTRACTOR SHALL IMMEDIATELY SUSPEND WORK AND NOTIFY THE HONOLULU POLICE DEPARTMENT, THE STATE DEPARTMENT OF LAND AND NATURAL RESOURCES-HISTORIC PRESERVATION DIVISION (692-8015). IN ADDITION, FOR NON-CITY PROJECTS, THE CONTRACTOR SHALL INFORM THE CIVIL ENGINEERING BRANCH, DEPARTMENT OF PLANNING AND PERMITTING (768-8084); AND FOR CITY PROJECTS, NOTIFY THE RESPONSIBLE CITY AGENCY.
- WHEREVER CONNECTIONS OF NEW UTILITIES TO EXISTING UTILITIES ARE SHOWN ON THE PLANS, THE CONTRACTOR SHALL EXPOSE THE EXISTING LINES AT THE PROPOSED CONNECTIONS TO VERIFY THEIR LOCATIONS AND DEPTHS PRIOR TO EXCAVATION FOR THE NEW LINES.
- DURING NON-WORKING HOURS, THE TRENCHES ON CITY STREETS SHALL BE COVERED WITH NON-SKID STEEL PLATES AND ALL LANES MAINTAINED OPEN FOR TRAFFIC.
- CONTRACTOR TO PROVIDE AS-BUILT DRAWINGS.
- FOR BENCH MARK, SEE DWG. NO. T-1.
- THE CONTRACTOR SHALL NOTIFY THE CIVIL ENGINEERING BRANCH, DEPARTMENT OF PLANNING AND PERMITTING AT 768-8084 TO ARRANGE FOR INSPECTIONAL SERVICES AND SUBMIT TWO (2) SETS OF APPROVED CONSTRUCTION PLANS SEVEN (7) DAYS PRIOR TO COMMENCEMENT OF CONSTRUCTION WORK.
- ALL APPLICABLE CONSTRUCTION WORK SHALL BE DONE IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION, SEPTEMBER 1986 AND THE STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION, SEPTEMBER 1984, AS AMENDED, OF THE DEPARTMENT OF PUBLIC WORKS, CITY AND COUNTY OF HONOLULU AND THE COUNTIES OF KAUAI, MAUI, AND HAWAII.
- CONFINED SPACE FOR ENTRY BY CITY PERSONNEL, INCLUDING INSPECTORS, INTO A PERMIT REQUIRED CONFINED SPACE AS DEFINED IN 29 CFR PART 1910.146(b), THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING:
 - ALL SAFETY EQUIPMENT REQUIRED BY THE CONFINED SPACE REGULATIONS APPLICABLE TO ALL PARTIES OTHER THAN THE CONSTRUCTION INDUSTRY, TO INCLUDE, BUT NOT LIMITED TO, THE FOLLOWING:
 - FULL BODY HARNESSES FOR UP TO TWO PERSONNEL.
 - LIFELINE AND ASSOCIATED CLIPS.
 - INGRESS/EGRESS AND FALL PROTECTION EQUIPMENT.
 - TWO-WAY RADIOS (WALKIE-TALKIES) IF OUT OF LINE-OF-SIGHT.
 - EMERGENCY (ESCAPE) RESPIRATOR (10 MINUTE DURATION).
 - CELLULAR TELEPHONE TO CALL FOR EMERGENCY ASSISTANCE.
 - CONTINUOUS GAS DETECTOR (CALIBRATED) TO MEASURE OXYGEN, HYDROGEN SULFIDE, CARBON MONOXIDE AND FLAMMABLES (CAPABLE OF MONITORING AT A DISTANCE OF LEAST 20-FEET AWAY).
 - PERSONAL MULTI-GAS DETECTOR TO BE CARRIED BY INSPECTOR.
 - CONTINUOUS FORCED AIR VENTILATION ADEQUATE TO PROVIDE SAFE ENTRY CONDITIONS.
 - ONE ATTENDANT/RESCUE PERSONNEL TOPSIDE (TWO, IF CONDITIONS WARRANT IT).
- THE CONTRACTOR SHALL OBTAIN AND COMPLY WITH NATIONAL POLLUTION DISCHARGE ELIMINATION SYSTEM (NPDES) PERMIT REQUIREMENTS FOR ALL PROJECTS WHICH WILL DISTURB ONE (1) ACRE OR MORE OF LAND. THE CONTRACTOR SHALL NOT START CONSTRUCTION UNTIL NOTICE OF GENERAL PERMIT COVERAGE (NGPC) IS RECEIVED FROM THE DEPARTMENT OF HEALTH, STATE OF HAWAII AND HAS SATISFIED ANY OTHER REQUIREMENTS OF THE NPDES PERMIT PROGRAM.

TRAFFIC NOTES FOR WORK ON CITY & COUNTY STREETS

- A PERMIT SHALL BE OBTAINED FROM THE DEPARTMENT OF TRANSPORTATION SERVICES BEFORE WORK ON ANY PORTION OF A PUBLIC STREET OR HIGHWAY MAY BEGIN. CONSTRUCTION TRAFFIC CONTROL PLANS APPROVED BY THE DEPARTMENT OF TRANSPORTATION SERVICES AND/OR THE DEPARTMENT OF PLANNING AND PERMITTING MUST BE PROVIDED WHEN APPLYING FOR THE PERMIT.
- THE CONTRACTOR SHALL PROVIDE, INSTALL AND MAINTAIN ALL NECESSARY SIGNS AND OTHER PROTECTIVE FACILITIES, WHICH SHALL CONFORM WITH THE "HAWAII ADMINISTRATIVE RULES GOVERNING THE USE OF TRAFFIC CONTROL DEVICES AT WORK SITES ON OR ADJACENT TO PUBLIC STREETS AND HIGHWAYS" ADOPTED BY THE DIRECTOR OF TRANSPORTATION, AND THE CURRENT U.S. FEDERAL HIGHWAYS ADMINISTRATION'S "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS, PART VI - TRAFFIC CONTROLS FOR STREET AND HIGHWAY CONSTRUCTION AND MAINTENANCE OPERATIONS".
- WORK ON ANY CITY STREET AREA MAY BE PERFORMED ONLY BETWEEN THE HOURS OF 8:30 A.M. TO 3:30 P.M., MONDAY THROUGH FRIDAY, UNLESS OTHERWISE PERMITTED BY THE DEPARTMENT OF TRANSPORTATION SERVICES.
- DURING WORKING HOURS, THE CONTRACTOR SHALL PROVIDE FOR THROUGH TRAFFIC. DURING NON-WORKING HOURS, ALL TRENCHES SHALL BE COVERED WITH A SAFE NON-SKID BRIDGING MATERIAL AND ALL LANES SHALL BE OPEN TO TRAFFIC.
- AS REQUIRED BY THE DEPARTMENT OF TRANSPORTATION SERVICES, THE CONTRACTOR SHALL PROVIDE OFF-DUTY POLICE OFFICERS TO CONTROL THE FLOW OF TRAFFIC.
- WHERE PEDESTRIAN WALKWAYS EXIST, THEY SHALL BE MAINTAINED IN PASSABLE CONDITION OR OTHER FACILITIES FOR PEDESTRIANS SHALL BE PROVIDED. PASSAGE BETWEEN WALKWAYS AT INTERSECTIONS SHALL LIKEWISE BE PROVIDED.
- DRIVEWAYS SHALL BE KEPT OPEN UNLESS THE OWNERS OF THE PROPERTY USING THESE RIGHTS-OF-WAY ARE OTHERWISE PROVIDED FOR SATISFACTORILY.
- CONTRACTOR SHALL REFERENCE TO THE APPROVAL OF THE DEPARTMENT OF TRANSPORTATION SERVICES AND THE DEPARTMENT OF PLANNING AND PERMITTING. ALL EXISTING TRAFFIC SIGNS, POSTS AND PAVEMENT MARKINGS PRIOR TO THE COMMENCEMENT OF CONSTRUCTION. THE CONTRACTOR SHALL REPLACE OR REPAIR ALL TRAFFIC SIGNS, POSTS AND PAVEMENT MARKINGS DISTURBED BY HIS ACTIVITIES.
- THE CONTRACTOR SHALL NOTIFY THE DEPARTMENT OF PLANNING AND PERMITTING AT 768-8084 ONE (1) WEEK PRIOR TO ANY WORK BEING DONE ON SIGNS, POST AND PAVEMENT MARKINGS.
- NO EQUIPMENT SHALL BE STORED WITHIN STREET RIGHTS-OF-WAY EXCEPT AT LOCATIONS DESIGNATED IN WRITING AND APPROVED BY THE DEPARTMENT OF TRANSPORTATION SERVICES.
- THE DEPARTMENT OF HAWAIIAN HOME LANDS SHALL ENSURE THAT THE CONTRACTOR INSTALLS THE CONSTRUCTION TRAFFIC CONTROL DEVICES IN ACCORDANCE WITH THE MUTCD AND THE HAWAII ADMINISTRATIVE RULES AS SPECIFIED IN TRAFFIC NOTE #2.

MECHANICAL & ELECTRICAL DIVISION NOTES:

- THE CONTRACTOR SHALL NOTIFY THE JOINT POLE COMMITTEE TWO (2) WEEKS IN ADVANCE OF ANY RELOCATION OF UTILITY POLE(S) THAT MAY BE NECESSARY.
- THE CONTRACTOR SHALL NOTIFY THE MECHANICAL & ELECTRICAL DIVISION, DEPARTMENT OF DESIGN AND CONSTRUCTION, THREE (3) WORKING DAYS PRIOR TO COMMENCING WORK ON THE STREET LIGHTING SYSTEM (PHONE: 768-8431).
- THE STREET LIGHTING SYSTEM SHALL BE KEPT OPERATIONAL DURING CONSTRUCTION. ANY RELOCATION REQUIRED SHALL BE APPROVED BY THE MECHANICAL & ELECTRICAL DIVISION, DEPARTMENT OF DESIGN AND CONSTRUCTION, AND PAID FOR BY THE CONTRACTOR.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGES TO EXISTING STREET LIGHTING FACILITIES. ANY AND ALL DAMAGES TO THESE FACILITIES SHALL BE REPAIRED BY THE CONTRACTOR AT HIS COST, IN ACCORDANCE WITH THE REQUIREMENTS OF THE CITY AND COUNTY OF HONOLULU.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGES TO THE CITY'S EXISTING COMMUNICATIONS FIBER OPTIC CABLE SYSTEM. ANY AND ALL DAMAGES TO THESE FACILITIES SHALL BE REPAIRED BY THE CONTRACTOR AT HIS COST IN ACCORDANCE WITH THE REQUIREMENTS OF THE CITY AND COUNTY OF HONOLULU.

DISABILITY AND COMMUNICATION ACCESS BOARD (DCAB) REQUIREMENTS

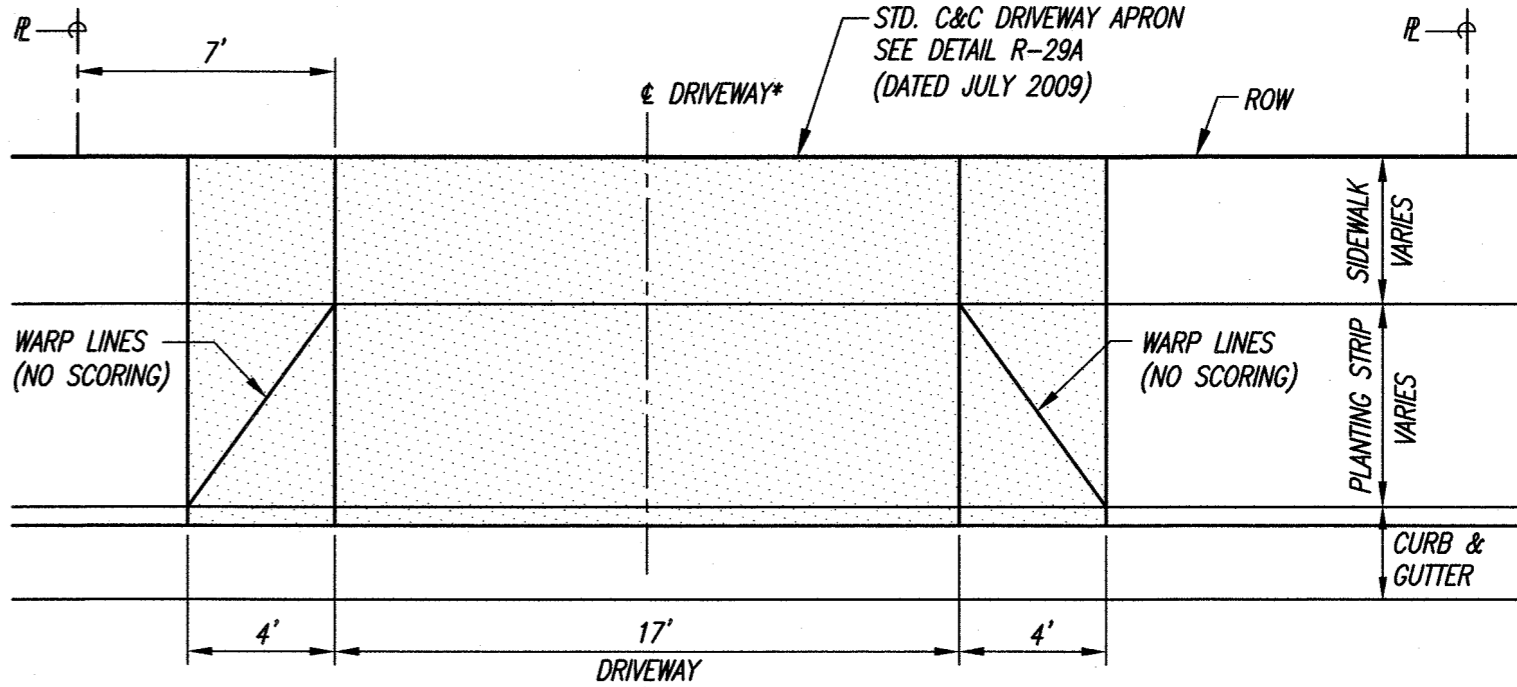
IF DURING CONSTRUCTION, ANY PREVIOUSLY UNIDENTIFIED SITES OR REMAINS (SUCH AS ARTIFACTS, SHELL, BONE, OR CHARCOAL DEPOSITS, HUMAN BURIALS, ROCK OR CORAL ALIGNMENTS, PAVINGS, OR WALLS) ARE ENCOUNTERED, THE APPLICANT SHALL STOP WORK AND CONTACT THE STATE DLNR HISTORIC SITES OFFICE AT 692-8015 IMMEDIATELY. WORK IN THE IMMEDIATE AREA SHALL BE STOPPED UNTIL THE OFFICE IS ABLE TO ASSESS THE IMPACT AND MAKE FURTHER RECOMMENDATIONS FOR MITIGATIVE ACTIVITY.

ARCHAEOLOGICAL NOTE

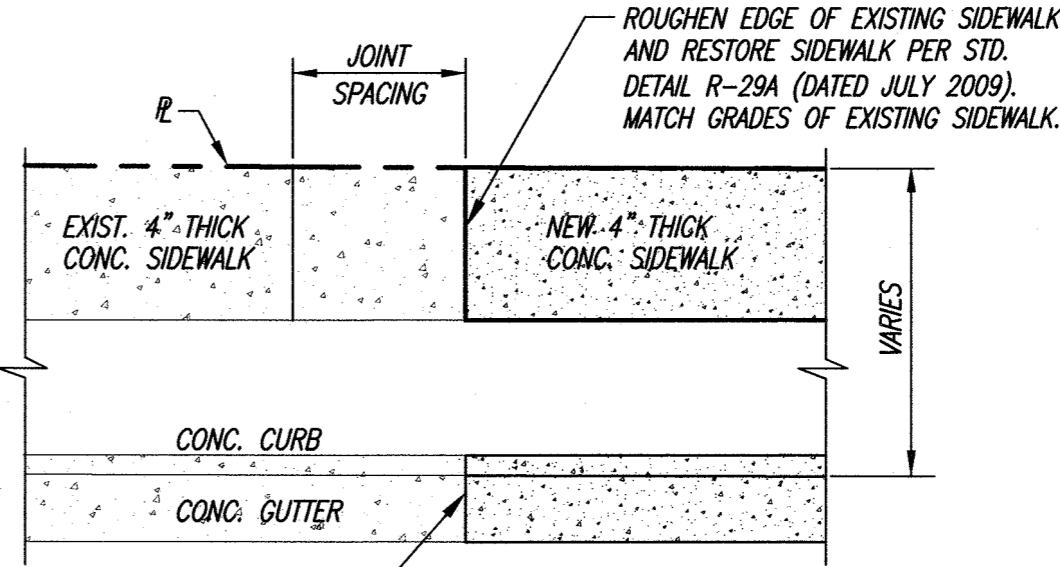
IF DURING CONSTRUCTION, ANY PREVIOUSLY UNIDENTIFIED SITES OR REMAINS (SUCH AS ARTIFACTS, SHELL, BONE, OR CHARCOAL DEPOSITS, HUMAN BURIALS, ROCK OR CORAL ALIGNMENTS, PAVINGS, OR WALLS) ARE ENCOUNTERED, THE APPLICANT SHALL STOP WORK AND CONTACT THE STATE DLNR HISTORIC SITES OFFICE AT 692-8015 IMMEDIATELY. WORK IN THE IMMEDIATE AREA SHALL BE STOPPED UNTIL THE OFFICE IS ABLE TO ASSESS THE IMPACT AND MAKE FURTHER RECOMMENDATIONS FOR MITIGATIVE ACTIVITY.

NOTES FOR PUBLIC HEALTH, SAFETY AND CONVEYANCE

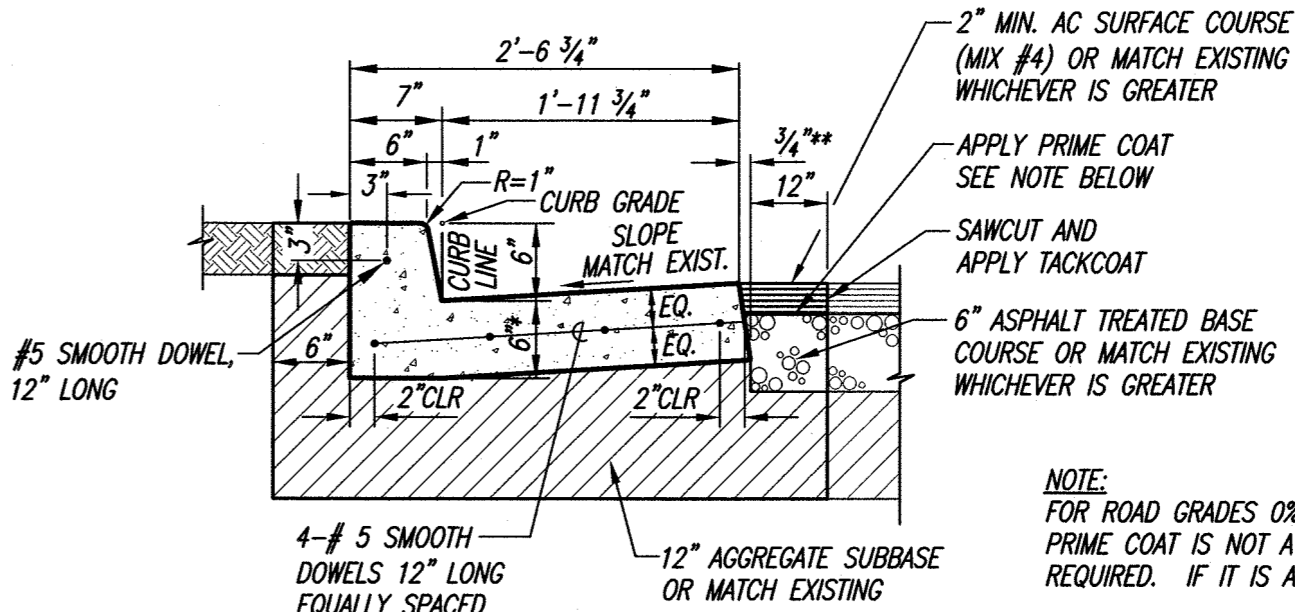
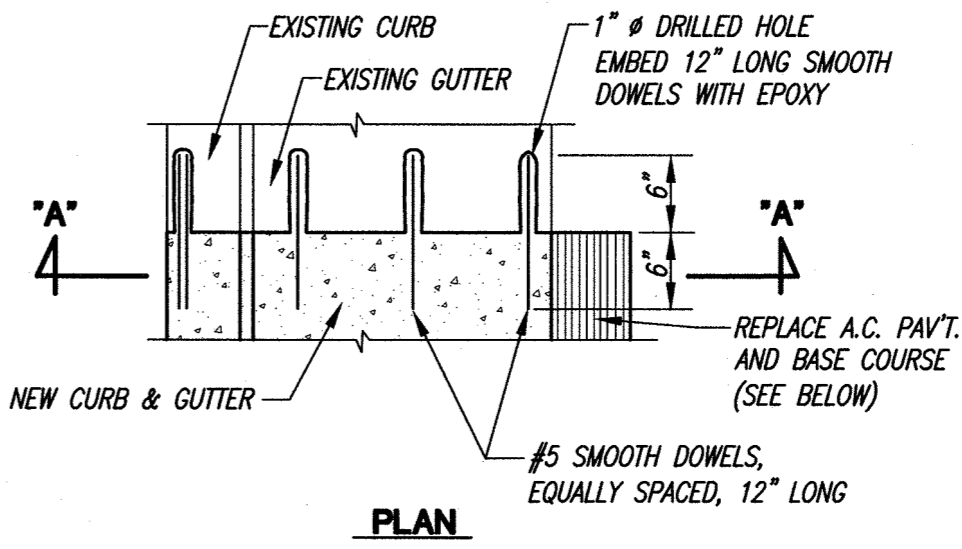
- THE CONTRACTOR SHALL OBSERVE AND COMPLY WITH ALL FEDERAL, STATE AND LOCAL LAWS REQUIRED FOR THE PROTECTION OF PUBLIC HEALTH AND SAFETY AND ENVIRONMENTAL QUALITY.
- THE CONTRACTOR AT HIS OWN EXPENSE SHALL KEEP THE PROJECT AND ITS SURROUNDING AREAS FREE FROM DUST NUISANCE. THE WORK SHALL BE IN CONFORMANCE WITH THE AIR POLLUTION STANDARDS AND REGULATIONS OF THE STATE DEPARTMENT OF HEALTH. CONTRACTOR SHALL BE IN CONFORMANCE WITH THE HAWAII ADMINISTRATIVE RULES, CHAPTER 11-60.1-33.
- THE CONTRACTOR SHALL PROVIDE, INSTALL AND MAINTAIN ALL NECESSARY SIGNS, LIGHTS, FLARES, BARRICADES, MARKERS, CONES AND OTHER PROTECTIVE FACILITIES AND TAKE ALL NECESSARY PRECAUTIONS FOR THE PROTECTION, CONVEYANCE AND SAFETY OF THE PUBLIC.
- THE CONTRACTOR SHALL NOTIFY THE OWNER AND ENGINEER UPON DISCOVERY OF STAINED SOIL OR OLFACTORY EVIDENCE OF A SUSPECTED PETROLEUM OR SOLVENT RELEASE INTO THE ENVIRONMENT. IF THERE ARE ANY FUEL SPILLAGES, EXISTING LEAKS, ETC. FOUND DURING CONSTRUCTION, REPORT THE FOREGOING TO THE HAZARDOUS EVALUATION AND EMERGENCY RESPONSE UNIT (PH. NO. 536-4249) OR THE DEPARTMENT OF HEALTH. FOR NON-WORKING HOURS, CALL THE STATE HOSPITAL OPERATOR (PH. NO. 247-2191).



TYPICAL DRIVEWAY DETAIL
NOT TO SCALE



SIDEWALK CONNECTION DETAIL
NOT TO SCALE

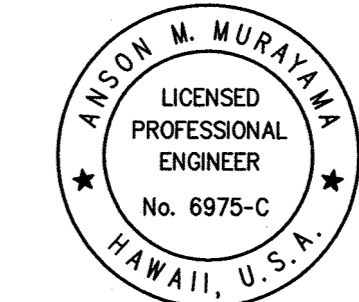


SECTION "A"-A"
CURB AND GUTTER CONNECTION DETAIL
NOT TO SCALE

- NOTES:
- SEE TYPICAL ROAD SECTIONS, DWG. NO. C-10 FOR SIDEWALK AND PLANTING STRIP WIDTHS.
 - *DRIVEWAYS LOCATED OTHER THAN 7' FROM R ARE LOCATED BY THE ROAD STATION OF THE DRIVEWAY CENTERLINE.
 - CONTRACTOR SHALL COMPLY WITH THE CITY AND COUNTY OF HONOLULU ENGINEERING AND POLICY MEMORANDUM NO. CEB-1-09 "JOINTING REQUIREMENTS FOR CONCRETE SIDEWALKS AND DRIVEWAYS" DATED APRIL 6, 2009.

NOTE:
FOR GRASSSED AREA, RESTORE BACK TO ORIGINAL CONDITION OR BETTER. PROVIDE 4" MIN. TOPSOIL OR MATCH EXISTING, WHICHEVER IS GREATER.

CONTRACTOR SHALL COMPLY WITH THE CITY AND COUNTY OF HONOLULU ENGINEERING AND POLICY MEMORANDUM NO. CEB-1-09 "JOINTING REQUIREMENTS FOR CONCRETE SIDEWALKS AND DRIVEWAYS" DATED APRIL 6, 2009.



THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION. CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION. LICENSE EXPIRATION DATE: 04/30/14

REVISION DATE	DESCRIPTION	MADE BY	APPROVED
Community Planning and Engineering, Inc. Engineering Design Construction Management Infrastructure Planning 1298 Queen Emma Street Honolulu, Hawaii			
EAST KAPOLEI II DEVELOPMENT INCREMENT 2B HONOLULU, EWA, OAHU, HAWAII (DPP SUBD. FILE NO. 2011/SUB-155) OWNER & DEVELOPER: DEPARTMENT OF HAWAIIAN HOME LANDS TAX MAP KEY: 9-1-17: Portion 110			
GENERAL NOTES - 1			
DRAWN BY: LYL	ENGINEER: SS	CHECKED BY: AMM	
APPROVED: M. F. 6/24/13 CHIEF, CIVIL ENGINEERING BRANCH, D.P.P. DATE CHIEF, TRAFFIC ENGINEERING BRANCH, D.P.P. DATE			
FILE	POCKET	FOLDER	NO.

NOTICE OF INTENTION TO BID

Date: _____

Honorable Jobie M. K. Masagatani, Chairman
Hawaiian Homes Commission
DEPARTMENT OF HAWAIIAN HOME LANDS
91-5420 Kapolei Parkway
Kapolei, Hawaii 96707

Attention: Darrell Ing, Land Development Division
Notice of Intention to Bid due 0:00 p.m., Month Day, Year.

Gentlemen:

In accordance with the provisions of Section 103D-310, Hawaii Revised Statutes and Hawaii Administrative Rules 3-122-111, it is the intention of the undersigned to bid on IFB No. IFB-14-HHL-001, East Kapolei II Development, Increment IIB, City and County of Honolulu, State of Hawaii, for which bids will be opened on **0:00 p.m., Month Day, Year.**

_____ Name of Firm	_____ Contractor's License No.
_____ Address	_____ Hawaii General Excise Tax No.
_____ City, State and Zip Code	_____ Telephone No. / Facsimile No.
	_____ e-mail address
Respectfully submitted,	
	_____ Signature
	_____ Print Name and Title

Date: _____

Gentlemen:

The Department of Hawaiian Home Lands acknowledges on this date above, your Notice of Intention to Bid on IFB-14-HHL-001.

Jobie M. K. Masagatani, Chairman
Hawaiian Homes Commission

SAMPLE

STATE OF HAWAII
STANDARD
QUALIFICATION QUESTIONNAIRE
FOR
OFFERORS

issued by the
PROCUREMENT POLICY BOARD
STATE OF HAWAII

June 16, 2003

To be filed with the procurement officer calling for offers
in accordance with Section 103D-310, HRS, as amended.

Submitted By _____

Address _____

Date _____

STANDARD QUALIFICATION QUESTIONNAIRE

COVERING EXPERIENCE, EQUIPMENT AND FINANCIAL STATEMENT OF OFFERORS. THE OFFICER CALLING FOR OFFERS MAY REQUIRE THE OFFEROR TO FURNISH ADDITIONAL INFORMATION NOT SPECIFICALLY COVERED HEREIN. ALL ITEMS MUST BE ANSWERED AND OMISSIONS MAY BE CONSIDERED GOOD CAUSE FOR UNFAVORABLE CONSIDERATION.

GENERAL INFORMATION

1. The statements contained in this Questionnaire are being furnished for consideration in submitting an offer for the following project:

(a) Project Title _____

(b) Location _____

(c) Bid Opening Date _____

2. The Questionnaire is being submitted in behalf of:

(a) Name of Offeror _____

- ☐ A Corporation
☐ A Partnership
☐ An Individual
☐ A Joint-Venture

(b) Address _____

(c) Telephone No. _____

(d) Date Submitted _____

3. If the bid is submitted by a joint venture, composed of two or more individual firms, then each member firm comprising the joint venture must submit all information listed on pages 3 through 16, inclusive, of the Questionnaire and, in addition, answer the following:

(a) Members of joint Venture _____

(b) Date of Joint Venture Agreement _____

(c) Is agreement between members comprising the joint venture joint and several liability? _____

If not, state the terms of agreement in this respect: _____

EXPERIENCE QUESTIONNAIRE

Submitted by _____

☐ A Corporation

☐ A Partnership

☐ An Individual

Principal Office _____

The signatory of this questionnaire guarantees the truth and accuracy of all statements and of all answers to interrogatories hereinafter made

1. How many years has your organization been in business as a [General Contractor] under your present business name? _____
2. How many years experience in [construction] _____ has your organization had: (A) as a [General Contractor] _____; (B) as a [Sub-Contractor] _____
3. Show what [construction] projects your organization has completed in the past five (5) years in the following tabulation:

Contract Amt.	Class of Work	When Completed	Name and Address of Owner

4. Have you ever failed to complete any work awarded to you? _____ If so, state when, where and why? _____

5. Has any officer or partner of your organization in the past five (5) years been an officer or partner of some other organization that failed to complete a contract? If so, state name of individual, other organization and reason therefore _____

6. Has any officer or partner of your organization in the past five (5) years failed to complete a contract handled in his own name? _____ If so, state name of individual, name of Owner and reason therefore.

7. In what other lines of business are you financially interested? _____

8. For what corporations or individuals in the past five (5) years have you performed work, and to whom do you refer? _____

9. For what counties within the State of Hawaii have you performed work and to whom do you refer?

10. For what Bureaus or Departments of the State government have you performed work and to whom do you refer?

11. Have you performed work for the U. S. Government? _____ If so, when and to whom do you refer?

12. Have you ever performed any work for any other governmental agencies outside the State of Hawaii? _____ If so, when and to whom do you refer? _____

13. What is the [construction] experience of the principal individuals of your organization?

Individual's Name	Present Position or Office	Years of Work Experience	Magnitude and Type of Work	In What Capacity?

EQUIPMENT QUESTIONNAIRE

Submitted by _____

☐ A Corporation
☐ A Partnership
☐ An Individual

Principal Office _____

The signatory of this questionnaire guarantees the truth and accuracy of all statements and of all answers to interrogatories hereinafter made

1. In what manner have you inspected this proposed work? Explain in detail. _____

2. Explain your plan or layout for performing the proposed work. _____

3. The work, if awarded to you, will have the personal supervision of whom? _____

4. Do you intend to do the hauling on the proposed work with your own force? _____ If so, give amount and type of equipment to be used. _____

5. If you intend to sublet the hauling or perform it through an agent, state amount of sub-contract or agent's contract, and, if known, the name and address of sub-contractor or agent, amount and type of his equipment and financial responsibility _____

6. Do you intend to do grading on the proposed work with your own forces? _____ If so, give type of equipment to be used _____

-
-
-
-
-
-

- [illegible]

-
-
-
-
-
-

- [illegible]

- 7

Quantity	Item	Description, Size, Capacity, Etc.	Approximate Cost

12. How and when will you pay for the equipment to be purchased? _____

13. Do you propose to rent any equipment for this work? _____ If so, state type, quantity
 and reasons for renting _____

FINANCIAL STATEMENT

Submitted by _____

- ☐ A Corporation
☐ A Partnership
☐ An Individual

Principal Office _____

The signatory of this questionnaire guarantees the truth and accuracy of all statements and of all answers to interrogatories hereinafter made

BALANCE SHEET

As of _____, 20____

Assets

Current assets:

Cash and cash equivalents (1)	\$ _____
Short-term investments (2)	_____
Accounts receivable, net (3)	_____
Inventories (4)	_____
Costs and estimated earnings in excess of billings on uncompleted contracts (5)	_____
Prepaid expenses and other (6)	_____
Sub-Total Current Assets	_____

Property and equipment:

Land (7)	_____
Buildings (8)	_____
Vehicles, machinery and equipment (9)	_____
Furniture and fixtures (10)	_____
Less accumulated depreciation	(_____)
Sub-Total Net Property and Equipment	_____

Other assets:

Cash surrender value of life insurance policies (11)	_____
Deposits and other (12)	_____
Sub-Total Other Assets	_____

Total Assets: \$ _____

BALANCE SHEET (Continued)

Liabilities and Stockholder's Equity

Current liabilities:

Current portion of long-term debt (1)	\$ _____
Accounts payable (2)	_____
Billings in excess of costs and estimated earnings on uncompleted contracts (3)	_____
Accrued liabilities and other (4)	_____
Sub-Total Current Liabilities	_____

Long-term debt, net of current portion (5)	_____
--	-------

Sub-Total Liabilities & Long-term Debt:	\$ _____
---	----------

Stockholder's equity:

Capital stock (6)	_____
Additional paid-in capital (7)	_____
Retained earnings	_____
Treasury stock (8)	(_____)
Sub-Total Stockholder's Equity	\$ _____

Total Liabilities and Stockholder's Equity	\$ _____
--	----------

DETAILS RELATIVE TO ASSETS

(1) Cash and cash equivalents:

<u>Financial Institution</u>	<u>Type of Account</u>	<u>Amount</u>
		\$ _____

		\$ _____

(2) Short-term investments:

<u>Type of Security</u>	<u>Cost</u>	<u>Unrealized Gains</u>	<u>Unrealized Losses</u>	<u>Estimated Fair Value</u>
_____	\$ _____	\$ _____	\$ _____	\$ _____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
	\$ _____	\$ _____	\$ _____	\$ _____

(3) Accounts receivable (list major debtors):

Completed contracts

<u>Name</u>	<u>Description</u>	<u>Completion Date</u>	<u>Contract Amount</u>	<u>Amount Receivable</u>
_____		\$ _____	\$ _____	\$ _____
_____		_____	_____	_____
_____		_____	_____	_____
		\$ _____	\$ _____	\$ _____

Other than completed contracts

<u>Name</u>	<u>Description</u>	<u>Due Date</u>	<u>Amount Receivable</u>

Less allowance for doubtful accounts			(_____)
			\$ _____

(4) Inventories

<u>Description</u>	<u>Cost</u>	<u>Market Value</u>	<u>Lower of Cost or Market Value</u>
_____	\$ _____	\$ _____	\$ _____
_____	_____	_____	_____
_____	_____	_____	_____
	\$ _____	\$ _____	\$ _____

DETAILS RELATIVE TO ASSETS (Continued)

(5) Costs and estimated earnings in excess of billings on uncompleted contracts

<u>Name</u>	<u>Description</u>	<u>Completion Date</u>	<u>Contract Amount</u>	<u>Costs and Estimated Earnings to Date</u>	<u>Billings to Date</u>	<u>Costs and Estimated Earnings in Excess of Billings</u>
		\$	\$	\$	\$	
			\$	\$	\$	\$

(6) Prepaid expenses and other

<u>Description</u>	<u>Amount</u>
	\$
	\$

(7) Land

<u>Description</u>	<u>Location</u>	<u>Amount</u>
		\$
		\$

(8) Buildings

<u>Description</u>	<u>Location</u>	<u>Amount</u>
		\$
		\$

(9) Vehicles, machinery and equipment

<u>Description</u>	<u>Amount</u>
	\$
	\$

(10) Furniture and fixtures

<u>Description</u>	<u>Amount</u>
	\$
	\$

DETAILS RELATIVE TO ASSETS (Continued)

(11) Cash surrender value of life insurance policies

<u>Key Employee</u>	<u>Insurance Company</u>	<u>Policy Amount</u>	<u>Paid-Up Additional Insurance</u>	<u>CSV Amount</u>
_____	_____	\$ _____	\$ _____	\$ _____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
Less loans payable		_____	_____	(_____)
		\$ _____	\$ _____	\$ _____

(12) Deposits and other

<u>Description</u>	<u>Amount</u>
_____	\$ _____
_____	_____
_____	_____
	\$ _____

DETAILS RELATIVE TO LIABILITIES AND STOCKHOLDER'S EQUITY

(1) Current portion of long-term debt (maturing within 12 months)

<u>Lender</u>	<u>Description</u>	<u>Security Pledged</u>	<u>Due Date</u>	<u>Amount</u>
				\$ _____

				\$ _____

(2) Accounts payable (list major creditors)

<u>Name</u>	<u>Past Due Amount</u>	<u>Amount</u>
	\$ _____	\$ _____
	_____	_____
	_____	_____
	\$ _____	\$ _____

(3) Billings in excess of costs and estimated earnings on uncompleted contracts

<u>Name</u>	<u>Description</u>	<u>Completion Date</u>	<u>Contract Amount</u>	<u>Costs and Estimated Earnings to Date</u>	<u>Billings to Date</u>	<u>Billings in excess of costs and Estimated Earnings</u>
			\$ _____	\$ _____	\$ _____	\$ _____
			_____	_____	_____	_____
			_____	_____	_____	_____
			\$ _____	\$ _____	\$ _____	\$ _____

(4) Accrued liabilities and other

<u>Description</u>	<u>Amount</u>
	\$ _____

	\$ _____

(5) Long-term debt, net of current portion

<u>Lender</u>	<u>Description</u>	<u>Security Pledged</u>	<u>Due Date</u>	<u>Amount</u>
				\$ _____

				\$ _____

DETAILS RELATIVE TO LIABILITIES AND STOCKHOLDER'S EQUITY (Continued)

(6) Capital stock

<u>Type of Stock</u>	<u>Class</u>	<u>No. of Shares Authorized</u>	<u>No. of Shares Issued and Outstanding</u>	<u>Par Value</u>	<u>Amount</u>
				\$	\$
					\$

(7) Additional paid-in capital

<u>Description</u>	<u>Amount</u>
	\$
	\$

(8) Treasury stock

<u>Type of Stock</u>	<u>Class</u>	<u>No. of Shares</u>	<u>Cost</u>
			\$
			\$

STATEMENTS OF INCOME AND RETAINED EARNINGS

For the Years Ended _____, 20____ and 20____

	20____	20____
	_____	_____
Contract revenues	\$ _____	\$ _____
Costs of contracts	_____	_____
Gross income from contracts		
General and administrative expenses	_____	_____
Income from operations		
Other income (expense)	_____	_____
Income before income taxes		
Income taxes	_____	_____
Net income		
Retained earnings, beginning of the year	_____	_____
Retained earnings, end of the year	\$ _____	\$ _____

<p>If a corporation, answer this:</p> <p>Capital paid in cash, \$ _____</p> <p>When Incorporated _____</p> <p>In what State _____</p> <p>Date registered in Hawaii _____</p> <p>President's name _____</p> <p>Vice-President's name _____</p> <p>Secretary's name _____</p> <p>Treasurer's name _____</p>	<p>If a partnership, answer this:</p> <p>Date of organization _____</p> <p>Date registered in Hawaii _____</p> <p>State whether partnership is general or limited _____</p>										
	<table border="1"> <tr> <th>Name and address of partners:</th> <th>Age</th> </tr> <tr> <td>_____</td> <td>_____</td> </tr> <tr> <td>_____</td> <td>_____</td> </tr> <tr> <td>_____</td> <td>_____</td> </tr> <tr> <td>_____</td> <td>_____</td> </tr> </table>	Name and address of partners:	Age	_____	_____	_____	_____	_____	_____	_____	_____
Name and address of partners:	Age										
_____	_____										
_____	_____										
_____	_____										
_____	_____										

The undersigned hereby declares: that the foregoing is a true statement of the financial condition of the individual, partnership or corporation herein first named, as of the date herein first given; that this statement is for the express purpose of inducing the party to whom it is submitted to award the offeror a contract; and that any depository, vendor or other agency herein named is hereby authorized to supply such party with any information necessary to verify this statement.

NOTE: A partnership must give firm name and signatures of all partners. A corporation must give full corporate name, signature of official, and affix corporate seal.

Affidavit for Individual

STATE OF HAWAII

COUNTY OF _____

_____ being duly sworn, deposes and says that the foregoing financial statement, taken from his books, is a true and accurate statement of his financial condition as of the date thereof and that the answers to the foregoing interrogatories are true.

Sworn to before me this _____ day of _____ 20____

 (Applicant must also sign here)

 Notary Public

Affidavit for Partnership

STATE OF HAWAII

COUNTY OF _____

_____ being duly sworn, deposes and says that he is a member of the firm of _____; and that he is familiar with the books of the said firm showing its financial condition; that the foregoing financial statement, taken from the books of the said firm, is a true and accurate statement of the financial condition of the said firm as of the date thereof and that the answers to the foregoing interrogatories are true.

Sworn to before me this _____ day of _____ 20____

 (Members of firm must also sign here)

 Notary Public

Affidavit for Corporation

STATE OF HAWAII

COUNTY OF _____

_____ being duly sworn, deposes and says that he is _____ of the _____, the corporation described in and which executed the foregoing statement; that he is familiar with the books of the said corporation showing its financial condition; that the foregoing financial statement, taken from the books of the said corporation, is a true and accurate statement of the financial condition of said corporation as of the date thereof and that the answers to the foregoing interrogatories are true.

Sworn to before me this _____ day of _____ 20____

 (Officer must also sign here)

 Notary Public

Corporate Resolution Form

CORPORATE RESOLUTION
(Name of Corporation - Use Letterhead)

I, _____, Secretary of _____
Corporation, a _____ corporation, do hereby certify that the following is a full,
true and correct copy of a resolution duly adopted by the Board of Directors of said Corporation,
at its meeting duly called and held at the office of the Corporation located at
_____,
(address)

on the _____ day of _____, 20____, at which a quorum was present
and acting throughout; and that said resolution has not been modified, amended or rescinded and
continues in full force and effect:

"RESOLVED that any individual at the time holding the position of
President or Vice President, be, and each of them hereby is, authorized to
execute on behalf of the Corporation any bid, proposal or contract for the
sale or rental of the products of the Corporation or for services to be
performed by the Corporation and to execute any bond required by any
such bid proposal or contract with the United States Government or the
State of Hawaii or the City and County of Honolulu, or any County or
Municipal Government of said State, or any department or subdivision of
any of them."

IN WITNESS WHEREOF, I have hereunto set my hand and affixed the corporate seal of
said _____ Corporation this _____ day of
_____, 20_____.

Secretary

(Names and Addresses of:)
President
Vice President
Secretary

LINDA LINGLE
GOVERNOR



PROCUREMENT POLICY BOARD
LESLIE S. CHINEN
DARYLE ANN HO
GREGORY L. KING
RUSS K. SAITO
PAMELA A. TORRES

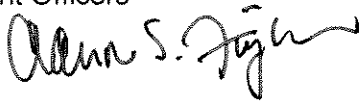
AARON S. FUJIOKA
ADMINISTRATOR

**STATE OF HAWAII
STATE PROCUREMENT OFFICE**

P.O. Box 119
Honolulu, Hawaii 96810-0119
Tel: (808) 587-4700 Fax: (808) 587-4703
www.spo.hawaii.gov

July 24, 2007

PROCUREMENT DIRECTIVE NO. 2007-02

TO: Chief Procurement Officers
FROM: Aaron S. Fujioka 
SUBJECT: Bid Security, Contract Performance and Payment Bonds

This directive is issued to:

- 1) Rescind Procurement Directive No. 1998-03, dated November 17, 1998; and
- 2) Reissue amended bond forms Exhibits B, D, F, and includes bond and acknowledgment forms Exhibits A, C, E, G, H, I, J, which did not require any changes. The forms are as required by HAR Subchapter 24, Chapter 3-122, and in accordance with HRS §§103D-323 to 103D-328.

Changes made to the forms, effective June 21, 2007, are as follows:

- 1) **Exhibits B & D:**
Page 1, 2nd paragraph, is amended to read: "WHEREAS, the above-bound Principal has ~~[entered into]~~ signed a Contract with Obligee ~~[dated]~~ on _____, for the following project: _____"
- 2) **Exhibit F:**
 - a. Page 1, 2nd paragraph, is amended to read: "WHEREAS: The Principal has by written agreement dated _____ ~~[entered into]~~ signed a contract with Obligee for the following Project:"
 - b. Page 2, 5th paragraph, is amended to read: ". . . the performance of the Contract who has not been paid in full therefor after ~~[two months]~~ ninety days from the completion"
 - c. Page 3, 1st sentence, is amended to read: "The amount of this bond may be reduced in accordance with and subject to section ~~[3-122-226]~~ 3-122-225, Hawaii Administrative Rules."
- 3) **Exhibits A, C, E, G, H, I, J:** No changes were made to these exhibits.

PROCUREMENT DIRECTIVE NO. 2007-02

July 24, 2007

Page 2

Purchasing agencies shall utilize bond and acknowledgment forms as provided in the exhibits below:

- EXHIBIT A:** Surety bid security titled "*Surety [Bid] [Proposal] Bond*", dated 11/17/98.
- EXHIBIT B:** Surety contract performance bond titled "*Performance Bond (Surety)*", dated 6/21/07.
- EXHIBIT C:** Contract performance bond for types of security pursuant to HAR §3-122-222(2) and (3), titled "*Performance Bond*", dated 11/17/98.
- EXHIBIT D:** Surety contract labor and material payment bond titled "*Labor and Material Payment Bond (Surety)*", dated 6/21/07.
- EXHIBIT E:** Contract labor and material payment bond for types of security pursuant to HAR §3-122-222(2) and (3), titled "*Labor and Material Payment Bond*", dated 11/17/98.
- EXHIBIT F:** Surety combination contract performance and payment bond titled "*Combination Performance and Payment Bond*", dated 6/21/07.
- EXHIBIT G:** Surety contract performance bond for goods and services supplemental agreement titled "*Performance Bond (Surety) for Supplemental Agreement for Goods and Services*", dated 11/17/98.
- EXHIBIT H:** Contract performance bond for goods and services supplemental agreement for types of security pursuant to HAR §3-122-222(2) and (3), titled "*Performance Bond for Supplemental Agreement for Goods and Services*", dated 11/17/98.
- EXHIBIT I:** Contractor acknowledgement form for use with contract performance and payment bonds titled "*Contractor Acknowledgment*", dated 11/12/97.
- EXHIBIT J:** Surety acknowledgement form for use with contract performance and payment bonds titled "*Surety Acknowledgment*", dated 11/12/97.

The bonds and related forms are available on the SPO homepage at www.spo.hawaii.gov, under the "Quick Links" section, click on "Forms for State Agencies". To view the complete listing of all current Procurement Directives, click on "Procurement Directives".

Questions may be directed to Justin Fo at 586-0577 or Colin Tanaka at 586-0558, or call me at 587-4700.

EXHIBIT A

SURETY [BID] [PROPOSAL] BOND
(11/17/98)

Bond No. _____

KNOW TO ALL BY THESE PRESENTS:

That we, _____,
(Full Name or Legal Title of Offeror)

as Offeror, hereinafter called Principal, and _____,
(Name of Bonding Company)

as Surety, hereinafter called Surety, a corporation authorized to transact business as a Surety
in the State of Hawaii, are held and firmly bound unto _____,
(State/County Entity)
as Owner, hereinafter called Owner, in the penal sum of _____

(Required Amount of Bid Security)

Dollars (\$_____), lawful money of the United States of America, for the payment of
which sum well and truly to be made, the said Principal and the said Surety bind ourselves, our
heirs, executors, administrators, successors and assigns, jointly and severally, firmly by these
presents.

WHEREAS:

The Principal has submitted an offer for _____

(Project by Number and Brief Description)

NOW, THEREFORE:

The condition of this obligation is such that if the Owner shall reject said offer, or in the
alternate, accept the offer of the Principal and the Principal shall enter into a Contract with the
Owner in accordance with the terms of such offer, and give such bond or bonds as may be
specified in the solicitation or Contract Documents with good and sufficient surety for the faithful
performance of such Contract and for the prompt payment of labor and material furnished in the
prosecution thereof as specified in the solicitation then this obligation shall be null and void,
otherwise to remain in full force and effect.

Signed this _____ day of _____, _____.

(Seal)

Name of Principal (Offeror)

Signature

Title

(Seal)

Name of Surety

Signature

Title

EXHIBIT B

PERFORMANCE BOND (SURETY)
(6/21/07)

KNOW TO ALL BY THESE PRESENTS:

That _____,
(Full Legal Name and Street Address of Contractor)

as Contractor, hereinafter called Principal, and _____

(Name and Street Address of Bonding Company)

as Surety, hereinafter called Surety, a corporation(s) authorized to transact business as a
surety in the State of Hawaii, are held and firmly bound unto the _____,
(State/County Entity)

its successors and assigns, hereinafter called Obligor, in the amount of _____

DOLLARS (\$ _____), to which payment Principal and Surety bind themselves,
their heirs, executors, administrators, successors and assigns, jointly and severally, firmly by
these presents.

WHEREAS, the above-bound Principal has signed a Contract with Obligor on
_____, for the following project: _____

hereinafter called Contract, which Contract is incorporated herein by reference and made a part
hereof.

NOW THEREFORE, the condition of this obligation is such that:

If the Principal shall promptly and faithfully perform, and fully complete the Contract in
strict accordance with the terms of the Contract as said Contract may be modified or amended
from time to time; then this obligation shall be void; otherwise to remain in full force and effect.

Surety to this Bond hereby stipulates and agrees that no changes, extensions of time, alterations, or additions to the terms of the Contract, including the work to be performed thereunder, and the specifications or drawings accompanying same, shall in any way affect its obligation on this bond, and it does hereby waive notice of any such changes, extensions of time, alterations, or additions, and agrees that they shall become part of the Contract.

In the event of Default by the Principal, of the obligations under the Contract, then after written Notice of Default from the Obligee to the Surety and the Principal and subject to the limitation of the penal sum of this bond, Surety shall remedy the Default, or take over the work to be performed under the Contract and complete such work, or pay moneys to the Obligee in satisfaction of the surety's performance obligation on this bond.

Signed this _____ day of _____, _____.

(Seal)

Name of Principal (Contractor)

*

Signature

Title

(Seal)

Name of Surety

*

Signature

Title

*ALL SIGNATURES MUST BE ACKNOWLEDGED
BY A NOTARY PUBLIC

EXHIBIT C

PERFORMANCE BOND
(11/17/98)

KNOW TO ALL BY THESE PRESENTS:

That we, _____,
(Full Legal Name and Street Address of Contractor)

as Contractor, hereinafter called Contractor, is held and firmly bound unto the

_____, its successors and assigns, as Oblige, hereinafter called
(State/County Entity)
Oblige, in the amount of _____

(Dollar Amount of Contract)

DOLLARS (\$ _____), lawful money of the United States of America, for the payment of which to the said Oblige, well and truly to be made, Contractor binds itself, its heirs, executors, administrators, successors and assigns, firmly by these presents. Said amount is evidenced by:

- ☐ Legal tender;
- ☐ Share Certificate unconditionally assigned to or made payable at sight to
Description _____;
_____;
- ☐ Certificate of Deposit, No. _____, dated _____, issued by
_____,
drawn on _____,
a bank, savings institution or credit union insured by the Federal Deposit
Insurance Corporation or the National Credit Union Administration, payable at
sight or unconditionally assigned to _____;
_____;
- ☐ Cashier's Check No. _____, dated _____, issued
by _____,
drawn on _____,
a bank, savings institution or credit union insured by the Federal Deposit
Insurance Corporation or the National Credit Union Administration, payable at
sight or unconditionally assigned to _____;
_____;

- ☐ Teller's Check No. _____, dated _____, issued by _____, drawn on _____, a bank, savings institution or credit union insured by the Federal Deposit Insurance Corporation or the National Credit Union Administration, payable at sight or unconditionally assigned to _____;
- ☐ Treasurer's Check No. _____, dated _____, issued by _____, drawn on _____, a bank, savings institution or credit union insured by the Federal Deposit Insurance Corporation or the National Credit Union Administration, payable at sight or unconditionally assigned to _____;
- ☐ Official Check No. _____, dated _____, issued by _____, drawn on _____, a bank, savings institution or credit union insured by the Federal Deposit Insurance Corporation or the National Credit Union Administration, payable at sight or unconditionally assigned to _____;
- ☐ Certified Check No. _____, dated _____, accepted by a bank, savings institution or credit union insured by the Federal Deposit Insurance Corporation or the National Credit Union Administration, payable at sight or unconditionally assigned _____;

WHEREAS:

The Contractor has by written agreement dated _____ entered into a contract with Obligor for the following Project: _____

 hereinafter called Contract, which Contract is incorporated herein by reference and made a part hereof.

NOW, THEREFORE,

The condition of this obligation is such that, if Contractor shall promptly and faithfully perform the Contract in accordance with, in all respects, the stipulations, agreements, covenants and conditions of the Contract as it now exists or may be modified according to its terms, and shall deliver the Project to the Obligee, or to its successors or assigns, fully completed as in the Contract specified and free from all liens and claims and without further cost, expense or charge to the Obligee, its officers, agents, successors or assigns, free and harmless from all suits or actions of every nature and kind which may be brought for or on account of any injury or damage, direct or indirect, arising or growing out of the doing of said work or the repair or maintenance thereof or the manner of doing the same or the neglect of the Contractor or its agents or servants or the improper performance of the Contract by the Contractor or its agents or servants or from any other cause, then this obligation shall be void; otherwise it shall be and remain in full force and effect.

AND IT IS HEREBY STIPULATED AND AGREED that suit on this bond may be brought before a court of competent jurisdiction without a jury, and that the sum or sums specified in the said Contract as liquidated damages, if any, shall be forfeited to the Obligee, its successors or assigns, in the event of a breach of any, or all, or any part of, the covenants, agreements, conditions, or stipulations contained in the Contract or in this bond in accordance with the terms thereof.

The amount of this bond may be reduced by and to the extent of any payment or payments made in good faith hereunder.

Signed this _____ day of _____, _____.

(Seal)

Name of Contractor

* _____
Signature

Title

*ALL SIGNATURES MUST BE ACKNOWLEDGED
BY A NOTARY PUBLIC

EXHIBIT D

LABOR AND MATERIAL PAYMENT BOND (SURETY)
(6/21/07)

KNOW TO ALL BY THESE PRESENTS:

That _____,
(Full Legal Name and Street Address of Contractor)

as Contractor, hereinafter called Principal, and _____

_____,
(Name and Street Address of Bonding Company)

as Surety, hereinafter called Surety, a corporation(s) authorized to transact business as a surety in the State of Hawaii, are held and firmly bound unto the _____,
(State/County Entity)

its successors and assigns, hereinafter called Obligee, in the amount of _____

_____ Dollars (\$_____), to which payment Principal and Surety bind themselves, their heirs, executors, administrators, successors and assigns, jointly and severally, firmly by these presents.

WHEREAS, the above-bound Principal has signed Contract with the Obligee on _____ for the following project: _____

hereinafter called Contract, which Contract is incorporated herein by reference and made a part hereof.

NOW THEREFORE, the condition of this obligation is such that if the Principal shall promptly make payment to any Claimant, as hereinafter defined, for all labor and materials supplied to the Principal for use in the performance of the Contract, then this obligation shall be void; otherwise to remain in full force and effect.

1. Surety to this Bond hereby stipulates and agrees that no changes, extensions of time, alterations, or additions to the terms of the Contract, including the work to be performed thereunder, and the specifications or drawings accompanying same, shall in any way affect its obligation on this bond, and it does hereby waive notice of any such changes, extensions of time, alterations, or additions, and agrees that they shall become part of the Contract.

2. A "Claimant" shall be defined herein as any person who has furnished labor or materials to the Principal for the work provided in the Contract.

Every Claimant who has not been paid amounts due for labor and materials furnished for work provided in the Contract may institute an action against the Principal and its Surety on this bond at the time and in the manner prescribed in Section 103D-324, Hawaii Revised Statutes, and have the rights and claims adjudicated in the action, and judgment rendered thereon; subject to the Obligee's priority on this bond. If the full amount of the liability of the Surety on this bond is insufficient to pay the full amount of the claims, then after paying the full amount due the Obligee, the remainder shall be distributed pro rata among the claimants.

Signed this _____ day of _____, _____.

(Seal)

Name of Principal (Contractor)

*

Signature

Title

(Seal)

Name of Surety

*

Signature

Title

*ALL SIGNATURES MUST BE ACKNOWLEDGED
BY A NOTARY PUBLIC

EXHIBIT E

LABOR AND MATERIAL PAYMENT BOND

(11/17/98)

KNOW TO ALL BY THESE PRESENTS:

That we, _____,
(Full Legal Name and Street Address of Contractor)

as Contractor, hereinafter called Contractor, is held and firmly bound unto the

_____, its successors and assigns, as Obligee, hereinafter called
(State/County Entity)

Obligee, in the amount of _____

(Dollar Amount of Contract)

DOLLARS (\$_____), lawful money of the United States of America, for the payment of which to the said Obligee, well and truly to be made, Contractor binds itself, its heirs, executors, administrators, successors and assigns, firmly by these presents. Said amount is evidenced by:

- ☐ Legal tender;
- ☐ Share Certificate unconditionally assigned to or made payable at sight to
Description _____;
_____;
- ☐ Certificate of Deposit, No. _____, dated _____, issued by
_____,
drawn on _____,
a bank, savings institution or credit union insured by the Federal Deposit
Insurance Corporation or the National Credit Union Administration, payable at
sight or unconditionally assigned to _____;
_____;
- ☐ Cashier's Check No. _____, dated _____, issued by
_____,
drawn on _____,
a bank, savings institution or credit union insured by the Federal Deposit
Insurance Corporation or the National Credit Union Administration, payable at
sight or unconditionally assigned to _____;
_____;
- ☐ Teller's Check No. _____, dated _____, issued by
_____,
drawn on _____;

a bank, savings institution or credit union insured by the Federal Deposit Insurance Corporation or the National Credit Union Administration, payable at sight or unconditionally assigned to _____;

☐ Treasurer's Check No. _____, dated _____, issued by _____,
drawn on _____,
a bank, savings institution or credit union insured by the Federal Deposit Insurance Corporation or the National Credit Union Administration, payable at sight or unconditionally assigned to _____;

☐ Official Check No. _____, dated _____, issued by _____,
drawn on _____,
a bank, savings institution or credit union insured by the Federal Deposit Insurance Corporation or the National Credit Union Administration, payable at sight or unconditionally assigned to _____;

☐ Certified Check No. _____, dated _____, accepted by a bank, savings institution or credit union insured by the Federal Deposit Insurance Corporation or the National Credit Union Administration, payable at sight or unconditionally assigned to _____;

WHEREAS:

The Contractor has by written agreement dated _____ entered into a contract with Oblige for the following Project: _____

hereinafter called Contract, which Contract is incorporated herein by reference and made a part hereof.

NOW, THEREFORE,

The condition of this obligation is such that, if Contractor shall promptly and faithfully perform the Contract in accordance with, in all respects, the stipulations, agreements, covenants and conditions of the Contract as it now exists or may be modified according to its terms, free from all liens and claims and without further cost, expense or charge to the Oblige, its officers, agents, successors or assigns, free and harmless from all suits or actions of every

nature and kind which may be brought for or on account of any injury or damage, direct or indirect, arising or growing out of the doing of said work or the repair or maintenance thereof or the manner of doing the same or the neglect of the Contractor or its agents or servants or the improper performance of the Contract by the Contractor or its agents or servants or from any other cause, and shall promptly pay all persons supplying labor and materials for the performance of the Contract, then this obligation shall be void; otherwise it shall be and remain in full force and effect.

AND IT IS HEREBY STIPULATED AND AGREED that suit on this bond may be brought before a court of competent jurisdiction without a jury, and that the sum or sums specified in the said Contract as liquidated damages, if any, shall be forfeited to the Obligee, its successors or assigns, in the event of a breach of any, or all, or any part of, the covenants, agreements, conditions, or stipulations contained in the Contract or in this bond in accordance with the terms thereof.

AND IT IS HEREBY STIPULATED AND AGREED that this bond shall inure to the benefit of any and all persons entitled to file claims for labor performed or materials furnished in said work so as to give any and all such persons a right of action as contemplated by Sections 103D-324(d) and 103D-324(e), Hawaii Revised Statutes.

The amount of this bond shall be reduced by and to the extent of any payment or payments made in good faith hereunder, inclusive of the payment of mechanics' liens which may be filed of record against the Project, whether or not claim for the amount of such lien be presented under and against this bond.

Signed this _____ day of _____, _____.

(Seal)

Name of Contractor

*

Signature

Title

*ALL SIGNATURES MUST BE ACKNOWLEDGED
BY A NOTARY PUBLIC

EXHIBIT F

COMBINATION PERFORMANCE AND PAYMENT BOND
(6/21/07)

KNOW TO ALL BY THESE PRESENTS:

That we, _____,
(Full Legal Name and Street Address of Contractor)

as Contractor, hereinafter called Principal, and _____

_____,
(Name and Street Address of Bonding Company)

as surety, hereinafter called Surety, a corporation(s) authorized to transact business as a
surety in the State of Hawaii, are held and firmly bound unto the _____,
(State/County Entity)
its successors and assigns, as Obligee, hereinafter called Obligee, in the amount of

(Twice the Dollar Amount of Contract)

DOLLARS (\$ _____) (being _____)
DOLLARS as performance bond and _____
DOLLARS as payment bond, each in the amount of one hundred percent of the contract price
as required by 103D-324, Haw. Rev. Stat.), lawful money of the United States of America, for
the payment of which to the said Obligee, well and truly to be made, Contractor and Surety bind
ourselves, our heirs, executors, administrators, successors and assigns, jointly and severally,
firmly by these presents.

WHEREAS:

The Principal has by written agreement dated _____ signed a contract with
Obligee for the following Project: _____

_____,
hereinafter called Contract, which Contract is incorporated herein by reference and made a part
hereof.

NOW, THEREFORE,

The condition of this obligation is such that, if Principal shall promptly and faithfully perform the Contract in accordance with, in all respects, the stipulations, agreements, covenants and conditions of the Contract as it now exists or may be modified according to its terms, and shall deliver the Project to the Obligee, or to its successors or assigns, fully completed as in the Contract specified and free from all liens and claims and without further cost, expense or charge to the Obligee, its officers, agents, successors or assigns, free and harmless from all suits or actions of every nature and kind which may be brought for or on account of any injury or damage, direct or indirect, arising or growing out of the doing of said work or the repair or maintenance thereof or the manner of doing the same or the neglect of the Principal or its agents or servants or the improper performance of the Contract by the Principal or its agents or servants or from any other cause, and shall promptly pay all persons supplying labor and materials for the performance of the Contract, then this obligation shall be void; otherwise it shall be and remain in full force and effect.

AND IT IS HEREBY STIPULATED AND AGREED that no change, extension, alteration, deduction or addition, permitted by the Contract, in or to the terms of the Contract, or the plans or specifications pertaining thereto, shall in any way affect the obligation of the Surety on this bond; and the Surety does hereby waive notice of any such change, extension, alteration, deduction or addition in or to the terms of the Contract, or the plans or specifications pertaining thereto, or in or to the said Project.

AND IT IS HEREBY STIPULATED AND AGREED that suit on this bond may be brought before a court of competent jurisdiction without a jury, and that the sum or sums specified in the said Contract as liquidated damages, if any, shall be forfeited to the Obligee, its successors or assigns, in the event of a breach of any, or all, or any part of, the covenants, agreements, conditions, or stipulations contained in the Contract or in this bond in accordance with the terms thereof.

AND IT IS HEREBY STIPULATED AND AGREED that this bond shall inure to the benefit of any and all persons entitled to file claims for labor performed or materials furnished in said work so as to give any and all such persons a right of action as contemplated by Sections 103D-324(d) and 103D-324(e), Hawaii Revised Statutes.

The above-named Principal and Surety hereby jointly and severally agree with the Obligee that every person who has furnished labor or material to the Principal for the performance of the Contract who has not been paid in full therefor after ninety days from the completion and final settlement of any contract, may institute an action against the Principal and its sureties, and have their rights and claims adjudicated in the action, and judgment rendered thereon. If the full amount of the liability of the sureties on the bond is insufficient to pay the full amount of the claims, then, after paying the full amount due the Obligee, the remainder shall be distributed pro rata among the claimants. The Obligee shall not be liable for the payment of any costs or expenses of any such suit.

The amount of this bond may be reduced in accordance with and subject to section 3-122-225, Hawaii Administrative Rules.

Signed this _____ day of _____, _____.

(Seal)

Name of Principal (Contractor)

*

Signature

Title

(Seal)

Name of Surety

*

Signature

Title

*ALL SIGNATURES MUST BE ACKNOWLEDGED
BY A NOTARY PUBLIC

EXHIBIT G

**PERFORMANCE BOND (SURETY)
FOR SUPPLEMENTAL AGREEMENT
FOR GOODS AND SERVICES
(11/17/98)**

KNOW TO ALL BY THESE PRESENTS:

That _____,
(Full Legal Name and Street Address of Contractor)

as Contractor, hereinafter called Principal, and _____

(Name and Street Address of Bonding Company)

as Surety, hereinafter called Surety, a corporation(s) authorized to transact business as a surety
in the State of Hawaii, are held and firmly bound unto the _____,
(State/County Entity)
its successors and assigns, hereinafter called Obligor, in the amount of

_____ DOLLARS (\$ _____), to which payment Principal and Surety bind themselves, their
heirs, executors, administrators, successors and assigns, jointly and severally, firmly by these
presents.

WHEREAS, the above-bound Principal has entered into a Contract with Obligor dated
_____ for _____

and entered into Supplemental Agreement No. _____, dated _____ for the period

hereinafter collectively called Contract, which Contract is incorporated herein by reference and
made a part hereof.

NOW THEREFORE, the condition of this obligation is such that:

If the Principal shall promptly and faithfully perform, and fully complete the Contract in
strict accordance with the terms of the Contract as said Contract may be modified or amended
from time to time; then this obligation shall be void; otherwise to remain in full force and effect.

Surety to this Bond hereby stipulates and agrees that no changes, extensions of time,
alterations, or additions to the terms of the Contract, including the work to be performed
thereunder, and the specifications or drawings accompanying same, shall in any way affect its

obligation on this bond, and it does hereby waive notice of any such changes, extensions of time, alterations, or additions, and agrees that they shall become part of the Contract.

In the event of Default by the Principal, of the obligations under the Contract, then after written Notice of Default from the Obligee to the Surety and the Principal, Surety shall either remedy the Default, or take over the work to be performed under the Contract and complete such work, subject, however, to the limitation of the penal sum of this bond.

Signed this _____ day of _____, _____.

(Seal)

Name of Principal (Contractor)

*

Signature

Title

(Seal)

Name of Surety

*

Signature

Title

*ALL SIGNATURES MUST BE ACKNOWLEDGED
BY A NOTARY PUBLIC

EXHIBIT H

**PERFORMANCE BOND
FOR SUPPLEMENTAL AGREEMENT
FOR GOODS AND SERVICES**

(11/17/98)

KNOW TO ALL BY THESE PRESENTS:

That we, _____,
(Full Legal Name and Street Address of Contractor)
as Contractor, hereinafter called Contractor, is held and firmly bound unto the

_____, its successors and assigns, as Obligee, hereinafter called Obligee,
(State/County Entity)
in the amount of _____

(Dollar Amount of Contract)

DOLLARS (\$ _____), lawful money of the United States of America, for the payment of which to the said Obligee, well and truly to be made, Contractor binds itself, its heirs, executors, administrators, successors and assigns, firmly by these presents. Said amount is evidenced by:

- ☐ Legal tender;
- ☐ Share Certificate unconditionally assigned to or made payable at sight to _____;
Description _____;
- ☐ Certificate of Deposit, No. _____, dated _____ issued by _____,
drawn on _____,
a bank, savings institution or credit union insured by the Federal Deposit Insurance Corporation or the National Credit Union Administration, payable at sight or unconditionally assigned to _____;
- ☐ Cashier's Check No. _____, dated _____, drawn on _____,
a bank, savings institution or credit union insured by the Federal Deposit Insurance Corporation or the National Credit Union Administration, payable at sight or unconditionally assigned to _____;
- ☐ Teller's Check No. _____, dated _____, drawn on _____,
a bank, savings institution or credit union insured by the Federal Deposit Insurance Corporation or the National Credit Union Administration, payable at sight or unconditionally assigned to _____;

- ☐ Treasurer's Check No. _____, dated _____, drawn on _____, a bank, savings institution or credit union insured by the Federal Deposit Insurance Corporation or the National Credit Union Administration, payable at sight or unconditionally assigned to _____;
- ☐ Official Check No. _____, dated _____, drawn on _____, a bank, savings institution or credit union insured by the Federal Deposit Insurance Corporation or the National Credit Union Administration, payable at sight or unconditionally assigned to _____;
- ☐ Certified Check No. _____, dated _____, accepted by a bank, savings institution or credit union insured by the Federal Deposit Insurance Corporation or the National Credit Union Administration, payable at sight or unconditionally assigned to _____;

WHEREAS:

The Contractor has by written agreement dated _____ entered into a contract with Obligee for the following Project: _____

and entered into Supplemental Agreement No. _____, dated _____ for the period _____; hereinafter collectively called Contract, which Contract is incorporated herein by reference and made a part hereof.

NOW, THEREFORE,

The condition of this obligation is such that, if Contractor shall promptly and faithfully perform the Contract in accordance with, in all respects, the stipulations, agreements, covenants and conditions of the Contract as it now exists or may be modified according to its terms, and shall deliver the Project to the Obligee, or to its successors or assigns, fully completed as in the Contract specified and free from all liens and claims and without further cost, expense or charge to the Obligee, its officers, agents, successors or assigns, free and harmless from all suits or actions of every nature and kind which may be brought for or on account of any injury or damage, direct or indirect, arising or growing out of the doing of said work or the repair or maintenance thereof or the manner of doing the same or the neglect of the Contractor or its agents or servants or the improper performance of the Contract by the Contractor or its agents or servants or from any other cause, then this obligation shall be void; otherwise it shall be and remain in full force and effect.

AND IT IS HEREBY STIPULATED AND AGREED that suit on this bond may be brought before a court of competent jurisdiction without a jury, and that the sum or sums specified in the said Contract as liquidated damages, if any, shall be forfeited to the Obligee, its successors or assigns, in the event of a breach of any, or all, or any part of, the covenants, agreements, conditions, or stipulations contained in the Contract or in this bond in accordance with the terms thereof.

The amount of this bond may be reduced by and to the extent of any payment or payments made in good faith hereunder.

Signed this _____ day of _____, _____.

(Seal)

Name of Contractor

*

Signature

Title

*ALL SIGNATURES MUST BE ACKNOWLEDGED
BY A NOTARY PUBLIC

**Engineers Joint Documents Committee
Design and Construction Related Documents
Instructions and License Agreement**

Instructions

Before you use any EJCDC document:

1. Read the License Agreement. You agree to it and are bound by its terms when you use the EJCDC document.
2. Make sure that you have the correct version for your word processing software.

How to Use:

1. While EJCDC has expended considerable effort to make the software translations exact, it can be that a few document controls (e.g., bold, underline) did not carry over.
2. Similarly, your software may change the font specification if the font is not available in your system. It will choose a font that is close in appearance. In this event, the pagination may not match the control set.
3. If you modify the document, you must follow the instructions in the License Agreement about notification.
4. Also note the instruction in the License Agreement about the EJCDC copyright.

License Agreement

You should carefully read the following terms and conditions before using this document. Commencement of use of this document indicates your acceptance of these terms and conditions. If you do not agree to them, you should promptly return the materials to the vendor, and your money will be refunded.

The Engineers Joint Contract Documents Committee ("EJCDC") provides **EJCDC Design and Construction Related Documents** and licenses their use worldwide. You assume sole responsibility for the selection of specific documents or portions thereof to achieve your intended results, and for the installation, use, and results obtained from **EJCDC Design and Construction Related Documents**.

You acknowledge that you understand that the text of the contract documents of **EJCDC Design and Construction Related Documents** has important legal consequences

and that consultation with an attorney is recommended with respect to use or modification of the text. You further acknowledge that EJCDC documents are protected by the copyright laws of the United States.

License:

You have a limited nonexclusive license to:

1. Use **EJCDC Design and Construction Related Documents** on any number of machines owned, leased or rented by your company or organization.
2. Use **EJCDC Design and Construction Related Documents** in printed form for bona fide contract documents.
3. Copy **EJCDC Design and Construction Related Documents** into any machine readable or printed form for backup or modification purposes in support of your use of **EJCDC Design and Construction Related Documents**.

You agree that you will:

1. Reproduce and include EJCDC's copyright notice on any printed or machine-readable copy, modification, or portion merged into another document or program. All proprietary rights in **EJCDC Design and Construction Related Documents** are and shall remain the property of EJCDC.
2. Not represent that any of the contract documents you generate from **EJCDC Design and Construction Related Documents** are EJCDC documents unless (i) the document text is used without alteration or (ii) all additions and changes to, and deletions from, the text are clearly shown.

You may not use, copy, modify, or transfer EJCDC Design and Construction Related Documents, or any copy, modification or merged portion, in whole or in part, except as expressly provided for in this license. Reproduction of EJCDC Design and Construction Related Documents in printed or machine-readable format for resale or educational purposes is expressly prohibited.

If you transfer possession of any copy, modification or merged portion of EJCDC Design and Construction Related Documents to another party, your license is automatically terminated.

Term:

The license is effective until terminated. You may terminate it at any time by destroying **EJCDC Design and Construction Related Documents** altogether with all copies, modifications and merged portions in any form. It will also terminate upon conditions set forth

elsewhere in this Agreement or if you fail to comply with any term or condition of this Agreement. You agree upon such termination to destroy **EJCDC Design and Construction Related Documents** along with all copies, modifications and merged portions in any form.

Limited Warranty:

EJCDC warrants the CDs and diskettes on which **EJCDC Design and Construction Related Documents** is furnished to be free from defects in materials and workmanship under normal use for a period of ninety (90) days from the date of delivery to you as evidenced by a copy of your receipt.

There is no other warranty of any kind, either expressed or implied, including, but not limited to the implied warranties of merchantability and fitness for a particular purpose. Some states do not allow the exclusion of implied warranties, so the above exclusion may not apply to you. This warranty gives you specific legal rights and you may also have other rights which vary from state to state.

EJCDC does not warrant that the functions contained in **EJCDC Design and Construction Related Documents** will meet your requirements or that the operation of **EJCDC Design and Construction Related Documents** will be uninterrupted or error free.

Limitations of Remedies:

EJCDC's entire liability and your exclusive remedy shall be:

1. the replacement of any document not meeting EJCDC's "Limited Warranty" which is returned to EJCDC's selling agent with a copy of your receipt, or
2. if EJCDC's selling agent is unable to deliver a replacement CD or diskette which is free of defects in materials and workmanship, you may terminate this Agreement by returning EJCDC Document and your money will be refunded.

In no event will EJCDC be liable to you for any damages, including any lost profits, lost savings or other incidental or consequential damages arising out of the use or inability to use **EJCDC Design and Construction Related Documents** even if EJCDC has been advised of the possibility of such damages, or for any claim by any other party.

Some states do not allow the limitation or exclusion of liability for incidental or consequential damages, so the above limitation or exclusion may not apply to you.

General:

You may not sublicense, assign, or transfer this license except as expressly provided in this Agreement. Any

attempt otherwise to sublicense, assign, or transfer any of the rights, duties, or obligations hereunder is void.

This Agreement shall be governed by the laws of the State of Virginia. Should you have any questions concerning this Agreement, you may contact EJCDC by writing to:

Arthur Schwartz, Esq.
General Counsel
National Society of Professional Engineers
1420 King Street
Alexandria, VA 22314

Phone: (703) 684-2845
Fax: (703) 836-4875
e-mail: aschwartz@nspe.org

You acknowledge that you have read this agreement, understand it and agree to be bound by its terms and conditions. You further agree that it is the complete and exclusive statement of the agreement between us which supersedes any proposal or prior agreement, oral or written, and any other communications between us relating to the subject matter of this agreement.

BID BOND

Any singular reference to Bidder, Surety, Owner or other party shall be considered plural where applicable.

BIDDER (*Name and Address*):

SURETY (*Name and Address of Principal Place of Business*):

OWNER (*Name and Address*):

BID

Bid Due Date:

Description (*Project Name and Include Location*):

BOND

Bond Number:

Date (*Not earlier than Bid due date*):

Penal sum _____ \$ _____
(Words) (Figures)

Surety and Bidder, intending to be legally bound hereby, subject to the terms set forth below, do each cause this Bid Bond to be duly executed by an authorized officer, agent, or representative.

BIDDER**SURETY**

Bidder's Name and Corporate Seal (Seal) Surety's Name and Corporate Seal (Seal)

By: _____
Signature

By: _____
Signature (Attach Power of Attorney)

Print Name

Print Name

Title

Title

Attest: _____
Signature

Attest: _____
Signature

Title

Title

Note: Above addresses are to be used for giving any required notice. Provide execution by any additional parties, such as joint venturers, if necessary.

1. Bidder and Surety, jointly and severally, bind themselves, their heirs, executors, administrators, successors, and assigns to pay to Owner upon default of Bidder the penal sum set forth on the face of this Bond. Payment of the penal sum is the extent of Bidder's and Surety's liability. Recovery of such penal sum under the terms of this Bond shall be Owner's sole and exclusive remedy upon default of Bidder.
2. Default of Bidder shall occur upon the failure of Bidder to deliver within the time required by the Bidding Documents (or any extension thereof agreed to in writing by Owner) the executed Agreement required by the Bidding Documents and any performance and payment bonds required by the Bidding Documents.
3. This obligation shall be null and void if:
 - 3.1 Owner accepts Bidder's Bid and Bidder delivers within the time required by the Bidding Documents (or any extension thereof agreed to in writing by Owner) the executed Agreement required by the Bidding Documents and any performance and payment bonds required by the Bidding Documents, or
 - 3.2 All Bids are rejected by Owner, or
 - 3.3 Owner fails to issue a Notice of Award to Bidder within the time specified in the Bidding Documents (or any extension thereof agreed to in writing by Bidder and, if applicable, consented to by Surety when required by Paragraph 5 hereof).
4. Payment under this Bond will be due and payable upon default of Bidder and within 30 calendar days after receipt by Bidder and Surety of written notice of default from Owner, which notice will be given with reasonable promptness, identifying this Bond and the Project and including a statement of the amount due.
5. Surety waives notice of any and all defenses based on or arising out of any time extension to issue Notice of Award agreed to in writing by Owner and Bidder, provided that the total time for issuing Notice of Award including extensions shall not in the aggregate exceed 120 days from Bid due date without Surety's written consent.
6. No suit or action shall be commenced under this Bond prior to 30 calendar days after the notice of default required in Paragraph 4 above is received by Bidder and Surety and in no case later than one year after Bid due date.
7. Any suit or action under this Bond shall be commenced only in a court of competent jurisdiction located in the state in which the Project is located.
8. Notices required hereunder shall be in writing and sent to Bidder and Surety at their respective addresses shown on the face of this Bond. Such notices may be sent by personal delivery, commercial courier, or by United States Registered or Certified Mail, return receipt requested, postage pre-paid, and shall be deemed to be effective upon receipt by the party concerned.
9. Surety shall cause to be attached to this Bond a current and effective Power of Attorney evidencing the authority of the officer, agent, or representative who executed this Bond on behalf of Surety to execute, seal, and deliver such Bond and bind the Surety thereby.
10. This Bond is intended to conform to all applicable statutory requirements. Any applicable requirement of any applicable statute that has been omitted from this Bond shall be deemed to be included herein as if set forth at length. If any provision of this Bond conflicts with any applicable statute, then the provision of said statute shall govern and the remainder of this Bond that is not in conflict therewith shall continue in full force and effect.
11. The term "Bid" as used herein includes a Bid, offer, or proposal as applicable.

PERFORMANCE BOND

Any singular reference to Contractor, Surety, Owner, or other party shall be considered plural where applicable.

CONTRACTOR (*Name and Address*): SURETY (*Name, and Address of Principal Place of Business*):

OWNER (*Name and Address*):

CONTRACT

Effective Date of Agreement:

Amount:

Description (*Name and Location*):

BOND

Bond Number:

Date (*Not earlier than Effective Date of Agreement*):

Amount:

Modifications to this Bond Form:

Surety and Contractor, intending to be legally bound hereby, subject to the terms set forth below, do each cause this Performance Bond to be duly executed by an authorized officer, agent, or representative.

CONTRACTOR AS PRINCIPAL

SURETY

Contractor's Name and Corporate Seal

Surety's Name and Corporate Seal

By: _____
Signature

By: _____
Signature (Attach Power of Attorney)

Print Name

Print Name

Title

Title

Attest: _____
Signature

Attest: _____
Signature

Title

Title

Note: Provide execution by additional parties, such as joint venturers, if necessary.

Contractor and Surety, jointly and severally, bind themselves, their heirs, executors, administrators, successors, and assigns to Owner for the performance of the Contract, which is incorporated herein by reference.

1. If Contractor performs the Contract, Surety and Contractor have no obligation under this Bond, except to participate in conferences as provided in Paragraph 2.1.
2. If there is no Owner Default, Surety's obligation under this Bond shall arise after:
 - 2.1 Owner has notified Contractor and Surety, at the addresses described in Paragraph 9 below, that Owner is considering declaring a Contractor Default and has requested and attempted to arrange a conference with Contractor and Surety to be held not later than 15 days after receipt of such notice to discuss methods of performing the Contract. If Owner, Contractor, and Surety agree, Contractor shall be allowed a reasonable time to perform the Contract, but such an agreement shall not waive Owner's right, if any, subsequently to declare a Contractor Default; and
 - 2.2 Owner has declared a Contractor Default and formally terminated Contractor's right to complete the Contract. Such Contractor Default shall not be declared earlier than 20 days after Contractor and Surety have received notice as provided in Paragraph 2.1; and
 - 2.3 Owner has agreed to pay the Balance of the Contract Price to:
 1. Surety in accordance with the terms of the Contract; or
 2. Another contractor selected pursuant to Paragraph 3.3 to perform the Contract.
3. When Owner has satisfied the conditions of Paragraph 2, Surety shall promptly, and at Surety's expense, take one of the following actions:
 - 3.1 Arrange for Contractor, with consent of Owner, to perform and complete the Contract; or
 - 3.2 Undertake to perform and complete the Contract itself, through its agents or through independent contractors; or
 - 3.3 Obtain bids or negotiated proposals from qualified contractors acceptable to Owner for a contract for performance and completion of the Contract, arrange for a contract to be prepared for execution by Owner and contractor selected with Owner's concurrence, to be secured with performance and payment bonds executed by a qualified surety equivalent to the bonds issued on the Contract, and pay to Owner the amount of damages as described in Paragraph 5 in excess of the Balance of the Contract Price incurred by Owner resulting from Contractor Default; or
 - 3.4 Waive its right to perform and complete, arrange for completion, or obtain a new contractor, and with reasonable promptness under the circumstances:
 1. After investigation, determine the amount for which it may be liable to Owner and, as soon as practicable after the amount is determined, tender payment therefor to Owner; or
 2. Deny liability in whole or in part and notify Owner citing reasons therefor.
4. If Surety does not proceed as provided in Paragraph 3 with reasonable promptness, Surety shall be deemed to be in default on this Bond 15 days after receipt of an additional written notice from Owner to Surety demanding that Surety perform its obligations under this Bond, and Owner shall be entitled to enforce any remedy available to Owner. If Surety proceeds as provided in Paragraph 3.4, and Owner refuses the payment tendered or Surety has denied liability, in whole or in part, without further notice Owner shall be entitled to enforce any remedy available to Owner.
5. After Owner has terminated Contractor's right to complete the Contract, and if Surety elects to act under Paragraph 3.1, 3.2, or 3.3 above, then the responsibilities of Surety to Owner shall not be greater than those of Contractor under the Contract, and the responsibilities of Owner to Surety shall not be greater than those of Owner under the Contract. To the limit of the amount of this Bond, but subject to commitment by Owner of the Balance of the Contract Price to mitigation of costs and damages on the Contract, Surety is obligated without duplication for:

- 5.1 The responsibilities of Contractor for correction of defective Work and completion of the Contract;
- 5.2 Additional legal, design professional, and delay costs resulting from Contractor's Default, and resulting from the actions of or failure to act of Surety under Paragraph 3; and
- 5.3 Liquidated damages, or if no liquidated damages are specified in the Contract, actual damages caused by delayed performance or non-performance of Contractor.

6. Surety shall not be liable to Owner or others for obligations of Contractor that are unrelated to the Contract, and the Balance of the Contract Price shall not be reduced or set off on account of any such unrelated obligations. No right of action shall accrue on this Bond to any person or entity other than Owner or its heirs, executors, administrators, or successors.

7. Surety hereby waives notice of any change, including changes of time, to Contract or to related subcontracts, purchase orders, and other obligations.

8. Any proceeding, legal or equitable, under this Bond may be instituted in any court of competent jurisdiction in the location in which the Work or part of the Work is located, and shall be instituted within two years after Contractor Default or within two years after Contractor ceased working or within two years after Surety refuses or fails to perform its obligations under this Bond, whichever occurs first. If the provisions of this paragraph are void or prohibited by law, the minimum period of limitation available to sureties as a defense in the jurisdiction of the suit shall be applicable.

9. Notice to Surety, Owner, or Contractor shall be mailed or delivered to the address shown on the signature page.

10. When this Bond has been furnished to comply with a statutory requirement in the location where the Contract was to be performed, any provision in this Bond conflicting with said statutory requirement shall be deemed deleted herefrom and provisions conforming to such statutory requirement shall be deemed incorporated herein. The intent is that this Bond shall be construed as a statutory bond and not as a common law bond.

11. Definitions.

- 11.1 Balance of the Contract Price: The total amount payable by Owner to Contractor under the Contract after all proper adjustments have been made, including allowance to Contractor of any amounts received or to be received by Owner in settlement of insurance or other Claims for damages to which Contractor is entitled, reduced by all valid and proper payments made to or on behalf of Contractor under the Contract.
- 11.2 Contract: The agreement between Owner and Contractor identified on the signature page, including all Contract Documents and changes thereto.
- 11.3 Contractor Default: Failure of Contractor, which has neither been remedied nor waived, to perform or otherwise to comply with the terms of the Contract.
- 11.4 Owner Default: Failure of Owner, which has neither been remedied nor waived, to pay Contractor as required by the Contract or to perform and complete or otherwise comply with the other terms thereof.

FOR INFORMATION ONLY – *(Name, Address and Telephone)*

Surety Agency or Broker:

Owner's Representative *(Engineer or other party)*:

PAYMENT BOND

Any singular reference to Contractor, Surety, Owner, or other party shall be considered plural where applicable.

CONTRACTOR (*Name and Address*):

SURETY (*Name, and Address of Principal Place of Business*):

OWNER (*Name and Address*):

CONTRACT

Effective Date of Agreement:

Amount:

Description (*Name and Location*):

BOND

Bond Number:

Date (*Not earlier than Effective Date of Agreement*):

Amount:

Modifications to this Bond Form:

Surety and Contractor, intending to be legally bound hereby, subject to the terms set forth below, do each cause this Payment Bond to be duly executed by an authorized officer, agent, or representative.

CONTRACTOR AS PRINCIPAL

SURETY

Contractor's Name and Corporate Seal (Seal)

Surety's Name and Corporate Seal (Seal)

By: _____
Signature

By: _____
Signature (Attach Power of Attorney)

Print Name

Print Name

Title

Title

Attest: _____
Signature

Attest: _____
Signature

Title

Title

Note: Provide execution by additional parties, such as joint venturers, if necessary.

1. Contractor and Surety, jointly and severally, bind themselves, their heirs, executors, administrators, successors, and assigns to Owner to pay for labor, materials, and equipment furnished by Claimants for use in the performance of the Contract, which is incorporated herein by reference.
2. With respect to Owner, this obligation shall be null and void if Contractor:
 - 2.1 Promptly makes payment, directly or indirectly, for all sums due Claimants, and
 - 2.2 Defends, indemnifies, and holds harmless Owner from all claims, demands, liens, or suits alleging non-payment by Contractor by any person or entity who furnished labor, materials, or equipment for use in the performance of the Contract, provided Owner has promptly notified Contractor and Surety (at the addresses described in Paragraph 12) of any claims, demands, liens, or suits and tendered defense of such claims, demands, liens, or suits to Contractor and Surety, and provided there is no Owner Default.
3. With respect to Claimants, this obligation shall be null and void if Contractor promptly makes payment, directly or indirectly, for all sums due.
4. Surety shall have no obligation to Claimants under this Bond until:
 - 4.1 Claimants who are employed by or have a direct contract with Contractor have given notice to Surety (at the address described in Paragraph 12) and sent a copy, or notice thereof, to Owner, stating that a claim is being made under this Bond and, with substantial accuracy, the amount of the claim.
 - 4.2 Claimants who do not have a direct contract with Contractor:
 1. Have furnished written notice to Contractor and sent a copy, or notice thereof, to Owner, within 90 days after having last performed labor or last furnished materials or equipment included in the claim stating, with substantial accuracy, the amount of the claim and the name of the party to whom the materials or equipment were furnished or supplied, or for whom the labor was done or performed; and
 2. Have either received a rejection in whole or in part from Contractor, or not received within 30 days of furnishing the above notice any communication from Contractor by which Contractor had indicated the claim will be paid directly or indirectly; and
 3. Not having been paid within the above 30 days, have sent a written notice to Surety (at the address described in Paragraph 12) and sent a copy, or notice thereof, to Owner, stating that a claim is being made under this Bond and enclosing a copy of the previous written notice furnished to Contractor.
5. If a notice by a Claimant required by Paragraph 4 is provided by Owner to Contractor or to Surety, that is sufficient compliance.
6. Reserved.
7. Surety's total obligation shall not exceed the amount of this Bond, and the amount of this Bond shall be credited for any payments made in good faith by Surety.
8. Amounts owed by Owner to Contractor under the Contract shall be used for the performance of the Contract and to satisfy claims, if any, under any performance bond. By Contractor furnishing and Owner accepting this Bond, they agree that all funds earned by Contractor in the performance of the Contract are dedicated to satisfy obligations of Contractor and Surety under this Bond, subject to Owner's priority to use the funds for the completion of the Work.
9. Surety shall not be liable to Owner, Claimants, or others for obligations of Contractor that are unrelated to the Contract. Owner shall not be liable for payment of any costs or expenses of any Claimant under this Bond, and shall have under this Bond no obligations to make payments to, give notices on behalf of, or otherwise have obligations to Claimants under this Bond.

10. Surety hereby waives notice of any change, including changes of time, to the Contract or to related subcontracts, purchase orders, and other obligations.

11. No suit or action shall be commenced by a Claimant under this Bond other than in a court of competent jurisdiction in the location in which the Work or part of the Work is located or after the expiration of one year from the date (1) on which the Claimant gave the notice required by Paragraph 4.1 or Paragraph 4.2.3, or (2) on which the last labor or service was performed by anyone or the last materials or equipment were furnished by anyone under the Contract, whichever of (1) or (2) first occurs. If the provisions of this paragraph are void or prohibited by law, the minimum period of limitation available to sureties as a defense in the jurisdiction of the suit shall be applicable.

12. Notice to Surety, Owner, or Contractor shall be mailed or delivered to the addresses shown on the signature page. Actual receipt of notice by Surety, Owner, or Contractor, however accomplished, shall be sufficient compliance as of the date received at the address shown on the signature page.

13. When this Bond has been furnished to comply with a statutory requirement in the location where the Contract was to be performed, any provision in this Bond conflicting with said statutory requirement shall be deemed deleted herefrom and provisions conforming to such statutory requirement shall be deemed incorporated herein. The intent is that this Bond shall be construed as a statutory Bond and not as a common law bond.

14. Upon request of any person or entity appearing to be a potential beneficiary of this Bond, Contractor shall promptly furnish a copy of this Bond or shall permit a copy to be made.

15. Definitions

15.1 Claimant: An individual or entity having a direct contract with Contractor, or with a first-tier subcontractor of Contractor, to furnish labor, materials, or equipment for use in the performance of the Contract. The intent of this Bond shall be to include without limitation in the terms "labor, materials or equipment" that part of water, gas, power, light, heat, oil, gasoline, telephone service, or rental equipment used in the Contract, architectural and engineering services required for performance of the Work of Contractor and Contractor's subcontractors, and all other items for which a mechanic's lien may be asserted in the jurisdiction where the labor, materials, or equipment were furnished.

15.2 Contract: The agreement between Owner and Contractor identified on the signature page, including all Contract Documents and changes thereto.

15.3 Owner Default: Failure of Owner, which has neither been remedied nor waived, to pay Contractor as required by the Contract, or to perform and complete or otherwise comply with the other terms thereof.

FOR INFORMATION ONLY – *(Name, Address, and Telephone)*

Surety Agency or Broker:

Owner's Representative *(Engineer or other)*:

Contractor's Application for Payment No.

		Application Period:	Application Date:
To (Owner):	From (Contractor):	Via (Engineer):	
Project:	Contract:		
Owner's Contract No.:	Contractor's Project No.:	Engineer's Project No.:	

Application For Payment Change Order Summary

Approved Change Orders			
Number	Additions	Deductions	
			1. ORIGINAL CONTRACT PRICE..... \$ _____
			2. Net change by Change Orders..... \$ _____
			3. Current Contract Price (Line 1 ± 2)..... \$ _____
			4. TOTAL COMPLETED AND STORED TO DATE
			(Column F on Progress Estimate)..... \$ _____
			5. RETAINAGE:
			a. X _____ Work Completed..... \$ _____
			b. X _____ Stored Material..... \$ _____
			c. Total Retainage (Line 5a + Line 5b)..... \$ _____
			6. AMOUNT ELIGIBLE TO DATE (Line 4 - Line 5c)..... \$ _____
			7. LESS PREVIOUS PAYMENTS (Line 6 from prior Application)..... \$ _____
			8. AMOUNT DUE THIS APPLICATION..... \$ _____
			9. BALANCE TO FINISH, PLUS RETAINAGE
			(Column G on Progress Estimate + Line 5 above)..... \$ _____
TOTALS			
NET CHANGE BY			
CHANGE ORDERS			

Contractor's Certification

The undersigned Contractor certifies that to the best of its knowledge: (1) all previous progress payments received from Owner on account of Work done under the Contract have been applied on account to discharge Contractor's legitimate obligations incurred in connection with Work covered by prior Applications for Payment; (2) title of all Work, materials and equipment incorporated in said Work or otherwise listed in or covered by this Application for Payment will pass to Owner at time of payment free and clear of all Liens, security interests and encumbrances (except such as are covered by a Bond acceptable to Owner indemnifying Owner against any such Liens, security interest or encumbrances); and (3) all Work covered by this Application for Payment is in accordance with the Contract Documents and is not defective.

By:

Date:

Payment of: \$ _____
(Line 8 or other - attach explanation of the other amount)

is recommended by: _____ (Date)
(Engineer)

Payment of: \$ _____
(Line 8 or other - attach explanation of the other amount)

is approved by: _____ (Date)
(Owner)

Approved by: _____ (Date)
Funding Agency (if applicable)

Endorsed by the Construction Specifications Institute.

Change Order

No. _____

Date of Issuance: _____ Effective Date: _____

Project:	Owner:	Owner's Contract No.:
Contract:		Date of Contract:
Contractor:		Engineer's Project No.:

The Contract Documents are modified as follows upon execution of this Change Order:

Description:

Attachments (list documents supporting change):

CHANGE IN CONTRACT PRICE:	CHANGE IN CONTRACT TIMES:
Original Contract Price: \$ _____	Original Contract Times: <input type="checkbox"/> Working <input type="checkbox"/> Calendar days Substantial completion (days or date): _____ Ready for final payment (days or date): _____
[Increase] [Decrease] from previously approved Change Orders No. _____ to No. _____: \$ _____	[Increase] [Decrease] from previously approved Change Orders No. _____ to No. _____: Substantial completion (days): _____ Ready for final payment (days): _____
Contract Price prior to this Change Order: \$ _____	Contract Times prior to this Change Order: Substantial completion (days or date): _____ Ready for final payment (days or date): _____
[Increase] [Decrease] of this Change Order: \$ _____	[Increase] [Decrease] of this Change Order: Substantial completion (days or date): _____ Ready for final payment (days or date): _____
Contract Price incorporating this Change \$ _____	Contract Times with all approved Change Orders: Substantial completion (days or date): _____ Ready for final payment (days or date): _____

RECOMMENDED:	ACCEPTED:	ACCEPTED:
By: _____ Engineer (Authorized Signature)	By: _____ Owner (Authorized Signature)	By: _____ Contractor (Authorized Signature)
Date: _____	Date: _____	Date: _____
Approved by Funding Agency (if applicable): _____		Date: _____

Change Order

Instructions

A. GENERAL INFORMATION

This document was developed to provide a uniform format for handling contract changes that affect Contract Price or Contract Times. Changes that have been initiated by a Work Change Directive must be incorporated into a subsequent Change Order if they affect Price or Times.

Changes that affect Contract Price or Contract Times should be promptly covered by a Change Order. The practice of accumulating Change Orders to reduce the administrative burden may lead to unnecessary disputes.

If Milestones have been listed in the Agreement, any effect of a Change Order thereon should be addressed.

For supplemental instructions and minor changes not involving a change in the Contract Price or Contract Times, a Field Order should be used.

B. COMPLETING THE CHANGE ORDER FORM

Engineer normally initiates the form, including a description of the changes involved and attachments based upon documents and proposals submitted by Contractor, or requests from Owner, or both.

Once Engineer has completed and signed the form, all copies should be sent to Owner or Contractor for approval, depending on whether the Change Order is a true order to the Contractor or the formalization of a negotiated agreement for a previously performed change. After approval by one contracting party, all copies should be sent to the other party for approval. Engineer should make distribution of executed copies after approval by both parties.

If a change only applies to price or to times, cross out the part of the tabulation that does not apply.

Certificate of Substantial Completion

Project:	
Owner:	Owner's Contract No.:
Contract:	Engineer's Project No.:

This [tentative] [definitive] Certificate of Substantial Completion applies to:

- ☐ All Work under the Contract Documents: ☐ The following specified portions of the Work:

Date of Substantial Completion

The Work to which this Certificate applies has been inspected by authorized representatives of Owner, Contractor, and Engineer, and found to be substantially complete. The Date of Substantial Completion of the Project or portion thereof designated above is hereby declared and is also the date of commencement of applicable warranties required by the Contract Documents, except as stated below.

A [tentative] [definitive] list of items to be completed or corrected is attached hereto. This list may not be all-inclusive, and the failure to include any items on such list does not alter the responsibility of the Contractor to complete all Work in accordance with the Contract Documents.

The responsibilities between Owner and Contractor for security, operation, safety, maintenance, heat, utilities, insurance and warranties shall be as provided in the Contract Documents except as amended as follows:

- ☐ Amended Responsibilities ☐ Not Amended

Owner's Amended Responsibilities:

Contractor's Amended Responsibilities:

The following documents are attached to and made part of this Certificate:

This Certificate does not constitute an acceptance of Work not in accordance with the Contract Documents nor is it a release of Contractor's obligation to complete the Work in accordance with the Contract Documents.

<hr/>	<hr/>
Executed by Engineer	Date

<hr/>	<hr/>
Accepted by Contractor	Date

<hr/>	<hr/>
Accepted by Owner	Date



STATE OF HAWAII
STATE PROCUREMENT OFFICE

CERTIFICATION FOR HAWAII PRODUCT PREFERENCE

1. Legal Name of the company whose product is mined, excavated, produced, manufactured, raised or grown in the state of Hawaii
2. dba:

Requester:

3. Hawaii General Excise Tax Number:

4. Address

5. Email Address

6. Contact Person

Submit one (1) form for each product.

8. Specify and provide details of the product for which preference is claimed (ie: Milk, white, 2% low fat, 1 gallon, four (4) to a case etc.):

9. Quality Standards met by product (ie. California Milk Standards, ASTM/AHSTO,USDA, etc.) :

10. Product available on: Oahu Maui Hawaii Lanai Kauai Molokai

11. Product is certified an agricultural, aquacultural, horticultural, silvicultural, floricultural, or livestock product raised, grown, or harvested in the state of Hawaii.

Yes or No

12 Definition: "Hawaii Input" is the part of the product cost attributable to production, manufacturing, or other expenses arising within the state of Hawaii.

	A	B	C
	Hawaii Input	Non- Hawaii input	Total A + B
Fill in every line in column s A, B, & C			
a Cost to mine, excavate, produce, manufacture, raise, or grow the materials in the state of Hawaii.	\$ per unit	\$ per unit	\$ per unit
b The added value of that portion of the cost of imported materials incurred after landing in the state of Hawaii, including but not limited to other articles, materials, and supplies, added to the imported materials.	\$ per unit	\$ per unit	\$ per unit
c Cost of labor, variable overhead, utilities, and services, incurred in the production and manufacturing of materials or products in the state of Hawaii	\$ per unit	\$ per unit	\$ per unit
d Fixed overhead cost and amortization or depreciation cost, if any, for buildings, tools, and equipment situated and located in the state of Hawaii used in the production or manufacturing of a product.	\$ per unit	\$ per unit	\$ per unit
e Totals	\$ per unit (Add Column A)	\$ per unit (Add Column B)	\$ per unit (Add Column C)

13. Percent of Hawaii Input % (12e. Column A Total ÷ Column C Total)

14. Failure to adequately verify, deliver, or supply Hawaii products. A procurement officer who has awarded a contract finds the contractor has failed to comply with HRS §103D-1002, Hawaii products, the contract shall be cancelled and the findings shall be referred for debarment or suspension proceedings under HRS §103D-702. Any purchase made or any contract awarded or executed in violation of this section shall be void and no payment shall be made by any purchasing agency. If debarred, the person or company shall be prohibited from bidding on any state or county government solicitations for up to three (3) years.

Should the procurement officer receiving a protest challenging the validity of the classification of a Hawaii product request an audit of the information of the proper classification of the product as defined under HRS §103D-1002, the cost of the audit shall be paid for by the requester.

In the event of any change that materially alters the offeror's ability to supply the certified Hawaii products, the offeror shall notify in writing the procurement officer within five (5) working days of knowing of the change and the parties shall enter into discussions for the purposes of revising the contract or terminating the contract for convenience.

Information submitted is CONFIDENTIAL or PROPRIETARY DATA, and the procurement officer shall not disclose this form, pursuant to HRS §92F-13(3) on government records; exception's to general rule.

I certify, under penalties set forth in HRS §103D-1002, on Hawaii products, that the information provided herein has been examined by me and to the best of my knowledge and belief is true, correct, complete, and made in good faith pursuant to HRS §103D-101.

Signature of Authorized Representative: _____

Date: _____

Print Name of Authorized Representative: _____

Title: _____

GOVERNMENT USE ONLY

APPROVED

DISAPPROVED

Procurement Officer Signature

Government Agency

**CERTIFICATION OF COMPLIANCE
FOR
EMPLOYMENT OF STATE RESIDENTS
HRS CHAPTER 103B, AS AMENDED BY ACT 192, SLH 2011**

Project Title: _____

Agency Project No: _____

Contract No.: _____

As required by Hawai'i Revised Statutes Chapter 103B, as amended by Act 192, Session Laws of Hawaii 2011—Employment of State Residents on Construction Procurement Contracts, I hereby certify under oath, that I am an officer of _____ and

(Name of Contractor or Subcontractor Company)

for the Project Contract indicated above, _____ was in

(Name of Contractor or Subcontractor Company)

compliance with HRS Chapter 103B, as amended by Act 192, SLH 2011, by employing a workforce of which not less than eighty percent are Hawai'i residents, as calculated according to the formula in the solicitation, to perform this Contract.

☐ I am an officer of the **Contractor** for this contract.

☐ I am an officer of a **Subcontractor** for this contract.

CORPORATE SEAL

(Name of Company)

(Signature)

(Print Name)

(Print Title)

Subscribed and sworn to me before this
_____ day of _____, 2011.

Doc. Date: _____ # of Pages _____ 1st Circuit

Notary Name: _____

Doc. Description: _____

Notary Public, 1st Circuit, State of Hawai'i
My commission expires: _____

Notary Signature

Date

NOTARY CERTIFICATION

FORM 1

CERTIFICATION OF BIDDER'S PARTICIPATION IN APPROVED APPRENTICESHIP PROGRAM UNDER ACT 17

I. Bidder's Identifying Information			
A. Legal Business Name: _____			
B. Project Bid Title & Reference No.: _____			
C. Contact Person's Name: _____			
1. Phone No.: _____		2. E-Mail: _____	
II. Apprenticeable Trades To Be Employed*	B. Apprenticeship Sponsor*	C. No. Enrolled	D. No. Completed
A. (List)	(One Sponsor Per Form)	(# of apprentices currently enrolled as of bidder's request date)	(# of apprentices who completed the apprenticeship program in the 12 months prior to request date)
1.			
2.			
3.			
4.			
5.			
6.			
III. Bidder's Certification			
I certify that the above information is accurate to the best of my knowledge. I understand that my willful misstatement of facts may cause forfeiture of the preference under Act 17 and may result in criminal action. I give permission for outside sources to be contacted and for them to disclose any information necessary to verify the bidder's preference.			
A. Name (Type) _____		B. Title _____	
C. Signature (original signature required) _____		D. Date _____	
IV. Apprenticeship Sponsor's Contact Information			
A. Training Coordinator's Name: _____			
B. Address: _____			
C. Phone No.: _____		D. E-Mail: _____	E. Fax No: _____
V. Apprenticeship Program Sponsor's Certification			
I certify that the above information is accurate to the best of my knowledge. I understand that my willful misstatement of facts may cause forfeiture of the bidder's preference and may result in criminal action. I give permission for outside sources to be contacted and for them to disclose any information necessary to verify the bidder's preference under Act 17.			
A. Name of Authorized Official _____		B. Title _____	
C. Signature (original signature required) _____		D. Date _____	

* Name of Apprenticeable Trade and Apprenticeship Sponsor must be the **same** as recorded in the List of Construction Trades in Registered Apprenticeship Programs that is posted on the State Department of Labor and Industrial Relations website.

FORM 2

MONTHLY REPORT OF CONTRACTOR'S PARTICIPATION IN APPROVED APPRENTICESHIP PROGRAM UNDER ACT 17

I. Contractor's Identifying Information		II. Reporting Period	
A. Legal Business Name:		A. Month:	B. Year:
B. Project Contract Title & Reference No.:			
C. Contact Person's Name:			
1. Phone No.:		2. E-Mail:	
III. Apprenticeship Program (Complete a separate form for <i>each</i> apprenticeship program in which workers are employed on the project.)			
A. Contractor was a party to an apprenticeship program or programs with the following sponsor: (Give sponsor's name.)*		B. Was the contractor a party to the program during the <i>entire</i> report month?	
		1. Yes <input type="checkbox"/>	
		2. No <input type="checkbox"/> If NO, state applicable period and why (may be subject to sanctions.)	
IV. Contractor's Certification			
I certify that the above information is accurate to the best of my knowledge. I understand that my willful misstatement of facts may cause forfeiture of the preference under Act 17 and may result in criminal action. I give permission for outside sources to be contacted and for them to disclose any information necessary to verify the bidder's preference.			
A. Name (Type)		B. Title	
C. Signature (original signature required)		D. Date	
V. Apprenticeship Sponsor's Contact Information			
A. Training Coordinator's Name:			
B. Address:			
C. Phone No.:		D. E-Mail:	
		E. Fax No:	
VI. Apprenticeship Program Sponsor's Certification			
I certify that the above information is accurate to the best of my knowledge. I understand that my willful misstatement of facts may cause forfeiture of the bidder's preference and may result in criminal action. I give permission for outside sources to be contacted and for them to disclose any information necessary to verify the bidder's preference under Act 17.			
A. Name of Authorized Official		B. Title	
C. Signature (original signature required)		D. Date	

* Name of Apprenticeship Sponsor must be the **same** as recorded in the List of Construction Trades in Registered Apprenticeship Programs that is posted on the State Department of Labor and Industrial Relations website.

WATER NOTES

- UNLESS OTHERWISE SPECIFIED, ALL MATERIALS AND CONSTRUCTION OF WATER SYSTEM FACILITIES AND APPURTENANCES SHALL BE IN ACCORDANCE WITH THE CITY AND COUNTY OF HONOLULU BOARD OF WATER SUPPLY'S "WATER SYSTEM STANDARDS", DATED 2002, THE "WATER SYSTEM EXTERNAL CORROSION CONTROL STANDARDS", VOLUME 3, DATED 1991, AND ALL SUBSEQUENT AMENDMENTS AND ADDITIONS.
- ALL PLANS APPROVED BY THE BOARD OF WATER SUPPLY ARE BASED SOLELY ON THE ADEQUACY OF THE WATER SUPPLY. ALL OTHER FEATURES OF THE WATER SYSTEM, SUCH AS LINES, GRADES, FITTINGS, DRAINAGE, ETC., AND OTHER FEATURES OF IMPROVEMENTS SHALL NOT BE THE RESPONSIBILITY OF THE BOARD OF WATER SUPPLY.
- UNLESS OTHERWISE SPECIFIED, ALL LATERALS AND CONNECTIONS SHALL BE COPPER TYPE "C-1", WITH BLIND METER SPUCE LENGTHS AT 7-1/2 INCHES TO ACCOMMODATE 3/4 INCH METERS. TYPE "C-1" SERVICE LATERALS SHALL BE ONE 1-1/2 INCH DIAMETER LATERAL BRANCHING TO TWO 1-INCH DIAMETER CONNECTIONS.
- TEST PRESSURE SHALL BE 150 PSI. DURING THE 30-MINUTE PRESSURE TEST, THE PRESSURE SHALL NOT DROP MORE THAN 10 PSI.
- THE CONTRACTOR SHALL NOTIFY BWS CAPITAL PROJECTS DIVISION, CONSTRUCTION SECTION IN WRITING AND SUBMIT SIX (6) SETS OF APPROVED CONSTRUCTION PLANS ONE WEEK PRIOR TO COMMENCING WORK ON THE WATER SYSTEM.
- AFTER INSTALLATION OF TAPPING SLEEVE AND VALVE PRIOR TO ACTUAL TAPPING OPERATIONS, THE ASSEMBLY SHALL BE TESTED AT 150 PSI ON BOTH SIDES OF THE VALVE.
- THE CONTRACTOR SHALL CHLORINATE THE ENTIRE SURFACE OF EACH PIPE AND FITTING WITH DISINFECTON SOLUTION OF 5 OUNCES OF SODIUM HYPOCHLORITE MIXED WITH 10 GALLONS OF WATER. (FOR CONNECTION ONLY)
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF ALL WATER LINES DURING CONSTRUCTION. THE CONTRACTOR SHALL BE ESPECIALLY CAREFUL WHEN EXCAVATING BEHIND WATER LINES, TEES AND BENDS WHEREVER THERE IS A POSSIBILITY OF WATER LINE MOVEMENT DUE TO THE REMOVAL OF THE SUPPORTING EARTH BEYOND THE EXISTING REACTION BLOCKS. THE CONTRACTOR SHALL TAKE WHATEVER MEASURE NECESSARY TO PROTECT THE WATER LINES, SUCH AS CONSTRUCTING SPECIAL REACTION BLOCKS (WITH BWS APPROVAL) AND/OR MODIFYING HIS CONSTRUCTION METHOD.
- THE EXISTENCE AND LOCATION OF UNDERGROUND UTILITIES AND STRUCTURES AS SHOWN ON THE PLANS ARE FROM THE LATEST AVAILABLE DATA BUT IS NOT GUARANTEED AS TO THE ACCURACY OR THE ENCOUNTERING OF OTHER OBSTACLES DURING THE COURSE OF THE WORK. THE CONTRACTOR SHALL BE RESPONSIBLE AND SHALL PAY FOR ALL DAMAGES TO EXISTING UTILITIES. THE CONTRACTOR SHALL NOT ASSUME THAT WHERE NO UTILITIES ARE SHOWN, THAT NONE EXIST.
- PRIOR TO INSTALLATION, THE CONTRACTOR SHALL SUBMIT FOR APPROVAL BY BOARD OF WATER SUPPLY, THE MANUFACTURER'S CERTIFICATION THAT ALL CAST IRON (GRAY OR DUCTILE) FITTINGS FOR THE PROJECT CONFORM IN ALL RESPECTS TO THE WATER SYSTEM STANDARDS, DATED 2002.
- POLYGON SHAPE FOR MECHANICAL JOINT GLANDS AS DESCRIBED IN ANMA STANDARD C111 SHALL BE "STRAIGHT-SIDED" OR AN APPROVED EQUAL ON A JOB-TO-JOB BASIS.
- RE-APPROVAL SHALL BE REQUIRED IF THIS PROJECT IS NOT UNDER CONSTRUCTION WITHIN A PERIOD OF TWO YEARS.
- CONTRACTOR SHALL CUT AND PLUG ALL EXISTING UNUSED LATERALS AT THE MAIN WHETHER OR NOT SHOWN ON THE PLANS. WATER AND VALVE BOXES TO BE OR ALREADY ABANDONED SHALL BE DEMOLISHED OR REMOVED AND PROPERLY DISPOSED OF. THE DAMAGED AREA SHALL BE REPAIRED TO AN EQUAL OR BETTER CONDITION THAN THE IMMEDIATE AREA. ALL WORK SHALL BE DONE AT THE EXPENSE OF THE CONTRACTOR.
- THE CONTRACTOR SHALL FURNISH AND INSTALL POLYETHYLENE WRAP, 3 FEET MINIMUM AT ALL TAPS (FOR DI PIPE AND COPPER LATERAL COMBINATION ONLY) AND PLASTIC PIPE (PE TUBING) 3 FEET LONG AFTER METERS FOR ALL SERVICE LATERAL CONNECTIONS.
- ADEQUATE OFFSITE FIRE PROTECTION MEETING THE BWS STANDARD SHALL BE INSTALLED AND COMPLETED PRIOR TO CONSTRUCTION OF HOMES INCLUDING MODEL HOMES.
- AT THE ELECTRICAL/SIGNAL DUCTLINE WATER CROSSINGS, ADJUST ALL ELECTRICAL/SIGNAL DUCTLINE ELEVATIONS TO MAINTAIN 6" VERTICAL CLEAR SEPARATION FROM ALL WATERLINES (12" CLEAR FOR ALL ELECTRICAL/SIGNAL DUCTLINE STRUCTURES LARGER THAN 16") AT NO COST TO THE BOARD OF WATER SUPPLY.
- MAINTAIN 3'-0" MIN. HORIZONTAL CLEAR SEPARATION BETWEEN ALL WATERLINE SYSTEMS AND NEAREST ELECTRICAL/SIGNAL DUCTLINES PARALLELING THE WATER SYSTEM AT NO COST TO THE BOARD OF WATER SUPPLY.
- MAINTAIN 3'-0" MIN. HORIZONTAL CLEAR SEPARATION BETWEEN STREET LIGHT/TRAFFIC SIGNAL STANDARDS (INCLUDING ANY MODULAR UNITS) AND THE NEAREST WATER SYSTEM. CONTRACTOR SHALL FIELD VERIFY FOR ANY CONFLICTS AT EACH STREET LIGHT/TRAFFIC SIGNAL STANDARD LOCATION. WHERE CONFLICTS OCCUR, THE CONTRACTOR SHALL COORDINATE WITH THE PROJECT ENGINEER TO REVISE THE STREET LIGHT/TRAFFIC SIGNAL STANDARD TO PROVIDE THE REQUIRED CLEARANCES AT NO COST TO THE BWS.
- THE CONTRACTOR/DEVELOPER SHALL OBTAIN A NPDES PERMIT PRIOR TO CHLORINATION AND/OR DOWATERING. A COPY OF THE PERMIT SHALL BE SUBMITTED TO THE BOARD OF WATER SUPPLY, CAPITAL PROJECTS DIVISION, CONSTRUCTION SECTION.
- PIPE CUSHION SHALL BE OF HIGH RESISTIVITY MATERIAL. THE CONTRACTOR SHALL SUBMIT A SOIL CERTIFICATION THAT HIGH RESISTANT CUSHION MATERIAL HAS A RESISTIVITY GREATER THAN 5,000 OHM-CM. REMAINDER OF THE BACKFILL MATERIAL SHALL BE AS SPECIFIED IN THE WATER SYSTEM STANDARDS. PIPE CUSHION AND BACKFILL MATERIAL SHALL CONTAIN NO HAZARDOUS SUBSTANCES ABOVE REGULATORY ACTION LEVELS INCLUDING BUT NOT LIMITED TO LEAD, ASBESTOS, MERCURY, CHROMIUM, CADMIUM, ZINC, STRONTIUM, AND POLYCHLORINATED BIPHENYLS (PCB).
- BWS WILL NOT SEND COMPLETION NOTICES TO DPP SUBDIVISION BRANCH UNTIL EASEMENT DOCUMENTS ARE SUBMITTED TO BWS AND RECORDED.
- UPON COMPLETION OF THE PROJECT, THE DEVELOPER SHALL PROVIDE THE BWS WITH A CERTIFICATE FROM A REGISTERED SOILS ENGINEER CERTIFYING THAT THE ROAD PRISM HAS BEEN CONSTRUCTED IN ACCORDANCE TO CITY AND COUNTY ROADS STANDARDS.
- ALL DUCTILE IRON PIPE, FITTINGS AND VALVES SHALL BE WRAPPED WITH TWO LAYERS OF 8 MIL. POLYETHYLENE WRAP.
- TWO-WAY BLUE REFLECTIVE HYDRANT MARKERS TYPE DB SHALL BE INSTALLED AT ALL NEW FIRE HYDRANT INSTALLATIONS. CONTRACTOR SHALL VERIFY THE EXACT LOCATIONS OF HYDRANT MARKERS WITH THE NEAREST HONOLULU FIRE DEPARTMENT BATTALION CHIEF.
- CLEANING SHALL BE BY THE USE OF "PIGS" INTRODUCED INTO THE PIPELINE AND RUN COMPLETELY THROUGH ALL INSTALLED PIPELINES AND ALL BRANCH LINES FOR FIRE HYDRANTS. "PIGGING" OF SERVICE LATERALS IS NOT REQUIRED. BARE FOAM "PIGS" SHALL BE USED TO SWAB PIPING CLEAN AS EACH LENGTH OF THE PIPELINE IS INSTALLED. EACH "PIG" SHALL CONSIST OF A CYLINDRICAL PIECE OF POLYURETHANE FOAM WITH A DENSITY OF 3-7 POUNDS PER CUBIC FOOT AND A VINYL-COATED NOSE. OUTSIDE DIAMETER OF THE "PIG" SHALL BE EQUAL TO 1-1/4 TO 1-1/2 TIMES THE INSIDE DIAMETER OF THE PIPE BEING INSTALLED. THE LENGTH OF THE "PIG" SHALL BE 1-1/2 TO 2 TIMES ITS DIAMETER. PRIOR TO USE, THE "PIG" SHALL BE SUBMERGED IN A CHLORINE SOLUTION OF 1 OZ. OF 5% CHLORINE BLEACH IN 5 GALLONS OF WATER. "PIGGING" OF THE PIPELINE SHALL BE CONSIDERED INCIDENTAL TO THE INSTALLATION OF THE NEW PIPELINE.
- ALL SECTIONS OF THE WATER MAIN REQUIRING REINFORCED CONCRETE JACKETING SHALL BE DUCTILE IRON PIPE OR CONCRETE CINDER PIPE AND FITTINGS.
- BALL CORP AND BALL STOP SHALL BE USED IN LIEU OF A CORPORATION STOP AND STOPCOCK, RESPECTIVELY.
- INSTALL 4 MIL. THICK, NON-METALLIC, BLUE COLORED, 6 INCHES WIDE WARNING TAPE OVER CENTERLINE OF THE PIPE AND BELOW THE BASE COURSE ALONG THE ENTIRE LENGTH OF TRENCH. TAPE SHOULD BE MARKED WITH "CAUTION WATER LINE BURIED BELOW".
- THE CONTRACTOR SHALL INSTALL ELECTRONIC MARKERS TO ALL MAINS AND TEST THE ELECTRONIC MARKERS PRIOR TO INSTALLATIONS TO VERIFY PROPER OPERATION. BWS PERSONNEL SHALL VERIFY THE NUMBER AND LOCATIONS OF PLACED ELECTRONIC MARKERS BEFORE FINAL PAVING OF THE PROJECT.
- WATER PIPELINE CHLORINATION AND TESTING PROCEDURES:
 - THE FOLLOWING CHLORINATION AND WATER SAMPLE COLLECTION PROCEDURE SHALL APPLY TO ALL WATER PIPELINE PROJECTS:
 - CHLORINATE MAIN BY FILLING WITH WATER AND INTRODUCING CHLORINE IN SUFFICIENT QUANTITY TO OBTAIN A MINIMUM CHLORINE CONCENTRATION OF 50 PARTS PER MILLION. LEAVE CHLORINATED WATER IN MAIN OVERNIGHT.
 - FLUSH MAIN WITH FRESH WATER UNTIL ALL CHLORINE HAS BEEN FLUSHED OUT AS EVIDENCED BY THE ORTHO-TOLUIDINE TEST, THEN COLLECT A WATER SAMPLE WHILE CONTINUING TO FLUSH THE MAIN.
 - REPEAT STEPS 1 AND 2. AFTER COLLECTING THE SECOND WATER SAMPLE, STOP FLUSHING AND ALLOW THE WATER TO STAND IN THE MAIN OVERNIGHT.
 - THOROUGHLY FLUSH THE MAIN WITH FRESH WATER UNTIL ALL WATER THAT HAD BEEN STANDING IN THE MAIN OVERNIGHT HAS BEEN FLUSHED OUT. STOP FLUSHING AND LET THE WATER STAND IN THE MAIN FOR ONE HOUR. COLLECT A WATER SAMPLE.
 - THE MAIN IS DEEMED ACCEPTABLE AND CERTIFIED WHEN (1) TWO CONSECUTIVE WATER SAMPLES, COLLECTED 24 HOURS APART UNDER STEPS 1 AND 2, SHOW NO TOTAL AND FECAL COLIFORM AND LESS THAN 200 COLONY FORMING UNITS (CFU) OF TOTAL

WATER NOTES (CONT.)

- BACTERIA AND (2) THE SAMPLE OF WATER HELD IN THE MAIN FOR ONE HOUR, COLLECTED UNDER STEP 4, ALSO SHOWS NO TOTAL AND FECAL COLIFORM AND LESS THAN 200 CFU OF TOTAL BACTERIA.
- CHLORINATION, FLUSHING, SAMPLING AND TESTING WILL BE EXTENDED SHOULD UNSATISFACTORY RESULTS BE ENCOUNTERED. ANY SAMPLE THAT SHOWS POSITIVE COLIFORM PRESENCE OR TOTAL BACTERIA GREATER THAN 200 CFU IS UNSATISFACTORY.
 - STEPS 1 AND 2 MAY BE REPEATED BEFORE COLLECTING THE ONE-HOUR HOLD SAMPLE SPECIFIED IN STEP 4. REPEATING STEPS 1 AND 2 IS RECOMMENDED IN THE EVENT SAMPLES SHOW THE PRESENCE OF COLIFORMS AND/OR INCREASING TOTAL BACTERIAL RESULTS FROM ONE SAMPLE TO THE NEXT.
 - WATER SAMPLES THAT SHOW THE PRESENCE OF ATYPICAL COLONIES, DEBRIS OR RESULTS INCONSISTENT WITH EXISTING WATER ARE SUBJECT TO RECONFIRMATION. BWS RESERVES THE RIGHT TO REQUEST AND TEST ADDITIONAL WATER SAMPLES IN THE INTEREST OF SAFEGUARDING PUBLIC HEALTH AND SAFETY.
- BOARD OF WATER SUPPLY APPROVAL OF THESE PLANS DOES NOT CONSTITUTE A WATER COMMITMENT. AVAILABILITY OF WATER WILL BE DETERMINED WHEN BUILDING PERMIT IS PRESENTED TO THE DEPARTMENT. WATER COMMITMENT WILL DEPEND UPON THE STATUS OF THE WATER SYSTEM AT THE TIME. SHOULD WATER SERVICE BE MADE AVAILABLE, THE WATER COMMITMENT WILL BE EFFECTIVE WHEN THE PROJECT RECEIVES AN APPROVED BUILDING PERMIT FROM THE BUILDING DEPARTMENT. ALL WATER COMMITMENTS WILL BE CANCELED IN THE EVENT THE BUILDING PERMIT IS CANCELED.
 - POLYVINYL CHLORIDE (PVC) PIPES SHALL BE CLASS 150 (DR=18). ALL DUCTILE IRON VALVES AND METALLIC FITTINGS SHALL BE WRAPPED WITH TWO LAYERS OF 8 MIL POLYETHYLENE WRAP. NO BENDING OF POLYVINYL CHLORIDE PIPES SHALL BE PERMITTED. THE INSTALLATION OF PVC PIPE, ACCORDING TO THE PLANS AND SPECIFICATIONS AS BID ON BY THE CONTRACTOR, MAY REQUIRE ADDITIONAL DESIGN WORK, ADDITIONAL FITTINGS AND SPECIAL COUPLINGS SHALL BE CONSIDERED INCIDENTAL TO THE UNIT PRICE BID IN THE PROPOSAL FOR PVC PIPE. ANY ADDITIONAL DESIGN WORK SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
 - ALL POLYVINYL CHLORIDE (PVC) PIPE DEFLECTIONS SHALL BE ACCOMPLISHED ONLY BY THE USE OF SPECIAL PVC DEFLECTION COUPLINGS. DEFLECTION AROUND CURVES SHALL BE ACCOMPLISHED ONLY BY THE USE OF PVC DEFLECTION COUPLINGS.
 - ALL SECTIONS OF THE WATER MAIN REQUIRING REINFORCED CONCRETE JACKETING SHALL BE DUCTILE IRON PIPE CLASS 52 WITH DUCTILE IRON FITTINGS OR CONCRETE CINDER PIPE AND FITTINGS.
 - BOSSSED TEES REQUIRED FOR ALL LATERAL AND ARV CONNECTIONS TO PVC MAINS 12" AND SMALLER. DUCTILE IRON CONNECTOR PIECES TAPPED ARE REQUIRED FOR ALL LATERAL AND ARV CONNECTION TO PVC MAINS LARGER THAN 12".
 - ALL PVC FITTINGS SHALL CONFORM TO AMERICAN WATER WORKS ASSOCIATIONS (AWWA) C-907. DUCTILE IRON FITTINGS SHALL BE USED FOR ALL TYPES OF FITTINGS NOT SPECIFIED IN AWWA C-907.
 - REACTION BLOCK REQUIREMENTS FOR PVC FITTINGS SHALL BE THE SAME FOR DUCTILE IRON FITTINGS.
 - THE USE OF HUB CLAMPS AND SET SCREWS ON PVC FITTINGS IS NOT APPROVED.
 - PRIOR TO THE PVC FITTING INSTALLATION, THE CONTRACTOR SHALL SUBMIT FOR APPROVAL BY THE BWS, THE MANUFACTURER'S CERTIFICATION THAT ALL PVC FITTINGS CONFORM TO AWWA C-907.

SPECIAL WATER NOTES

- WATER METERS AND BOXES SHALL BE CLEAR OF DRIVEWAYS AND ELECTRICAL PULLBOXES.
- THE CONTRACTOR SHALL INSTALL ELECTRONIC MARKERS TO ALL MAINS AND TEST THE ELECTRONIC MARKERS PRIOR TO INSTALLATIONS TO VERIFY PROPER OPERATION. BWS PERSONNEL SHALL VERIFY THE NUMBER AND LOCATIONS OF PLACED ELECTRONIC MARKERS BEFORE FINAL PAVING OF THE PROJECT.
- FIBER OPTIC DUCTLINES SHALL BE INSTALLED AT A MINIMUM OF 5' HORIZONTAL CLEARANCE TO WATERLINES. WHERE 5' CLEARANCE IS NOT FEASIBLE, DUCTLINES SHALL BE AT LEAST 3' CLEAR, HORIZONTALLY, AND SHALL BE CONCRETE JACKETED, OR ENCASED AND GROUTED IN A CARRIER PIPE. WHERE 3' CLEARANCE IS NOT POSSIBLE, DUCTLINES SHALL BE INSTALLED TO PROVIDE AS MUCH HORIZONTAL CLEARANCE AS POSSIBLE, WITH THE FOLLOWING REQUIREMENTS:
 - FOR OPEN TRENCH INSTALLATION, DUCTLINE SHALL BE CONCRETE JACKETED AND AT LEAST 18" BELOW THE WATERLINE.
 - FOR DIRECTIONAL DRILLING, DUCTLINE SHALL BE ENCASED AND GROUTED AND SHALL BE AT LEAST 3' BELOW THE WATERLINE.
- THE CONTRACTOR WILL PROVIDE ADEQUATE SUPPORT FOR THE WATERLINE WHEN THE INSTALLATION OF THE FIBER OPTIC LINE IS INSTALLED UNDER OUR MAIN. FIBER OPTIC LINES WILL BE ALLOWED TO CROSS UNDER A WATERLINE, ONLY ON A STRAIGHT PORTION OF PIPE, WITHOUT THE PRESENCE OF ANY BENDS OR SUPPORTS.

RECYCLED WATER SYSTEM

- UNLESS OTHERWISE SPECIFIED, ALL MATERIALS AND CONSTRUCTION OF WATER SYSTEM FACILITIES AND APPURTENANCES SHALL BE IN ACCORDANCE WITH THE CITY AND COUNTY OF HONOLULU BOARD OF WATER SUPPLY'S "WATER SYSTEM STANDARDS", DATED 2002, THE "WATER SYSTEM EXTERNAL CORROSION CONTROL STANDARDS", VOLUME 3, DATED 1991, AND THE DEPARTMENT OF HEALTH "GUIDELINES FOR THE TREATMENT AND USE OF RECYCLED WATER" DATED MAY 15, 2002, AND ALL SUBSEQUENT AMENDMENTS AND ADDITIONS.
- ALL PLANS APPROVED BY THE BOARD OF WATER SUPPLY ARE BASED SOLELY ON THE ADEQUACY OF THE WATER SUPPLY. ALL OTHER FEATURES OF THE WATER SYSTEM, SUCH AS LINES, GRADES, FITTINGS, DRAINAGE, ETC., AND OTHER FEATURES OF IMPROVEMENTS SHALL NOT BE THE RESPONSIBILITY OF THE BOARD OF WATER SUPPLY.
- RE-APPROVAL SHALL BE REQUIRED IF THIS PROJECT IS NOT UNDER CONSTRUCTION WITHIN A PERIOD OF TWO YEARS.
- TEST PRESSURE SHALL BE 150 PSI. DURING THE 30-MINUTE PRESSURE TEST, THE PRESSURE SHALL NOT DROP MORE THAN 10 PSI.
- THE CONTRACTOR SHALL NOTIFY BWS CAPITAL PROJECTS DIVISION, CONSTRUCTION SECTION IN WRITING AND SUBMIT SIX (6) SETS OF APPROVED CONSTRUCTION PLANS ONE WEEK PRIOR TO COMMENCING WORK ON THE WATER SYSTEM.
- THE EXISTENCE AND LOCATION OF UNDERGROUND UTILITIES AND STRUCTURES AS SHOWN ON THE PLANS ARE FROM THE LATEST AVAILABLE DATA BUT IS NOT GUARANTEED AS TO THE ACCURACY OR THE ENCOUNTERING OF OTHER OBSTACLES DURING THE COURSE OF THE WORK. THE CONTRACTOR SHALL BE RESPONSIBLE AND SHALL PAY FOR ALL DAMAGES TO EXISTING UTILITIES. THE CONTRACTOR SHALL NOT ASSUME THAT WHERE NO UTILITIES ARE SHOWN, THAT NONE EXIST.
- PRIOR TO INSTALLATION, THE CONTRACTOR SHALL SUBMIT FOR APPROVAL BY BOARD OF WATER SUPPLY, THE MANUFACTURER'S CERTIFICATION THAT ALL CAST IRON (GRAY OR DUCTILE) FITTINGS FOR THE PROJECT CONFORM IN ALL RESPECTS TO THE WATER SYSTEM STANDARDS, DATED 2002.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF ALL WATER LINES DURING CONSTRUCTION. THE CONTRACTOR SHALL BE ESPECIALLY CAREFUL WHEN EXCAVATING BEHIND WATER LINES, TEES AND BENDS WHEREVER THERE IS A POSSIBILITY OF WATER LINE MOVEMENT DUE TO THE REMOVAL OF THE SUPPORTING EARTH BEYOND THE EXISTING REACTION BLOCKS. THE CONTRACTOR SHALL TAKE WHATEVER MEASURE NECESSARY TO PROTECT THE WATER LINES, SUCH AS CONSTRUCTING SPECIAL REACTION BLOCKS (WITH BWS APPROVAL) AND/OR MODIFYING HIS CONSTRUCTION METHOD.
- INTERCONNECTION BETWEEN RECYCLED WATER MAINS AND POTABLE MAINS SHALL NOT BE ALLOWED.
- MATERIALS FOR FRAMES AND COVERS OF MANHOLES, VALVE BOXES, AND METER BOXES SHALL CONFORM TO THE REQUIREMENTS SPECIFIED IN THE WATER SYSTEM STANDARD. THE RECYCLED WATER COVERS SHALL BE CAST WITH THE WORDS "RECYCLED WATER" AND SHALL BE PROVIDED WITH A 24-INCH LONG GALVANIZED STEEL COIL CHAIN, 3/4-INCH WITH 12.5 LINKS PER FOOT, AND BE WELDED TO THE FRAME AND COVER. IN LIEU OF THE CAST "RECYCLED WATER" MATERIALS MAY BE PAINTED PURPLE FOR IDENTIFICATION PURPOSES.
- HORIZONTAL CLEARANCE OF 3- FEET AND VERTICAL CLEARANCE OF 6-INCHES SHALL BE MAINTAINED BETWEEN RECYCLED WATER AND OTHER LINES.
- VALVE COVERS, MANHOLE COVERS, FIRE HYDRANTS, METER COVERS AND BODIES SHALL BE ALL PAINTED PURPLE (PANTONE 522 OR EQUAL) FOR IDENTIFICATION.
- PVC C900 PIPE SHALL BE IN COMPLIANCE WITH AWWA C900, 4-INCH TO 12-INCH. ALL RECYCLED WATER C900 PVC MAINS SHALL BE MARKED ON OPPOSITE SIDES TO READ "CAUTION RECYCLED WATER - DO NOT DRINK" IN INTERVALS NOT GREATER THAN FIVE FEET. LETTERS SHALL BE A MINIMUM OF 3/4 INCHES HIGH. RECYCLED WATER C900 PVC MAINS MAY BE PURPLE IN COLOR.

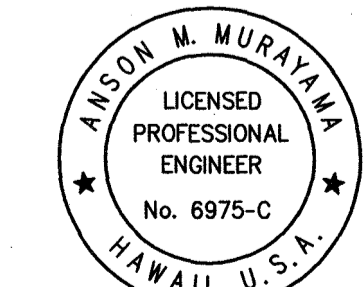
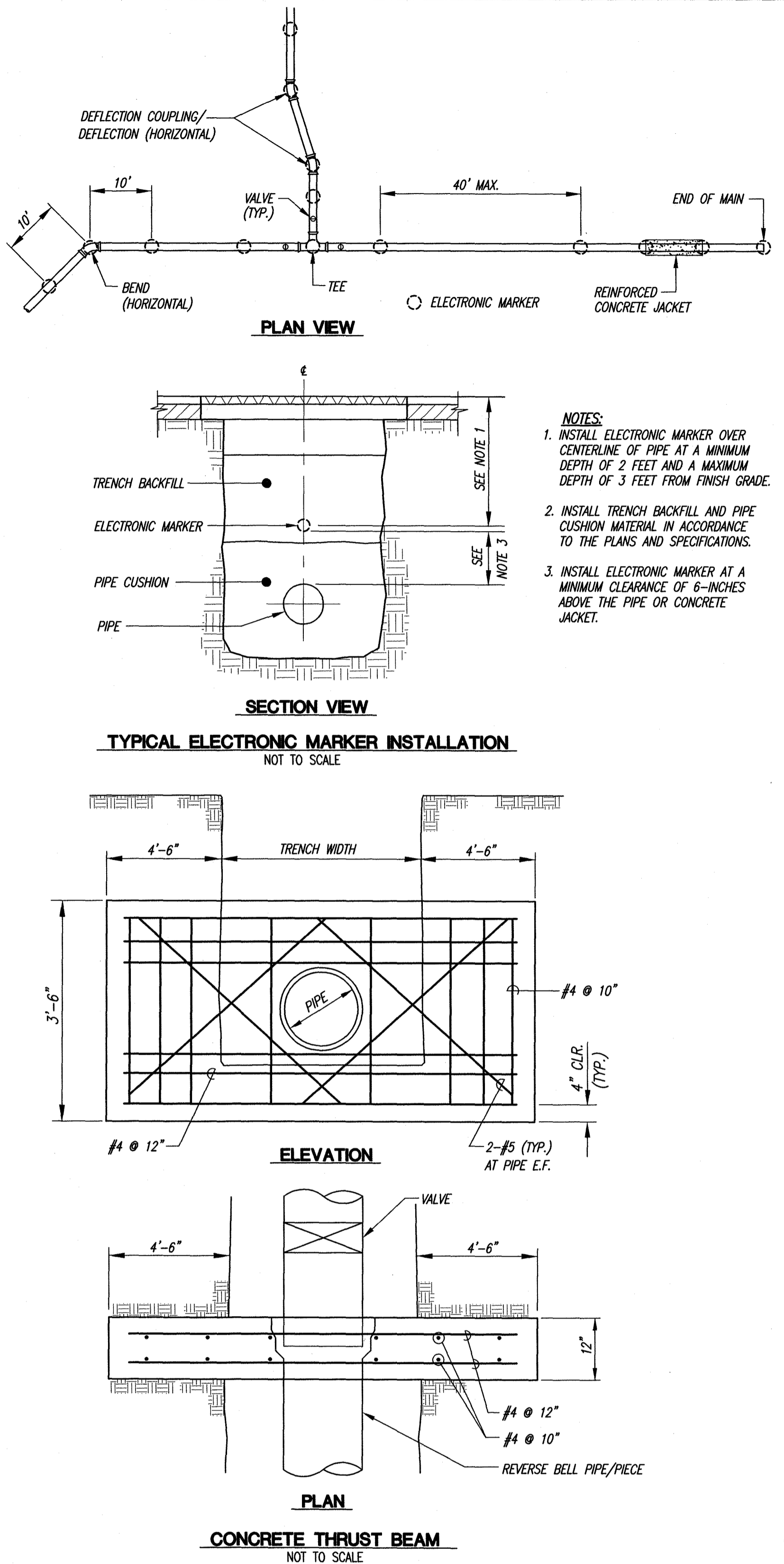
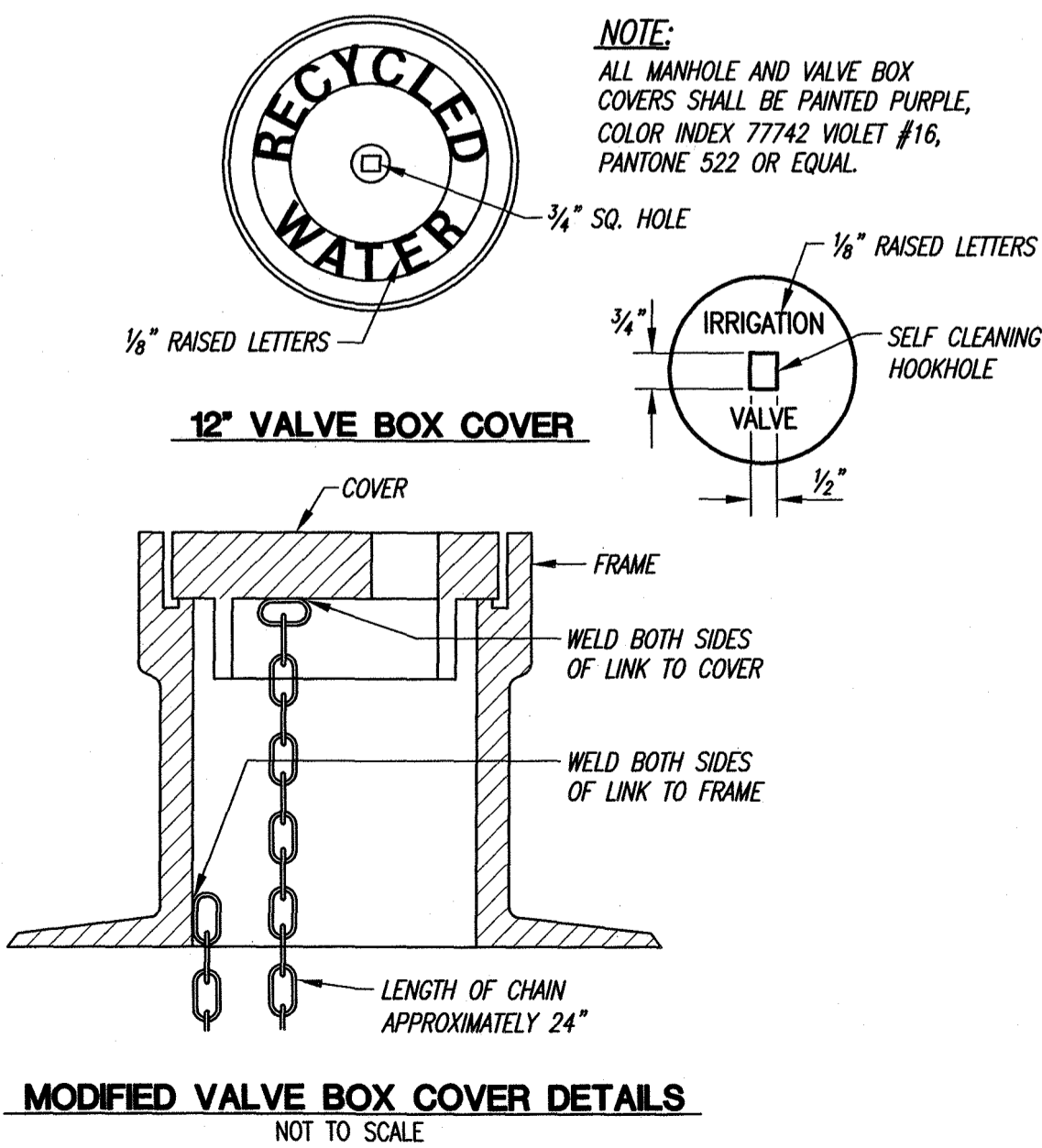
RECYCLED WATER SYSTEM (CONT.)

- PVC C905 PIPE SHALL BE IN COMPLIANCE WITH AWWA C905, 14-INCH TO 36-INCH. ALL RECYCLED WATER C905 PVC MAINS SHALL BE MARKED ON OPPOSITE SIDES TO READ "CAUTION RECYCLED WATER - DO NOT DRINK" IN INTERVALS NOT GREATER THAN FIVE FEET. LETTERS SHALL BE A MINIMUM OF 3/4 INCHES HIGH. RECYCLED WATER C905 PVC MAINS MAY BE PURPLE IN COLOR.
- PRIOR TO ANY EXCAVATING, THE CONTRACTOR SHALL VERIFY IN THE FIELD THE LOCATION OF EXISTING WATER MAINS AND APPURTENANCES.
- AT THE ELECTRICAL/SIGNAL DUCTLINE WATER CROSSINGS, ADJUST ALL ELECTRICAL/SIGNAL DUCTLINE ELEVATIONS TO MAINTAIN 6" VERTICAL CLEAR SEPARATION FROM ALL WATERLINES (12" CLEAR FOR ALL ELECTRICAL/SIGNAL DUCTLINE STRUCTURES LARGER THAN 16") AT NO COST TO THE BOARD OF WATER SUPPLY.
- MAINTAIN 3'-0" MIN. HORIZONTAL CLEAR SEPARATION BETWEEN ALL WATERLINE SYSTEMS AND NEAREST ELECTRICAL/SIGNAL DUCTLINES PARALLELING THE WATER SYSTEM AT NO COST TO THE BOARD OF WATER SUPPLY.
- MAINTAIN 3'-0" MIN. HORIZONTAL CLEAR SEPARATION BETWEEN STREET LIGHT/TRAFFIC SIGNAL STANDARDS (INCLUDING ANY MODULAR UNITS) AND THE NEAREST WATER SYSTEM. CONTRACTOR SHALL FIELD VERIFY FOR ANY CONFLICTS AT EACH STREET LIGHT/TRAFFIC SIGNAL STANDARD LOCATION. WHERE CONFLICTS OCCUR, THE CONTRACTOR SHALL COORDINATE WITH THE PROJECT ENGINEER TO REVISE THE STREET LIGHT/TRAFFIC SIGNAL STANDARD TO PROVIDE THE REQUIRED CLEARANCE AT NO COST TO THE BWS.
- THE CONTRACTOR SHALL COORDINATE THE SECURING OF THE EXISTING WATER SYSTEM WITH THE BWS PRIOR TO EXCAVATING BEHIND OR REMOVING ANY EXISTING THRUST BLOCKS, STRUCTURAL STRUTS OR REACTION BEAMS, OR ANY FITTINGS SUCH AS TEES, PLUGS, CAPS, BENDS, OFFSETS, AND VALVES, OR ANY OTHER PIPELINE APPURTENANCE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL ASSOCIATED DAMAGES RESULTING FROM FAILURE TO ADEQUATELY SECURE THE EXISTING SYSTEM.
- HORIZONTAL AND VERTICAL CLEARANCES BETWEEN POTABLE WATER AND OTHER UTILITIES, NAMELY RECYCLED WATER LINES SHALL CONFORM WITH THE "WATER SYSTEM STANDARDS" DEPARTMENT OF WATER, COUNTY OF KAUAI; BOARD OF WATER SUPPLY, CITY AND COUNTY OF HONOLULU; DEPARTMENT OF WATER SUPPLY, COUNTY OF MAUI; DEPARTMENT OF WATER SUPPLY, COUNTY OF HAWAII, VOLUME 1 [26]. FURTHERMORE, THE MINIMUM EASEMENT OR RIGHT-OF-WAY WIDTHS, AND MINIMUM COVER AND REQUIREMENTS FOR NON-POTABLE SHALL ALSO CONFORM TO THIS REFERENCE.
- ALL NEW BURIED TRANSMISSION PIPING IN THE RECYCLED WATER SYSTEM, INCLUDING SERVICE LINES, VALVES, AND OTHER APPURTENANCES SHALL BOTH BE COLORED PURPLE, SUGGESTED COLOR PANTONE 522 OR EQUAL, AND EMBOSSSED OR BE INTEGRALLY STAMPED/MARKED "CAUTION: RECYCLED WATER-DO NOT DRINK," OR BE INSTALLED WITH A PURPLE IDENTIFICATION TAPE, OR A PURPLE POLYETHYLENE WRAP, SUGGESTED COLOR INDEX 77742 VIOLET #16, PANTONE 512 OR EQUAL.
- IDENTIFICATION TAPE SHALL BE PREPARED WITH WHITE OR BLACK PRINTING ON A PURPLE FIELD, SUGGESTED COLOR INDEX 77742 VIOLET #16, PANTONE 512 OR EQUAL, HAVING THE WORDS "CAUTION: RECYCLED WATER - DO NOT DRINK." THE OVERALL WIDTH OF THE TAPE SHALL BE AT LEAST THREE (3) INCHES. IDENTIFICATION TAPES SHALL BE INSTALLED ON TOP OF NEW TRANSMISSION PIPE LONGITUDINALLY AND SHALL BE CENTERED. THE IDENTIFICATION SHALL BE CONTINUOUS IN THEIR COVERAGE ON THE PIPE AND SHALL BE FASTENED TO EACH PIPE LENGTH NO MORE THAN TEN FEET APART. TAPE ATTACHED TO SECTIONS OF PIPE BEFORE THEY ARE PLACED IN THE TRENCH SHALL HAVE FLAPS SUFFICIENT FOR CONTINUOUS COVERAGE. OTHER SATISFACTORY MEANS OF SECURING THE TAPE DURING BACKFILL OF THE TRENCH MAY BE USED IF SUITABLE FOR THE WORK, AS DETERMINED BY THE RECLAMATION AGENCY.
- VALVE BOXES AND COVERS SHALL CONFORM TO THE DEPARTMENT OF HEALTH "GUIDELINES FOR THE TREATMENT AND USE OF RECYCLED WATER", REVISED 2002, OR AS APPROVED BY THE DEPARTMENT OF HEALTH. ALL VALVE COVERS ON OFFSITE RECLAMATION TRANSMISSION WATER LINES SHALL BE OF NON-INTERCHANGEABLE SHAPE WITH POTABLE WATER COVERS AND WITH A RECOGNIZABLE INSCRIPTION CAST ON THE TOP SURFACE "RECYCLED WATER".
- ALL ABOVE GROUND EXISTING AND NEW FACILITIES SHALL BE CONSISTENTLY COLOR CODED PURPLE, SUGGESTED COLOR INDEX 77742 VIOLET #16, PANTONE 512, OR EQUAL AND MARKED TO DIFFERENTIATE RECYCLED WATER APPURTENANCES FROM POTABLE WATER OR WASTEWATER.
- EITHER AN IN-LINE TYPE OR END-OF-LINE TYPE DRAIN (BLOW-OFF) ASSEMBLY SHALL BE INSTALLED FOR REMOVING WATER OR SEDIMENT FROM THE PIPE. THE LINE TAP FOR THE ASSEMBLY SHALL BE NO CLOSER THAN 18-INCHES TO A VALVE, COUPLING, JOINT, OR FITTING UNLESS IT IS AT THE END OF THE LINE. SINCE THERE ARE RESTRICTIONS ON RUNOFF AND PONDING AND THERE MAY BE RESTRICTIONS ON INFILTRATION, THE METHOD FOR DISPOSAL OF THE DRAIN WATER SHALL BE PRESENTED TO THE DEPARTMENT OF HEALTH FOR APPROVAL.

NPDES REQUIREMENTS FOR PERMIT PROJECTS WITHIN STATE HIGHWAY RIGHT-OF-WAY

THE CONTRACTOR SHALL OBTAIN AND COMPLY WITH THE "NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) REQUIREMENTS FOR OAHU DISTRICT PERMIT PROJECTS." THIS IS AVAILABLE AT THE OAHU DISTRICT OFFICE AT 727 KAKO STREET (PH. 831-6793). DUE TO POTENTIAL COST IMPACTS, THE CONTRACTOR NEEDS TO BE AWARE OF THESE REQUIREMENTS.

THE CONTRACTOR SHALL COMPLETE AND SUBMIT A "CONTRACTOR'S CERTIFICATE OF NPDES COMPLIANCE," INCLUDING COMPLETION OF THE "BEST MANAGEMENT PRACTICE (BMP) CHECKLIST" AND SUBMITTAL OF A WRITTEN BMP PLAN AND DRAWINGS, PRIOR TO ISSUANCE OF THE PERMIT TO PERFORM WORK UPON STATE HIGHWAYS.



THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION. CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION. LICENSE EXPIRATION DATE: 04/30/14

REVISION DATE	DESCRIPTION	MADE BY	APPROVED
Community Planning and Engineering, Inc. Engineering Design Construction Management Infrastructure Planning 1208 Kapele Street Honolulu, Hawaii			
EAST KAPOLEI II DEVELOPMENT INCREMENT 2B HONOLULU, EWA, OAHU, HAWAII (DPP SUBD. FILE NO. 2011/SUB-155) OWNER & DEVELOPER: DEPARTMENT OF HAWAIIAN HOME LANDS TAX MAP KEY: 9-1-17: Portion 110			
GENERAL NOTES - 2			
DRAWN BY: LYL	ENGINEER: SS	CHECKED BY: AMM	
APPROVED:			
FILE PROCKET FOLDER NO.			

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DIVISION 2 SITEWORK

SECTION 02210 – SITE EARTHWORK

PART 1 – GENERAL

- 1.01 GENERAL CONDITIONS: The General Conditions and Special Provisions preceding these specifications shall govern this section of the work.
- 1.02 WORK INCLUDED: Furnish all labor, materials, services, equipment and related items necessary to excavate, fill, remove, transport, stockpile and dispose of all materials within the limits of the project required to construct the site work improvements in accordance with these specifications, dimensions, sections and details shown on the plans, and the approval of the Department.

1.03 RELATED WORK IN OTHER SECTIONS

Temporary Soil Erosion Control.....Section 02270

- 1.04 SUBSURFACE SOIL DATA: Subsurface soil investigations have been made at the project site. A copy of the complete report entitled “Revised Preliminary Geotechnical Exploration Report – Proposed East Kapolei Phase II Development Study Area I, Honouliuli, Ewa, Oahu, Hawaii,” dated June 2009, prepared by PSC Consultants LLC is available with these bid documents. Test pit and boring logs are shown in the soils report.

The Contractor is expected to examine the site and the record of soil investigation and decide for himself the character of materials to be encountered. The Engineer will not assume responsibility for variations of subsoil quality or condition at locations other than places shown and at the time investigations were made.

1.05 PROTECTION

- A. Erosion Control: The Contractor shall incorporate into his work schedule the Temporary Erosion Control Measures and the Permanent Erosion Control procedures indicated on the plans and as specified in the contract.
- B. Dust Control: Every effort shall be made by the Contractor to keep dust to a minimum. Spraying the ground with water or other means of control shall be used wherever possible. The Contractor shall have an adequate supply of water for moisture conditioning of fill material.

Without limiting the generality or applicability of other indemnity provisions of the contract, the Contractor agrees that he shall indemnify and hold harmless the Department from and against all suits, actions, claims, demands, damages, costs

and expenses (including but not limited to attorney's fees) arising out of any damage to any property whatsoever or injury to any person whomsoever, in any way caused or contributed to by dust from the Contractor's operations.

- C. Existing Utilities and Work Areas: The Contractor shall be responsible for the protection of existing surface and subsurface utilities and poles within and abutting the project site, trench excavations and other work areas.
- D. Finished Grades: All finished grades shall be kept moist until chemically stabilized. Where shrinkage cracks are noted after compaction of the finished grade, finished grade shall be rescarified, moisture-conditioned to above the optimum moisture content, and recompacted to the specified requirement at no additional cost to the Department. During construction, the Contractor shall properly grade and maintain all excavated surfaces to provide positive drainage and prevent ponding of water. In the event that ponding of water caused softening of the subgrades, the Contractor shall remove the soft soils and shall backfill the excavation with compacted fill at no additional cost to the Department.

PART 2 – PRODUCTS

2.01 MATERIALS

- A. General Fill: On-site material excavated from within the project limits and meeting the requirements for embankment may be utilized as fills unless otherwise recommended by the Geotechnical Engineer during construction. This excavated material shall be used as general fill under the required non-expansive select material as shown on the plans.
- B. Imported Borrow: Additional general fill material needed for general filling shall consist of imported borrow materials that have the same general properties as on-site material described above. Borrow material shall be tested by the geotechnical engineer to evaluate its stability for use as general fill. and shall be approved by the Construction Manager.
- C. Non-Expansive Select Material: Non-expansive select material to be used for this project shall consist of crushed coral, basalt gravel, or cinder sand. The non-expansive select material shall be well-graded from coarse to fine with no particles larger than 3 inches in largest dimension. It shall have a plasticity index not exceeding 15 as determined by ASTM D-4318-84; and have maximum 20 percent particles passing the No. 200 sieve. The material shall have a laboratory CBR value of 25 or higher. Free draining materials and highly permeable materials shall not be used as select material. Select material shall be tested by the geotechnical engineer for conformance with these requirements prior to delivery to the project site for the intended use.

- D. Rocks: Rocks greater than 6 inches in diameter may be used at the bottom of deep fills or may be placed in areas suitable for rock disposal in accordance with the recommendations of the geotechnical engineer. Rocks not used in an engineered fill shall be disposed of as directed by the Construction Manager.

PART 3 – EXECUTION

3.01 GRADING

- A. Notification of Schedule: The Construction Manager shall be notified by the Contractor before any fill is placed; and also at least two weeks in advance before grading operations are scheduled to begin. Further, the Contractor shall advise the Construction Manager of the proposed overall schedule for earthwork operations.
- B. General: All cuts and fills to be constructed shall be monitored by a licensed geotechnical consultant (soils engineer) retained by Department, who shall approve all subgrade preparation, fill material, methods of placing and compaction and perform field density tests during the grading. No deviation from these specifications shall be made except upon the written approval of the Engineer and/or other public agencies having jurisdiction.
- C. Preparation of Subgrades for Areas to Receive Fill:
1. Firm Competent Soils: The area shall be proofrolled to locate soft and yielding spots. The surface to receive fill shall be scarified to a depth of 6 inches until free of large clods, moisture-conditioned to at least 2 to 3 percent above the optimum moisture content and compacted to at least 90 percent of the maximum dry density established by ASTM D1557-91.
 2. Soft Wet Soils: Soft, yielding or pumping areas shall be over excavated to firm natural material and stabilized by backfilling with select material placed in 8-inch thick level lifts, moisture-conditioned at least 2 to 3 percent above optimum moisture content and compacted to 90 percent relative compaction.
- D. Soil Fill Placement and Compaction: After completion of the subgrade preparation, general fills or imported borrow materials shall be brought to at least 2 percent above the optimum moisture content, placed in level lifts not exceeding 8 inches in loose thickness, and compacted to a minimum of 90 percent of the maximum dry density established by ASTM D1557-91. The minimum degree of compaction within the upper 2.5 feet of the finished grade should be 95 percent.

Each lift of non-expansive select material shall be brought to above the optimum moisture content, placed in level lifts not exceeding 8 inches in loose thickness, and compacted to a minimum of 95 percent of the maximum dry density established by ASTM D1557-91.

Each lift of fill shall be thoroughly compacted complete to the edge before the next layer is laid thereon. Compaction shall be obtained with the use of conventional compaction equipment designed for the intended purpose. The incidental compaction achieved by the passage of hauling units over the fill will not be considered adequate.

Each lift of fill material shall be brought to at least 2 to 3 percent above the optimum moisture content to permit compacting to the specified requirements. If the soil moisture content is too high or too low, the soil moisture content shall be adjusted by suitable means before placement. Compaction of each lift of fill (including slopes, berms, etc.) shall be continued until the density as determined by field tests reaches a value of at least 90 percent of the maximum indicated by the aforementioned methods. In lieu of compacting of the slope faces, embankments may be overfilled past the design slope and then cut back.

In all cases where the existing ground surface is steeper than five horizontal to one vertical, the existing ground shall be keyed and benched into the underlying stiff soils when fill is placed on the sloping ground surface.

- E. Excavations: All excavation shall be made to the lines and grades as shown on the project plans. All excavation shall be inspected and approved by the geotechnical engineer. Where conditions encountered require deeper excavation, he shall direct the necessary modifications to be made.

Suitable material from excavation shall be used in the fill, and unsuitable material free of organic material from excavation shall be disposed of offsite.

- F. Slopes: For fill slopes consisting of granular materials (six inches or less in size) and cut slopes, maximum slopes of two horizontal to one vertical (2:1) shall be used. Fill slopes shall be constructed by overfilling and cutting back to the required slope ratio.
- G. Drainage: Care shall be exercised during grading so that areas involved will drain properly. Water shall be prevented from running over the slopes by the temporary berms or drainage swales. Runoff diversion by ditches shall be completed in the time specified in the Proposal.
- H. Field Testing: The Construction Manager shall be notified seven (7) days prior to the start of grading. A pre-grading conference shall be held between the parties involved so as to discuss methods of operations, site problems and scheduling.

Field density tests shall be taken by the geotechnical engineer retained by the Department.

- I. Supervision: At all times, the Contractor shall have a responsible field superintendent on the project in full charge of the work with authority to make decisions. He shall cooperate with the Construction Manager in carrying out the work. Any instructions given to him by Construction Manager shall be considered to have been given to the Contractor personally.
- J. Rainy Weather: No fill shall be placed, spread or rolled during unfavorable weather. When the work is interrupted by rain, operations shall not be resumed until field tests by the Engineer indicate that conditions will permit satisfactory results.
- K. Unforeseen Conditions: If unforeseen or undetected soil conditions such as soft spots, existing utility trenches, structure foundations, voids or cavities, boulders, seepage water or expansive soil pockets, etc. are encountered, the Contractor at his sole expense shall make all necessary corrective measures in the field as such conditions are detected.

- 3.02 UNSUITABLE EXCAVATED MATERIAL: The Contractor shall remove from the site all unsuitable excavated material unless specified otherwise by the Construction Manager. Unsuitable material containing organic material shall be disposed of off-site.

Removal, including hauling and disposal, of the unsuitable material will not be paid for directly, but shall be considered incidental to the project.

3.03 MAINTENANCE OF CHEMICALLY STABILIZED GRADED AREA

- A. Maintenance shall include, but is not limited to:
 - 1. Protect areas susceptible to traffic by erecting barricades immediately after stabilization.
 - 2. Maintain chemically stabilized area per manufacturer's specifications.
 - 3. Keep stabilized area free of weeds and undesirable grasses through daily weeding, if required. Remove the entire root system. Dispose of all weeds in appropriate trash containers.
 - 4. Inspect area for disease or insect damage weekly. Treat affected material immediately.

END OF SECTION

DIVISION 2 SITEWORK

SECTION 02230 – FINE GRADING OF ROADWAY PRISM

PART 1 – GENERAL

1.01 GENERAL CONDITIONS: The General Conditions and Special Provisions preceding these specifications shall govern this section of the work.

1.02 WORK INCLUDED: Furnish all labor, materials, services, equipment and related items necessary to excavate and grade the roadway prism necessary to install curbs, gutters, sidewalks and pavement structure. Work shall be governed by Section 12, Roadway Excavation, and Section 30, Select Borrow for Subbase Course, of the Standard Specifications.

1.03 RELATED WORK IN OTHER SECTIONS

Temporary Soil Erosion Control.....Section 02270

1.04 SUBSURFACE SOIL DATA: Subsurface soil investigations have been made at the project site. A copy of the complete report entitled “Revised Preliminary Geotechnical Exploration Report – Proposed East Kapolei Phase II Development Study Area I, Honouliuli, Ewa, Oahu, Hawaii,” dated June 2009, prepared by PSC Consultants LLC is available with these bid documents. Test pit and boring logs are shown in the soils report.

The Contractor is expected to examine the site and the record of soil investigation and decide for himself the character of materials to be encountered. The Engineer will not assume responsibility for variations of subsoil quality or condition at locations other than places shown and at the time investigations were made.

1.05 PROTECTION

A. Erosion Control: The Contractor shall incorporate into his work schedule the Temporary Erosion Control Measures and the Permanent Erosion Control procedures indicated on the plans and as specified in the contract.

B. Dust Control: Every effort shall be made by the Contractor to keep dust to a minimum. Spraying the ground with water or other means of control shall be used wherever possible. The Contractor shall have an adequate supply of water for moisture conditioning of fill material.

Without limiting the generality or applicability of other indemnity provisions of the contract, the Contractor agrees that he shall indemnify and hold harmless the Department from and against all suits, actions, claims, demands, damages, costs and expenses (including but not limited to attorney's fees) arising out of any damage to any property whatsoever or injury to any person whomsoever, in any way caused or contributed to by dust from the Contractor's operations.

- C. Existing Utilities and Work Areas: The Contractor shall be responsible for the protection of existing surface and subsurface utilities and poles within and abutting the project site, trench excavations and other work areas.
- D. Finished Grades and Subgrades: All subgrades shall be kept moist until covered by subbase, base course, or concrete. All finished grades shall be kept moist until covered by landscaping or other permanent groundcover. Where shrinkage cracks are noted after compaction of the subgrade or finished grade, the subgrade or finished grade shall be rescarified, moisture-conditioned to above the optimum moisture content, and recompact to the specified requirement at no additional cost to the Department. During construction, the Contractor shall properly grade and maintain all excavated surfaces to provide positive drainage and prevent ponding of water. In the event that ponding of water causes softening of the subgrades, the Contractor shall remove the soft soils and shall backfill the excavation with compacted fill at no additional cost to the Department.

PART 2 – PRODUCTS

2.01 MATERIALS

- A. General Fill: On-site material excavated from within the project limits and meeting the requirements for embankment may be utilized as fills unless otherwise recommended by the Geotechnical Engineer during construction.
- B. Select Granular Fill (Capping Fill): Select granular fill required below roadways shall consist of non-expansive, select granular material, crushed coral to be consistent with the material installed under the separate mass grading contract. The material shall be well-graded from coarse to fine with no particles larger than 3 inches in largest dimension. It shall also contain between 10 and 30 percent particles passing the No. 200 sieve. The material shall have a laboratory CBR value of 25 or higher and a swell potential of 1 percent or less when tested in accordance with ASTM Test Designation D1883. If available, coralline material processed from the designated borrow site may be used. Free-draining materials and highly permeable materials shall not be used as select granular fill. Select granular fill material shall be tested by the Geotechnical Engineer for conformance with these requirements prior to delivery to the project site for the intended use.

PART 3 – EXECUTION

3.01 GRADING ROADWAY PRISM

- A. Notification of Schedule: The Construction Manager shall be notified by the Contractor at least two weeks in advance before grading operations are scheduled to begin. Further, the Contractor shall advise the Construction Manager of the proposed overall schedule for the grading operations.
- B. General: All cuts and fills to be constructed shall be monitored by a licensed geotechnical consultant (soils engineer) retained by the Department, who shall approve all subgrade preparation, fill material, methods of placing and compaction and perform field density tests during the grading. Written approval shall be issued upon completion of cuts and fills.
- C. Preparation of Subgrades for Areas to Receive Fill: Firm Competent Soils: The surface to receive fill shall be scarified to a depth of about 6 inches until free of large clods, moisture-conditioned to at least 2 percent above the optimum moisture content and compacted to at least 95 percent of the maximum dry density established by ASTM D1557-91.
- D. Soil Fill Placement and Compaction: After completion of the subgrade preparation, select granular fill materials shall be brought to at least 2 percent above the optimum moisture content, placed in level lifts not exceeding 8 inches in loose thickness, and compacted to a minimum of 95 percent of the maximum dry density established by ASTM D1557-91.

Each lift of fill shall be thoroughly compacted complete to the edge before the next layer is laid thereon. Compaction shall be obtained with the use of conventional compaction equipment designed for the intended purpose. The incidental compaction achieved by the passage of hauling units over the fill will not be considered adequate.

Each lift of fill material shall be brought to at least 2 percent above the optimum moisture content (above the optimum moisture content for the capping fill) to permit compacting the specified requirements. If the soil moisture content is too high or too low, the soil moisture content shall be adjusted by suitable means before placement. Compaction of each lift of fill shall be continued until the density as determined by field tests reaches a value of at least 95 percent of the maximum indicated by the aforementioned methods. In lieu of compacting the slope faces, embankments may be overfilled past the design slope and then cut back.

The finished subgrade below areas to receive asphalt concrete base course for pavements shall be scarified to a depth of 6 inches, moisture-conditioned to above the optimum moisture content, and compacted to at least 95 percent of the maximum dry density established by ASTM D1557-91.

- E. Excavations: All excavation shall be made to the lines and grades as shown on the project plans. All excavation shall be inspected and approved by the Geotechnical Engineer. Where conditions encountered require, he shall direct the necessary modifications to be made.

Suitable material from excavation shall be used in the fill, and unsuitable material free of organic material from excavation shall be disposed of in the designated borrow site to replace material borrowed.

- F. Drainage: Care shall be exercised during grading so that areas involved will drain properly. Water shall be prevented from running over the slopes by the temporary berms or drainage swales.
- G. Field Testing: The Construction Manager shall be notified at least two days prior to the start of grading. A pre-grading conference shall be held between the parties involved so as to discuss methods of operations, site problems and scheduling. Field density tests shall be taken by the Geotechnical Engineer retained by the Department.
- H. Supervision: At all times, the Contractor shall have a responsible field superintendent on the project in full charge of the work with authority to make decisions. He shall cooperate with the Construction Manager in carrying out the work. Any instructions given to him by the Construction Manager shall be considered to have been given to the Contractor personally.
- I. Rainy Weather: No fill shall be placed, spread or rolled during unfavorable weather. When the work is interrupted by rain, operations shall not be resumed until field tests by the Construction Manager indicate that conditions will permit satisfactory results.

- 3.02 UNSUITABLE EXCAVATED MATERIAL: The Contractor shall remove from the site all unsuitable excavated material unless specified otherwise by the Construction Manager. Unsuitable material containing organic material shall be disposed of off-site.

Removal, including hauling and disposal, of the unsuitable material will not be paid for directly, but shall be considered incidental to the project.

END OF SECTION

SECTION 02270 – TEMPORARY SOIL EROSION CONTROL

PART 1 – GENERAL

- 1.01 GENERAL CONDITIONS: The General Conditions and Special Provisions preceding these specifications shall govern this section of the work.
- 1.02 WORK INCLUDED: Submit three (3) sets of the erosion control materials for approval by the Engineer. Furnish all labor, materials, services, equipment and related items necessary to implement the temporary erosion control measures, submitted separately, as required by these specifications and as ordered by the Engineer during the life of the contract to control water pollution through the use of berms, dikes, dams, sediment basins, fiber mats, netting, gravel, mulches, grasses, slope drains, and other erosion control devices or methods.
- A. Temporary erosion and siltation control measures as described herein shall be applied to any erodible material within this project, including local material sources and work areas.
 - B. The Contractor shall be responsible for providing the necessary erosion control measures which are shown on the plans or which may be ordered by the Engineer. All grading operations shall be performed in conformance with the applicable provisions of the “Water Pollution Control and Water Quality Standards” contained in the “Public Health Regulations,” State Department of Health.
 - C. The Contractor shall be responsible for promptly (next day after storms) removing all silt and debris resulting from his work and deposited in drainage facilities, roadways, neighboring lands, and other areas.

1.03 RELATED WORK IN OTHER SECTIONS

Fine Grading of Roadway Prism.....Section 02230

PART 2 – PRODUCTS

2.01 MATERIALS

- A. Mulches: To be bagasse, hay, straw, fiber mats, netting, wood cellulose, bark, wood chips, or other suitable material acceptable to the Engineer and shall be reasonably clean and free of noxious weeds and deleterious materials.
- B. Slope Drains: To be constructed of fiber mats, plastic sheets, or other materials acceptable to the Engineer.
- C. Catch Basin Inlet Filters: “True Dam” sediment filter (by Dandy Products, Inc.) or approved equal.

PART 3 – EXECUTION

3.01 TEMPORARY EROSION CONTROL

- A. The Construction Manager has the authority to limit the surface area exposed by clearing and grubbing and to limit the surface area exposed by excavation, borrow and fill operations. The Construction Manager may also direct the Contractor to provide immediate, permanent, or temporary pollution control measures to prevent contamination of streams, drainage channels and pipes, roads, neighboring lands, and other areas.

Except for specified measures which may be shown on the plans, the Contractor shall determine the appropriate erosion control measures to use. Such work may involve the construction of temporary berms, dikes, dams, sediment basins, and slope drains, and the use of temporary mulches, mats, and grassing, or the construction and use of other control devices or methods as necessary to control erosion.

- B. The Contractor shall incorporate all erosion control measures shown in the plans. The erosion controls may be modified as necessary to adjust to conditions that develop during construction. All modifications are subject to approval by the Engineer.
- C. The Contractor shall limit the surface area exposed by grubbing, stripping of topsoil, and grading to that which is necessary for him to perform the next operation and which is within his capability and progress in keeping the finish grading, mulching, grassing, and other such pollution control measures current.

The grubbing of the vegetative root mat and stumps and the stripping of topsoil shall be confined within the limits of grading which can be actively and continuously prosecuted within 15 calendar days. The area to be graded shall be limited to the minimum area necessary to accommodate the Contractor's equipment and work force and shall not at any time exceed 15 acres, unless otherwise stated on plans, without prior approval of the Construction Manager.

Any area remaining bared or cleared for more than 10 calendar days and which is not within the limits of active construction shall be immediately hydro-mulch seeded or remedied as directed by the Engineer at the Contractor's expense without cost to the Department. All areas where finish grading has been completed shall be grassed within three calendar days after the completion of grading for that area.

- D. The Contractor shall, at the end of each work operation in any one day, shape the earthwork in such a manner as to control and direct the runoff to minimize the erosion of soils. He shall construct earth berms along the top edges of embankments or along the property line with adjacent properties, streams and

water channels, to intercept any runoff. Temporary slope drains shall be provided to carry runoff from the top of cuts and fills. Temporary facilities for controlled discharges shall be provided for runoff impounded, directed, or controlled by project activities or by any erosion control measure employed.

- E. Cut slopes shall be shaped, topsoil added if necessary, and planted as the work progresses. In no case shall the exposed surface be greater than 15 feet in height. Whenever major excavation is suspended or halted and the slope is bared for more than 15 consecutive days, the exposed surfaces shall be hydro-mulch seeded or protected as directed by the Engineer at the Contractor's expense without cost to the Department of Hawaiian Home Lands.

Fill slopes shall be finished as specified and in accordance with the requirements outlined for cut slopes above.

- F. Construction of berms, cofferdams, or other such construction in or near the vicinity of streams, ponds, waterways, or other bodies of water shall be with approved materials.
- G. The temporary erosion and siltation control measures outlined in these specifications are minimum requirements and shall not preclude the provision of any additional measures which the Contractor may deem necessary. Damages caused by the erosion of soils and the pollution of downstream areas shall be the responsibility of the Contractor and all costs for repairing, correcting, replacing and cleaning damaged or polluted facilities shall be borne by the Contractor.

END OF SECTION

SECTION 02480 - LANDSCAPE PLANTING

PART 1 - GENERAL

- 1.01 GENERAL PROVISIONS: The General Instructions to Bidders, the General Conditions of Construction Contracts, and Special Provisions preceding these specifications shall govern this section of the work.
- 1.02 WORK INCLUDED: Work includes all labor, materials, equipment and incidentals required to complete the landscaping by a licensed landscape contractor as shown on the plans and as herein specified. Grass restoration for trenches (12" or less in width) for sewers, drains, culverts, electrical ducts, potable water lines, irrigation lines and related appurtenances shall not be required to be done by a licensed landscape contractor.
- 1.03 REFERENCE: DPR Standard Specifications for Landscaping.
- 1.04 EXPLANATION AND PRECEDENCE OF DRAWINGS:
- A. For purposes of clarity or legibility, drawings are essentially diagrammatic and although the locations and areas of plant material are drawn to scale, Contractor shall make use of all data in all contract documents and shall verify this information at the site.
 - B. All work called for on the drawings by notes shall be furnished and installed whether or not specifically mentioned in the specifications.
- 1.05 WORK SPECIFIED IN OTHER SECTIONS:
- A. Stripping surface, stockpiling and spreading of existing on-site soil and/or furnishing and spreading of imported screened soil in all planting areas except for trees and shrubs.
 - B. Submission of samples of the existing on-site soil and/or imported screened soil and the soil analysis.
- 1.06 SOIL PREPARATION (For grass and ground cover planting):
- A. General:
 - 1. These specifications shall supersede Sections 50 and 51 "Standard Specifications for Public Works Construction," September 1986, City and County of Honolulu.

2. Soil Testing: Complete soil testing and soil analysis shall be done on all existing on-site soil and/or imported screened soil to be used for landscaping on the site. Soil testing shall be done by the University of Hawaii Cooperative Extension Service or an independent soil engineering laboratory. Soil samples shall be tested for pH and "available" phosphorous, potassium, calcium and magnesium. A test for salinity may be requested upon inspection by the Engineer. Contractor shall bear all cost of soil testing.

B. Materials:

1. Commercial fertilizer shall be of the analysis 10-30-10, or as determined by the Engineer.
2. Lime (Calcium Carbonate) shall be agricultural type acceptable to the Engineer.
3. Gypsum (calcium sulfate) shall be agricultural type acceptable to the Engineer.
4. Organic Nutrient soil conditioner (humus) shall be Ferto (6-4-2) or Gro-Power Plus (5-3-1) or equal acceptable to the Engineer.
5. Organic non-nutrient-soil conditioner shall be "Menehune Mulch" or Big "R" Redwood soil conditioner or equal acceptable to the Engineer.

C. Soil Amending Application Rates:

1. Organic nutrient soil conditioner shall be applied at the rate of 150 lbs. per 1000 square feet or as specified on plans.
2. Organic non-nutrient-soil conditioner shall be applied as specified on plans.
3. Addition of Amendments: Addition of commercial fertilizer and amendments shall be in strict accordance to specifications and as determined by the Engineer after submission of soil test report.
4. Contractor shall submit copies of all purchase and delivery receipts to the Engineer for all amendments ordered and used on this project.

D. Soil Preparation Procedure:

1. After site grading operations have been completed, shape and fine grade to a smooth fine surface the entire site in accordance with the grading plan. In ballfield areas, grade to a maximum 2% slope ground plane to insure proper drainage.
2. Spread amendments on ground in even layers at rates specified in 1.05c, 1, and 2 and incorporate to a depth of 4 inches by rotary hoe method, working over all areas in alternate directions. ALL AMENDMENTS SHALL BE SPREAD OVER THE SITE IN THE PRESENCE OF AND ACCEPTED BY THE ENGINEER BEFORE INCORPORATION. This soil amending and acceptance procedure shall not be deleted, substituted nor amended in any manner.
3. Drag all areas by mechanical means to break up clods. Remove debris and rocks over 1 inch in diameter by use of a spring tooth harrow with debris screen container. Fine grade to a smooth continuous surface and roll with a lightweight disc roller prior to planting.

1.07 LANDSCAPE PLANTING - TREES, SHRUBS, GROUND COVERS AND GRASS:

A. General: Plant trees, shrubs, ground covers and grass where indicated on the drawings and specified herein.

B. Materials:

1. Imported screened soil: Shall be screened, (1/2-inch screen), natural, fertile, friable soil free of stones, noxious seeds, roots, sticks, weeds, (especially nutgrass), subsoil in any quantity. Red Humic latosol soils or types known as "Palolo Clay" or "Lualualei Clay" are unacceptable. Soil should have satisfactory loam characteristics, and it shall not be screened subsoil.
2. Commercial Fertilizer: Shall be slow release Agriform (20-10-5) tablets or Osmocote (18-6-12) polymeric capsules, unless otherwise detailed on plans.
3. Organic nutrient-soil conditioner (humus): shall be Ferto (6-4-2) or Gro-Power Plus (5-3-1) or equal acceptable to the Engineer.
4. Organic non-nutrient-soil conditioner: shall be Burnt Bagasse Mix or Big "R" Redwood soil conditioner or equal acceptable to the Engineer.
5. Stakes for container stock trees shall be 2" x 2" x 8'-0" rough construction grade redwood or treated Douglas Fir; stakes for field grown trees shall be #5 reinforcing bars, 3 feet long minimum or as detailed on drawings.

6. Tree Ties shall be new or used reinforced rubber or plastic hose inserted with #12 gauge pliable galvanized iron wire or commercial ties acceptable to the Engineer.

C. Plant Materials:

1. Nomenclature: The names of plants required shall conform to "Gardens of Hawaii" by Marie C. Neal. Names of plants not included therein shall conform to names generally accepted in the local nursery trade. The Engineer shall be the final arbiter in decisions regarding plant identification and nomenclature.
2. Quality and Size: All plant materials shall be uniform and have a habit of growth that is normal for the species and shall be sound, healthy, vigorous and free from insect pests, plant disease and injuries. Trees and shrubs in containers of the size specified shall have sufficient roots to hold earth together intact after removal from containers without being rootbound.

Trees will be straight of uniform shape without damaged, crooked or multiple leader, unless otherwise specified. Trees shall be free of bark abrasions, sunscalds, disfiguring knots or fresh cuts of limbs over 3/4 inch which have not completely calloused.

All materials shall equal or exceed the measurements specified in the drawings which are minimum acceptable sizes. Caliper measurements for trees shall be taken at a point 6 inches above natural ground line for trees up to 4 inches in caliper and at a point 12 inches above natural ground line for trees over 4 inches in caliper. Materials shall be measured before pruning with branches in normal condition.

D. Trees, Shrubs and Ground Cover Procedure

1. Planting Pits: Reasonable care shall be exercised to have tree and shrub pits dug and soil prepared prior to moving plants to their respective locations for planting to ensure that they will not be unnecessarily exposed to drying elements or to physical damage. The diameter of all plant pits shall be at least twice the diameter of the container. The depth of pits for trees and shrubs shall be sufficient to accommodate the rootball depths when the plant is set plus at least 12 inches clearance for trees and 6 inches clearance for shrubs for prepared soil at the bottom of the pit.
2. Setting Trees: All trees shall be set at such a level that after settlement, the top of rootball shall be approximately 4-6 inches below the finished grade of the surrounding ground. Each shall be set upright and faced to provide the best appearance possible.

3. Planting: Trees shall be planted in the specified backfill which shall be thoroughly settled by watering and tamping. Backfill mix for all trees shall consist of organic non-nutrient-soil conditioner, organic nutrient-soil (humus) and screened soil in proportions detailed on plans. MagAmp (7-40-6) shall be mixed in bottom of pits in proportions detailed on plans. All soil amendments and screened top soil shall be thoroughly mixed together before being placed in the plant pit. If the on-site soil available from the excavation of planting pits, as herein specified, is insufficient in quantity or of poor quality for backfill, the Contractor shall provide the necessary additional imported screened top soil. Backfill shall not be packed.

After backfilling, 6" below the rootcrown, soak pit with water and place the required number of Agriform tablets or amount of Osmocote fertilizer evenly around the rootball, approximately 2 inches from root tips. Slow release fertilizer shall be applied to trees and shrubs at rates detailed on plans.

Backfill rest of hole with specified backfill mixture. Firm down backfill, but do not pack. Immediately after planting, thoroughly soak planting pit with water.

4. Staking: Trees shall be supported immediately after planting.

Container-grown trees shall be secured with stakes as detailed on plans.

5. Pruning: Pruning of trees shall be limited to the minimum necessary to remove injured twigs and branches and to compensate for the loss of roots during transplanting but never to exceed one-half of the branching structure.

6. Ground Cover Planting: Plant ground cover in prepared soil only, refer to 1.06. Soil Preparation. Plants shall be spaced equally and uniformly at the distance indicated on the plan. Spacings shown on the drawings are triangular, unless noted otherwise. Finish grade shall be smooth and uniform, and drainage patterns and tree water basins shall not be altered. Water and soak ground immediately after planting.

E. Grass Planting:

1. General:

- a. The work covered under this section shall include the furnishing of all labor, equipment, materials and incidentals necessary for grass planting or grass restoration, complete in place, in strict accordance with this section of the specifications and applicable drawings.

- b. Grass planting shall commence immediately after the soil preparation has been completed and accepted by Engineer
- c. The Contractor may elect to plant grass by either seeding, stolonizing or hydromulching, unless otherwise indicated on the drawings.

2. Materials:

- a. Grass shall be common Bermuda, Cynodon dactylon, unless otherwise indicated on the drawings.
- b. Grass seed shall be fresh hulled and meet the following requirements:

Pure Seed.....95.0% minimum
 Crop Seed..... 1.0% maximum
 Weed..... 0.5% maximum
 Inert Material..... 5.0% maximum
 Germination.....85.0% minimum

Grass seeds shall be delivered to the site in unopened, sealed container, labeled with brand name and percent purity. Labeling shall indicate that the seeds passed a certified germination test no more than 12 months prior to use.

- c. Grass stolons shall be healthy, living runners 2 inches to 4 inches long with a well developed root system. They shall be freshly cut and free from weeds. Immediately following harvesting, the stolons shall be thoroughly watered then covered and kept moist during storage and transportation until planted.

3. Procedure:

- a. Preparation of Planting Area: Refer to 1.06. Soil Preparation.
- b. Planting by Seed: Ground surface shall be raked to a smooth even plane, broadcast seeds uniformly by mechanical sower at a minimum rate of 5 lbs. per 1000 square feet. Sow one-half the seeds in one direction and the remainder at right angles to the first direction. The seeds shall be incorporated into the top 1/4 inch to 1/2 inch of soil. After sowing, the seeded area shall be compacted by hand or a cultipacker or mechanical roller weighing 60 to 90 pounds per lineal foot of roller. The area shall be thoroughly and gently watered and kept moist during the germination period.

c. Planting by Stolons: After ground surfaces have been raked to a smooth and even plane, broadcast stolons uniformly by hand at a minimum rate of 6 bushels per 1000 square feet. The stolons shall be incorporated into the top 1/4 inch to 1/2 inch of soil. After broadcasting, the planted area shall then be disked and rolled by a mechanical roller weighing 60 to 90 lbs. per lineal foot of roller to insure close contact of the soil and stolons. Do not roll on wet soil.

d. Planting by Hydromulching:

(1) Description: This work shall consist of furnishing and applying by hydromulching, seeds or stolons, and mulch to areas designated on the plans or ordered by the Engineer and shall include continuous care and maintenance in accordance with these specifications. Such areas shall include those damaged or made barren by construction operations or equipment. All steep banks 3 to 1 slope or more shall be hydromulched for erosion control.

(2) Materials:

(a) Seeds: Seeds shall be hulled common Bermuda (Cynodon dactylon), certified, meeting the following requirements:

Pure Seed.....95.0% minimum
Crop Seed..... 1.0% maximum
Weed..... 0.5% maximum
Inert Material..... 5.0% maximum
Germination.....85.0% minimum

The seeds shall be applied at the rate of 50 pounds per acre (minimum) and within 12 months of the date of the certified germination test.

(b) Stolons: Shall be healthy, living, well developed runners, 1 inch to 2-1/2 inches in length, freshly dug up and free from weeds. Immediately following harvesting, the stolons shall be thoroughly watered then kept moist during storage and transportation until planted. Stolons shall be applied at the rate of 8 bushels per 1000 square feet (minimum).

(c) Mulch: Mulch shall be specifically processed fiber containing no growth or germination inhibiting factors. It shall be such that after addition and agitation in the hydraulic equipment with seeds, fertilizer, water and other additives not detrimental

to plant growth, the fibers will form a homogeneous slurry. When hydraulically sprayed on the soil, the fibers shall form a blotter-like ground cover which readily absorbs water and allows infiltration to the underlying soil. In every application, complete coverage of the soil shall be attained. Mulch shall be applied at the minimum rate of 1700 pounds per acre.

(3) Procedure:

- (a) The Contractor shall notify the Engineer not less than 24 hours in advance of any hydromulching operation and shall not begin work until area for hydromulching has been prepared and accepted by Engineer. Acceptance shall include inspection of fine grading to provide for the collection and disposal of surface and subsurface water to protect planting areas against unnecessary erosion. Acceptance shall not relieve the Contractor of his responsibility to restore any damage to the grade until the planted areas are accepted. Following the Engineer's acceptance, hydromulching of the approved planting areas shall begin promptly.

The hydromulch equipment shall be capable of mixing all the necessary ingredients to a uniform mixture and to apply the slurry to provide uniform coverage. Seeds, fertilizer and mulch mix shall be applied in one operation by approved hydraulic equipment. The equipment shall have a built-in agitation system with an operating capacity sufficient to keep the mix in uniform distribution until pumped from the tank. Distribution and discharge lines shall be large enough to prevent stoppage and shall be equipped with hydraulic discharge spray nozzles which provide a uniform distribution of the slurry. Areas inaccessible to hydromulching application shall be stolonized or seeded by hand broadcast method acceptable to Engineer and fertilized.

Water shall be applied immediately following mulching in such quantities as to moisten the soil and mulch. Watering shall be continued in such manner, quantity and frequency to insure proper germination and growth and shall be done in a way that will prevent erosion. Watering equipment shall

be of a type that will not cause erosion or runoff. If method is deemed unacceptable by the Engineer, it shall be corrected by the Contractor. Should the slope erode or silt be transported to pose as potential pollutants, it shall be immediately removed and prevented from entering into water channels. All eroded areas shall be restored to the original grade as soon as possible.

1.08 PLANTING MAINTENANCE, INSPECTION AND ACCEPTANCE:

- A. General: This item of work shall consist of the maintenance of all plants and planted areas in optimum growing condition and appearance and the inspection and acceptance of landscape planting.
- B. Pre-Maintenance Inspection:
 - 1. A pre-maintenance inspection shall be held at the completion of all planting operations and prior to the beginning of the formal maintenance period.
 - 2. All deficiencies shall be corrected and all plantings accepted by the Engineer before the issuance of a commencement date of the formal maintenance period.
- C. Period of Maintenance:
 - 1. Maintenance shall begin immediately after completion and acceptance of all planting and shall continue for 60 calendar days thereafter, unless otherwise specified in the Proposal or on the drawings. The care of plants prior to completion of all planting, including relocated trees, shall not be considered as part of the maintenance period but only as an incidental to landscape work.
 - 2. Maintenance shall include watering, weeding, fertilizing, topdressing with amended imported screened soil acceptable to Engineer, mowing, pruning, repairing stakes, guys and ties, spraying for diseases and insects, replanting and any other work necessary to maintain all plants in a healthy growing condition. The contractor shall irrigate all planting areas as required to insure active growth keeping areas moist but not saturated. Regulate irrigation as necessary to avoid erosion and gullyng. The Contractor shall be responsible for the protection of all plants and planting areas during the maintenance period and shall pay for all water required during the maintenance period unless otherwise specified. All dead plant materials shall be replaced immediately. During the last week of the maintenance period, the Contractor shall fertilize the entire planting areas as follows:

- a. Organic nutrient-soil conditioner (humus) at the rate of 25 lbs. per 1000 square feet. Ferto (6-4-2) or Gro-Power Plus (5-3-1) shall be applied in the presence of the Engineer.

D. Final Inspection and Acceptance:

1. At the completion of all planting operations and the maintenance period, an inspection shall be performed.
2. The Contractor shall request the inspection in writing to the Engineer 7 calendar days prior to the completion of the maintenance period in order that a mutually agreeable time for inspection may be arranged.
3. The Contractor and the Engineer, or their representatives, shall be present at the inspection.
4. Any plant material found not to be in healthy growing condition shall be immediately replaced by the Contractor.
5. Acceptance of the grass planting after the maintenance period shall be contingent upon the following:
 - a. 95% coverage of the overall area shall be required for grass planting.
 - b. All germinated areas shall be healthy and living at the end of maintenance period.
 - c. Weeds shall not exceed an area greater than 10% of the overall grass area.
 - d. Grass shall be mowed and not taller than 1 inch in height. All clippings shall be removed.
 - e. All depressions shall be filled to proper grade and area regrassed as required.
6. Acceptance of the ground cover planting after the maintenance period shall be contingent upon an 80% coverage.
7. If at the final inspection, the Engineer is of the opinion that all or certain portions of the work is not acceptable as to the intent of the drawings and specifications, an additional 30 days maintenance period shall be extended at no cost to the owner. During this period, the Contractor shall meet all requirements and correct all deficiencies, including any additional mowing and fertilizing. After the 30 days, if the work is still unacceptable or does not meet the conditions as specified under Section 1.08.d.4) & 5), Planting

Maintenance, Inspection and Acceptance, the Contractor shall be charged with liquidated damages for each and every calendar day thereafter and shall be based on the amount bid in the Proposal and as specified in the Schedule of Liquidated Damages.

8. If all plant materials are accepted at this inspection by the Engineer, the Contractor shall be relieved of further maintenance.
9. All trees and palms shall be guaranteed for one year. If any tree or palm fails to survive by the end of one year, it shall be replaced with the same size and species by the Contractor at no cost to the owner. Contractor shall not be held liable for any loss due to lack of proper maintenance, vandalism or accident.

END OF SECTION

SECTION 02500 – ROAD PAVEMENT

PART 1 – GENERAL

- 1.01 GENERAL CONDITIONS: The General Conditions and Special Provisions preceding these specifications shall govern this section of the work.
- 1.02 WORK INCLUDED: Furnish all labor, materials, tools, equipment and related items necessary to complete, in place, asphalt concrete pavement for roads in conformity with the dimensions, profiles, sections and details shown on the plans.
- 1.03 SUBMITTALS: The Contractor shall submit for approval, the job mix formula for the Asphalt Concrete to be supplied for the project. The job mix formula shall indicate the source of aggregates and grades of bituminous material to be used in the mix. The total amount of bituminous binder in the mix shall be between 4.5 percent to 8.0 percent by weight depending on the specified Asphalt Concrete Mix. All test data used to develop the job mix formula shall also be submitted. The job mix formula for the mixture shall be in effect until modified in writing by the Engineer. Should a change in sources of materials be made, a new job mix formula shall be established and approved before the new material is used.

The bituminous mixtures shall be designed using procedures contained in Chapter III, Marshall Method of Mix Design, of the Asphalt Institute's Manual Series No. 2 (MS-2), current edition, and shall meet the requirements of Table I below:

TABLE I
REQUIREMENTS FOR MARSHALL METHOD OF MIX DESIGN

Test Property	Mix #2	Mix #3	Mix #4	Mix #5
Number of Blows	75	75	75	75
Stability, lb (minimum number)	2,000	2,000	2,000	2,000
Flow, 0.01 in.	8 - 16	8 - 16	8 - 16	8 - 16
Percent air voids	4 - 6	4 - 6	4 - 6	4 - 6
Percent air voids in mineral aggregate (min.)	13	14	16	18

The job-mix formula for each mixture shall establish a single percentage of aggregate passing each required sieve size and a single percentage of bituminous material to be added to the aggregate.

After the job-mix formula is established, all mixtures furnished for the project shall conform thereto within the following ranges of tolerances in Table II below:

TABLE II
RANGE OF TOLERANCES FOR JOB-MIX FORMULA

Passing No. 4 and larger sieves	± 7 percent
Passing No. 8 to No. 100 sieves (inclusive)	± 4 percent
Passing No. 200 sieve	± 2 percent
Bitumen	± 0.4 percent

Acceptance Sampling and Testing of the Bituminous Mixture.

- A. The Contractor shall provide laboratory testing for control and acceptance functions during periods of mixture productions: One (1) field Marshall Test, asphalt content test, gradation analysis, and specific gravity test for each mixture.
- B. The compacted mixtures of the in-place pavement shall not be less than 91 percent of the specific gravity (ASTM D2041, commonly called the Rice Method) of the combined mixture without voids.
- C. Two (2) core or cut samples per street for the determination of the thickness and density of the completed pavements (or using nuclear gauge for determination of density) shall be obtained and/or tested by the Contractor at no extra cost (including that to restore the affected area). The size and locations of the samples will be directed by the Construction Engineer.
- D. All data for the control and the acceptance testing shall be submitted.

PART 2 – PRODUCTS

- 2.01 MATERIALS: Materials for roads shall be in accordance with the following sections of the Standard Specifications, except as amended on the plans and/or in the specifications herewith:

Roadway Excavation	Section 12
Subgrade	Section 29
Aggregate Subbase Course	Section 30
Aggregate Base Course.....	Section 31
Asphalt Surface Treatments.....	Section 33
Asphalt Concrete Pavement, Mix No. 3 or 4.....	Section 34
Standard Street Survey Monuments.....	Section 49

Asphalt cement grade shall be PG 64-16.

PART 3 – EXECUTION

- 3.01 INSTALLATION: Stake out the areas to be paved using wooden stakes on which the final finish elevations, base course and subgrade elevations are clearly marked. All stakes and elevations shall be approved by the Engineer before any work is done.

Contractor shall fine grade the subgrade under the pavement and sidewalk by bringing the subbase or coralline material to the proper grade from the mass grade elevations to the proper shape before installing the base course or concrete sidewalk.

Install roadways in accordance with the applicable sections noted hereinbefore.

- 3.02 COMPACTION TESTING: The Contractor shall notify the Construction Manager at least 5 days prior to the start of fine grading for the roadway subgrade. Field density tests will be taken on the roadway subgrade, and aggregate base course by the Geotechnical Engineer retained by the Department. The Contractor shall be responsible for any corrective measures required as a result of inadequate compaction.

- 3.03 CLEANING OF SURFACES: Immediately before applying the prime coat or tack coat, the surface to be treated shall be swept clean of all loose material, dirt, excess dust or other objectionable material. No application shall be permitted when the surface to be treated is appreciably damp or when weather conditions are unsuitable.

Apply asphalt surface treatments at the rates specified in Section 33 of the Standard Specifications.

- 3.04 ADJUSTMENT OF EXISTING UTILITY STRUCTURES TO FINISHED GRADE: Adjust existing utility structures to finished grade in accordance with Section 36 of the Standard Specifications.

- 3.05 REPAIRS OF EXISTING ASPHALT CONCRETE PAVEMENTS: Repair to the original conditions and to the satisfaction of the Engineer all existing asphaltic concrete pavements that have been damaged by construction activities, including damage done by heavy equipment.

- 3.06 PLACING ASPHALT CONCRETE PAVEMENT: Install asphalt concrete pavement as specified in Section 34 of the Standard Specifications.

END OF SECTION

SECTION 02501 – ASPHALT CONCRETE BASE

PART 1 – GENERAL

- 1.01 **GENERAL CONDITIONS:** The General Conditions and Special Provisions preceding these specifications shall govern this section of the work.
- 1.02 **WORK INCLUDED:** Furnish all labor, materials, tools, equipment and related items necessary to complete, in place, one or more courses of plant mixed asphalt concrete base course or plant mixed glassphalt concrete base course on a prepared subbase and subgrade in accordance with the requirements of these specifications and in conformity with the dimensions, profiles, sections and details shown on the plans.
- 1.03 **SUBMITTALS:** The Contractor shall submit for review the job mix formula for the Asphalt Concrete Base/Glassphalt Concrete Base (with crushed glass and/or virgin material) to be supplied. The job mix formula shall indicate the source of the aggregates, grades of bituminous material and proportion of the crushed glass to be used in the mix. The total amount of bituminous binder in the mix shall be between 4.0% to 6.0% for Asphalt Concrete Base. All test data used to develop the job mix formula shall also be submitted. The job mix formula for the mixture shall be in effect until modified in writing by the Engineer. Should a change in sources of materials be made, a new job mix formula shall be established and submitted for review before the new material is used.

The bituminous mixtures shall be designed using procedures contained in Chapter III, Marshall Method of Mix Design, of the Asphalt Institute's Manual Series No. 2 (MS-2), current edition, and shall meet the requirements of Table I below:

TABLE I
REQUIREMENTS FOR MARSHALL METHOD OF MIX DESIGN

Test Property	Asphalt Concrete Base
Number of Blows	75
Stability, lb. (minimum number)	2,000
Flow, 0.01 in.	8 – 16
Percent air voids	3 – 8
Percent air voids in mineral aggregate (min.)	13

Acceptance Sampling and Testing of the Bituminous Mixture:

- A. The Contractor shall provide laboratory testing for control and acceptance functions during periods of mixture productions: One (1) field Marshall Test, asphalt content test, gradation analysis, and specific gravity test for each mixture.
- B. The compacted mixtures of the in-place pavement shall not be less than 91 percent of the specific gravity (ASTM D2041, commonly called the Rice Method) of the combined mixture without voids.
- C. Pavement Samples. At the discretion of the Engineer, the Contractor shall obtain pavement samples and/or test the samples and restore the affected areas at no extra cost to the City.
 - 1. Quantity. Two (2) core or cut samples shall be obtained per street.
 - 2. Size. The size of the samples will be directed by the Engineer. Core samples shall be minimum 4 inches in diameter. Cut samples shall be minimum 12 inches by 12 inches. Samples shall be taken to the full depth of the course.
 - 3. Location. The location of the samples will be directed by the Engineer.
 - 4. Testing. Samples shall be tested to determine thickness and density of the completed pavements. A nuclear gauge shall be used for the final determination of density.
 - 5. Restoration. Place and compact the sampled area with new materials to conform with the surrounding area.
- D. All data for the control and the acceptance testing shall be submitted.
- E. Tests necessary to determine the conformance with requirements may be performed by the Engineer without cost to the Contractor.

Availability of Cullet (Crushed Glass) for Glassphalt Concrete Base:

- A. Aggregate base course shall include mixture of aggregate and cullet. When cullet is not produced on the project island, or material unit price of cullet is greater than material unit price of aggregate for untreated base, cullet may be excluded. Before excluding cullet, submit availability and pricing documentation.

PART 2 – PRODUCTS

2.01 MATERIALS: Plant Mix Asphalt Concrete Base and Plant Mixed Glassphalt Concrete Base shall conform to the following:

- A. The asphalt cement grade shall be PG 64-16.
- B. Aggregate shall conform to the requirements of Section 34.2B of the Standard Specifications, and shall meet the following grading requirements:

<u>Sieve Size</u>	<u>Percent Passing by Weight</u>
1.25 Inch	100
1 Inch	85 – 100
0.75 Inch	73 - 92
0.5 Inch	60 – 80
0.375 Inch	52 - 72
#4	36 – 55
#8	25 – 42
#16	18 - 33
#30	12 – 24
#50	7 - 18
#100	4 – 12
#200	1 - 8

- C. Blending Sand and Mineral Filler shall conform to the requirements of Section 34.2C of the Standard Specifications.
- D. Glassphalt (Concrete Base). If available, glassphalt shall be used.

Crushed glass shall be supplied by the City's Department of Environmental Services Division of Refuse Collection and Disposal (Refuse). Contact person for Refuse is Ms. Suzanne Jones, telephone 768-3420.

"Glassphalt" means asphaltic concrete for street paving made from crushed glass as a partial substitute for the aggregate (sand or crushed stone) in the mix.

1. Crushed Glass shall be processed to provide a uniform gradation from fine to coarse with 100 percent of the material passing the 3/8-inch sieve and be relatively free of foreign materials (bottle caps, plastics, and paper). The blend of crushed glass and virgin aggregate shall produce a combined mixture of acceptable gradation.
2. The Glassphalt Concrete Base shall be a uniform mixture of crushed glass, virgin aggregate, and asphalt cement. The proportion of crushed glass to virgin aggregate shall not exceed 10% crushed glass to 90% virgin aggregate by weight. Once established, the proportion shall not be

changed. The Contractor shall submit for review any changes to the proportion.

3. Should the supply of glass provided by the City be exhausted, only then is the Contractor to use virgin asphalt concrete base.

However, as glass becomes available to the Contractor from the City, the Contractor is required to revert back to using Glassphalt. This process may occur more than once during the duration of the contract.

Once the job mix is established, the Contractor shall maintain controls to produce a uniform product as established in the job mix.

PART 3 – EXECUTION

- 3.01 PLACING ROAD BASE COURSE: Plant mixed asphalt concrete base/glassphalt concrete base mixture shall be placed on the approved moistened subgrade in a uniform layer by an approved self-propelled mechanical spreader ready for compaction without further shaping. Dumping of the mixture in piles or windrows will not be permitted.

- 3.02 COMPACTING AND FINISHING: The mixture shall be spread in one lift if the required thickness is 6 inches or less and in two or more equal lifts if the required thickness is greater than 6 inches. Compact the mixture immediately upon completion of spreading operations to a density of 91 percent of the maximum theoretical specific gravity according to AASHTO T 209 (ASTM D 2041) modified by deletion of Section 8 supplemental procedure. Tamp places not accessible to the roller with mechanical tampers.

The combined thickness of the asphalt concrete base course/glassphalt concrete base course and the asphaltic concrete pavement shall be within 0.02 foot of the planned thickness.

A tack coat shall be applied to all layers of asphalt concrete base course/glassphalt concrete base course upon which a subsequent layer of asphalt concrete base course/glassphalt concrete base course or asphaltic concrete pavement is to be placed. Tack coat shall conform to Section 33, Asphalt Surface Treatments of the DPW Standard Specifications.

- 3.03 MEASUREMENT AND PAYMENT: The Engineer will measure plant mix asphalt concrete base/plant mixed glassphalt concrete base by the square yard. Payment at the unit price bid shall be full compensation for furnishing the material, equipment, tools, labor, and any incidental work necessary to construct the work in place.

END OF SECTION

SECTION 02520 – CONCRETE CURBS, GUTTERS, SIDEWALKS AND CURB RAMPS

PART 1 – GENERAL

- 1.01 GENERAL CONDITIONS: The General Conditions and Special Provisions preceding these specifications shall govern this section of the work.
- 1.02 WORK INCLUDED: Furnish all labor, materials, tools, equipment and related items necessary to complete, in place, concrete curbs, gutters, sidewalks, driveway aprons and wheelchair ramps in conformity with the dimensions, profiles, sections and details shown on the plans.
- 1.03 APPLICABLE SECTIONS: Work shall be in accordance with the following sections of the Standard Specifications, except as amended on the plans and/or in the specifications herewith:
- | | |
|-------------------------------------|------------|
| Portland Cement Concrete | Section 39 |
| Curb and Gutter..... | Section 41 |
| Sidewalk..... | Section 42 |
| Reinforced Concrete Driveways | Section 46 |
| Reinforcing Steel | Section 48 |

PART 2 – PRODUCTS

- 2.01 MATERIALS: Materials shall conform to the sections of the Standard Specifications noted hereinbefore, or as listed below:
- A. Detectable warning material shall be pre-mold, thermoplastic meeting the requirements of TopMark by Flint Trading, Inc. or approved equal.
- B. Adhesive shall be as recommended by the manufacturer.

PART 3 – EXECUTION

- 3.01 INSTALLATION: The Contractor shall be responsible for precisely laying out the curbs, gutters, sidewalks and curb ramps shown on the contract plans in accordance with the sections of the Standard Specifications noted hereinbefore. The Contractor shall note that the plan and profile curb grades are based on the standard 6-inch high curbs and shall make necessary adjustments for the difference in height of the rolled curb as shown in the DPW Standard Details.
- 3.02 QUALITY CONTROL FOR CURB RAMPS: The Contractor shall install curb ramps to the dimensions and grades shown in the plans. Installation of the curb ramps shall be within the tolerance range shown in the table below.

CONSTRUCTION TOLERANCE		
Surface Slope per Plans	Allowable Slope Tolerance	Allowable Flatness Tolerance
Less than 5%	+0.9% max.	1/4" max. gap
5% - 8.3%	+1.2% max.	3/8" max. gap
Greater than 8.3%	+1.5% max.	1/2" max. gap
For Horizontal Plan Measurements, Length of Intended Dimension	Horizontal Tolerance Allowed	
Less than 12"	+1/4" or -1/4"	
12" - 36"	+3/8" or -3/8"	
Greater than 36"	+1/2" or -1/2" in each 10'	

The method of measuring the surface requires a 24" long digital level to be placed so, when set on the measured sloped surface, it reads the steepest slope of any part of the measured surface.

The method of measuring flatness requires a 24" long level to be placed so it is centered over any trough or balanced on a ridge with equal gap at both ends of the level. Measure the gap under the level at troughs and at the end of the level at ridges.

Horizontal measurements are to be made with a steel tape.

Detectable warning devices shall be installed per the manufacturer's installation instructions.

3.03 MEASUREMENT AND PAYMENT FOR CURB RAMPS: The Construction Manager will not measure curb ramps.

The Construction Manager will not pay for the accepted curb ramps separately. The Construction Manager will consider the price for curb ramps included in the contract price for reinforced concrete sidewalks including curb ramps and detectable warning strips.

The price includes full compensation for excavating; backfilling; installing reinforcing steel, concrete expansion joint materials, construction joints, special drop curbs, and bed course material; and furnishing labor, materials, equipment, tools and incidentals necessary to complete the work.

END OF SECTION

SECTION 02577 - PAVEMENT MARKERS, STRIPING AND MARKINGS

PART 1 - GENERAL

- 1.01 GENERAL CONDITIONS: The General Conditions and Special Provisions preceding these specifications shall govern this section of the work.
- 1.02 WORK INCLUDED: Furnish all labor, materials and equipment required to accomplish the installation of all pavement markers, reflectorized white and yellow traffic pavement striping and other markings in conformance to the "Manual on Uniform Traffic Control Devices for Streets and Highways," 2003, the "Traffic Standards Manual" of the Department of Transportation Services, July 1976, and these plans and specifications. This work shall also include the removing of existing pavement markers and removing or eradicating of existing pavement striping and markings when called for in the plans and/or directed by the Traffic Engineer.
- 1.03 SUBMITTALS: Submit material certifications, test results and brochures for all pavement markers and traffic paint materials to the Traffic Review Branch, Department of Planning and Permitting, City and County of Honolulu. A copy of the submittal shall be submitted to the Construction Manager.

PART 2 - PRODUCTS

- 2.01 GENERAL: Materials shall conform to the requirements of Pavement Markers, Adhesives for Pavement Markers, and Pre-Mixed Reflectorized White and Yellow Traffic Paint, as specified in these specifications.
- 2.02 MATERIALS
- A. Pavement Markers
1. Description of Markers: The markers shall have the shape, dimensions and tolerances as shown on the plans. The markers shall be of uniform composition and free from surface irregularities, cracks, checks, chipping and other physical damage interfering with appearance or application.
 2. Type of Markers
 - a. Type A - Non-Reflective White Markers and Type J Non-Reflective Yellow Markers.
 - 1) Class III Ceramic Type. For use on Portland cement concrete and asphalt concrete road surfaces.

- 2) Class IV Ceramic Type. For use only on Portland cement concrete road surfaces.
 - 3) The class of non-reflective white marker to be used shall be at the option of the Contractor, subject to the above limitations.
 - b. Type B - Two-Way Clear Reflective Markers
 - c. Type C - Red-Clear Reflective Markers
 - d. Type D - Two-Way Yellow Reflective Markers
 - e. Type E - Yellow-Clear Reflective Markers
 - f. Type G - One-Way Clear Reflective Markers
 - g. Type H - One-Way Yellow Reflective Markers
3. Markers
- a. Non-Reflective Markers: Type A and J pavement markers shall have the following characteristics:
 - 1) Composition of Markers: The composition of finished markers shall conform to the following: The Class III and IV pavement markers shall consist of a heat-fired, vitreous, ceramic base and a heat-fired, opaque, glazed surface to produce the properties required in these specifications. The markers shall be produced from any suitable combination of intimately mixed clays, shales, talcs, flints, feldspars, or other inorganic material which shall meet the properties herein required. The markers shall be thoroughly and evenly matured and free from defects which affect appearance or serviceability.
 - 2) Properties of Markers: The properties of finished markers, Class III and Class IV, shall conform to the following:
 - a) Finish: The top surface of the marker shall be convex and the radius of curvature shall be between 3-1/2 inches and 6 inches except that the radius of the 1/2 inch nearest the edge may be less. Any change in curvature shall be gradual. The top and sides shall be smooth and free of mold marks, pits, indentations, air

bubbles, or other objectionable marks or discolorations.

The bottoms of the ceramic markers shall be free from gloss or glaze and shall have a number of integrally formed protrusions approximately 0.050 inch projecting from the surface in a uniform pattern of parallel rows.

Each protrusion shall have a face parallel to the bottom of the marker. The area of each parallel face shall be between 0.01 and 0.065 square inches and the combined area of these faces shall be between 2.2 and 4.4 square inches.

The protrusions shall be circular in section.

The number of protrusions should be not less than 48 nor more than 200.

To facilitate forming and mold release, the sides of each protrusion may be tapered. This taper shall not exceed 15 degrees from perpendicular to the marker bottom. Markers manufactured with protrusions whose diameter is less than 0.15 inch may have an additional taper not exceeding 30 degrees from perpendicular to the marker bottom and extending not more than one-half the total height of the protrusion.

The overall height of the marker shall be between 0.68 to 0.80 inch.

- b) Glaze Thickness: The thickness of the glazed surface shall be not less than 0.007 inch at any point located more than 1/4 inch from the edge of the marker circumference. The glaze thickness shall be measured on a fractured edge with a calibrated reticule of a microscope of at least 25 power.
- c) Moh Hardness: The glazed surface of the marker shall have a hardness of a 6 minimum in the Moh hardness scale. This shall be determined relative to the mineral orthoclase which has a hardness of 6. With moderate hand pressure, it must be possible to

scratch orthoclase with the marker but not possible to scratch the marker with the orthoclase.

- d) Directional Reflectance (Type A markers only): The 45°, 0° directional reflectance of the marker when tested in accordance with ASTM E97, shall have the following values:

Glazed Surface 75 minimum
Body of Marker 65 minimum

The test on the glazed surface shall be made on the top of the convex surface of the marker. The test on the body of the marker shall be made on a flat surface of the marker from which the glaze has been removed by grinding with carborundum wheel.

- e) Yellowness Index (Type A markers only): The yellowness index of the marker when tested in accordance with ASTM E313 shall have the following values:

Glazed Surface 0.07 maximum
Body of Marker 0.12 maximum

The test on the glazed surface shall be made on the top of the convex surface of the marker. The test on the body of the marker shall be made on a flat surface of the marker from which the glaze has been removed by grinding with a carborundum wheel.

- f) Color (Type J markers only): The chromaticity of the glazed surface of the marker shall be within the following limits:

Purity 76 to 96 percent

Dominant Wave Length 579 to 585 mu

Total Luminous Reflectance
(Y value) 0.41 minimum

Chromaticity measurements shall be made in accordance with California Test Method No. 660.

- g) Water Absorption: The average water absorption of the ceramic marker when tested in accordance with ASTM C373 shall not exceed 2.0 percent of the dry weight of the test piece.
- h) Autoclave Test: The glazed surface of the marker shall not craze, spall or peel when subjected to one cycle at 100 psi for one hour of the autoclave test when tested in accordance with ASTM C424.
- i) Strength Test: A random sample of five markers of each type and/or class used will be selected for the load test. Each Class III marker shall support a minimum load of 1,500 pounds and each Class IV marker shall support a minimum load of 750 pounds when the load is applied in the following manner: The base of the marker shall be made flat using plaster of paris or some other suitable material. Sufficient amount of material shall be applied to the base of the marker to fill the spaces around the protrusions up to the faces of the protrusions. The protrusions shall not protrude from the prepared finished base. The prepared marker shall be centered, base down, over the open end of a vertically positioned hollow metal cylinder. The cylinder shall be 1-inch high, with an internal diameter of 3 inches and a wall thickness of 1/4 inch. A load necessary to break the marker shall be applied at a speed of 0.2 inch per minute to the top of the marker through a 1-inch diameter solid metal cylinder centered on the top of the marker. Failure shall consist of a breakage of the marker at a load of less than 1,500 pounds when applied to Class III markers or less than 750 pounds when applied to Class IV markers.
- j) Sampling: Twenty markers selected at random will constitute a representative sample for each batch consisting of 10,000 markers or less. Forty markers will constitute a representative sample for lots consisting of more than 10,000 markers. The lot size shall not exceed 25,000 markers. However, if a batch represents less than 100 markers, the Engineer may delete sampling and may accept the markers based on certification of compliance and certified test results.

k) Tolerances

- (1) Three test specimens shall be randomly selected from the sample for each test except as noted in (i) above, and tested for compliance in accordance with these specifications. Should any one of the specimens fail to comply with the requirements of these specifications, additional samples consisting of double the number of samples originally taken will be tested. The failure of any one of these additional samples shall be cause for rejection of the entire lot or shipment represented by the sample.
- (2) At the discretion of the Engineer, a resample may be taken consisting of double the number of samples originally taken. Tolerances for resamples shall be in the same ratio as specified above

- l) Packaging: Shipments shall be made in containers which are acceptable to common carriers and packaged in such a manner as to insure delivery in perfect condition. Any damaged shipments shall be replaced by the Contractor. Each package shall be clearly marked as to the name of the manufacturer, type, color, quantity enclosed, lot and/or batch number, and date of manufacture.

- b. Reflective Pavement Markers: Reflective pavement markers shall be of the prismatic reflector type consisting of a methyl methacrylate or suitably compounded acrylonitrile butadiene styrene (ABS) shell filled with a mixture of an inert thermosetting compound and filler material. The exterior surface of the shell shall be smooth and contain one or two methyl methacrylate prismatic reflector faces of the color specified.

The reflective lens shall not contain any voids or air space, and the back of the lens shall be metallized.

The shell shall be fabricated in a manner that will provide a mechanical interlock between the thermosetting compound and the shell. The thermosetting compound shall bond directly to the backside of the metallized lens surface.

The base of the marker shall be flat (the deviation from a flat surface shall not exceed 0.050 inch), rough textured and free from gloss or substances which may reduce its bond to the adhesive. The presence of a soft or resin-rich film on the surface of the base will be cause for rejection.

Reflective markers shall conform to the following requirements:

- 1) Optical Performance: The specific intensity of each reflective surface, when tested at 0.2 degrees angle of divergence, shall not be less than the following specified values:

Specific Intensity			
	Clear	Yellow	Red
0° Incidence Angle	3.0	1.5	0.75
20° Incidence Angle	1.2	0.60	0.30

NOTE:

- a) Angle of Incidence. The angle formed by a ray from the light source to the marker and the normal to the leading edge of the marker face.
- b) Angle of Divergence. The angle formed by a ray from the light source to the marker and the returned ray from the marker to the measuring receptor.

- c) Specific Intensity. The mean candle power of the reflected light at a given incidence and divergence angle for each foot candle at the reflector on a plane perpendicular to the incidence light.

$$\frac{(R_L)(D^2)}{I_L} SI =$$

Where: SI = Specific Intensity

R_L = Reflected Light

I_L = Incident Light

D = Test Distance

- d) Test Method: The markers to be tested shall be located with the center of the reflecting face at a distance of 5 feet from a uniformly bright light source having an effective diameter of 0.2 inch. The photocell receptor width shall be 0.05 inch and shall be shielded to eliminate stray light. The distance from the center of the light source aperture to the center of the photocell shall be 0.21 inch. If a test distance of other than 5 feet is used, the source and receptor shall be modified in the same proportion as the test distance.
- 2) Color: The color of the reflectors when illuminated by an automobile headlight shall be an approved clear, yellow or red color as required. Off-color reflection will constitute grounds for rejection.
- 3) Strength Requirements: A random sample of 3 markers shall be selected for the load test. The marker shall support a minimum load of 2,000 pounds as applied in the following manner: The marker shall be centered, base down, over the open end of a vertically positioned hollow metal cylinder. The cylinder shall be 1-inch high, with an internal diameter of 3 inches and a wall thickness of 1/4 inch. A load necessary to break the marker shall be applied at a speed of 0.2 inch per minute to the top of the marker through a 1-inch diameter solid metal cylinder centered on the top of the marker. Failure shall consist of either:

- a) breakage or significant deformation of the marker at load of less than 2,000 pounds, or
 - b) significant delamination of the shell and the filler material regardless of the load required to break the marker.
- 4) Sampling: Six markers will be selected at random from each batch for testing. However, if a batch represents less than 100 markers, the Traffic Engineer may delete sampling and may accept the markers based on certification of compliance and certified test results.
- 5) Tolerances: Should any one of the samples selected for strength testing fail to comply with the strength requirements of these specifications, six (6) additional samples will be tested. The failure of any of these additional six (6) samples will be cause for rejection of the entire lot or shipment represented by the samples.
- 6) Packaging: Shipments shall be made in containers which are acceptable to common carriers and packaged in such a manner as to insure delivery in perfect condition. Any damaged shipments shall be replaced by the Contractor. Each package shall be clearly marked as to the name of the manufacturer, color, type, lot number, quantity enclosed, and date of manufacture.

B. Adhesive for Pavement Markers

1. General: The adhesives shall be furnished as two components. The adhesives are described as Standard Set Type and Rapid Set Type.

All adhesives shall have a white A epoxy component and a black B curing agent component, each packaged separately. The mixing ratio of Component A to Component B shall be one-to-one by volume. The color of the material when mixed shall be approximately that of Color Nos. 26132 to 21652 of Federal Standard No. 595-A. The Standard Set Type is a compositional specification, together with test requirements. The Rapid Set Type is based on laboratory test requirements only. No volatile solvents or thinners shall be present in the epoxy adhesives requirements.

2. Properties of the Adhesives: The adhesive shall have the following properties:

- a. Pot Life: The pot life shall be 12 minutes maximum and 7 minutes minimum for Standard Set Type and 5 minutes minimum for Rapid Set Type when tested as follows at $77^{\circ}\text{F} \pm 3^{\circ}\text{F}$: Mix equal volumes of Components A and B in an 8-ounce, unwaxed paper cut 2 inches \pm 1/4 inch at base to give a 170 grams \pm 10 grams total mass. Mix 60 seconds \pm 5 seconds before timing for pot life. Test with a tongue depressor with minimum stirring. Record the time the material becomes unusable as the pot life. With most materials this shall be approximately the time a hard lump forms in the center.
- b. Shear Strength: When tested as follows, the shear strength shall be not less than 1,000 psi for Standard Set Type and 900 psi for Rapid Set Type.

Bond three concrete blocks 2 inch x 3-1/2 inch x 7 inch of 7-sack concrete together with the 7-inch sides parallel forming two areas of contact 3-1/2 inch x 3-1/2 inch by overlapping the blocks. The test specimen then has a base of two blocks and a second surface formed by the center block. Apply the adhesive to the contact surfaces and allow to cure for 24 hours at $77^{\circ}\text{F} \pm 3^{\circ}\text{F}$. Cap the base of the specimen with an approved capping compound and test at a load rate of 10,000 pounds per minute. A swivel type head must be used at the top of the testing press. Computations are based on a total area of 24.5 square inches (shear strength = total load/24.5).

- c. Viscosity: The viscosity of each component when measured in a three-fourths filled standard round quart paint can shall be between 1.0×10^5 and 3.0×10^5 centipoises for Standard Set Type and 0.8×10^5 and 2.2×10^5 centipoises for Rapid Set Type when measured as follows: Stir the components vigorously for 30 seconds with a spatula. Remove entrained air by vigorously tamping and measure viscosity within 10 minutes after stirring. Use Brookfield Viscometer, Model RVT at 5.0 RPM with a Model C Brookfield Helipath Stand and Helipath TD Spindle having a crossarm length of 0.804 inch for Standard Set Type and T.E. Spindle for Rapid Set Type. Use weight included in spindle set. Component and ambient temperature is to be $77^{\circ}\text{F} \pm 3^{\circ}\text{F}$ at time of measurement. Reading shall be taken at approximately the center of the vertical travel of the spindle.

d. Viscosity--Shear Ratio:

$$\frac{\text{Viscosity at 0.5 RPM}}{\text{Viscosity at 2.5 RPM}}$$

This ratio shall be 2.0 minimum for Standard Set Type and 1.8 minimum for Rapid Set Type for Component A and 1.9 minimum for Component B. Take the above viscosities at the same time and conditions as in subsection (C) above.

e. Bond Strength

- 1) Clean a 4 inch x 4 inch area on a flat surface of a concrete block made with 7-sack concrete and having a tensile strength in excess of 250 psi.
- 2) Use the equipment and load described in California Test Method No. 420. Condition test equipment, concrete and epoxy at test temperature for 24 hours before test.
- 3) Mix adhesive on a tin plate with a trowel or spatula for 60 seconds ± 5 seconds. Immediately start timing, place adhesive on pipe cap and press firmly in place on concrete. Just before the required test time, insert the dynamometer hook into pipe cap.
- 4) After curing 3-1/3 hours for Standard Set Type and 25 minutes for Rapid Set Type at $77^{\circ}\text{F} \pm 3^{\circ}\text{F}$ measured from the end of the mixing period, the bond strength shall be at least 200 psi.

f. Weight per Gallon, Pounds at $77^{\circ}\text{F} \pm 3^{\circ}\text{F}$ (Standard Set Type).

Component A 11.5 - 11.8

Component B 11.7 - 12.1

Composition:

STANDARD SET TYPE	
Component A	Parts by Weight
Epoxy Resin ¹	100
Titanium Dioxide, TT-P-422, Type III or IV	7.31
Resin Grade Asbestos ²	5.00
Talc ³	37.64
Component B	
N-Aminoethyl Piperazine ¹	23.16
Nonylphenol ⁵	52.00
Carbon Black, TT-P-343, Form 1, Class B	0.22
Talc ³	77.37
Resin Grade Asbestos ²	1.00

¹Viscosity, 5-7 poises at 25°C; epoxide equivalent 175-195; Color (Gardner), 5 maximum; manufactured from epichlorohydrin and bisphenol A. The reactive diluent shall be butyl glycidyl ether.

²Specific gravity, grams per ml., 2.45; moisture content, % by weight, 2.0 maximum; surface area, square meters per gram, 60 approximately; reflectance, G.E. brightness, 72-76; nature of surface charge, electropositive (cationic); Ph in water, 9.5; bulking value, gallons per 100 lbs., 4.8; oil absorption (DOP), pound per 100 lbs., 120; refractive index, n_d 25°C, 1.54-1.56; wet bulk density in water, after dispersion, 2 grams per liter, settling after 1 hr., 100 ml. clear maximum; dry bulk density, pounds per cubic foot, 4.

³Percent passing U. S. No. 325 sieve, 94-96; maximum particle size, 70 microns, oil absorption (Gardner-Coleman), 6-7 ml. per 20 grams; fineness in oil (Hegman) 1-2; specific surface, 0.5-0.6 square meter per gram; consistency (40% suspension in linseed oil) 55-60 KU.

⁴Color (ALPHA) 50 maximum; amine value 1250-1350 based on titration which reacts with the three nitrogens in the molecule; appearance clear and substantially free of suspended matter.

⁵Color (ALPHA) 50 maximum; hydroxyl number 245-255; distillation range, °C at 760 mm first drop 295 minimum, 5% 298 minimum, 95% 325 maximum; water, % (K.F.) 0.05 maximum.

g. Directions for use

Any settling of fillers or pigments in Components A or B shall be completely redispersed to provide a homogeneous mix before the components are used. Just before use, Components A and B shall be mixed in a one-to-one ratio by volume.

When the Rapid Set Type adhesive is used, the components shall be mixed by a 2-component type automatic mixing and extrusion apparatus. The temperature of the Rapid Set Type adhesive shall be maintained at 65°F to 85°F before mixing. The temperature of the Standard Set Type adhesive shall be maintained at 60°F to 100°F before mixing. Any heating of epoxy adhesive shall be done by the application of indirect heat.

Packaging and Labeling of Adhesive: Each adhesive component shall be packaged in containers not larger than 5 gallons in volume. The containers shall be new steel, not less than No. 24 gage and shall otherwise meet Interstate Commerce shipping standards. Each container shall be clearly labeled with designation (Component A or B), type (Standard or Rapid Set), manufacturer's name, date of manufacture, batch number (a batch shall consist of a single charge of all components in a mixing chamber), directions for mixing, and the following warning:

CAUTION

This material will cause severe dermatitis if it is allowed to come in contact with the skin or eyes. Use gloves and protective creams on the hands. Should this material contact the skin, wash thoroughly with soap and water. Do not attempt to remove this material from the skin with solvents. If any gets in the eyes, flush for 10 minutes with water and secure immediate medical attention.

Sampling: One quart sample of each of the components (A and B) from each batch will be sampled for testing.

Certification: The Contractor shall submit to the Engineer a certificate of compliance indicating that all types of adhesives conform to the requirements of the specifications.

C. Pre-Mixed Reflectorized White and Yellow Traffic Paint

1. General: Qualification of Reflectorized Traffic Paint: Only those traffic paints which have qualified in the latest completed prequalification tests conducted by the State Department of Transportation and having a Weighted Rating (W) of at least 6.5 for reflectorized white and 7.0 for reflectorized yellow at the completion of the road test will be permitted for use on this project. Quick dry paints shall not be used.

The phrase "latest completed prequalification tests" shall mean either those traffic paints which have been prequalified by the State Department of Transportation at the time this contract becomes effective or those traffic paints which have been listed by the State Department of Transportation as meeting the prequalification tests of the State Department of Transportation at the time the Contractor is doing pavement striping. The Traffic Engineer will furnish a list of prequalified traffic paints upon the request of the Contractor.

The Contractor may use other materials designed for pavement striping, such as adhesive striping, on temporary detours with the approval of the Traffic Engineer. Such materials shall meet the color and reflection requirements for traffic paints.

2. Pre-Mixed Reflectorized White and Yellow Traffic Paint

- a. General: The pre-mixed reflectorized white and yellow traffic paints shall be composed of a pigment binder and glass spheres and shall be suitable for use as traffic markings on concrete, bituminous macadam and asphalt concrete pavements. These paints shall be ready for use without any subsequent addition of glass spheres or solvent. The white paint shall be pure white and free from tint. The yellow paint shall be within the green and red tolerance limits when compared with U. S. Federal Highways Administration's "Standard Color Chips for Highways Signs."

The term "pre-mixed reflectorized" shall refer to the finished mixture of pigmented binder and glass spheres. The terms "pre-mixed compound" and "compound" shall mean the same thing. The term "binder" shall refer to the pigment and vehicle alone (not including glass spheres). The term "spheres" shall refer only to the glass spheres incorporated in the compound.

The pre-mixed reflectorized white and yellow traffic paints shall be mixed at the factory ready for immediate application, using spray machines without thinning, at the normal rate of application used for these purposes by the Department of Transportation Services.

The traffic paints shall be well-ground and mixed. The paints shall not exhibit any characteristics of skinning, settling, thickening, or livering. The paints shall be readily mixed to a uniform consistency, capable of being applied through the spray machine without clogging or causing other operational difficulties. The mixing of the paint shall be performed in the normal manner followed by the Department of Transportation Services.

The paint shall be capable of drying to an elastic adherent finish and shall not show appreciable discoloration with age. The volatile material shall have a minimum solvent action on asphalt and be of such character that any gums and nonvolatile components of the vehicle will entirely dissolve therein and not precipitate from the solution on standing. The paints shall be of such quality that a dry film thereof will not darken or otherwise discolor excessively when exposed to sunlight.

- b. Tests: In addition to the above-mentioned requirements, the pre-mixed reflectorized white and yellow traffic paints shall conform to the following requirements:
- 1) Composition: The composition, formulation, and milling of the paints shall in all respect be identical to the sample and manufacturer's certificate of formulation thereof submitted in accordance with the Department of Transportation Services' requirements.
 - 2) Consistency: This test shall be performed in accordance with ASTM D562. The paint, as received, shall have a consistency as determined by the Stormer Viscosimeter and expressed as Krebs units at 77°F between 75 and 90.
 - 3) Wet Hiding Power: When applied with a 0.008 inch Bird Film Applicator on Standard Moresst Black and White Hiding Power Chart, Form 05, as supplied by the Leneta Company, P. O. Box 86, Ho-ho-kus, New Jersey 07423, the paint shall completely hide black.

- 4) No Pickup Time: The paint shall be tested in accordance with ASTM D711, except that the wet film shall be applied to the glass with a 0.005 inch Bird Film Applicator. The drying time for no pickup shall be not less than 5 minutes or more than 40 minutes.)
- 5) Chemical Analysis: The Department of Transportation Services shall have the option to perform a chemical analysis of said paints to determine if the paints conform with the manufacturer's certificate of formulation and that they are identical with the sample of paint submitted for prequalification test under the latest "Notice to Prospective Bidders for Furnishing Traffic Paint." (The Department of Transportation Services retains the right to check formulation by any approved method.
- 6) Weight per Gallon: The paint supplied by the successful bidder shall be within ± 0.5 Department of Transportation Services prior to installation of materials.
- 7) Glass Spheres: The glass spheres used in the compound shall be colorless, clean and transparent, free from milkiness and air bubbles. Not more than 20 percent of the glass spheres shall be irregular or fused spheroids when tested in accordance with the method used by the Department of Transportation Services.
- 8) Glass Spheres Content: There shall not be less than 4.00 pounds of glass spheres per gallon of finished pre-mixed reflectorized traffic paint.
- 9) Gradation of Spheres: Glass spheres shall meet the following gradation when tested in accordance with ASTM D1214, using U. S. Standard Sieves:

Sieve Size	Percent Passing
#40	100
#50	90 - 100
#100	20 - 75
#200	0 - 15

- c. Packing: Marking and Batching: The paints shall be delivered in clean open-head steel drums. Each container shall bear a label with the following information shown thereon: Name and address of the manufacturer, shipping point, trademark or trade name, kind of paint, formula, number of gallons, date of manufacture and batch number.

All paint pails shall have a positive and permanent seal.

- d. Sampling and Testing: The Contractor shall furnish paint samples from each paint batch to an independent testing laboratory. At least two samples from each batch consisting of one quart each in sealed containers will be used for testing.

No paint shall be used or paid for except as authorized by the Traffic Engineer until laboratory tests (excluding the laboratory test for settling) are completed, or if the paint fails to meet the requirements of these specifications.

D. Preformed Pavement Markings

- 1. General: The preformed pavement marking tape shall consist of a film with glass beads on a conformable backing precoated with a pressure sensitive adhesive. The tape shall be capable of being adhered to asphalt concrete or Portland cement concrete without the use of heat, solvents or other additional adhesive means, and shall be immediately ready for traffic after application.

The size, quality and refractive index of the glass beads shall be such that the performance requirements as specified herein are met. The beads shall not be easily removed when the material surface is scratched with a thumbnail.

The preformed pavement marking tape shall contain selected pigments blended to provide standard highway colors of white or yellow. The tape shall maintain a uniform color under both daylight and night lighting conditions throughout its expected life.

Preformed works and symbols shall conform to the applicable shapes and sizes outlined in the latest edition of the FHWA publication, "Manual on Uniform Traffic Control Devices for Streets and Highways" (MUTCD), as amended.

When stored in a cool, dry area indoors, the tape shall be suitable for use a minimum of one year after the date of purchase.

2. Classification: Preformed pavement marking tape shall be of various types and compositions and for applications as specified as follows:
 - a. Temporary Preformed Pavement Marking Tape: Temporary tape shall be capable of performing for the duration of a normal construction period and shall then be capable of being removed intact or in large pieces.
 - b. Permanent Preformed Pavement Marking Tape
 - 1) Type I permanent tape shall be durable and capable of performing as specified herein when subjected to a high traffic volume and severe wear conditions such as repeated shear action from crossover and stop, start, or turn movements. Removal should not be easy.
 - 2) Type II permanent tape shall be used for highway edge of pavement lines. The tape shall be capable of performing satisfactorily when subjected to low traffic volumes, less severe wear action than for Type I, and primarily free rolling traffic.
 - 3) Type III permanent tape shall be used for symbols, legends and intersection markings such as stopbars and crosswalks in areas of high wear or as needed.
3. Reflectance: The films shall have the following initial minimum reflectance value of 0.2 degree and 0.5 degree observation angles and at an entrance angle of 86 degrees as measured in accordance with the testing procedure of Federal Test Method Standard 370. The photometric quantity to be measured shall be specific luminance (SL), and shall be expressed as millicandelas per square foot per foot candle (mcd/ft.²/fc).

INITIAL MINIMUM REFLECTANCE VALUE

		Specific Luminance (mcd/ft. ² /fc)			
		White		Yellow	
Observation Angle Classification		0.26°	0.5°	0.2°	0.5°
Temporary		1770	1270	1310	810
Permanent	Type I	550	380	410	250
	Type II	960	760	680	510
	Type III	550	380	410	250

The sample size shall be 2.0 feet x 2.5 feet and the test distance shall be 50 feet. The angular aperture of both the photoreceptor and light projector shall be 6 minutes of arc. The reference center shall be the geometric center of the sample, and the reference axis shall be taken perpendicular to the test sample.

4. Skid Resistance: The surface of the preformed pavement marking tapes shall provide an initial minimum skid resistance value of 45 BPN when tested in accordance with ASTM E303.

5. Temporary Preformed Pavement Marking Tape

- a. Composition: The tape shall be a highly reflective, conformable, pliant polymer material intended for marking applications where removability is required.

The tape shall consist of a mixture of high quality polymer materials and pigments and shall not contain metallic foil. Glass beads shall be distributed throughout the pigmented area and in a reflective layer bonded to the top surface. The performance of the glass beads shall meet the durability and reflectance criteria specified herein.

The tape shall be reinforced with a non-metallic medium and shall be precoated with a pressure sensitive adhesive.

The tape shall be capable of adhering to roadway surfaces under climatic and traffic conditions normally encountered in the construction work zone. Newly applied tape shall be capable of being immediately exposed to traffic without pickup or distortion by vehicles.

- b. Thickness: The film without adhesive shall have a minimum thickness of 0.03 inch (0.76 mm).
 - c. Removability: The tape shall be removable from asphalt cement concrete or Portland cement concrete, either manually or with a roll-up device, at temperatures about 40°F (4°C), and without the use of heat, solvents, grinding or sandblasting. The tape shall meet this requirement even after traffic exposure on transverse applications in accordance with the following:

- 1) Time in place - 632 days
 - 2) ADT per lane - 9,000 (23% trucks, 3.5 axles/unit)
 - 3) Minimum axle hits - 13,000,000

6. Permanent Preformed Pavement Marking Tape

a. Type I

- 1) Composition: Tape shall consist of a mixture of high quality polymeric materials, pigments and glass beads, with a reflective layer of beads bonded to the top surface.
- 2) Thickness: The film without adhesive shall have a minimum thickness of 0.06 inch (1.52 mm).
- 3) Conformability and Patchability: The tape shall be conformable to pavement contours, breaks, faults, etc., through the action of traffic at normal pavement temperatures. Worn or missing areas shall be repairable with butt spliced patches of the same material.
- 4) Tensile Strength and Elongation: The tape shall have a minimum tensile strength of 40 pounds per square inch and minimum elongation of 75 percent at break when tested in accordance with ASTM D638. The sample size shall be 6 inches x 1 inch and shall be tested at a temperature between 70°F and 80°F with a jaw speed of 10 to 12 inches per minute.
- 5) Reflectivity Retention: Glass beads shall be strongly bonded and not easily removed by traffic. The tape shall be tested for reflectivity retention as follows:
 - (a) A sample 2 inches x 6 inches shall be bent around a 1/2-inch diameter mandrel with the 2-inch dimension perpendicular to the mandrel axis. Examination of the area with 5x magnifier shall show less than 10 percent of the beads with 40 percent or less embedment in the binder.
 - (b) Taber Abraser Simulation Test: Using a Taber Abraser with an H-18 wheel and a 125 gram load, a sample shall be tested for 200 cycles and then inspected with a magnifier of 5-power or larger.

No more than 15 percent of the beads shall be lost due to popout and bead erosion shall be the major mode of failure.

- 6) Effective Performance: The tape shall be neat and durable and shall not flow or distort due to temperature or vehicle impacts. The pliant polymer shall provide a cushioned, resilient substrate that shall reduce bead crushing and loss for the life of the marking. The film shall be weather resistant and shall show no appreciable fading, lifting or shrinkage throughout its usage. The tape shall show no significant tearing, roll back, or other signs of poor adhesion during its useful life which shall be a minimum of one year from the date of installation.

Immediately after application, the tape shall be capable of being impacted by vehicles without being picked up or distorted.

b. Type II

- 1) Composition: The retroreflective pavement marking material shall consist of glass beads embedded in a white or yellow film with a thin, flexible conformable backing which is precoated with a pressure sensitive adhesive.
- 2) Thickness: The film with adhesive shall have a minimum thickness of 0.025 inch (0.64 mm).
- 3) Abrasive Resistance: Samples of test material shall not wear through to the conformable backing surface in less than 400 cycles when tested in accordance to Federal Test Method Standard 141, Method 6192, except using an H-22 wheel and a 250 gm load.
- 4) Acid Resistance: The beads shall show resistance to etching, hazing or delamination of bead surface after exposure to a 1 percent solution of sulfuric acid. The test shall be performed as follows:

Soak one gram of beads in 100 cc of a 1 percent H₂SO₄ solution for 100 hours. Then decant the acid solution and dry the beads at 100°C. Microscopic examination of a sample of the beads shall show no more than 5 percent of the beads altered by the acid.
- 5) Reflectivity Retention: The requirements shall be as described in 6.a.5).

- 6) Effective Performance: The requirements shall be as described in 6.a.6).

c. Type III

- 1) Composition: The retroreflective pavement marking film shall consist of a mixture of high quality polymeric materials, pigments and glass beads distributed throughout its base cross sectional area, with a reflective layer of beads bonded to the top urethane wear surface. The edges of the preformed tape shall be clean cut and true.
- 2) Thickness: The film without adhesive shall have a minimum thickness of 0.06 inch (1.52 mm).
- 3) Conformability and Patchability: The tape shall be conformable to pavement contours, breaks, faults, etc., and worn or missing areas shall be reparable with the same materials in accordance with the manufacturer's instructions.
- 4) Tensile Strength and Elongation. The material shall have a minimum tensile strength of 350 pounds per square inch and a minimum elongation of 50 percent at break when tested in accordance to the provisions of ASTM D638. The sample size shall be 6 inches x 1 inch and shall be tested between 70-80°F with a jaw speed of 10 to 12 inches per minute.
- 5) Reflectivity Retention: The glass beads shall be strongly bonded and not be easily removed by traffic wear.

The predominant mode of failure shall be "wear down" of the beads at 200 cycles when no more than 15 percent of the beads shall be lost due to popout using a Taber Abraser with an H-18 wheel and a 125 gram load.

- 6) Glass Bead Retention: When a 2-inch x 6-inch (5.08 x 15.24 cm) sample is bent over a 1/2-inch diameter mandrel (with a 2-inch dimension perpendicular to the mandrel axis), microscopic examination of the area on the mandrel shall show no more than 10 percent of the beads with entrapment by the binder of less than 40 percent.
- 7) Installation: The markings shall be applied and tamped in accordance with the manufacturer's recommendations.

E. Reflective Thermoplastic Compound Pavement Markings

1. General: Reflective thermoplastic compound pavement markings shall be a substance, free of volatiles, which is machine applied to the pavement surface in a hot molten state and which, after cooling to the ambient temperature, and without polymerization or other chemical change, forms a traffic marking stripe of the quality and appearance as specified herein.

The material used shall be a product especially compounded for traffic markings.

The installed stripe shall not be slippery when wet.

The compound shall not deteriorate by contact with sodium chloride, calcium chloride, oil content of pavement materials, or from oil droppings from traffic.

In the plastic state, the material shall not give off fumes which are toxic or otherwise injurious to persons or property. The material shall not break down or deteriorate if held at the plastic temperature for a period of 4 hours, or by reason of four reheatings to the plastic temperature.

There shall be no obvious change in color of the material as a result of up to four reheatings, or from batch to batch.

To insure the best possible adhesion, the compound shall be installed in a melted state of a minimum temperature of 375°F, and the material shall not scorch or discolor if kept at temperatures between 380°F to 450°F for up to 4 hours.

The pigmented binder shall be well-dispersed and free from all skins, dirt, foreign objects, or such ingredients as will cause bleeding, staining, or discoloration.

After application and proper drying time, the material shall show no appreciable deformation or discoloration under local traffic conditions, and in an air and/or road temperature ranging from 0° to 120°F.

Under this specification, the term “drying time” shall be defined as the minimum elapsed time, after application, when the stripe shall have and retain the characteristics required by the preceding sections. In addition, the drying time shall be established by the minimum elapsed time after application, after which normal local traffic will leave no impression or imprint on the applied marking.

The drying time shall not exceed a characteristic straight line curve, the lower limits of which are 2 minutes at 50°F, the upper limits of which are 15 minutes at 90°F, both temperatures measured at a maximum relative humidity of 70 percent.

The stripe shall maintain its original dimensions and placement. The exposed surface shall be free from tack. Cold ductility of the material shall be such as to permit normal movement with the road surface without chipping.

The marking shall have a uniform cross section. Pigment shall be evenly dispersed throughout the material. The density and character of the material shall be uniform throughout its thickness.

The material shall not smear or spread under normal traffic conditions at temperatures below 120°F.

The filler to be incorporated with the resins or binders shall be a white calcium carbonate or equivalent filler.

The white thermoplastic shall have a pigment containing not less than 6 percent per Titanium Dioxide, and, after setting, shall be pure white, free from dirt or tint.

Yellow reflectorized thermoplastic compound shall be "Federal Yellow."

The binder shall consist of a mixture of non-drying synthetic resins at least one of which is solid at room temperature. The total binder content of the thermoplastic compound shall be not less than 15 percent nor more than 35 percent by weight.

The material shall not change in its color and brightness characteristics after prolonged exposure to sunlight.

During manufacture, reflectorizing beads shall be mixed into the material to the extent of not less than 20 percent nor more than 50 percent by weight of the material. The beads that are applied to the surface of the material shall be automatically applied at a uniform rate of approximately 3 pounds of glass beads to every 100 square feet of line.

The glass beads used in the formulation shall have a refractive index of not less than 1.51 when tested by the liquid immersion method at 25°C; shall consist of 70 percent min. by count of true spheres; shall be free from air inclusions; and shall have the following graduation:

U. S. Sieve Number	Percent Passing
30	90 -100
40	35 - 100
100	0 -10

Not less than 70 percent of the spheres shall meet the following requirements:

- a. The surface of the spheres shall be smooth, lustrous, and free from film scratch and pits.
- b. The spheres shall be clear and transparent and shall not be oviolate in shape or fused spheroids.
- c. The spheres shall show high autocollimating efficiency. Not more than 1 percent shall be black, amber, or milky.

The glass beads dropped on the applied marking shall have a refractive index of not less than 1.51 when tested by the liquid immersion method of 25°C, shall consist of 70 percent min. by count of true spheres; shall be free from air inclusion; and shall have the following gradation:

U. S. Sieve Number	Percent Passing
20	90 - 100
80	0 - 10

Not less than 70 percent of the spheres shall meet the following requirements:

- a. The surface of the spheres shall be smooth, lustrous, and free from film scratch and pits.
- b. The spheres shall be clear and transparent and shall not be oviolate in shape or fused spheroids.
- c. The spheres shall show high autocollimating efficiency. Not more than 1 percent shall be black, amber, or milky.

2. Specifications and Tests

a. Color

- 1) White: Initially white; as demonstrated by a standard color difference meter such as the Gardner Color Difference Meter manufactured by Gardner Laboratories, Inc., Bethesda, Maryland, the material shall show deviations from a magnesium oxide standard not greater than the following:

Scale Definition	Mag Oxide Standard Sample	
Rd Reflectance	100	70 minimum
a Redness-Greenness	0	-5 to +5
b Yellowness-Blueness	0	-10 to +10

- 2) Yellow: Initially yellow; equal to standard color chips using Federal test method standard 141 Method 4252.

- b. Color Retention: The retention of the initial color shall be determined as follows: Specimens shall be prepared and tested from the samples submitted in accordance with ASTM D620-57T, "Tentative Method of Test for Colorfastness of Plastics." The ultraviolet light source shall be as specified from the test procedure or optionally may be a General Electric 275 watt sunlamp bulb, type RS, with built-in reflector. After 100 hours of exposure, specimens shall show no perceptible color change when compared visually with an unexposed specimen.
- c. Water Absorption: Material shall have not more than 0.5 percent by weight of retained water, when tested by ASTM D570, procedure a.
- d. Softening Point: Material shall have a softening point of not less than 90°C, as determined by ASTM E28.
- e. Specific Gravity: Specific gravity of compound at 25°C shall be from 1.9 to 2.5.

- f. Impact Resistance: The impact resistance shall not be less than 15 inch-pounds at 77°F after the material has been heated for 4 hours at 400°F and cast into bars of 1-inch cross sectional area and 3 inches long and placed with 1-inch extending above the vise in a cantilever beam (Izod Type) tester using the 25-inch pound scale. See ASTM D256 for description of this instrument.
- g. Bond Strength: When two concrete blocks 2 inches by 3-1/2 inches by 7 inches are cemented together on the 3-1/2 inch by 7-inch faces with a 1/16 to 1/8-inch layer of the thermoplastic traffic line material and tested according to ASTM C321, the bond strength shall not be less than 150 pounds square inch.
- h. Indentation Resistance: The reading of the Shore Durometer, Type A, as described in ASTM D2240 after 15 seconds shall not be less than the amounts herein designated when the material is tested after heating for 4 hours at 400°F, and cooled to the following temperatures:

Temperature	Reading
115°F	65
77°F	95
40°F	95

- 3. Packaging: Each unit container shall be clearly and adequately marked to indicate the color of the material, the process batch number or similar manufacturer's identification, the manufacturer's name and location of plant, and the date of manufacture.

The material shall be delivered to a designated area in unit containers as processed by the manufacturer. Each unit container when filled shall weigh no less than 24 lbs. or more than 52 lbs.

- 4. Warranty: Thermoplastic compound pavement marking material furnished and installed under this specification shall be guaranteed by the Contractor against failure due to poor adhesion resulting from defective materials or methods of application.

For approved pavements carrying 30,000 vehicles per day or less, the successful bidder shall guarantee to replace, without cost to the Department, that part of the pavement markings installed under this contract which, in the opinion of the Construction Manager, has not remained to perform useful service as follows:

a. Crosswalks and Stop Lines:

90 percent of the total of any one intersection for one year.

75 percent of the total of any one intersection for 2 years.

50 percent of the total of any one intersection for less than 3 years.

b. Lane Lines, Edge Lines, and Center Lines:

90 percent of a unit for one year.

80 percent of a unit for 2 years.

60 percent of a unit for 3 years.

(A "Unit" is defined as any length of highway having installed thereon 2,000 lineal feet of line of specified width in any combination or pattern.)

The replacement material installed under this guarantee shall be guaranteed the same as the original material, from the date of the original installation.

5. Equipment: The material shall be applied to the pavement by an extrusion method wherein one side of the shaping die is the pavement and the other three sides are part of the equipment.

The equipment shall provide continuous mixing and agitation of the material. Conveying parts of the equipment shall be constructed to pavement accumulation and clogging. All parts of the equipment which come in contact with the material shall be easily accessible and exposable for cleaning and maintenance.

All mixing and conveying parts including the shaping die shall maintain the material at the plastic temperature.

The equipment shall assure continuous uniformity in the dimensions of the stripe. The thickness of the material on the pavement shall be no less than 3/32 inch and no more than 3/16 inch measured as an average in any 3-foot length.

The applicator shall cleanly cut off square stripe ends and shall be capable of applying "skip" lines. The use of pans, aprons or similar appliances which the die overruns will not be permitted.

Beads applied to the surface of the completed stripe shall be applied by an automatic bead dispenser attached to the liner in such a manner that the beads are dispensed almost instantly upon the completed line. The bead dispenser shall be equipped with an automatic cutoff control synchronized with the cutoff of the thermoplastic material.

The equipment shall be constructed to provide for varying die widths to produce varying widths of traffic markings.

A special kettle shall be provided for melting and heating the composition. The kettle shall be equipped with an automatic thermostatic control device so that heating can be done by controlled heat transfer liquid rather than direct flame, to provide positive temperature control and prevent overheating of the composition.

The applicator and kettle must be equipped and arranged to satisfy the requirements of the National Fire Underwriters.

The applicator shall be mobile and maneuverable to the extent that straight lines can be followed and normal curves can be made in a true arc.

The applicator shall be capable of containing a minimum of 125 pounds of molten material.

6. Application: The Contractor shall clean off dirt, blaze, paint, tape and grease where necessary and as directed by the Engineer.

The material may be installed in variable widths from 2 inches to 12 inches.

On pavements containing less than 6 percent bituminous asphalt and on all concrete pavements, the Contractor shall prestripe the application area with a binder material as recommended by the manufacturer.

The compound shall be installed in a melted state at temperatures of 380°F to 450°F.

The minimum installed thickness of the line as viewed from a lateral cross section shall be not less than 3/32nds of an inch at the edges, nor less than 1/8th of an inch in the center. The measures shall be taken as an average throughout any 36-inch section of the line.

The new line when applied over an old line of compatible material shall bond itself to the old line in such a manner that no splitting or separation takes place during its useful life.

The finished lines shall have well-defined edges and be free of waviness.

PART 3 - EXECUTION

- 3.01 GENERAL: Pavement markers and markings shall be applied to surfaces that have been thoroughly cleaned and are free of dirt, dust, curing compound, grease, oil, moisture, loose aggregates, unsound layers and any other material which would adversely affect the bond of the adhesive or paint.

In the installation of pavement markers, the cleaning of Portland cement concrete and asphalt concrete surfaces shall be by blast cleaning. Clean, newly placed asphalt concrete need not be blast cleaned unless the surface contains an abnormal amount of asphalt or the surface is contaminated with dirt, grease, oil or any other material which would adversely affect bonding.

Unless otherwise specified, the Contractor shall establish control points, satisfactory to the Traffic Engineer, spaced at intervals that will insure accurate location of pavement markers and striping. Markers, paints and tape shall not be applied when moisture or foreign matter is present on the pavement surface or when wind conditions are such as to cause dust to be deposited on the prepared areas or to prevent satisfactory application of the marker adhesive or paint.

The Contractor shall paint temporary guidelines and outline of arrows, legends and crosswalks with a 2-inch wide brushed line on the day the roadway is opened to traffic which shall be approved by the Traffic Engineer before permanent lines are painted.

The Contractor shall furnish and place all warning and directional signs necessary to direct and control the traffic during marker installation or the striping operations. Warning signs shall be set up before the beginning of each operation and extra signs shall be kept well ahead of the marking or painting equipment.

The Contractor shall install all markers and apply all pavement striping before opening roadways to public traffic except that when connections to existing pavements are made or when temporary detours carry public traffic, the Contractor shall mark or stripe the connecting pavements on the day that the roadway is open to traffic.

If it is necessary to run public traffic over roadways soon after paving, the Contractor shall paint, on the day of each day's paving, temporary guide dashes at the traffic stripe or marker location on the pavement, as guidance for drivers, until the permanent markings can be placed. The Contractor shall maintain and repaint, if necessary, all temporary markings until the permanent striping and/or markers are installed. This work shall be considered incidental to the items of paving, pavement markers and/or pavement striping, and no separate payment will be made therefor.

Permanent pavement markers, striping and markings shall be applied no sooner than 7 calendar days nor later than 14 calendar days after completion of the pavement.

- 3.02 PAVEMENT MARKERS: Unless otherwise ordered in writing by the Traffic Engineer, markers shall be cemented to the pavement with Standard Set Type adhesive. If ordered by the Traffic Engineer, the Contractor shall use Rapid Set Type adhesive for the Standard Set Type adhesive at no extra cost to the City.

If the Contractor uses Rapid Set Type adhesive, he shall submit samples of the markers and Rapid Set Type adhesive proposed for use to the Traffic Engineer, for testing and approval, at least 10 days before the date of its intended use.

The adhesive shall be placed uniformly on the cleaned pavement surface or on the bottom of the marker in a quantity sufficient to result in complete coverage of the area of contact of the marker with no voids present and with a slight excess after the marker has been pressed in place. The marker shall be placed in position and pressure applied until firm contact is made with the pavement. Excess adhesive around the edge of the marker, excess adhesive on the pavement, and adhesive on the exposed surfaces of the markers shall be immediately removed. Soft rags moistened with mineral spirits conforming to Federal Specification TT-T-291E or kerosene may be used, if necessary, to remove adhesive from exposed faces of pavement markers. No other solvent shall be used. The marker shall be protected against impact until the adhesive has hardened to the degree designated by the Traffic Engineer.

The adhesive requires that the mixing operation and placing of the markers be done rapidly. When hand mixing or machine mixing the Standard Set Type adhesive, all markers shall be aligned and pressed into place within 5 minutes after mixing is started. When hand mixing Standard Set Type adhesive, not more than one quart shall be mixed at one time. Any mixed batch which becomes viscous so that the adhesive cannot be readily extruded from under the marker on application of slight pressure shall not be used.

When the Rapid Set Type adhesive is used, the components shall be mixed by a two component type automatic mixing and extrusion apparatus, the markers shall be placed within 60 seconds after the adhesive has been mixed and extruded and no further movement of the marker will be allowed.

Automatic mixing equipment for the epoxy adhesive shall use positive displacement pumps and shall properly meter the components in the specific ratio, ± 5 percent by volume of either component. At the beginning of each day and at any other time ordered by the Traffic Engineer, the ratio shall be checked by the Contractor in the presence of the Traffic Engineer. This check shall be made by disconnecting the mixing heads, or using suitable bypass valves, and filling two suitable containers with the unmixed components. The mixing head shall properly mix two components so that there is no trace of black or white streaks in the mixed material.

The Standard Set Type adhesive shall not be used when either the pavement or the air temperature is less than 50°F. The Rapid Set Type adhesive shall not be used when either the pavement or the air temperature is less than 30°F. No markers shall be installed if the relative humidity of the air is greater than 80 percent or if the pavement is not surface dry. The Traffic Engineer shall be the judge as to when the adhesive has set sufficiently to bear traffic. The following table may be used as a guide; however, the times shown may vary, depending upon field conditions:

TIME TO BEAR TRAFFIC		
Temperature* (°F)	Standard Set Type (Hours)	Rapid Set Type (Minutes)
100	1-1/2	15
90	2	20
80	3	25
70	4	30
60	5	35
50	7	45
40	No Application Below 50°F	65
30		85
		No Application Below °F

*The temperature indicated is either pavement surface or air temperature, whichever is lower. The hardness of the rim of epoxy around the marker shall not be used as an indication of the degree of cure of the epoxy under the marker.

Types A and J pavement markers that are used to delineate 10-foot lane stripes shall be installed in sets of four markers as called for on the plans. Installation of fractional sets (i. e., one, two or three markers) will not be permitted. The length of the 10-foot stripe and 30-foot gap may vary ± 1 foot to properly distribute the spacing of stripes.

No pavement markers shall be installed over longitudinal or transverse joints of the pavement surface.

- 3.03 PAVEMENT STRIPING AND MARKINGS: Pavement striping and markings shall be of the length, width and placement specified and shall conform to the Department of Transportation Services' Standards.

Traffic paint shall be applied at a nominal film thickness of 0.015 inch, utilizing a wheeled, hand or self-propelled applicator machine. The traffic paint applicator machine shall have appropriate shields of nozzle controls which will permit sharp pavement stripe definition. The traffic paint applicator machine shall have an air stream nozzle which can direct compressed air immediately before the area of paint application for the purpose of cleaning the pavement prior to paint application.

Pavement arrows, legends, and crosswalks shall be applied with appropriate templates (refer to "Traffic Standards Manual" of the Department of Transportation Services, dated July 1976).

No stripe shall be less than the specified width. No stripe shall exceed the specified width by more than 1/2 inch. The length of the 10-foot painted segment for skip stripe may vary ± 1 foot and the 30-foot gap between segments may vary ± 1 foot. The alignment of the stripe shall not deviate from the intended alignment by more than 1 inch on tangents and on curves up to and including one degree. On curves exceeding one degree, the alignment of the stripe shall not deviate from the intended alignment by more than 2 inches.

When necessary to correct a deviation which exceeds the permissible tolerance in alignment, that portion of the stripe so affected shall be removed plus an additional 30 feet in each direction, and a new stripe then provided in accordance with these specifications.

All stripes, segments of stripes and markings shall present a clean cut, uniform appearance. All striping and markings which fail to meet the requirements specified herein, or are marred or damaged by traffic or from other causes, shall be corrected prior to acceptance by the City at the Contractor's expense. All misted areas, dripped and spattered paint shall be removed to the satisfaction of the Construction Manager.

The freshly painted stripe shall be protected by cones or other satisfactory devices until the traffic paint is dry and will not transfer to car tires. All stripes damaged by traffic, or pavements marked by traffic crossing wet paint, shall be repaired or corrected as specified below.

The Contractor shall submit to the Traffic Engineer test specimens as requested. Test films shall be applied to a suitable plane rigid surface. The area shall be of sufficient size to permit film thickness measurement to be made at least 1 inch from any edge.

3.04 REMOVING EXISTING PAVEMENT MARKERS, STRIPING AND MARKINGS:
Existing pavement markers shall be removed by methods that cause the least possible damage to the pavement or surfacing.

Where specified on the plans and/or directed by the Traffic Engineer, existing pavement striping and markings shall be removed to the fullest extent possible by methods that will not materially damage the surface or texture of the pavement, or leave impressions on the roadway that could be confused with permanent striping during inclement weather or night driving conditions. Any damage to the pavement or surfacing caused by the removal operations shall be repaired by the Contractor at his expense by methods acceptable to the Traffic Engineer.

Painting over the existing striping and markings will not be permitted. Burning off existing striping and markings will be permitted using an approved method using excess oxygen.

Sand or other material deposited on the pavement as a result of removing pavement markers, traffic striping and markings shall be removed as the work progresses. Accumulation of sand or other material which may constitute a hazard to traffic will not be permitted.

Extraneous traffic striping and markings shall be removed before any change is made in the traffic pattern.

3.05 PREFORMED PAVEMENT MARKING TAPE: Preformed pavement marking tape may be applied manually or with the tape applicators approved by the tape manufacturer. All markings shall be applied in accordance with the tape manufacturer's recommendations and as specified herein.

The Contractor shall install permanent preformed pavement marking tape only at the locations shown on the plans and as specified herein.

Preformed pavement marking tape shall not be applied over other markings or old paint. The Contractor shall remove all old markings and otherwise prepare the surface for tape application as specified.

The minimum temperatures for the application of preformed pavement marking tape shall be 60° (15°C) for air and 70°F (21°C) for roadway surfaces, with both temperatures rising. The maximum temperature shall be 150° (66°C) for roadway surfaces.

The Contractor shall prime existing roadway surfaces with an approved primer immediately prior to the application of permanent preformed pavement marking tape. The Contractor shall apply the primer as recommended by the tape manufacturer and as directed by the Construction Manager.

The Contractor may use tapes of different widths to form a specified stripe width (i. e., two 4-inch wide tapes may be used to form an 8-inch wide stripe); however, 12-inch wide stripe shall be of a single width and payment shall be made for the specified stripe width as shown on the plans and called for in the proposal.

The Contractor shall use butt splices only and shall not overlap the tape material.

All markings shall be thoroughly tamped with approved mechanical tampers. Additionally, the Contractor shall slowly drive on the newly applied markings several times with a truck.

All areas marked with preformed pavement marking tape shall be ready for traffic immediately after application.

3.06 REMOVAL OF TEMPORARY TAPE TRAFFIC MARKINGS: The Contractor shall remove all temporary tape striping placed to delineate traffic lanes, crosswalks, stop bars, etc., prior to the laydown of the finish asphalt concrete mix #4 layer.

3.07 METHOD OF MEASUREMENT: Pavement markings, including lane striping, will not be measured.

Pavement markers will not be measured.

Crosswalk markings will be measured as complete units of painted crosswalk marking as indicated on the plans and in the proposal.

Pavement arrows, legends and words will be measured as complete units of the type and design specified on the plans and in the proposal.

3.08 BASIS OF PAYMENT: The accepted quantities of the various types of pavement markers will be paid for at the contract lump sum price complete in place. The price includes full compensation for furnishing all labor, materials, tools, equipment and incidentals, and for doing all the work involved, in furnishing and placing pavement markers complete in place, as shown on the plans, as specified herein or as directed by the Engineer.

Pavement striping, including pavement markings such as stop lines (or stop bars), will be paid for at the lump sum price bid in the proposal which price shall be full compensation for furnishing all labor, materials, tools, equipment and incidentals and for doing all the work involved in furnishing and installing traffic pavement striping complete in place as shown on the plans, including the removal of existing extraneous paint or paint stripe, as specified herein or as directed by the Engineer.

The quantity of pavement striping noted in the proposal is based on the striping plan. If the completed work deviates from the striping plan, the unit price for the adjusted striping work will be determined by dividing the lump sum price bid in the proposal by the quantity noted in the proposal. The lump sum price bid will be adjusted by the amount determined by multiplying the above unit price by the length of striping added or deleted. The adjusted striping work will be measured as follows: pavement stripes 12 inches or less in width (including between line spacing) will be measured as a single stripe; pavement stripes over 12 inches wide will be measured as two stripes; and the unpainted spaces, up to 25 feet, between painted stripe segments will be included in the measurement.

The accepted quantities of crosswalk markings will be paid for at the contract unit price per each thermoplastic or taped crosswalk marking as indicated on the plans and in the proposal, in place complete.

The accepted quantities of pavement arrows, legend and words will be paid for at the contract unit price per each as indicated in the proposal, in place complete.

The contract price shall be full compensation for furnishing all labor, materials, tools, equipment and incidentals and for doing all the work involved as shown on the plans, as specified herein or as directed by the Construction Manager.

Removal of existing pavement markings and markers shall be considered incidental to the various payment items.

END OF SECTION

SECTION 02609 – ELECTRONIC MARKERS FOR POTABLE AND NON-POTABLE WATER SYSTEMS

PART 1 – GENERAL

- 1.01 GENERAL CONDITIONS: The General Conditions and Special Provisions preceding these specifications shall govern this section of the work.
- 1.02 WORK INCLUDED: Furnish all labor, materials, tools and equipment necessary for the installation and testing of electronic markers over plastic pipe and concrete jackets for "locating" purposes.

Electronic markers shall be installed in lieu of copper toning wire along all new mains 4-inches and larger including non-potable water mains and fire hydrant and meter laterals.

PART 2 – PRODUCTS

- 2.01 MATERIALS: Electronic markers shall be the "Omni Marker," manufactured by Tempo, or approved equal.

Application	Color	Frequency	Model Number	UPC Number
Potable Water Main	Blue	145.7 kHz	161	60766
Non-Potable Water Main	Purple	66.35 kHz	168	11050

PART 3 – EXECUTION

- 3.01 PLACEMENT: The electronic markers shall be hand placed in the trench, centered over the pipe and covered with sufficient base course material to prevent shifting prior to backfilling of the trench. Installation shall be at a minimum depth of 2 feet and a maximum depth of 3 feet from finish grade.
- 3.02 LOCATION: Installation of electronic markers shall be in accordance with the following:
- A. One marker at all changes in horizontal alignment (e. g., bends, deflection couplings and deflections at joints).
 - B. One marker 10 feet prior to and one marker 10 feet after a change in horizontal alignment unless markers are required within the 10-foot distance.
 - C. On straight runs, markers shall be placed at a maximum distance of 40 feet.

- D. One marker at the end of all mains and at all permanent cleanouts.
 - E. Markers at the beginning and ending of all concrete jackets.
- 3.03 TESTING: Contractor shall test the electronic markers prior to installation to verify proper operation. Construction Manager shall verify the number and locations of placed electronic markers before final paving of the project. Contractor shall record marker locations on the "as-built" drawings.
- 3.04 PAYMENT: Payment for electronic markers will be made at a lump sum price.

The lump sum price for electronic markers shall be full compensation for all labor, materials, tools and equipment necessary for furnishing and installing electronic markers and all other incidentals required to complete the work.

END OF SECTION

SECTION 02713 – POTABLE WATER SYSTEM

PART 1 – GENERAL

- 1.01 GENERAL CONDITIONS: The General Conditions and Special Provisions preceding these specifications shall govern this section of the work.
- 1.02 WORK INCLUDED: Furnish all labor, materials, tools, equipment and related items necessary to complete, in place, the potable water system in conformity with the dimensions, profiles, sections, and details shown on the plans. Work shall be governed by the Water System Standards, Board of Water Supply, City and County of Honolulu, et al., State of Hawaii, 2002,” hereinafter referred to as the BWS Standards.

PART 2 – PRODUCTS

- 2.01 MATERIALS: All materials shall conform to the BWS Standards. Water mains shall be polyvinyl chloride (PVC), Class 150, plastic pipe conforming to AWWA C900. Fittings shall be Class 350 ductile iron with mechanical joints. Gate valves shall be cast iron, Class 150, with mechanical joints. Fire hydrants shall be wet-barrel type.

Brass fittings shall conform to the BWS Standards amendment letter regarding “lead-free” fittings, found at the end of this section.

- 2.02 Electronic markers as specified in Section 02609 - Electronic Markers for Potable and Non-Potable Water Systems.

PART 3 – EXECUTION

- 3.01 INSTALLATION: The installation, testing, disinfection and acceptance of water lines shall be governed by the BWS Standards.

The Construction Manager shall be responsible for precisely laying out the various utility lines shown on the contract plans as provided elsewhere in these specifications. The location shown on the contract plans of the various existing utility lines which the new lines are to cross over or under or connect to were determined on the basis of the best information available; however, no assurance can be provided that the actual locations will be precisely as shown on the contract plans.

In performing all work, the Contractor shall exercise due care and caution necessary to avoid any damage to and impairment in the use of any existing utility lines. Any damage inflicted on existing lines resulting from the Contractor’s operations shall be immediately repaired and restored as directed by the Construction Manager at the Contractor’s expense.

Connections to or the lowering or relocation of existing mains shall be done by the Contractor in accordance with the BWS Standards. The Contractor shall furnish all necessary pipe, fittings, appurtenances and other incidental materials.

Trenching, pipe cushion and backfilling for the water main shall be in accordance with the BWS Standards.

The Contractor shall coordinate the connection of the new water line with the Construction Manager. The Contractor shall inform the Construction Manager a minimum of one week prior to the date of the actual connection. The inverts shown on the plans are approximate only, and the Contractor shall adjust the slope of the new water line as necessary to construct a fully functional and acceptable system. The Contractor shall ensure that all piping, fittings, materials, tools, equipment and incidentals are at the site and ready for connection.

- 3.02 Install electronic markers as specified in Section 02609 – Electronic Markers for Potable and Non-Potable Water Systems.

BOARD OF WATER SUPPLY

CITY AND COUNTY OF HONOLULU
630 SOUTH BERETANIA STREET
HONOLULU, HI 96843



October 22, 2013

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Manager and Chief Engineer

ELLEN E. KITAMURA, P.E.
Deputy Manager and Chief Engineer *ELL*

TO: WHOM IT MAY CONCERN

FROM: *ELL* ERNEST Y. W. LAU, P.E.
MANAGER AND CHIEF ENGINEER

SUBJECT: 2002 WATER SYSTEM STANDARDS AMENDMENTS

All waterworks brass fittings shall be in compliance with the amended Section 1417 of the Safe Drinking Water Act (SDWA) which takes effect on January 4, 2014. The amendment includes a change to the definition of "lead-free" by reducing lead content from 8% to a weighted average of not more than 0.25% in the wetted surface material. All waterworks brass fittings installed for potable water service on January 4, 2014 and beyond shall conform to the amended definition of "lead-free".

As indicated in Section 211 – Brass Products, all brass fitting shall conform to NSF Standard 61 and Section 1417 of the SDWA. In addition, for Oahu only, all brass fittings shall conform to NSF Standard 372. Until conforming brass products are approved for inclusion on the Approved Materials List, brass products must be submitted for review and approval on a project-to-project basis.

If you have any questions, please contact Michael Domion at (808)748-5740.

cc: Kauai, Maui and Hawaii Dept. of Water Supply

Water for Life Ka Mui Olu

END OF SECTION

EAST KAPOLEI II DEVELOPMENT
INCREMENT IIB SUBDIVISION
IFB-14-HHL-001

02713-3

POTABLE WATER SYSTEM

SECTION 02721 – STORM DRAINAGE SYSTEM

PART 1 – GENERAL

- 1.01 GENERAL CONDITIONS: The General Conditions and Special Provisions preceding these specifications shall govern this section of the work.
- 1.02 WORK INCLUDED: Furnish all labor, materials, tools, equipment and related items necessary to complete, in place, the storm drainage system in conformity with the dimensions, profiles, sections, and details shown on the plans. Work relating to drainpipes and drainage structures shall be governed by the following sections of the Standard Specifications:
- | | |
|---|------------|
| Trench Excavation and Backfill..... | Section 11 |
| Drainpipes | Section 24 |
| Drain Manholes..... | Section 25 |
| Catch Basins and Storm Water Inlets | Section 26 |
| Portland Cement Concrete | Section 39 |
| Concrete Structures | Section 40 |
- 1.03 CONTRACTOR SUBMITTALS: Shop drawings shall be submitted for precast manholes, catch basins and storm water inlets.

PART 2 – PRODUCTS

- 2.01 MATERIALS
- A. Drainpipe: Reinforced Concrete Pipe, Class III, AASHTO M170.
- B. Materials for the storm drainage system shall be in accordance with the sections of the Standard Specifications noted hereinbefore.

PART 3 – EXECUTION

- 3.01 INSTALLATION: Install the storm drainage system in accordance with the sections of the Standard Specifications noted hereinbefore.
- 3.02 The Contractor shall be responsible for precisely laying out the storm drain line shown on the contract plans. The location shown on the contract plans of the various existing utility lines which the new lines are to cross over or under or connect to were determined on the basis of the best information available; however, no assurance can be provided that the actual locations will be precisely as shown on the contract plans.

- 3.03 In performing all work, the Contractor shall exercise due care and caution necessary to avoid any damage to and impairment in the use of any existing utility lines. Any damage inflicted on existing lines resulting from the Contractor's operations shall be immediately repaired and restored as directed by the Engineer at the Contractor's expense.

END OF SECTION

SECTION 02731 – SANITARY SEWER SYSTEM

PART 1 – GENERAL

1.01 GENERAL CONDITIONS: The General Conditions and Special Provisions preceding these specifications shall govern this section of the work.

1.02 WORK INCLUDED: Furnish all labor, materials, tools, equipment and related items necessary to complete, in place, the sewer system in conformity with the dimensions, profiles, sections, and details shown on the plans. Work relating to the sewer system shall be governed by the following sections of the DPW Standard Specifications:

PVC Sewer Pipe and Appurtenances	Section 21
Connection to Existing Sewer and Connecting Cesspool in Direct Line of Sewer	Section 22
Sewer Manholes	Section 23
Portland Cement Concrete	Section 39
Concrete Blocks, Cradles and Concrete Jackets	Section 43
Reinforcing Steel	Section 48

PART 2 – PRODUCTS

2.01 MATERIALS

- A. Sewer Pipe: Polyvinyl Chloride Pipe, C-900, Class 150 (DR 18).
- B. Sewer Manholes: As specified in Section 23 - Sewer Manholes of the “Standard Specifications.”
- C. Materials for the sewer system shall be in accordance with the sections of the Standard Specifications noted hereinafter.

PART 3 – EXECUTION

3.01 INSTALLATION: Install the sewer system in accordance with the sections of the Standard Specifications noted hereinbefore.

3.02 The Contractor shall be responsible for precisely laying out the sewer line shown on the contract plans. The location shown on the contract plans of the various existing utility lines which the new lines are to cross over or under or connect to were determined on the basis of the best information available; however, no assurance can be provided that the actual locations will be precisely as shown on the contract plans.

3.03 In performing all work, the Contractor shall exercise due care and caution necessary to avoid any damage to and impairment in the use of any existing utility lines. Any damage

inflicted on existing lines resulting from the Contractor's operations shall be immediately repaired and restored as directed by the Engineer at the Contractor's expense.

END OF SECTION

SECTION 02840 - TRAFFIC SIGNS

PART 1 - GENERAL

- 1.01 GENERAL CONDITIONS: The General Conditions preceding these specifications shall govern this section of the work.
- 1.02 WORK INCLUDED: Furnish all materials, labor and equipment required to accomplish the installation of all traffic signs as indicated on the plans and specified herein.
- 1.03 SUBMITTALS: A list of component parts indicating the description of each part, the material from which it has been fabricated (including ASTM numbers where applicable) and a statement certifying compliance to the material specification.

PART 2 - PRODUCTS

2.01 MATERIALS

- A. Asbestos Prohibition: No asbestos containing materials or equipment shall be used under this section. The Contractor shall ensure that all materials and equipment incorporated in the project are asbestos-free.
- B. Materials shall be in accordance with Section 621 -Traffic Control Signs of the State Standard Specifications, except as shown on the plans or amended in the specifications herewith.

PART 3 - EXECUTION

- 3.01 INSTALLATION: Installation of signs shall be in accordance with Section 621 - Traffic Control Signs of the State Standard Specifications, except as shown on the plans or amended in the specifications herewith.

END OF SECTION

DIVISION 5 - METALS

SECTION 05500 - STEEL FABRICATIONS

PART 1 - GENERAL

- 1.01 GENERAL CONDITIONS: The General Conditions and Special Provisions preceding these specifications shall govern this section of the work.
- 1.02 WORK INCLUDED: This Section includes but is not limited to:
- A. Miscellaneous steel angles, plates, pipes, bars and tubing not specified elsewhere.
 - B. Ferrous metal anchors, bolts, expansion shields, and other accessories indicated and/or required for the complete installation of all work.
- 1.03 GENERAL REQUIREMENTS
- A. Reference Specifications: Unless otherwise indicated, the “Specification for the Design, Fabrication and Erection of Structural Steel for Buildings” of the American Institute of Steel Construction (AISC) and the American Welding Society (AWS) Standard Code shall govern the work.
 - B. Coordinate with other trades so that all inserts and attachments are properly set and that adequate provision is made for embedding this work, where required, in the concrete and rough stone work.
 - C. Submittals: Submit the following in accordance with the Special Provisions.
 - 1. Prequalification of “or approved equal” materials.
 - 2. Shop Plans: Submit shop plans for approval.

PART 2 - PRODUCTS

- 2.01 MATERIALS: All new, with physical and chemical characteristics equal to or better than those required herein.
- A. Steel: ASTM A36 and A283, new, straight and true; manufactured by reputable mills.
 - B. Bolts, Nuts, and Washers: ASTM A307, Grade “A”, hot-dipped galvanized. High strength bolts: ASTM A325.
 - C. Expansion Bolts: Star Expansion Industries Corp. or approved equal lead sleeve type.

- D. Paint for Shop Priming and Field Touch-Up of Non-Galvanized Steel: Zinc Chromate-Iron Oxide Primer, Fuller #621-04, Sinclair #15, or approved equal.
- E. Cold Galvanizing Compound for Shop and Field Touch-Up of Galvanized Ferrous Metal Work: The ZRC Chemical Products Co. "ZRC Compound", applied in strict accordance with manufacturer's specifications.
- F. Fill for Embedment of Perimeter Fence Posts, Anchors, and for Similar Uses: Sonneborn "SonogROUT", Anti-Hydro Co. "Axpandcrete S-Hi-Flow", Thoro System Products "Thorogrip", or approved equal non-metallic grout, premixed, specially manufactured for this purpose, with mix and setting characteristics as recommended by the manufacturer for the purpose intended. Mix and place in strict accordance with manufacturer's instructions.

2.02 FABRICATION AND WORKMANSHIP

- A. Insofar as possible, fit and shop assemble the work, ready for installation. Fabricate and erect all work square, plumb, straight and true. Provide all supports and anchors required for proper installation. Perimeter fence shall be fabricated in as large sections as possible and hot-dip galvanized after fabrication.
- B. Connections: Weld, blindrivet, or attach with screws, countersink and finish flush where exposed, unless otherwise indicated. Make joints and intersections accurately in true planes; tightly fit and draw up, with end threads nicked to prevent loosening.
- C. Welding: Use the referenced AWS Standards for general procedure, with all welders certified for the classification of work involved. Grind all exposed welds smooth.
- D. Connections: Provide holes and connections for the work of other trades and connect thereto as required.
 - 1. Isolate metals from contact with concrete and stone work, and different metals from contact with each other, where necessary to prevent corrosion.
 - 2. Bolting: Use proper size bolts. Draw nuts tight with end threads upset. Metal shall be clean and free from mill-scale, rust and/or pitting.
- E. Painting
 - 1. Shop paint all ferrous metal work except zinc-coated surfaces and work to be embedded in concrete or mortar. Do not coat surfaces to be welded closer than three inches from the weld, prior to welding. Thoroughly dry

and clean surfaces; then paint in a workmanlike manner, with all joints and crevices coated thoroughly. Prior to assembly, paint all surfaces which will be concealed or inaccessible after assembly.

- a. Cleaning: Remove all scale, rust, dirt, grease and other deleterious materials prior to coating.
 - b. Priming: As soon as possible after cleaning, prime coat all exposed surfaces to a uniform dried film thickness of not less than 1.5 mil, Damaged coating shall be promptly repaired with the primer.
2. Field Painting: After installation, clean welds, bolts, and abraded portions and give an additional spot coat of the same materials. Leave the entire work in condition to receive the finish paint, or to provide complete protection of exposed metal if finish painting is not required.
- F. Galvanizing: Where so specified, galvanize ferrous metal items using ASTM A123 hot dip process, to an average weight of not less than 2.0 ounces per square foot of surface (coating thickness 0.0034”) with no individual specimen having less than 1.8 ounces (coating thickness 0.0030”).
1. In the event of doubt of compliance with the weight of zinc coating, test the weight of the coating using test method ASTM A90.
 2. Repair of Galvanizing: Where damaged by welding after galvanizing, or by any other cause in shop or field, clean surfaces thoroughly by wire brushing or other approved means, then touch up with the specified cold galvanizing compound. Prepare surfaces, apply material and fuse onto the surface in accordance with manufacturer’s instructions. Repair shall provide protection equal to the original coating.

PART 3 - EXECUTION

3.01 INSTALLATION

- A. Assemble and install shop fabricated work plumb, square and unwarped. Movable parts shall operate smoothly upon completion. Galvanizing repaired after welding as specified above.
- B. Secure anchor bolts with cinch anchors set in holes drilled under this section, in concrete and stone work. At the Contractor’s option, attachments may be made with bolts installed in the forms and embedded in the concrete, wherever practical.
- C. Protect finish metal surfaces installed in contact with stone, concrete or non-

compatible metals with a heavy coat of asphalt or zinc chromate paint, unless specified otherwise.

D. Finished work shall be complete in every detail, strong and rigid, neat in appearance, free from defects, and acceptable to Engineer.

E. Clean all surfaces after installation and leave free of all oil, grease and dirt.

3.02 CLEANUP: Clean up and remove all debris accumulated from construction operations from time to time, when and as directed by the Engineer. Upon completion of the construction work and before final acceptance of work, remove all surplus materials, equipment, etc.

END OF SECTION

DIVISION 10 - SPECIALTIES

SECTION 10552 – CONCRETE PAD FOR MAIL BOXES

PART 1 – GENERAL

- 1.01 GENERAL CONDITIONS: The General Conditions and Special Provisions preceding these specifications shall govern this section of the work.

WORK INCLUDED: Furnish all labor, materials, tools, and equipment necessary for the installation of mail boxes, including concrete pads and anchor bolts, in conformity with the dimensions, profiles, sections, and details shown in this section.

PART 2 – PRODUCTS

2.01 MATERIALS

- A. Mail Boxes shall be “Vital Type III Cluster Box Units (CBUs), Model #1570-16PG” by Florence Manufacturing Company, or approved equal.
- B. Concrete Pad
1. Concrete shall have a compressive strength of 3000 psi @ 28 days, contain 4% minimum to 6% maximum air entrainment and be placed with a 3.50 to 4.50 slump in accordance with ACI 301.
 2. Reinforcing steels rods shall conform to ASTM A615, Grade 60.
 3. Anchor Bolts shall conform to ASTM A193, Grade B8M, Type 316 Stainless Steel.

PART 3 – EXECUTION

3.01 INSTALLATION:

CBUs shall not be installed until the local USPS representative has conducted an on-site visit to ensure compliance with the official specifications. **The Contractor shall contact the local USPS representative at 423-3653 to have the pads inspected prior to pouring the concrete.**

CBUs shall be installed facing the correct direction. CBU installed on concrete pads poured behind the sidewalk shall face the sidewalk.

CBUs shall not be installed so close to an intersection or traffic lane that they block visibility for approaching traffic or could be struck by a passing motor vehicle.

CBUs shall not be located on dead-end streets where there is no safe turnaround for Postal delivery vehicles.

The Contractor shall notify the local USPS representative immediately upon completion of the CBU installation so that USPS can install the arrow lock and secure the unit.

All CBU compartment keys shall be distributed by the DHHL at the time of move in. The local USPS representative shall be contacted by the DHHL for the box address assignments. Each homeowner shall receive a copy of the Mode of Delivery Agreement at the time of move in.

Any deviation from the USPS designated location of the CBU shall not occur without first receiving authorization from the local USPS representative.

CBUs shall be level and mounted firmly in concrete, using one of the following methods.

1. The J-bolt method is the preferred method of installation of CBUs on concrete pads; however, the J-bolt pattern shall be accurate with the CBU pedestal plate. When using J-bolts, in order to prevent any damage or accidents that could result from the exposed bolts, consideration shall be given as to the time lapse between pouring the concrete and the actual installation. Expansion anchors shall be installed in accordance with the manufacturer's instructions.
2. The use of anchor bolts for the installation of CBUs on concrete pads is also acceptable as long as the methods described below are followed.
 - a. Hilti Kwik bolt II, 1/2" diameter X 5-1/2" overall length
Catalog Number: 000-453-696, KB II 12-512
Stainless Steel Catalog Number: 000-454-744
Minimum embedment in concrete shall be no less than 3-1/2"
 - b. ITW Ramset Redhead Trubolt, galvanized, 1/2" diameter X 7" overall length.
 - c. Rawl Stud, 1/2" diameter X 5-1/2" overall length, galvanized.
Catalog Number: 7324
Minimum embedment in concrete shall be no less than 4"

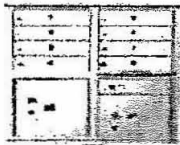
CLUSTER BOX UNIT (CBU) CONCRETE PAD REQUIREMENTS

- ALL FREE STANDING PADS MUST BE 8" THICK -

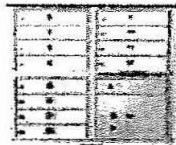
1 BOX	SINGLE PAD	4' X 4' (C&C HNL 4'X6')
2 BOXES	DOUBLE PAD	4' X 7'
3 BOXES	TRIPLE PAD	4' X 10'
4 BOXES	QUAD PAD	4' X 13'

**WHEN PLACING A PARCEL LOCKER AT ANY CBU LOCATION,
INCREASE THE PAD SIZE BY AN ADDITIONAL 4' X 4'**

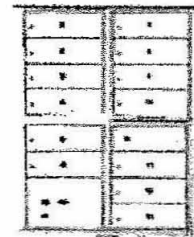
CLUSTER BOX UNITS FOR OUTDOOR CENTRALIZED MAIL DELIVERY



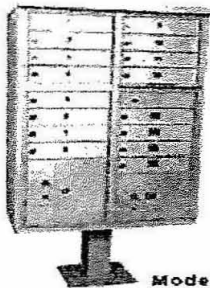
**FCBU Type I
8-box Unit**



**FCBU Type II
12-box Unit**

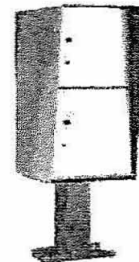


**FCBU Type IV
13-box Unit**



16-box Unit

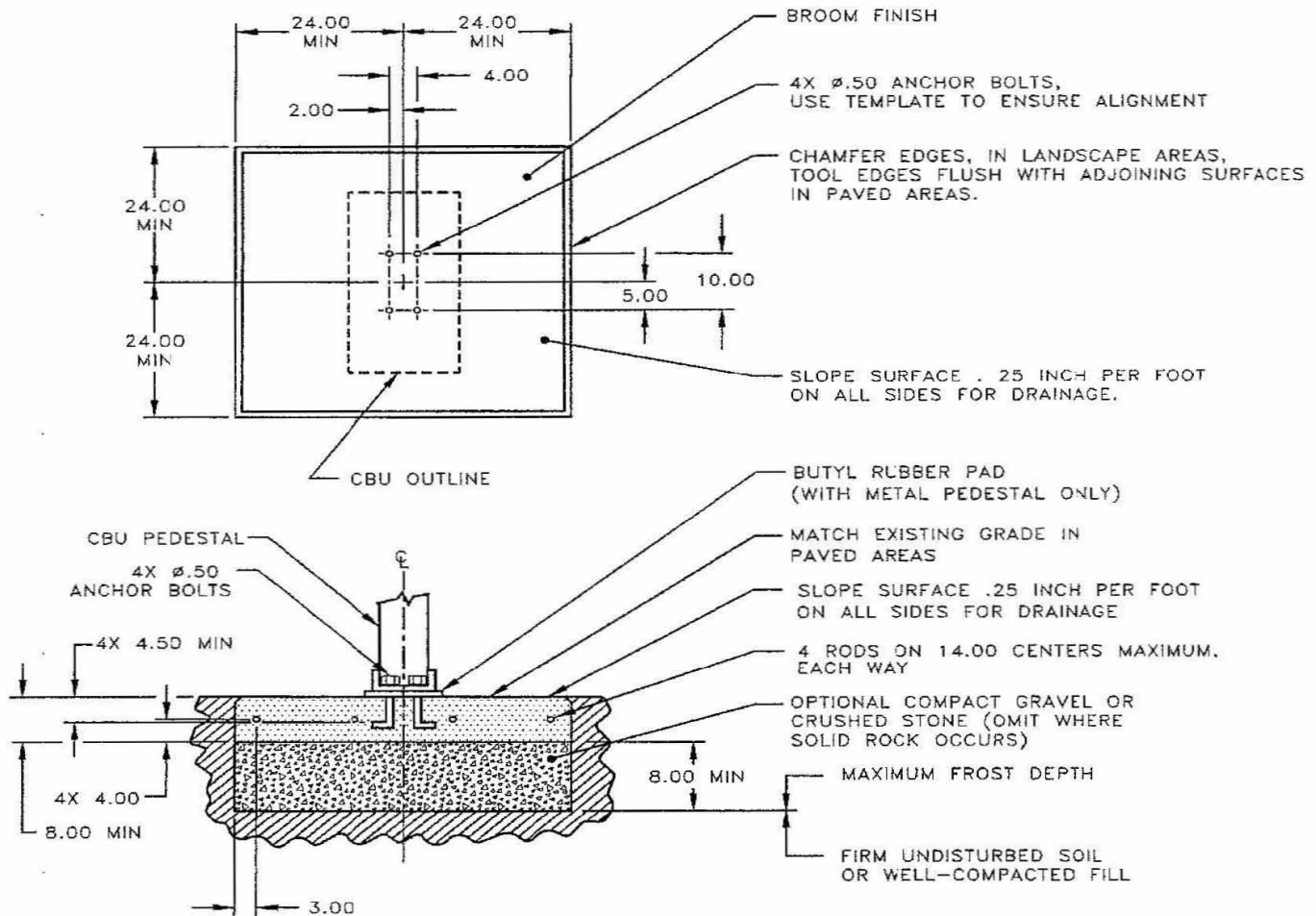
Model 1570 (F) CBU



Outdoor Parcel Locker

FCBU Type III

USPS APPROVED SPECIFICATIONS – CONCRETE PAD (SINGLE UNIT)



NOTES:

1. CONCRETE SHALL HAVE A COMPRESSIVE STRENGTH OF 3000 PSI @ 28 DAYS, CONTAIN 4% MIN – 6% MAX AIR ENTRAINMENT AND BE PLACED WITH A 3.50 – 4.50 SLUMP IN ACCORDANCE WITH ACI 301.
2. REINFORCING STEEL RODS SHALL CONFORM TO ASTM A615, GRADE 60.
3. ANCHOR BOLTS SHALL CONFORM TO ASTM A193, GRADE B8M, TYPE 316 STAINLESS STEEL.

Technical drawing of a concrete utility box (CBU) showing top and side views with dimensions and callouts.

Top View Dimensions:

- Overall width: 24.00 MIN (split into two 12.00 MIN sections)
- Overall height: 24.00 MIN (split into two 12.00 MIN sections)
- Internal width: 4.00
- Internal height: 4.00
- Distance from top edge to first internal horizontal line: 2.00
- Distance from bottom edge to last internal horizontal line: 2.00
- Distance from left edge to first internal vertical line: 2.00
- Distance from right edge to last internal vertical line: 2.00
- Internal width between vertical lines: 4.00
- Internal height between horizontal lines: 4.00

Side View Dimensions:

- Overall height: 192.00 MAX (SEE NOTE 4)
- Internal height: 32.00 MAX
- Distance from top edge to first internal horizontal line: 15.00 MAX
- Distance from bottom edge to last internal horizontal line: 10.00 PER CBU
- Internal height between horizontal lines: 5.00

Callouts and Notes:

- 4X ϕ .50 ANCHOR BOLTS, PER CBU. USE TEMPLATE TO ENSURE ALIGNMENT
- BROOM FINISH
- CHAMFER EDGES, IN LANDSCAPE AREAS, TOOL EDGES FLUSH WITH ADJOINING SURFACES IN PAVED AREAS.
- SLOPE SURFACE .25 INCH PER FOOT ON ALL SIDES FOR DRAINAGE
- BUTYL RUBBER PAD (WITH METAL PEDESTAL ONLY)
- MATCH EXISTING GRADE IN PAVED AREAS
- SLOPE SURFACE .25 INCH PER FOOT ON ALL SIDES FOR DRAINAGE
- 4 RODS ON 14.00 CENTERS MAXIMUM, EACH WAY
- OPTIONAL COMPACT GRAVEL OR CRUSHED STONE (OMIT WHERE SOLID ROCK OCCURS)
- 8.00 MIN
- MAXIMUM FROST DEPTH
- FIRM UNDISTURBED SOIL OR WELL-COMPACTED FILL
- 3.00
- 8.00 MIN
- 4X 4.50 MIN
- 4X ϕ .50 ANCHOR BOLTS PER CBU
- CBU PEDESTAL
- CBU OUTLINE

EAST KAPOLEI II DEVELOPMENT
INCREMENT IIB SUBDIVISION
IFB-14-HHL-001

CONCRETE PAD FOR MAIL BOXES

DIVISION 16 - ELECTRICAL

SECTION 16301 - EXTERIOR ELECTRICAL WORK

PART 1 - GENERAL

1.01 GENERAL CONDITIONS:

- A. The General Conditions and Special Provisions preceding this Specification shall govern this section.
- B. Specification and Plans complement each other and what is specified, scheduled or mentioned by one shall be binding as if called for by both. Specification and Plans are intended to specify nature, quantity and quality of electrical work.
- C. Before bidding, visit project site, carefully review each section of the Specification and all Drawings of this Contract, and obtain from utility companies their standards, drawings and specifications for the work to be provided. Verify details, report any error, conflicts or omissions to the Owner's representative (hereafter referred to as Engineer) at least 10 calendar days before submission of bids for interpretation or clarification. If errors or omissions are not reported, Contractor shall provide necessary work at no cost to the Department to properly complete intent of Specification and Drawings.

By submitting a proposal of the work included in this contract, the Contractor shall be deemed to have made such examination and to be familiar with and accept all conditions of the job site.

1.02 WORK INCLUDED:

- A. In general, provide complete underground electric, telephone, CATV, communications, street lighting, and power systems within project boundaries. Furnish all labor, materials (except as hereinafter noted), tools, equipment and appliances required to provide and install all Electrical Work, complete, as indicated on the Drawings and/or as herein specified, and as required for its correct and proper operation. The Drawings note various sizes of equipment as determined for basis of design; the Electrical Work, however, shall be installed to comply with the equipment furnished by the successful supplier. The work shall include but not necessarily be limited to:
 - 1. Complete underground raceway system including trenches, ducts, manholes, and boxes, to be used by the Hawaiian Electric Company (HECO) for their cables and equipment.

2. Complete underground raceway system including trenches, ducts, manholes, and boxes, to be used by Sandwich Isles Communications, Inc. for their cables and equipment.
 3. Complete underground raceway system including trenches, ducts, and boxes, to be used for communication system cables and equipment.
 4. Complete street lighting system.
 5. Complete secondary power systems.
 6. Coordinate work and arrange for periodic inspections by Hawaiian Electric Co., Sandwich Isles Communications, Inc., State Inspectors, City & County Inspectors, and Engineer.
 7. Pass test mandrel through all ducts and conduits, and make corrections as directed by inspectors or Engineer.
 8. Provide pulling wire, No. 12 AWG galvanized steel or polypropylene cord, in all empty ducts and conduits, unless indicated otherwise. Provide duct measuring/cable pulling tape in all Hawaiian Electric Company and Sandwich Isles Communications, Inc. ducts and conduits.
 9. Immediately report and pay for damages to existing equipment.
- B. Obtain and pay for electrical permits, arrange for periodic inspection by local authorities and deliver certificate of final inspection to Engineer.
- C. Contractor shall check and test the installation for completeness and functional operation as described by the Drawings and specified herein. Final test shall be in the presence of Engineer and representatives of the utility companies, Sandwich Isles Communications, Inc., and the City. Contractor shall arrange and pay for all testing costs. Should intermediate or final inspections of the duct system reveal crushed, damaged or impassable ducts, the Contractor shall repair those sections of duct system, including repairs to paved surfaces and concrete structures, at no additional cost to the Department.

1.03 SPECIAL CONDITIONS:

- A. Contractor shall install duct systems and schedule the electric, telephone, CATV, communications, and street lighting work within the timetable set by the General Contractor.

- B. Contractor shall verify ductline requirements, duct entry configurations and their locations, for each utility company and Sandwich Isles Communications manhole and handhole, with the respective utility company and Sandwich Isles Communications.
- C. Contractor shall make detailed arrangements for work by utility companies and Sandwich Isles Communications, Inc. pertaining to this Contract. Payment to utility companies for their work shall be by the Department.
- D. Contractor shall closely coordinate all work with Sandwich Isles Communications, Inc. (SIC). All trenches must be inspected prior to backfilling material. The Contractor shall notify the SIC Inspector (Customer Service Toll Free No. 1-888- 995-7274) at least 72 hours prior to pouring of concrete or backfilling trenches.
- E. Arrange for the General Contractor to identify the locations of all civil site utilities (i.e. drain, water and sewer lines, etc.) and driveways prior to layout of electric, telephone, street light and CATV systems.
- F. Contractor and General Contractor shall closely supervise and coordinate all electrical work with the utility companies and Sandwich Isles Communications, Inc. to ensure that proper roadway drainage is maintained during construction. Should damage and erosion occur during construction, the Contractor or General Contractor shall repair all damage and restore existing grade at no additional cost to the Department.

1.04 RELATED WORK BY OTHERS:

- A. Service cables and transformer(s), final connection thereto, and metering equipment by Hawaiian Electric Company. Obtain service raceway, grounding, transformer, and metering requirements before bidding, fabricating, constructing and installing. Make detailed arrangements for all work by utility company pertaining to Contract.
- B. Connection of street light circuits to utility company power source shall be by Hawaiian Electric Company.
- C. Telecommunications utility cables and equipment shall be by Sandwich Isles Communications, Inc. and/or respective communications provider for this operator area.
- D. Equipment utilizing electricity shall be provided by respective sections of Specification. Furnishing of equipment controllers (motor starters), unless otherwise specified, and providing complete control and interlock is provided by respective section supplying equipment. Installation of complete feeder or branch circuit system, and power wiring to equipment and controllers shall be part of electrical work.

1.05 SUBMITTALS:

1

- A. Shop Drawings: Within four weeks of award of Contract and prior to installation, submit complete shop drawings and manufacturer's literature for Engineer's review before any work is fabricated. Submit six sets of manufacturer's literature and/or fabrication drawings for the following:
1. Complete street light standards and accessories, including computerized footcandle arrays showing illumination levels for all project roadways..
 2. Complete secondary power system, including cabinets, meter sockets, circuit breakers, and accessories.
 3. Complete electric and utility system pullboxes, handholes, manholes, conduit and accessories. For utility system pullboxes, handholes, and manholes, obtain approvals from respective utility company prior to submission for Engineer's review.
 4. Utility companies' drawings.
- B. Prequalification: Brand names, manufacturer's names and catalog numbers indicate standard of design and quality required. Where materials or products specified herein are designated by manufacturer's name, any request to substitute materials or products other than those specified shall be approved by the Engineer. Burden of proof of equality of proposed substitutions will be the responsibility of the Contractor. List of substitute material together with qualifying data shall be submitted for approval at least ten days before bid opening.

Submission shall be as follows:

EXAMPLE:

<u>Item</u>	<u>Manufacturer and Catalog Number Specified</u>	<u>Substitute Manufacturer And Catalog Number</u>
Cable	John Doe - No. 3200	King - No. 2200

- C. Shop drawings and catalogue cuts for substitute materials shall clearly specify compliance with and/or deviation from specified material. Certification shall not contain statements to imply that the item does not meet requirements specified, such as "as good as"; and "achieve the same end use and results as materials formulated in accordance with the referenced publications". Certifications shall simply state that the item conforms to the requirements specified. Certificates shall be printed on the manufacturer's letterhead and shall be signed by the manufacturer's official authorized to sign certificates of compliance. Review of

shop drawings and catalogue cuts shall not release Contractor from complying with intent of Drawings and Specifications.

D. Intent of Shop Drawing and Catalog Cut Review:

1. Shop drawing and catalog cut submittals processed by the Engineer are not Change Orders. The purpose of the submittals by the Contractor is to demonstrate to the Engineer that he understands the design concept, that he demonstrates his understanding by indicating which equipment and material he intends to furnish and install and by detailing the fabrication and installation methods he intends to use;
2. If deviations, discrepancies or conflicts between shop drawings and Specifications are discovered either prior to or after shop drawing submittals are processed by the Engineer, the design drawings and specifications shall control and shall be followed;
3. The fact that a manufacturer does not offer a specific option or meet a minimum guaranteed performance specification, called for herein or in a formal bid specification, is not deemed proprietary when such is available from one or more manufacturers.

E. Approvals rendered on shop drawings shall not be considered as a guarantee of measurements or site conditions. Where drawings are approved, said approval does not relieve the Contractor from his responsibility for furnishing material or performing work as required by the Contract Drawings and Specifications.

1.06 GUARANTEE AND CERTIFICATE:

Defective materials and workmanship shall be removed and replaced at no cost to the Department. For period of one year after acceptance of work by the Department, materials and workmanship developing defects and malfunctions shall be repaired and/or replaced, to conform to intent of the Specification and Drawings at no additional cost to the Department.

PART 2 - PRODUCTS

2.01 GENERAL:

- A. All materials shall be new, except as specifically noted, and shall bear the label of Underwriters's Laboratories whenever standards have been established and label service is normally and regularly furnished by the agency.

2.02 MATERIALS:

- A. Direct Buried Conduits (for below grade use):
 - 1. Under Sidewalk or Protective Concrete Topping: Conduits for electric systems shall be round bore, PVC (polyvinyl chloride) Schedule 40 plastic or approved equal. Conduits for telephone, CATV, and communication systems shall be round bore, PVC (polyvinyl chloride) Schedule 40 plastic, or approved equal. Conduits for street lighting and secondary power systems shall be PVC (polyvinyl chloride) Schedule 40.
 - 2. Under Road Pavement or Grassed Areas: Conduits for electric systems shall be round bore, PVC (polyvinyl chloride) Schedule 80 plastic or approved equal. Conduits for telephone, CATV, and communication systems shall be round bore, PVC (polyvinyl chloride) Schedule 40 plastic, or approved equal. Conduits for street lighting and secondary power systems shall be PVC (polyvinyl chloride) Schedule 80.
- B. Concrete Encased Conduits (for below grade use): Conduits for electric systems shall be round bore, PVC Schedule 40 plastic or approved equal. Conduits for telephone, CATV and communications systems shall be round bore, PVC Schedule 40 plastic or approved equal. Conduits for street lighting and secondary power systems shall be PVC Schedule 40.
- C. Metal Raceways: (for above grade use)
 - 1. Conduits: EMT (where indicated) and galvanized rigid steel.
 - 2. Flexible conduit: Zinc-coated inside and outside; for wet or moist areas -- liquid-tight with factory fittings.
- D. Conduit and Duct Accessories: Couplings, spacers, plugs, and accessories shall be as recommended by the manufacturer of conduits and ducts and shall be of the same schedule as the ducts which are connected to it, unless indicated otherwise.
- E. Ground Rods: Diameter shall be adequate to permit driving to full length of the rod, but not less than 5/8" in diameter unless otherwise indicated. Ground rods for street light standards shall be 5/8" x 10'-0" copper-cladded steel core. All others shall be 5/8" x 8'-0" copper-cladded steel core, unless indicated otherwise.
- F. Wire Mesh: Welded steel wire fabric for reinforcing concrete, galvanized, conforming to ASTM Specification A185.
- G. Concrete: Ready mixed type with compressive strengths as shown on Drawings. Concrete material and aggregates shall conform to latest ASTM Specifications. Concrete aggregates for ductlines shall be 3/4" maximum in size.

- H. Backfill Material Type A: Black or beach sand, earth or earth and gravel mixture. Material used shall be non-expansive. If earth and gravel mixture, rock size shall be 1-inch or smaller and shall not contain more than 20% rock particles by volume. This fill shall be used over concrete encased ducts and over direct buried ducts after backfill Type B has been placed.
- I. Backfill Material Type B: Black or beach sand, earth or earth and gravel mixture. Material used shall be non-expansive. If earth and gravel, mixture must pass a ½-inch screen and contain not more than 20% rock particles by volume. This fill shall be used all around direct buried conduits.
- J. Manholes, Handholes and Pullboxes: Shall be the type noted on the drawings and shall be constructed in accordance with the applicable details as indicated. Manholes, handholes and pullboxes may be precast or cast-in-place
 - 1. Precast Manholes, Handholes and Pullboxes: Provide precast manholes, handholes and pullboxes complete with all hardware and accessories (i.e. cable racks, steps, pegs, etc.), and strengths as required for cast-in-place manholes, handholes and pullboxes. Identify each casting by having the manufacturers name and address cast into an interior face or permanently attached thereto.
 - a. Precast manholes, handholes and pullboxes shall have a smooth trowel finish for horizontal surfaces.
 - b. Precast units shall be the product of a manufacturer regularly engaged in the manufacture of precast concrete manholes, handholes and pullboxes.
 - c. Precast manholes assembly, including frame and cover shall be rated for AASHTO Class H20 wheel loading, unless otherwise indicated.
 - d. Sandwich Isles Communications UH-35 assembly units shall be by Hawaii Precast, per master purchase agreement.
 - e. Sandwich Isles Communications Handholes: Shall include 20K traffic load rated cover(s). Covers shall have the “SIC” logo. Handhole cover bolts shall be stainless steel 3/4" Pentahead, unless otherwise noted.
 - 2. Cast-in-Place Manholes and Handholes: Concrete used shall provide 4000 pounds compressive breaking strength at 28 days maturity. Floor surface shall have a steel trowel finish. Walls shall be of monolithic concrete construction. The complete manhole assembly, including cover, shall be rated for AASHTO Class H20 wheel loading. Submit manufacturer's certificate of compliance with requirements.

3. Pulling-in Irons: Shall be steel bars bent in the form indicated and cast in the manhole or handhole walls. In the wall they shall be not less than 6 inches above or below, and opposite the conduits entering the manhole or handhole. Pulling-in irons shall be projected into the handhole and manhole approximately 6 inches. Irons shall be zinc coated after fabrication.
 4. Cable Racks: Including hooks and insulators, shall be sufficient to accommodate the cables and shall be spaced not more than 18 inches horizontally. The wall bracket shall be channel or T-section steel. The hooks shall be of steel or malleable iron and shall be of the removable type. Insulators shall be dry-process glazed porcelain. The metal portion of racks shall be zinc-coated after fabrication. Cable racks for use in existing manholes shall be compatible with existing rack supports.
 5. Cast end bells shall be provided; "knock outs" shall not be allowed.
 6. Concrete bricks shall be concrete masonry units conforming to ASTM C 139.
- K. Wires and Cables: Conductors shall be copper, No. 12 AWG minimum; No. 10 AWG and smaller, solid and round; No. 8 AWG and larger, 7 or 19 strands concentric.
1. Conductors No. 10 and smaller shall be type THWN/THHN, except that ground wire may be type TW. Conductors No. 8 AWG and larger shall be type RHW-USE, XHHW-USE or THW with neoprene jacket. For street light circuits, exterior and below-grade locations, conductors shall be type RHW-USE.
 2. Grounding conductors shall be 1/c - #4 bare copper unless indicated otherwise.
 3. Wires and cables for locations and uses not specified above shall be suitable for the purpose and in accordance with the NEC.
- L. Sandwich Isles Communications BM 2(5/8)(8) Housing Ground Assembly Unit: Consists of providing a copper clad ground rod, ground rod clamp and the required length of bare #6 AWG tinned copper ground wire connected to an auxiliary grounding connector (included in the housing assembly unit) within the housing. The first set of parentheses indicates the required diameter of the ground rod, and the second set of parentheses indicates the length of the ground rod.
- M. Connectors and Terminals: Connectors and terminals shall be designed and approved for use with the associated conductor material, and shall provide a uniform compression over the entire contact surface. Solderless terminal lugs

shall be used on all stranded conductors. Crimp type connectors will be acceptable, however, the type which makes only one indentation will not be acceptable. The crimping tool shall make a minimum of four indentations around the circumference of the cable. In addition, crimp type connectors to be used on 250 MCM and larger conductors shall have adequate length for two sets of indentations on each half of the connector.

1. Gaskets shall be of neoprene or Buna N rubber, and shall be a resilient, heat-resistant and oil-resistant grade having low compression set and high tear strength.
 2. Cap screws shall be of a cadmium or zinc-coated steel or of copper-silicon alloy, and shall be of extra-large size and closely spaced so as to maintain a tight joint.
- N. Waterproof Connection Kits: Shall be quick disconnect in-line fuse holder (6 ampere fuse link unless indicated otherwise) fused for hot leg. The fuse holder body shall be molded plastic made in two sections where lead side section shall have a captive nut and waterproofing ring. Fuse holder shall be TRON and manufactured by BUSSMANN, or approved equal.
- O. Boxes and Cabinets:
1. Outlet and Small Junction Boxes: Exposed boxes and weather exposed boxes shall be cast iron, or ferrous alloy, prime painted and enamel finished, with threaded hubs for conduit connection. Steel City 600 series or approved equal.
 2. Large Junction Boxes and Gutters: For dry interior location, the box shall be fabricated from NEC gauge galvanized steel with matching screw-on type cover, field punched knockouts. For exterior and wet locations, the box shall be galvanized cast iron with matching gasketed cover and threaded hubs for conduit connection. All screws shall be stainless steel. All boxes and gutters shall have minimum dimensions to accommodate pulling per NEC Article 370 requirements
 3. Enclosures and Cabinets: Enclosures and cabinets for panelboards, breakers, and switches shall be NEMA type, fabricated from stainless steel, or as indicated, prime painted and enamel finished according to NEMA specifications. Field painting shall be as specified hereinafter.
 - a. Enclosures for individually mounted circuit breakers shall include provisions for locking the enclosure closed and locking the breaker open. The cover of the enclosure shall be interlocked with the circuit breaker operating handle so that the cover cannot be opened unless the circuit breaker handle is in the "OFF" position.

- P. Device and Cover Plates: Plates for exposed and weather exposed boxes (indicated WP on drawings) shall be cast metal with neoprene gasket for sealing against entry of water and moisture into box.
- Q. Weatherproof Ground-Fault Circuit Interrupter (GFCI) Duplex Receptacle: Duplex receptacle, for mounting in a standard outlet box, 20 ampere, 125-volt, 3 wires, grounding type with test and reset buttons mounted on the device face. Device shall be capable of detecting a current leakage of 6 milliamperes or greater and tripping per requirements of UL-943 for Class A GFCI devices. Receptacles shall be UL rated for 20 amperes feed through, suitable for use as GFCI protection on a 20 ampere circuit. Pass & Seymour 2091-HG series or pre-approved equal. Includes cast metal outlet box, cast metal device plate with hinged self-closing lid. UL approved for "wet locations". Bryant Electric Co., Hubbell, Arrow Hart, General Electric, and Pass & Seymour equals.
- R. Loadcenters: UL listed, surface-mounted 120/240V, 1-phase, 3WSN, copper bussing, with breaker complement as shown, complete with door, trim, 2-ply plastic nameplate, and typed directory. Locks to be keyed alike. Cutler-Hammer, or Square D, General Electric, Siemens equal.
1. Single pole breakers shall be full module size; two poles shall not be installed in a single module.
 2. Multi-Pole Breakers: Provide common-trip type with single operating handle. Breaker design shall be such that overload in one pole automatically causes all poles to open. Multi-pole breakers of frame sizes 100 amperes or less may consist of single-pole breakers permanently factory assembled into a multi-pole unit having an internal mechanical nontamperable common-trip mechanism and external handle ties.
- S. Individual Circuit Breaker: Shall consist of molded plastic case circuit breaker with toggle operated mechanism and thermal-magnetic overload trips, in enclosure, type as indicated. Enclosures shall include provisions for locking the enclosure closed and locking the breaker "open". Interchangeable trip shall be provided when available. Toggle positions "On" and "Off", engraved or embossed on body.
- T. Meter Sockets: Surface-mounted weatherproof type with ratings and provisions as indicated on the drawings. Meter sockets shall be submitted to and approved by Hawaiian Electric Company.
- U. Equipment Disconnect and Fused Switch: Heavy-duty, horse-power rated when used as motor disconnect, lever-operated contacts, spring-loaded, NEC standard fuse rejection type holders when used with current limiting fuses. Include provisions for locking the switch enclosure "closed" and for locking the switch "open". The cover of the enclosure shall be interlocked with the switch operating

handle so that the cover cannot be opened unless the switch handle is in the "Off" position. General Electric Co. type TH, or Westinghouse, Cutler-Hammer, Square D, Siemens equal.

- V. Nameplates: Laminated plastic nameplates shall be provided for each cabinet. Nameplates shall be 1/8-inch thick Melamine plastic, black with white center core, 1-inch high by 2½ inches wide, minimum. Lettering shall be minimum 1/4-inch high normal block lettering. Equipment designations shall be as indicated on Drawings.
- W. Luminaires: Provided complete with all necessary mounting hardware and accessories, lamps, ballasts, etc., as specified herein and on the Drawings. Ballasts for high-intensity discharge lamps shall be integrally mounted in luminaire housing and be regulated, constant wattage, high power factor type, designed to operate the respective type of lamp indicated. Lamps shall be low mercury content type, and TCLP-compliant, passing the EPA's Toxic Characteristic Leaching Procedure test for non-hazardous waste. Where indicated, luminaire housing shall be provided with 3 wire twist lock receptacle mounted in the housing for individual photo electrical control.
- X. Poles: Shall be vandal resistant, with access handhole, for anchor base mounting, complete with fixture luminaire aperture, hot-dipped galvanized anchor bolts, etc. as indicated on the Drawings. Pole strength design shall be for minimum of 105 MPH winds.
- Y. Hardware, Supports, Backing, Etc.: All hardware, supports, backing and other accessories necessary to install electrical equipment shall be provided. Wood materials shall be "wolmanized" treated against termites, iron or steel materials shall be galvanized for corrosion protection, and non-ferrous materials shall be brass or bronze.

PART 3 - EXECUTION

3.01 GENERAL:

- A. Rules and Permit: The entire installation shall conform to ordinances of the City and County of Honolulu; General Order No. 10, Public Utilities Commission, State of Hawaii; and shall be made in strict accordance with the latest rules and regulations of the National Board of Fire Underwriters, the currently adopted edition of the National Electrical Code (NEC), National Electrical Safety Code (NESC) and the local Electrical Bureau. The Contractor shall obtain and pay for the electrical permit as required by local laws and rules. All work shall be inspected by the proper local authorities as it progresses. The Contractor shall pay all inspection fees and shall deliver certificates of completion and inspection to the Engineer before final payment will be made. Costs of permits and inspection fees shall be included in the Contractor's bid price.

- B. **Materials and Workmanship:** All labor and materials of every kind shall be subject to the approval of the Engineer who shall be afforded every facility for ascertaining the competence of such labor and examining such materials as he may deem necessary. Concealed work shall be reopened at random as directed during formal inspection by Engineer or Electrical or Utility Inspector.
- C. **Qualification of Installers:** For actual fabrication, installation and testing of the Work of this section, use only thoroughly trained and experienced workmen completely familiar with items required and with manufacturers' recommended methods of installation. In acceptance or rejection of installed work, no allowance will be made for lack of skill on part of workmen.
- D. **Construction Methods:** Construction shall conform to construction practices as recommended by the American Electricians Handbook by Croft (latest edition), American National Standards Institute (ANSI), Edison Electric Institute, National Board of Fire Underwriters (NBFU), National Electrical Code (NEC), National Electrical Manufacturer's Association (NEMA), National Electrical Safety Code (NESC), National Fire Protection Association (NFPA), Underwriters' Laboratories, Inc. (UL) and applicable instructions of manufacturers of equipment and material supplied for this project.
- E. **Inspection:** Skill and competency of workmanship shall be subject to the approval of the Engineer, inspectors of the utility companies, Sandwich Isles Communications, Inc., the State of Hawaii and the City and County of Honolulu. Notification for inspection shall be given to the respective companies or agencies three working days in advance of work.
- F. **Record Drawings:** The Contractor shall maintain an accurate and adequate record of each change as it occurs, regardless of how ordered. As-built drawings shall be prepared in accordance with project requirements.
- G. **Plans and Specification:** This specification is intended to cover all labor, materials and standards of workmanship to be employed in the work indicated on the plans and called for in the specification or reasonably implied therein. The plans and specification supplement one another. Any part of the work mentioned in one and not represented in the other, shall be done the same as if it has been mentioned in both. The Contractor shall not make alterations in the drawings and specification.
- H. **Discrepancies and Interpretations:**
 - 1. Should the Contractor find any discrepancies in or omissions from any of the documents or be in doubt as to their meaning, he shall advise the Engineer who will issue any necessary clarification within a time period which does not disrupt the progress of the work.

2. All interpretation and supplemental instructions will be in the form of a written addenda to the Contract Documents.
 3. Should any discrepancy arise from the failure of the Contractor to notify the Engineer, the higher quality or larger quantity of item shall prevail. Engineer shall make the final interpretation and judgement.
 4. In the event of a discrepancy between small scale drawings and large scale details, or between drawings and specification, on which is in violation of any regulations, ordinances, laws or codes, the discrepancy, if known by the Contractor, shall be immediately brought to the attention of the Engineer for a decision before proceeding with the particular work involved. Work carried out disregarding these instructions will be subject to removal and replacement at the Contractor's expense.
- I. Symbols: The standard electrical symbols together with the special symbols, notes and instructions shown on the drawings indicate the work and outlets required and are all to be included as a part of this specification.
- J. Coordination: This specification is accompanied by plans, sections and elevations, and site plans indicating locations of all outlets, controls, service runs, and other electrical apparatus. These locations are approximate and, before installing, the Contractor shall study the adjacent civil utility and landscaping details and actually make the installation in the most logical manner. Any outlet may be relocated within ten feet before installation at the direction of the Engineer. The circuit routing is typical only and may be varied in any logical manner.
- K. Before installation, verify all dimensions, conditions and sizes of equipment at job site. Installation shall be complete in every detail as specified and ready for use.
- L. Work shall conform to ordinances of City and County of Honolulu; latest edition of National Electrical Code (NEC); National Electrical Safety Code (NESC), and Regulations and Standard Practices of Hawaiian Electric Company, Inc., and Sandwich Isles Communications, Inc.
- M. Applicable rules, standards and specifications of following associations shall apply to materials and workmanship:
- American National Standards Institute (ANSI)
Illumination Engineer Society (IES)
National Board of Fire Underwriters (NBFU)
National Electrical Manufacturer's Association (NEMA)
National Fire Protection Association (NFPA)
Underwriters' Laboratories, Inc. (UL)

Applicable instructions of manufacturers of equipment and material supplied for this project.

- N. All metallic materials shall be protected against corrosion. Exposed metallic parts of outdoor apparatus shall be given a rust-inhibiting treatment and standard finish by the manufacturer. All such parts as boxes, bodies, fittings, guards and miscellaneous parts made of ferrous metals but not of corrosion-resistant steel, shall be zinc-coated in accordance with ASTM A153. The Contractor shall not join dissimilar metals that will result in deterioration due to galvanic corrosion.

3.02 CONSTRUCTION REQUIREMENTS:

A. Trench Excavation:

1. Dimensions and locations of trenches for boxes, transformer and equipment pads, direct buried conduits and ductlines shall be as indicated on Drawings. Trench width and depths shall be sufficient to accommodate proper installation of conduit banks and cables.
2. Should material at bottom of trench for direct buried conduits not be equal to backfill material Type B, the trench shall be excavated an additional 3" to permit backfilling with Type B backfill.
3. Where a trench is excavated on slope, sides are to be vertical, and depth measured at lowest side. All measurements are to be based on final grades.
4. Bottom of trenches to be flat and smooth.
5. Trenches shall be widened at equipment pads, manhole, handhole and pullbox sites to permit proper entry of conduits.
6. Trenches shall be approved by respective utility inspectors prior to any ducts being installed.
7. All excavations for manholes, pullboxes and handholes in excess of the required depths shall be filled with concrete or crushed lava rock.
8. Excavate 30'-0" on both sides of manhole and handhole locations prior to installation of manhole and handhole. If water, water, drainage or sewer lines are encountered, provide smooth transitions in conduits and route below the respective utility line.
9. Sheathing and bracing as required shall be provided to support sides of excavations from cave-ins.

10. Provide drainage and pumps to keep trenches dry.
11. Saw cut all edges of existing sidewalks and pavement before trenching.
13. Excavated material may be placed alongside trench; however, it shall not interfere with utility company work.
14. Utility companies and Sandwich Isles Communications, Inc. shall be notified a minimum of seventy-two hours before commencing excavations.

B. Backfill:

1. Ducts, boxes, and conduit installations shall be approved by the respective inspector from utility company and Sandwich Isles Communications prior to backfilling. All excavations for boxes in excess of the required depths shall be filled with concrete or crushed lava rock.
2. Should material below utility company and Sandwich Isle Communications' direct buried conduits not be equal to 3" (thickness) of backfill material Type B, trench shall be deepened by 3", and backfilled with Type B backfill.
3. Backfilling shall be to finished grades indicated on accompanying Drawings, and matching existing conditions.
4. Backfill material shall be completely free of wood or other debris. Excavated material may be reused as backfill, providing that it conforms to the requirements of Type A and Type B backfill. For excavated material used to backfill Sandwich Isles Communications ducts, a written soils report of conformance by a licensed third party Geotechnical Engineer is required prior to backfilling using the excavated material.
5. Type B backfill over conduits shall be installed under the supervision of the respective utility companies' and Sandwich Isles Communications' inspector.
6. Backfill material shall be placed in maximum of 8" layers in loose thickness before compacting. Backfill shall be thoroughly compacted with hand or mechanical tampers to 95% of ASTM D1557 maximum dry density. In no case shall tamping be accomplished by using the wheels or tracks of a vehicle.
7. Backfill over conduit bends at transformer and switchgear pads shall be Type A or better.

C. Installation of Conduit and Duct Bank:

1. Bottom of trench shall be clean, smooth, and well-graded and approved by utility company inspectors.
2. Saw cut, ream and taper ducts and conduits with manufacturers' approved tool.
3. Couplings and bells shall be tight to prevent entry of dirt or concrete into ducts and conduits. Stagger the joints of the ducts by rows and layers so as to provide a ductline having the maximum strength.
4. Provide spacers to maintain proper separation between ducts.
5. Changes of direction shall not exceed 4 degrees per length of conduit or duct. Radii and turns shall be made with appropriate duct bends and sweeps.

Horizontal bends for Sandwich Isles Communications and communications Conduits/ducts shall be constructed with 25-foot minimum radius curves unless indicated otherwise or approved by the respective inspector or Engineer. Angled couplings are not permitted. If factory made bends are to be provided, the contractor shall demonstrate their suitability to the Engineer and inspectors by pulling the respective mandrel completely through the bend prior to installation. Vertical bends for Sandwich Isles Communications and communications conduits/ducts shall be constructed with 20-foot minimum radius curves unless indicated otherwise or approved by the respective inspector or Engineer.

6. Ducts shall be clean and free from debris, rubbish and water.
7. After each day's work, provide temporary watertight conduit plugs or seals at the end of conduit banks to prevent entry of moisture, dirt, rubbish, debris, or concrete. Ducts for Sandwich Isles Communications use shall be provided with Tyco, Quadplex Jackmoon Duct Seals and Hole Plugs, Series 136. Duct tape is not acceptable.
8. Pass a test mandrel conforming to the respective utility company, City & County of Honolulu or the Engineer's requirements, through the entire length of each duct or conduit to test for burrs and obstructions. Unless indicated otherwise, mandrel shall be 14" long and shall have diameter of $\frac{1}{2}$ " less than inside diameter of duct. Mandrel for Sandwich Isles Communications ducts shall be 12" long and shall have diameter of $\frac{1}{4}$ " less than inside diameter of duct. Mandrel shall be pulled through each Sandwich Isle Communications duct, after which a brush with stiff bristles shall be pulled through to make certain that no particles of earth, sand, or

gravel have been left in the duct. The Sandwich Isles Communications Inspector shall be present during the mandrel testing. If burrs or obstructions are encountered, that section shall be replaced at no additional cost to the Department.

9. Unless indicated otherwise, install #12 AWG galvanized iron pulling wire or polypropylene cord, having a breaking strength of at least 200 pounds, in each conduit after testing.
 - a. For electric utility company ducts, provide cable pulling tape (NEPTCO WP1800P Muletape or approved equal) in each new duct.
 - b. For Sandwich Isles Communications ducts, provide duct measuring/cable pulling tape (NEPTCO WP1800P Muletape or approved equal) in each new duct.

Using the duct measuring/cable pulling tape, the Contractor shall measure at least one duct of a common duct run. The distance shall be marked on a copy of the record prints and submitted to the respective Sandwich Isles Communications and/or communication company inspector for record keeping.

10. Terminate ducts in end-bells where ductlines enter manholes and handholes. Ducts shall enter handholes at 90 degree angle. Ducts entering handholes at angles other than 90 degrees may be permitted, but only when specified by the Engineer.
11. Apply thin coat of sealing compound on ducts and conduits at couplings and bells.
12. Conduits stubbed for future connections shall be plugged and marked.
13. Securely anchor duct banks prior to pouring concrete encasement to prevent ducts from floating. Utility Company and Sandwich Isles Communications duct banks shall be inspected and approved by the respective inspector prior to placing concrete and backfilling.
14. When pouring concrete, prevent heavy masses of concrete from falling directly on ducts. If unavoidable, protect ducts with plank.
15. Direct flow of concrete down sides of duct bank to bottom, allowing concrete to rise between ducts, filling all open spaces uniformly.

16. To ensure against voids in concrete, work a long, flat splicing bar or spatula liberally and carefully up and down the vertical rows of ducts. Mechanical vibrators shall be used for stacked duct banks of three ducts or higher.
17. Cure concrete for a minimum of 72 hours before permitting traffic and/or backfilling.
18. Warning Tapes:
 - a. 6" wide warning tape, red in color with a black imprinted message "CAUTION ELECTRIC LINE BURIED BELOW", shall be placed 12" below finish grade over electric ducts or the concrete jacket for electric ducts for the entire length of ductline installations.
 - b. A 3" wide warning tape, orange in color with black imprinted message "CAUTION BURIED FIBER OPTIC CABLE BELOW" shall be placed 12" above all Sandwich Isles Communications ducts or the concrete jacket for said ducts for the entire length of ductline installations.

D. Concrete and Brick Work:

1. Concrete, ready mixed according to ASTM C94-98.
2. Convey concrete from mixer to forms rapidly to prevent segregation. Free drop shall be limited to five feet, unless authorized by inspector.
3. Placing:
 - a. Clean and remove all debris from inside forms and trenches before placing concrete.
 - b. Place concrete only on clean damp surfaces, free from water.
 - c. Place concrete in forms, in horizontal layers not exceeding 18" thickness.
 - d. Place concrete to avoid segregation of materials and displacement of ducts, inserts and reinforcing.
 - e. Vibrate structural concrete thoroughly during and immediately after placing to ensure dense watertight concrete.
 - f. Prior to placing concrete for utility company ductlines, the Contractor shall obtain the approval of the respective inspector.

4. Forming:
 - a. Forms shall be of good sound lumber with sufficient strength and conforming to shapes and dimensions indicated on Drawings.
 - b. Forms shall be treated with non-staining form oil immediately before each use.
5. Patching: Patch all voids, pour joints and holes before concrete is thoroughly dry. Use mortar of same proportions as original concrete.
6. Curing: Curing of concrete shall be accomplished by impervious membrane method with liquid membrane compound. Apply two or more coats to obtain a total of one gallon for each 150 square feet of concrete surface.
7. Reinforcing Steel:
 - a. Clean reinforcing of mill or rust scale and form to dimensions indicated.
 - b. Install reinforcing in proper locations and secure in place to prevent movement during concrete placing or vibrating.
8. Concrete Brick and Hollow Concrete Block Work:
 - a. Concrete brick and hollow block shall be laid in full bed of mortar, both horizontally and vertically.
 - b. Mortar shall be one part (by volume) cement and three parts (by volume) fine aggregate, thoroughly mixed and used when fresh. Retampering will not be allowed. Mortar shall have a minimum 28 days strength of 2,500 psi.
 - c. Setting bed shall be of depth required to bring top of blocks flush with finish line.

E. Manholes, Handholes And Pullboxes:

1. Boxes shall be installed approximately where shown. The exact location of each box shall be determined after careful consideration has been given to the location of the driveway apron, other utilities, grades, and pavement. Boxes shall be of the type noted on the Drawings and shall be constructed in accordance with the applicable details as indicated. Provide number of cable racks and pulling-in irons as required by the respective utility company. A machine-finished seat shall be provided to insure a

perfect joint between frame and cover. Covers shall be machined to prevent rocking within frames. In paved areas, the tops of pullbox, handhole and manhole covers shall be flush to grade with the sidewalk or with the finished surface of the paving, unless otherwise noted. In unpaved areas, the top of handhole covers shall be approximately ½ inch above the finished grade; Sandwich Isles Communications' handholes shall be set approximately 1" above the finished grade.

2. Precast Handhole and Pullbox Installation: Commercial precast assembly shall be set on 6 inches of level, 90 percent compacted crushed rock fill, 3/4 inch to 1 inch size, extending 12 inches beyond the handhole/pullbox on each side. Granular fill shall be compacted by a minimum of four passes with a plate type vibrator. Provide number of cable racks and pulling-in irons as required by the respective utility company, complete with all hardware including steps and pegs.

Pits for Sandwich Isles Communications precast handholes and manholes are to be flat and smooth, free of rocks, rock chips, hardened lumps of dirt, debris and all deleterious material. A six-inch layer of compacted sand shall be placed as a base for the precast manholes and handholes. Set handhole or manhole on a level area, in the bottom of the excavation, on a 4" layer of crushed rock, for drainage purposes.

3. Sandwich Isles Communications Manholes, Handholes and Pullboxes:
 - a. Provide a 5/8" diameter x 8-foot copper clad ground rod in all handholes and manholes, unless indicated otherwise.
 - b. Damp-proofing shall be provided on all exterior precast manhole and handhole walls. All dust, dirt and other deleterious substances shall be removed from the concrete surface. The concrete surface shall be thoroughly dry before the damp-proofing is applied. The concrete surface shall be primed in accordance with the manufacturer's instructions and two coats of damp-proofing compound shall be applied. Allow the compound to dry thoroughly after priming and in between coats. Do not backfill until the final coat has dried hard.
 - c. Before backfilling and compacting, make sure covers are in place and secured. Layer 6" to 8" of backfill material around the manhole or handhole. Tamp each individual layer of backfill material. Continue the layering and "tamping" until final grade is achieved.
 - d. Caulk manhole and handhole seams after the unit is assembled using a good quality silicone compound material.

- e. The base of the manhole or handhole shall be placed level, and form work is constructed between the underside of the frame and topside of the manhole or handhole using duct tape, wood strips, cardboard, etc. Some manholes have adjustable frames that are raised to finish grade and secured in position. All voids created during the installation shall be filled with mortar mix, concrete or slurry and allowed to set. Strip forms after sufficient strength has developed. This is especially important where manholes or handholes may be subject to any vehicular traffic.
 - f. UH-35 handholes are equipped with jack moon duct plugs to accommodate the UD (1x 3) configurations. All 4-inch duct plugs, however, are to be provided by the Contractor. This unit will accommodate six SDR-11 conduits; therefore, the Contractor is required to provide plugs for the vacant conduit holes in the jack moon.
4. Ducts ending in manholes or handholes shall be terminated with junior end bells. End bells, terminators or ducts shall be flush to inside wall surfaces; duct extension into boxes is not acceptable. All ducts entering manholes or handholes shall be grouted between conduits and sidewall, inside and out. Verify requirements, complement and arrangement of ducts entering each manhole or handhole and location of duct entrance with the respective utility company and Sandwich Isles Communications, Inc. prior to fabrication and installation of the respective manhole or handhole.
- a. All Sandwich Isles Communications conduits shall enter the handholes on the property side at all times unless otherwise specified by the Engineer. Conduits shall enter handholes at 90 degree angle.
- Any exceptions shall only be permitted when specified by the Engineer.
- b. Stub-out conduits from Sandwich Isles Communications handholes to individual residential lots shall be Schedule 40 PVC, 1" diameter and shall be extend 5' beyond property line. Cap and seal end and mark locations with above ground marker.

F. Electrical Equipment Pads:

- 1. Slope of lots/area for concrete equipment pads shall not exceed one-inch rise in one foot run.
- 2. Grade sufficiently around equipment pad area to prevent future filling of lot/area.

3. Transformer pads may be precast or cast-in-place reinforced concrete as indicated on Drawings.
4. Concrete equipment pads shall be installed level. Pad elevation shall be 2" above the highest grade fronting the pad.

G. Street Lighting Systems:

1. Street lighting materials and installation shall be in accordance with the Standard Specifications of the City & County of Honolulu, and as specified herein and on the Drawings.
2. Street lighting system shall provide illumination along length of project roadways. System shall be provided complete, and be completely tested and ready for use. Furnish computerized footcandle arrays to show illumination levels and distribution along all project roadways.
 - a. Street light fixtures shall be mounted with bracket arms oriented 90 degrees to center line of road. Shaft shall be field adjusted for vertical alignment.
 - b. Prior to trenching or excavating, structural outlines and center lines of ductlines and street light foundation shall be clearly staked, and approval received from Engineer, City inspectors and utility companies. Staking shall be with steel or wood pegs or paint.
 - c. Base foundation for street light standards shall consist of cast-in-place reinforced concrete complete with anchor bolts, sized and placed in accordance with pole manufacturer's requirements and installation template. Length of base shown on Drawings shall be considered as minimum and shall be lengthened to suit the soil conditions and to adequately support the pole and lighting fixture assembly.
 - d. After pole is set, grease (or bituminous coat) ends of all anchor bolts, bottom of the anchor plate and all screws and bolts.
3. Provide duct seal in duct entries into handholes and pullboxes to prevent moisture from entering light fixtures.

H. Structural Steel And Miscellaneous Metal Work: Structural steel work including bolts, nuts, anchors, pulling-in irons, etc. shall be galvanized by hot-dipped process after fabrication into largest practical sections.

I. Installation of Wiring System:

1. Secondary electrical system materials and installation shall be in accordance with Standard Specifications, and as specified herein and on the Drawings.
2. Unless otherwise indicated or specified herein, wiring shall consist of single conductor cables installed in conduit/duct in areas where permitted by the NEC and NESC.
 - a. Below or in slab, use Schedule 80 PVC, unless indicated otherwise. For distribution feeder banks, provide Schedule 40 PVC with 3" concrete encasement.
 - b. Above grade where exposed to damage, use galvanized rigid steel conduit.
 - c. Above grade where not exposed to damage, use EMT with UL approved grounding connectors.
 - d. Conduit system shall be continuous from outlet to outlet or fitting to fitting so that electrical continuity is obtained between all conduits of the system.
 - e. Conduits cut square and inner edges reamed. Butt together evenly in couplings.
 - f. Changes in direction shall be made with symmetrical bends or cast metal fittings. Make bends and offsets with hickey or conduit-bending machine. Do not use vise or pipe tee. Flattened crushed or deformed conduit not acceptable. Trapped raceways shall be avoided.
 - g. Use of running threads not permitted. Where conduits cannot be joined by standard threaded couplings, approved water-tight conduit unions shall be used. Threadless fittings for electrical metallic tubing shall be of a type approved for the conditions encountered.
 - h. Cap conduits during construction with plastic or metal- capped bushings to prevent entrance of dirt or moisture. Swab all conduits and dry before installing wires.
 - i. Pull wires shall be placed in all empty conduits for ten feet in length and as indicated.

- j. Install insulating bushings and two locknuts on each end of every conduit run at enclosures and boxes. Provide grounding bushings as required.
3. Conductors:
- a. Mechanical means for pulling shall be torque-limiting type and not used for #2 AWG and smaller wires.
 - b. Pulling tension shall not exceed wire manufacturer's recommendations.
 - c. Where necessary, powdered soapstone may be used as a lubricant for drawing wires through conduit. No other means of lubricating will be allowed.
 - d. Form neatly in enclosures and boxes for minimum of crossovers. Tag all feeders.
 - e. Thoroughly swab out existing ducts to remove foreign material before the pulling of cable.
4. Splicing of Wire and Cable:
- a. Splices made according to NEC Article 110.
 - b. Splices for 600 Volt Class Cables: The conductors shall be joined securely both mechanically and electrically by the use of solderless or crimp type connectors with properly sized tools.
 - (1) Splices for cables No. 10 AWG and smaller in underground systems shall be made only in accessible locations using a compression connector on the conductor, taped watertight.
 - (2) Splices for cables No. 8 AWG and larger in underground systems shall be made only in accessible locations using a compression connector on the conductor and by insulating and waterproofing suitable for continuous submersion in water.
5. Cable Terminations: Protect terminations of insulated power and lighting cables from accidental contact, deterioration of coverings and moisture by the use of terminating devices and materials.

- a. Install all terminations of insulated power and lighting cables in accordance with the manufacturer's requirements.
 - b. Make terminations using materials and methods as indicated or specified herein or as designated by the written instruction of the cable manufacturer and termination kit manufacturer.
- 6. Protection of Wire and Cable Ends: The ends of wire and cables in handholes, pullboxes, and in other wet locations, as defined by the NEC, that are not to be spliced or connected to equipment shall be protected from moisture and other damage.
 - a. The ends of wires and cables shall be protected by applying not less than six half-lapped wraps of electrical insulating tape beginning three inches from the end of the wire or cable and continuing over the exposed conductor to form a watertight seal.
 - b. The ends of wires and cables that are to be left unspliced or unconnected temporarily during construction shall be protected to prevent moisture from getting into the cable.
- 7. Finishing:
 - a. All cutting that may be required for complete installation of the electrical work shall be carefully performed, and all patching shall be finished in first-class condition by the Contractor.
 - b. Wipe clean all exposed raceways and enclosures with rag and solvent. Unfinished raceways and enclosures shall be prime-painted and finished to blend into background. (Do not cover nameplates). Factory finished enclosures shall not be painted.
- 8. Miscellaneous Details:
 - a. Cut, drill and patch as required to install electrical system. Repair any surface damaged or marred by notching, drilling or any other process necessary for installation of electrical work. Cutting, repairs and refinishing subject to the approval of the Engineer. Need for remedial work determined by Engineer as attributable to poor coordination and workmanship shall be cause for reconstruction to the satisfaction of the Engineer.
 - b. Attachment of electrical equipment to wood by non-ferrous wood screws. Attachment to concrete by expansion anchors. Powder-charge-driven studs and anchors permitted only with prior approval.

- c. Furnish necessary test equipment and make all test necessary to check for unspecified grounding, shorts and wrong connections. Correct faulty conditions, if any.
- d. Provide nameplate for service equipment, loadcenters, enclosed circuit breakers, etc.

Tag all empty conduits in cabinets and boxes giving destination.
Use fiber disc tags in bushing.

3.03 EXISTING UNDERGROUND UTILITIES:

Underground utilities indicated on plans are approximate in location. It is not the intention of plans to imply that all existing utilities are drawn and located. It shall be the responsibility of Contractor to coordinate locations of existing utilities prior to doing any excavation work. Any damage to existing utilities shall be repaired by Contractor at no cost to the Department.

3.04 CLEANING AND REPAIRING:

- A. During the progress of work, all rubbish, waste lumber, displaced materials, etc. shall be removed as soon as possible and upon completion of the work, Contractor shall remove from Owner's property and from all public and private property, at his own expense, all temporary structures, rubbish and waste material resulting from his operations.
- B. The Contractor shall restore all removed or damaged pavement, gutters, curbs, sidewalks, sign posts, trees and landscape damaged by his operations to as near their original condition or better. Materials used for restoration work shall be equal to or better in quality than the materials the Contractor will replace, and matching in thickness, texture, and color whenever applicable. The grades of the restored surfaces shall conform to the existing grades.

3.05 TESTS:

Test complete installation and correct all defects of material and workmanship as well as all malfunctions of equipment and systems prior to final inspection at no increase in contract amount. All wiring shall be tested to ensure proper operation according to functions specified herein; and in other sections of these specifications, on drawings and conform to standard industry practices.

- A. Ground Resistance: Ground resistance measurements of each ground rod shall be taken and certified by the Contractor. Ground resistance measurements shall be made in normally dry weather, not less than 48 hours after rainfall, and with the ground under test isolated from other grounds. Upon completion of the project, the Contractor shall submit in writing to the Engineer, the measured ground

resistance of each ground rod and grounding system, as well as the resistance and soil conditions at the time the measurements were made.

- B. Test all 600 volt class conductors to verify that no short circuits or accidental grounds exist. Make tests using an instrument which applies a voltage of approximately 500 volts to provide a direct reading in resistance, and measure the insulation resistance from phase to phase and phase to neutral. All test results shall be recorded and submitted.
- C. Wherever test or inspection reveals faulty materials or installation, Contractor shall take corrective action, at his own expense, repairing or replacing materials or installation as directed. The materials or installation shall then be retested.

END OF SECTION

ALL SEWER CONSTRUCTION SHALL BE PERFORMED IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION, SEPTEMBER 1986, STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION, SEPTEMBER 1984, AS AMENDED, OF THE DEPARTMENT OF PUBLIC WORKS, CITY AND COUNTY OF HONOLULU AND THE COUNTIES OF KAUAI, MAUI AND HAWAII, CURRENT CITY PRACTICES, THE REVISED ORDINANCES OF HONOLULU, 1990, AS AMENDED, AND THE DESIGN STANDARDS OF THE DEPARTMENT OF WASTEWATER MANAGEMENT, VOL. 1, JULY 1993.

- A. ALL SAFETY EQUIPMENT REQUIRED BY THE CONFINED SPACE REGULATIONS APPLICABLE TO ALL PARTIES OTHER THAN THE CONSTRUCTION INDUSTRY, TO INCLUDE, BUT NOT LIMITED TO, THE FOLLOWING:
 1. FULL BODY HARNESSSES FOR UP TO TWO PERSONNEL.
 2. LIFELINE AND ASSOCIATED CLIPS.
 3. INGRESS/EGRESS AND FALL PROTECTION EQUIPMENT.
 4. TWO-WAY RADIOS (WALKIE-TALKIES) IF OUT OF LINE-OF-SIGHT.
 5. EMERGENCY (ESCAPE) RESPIRATOR (10 MINUTE DURATION).
 6. CELLULAR TELEPHONE TO CALL FOR EMERGENCY ASSISTANCE.
 7. CONTINUOUS GAS DETECTOR (CALIBRATED) TO MEASURE OXYGEN, HYDROGEN SULFIDE, CARBON MONOXIDE AND FLAMMABLES (CAPABLE OF MONITORING AT A DISTANCE AT LEAST 20- FEET AWAY).
 8. PERSONAL MULTI-GAS DETECTOR TO BE CARRIED BY INSPECTOR.
- B. CONTINUOUS FORCED AIR VENTILATION ADEQUATE TO PROVIDE SAFE ENTRY CONDITIONS.
- C. ONE ATTENDANT/RESCUE PERSONNEL TOPSIDE (TWO, IF CONDITIONS WARRANT IT).

1. POLYVINYL CHLORIDE (PVC) PLASTIC SEWER PIPE AND APPURTENANCES USED ON THIS PROJECT SHALL CONFORM TO THE REQUIREMENTS OF SECTION 21 OF THE STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION DATED SEPTEMBER 1986, EXCEPT AS MODIFIED HEREIN.

- A. GENERAL. PIPE GRAVITY SEWER PIPE AND FITTINGS SHALL CONFORM TO THE REQUIREMENTS OF AWWA C-900/C-905, CLASS 100PSI, DR=25. THE PIPE SHALL BE GREEN IN COLOR.
- B. ACCEPTANCE. THE BASIS FOR ACCEPTANCE SHALL BE THE INSPECTION OF PIPE, FITTINGS AND COUPLINGS, THE TESTS SPECIFIED HEREIN AND IN SECTION 21, AND COMPLIANCE WITH THE SPECIFICATIONS. AT THE TIME OF MANUFACTURE, EACH LOT OF PIPE, FITTINGS AND COUPLINGS SHALL BE TESTED FOR IMPACT, STIFFNESS AND FLEXURE IN ACCORDANCE WITH ASTM D3035. THE ENGINEER MAY REQUIRE CERTIFICATION BY THE MANUFACTURER THAT THE TEST RESULTS COMPLY WITH SPECIFICATION REQUIREMENTS. WHEN THE PIPE IS DELIVERED TO THE JOB SITE THE ENGINEER MAY REQUIRE THE CONTRACTOR TO PROVIDE ADDITIONAL TESTING TO INSURE THE QUALITY OF THE PIPE AT NO EXPENSE TO THE CITY. PIPE WHICH IS NOT INSTALLED WITHIN 120 DAYS OF THE LATEST FACTORY TEST SHALL NOT BE USED WITHOUT PRIOR APPROVAL OF THE ENGINEER.
- C. SELECTION OF TEST PIPE. WHEN TESTING IS REQUIRED BY THE ENGINEER, ONE TEST PIPE SHALL BE SELECTED AT RANDOM BY THE ENGINEER FROM EACH 1200 LINEAR FEET OR FRACTION THEREOF OF PIPE WHICH IS DELIVERED TO THE JOB SITE BUT NO LESS THAN ONE TEST PIPE PER LOT. A LOT SHALL BE DEFINED AS PIPE HAVING THE SAME IDENTIFICATION MARKING. THE LENGTH OF SPECIMEN OF EACH SELECTED PIPE SHALL BE A MINIMUM OF 8 FEET.
- D. CELL CLASSIFICATION. PIPE SHALL BE MADE OF PVC PLASTIC HAVING A CELL CLASSIFICATION OF 12454-B, 13364-A, OR 13364-B AS DEFINED IN ASTM D1784. THE FITTINGS SHALL BE MADE OF PVC PLASTIC HAVING A CELL CLASSIFICATION D1784. THE FITTINGS SHALL BE MADE OF PVC PLASTIC HAVING A CELL CLASSIFICATION OF 12454-B, 12454-C, OR 13343-C. PVC COMPOUNDS OF OTHER CELL CLASSIFICATIONS SHALL BE PRE-QUALIFIED BY THE MANUFACTURER.
- E. JOINTS. PIPE JOINTS SHALL BE BELL AND SPIGOT TYPE WITH AN ELASTOMERIC GASKET. THE GASKETED JOINTS SHALL BE MANUFACTURED WITH A SOCKET CONFIGURATION WHICH WILL PRECLUDE IMPROPER INSTALLATION OF THE GASKET AS WILL INSURE THE GASKET REMAINS IN PLACE DURING THE JOINING OPERATION. ALL PIPE SHALL HAVE A HOME MARK ON THE SPIGOT END TO INDICATE PROPER PENETRATION WHEN THE JOINT IS MADE.

G. DIMENSIONS AND TOLERANCES:

TABLE - PIPE DIMENSION (INCHES,

NOMINAL SIZE	AVERAGE O.D.	TOLERANCE ON AVERAGE	MINIMUM WALL THICKNESS	APPROX. WT./20 LENGTH (LBS.)
6	6.275	±0.011	0.180	49.4
8	8.400	±0.012	0.240	88.5
10	10.500	±0.015	0.300	138.6
12	12.500	±0.018	0.360	198.1

- H. CHEMICAL RESISTANCE. THE PVC COMPOUND FOR CELL CLASSIFICATIONS NOT SPECIFICALLY IDENTIFIED IN ITEM D ABOVE SHALL BE PREQUALIFIED BY THE PIPE MANUFACTURER BY MEETING THE CHEMICAL RESISTANCE TESTS WHICH FOLLOW. COMPOUND SAMPLES AND MOLDED TEST SPECIMENS SHALL BE PREPARED IN ACCORDANCE WITH ASTM D543.

TENSILE AND IZOD IMPACT EXPOSURE SPECIMENS SHALL BE IMMERSIED IN THE SOLUTIONS SPECIFIED IN TABLE 2 FOR A PERIOD OF 112 DAYS. TEST SPECIMENS SHALL BE CONDITIONED TO CONSTANT WEIGHT AT 110°F (43.3°C) BEFORE AND AFTER SUBMERSION. THE SOLUTIONS SHALL BE KEPT AT A TEMPERATURE OF 77°F ±5°F (24°C ±3°C). AT 28-DAY INTERVALS, SELECTED SPECIMENS SHALL BE REMOVED, WASHED, SURFACE DRIED AND TESTED.

TABLE 2 - TEST SOLUTIONS

CHEMICAL SOLUTION	CONCENTRATION (%)
SULFURIC ACID	20 *
SODIUM HYDROXIDE	5
AMMONIUM HYDROXIDE	5 *
NITRIC ACID	1 *
FERRIC CHLORIDE	1
SOAP	0.1
DETERGENT (LINEAR ALKYL BENZYL SULFONATE OR LAS)	0.1
BACTERIOLOGICAL	BOD NOT LESS THAN 70 PH

* VOLUMERIC PERCENTAGES OF CONCENTRATED REAGENTS OF C.P. GRADE

WEIGHT CHANGE SPECIMENS SHALL BE 2 INCHES IN DIAMETER AND MAY BE MOLDED DISCS OR DISCS CUT FROM THE PIPE WALL. SPECIMENS SHALL BE CONDITIONED FOR SEVEN DAYS AT 43° ±2°C, COOLED IN A DESICCATOR FOR THE THREE HOURS AT 23° ±2°C, WEIGHED, AND THEN IMMERSER IN THE SOLUTIONS. AT 4 WEEK INTERVALS, SELECTED SPECIMENS SHALL BE REMOVED, WASHED, SURFACE DRIED AND WEIGHED. THESE SAME SPECIMENS SHALL THEN BE RECONDITIONED FOR SEVEN DAYS AT 43° ±2°C, COOLED IN A DESICCATOR FOR THREE HOURS AT 23° ±2°C AND AGAIN WEIGHED.

INITIAL AND POST EXPOSURE SPECIMENS SHALL MEET THE FOLLOWING REQUIREMENTS WHEN TESTED AT $23^{\circ} \pm 2^{\circ}\text{C}$:

PROPERTY	ASTM TEST METHOD	CELL CLASS MINIMUM VALUES		
		12454	13343	13364
TENSILE STRENGTH (YIELD), PSI	D 638	7000	6000	6000
IMPACT STRENGTH, FT-LBS/IN.	D 256 METHOD A	0.65	1.5	1.5
WEIGHT CHANGE, %	D 543	1.5	1.5	1.5

IF ANY SPECIMEN FAILS TO MEET THE REQUIREMENTS AT ANY TIME DURING THE 112 DAY EXPOSURE PERIOD, THE MATERIAL WILL BE SUBJECT TO REJECTION.

- (1) OVEREXCAVATION. THE MAXIMUM ALLOWABLE TRENCH WIDTH SHALL BE EQUAL TO THE OUTSIDE DIAMETER OF THE PIPE PLUS 18-INCHES FOR PIPE UP TO 12" (D.D.). IF THE TRENCH EXCAVATION EXCEEDS THE COMPUTED MAXIMUM ALLOWABLE TRENCH WIDTH WHETHER BY EXCAVATION, CAVE-IN, OR BY GROUND MOVEMENT, THE CONTRACTOR SHALL PROVIDE AT HIS OWN EXPENSE ADDITIONAL BEDDING, ANOTHER TYPE OF BEDDING, AND/OR A HIGHER STRENGTH OF PIPE DESIGNATED BY THE ENGINEER. WHERE SHORING IS REQUIRED, THE ALLOWABLE WIDTH OF THE TRENCH SHALL BE INCREASED ONLY BY THE THICKNESS OF THE SHEATHING.

PIPE BEDDING, WHERE UNSUITABLE MATERIAL IS ENCOUNTERED AT THE SUBGRADE AND ADDITIONAL EXCAVATION IS REQUIRED, THE VOID CREATED BY THE ADDITIONAL EXCAVATION SHALL BE FILLED AND COMPACTED WITH BEDDING MATERIAL SPECIFIED ON THE PLANS OR SPECIAL PROVISIONS. WHERE CONCRETE IS SPECIFIED TO BED THE PIPE, THE TOP OF THE CONCRETE SHALL BE CONSIDERED AS THE TOP OF THE BEDDING.

BEDDING MATERIAL SHALL CONSIST OF ONE OF THE FOLLOWING:

- (1) BEACH SAND.
- (2) NO. 8 OR NO. 67 AGGREGATE CONFORMING TO THE GRADATION REQUIREMENTS OF ASTM C33.
- (3) 3/8" FILTER AGGREGATE.
- (4) NATIVE FREE-DRAINING GRANULAR MATERIAL HAVING A MINIMUM SAND EQUIVALENT OF 30 OR HAVING A COEFFICIENT OF PERMEABILITY GREATER THAN 0.001 CENTIMETER PER SECOND.
- (5) OTHER MATERIAL APPROVED BY THE ENGINEER.

BEDDING MATERIAL SHALL BE PLACED SO THAT THE PIPE IS SUPPORTED FOR THE FULL LENGTH OF THE BARREL WITH FULL BEARING ON THE BOTTOM SEGMENT OF THE PIPE EQUAL TO A MINIMUM OF 0.4 TIMES THE OUTSIDE DIAMETER OF THE BARREL. IF THE PIPE IS TO BE LAID IN A ROCK EXCAVATION, THE ROCK SHALL BE REMOVED SUCH THAT NO RIBS, ROCKS, OR SOLID PROJECTIONS SHALL BE WITHIN 6 INCHES OF THE SEWER PIPE HORIZONTALLY AND THERE SHALL BE AT LEAST 4 INCHES OF BEDDING BELOW THE PIPE.

COMPACTION OF THE BEDDING FROM THE BOTTOM OF THE PIPE TO 12 INCHES ABOVE THE PIPE BARREL BY JETTING WILL BE PERMITTED PROVIDED THAT THE FOUNDATION MATERIAL WILL NOT SOFTEN OR BE OTHERWISE DAMAGED BY THE APPLIED WATER. FLOODING OR PONDING METHODS OF ACHIEVING THE REQUIRED RELATIVE DENSITY WILL NOT BE PERMITTED. THE SIZE AND LENGTH OF JET PIPE, QUANTITIES AND PRESSURE OF WATER, AND JETTING LOCATIONS SHALL BE SUFFICIENT TO COMPACT THE BEDDING TO 87% MINIMUM RELATIVE DENSITY. COMPACTION OF THE BACKFILL FROM 12 INCHES ABOVE THE PIPE BARREL TO THE FINISH SURFACE SHALL CONFORM TO THE REQUIREMENTS OF SECTION 11.4 OF THE STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION.

2. BEDDING FOR PVC PIPE SEWER SHALL BE CLASS "B" AS SHOWN ON S-47 OF THE STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION UNLESS OTHERWISE NOTED.
3. THE MAXIMUM DESIGN DEFLECTION (FLATTENING) FOR PLASTIC PIPE SHALL BE 5 PERCENT. THE MAXIMUM SDR (STANDARD DIMENSION RATIO OF PIPE OUTSIDE DIAMETER TO PIPE WALL THICKNESS) SHALL BE 35.
4. SPECIAL WATERIGHT MANHOLE COUPLINGS PER STANDARD DETAIL S-48 WILL BE REQUIRED FOR ALL MANHOLE CONNECTIONS. COUPLINGS SHALL BE CAST DIRECTLY INTO CAST-IN-PLACE MANHOLES OR GROUTED INTO PRECAST CONCRETE MANHOLES WITH NON-SHRINK OR EXPANSION TYPE GROUT.
5. FOR CONNECTIONS OF PVC LATERAL SEWERS TO MAINS OF DIFFERENT MATERIALS, AN APPROVED SADDLE WYE FITTING CONSTRUCTED OF THE SAME MATERIAL AS THE MAIN LINE SHALL BE INSTALLED. CONNECTION TO THE SADDLE FITTING SHALL BE MADE BY MEANS OF AN APPROVED FLEXIBLE RUBBER COUPLING IN ACCORDANCE WITH THE COUPLING MANUFACTURER'S INSTALLATION RECOMMENDATIONS OR BY OTHER MEANS ACCEPTABLE TO THE ENGINEER.
6. PSC CONSULTANTS, LLC LETTER DATED APRIL 3, 2009, RECOMMENDS APPROVAL OF THE USE OF PVC PIPE FOR THE EAST KAPOLEI II DEVELOPMENT EAST-WEST ROAD AND ROAD "E" PROJECT.
7. PVC PIPE SHALL BE LIMITED TO USE IN AGRICULTURAL, RESIDENTIAL AND APARTMENT ZONED AREAS AND IN SIZES FROM 6 INCHES TO 12 INCHES IN DIAMETER.



NOT TO SCALE

1. CLOTH BARRIER TO BE MIRAFI 140N OR APPROVED EQUAL.
2. LUMBER SIZES ARE NOMINAL INCHES.
3. 1 x 2 CLOTH BARRIER CAPS TO BE NAILED 12" O.C.
4. BURLAP IS NOT ACCEPTABLE AS THE CLOTH BARRIER.
5. CLOTH TO HAVE NO HORIZONTAL SEAMS.
6. VERTICAL SEAMS TO BE MADE OVER UPRIGHTS ONLY.
7. ALL SEAMS TO BE CAPPED WITH MINIMUM 1 x 2.
8. ALL JOINTS TO BE SECURELY FASTENED BY MECHANICAL MEANS.



NOT TO SCALE

THIS WORK WAS PREPARED BY
ME OR UNDER MY SUPERVISION.
CONSTRUCTION OF THIS PROJECT
WILL BE UNDER MY OBSERVATION.
LICENSE EXPIRATION DATE: 04/30/14

FILE	POCKET	FOLDER	NO.

REVISION DATE	DESCRIPTION	MADE BY	APPROVED

cp&e Community Planning and Engineering, Inc.
Engineering Design | Construction Management | Infrastructure Planning
1286 Queen Emma Street Honolulu, Hawaii

**EAST KAPOLEI II DEVELOPMENT
INCREMENT 2B**
HONOLULU, EWA, OAHU, HAWAII
(DPP SUBD. FILE NO. 2011/SUB-155)
OWNER & DEVELOPER: DEPARTMENT OF HAWAIIAN HOME LANDS
TAX MAP KEY: 9-1-17: Portion 110

GENERAL NOTES - 3

GEOTECHNICAL REPORT

**REVISED PRELIMINARY
GEOTECHNICAL EXPLORATION REPORT
PROPOSED EAST KAPOLEI PHASE II DEVELOPMENT
STUDY AREA I
HONOULIULI, EWA, OAHU, HAWAII**

For

Community Planning and Engineering, Inc.
1100 Alakea Street, 6th Floor
Honolulu, Hawaii 96813

By:



Geotechnical • Environmental • Construction Management
Testing • Inspection • Drilling & Sampling

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**REVISED PRELIMINARY GEOTECHNICAL EXPLORATION REPORT
PROPOSED EAST KAPOLEI PHASE II DEVELOPMENT
STUDY AREA I
HONOULIULI, EWA, OAHU, HAWAII**

June 30, 2009

PSC Job No. 27303.10

SUMMARY OF FINDINGS AND RECOMMENDATIONS

The field exploration encountered about 6 to 12 inches of topsoil consisting of clayey silt and silty clays. Gravel and asphalt topsoil were also encountered in southwestern boundary of the site. The field exploration generally encountered very stiff to hard and very hard silty clay alluvial soils. A very dense coral formation was encountered in Boring Nos. B-1, B-3, and B-13 near the southern boundary of the property at depths of 13.5, 14, and 14.5 feet below ground surface, respectively. The coral formation was not encountered in the remaining borings within Study Area I. Groundwater was not encountered in any of the borings drilled.

Based on the field exploration and observations, the stiff to hard, near-surface materials encountered at the site should provide adequate support for the proposed residential housing development. However, laboratory tests show that the near-surface, silty clay soils exhibit moderate shrink and swell potential when subjected to changes in moisture content. Special attention should therefore be given to the preparation of subgrade and design of slab-on-grade and pavements for this project. To limit the development of cracks on floor slabs, walls, and pavements as a result of the anticipated movement of the subgrade soils, the following alternatives or a combination thereof may be adopted:

1. Control and maintenance of the near-surface subgrade soil moisture conditions during and after construction.
2. Design structures to withstand anticipated incremental movements of the subgrade soils i.e. with post tensioning techniques or design the structures to allow a limited flexibility of movement and,
3. Over excavate and replace the near-surface soils with non-expansive select borrow;

The above construction methods, special design recommendations, and grading schemes are discussed in more detail in the text of this report.



INTRODUCTION

East Kapolei II Development is divided into 2 study areas namely; Study Area I and Study Area II, as shown in the Project Location Map, Plate No. 1. This report is for Study Area I, and is the first of 2 preliminary geotechnical exploration reports for the East Kapolei II Development. Study Area I consists of the following parcels:

- 12-acre KROC Center;
- 4.7, 8.1, and 4.1-Acre Parks;
- 20.4 and a 19.7 acre Low Density Apartment (LDA) Lots;
- 153-lot subdivision parcel (Increment II-B);
- 220-lot subdivision parcel (Increment II-A);
- 105 ft-wide access road (East-West Road); and
- Subdivision road network.

A 17-acre parcel for a middle school is within Study Area I, but is not included in our investigation. A separate study will be done for this parcel by the Department of Education (DOE) in the future.

Our work was performed in general accordance with our February 12, 2007 proposal to Community Planning and Engineering, Inc. (CP&E). This report summarizes our findings and recommendations.

PROJECT CONSIDERATIONS

The proposed East Kapolei Phase II Development Study Area I consists of individual residential lots, paved roads, 3 community parks, a 12-acre KROC Center, a 26.6 acre Ilima conservation park, a sewer line corridor running along Mango Tree Road and 2 low-density apartment (LDA) complexes (Plate No. 2).

For Study Area I, 22 borings were drilled and 5 test pits were hand excavated by PSC Consultants, LLC (PSC) to examine the near surface silty clay overburden soils and to obtain samples for CBR and index property tests.

We anticipate the future residence/structures to be 1- to 2-story homes, supported by slab-on-grade with thickened edges and/or shallow-spread or continuous footings to be built by the developer or individual homeowners.



PURPOSE AND SCOPE

The purpose of our preliminary geotechnical exploration was to gather information on the nature, distribution, and characteristics of the subsurface soils encountered within Study Area I and to provide recommendations for the development of the proposed residential subdivisions within this area. The scope of our exploration consisted of the following tasks and work efforts:

1. Scheduling and planning the investigation;
2. Project coordination and site preparation;
3. Drilling 22 borings to 15 feet below the existing ground surface and excavating 5 hand-dug test pits and collecting bulk samples for classification and laboratory testing;
4. Providing a field engineer to monitor the drilling operations, obtain soil samples at selected depths, and maintain field logs of the soils encountered;
5. Performing laboratory tests on selected soil samples obtained from the borings and test pits to evaluate relevant engineering characteristics of the soils encountered;
6. Analyzing the field and laboratory data;
7. Reviewing soil information and related data on the project site and immediate vicinity; and
8. Preparing and submitting a written preliminary geotechnical engineering exploration report summarizing our findings, conclusions and recommendations for grading, pavement design, foundations and other geotechnical aspects.

REGIONAL GEOLOGY

Two basaltic shield volcanoes, Waianae and Koolau, built up the island of Oahu. The Waianae area, which forms the west side of the island, is the older of the 2 areas and was built during the Pliocene Epoch by the extrusion of the lavas of the Waianae Volcanic Series. As volcanic activity in Waianae ceased, lava flows from Koolau banked against the Waianae eroded slope forming a broad Plateau presently known as Schofield Plateau. Physical and chemical weathering followed by erosion of this plateau generated sediments, which were transported to the coast. In the vicinity of the project site and to the south, these sediments accumulated and interbedded with marine sediments and coral algal reef formation to form a sedimentary wedge. The thickness of the sedimentary wedge ranges from zero in the area of the interstate route H-1 highway to over 1,000 feet in Ewa Beach. This wedge forms the Ewa plain and serves as the confining formation over the artesian basal aquifers of southern Oahu. Deposition of sediments has continued from earlier geologic time through the present. Agricultural developments within the last 100 years and recent mass grading work have brought this part of Ewa Plains in Honouliuli, East Kapolei to its present form.



Geology of Study Area and Vicinity

The soils within the study area and surrounding Honouliuli and Ewa plains, belong to the Honouliuli Series (HxA) based on the Soil Survey of Oahu by the US Department of Agriculture Soil Conservation Service, 1972. This series consists of well-drained soils in the Ewa area on the Island of Oahu (Plate No. 3). These soils developed in alluvium derived from basic igneous material. They are nearly level and gently sloping. Elevations range from 15 to 125 feet. The annual rainfall in this area is from 10 to 20 inches, occurring mainly between November and April. Honouliuli soils are geographically associated with Ewa, Lualualei, Mamala, and Waialua.

EXISTING SITE CONDITIONS

The project site is located to the east of the existing Villages of Kapolei Development in the district of Ewa, Oahu, Hawaii. The study area is bound by the North-South Road on the west and by Mango Tree Road on the south. The northern and eastern boundaries of the property lie adjacent to cultivated fields (diversified agriculture). The western portion of Study Area I, comprising about a third of the project area, is currently uncultivated and is overgrown with grass and scattered with occasional Koa and Keawe bushes. Evidence of previous cultivation of sugar cane can be traced from the still upright but decayed remains of the last crops and the almost uniform consistency of the near-surface soils from seasons of cultivation. This unused portion of the property is generally dry and shows extensive cracking of the near surface soils due to dry conditions. The shrinkage cracks are about 3 to 5 inches wide at the surface and extend down about 2.5 to 3.5 feet below the surface. The topsoil within the uncultivated parcel contains considerable amounts of organic materials from decayed plant matter. The rest of the project area is currently being cultivated and planted with corn and various vegetable crops. Study Area I is generally flat with slopes estimated at less than 1 percent. Elevations range from about 58 feet in the vicinity of Boring No. B-3 near the southern boundary to about 75 feet at Boring No. B-19 near the northern boundary of Study Area I.

SUBSURFACE EXPLORATION

The subsurface conditions in Study Area I were explored by drilling and sampling 22 borings (Boring Nos. B-1 through B-22) to a depth of 15 feet below the existing ground surface and hand excavating and sampling 5 test pits (Test Pit Nos. TP-1 through TP-5) to depths of about 3.5 feet below the existing ground surface. The approximate locations of the borings and test pits are shown in the Site Plan, Plate No. 2.



SUBSURFACE CONDITIONS

The field exploration encountered about 6 to 12 inches of topsoil consisting of clayey silt and silty clays that were observed to be generally dry and loose from cultivation. The topsoil within the uncultivated parcel on the western half of Study Area I contains considerable amounts of organic materials from decayed plant matter. Gravel and asphalt topsoil were also encountered in southwestern boundary of the site. The underlying soils were very stiff to hard and very hard silty clay alluvial soils. A very dense coral formation was encountered in Boring Nos. B-1, B-3, and B-13, near the southern boundary of the property at depths of 13.5, 14, and 14.5 feet below ground surface, respectively. The coral formation was not encountered in the rest of the 15-foot borings within Study Area I. Groundwater was not encountered in any of the borings drilled.

Detailed descriptions of the materials encountered are shown in the Logs of Borings and Logs of Test Pits, Plate Nos. 4 through 25 and 26 through 30, respectively.

DISCUSSIONS AND RECOMMENDATIONS

Our field exploration generally encountered alluvium materials consisting of very stiff to hard brown silty clays. A very dense coral formation was encountered in Boring Nos. B-1, B-3, and B-13, near the southern boundary of the property at depths of 13.5, 14, and 14.5 feet below ground surface, respectively. Stiff to very stiff brown silty clay was encountered in Test Pit Nos. TP-1 through TP-5 to 3.5 feet deep. Laboratory tests indicate that these silty clay alluvial soils have a low to moderate expansion potential (ranging about 3 to 8 percent) when subjected to increases in moisture content, as shown in the CBR expansion tests (Plate Nos. 38 through 42) and one-dimensional swell tests (Plate No. 43). Our site observations also indicate that these soils have the potential to shrink and swell, and develop relatively deep surface cracks when left unattended for extended periods of time.

Site Preparation

At the onset of earthwork, the area within the contract grading limits should be cleared of trees, vegetation, debris, rubbish, and other deleterious materials. These materials should be removed and properly disposed of off-site.

After the clearing and removal of unsuitable surface materials, the area should be proof-rolled to locate soft and yielding spots. Soft or yielding areas encountered should be over-excavated to expose firm soil surface and stabilized by backfilling with select material placed in 8-inch thick, loose lifts, moisture-conditioned to at least 2 to 3 percent above the optimum moisture content and compacted to 90 percent relative compaction. In areas to receive fill, the ground surface should be scarified to a depth of 6 inches, moisture-conditioned to at least 2 to 3 percent above the optimum moisture content, and compacted to a minimum of 90 percent relative compaction.



Relative compaction refers to the in-place dry density of soil expressed as percentage of the maximum dry density of the same soil established in accordance with ASTM Test designation D 1557-91. The optimum moisture content is the moisture content corresponding to the maximum compacted dry density.

Site preparation and grading operation should be observed by a representative of PSC. It is important that a representative from our office observe the site preparation and to perform field density tests to evaluate whether any undesirable materials are encountered during the excavation and scarification process and whether the exposed soil conditions are similar to those anticipated in our engineering analysis.

Fill Material and Placement

Fill Material - Proper site preparation and compaction of new fills and bonding of new fills to existing ground are required to provide a stable fill mass. Except for the parks, materials used for general subdivision site embankment filling should be non-expansive select material, generally less than 3 inches in maximum dimension; should have a plasticity index not exceeding 15, as determined in accordance with ASTM Test Method D 4318-84; and should have maximum 20 percent of particles passing the No. 200 sieve. Offsite borrow materials should be tested by PSC Consultants, LLC to evaluate its suitability for use as select fill prior to its delivery to the project site.

Open Space, Park, and Non-Structural Areas - If desired, the top soil from adjacent areas may be stockpiled and used as fill within parks and open spaces, provided no structures will be constructed over these fills. Future changes in land use in the park fill areas will need a detailed soil investigation, particularly when buildings are planned.

Placement - Fill materials in the subdivision area should be placed in level lifts with a maximum loose thickness of 8 inches, moisture conditioned to at least 2 percent above optimum, and compacted to a minimum of 90 percent relative compaction. In roadway areas, the minimum degree of compaction within the upper 2 feet of the subgrade should be 95 percent. Each layer should be spread uniformly and blade-mixed to attain uniformity of the material and water content. Additional fill material should not be placed on any fill layer that has not been properly compacted.

Select Borrow Fill Thickness

Select non-expansive borrow fill at housepads should be 2½-feet thick, placed over properly prepared subgrade as described in the Site Preparation portion of this report.

At driveway aprons and curb ramps, the select non-expansive borrow fill should be 2-feet thick over properly prepared subgrade and borrow extends 4-feet onto planter and sidewalk areas.



At sidewalks, the select non-expansive borrow should be 8-inches thick and transitions to 2-feet (on a grade of 3:1), where it joins with the extended select borrow at driveway aprons and curb ramps. It is imperative to maintain the subgrade 3% above optimum moisture during and after sidewalk construction to limit movement to tolerable limits.

Slopes

Slope Construction - In cases where sloping fills are required, such as at the edge of fill embankments, these may be designed at 2H:1V or flatter. Fill slopes should be constructed by overfilling 2 to 3 feet, then cutting back to the design slope to expose a well-compacted face.

Slope Erosion Protection - Water should be diverted away from the slopes by diversion ditches at the tops and surface drains on slope surface and sub drains may be used to provide adequate drainage. Slope planting should be utilized to reduce erosion potential.

Foundations

Information on the proposed residential structures was not available at the time this report was prepared. We anticipate that 1- to 2-story buildings with relatively light loadings will be constructed. Thickened-edge slab-on-grade foundations bearing on the properly compacted granular select materials may be used to support the proposed residential and other light structures.

An allowable bearing pressure of 2,500 psf for dead plus live loads may be used for footings bearing on the undisturbed very stiff to hard natural soils and on properly compacted non-expansive granular select borrow fills over properly prepared and compacted subgrade. The allowable bearing pressure may be increased by 1/3 for transient loadings, such as wind or seismic forces.

We estimate the maximum total footing settlements should not exceed 1 inch with maximum differential settlement of 1/2 inches for the above foundation schemes.

Where footings are located adjacent to or on slopes, the footings should be embedded deep enough to provide a minimum horizontal set-back distance of at least 6 feet measured from the outbound edge of the footing to the face of the slope. Where footings are to be located adjacent to below-grade structures or utilities, the footings should extend to a depth below an imaginary 45-degree plane, projected upward from the bottom of the below-grade structure or utility. This requirement is necessary to avoid surcharging adjacent below-grade structures with additional structural loads and to reduce the potential of foundation settlement.

Lateral loads acting on the structure may be resisted by frictional resistance between the base of the footings and the bearing materials and by passive earth pressure developed against the



footings. A coefficient of 0.25 may be used to compute the frictional resistance and the passive pressure may be calculated using an equivalent fluid pressure of 250 pounds per square foot per foot of depth (pcf). These values assume that the concrete for footings is poured directly against the footing excavations. Unless covered by pavements or slabs, the passive resistance in the upper 12 inches below finished grade should be neglected in the computation of the passive pressure.

Excavation

Natural soils may be excavated utilizing conventional equipment. The very stiff to hard subsurface silty clay or coral formation should be excavated using heavy-duty equipment. Contractors, especially those digging utilities, should satisfy themselves as to the hardness of deposits and select the most appropriate type of equipment required.

For temporary unsurcharged construction excavations, the excavations should be sloped or shored. Slopes should not be steeper than 1H:1V in granular soils, and 1/2H:1V in fine-grained soils. If there is insufficient space for sloped excavations, shoring should be used. Traffic and surcharge loads should be kept back at least 10 feet from the top of the excavations. Slopes should be inspected during construction/excavation to determine if they need to be flattened based on exposed conditions. Exposed slopes should be kept moist (but not saturated) during construction.

Slabs-On-Grade

We anticipate that concrete slab-on-grade floors will be used for the proposed residential buildings. We recommend that a 4-inch cushion layer of No. 3B fine gravel (ASTM C 33, No. 67 gradation) be used below the slabs. To reduce future moisture infiltration and subsequent damage to floor coverings, vapor membrane should be incorporated on top of the 3B fine gravel cushion layer to reduce potential damage to moisture sensitive floor coverings by infiltration of moisture. To provide protection to the moisture barrier, a 2-inch layer of moist sand is recommended on top of the moisture barrier/geomembrane. This layer of sand will protect the geomembrane and also aid in the curing of the concrete slab.

Site Drainage

Subdrains should be provided where there is a possibility that runoff or irrigation could saturate the subsurface soils.

Exposed surface soils should be protected from erosive runoff by providing surface drains, diversion berms, and other flood control devices. The finished lot grade should be shaped to shed water away from foundations and to avoid ponding conditions. In addition, it is advised that each residence and building be equipped with a gutter and downspout system and the water



diverted as far away as possible from the house foundations and driveway. Collected water should be drained into an approved drainage system, and not allowed to flow freely on the site. Excessive landscape watering near foundations should be avoided.

Pavements

The pavement sections are based on medium subdivision traffic. In areas with heavier traffic, such as main collector roads, the section should be thickened with an additional 1/2-inch asphaltic concrete to provide adequate support for the increased traffic loading.

The minimum pavement section is as follows:

For the subdivision roads with 48- to 66-feet rights of way (ROW):

2-Inches	Asphalt Concrete
6-Inches	Asphalt Treated Base
<u>12-Inches</u>	<u>Subbase</u>
20-Inches	Total Pavement Thickness

For collector road with 78-feet ROW:

2½-Inches	Asphalt Concrete
6-Inches	Asphalt Treated Base
<u>12-Inches</u>	<u>Subbase</u>
20½-Inches	Total Pavement Thickness

The subbase will consist of a minimum 12 inches of compacted select borrow granular fill materials or aggregate subbase with a minimum CBR value of 25 and compacted to 95% relative compaction.

Coral or non-expansive select granular borrow material consisting of crusher run waste, mud-rock, sand, or cinders may be used as subbase for the road pavement as described in the Standard Specifications for Public Works Construction (1986).

CBR and density test and/or field observations should be performed on the actual subgrade used for the roadway subgrade construction to confirm the adequacy of the above pavement sections. The recommended section assumes that adequate drainage will be provided in the paved areas.

Paved areas should be sloped and drainage gradients maintained to carry all surface water off the site. Surface water ponding should not be allowed anywhere on the site during or after construction.



Sidewalks

It is anticipated that concrete sidewalks along the subdivision roads will be constructed as part of the road network development. The subbase for the sidewalk should consist of a minimum of 8 inches of select granular borrow fill. The subbase should be graded to the required cross-section, moisture-conditioned to above optimum moisture content and compacted to at least 95-percent relative compaction.

Utility Trenches

We envision that utility lines will be required for the proposed subdivision project. Granular bedding consisting of 6 inches of No. 3B Fine gravel is recommended under the pipes. Free draining granular materials, such as No. 3B Fine gravel (ASTM C 33, No. 67 gradation), should also be used for the trench backfill, up to about 12 inches above the pipes to provide adequate support around the pipes and to reduce compaction requirement of the backfill, and thus reducing the potential for damaging the pipes.

The upper portion of the trench backfill from 1-foot above the pipes to the top of the subgrade or finished grade should consist of select granular material. The backfill should be moisture conditioned, placed in maximum 8-inch, level, loose lifts, and mechanically compacted to not less than 90 percent relative compaction to reduce the potential for future ground subsidence. Where trenches are below pavement areas, the upper 2 feet of the trench backfill above the pavement subgrade should be compacted to 95 percent relative compaction.

Where the sewer line trench bottom is on expansive clay soils, the trench should be over-excavated below invert elevation by at least 18 inches and replaced with No. 3B Fine gravel wrapped with geofabric comparable to Mirafi 140N or equivalent. The aggregate fill shall be placed in 6-inch layers, compacted and brought to within 6 inches of the invert grade as specified in Section 11.4-B of the Standard Specifications for Public Works Construction. Excavation and backfill for manholes shall likewise be in accordance with Section 11, Trench Excavation and Backfill of the Standard Specifications for Public Works Construction. These over-excavation with granular backfill are measures to limit the effects of possible differential settlements or heave in the utility pipes resulting from changes in moisture content of the surrounding clay soils.

Retaining Walls

We understand that walls may be constructed at the site for grade separation, and boundary delineation. Walls that are subjected to unbalanced lateral loading shall be designed as retaining walls. The retaining wall structures should be designed to resist the lateral earth pressures due to



adjacent soils and surcharge effects. Based on the current subsurface soil information, we recommend the following for the design of the retaining walls:

Active Pressure - An active pressure of 35 pcf in equivalent fluid weight is recommended.

Passive Pressure - A passive pressure of 250 pcf in equivalent fluid weight is recommended.

Coefficient of Friction - A coefficient of friction of 0.25 is recommended between the base of the footings and the supporting materials.

The above values assume that the concrete for footings is poured directly against the footing excavations. Unless covered by pavement or slabs, the passive resistance in the upper 12 inches below the finished grade should be neglected in the computation of the passive pressure.

Allowable Bearing Pressure - An allowable bearing pressure of up to 2,500 psf is recommended.

Backfill Requirements - Backfill behind the embedded walls should consist of imported select granular materials. Backfill behind the wall should be compacted to at least 90 percent maximum dry density as determined by ASTM D-1557, but not over compacted. Over compaction of the backfill material should be avoided so as not to create excessive lateral pressures against the wall.

Requirements for Imported Fill Under Foundations - Imported fill under foundations should be non-expansive, select material, generally less than 3 inches in maximum dimension; should have a plasticity index not exceeding 15, as determined in accordance with ASTM Test Method D 4318-84; and should have maximum 20 percent of particles passing the No. 200 sieve. The wall footing should be supported on at least 12 inches of select borrow or granular material compacted to 95 percent of maximum dry density.

The values provided above assume that imported granular fill will be used to backfill behind the wall. An active condition may be used for walls that are free to deflect by as much as 0.5 percent of the wall height. Generally, top of walls, which are not free to deflect beyond this degree or are restrained, should be designed for the at-rest condition. These lateral earth pressure values do not include hydrostatic pressure or surcharge loads that might be caused by groundwater trapped behind the walls.

For sloping backfill behind a wall up to 2H:1V, these values should be increased by a factor of 1.5. The surcharge effect from loads adjacent to retaining structures should also be included in the design of the walls. A rectangular distribution over the height of the wall with a pressure equal to 50 and 65 percent of the surcharge load is recommended for active and at rest conditions, respectively.



Retaining walls should be provided with backdrains or weep holes to prevent the buildup of hydrostatic pressures. If seepage through the wall is objectionable, back-drainage should be collected in a perforated pipe that discharges into gutters or suitable drainage. A typical drainage system would consist of a 1- to 2-foot wide zone of permeable material, such as No. 3B Fine gravel (ASTM C 33, No. 67 gradation), immediately adjacent to the wall with a perforated pipe, with perforations down at the base of the wall. The pipe should be sloped to drain into a suitable drainage system. A geotextile fabric, such as Mirafi 140N, or equivalent, should be placed between the gravel and the compacted backfill material. The drainage material should extend from the base to a height within 2 feet below finished grade. The remaining backfill should consist of an impervious capping of low expansive soil to reduce water infiltration behind the walls.

As an alternative, a prefabricated drainage board, such as MiraDrain, EnkaDrain, may be used in lieu of the permeable 3B Fine gravel material. The prefabricated drainage product should also be hydraulically connected to a perforated pipe, with perforations down, at the base of the wall. It is possible that wet spots in the wall may occur, with or without a perimeter drainage system. If this is objectionable, the exterior portions of the walls should be waterproofed.

Design Review

Drawings and specifications for the proposed construction should be submitted to PSC Consultants, LLC, as geotechnical consultant, for review and written comments prior to construction. This review is needed to evaluate adherence of the plans to the recommendations provided herein. If this review is not made, PSC cannot assume responsibility for the interpretations made by others, or errors resulting there from.

Construction Observation and Testing

The recommendations provided in this report are based on subsurface conditions disclosed by widely spaced exploratory borings and excavations. The geotechnical consultant should check the interpolated subsurface conditions during construction. The geotechnical consultant should attend the pre-construction meeting between the contractors and owners/designers.

During grading, the geotechnical consultant should:

- ❖ Observe excavation, placement, and compaction of engineered fill for new structures and pavements;
- ❖ Observe preparation and compaction of aggregate base for asphalt/concrete pavement and flatwork subgrade;
- ❖ Check and test any imported materials prior to their use as fill;



- ❖ Perform field tests to evaluate fill compaction;
- ❖ Observe subgrade conditions at the bottom of pipeline trenches;
- ❖ Observe fill placement and compaction around the pipes in the utility trenches; and
- ❖ Observe the fine-grading and exterior drainage improvements constructed around the finished structures.

The recommendations provided in this report assume that PSC will be retained as the geotechnical consultant during the construction phase of the project. If another geotechnical consultant is selected, we request that the selected consultant provide a letter to the architect/designer and owner/client (with a copy to PSC) indicating that they fully understand our recommendations and that they are in full agreement with the recommendations contained in this report. If deviations from soil conditions and recommendations presented in this report occur, they should provide amended recommendations as new geotechnical consultants of record for the project.

LIMITATIONS

The analyses and recommendations submitted in this report are based, in part, upon information obtained from field borings. Variations of subsoil conditions between the borings may occur, and the nature and extent of these variations may not become evident until construction is underway. If variations then appear evident, it will be necessary to reevaluate the recommendations provided in this report.

The test pits and boring locations in this report were selected by PSC Consultants LLC, based on our scope of work. The field locations for the borings and test pits were located by Community Planning & Engineering's (CPE) Surveyor as shown on the plans. The physical locations and elevations of the borings should be considered accurate only to the degree implied by the methods used.

The stratification lines shown on graphic representations of the borings depict the approximate boundaries between soil/rock types and, as such, may denote a gradual transition.

This report has been prepared for the exclusive use of Community Planning and Engineering, Inc., their client, and their consultants for specific application to the proposed East Kapolei Development II, Study Area I, in accordance with generally accepted geotechnical engineering principles and practices. No warranty is expressed or implied.



This report has been prepared solely for the purpose of assisting the architect/engineer in the design evaluation of the proposed project. Therefore, it may not contain sufficient data, or proper information to serve as the basis for preparation of construction cost estimates. A contractor wishing to bid on this project is urged to retain a competent geotechnical engineer to assist in the interpretation of this report and/or in the performance of additional site-specific exploration for bid estimating purposes.

The owner/client should be aware that unanticipated soil/rock conditions are commonly encountered. Unforeseen soil/rock conditions, such as perched ground water, soft deposits, hard layers, or cavities, may occur in localized areas and may require probing or corrections in the field (which may result in construction delays) to attain a properly constructed project. Therefore, a sufficient contingency fund is recommended to accommodate these extra costs.

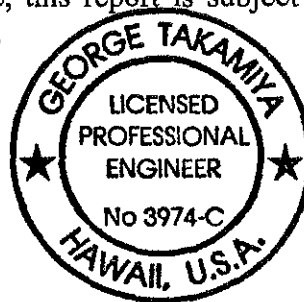
The findings in this report are valid as of the present date. However, changes in the soil conditions can occur with the passage of time, whether they may be due to natural processes, or to the works of man, on this or adjacent properties. In addition, changes in applicable or appropriate standards occur, whether they result from legislation, or from the broadening of knowledge. Accordingly, the findings in this report might be invalidated, wholly or partially, by changes outside of our control. Therefore, this report is subject to review by the controlling agencies and is valid for a period of 2 years.

Respectfully submitted,

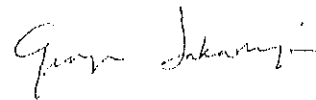
PSC CONSULTANTS, LLC



Melchor Nolasco
Project Engineer



This work was prepared by
me or under my supervision
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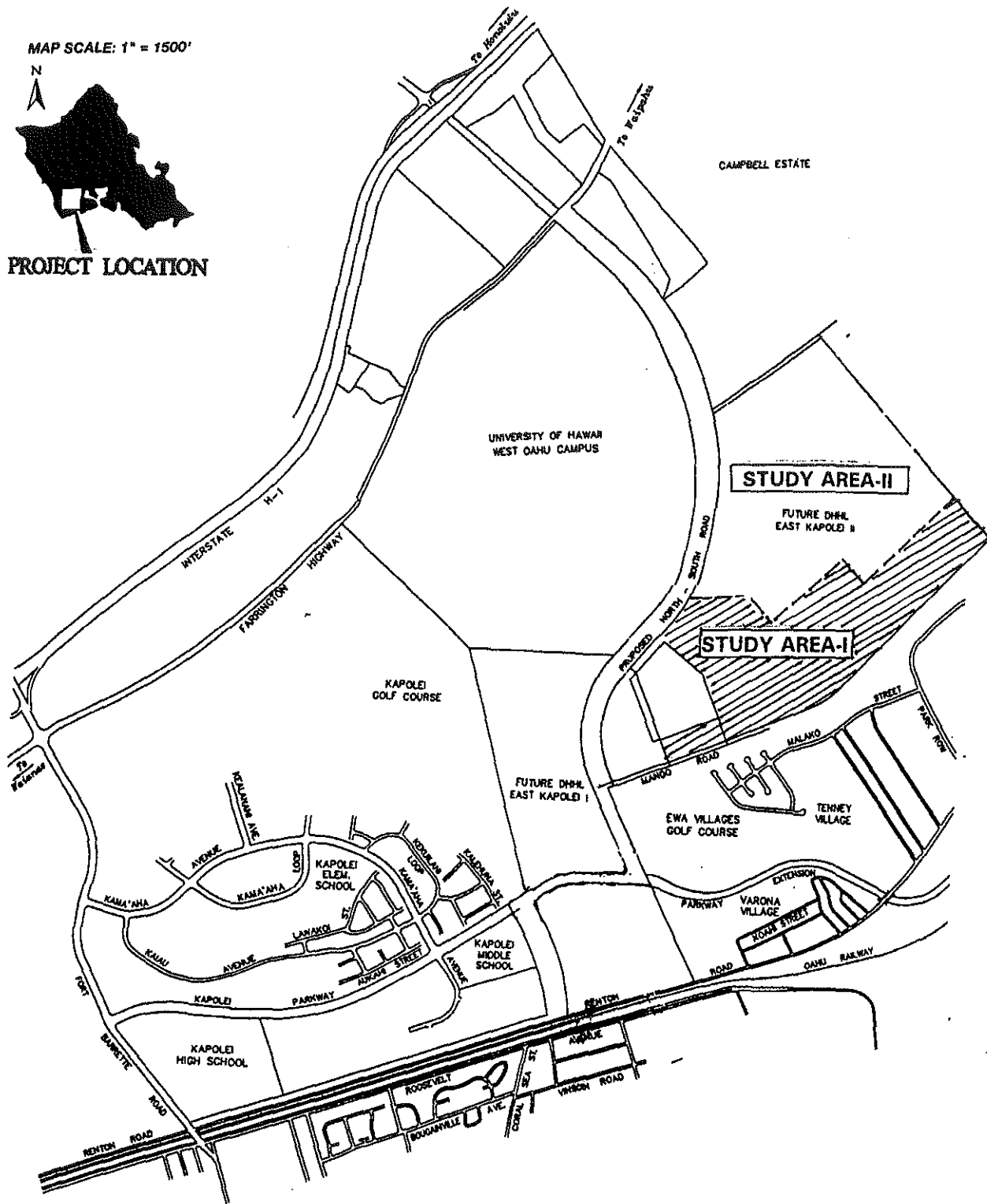


George Takamiya, P.E.
Senior Engineer

MN/GT:lk

Enc.: Plate No. 1	Project Location Map
Plate No. 2	Site Plan
Plate No. 3	Soils Classification Map
Plate No. 4 through 25	Logs of Borings
Plate Nos. 26 through 30	Logs of Test Pits
Plate No. 31A	Soils Classification Chart
Plate No. 31B	Rock Classification Chart
Plate No. 32	Atterberg Limits
Plate Nos. 33 through 37	Compaction Curve
Plate Nos. 39 through 43	California Bearing Ratio





PROJECT LOCATION MAP



CONSULTANTS, LLC
SOILS, FOUNDATION, AND GEOLOGICAL ENGINEERS

East Kapolei II Development
Study Area I, Honouliuli, Ewa, Oahu, Hawaii

DATE: May 2007

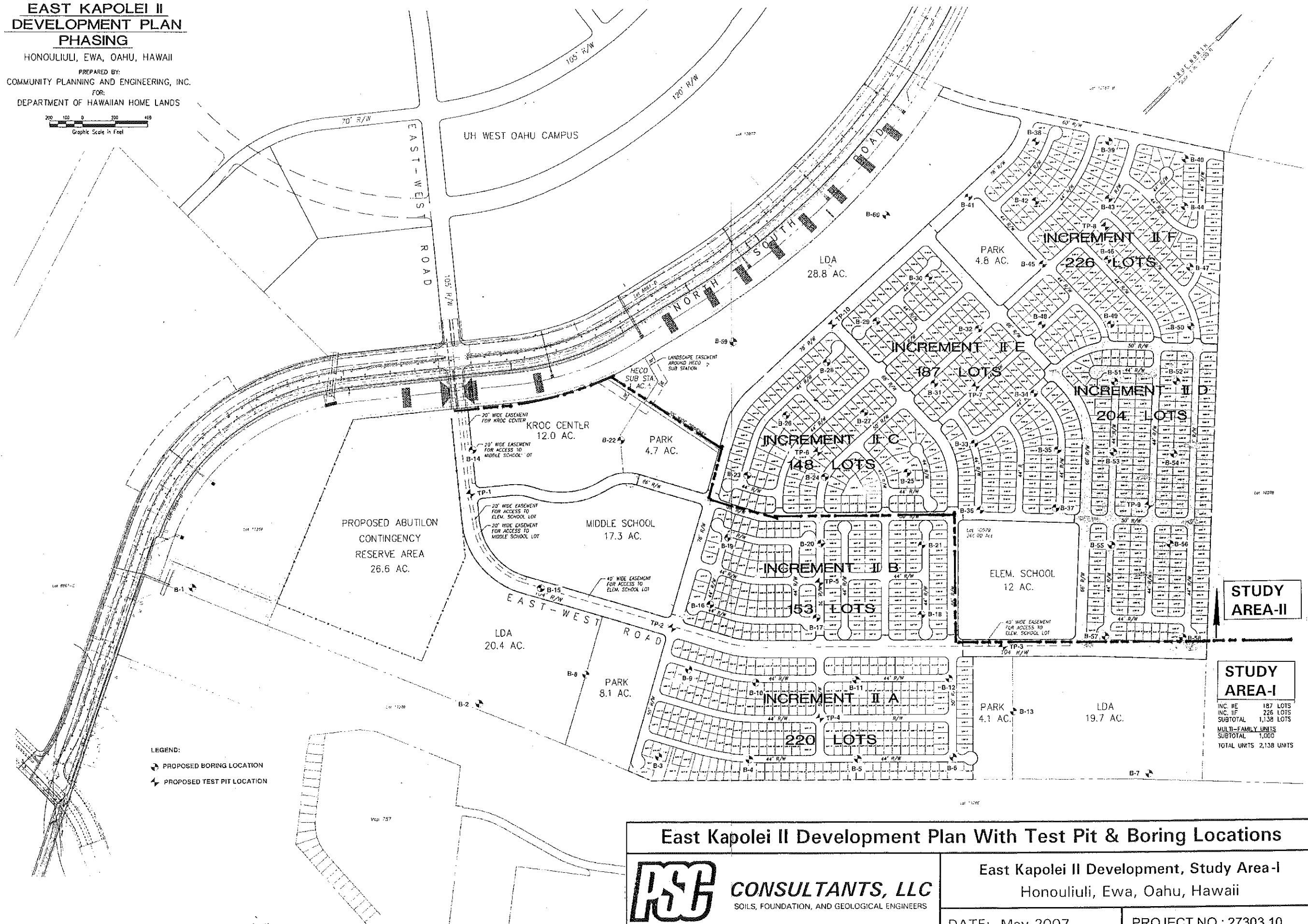
PROJ. NO.27303.10

PLATE NO. 1

EAST KAPOLEI II DEVELOPMENT PLAN PHASING

HONOLULU, EWA, OAHU, HAWAII

PREPARED BY:
COMMUNITY PLANNING AND ENGINEERING, INC.
FOR:
DEPARTMENT OF HAWAIIAN HOME LANDS



Reference: East Kapolei II Development Plan by CP&E (September 2006)

East Kapolei II Development Plan With Test Pit & Boring Locations



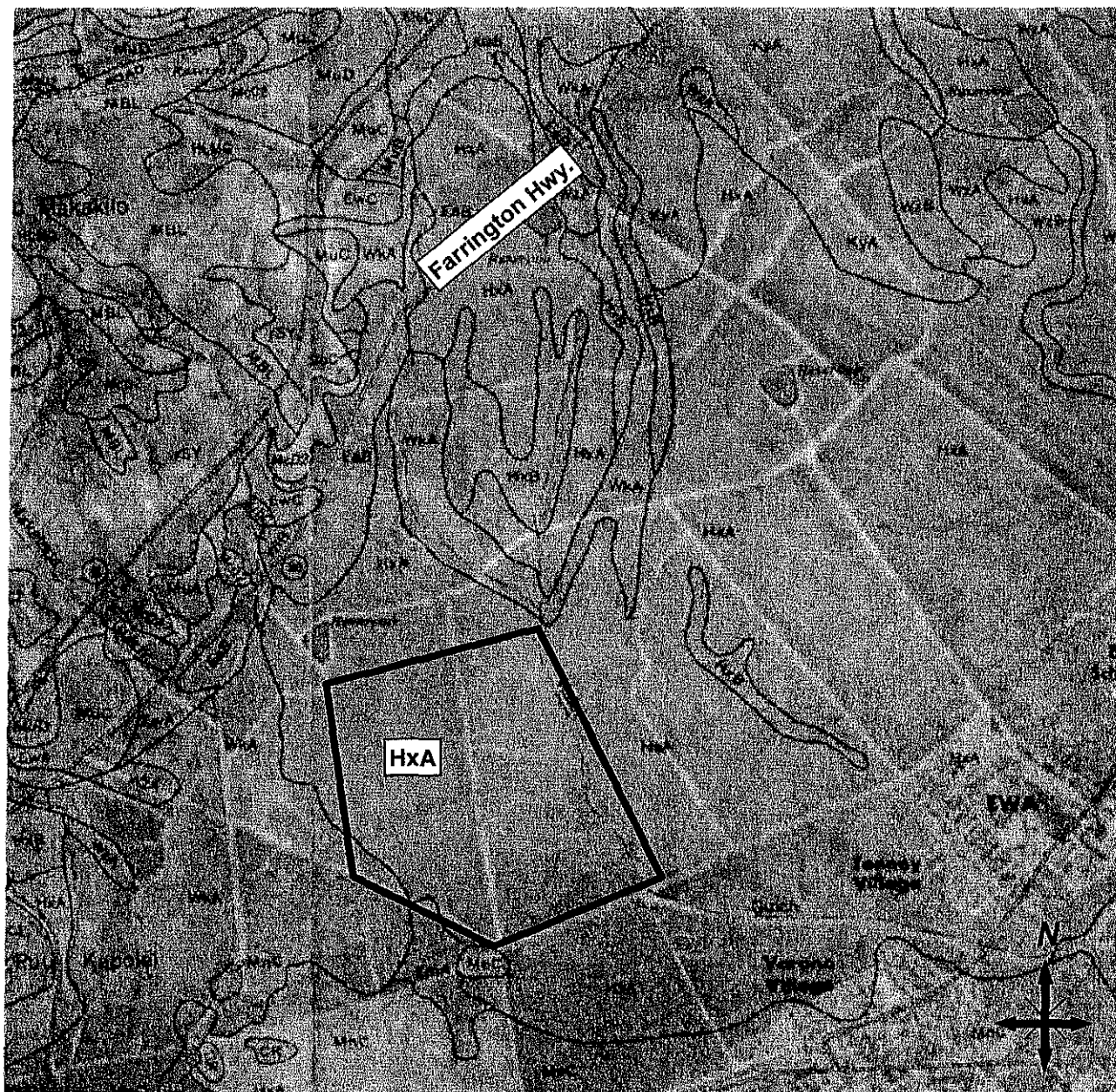
CONSULTANTS, LLC
SOILS, FOUNDATION, AND GEOLOGICAL ENGINEERS

East Kapolei II Development, Study Area-I
Honolulu, Ewa, Oahu, Hawaii

DATE: May 2007

PROJECT NO.: 27303.10

PLATE NO. 2



APPROXIMATE SITE LOCATION

HxA Honouliuli Clay, 0 to 2 percent slopes

NOT TO SCALE

REFERENCE: Soil Survey of Kauai, Oahu, Maui, Molokai, and Lanai
State of Hawaii, United States Department of Agriculture 1972



SOILS CLASSIFICATION MAP

East Kapolei II Soil Study
Farrington Highway & Farm Road
Honouliuli, Ewa, Oahu, Hawaii

DATE: MAY 2007	PROJECT NO. 27303.10	PLATE NO. 3
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BORING LOCATION: See Site Plan	DRILLER: PSC	BORING NO. B-1
BORING ELEVATION: 64.4	LOGGED BY: MGN	
DATE (S) DRILLED: 3/11/07	TYPE RIG: Diedrich (D-25)	

OTHER LAB TESTS	DRY UNIT WEIGHT (pcf)	MOISTURE CONTENT (%)	CORE RECOVERY (%)	R.Q.D. (%)	NUMBER OF BLOWS/12"	SAMPLE NUMBER	DEPTH IN FEET	GRAPHIC SYMBOL	U.S.C.S.	GEOTECHNICAL DESCRIPTION
						AUG-1	1		GP	Coralline GRAVEL, with sand, light brown, poorly graded, dense, slightly moist. (Macadam fill)
							2			Silty CLAY, brown, hard, moist.
		19.0			50	SPT-1	3			
							4			
						AUG-2	5			
							6			
							7		CL	
							8			
		22.9			45	SPT-2	9			
							10			
						AUG-3	11			
							12			
							13			
					40/2"	SPT-3	14			Coral Formation , very dense.
							15			Boring terminated at 15 feet below ground surface Groundwater not encountered
							16			
							17			

SAMPLE TYPE

MC - Modified California SPT - Standard Penetration
 CB - Core Barrel SH - Shelby Tube
 AUG - Auger Cuttings D&M - Dames & Moore

OTHER LABORATORY TESTS

MD - Moisture/Density UC - Unconfined Compression
 CON - Consolidation Test SG - Specific Gravity
 PI - Atterberg Limits SA - Sieve Analysis

LOG OF BORING



Geotechnical & Environmental
 Consultants
 Construction Management,
 Testing & Inspection

East Kapolei Phase II Development
 Study Area I
 Honouliuli, Ewa, Oahu, Hawaii

DATE: May 2007

PROJECT NO.: 27303.10

BORING 2730310.GPJ BORING.GDT 5/18/07

BORING LOCATION: See Site Plan	DRILLER: PSC	BORING NO. B-2
BORING ELEVATION: 62.7	LOGGED BY: MGN	
DATE (S) DRILLED: 3/11/07	TYPE RIG: Diedrich (D-25)	

OTHER LAB TESTS	DRY UNIT WEIGHT (pcf)	MOISTURE CONTENT (%)	CORE RECOVERY (%)	R.Q.D. (%)	NUMBER OF BLOWS/12"	SAMPLE NUMBER	DEPTH IN FEET	GRAPHIC SYMBOL	U.S.C.S.	GEOTECHNICAL DESCRIPTION
						AUG-1			GP	62.5 ASPHALT
							1			61.7 Coralline GRAVEL, with sand, light tan, poorly graded, dense to very dense, moist. (Macadam surface fill)
							2			Silty CLAY, brown, very stiff, low to medium plasticity, moist.
		20.0			22	SPT-1	4			
						AUG-2	5			
							6		CL	
							7			
		23.8			25	SPT-2	9			
						AUG-3	10			
							11			
							12			60.7 Silty CLAY, brown, hard, moist.
		22.2			35	SPT-3	14		CL	
							15			47.7 Boring terminated at 15 feet below ground surface Groundwater was not encountered.
							16			
							17			

SAMPLE TYPE

MC - Modified California SPT - Standard Penetration
CB - Core Barrel SH - Shelby Tube
AUG - Auger Cuttings D&M - Dames & Moore

OTHER LABORATORY TESTS

MD - Moisture/Density UC - Unconfined Compression
CON - Consolidation Test SG - Specific Gravity
PI - Atterberg Limits SA - Sieve Analysis

LOG OF BORING



Geotechnical & Environmental
Consultants
Construction Management,
Testing & Inspection

East Kapolei Phase II Development
Study Area I
Honouliuli, Ewa, Oahu, Hawaii

DATE: May 2007

PROJECT NO.: 27303.10

BORING 2730310.GPJ BORING.GDT 5/18/07

BORING LOCATION: See Site Plan	DRILLER: PSC	BORING NO. B-3
BORING ELEVATION: 58.0	LOGGED BY: MGN	
DATE (S) DRILLED: 3/11/07	TYPE RIG: Diedrich (D-25)	

OTHER LAB TESTS	DRY UNIT WEIGHT (pcf)	MOISTURE CONTENT (%)	CORE RECOVERY (%)	R.Q.D. (%)	NUMBER OF BLOWS/12"	SAMPLE NUMBER	DEPTH IN FEET	GRAPHIC SYMBOL	U.S.C.S.	GEOTECHNICAL DESCRIPTION
						AUG-1			57.8	ASPHALT
							1		GP	57.0
							2		CL	
							3			55.0
		18.5			55	SPT-1	4			
						AUG-2	5		CL	
							6			
							7			51.0
							8			
		19.2			38	SPT-2	9		CL	
						AUG-3	10			48.0
							11			
							12		CL	
							13			
		19.7			50/6"	SPT-3	14			44.0
							15			43.0
							16			
							17			

SAMPLE TYPE

MC - Modified California SPT - Standard Penetration
 CB - Core Barrel SH - Shelby Tube
 AUG - Auger Cuttings D&M - Dames & Moore

OTHER LABORATORY TESTS

MD - Moisture/Density UC - Unconfined Compression
 CON - Consolidation Test SG - Specific Gravity
 PI - Atterberg Limits SA - Sieve Analysis

LOG OF BORING



Geotechnical & Environmental
 Consultants
 Construction Management,
 Testing & Inspection

East Kapolei Phase II Development
 Study Area I
 Honouliuli, Ewa, Oahu, Hawaii

DATE: May 2007

PROJECT NO.: 27303.10

BORING 27303.10.GPJ BORING.GDT 5/18/07

BORING LOCATION: See Site Plan	DRILLER: PSC	BORING NO. B-4
BORING ELEVATION: 58.9	LOGGED BY: MGN	
DATE (S) DRILLED: 3/18/07	TYPE RIG: Diedrich (D-25)	

OTHER LAB TESTS	DRY UNIT WEIGHT (pcf)	MOISTURE CONTENT (%)	CORE RECOVERY (%)	R.Q.D. (%)	NUMBER OF BLOWS/12"	SAMPLE NUMBER	DEPTH IN FEET	GRAPHIC SYMBOL	U.S.C.S.	GEOTECHNICAL DESCRIPTION
						AUG-1	0		58.7	ASPHALT
							1		GP	Coralline GRAVEL, with sand, poorly graded, dense, slightly moist. (Macadam fill)
							2			Silty CLAY, brown, hard, low plasticity, moist.
							3			
		17.4			45	SPT-1	4			
						AUG-2	5			
							6			
							7			
							8		CL	
		18.0			47	SPT-2	9			
						AUG-3	10			
							11			
							12			
							13			
		21.8			37	SPT-3	14			
							15		43.9	Boring terminated at 15 feet below ground surface Groundwater was not encountered.
							16			
							17			

SAMPLE TYPE

MC - Modified California SPT - Standard Penetration
 CB - Core Barrel SH - Shelby Tube
 AUG - Auger Cuttings D&M - Dames & Moore

OTHER LABORATORY TESTS

MD - Moisture/Density UC - Unconfined Compression
 CON - Consolidation Test SG - Specific Gravity
 PI - Atterberg Limits SA - Sieve Analysis

LOG OF BORING



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BORING LOCATION: See Site Plan	DRILLER: PSC	BORING NO. B-5
BORING ELEVATION: 59.7	LOGGED BY: MGN	
DATE (S) DRILLED: 3/18/07	TYPE RIG: Diedrich (D-25)	

OTHER LAB TESTS	DRY UNIT WEIGHT (pcf)	MOISTURE CONTENT (%)	CORE RECOVERY (%)	R.Q.D. (%)	NUMBER OF BLOWS/12"	SAMPLE NUMBER	DEPTH IN FEET	GRAPHIC SYMBOL	U.S.C.S.	GEOTECHNICAL DESCRIPTION
						AUG-1	0			Top Soil, brown, silty clay with organic material, loose, dry.
							1		58.7	Silty CLAY, brown, hard, moist.
							2			
							3			
		23.0			40	SPT-1	4			
						AUG-2	5			
							6			
							7			
							8		CL	
		22.7			46	SPT-2	9			
						AUG-3	10			
							11			
							12			
							13			
		25.6			45	SPT-3	14			
							15		44.7	Boring terminated at 15 feet below ground surface Groundwater was not encountered.
							16			
							17			

SAMPLE TYPE

MC - Modified California SPT - Standard Penetration
CB - Core Barrel SH - Shelby Tube
AUG - Auger Cuttings D&M - Dames & Moore

OTHER LABORATORY TESTS

MD - Moisture/Density UC - Unconfined Compression
CON - Consolidation Test SG - Specific Gravity
PI - Atterberg Limits SA - Sieve Analysis

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BORING LOCATION: See Site Plan	DRILLER: PSC	BORING NO. B-6
BORING ELEVATION: 65.0	LOGGED BY: MGN	
DATE (S) DRILLED: 3/18/07	TYPE RIG: Diedrich (D-25)	

OTHER LAB TESTS	DRY UNIT WEIGHT (pcf)	MOISTURE CONTENT (%)	CORE RECOVERY (%)	R.Q.D. (%)	NUMBER OF BLOWS/12"	SAMPLE NUMBER	DEPTH IN FEET	GRAPHIC SYMBOL	U.S.C.S.	GEOTECHNICAL DESCRIPTION
						AUG-1				Top Soil, brown, silty clay with organic material, loose, dry.
							1			64.0 Silty CLAY, brown, very stiff, low plasticity, moist.
							2			
							3		CL	
		22.4			21	SPT-1	4			
						AUG-2	5			60.0 Silty CLAY, brown, hard, moist.
							6			
							7			
							8		CL	
		20.5			32	SPT-2	9			
						AUG-3	10			55.0 Silty CLAY, brown, very hard, moist.
							11			
							12			
							13		CL	
		10.7			62	SPT-3	14			
							15			50.0 Boring terminated at 15 feet below ground surface Groundwater was not encountered.
							16			
							17			

SAMPLE TYPE

MC - Modified California SPT - Standard Penetration
 CB - Core Barrel SH - Shelby Tube
 AUG - Auger Cuttings D&M - Dames & Moore

OTHER LABORATORY TESTS

MD - Moisture/Density UC - Unconfined Compression
 CON - Consolidation Test SG - Specific Gravity
 PI - Atterberg Limits SA - Sieve Analysis

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BORING LOCATION: See Site Plan	DRILLER: PSC	BORING NO. B-7
BORING ELEVATION: 63.8	LOGGED BY: MGN	
DATE (S) DRILLED: 3/18/07	TYPE RIG: Diedrich (D-25)	

OTHER LAB TESTS	DRY UNIT WEIGHT (pcf)	MOISTURE CONTENT (%)	CORE RECOVERY (%)	R.Q.D. (%)	NUMBER OF BLOWS/12"	SAMPLE NUMBER	DEPTH IN FEET	GRAPHIC SYMBOL	U.S.C.S.	GEOTECHNICAL DESCRIPTION
						AUG-1	0		GP	63.6 ASPHALT
							1			62.8 Coralline GRAVEL , with sand, light tan, poorly graded, dense, slightly moist. (Macadam fill)
							2			Silty CLAY , brown, very stiff, low to medium plasticity, moist.
		22.1			19	SPT-1	4		CL	
						AUG-2	5			
							6			
							7			56.8 Silty CLAY , brown, hard, moist.
		24.2			38	SPT-2	9			
						AUG-3	10			
							11		CL	
							12			
		30.4			40	SPT-3	14			
							15			48.8
							16			Boring terminated at 15 feet below ground surface Groundwater was not encountered.
							17			

SAMPLE TYPE

MC - Modified California SPT - Standard Penetration
CB - Core Barrel SH - Shelby Tube
AUG - Auger Cuttings D&M - Dames & Moore

OTHER LABORATORY TESTS

MD - Moisture/Density UC - Unconfined Compression
CON - Consolidation Test SG - Specific Gravity
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BORING: 27303.10.GPJ BORING.GDT 5/18/07

BORING LOCATION: See Site Plan	DRILLER: PSC	BORING NO. B-8
BORING ELEVATION: 60.8	LOGGED BY: MGN	
DATE (S) DRILLED: 3/24/07	TYPE RIG: Diedrich (D-25)	

OTHER LAB TESTS	DRY UNIT WEIGHT (pcf)	MOISTURE CONTENT (%)	CORE RECOVERY (%)	R.Q.D. (%)	NUMBER OF BLOWS/12"	SAMPLE NUMBER	DEPTH IN FEET	GRAPHIC SYMBOL	U.S.C.S.	GEOTECHNICAL DESCRIPTION
						AUG-1	1			Top Soil, brown, clayey silt with organic material, loose, dry.
							2			Silty CLAY, brown, hard, moist.
							3			
		17.4			53	SPT-1	4			
							5			
						AUG-2	6			CL
							7			
							8			
		18.4			36	SPT-2	9			
							10			CL
						AUG-3	11			
							12			
							13			
		19.8			55	SPT-3	14			CL
							15			
							16			Boring terminated at 15 feet below ground surface Groundwater was not encountered.
							17			

SAMPLE TYPE

MC - Modified California SPT - Standard Penetration
CB - Core Barrel SH - Shelby Tube
AUG - Auger Cuttings D&M - Dames & Moore

OTHER LABORATORY TESTS

MD - Moisture/Density UC - Unconfined Compression
CON - Consolidation Test SG - Specific Gravity
PI - Atterberg Limits SA - Sieve Analysis

LOG OF BORING



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















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BORING 27303.10.GPJ BORING.GDT 5/18/07

BORING LOCATION: See Site Plan	DRILLER: PSC	BORING NO. B-9
BORING ELEVATION: 64.2	LOGGED BY: MGN	
DATE (S) DRILLED: 3/27/07	TYPE RIG: Diedrich (D-25)	

OTHER LAB TESTS	DRY UNIT WEIGHT (pcf)	MOISTURE CONTENT (%)	CORE RECOVERY (%)	R.Q.D. (%)	NUMBER OF BLOWS/12"	SAMPLE NUMBER	DEPTH IN FEET	GRAPHIC SYMBOL	U.S.C.S.	GEOTECHNICAL DESCRIPTION
						AUG-1	0			Top Soil, brown, clayey silt with organic material, loose, dry.
							1		63.2	Silty CLAY, brown, stiff, low to medium plasticity, moist.
							2			
							3			
					11	SPT-1	4			
							5		58.2	Silty CLAY, brown, very stiff, low plasticity, moist.
	24.1					AUG-2	6			
							7			
							8			
					21	SPT-2	9			
							10			
	24.3					AUG-3	11			
							12			
							13			
					22	SPT-3	14			
	27.8						15		49.2	Boring terminated at 15 feet below ground surface Groundwater was not encountered.
							16			
							17			

SAMPLE TYPE

MC - Modified California SPT - Standard Penetration
CB - Core Barrel SH - Shelby Tube
AUG - Auger Cuttings D&M - Dames & Moore

OTHER LABORATORY TESTS

MD - Moisture/Density UC - Unconfined Compression
CON - Consolidation Test SG - Specific Gravity
PI - Atterberg Limits SA - Sieve Analysis

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BORING 27303.10.GPJ BORING.GDT 5/18/07

BORING LOCATION: See Site Plan	DRILLER: PSC	BORING NO. B-10
BORING ELEVATION: 64.4	LOGGED BY: MGN	
DATE (S) DRILLED: 3/27/07	TYPE RIG: Diedrich (D-25)	

OTHER LAB TESTS	DRY UNIT WEIGHT (pcf)	MOISTURE CONTENT (%)	CORE RECOVERY (%)	R.Q.D. (%)	NUMBER OF BLOWS/12"	SAMPLE NUMBER	DEPTH IN FEET	GRAPHIC SYMBOL	U.S.C.S.	GEOTECHNICAL DESCRIPTION
						AUG-1	0			Top Soil, brown, clayey silt with organic material, loose, dry.
							1		63.4	Silty CLAY, brown, very stiff, low to medium plasticity, moist.
							2			
	6.2						3			
					17	SPT-1	4			
						AUG-2	5		CL	Silty CLAY, brown, hard, moist.
	22.0						6			
							7			
							8		56.4	
					41	SPT-2	9		CL	Silty CLAY, brown, very stiff, low to medium plasticity, moist.
						AUG-3	10			
	22.2						11		53.9	
							12			
							13		CL	Boring terminated at 15 feet below ground surface Groundwater was not encountered.
					20	SPT-3	14			
							15		49.4	
	29.7						16			
							17			

SAMPLE TYPE

MC - Modified California SPT - Standard Penetration
CB - Core Barrel SH - Shelby Tube
AUG - Auger Cuttings D&M - Dames & Moore

OTHER LABORATORY TESTS

MD - Moisture/Density UC - Unconfined Compression
CON - Consolidation Test SG - Specific Gravity
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















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BORING 2730310.GPJ BORING.GDT 5/18/07

BORING LOCATION: See Site Plan	DRILLER: PSC	BORING NO. B-11
BORING ELEVATION: 67.6	LOGGED BY: MGN	
DATE (S) DRILLED: 3/25/07	TYPE RIG: Diedrich (D-25)	

OTHER LAB TESTS	DRY UNIT WEIGHT (pcf)	MOISTURE CONTENT (%)	CORE RECOVERY (%)	R.Q.D. (%)	NUMBER OF BLOWS/12"	SAMPLE NUMBER	DEPTH IN FEET	GRAPHIC SYMBOL	U.S.C.S.	GEOTECHNICAL DESCRIPTION
						AUG-1	0			Top Soil, brown, clayey silt with organic material, loose, dry.
							1		66.6	Silty CLAY, brown, very stiff, low to medium plasticity, moist.
							2			
							3			
		22.7			16	SPT-1	4			
						AUG-2	5			
							6			
							7			
							8		CL	
		27.9			23	SPT-2	9			
						AUG-3	10			
							11			
							12			
							13			
		24.2			27	SPT-3	14			
							15		52.6	
							16			Boring terminated at 15 feet below ground surface Groundwater was not encountered.
							17			

SAMPLE TYPE

MC - Modified California SPT - Standard Penetration
 CB - Core Barrel SH - Shelby Tube
 AUG - Auger Cuttings D&M - Dames & Moore

OTHER LABORATORY TESTS

MD - Moisture/Density UC - Unconfined Compression
 CON - Consolidation Test SG - Specific Gravity
 PI - Atterberg Limits SA - Sieve Analysis

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BORING 2730310.GPJ BORING.GDT 5/18/07

BORING LOCATION: See Site Plan		DRILLER: PSC	BORING NO. B-12
BORING ELEVATION: 68.8		LOGGED BY: AA	
DATE (S) DRILLED: 3/26/07		TYPE RIG: Diedrich (D-25)	

OTHER LAB TESTS	DRY UNIT WEIGHT (pcf)	MOISTURE CONTENT (%)	CORE RECOVERY (%)	R.Q.D. (%)	NUMBER OF BLOWS/12"	SAMPLE NUMBER	DEPTH IN FEET	GRAPHIC SYMBOL	U.S.C.S.	GEOTECHNICAL DESCRIPTION
						AUG-1	0			Top Soil, brown, clayey silt with organic material, little gravel, loose, dry.
							1		67.8	Silty CLAY, brown, hard, moist.
		14.0					2		CL	
							3		65.8	Silty CLAY, brown, very hard, moist.
					75	SPT-1	4			
		17.4				AUG-2	5			
							6			
							7		CL	
							8			
					67	SPT-2	9			
		21.9				AUG-3	10			
							11			
							12		56.8	Silty CLAY, brown, hard, moist.
							13			
					31	SPT-3	14		CL	
		22.6					15		53.8	Boring terminated at 15 feet below ground surface Groundwater was not encountered.
							16			
							17			

SAMPLE TYPE				OTHER LABORATORY TESTS		
MC - Modified California	SPT - Standard Penetration	MD - Moisture/Density	UC - Unconfined Compression			
CB - Core Barrel	SH - Shelby Tube	CON - Consolidation Test	SG - Specific Gravity			
AUG - Auger Cuttings	D&M - Dames & Moore	PI - Atterberg Limits	SA - Sieve Analysis			

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 Geotechnical & Environmental Consultants Construction Management, Testing & Inspection	East Kapolei Phase II Development Study Area I Honouliuli, Ewa, Oahu, Hawaii	
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BORING 27303.10.GPJ BORING.GDT 5/18/07

BORING LOCATION: See Site Plan	DRILLER: PSC	BORING NO. B-13
BORING ELEVATION: 67.0	LOGGED BY: AA	
DATE (S) DRILLED: 3/26/07	TYPE RIG: Diedrich (D-25)	

OTHER LAB TESTS	DRY UNIT WEIGHT (pcf)	MOISTURE CONTENT (%)	CORE RECOVERY (%)	R.Q.D. (%)	NUMBER OF BLOWS/12"	SAMPLE NUMBER	DEPTH IN FEET	GRAPHIC SYMBOL	U.S.C.S.	GEOTECHNICAL DESCRIPTION
						AUG-1	1			Top Soil, brown, clayey silt with organic materials, loose, dry.
							2			Silty CLAY, brown, very stiff, low to medium plasticity, moist.
		36.3			24	SPT-1	4		CL	
		20.0				AUG-2	5			
							6			Silty CLAY, brown, hard, moist.
							7			
					37	SPT-2	9			
		24.0				AUG-3	10		CL	
							11			
							12			
					30/1"	SPT-3	14			
							15			CORAL, very dense.
		22.9					16			Boring terminated at 15 feet below ground surface Groundwater was not encountered.
							17			

SAMPLE TYPE		OTHER LABORATORY TESTS	
MC - Modified California SPT - Standard Penetration		MD - Moisture/Density	UC - Unconfined Compression
CB - Core Barrel	SH - Shelby Tube	CON - Consolidation Test	SG - Specific Gravity
AUG - Auger Cuttings	D&M - Dames & Moore	PI - Atterberg Limits	SA - Sieve Analysis

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Geotechnical & Environmental Consultants Construction Management, Testing & Inspection	East Kapolei Phase II Development Study Area I Honouliuli, Ewa, Oahu, Hawaii	
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BORING 27303.10.GPJ BORING.GDT 5/18/07

BORING LOCATION: See Site Plan	DRILLER: PSC	BORING NO. B-14
BORING ELEVATION: 76.0	LOGGED BY: MGN	
DATE (S) DRILLED: 3/24/07	TYPE RIG: Diedrich (D-25)	

OTHER LAB TESTS	DRY UNIT WEIGHT (pcf)	MOISTURE CONTENT (%)	CORE RECOVERY (%)	R.Q.D. (%)	NUMBER OF BLOWS/12"	SAMPLE NUMBER	DEPTH IN FEET	GRAPHIC SYMBOL	U.S.C.S.	GEOTECHNICAL DESCRIPTION
						AUG-1				Top Soil, brown, clayey silt with organic material, loose, dry.
							1			75.0
							2		CL	Silty CLAY, brown, very stiff, low to medium plasticity, moist.
							3			73.5
							4			Silty CLAY, brown, very hard, moist.
	17.4				48	SPT-1				
							5		CL	
						AUG-2	6			
							7			69.0
							8			Silty CLAY, brown, very stiff, low plasticity, moist.
	17.7				20	SPT-2				
							9			
						AUG-3	10			
							11		CL	
							12			
	23.6				29	SPT-3				
							13			
							14			
							15			61.0
							16			Boring terminated at 15 feet below ground surface Groundwater was not encountered.
							17			

SAMPLE TYPE

MC - Modified California SPT - Standard Penetration
CB - Core Barrel SH - Shelby Tube
AUG - Auger Cuttings D&M - Dames & Moore

OTHER LABORATORY TESTS

MD - Moisture/Density UC - Unconfined Compression
CON - Consolidation Test SG - Specific Gravity
PI - Atterberg Limits SA - Sieve Analysis

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BORING 2730310.GPJ BORING.GDT 5/18/07

BORING LOCATION: See Site Plan	DRILLER: PSC	BORING NO. B-15
BORING ELEVATION: 67.2	LOGGED BY: MGN	
DATE (S) DRILLED: 3/24/07	TYPE RIG: Diedrich (D-25)	

OTHER LAB TESTS	DRY UNIT WEIGHT (pcf)	MOISTURE CONTENT (%)	CORE RECOVERY (%)	R.Q.D. (%)	NUMBER OF BLOWS/12"	SAMPLE NUMBER	DEPTH IN FEET	GRAPHIC SYMBOL	U.S.C.S.	GEOTECHNICAL DESCRIPTION
						AUG-1	0		66.5	Top Soil, brown, clayey silt with organic material, loose, dry.
							1			Silty CLAY, brown, hard, moist.
							2			
							3			
		18.2			46	SPT-1	4			
						AUG-2	5			
							6			
							7			
							8			
		20.7			41	SPT-2	9			
						AUG-3	10			
							11			
							12			
							13		54.7	Silty CLAY, brown, very hard, moist.
		24.7			58	SPT-3	14			
							15		52.2	Boring terminated at 15 feet below ground surface Groundwater was not encountered.
							16			
							17			

SAMPLE TYPE

MC - Modified California SPT - Standard Penetration
CB - Core Barrel SH - Shelby Tube
AUG - Auger Cuttings D&M - Dames & Moore

OTHER LABORATORY TESTS

MD - Moisture/Density UC - Unconfined Compression
CON - Consolidation Test SG - Specific Gravity
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BORING LOCATION: See Site Plan		DRILLER: PSC	BORING NO. B-16
BORING ELEVATION: 69.2		LOGGED BY: AA	
DATE (S) DRILLED: 3/27/07		TYPE RIG: Diedrich (D-25)	









OTHER LAB TESTS	DRY UNIT WEIGHT (pcf)	MOISTURE CONTENT (%)	CORE RECOVERY (%)	R.Q.D. (%)	NUMBER OF BLOWS/12"	SAMPLE NUMBER	DEPTH IN FEET	GRAPHIC SYMBOL	U.S.C.S.	GEOTECHNICAL DESCRIPTION
						AUG-1	1			Top Soil, brown, clayey silt with organic material, loose, dry.
							2		CL	Silty CLAY, brown, very stiff, low plasticity, moist.
							3			Silty CLAY, brown, hard, moist.
					36	SPT-1	4			
		19.1				AUG-2	5			
							6			
							7			
							8			
					42	SPT-2	9		CL	
		23.8				AUG-3	10			
							11			
							12			
							13			
					45	SPT-3	14			
		17.8					15			Boring terminated at 15 feet below ground surface Groundwater was not encountered.
							16			
							17			

SAMPLE TYPE				OTHER LABORATORY TESTS		
MC - Modified California	SPT - Standard Penetration	MD - Moisture/Density	UC - Unconfined Compression			
CB - Core Barrel	SH - Shelby Tube	CON - Consolidation Test	SG - Specific Gravity			
AUG - Auger Cuttings	D&M - Dames & Moore	PI - Atterberg Limits	SA - Sieve Analysis			

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BORING LOCATION: See Site Plan	DRILLER: PSC	BORING NO. B-17
BORING ELEVATION: 71.3	LOGGED BY: MGN	
DATE (S) DRILLED: 3/25/07	TYPE RIG: Diedrich (D-25)	

OTHER LAB TESTS	DRY UNIT WEIGHT (pcf)	MOISTURE CONTENT (%)	CORE RECOVERY (%)	R.Q.D. (%)	NUMBER OF BLOWS/12"	SAMPLE NUMBER	DEPTH IN FEET	GRAPHIC SYMBOL	U.S.C.S.	GEOTECHNICAL DESCRIPTION
						AUG-1	0			Top Soil, brown, clayey silt with organic material, loose, dry.
							1		70.3	Silty CLAY, brown, very stiff, low plasticity, moist.
							2			
							3			
		23.4			22	SPT-1	4			
						AUG-2	5			
							6			
							7			
							8		CL	
		25.1			30	SPT-2	9			
						AUG-3	10			
							11			
							12			
							13			
		24.9			25	SPT-3	14			
							15		56.3	Boring terminated at 15 feet below ground surface Groundwater was not encountered.
							16			
							17			

SAMPLE TYPE

MC - Modified California SPT - Standard Penetration
 CB - Core Barrel SH - Shelby Tube
 AUG - Auger Cuttings D&M - Dames & Moore

OTHER LABORATORY TESTS

MD - Moisture/Density UC - Unconfined Compression
 CON - Consolidation Test SG - Specific Gravity
 PI - Atterberg Limits SA - Sieve Analysis

LOG OF BORING



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







East Kapolei Phase II Development
 Study Area I
 Honouliuli, Ewa, Oahu, Hawaii

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BORING 27303.10.GPJ BORING.GDT 5/15/07

BORING LOCATION: See Site Plan	DRILLER: PSC	BORING NO. B-18
BORING ELEVATION: 72.8	LOGGED BY: MGN	
DATE (S) DRILLED: 3/25/07	TYPE RIG: Diedrich (D-25)	

OTHER LAB TESTS	DRY UNIT WEIGHT (pcf)	MOISTURE CONTENT (%)	CORE RECOVERY (%)	R.Q.D. (%)	NUMBER OF BLOWS/12"	SAMPLE NUMBER	DEPTH IN FEET	GRAPHIC SYMBOL	U.S.C.S.	GEOTECHNICAL DESCRIPTION
						AUG-1				Top Soil, brown, clayey silt with organic material, loose, slightly moist.
							1		71.8	Silty CLAY, brown, very stiff, low plasticity, moist.
							2			
							3			
		24.0			20	SPT-1	4			
						AUG-2	5			
							6			
							7			
							8			
		24.9			27	SPT-2	9			
						AUG-3	10			
							11			
							12			
							13			
		25.0			28	SPT-3	14			
							15		57.8	
							16			Boring terminated at 15 feet below ground surface Groundwater was not encountered.
							17			

SAMPLE TYPE

MC - Modified California SPT - Standard Penetration
 CB - Core Barrel SH - Shelby Tube
 AUG - Auger Cuttings D&M - Dames & Moore

OTHER LABORATORY TESTS

MD - Moisture/Density UC - Unconfined Compression
 CON - Consolidation Test SG - Specific Gravity
 PI - Atterberg Limits SA - Sieve Analysis

LOG OF BORING



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East Kapolei Phase II Development
 Study Area I
 Honouliuli, Ewa, Oahu, Hawaii

DATE: May 2007

PROJECT NO.: 27303.10

BORING 27303.10.GPJ BORING.GDT 5/18/07

BORING LOCATION: See Site Plan	DRILLER: PSC	BORING NO. B-19
BORING ELEVATION: 75.1	LOGGED BY: MGN	
DATE (S) DRILLED: 3/25/07	TYPE RIG: Diedrich (D-25)	

OTHER LAB TESTS	DRY UNIT WEIGHT (pcf)	MOISTURE CONTENT (%)	CORE RECOVERY (%)	R.Q.D. (%)	NUMBER OF BLOWS/12"	SAMPLE NUMBER	DEPTH IN FEET	GRAPHIC SYMBOL	U.S.C.S.	GEOTECHNICAL DESCRIPTION
						AUG-1	1			Top Soil, brown, clayey silt, dry.
							2			Silty CLAY, brown, very stiff, low to medium plasticity, moist.
							3			
		23.3			17	SPT-1	4			
						AUG-2	5			
							6			
							7			
							8		CL	
		24.9			28	SPT-2	9			
						AUG-3	10			
							11			
							12			
							13			
		23.4			24	SPT-3	14			
							15			Boring terminated at 15 feet below ground surface Groundwater was not encountered.
							16			
							17			

SAMPLE TYPE

MC - Modified California SPT - Standard Penetration
CB - Core Barrel SH - Shelby Tube
AUG - Auger Cuttings D&M - Dames & Moore

OTHER LABORATORY TESTS

MD - Moisture/Density UC - Unconfined Compression
CON - Consolidation Test SG - Specific Gravity
PI - Atterberg Limits SA - Sieve Analysis

LOG OF BORING



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BORING 2730310.GPJ BORING.GDT 5/18/07

BORING LOCATION: See Site Plan	DRILLER: PSC	BORING NO. B-20
BORING ELEVATION: 78.3	LOGGED BY: MGN	
DATE (S) DRILLED: 3/25/07	TYPE RIG: Diedrich (D-25)	

OTHER LAB TESTS	DRY UNIT WEIGHT (pcf)	MOISTURE CONTENT (%)	CORE RECOVERY (%)	R.Q.D. (%)	NUMBER OF BLOWS/12"	SAMPLE NUMBER	DEPTH IN FEET	GRAPHIC SYMBOL	U.S.C.S.	GEOTECHNICAL DESCRIPTION
						AUG-1	1	CL		Silty CLAY, brown, stiff, slightly moist.
							2			
							3			
		26.6			13	SPT-1	4			
						AUG-2	5	CL		Silty CLAY, brown, very stiff, low to medium plasticity, moist.
							6		72.3	
							7			
							8			
		24.5			23	SPT-2	9	CL		
							10			
						AUG-3	11			
							12			
							13	CL		
							14			
		22.0			28	SPT-3	15		63.3	
							16			
							17			Boring terminated at 15 feet below ground surface Groundwater was not encountered.

SAMPLE TYPE

MC - Modified California SPT - Standard Penetration
 CB - Core Barrel SH - Shelby Tube
 AUG - Auger Cuttings D&M - Dames & Moore

OTHER LABORATORY TESTS

MD - Moisture/Density UC - Unconfined Compression
 CON - Consolidation Test SG - Specific Gravity
 PI - Atterberg Limits SA - Sieve Analysis

LOG OF BORING



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DATE: May 2007

PROJECT NO.: 27303.10

BORING 2730310.GPJ BORING.GDT 5/18/07

BORING LOCATION: See Site Plan	DRILLER: PSC	BORING NO. B-21
BORING ELEVATION: 77.6	LOGGED BY: MGN	
DATE (S) DRILLED: 3/25/07	TYPE RIG: Diedrich (D-25)	

OTHER LAB TESTS	DRY UNIT WEIGHT (pcf)	MOISTURE CONTENT (%)	CORE RECOVERY (%)	R.Q.D. (%)	NUMBER OF BLOWS/12"	SAMPLE NUMBER	DEPTH IN FEET	GRAPHIC SYMBOL	U.S.C.S.	GEOTECHNICAL DESCRIPTION
						AUG-1	0			Top Soil, brown, clayey silt with organic material, loose, dry.
							1		76.6	
							2			Silty CLAY, brown, very stiff, low to medium plasticity, moist.
							3		CL	
		23.2			19	SPT-1	4			
							5		72.6	Silty CLAY, brown, very hard, moist.
						AUG-2	6			
							7		CL	
							8			
		21.1			34	SPT-2	9			
							10		67.6	Silty CLAY, brown, very stiff, low to medium plasticity, moist.
						AUG-3	11			
							12		CL	
							13			
		26.8			27	SPT-3	14			
							15		62.6	Boring terminated at 15 feet below ground surface Groundwater was not encountered.
							16			
							17			

SAMPLE TYPE

MC - Modified California SPT - Standard Penetration
CB - Core Barrel SH - Shelby Tube
AUG - Auger Cuttings D&M - Dames & Moore

OTHER LABORATORY TESTS

MD - Moisture/Density UC - Unconfined Compression
CON - Consolidation Test SG - Specific Gravity
PI - Atterberg Limits SA - Sieve Analysis

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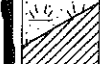














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BORING 2730310.GPJ BORING.GDT 5/18/07

BORING LOCATION: See Site Plan	DRILLER: PSC	BORING NO. B-22
BORING ELEVATION: 76.3	LOGGED BY: AA	
DATE (S) DRILLED: 3/27/07	TYPE RIG: Diedrich (D-25)	

OTHER LAB TESTS	DRY UNIT WEIGHT (pcf)	MOISTURE CONTENT (%)	CORE RECOVERY (%)	R.Q.D. (%)	NUMBER OF BLOWS/12"	SAMPLE NUMBER	DEPTH IN FEET	GRAPHIC SYMBOL	U.S.C.S.	GEOTECHNICAL DESCRIPTION
						AUG-1	0			Top Soil, brown, clayey silt with organic material, loose, dry.
							1		75.3	Silty CLAY, brown, very stiff, low to medium plasticity, moist.
							2			
							3			
					30	SPT-1	4			
	20.3					AUG-2	5			CL
							6			
							7			
							8			
					17	SPT-2	9			CL
	24.5					AUG-3	10			
							11			
							12		64.3	
							13			Silty CLAY, some coral gravel, brown, very stiff, low to medium plasticity, moist.
					20	SPT-3	14			
	24.9						15		61.3	Boring terminated at 15 feet below ground surface Groundwater was not encountered.
							16			
							17			

SAMPLE TYPE

MC - Modified California SPT - Standard Penetration
 CB - Core Barrel SH - Shelby Tube
 AUG - Auger Cuttings D&M - Dames & Moore

OTHER LABORATORY TESTS

MD - Moisture/Density UC - Unconfined Compression
 CON - Consolidation Test SG - Specific Gravity
 PI - Atterberg Limits SA - Sieve Analysis

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PROJECT NO.: 27303.10

BORING LOCATION: See Site Plan		DRILLER: PSC	BORING NO. TP-1
BORING ELEVATION: 69.0		LOGGED BY: AA	
DATE (S) DRILLED: 4/25/07		TYPE RIG:	

OTHER LAB TESTS	DRY UNIT WEIGHT (pcf)	MOISTURE CONTENT (%)	CORE RECOVERY (%)	R.Q.D. (%)	NUMBER OF BLOWS/12"	SAMPLE NUMBER	DEPTH IN FEET	GRAPHIC SYMBOL	U.S.C.S.	GEOTECHNICAL DESCRIPTION
										Clayey SILT, brown, clayey silt with organic material, loose, dry.
							1		MH	
										67.8
							2		CL	Silty CLAY, brown, stiff, low to medium plasticity, slightly moist.
							3			
										65.5
							4			Test Pit terminated at approximately 3.5 feet below ground surface Groundwater was not encountered.


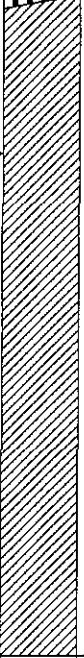

SAMPLE TYPE		OTHER LABORATORY TESTS	
MC - Modified California SPT - Standard Penetration		MD - Moisture/Density	UC - Unconfined Compression
CB - Core Barrel	SH - Shelby Tube	CON - Consolidation Test	SG - Specific Gravity
AUG - Auger Cuttings	D&M - Dames & Moore	PI - Atterberg Limits	SA - Sieve Analysis

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 Geotechnical & Environmental Consultants Construction Management, Testing & Inspection	East Kapolei Phase II Development Study Area I Honouliuli, Ewa, Oahu, Hawaii	
	DATE: May 2007	PROJECT NO.: 27303.10

BORING 2730310.GPJ BORING.GDT 5/18/07

BORING: 2730310.GPJ BORING.GDT 5/18/07

BORING LOCATION: See Site Plan					DRILLER: PSC					BORING NO. TP-2	
BORING ELEVATION: 65.0					LOGGED BY: AA						
DATE (S) DRILLED: 4/25/07					TYPE RIG:						
OTHER LAB TESTS	DRY UNIT WEIGHT (pcf)	MOISTURE CONTENT (%)	CORE RECOVERY (%)	R.Q.D. (%)	NUMBER OF BLOWS/12"	SAMPLE NUMBER	DEPTH IN FEET	GRAPHIC SYMBOL	U.S.C.S.	GEOTECHNICAL DESCRIPTION	
							1	 MH		Clayey SILT, brown, clayey silt with organic material, loose, dry.	
							2		 CL	63.8	Silty CLAY, brown, stiff, low to medium plasticity, moist.
							3				
							4			Test Pit terminated at approximately 3.5 below ground surface Groundwater not encountered.	
SAMPLE TYPE MC - Modified California SPT - Standard Penetration CB - Core Barrel SH - Shelby Tube AUG - Auger Cuttings D&M - Dames & Moore					OTHER LABORATORY TESTS MD - Moisture/Density UC - Unconfined Compression CON - Consolidation Test SG - Specific Gravity PI - Atterberg Limits SA - Sieve Analysis						
LOG OF BORING											
 Geotechnical & Environmental Consultants Construction Management, Testing & Inspection					East Kapolei Phase II Development Study Area I Honouliuli, Ewa, Oahu, Hawaii						
					DATE: May 2007			PROJECT NO.: 27303.10			

BORING LOCATION: See Site Plan		DRILLER: PSC	BORING NO. TP-3
BORING ELEVATION: 71.8		LOGGED BY: AA	
DATE (S) DRILLED: 4/17/07		TYPE RIG:	

OTHER LAB TESTS	DRY UNIT WEIGHT (pcf)	MOISTURE CONTENT (%)	CORE RECOVERY (%)	R.Q.D. (%)	NUMBER OF BLOWS/12"	SAMPLE NUMBER	DEPTH IN FEET	GRAPHIC SYMBOL	U.S.C.S.	GEOTECHNICAL DESCRIPTION
										Silty CLAY, brown, loose, dry.
							1		CL	
										70.8
										Silty CLAY, brown, stiff, slightly moist.
							2		CL	
							3			
										68.3
							4			Test Pit terminated at approximately 3.5 feet below ground surface Groundwater was not encountered.

SAMPLE TYPE				OTHER LABORATORY TESTS			
MC - Modified California	SPT - Standard Penetration	MD - Moisture/Density	UC - Unconfined Compression	CB - Core Barrel	SH - Shelby Tube	CON - Consolidation Test	SG - Specific Gravity
AUG - Auger Cuttings	D&M - Dames & Moore	PI - Atterberg Limits	SA - Sieve Analysis				

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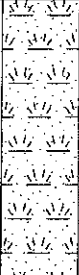
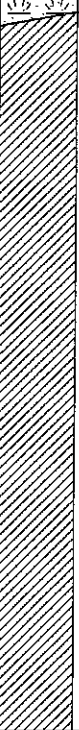
East Kapolei Phase II Development
Study Area I
Honouliuli, Ewa, Oahu, Hawaii

DATE: May 2007

PROJECT NO.: 27303.10

BORING 27303.10.GPJ BORING.GDT 5/18/07

BORING LOCATION: See Site Plan	DRILLER: PSC	BORING NO. TP-4
BORING ELEVATION: 63.7	LOGGED BY: AA	
DATE (S) DRILLED: 4/17/07	TYPE RIG:	

OTHER LAB TESTS	DRY UNIT WEIGHT (pcf)	MOISTURE CONTENT (%)	CORE RECOVERY (%)	R.Q.D. (%)	NUMBER OF BLOWS/12"	SAMPLE NUMBER	DEPTH IN FEET	GRAPHIC SYMBOL	U.S.C.S.	GEOTECHNICAL DESCRIPTION
										Top Soil, brown, clayey silt with organic material, loose, dry.
							1		62.7	Silty CLAY, brown, stiff, slightly moist.
							2			
							3			
							4			Test Pit terminated at approximately 3.5 feet below ground surface Groundwater not encountered

SAMPLE TYPE		OTHER LABORATORY TESTS	
MC - Modified California SPT - Standard Penetration		MD - Moisture/Density	UC - Unconfined Compression
CB - Core Barrel	SH - Shelby Tube	CON - Consolidation Test	SG - Specific Gravity
AUG - Auger Cuttings	D&M - Dames & Moore	PI - Atterberg Limits	SA - Sieve Analysis

LOG OF BORING



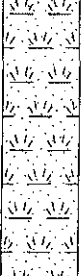

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East Kapolei Phase II Development
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PROJECT NO.: 27303.10

BORING LOCATION: See Site Plan	DRILLER: PSC	BORING NO. TP-5
BORING ELEVATION: 75.0	LOGGED BY: MGN	
DATE (S) DRILLED: 4/16/07	TYPE RIG:	

OTHER LAB TESTS	DRY UNIT WEIGHT (pcf)	MOISTURE CONTENT (%)	CORE RECOVERY (%)	R.Q.D. (%)	NUMBER OF BLOWS/12"	SAMPLE NUMBER	DEPTH IN FEET	GRAPHIC SYMBOL	U.S.C.S.	GEOTECHNICAL DESCRIPTION
										Top Soil, brown, clayey silt with some organic material, loose, dry.
							1		74.0	Silty CLAY, brown, stiff, low to medium plasticity, slightly moist.
							2			
							3			
							4			Test Pit terminated at approximately 3.5 feet below ground surface Groundwater was not encountered.

SAMPLE TYPE		OTHER LABORATORY TESTS	
MC - Modified California	SPT - Standard Penetration	MD - Moisture/Density	UC - Unconfined Compression
CB - Core Barrel	SH - Shelby Tube	CON - Consolidation Test	SG - Specific Gravity
AUG - Auger Cuttings	D&M - Dames & Moore	PI - Atterberg Limits	SA - Sieve Analysis

LOG OF BORING



Geotechnical & Environmental
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East Kapolei Phase II Development
Study Area I
Honouliuli, Ewa, Oahu, Hawaii

DATE: May 2007

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SOIL CLASSIFICATION CHART

MAJOR DIVISIONS			SYMBOLS		TYPICAL DESCRIPTIONS
			GRAPH	LETTER	
COARSE GRAINED SOILS MORE THAN 50% OF MATERIAL IS LARGER THAN NO. 200 SIEVE SIZE	GRAVEL AND GRAVELLY SOILS MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	CLEAN GRAVELS (LITTLE OR NO FINES)		GW	WELL-GRADED GRAVELS, GRAVEL - SAND MIXTURES, LITTLE OR NO FINES
				GP	POORLY-GRADED GRAVELS, GRAVEL - SAND MIXTURES, LITTLE OR NO FINES
		GRAVELS WITH FINES (APPRECIABLE AMOUNT OF FINES)		GM	SILTY GRAVELS, GRAVEL - SAND - SILT MIXTURES
				GC	CLAYEY GRAVELS, GRAVEL - SAND - CLAY MIXTURES
	SAND AND SANDY SOILS 50% OR MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE	CLEAN SANDS (LITTLE OR NO FINES)		SW	WELL-GRADED SANDS, GRAVELLY SANDS, LITTLE OR NO FINES
				SP	POORLY-GRADED SANDS, GRAVELLY SAND, LITTLE OR NO FINES
		SANDS WITH FINES (APPRECIABLE AMOUNT OF FINES)		SM	SILTY SANDS, SAND - SILT MIXTURES
				SC	CLAYEY SANDS, SAND - CLAY MIXTURES
FINE GRAINED SOILS 50 % OR MORE THAN 50% OF MATERIAL IS SMALLER THAN NO. 200 SIEVE SIZE	SILTS AND CLAYS LIQUID LIMIT LESS THAN 50			ML	INORGANIC SILTS AND VERY FINE SANDS, ROCK FLOUR, SILTY OR CLAYEY FINE SANDS OR CLAYEY SILTS WITH SLIGHT PLASTICITY
				CL	INORGANIC CLAYS OF LOW TO MEDIUM PLASTICITY, GRAVELLY CLAYS, SANDY CLAYS, SILTY CLAYS, LEAN CLAYS
				OL	ORGANIC SILTS AND ORGANIC SILTY CLAYS OF LOW PLASTICITY
	SILTS AND CLAYS LIQUID LIMIT GREATER THAN OR EQUAL TO 50			MH	INORGANIC SILTS, MICACEOUS OR DIATOMACEOUS FINE SAND OR SILTY SOILS
				CH	INORGANIC CLAYS OF HIGH PLASTICITY
				OH	ORGANIC CLAYS OF MEDIUM TO HIGH PLASTICITY, ORGANIC SILTS
				PT	PEAT, HUMUS, SWAMP SOILS WITH HIGH ORGANIC CONTENTS
HIGHLY ORGANIC SOILS					

UNIFIED SOIL CLASSIFICATION SYSTEM



CONSULTANTS, LLC
SOILS, FOUNDATION, AND GEOLOGICAL ENGINEERS

East Kapolei Phase II Development

Study Area I

Honouliuli, Ewa, Oahu Hawaii

DATE: May 2007

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PLATE NO. 31-A

I. CONSOLIDATION OF SEDIMENTARY ROCKS; usually determined from unweathered samples. Largely dependent on cementation.

U = unconsolidated

P = poorly consolidated

M = moderately consolidated

W = well consolidated

II. BEDDING OF SEDIMENTARY ROCKS

Splitting Property	Thickness	Stratification
Massive	Greater than 4.0 ft.	Very Thick-Bedded
Blocky	2.0 to 4.0 ft.	Thick-Bedded
Slabby	0.2 to 2.0 ft.	Thin-Bedded
Flaggy	0.05 to 0.2 ft.	Very Thin-Bedded
Shaly or Platy	0.01 to 0.05 ft.	Laminated
Papery	Less than 0.01 ft.	Thinly Laminated

III. FRACTURING

Intensity	Size of Pieces in Feet
Very Little Fractured	Greater than 4.0
Occasionally Fractured	1.0 to 4.0
Moderately Fractured	0.5 to 1.0
Closely Fractured	0.1 to 0.5
Intensely Fractured	0.05 to 0.1
Crushed	Less than 0.05

IV. HARDNESS

1. Soft – reserved for plastic material alone.
2. Low Hardness – can be gouged deeply or carved easily with a knife blade.
3. Moderately Hard – can be readily scratched by a knife blade; scratch leaves a heavy trace of dust and is readily visible after the powder has been blown away.
4. Hard – can be scratched with difficulty; scratch produces little powder and is often faintly visible.
5. Very Hard – cannot be scratched with a knife blade; leaves a metallic streak.

V. STRENGTH

1. Plastic or very low strength.
2. Friable – crumbles easily by rubbing with fingers.
3. Weak – an unfractured specimen of such material will crumble under light hammer blows.
4. Moderately Strong – specimen will withstand a few heavy hammer blows before breaching.
5. Strong – specimen will withstand a few heavy ringing hammer blows and will yield with difficulty only dust and small flying fragments.
6. Very Strong – specimen will resist heavy ringing hammer blows and will yield with difficulty only dust and small flying fragments.

VI. WEATHERING – The physical and chemical disintegration and decomposition of rocks and minerals by natural processes such as oxidation, reduction, hydration, solution, carbonation and freezing and thawing.

- D. Deep – moderate to complete mineral decomposition; extensive disintegration; deep and thorough discoloration; many fractures, all extensively coated or filled with oxides, carbonates and/or clay or silt.
- M. Moderate – slight change or partial decomposition of minerals; little disintegration; cementation little to unaffected; moderate to occasionally intense discoloration; moderately coated fractures.
- L. Little – no megascopic decomposition of minerals; little or no affect on normal cementation; slight and intermittent, or localized discoloration; few stains on fracture surfaces.
- F. Fresh – unaffected by weathering agents; no disintegration or discoloration; fractures usually less numerous than joints.

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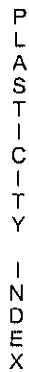
SOILS, FOUNDATION, AND GEOLOGICAL ENGINEERS

East Kapolei II Development, Study Area I

Honouliuli, Ewa, Oahu, Hawaii

DATE: May 2007

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SOILS, FOUNDATION, AND GEOLOGICAL ENGINEERS

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ATTERBERG LIMITS DATA



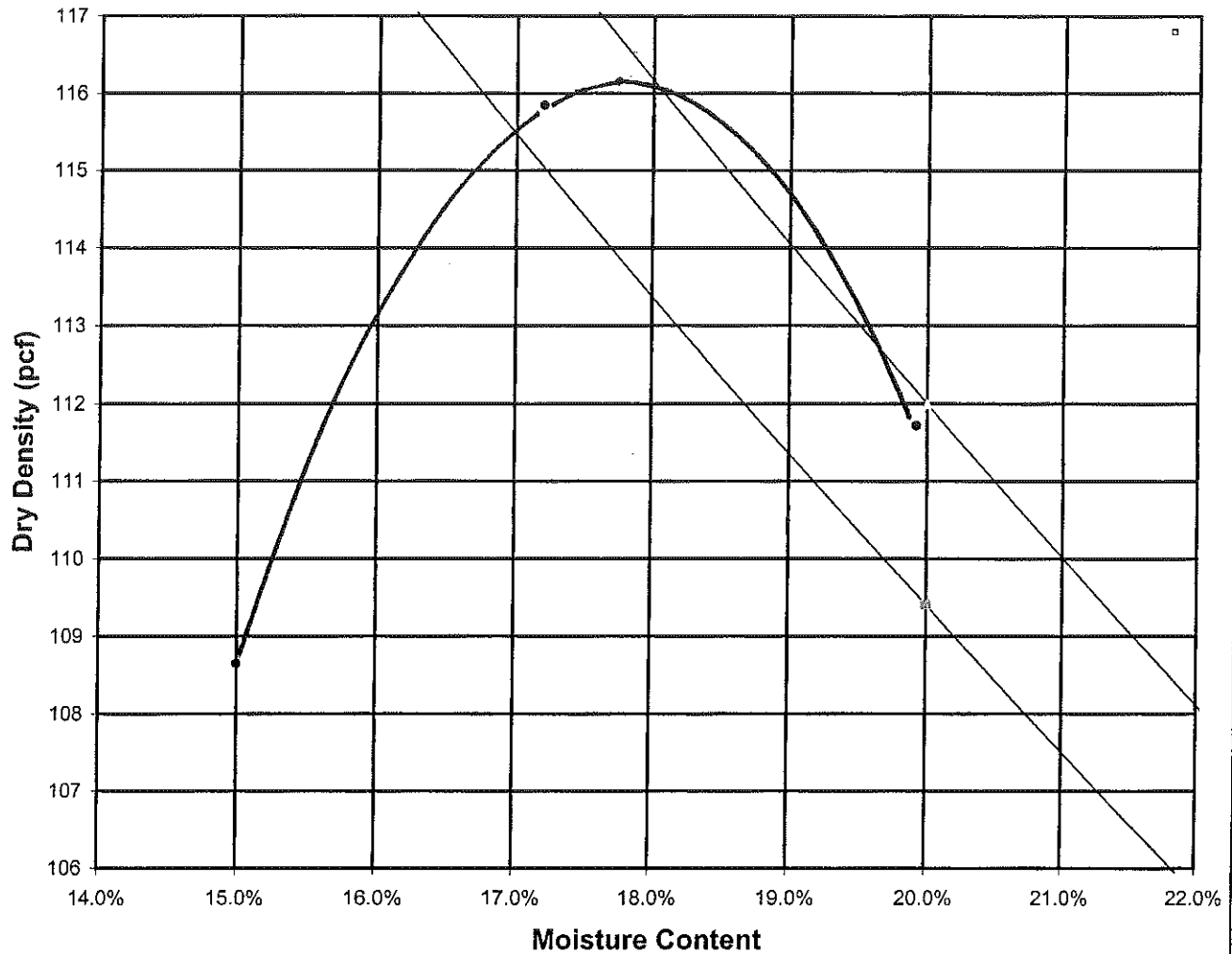
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SOILS, FOUNDATION, AND GEOLOGICAL ENGINEERS

East Kapolei Phase II Development
Study Area I
Honouliuli, Ewa, Oahu, Hawaii

Date: May 2007

Project No.: 27303.10

MOISTURE-DENSITY RELATIONSHIP



Sample Source: E.Kapolei Phase II TP-1 Description: silty sandy brownish CLAY

	Test Point 1	Test Point 2	Test Point 3	Test Point 4
Wet Density (pcf)	124.94	135.77	133.97	
Moisture Content	15.00%	17.20%	19.92%	
Dry Density (pcf)	108.65	115.85	111.72	

Maximum Dry Density (pcf): 116.2
 Optimum Moisture Content (%): 17.75%
 Test Method: ASTM D-1557

Atterberg Limits
LL PL PI

COMPACTION TEST RESULTS ASTM D-1557



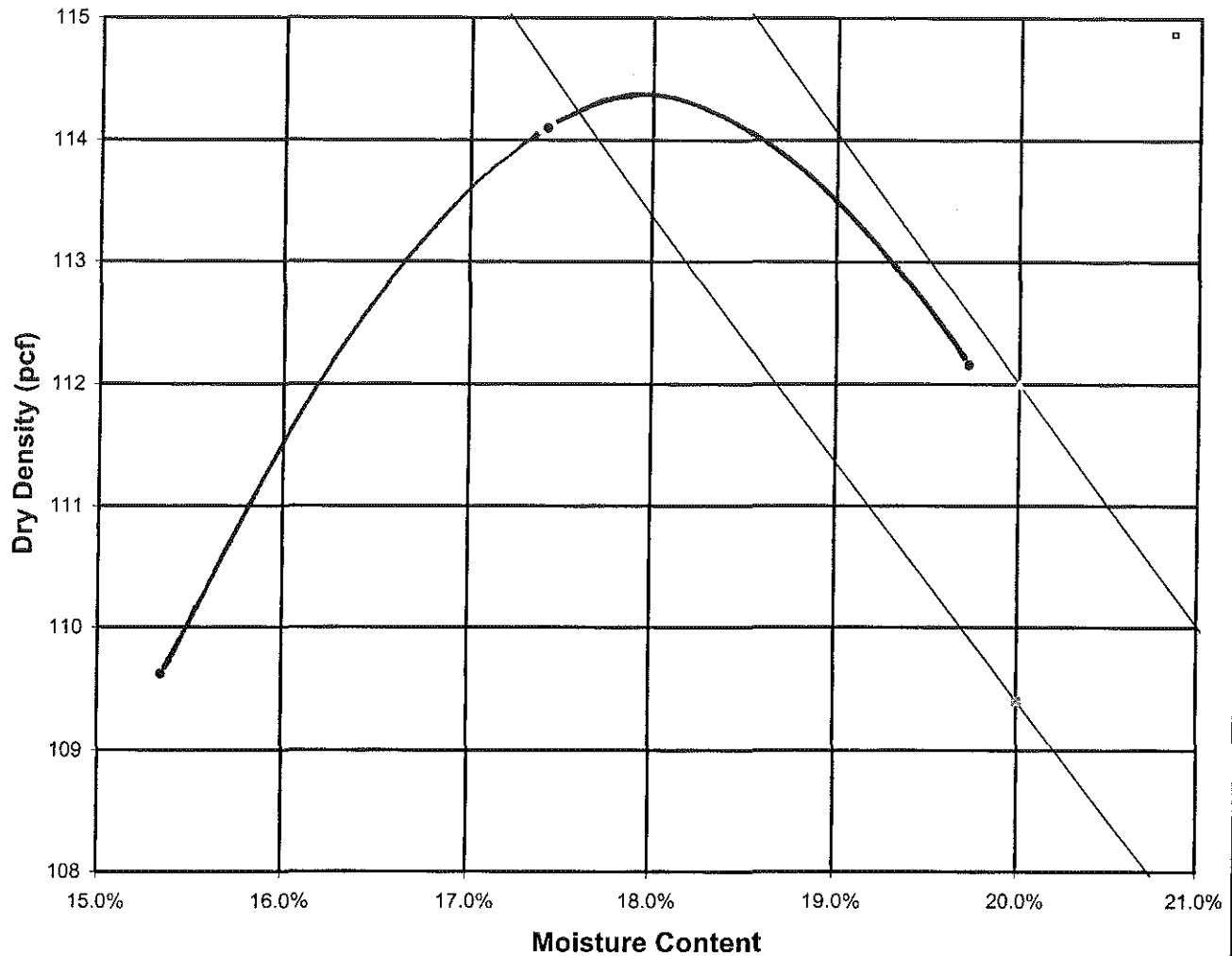
PSC Consultants, LLC
 SOILS, FOUNDATION, AND GEOLOGICAL ENGINEERS

East Kapolei Phase II Dev. Mon.
 Moisture Density Relationship
 East Kapolei Oahu, Hawaii

Date: April 27, 2007

Project No. 27303.10

MOISTURE-DENSITY RELATIONSHIP



Sample Source: E.Kapolei Phase II TP-2 Description: silty sandy brownish CLAY

	Test Point 1	Test Point 2	Test Point 3	Test Point 4
Wet Density (pcf)	126.44	133.97	134.27	
Moisture Content	15.35%	17.42%	19.72%	
Dry Density (pcf)	109.62	114.10	112.16	

Maximum Dry Density (pcf): 114.5
 Optimum Moisture Content (%): 17.90%
 Test Method: ASTM D-1557

Atterberg Limits

LL

PL

PI

COMPACTION TEST RESULTS

ASTM D-1557



PSC Consultants, LLC

SOILS, FOUNDATION, AND GEOLOGICAL ENGINEERS

East Kapolei Phase II Dev. Mon.

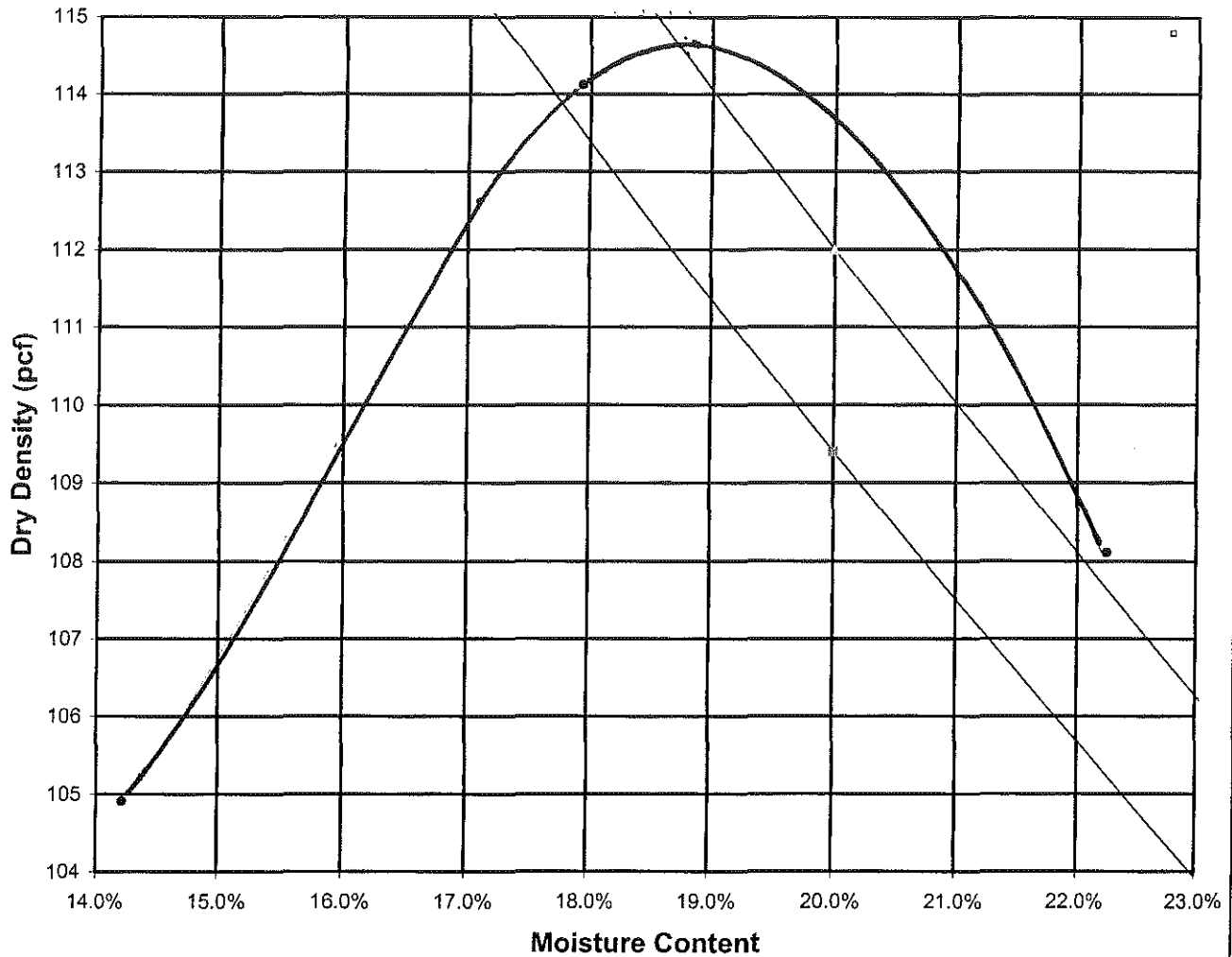
Moisture Density Relationship

East Kapolei Oahu, Hawaii

Date: April 30, 2007

Project No. 27303.10

MOISTURE-DENSITY RELATIONSHIP



Sample Source: E.Kapolei Phase II TP-3 Description: Silty, Sandy, CLAY

	Test Point 1	Test Point 2	Test Point 3	Test Point 4
Wet Density (pcf)	119.82	134.58	132.16	
Moisture Content	14.22%	17.93%	22.25%	
Dry Density (pcf)	104.91	114.12	108.11	

Maximum Dry Density (pcf): 114.75
 Optimum Moisture Content (%): 18.8%
 Test Method: ASTM D-1557

Atterberg Limits

LL

PL

PI

COMPACTION TEST RESULTS ASTM D-1557



PSC Consultants, LLC

SOILS, FOUNDATION, AND GEOLOGICAL ENGINEERS

East Kapolei Phase II Dev. Mon.

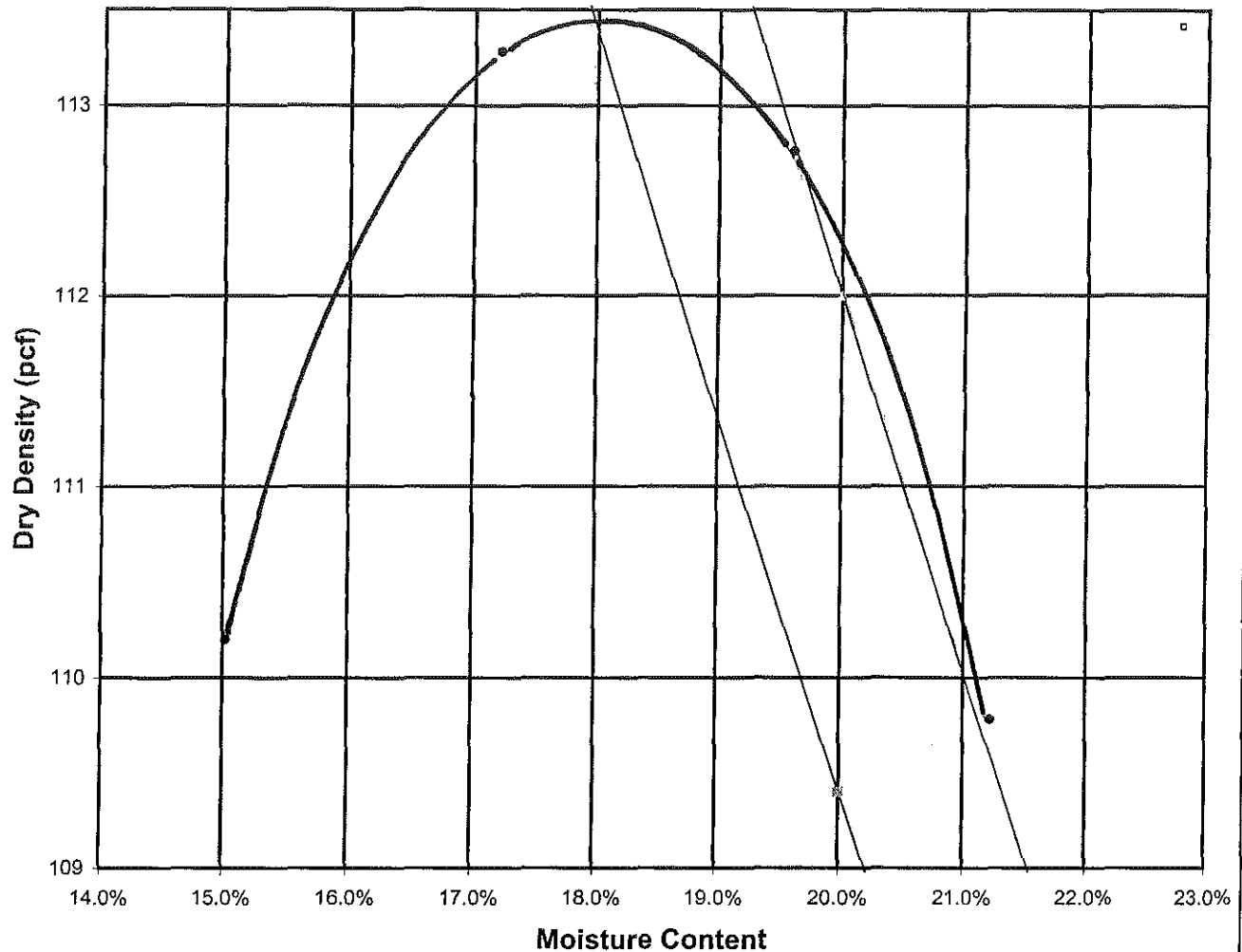
Moisture Density Relationship

East Kapolei Oahu, Hawaii

Date: April 23, 2007

Project No. 27303.10

MOISTURE-DENSITY RELATIONSHIP



Sample Source: E.Kapolei Phase II TP-4

Description: silty sandy brownish CLAY

	Test Point 1	Test Point 2	Test Point 3	Test Point 4
Wet Density (pcf)	126.75	132.77	134.87	133.07
Moisture Content	15.02%	17.21%	19.61%	21.22%
Dry Density (pcf)	110.20	113.28	112.76	109.78

Maximum Dry Density (pcf): 113.4
 Optimum Moisture Content (%): 17.90%
 Test Method: ASTM D-1557

Atterberg Limits

LL

PL

PI

COMPACTION TEST RESULTS

ASTM D-1557



PSC Consultants, LLC

SOILS, FOUNDATION, AND GEOLOGICAL ENGINEERS

East Kapolei Phase II Dev. Mon.

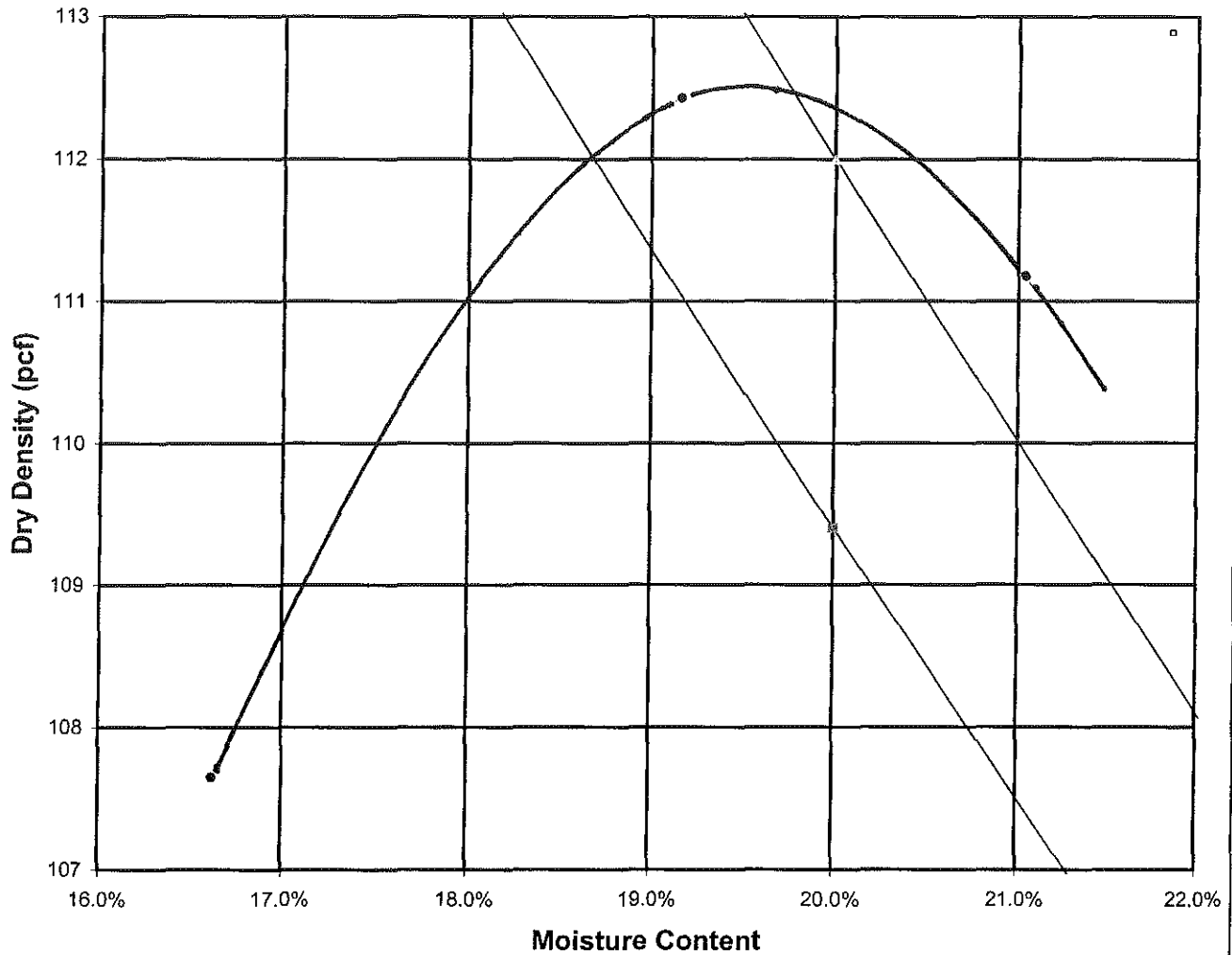
Moisture Density Relationship

East Kapolei Oahu, Hawaii

Date: April 24, 2007

Project No. 27303.10

MOISTURE-DENSITY RELATIONSHIP



Sample Source: E.Kapolei Phase II TP-5 Description: silty sandy brownish CLAY

	Test Point 1	Test Point 2	Test Point 3	Test Point 4
Wet Density (pcf)	125.54	133.97	134.57	
Moisture Content	16.62%	19.16%	21.04%	
Dry Density (pcf)	107.65	112.43	111.18	

Maximum Dry Density (pcf): 112.5
 Optimum Moisture Content (%) : 19.60%
 Test Method: ASTM D-1557

Atterberg Limits
 LL PL PI

COMPACTION TEST RESULTS ASTM D-1557



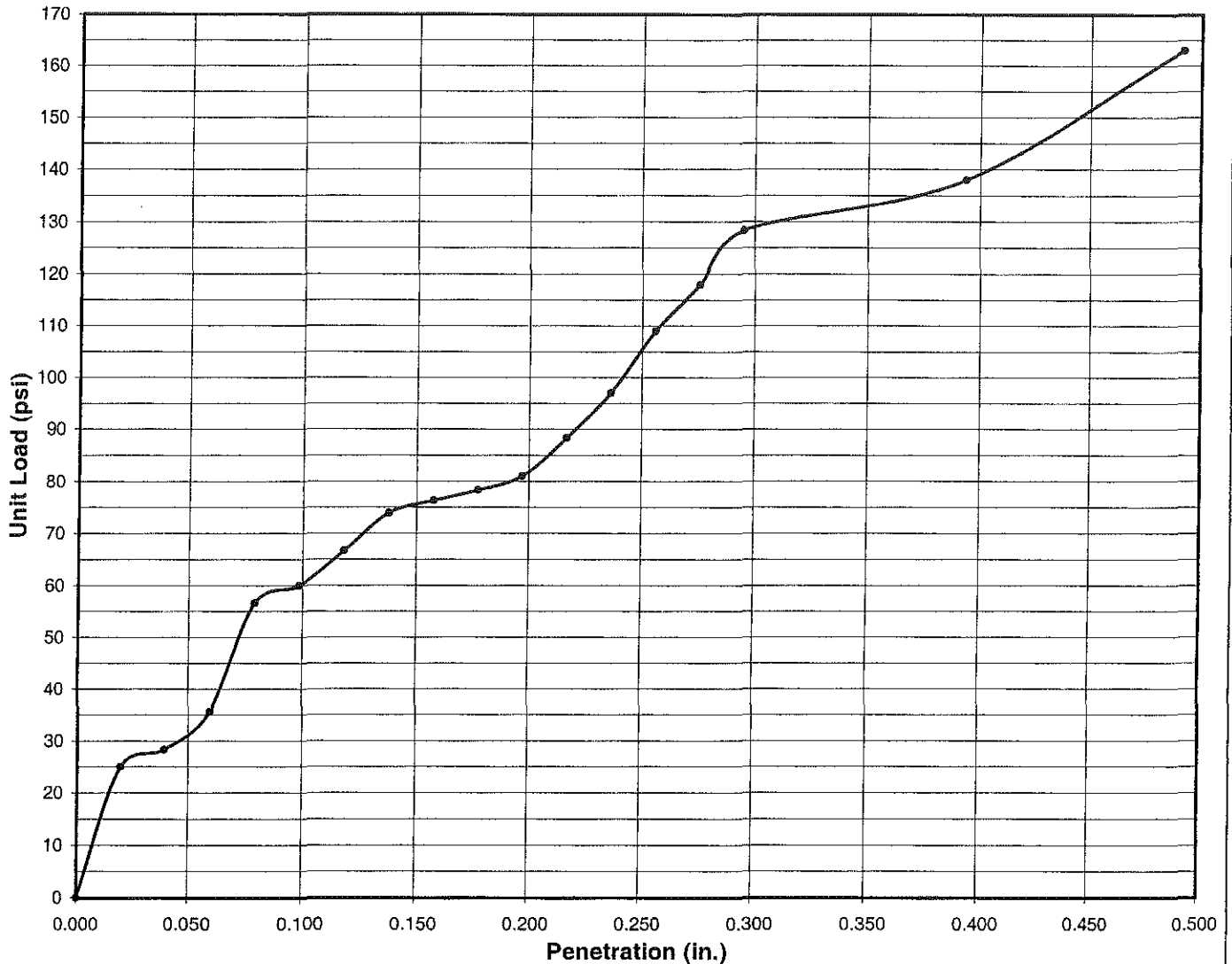
PSC Consultants, LLC
 SOILS, FOUNDATION, AND GEOLOGICAL ENGINEERS

East Kapolei Phase II Dev. Mon.
 Moisture Density Relationship
 East Kapolei Oahu, Hawaii

Date: April 23, 2007

Project No. 27303.10

CBR CURVE



Sample Source: TP-2

Depth: 0-3.5

Description: Brown Silty CLAY (CH)

	Before Expansion	After Expansion
Relative Compaction (%):	100.00%	96.74%
Moisture Content (%):	16.63%	19.15%
Dry Density (pcf):	116.20	112.42
Percent Swell or Expansion Value (%):	3.37%	
Compaction Test Method:	ASTM D-1557 A	
CBR Value @ 0.1" Corrected:	4.82%	
CBR Value @ 0.2" Corrected:	4.45%	

Atterberg Limits

LL

PL

PI

CALIFORNIA BEARING RATIO

ASTM D-1883-94



PSC Consultants, LLC

SOILS, FOUNDATION, AND GEOLOGICAL ENGINEERS

East Kapolei-II Development

Study Area I

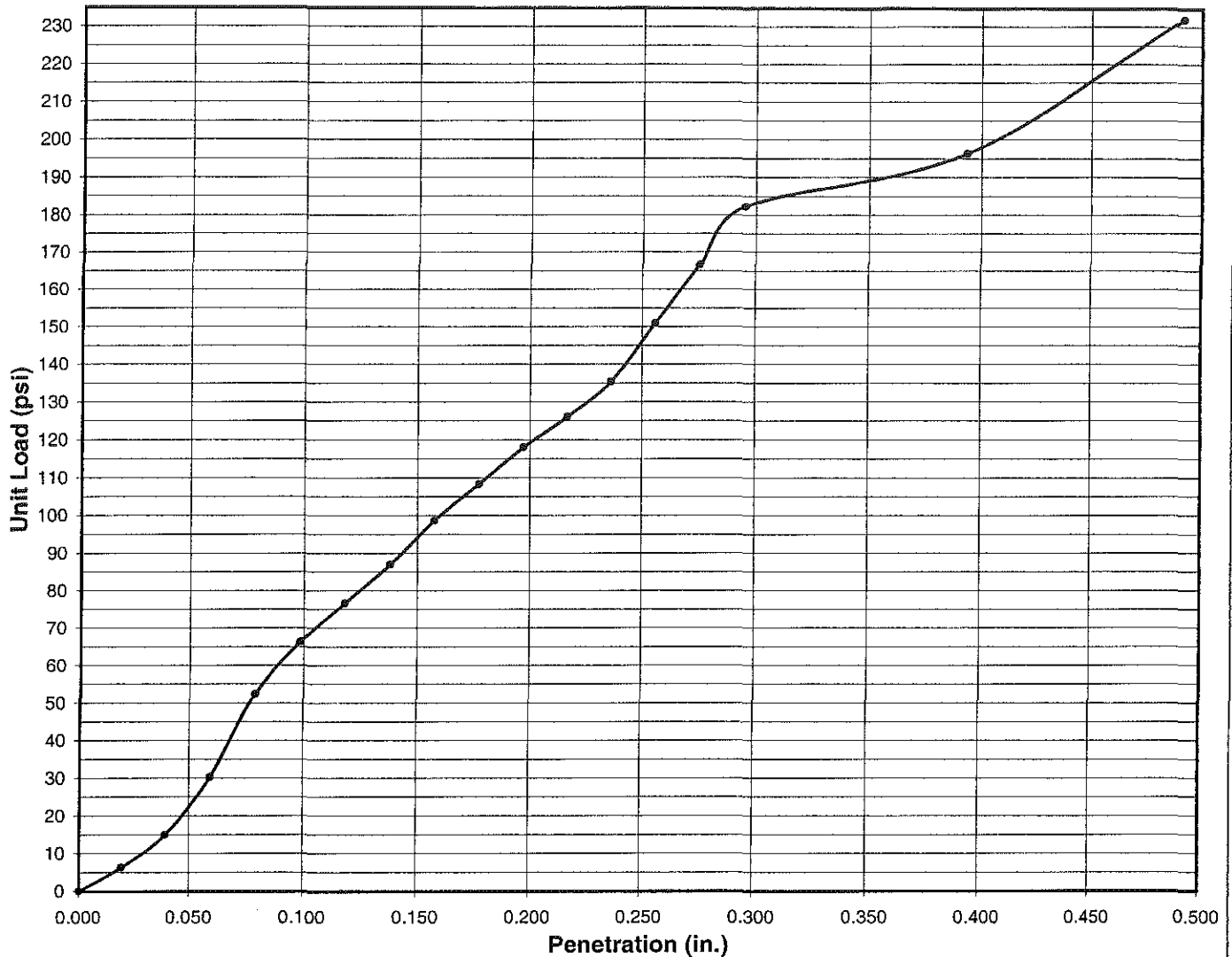
Honouliuli, Ewa, Oahu, Hawaii

Date: May, 2007

PROJECT NO. 27303.10

PLATE NO. 38

CBR CURVE



Sample Source: TP-2

Depth: 0-3.5

Description: Brown Silty CLAY (CH)

	Before Expansion	After Expansion
Relative Compaction (%):	100.00%	99.45%
Moisture Content (%):	16.28%	18.00%
Dry Density (pcf):	116.66	113.47
Percent Swell or Expansion Value (%):	2.81%	
Compaction Test Method:	ASTM D-1557 A	
CBR Value @ 0.1" Corrected:	6.40%	
CBR Value @ 0.2" Corrected:	6.30%	

Atterberg Limits

LL

PL

PI

CALIFORNIA BEARING RATIO

ASTM D-1883-94



PSC Consultants, LLC

SOILS, FOUNDATION, AND GEOLOGICAL ENGINEERS

East Kapolei-II Development

Study Area I

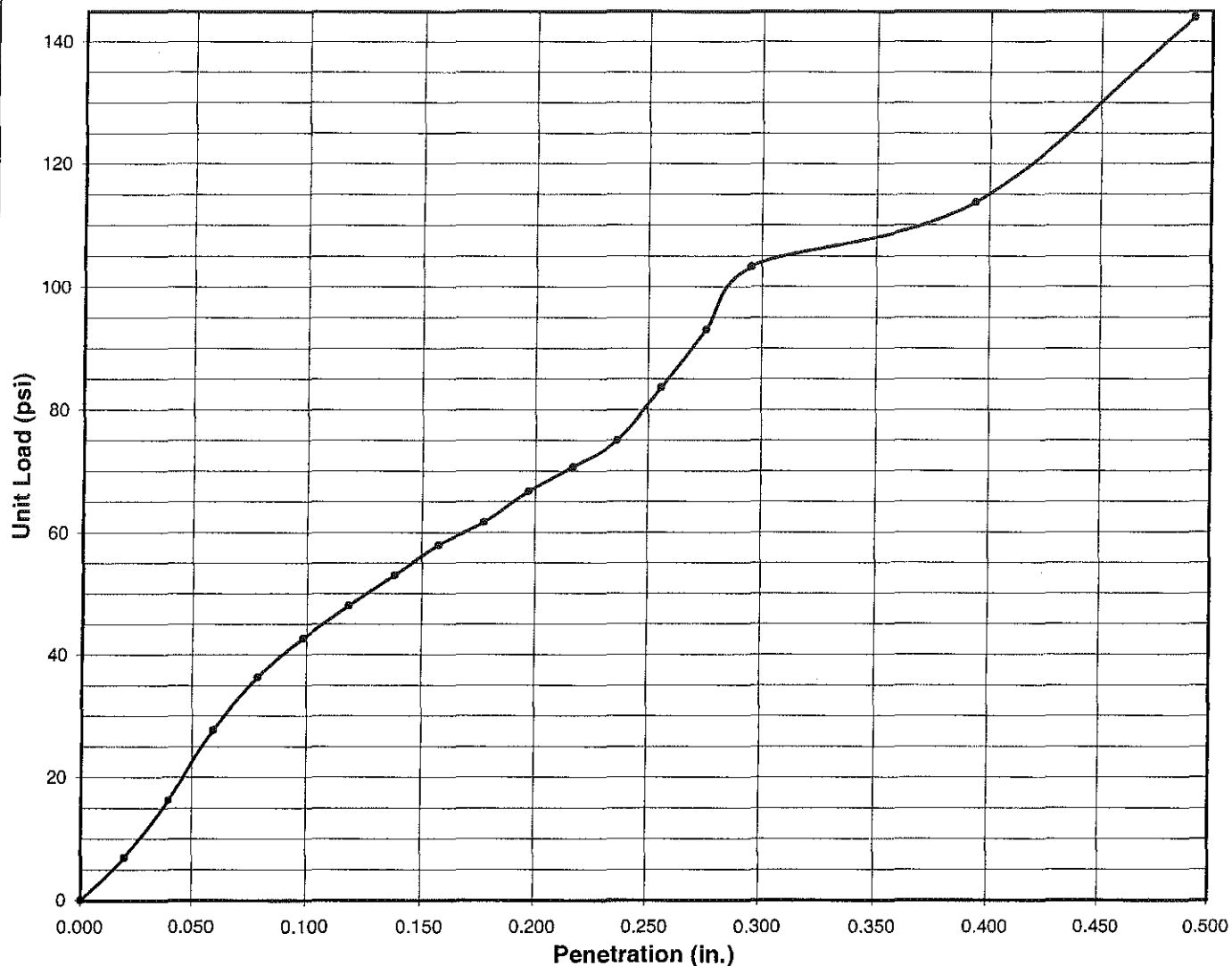
Honouliuli, Ewa, Oahu, Hawaii

Date: May, 2007

PROJECT NO. 27303.10

PLATE NO. 39

CBR CURVE



Sample Source: TP-3

Depth: 0-3.5

Description: Brown Silty CLAY (CH)

	Before Expansion	After Expansion
Relative Compaction (%):	100.00%	96.00%
Moisture Content (%):	118.82%	21.14%
Dry Density (pcf):	114.73	110.78
Percent Swell or Expansion Value (%):	3.57%	
Compaction Test Method:	ASTM D-1557 A	
CBR Value @ 0.1" Corrected:	3.63%	
CBR Value @ 0.2" Corrected:	3.86%	

Atterberg Limits

<u>LL</u>	<u>PL</u>	<u>PI</u>
51.50	44	7.5

CALIFORNIA BEARING RATIO ASTM D-1883-94



PSC Consultants, LLC

SOILS, FOUNDATION, AND GEOLOGICAL ENGINEERS

East Kapolei-II Development

Study Area I

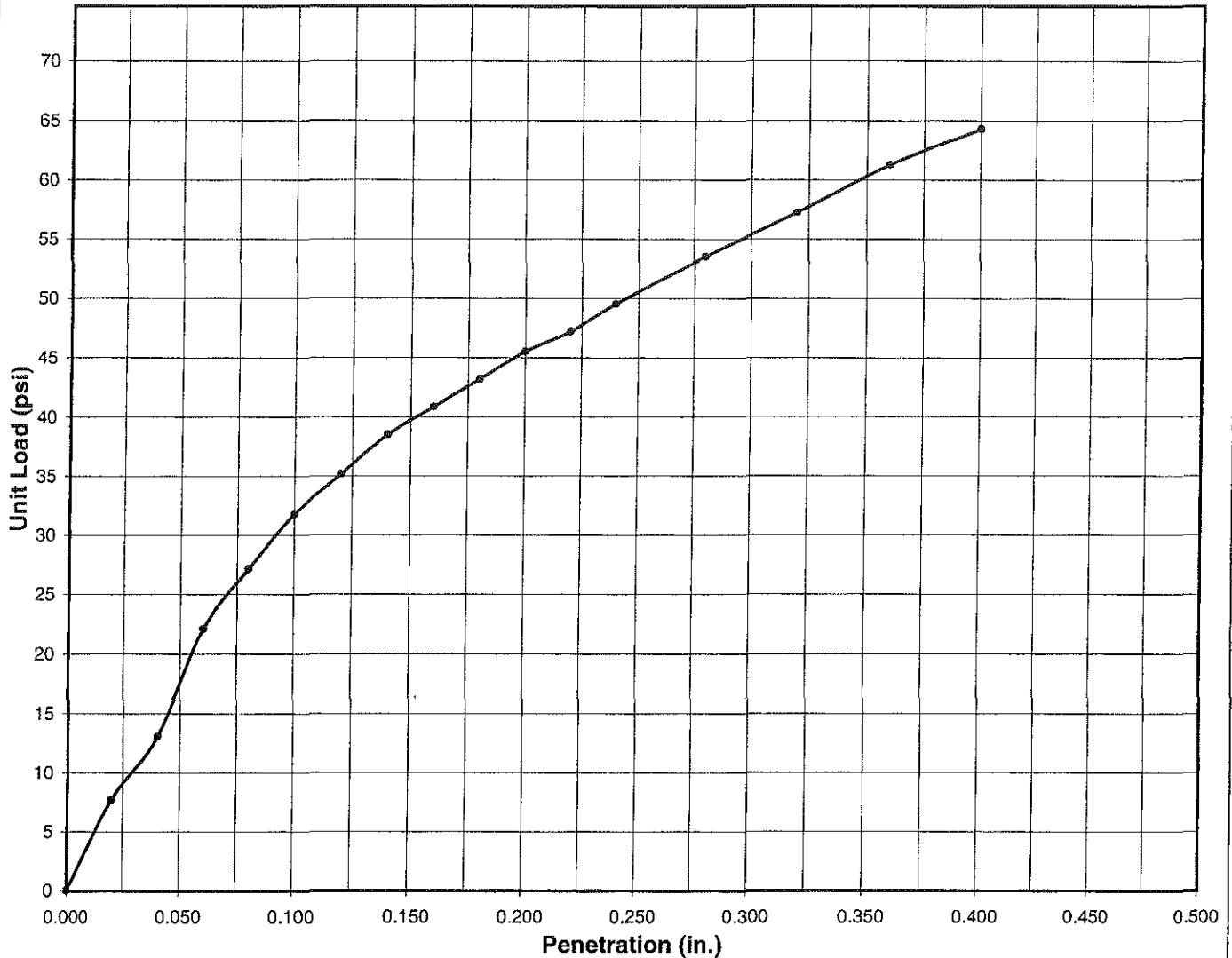
Honouliuli, Ewa, Oahu, Hawaii

Date: May, 2007

PROJECT NO. 27303.10

PLATE NO. 40

CBR CURVE



Sample Source: TP-4

Depth: 0-3.5 ft.

Description: Brown CLAY

	Before Expansion	After Expansion
Relative Compaction (%):	97.13%	92.00%
Moisture Content (%):	17.97%	23.64%
Dry Density (pcf):	110.04	104.40
Percent Swell or Expansion Value (%):	5.40%	
Compaction Test Method:	ASTM D-1557 A	
CBR Value @ 0.1" :	2.5	
CBR Value @ 0.2" :	2.1	

Atterberg Limits

LL **PL** **PI**

CALIFORNIA BEARING RATIO ASTM D-1883-94



PSC Consultants, LLC
SOILS, FOUNDATION, AND GEOLOGICAL ENGINEERS

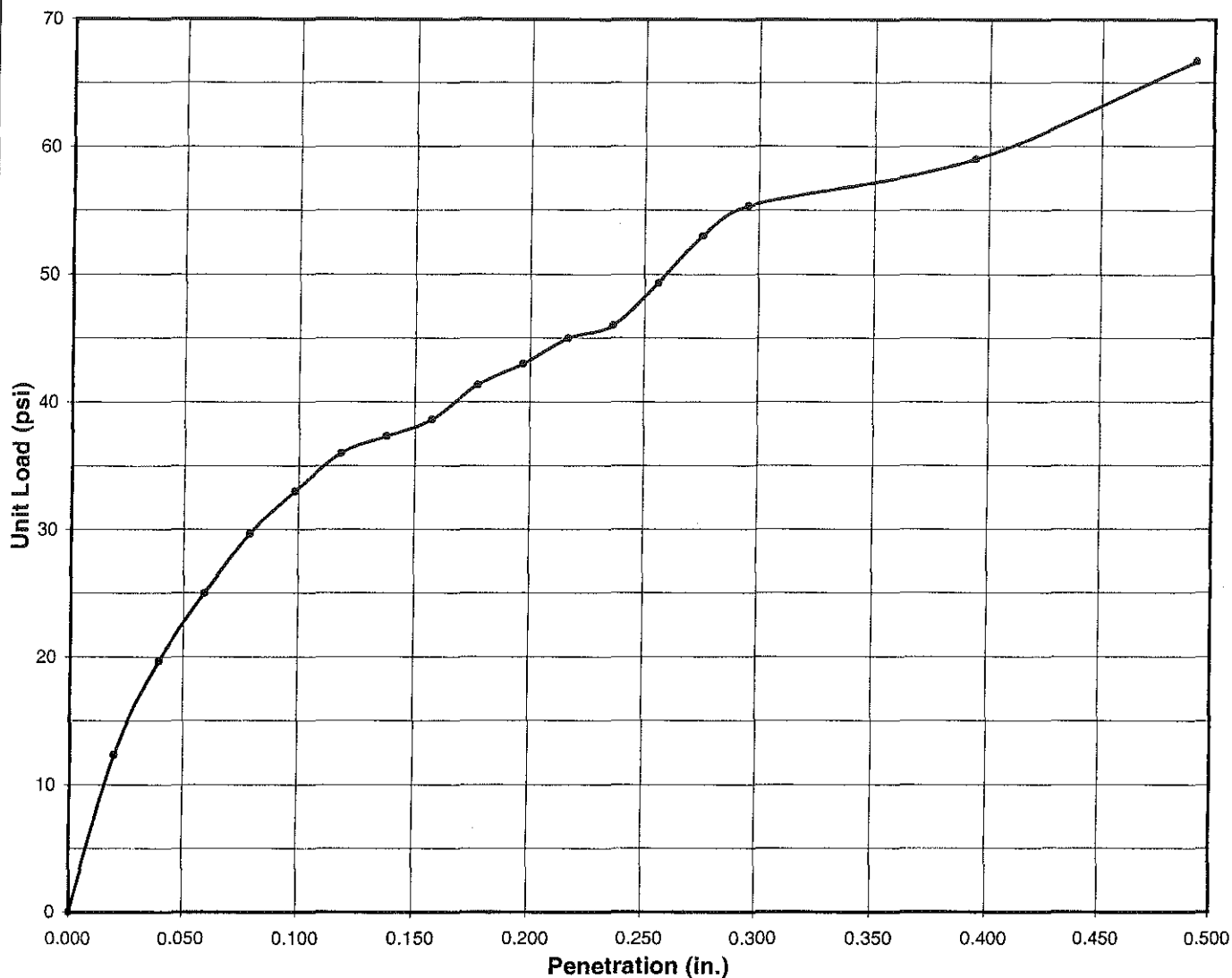
East Kapolei-II Development
Study Area I
Honouliuli, Ewa, Oahu, Hawaii

Date: May, 2007

PROJECT NO. 27303.20

PLATE NO. 41

CBR CURVE



Sample Source: TP-5

Depth: 0-3.5

Description: Brown Silty CLAY (CH)

	Before Expansion	After Expansion
Relative Compaction (%):	99.21%	93.82%
Moisture Content (%):	13.98%	20.54%
Dry Density (pcf):	111.55	105.48
Percent Swell or Expansion Value (%):	5.75%	
Compaction Test Method:	ASTM D-1557 A	
CBR Value @ 0.1" Corrected:	2.44%	
CBR Value @ 0.2" Corrected:	1.86%	

Atterberg Limits		
<u>LL</u>	<u>PL</u>	<u>PI</u>
45.00	22	23

CALIFORNIA BEARING RATIO

ASTM D-1883-94



PSC Consultants, LLC

SOILS, FOUNDATION, AND GEOLOGICAL ENGINEERS

East Kapolei-II Development

Study Area I

Honouliuli, Ewa, Oahu, Hawaii

Date: May, 2007

PROJECT NO. 27303.10

PLATE NO. 42

One Dimensional Swell Test

Sample Source	Sample Depth	Molding Moisture (%)	Surcharge (psf)	Percent Swell (%)
TP-1	0-3.5 ft.	19.23	71.28	3.77
TP-2	0-3.5 ft.	15.84	69.66	8*
TP-3	0-3.5 ft.	22	63.66	2.8
TP-4	0-3.5 ft.	20.28	69.21	3.72
TP-5	0-3.5 ft.	22.51	71.43	4.53

Note 1: The above swell test samples were obtained by pressing 1-inch ring samplers (with a hydraulic press) into the compacted and extruded soil samples from the proctor test specimens at approximately 2% above optimum moisture content (except Sample TP-2*). This procedure aims to simulate field conditions after moisture conditioning and compaction of the insitu soils. The surcharge load simulates a floor slab or pavement dead load. The samples were then soaked for 72 hours or until no further expansion were observed.

Note 2: Sample TP-2 was remolded at approximately 2% below its optimum moisture content and shows a relatively higher swell value of 8%. This demonstrates the relationship of the soils initial moisture content and its sensitivity to swelling resulting from moisture absorption.

One Dimensional Swell Test

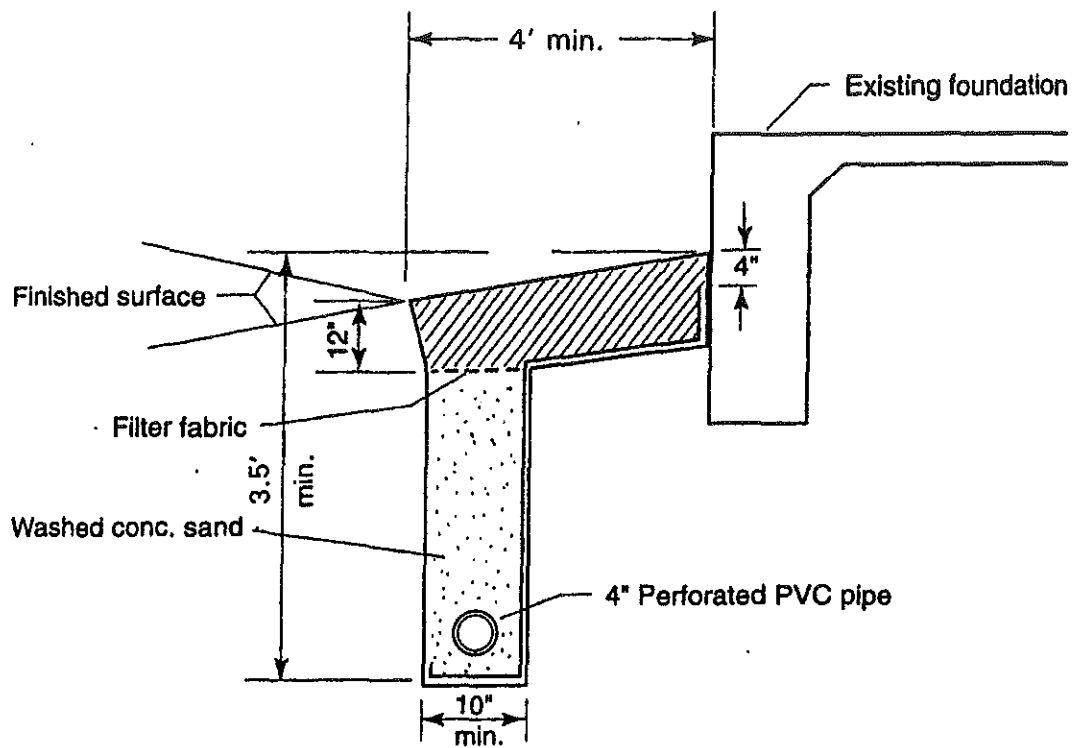


CONSULTANTS, LLC
SOILS, FOUNDATION, AND GEOLOGICAL ENGINEERS

East Kapolei II Development, Study Area I
Honouliuli, Ewa, Oahu, Hawaii

DATE: May 2007

PROJ. NO.27303.10



Reference: Kirby Meyers Remediation Design: (GEOMEMBRANES & the Control of Expansive Soils in Construction by M Steinberg, 1998)

Remediation Design-Subdrain with Vertical Moisture Barrier

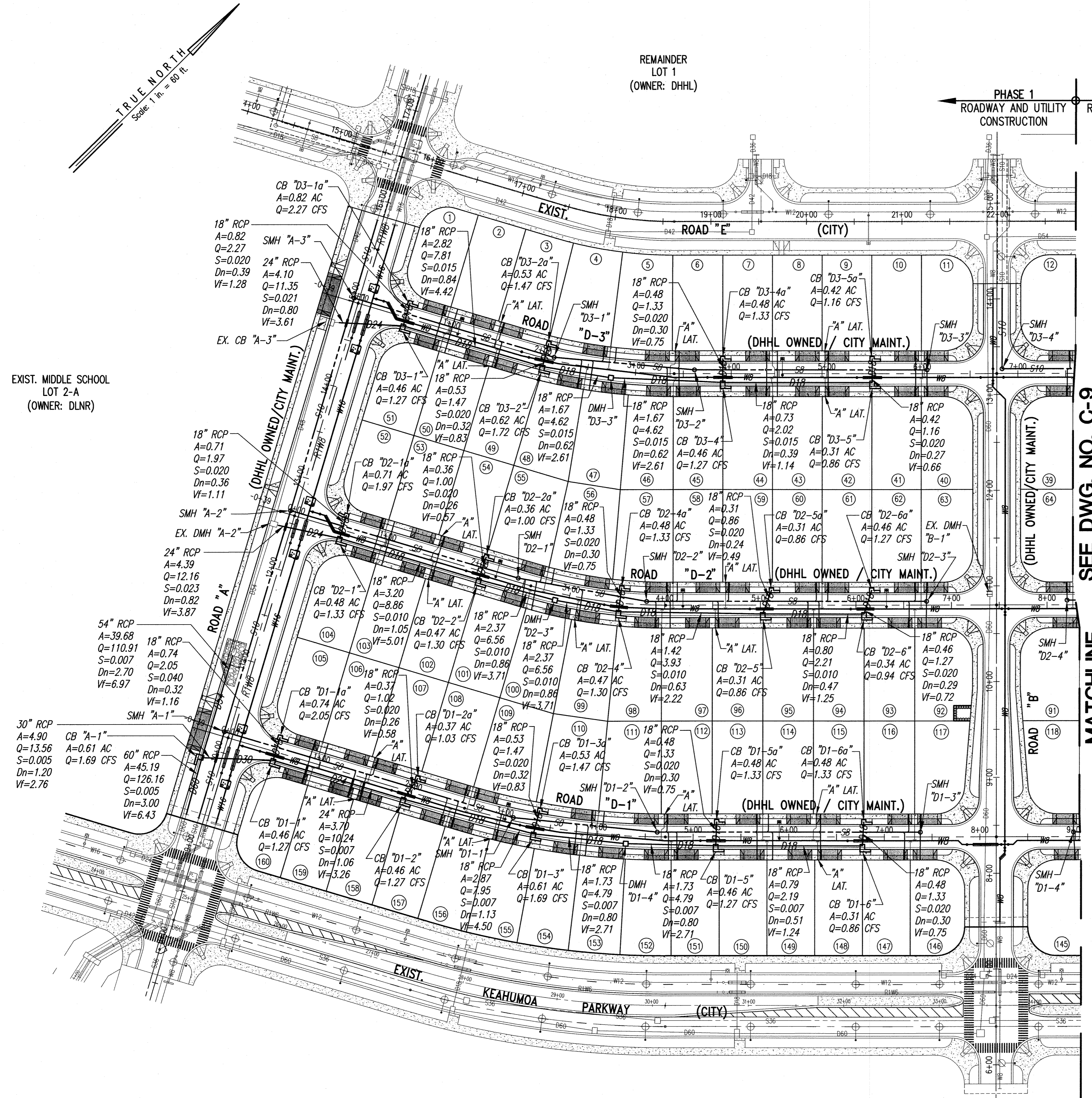


CONSULTANTS, LLC
SOILS, FOUNDATION, AND GEOLOGICAL ENGINEERS

East Kapolei II Development, Study Area-I
Honouliuli, Ewa, Oahu, Hawaii

DATE: May 2007

PROJECT NO. 27302.10



GENERAL LAYOUT PLAN - 1
SCALE: 1"=60'

NOTES:

- THESE PLANS ARE IN CONFORMANCE WITH THE "WASTEWATER MASTER PLAN FOR EAST KAPOLEI II DEVELOPMENT, TMK: 9-1-17 POR. 71 AND 88," APPROVED APRIL 22, 2009.
- SEWER LINES WILL BE DHHL OWNED.

HYDROLOGIC DESIGN DATA

$$Q = C I A$$

Q = FLOWRATE IN CFS
I = RAINFALL INTENSITY
C = RUNOFF COEFFICIENT
A = AREA IN ACRES (AC)

$T_m = 10 \text{ YRS}$
 $i = 1.8$
 $I = 3.96$
 $C = 0.70$
 $CI = 2.77 \text{ CFS}$

$T_m = 50 \text{ YRS}$
 $i = 2.2$
 $I = 4.84$
 $C = 0.70$
 $CI = 3.39 \text{ CFS}$

FOR ESTIMATING PURPOSES ONLY

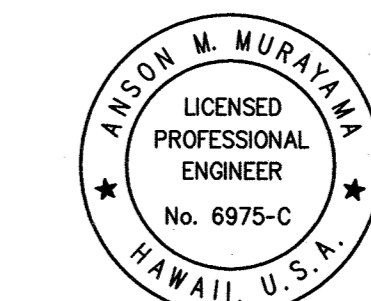
DESCRIPTION OF WORK	ESTIMATE
NUMBER OF LOTS 160	
3/4" METER @ 87+180	
INSTALLATION CHARGE PER LOT	\$267.00
TOTAL INSTALLATION CHARGE	\$42,720.00
*WATER SYSTEM FACILITIES CHARGES (WSFC) (SOURCE AND TRANSMISSION) (160 LOTS) 117.91/FU x MINIMUM 20 FU PER LOT =	\$2,358.20/Lot
TOTAL WSFC	\$377,312.00
*CREDIT S/N	
IRRIGATION SERVICE (STREET TREES) METER	
INSTALLATION CHARGE	
WATER SYSTEM FACILITIES CHARGE	
TOTAL	\$420,032.00

* CREDITS WILL BE DETERMINED WHEN THE BUILDING PERMIT APPLICATION IS SUBMITTED FOR BWS REVIEW AND APPROVAL.

THIS ESTIMATE REFLECTS ONLY THE MINIMUM CHARGES FOR THE PROJECT AND IS SUBJECT TO CHANGE. A FORMAL WRITTEN QUOTATION MAY BE OBTAINED AND ALL PAYMENTS FOR THE MINIMUM CHARGES SHOWN ON THE QUOTATION MADE WITHIN 30 DAYS AFTER THE CONSTRUCTION PLAN IS APPROVED BY BWS. HOWEVER, ACTUAL CHARGES WILL BE DETERMINED WHEN THE BUILDING PERMIT APPLICATION IS SUBMITTED FOR BWS REVIEW. ALL CHARGES IN EXCESS OF THE MINIMUM WILL ALSO BE SUBJECT TO THE 30 DAY PERIOD. IF PAYMENTS ARE NOT RECEIVED WITHIN THE 30 DAY PERIOD, THE PROJECT WILL BE SUBJECT TO THE PREVAILING RATES.

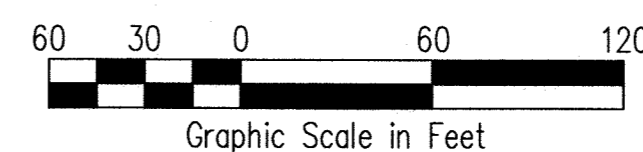
LEGEND

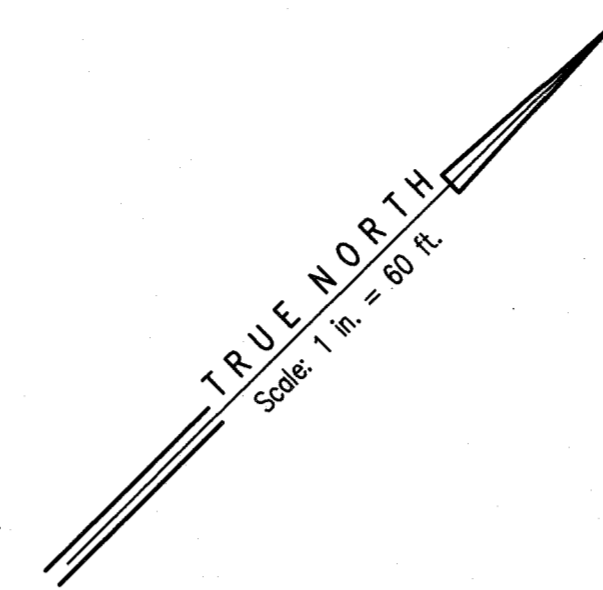
P	PROPERTY LINE
DI	DRAIN INLET
CB	CATCH BASIN
DMH	DRAIN MANHOLE
RCP	REINFORCED CONCRETE PIPE
SMH	SEWER MANHOLE
A	AREA IN ACRES
Q	DRAIN RUNOFF IN CUBIC FEET PER SECOND
	DRIVEWAY
	CENTERLINE OF ROADWAY
D36	NEW DRAINLINE W/ SIZE
S8	NEW SEWERLINE W/ SIZE
W12	NEW WATERLINE W/ SIZE
R1W8	NEW NON-POTABLE WATERLINE W/ SIZE
D36	EXISTING DRAINLINE W/ SIZE
S8	EXISTING SEWERLINE W/ SIZE
W12	EXISTING WATERLINE W/ SIZE
R1W8	EXISTING NON-POTABLE WATERLINE W/ SIZE



THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION. CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION. LICENSE EXPIRATION DATE: 04/30/14

REVISION DATE	DESCRIPTION	MADE BY	APPROVED
<p>Community Planning and Engineering, Inc. Engineering Design Construction Management Infrastructure Planning 1288 Queen Emma Street Honolulu, Hawaii</p> <p>EAST KAPOLEI II DEVELOPMENT INCREMENT 2B HONOLULU, EWA, OAHU, HAWAII (DPP SUBD. FILE NO. 2011/SUB-155) OWNER & DEVELOPER: DEPARTMENT OF HAWAIIAN HOME LANDS TAX MAP KEY: 9-1-17: Portion 110</p> <p>GENERAL LAYOUT PLAN - 1</p>			
DRAWN BY: LYL	ENGINEER: SS	CHECKED BY: AMM	APPROVED:
<p><i>Scotty Chao</i> 4/23/13 DATE CHIEF, WASTEWATER BRANCH, D.P.P. (FOR CONFORMANCE TO CITY STANDARDS ONLY)</p> <p><i>M. J. C. 6/20/13</i> DATE CHIEF, CIVIL ENGINEERING BRANCH, D.P.P. (FOR CONFORMANCE TO CITY STANDARDS ONLY)</p> <p><i>Scotty Chao</i> 4/23/13 DATE CHIEF, WASTEWATER BRANCH, D.P.P. (FOR CONFORMANCE TO CITY STANDARDS ONLY)</p> <p><i>Scotty Chao</i> 4/23/13 DATE CHIEF, WASTEWATER BRANCH, D.P.P. (FOR CONFORMANCE TO CITY STANDARDS ONLY)</p>			
FILE	POCKET	FOLDER	NO.





ROAD "D"
(DHHL OWNED / CITY MAINT.)

18" RCP —
A=0.40
Q=1.11
S=0.020
Dn=0.27
Vf=0.63




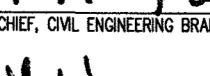


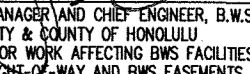
CB "D3-6"—
A=0.30 AC
Q=0.83 CFS


18" RCP —
A=0.43
Q=1.19
S=0.020
Dn=0.29
Vf=0.67

CB "D2-7"—
A=0.30 AC
Q=0.83 CFS

18" RCP —
A=0.44
Q=1.22
S=0.020
Dn=0.29
Vf=0.69

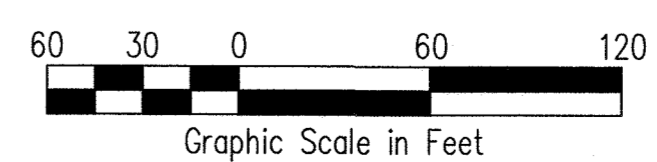
CB "D1-7"—
A=0.31 AC
Q=0.86 CFS

REVISION DATE	DESCRIPTION	MADE BY	APPROVED
 Community Planning and Engineering, Inc. Engineering Design Construction Management Infrastructure Planning 1288 Queen Emma Street Honolulu, Hawaii			
<h1>EAST KAPOLEI II DEVELOPMENT</h1> <h2>INCREMENT 2B</h2> <p>HONOLULU, EWA, OAHU, HAWAII (DPP SUBD. FILE NO. 2011/SUB-155) OWNER & DEVELOPER: DEPARTMENT OF HAWAIIAN HOME LANDS TAX MAP KEY: 9-1-17; Portion 110</p>			
<h1>GENERAL LAYOUT PLAN - 2</h1>			
DRAWN BY: LYL.T	ENGINEER: SS	CHECKED BY: AMM	
APPROVED: <div style="display: flex; justify-content: space-between; align-items: flex-end; margin-top: 20px;"> <div>  M. J. J. J. CHIEF, CIVIL ENGINEERING BRANCH, D.P.P. </div> <div>  Scott L. L. CHIEF, WATERWAY BRANCH, D.P.P. (FOR CONFORMANCE TO CITY STANDARDS ONLY) </div> <div> 4/23/13 DATE </div> </div> <div style="display: flex; justify-content: space-between; align-items: flex-end; margin-top: 20px;"> <div>  M. J. J. J. CHIEF, TRAFFIC REVIEW BRANCH, D.P.P. </div> <div>  M. J. J. J. CHIEF, ENGINEERING BRANCH, D.P.P. </div> <div> 4/23/13 DATE </div> </div> <div style="display: flex; justify-content: space-between; align-items: flex-end; margin-top: 20px;"> <div>  M. J. J. J. CHIEF, TRAFFIC REVIEW BRANCH, D.P.P. </div> <div>  M. J. J. J. CHIEF, ENGINEERING BRANCH, D.P.P. </div> <div> 4/23/13 DATE </div> </div>			



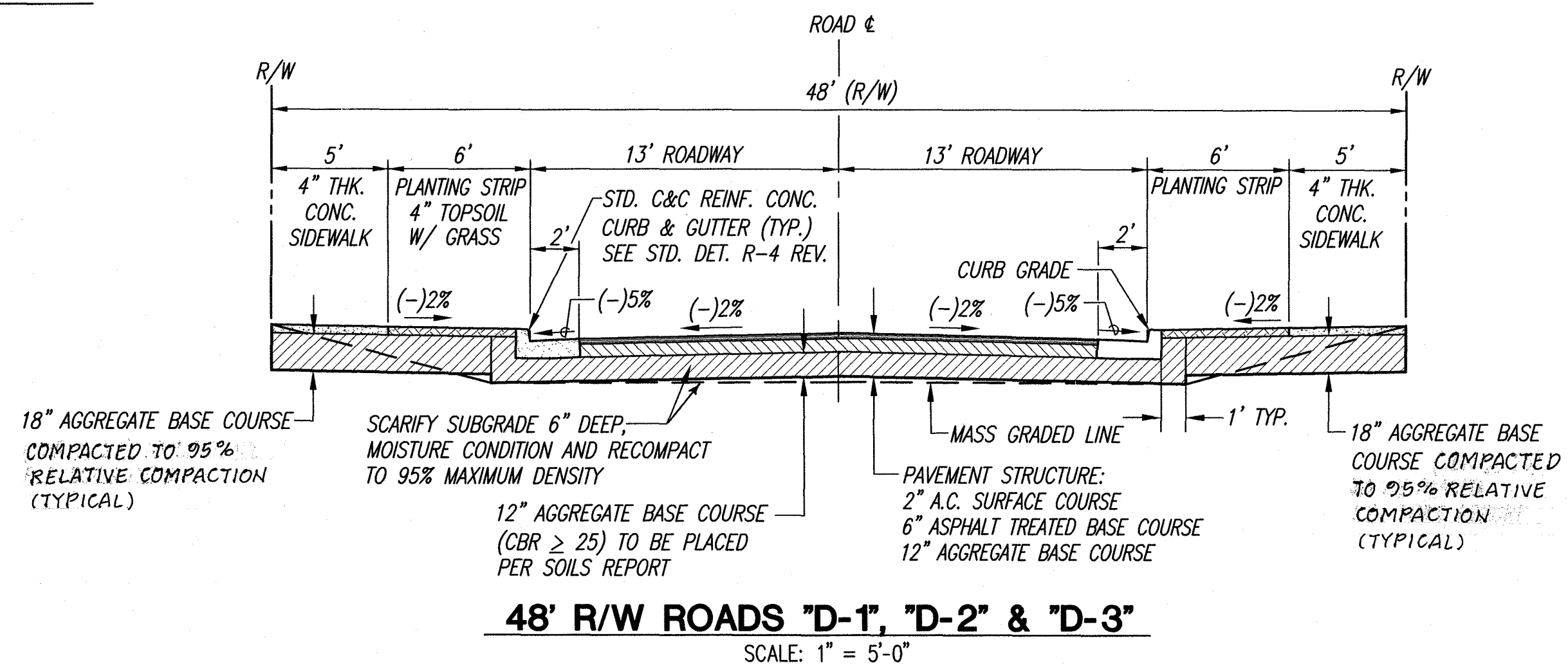
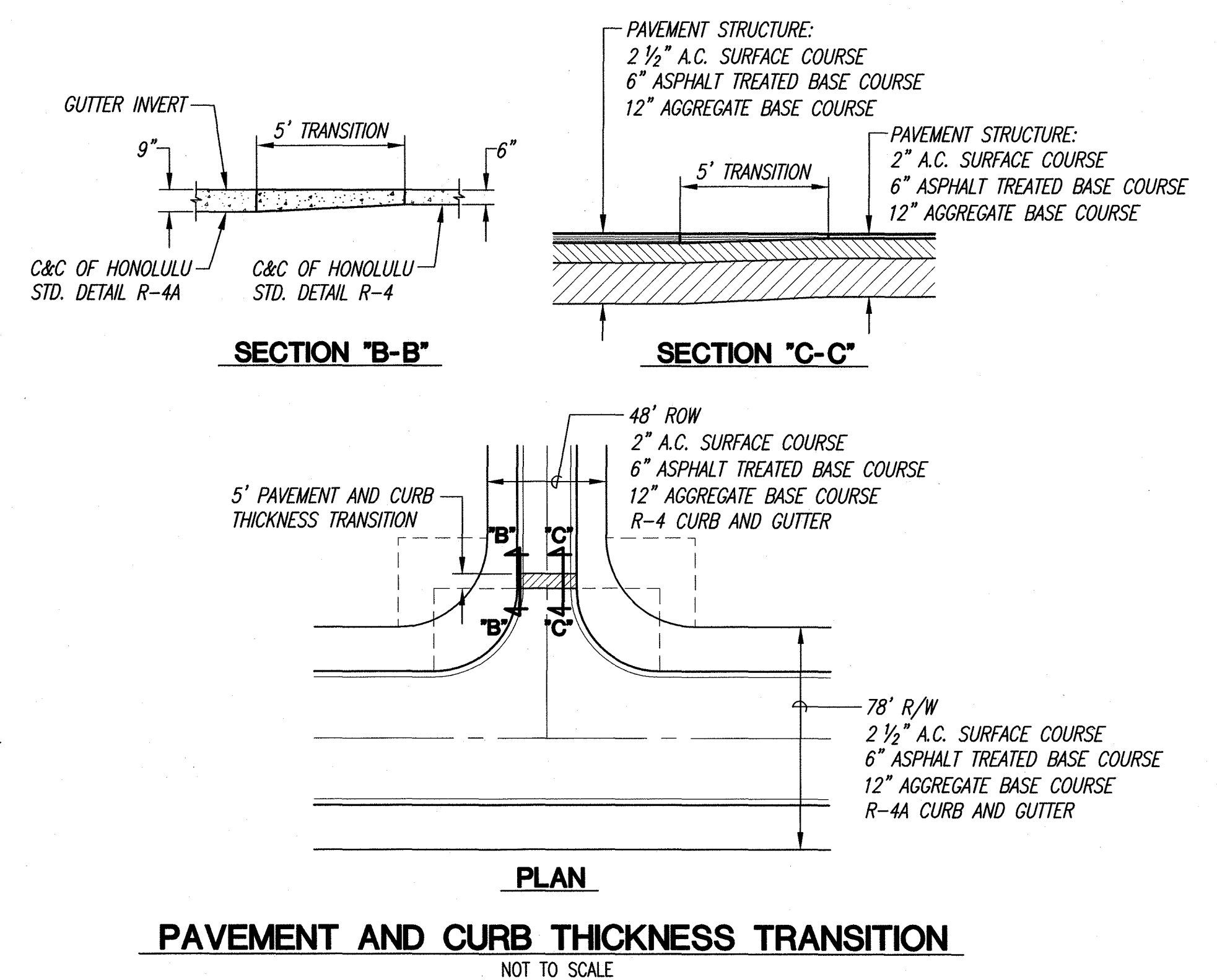
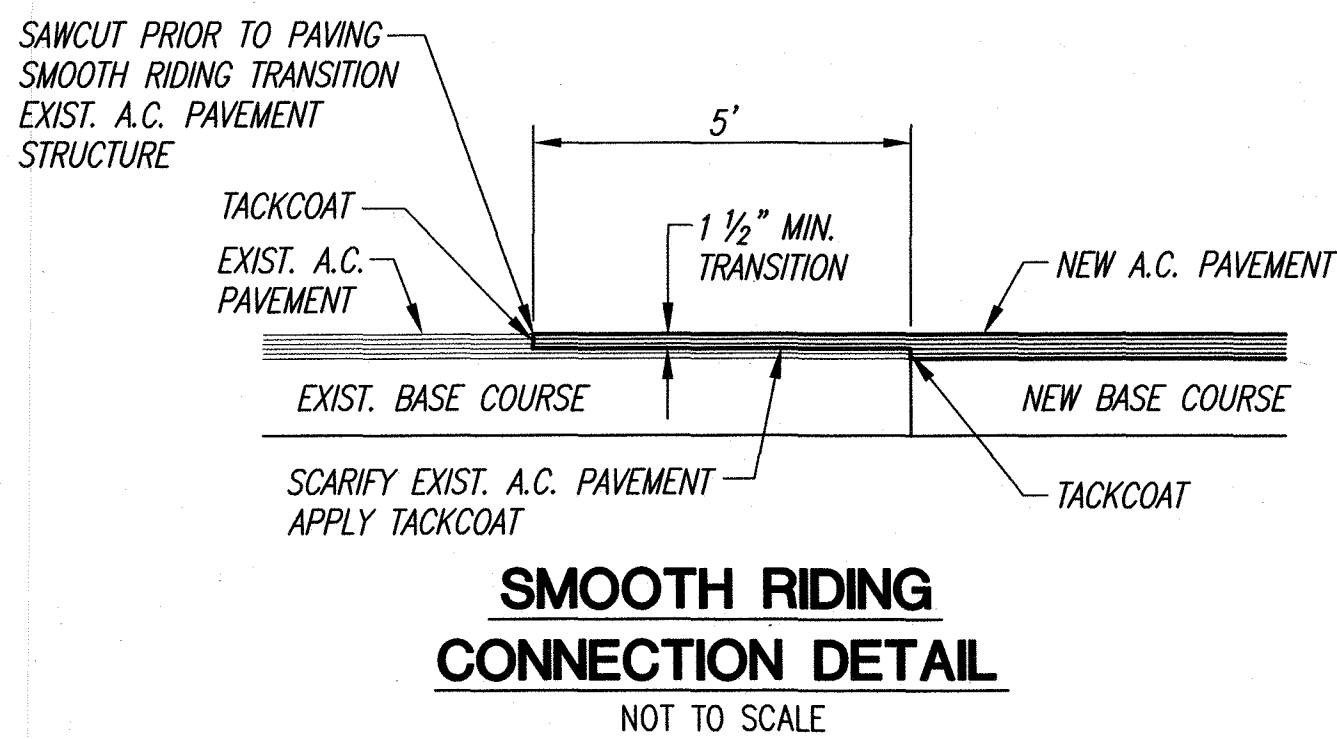
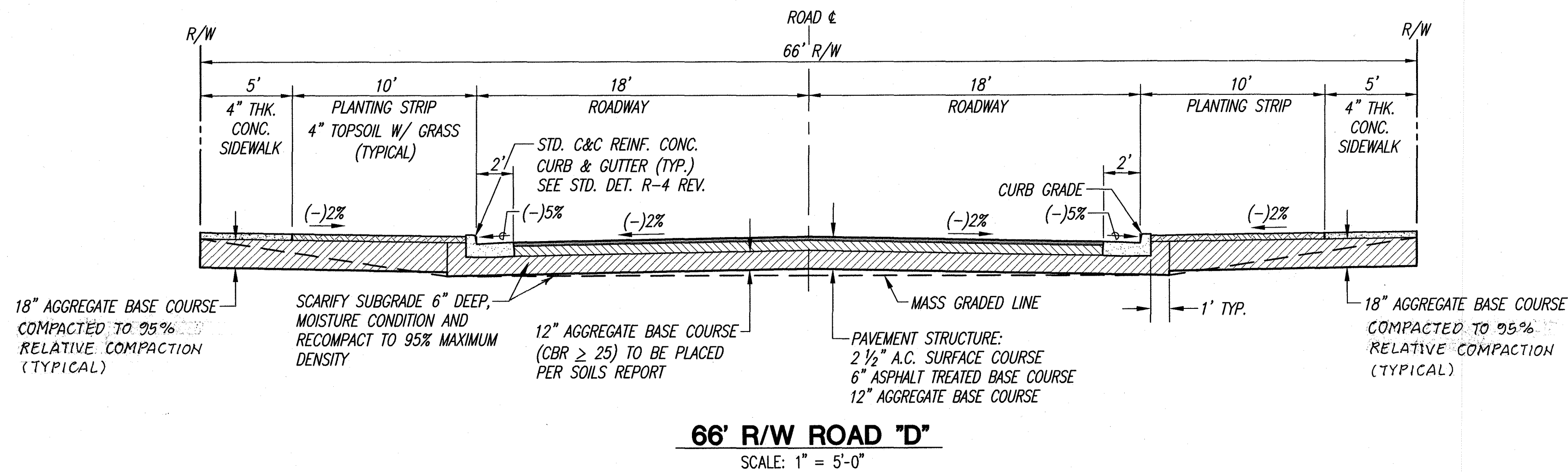
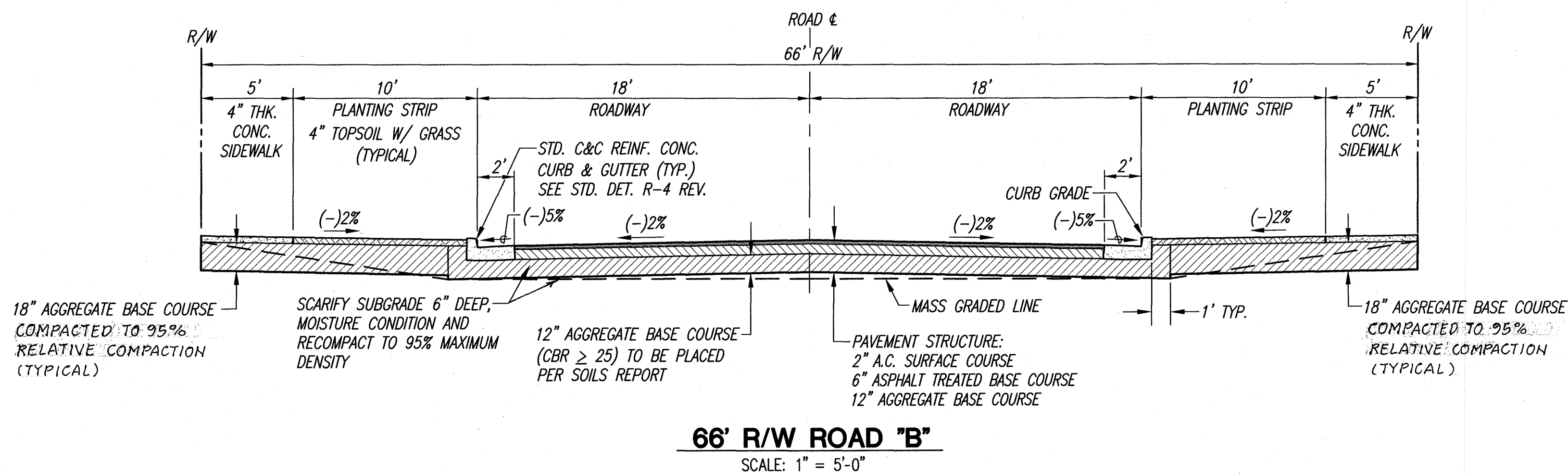
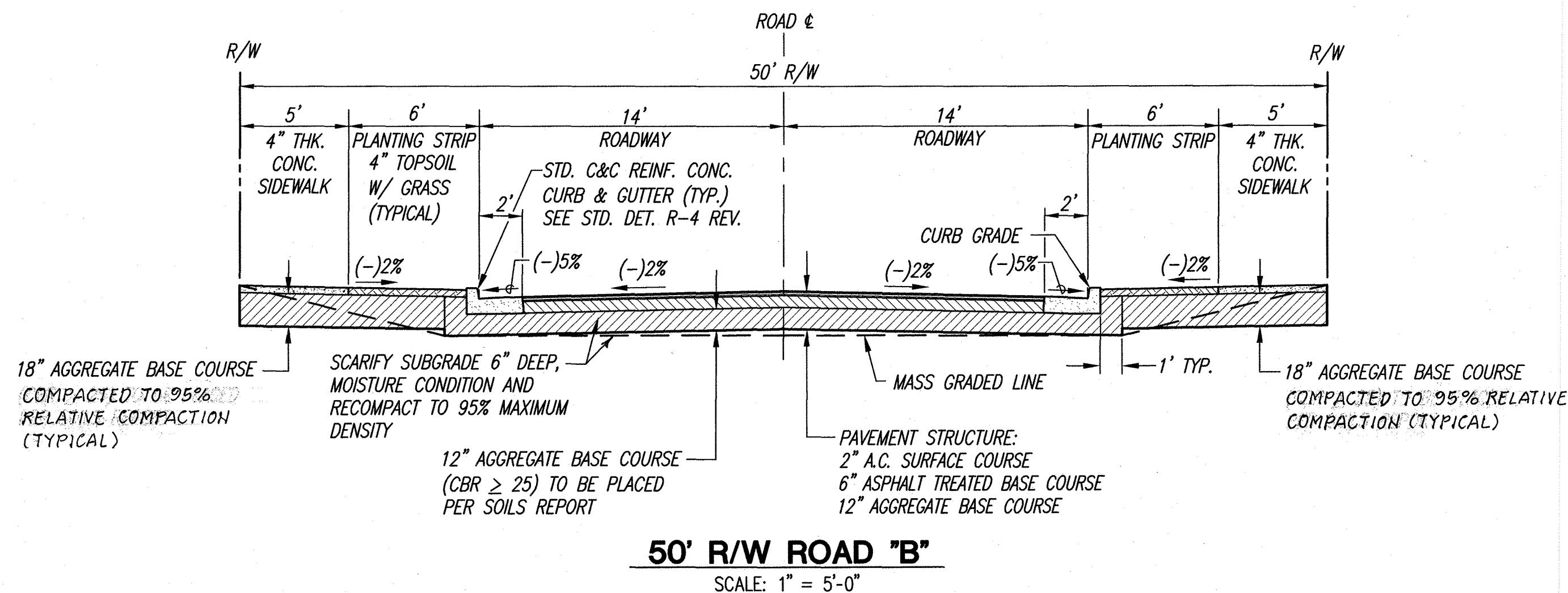
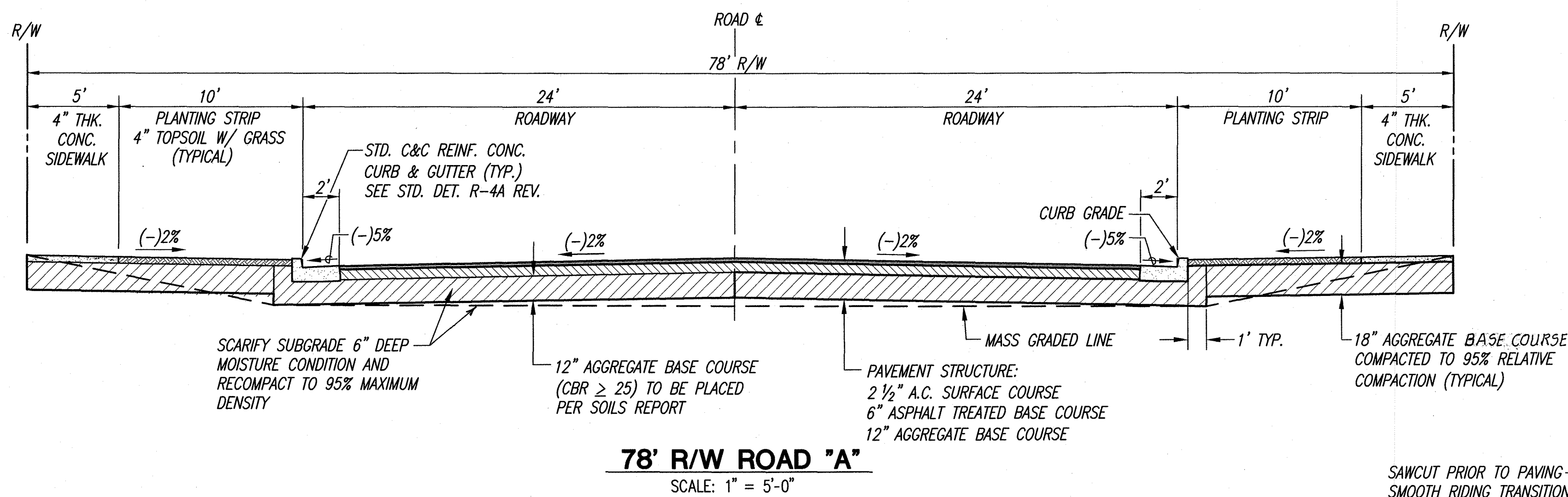
A circular professional engineer seal for Anson M. Murayama. The outer ring contains the name "ANSON M. MURAYAMA" at the top and "HAWAII, U.S.A." at the bottom, separated by two stars. The center of the seal contains the text "LICENSED PROFESSIONAL ENGINEER" and "No. 6975-C".

THIS WORK WAS PREPARED BY
ME OR UNDER MY SUPERVISION.
CONSTRUCTION OF THIS PROJECT
WILL BE UNDER MY OBSERVATION.
LICENSE EXPIRATION DATE: 04/30/14



DWG. NO. **C-9** SHEET 10 OF 78 SHEETS

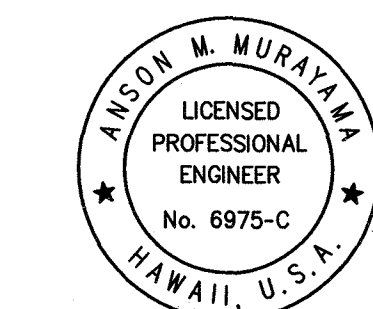
FILE	POCKET	FOLDER	NO.



NOTES:

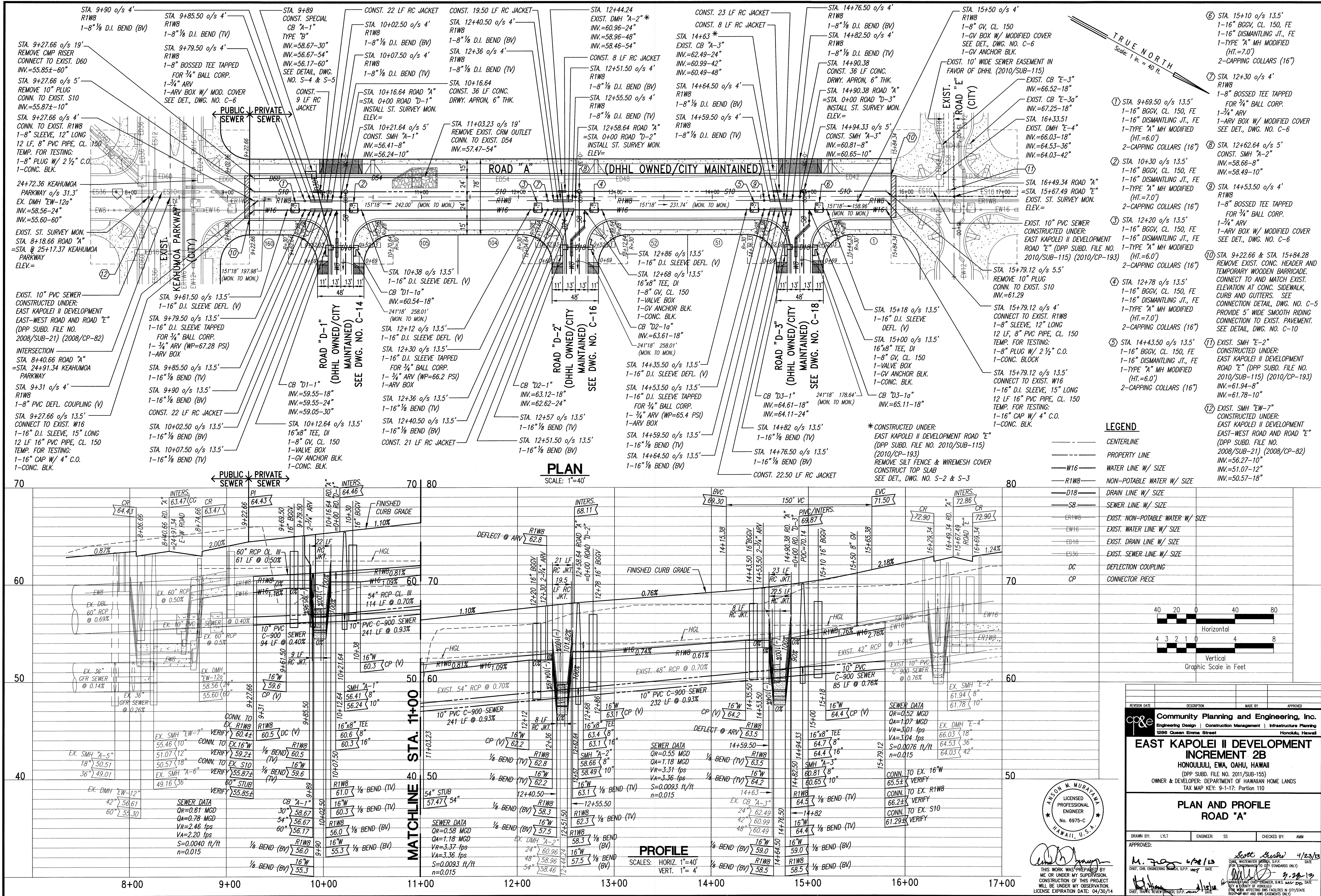
- FOR COMPACTION REQUIREMENTS FOR PAVEMENT SECTIONS, SEE PROJECT SOILS REPORT TITLED: "REVISED PRELIMINARY GEOTECHNICAL EXPLORATION REPORT PROPOSED EAST KAPOLEI PHASE II STUDY AREA 1", HONOLULU, EWA, OAHU, HAWAII, DATED JUNE 2009.
- AREAS TO RECEIVE FILL (INCLUDING SELECT MATERIAL), THE GROUND SURFACE SHALL BE AT LEAST 2% ABOVE OPTIMUM MOISTURE CONTENT PRIOR TO PLACEMENT OF SUBBASE MATERIAL. IF NOT AT LEAST 2% ABOVE OPTIMUM, THEN, GROUND SURFACE SHALL BE SCARIFIED TO A DEPTH OF SIX INCHES, MOISTURE CONDITIONED TO AT LEAST 2% ABOVE OPTIMUM MOISTURE CONTENT AND RECOMPACTED.
- AT ROADWAY AREAS, CONTRACTOR SHALL CONTINUALLY WATER SUBGRADE SO THAT SUBGRADE DOES NOT DRY OUT AND SUBGRADE MOISTURE SHALL BE AT LEAST 2% ABOVE OPTIMUM MOISTURE CONTENT PRIOR TO PLACEMENT OF BASE COURSE.
- CONTRACTOR SHALL COMPLY WITH THE CITY AND COUNTY OF HONOLULU ENGINEERING AND POLICY MEMORANDUM NO. CEB-1-09, JOINTING REQUIREMENTS FOR CONCRETE SIDEWALKS AND DRIVEWAYS DATED APRIL 6, 2009.
- THE 4" CONCRETE SIDEWALK SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE CITY AND COUNTY STANDARD DETAIL R-28 REVISED.

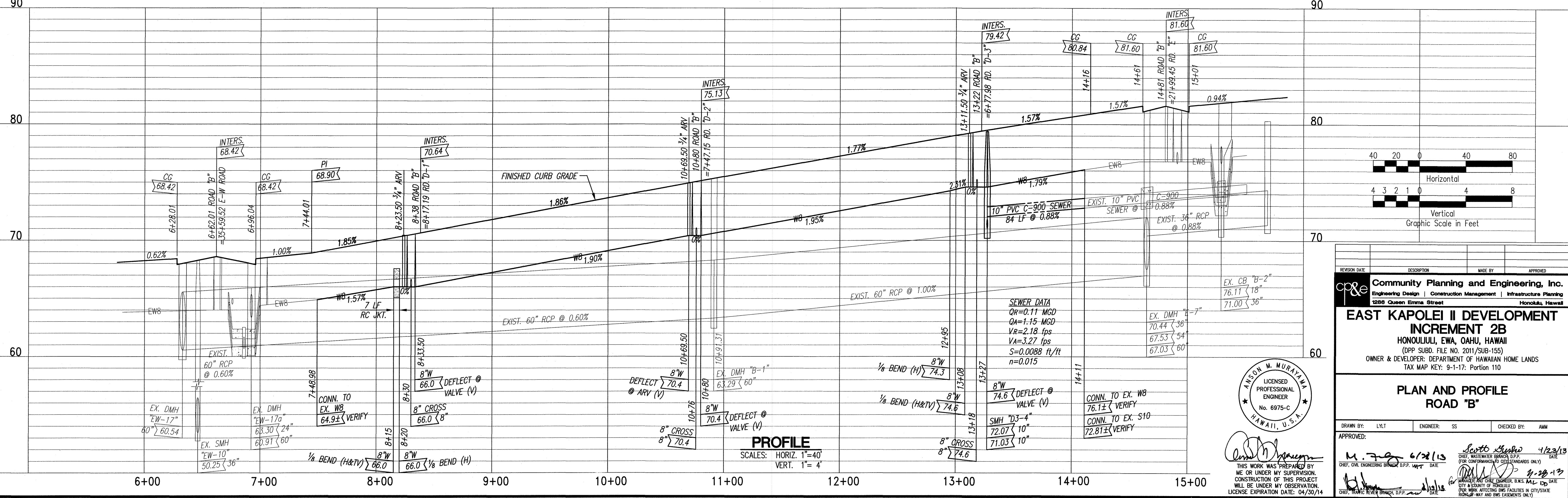
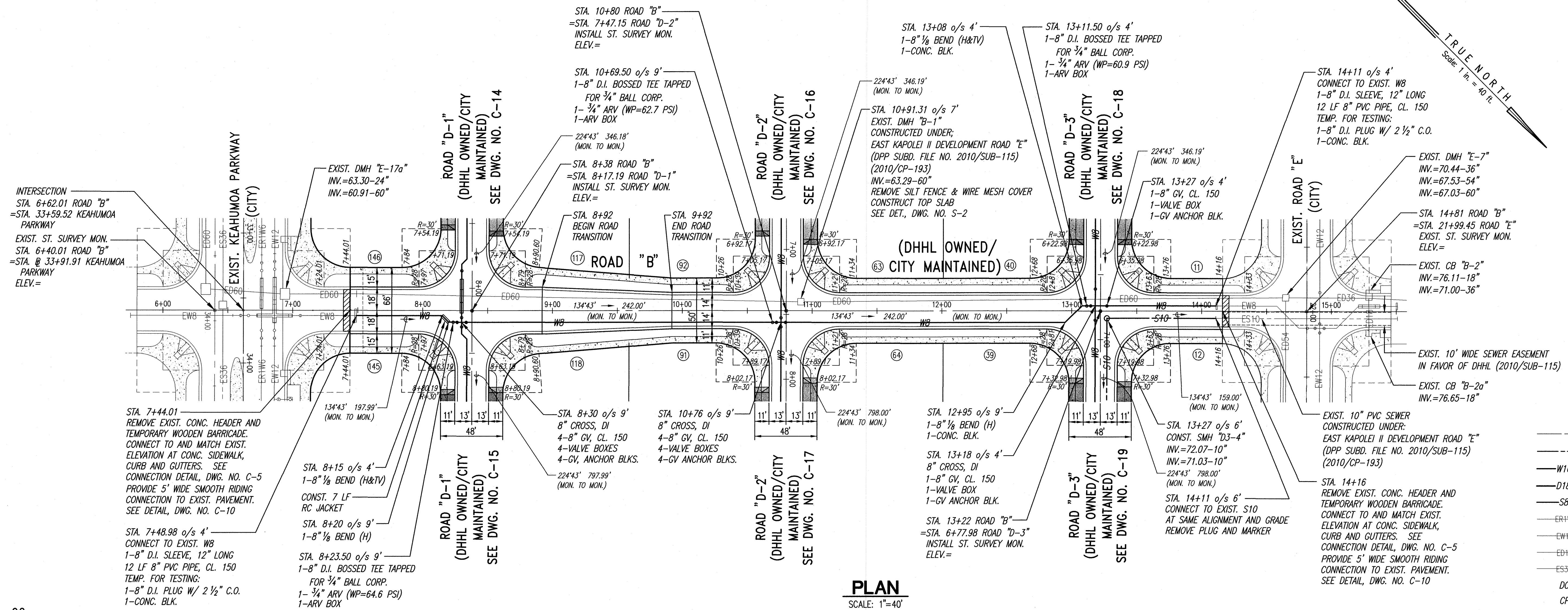
AGGREGATE BASE COURSE THICKNESS		
LOCATION	THICKNESS	COMMENTS
UNDER CONCRETE SIDEWALKS AND PLANTING STRIP	18"	COMPACTED TO 95% RELATIVE COMPACTION (TYPICAL)
CONCRETE DRIVEWAYS	24"	COMPACTED TO 95% RELATIVE COMPACTION (TYPICAL)
CONCRETE CURB RAMPS	24"	COMPACTED TO 95% RELATIVE COMPACTION (TYPICAL)



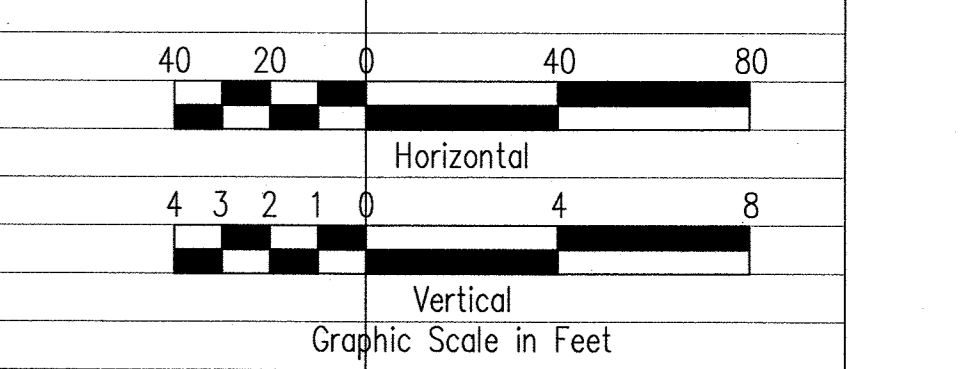
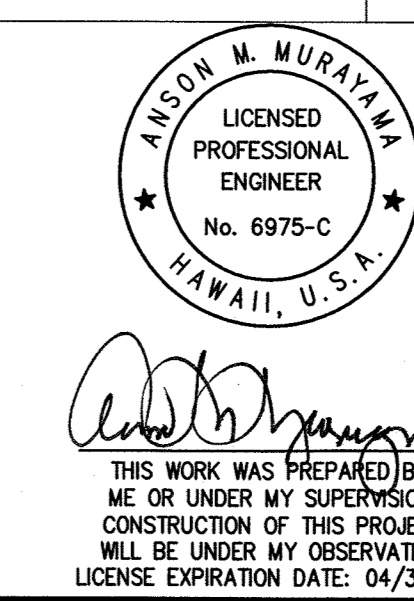
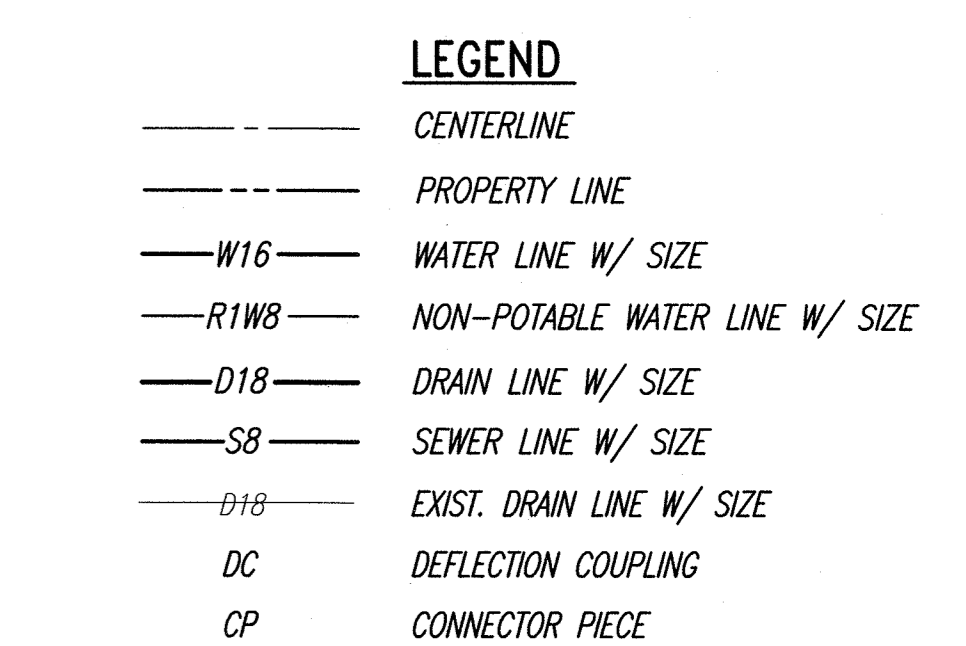
THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION. CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION. LICENSE EXPIRATION DATE: 04/30/14


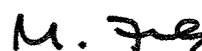
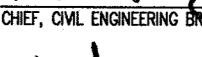

REVISION DATE	DESCRIPTION	MADE BY	APPROVED
Community Planning and Engineering, Inc. Engineering Design Construction Management Infrastructure Planning 1286 Queen Emma Street Honolulu, Hawaii			
EAST KAPOLEI II DEVELOPMENT INCREMENT 2B HONOLULU, EWA, OAHU, HAWAII OPP SUBJ. FILE NO. 2011/SUB-155 OWNER & DEVELOPER: DEPARTMENT OF HAWAIIAN HOME LANDS TAX MAP KEY: 9-1-17: Portion 110			
TYPICAL ROADWAY SECTIONS			
DRAWN BY: LYL	ENGINEER: SS	CHECKED BY: JMM	
APPROVED: <i>M. J. [Signature]</i> 6/28/13 CHIEF, CIVIL ENGINEERING BRANCH, D.P.P. UNIT DATE <i>[Signature]</i> 6/28/13 CHIEF, INFRASTRUCTURE BRANCH, D.P.P. UNIT DATE			



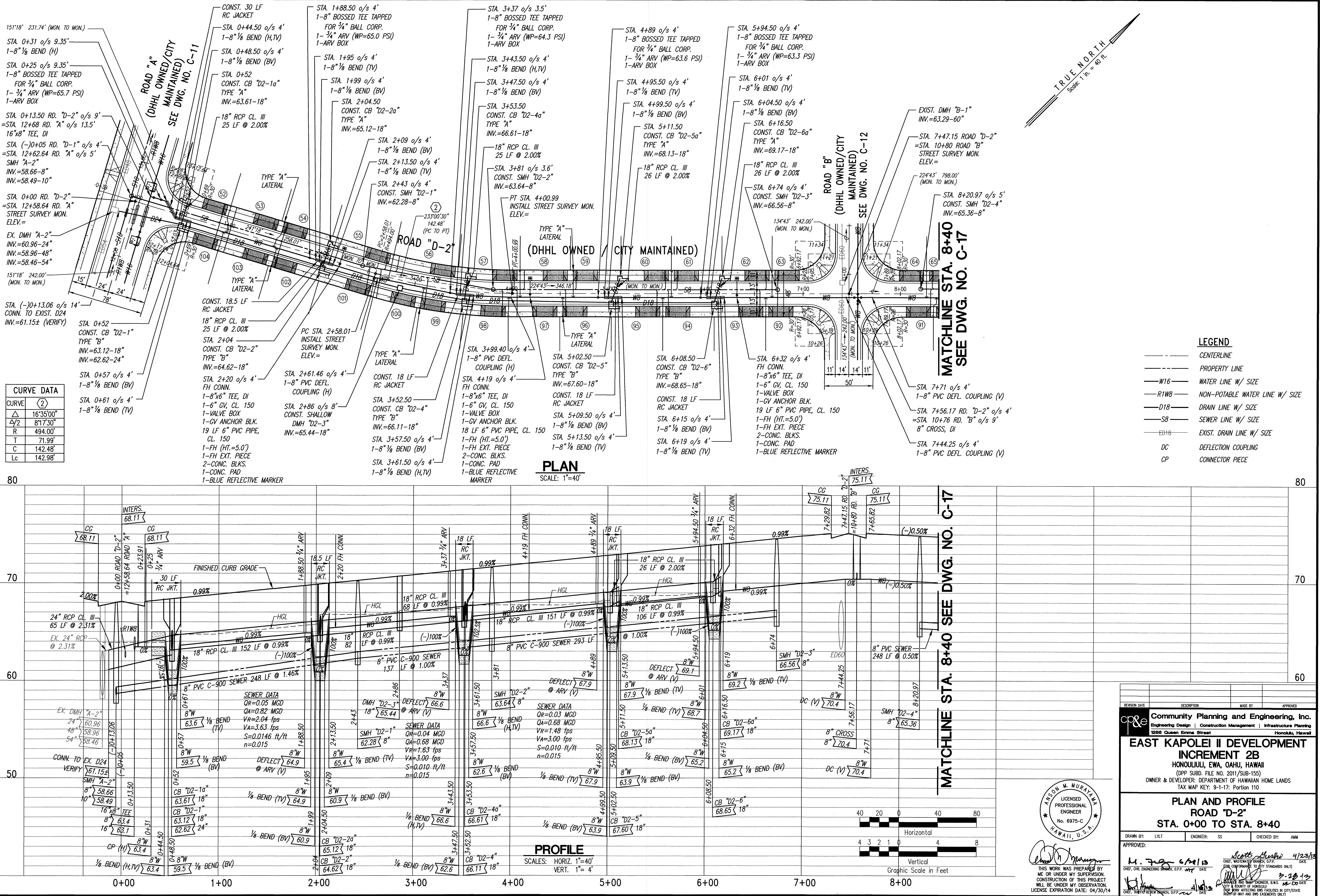


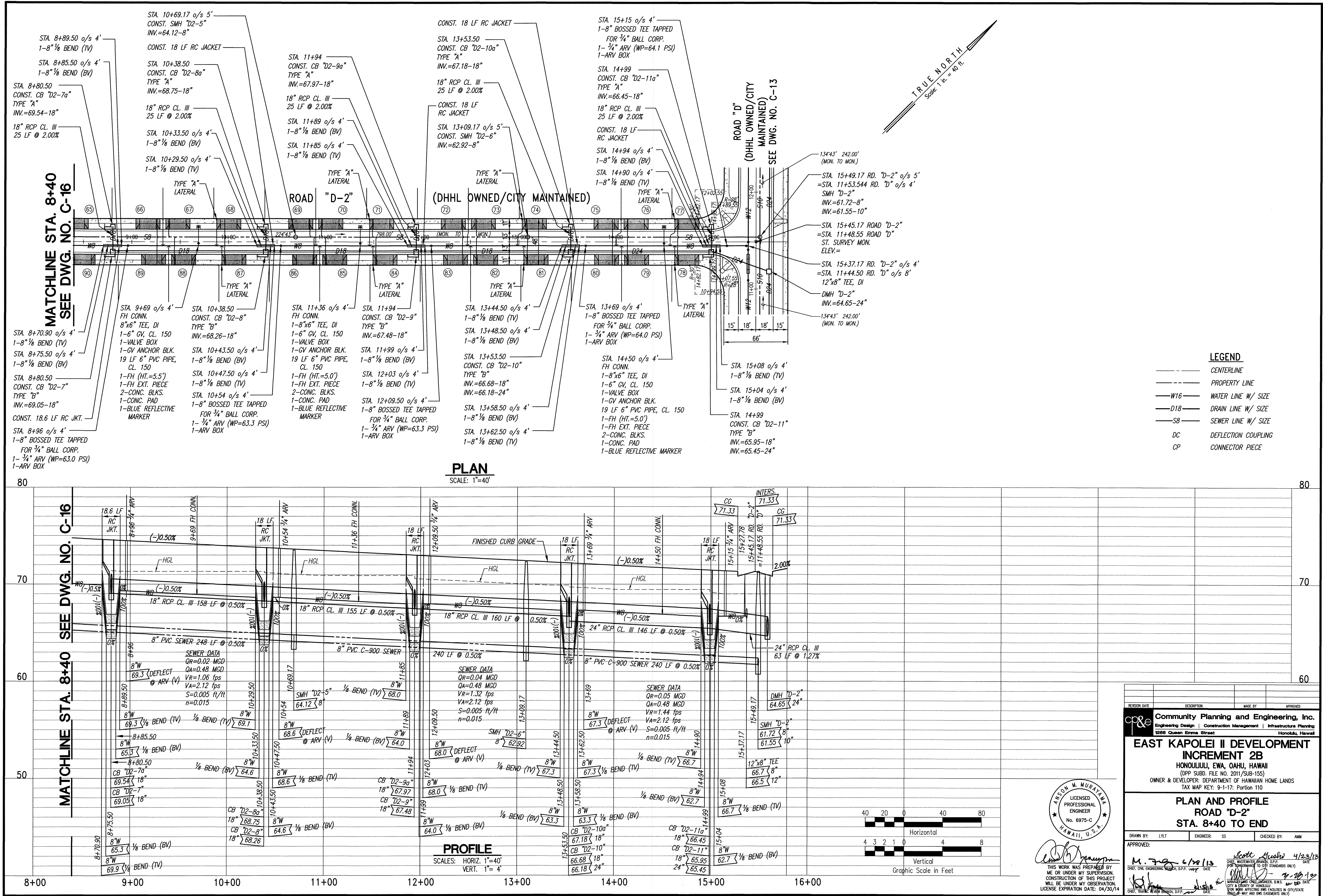


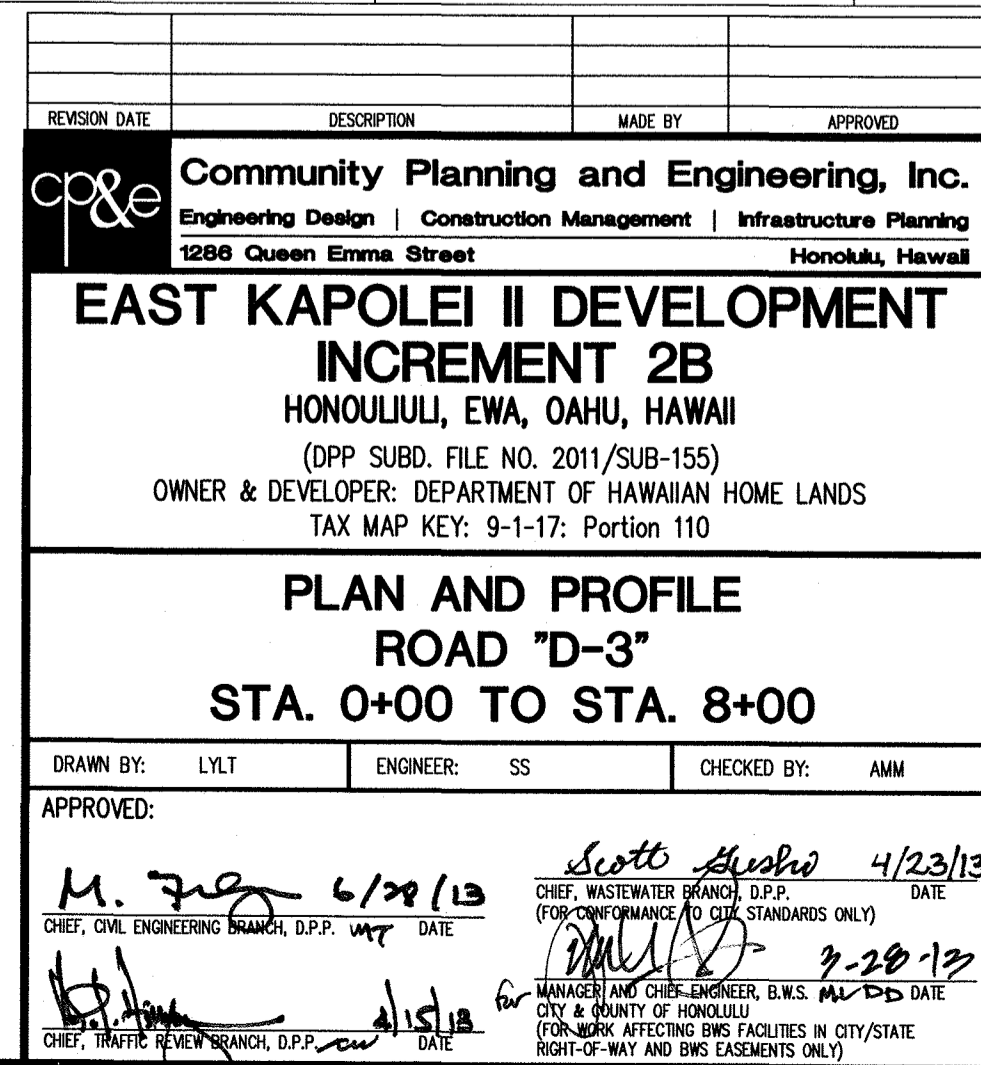
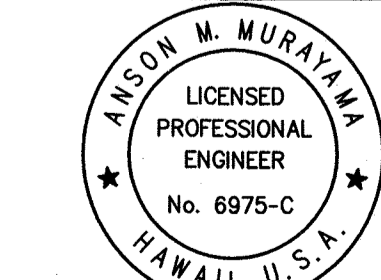
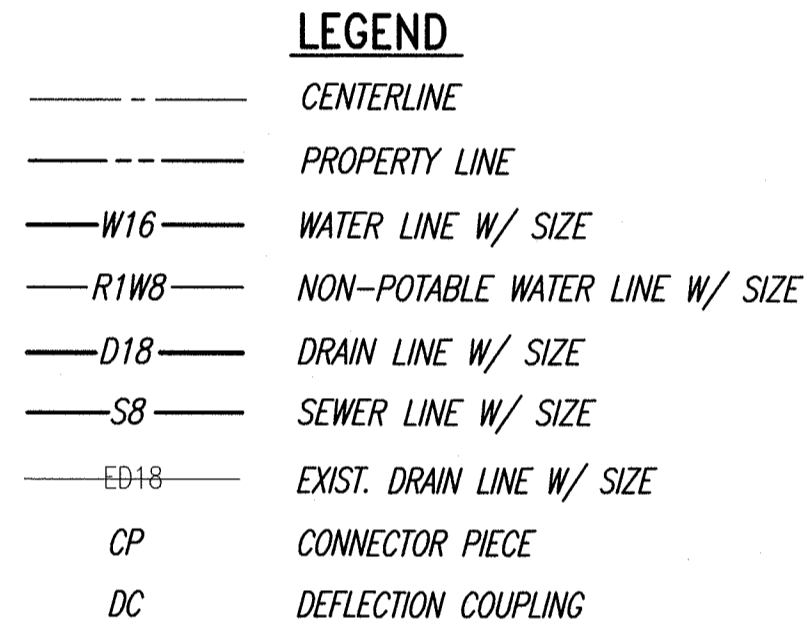
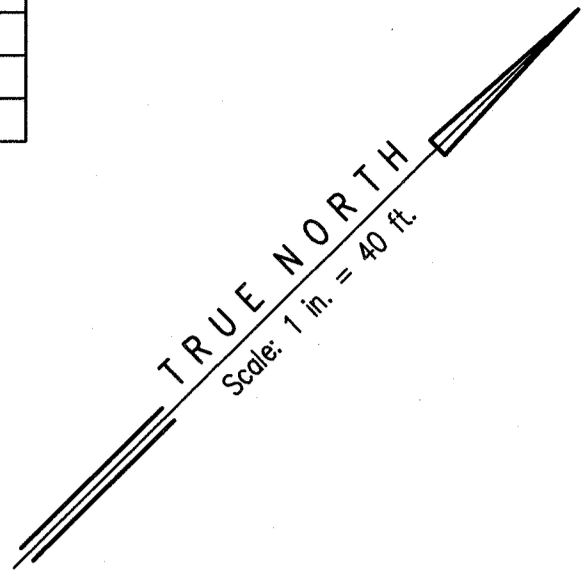


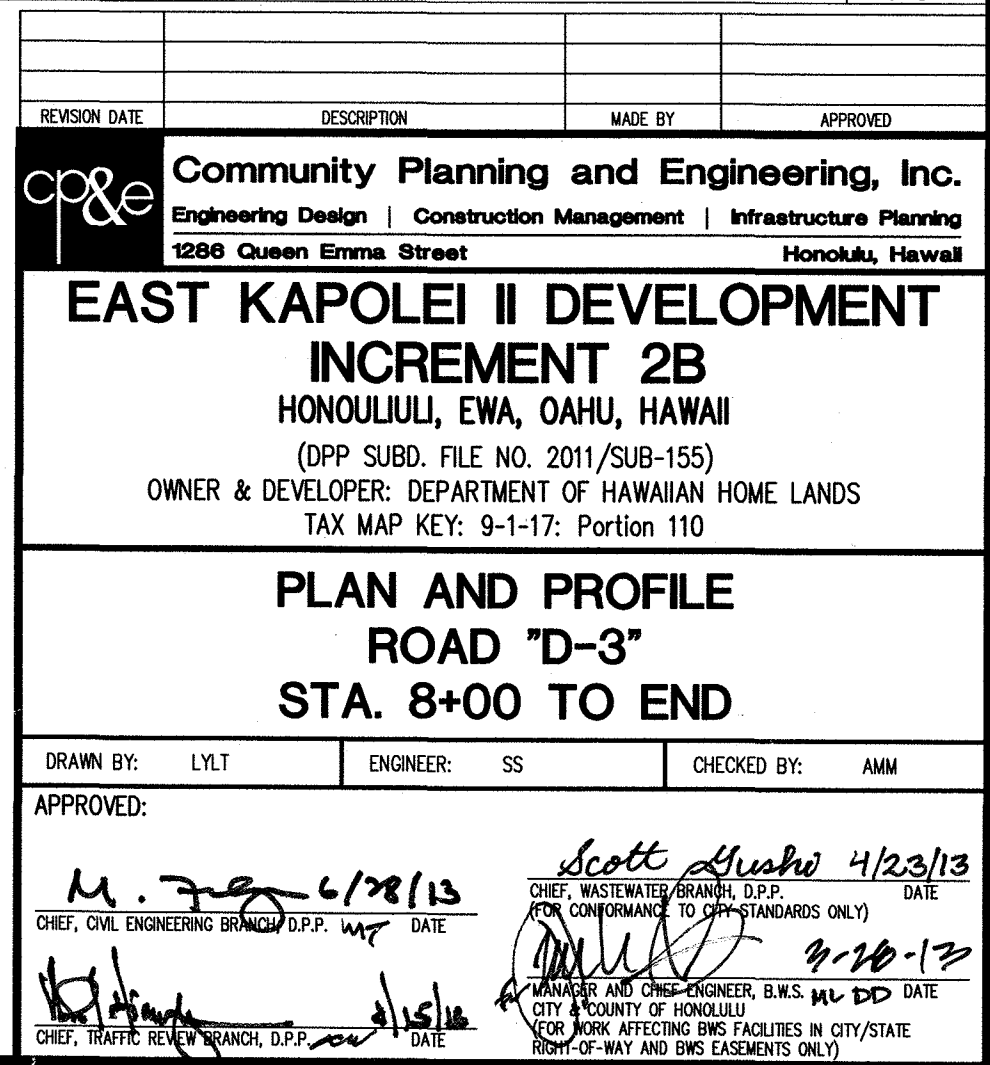
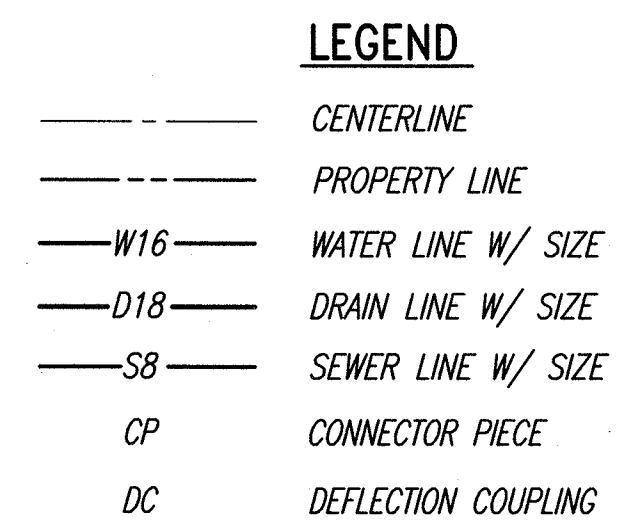
REVISION DATE	DESCRIPTION	MADE BY	APPROVED
 <div> Community Planning and Engineering, Inc. Engineering Design Construction Management Infrastructure Planning 1286 Queen Emma Street Honolulu, Hawaii </div>			
<h1>EAST KAPOLEI II DEVELOPMENT</h1> <h2>INCREMENT 2B</h2> <p>HONOLULU, EWA, OAHU, HAWAII (OPP SUBD. FILE NO. 2011/SP-155) OWNER & DEVELOPER: DEPARTMENT OF HAWAIIAN HOME LANDS TAX MAP KEY: 9-1-17: Portion 110</p>			
<h1>PLAN AND PROFILE</h1> <h2>ROAD "D-I"</h2> <h2>STA. 0+00 TO +8+90</h2>			
DRAWN BY: LYLE	ENGINEER: SS	CHECKED BY: AMM	
APPROVED: <div>  <div> Scott Shiroki 4/23/13 CHIEF, WASTEwater BRANCH D.D.P. DATE (FOR CONFORMANCE TO ISO STANDARDS ONLY) </div> </div> <div>  <div> AMM 4-28-13 CHIEF, CIVIL ENGINEERING BRANCH, D.D.P. DATE (FOR CONFORMANCE TO ISO STANDARDS ONLY) </div> </div> <div>  <div> AMM 4-28-13 CHIEF, TRAFFIC REVIEW BRANCH, D.D.P. DATE (FOR CONFORMANCE TO ISO STANDARDS ONLY) </div> </div>			



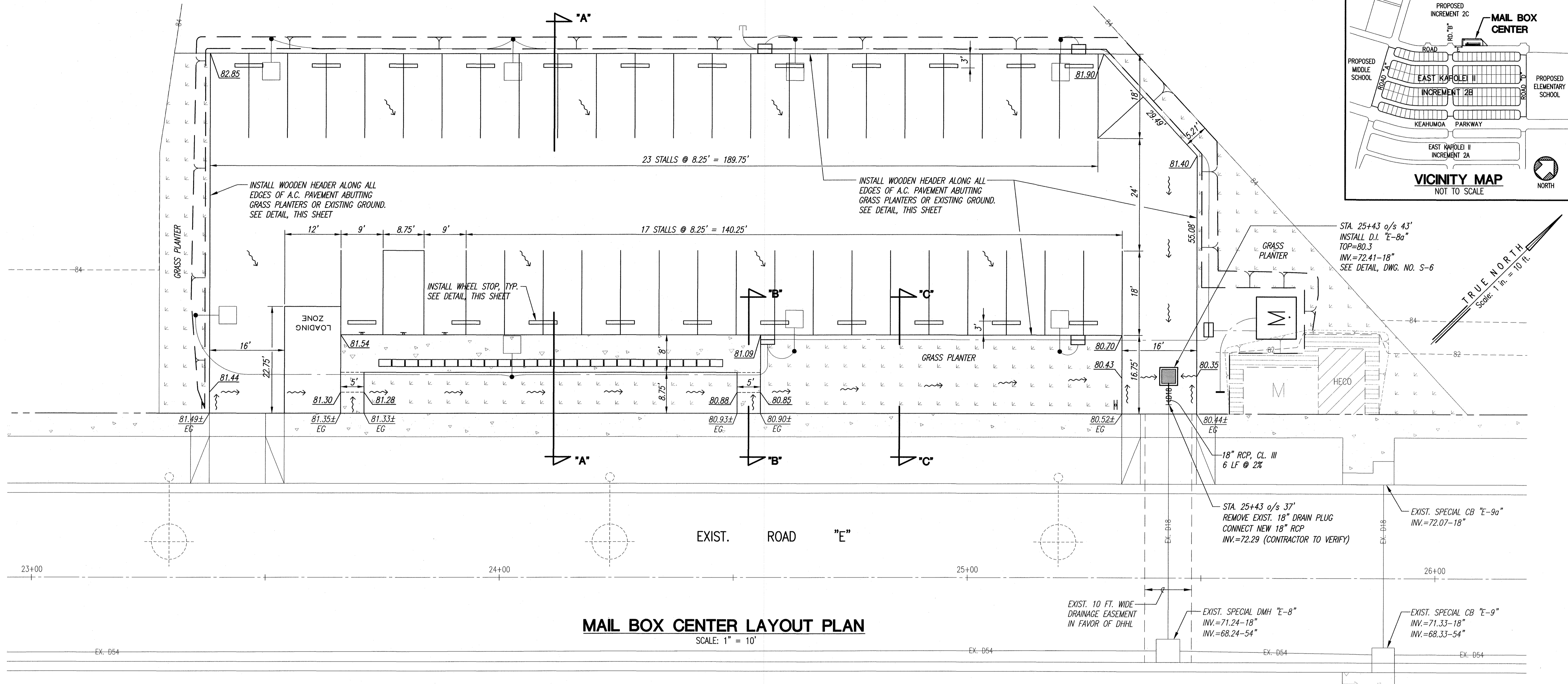






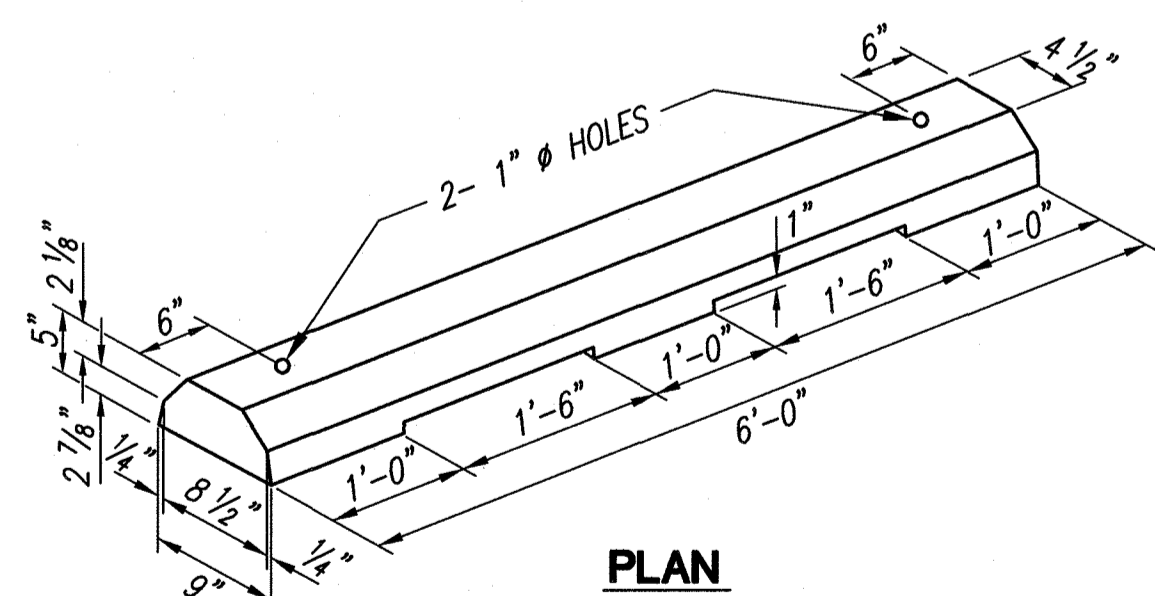


P:\Land Projects\DHHL East Kapolei II\Increment II-B\Construction Drawings\Government Review\43MAIL BOX CENTER LAYOUT PLAN GR45.dwg, 21 MAIL BOX CENTER LAYOUT PLAN, 3/13/2013 2:34:36 PM, 1:1

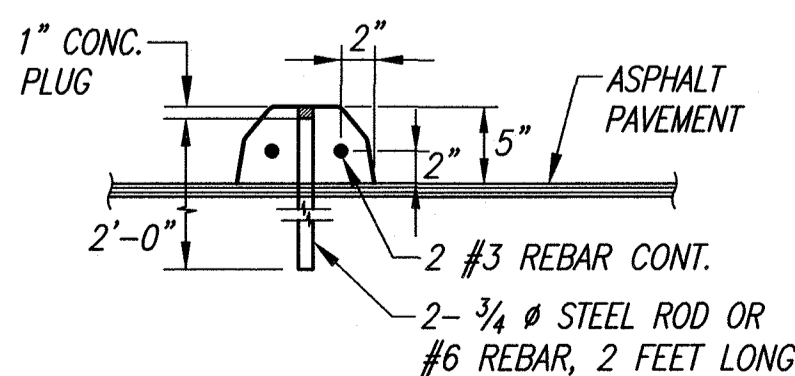


MAIL BOX CENTER LAYOUT PLAN

SCALE: 1" = 10'



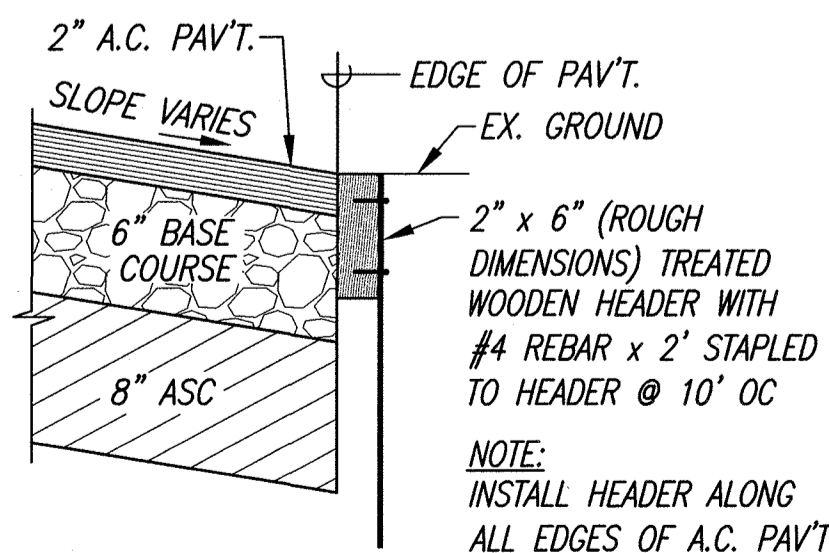
PLAN



TYPICAL SECTION

DETAIL-PRECAST WHEEL STOP

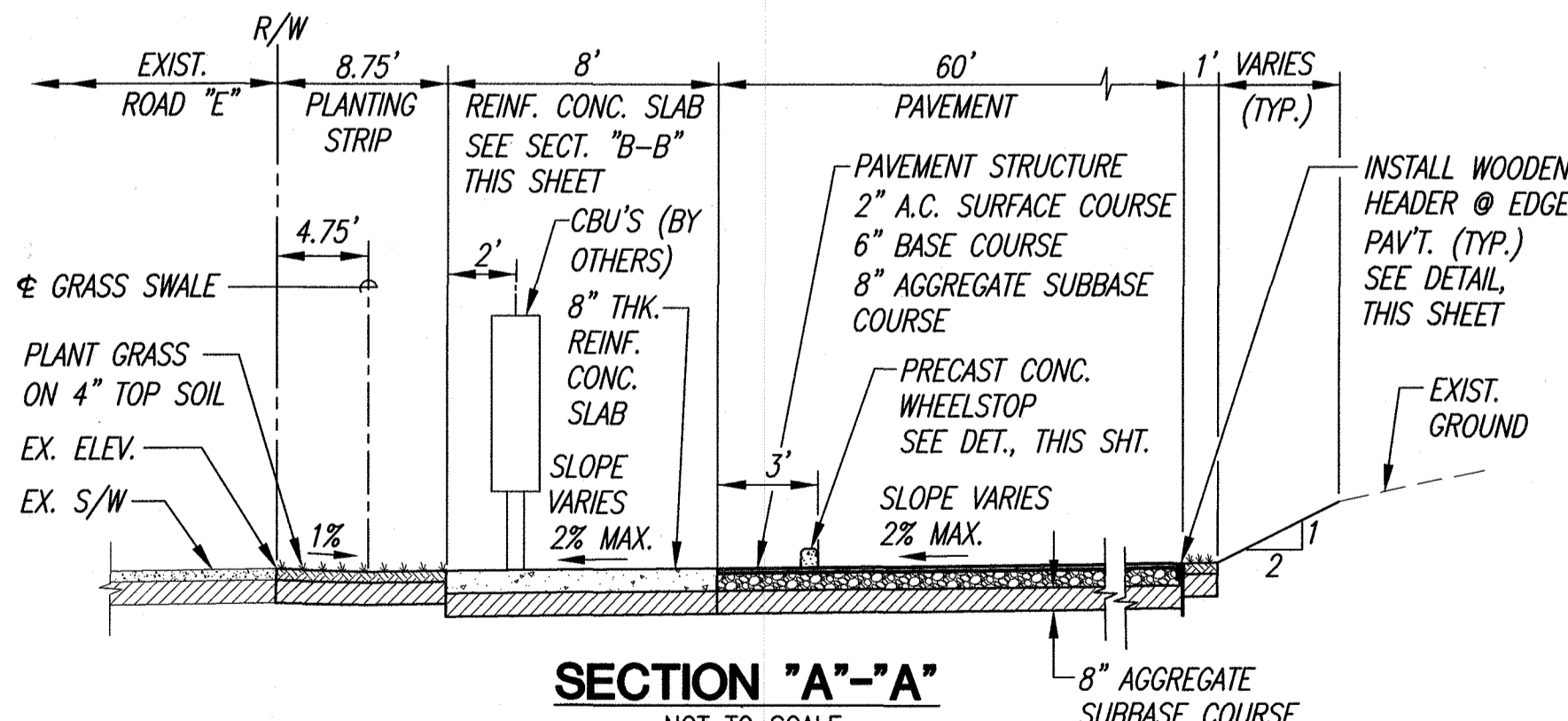
NOT TO SCALE



TYPICAL SECTION

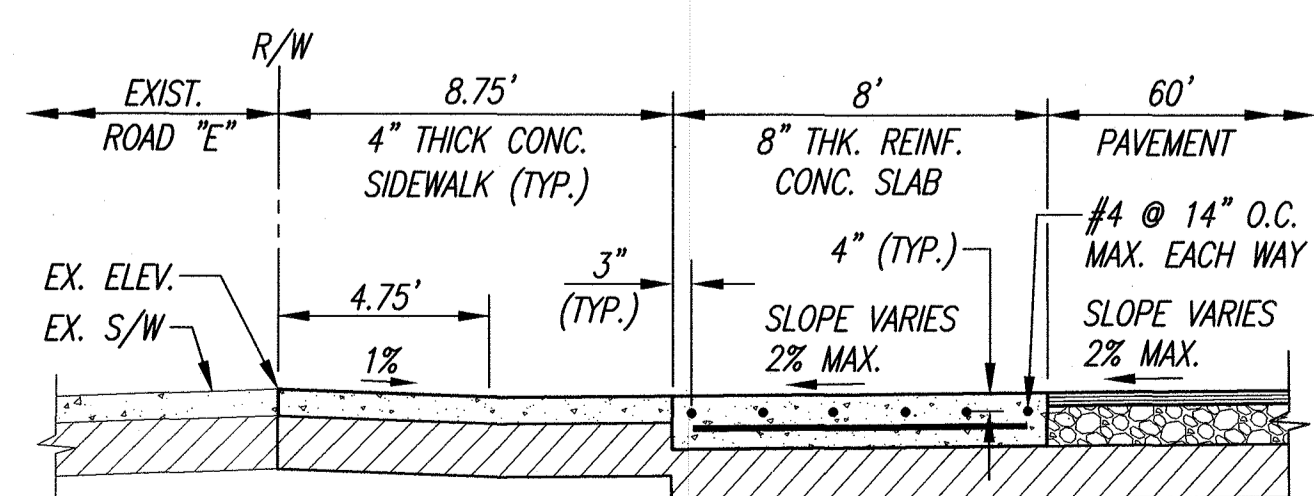
DETAIL-WOODEN HEADER

NOT TO SCALE



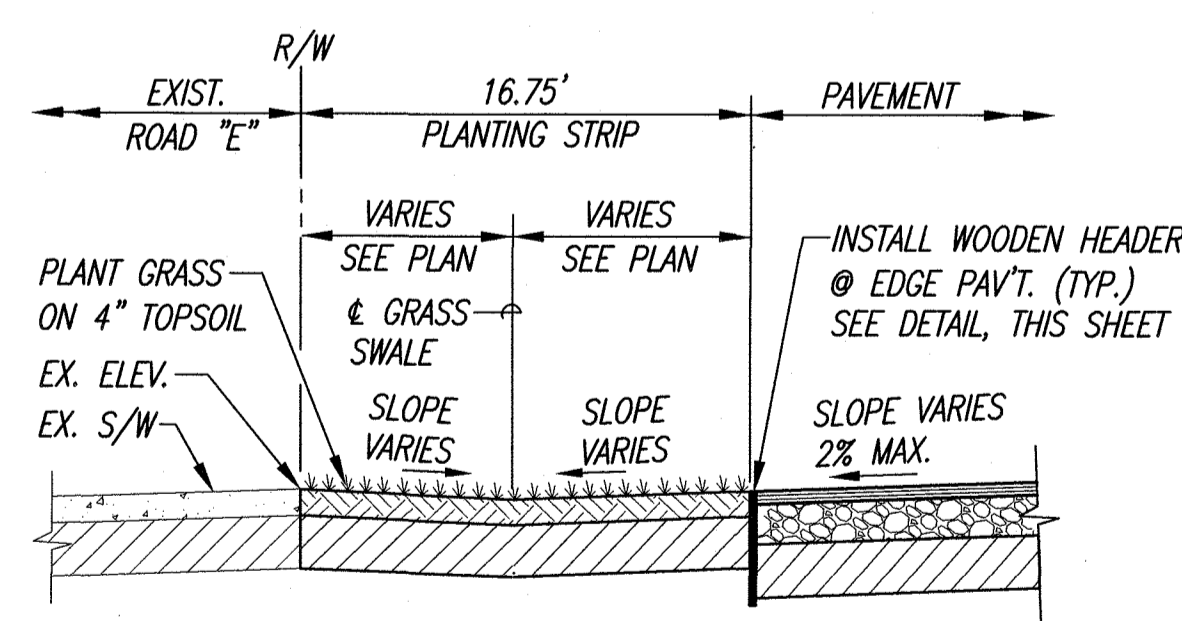
SECTION 'A'-A'

NOT TO SCALE



SECTION 'B'-B'

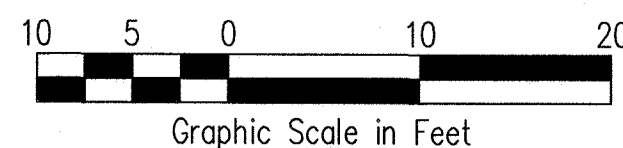
NOT TO SCALE



SECTION 'C'-C'

NOT TO SCALE

NOTE:
SEE "TECHNICAL SPECIFICATIONS DIVISION - 10.
SECTION 10552 - CONC. PAD FOR MAIL BOXES"
FOR ADDITIONAL DETAILS



LEGEND

- ~ SURFACE WATER FLOW
- EG EXISTING GRADE
- D.I. DRAIN INLET
- CB CATCH BASIN
- DMH DRAIN MANHOLE
- EX. D+18 EXIST. DRAINLINE W/SIZE

REVISION DATE	DESCRIPTION	MADE BY	APPROVED

Community Planning and Engineering, Inc.
Engineering Design | Construction Management | Infrastructure Planning
1288 Queen Emma Street Honolulu, Hawaii

**EAST KAPOLEI II DEVELOPMENT
INCREMENT 2B**
HONOLULU, EWA, OAHU, HAWAII
(DPP SUBD. FILE NO. 2011/SUB-155)
OWNER & DEVELOPER: DEPARTMENT OF HAWAIIAN HOME LANDS
TAX MAP KEY: 9-1-17: Portion 110

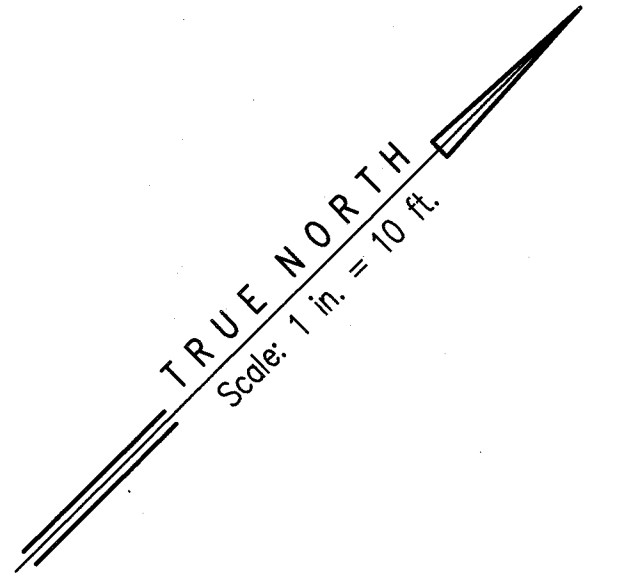
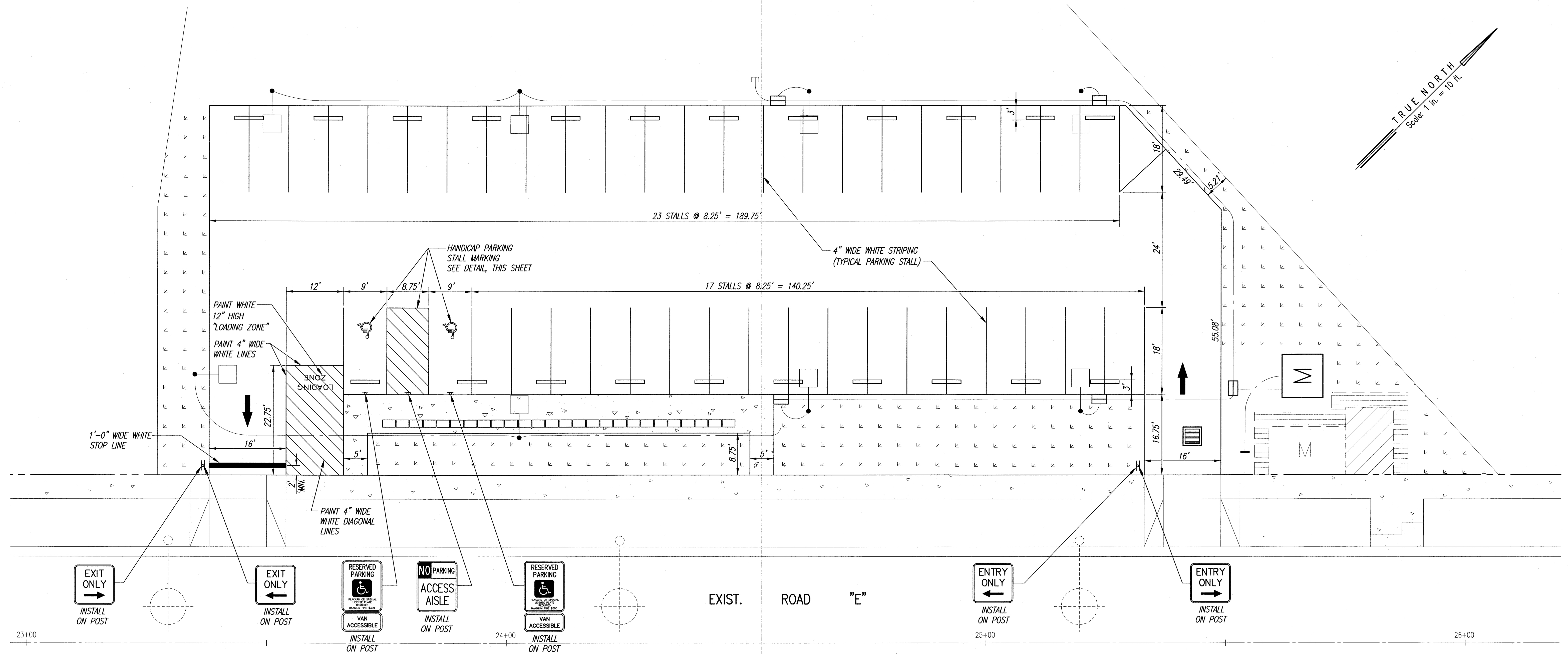
**MAIL BOX CENTER
LAYOUT PLAN**

DRAWN BY: LYL	ENGINEER: SS	CHECKED BY: AMM
---------------	--------------	-----------------

APPROVED: _____

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION. CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION. LICENSE EXPIRATION DATE: 04/30/14

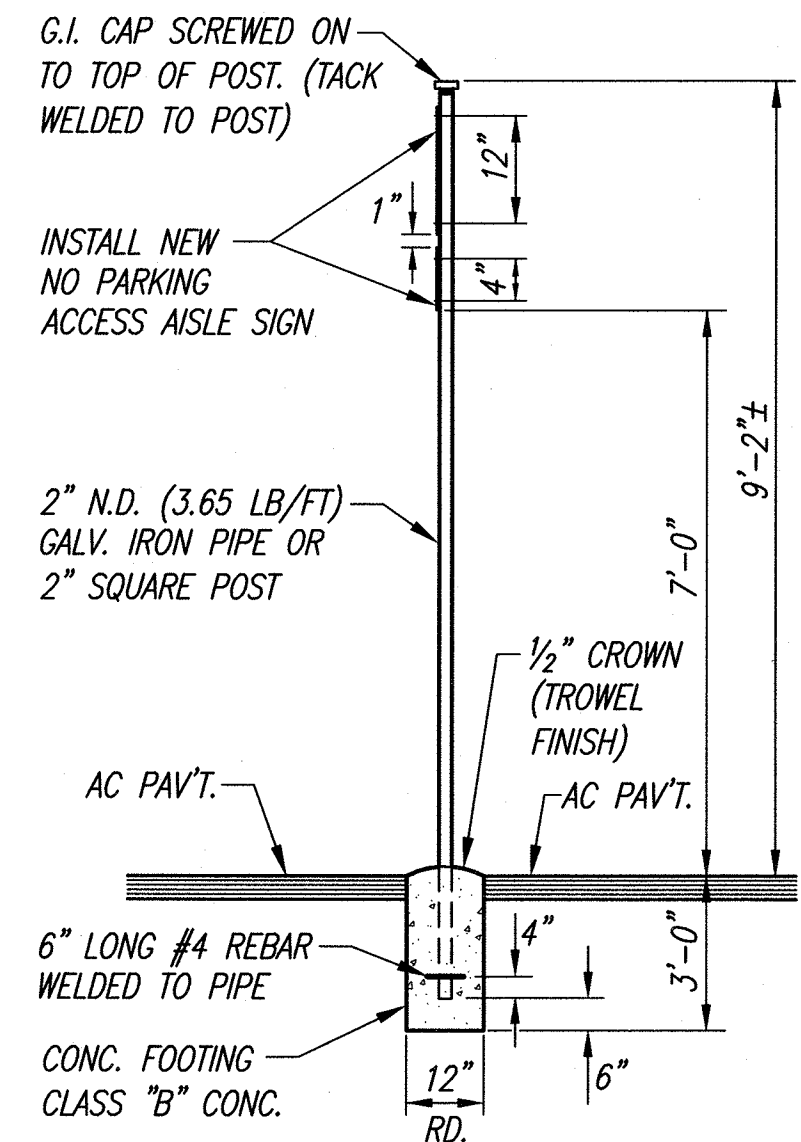
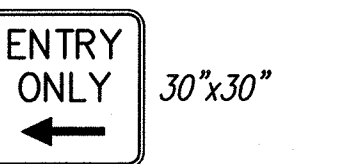
P:\Land Projects\DHHL East Kapolei Illustration\Construction Drawings\Government Review\3\MB CENTER SIGNING AND STRIPING PLAN GR43.dwg, 22 MAIL BOX CENTER SIGN AND STRIPING PLAN, 3/13/2013 2:37:33 PM, 1:1



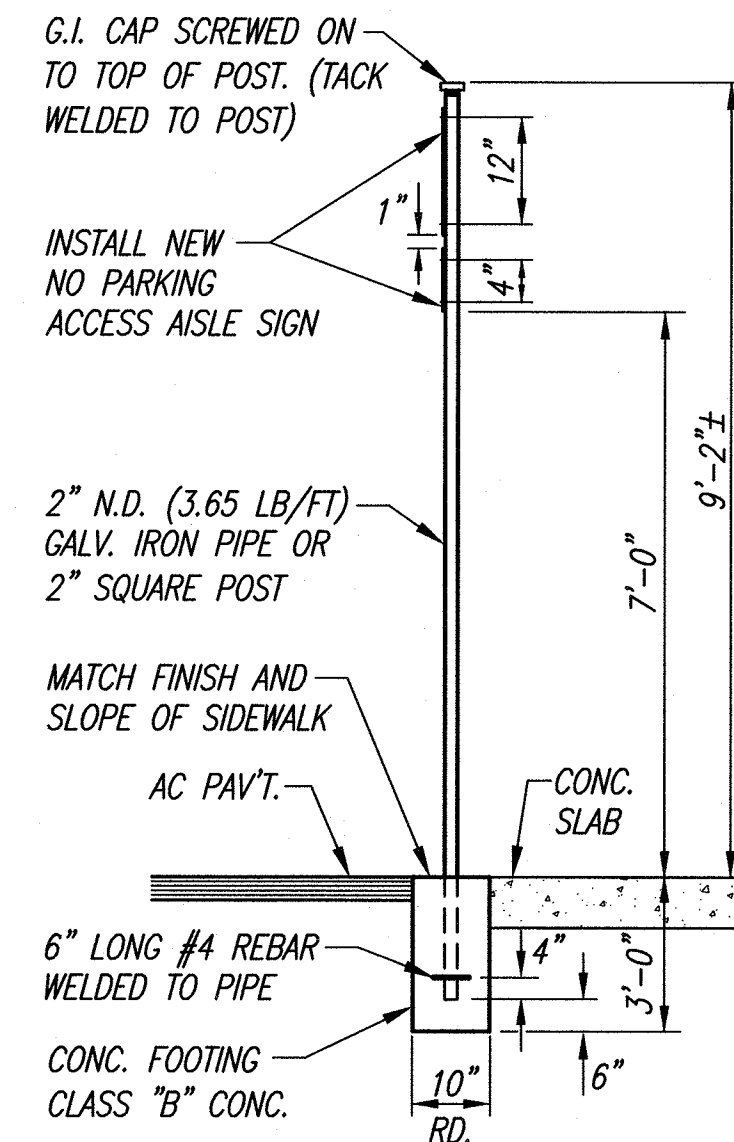
MAIL BOX CENTER SIGN AND STRIPING PLAN

SCALE: 1" = 10'

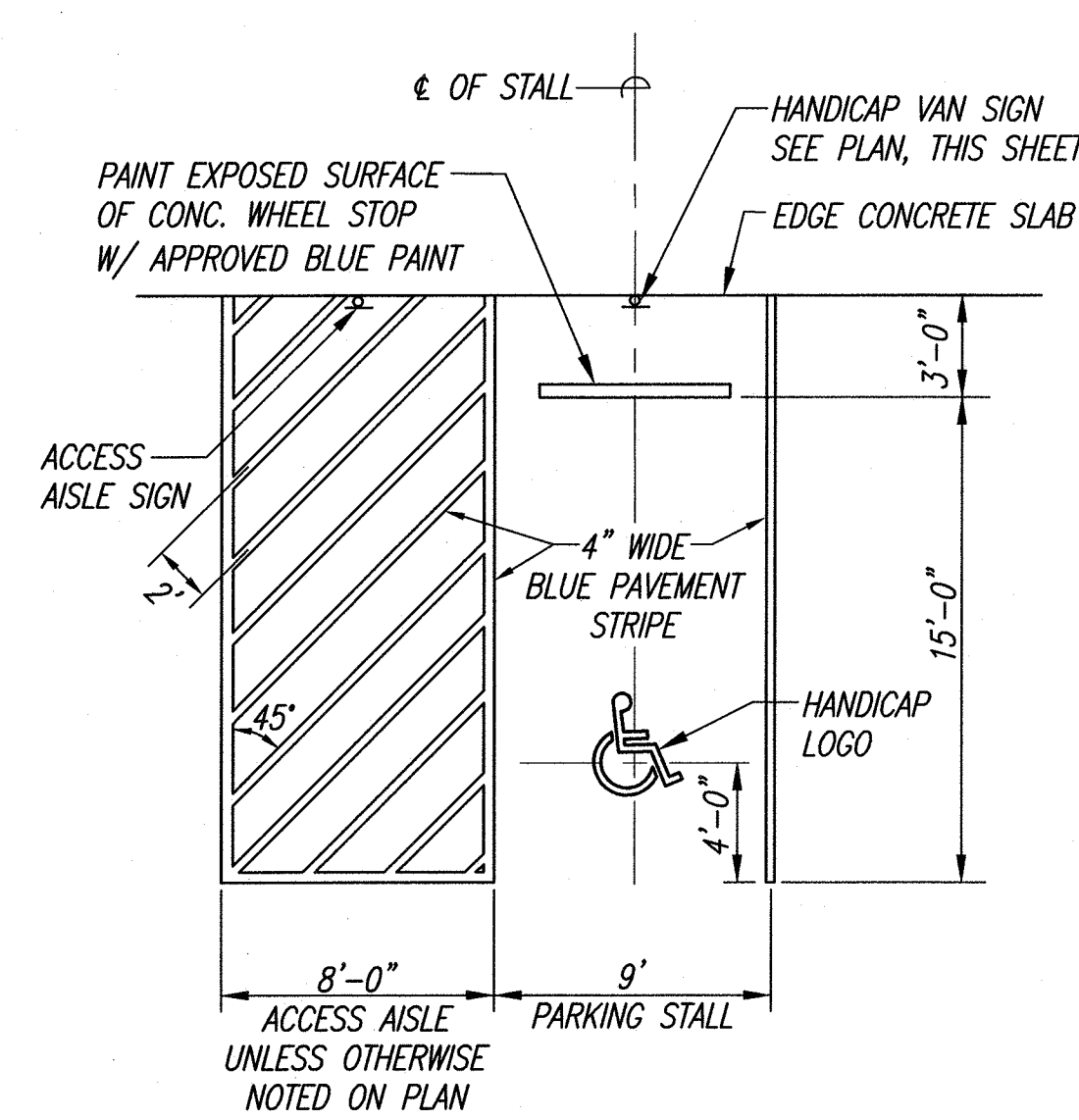
LEGEND



TYPICAL HANDICAP SIGN POST DETAIL
NOT TO SCALE



**TYPICAL HANDICAP SIGN POST
AT CONC SLAB DETAIL**
NOT TO SCALE



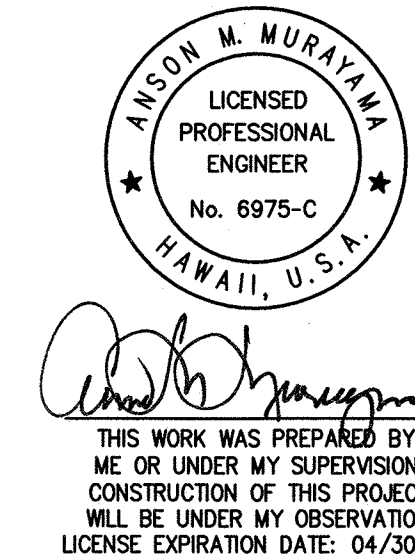
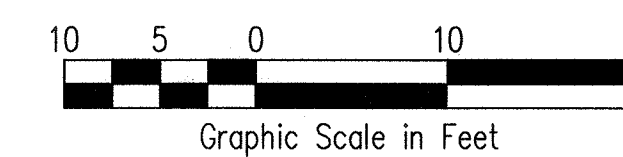
HANDICAP PARKING STALL MARKINGS DETAIL
NOT TO SCALE



HANDICAP VAN SIGN
NOT TO SCALE



ACCESS AISLE SIGN
NOT TO SCALE



REVISION DATE	DESCRIPTION	MADE BY	APPROVED

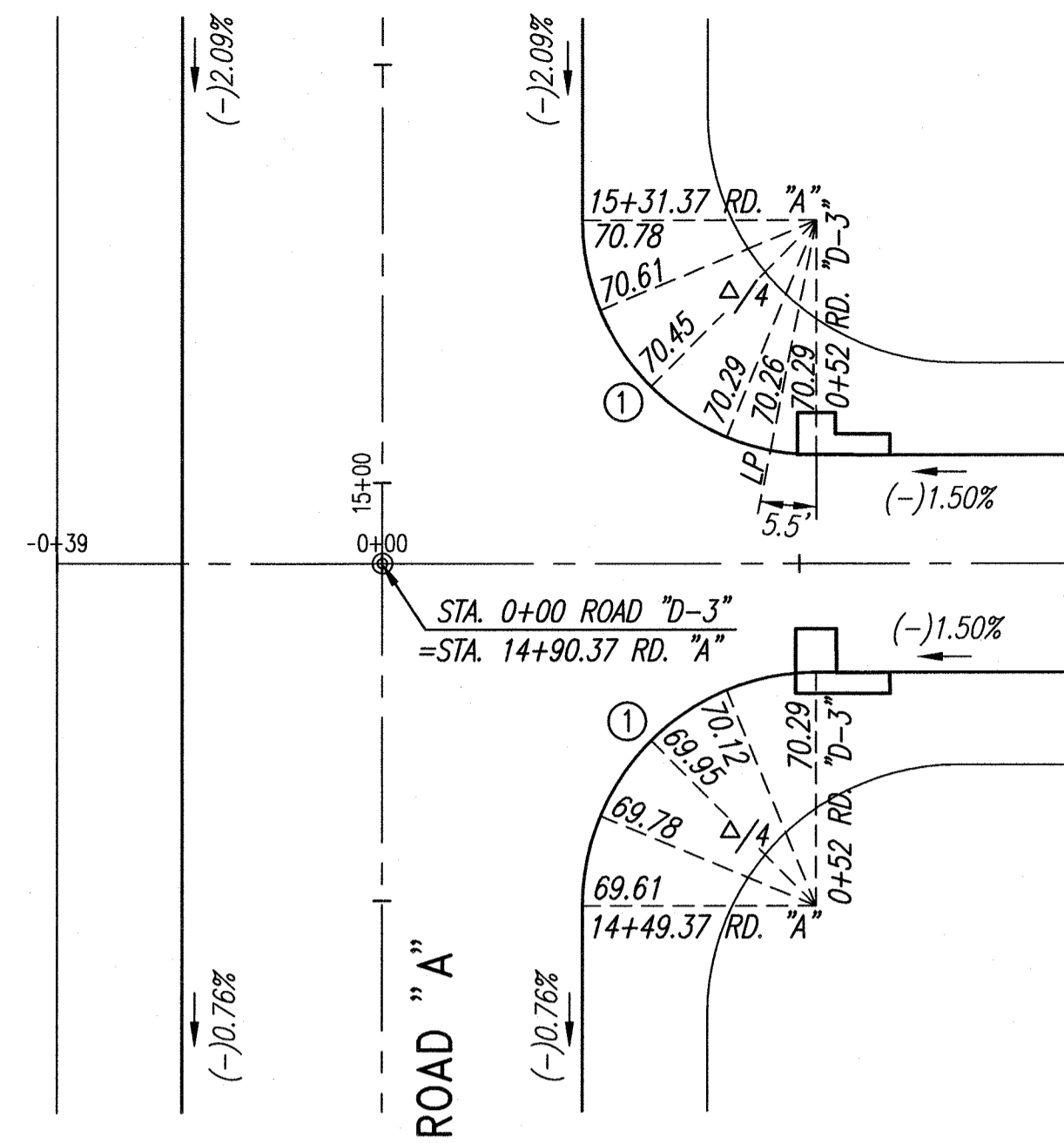
Community Planning and Engineering, Inc.
Engineering Design | Construction Management | Infrastructure Planning
1286 Queen Emma Street Honolulu, Hawaii

**EAST KAPOLEI II DEVELOPMENT
INCREMENT 2B**
HONOLULU, EWA, OAHU, HAWAII
(DPP SUBD. FILE NO. 2011/SUB-155)
OWNER & DEVELOPER: DEPARTMENT OF HAWAIIAN HOME LANDS
TAX MAP KEY: 9-1-17: Portion 110

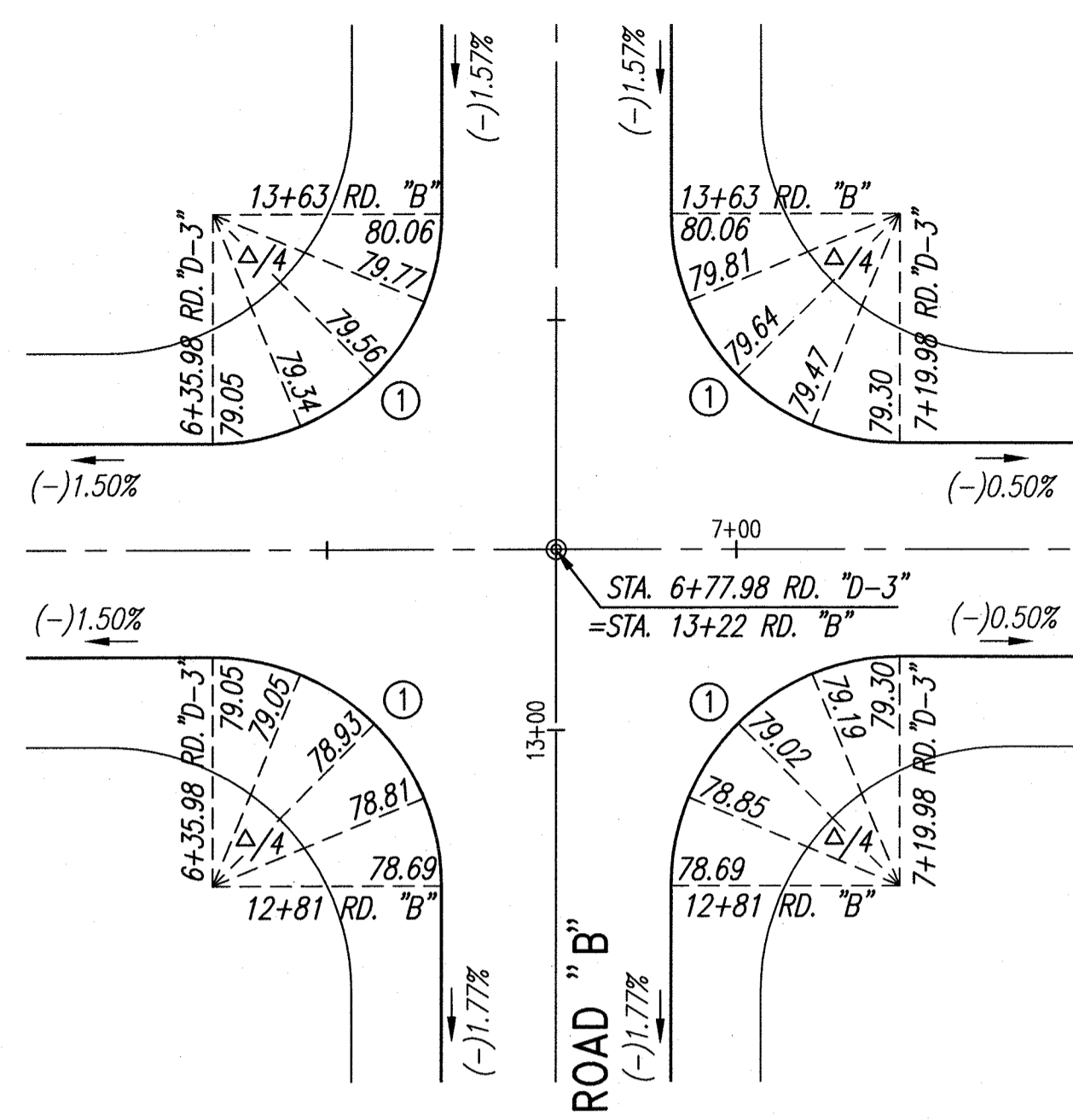
**MAIL BOX CENTER
SIGN AND STRIPING PLAN**

DRAWN BY: LYLT ENGINEER: SS CHECKED BY: JAM

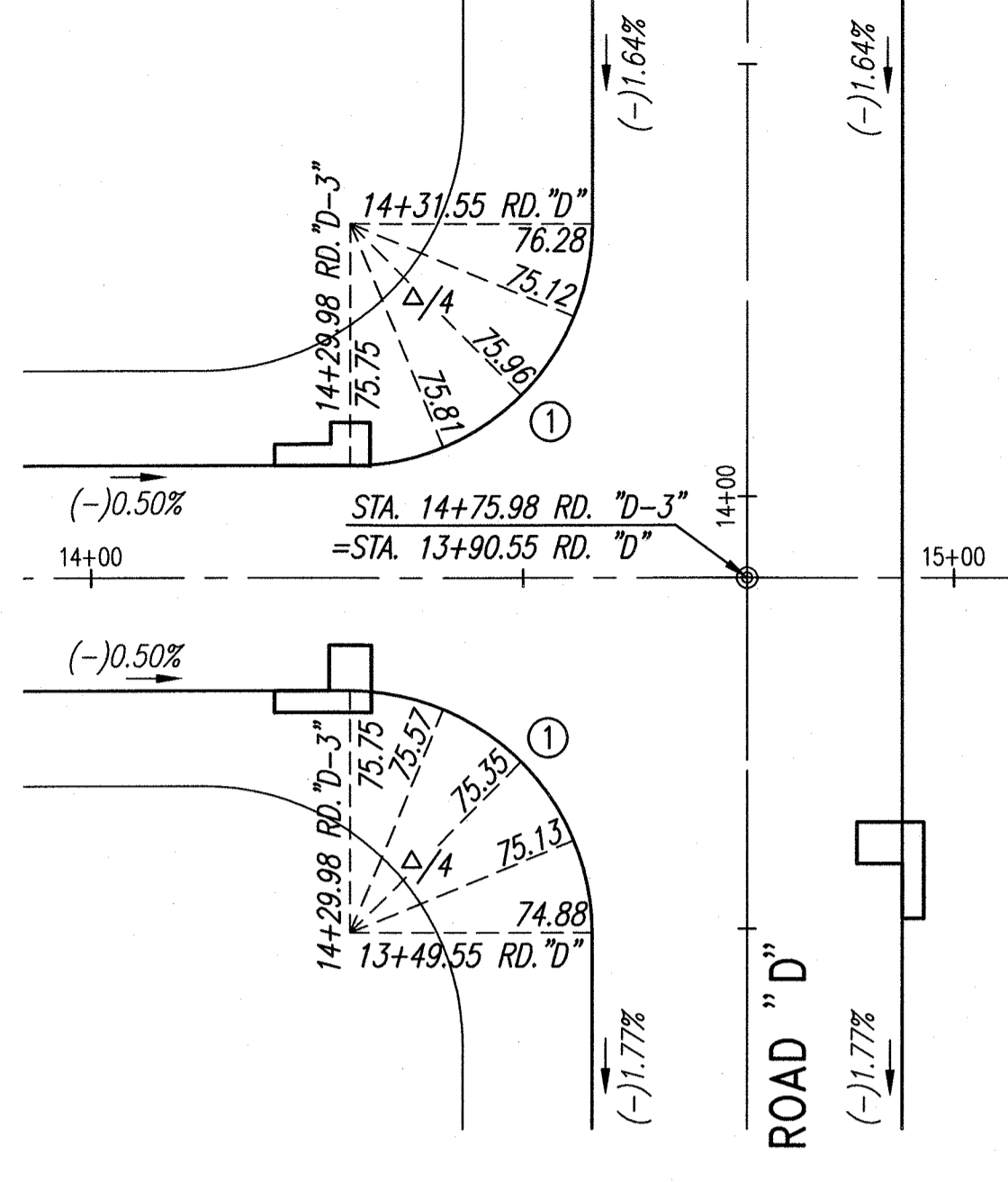
APPROVED:



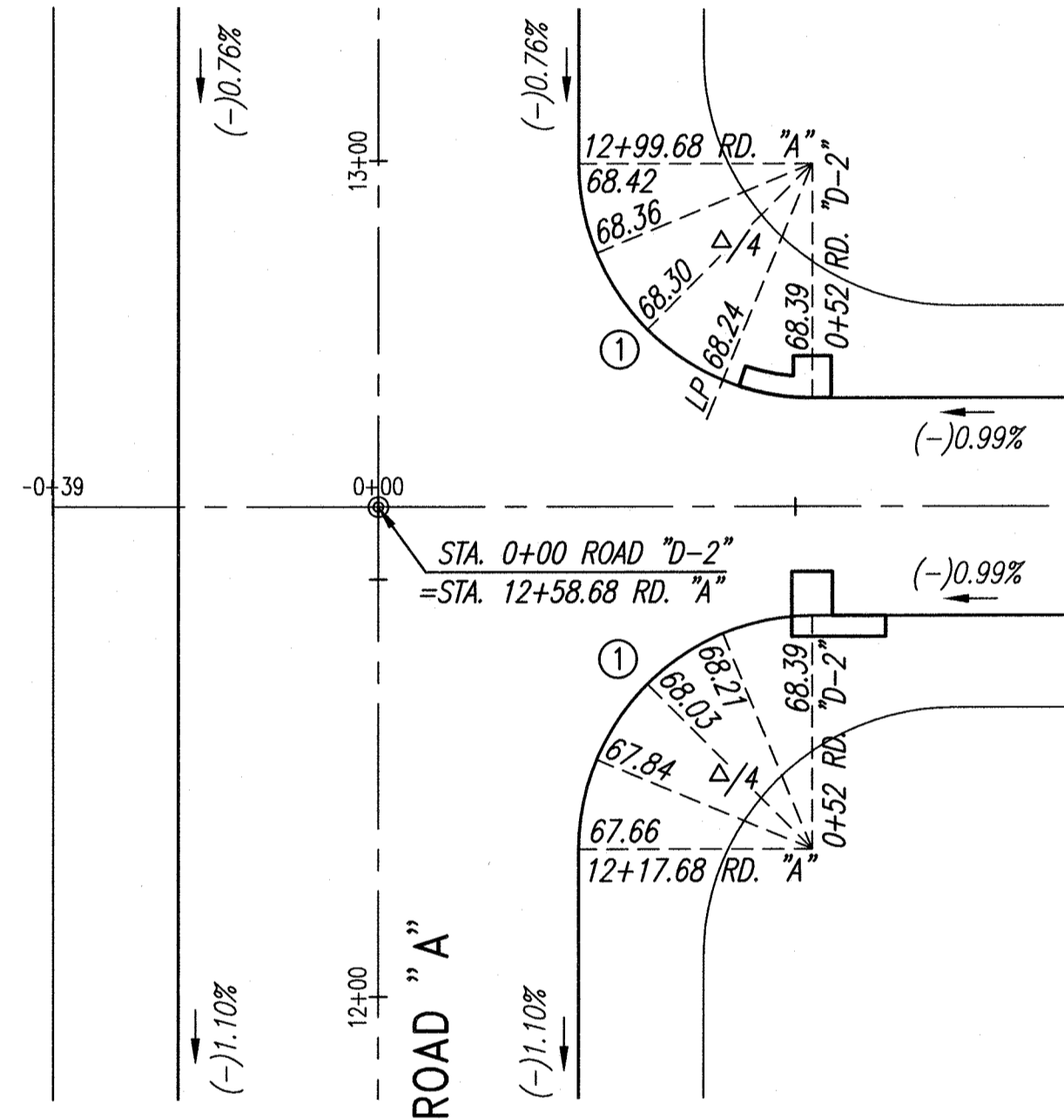
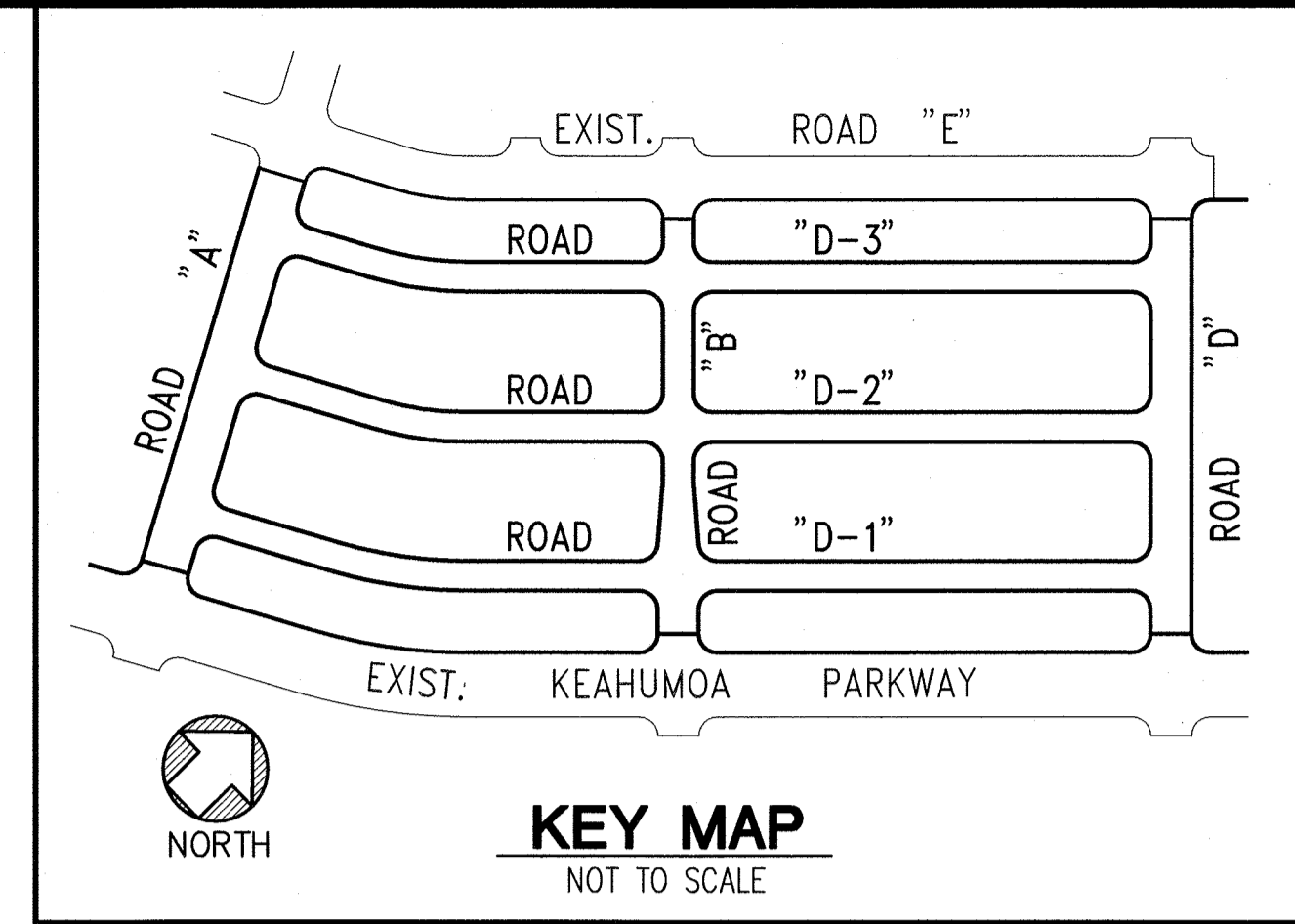
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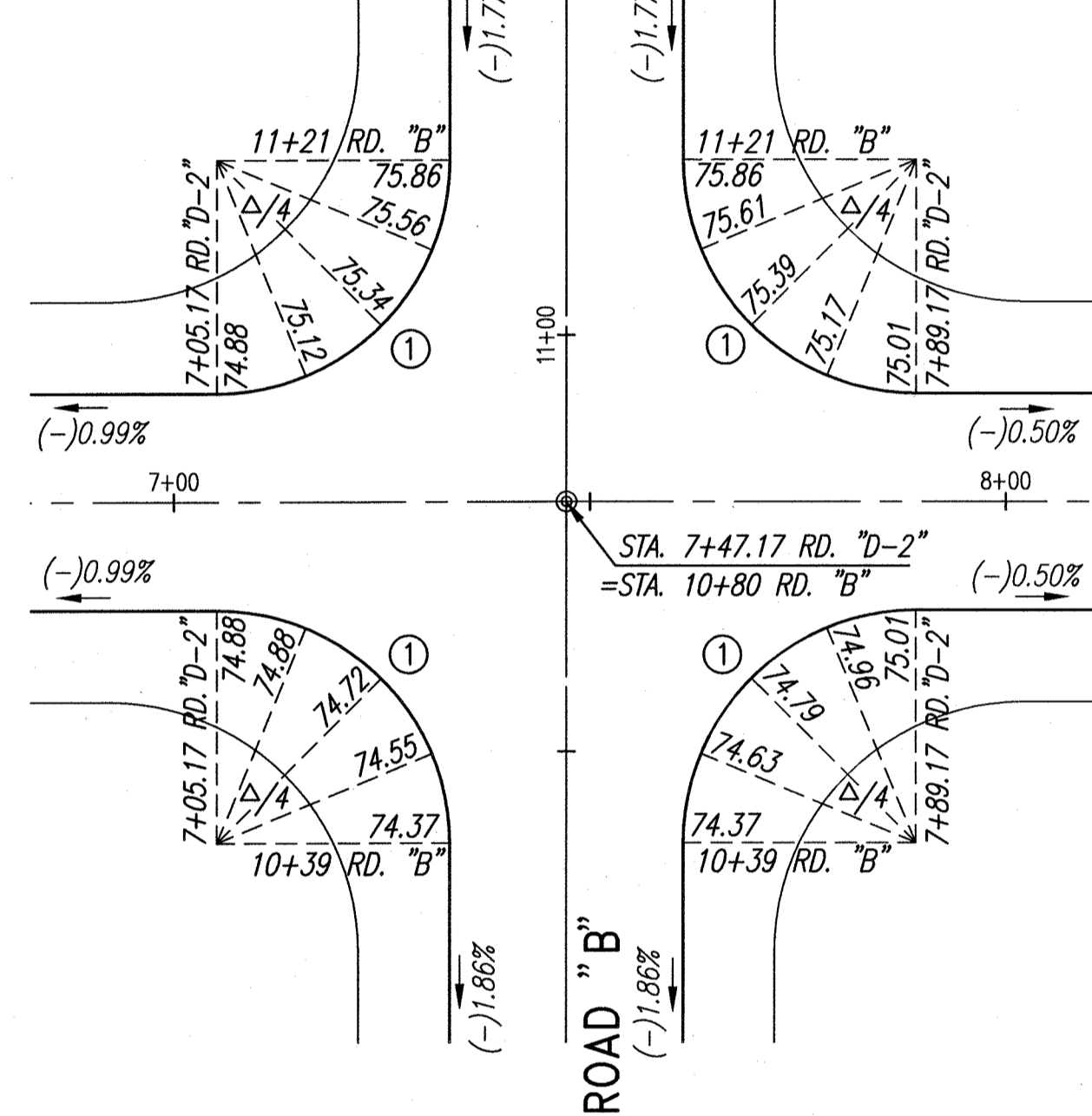
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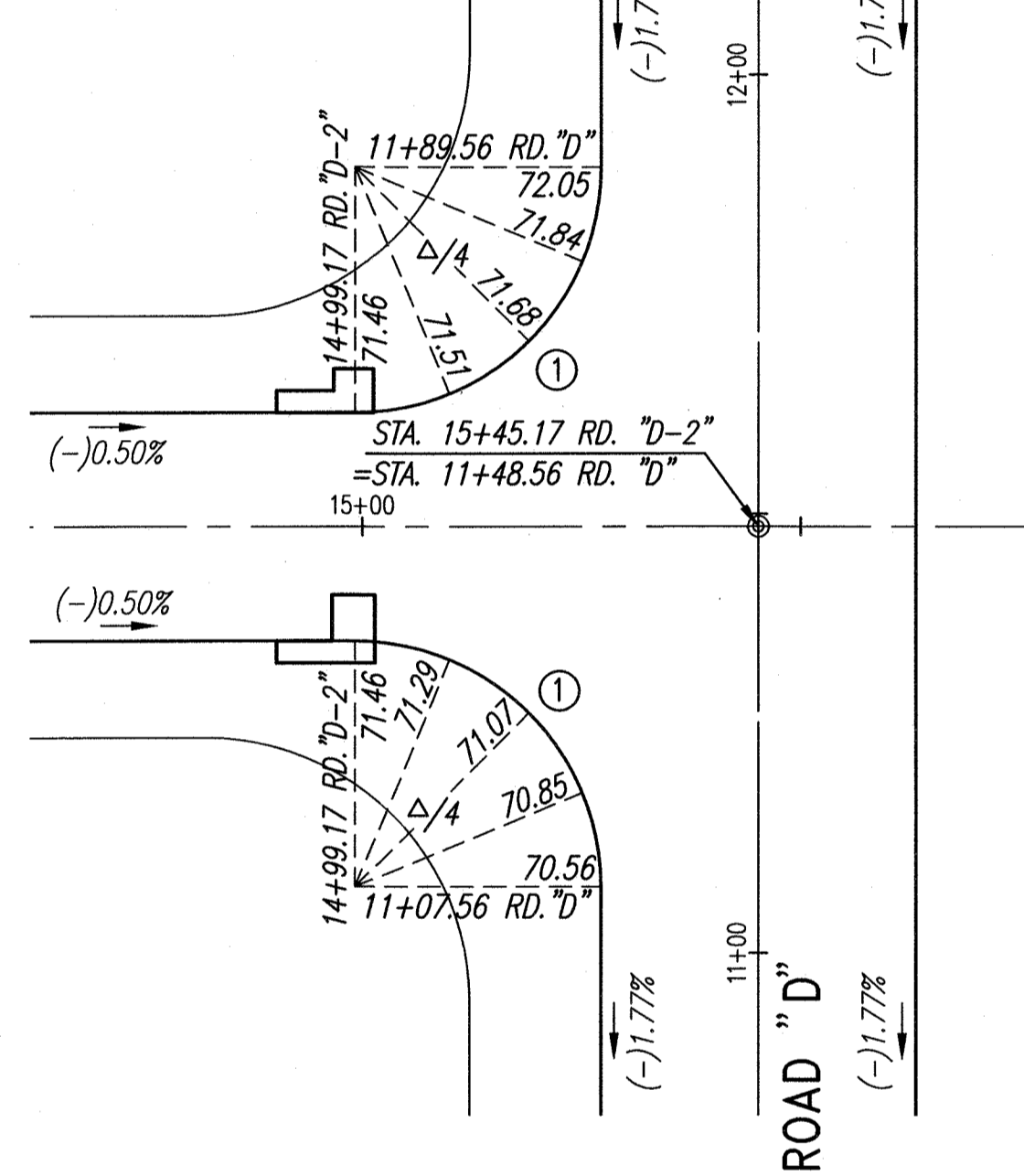
ROAD "D"



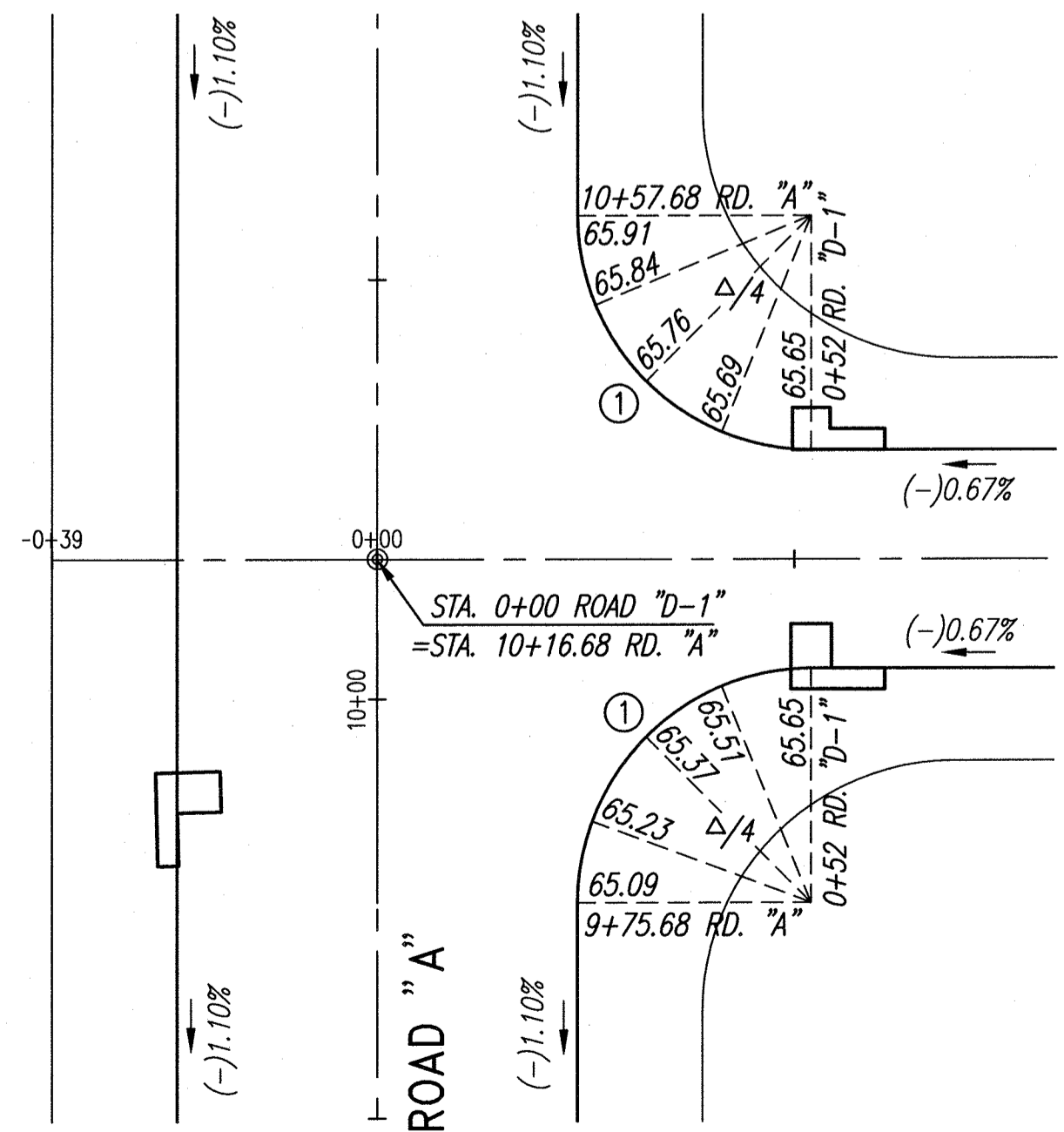
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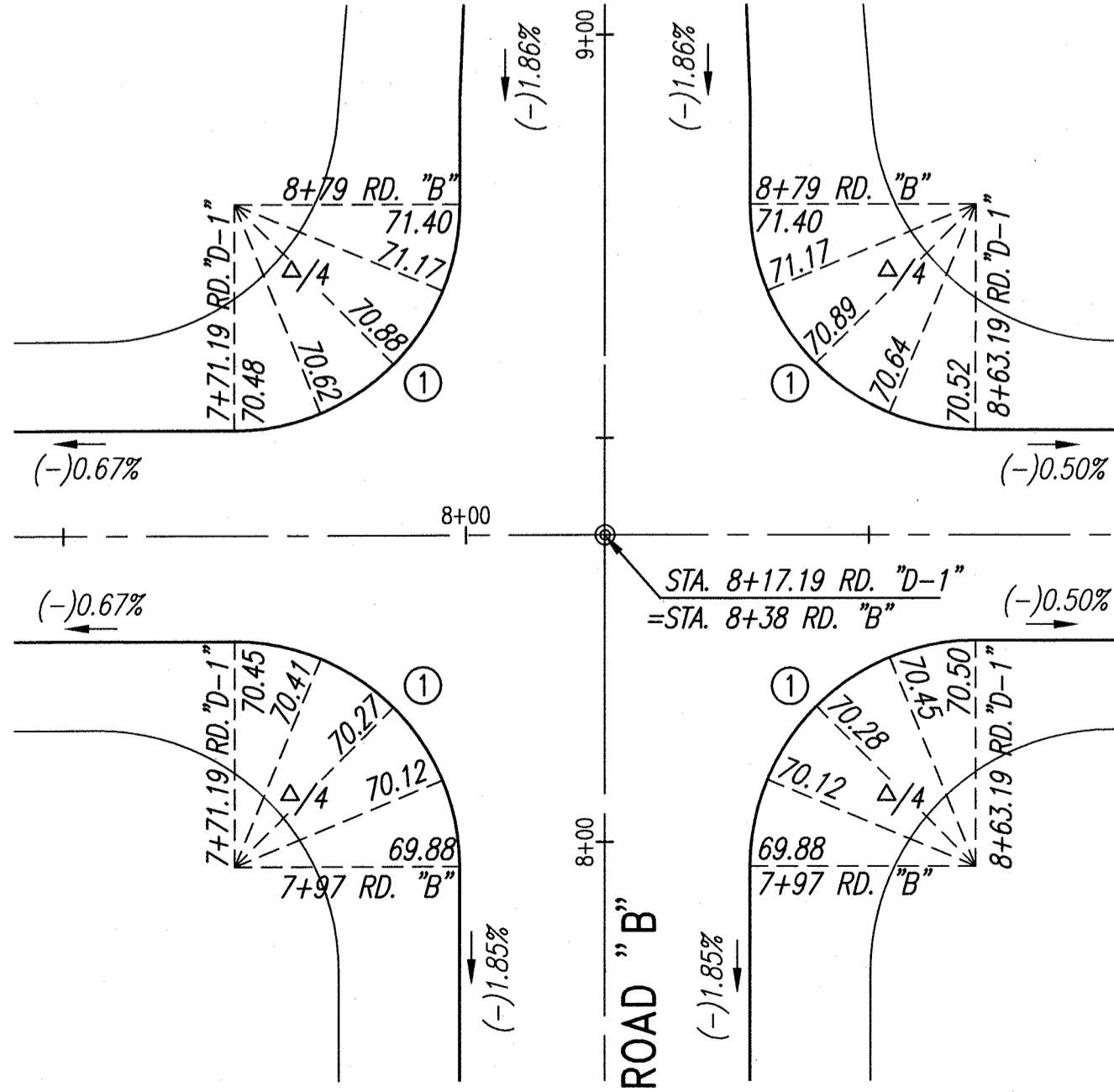
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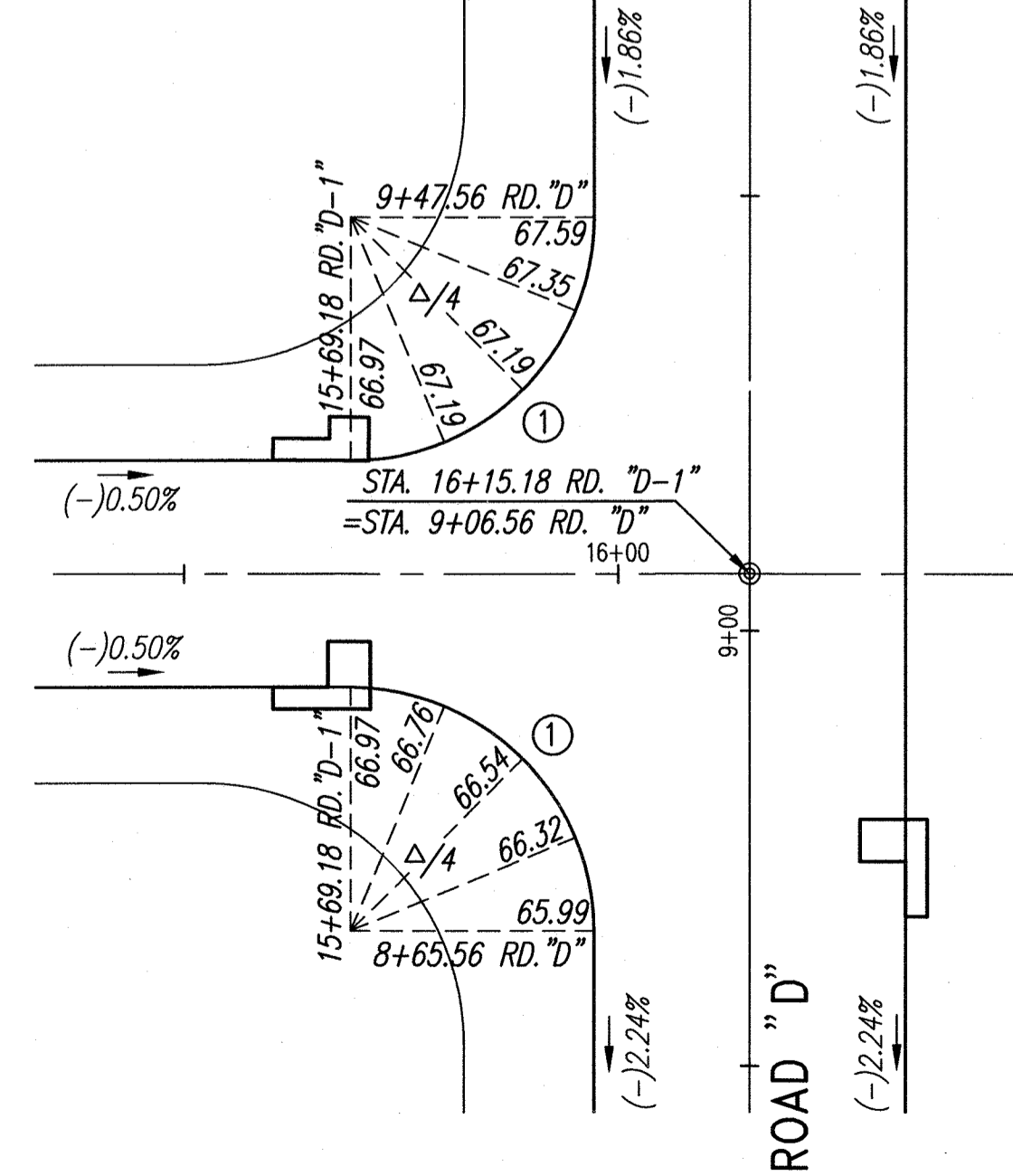
ROAD "D"



ROAD "D-1"



ROAD "D-1"

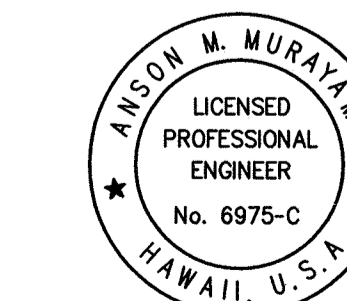


ROAD "D"

CURB RETURNS

SCALE: 1" = 20'

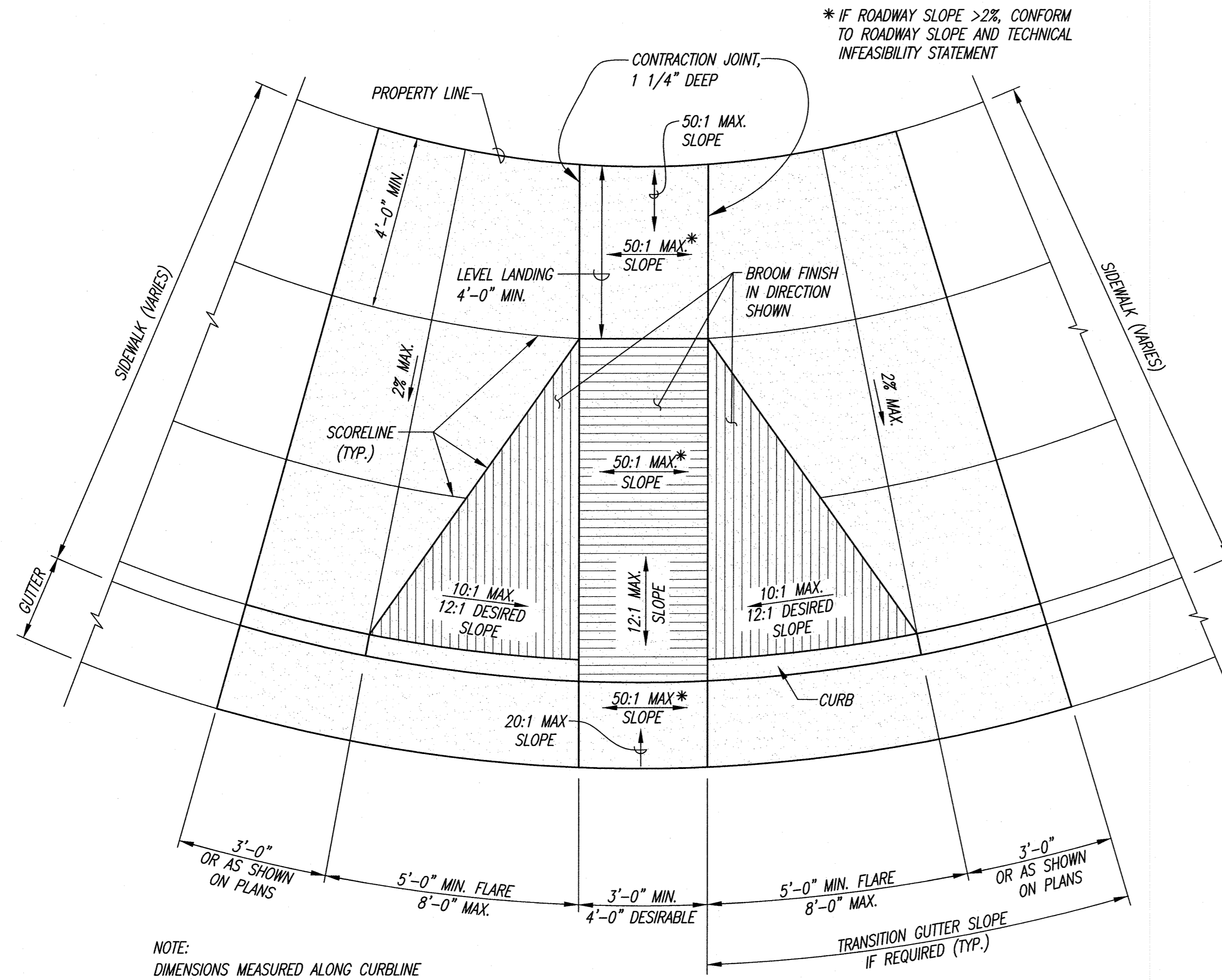
CURB DATA	
CURVE	①
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Δ/2	45°00'00"
R	28.00'
T	28.00'
C	39.60'
L	43.98'



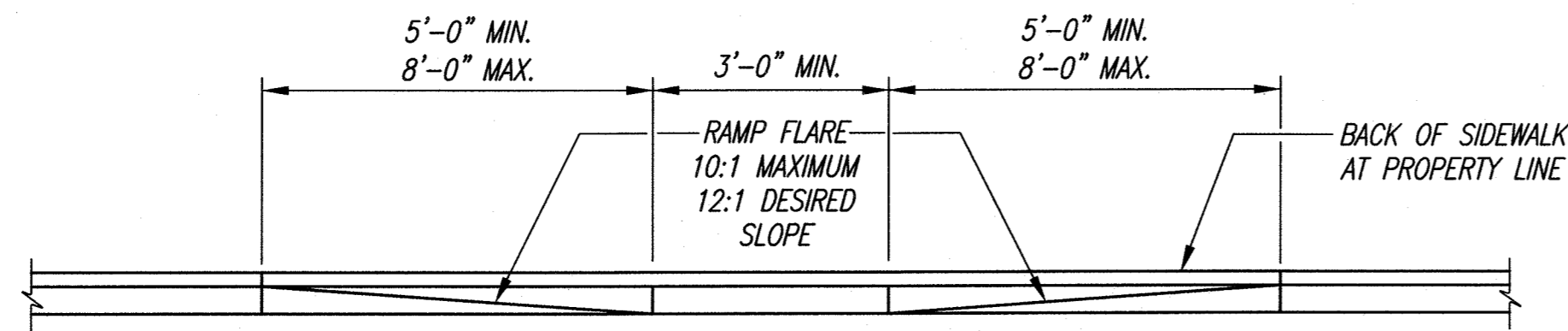
THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION. CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION. LICENSE EXPIRATION DATE: 04/30/14

REVISION DATE	DESCRIPTION	MADE BY	APPROVED
Community Planning and Engineering, Inc. Engineering Design Construction Management Infrastructure Planning 1286 Queen Emma Street Honolulu, Hawaii			
EAST KAPOLEI II DEVELOPMENT INCREMENT 2B HONOLULU, EWA, OAHU, HAWAII (DPP SUBD. FILE NO. 2011/SUB-155) OWNER & DEVELOPER: DEPARTMENT OF HAWAIIAN HOME LANDS TAX MAP KEY: 9-1-17: Portion 110			
CURB RETURNS			
DRAWN BY: LYL	ENGINEER: SS	CHECKED BY: AMM	APPROVED:
M. F. 6/2/13 CHIEF, CIVIL ENGINEERING BRANCH D.P.P. DATE			
CHIEF, TRAFFIC ENGINEERING BRANCH D.P.P. DATE			
FILE	POCKET	FOLDER	NO.

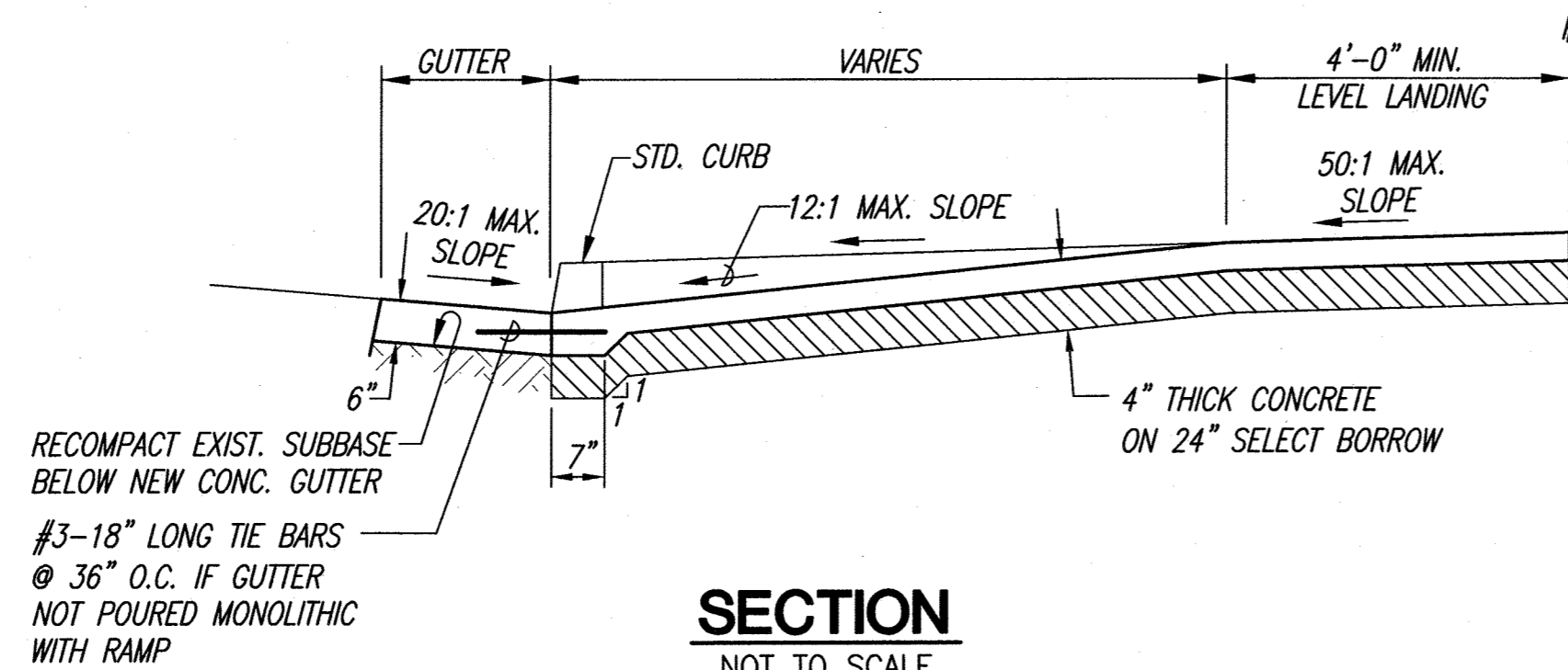
P:\Land Projects\DHHL East Kapolei\11\Construction Drawings\Government Review\43\TYPICAL CURB RAMP DETAILS.dwg, 3/13/2013 2:44:18 PM, 1:1



PLAN
NOT TO SCALE



ELEVATION
NOT TO SCALE

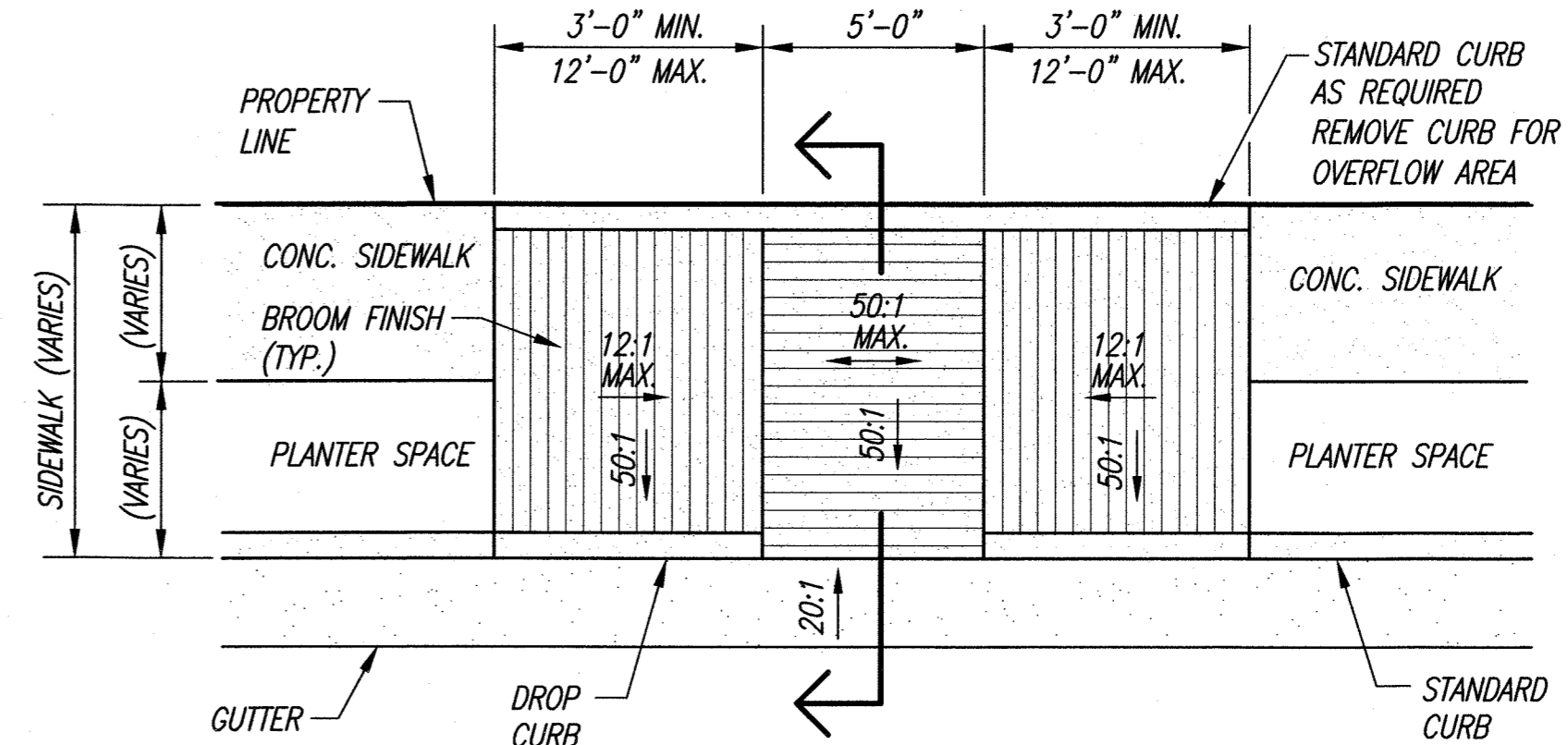


SECTION
NOT TO SCALE

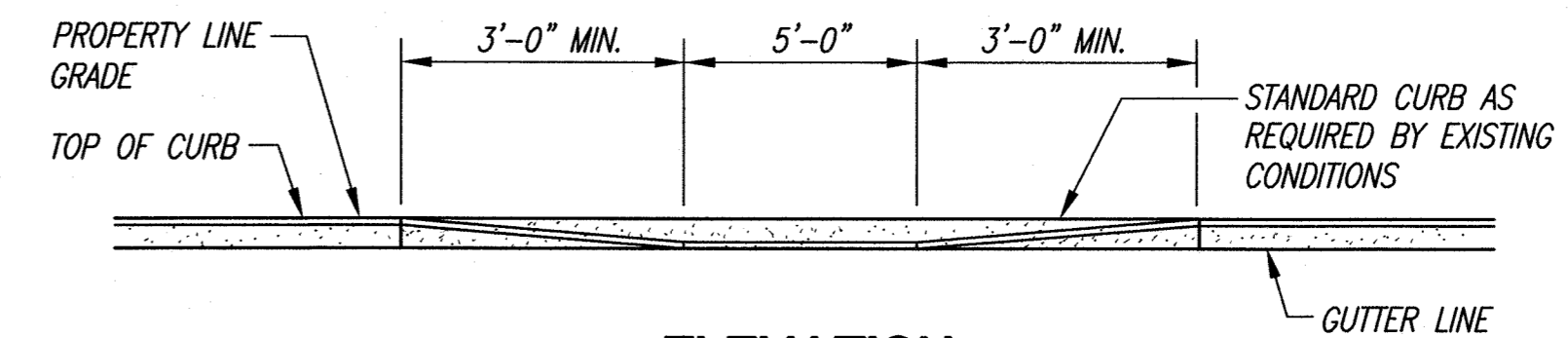
CURB RAMP - TYPE "A"
NOT TO SCALE

CURB RAMP GENERAL NOTES

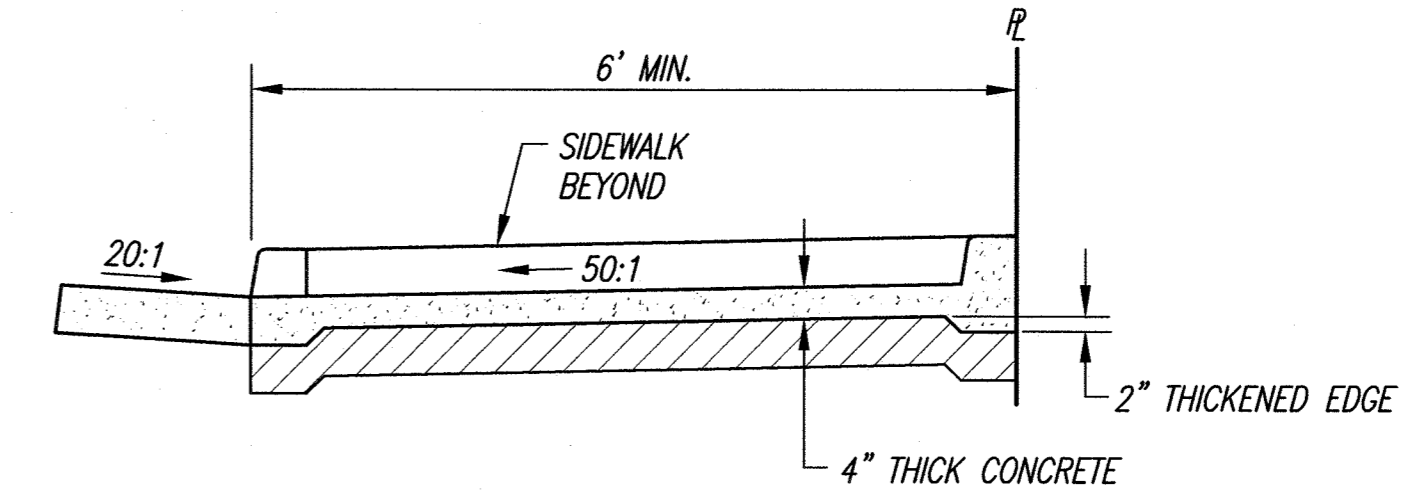
- THE CONSTRUCTION TOLERANCES FOR ADA CURB RAMP SLOPES PROVIDED IN THE SP SECTION FOR CURB RAMP SLOPES, WILL BE APPLIED, AS APPLICABLE, TO THE SLOPES REFLECTED ON THE PROJECT'S CURB RAMP DETAILS.
- FOR CURB RAMP AT CURB RETURNS, INSTALL EXPANSION JOINTS PER STANDARD DETAIL R-27. FULL WIDTH SIDEWALK AT CURB RETURN. EXPANSION JOINTS WILL NOT BE MEASURED SEPARATELY FOR PAYMENT. EXPANSION JOINTS SHALL BE CONSIDERED INCIDENTAL TO THE CURB RAMP CONTRACT ITEMS.
- WHEN DIRECTED BY THE ENGINEER, SIDEWALK TRANSITION AREA SHALL BE EXTENDED BEYOND SHOWN PLAN LIMITS TO MATCH THE NEAREST SCORELINE.



PLAN
SCALE: 1/8"=1'-0"

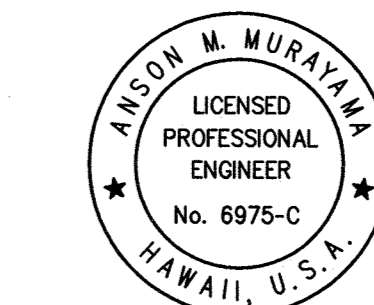


ELEVATION
SCALE: 1/8"=1'-0"



SECTION
SCALE: 1/4"=1'-0"

CURB RAMP - TYPE "B"
SCALE: AS SHOWN



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REVISION DATE	DESCRIPTION	MADE BY	APPROVED

Community Planning and Engineering, Inc.
Engineering Design | Construction Management | Infrastructure Planning
1286 Queen Emma Street Honolulu, Hawaii

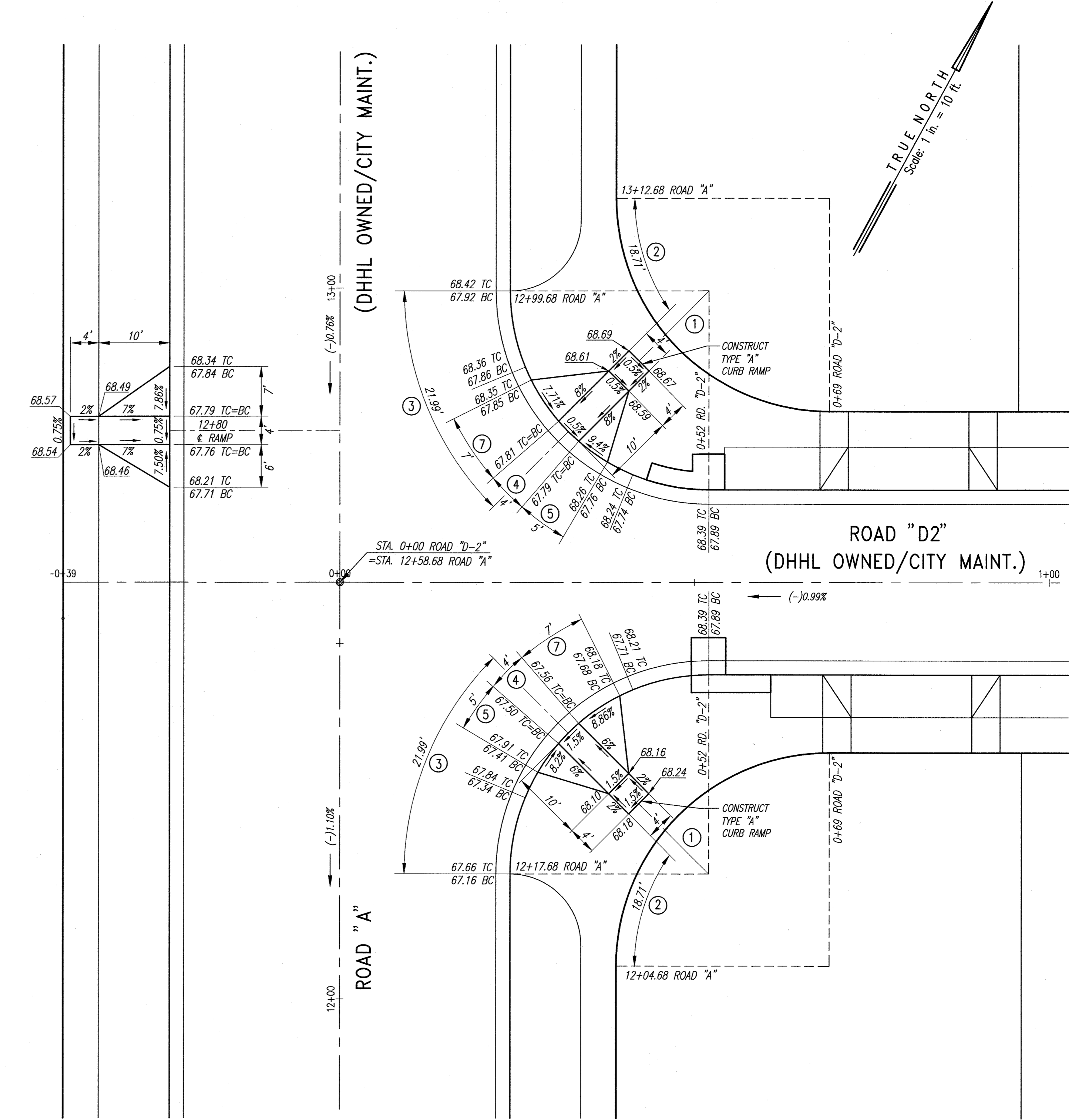
EAST KAPOLEI II DEVELOPMENT INCREMENT 2B
HONOLULU, EWA, OAHU, HAWAII
(DPP SUBD. FILE NO. 2011/SUB-155)
OWNER & DEVELOPER: DEPARTMENT OF HAWAIIAN HOME LANDS
TAX MAP KEY: 9-1-17: Portion 110

TYPICAL CURB RAMP DETAILS

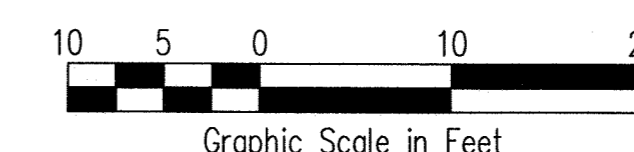
DRAWN BY: LYL	ENGINEER: SS	CHECKED BY: AMM
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APPROVED: *M. M. Murray* 6/8/13
DATE: 6/8/13

FILE	POCKET	FOLDER	NO.
------	--------	--------	-----




CURVE DATA										CURVE
CURVE	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	CURVE
△	90°00'00"	35°44'17"	45°00'00"	8°11'32"	101°35'3"	12°16'40"	14°19'26"	29°13'25"	22°30'00"	△/R
△/2	45°00'00"	17°52'08.5"	22°30'00"	4°05'46"	5°06'56.5"	6°08'20"	7°09'43"	14°36'42.5"	11°15'00"	△/2
R	28.00'	30.00'	28.00'	28.00'	28.00'	28.00'	28.00'	30.00'	28.00'	R
T	28.00'	9.67'	11.60'	2.00'	2.51'	3.01'	3.52'	7.82'	5.57'	T
C	39.60'	18.41'	24.43'	4.00'	5.00'	5.99'	6.98'	15.14'	10.93'	C
L	43.98'	18.71'	21.99'	4.00'	5.00'	6.00'	7.00'	15.30'	11.00'	L



THIS WORK WAS PREPARED BY
ME OR UNDER MY SUPERVISION.
CONSTRUCTION OF THIS PROJECT
WILL BE UNDER MY OBSERVATION.
LICENSE EXPIRATION DATE: 04/30/1


REVISION DATE	DESCRIPTION	MADE BY	APPROVED

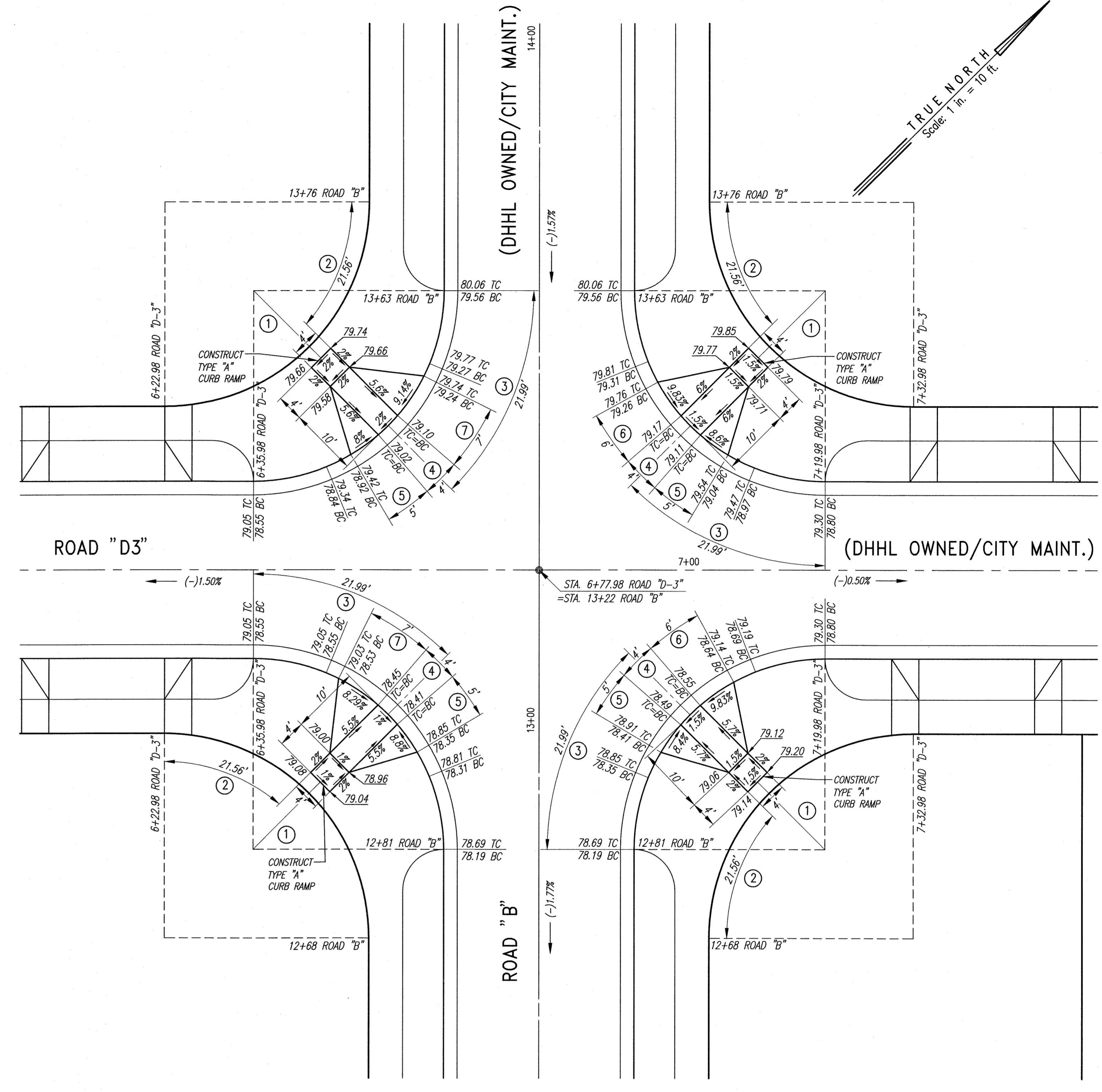

Community Planning and Engineering, Inc.
 Engineering Design | Construction Management | Infrastructure Planning
 1286 Queen Emma Street Honolulu, Hawaii

**EAST KAPOLEI II DEVELOPMENT
 INCREMENT 2B**
 HONOLULU, EWA, OAHU, HAWAII
 (OPP SUBD. FILE NO. 2011/SUB-155)
 OWNER & DEVELOPER: DEPARTMENT OF HAWAIIAN HOME LANDS
 TAX MAP KEY: 9-1-17: Portion 110

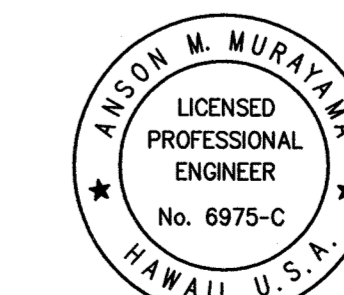
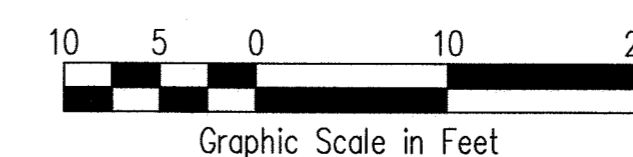
CURB RAMP DETAILS - 1

DRAWN BY: L.YLT, MFN	ENGINEER: SS, HNC	CHECKED BY: AMM
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APPROVED:  6/28/13
 CHIEF CIVIL ENGINEERING BRANCH (D.E.P.) DATE




CURVE DATA												
CURVE	①	②	③	④	⑤	⑥	⑦	⑧	⑨	⑩	⑪	CURVE
△	90°00'00"	41°10'39"	45°00'00"	8°11'32"	10°13'53"	12°16'40"	14°19'26"	16°22'13"	13°18'03"	22°30'00"	29°13'25"	△
Δ/2	45°00'00"	20°35'19.5"	22°30'00"	4°05'46"	5°06'56.5"	6°08'20"	7°09'43"	8°11°06.5"	6°39'01.5"	11°15'00"	14°36'42.5"	Δ/2
R	28.00'	30.00'	28.00'	28.00'	28.00'	28.00'	28.00'	28.00'	28.00'	28.00'	30.00'	R
T	28.00'	11.27'	11.60'	2.00'	2.51'	3.01'	3.52'	4.03'	3.26'	5.57'	7.82'	T
C	39.60'	21.10'	24.43'	4.00'	5.00'	5.99'	6.98'	7.97'	6.49'	10.93'	15.14'	C
L	43.98'	21.56'	21.99'	4.00'	5.00'	6.00'	7.00'	8.00'	6.50'	11.00'	15.30'	L



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LICENSE EXPIRATION DATE: 04/30/14

REVISION DATE:	DESCRIPTION:	MADE BY:	APPROVED:



Community Planning and Engineering, Inc.

Engineering Design | Construction Management | Infrastructure Planning

1288 Queen Emma Street Honolulu, Hawaii

EAST KAPOLEI II DEVELOPMENT

INCREMENT 2B

HONOLULU, EWA, OAHU, HAWAII

(DPP SUBD. FILE NO. 2011/SUB-155)

OWNER & DEVELOPER: DEPARTMENT OF HAWAIIAN HOME LANDS

TAX MAP KEY: 9-1-17: Portion 110

CURB RAMP DETAILS - 2

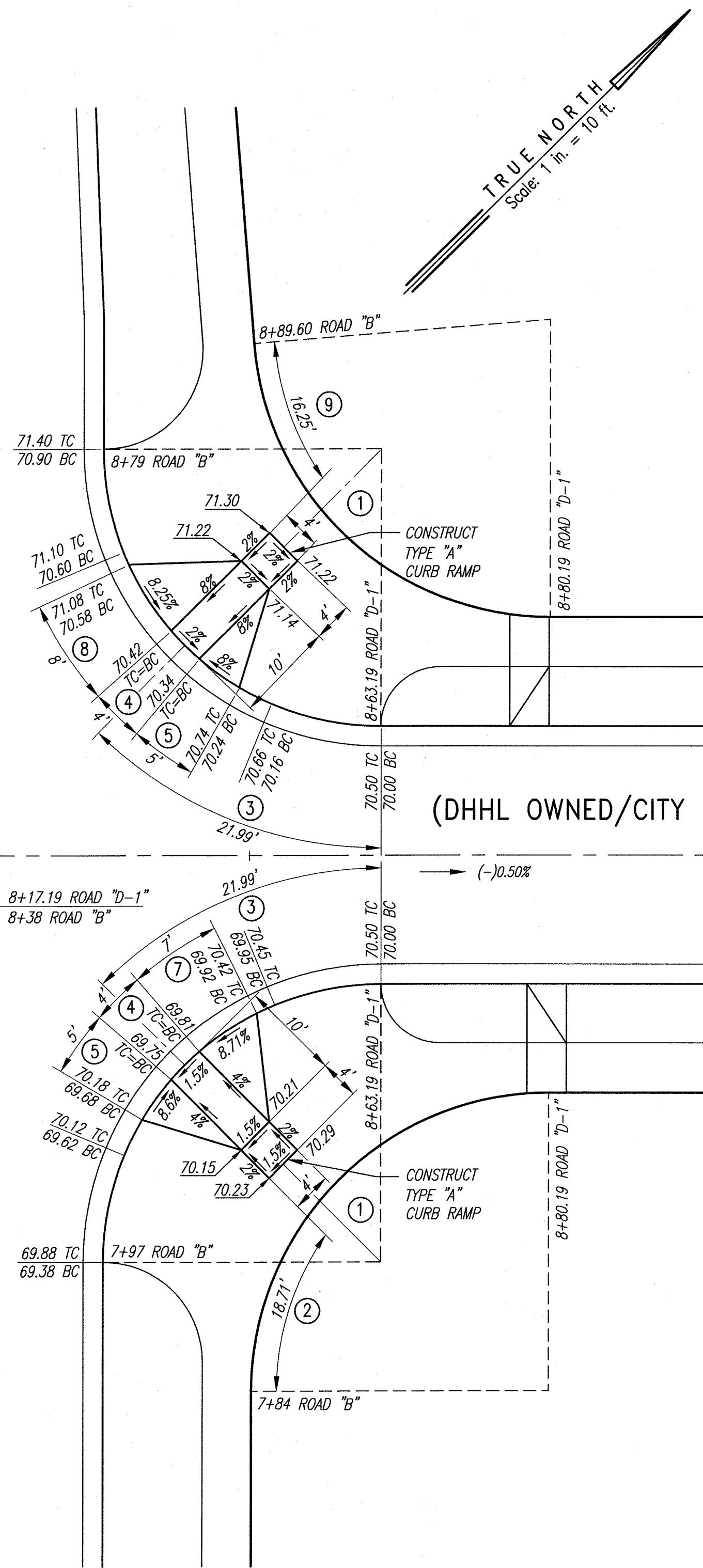
DRAWN BY: LYLIT, MFW	ENGINEER: SS, HNC	CHECKED BY: AMM
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APPROVED: 6/28/13

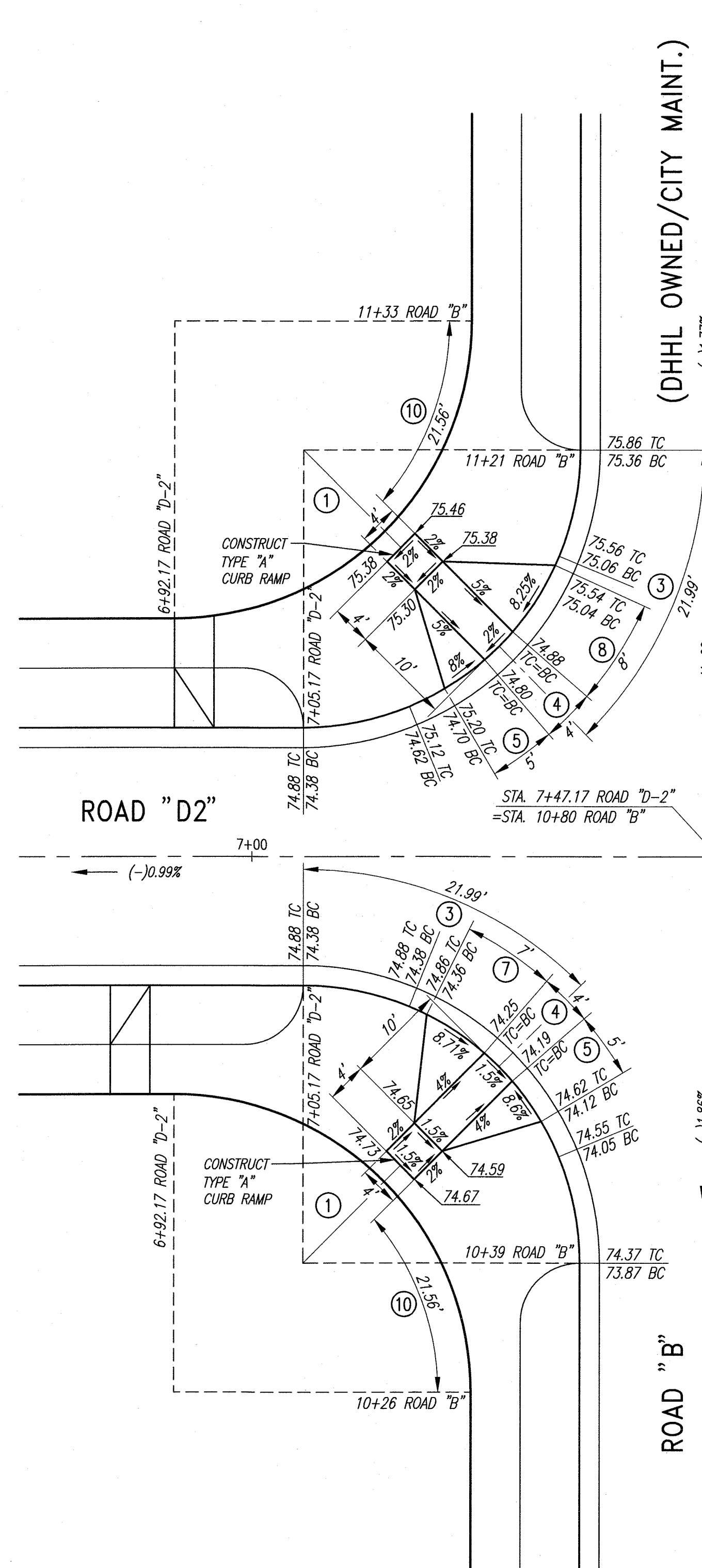
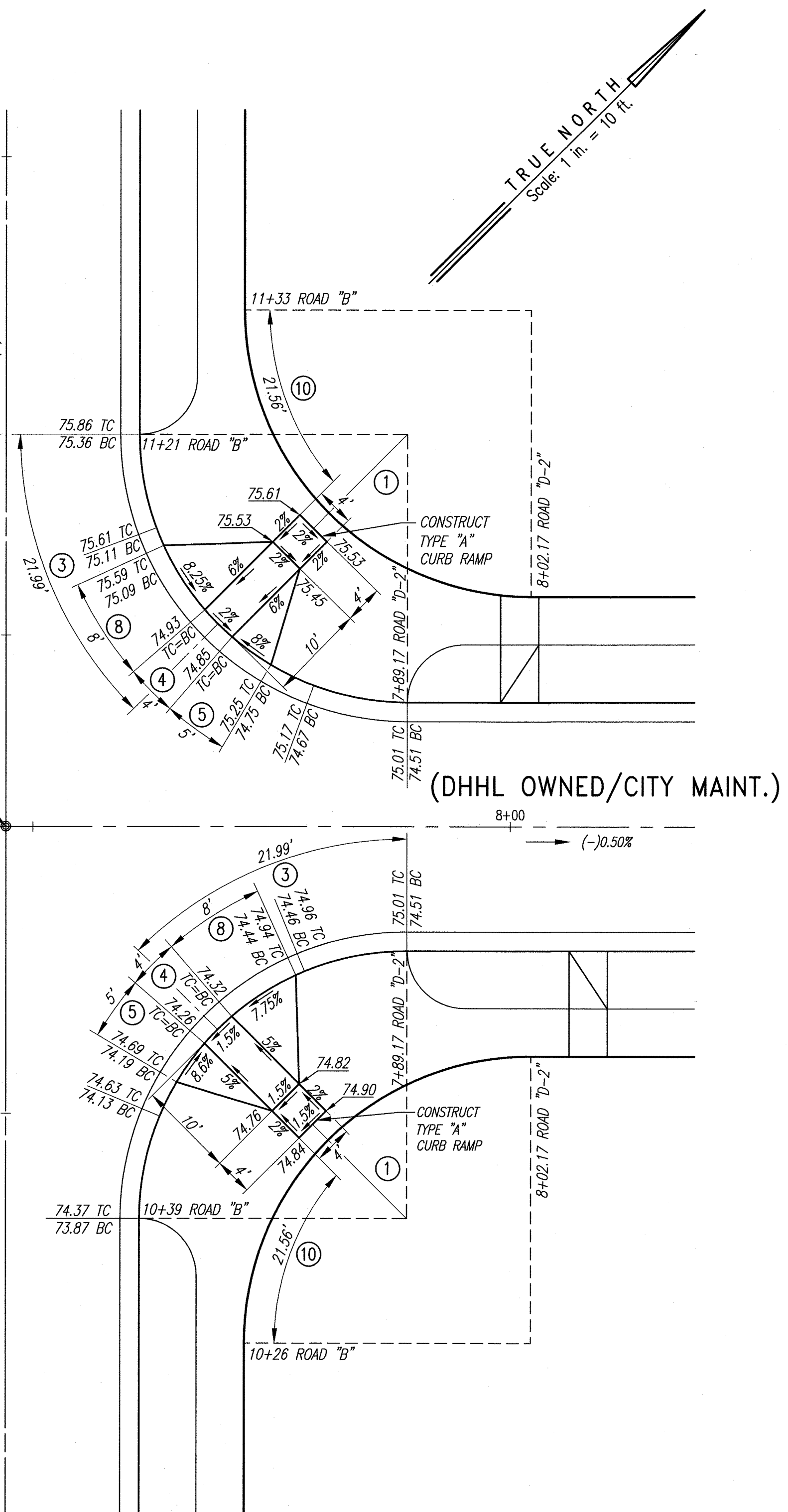
M. Fong

CIVIL ENGINEERING BRANCH P.P. WIT DATE

ROAD "B" / 14 0500

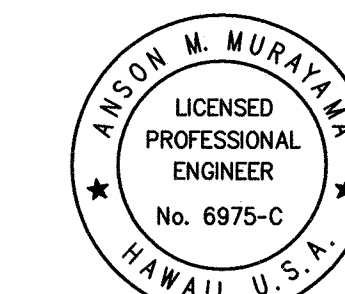
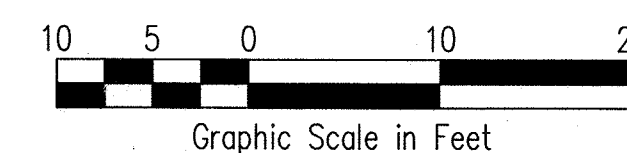


(DHHL OWNED/CITY MAINT.)

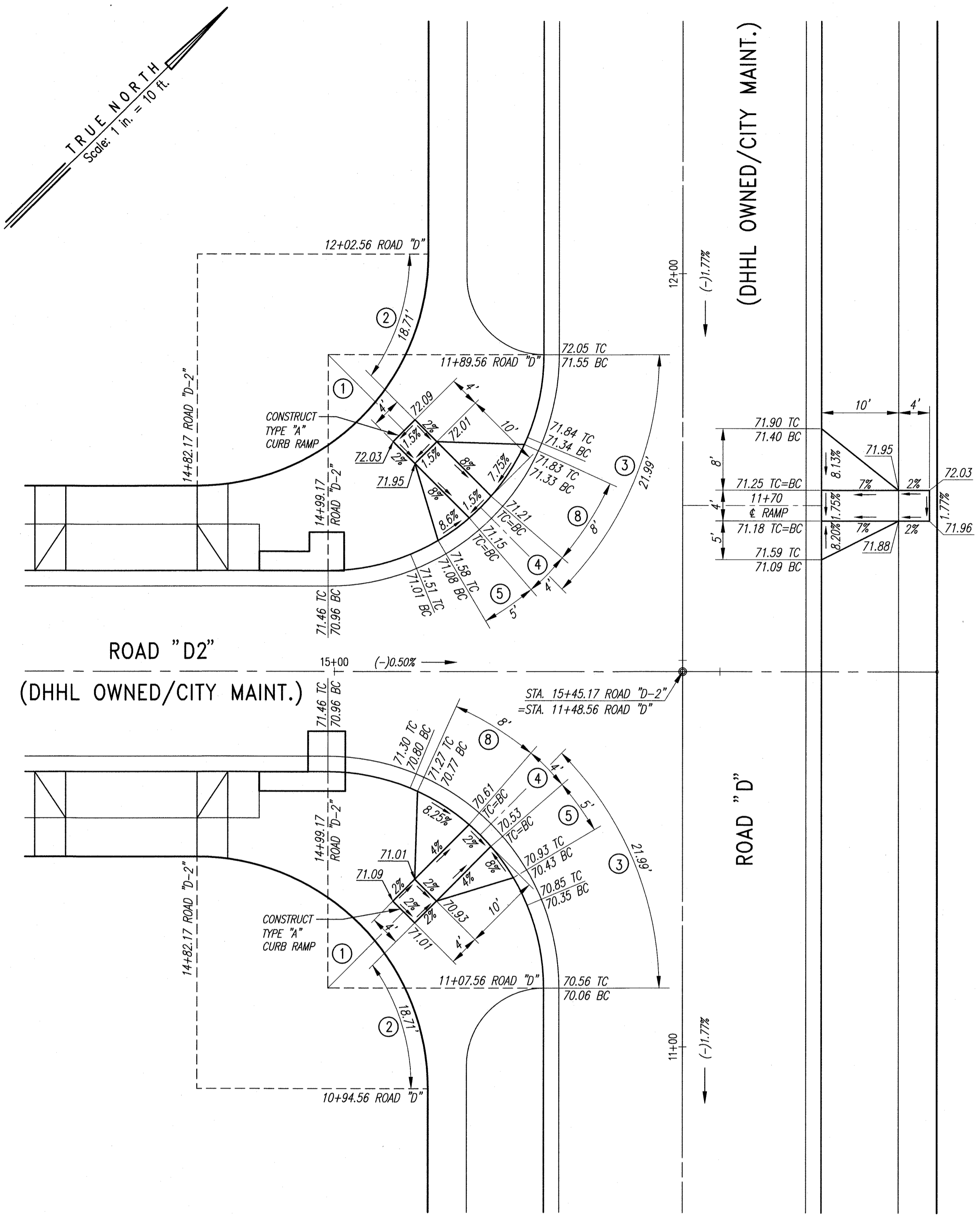
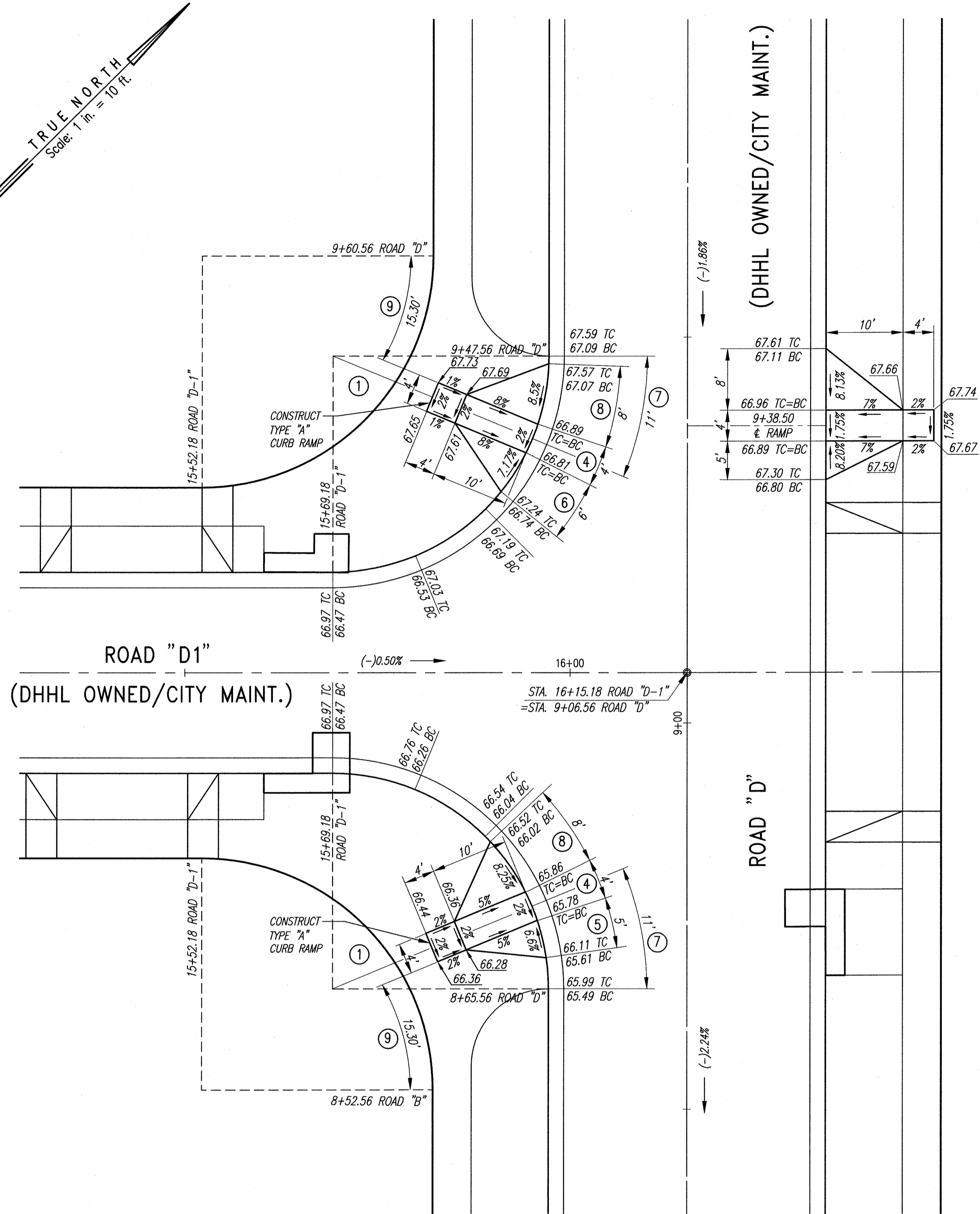
ROAD "B" $\frac{TC}{BC}$ 

(DHHL OWNED/CITY MAINT.)

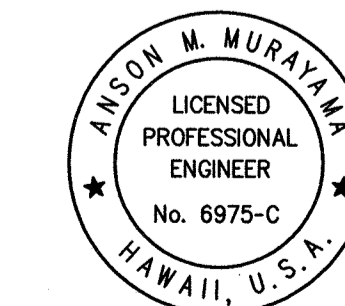
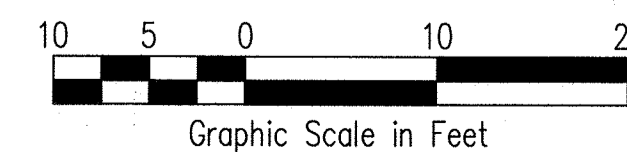
CURVE DATA										
CURVE	①	②	③	④	⑤	⑥	⑧	⑨	⑩	△
△	90°00'00"	35°44'17"	45°00'00"	81°1'32"	101°3'53"	14°19'26"	16°22'13"	31°01'59"	41°10'39"	△
△/2	45°00'00"	17°52'08.5"	22°30'00"	4°05'46"	5°06'56.5"	7°09'43"	8°11'06.5"	15°30'59.5"	20°35'19.5"	△/2
R	28.00'	30.00'	28.00'	28.00'	28.00'	28.00'	28.00'	30.00'	30.00'	R
T	28.00'	9.67'	11.60'	2.00'	2.51'	3.52'	4.03'	8.33'	11.27'	T
C	39.60'	18.41'	24.43'	4.00'	5.00'	6.98'	7.97'	16.05'	21.40'	C
L	43.98'	18.71'	21.99'	4.00'	5.00'	7.00'	8.00'	16.25'	21.56'	L



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LICENSE EXPIRATION DATE: 04/30/14

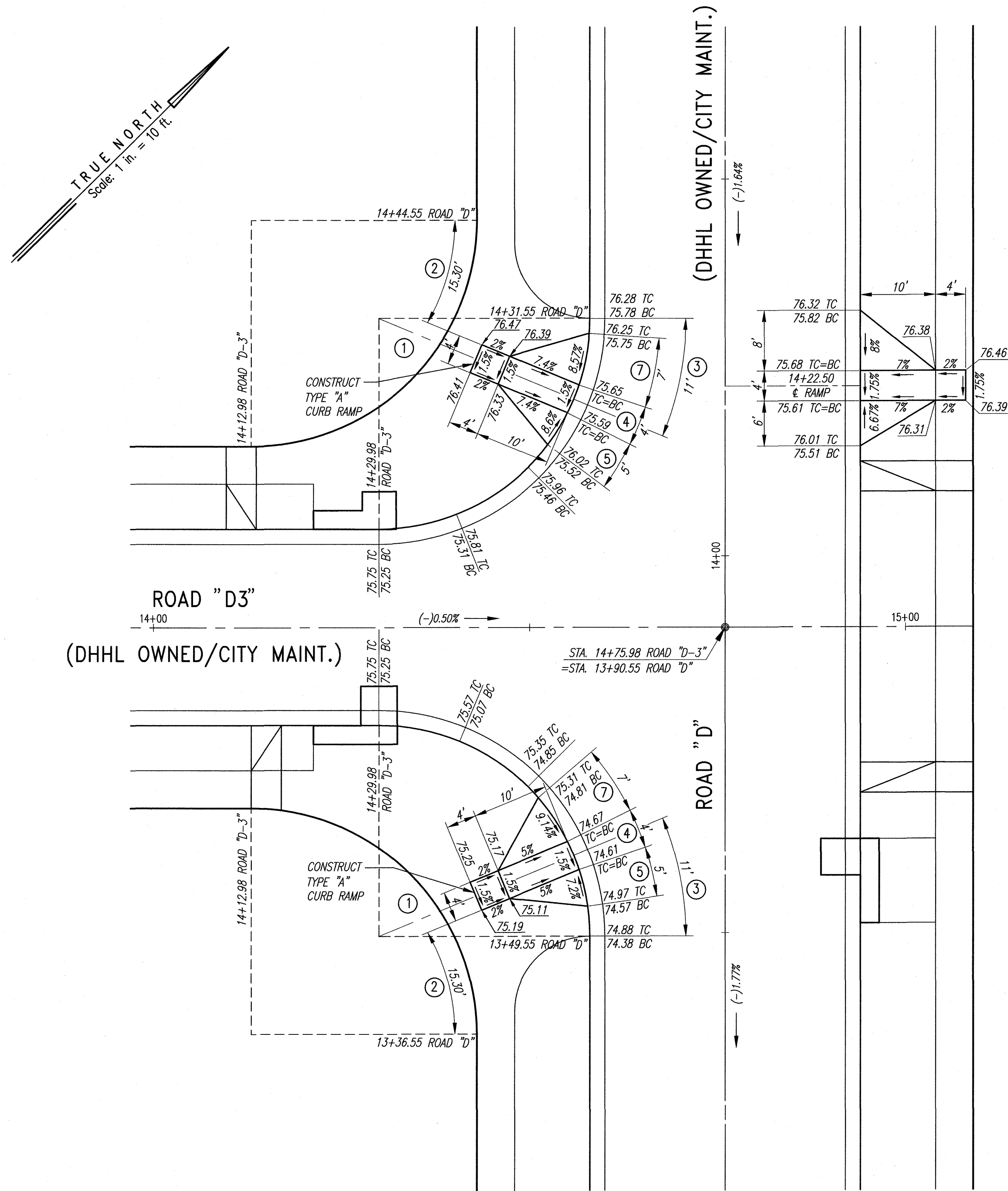


CURVE DATA									
CURVE	①	②	③	④	⑤	⑥	⑦	⑧	⑨
△	90°00'00"	35°44'17"	45°00'00"	8°11'32"	10°13'53"	12°16'40"	22°30'00"	16°22'13"	29°13'25"
△/2	45°00'00"	17°52'08.5"	22°30'00"	4°05'46"	5°06'56.5"	6°08'20"	11°15'00"	8°11'06.5"	14°36'42.5"
R	28.00'	30.00'	28.00'	28.00'	28.00'	28.00'	28.00'	28.00'	30.00'
T	28.00'	9.67'	11.60'	2.00'	2.51'	3.01'	5.57'	4.03'	7.82'
C	39.60'	18.41'	24.43'	4.00'	5.00'	5.99'	10.93'	7.97'	15.14'
L	43.98'	18.71'	21.99'	4.00'	5.00'	6.00'	11.00'	8.00'	15.30'

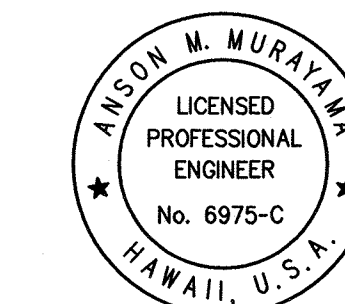
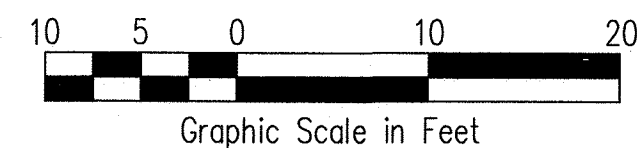


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LICENSE EXPIRATION DATE: 04/30/14

REVISION DATE	DESCRIPTION	MADE BY	APPROVED
Community Planning and Engineering, Inc. Engineering Design Construction Management Infrastructure Planning 1296 Queen Emma Street Honolulu, Hawaii			
EAST KAPOLEI II DEVELOPMENT INCREMENT 2B (DPP SUBD. FILE NO. 2011/SUB-155) OWNER & DEVELOPER: DEPARTMENT OF HAWAIIAN HOME LANDS TAX MAP KEY: 9-1-17: Portion 110			
CURB RAMP DETAILS - 4			
DRAWN BY: LYL, MFM	ENGINEER: SS, INC	CHECKED BY: AMM	APPROVED:
U. Ferguson 6/28/10 CHIEF, CIVIL ENGINEERING BRANCH, DPP, HAWAII			
FILE	POCKET	FOLDER	NO.

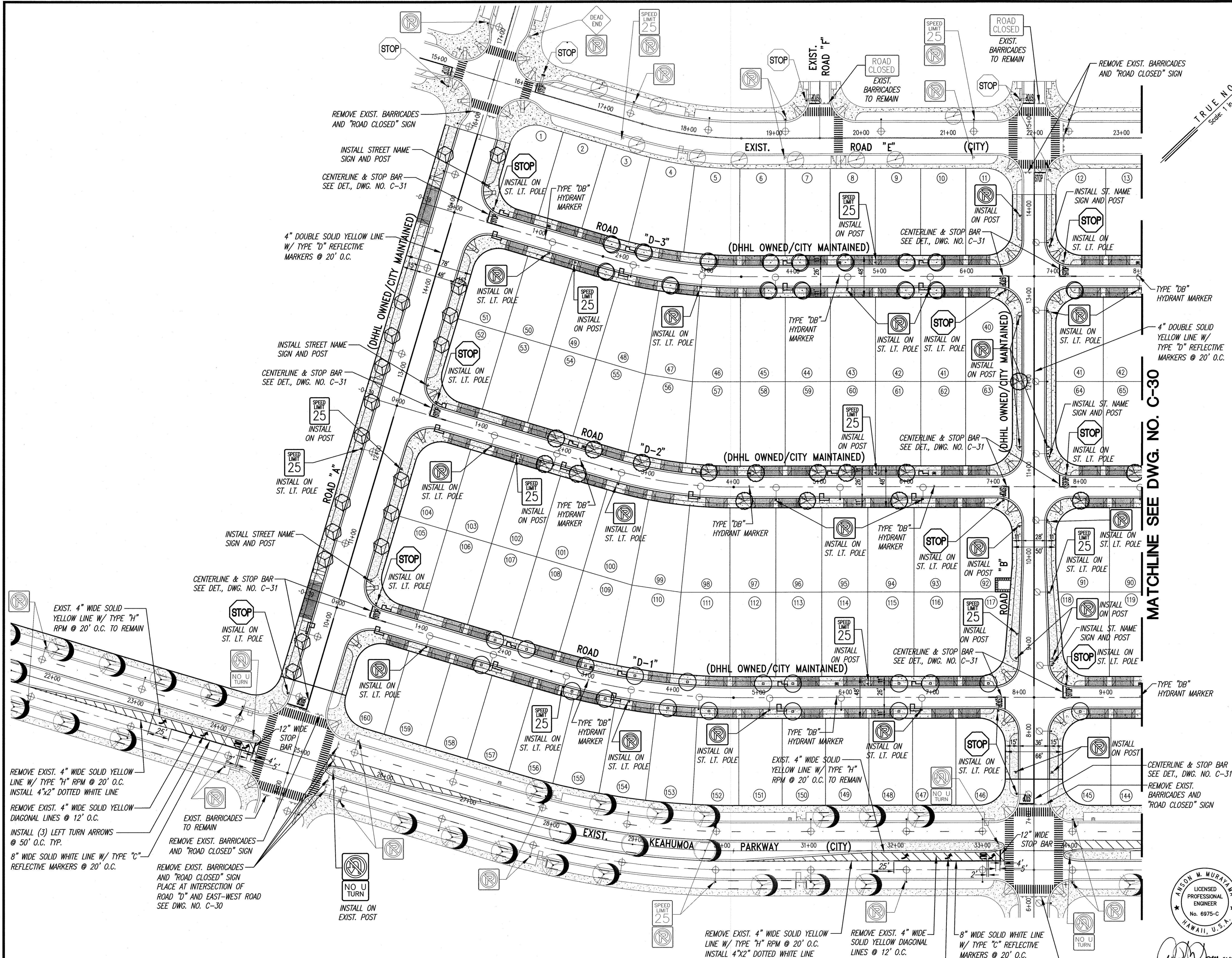


CURVE DATA						
CURVE	①	②	③	④	⑤	CURVE
Δ	90°00'00"	29°13'25"	22°30'00"	8°11'32"	10°13'53"	14°19'26"
Δ/2	45°00'00"	14°36'42.5"	11°15'00"	4°05'46"	5°06'56.5"	7°09'43"
R	28.00'	30.00'	28.00'	28.00'	28.00'	28.00'
T	28.00'	7.82'	5.57'	2.00'	2.51'	3.52'
C	39.60'	15.14'	10.93'	4.00'	5.00'	6.98'
L	43.98'	15.30'	11.00'	4.00'	5.00'	7.00'



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CONSTRUCTION OF THIS PROJECT
WILL BE UNDER MY OBSERVATION.
LICENSE EXPIRATION DATE: 04/30/14

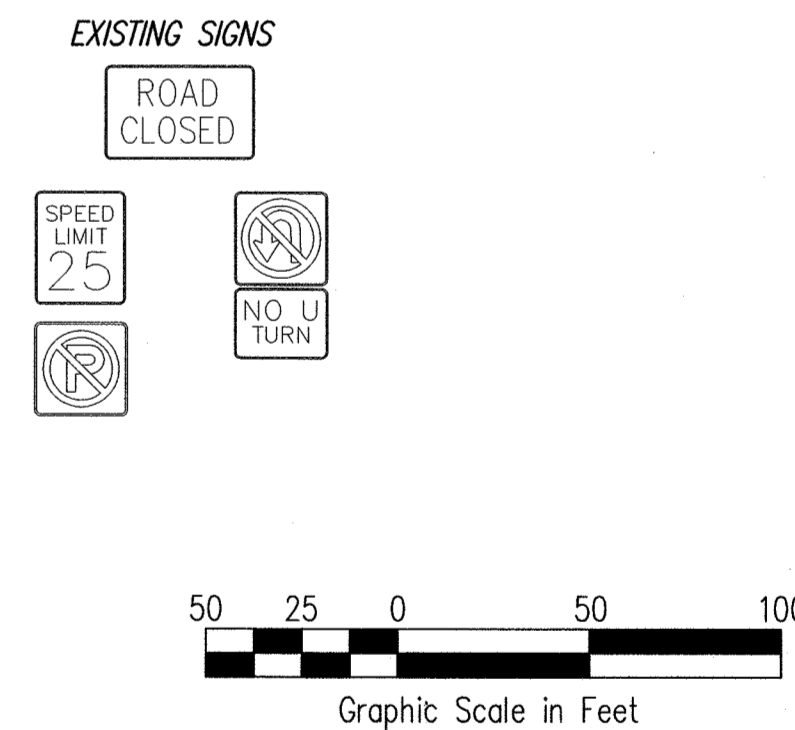
REVISION DATE	DESCRIPTION	MADE BY	APPROVED
Community Planning and Engineering, Inc. Engineering Design Construction Management Infrastructure Planning 1288 Queen Emma Street Honolulu, Hawaii			
EAST KAPOLEI II DEVELOPMENT INCREMENT 2B HONOLULU, EWA, OAHU, HAWAII (DPP SUBD. FILE NO. 2011/SUB-155) OWNER & DEVELOPER: DEPARTMENT OF HAWAIIAN HOME LANDS TAX MAP KEY: 9-1-17: Portion 110			
CURB RAMP DETAILS - 5			
DRAWN BY: LYL, MFW	ENGINEER: SS, INC	CHECKED BY: AMM	APPROVED:
M. 7/26/13 DATE			
FILE	POCKET	FOLDER	NO.



- LEGEND**
- STREET LIGHT (ST. LT.)
 - TRAFFIC SIGN W/ POST
 - SIGN POST ONLY (AS NOTED)

SIGN SCHEDULE

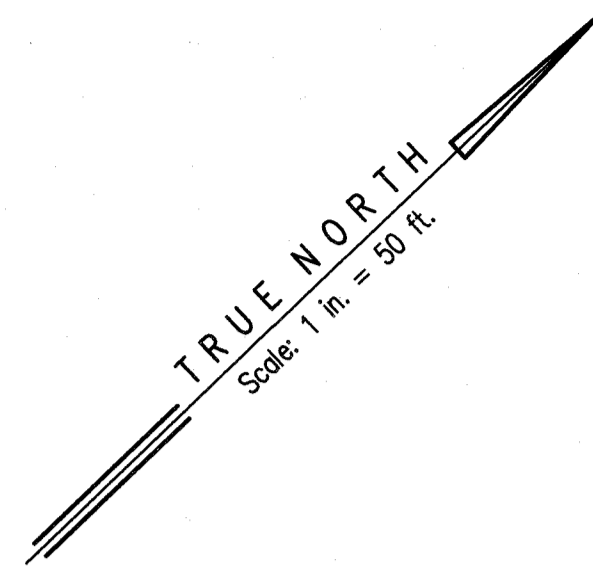
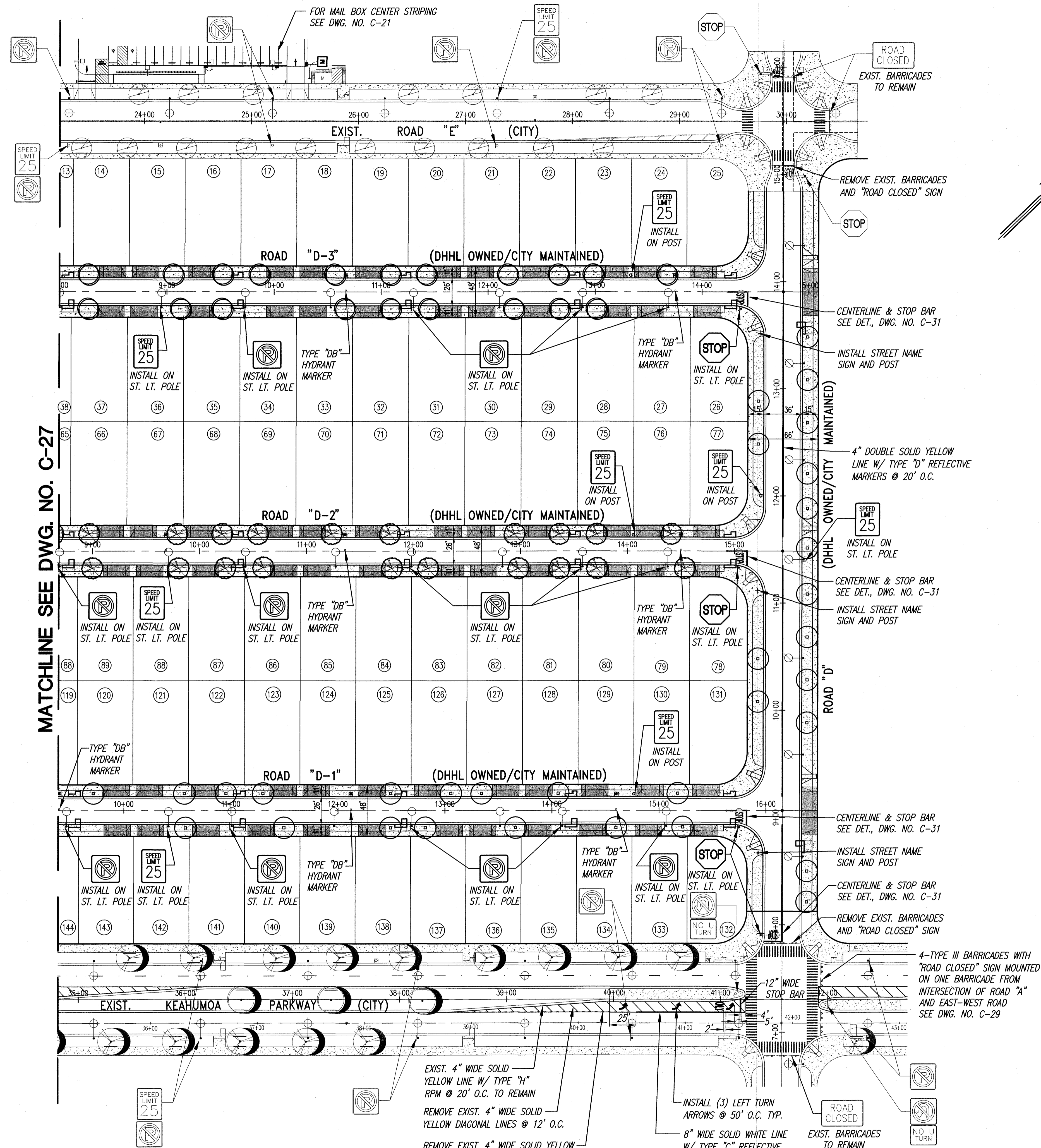
SPEED LIMIT 25 24"x30"	R2-1(25) 24"x30"	R3-4 24"x24"
NO U TURN 12"x18"	R7-1a 12"x18"	R3-4 30"x18"
STOP 30"x30"	R7-1a 12"x18"	R1-1 30"x30"
NO U TURN 12"x18"	R7-1a 12"x18"	R8-3a 12"x12" (FOR 48' & 50' R/W STREETS) 24"x24" (FOR 66' & 78' R/W STREETS)



REVISION DATE	DESCRIPTION	MADE BY	APPROVED
Community Planning and Engineering, Inc. Engineering Design Construction Management Infrastructure Planning 1288 Queen Emma Street Honolulu, Hawaii			
EAST KAPOLEI II DEVELOPMENT INCREMENT 2B HONOLULU, EWA, OAHU, HAWAII (DPP SUBD. FILE NO. 2011/SUB-155) OWNER & DEVELOPER: DEPARTMENT OF HAWAIIAN HOME LANDS TAX MAP KEY: 9-1-17: Portion 110			
TRAFFIC SIGNS AND PAVEMENT MARKING PLAN - 1			
DRAWN BY: LYL	ENGINEER: SS	CHECKED BY: AMM	APPROVED:
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FILE	POCKET	FOLDER	NO.

TRAFFIC SIGNS AND PAVEMENT MARKING PLAN - 1

SCALE: 1"=50'



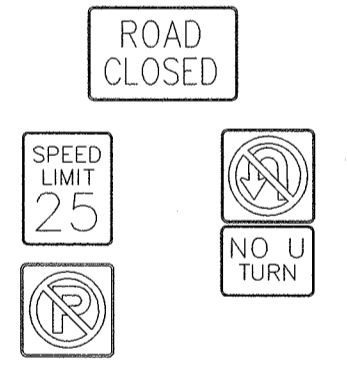
LEGEND

- STREET LIGHT (ST. LT.)
- TRAFFIC SIGN W/ POST
- SIGN POST ONLY (AS NOTED)

SIGN SCHEDULE

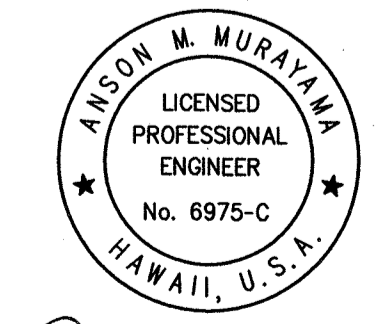
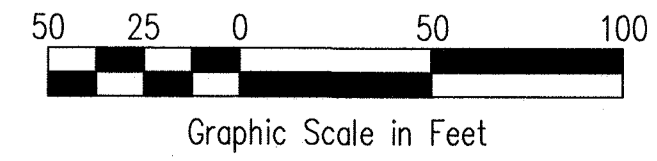
	R7-1a 12"x18"		R1-1 30"x30"
	R7-1a 12"x18"		R2-1(25) 24"x30"
	R11.2 48"x30"		R8-3a 12"x12" (FOR 48' & 50' R/W STREETS) 24"x24" (FOR 66' & 78' R/W STREETS)

EXISTING SIGNS



TRAFFIC SIGNS AND PAVEMENT MARKING PLAN - 2

SCALE: 1"=50'



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REVISION DATE	DESCRIPTION	MADE BY	APPROVED
Community Planning and Engineering, Inc. Engineering Design Construction Management Infrastructure Planning 1299 Queen Emma Street Honolulu, Hawaii			
EAST KAPOLEI II DEVELOPMENT INCREMENT 2B HONOLULU, EWA, OAHU, HAWAII (DPP SUBD. FILE NO. 2011/SUB-155) OWNER & DEVELOPER: DEPARTMENT OF HAWAIIAN HOME LANDS TAX MAP KEY: 9-1-17: Portion 110			
TRAFFIC SIGNS AND PAVEMENT MARKING PLAN - 2			
DRAWN BY: LYL	ENGINEER: SS	CHECKED BY: AM	APPROVED:
FILE	POCKET	FOLDER	NO.

Technical drawings of two rectangular signs. The first sign is labeled 'STOP' and has a height of 8'-0" and a width of 8'-5". The second sign is labeled 'ONLY' and has a height of 8'-0" and a width of 7'-10". Both signs have a height of 8'-0" and a width of 8'-5". The 'STOP' sign has a width of 8'-5" and the 'ONLY' sign has a width of 7'-10". The letters are in a bold, sans-serif font. The 'STOP' sign has a height of 8'-0" and the 'ONLY' sign has a height of 8'-0". The 'STOP' sign has a width of 8'-5" and the 'ONLY' sign has a width of 7'-10". The 'STOP' sign has a height of 8'-0" and the 'ONLY' sign has a height of 8'-0". The 'STOP' sign has a width of 8'-5" and the 'ONLY' sign has a width of 7'-10".

Diagram illustrating the dimensions of a roof truss section. The dimensions are as follows:

- Center of Lane: Indicated by a horizontal line at the top.
- Height: 5'-0" (Total height from base to peak).
- Height of Truss: 4'-4" (Height from base to the top of the truss structure).
- Height of Truss: 4" (Height of the truss structure above the base).
- Height of Truss: 1'-6" (Height of the truss structure above the base).
- Width of Truss: 10" (Width of the truss structure at the base).
- Width of Truss: 3'-8" (Total width of the truss structure at the base).

LEFT TURN ARROW

The diagram shows a horizontal line with four vertical lines extending downwards to shaded rectangular blocks representing wheels. The distance between the first and second vertical lines is labeled $2'$. The distance between the second and third vertical lines is labeled $4'$. The third vertical line is aligned with the center of the third wheel, and the second vertical line is aligned with the center of the second wheel.

A diagram of a 20-foot long Type 'C' RPM. A horizontal line represents the length, with a dimension line above it labeled '20\''. Below the line, there are three small rectangular blocks representing wheels. An arrow points to the line with the label '8" WIDE WHITE LINE'. Another arrow points to the right side of the assembly with the label 'TYPE "C" RPM'.

Technical drawing of a reflective surface. The main view shows a square with a beveled edge. The dimensions are $3.85'' - 4.05''$ for both width and height. The text "REFLECTIVE SURFACE" is centered within the square. A cross-section view on the right shows the bevel angle, which is 30° MAX. . The thickness of the material is $0.12'' \text{ MAX.}$. The width of the beveled edge is $0.50'' - 0.70''$.

NOT TO SCALE

Technical drawing of a rectangular reflector. The top view shows a rectangle with dimensions $3.85'' - 4.05''$ (width) and $3.85'' - 4.05''$ (depth). The front view shows a rectangular profile with a height of $0.12''$ MAX. and a top edge chamfered at $0.50'' - 0.70''$. The interior surfaces are labeled "REFLECTIVE SURFACE". A detail view of the chamfer is shown with a 30° MAX. angle.

NOT TO SCALE

Technical drawing of a rectangular reflector. The front view shows a rectangle with a width dimension of $3.85'' - 4.05''$ and a height dimension of $3.85'' - 4.05''$. The top and bottom horizontal surfaces are labeled "REFLECTIVE SURFACE". The side view shows a depth dimension of $0.50'' - 0.70''$ and a thickness dimension of $0.12''$ MAX. A chamfer on the top edge is indicated with a 30° MAX. angle.

NOT TO SCALE

Technical drawing of a rectangular reflector. The front view shows a rectangle with a width dimension of $3.85'' - 4.05''$ and a height dimension of $3.85'' - 4.05''$. The top and bottom surfaces are labeled "REFLECTIVE SURFACE". The side view shows a depth dimension of $0.50'' - 0.70''$ and a thickness dimension of $0.12''$ MAX. A corner chamfer is indicated with a dimension of 30° MAX.

NOT TO SCALE

NOT TO SCALE

NOT TO SCALE

A diagram of a rectangular block. The vertical dimension is labeled l and the horizontal dimension is labeled l'' . The block is shown in a perspective view, with a vertical line on the left and a horizontal line on the bottom.

BRACKET

METAL STREET LIGHT STANDARD

METAL CLIP

3/4" WIDE STAINLESS STEEL STRAP

[illegible]

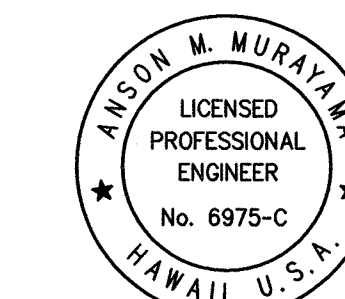
CLIFF D

Diagram illustrating the placement and dimensions of a stop sign and street name sign at a street intersection.

Sign Dimensions and Placement:


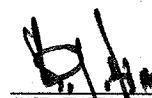

- STOP SIGN:** Dimensions include 2' MIN. (height), 2' (width), and 8' (height of the sign face).
- STREET NAME SIGN:** Dimensions include 2'-0" FOR 36" ST. NAME SIGN and 1'-0" FOR 24" ST. NAME SIGN.
- White Stop Line:** 1'-0" WIDE WHITE STOP LINE.
- Curb Ramp:** CURB RAMP SEE ROAD PLANS.
- Intersection Geometry:** The diagram shows a 90-degree intersection with a 45-degree angle labeled $\Delta/2$.
- Pavement Markings:** 4" WIDE DOUBLE SOLID YELLOW STRIPE.
- Sign Mounting:** TYPE "D" RAISED PAVEMENT MARKERS @ 20' O.C. (TYP.).
- Sign Reference:** R1-1 30"x30".

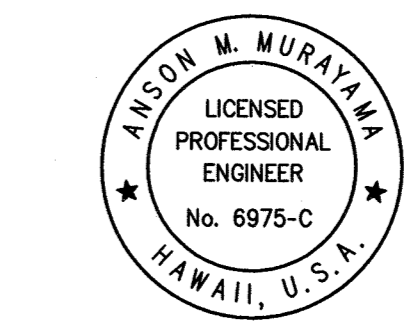
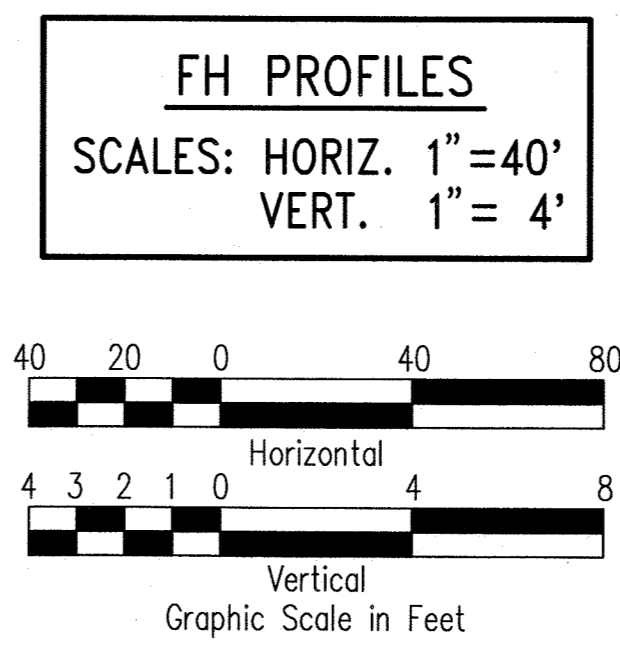
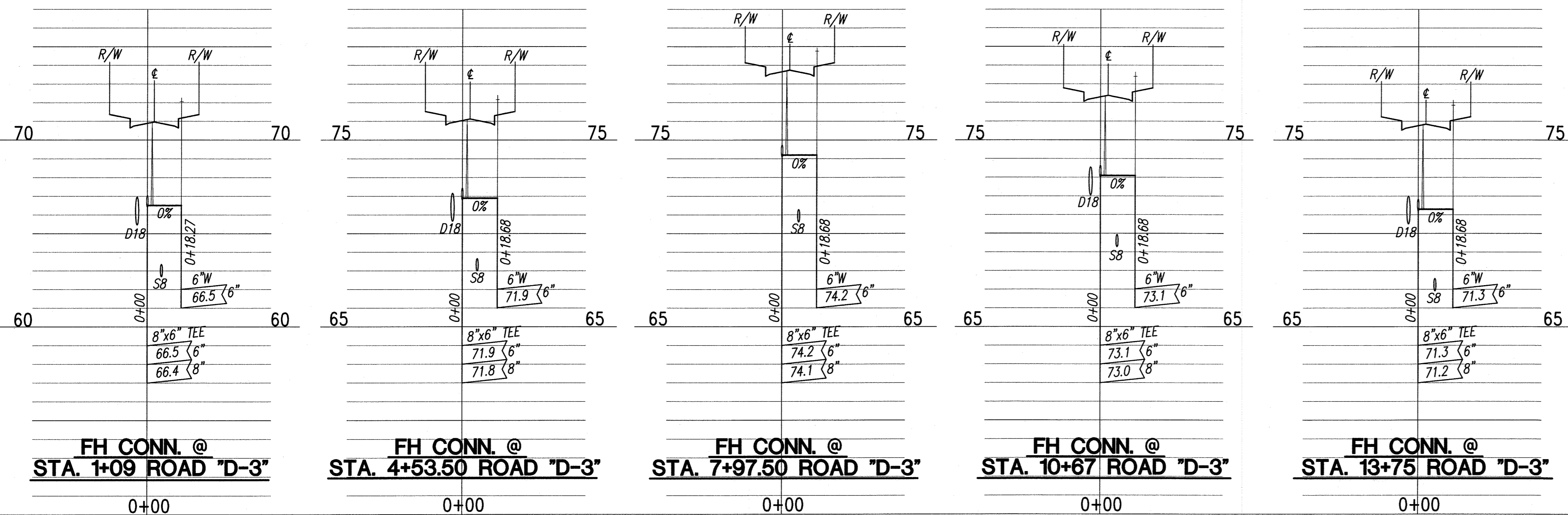
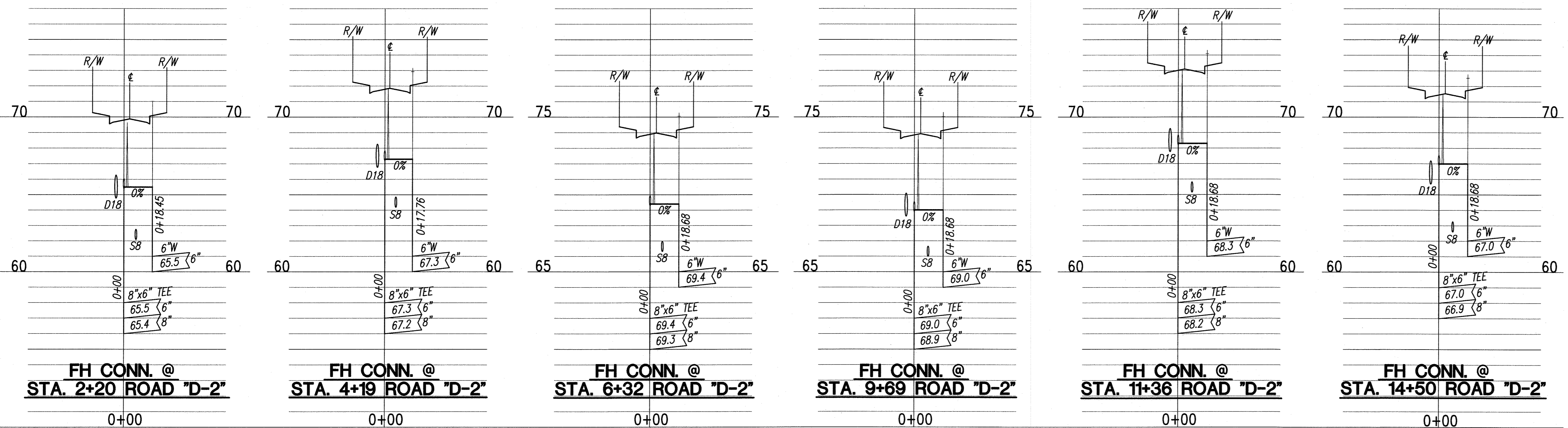
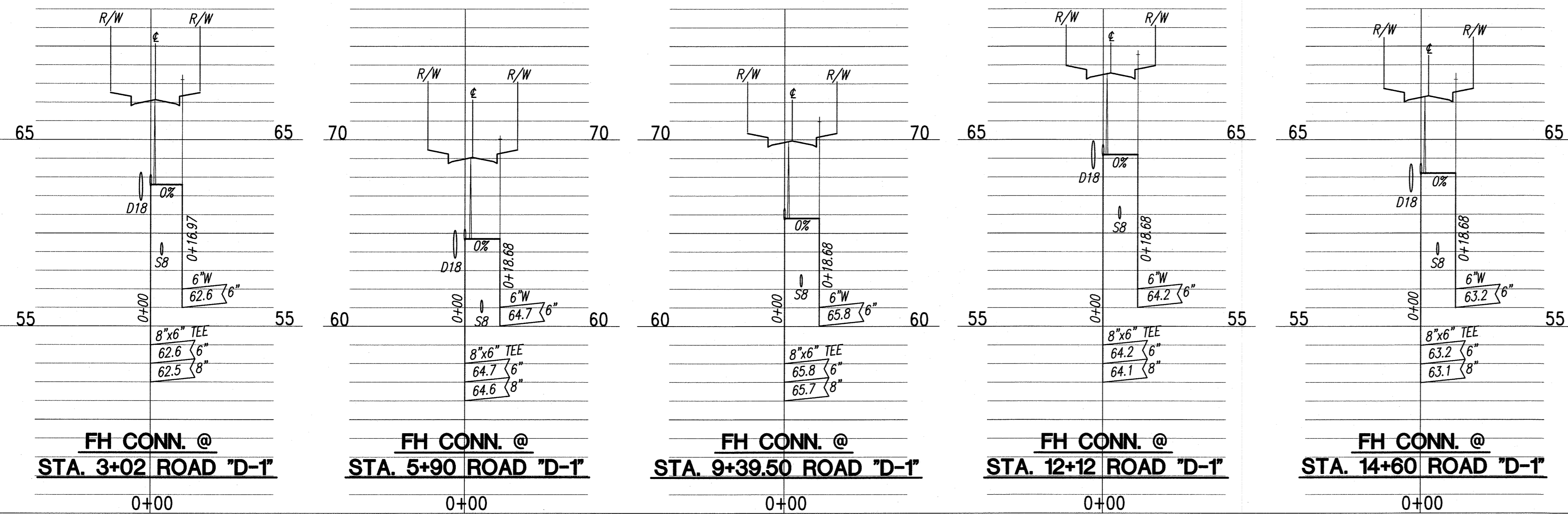
NOT TO SCALE



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CONSTRUCTION OF THIS PROJECT
WILL BE UNDER MY OBSERVATION.
LICENSE EXPIRATION DATE: 04/30/1

1. ALL TRAFFIC SIGN AND PAVEMENT MARKING INSTALLATIONS SHALL BE IN ACCORDANCE WITH THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS", 2009 EDITION, AS AMENDED, THE LATEST SPECIFICATIONS FROM THE TRAFFIC REVIEW BRANCH, DEPARTMENT OF PLANNING AND PERMITTING, AND AS SHOWN ON THE PLANS.
2. CONTRACTOR SHALL NOTIFY AND COORDINATE WORK WITH THE CIVIL ENGINEERING BRANCH, DEPARTMENT OF PLANNING AND PERMITTING, ONE (1) WEEK IN ADVANCE OF COMMENCING WORK AT 768-8084.
3. CONTRACTOR SHALL SUBMIT MATERIAL BROCHURES FOR ALL SIGNS AND PAINT MATERIALS TO THE TRAFFIC REVIEW BRANCH, DEPARTMENT OF PLANNING AND PERMITTING.
4. THE SIGNING AND/OR STRIPING CONTRACTOR SHALL KEEP ONE (1) SET OF APPROVED PLANS AT THE PROJECT SITE AT ALL TIMES DURING CONSTRUCTION WORK.
5. CONTRACTOR SHALL PAINT TEMPORARY GUIDELINES AND OUTLINE OF ARROWS, LEGENDS, AND CROSSWALKS WITH A TWO INCH (2") WIDE BRUSHED LINE ON THE DAY THE ROADWAY IS OPENED TO TRAFFIC. THESE MARKINGS MUST BE APPROVED BY THE INSPECTOR FROM THE TRAFFIC REVIEW BRANCH, DEPARTMENT OF PLANNING AND PERMITTING.
6. CONTRACTOR SHALL NOTIFY THE CIVIL ENGINEERING BRANCH, DEPARTMENT OF PLANNING AND PERMITTING AT 768-8084, THREE (3) DAYS IN ADVANCE OF FINAL INSPECTION.
7. CONTRACTOR SHALL MEET WITH THE INSPECTOR FROM THE CIVIL ENGINEERING BRANCH, DEPARTMENT OF PLANNING AND PERMITTING DURING THE FINAL INSPECTION.
8. WITHIN TEN (10) DAYS FOLLOWING NOTIFICATION OF AWARD OF CONTRACT, THE CONTRACTOR SHALL SUBMIT TO THE DEPARTMENT OF PLANNING AND PERMITTING (PHONE: 768-8084) FOR APPROVAL, A LIST OF ANY SIGNING AND PAVEMENT MARKING MATERIAL WHICH HE PROPOSES TO INSTALL. THE LIST SHALL BE COMPLETE AS TO THE NAME OF MANUFACTURER, CATALOG NUMBER, AND SHALL BE SUPPLEMENTED WITH MATERIAL BROCHURES.
9. UPON FINAL INSPECTION OF THE PROJECT, THE CONTRACTOR SHALL SUBMIT A LETTER OF CERTIFICATION FOR ALL TRAFFIC SIGNING AND PAVEMENT MARKING MATERIALS INSTALLED.
10. SIGNS SHALL BE ATTACHED TO BRACKETS WITH 5/16" ZINC PLATED STEEL BOLTS, NUTS AND WASHERS. SIGNS 48" WIDE OR LARGER THAN 10 SQ. FT. IN AREA SHALL BE MOUNTED ON TWO 2" GALV. PIPE POST. THE SIGN SHALL BE INSTALLED WITH AT LEAST ONE (1) FOOT CLEARANCE FROM THE SIGN EDGE TO THE CURB FACE.
11. ALL TRAFFIC SIGNS SHALL BE REFLECTORIZED.
12. RAISED PAVEMENT MARKERS SHALL BE INSTALLED IN ACCORDANCE WITH THE DEPARTMENT OF PLANNING AND PERMITTING STANDARDS.
13. LOCATION OF "STOP" SIGN:
 - A. INSTALL "STOP" SIGN AT CURB TANGENT POINT.
 - B. INSTALL "STOP" SIGN ON METAL STREET LIGHT STANDARD IF A STANDARD IS LOCATED WITHIN 10 FEET OF CURB RETURN.
 - C. INSTALL "STOP" SIGN IN FRONT OF UTILITY POLE IF A POLE IS LOCATED WITHIN 10 FEET OF CURB RETURN.
14. PAVEMENT WORD AND SYMBOL MARKINGS SHALL BE IN ACCORDANCE WITH THE DEPARTMENT OF PLANNING AND PERMITTING STANDARDS.
15. THE CONTRACTOR SHALL USE THERMOPLASTIC MATERIAL, APPROVED BY THE CIVIL ENGINEERING BRANCH, DEPARTMENT OF PLANNING AND PERMITTING, FOR ALL CROSSWALKS, STOP BARS, PAVEMENT ARROWS, CENTER LINES, LANE LINES, ARC LINES, CHANNELIZED TRAFFIC ISLANDS, AND LEGENDS.

REVISION DATE	DESCRIPTION	MADE BY	APPROVED
 Community Planning and Engineering, Inc. Engineering Design Construction Management Infrastructure Planning 1288 Queen Emma Street Honolulu, Hawaii			
<h1>EAST KAPOLEI II DEVELOPMENT</h1> <h2>INCREMENT 2B</h2> <p>HONOLULU, OAHU, HAWAII (OPP SUBD. FILE NO. 2011/SUB-155) OWNER & DEVELOPER: DEPARTMENT OF HAWAIIAN HOME LANDS TAX MAP KEY: 9-1-17: Portion 110</p>			
<h1>TRAFFIC SIGNS AND PAVEMENT MARKING DETAILS</h1>			
DRAWN BY: LYLT	ENGINEER: SS	CHECKED BY: AMM	
APPROVED:			
  CHIEF, HAWAIIAN HOME LANDS, D.P.P. DATE			



THIS WORK WAS PREPARED BY
ME OR UNDER MY SUPERVISION
CONSTRUCTION OF THIS PROJECT
WILL BE UNDER MY OBSERVATION.
LICENSE EXPIRATION DATE: 04/30/14


REVISION DATE	DESCRIPTION	MADE BY	APPROVED

Community Planning and Engineering, Inc.
Engineering Design | Construction Management | Infrastructure Planning
1285 Queen Emma Street Honolulu, Hawaii

**EAST KAPOLEI II DEVELOPMENT
INCREMENT 2B**
HONOLULU, EWA, OAHU, HAWAII
(DPP SUBD. FILE NO. 2011/SUB-155)
OWNER & DEVELOPER: DEPARTMENT OF HAWAIIAN HOME LANDS
TAX MAP KEY: 9-1-17: Portion 110

FIRE HYDRANT PROFILES

DRAWN BY: LYL	ENGINEER: SS	CHECKED BY: AMM
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APPROVED:  4-20-13

MANAGER AND CHIEF ENGINEER, D.L.S. M.V. DATE
CITY & COUNTY OF HONOLULU
FOR WORK AFFECTING EWS FACILITIES IN CITY/STATE
(SHOW-OF-WAY AND EWS EASEMENTS ONLY)

FILE	POCKET	FOLDER	NO.

DRAINAGE STRUCTURE NOTES

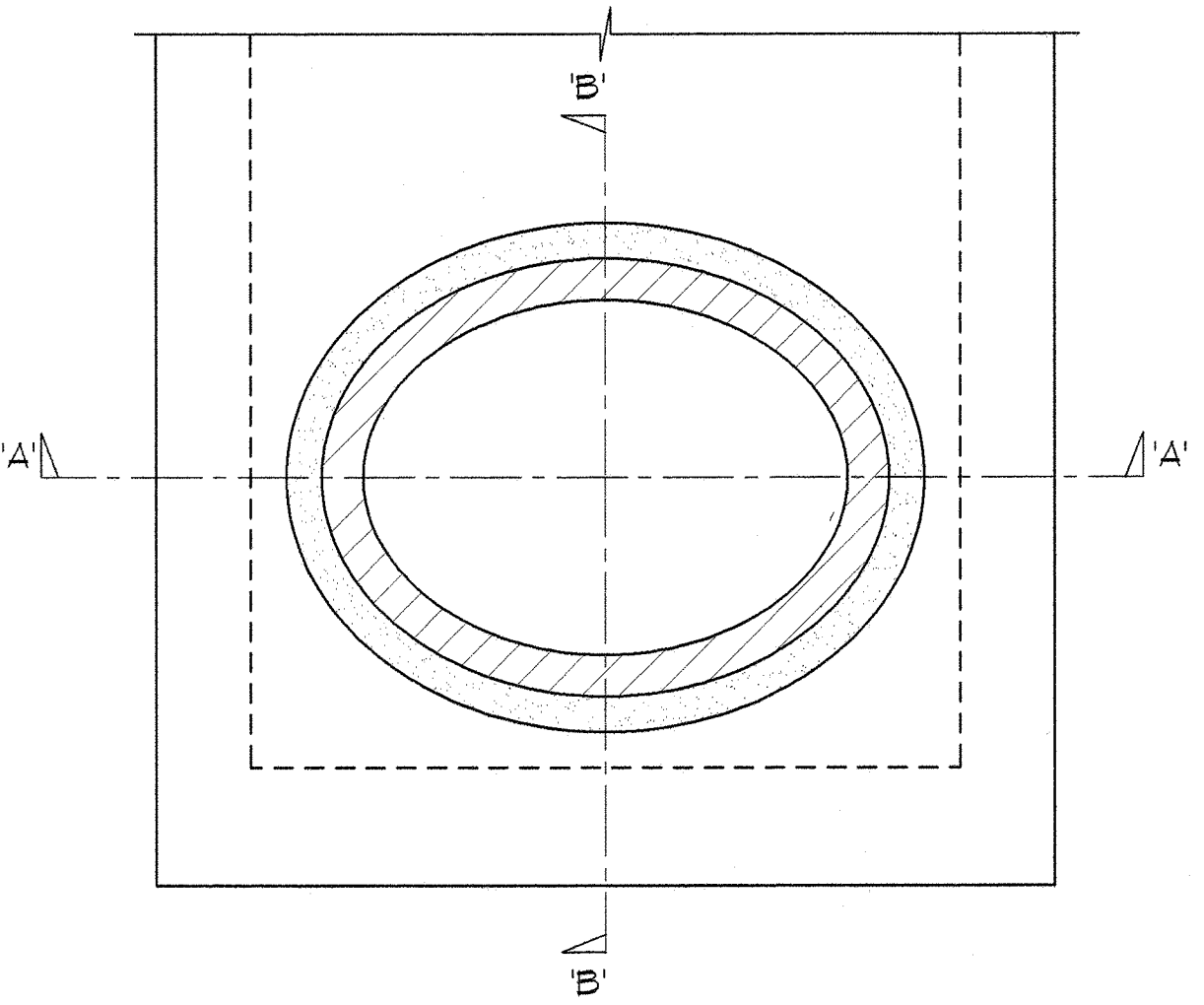
1. ALL WORK SHALL CONFORM TO THE 'STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION' (LATEST).
2. CONCRETE SHALL HAVE A MINIMUM 28 DAY COMPRESSIVE STRENGTH & A MAXIMUM WATER TO CEMENT RATIO AS FOLLOWS:
- | | STRENGTH | W/C RATIO |
|----------|----------|-----------|
| DMH & CB | 4000 PSI | 0.48 |
3. ALL REINFORCING STEEL SHALL CONFORM TO ASTM A615 GRADE 60.
4. MINIMUM COVER IN INCHES FOR REBARS FOR CAST-IN-PLACE AND PRECAST CONCRETE EXCEPT AS NOTED:
- | | CONCRETE CAST AGAINST EARTH (C.I.P.) | FORMED CONCRETE EXPOSED TO EARTH OR WEATHER |
|--|--------------------------------------|---|
| | 3" | 2" |
5. UNLESS OTHERWISE NOTED, SPLICES, LAPS, DOVEL EXTENSIONS AND EMBEDMENTS SHALL BE 40 BAR DIAMETERS MINIMUM.
6. ALL REINFORCING BARS MARKED 'CONT.' OR 'TEMP.' SHALL BE LAPPED 40 BAR DIAMETERS MINIMUM.
7. STAGGER ALL SPLICES WHERE POSSIBLE.
8. REBARS SHALL BE SUPPORTED, BENT AND PLACED AS PER 'MANUAL OF STANDARD PRACTICE FOR DETAILING CONCRETE STRUCTURES' ACI 318 (LATEST).
9. AT TIME CONCRETE IS PLACED, REINFORCING SHALL BE FREE FROM MUD, OIL, LAITANCE OR OTHER SUBSTANCES ADVERSELY AFFECTING BOND CAPACITY.
10. FOR REINFORCING NOT SHOWN ON THE PLANS, FOLLOW LATEST APPROVED VERSION OF THE 'STANDARD DETAILS FOR PUBLIC WORK CONSTRUCTION' (STANDARD DETAILS).
11. REINFORCEMENT, ANCHOR BOLTS, DOVELS AND ALL OTHER EMBEDDED ITEMS SHALL BE POSITIVELY SECURED BEFORE POURING.

DESIGN CRITERIA

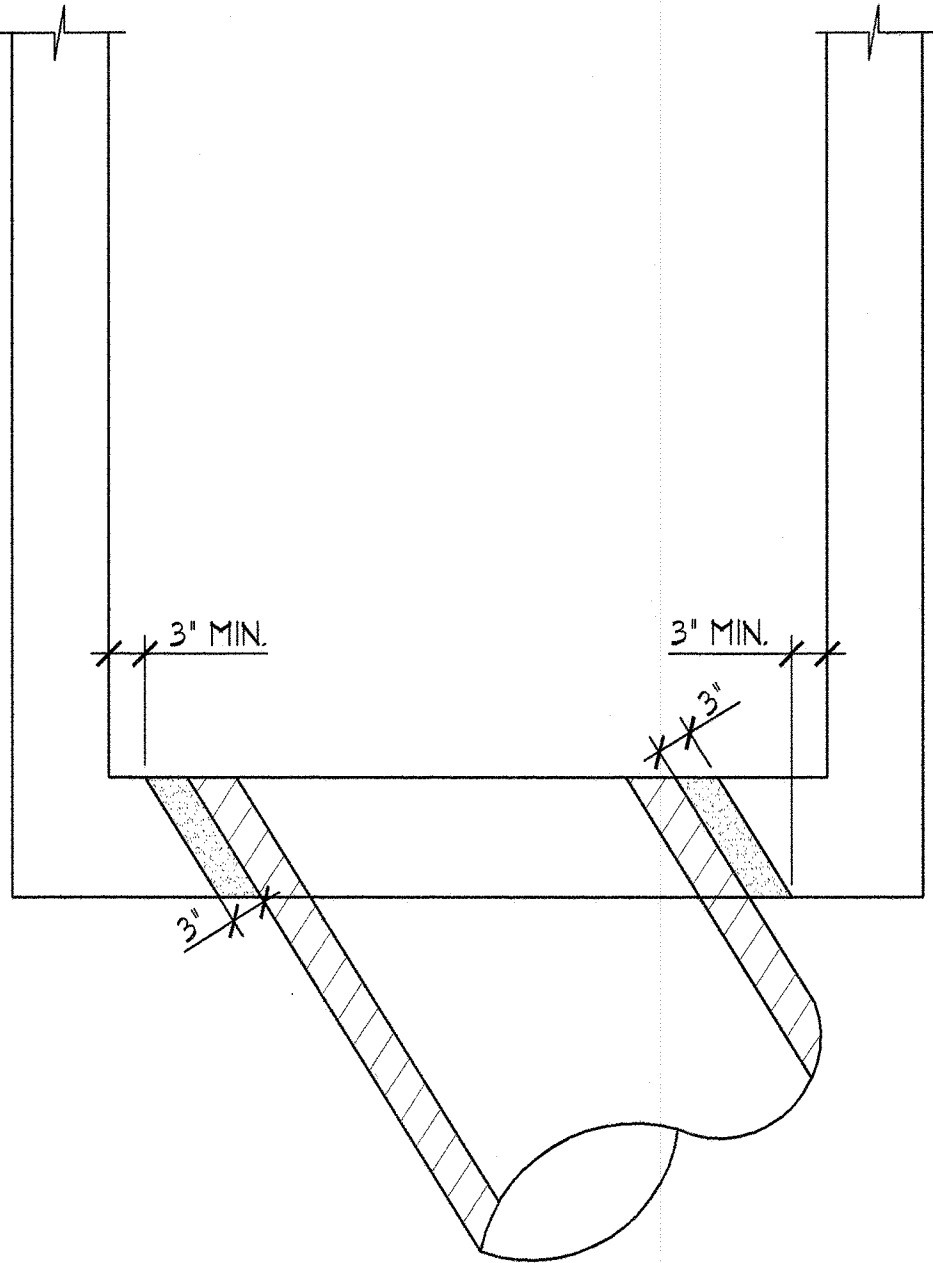
1. AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS BRIDGES FOURTH EDITION 2001:
- LIVE LOAD: HL-93 (IN TRAFFIC AREAS)
250 PSF (NON-TRAFFIC AREAS)
- 60 PCF ACTIVE PRESSURE (TOP RESTRAINED)

PRECAST CONSTRUCTION NOTES

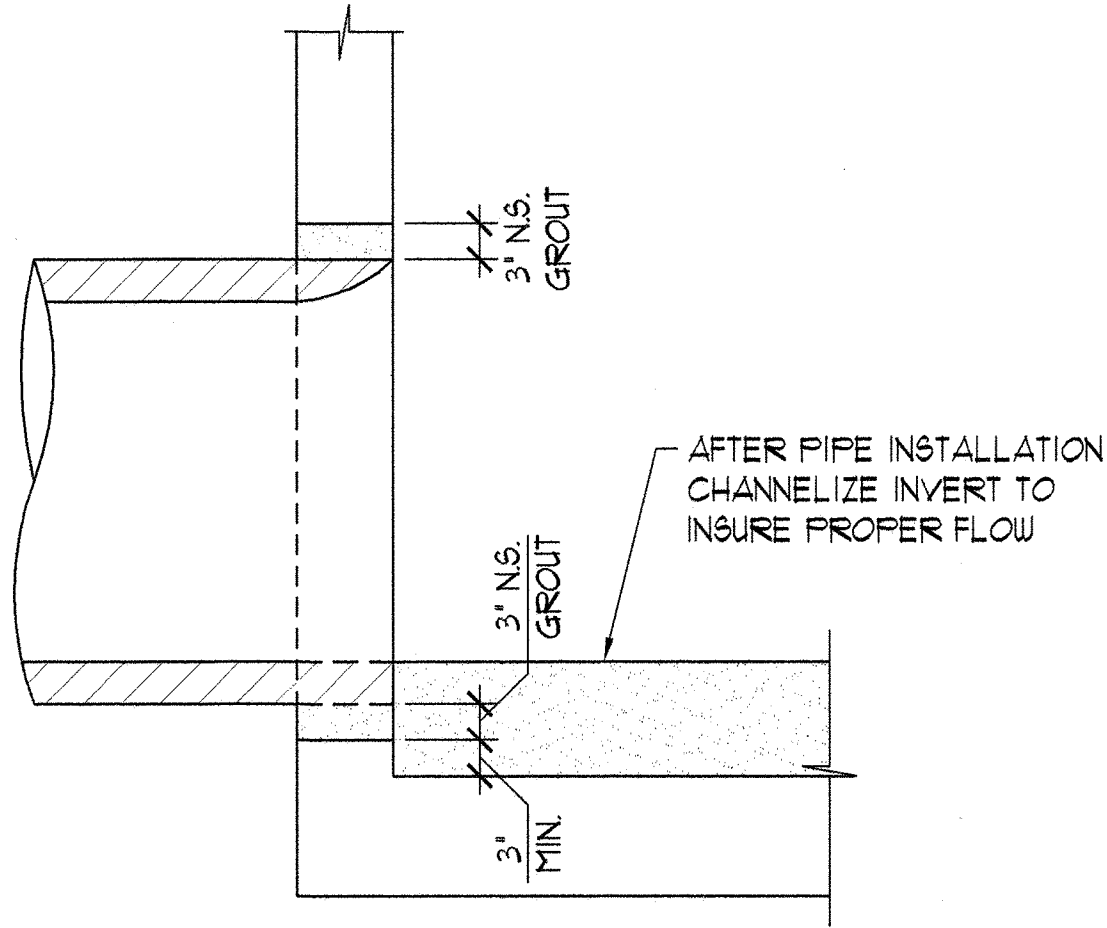
1. PRIOR TO CONSTRUCTION AND INSTALLATION OF ANY PRECAST STRUCTURE, THE CONTRACTOR SHALL NOTIFY THE CIVIL ENGINEERING BRANCH, DEPARTMENT OF PLANNING AND PERMITTING AT 768-2084 TO ARRANGE FOR INSPECTIONAL SERVICES. NON-COMPLIANCE OF THIS REQUIREMENT SHALL MEAN IMMEDIATE SUSPENSION OF ALL PRECAST WORK AND REJECTION OF ALL PRECAST STRUCTURES ALREADY CONSTRUCTED.
2. CONSTRUCTION OF PRECAST DRAINAGE STRUCTURES SHALL CONFORM TO ASTM C478.
3. THE JOINTS SHALL BE CONSTRUCTED TRUE TO THE DIMENSIONS SHOWN ON THE SHOP DRAWINGS.
4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING ALL DIMENSIONS FOR CONFORMANCE TO THE PLANS AND SPECIFICATIONS, CORRECT DETAILS AND FIT OF PARTS AFTER ASSEMBLY.
5. IF THE PERMISSIBLE VARIATION/TOLERANCES ARE EXCEEDED, THE PRECAST SECTIONS MAY BE ACCEPTABLE UPON RECEIPT OF A SIGNED AND STAMPED CERTIFICATION FROM THE DESIGN ENGINEER THAT:
- A. EXCEEDING THE TOLERANCE/VARIATION DOES NOT AFFECT THE STRUCTURAL INTEGRITY OF THE UNIT,
 - B. THE UNIT CAN BE BROUGHT WITHIN TOLERANCE BY STRUCTURALLY SATISFACTORY MEANS, OR
 - C. THE TOTAL ERECTED ASSEMBLY CAN BE MODIFIED TO MEET ALL STRUCTURAL REQUIREMENTS.



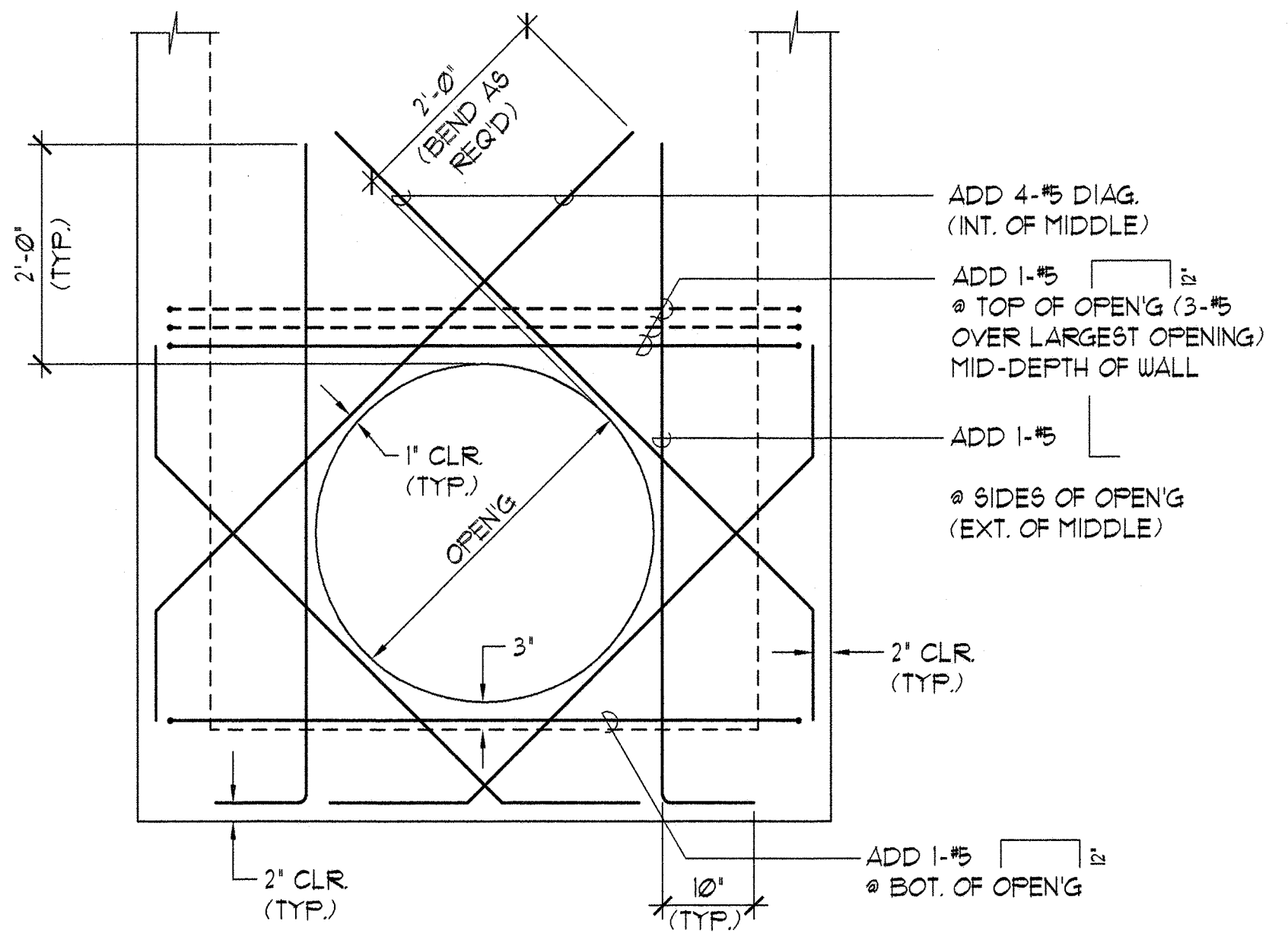
WALL ELEVATION



SECTION 'A-A'



SECTION 'B-B'



ELEVATION

PIPE OPEN'G LIMITATIONS FOR PRECAST BOXES

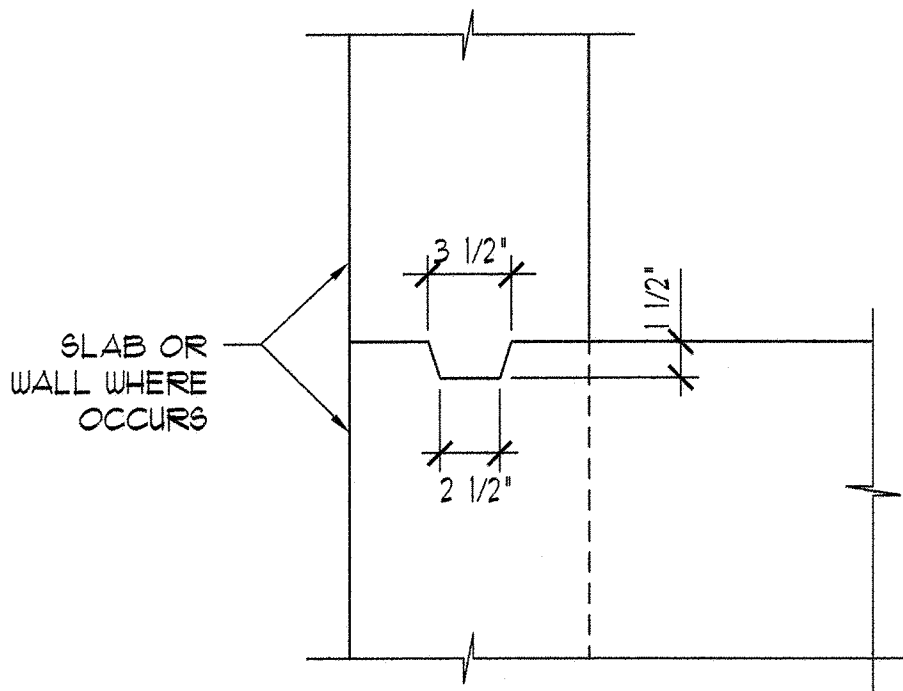
N.T.S.

A
S-1

TYPICAL ADDED REINF. AROUND PIPE OPEN'G FOR P.C.B.

N.T.S.

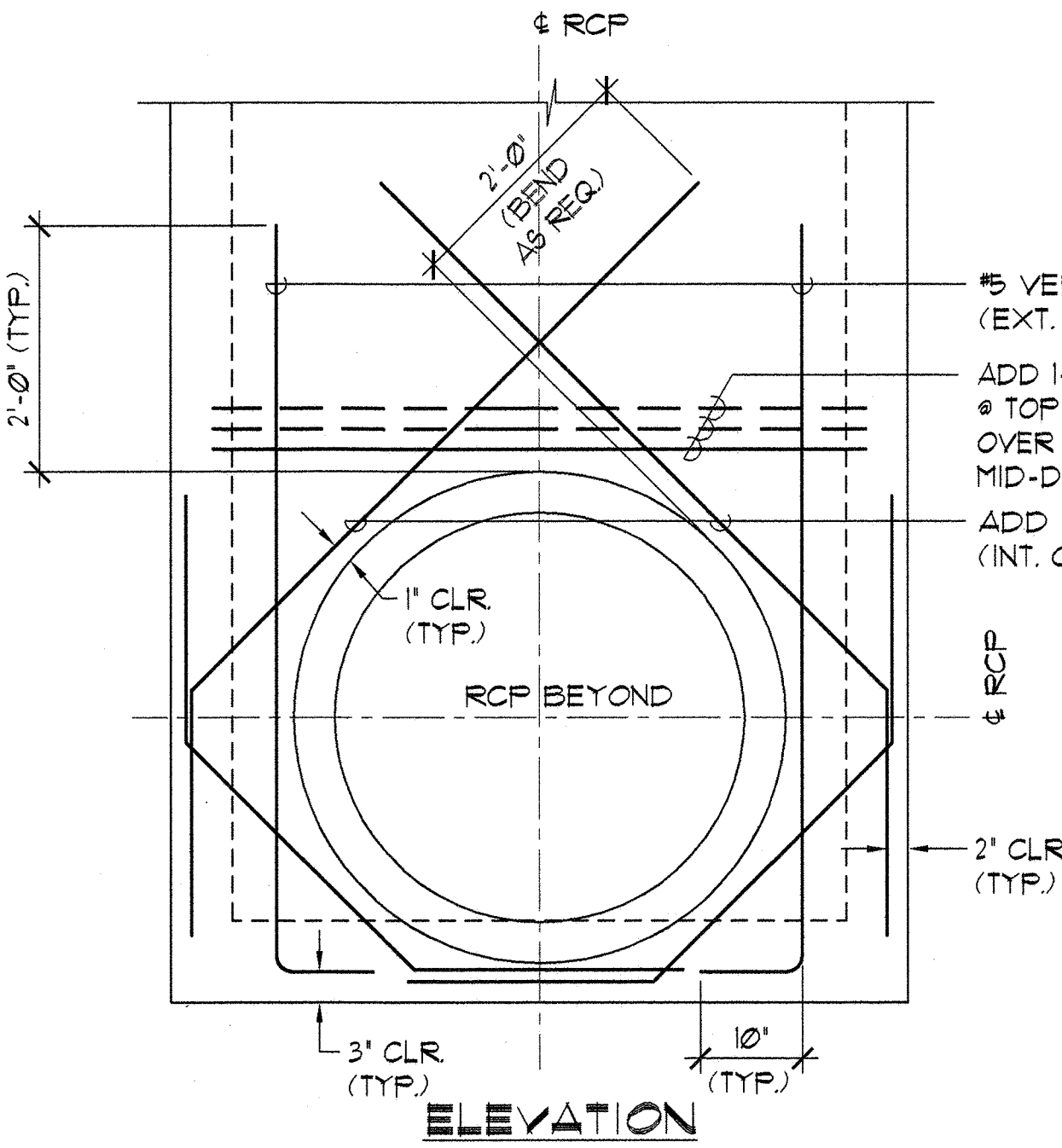
B
S-1



TYPICAL KEY DETAIL

SC: 1 1/2" = 1'-0"

C
S-1

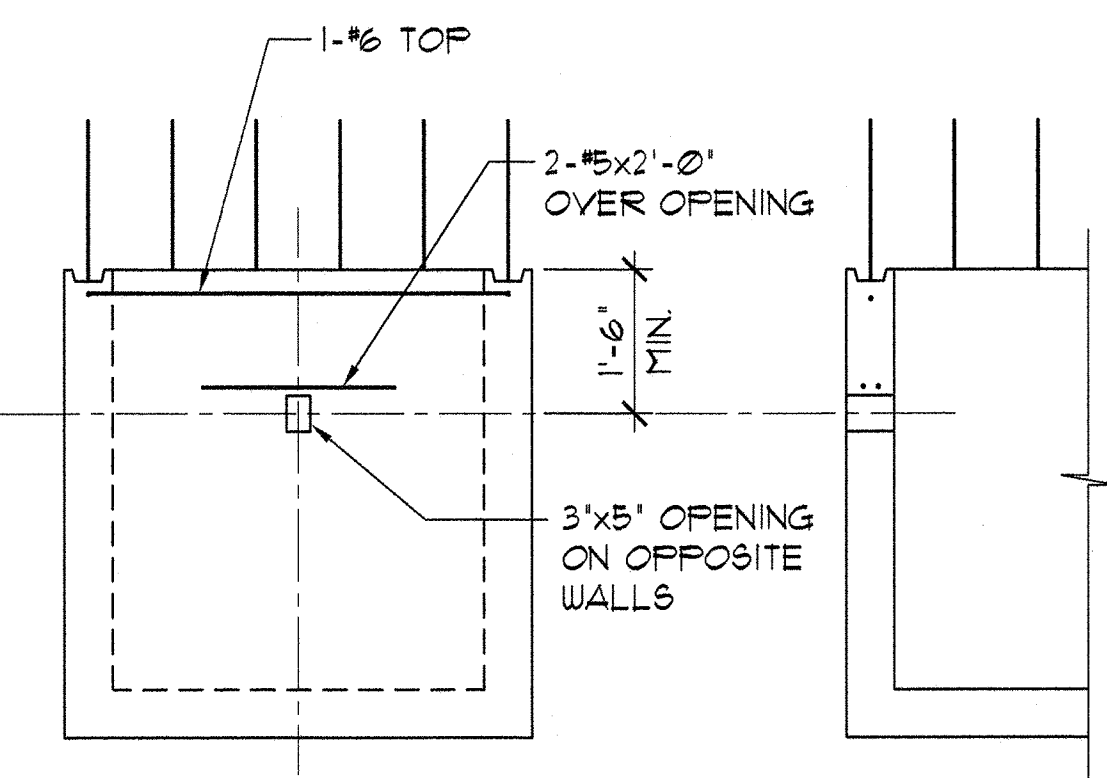


ELEVATION

TYP. ADDED REINF. AT PIPES FOR C.I.P. CONSTR.

N.T.S.

D
S-1



TYPICAL LIFTING EYE DETAIL FOR PRECAST BOX

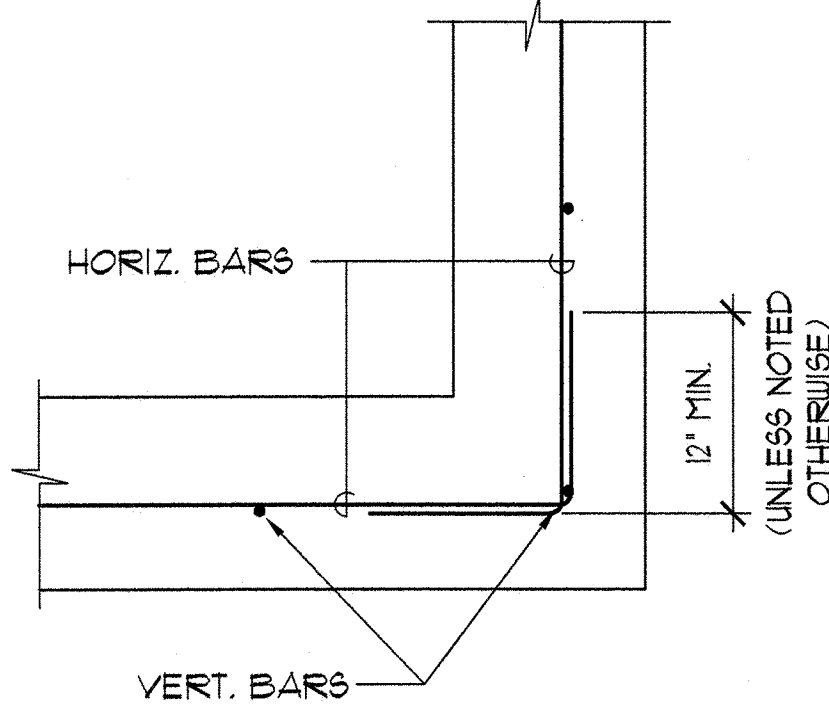
N.T.S.

F
S-1

TYPICAL KEY DETAIL

SC: 1 1/2" = 1'-0"

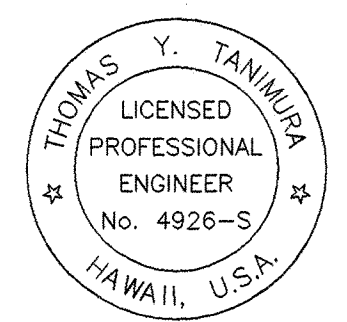
C
S-1



PLAN - TYP. CORNER REINFORCEMENT LAPPING

N.T.S.

D
S-1



TH Y Tanimura
04/30/14
Expiration Date of the License

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REVISION DATE	DESCRIPTION	MADE BY	APPROVED

Community Planning and Engineering, Inc.
Engineering Design Construction Management Infrastructure Planning
1100 Alakea Street, Sixth Floor Honolulu, Hawaii

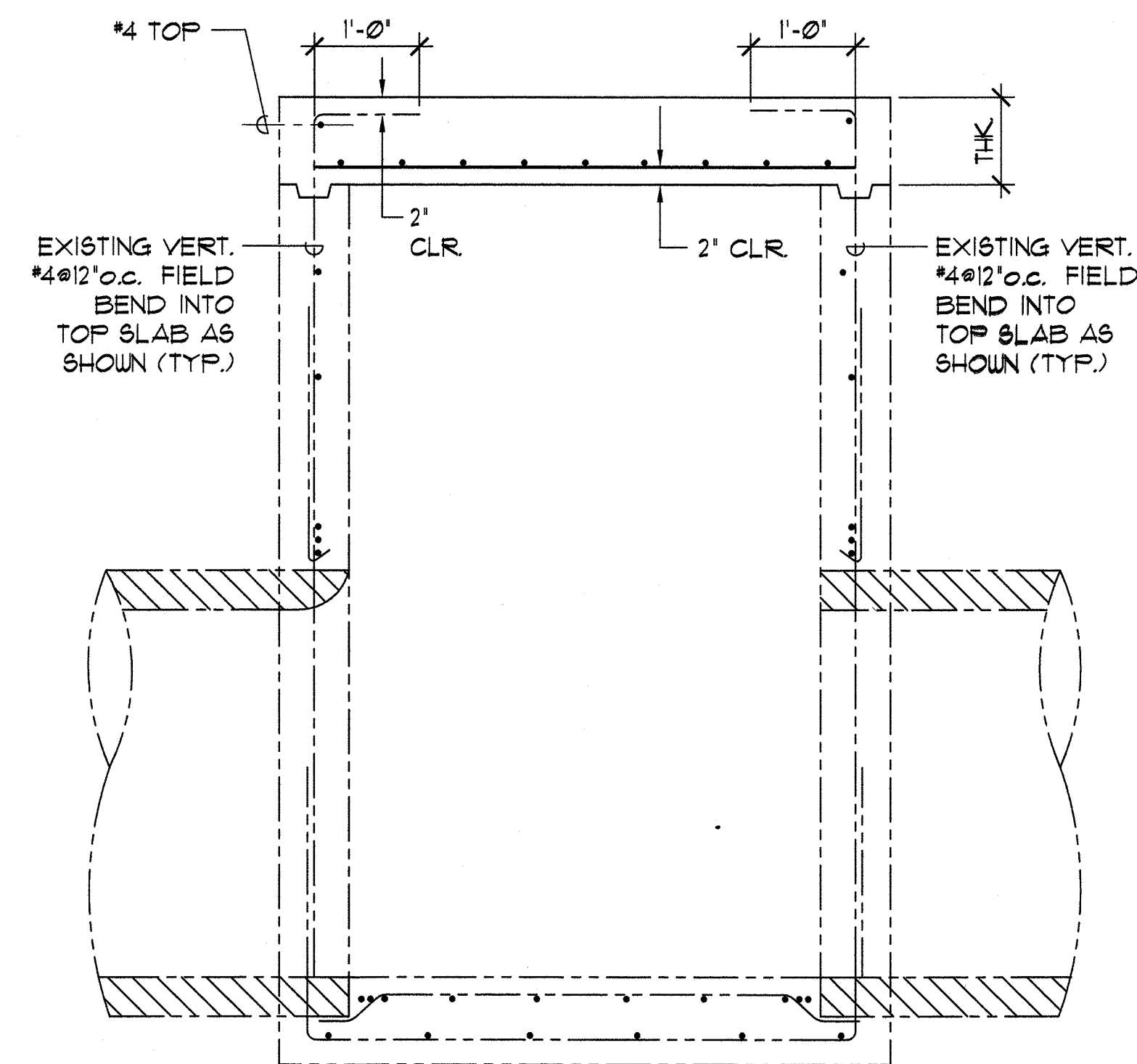
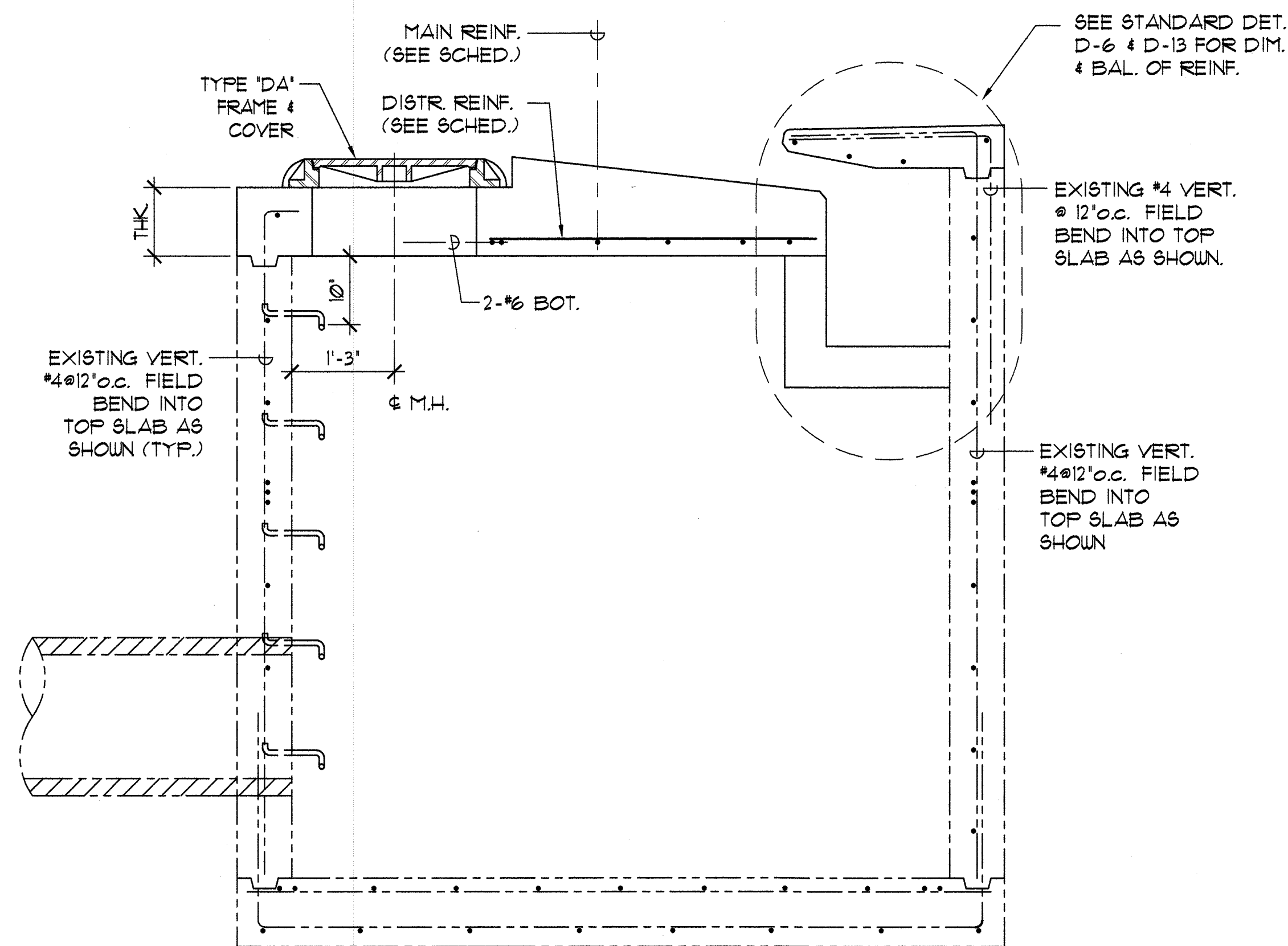
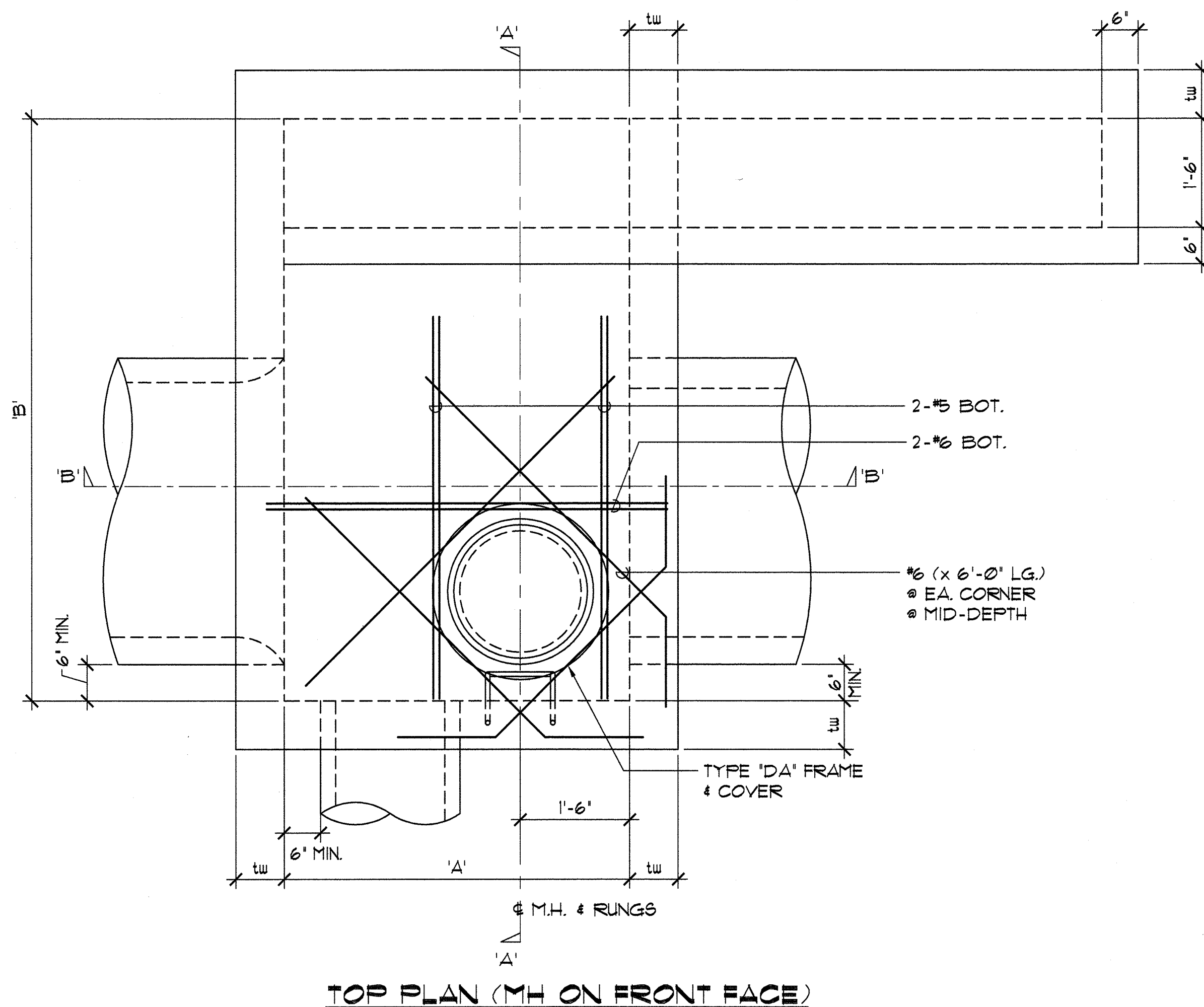
EAST KAPOLEI II DEVELOPMENT INCREMENT 2B
HONOLULU, EWA, OAHU, HAWAII
(DPP SUBD. FILE NO. 2011/SUB-155)
OWNER & DEVELOPER: DEPARTMENT OF HAWAIIAN HOME LANDS
TAX MAP KEY: 9-1-17: PORTION 110

GENERAL NOTES & TYPICAL DETAILS

DRAWN BY:	ENGINEER:	CHECKED BY:
HM	TT	TT

APPROVED: *M. F. 4/28/13*
DATE

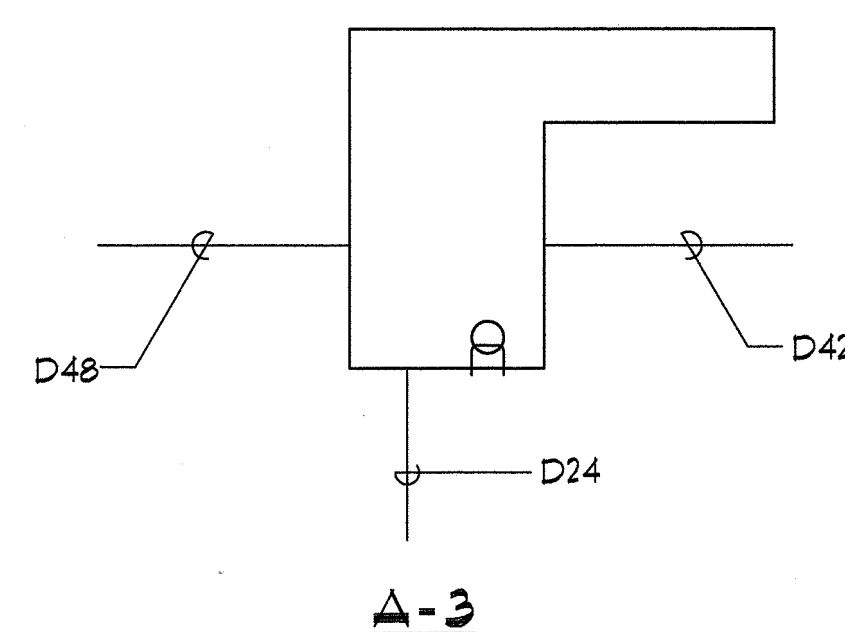
FILE	PROJECT	FOLDER	NO.



SPECIAL TYPE 'B' CATCH BASIN CAST-IN-PLACE DETAILS

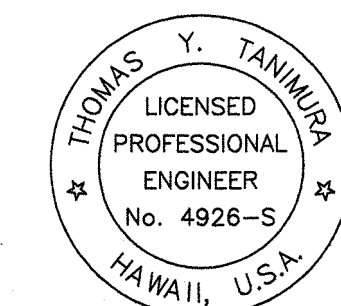
SC: 3/4" = 1'-0"

6-3



SLAB REINFORCING SCHEDULE						
MARK	"A"	"B"	tE	THK.	TOP SLAB REINF.	
					TOP MAIN	REINF. DISTRIB.
A-3	5'-4"	7'-4"	8"	10"	#5 @ 6" O.C.	#5 @ 10" O.C.

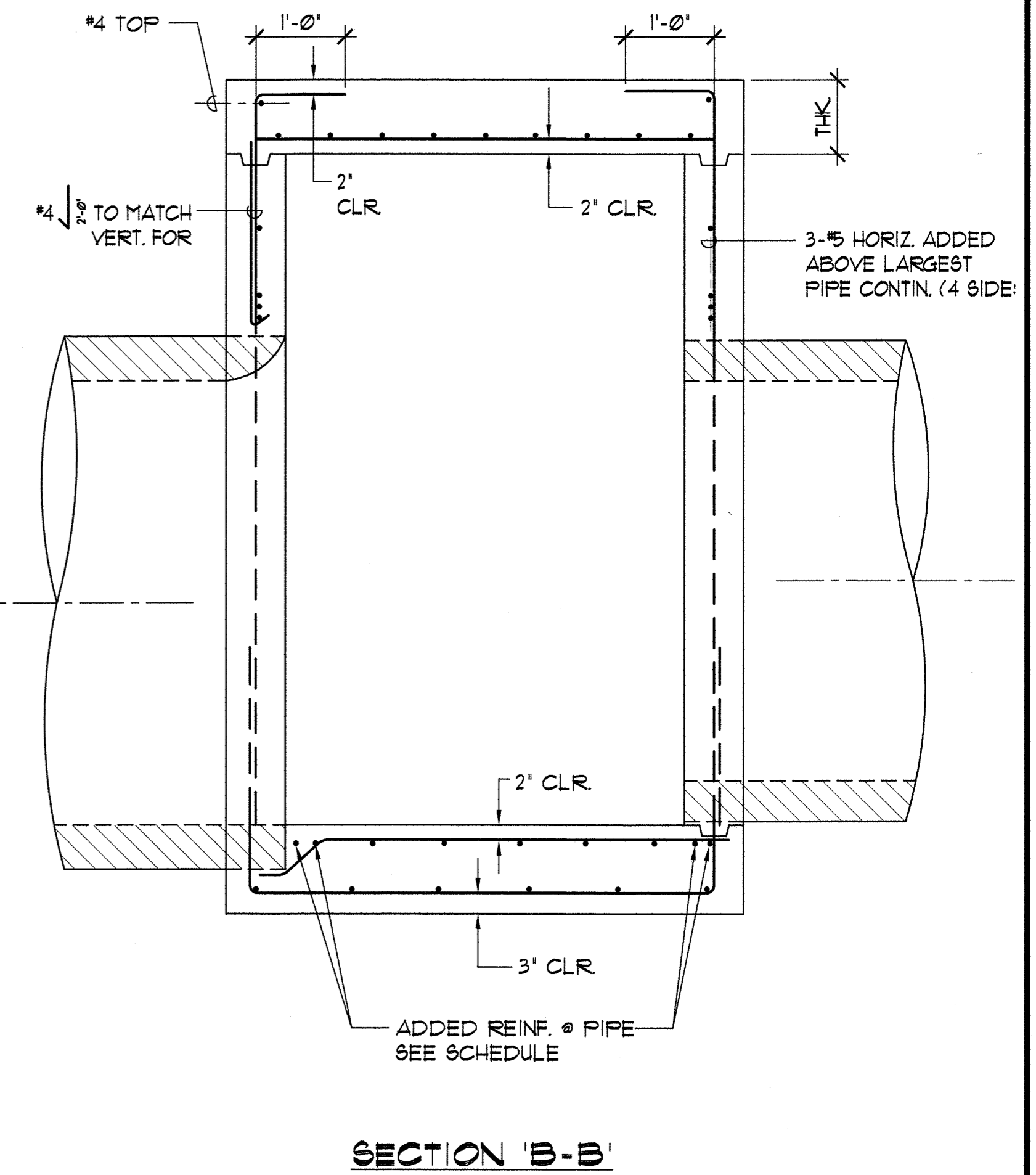
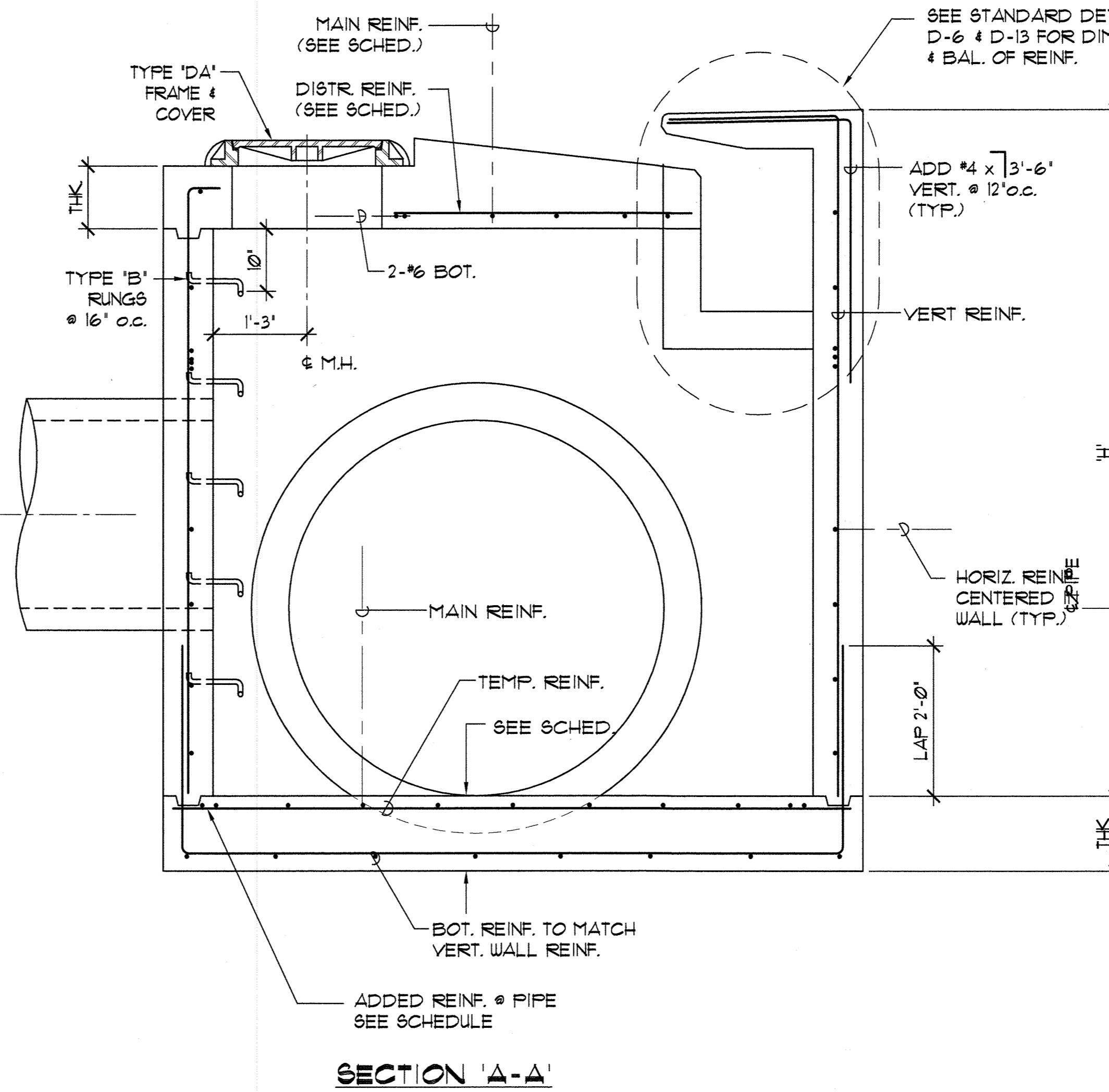
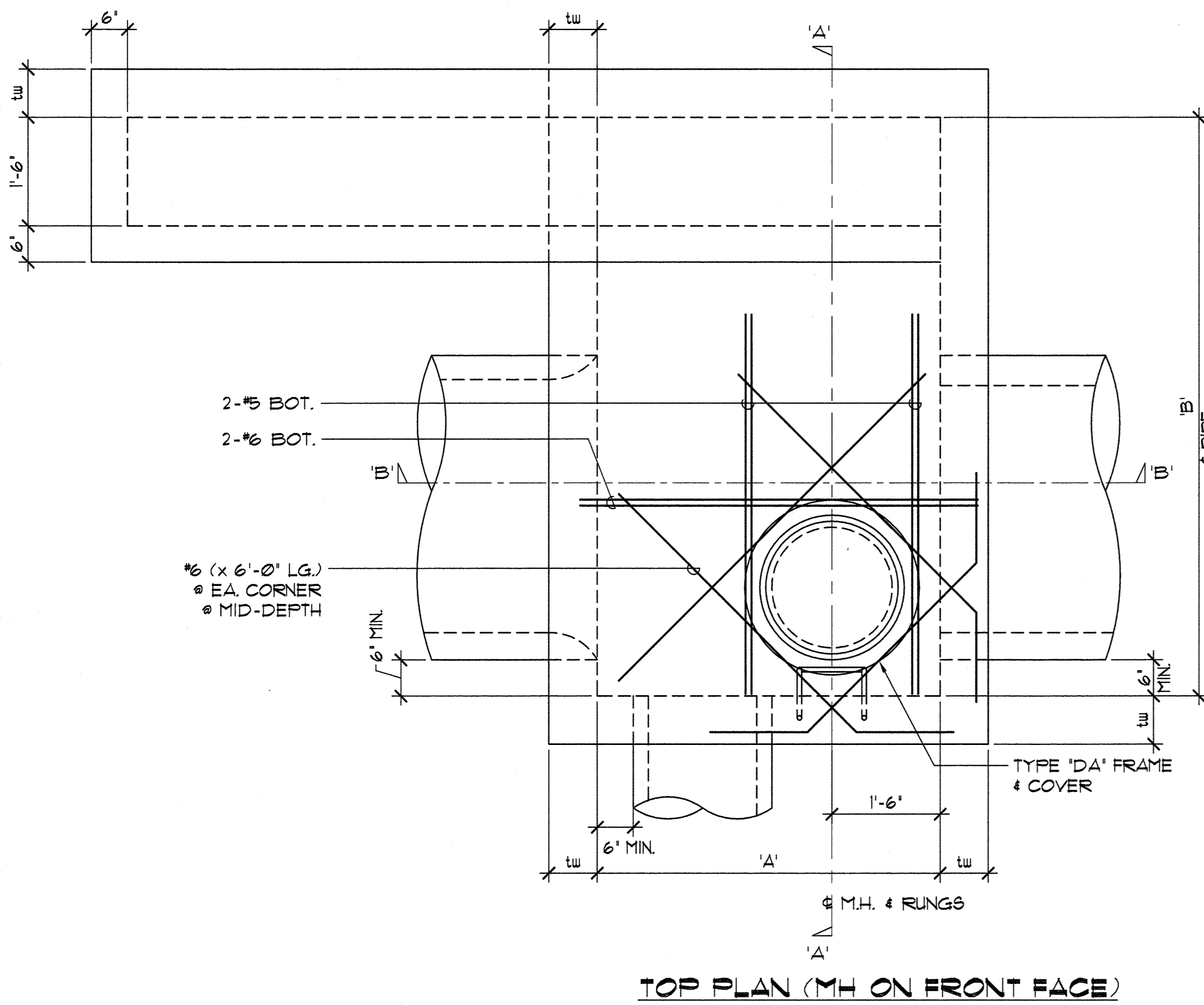
NOTE:
THE WALLS AND INVERT SLAB FOR CB A-3
WERE CONSTRUCTED UNDER:
EAST KAPOLEI II DEVELOPMENT ROAD 'E'
CP # 2010-CP-193



THOMAS Y. TANAKA
LICENSED PROFESSIONAL ENGINEER
No. 4926-S
HAWAII, U.S.A.

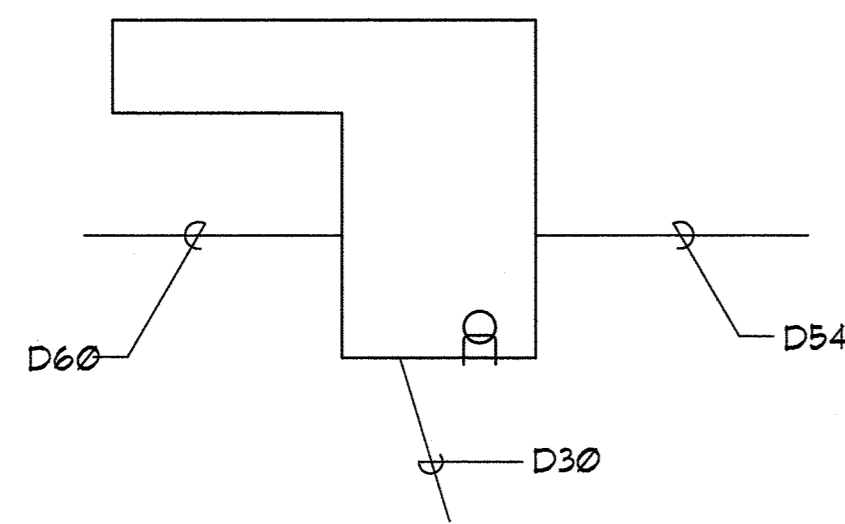
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REVISION DATE	DESCRIPTION	MADE BY	APPROVED
<p>Community Planning and Engineering, Inc. Engineering Design Construction Management Infrastructure Planning 1100 Alakaa Street, Sixth Floor Honolulu, Hawaii</p>			
<p>EAST KAPOLEI II DEVELOPMENT INCREMENT 2B HONOLULU, EWA, OAHU, HAWAII (DPP SUBD. FILE NO. 2011/SUB-155) OWNER & DEVELOPER: DEPARTMENT OF HAWAIIAN HOME LANDS TAX MAP KEY: 9-1-17: PORTION 110</p>			
<p>NEW TOP SLAB & GUTTER FOR UNFINISHED CATCH BASIN</p>			
DRAWN BY: HM	ENGINEER: TT	CHECKED BY: TT	
APPROVED:			
<p>M. 7/28/13 CHIEF, CIVIL ENGINEERING BRANCH, D.P.P. DATE</p>			



SPECIAL TYPE 'B' CATCH BASIN CAST-IN-PLACE DETAILS

SC: 3/4" = 1'-0"



CB A-1

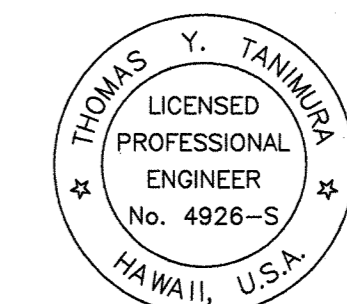
N.T.S.

B
S-4

SLAB REINFORCING SCHEDULE								TYPE 'B' CB		
MARK	"H" MAX.	"A"	"B"	tw	THK.	TOP SLAB REINF.		INVERT SLAB REINF.		
						TOP MAIN	REIN. DISTRIB.	THK.	MAIN	TEMP.
A-1	92'	6'-2"	8'-0"	8'	10'	#6@6'o.c.	#6@8'o.c.	12	#4@9'o.c.	#4@9'o.c.

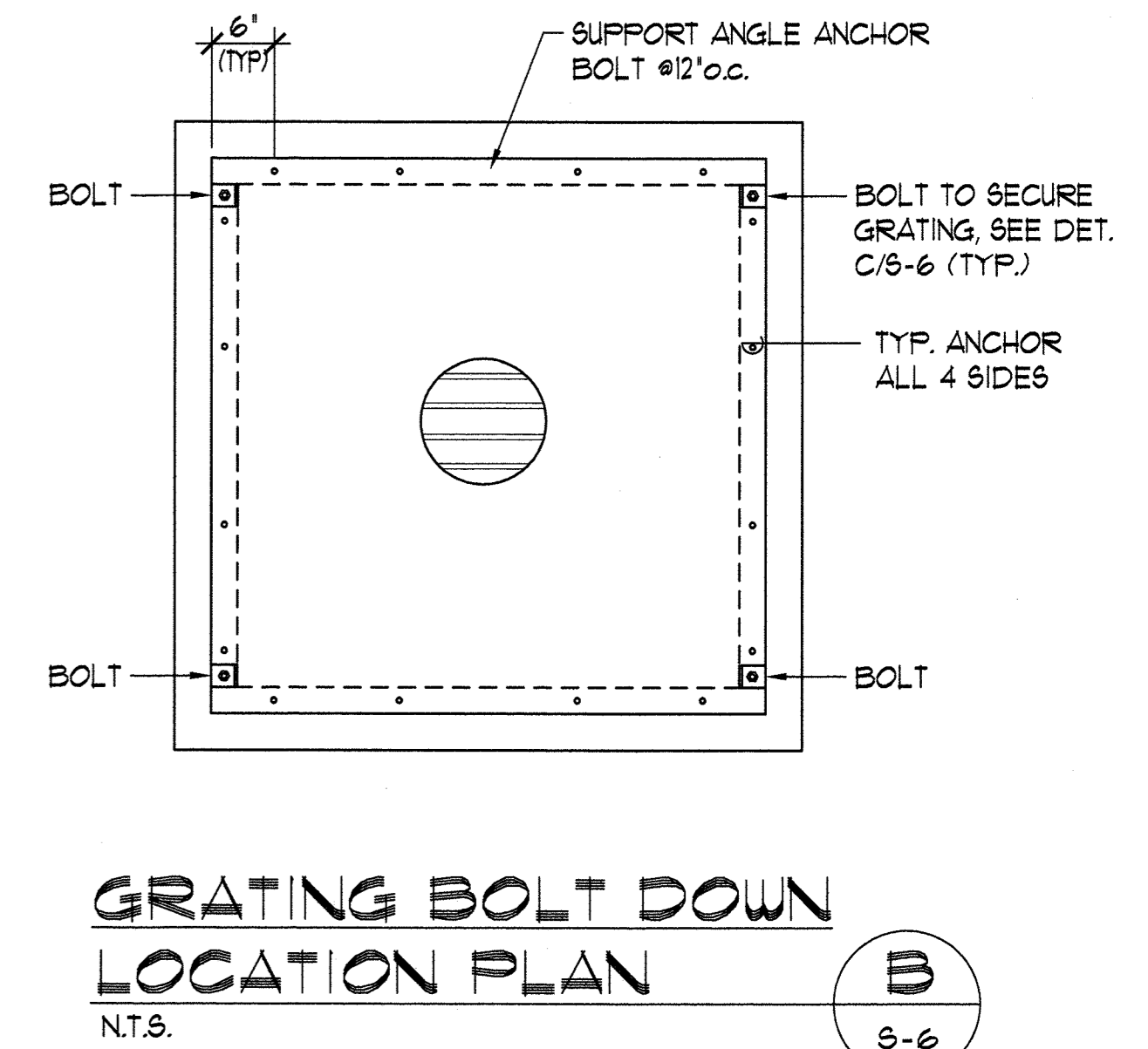
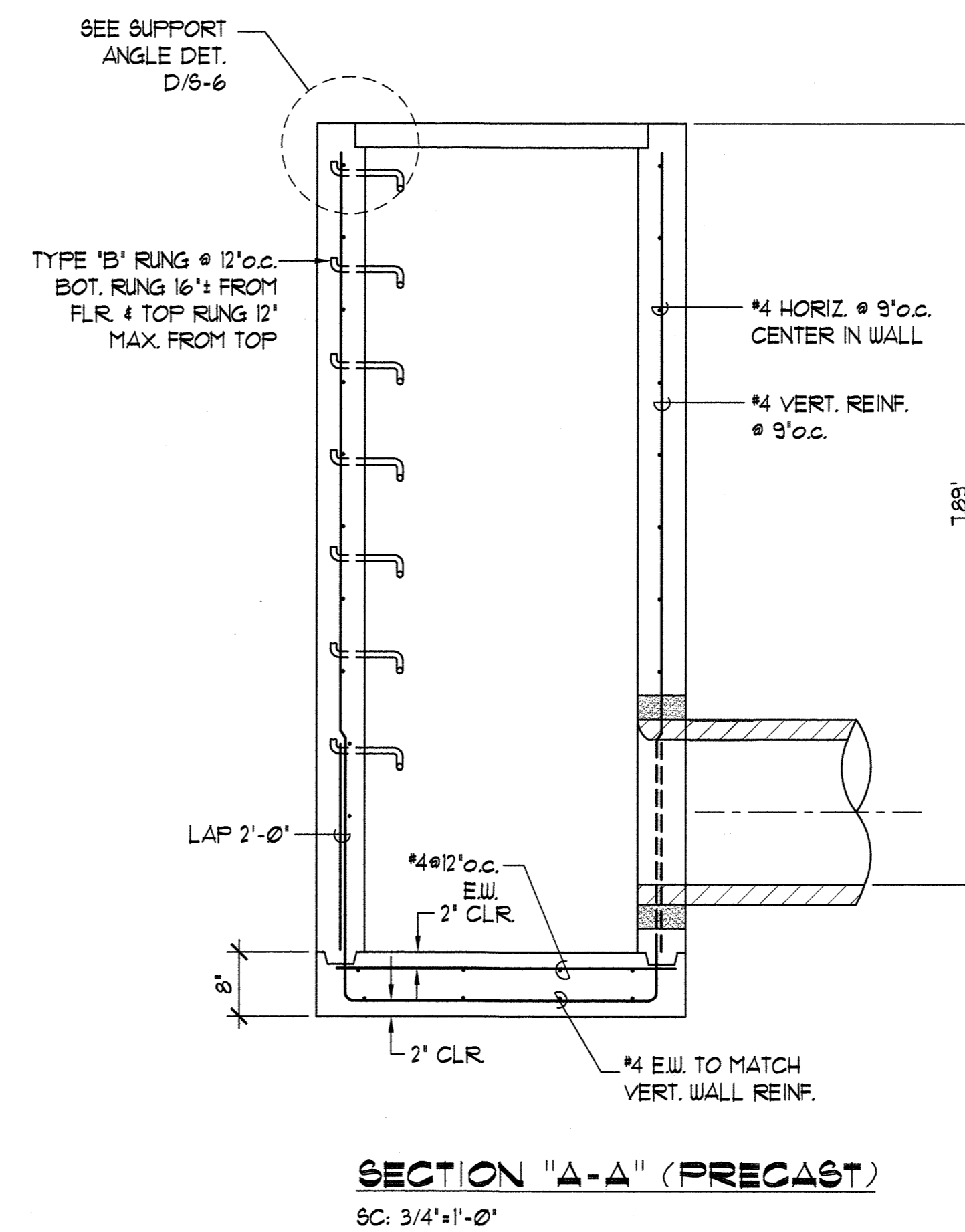
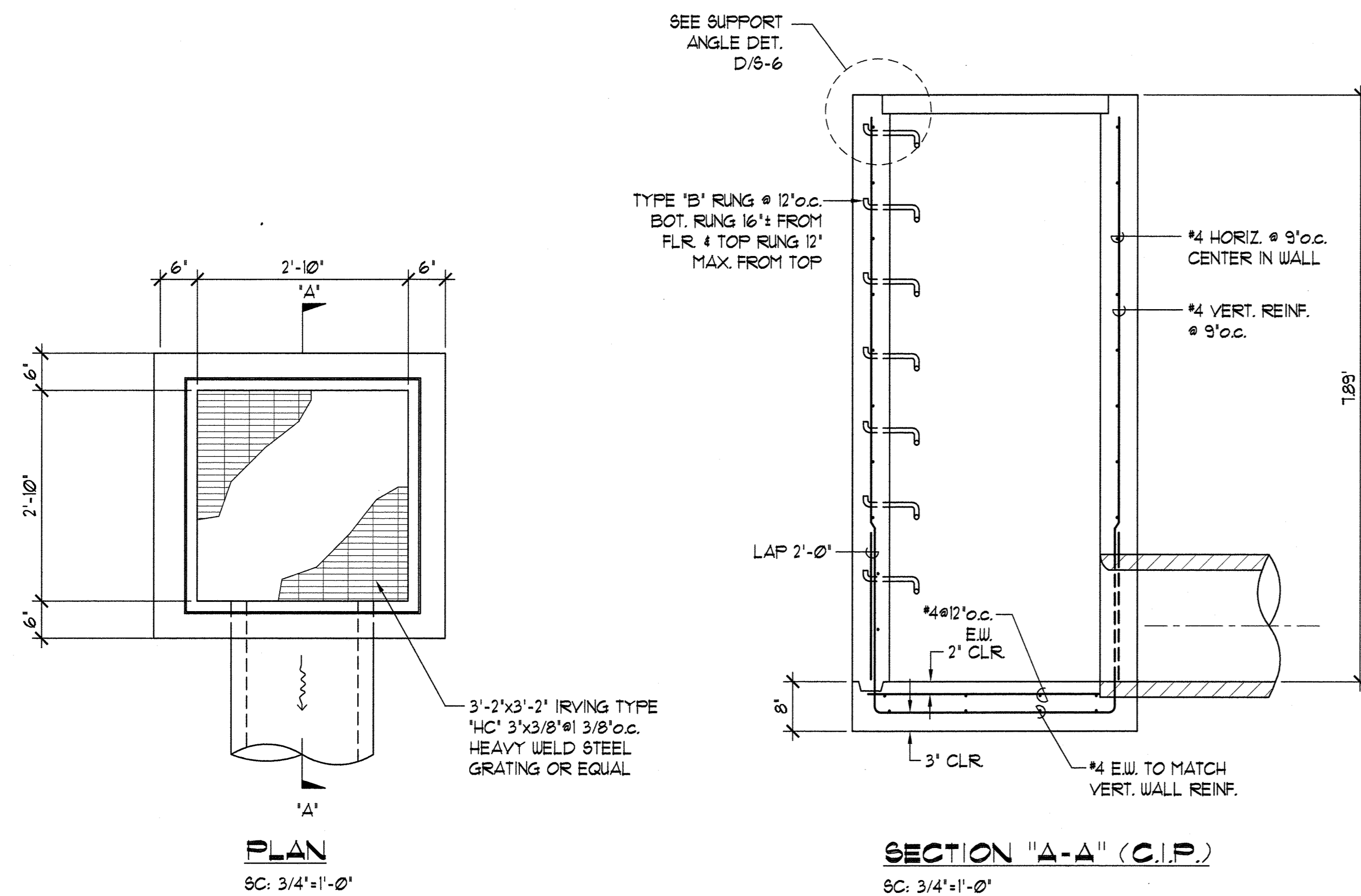
WALL REINFORCING SCHEDULE					
MARK	A-1				MARK
tw	8'				tw
VERT. REINF.	#4@12'o.c.				VERT. REINF.
"H"	HORIZ. REINF. (CENTERED IN WALL)				"H"
0'-0" TO 2'-0"	#5@7'o.c.				0'-0" TO 2'-0"
2'-0" TO 3'-0"					2'-0" TO 3'-0"
3'-0" TO 4'-0"	#5@5'o.c.				3'-0" TO 4'-0"
4'-0" TO 5'-0"					4'-0" TO 5'-0"
5'-0" TO 6'-0"					5'-0" TO 6'-0"
6'-0" TO 7'-0"					6'-0" TO 7'-0"
7'-0" TO 8'-0"					7'-0" TO 8'-0"
8'-0" TO 9'-0"					8'-0" TO 9'-0"
> 9'-0"					> 9'-0"

ADDED REINF. @ PIPE	
PIPE SIZE	REINF.
30"	1-#5
54"	2-#5
60"	2-#5



TH. Tannura
04/30/14
Expiration Date of the License
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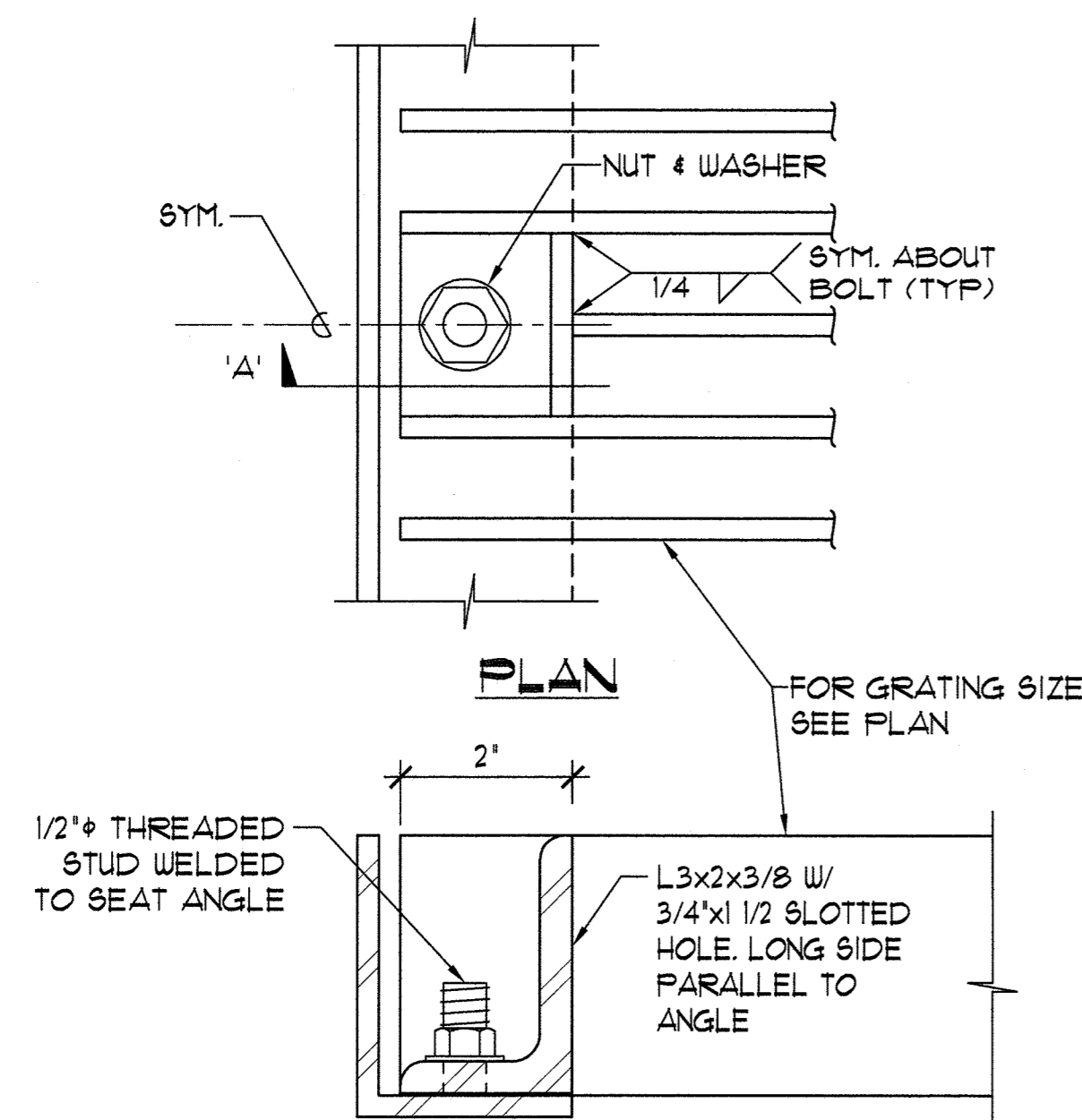
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Community Planning and Engineering, Inc. Engineering Design Construction Management Infrastructure Planning 1100 Alakaa Street, Sixth Floor Honolulu, Hawaii			
EAST KAPOLEI II DEVELOPMENT INCREMENT 2B HONOLULU, EWA, OAHU, HAWAII (DPP SUBD. FILE NO. 2011/SUB-155) OWNER & DEVELOPER: DEPARTMENT OF HAWAIIAN HOME LANDS TAX MAP KEY: 9-1-17: PORTION 110			
SPECIAL TYPE 'B' CATCH BASIN CAST-IN-PLACE DETAILS			
DRAWN BY: HW	ENGINEER: TT	CHECKED BY: TT	
APPROVED:			
M. 7/2 6/28/13 CHIEF, CIVIL ENGINEERING, DPP, HW DATE			



CAST-IN-PLACE & PRECAST DETAILS FOR DRAIN INLET IN PAYEMENT AREA (PRIVATE)

A
S-6

- GRATING NOTES:
- 1) STEEL GRATING SHALL BE ABLE TO SUPPORT THE WHEEL LOAD PLUS IMPACT FOR THE AASHTO LRFD DESIGN TRUCK (FORMERLY HS20 TRUCK).
 - 2) GRATING BARS SHALL CONFORM TO ASTM A36 STEEL.
 - 3) CROSS BARS SHALL BE WELDED TO THE MAIN BARS @ 4' o.c. GRATING SHALL BE HOT-DIPPED GALVANIZED AFTER FABRICATION.
 - 4) SUPPORT FRAME SHALL CONSIST OF STEEL PLATES, ANGLES AND THREADED RODS CONFORMING TO ASTM A36 AND ANCHOR BOLTS CONFORMING TO ASTM A307. SUPPORT FRAME SHALL BE HOT-DIPPED GALVANIZED AFTER FABRICATION.
 - 5) NUTS SHALL CONFORM TO ASTM A563 SIZED TO ACCOMMODATE GALVANIZING.

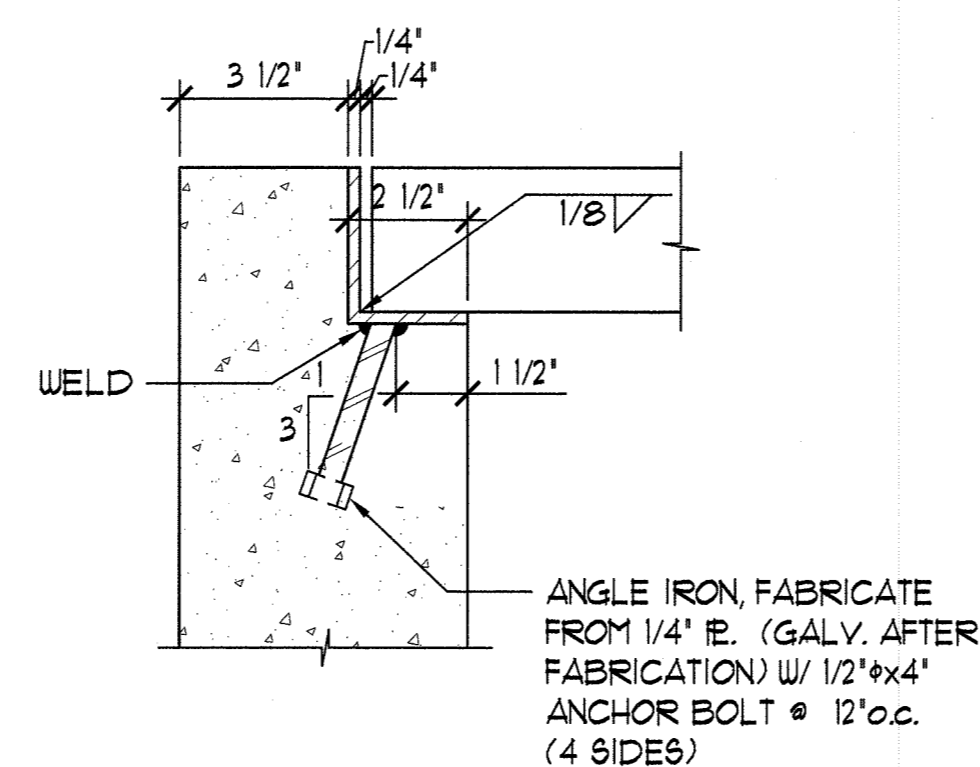


NOTE: PROVIDE 1-BOLT AT EACH CORNER OF EACH SECTION OF GRATING.
SEE DET. B/8-6

GRATING BOLT DOWN DETAIL

SC: 6" = 1'-0"

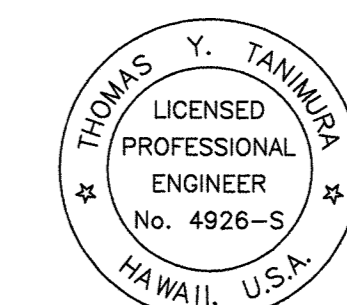
C
S-6



SUPPORT ANGLE

SC: 3" = 1'-0"

D
S-6



THOMAS Y. TANIMURA
LICENSED PROFESSIONAL ENGINEER
No. 4926-S
HAWAII, U.S.A.

04/30/14
Expiration Date of the License

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REVISION DATE	DESCRIPTION	MADE BY	APPROVED
<p>Community Planning and Engineering, Inc. Engineering Design Construction Management Infrastructure Planning 1100 Alakea Street, Sixth Floor Honolulu, Hawaii</p>			
<p>EAST KAPOLEI II DEVELOPMENT INCREMENT 2B HONOLULU, EWA, OAHU, HAWAII (DPP SUBD. FILE NO. 2011/SUB-155) OWNER & DEVELOPER: DEPARTMENT OF HAWAIIAN HOME LANDS TAX MAP KEY: 9-1-17: PORTION 110</p>			
<p>DRAIN INLET DETAILS</p>			
DRAWN BY: HM	ENGINEER: TT	CHECKED BY: TT	
APPROVED:			
<p>M. J. 6/28/13 DATE</p>			

GENERAL NOTES

1. ALL WORK SHALL CONFORM TO THE BUILDING CODE OF THE CITY AND COUNTY OF HONOLULU (LATEST).
2. ALL MATERIALS AND WORKMANSHIP SHALL CONFORM TO THE DRAWINGS AND THE SPECIFICATIONS.
3. THE GENERAL NOTES AND TYPICAL DETAILS SHALL APPLY UNLESS OTHERWISE SHOWN.
4. DIMENSIONS SHALL TAKE PRECEDENCE OVER SCALES SHOWN ON DRAWINGS.
5. DRAWINGS INDICATE GENERAL AND TYPICAL DETAILS OF CONSTRUCTION. WHERE CONDITIONS ARE NOT SPECIFICALLY INDICATED BUT ARE OF SIMILAR CHARACTER TO DETAILS SHOWN, SIMILAR DETAILS OF CONSTRUCTION SHALL BE USED, SUBJECT TO REVIEW BY THE ARCHITECT.
6. SEE CIVIL DRAWINGS FOR LOCATION OF LIGHT POLES
7. ALL OMISSIONS OR CONFLICTS BETWEEN THE VARIOUS ELEMENTS OF THE WORKING DRAWINGS AND/OR SPECIFICATIONS SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER BEFORE PROCEEDING WITH ANY WORK SO INVOLVED.
8. DURING THE CONSTRUCTION PERIOD THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE SAFETY OF THE BUILDING AND THE PROTECTION OF ADJACENT PROPERTIES, STRUCTURES, STREETS AND UTILITIES FROM DAMAGE. THE CONTRACTOR SHALL PROVIDE ADEQUATE SHORING, BRACING AND GUYS IN ACCORDANCE WITH ALL NATIONAL, STATE AND LOCAL SAFETY ORDINANCES.
9. ALL ERECTION PROCEDURES SHALL CONFORM TO OSHA STANDARDS. ANY DEVIATION MUST BE APPROVED BY OSHA PRIOR TO ERECTION.
10. THE CONTRACTOR SHALL TAKE ALL STEPS NECESSARY TO PROPERLY ALIGN THE STRUCTURE.
11. SHOP DRAWINGS REQUIRED BY THE SPECIFICATIONS SHALL BE SUBMITTED TO THE ENGINEER FOR REVIEW PRIOR TO FABRICATION.
12. ALL REQUESTS BY THE CONTRACTOR TO CHANGE WHAT IS SHOWN IN THE CONTRACT DOCUMENTS MUST BE SUBMITTED IN WRITING TO THE ENGINEER.
13. THE CONTRACTOR SHALL NOTIFY TANIMURA & ASSOCIATES (PH. 536-1692) THREE (3) WORKING DAYS PRIOR TO POURING CONCRETE.

FOUNDATION

1. THE FOUNDATION DESIGN IS BASED ON THE RECOMMENDATIONS IN THE FOUNDATION INVESTIGATION REPORT BY P&C CONSULTANTS JOB NO. 2130310, DATED JUNE 2009. UNLESS OTHERWISE INDICATED FOUNDATION WORK SHALL BE PERFORMED IN ACCORDANCE WITH THIS REPORT. THE REPORT IS PART OF THIS PLAN AND SHALL BE KEPT ON THE JOB SITE AT ALL TIMES.
2. THE SIDES OF THE POLE FOUNDATION SHALL BE UNDISTURBED SOIL.
3. ALL WATER, MUD AND DEBRIS SHALL BE REMOVED FROM THE BOTTOM OF FOOTING EXCAVATIONS PRIOR TO THE PLACEMENT OF CONCRETE.
4. CONTRACTOR SHALL NOTIFY P&C CONSULTANTS, 3 WORKING DAYS PRIOR TO BEGINNING ANY FOUNDATION WORK (BOTTOM OF FOOTING, STRUCTURAL FILL, ETC.).

REINFORCED CONCRETE

1. ALL CONCRETE WORK SHALL CONFORM TO ACI 318-02.
2. ALL CONCRETE SHALL BE NORMAL WEIGHT (150 PCF) WITH AGGREGATES CONFORMING TO ASTM C-33. UNLESS OTHERWISE NOTED, THE COMPRESSIVE STRENGTHS OF CONCRETE AT 28 DAYS AND MAXIMUM AGGREGATE SIZES SHALL BE AS FOLLOWS:
- | | STRENGTH | AGGREGATE SIZE |
|---------------|----------|----------------|
| DRILLED PIERS | 3000 PSI | 1-1/2" |
3. MAXIMUM WATER-CEMENT RATIO SHALL NOT EXCEED 0.55.
4. ALL REINFORCING STEEL EXCEPT TIES AND STIRRUPS SHALL CONFORM TO ASTM A615 GRADE 60. TIES, STIRRUPS AND REBARS TO BE WELDED SHALL BE ASTM A615 GRADE 40.
5. UNLESS OTHERWISE NOTED, SPLICES, LAPS, DOWEL EXTENSIONS AND EMBEDMENTS SHALL BE 45 BAR DIAMETERS MINIMUM BUT NOT LESS THAN 2'-0".
6. ALL REINFORCING BARS MARKED CONTINUOUS (CONT.) ON THE PLANS SHALL BE LAPPED 45 BAR DIAMETERS MINIMUM BUT NOT LESS THAN 2'-0".
7. STAGGER ALL SPLICES WHERE POSSIBLE.
8. ALL WELDING OF REINFORCING SHALL CONFORM TO 'STRUCTURAL WELDING CODE - REINFORCING STEEL' (AWS D1.4).

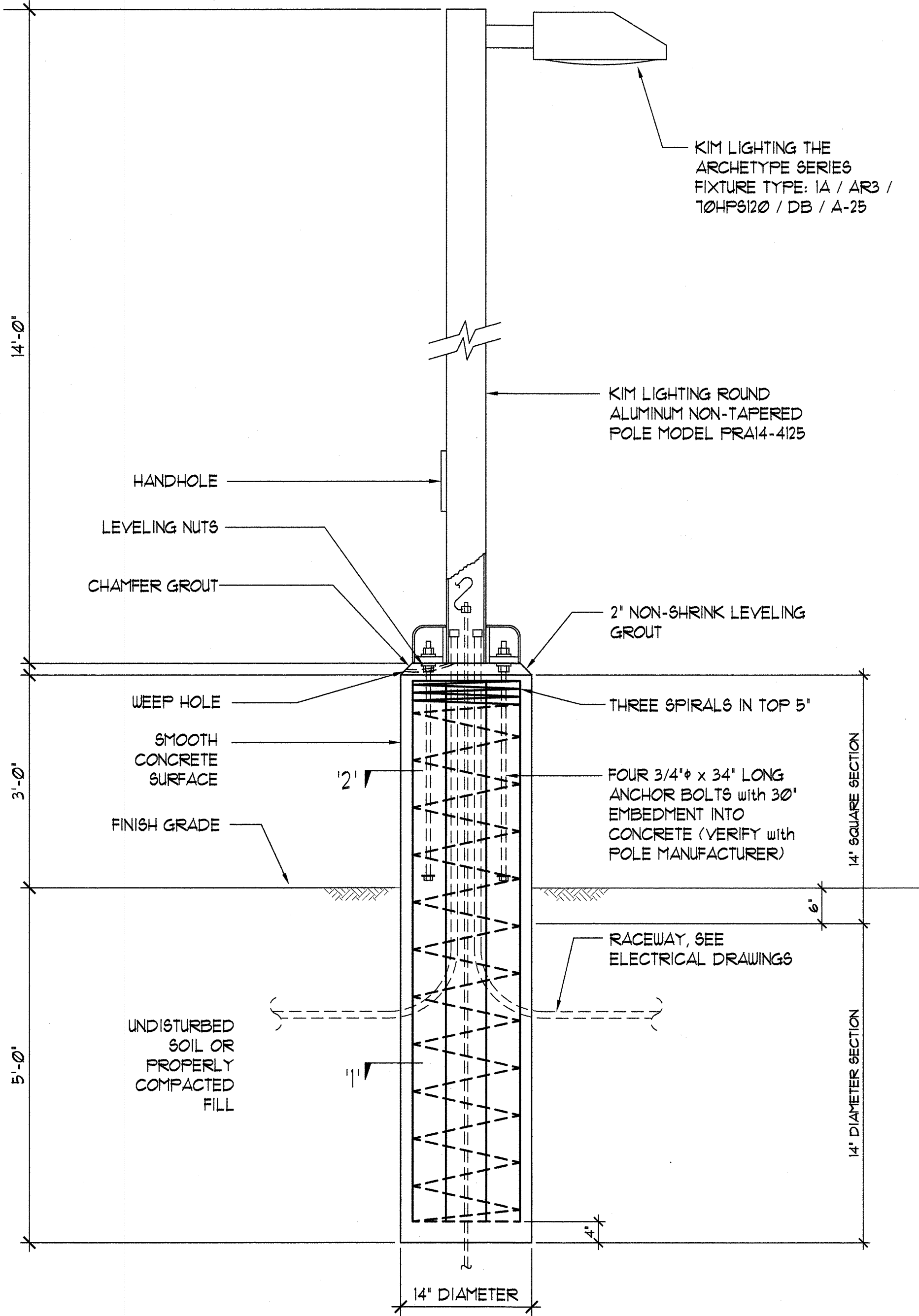
9. REBARS SHALL BE SUPPORTED, BENT AND PLACED AS PER 'MANUAL OF STANDARD PRACTICE FOR DETAILING CONCRETE STRUCTURES' ACI 315 (LATEST).
10. MINIMUM COVER IN INCHES FOR REBARS FOR CAST-IN-PLACE CONCRETE:
- | CONCRETE CAST AGAINST EARTH | 3" |
|--|--------|
| FORMED CONCRETE EXPOSED TO EARTH OR WEATHER: | |
| #5 AND SMALLER | 1-1/2" |
| #6 AND LARGER | 2" |
11. AT TIME CONCRETE IS PLACED, REINFORCING SHALL BE FREE FROM MUD, OIL, LAITANCE OR OTHER COATINGS ADVERSELY AFFECTING BOND CAPACITY.
12. REINFORCEMENT, ANCHOR BOLTS, DOWELS AND ALL OTHER EMBEDDED ITEMS SHALL BE POSITIVELY SECURED BEFORE POURING.

DESIGN CRITERIA

1. CODES: 2009 AASHTO STANDARD SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINAIRES AND TRAFFIC SIGNALS
2. FOUNDATION DESIGN CRITERIA
ALLOWABLE BEARING 2500 PCF
PASSIVE PRESSURE 250 PCF
3. LATERAL FORCES
- WIND
BASIC WIND SPEED (3 SECOND GUST) 105 MPH
WIND IMPORTANCE FACTOR I_r 1.0

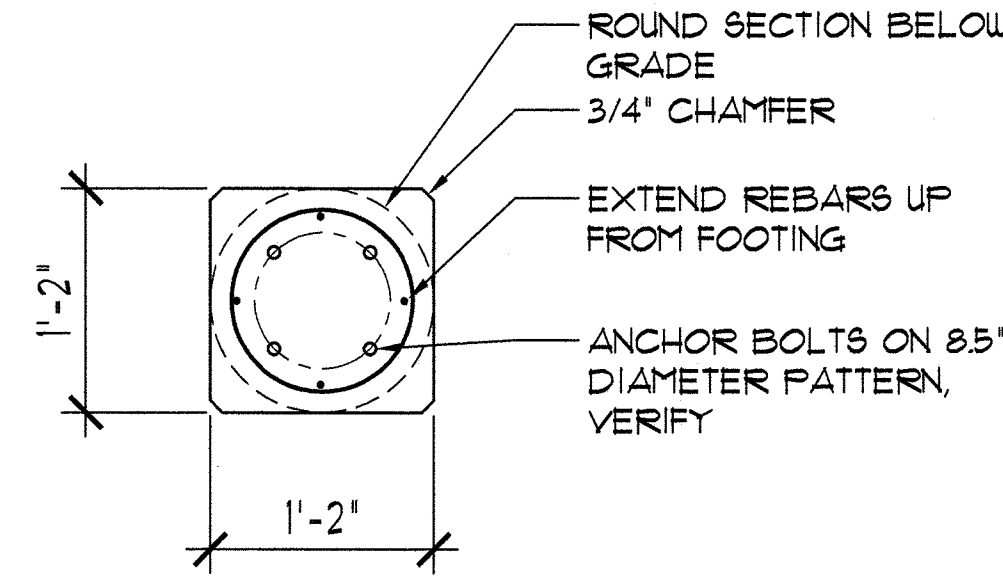
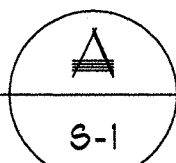
SPECIAL INSPECTION

1. ITEMS REQUIRING SPECIAL INSPECTION:
2. BOLTS IN CONCRETE
4. REINFORCING STEEL
2. NOTIFY SPECIAL INSPECTOR 3 WORKING DAYS PRIOR TO NEED OF INSPECTION SERVICES.
- CONTRACTOR SHALL NOTIFY TANIMURA & ASSOCIATES (PHONE 536-1692) 3 WORKING DAYS PRIOR TO NEED OF INSPECTION SERVICES. WORK SHALL NOT PROCEED UNTIL INSPECTION HAS BEEN COMPLETED.



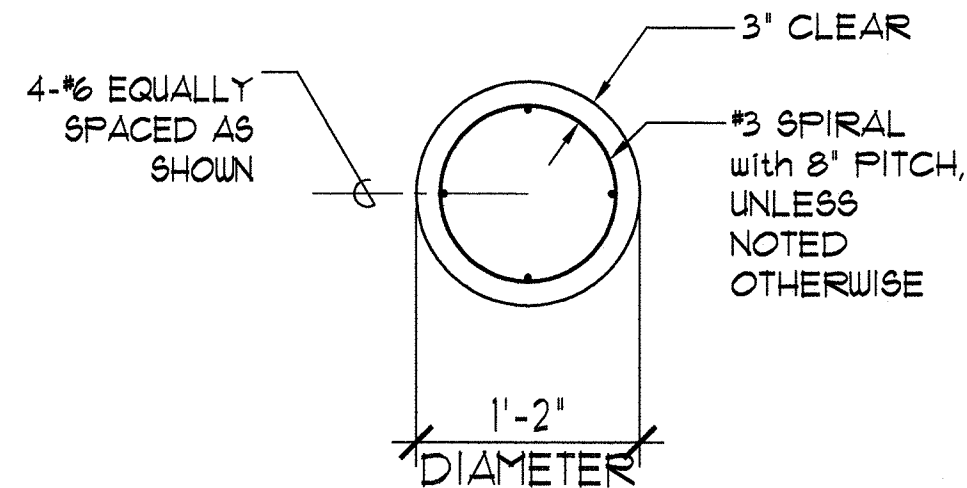
LIGHT POLE SECTION

SC: 3/4"=1'-0"



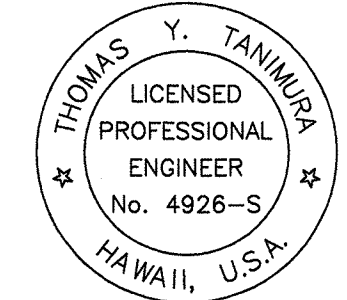
1/2" SECTION - SQUARE BASE

SC: 1'=1'-0"



1/4" SECTION - ROUND FOOTING

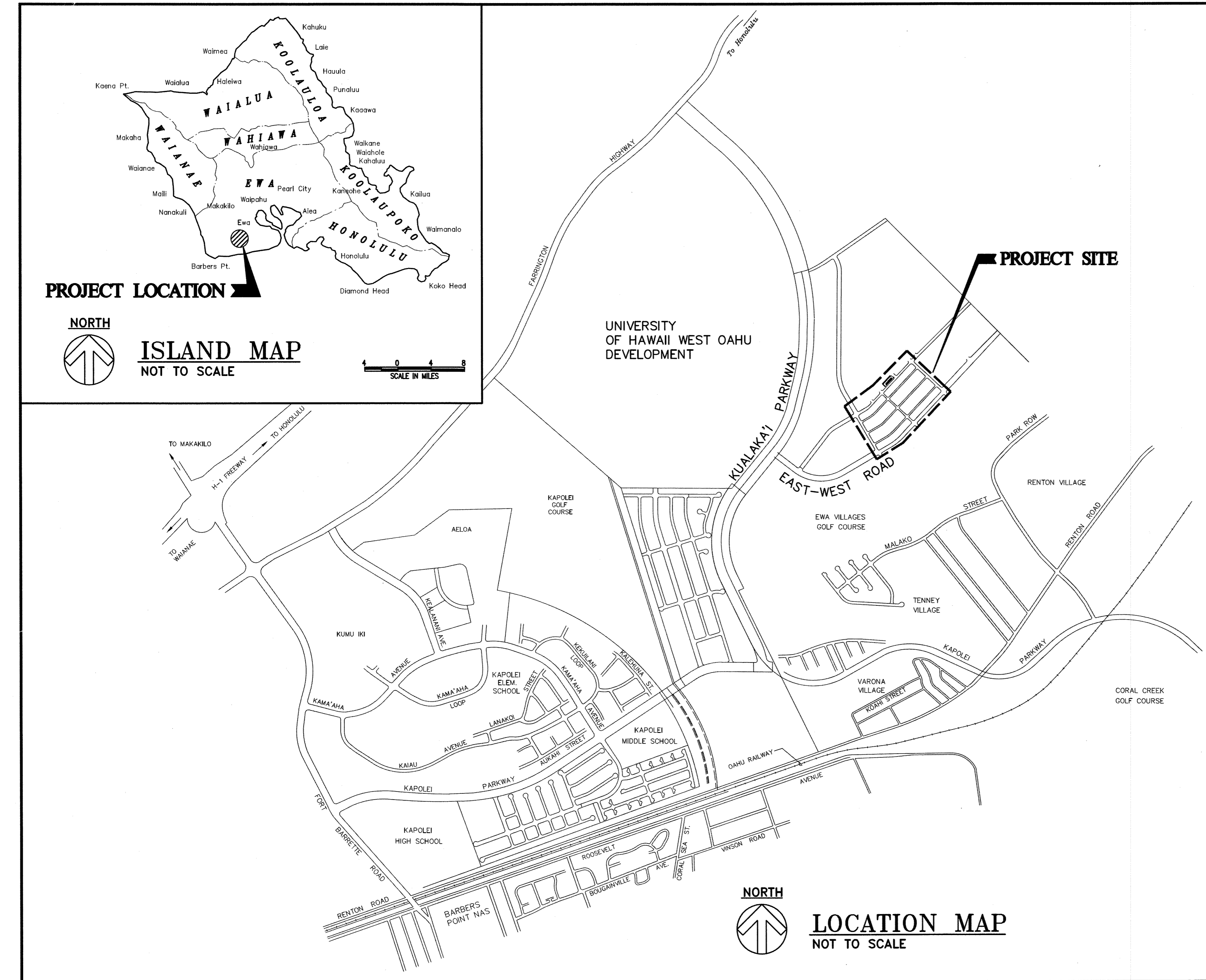
SC: 1'=1'-0"



T.Y. Tanimura
04/30/14
Expiration Date of the License

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION AND CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION.

REVISION DATE	DESCRIPTION	MADE BY	APPROVED
Community Planning and Engineering, Inc. Engineering Design Construction Management Infrastructure Planning 1100 Alakea Street, Sixth Floor Honolulu, Hawaii			
EAST KAPOLEI II DEVELOPMENT INCREMENT 2B HONOLULU, EWA, OAHU, HAWAII (DPP SUBD. FILE NO. 2011/SUB-155) OWNER & DEVELOPER: DEPARTMENT OF HAWAIIAN HOME LANDS TAX MAP KEY: 9-1-17: PORTION 110			
LIGHT POLE NOTES & DETAILS			
DRAWN BY: HM	ENGINEER: TT	CHECKED BY: TT	
APPROVED:			



ELECTRICAL SYMBOLS			
SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
	STREET LIGHT, 150W HIGH PRESSURE SODIUM LUMINAIRE, GALVANIZED STEEL POLE, XFMR BASE & BRACKET ARM, SEE DETAIL A/E-23		HECO 13' X 24' PULLBOX
	STREET LIGHT, 100W HIGH PRESSURE SODIUM LUMINAIRE, GALVANIZED STEEL POLE & BRACKET ARM, SEE DETAIL A/E-24		HECO 17' X 30' PULLBOX
	STREET LIGHT, 70W HIGH PRESSURE SODIUM LUMINAIRE, GALVANIZED STEEL POLE & BRACKET ARM, SEE DETAIL A/E-24		HECO 2' X 4' PULLBOX
	EXST. STREET LIGHT, 250W HIGH PRESSURE SODIUM LUMINAIRE		HECO 3' X 5' HANDHOLE
	EXST. STREET LIGHT, 150W HIGH PRESSURE SODIUM LUMINAIRE		HECO 4' X 6' HANDHOLE
	PARKING LOT LIGHT, 70W HIGH PRESSURE SODIUM LUMINAIRE, ANODIZED ALUMINUM POLE & BRACKET ARM, SEE DETAIL B/E-21		HECO 5' X 7' HANDHOLE
	GROUND ROD, 5/8" DIA. X 8'-0" (BMZ)		HECO 6' X 11' MANHOLE
	BREAKLINE TO BEGIN & END DUCT SECTION TYPE		EXST. HECO HANDHOLE
	ELECTRIC/SIGNAL DUCTLINE WITH DESIGNATORS; INDICATES TYPE "A" DUCT SECTION WITH "2-2E" DUCTS. SEE SHEET E-15 & E-16 FOR DUCT SECTIONS AND SHEET E-18 FOR CONDUIT SCHEDULE		EXST. HECO MANHOLE
	STUB, CAP, & MARK CONDUIT(S) WITH CONCRETE MARKER, SEE DETAIL B/E-18		EXST. HECO MANHOLE
	SAWCUT EXST. A.C. PAVEMENT, CONC. SIDEWALK, CURB & GUTTER PRIOR TO TRENCH EXCAVATION. RESTORE SUBBASE, BASECOURSE, PAVEMENT, CONC. SIDEWALK, CURB & GUTTER PER CITY REQUIREMENTS, THICKNESS SHALL MATCH EXST ROAD DESIGN		EXST. CATV HANDHOLE
	STREET LIGHT DUCTS & WIRING		EXST. CATV HANDHOLE
	TRAFFIC SIGNAL DUCT & PULLWIRE		EXST. HECO MANHOLE
	EXST. UNDERGROUND DUCTLINE & WIRING		EXST. HECO MANHOLE
	EXST. UNDERGROUND TEL. CABLES		EXST. HECO MANHOLE
	EXST. UNDERGROUND STREET LIGHT CABLES & CONDUITS		EXST. HECO MANHOLE
	EXST. UNDERGROUND TRAFFIC SIGNAL CONDUITS		EXST. HECO MANHOLE
	EXST. UNDERGROUND SECONDARY POWER CABLES AND CONDUIT		EXST. HECO MANHOLE
	NON-METERED STREET LIGHT I.D. TAG, 20 = AREA CODE NO., 999 = LIGHT NO., 77 = POLE NO., SEE DET G/E-23		EXST. HECO MANHOLE
	METERING EQUIPMENT & CABINET, SEE DETAIL		EXST. HECO MANHOLE
	HECO TRANSFORMER PAD LOT, SEE DETAIL A/E-17		EXST. HECO MANHOLE
	HECO SWITCHING EASEMENT PAD LOT, SEE DETAIL A/E-18		EXST. HECO MANHOLE
	EXST. HECO XFMR EASEMENT PAD LOT		EXST. HECO MANHOLE
	EXST. HECO SWITCHING EASEMENT PAD LOT		EXST. HECO MANHOLE
	EXST. METERING EQUIPMENT		EXST. HECO MANHOLE
	CONCRETE STUB OUT MARKER, SEE DETAIL B/E-18		EXST. HECO MANHOLE
	CATV POWER SUPPLY EQUIP., 6' X 6' EASEMENT, SEE DETAIL B/E-19		EXST. HECO MANHOLE
	NOTE SYMBOL, SEE PLAN FOR NOTES		EXST. HECO MANHOLE

GENERAL NOTES

1. PROVIDE 5' MINIMUM CLEAR BETWEEN STREET LIGHT POLES & SEWER LATERALS.
2. PROVIDE 3' MINIMUM CLEAR BETWEEN PULLBOXES & SEWER LATERALS.
3. PROVIDE 6' MINIMUM CLEAR BETWEEN TRANSFORMER PADS & SEWER LATERALS (DO NOT STRADDLE).
4. PROVIDE 3' MINIMUM CLEAR BETWEEN DUCTLINES & SEWER LINES.
5. CONTRACTOR SHALL VERIFY SEWER LATERAL LOCATIONS WITH CIVIL SHEETS.
6. PROVIDE 3' MINIMUM HORIZONTAL CLEAR & 6" VERTICAL CLEAR BETWEEN WATER LINES & ALL ELECTRICAL SYSTEMS.
7. CONTRACTOR SHALL BE RESPONSIBLE TO ARRANGE WITH THE GENERAL CONTRACTOR TO IDENTIFY THE LOCATIONS OF CIVIL SITE UTILITIES, DRIVEWAYS, ETC. PRIOR TO ELECTRICAL CONTRACTORS LAYOUT OF ELECTRIC, TELEPHONE, STREET LIGHT, TRAFFIC SIGNAL, AND CATV SYSTEMS.

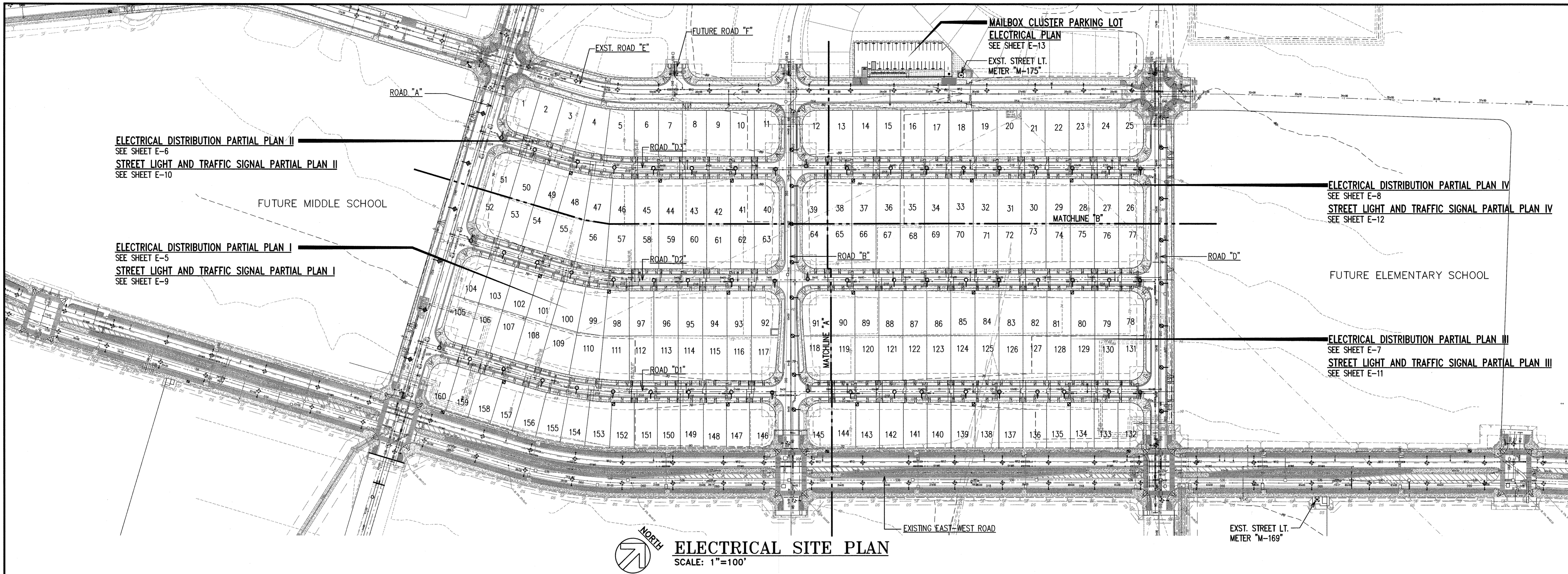
NOTES FOR CONSTRUCTION

- a. THE LOCATION OF OVERHEAD AND UNDERGROUND FACILITIES SHOWN ON THE PLANS ARE FROM EXISTING RECORDS WITH VARYING DEGREES OF ACCURACY AND ARE NOT GUARANTEED AS SHOWN. THE CONTRACTOR SHALL EXERCISE EXTREME CAUTION WHENEVER CONSTRUCTION CROSSES OR IS IN PROXIMITY OF UNDERGROUND LINES AND SHALL MAINTAIN ADEQUATE CLEARANCE WHEN OPERATING EQUIPMENT UNDER ANY OVERHEAD LINES.
- b. THE CONTRACTOR IS TO COMPLY WITH THE DIRECTIONS OF THE STATE OF HAWAII OCCUPATIONAL SAFETY AND HEALTH LAW (DOSH).
- c. WHEN TRENCH EXCAVATION IS ADJACENT TO EXISTING STRUCTURES OR FACILITIES, THE CONTRACTOR IS RESPONSIBLE FOR PROPERLY SHEETING AND BRACING THE EXCAVATION AND STABILIZING THE EXISTING GROUND TO RENDER IT SAFE AND SECURE FROM POSSIBLE SLIDES, CAVE-INS AND SETTLEMENT, AND FOR PROPERLY SUPPORTING EXISTING STRUCTURES AND FACILITIES WITH BEAMS, STRUTS OR UNDERPINNING TO FULLY PROTECT IT FROM DAMAGE.
- d. AS REQUIRED BY THE CITY AND COUNTY OF HONOLULU, THE CONTRACTOR SHALL PROVIDE OFF-DUTY POLICE OFFICERS TO CONTROL THE FLOW OF TRAFFIC.
- e. WHERE PEDESTRIAN WALKWAYS EXIST, SUCH WALKWAYS SHALL BE MAINTAINED IN PASSABLE CONDITION OR OTHER FACILITIES FOR PEDESTRIANS SHALL BE PROVIDED. PASSAGE BETWEEN WALKWAYS AT INTERSECTIONS SHALL LIKEWISE BE PROVIDED.
- f. DRIVEWAYS SHALL BE KEPT OPEN UNLESS THE OWNERS OF THE PROPERTY USING THESE RIGHT-OF-WAYS ARE OTHERWISE PROVIDED FOR SATISFACTORILY.
- g. THE UNDERGROUND PIPES, CABLES OR DUCTLINES KNOWN BY THE ENGINEER TO EXIST FROM HIS SEARCH OF RECORDS ARE INDICATED ON THE PLANS. THE CONTRACTOR SHALL VERIFY THE LOCATION AND DEPTH OF THE FACILITIES AND EXERCISE PROPER CARE IN EXCAVATING THE AREA. WHEREVER CONNECTIONS OF NEW UTILITIES TO EXISTING UTILITIES ARE SHOWN ON THE PLANS, THE CONTRACTOR SHALL EXPOSE THE EXISTING LINES AT THE PROPOSED CONNECTIONS TO VERIFY THEIR LOCATIONS AND DEPTHS PRIOR TO EXCAVATION FOR THE NEW LINES.

DRAWING REVIEW
Reviewed for HECO's Facilities Only
Date 12/19/12 By Gary I. Funasaka
Customer Installation Department
Hawaiian Electric Company, Inc.
HECO's review of these drawings shall in no way relieve the Customer, its Consultant, its Contractor or anyone acting on the Customer's behalf from the responsibility for engineering, design, materials and any other liability associated with this project.
APPROVED BY: [Signature] DATE 1/28/13
CHIEF, TRAFFIC SIGNALS AND TECHNOLOGY
DEPT. OF TRANSPORTATION SERVICES

GARY I. FUNASAKA
LICENSED PROFESSIONAL ENGINEER
No. 4195-E
HAWAII, U.S.A.
13 NOV 2012
THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION. CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION. LICENSE EXPIRATION DATE: 04/30/14

REVISION DATE	DESCRIPTION	MADE BY	APPROVED
Community Planning and Engineering, Inc. Engineering Design Construction Management Infrastructure Planning 1100 Alakoa Street, Sixth Floor Honolulu, Hawaii			
EAST KAPOLEI II DEVELOPMENT INCREMENT 2B HONOLULU, EWA, OAHU, HAWAII (DPP SUBD. FILE NO. 2011/SUB-155) OWNER & DEVELOPER: DEPARTMENT OF HAWAIIAN HOME LANDS TAX MAP KEY: 9-1-17: Portion 110			
ELECTRICAL SYMBOLS, MAPS, NOTES			
DRAWN BY: CAD	ENGINEER: GF	CHECKED BY: GF	
APPROVED:			
HAWAIIAN ELECTRIC CO. DATE	CHIEF, TRAFFIC SIGNALS AND TECHNOLOGY DATE	CHIEF, ELECTRICAL DIVISION DATE	
12/19/12	1/28/13	1/28/13	
SHEET 41 OF 78 SHEETS			



EQUIPMENT SCHEDULE

THE HAWAIIAN ELECTRIC CO. (HECO), SANDWICH ISLES COMMUNICATIONS, INC. (SIC), COMMUNITY ANTENNA TELEVISION, TRAFFIC SIGNAL & STREET LIGHTING PULLBOXES, HANDHOLE, TRANSFORMER PAD LOTS & SWITCHING EQUIPMENT PAD LOTS SHALL BE CONSTRUCTED BY THE CONTRACTOR AS SHOWN IN THESE DRAWINGS & IN ACCORDANCE WITH THE FOLLOWING STANDARD DRAWINGS:

TYPE	DESCRIPTION	TYPE	DESCRIPTION
13" X 24" HECO PULLBOX	13" X 24" NON-CONCRETE PULLBOX, COVER WITH LOCKING DEVICE, PROVIDED IN ACCORDANCE WITH HECO STANDARD DRAWINGS NO. 30-2006 & 011314.	13" X 24" COMMUNICATION PULLBOX	13" X 24" X 36" POLYMER CONCRETE HANDHOLE WITH NON-SKID SURFACE POLYMER CONCRETE 20K "TRAFFIC" RATED COVER, "SIC" INSCRIBED ON COVER. PROVIDED IN ACCORDANCE WITH SANDWICH ISLES COMMUNICATIONS REQUIREMENTS, TYPE UHC 13x24x36
17" X 30" HECO PULLBOX	17" X 30" NON-CONCRETE PULLBOX, COVER WITH LOCKING DEVICE, PROVIDED IN ACCORDANCE WITH HECO STANDARD DRAWINGS NO. 30-2006 & 011314.	30" X 48" COMMUNICATION HANDHOLE	2'-6" X 4'-0" X 2'-9" POLYMER CONCRETE HANDHOLE WITH NON-SKID SURFACE POLYMER CONCRETE 20K "TRAFFIC" RATED COVERS, "SIC" INSCRIBED ON COVERS. PROVIDED IN ACCORDANCE WITH SANDWICH ISLES COMMUNICATIONS REQUIREMENTS, TYPE UHC 30x48x33.
2' X 4' HECO PULLBOX	2' X 4' PRECAST CONCRETE PULLBOX WITH PRECAST CONCRETE COVER, PROVIDED IN ACCORDANCE WITH HECO STANDARD DRAWING NO. 30-2005.	3' X 5' COMMUNICATION MANHOLE	3'-9" X 5'-9" X 3'-7" REINFORCED CONCRETE MANHOLE WITH TRAFFIC RATED FRAME AND COVERS, PROVIDED IN ACCORDANCE WITH SANDWICH ISLES COMMUNICATIONS REQUIREMENTS TYPE UM-3 X 5. VERIFY DEPTH OF MANHOLE.
3' X 5' HECO HANDHOLE	3' X 5' PRECAST CONCRETE HANDHOLE WITH PRECAST CONCRETE COVER, PROVIDED IN ACCORDANCE WITH HECO STANDARD DRAWING NO. 101020.	3' X 5' COMMUNICATION HANDHOLE	3'-9" X 5'-9" X 3'-10 1/2" POLYMER CONCRETE HANDHOLE WITH TWO PIECE HINGED NON-SKID SURFACE POLYMER CONCRETE 20K "TRAFFIC" RATED COVERS, "SIC" INSCRIBED ON COVERS. PROVIDED IN ACCORDANCE WITH SANDWICH ISLES COMMUNICATIONS REQUIREMENTS, TYPE UH3x5.
4' X 6' HECO HANDHOLE	4'-0" X 7'-0" REINFORCED CONCRETE HANDHOLE WITH PRECAST CONCRETE COVERS, PROVIDED IN ACCORDANCE WITH HECO STANDARD NO. 101024.	4' X 6' COMMUNICATION MANHOLE	4'-0" X 6'-0" X 6'-1 1/4" REINFORCED CONCRETE MANHOLE WITH TRAFFIC RATED FRAME AND COVERS, PROVIDED IN ACCORDANCE WITH SANDWICH ISLES COMMUNICATIONS REQUIREMENTS, TYPE UM-4 X 6. VERIFY DEPTH OF MANHOLE.
5' X 8' HECO HANDHOLE	5'-0" X 8'-0" REINFORCED CONCRETE HANDHOLE WITH PRECAST CONCRETE COVERS, PROVIDED IN ACCORDANCE WITH HECO STANDARD NO. 100907.		
6' X 11' HECO MANHOLE	6' X 11' REINFORCED CONCRETE MANHOLE WITH TRAFFIC RATED FRAME AND COVER. PROVIDED IN ACCORDANCE WITH HECO STANDARD DRAWING NO. 100726.		
TYPE "B" ST. LT. PULLBOX (CITY & COUNTY)	TYPE "B" PRECAST CONCRETE PULLBOX WITH POLYMER CONCRETE COVER PROVIDED IN ACCORDANCE WITH C&C OF HONOLULU, DEPARTMENT OF TRANSPORTATION SERVICES.		

DRAWING REVIEW

Reviewed for HECO's Facilities Only

Date 12/18/12 By [Signature]

Customer Installation Department
Hawaiian Electric Company, Inc.

HECO's review of these drawings shall in no way relieve the Customer, its Consultant, its Contractor or anyone acting on the Customer's behalf from the responsibility for engineering, design, materials and any other liability associated with this project.

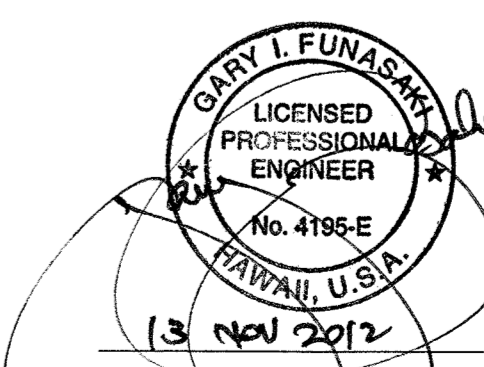
APPROVED BY:

[Signature]
CHIEF, TRAFFIC SIGNALS AND TECHNOLOGY
DEPT. OF TRANSPORTATION SERVICES

1/28/13 DATE

100' 50' 0 100' 200' 300'
SCALE: 1"=100'

GRAPHIC SCALE



THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION. CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION. LICENSE EXPIRATION DATE: 04/30/14

REVISION DATE	DESCRIPTION	MADE BY	APPROVED
Community Planning and Engineering, Inc. Engineering Design Construction Management Infrastructure Planning 1100 Alakoa Street, Sixth Floor Honolulu, Hawaii			
EAST KAPOLEI II DEVELOPMENT INCREMENT 2B HONOLULU, EWA, OAHU, HAWAII (DPP SUBD. FILE NO. 2011/SUB-155) OWNER & DEVELOPER: DEPARTMENT OF HAWAIIAN HOME LANDS TAX MAP KEY: 9-1-17: Portion 110			
ELECTRICAL SITE PLAN, SCHEDULES			
DRAWN BY: CAD	ENGINEER: GF	CHECKED BY: GF	
APPROVED:			
HAWAIIAN ELECTRIC CO.	DATE	DATE	DATE
[Signature]	12/18/12	[Signature]	1/28/13
SANDWICH ISLES COMMUNICATIONS, INC.	DATE	DATE	DATE
[Signature]		[Signature]	

HAWAIIAN ELECTRIC COMPANY (HECO) NOTES

1. LOCATION OF HECO FACILITIES

THE LOCATION OF HECO'S OVERHEAD AND UNDERGROUND FACILITIES SHOWN ON THE PLANS ARE FROM EXISTING RECORDS WITH VARYING DEGREES OF ACCURACY AND ARE NOT GUARANTEED AS SHOWN. THE CONTRACTOR SHALL VERIFY IN THE FIELD THE LOCATIONS OF THE FACILITIES AND SHALL EXERCISE PROPER CARE IN EXCAVATING AND WORKING IN THE AREA. WHEREVER CONNECTIONS OF NEW UTILITIES TO EXISTING UTILITIES AND UTILITY CROSSINGS ARE SHOWN, THE CONTRACTOR SHALL EXPOSE THE EXISTING LINES AT THE PROPOSED CONNECTIONS AND CROSSINGS TO VERIFY THE DEPTHS PRIOR TO EXCAVATION FOR THE NEW LINES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGES TO HECO'S FACILITIES WHETHER SHOWN OR NOT SHOWN ON THE PLANS.

2. COMPLIANCE WITH HAWAII OCCUPATIONAL SAFETY AND HEALTH LAWS

THE CONTRACTOR SHALL COMPLY WITH THE STATE OF HAWAII'S OCCUPATIONAL SAFETY AND HEALTH LAWS AND REGULATIONS, INCLUDING WITHOUT LIMITATION, THOSE RELATED TO WORKING ON OR NEAR EXPOSED OR ENERGIZED ELECTRICAL LINES AND EQUIPMENT.

3. EXCAVATION PERMIT

THE CONTRACTOR SHALL OBTAIN AN EXCAVATION PERMIT FROM HECO'S TECHNICAL DIVISION (543-5654) LOCATED AT 820 WARD AVENUE, 4TH FLOOR, TWO WEEKS PRIOR TO STARTING CONSTRUCTION. PLEASE REFER TO OUR REQUEST NUMBER AT THAT TIME.

4. CAUTION!!! ELECTRICAL HAZARD!!!

EXISTING HECO OVERHEAD AND UNDERGROUND LINES ARE ENERGIZED AND WILL REMAIN ENERGIZED DURING CONSTRUCTION UNLESS PRIOR SPECIAL ARRANGEMENTS HAVE BEEN MADE WITH HECO. ONLY HECO PERSONNEL ARE TO HANDLE THESE ENERGIZED LINES AND ERECT TEMPORARY GUARDS TO PROTECT THESE LINES FROM DAMAGE. THE CONTRACTOR SHALL WORK CAUTIOUSLY AT ALL TIMES TO AVOID ACCIDENTS AND DAMAGE TO EXISTING HECO FACILITIES, WHICH CAN RESULT IN ELECTROCUTION.

5. OVERHEAD LINES

STATE LAW (OSHA 1910.269 (k) (28)) REQUIRES THAT A WORKER AND THE LONGEST OBJECT HE OR SHE MAY CONTACT CANNOT COME CLOSER THAN A MINIMUM RADIAL CLEARANCE OF 10 FEET WHEN WORKING CLOSE TO OR UNDER ANY OVERHEAD LINES RATED 50KV AND BELOW. FOR EACH ADDITIONAL 1KV ABOVE 50KV, AN ADDITIONAL 0.4 INCH SHALL BE ADDED TO THE 10- FOOT CLEARANCE REQUIREMENT. THE PRECEDING INFORMATION ON LINE CLEARANCE REQUIREMENTS IS PROVIDED AS A CONVENIENCE AND IT IS THE CONTRACTOR'S RESPONSIBILITY TO BE INFORMED OF AND COMPLY WITH ANY REVISIONS OR AMENDMENTS TO THE LAW.

SHOULD THE CONTRACTOR ANTICIPATE THAT HIS WORK WILL RESULT IN THE NEED TO ENCR OACH WITHIN THE MINIMUM REQUIRED CLEARANCE AT ANY TIME, THE CONTRACTOR SHALL NOTIFY HECO AT LEAST FOUR (4) WEEKS PRIOR TO THE PLANNED ENCR OACHMENT SO THAT, IF FEASIBLE, THE NECESSARY PROTECTIONS (E.G. RELOCATE, DE- ENERGIZE, OR BLANKET HECO LINES) CAN BE PUT IN PLACE. HECO'S COST OF SAFEGUARDING ITS LINES WILL BE CHARGED TO THE CONTRACTOR.

CONTACT HECO'S CUSTOMER INSTALLATIONS DEPARTMENT AT 543-7846 FOR ASSISTANCE IN IDENTIFYING AND SAFEGUARDING OVERHEAD POWER LINES.

REFER TO SECTION X OF HECO'S ELECTRIC SERVICE INSTALLATION MANUAL FOR ADDITIONAL GUIDELINES WHEN WORKING AROUND HECO'S FACILITIES. A COPY MAY BE OBTAINED FROM HECO'S CUSTOMER INSTALLATIONS DEPARTMENT.

6. POLE BRACING

A MINIMUM CLEARANCE OF 10 FEET MUST BE MAINTAINED WHEN EXCAVATING AROUND UTILITY POLES AND/OR THEIR ANCHOR SYSTEM TO PREVENT WEAKENING OR POLE SUPPORT FAILURE. SHOULD WORK REQUIRE EXCAVATING WITHIN 10 FEET OF A POLE AND/OR ITS ANCHOR SYSTEM, THE CONTRACTOR SHALL PROTECT, SUPPORT, SECURE, AND TAKE ALL OTHER PRECAUTIONS TO PREVENT DAMAGE TO OR LEANING OF THESE POLES. THE CONTRACTOR IS RESPONSIBLE FOR ALL ASSOCIATED COSTS TO BRACE, REPAIR, OR STRAIGHTEN POLES. ALL MEANS OF STRUCTURAL SUPPORT FOR THE POLE PROPOSED BY THE CONTRACTOR SHALL FIRST BE REVIEWED BY HECO BEFORE IMPLEMENTATION. FOR POLE BRACING INSTRUCTIONS, THE CONTRACTOR SHALL CALL THE HECO CONSTRUCTION AND MAINTENANCE DEPT., CUSTOMER & SYSTEM SUPERINTENDENT AT 543-4223 A MINIMUM OF TWO (2) WEEKS IN ADVANCE.

7. UNDERGROUND LINES

THE CONTRACTOR SHALL EXERCISE EXTREME CAUTION WHENEVER CONSTRUCTION CROSSES OR IS IN CLOSE PROXIMITY OF UNDERGROUND LINES. HECO'S EXISTING ELECTRICAL CABLES ARE ENERGIZED AND WILL REMAIN ENERGIZED DURING CONSTRUCTION. ONLY HECO PERSONNEL ARE TO BREAK INTO EXISTING HECO FACILITIES, HANDLE THESE CABLES, AND ERECT TEMPORARY GUARDS TO PROTECT THESE CABLES FROM DAMAGE. THE COST OF HECO'S ASSISTANCE IN PROVIDING PROPER SUPPORT AND PROTECTION OF ITS UNDERGROUND LINES WILL BE CHARGED TO THE CONTRACTOR. SPECIAL PRECAUTIONS ARE REQUIRED WHEN EXCAVATING NEAR HECO'S 138KV UNDERGROUND LINES (SEE HECO INSTRUCTIONS TO CONSULTANTS/CONTRACTORS ON "EXCAVATION NEAR HECO'S UNDERGROUND 138KV LINES" FOR DETAILED REQUIREMENTS).

FOR VERIFICATION OF UNDERGROUND LINES, THE CONTRACTOR SHALL CALL HECO'S UNDERGROUND DIVISION AT 543-7049 A MINIMUM OF 72 HOURS IN ADVANCE.

FOR ASSISTANCE IN PROVIDING PROPER SUPPORT AND PROTECTION OF THESE LINES, THE CONTRACTOR SHALL CALL HECO'S CONSTRUCTION & MAINTENANCE DEPT., CUSTOMER & SYSTEM SUPERINTENDENT, AT 543-4223, A MINIMUM OF TWO (2) WEEKS IN ADVANCE.

8. UNDERGROUND FUEL PIPELINES

THE CONTRACTOR SHALL EXERCISE EXTREME CAUTION WHENEVER CONSTRUCTION CROSSES OR IS IN CLOSE PROXIMITY OF HECO'S UNDERGROUND FUEL OIL PIPELINES. SPECIAL PRECAUTIONS ARE REQUIRED WHEN EXCAVATING NEAR HECO'S UNDERGROUND FUEL OIL PIPELINES (SEE HECO INSTRUCTIONS TO CONSULTANTS/CONTRACTORS ON "EXCAVATION NEAR HECO'S UNDERGROUND FUEL PIPELINES" FOR DETAILED REQUIREMENTS).

9. EXCAVATIONS

WHEN TRENCH EXCAVATION IS ADJACENT TO OR BENEATH HECO'S EXISTING STRUCTURES OR FACILITIES, THE CONTRACTOR IS RESPONSIBLE FOR:

- a) SHEETING AND BRACING THE EXCAVATION AND STABILIZING THE EXISTING GROUND TO RENDER IT SAFE AND SECURE AND TO PREVENT POSSIBLE SLIDES, CAVE-INS, AND SETTLEMENTS.
- b) PROPERLY SUPPORTING EXISTING STRUCTURES OR FACILITIES WITH BEAMS, STRUTS, OR UNDER-PINNINGS TO FULLY PROTECT IT FROM DAMAGE.
- c) BACKFILLING WITH PROPER BACKFILL MATERIAL INCLUDING SPECIAL THERMAL BACKFILL WHERE EXISTING (REFER TO ENGINEERING DEPARTMENT FOR THERMAL BACKFILL SPECIFICATIONS).

10. RELOCATION OF HECO FACILITIES

ANY WORK REQUIRED TO RELOCATE OR MODIFY HECO FACILITIES SHALL BE DONE BY HECO, OR BY THE CONTRACTOR UNDER HECO'S SUPERVISION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL COORDINATION, AND SHALL PROVIDE NECESSARY SUPPORT FOR HECO'S WORK, WHICH MAY INCLUDE, BUT NOT BE LIMITED TO, EXCAVATION AND BACKFILL, PERMITS AND TRAFFIC CONTROL, BARRICADING, AND RESTORATION OF PAVEMENT, SIDEWALKS, AND OTHER FACILITIES.

ALL COSTS ASSOCIATED WITH ANY RELOCATION OR MODIFICATION (EITHER TEMPORARY OR PERMANENT) FOR THE CONVENIENCE OF THE CONTRACTOR, OR TO ENABLE THE CONTRACTOR TO PERFORM HIS WORK IN A SAFE AND EXPEDITIOUS MANNER IN FULFILLING HIS CONTRACT OBLIGATIONS SHALL BE BORNE BY THE CONTRACTOR.

11. CONFLICTS

ANY REDESIGN OR RELOCATION OF HECO'S FACILITIES NOT SHOWN ON THE PLANS MAY BE CAUSE FOR LENGTHY DELAYS. THE CONTRACTOR ACKNOWLEDGES THAT HECO IS NOT RESPONSIBLE FOR ANY DELAY OR DAMAGE THAT MAY ARISE AS A RESULT OF ANY CONFLICTS DISCOVERED OR IDENTIFIED WITH RESPECT TO THE LOCATION OR CONSTRUCTION OF HECO'S ELECTRICAL FACILITIES IN THE FIELD, REGARDLESS OF WHETHER THE CONTRACTOR HAS MET THE REQUESTED MINIMUM ADVANCE NOTICES. IN ORDER TO MINIMIZE ANY DELAY OR IMPACT ARISING FROM SUCH CONFLICTS, HECO SHOULD BE NOTIFIED IMMEDIATELY UPON DISCOVERY OR IDENTIFICATION OF SUCH CONFLICT.

12. DAMAGE TO HECO FACILITIES

THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF ALL HECO SURFACE AND SUBSURFACE UTILITIES AND SHALL BE RESPONSIBLE FOR ANY DAMAGES TO HECO'S FACILITIES AS A RESULT OF HIS OPERATIONS. THE CONTRACTOR SHALL IMMEDIATELY REPORT SUCH DAMAGES TO HECO'S TROUBLE DISPATCHER AT 548-7961. REPAIR WORK SHALL BE DONE BY HECO OR BY THE CONTRACTOR UNDER HECO'S SUPERVISION COSTS FOR DAMAGES TO HECO'S FACILITIES SHALL BE BORNE BY THE CONTRACTOR.

IN CASE OF DAMAGE OR SUSPECTED DAMAGE TO HECO'S FUEL PIPELINE, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY HECO'S HONOLULU POWER PLANT SHIFT SUPERVISOR AT 533-2102 (A 24-HOUR NUMBER) SO HECO PERSONNEL CAN SECURE THE DAMAGED SECTION AND REPORT ANY OIL SPILLS TO THE PROPER AUTHORITIES. ALL COSTS ASSOCIATED WITH THE DAMAGE, REPAIR, AND OIL SPILL CLEANUP SHALL BE BORNE BY THE CONTRACTOR.

13. HECO STAND-BY PERSONNEL

THE CONTRACTOR MAY REQUEST HECO TO PROVIDE AN INSPECTOR TO STAND-BY DURING CONSTRUCTION NEAR HECO'S FACILITIES. THE COST OF SUCH INSPECTION WILL BE CHARGED TO THE CONTRACTOR.

THE CONTRACTOR SHALL CALL THE HECO CONSTRUCTION AND MAINTENANCE DEPT., CUSTOMER & SYSTEM SUPERINTENDENT AT 543-4223 A MINIMUM OF 5 WORKING DAYS IN ADVANCE TO ARRANGE FOR HECO STAND-BY PERSONNEL.

14. CLEARANCES

THE FOLLOWING CLEARANCES SHALL BE MAINTAINED BETWEEN HECO'S DUCTLINE AND ALL ADJACENT STRUCTURES (CHARTED AND UNCHARTED) IN THE TRENCH:

STRUCTURE TYPE	MINIMUM CLEARANCE(INCHES)
WATER LINES, PARALLEL	36 (A)
WATER LINES, CROSSING	12 (B)
SEWER LINES, PARALLEL	36 (C)
SEWER LINES, CROSSING	24 (D)
DRAIN LINES, PARALLEL	12
DRAIN LINES, CROSSING	6 (E)
ELECTRICAL AND GAS LINES, PARALLEL	12
ELECTRICAL AND GAS LINES, CROSSING	12
TELEPHONE LINES, PARALLEL	6 (E)
TELEPHONE LINES, CROSSING	6 (E)
CHEVRON OIL LINES, PARALLEL	36
CHEVRON OIL LINES, CROSSING	48 BELOW OIL LINE (F)

- A. THE MINIMUM HORIZONTAL CLEARANCES TO WATER LINES PARALLEL TO ELECTRICAL DUCTLINES MUST BE INCREASED TO 60 INCHES IF THE WATER LINE IS GREATER THAN 16 INCHES IN DIAMETER
- B. THE MINIMUM VERTICAL CLEARANCES TO WATER LINES CROSSING ELECTRICAL DUCTLINES CAN BE REDUCED TO 6 INCHES IF THE ELECTRICAL DUCTLINE STRUCTURE IS CONCRETE ENCASED AND IS BELOW THE WATER LINE AND THE WATER LINE IS LESS THAN 16 INCHES IN DIAMETER.
- C. A MINIMUM HORIZONTAL CLERANCE OF 36 INCHES IS REQUIRED BETWEEN NEW HANDHOLES AND EXISTING SEWER LATERALS.
- D. THE MINIMUM VERTICAL CLEARANCES TO SEWER PIPES CROSSING ELECTRICAL DUCTLINES CAN BE REDUCED TO 12 INCHES IF THE SEWER PIPE IS JACKETED IN CONCRETE.
- E. THE MINIMUM CLEARANCES SHALL BE INCREASED TO 12 INCHES IF THE ELECTRICAL DUCTLINE IS DIRECT BURIED.
- F. THE MINIMUM VERTICAL CLEARANCES TO OIL LINES CROSSING ELECTRICAL DUCTLINES CAN BE REDUCED TO 24 INCHES BELOW OIL LINES IF THE CROSSINGS ARE ENCASED IN 6 INCHES OF CONCRETE.
- G. THE CONTRACTOR SHALL NOTIFY THE CONSTRUCTION MANAGER & HECO OF ANY HEAT SOURCES (POWER CABLE DUCT BANK, STEAMLINE, ETC.) ENCOUNTERED THAT ARE NOT PROPERLY IDENTIFIED ON THE DRAWING.

THE FOLLOWING CLEARANCE SHALL BE MAINTAINED BETWEEN HECO'S FUEL OIL PIPELINES AND ALL ADJACENT STRUCTURES: 24-INCHES, PARALLEL OR CROSSING. THE MINIMUM CLEARANCE CAN BE REDUCED TO 12 INCHES (PARALLEL AND BELOW ONLY) IF THE STRUCTURE IS JACKETED IN CONCRETE.

15. INDEMNITY

THE CONTRACTOR SHALL INDEMNIFY, DEFEND AND HOLD HARMLESS HECO FROM AND AGAINST ALL LOSSES, DAMAGES, CLAIMS, AND ACTIONS, INCLUDING BUT NOT LIMITED TO REASONABLE ATTORNEY'S FEES AND COSTS BASED UPON OR ARISING OUT OF DAMAGE TO PROPERTY OR INJURIES TO PERSONS, OR OTHER TORTIOUS ACTS CAUSED OR CONTRIBUTED TO BY CONTRACTOR OR ANYONE ACTING UNDER ITS DIRECTION OR CONTROL OR ON ITS BEHALF; PROVIDED CONTRACTOR'S INDEMNITY SHALL NOT BE APPLICABLE TO ANY LIABILITY BASED UPON THE SOLE NEGLIGENCE OF HECO.

16. SCHEDULE

CONTRACTOR SHALL FURNISH HIS CONSTRUCTION SCHEDULE ___ WORKING DAYS PRIOR TO STARTING WORK ON HECO FACILITIES. CONTRACTOR SHALL GIVE HECO, IN WRITING ___ WORKING DAYS NOTICE TO PROCEED WITH HECO'S PORTION OF WORK.

17. AUTHORITY

ALL CONSTRUCTION, RESTORATION WORK, AND INSPECTION SHALL BE SUBJECT TO WHICHEVER GOVERNMENTAL AGENCY HAS AUTHORITY OVER THE WORK.

18. SPECIFICATIONS

CONSTRUCTION OF HECO'S UNDERGROUND FACILITIES SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE LATEST REVISIONS OF HECO SPECIFICATIONS CS7001, CS7003, CS7202, CS9301, AND CS9401 AND APPLICABLE HECO STANDARDS.

19. CONSTRUCTION

CONTRACTOR SHALL FURNISH ALL LABOR, MATERIALS, EQUIPMENT, AND SERVICES TO PROPERLY PERFORM AND FULLY COMPLETE ALL WORK SHOWN ON THE CONTRACT, DRAWINGS, AND SPECIFICATIONS. ALL MATERIALS SHALL BE NEW AND MANUFACTURED IN THE UNITED STATES OF AMERICA. ALL MANHOLE, HANDHOLE, AND DUCTLINE INSTALLATIONS SHALL BE INSPECTED AND APPROVED BY HECO PRIOR TO EXCAVATION AND PRIOR TO PLACING CONCRETE. CONTRACTOR SHALL NOTIFY HECO'S INSPECTION DIVISION AT 543-4356 AT LEAST 48 HOURS PRIOR TO PLACING CONCRETE.

CONTRACTOR TO COORDINATE WORK TO BREAK INTO HECO'S EXISTING ELECTRICAL FACILITIES WITH HECO'S UNDERGROUND DIVISION AT 543-7871 AT LEAST 10 WORKING DAYS IN ADVANCE.

20. STAKEOUT

THE CONTRACTOR SHALL ARRANGE FOR TONEOUTS OF ALL UNDERGROUND FACILITIES AND SHALL STAKEOUT ALL PROPOSED HECO FACILITIES WITHIN THE PROJECT AREA SO AS TO NOT CONFLICT WITH ANY UTILITY (EXISTING OR PROPOSED) AND ANY PROPOSED CONSTRUCTION OR IMPROVEMENT WORK FOR VERIFICATION BY HECO BEFORE PROCEEDING WITH HECO WORK.

DRAWING REVIEW

Reviewed for HECO's Facilities Only

Date 12/12/12 By [Signature]

Customer Installation Department
Hawaiian Electric Company, Inc.

HECO's review of these drawings shall in no way relieve the Customer, its Consultant, its Contractor or anyone acting on the Customer's behalf from the responsibility for engineering, design, materials and any other liability associated with this project.

21. DUCTLINES


ALL DUCTLINE INSTALLATIONS SHALL BE PVC SCHEDULE 40 ENCASED IN CONCRETE, UNLESS OTHERWISE NOTED. ALL COMPLETED DUCTLINES SHALL BE MANDREL TESTED BY THE CONTRACTOR IN THE PRESENCE OF HECO'S INSPECTOR USING HECO'S STANDARD PRACTICE. THE CONTRACTOR SHALL INSTALL A 1/8" POLYOLEFIN PULL LINE IN ALL COMPLETED DUCTLINES AFTER MANDREL TESTING IS COMPLETE.

22. JOINT POLE REMOVAL

THE LAST JOINT POLE OCCUPANT OFF THE POLES SHALL REMOVE THE POLES.

23. AS-BUILT PLANS

THE CONTRACTOR SHALL PROVIDE HECO WITH TWO SETS OF AS-BUILT REPRODUCIBLE TRACINGS SHOWING THE OFFSETS, STATIONING, AND VERTICAL ELEVATION OF THE DUCT LINE(S) CONSTRUCTED.

REVISION DATE	DESCRIPTION	MADE BY	APPROVED
			
Community Planning and Engineering, Inc. Engineering Design Construction Management Infrastructure Planning 1100 Alakoa Street, 6th Floor Honolulu, Hawaii			
EAST KAPOLEI II DEVELOPMENT INCREMENT 2B HONOLULU, EWA, OAHU, HAWAII (DPP SUBD. FILE NO. 2011/SUB-155) OWNER & DEVELOPER: DEPARTMENT OF HAWAIIAN HOME LANDS TAX MAP KEY: 9-1-17: Portion 110			
HECO NOTES			
DRAWN BY: CAD	ENGINEER: GF	CHECKED BY: GF	
APPROVED:			
HAWAIIAN ELECTRIC CO.	DATE	DATE	DATE
DATE	DATE	DATE	DATE
FILE	POCKET	FOLDER	NO.

SANDWICH ISLES COMMUNICATIONS' NOTES
September 14, 2011

GENERAL:

ALL WORK SHALL BE IN STRICT ACCORDANCE WITH SPECIFICATIONS AND REQUIREMENTS OF THE RURAL UTILITIES SERVICES (RUS) AND SANDWICH ISLES COMMUNICATIONS (SIC), WHICH COMPLIES WITH ALL APPLICABLE CITY, COUNTY, STATE AND FEDERAL REQUIREMENTS.

ALL MATERIALS USED MUST BE APPROVED AND (OR) ACCEPTED BY SANDWICH ISLES COMMUNICATIONS, INC..

CONTRACTOR MAY REFER TO THE RUS WEBSITE (HTTP://WWW.RURDEV.USDA.GOV/RUSTELECOMPROGRAMS.HTML) FOR REGULATIONS, BULLETINS, FORMS, ETC.

CONTACT THE HAWAII ONE CALL CENTER AT (866) 423-7287 FOR LOCATING EXISTING UNDERGROUND FACILITIES PRIOR TO BEGINNING ANY EXCAVATION.

ALL WORK SHALL BE COORDINATED AND SCHEDULED WITH SIC AND/OR IT'S REPRESENTATIVE AND ANY OTHER AGENCY INVOLVED WITH THE PROJECT.

THE CONTRACTOR SHALL PROCURE AND PAY FOR ALL LICENSES AND PERMITS AND SHALL GIVE ALL NOTICES NECESSARY FOR PROSECUTION OF THE WORK.

CONDUITS:

- ALL PVC CONDUITS, SWEEPS, COUPLINGS, ADAPTERS AND BELL ENDS SHALL BE SCHEDULE 40, UNLESS OTHERWISE SPECIFIED.
- ALL HIGH DENSITY POLYETHYLENE CONDUITS SHALL BE SDR 11. TYPICAL 4-PACK UNIT INCLUDES FOUR 1-1/2" SDR 11 RATED CONDUITS IN THE COLORS OF BLACK, RED, ORANGE, AND WHITE, UNLESS OTHERWISE SPECIFIED. ALL CONDUITS TO BE PRESSURE TESTED AT 120 PSI. FUSION SPLICING OF THE CONDUIT SHALL BE ACCEPTABLE ONLY WHEN PULLING JOINTS THROUGH BORES. ALL COUPLINGS SHALL BE DOUBLE "E-LOC" MANUFACTURED BY ETOC SPECIALTY PRODUCTS, INC.
- MAIN CONDUIT RUNS, EXCEPT RISER CONDUITS, SHALL BE CONSTRUCTED WITH MINIMUM 6-FOOT RADIUS CURVES, UNLESS OTHERWISE APPROVED BY THE ENGINEER.
- AFTER THE CONDUITS ARE INSTALLED, A ROUND SOLID MANDREL NOT LESS THAN 12" IN LENGTH AND HAVING A DIAMETER OF 1/8" LESS THAN THE INSIDE DIAMETER OF THE CONDUIT SHALL BE PULLED THROUGH EACH CONDUIT. SUFFIXES LISTED IN RUS 515B FOR CONDUITS ARE APPLICABLE.
- INSTALL MULETAPE IN ALL PVC CONDUITS AND CAP ALL CONDUITS AFTER TESTING. THE NEPTCO (OR APPROVED EQUAL) MULETAPE IS AVAILABLE IN 3,000FT., 6,500FT., AND 10,000FT. REELS FROM WESTINGHOUSE ELECTRIC SUPPLY COMPANY (WESCO), THE NEPTCO MULETAPE IS PRE-LUBRICATED AND PRINTED WITH SEQUENTIAL FOOTAGE MARKINGS. MULETAPE WILL NOT BE INSTALLED IN CONDUITS DESIGNATED FOR FIBER.
- ALL 4" DUCTS SHALL HAVE WATERTIGHT PLUGS TO KEEP THEM FREE OF MOISTURE & DEBRIS AND TO ACCOMMODATE CABLING PLACED ON FUTURE PROJECTS.
4" PLUGS SHALL CONSIST OF:
TYCO, QUADPLEX JACKMOON PLUGS, SERIES 136
TYCO, JACKMOON HOLE PLUGS & BUSHINGS, SERIES 136
ALL OTHER DUCTS SHALL HAVE TYCO, BLANK JACKMOON PLUGS TO KEEP THEM FREE OF WATER AND DEBRIS.
- CONDUIT STUBS FROM HANDHOLES TO INDIVIDUAL RESIDENTIAL LOTS SHALL BE SCHEDULE 40 PVC, 1" DIAMETER AND EXTENDED 5' BEYOND PROPERTY LINE. CAP AND SEAL END AND MARK LOCATIONS WITH ABOVE GROUND MARKER.
- ALL CONDUITS SHALL ENTER MANHOLES AT A 90 DEGREE ANGLE AND SHALL EXTEND INTO THE MANHOLE AS FOLLOWS: CONDUITS DESIGNATED FOR FIBER SHALL EXTEND 12" INTO THE MANHOLE. ALL OTHER CONDUITS SHALL BE FLUSH WITH THE INSIDE WALL AND INCLUDE BELL ENDS. ANY EXCEPTIONS SHALL ONLY BE PERMITTED WHEN SPECIFIED BY THE ENGINEER.
- ALL CONDUITS ENTERING MANHOLES OR HANDHOLES SHALL BE GROUTED BETWEEN THE CONDUITS AND SIDEWALL, INSIDE AND OUT. ALL CONDUITS WILL ENTER THE MANHOLES AND HANDHOLES ON THE PROPERTY SIDE AT ALL TIMES UNLESS OTHERWISE SPECIFIED BY THE ENGINEER.
- BACKFILL AND COMPACTION FOR DUCTLINE TRENCHES, MANHOLES AND HANDHOLES SHALL BE IN ACCORDANCE WITH:
 - STATE HIGHWAY DEPARTMENT'S STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION WITH LATEST AMENDMENTS, IF CONSTRUCTION IS LOCATED UNDER A STATE STREET OR ROAD, OR LOCATED IN PRIVATE PROPERTY.
 - THE STANDARD SPECIFICATIONS FOR ROAD, BRIDGE AND PUBLIC WORKS CONSTRUCTION, DATED 1986, OF THE DEPARTMENT OF PUBLIC WORKS, CITY AND COUNTY OF HONOLULU, WITH LATEST AMENDMENTS; COUNTY OF KAUAI, MAUI, OR HAWAII, AS THE CASE MAY BE, IF CONSTRUCTION IS LOCATED UNDER COUNTY STREETS AND ROADS

- BACKFILLING SHALL BE SUBJECT TO THE APPROVAL OF THE SIC INSPECTOR, THE AUTHORIZED REPRESENTATIVE OF THE DEPARTMENT OF TRANSPORTATION, STATE OF HAWAII AND/OR DEPARTMENT OF PUBLIC WORKS, CITY AND COUNTY OF HONOLULU, COUNTY OF KAUAI, MAUI OR HAWAII, AS THE CASE MAY BE.
- A THIRD PARTY GEOTECHNICAL ENGINEER, LICENSED AND INSURED IN THE STATE OF HAWAII, MUST CERTIFY THAT THE EXCAVATED AREA MEETS THE GOVERNING AGENCIES AND/OR OWNERS STANDARDS FOR BACKFILL AND COMPACTION.
- EXCAVATED MATERIAL MAY BE REUSED AS BACKFILL, PROVIDING THAT IT CONFORMS TO REQUIREMENTS OF TYPE "A" AND TYPE "B" BACKFILL, AS REQUIRED WITHIN THE STANDARD SPECIFICATIONS. A WRITTEN SOILS REPORT OF CONFORMANCE BY A LICENSED THIRD PARTY GEOTECHNICAL ENGINEER IS NEEDED PRIOR TO BACKFILL USING THE EXCAVATED MATERIAL.
 - TYPE A BACKFILL IS DEFINED AS BEACH SAND, EARTH OR EARTH AND GRAVEL. MAXIMUM PARTICLE SIZE SHALL BE 1" AND MIXTURE SHALL NOT CONTAIN MORE THAN 20 % BY VOLUME OF ROCK PARTICLES.
 - TYPE B BACKFILL IS DEFINED AS BEACH SAND, EARTH OR EARTH AND GRAVEL. MAXIMUM PARTICLE SIZE SHALL BE 1/2" AND MIXTURE SHALL NOT CONTAIN MORE THAN 20 % BY VOLUME OF ROCK PARTICLES.
- ALL CONDUIT RUNS SHALL HAVE A 3" NON-METALLIC WARNING TAPE PLACED 12 INCHES ABOVE THE CONDUIT RUN. THE TAPE SHALL READ "CAUTION BURIED FIBER OPTIC CABLE BELOW".

MANHOLES AND HANDHOLES:

- ALL MANHOLES SHALL HAVE HS20-44 TRAFFIC LOADING COVERS (UNLESS OTHERWISE NOTED). HANDHOLES SHALL HAVE 20K TRAFFIC LOAD RATED COVERS.
- ALL MANHOLE AND HANDHOLE COVERS SHALL HAVE COVER LOGO TO READ "SIC".
- ALL MANHOLE AND HANDHOLE COVER BOLTS SHALL BE STAINLESS STEEL U" PENTAHEAD, UNLESS OTHERWISE NOTED.
- ALL MANHOLES AND HANDHOLES ARE SPECIFIED AS FOLLOWS:
 - UM35 AND UM4X6 MANHOLE ASSEMBLY UNITS - HAWAII PRECAST, INC. AS PER MASTER PURCHASE AGREEMENT.
 - UHC30X48X33 HANDHOLE (PULLBOX) ASSEMBLY UNIT. THIS UNIT SHALL CONSIST OF ONE TWO TIER ARMORCAST POLYMER CONCRETE BOX & COVER ASSEMBLY. PART NUMBER (A6001430TA-SIC4) OR EQUIVALENT.
 - UHC13X24X36 HANDHOLE (PULLBOX) ASSEMBLY UNIT. THIS UNIT SHALL CONSIST OF ONE ARMORCAST POLYMER CONCRETE BOX & COVER ASSEMBLY. PART NUMBER (A6001946TA-SIC2) OR EQUIVALENT.
 - UH35 AND UH4X6 HANDHOLE ASSEMBLY UNITS - HAWAII PRECAST, INC. AS PER MASTER PURCHASE AGREEMENT.
- ALL MANHOLES AND HANDHOLES TO BE ORDERED WITH ALL HARDWARE, INCLUDING CABLE RACKS, STEPS AND LOCKS.
- SET MANHOLE OR HANDHOLE ON A LEVEL AREA, IN THE BOTTOM OF THE EXCAVATION, ON A 4" LAYER OF CRUSHED ROCK, FOR DRAINAGE PURPOSES.
- THE BASE OF ALL MANHOLES AND HANDHOLES WILL BE PLACED LEVEL. SOME MANHOLES HAVE ADJUSTABLE FRAMES. ALL VOIDS CREATED DURING INSTALLATION MUST BE FILLED WITH MORTAR MIX OR CONCRETE. THIS IS ESPECIALLY TRUE FOR MANHOLES AND HANDHOLES SET IN ROADWAYS.
- BEFORE BACKFILLING AND COMPACTING, MAKE SURE COVERS ARE IN PLACE AND SECURE. LAYER 6" TO 8" OF BACKFILL MATERIAL AROUND THE MANHOLE OR HANDHOLE. TAMP EACH INDIVIDUAL LAYER OF BACKFILL MATERIAL. CONTINUE THE LAYERING AND "TAMPING" UNTIL FINAL GRADE IS ACHIEVED.
- THE TOPS OF ALL MANHOLES AND HANDHOLES SHALL BE FLUSH TO GRADE IN PAVED AREAS OR 1" ABOVE FINISH GRADE IN NON-PAVED AREAS, UNLESS OTHERWISE SPECIFIED BY ENGINEER.
- PROVIDE A 5/8-INCH DIAMETER X 8 FT. COPPER CLAD GROUND ROD AT HANDHOLES AND MANHOLES, AS SPECIFIED ON THE DRAWINGS OR AS DIRECTED BY THE PROJECT MANAGER.

OCEANIC TIME WARNER CABLE NOTES

- THE LOCATION OF CATV FACILITIES ARE BASICALLY WITHIN EXISTING CATV CONDUITS. THE CONTRACTOR SHALL USE EXTREME CAUTION WHEN WORKING IN CLOSE PROXIMITY OF CATV FACILITIES.
- THE CONTRACTOR SHALL OBTAIN EXCAVATION PERMIT CLEARANCE FROM OCEANIC TIME WARNER CABLE'S ENGINEERING SECTION LOCATED AT 200 AKAMAINUI ST., MILILANI TECH. PARK. PHONE 625-8443.
- ANY WORK REQUIRED TO RELOCATE CATV FACILITIES SHALL BE DONE BY OCEANIC TIME WARNER CABLE AND THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL COORDINATION REQUIREMENTS AND ASSOCIATED APPLICABLE COSTS.
- ANY DAMAGE TO CATV FACILITIES SHALL BE REPORTED IMMEDIATELY TO OCEANIC TIME WARNER CABLE'S REPAIR DISPATCH DEPARTMENT AT 625-8437.
- CONTACT OCEANIC TIME WARNER CABLE INSPECTOR 72 HOURS PRIOR TO STARTING WORK ON CATV INFRASTRUCTURE. CALL MOKI PLACE AT 306-0658.
- ALL CONDUITS SHALL ENTER THROUGH THE END OF THE PULLBOX AT 90 DEGREES TO THE WALL OF PULLBOX.
- ALL ENTRANCES INTO THE PULLBOX SHALL BE GROUTED AROUND THE CONDUITS AND THE INSIDE SURFACES SHALL BE SMOOTH AND FLUSH WITH THE EXISTING WALL.
- ALL 4" CONDUITS SHALL HAVE MULETAPE AND ALL OTHER SIZE CONDUITS SHALL HAVE PULLSTRING.
- END BELS ARE REQUIRED ON ALL 4" AND 2" CONDUITS.
- AFTER DUCTLINE HAS BEEN COMPLETED, A MANDREL NOT LESS THAN 12" LONG AND HAVING A DIAMETER OF 1/4" LESS THAN THE INSIDE DIAMETER OF DUCT SHALL BE PULLED THROUGH EACH DUCT.

HAWAIIAN ELECTRIC COMPANY NOTES

- ALL HECO PRIMARY DUCTS SHALL BYPASS ALL HECO PULLBOXES 2' X 4' AND SMALLER.
- 2" DUCTS FOR HECO SINGLE PHASE PRIMARY SHOULD BYPASS HECO MH'S USED FOR MAINS, WHEN FEASIBLE.
- IF HECO EQUIPMENT IS LOCATED NEAR SLOPING TERRAIN, THE CONTRACTOR MAY BE REQUIRED TO CONSTRUCT RETAINING WALLS PER HECO STANDARD NO. 30-5002.

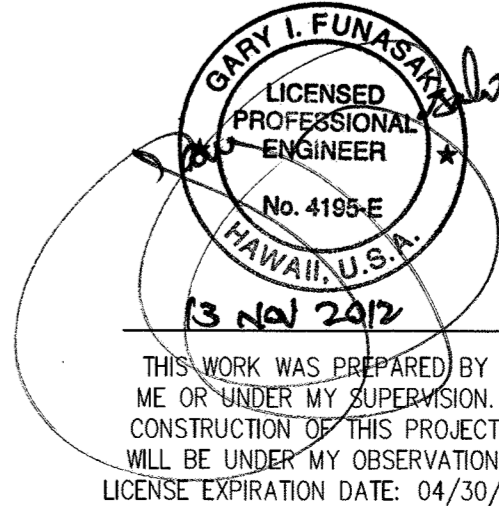
DRAWING REVIEW

Reviewed for HECO's Facilities Only

Date 12/19/12 By Gary I. Funasaka

Customer Installation Department
Hawaiian Electric Company, Inc.

HECO's review of these drawings shall in no way relieve the Customer, its Consultant, its Contractor or anyone acting on the Customer's behalf from the responsibility for engineering, design, materials and any other liability associated with this project.



REVISION DATE	DESCRIPTION	MADE BY	APPROVED
Community Planning and Engineering, Inc. Engineering Design Construction Management Infrastructure Planning 1100 Alakea Street, 6th Floor Honolulu, Hawaii			
EAST KAPOLEI II DEVELOPMENT INCREMENT 2B HONOLULU, EWA, OAHU, HAWAII (DPP SUBD. FILE NO. 2011/SUB-155) OWNER & DEVELOPER: DEPARTMENT OF HAWAIIAN HOME LANDS TAX MAP KEY: 9-1-17: Portion 110			
HECO, SIC & OCEANIC NOTES			
DRAWN BY: CAD	ENGINEER: GF	CHECKED BY: GF	
APPROVED:			
HAWAIIAN ELECTRIC CO. DATE 12/19/12		DATE	
SANDWICH ISLES COMMUNICATIONS, INC. DATE		DATE	
FILE	POCKET	FOILER	NO.

NOTES:

- ROUTE ELECTRIC/COMMUNICATION DUCTLINE BELOW DRAINLINE/WATERLINE.
- ROUTE ELECTRIC/COMMUNICATION DUCTLINE BELOW WATERLINE.
- EXPOSE DUCT(S), PROVIDE COUPLING(S) AND EXTEND.

DRAWING REVIEW

Reviewed for HECO's Facilities Only

Date 12/18/12 By [Signature]

Customer Installation Department
Hawaiian Electric Company, Inc.

HECO's review of these drawings shall in no way relieve the Customer, its Consultant, its Contractor or anyone acting on the Customer's behalf from the responsibility for engineering, design, materials and any other liability associated with this project.

NOTES FOR BEDDING BENEATH UNDERGROUND STRUCTURES:

- BOXES AND STRUCTURES WITHOUT BOTTOM SLABS (OPEN BASE):
4" MINIMUM THICKNESS OF NO. 3 FINE GRAVEL; ASTM C-33-03, #67.
- BOXES AND STRUCTURES WITH BOTTOM SLABS (CLOSED BASE):
4" MINIMUM THICKNESS OF CLEAN, WELL-GRADED GRANULAR MATERIAL WITH A MAXIMUM PARTICLE SIZE OF THREE (3) INCHES, AND LESS THAN THREE (3) PERCENT PASSING THE NO. 200 SIEVE OR SELECT BORROW.
- PROVIDED BEDDING BENEATH MANHOLES, HANDHOLES AND PULLBOXES IN RELATIVELY UNIFORM LIFTS NO GREATER THAN SIX (6) INCHES IN LOOSE THICKNESS, MOISTURE CONDITIONED TO WITHIN THREE (3) PERCENT OF THEIR OPTIMUM MOISTURE CONTENT, AND UNIFORMLY COMPACTED TO AT LEAST NINETY (90) PERCENT OF THE MAXIMUM DRY DENSITY (ASTM D1557-02). CONTRACTOR TO SCHEDULE WITH CITY INSPECTORS FOR COMPACTION AND BEDDING INSTALLATION.

ELECTRICAL DISTRIBUTION PARTIAL PLAN I

SCALE: 1"=40'

APPROVED BY:

M. [Signature]
CHIEF, CIVIL ENGINEERING BRANCH
DEPT. OF PLANNING AND PERMITTING

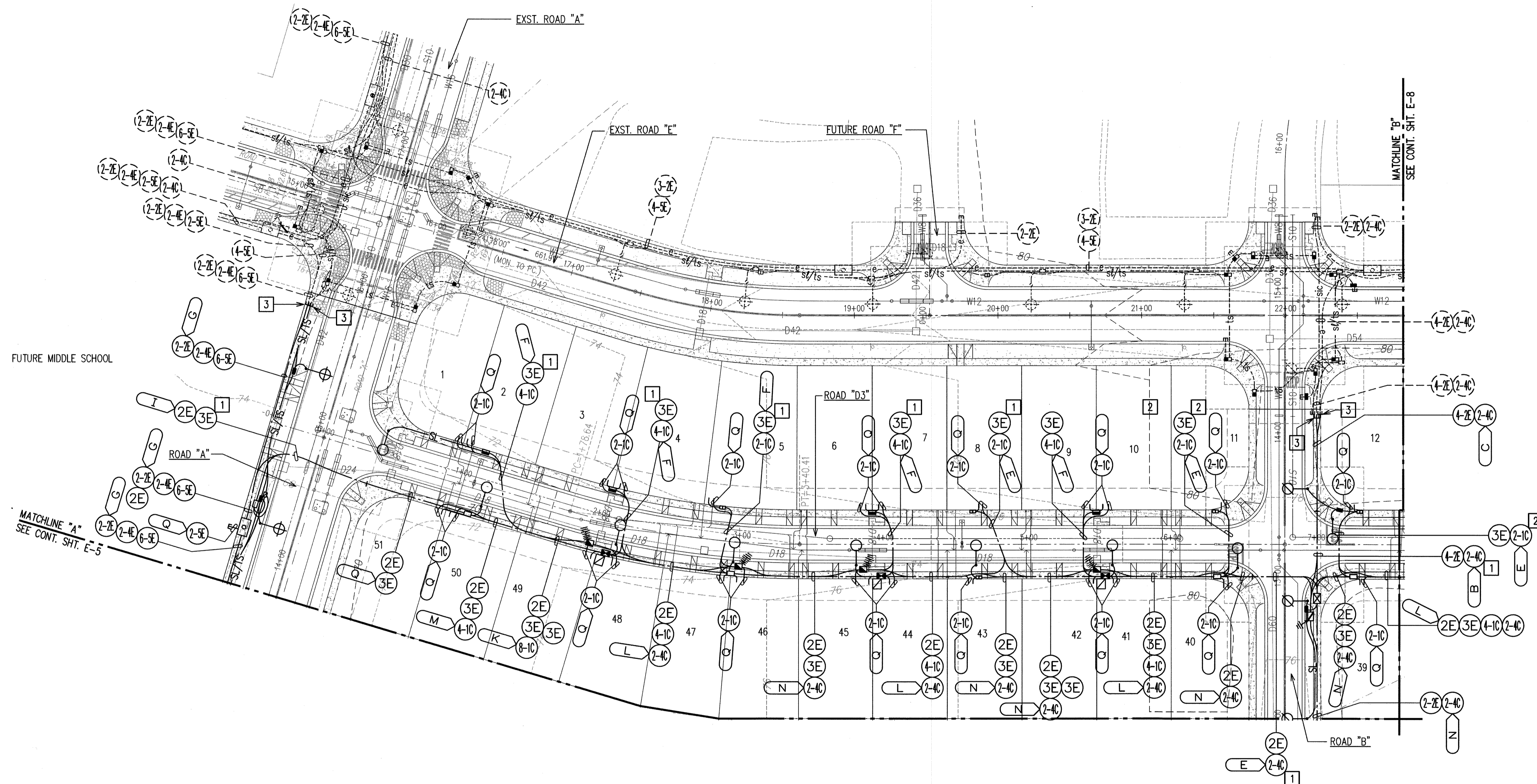
6/28/13
DATE

40' 20' 0 40' 80' 120'
SCALE:
GRAPHIC SCALE

DARY I. FUMASAKI
LICENSED PROFESSIONAL ENGINEER
No. 4198-E
HAWAII, U.S.A.
13 NOV 2012
THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION. CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION. LICENSE EXPIRATION DATE: 04/30/14

REVISION DATE	DESCRIPTION	MADE BY	APPROVED
Community Planning and Engineering, Inc. Engineering Design Construction Management Infrastructure Planning 1100 Alakoa Street, Sixth Floor Honolulu, Hawaii			
EAST KAPOLEI II DEVELOPMENT INCREMENT 2B HONOLULU, EWA, OAHU, HAWAII (OPP SUBD. FILE NO. 2011/SUB-155) OWNER & DEVELOPER: DEPARTMENT OF HAWAIIAN HOME LANDS TAX MAP KEY: 9-1-17: Portion 110			
ELECTRICAL DISTRIBUTION PARTIAL PLAN I			
DRAWN BY: CAD	ENGINEER: GF	CHECKED BY: GF	
APPROVED:			
HAWAIIAN ELECTRIC CO.	DATE	CHIEF, TRAFFIC REVIEW BOARD, EPP	DATE
[Signature]	12/19/12	[Signature]	
DWG. NO. E5 SHEET 45 OF 78 SHEETS			

- 1 ROUTE ELECTRIC/COMMUNICATION DUCTLINE BELOW DRAINLINE/WATERLINE.
- 2 ROUTE ELECTRIC/COMMUNICATION DUCTLINE BELOW WATERLINE.
- 3 EXPOSE DUCT(S), PROVIDE COUPLING(S) AND EXTEND.



1. BOXES AND STRUCTURES WITHOUT BOTTOM SLABS (OPEN BASE):
#4 MINIMUM THICKNESS OF NO. 3 FINE GRAVEL; ASTM C-33-03,
#67.
2. BOXES AND STRUCTURES WITH BOTTOM SLABS (CLOSED BASE):
4" MINIMUM THICKNESS OF CLEAN, WELL-GRADED GRANULAR
MATERIAL WITH A MAXIMUM PARTICLE SIZE OF THREE (3) INCHES,
AND LESS THAN THREE (3) PERCENT PASSING THE NO. 200 SIEVE
OR SELECT BORROW.
3. PROVIDED BEDDING BENEATH MANHOLES, HANDHOLES AND
PULLBOXES IN RELATIVELY UNIFORM LIFTS NO GREATER THAN
SIX (6) INCHES IN LOOSE THICKNESS, MOISTURE CONDITIONED TO
WITHIN THREE (3) PERCENT OF THEIR OPTIMUM MOISTURE
CONTENT, AND UNIFORMLY COMPACTED TO AT LEAST NINETY (90)
PERCENT OF THE MAXIMUM DRY DENSITY (ASTM D1557-02).
CONTRACTOR TO SCHEDULE WITH CITY INSPECTORS FOR
COMPACTION AND BEDDING INSTALLATION.



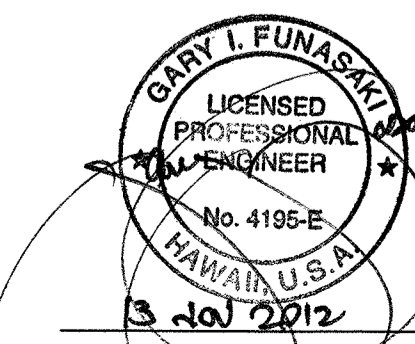
SCALE: 1"=40'

HECO's review of these drawings shall in no way relieve the Customer, its Consultant, its Contractor or anyone acting on the Customer's behalf from the responsibility for engineering, design, materials and any other liability associated with this project.







M. J. [Signature]
CHIEF, CIVIL ENGINEERING BRANCH
DEPT. OF PLANNING AND PERMITTING

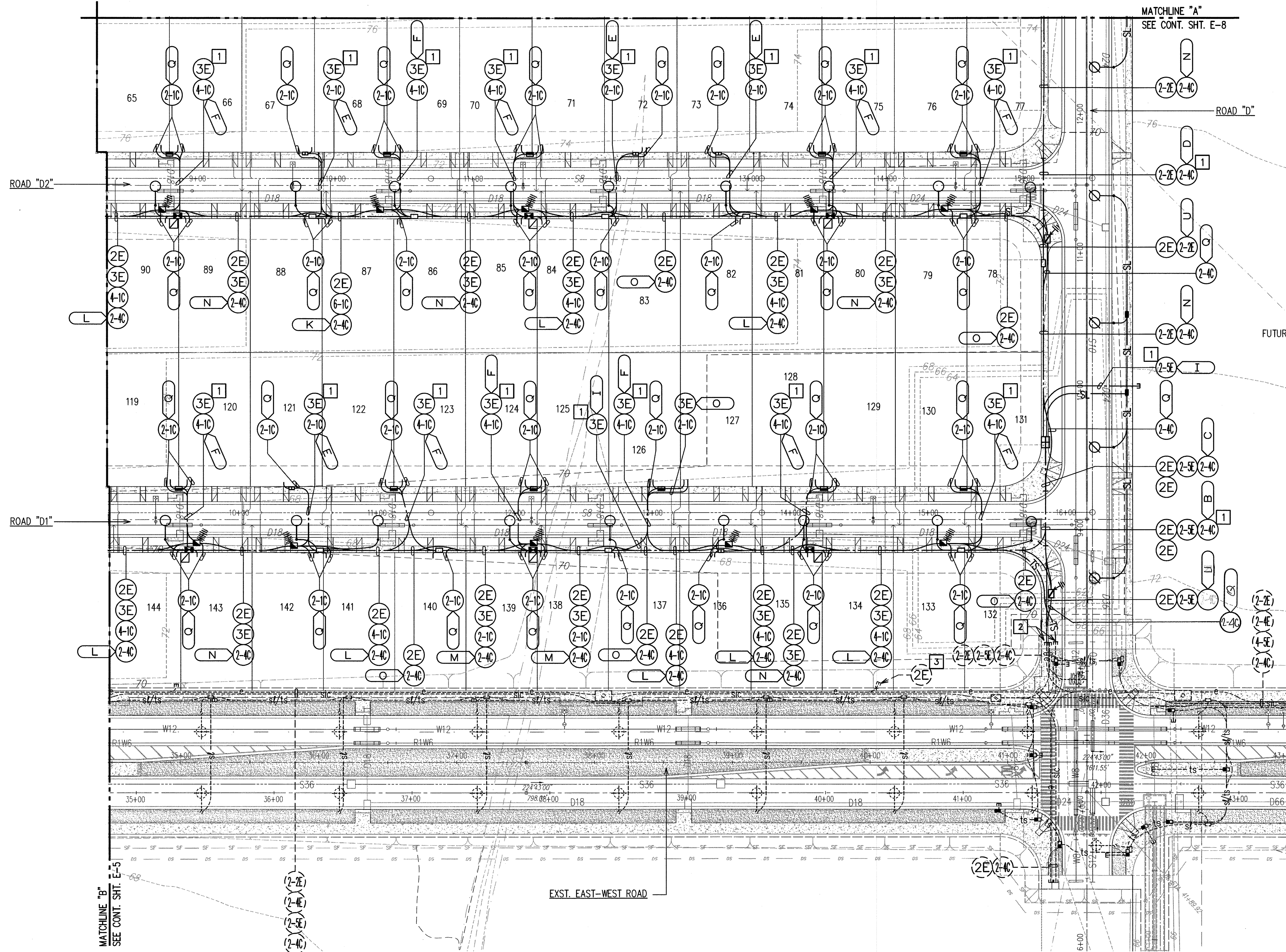
GRAPHIC SCALE

GRAPHIC SCALE



THIS WORK WAS PREPARED BY
ME OR UNDER MY SUPERVISION.
CONSTRUCTION OF THIS PROJECT
WILL BE UNDER MY OBSERVATION.
LICENSE EXPIRATION DATE: 04/30/14

REVISION DATE	DESCRIPTION	MADE BY	APPROVED
 Community Planning and Engineering, Inc. Engineering Design Construction Management Infrastructure Planning 1100 Alakoa Street, 8th Floor Honolulu, Hawaii			
<h1>EAST KAPOLEI II DEVELOPMENT</h1> <h2>INCREMENT 2B</h2> <p>HONOLULU, EWA, OAHU, HAWAII (DPP SUBD. FILE NO. 2011/SUB-155 OWNER & DEVELOPER: DEPARTMENT OF HAWAIIAN HOME LANDS TAX MAP KEY: 9-1-17: Portion 110</p>			
<h1>ELECTRICAL DISTRIBUTION PARTIAL PLAN II</h1>			
DRAWN BY: CAD		ENGINEER: GF	CHECKED BY: GF
APPROVED: <div style="display: flex; justify-content: space-between; align-items: flex-end; margin-top: 20px;"> <div>  HAWAIIAN ELECTRIC CO. </div> <div>  GEF, HAWAII </div> <div>  D.P.P. </div> </div> <div style="display: flex; justify-content: space-between; margin-top: 10px;"> <div>  SANDOVICH & SONS COMMUNICATIONS, INC. </div> <div>  DATE </div> </div>			



- NOTES:**
- 1 ROUTE ELECTRIC/COMMUNICATION DUCTLINE BELOW DRAINLINE/WATERLINE.
 - 2 EXPOSE DUCT(S), PROVIDE COUPLING(S) AND EXTEND.
 - 3 EXPOSE DUCT, CUT & CAP AT RIGHT-OF-WAY LINE AND ABANDON DUCT IN PLACE.

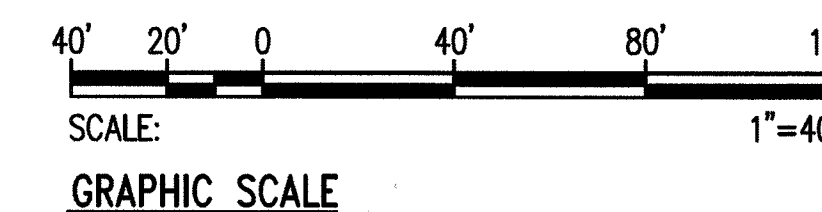
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3. PROVIDED BEDDING BENEATH MANHOLES, HANDHOLES AND PULLBOXES IN RELATIVELY UNIFORM LIFTS NO GREATER THAN SIX (6) INCHES IN LOOSE THICKNESS, MOISTURE CONDITIONED TO WITHIN THREE (3) PERCENT OF THEIR OPTIMUM MOISTURE CONTENT, AND UNIFORMLY COMPACTED TO AT LEAST NINETY (90) PERCENT OF THE MAXIMUM DRY DENSITY (ASTM D1557-02). CONTRACTOR TO SCHEDULE WITH CITY INSPECTORS FOR COMPACTION AND BEDDING INSTALLATION.



ELECTRICAL DISTRIBUTION PARTIAL PLAN III
SCALE: 1"=40'

APPROVED BY:
M. J. [Signature] 6/28/13
CHIEF, CIVIL ENGINEERING BRANCH
DEPT. OF PLANNING AND PERMITTING



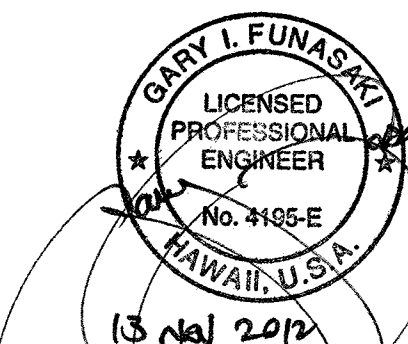
DRAWING REVIEW

Reviewed for HECO's Facilities Only

Date 12/18/12 By *[Signature]*

Customer Installation Department
Hawaiian Electric Company, Inc.

HECO's review of these drawings shall in no way relieve the Customer, its Consultant, its Contractor or anyone acting on the Customer's behalf from the responsibility for engineering, design, materials and any other liability associated with this project.



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REVISION DATE	DESCRIPTION	MADE BY	APPROVED

Community Planning and Engineering, Inc.
Engineering Design | Construction Management | Infrastructure Planning
1100 Alakoa Street, Sixth Floor Honolulu, Hawaii

EAST KAPOLEI II DEVELOPMENT INCREMENT 2B
HONOLULU, EWA, OAHU, HAWAII
(DPP SUBD. FILE NO. 2011/SUB-155)
OWNER & DEVELOPER: DEPARTMENT OF HAWAIIAN HOME LANDS
TAX MAP KEY: 9-1-17: Portion 110

ELECTRICAL DISTRIBUTION PARTIAL PLAN III

DRAWN BY: CAD	ENGINEER: GF	CHECKED BY: GF
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APPROVED: *[Signature]* 12/19/12

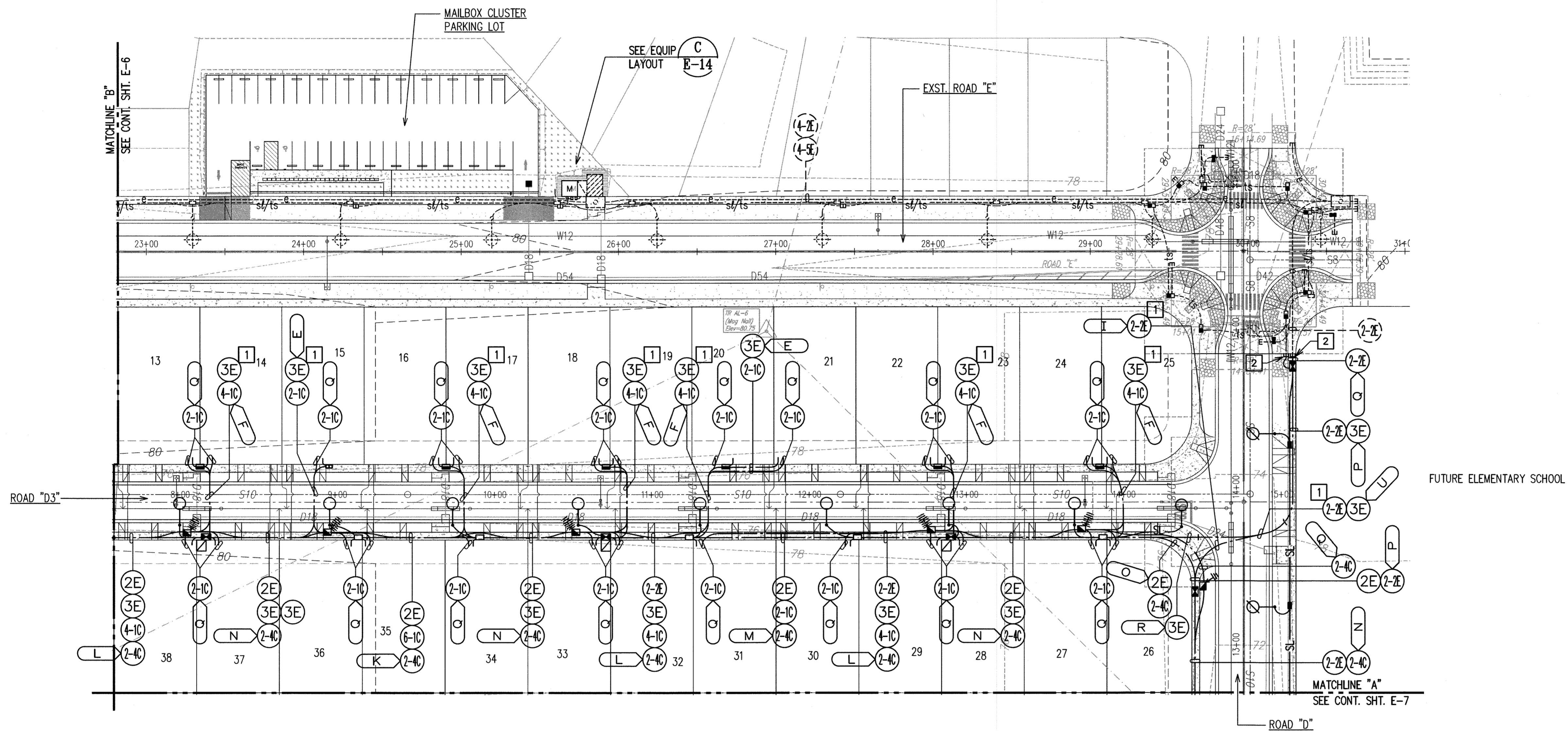
HAWAIIAN ELECTRIC CO.	DATE	DATE
<i>[Signature]</i>	12/19/12	

SHOWN FILES COMMUNICATIONS, INC. DATE

FILE	PROJECT	FOLDER	NO.
------	---------	--------	-----

NOTES:

- 1 ROUTE ELECTRIC/COMMUNICATION DUCTLINE BELOW DRAINLINE/WATERLINE.
- 2 EXPOSE DUCT(S), PROVIDE COUPLING(S) AND EXTEND.



NOTES FOR BEDDING BENEATH UNDERGROUND STRUCTURES:

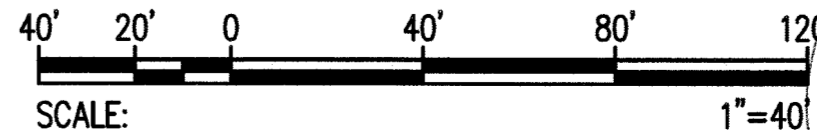
1. BOXES AND STRUCTURES WITHOUT BOTTOM SLABS (OPEN BASE):
4" MINIMUM THICKNESS OF NO. 3 FINE GRAVEL; ASTM C-33-03, #67.
2. BOXES AND STRUCTURES WITH BOTTOM SLABS (CLOSED BASE):
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3. PROVIDED BEDDING BENEATH MANHOLES, HANDHOLES AND PULLBOXES IN RELATIVELY UNIFORM LIFTS NO GREATER THAN SIX (6) INCHES IN LOOSE THICKNESS, MOISTURE CONDITIONED TO WITHIN THREE (3) PERCENT OF THEIR OPTIMUM MOISTURE CONTENT, AND UNIFORMLY COMPACTED TO AT LEAST NINETY (90) PERCENT OF THE MAXIMUM DRY DENSITY (ASTM D1557-02). CONTRACTOR TO SCHEDULE WITH CITY INSPECTORS FOR COMPACTION AND BEDDING INSTALLATION.



ELECTRICAL DISTRIBUTION PARTIAL PLAN IV

SCALE: 1"=40'

APPROVED BY:
M. J. [Signature]
CHIEF, CIVIL ENGINEERING BRANCH
DEPT. OF PLANNING AND PERMITTING



GRAPHIC SCALE

DRAWING REVIEW

Reviewed for HECO's Facilities Only

Date *12/12/12* By *[Signature]*

Customer Installation Department
Hawaiian Electric Company, Inc.

HECO's review of these drawings shall in no way relieve the Customer, its Consultant, its Contractor or anyone acting on the Customer's behalf from the responsibility for engineering, design, materials and any other liability associated with this project.



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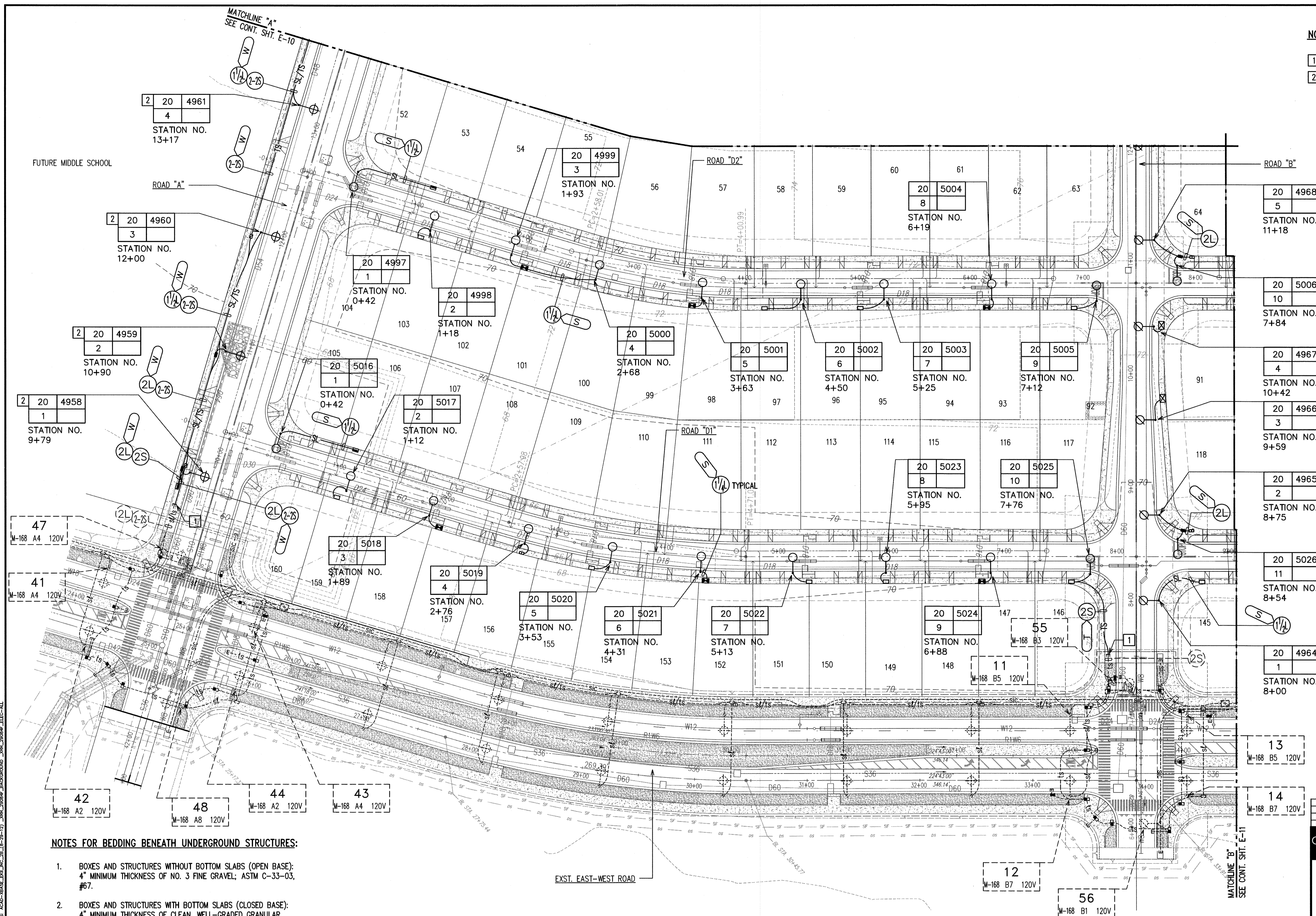
REVISION DATE	DESCRIPTION	MADE BY	APPROVED

Community Planning and Engineering, Inc. Engineering Design Construction Management Infrastructure Planning 1100 Alakoa Street, 8th Floor Honolulu, Hawaii			
EAST KAPOLEI II DEVELOPMENT INCREMENT 2B HONOLULU, EWA, OAHU, HAWAII (DPP SUBD. FILE NO. 2011/SUB-155) OWNER & DEVELOPER: DEPARTMENT OF HAWAIIAN HOME LANDS TAX MAP KEY: 9-1-17: Portion 110			
ELECTRICAL DISTRIBUTION PARTIAL PLAN IV			
DRAWN BY: CAD	ENGINEER: GF	CHECKED BY: GF	
APPROVED: <i>[Signature]</i>			
HAWAIIAN ELECTRIC CO.	DATE: <i>12/19/12</i>	CHEF, TRAFFIC REVIEW BRANCH DPP	DATE: <i>12/19/12</i>
SCHWENK & SONS COMMUNICATIONS, INC.	DATE: <i>12/19/12</i>		DATE: <i>12/19/12</i>

FILE	POCKET	FOLDER	NO.

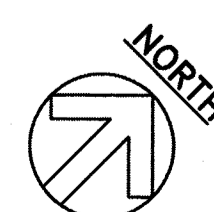
NOTES:

- 1 EXPOSE DUCT(S), PROVIDE COUPLING(S) AND EXTEND.
- 2 IES TYPE III DISTRIBUTION.



NOTES FOR BEDDING BENEATH UNDERGROUND STRUCTURES:

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STREET LIGHTING AND TRAFFIC SIGNAL PARTIAL PLAN I

SCALE: 1"=40'

APPROVED BY:
M. J. [Signature]
CHIEF, CIVIL ENGINEERING BRANCH
DEPT. OF PLANNING AND PERMITTING

DATE: 6/28/13

SCALE: 1"=40'

GRAPHIC SCALE



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REVISION	DATE	DESCRIPTION	MADE BY	APPROVED

Community Planning and Engineering, Inc.
Engineering Design | Construction Management | Infrastructure Planning
1100 Alakoa Street, Sixth Floor Honolulu, Hawaii

EAST KAPOLEI II DEVELOPMENT INCREMENT 2B
HONOLULU, EWA, OAHU, HAWAII
(OPP SUBD. FILE NO. 2011/SUB-155)
OWNER & DEVELOPER: DEPARTMENT OF HAWAIIAN HOME LANDS
TAX MAP KEY: 9-1-17: Portion 110

STREET LIGHTING AND TRAFFIC SIGNAL PARTIAL PLAN I

DRAWN BY: CAD ENGINEER: GF CHECKED BY: GF

APPROVED:

DATE: 11/21/13
DATE: 11/21/13
DATE: 11/21/13

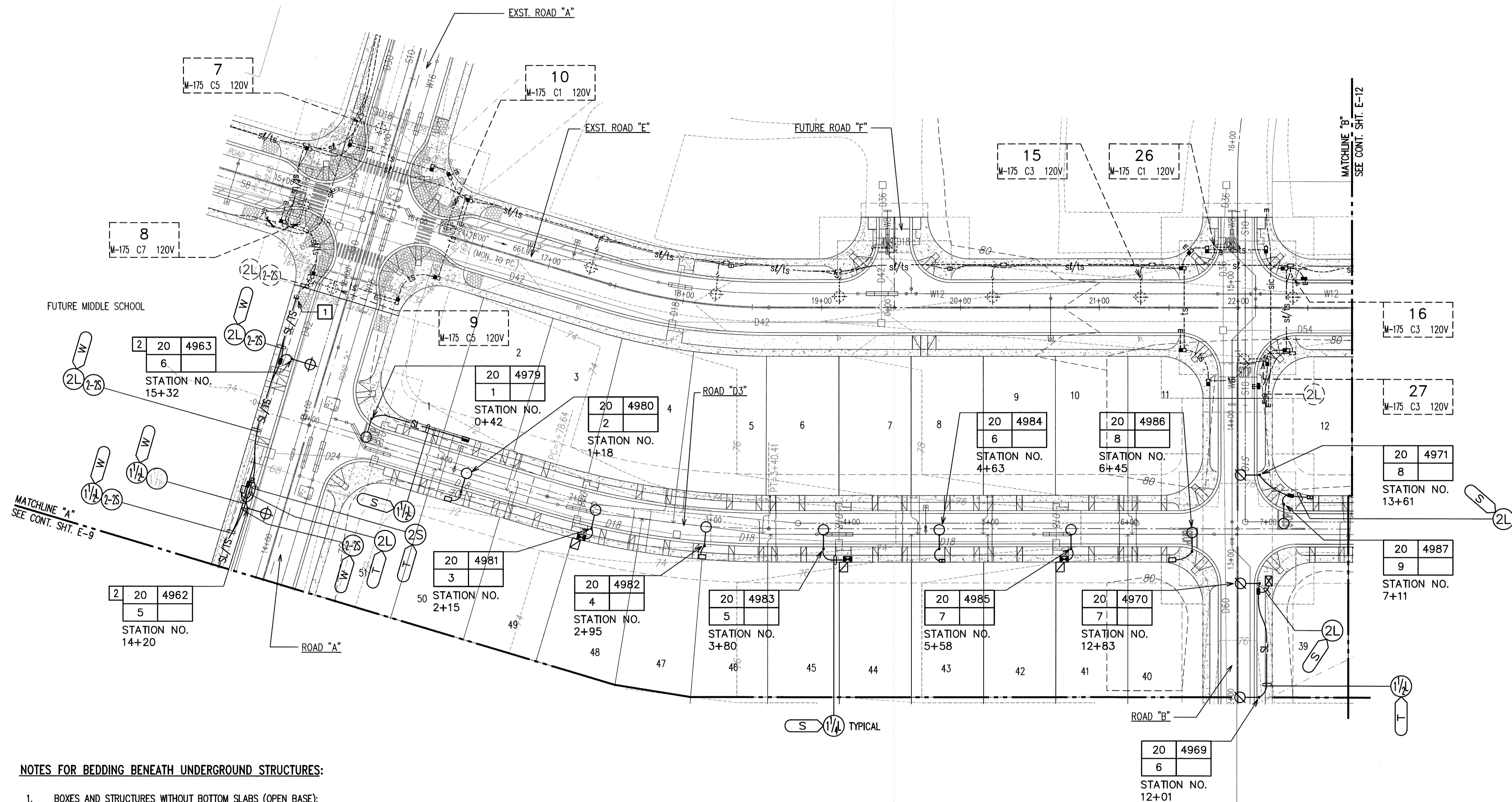
DWG. NO. E-9

SHEET 49 OF 78 SHEETS

FILE FOLDER NO.

NOTES:

- 1 EXPOSE DUCT(S), PROVIDE COUPLING(S) AND EXTEND.
- 2 IES TYPE III DISTRIBUTION.



NOTES FOR BEDDING BENEATH UNDERGROUND STRUCTURES:

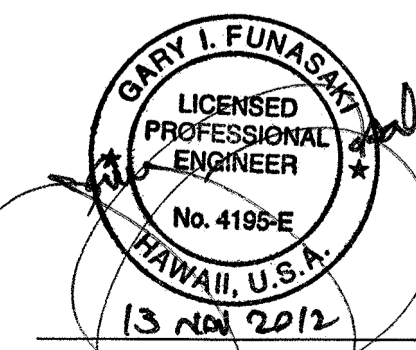
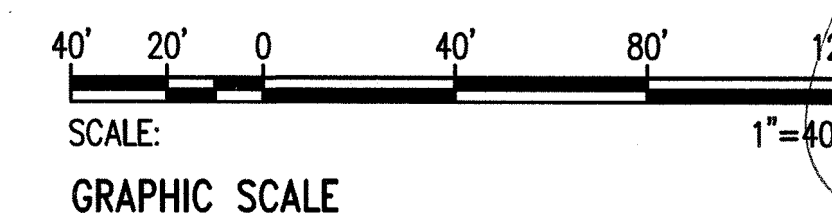
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STREET LIGHTING AND TRAFFIC SIGNAL PARTIAL PLAN II

SCALE: 1"=40'

APPROVED BY:
M. J. [Signature]
CHIEF, CIVIL ENGINEERING BRANCH
DEPT. OF PLANNING AND PERMITTING
DATE: 6/28/13

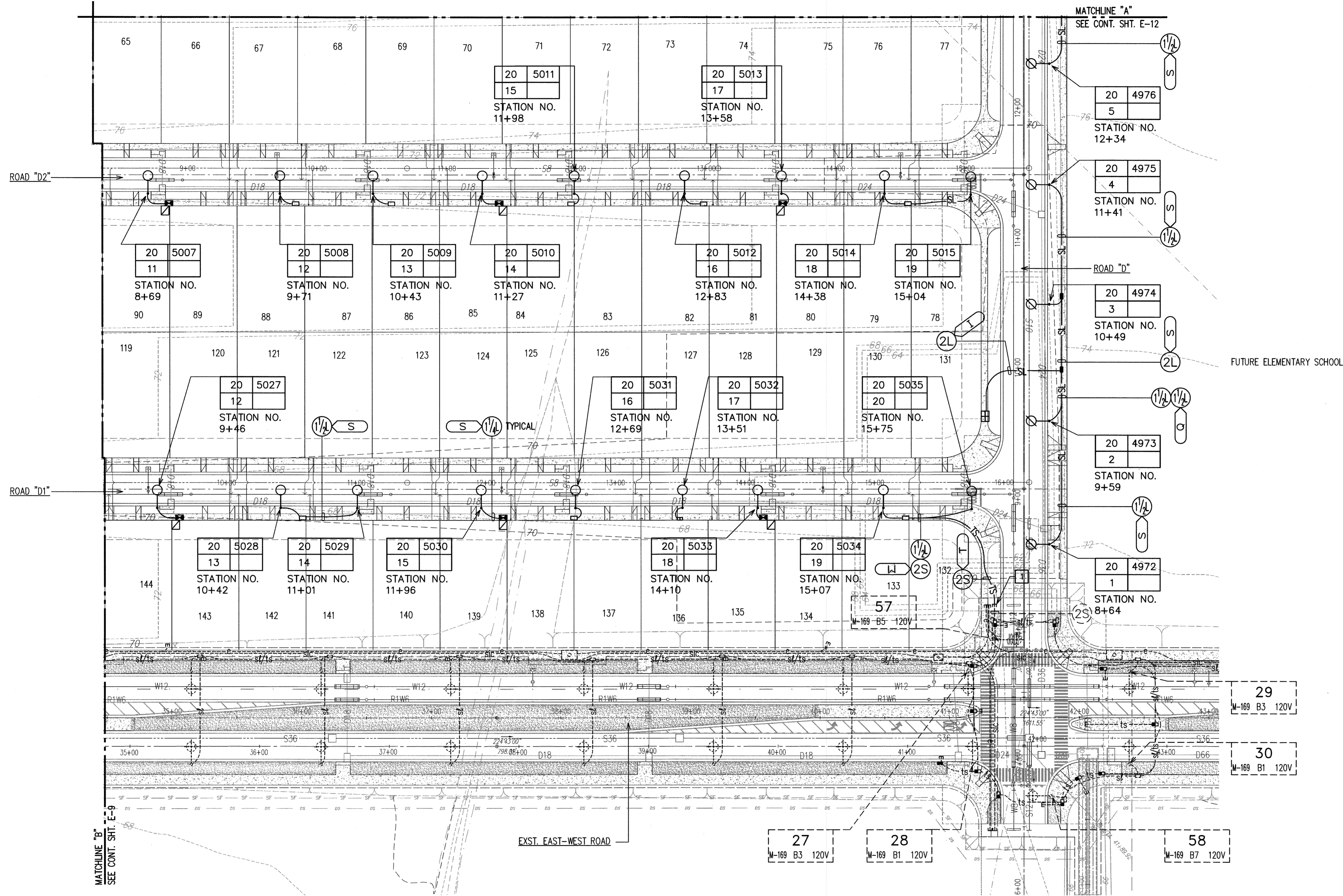


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REVISION DATE	DESCRIPTION	MADE BY	APPROVED
<p>Community Planning and Engineering, Inc. Engineering Design Construction Management Infrastructure Planning 1100 Alakoa Street, Sixth Floor Honolulu, Hawaii</p> <p>EAST KAPOLEI II DEVELOPMENT INCREMENT 2B HONOLULU, EWA, OAHU, HAWAII (DPP SUBD. FILE NO. 2011/SUB-155) OWNER & DEVELOPER: DEPARTMENT OF HAWAIIAN HOME LANDS TAX MAP KEY: 9-1-17: Portion 110</p> <p>STREET LIGHTING AND TRAFFIC SIGNAL PARTIAL PLAN II</p>			
DRAWN BY: CAD	ENGINEER: GF	CHECKED BY: GF	
APPROVED:			
DATE: 1/28/13	DATE: 1/31/2013	DATE:	DATE:
CHIEF, TRAFFIC SIGNALS AND TECHNOLOGY, D.T.S.	CHIEF, TRAFFIC SIGNALS AND TECHNOLOGY, D.T.S.	CHIEF, TRAFFIC SIGNALS AND TECHNOLOGY, D.T.S.	CHIEF, TRAFFIC SIGNALS AND TECHNOLOGY, D.T.S.

NOTES:

- 1 EXPOSE DUCT(S), PROVIDE COUPLING(S) AND EXTEND.



NOTES FOR BEDDING BENEATH UNDERGROUND STRUCTURES:

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STREET LIGHTING AND TRAFFIC SIGNAL PARTIAL PLAN III

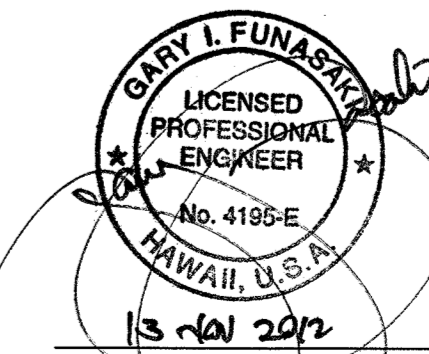
SCALE: 1"=40'

APPROVED BY:

M. J. [Signature]
CHIEF, CIVIL ENGINEERING BRANCH
DEPT. OF PLANNING AND PERMITTING

DATE: 6/28/13

SCALE: 1"=40'
GRAPHIC SCALE



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REVISION DATE	DESCRIPTION	MADE BY	APPROVED

Community Planning and Engineering, Inc.
Engineering Design | Construction Management | Infrastructure Planning
1100 Alakoa Street, Sixth Floor Honolulu, Hawaii

EAST KAPOLEI II DEVELOPMENT INCREMENT 2B
HONOLULU, EWA, OAHU, HAWAII
(DPP SUBD. FILE NO. 2011/SUB-155)
OWNER & DEVELOPER: DEPARTMENT OF HAWAIIAN HOME LANDS
TAX MAP KEY: 9-1-17: Portion 110

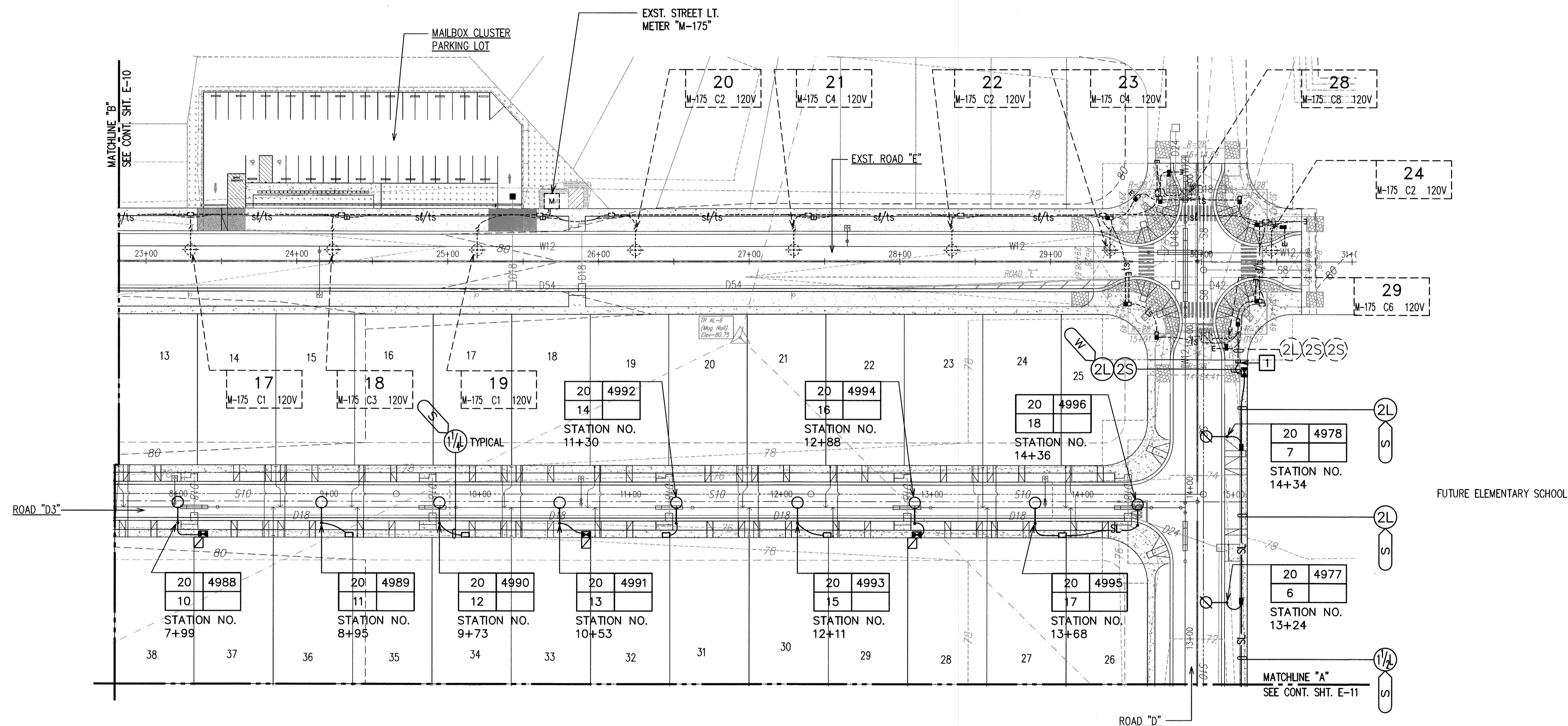
STREET LIGHTING AND TRAFFIC SIGNAL PARTIAL PLAN III

DRAWN BY: CAD	ENGINEER: GF	CHECKED BY: GF
APPROVED:		
DATE: 1/28/13	DATE: 1/28/13	DATE: 1/28/13

FILE NO. DWG. NO. E-11 SHEET 51 OF 78 SHEETS

NOTES:

1 EXPOSE DUCT(S), PROVIDE COUPLING(S) AND EXTEND.



NOTES FOR BEDDING BENEATH UNDERGROUND STRUCTURES:

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- PROVIDED BEDDING BENEATH MANHOLES, HANDHOLES AND PULLBOXES IN RELATIVELY UNIFORM LIFTS NO GREATER THAN SIX (6) INCHES IN LOOSE THICKNESS, MOISTURE CONDITIONED TO WITHIN THREE (3) PERCENT OF THEIR OPTIMUM MOISTURE CONTENT, AND UNIFORMLY COMPACTED TO AT LEAST NINETY (90) PERCENT OF THE MAXIMUM DRY DENSITY (ASTM D1557-02). CONTRACTOR TO SCHEDULE WITH CITY INSPECTORS FOR COMPACTION AND BEDDING INSTALLATION.



STREET LIGHTING AND TRAFFIC SIGNAL PARTIAL PLAN IV
SCALE: 1"=40'

APPROVED BY: *M. J. [Signature]* 6/28/13
CHIEF, CIVIL ENGINEERING BRANCH
DEPT. OF PLANNING AND PERMITTING DATE

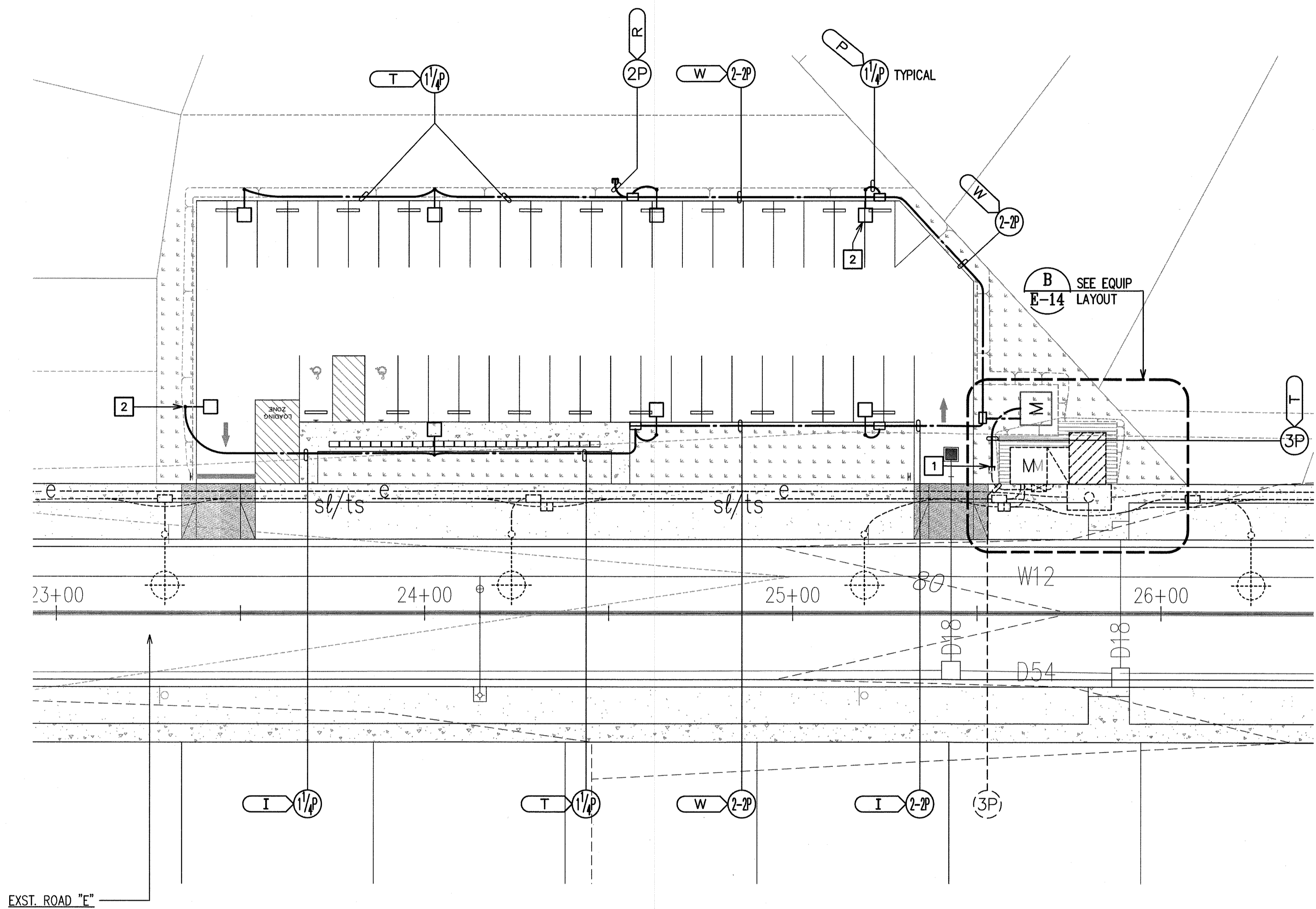
40' 20' 0 40' 80' 120'
SCALE: 1"=40'
GRAPHIC SCALE

GARY I. FUNASAKI
LICENSED PROFESSIONAL ENGINEER
NO. 4935-E
HAWAII, U.S.A.
13 NOV 2012
THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION. CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION. LICENSE EXPIRATION DATE: 04/30/14

REVISION	DATE	DESCRIPTION	MADE BY	APPROVED
<p>Community Planning and Engineering, Inc. Engineering Design Construction Management Infrastructure Planning 1100 Alakea Street, Sixth Floor Honolulu, Hawaii</p> <p>EAST KAPOLEI II DEVELOPMENT INCREMENT 2B HONOLULU, EWA, OAHU, HAWAII (OPP SUBD. FILE NO. 2011/SUB-155) OWNER & DEVELOPER: DEPARTMENT OF HAWAIIAN HOME LANDS TAX MAP KEY: 9-1-17: Portion 110</p> <p>STREET LIGHTING AND TRAFFIC SIGNAL PARTIAL PLAN IV</p>				
DRAWN BY: CAD	ENGINEER: GF	CHECKED BY: GF		
APPROVED:				
DATE: 1/24/13		DATE: 1/31/2013		DATE:
CHIEF, TRAFFIC SIGNALS AND TECHNOLOGY, D.T.S.		CHIEF, MECHANICAL/ELECTRICAL DIVISION, D.T.S.		DATE:

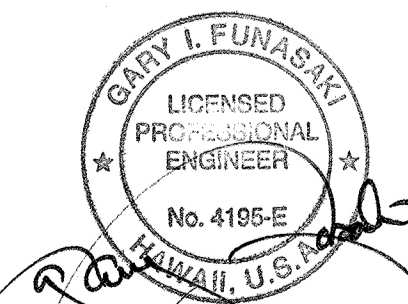
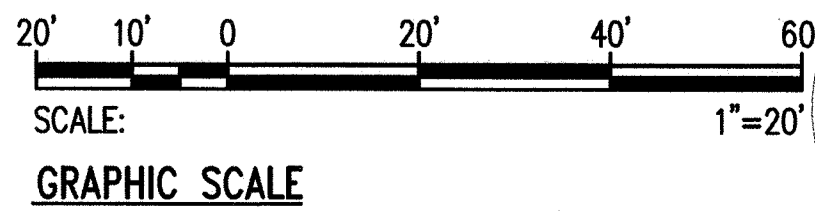
NOTES:

- 1 EXPOSE DUCT(S), PROVIDE COUPLING(S) & EXTEND.
- 2 PROVIDE HOUSE-SIDE SHIELD.



MAILBOX CLUSTER PARKING LOT ELECTRICAL PLAN

SCALE: 1"=20'



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REVISION DATE	DESCRIPTION	MADE BY	APPROVED

Community Planning and Engineering, Inc.
Engineering Design | Construction Management | Infrastructure Planning
1100 Alahehe Street, 8th Floor Honolulu, Hawaii

EAST KAPOLEI II DEVELOPMENT INCREMENT 2B
HONOLULU, EWA, OAHU, HAWAII
(DPP SUBD. FILE NO. 2011/SUB-155)
OWNER & DEVELOPER: DEPARTMENT OF HAWAIIAN HOME LANDS
TAX MAP KEY: 9-1-17: Portion 110

MAILBOX CLUSTER PARKING LOT ELECTRICAL PLAN

DRAWN BY: CAD ENGINEER: GF CHECKED BY: GF
APPROVED: _____
DATE: _____

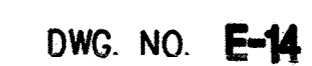
DATE: _____



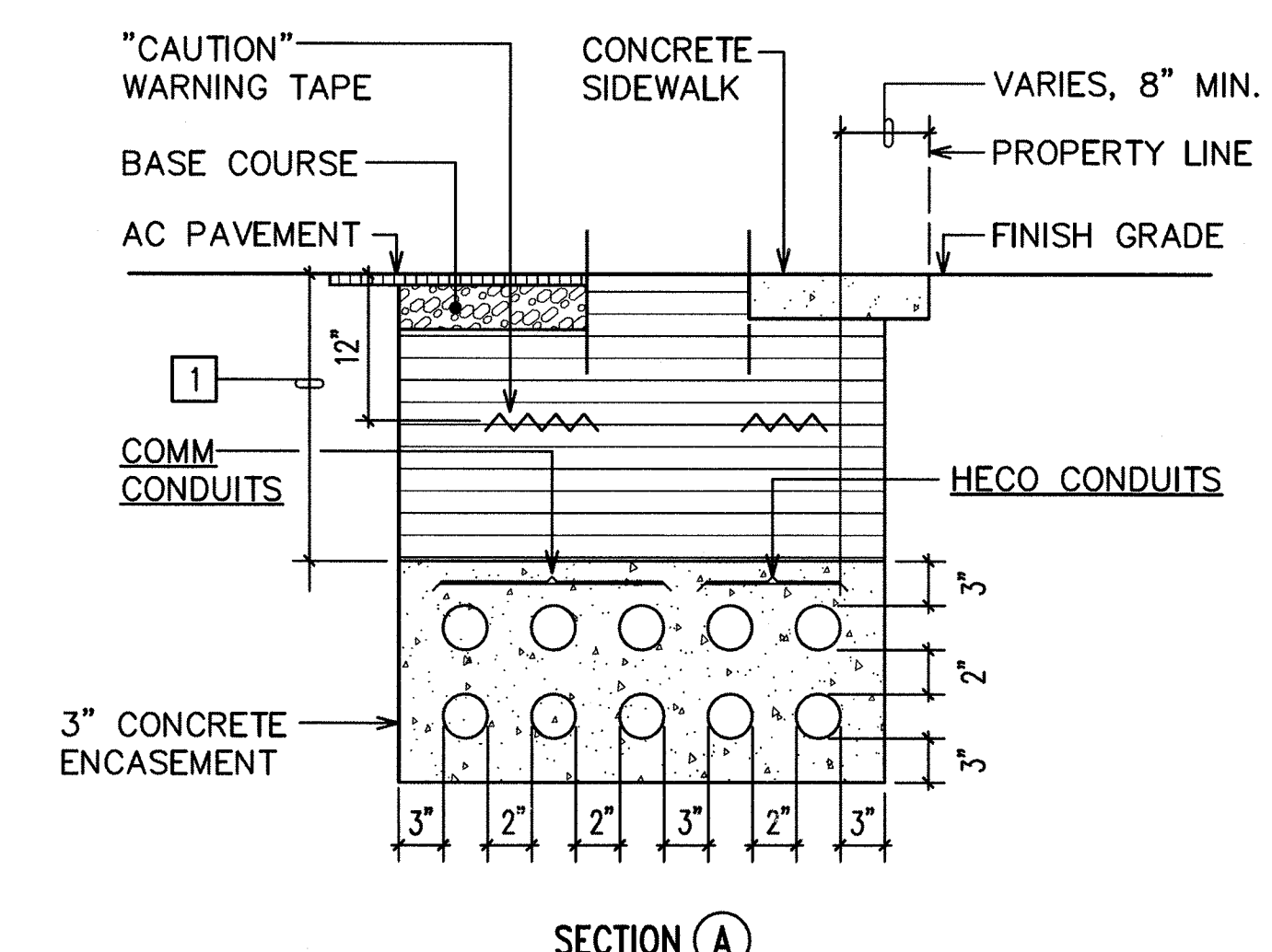
1 EXPOSE DUCT(S), PROVIDE COUPLING(S) AND EXTEND.

SCALE:

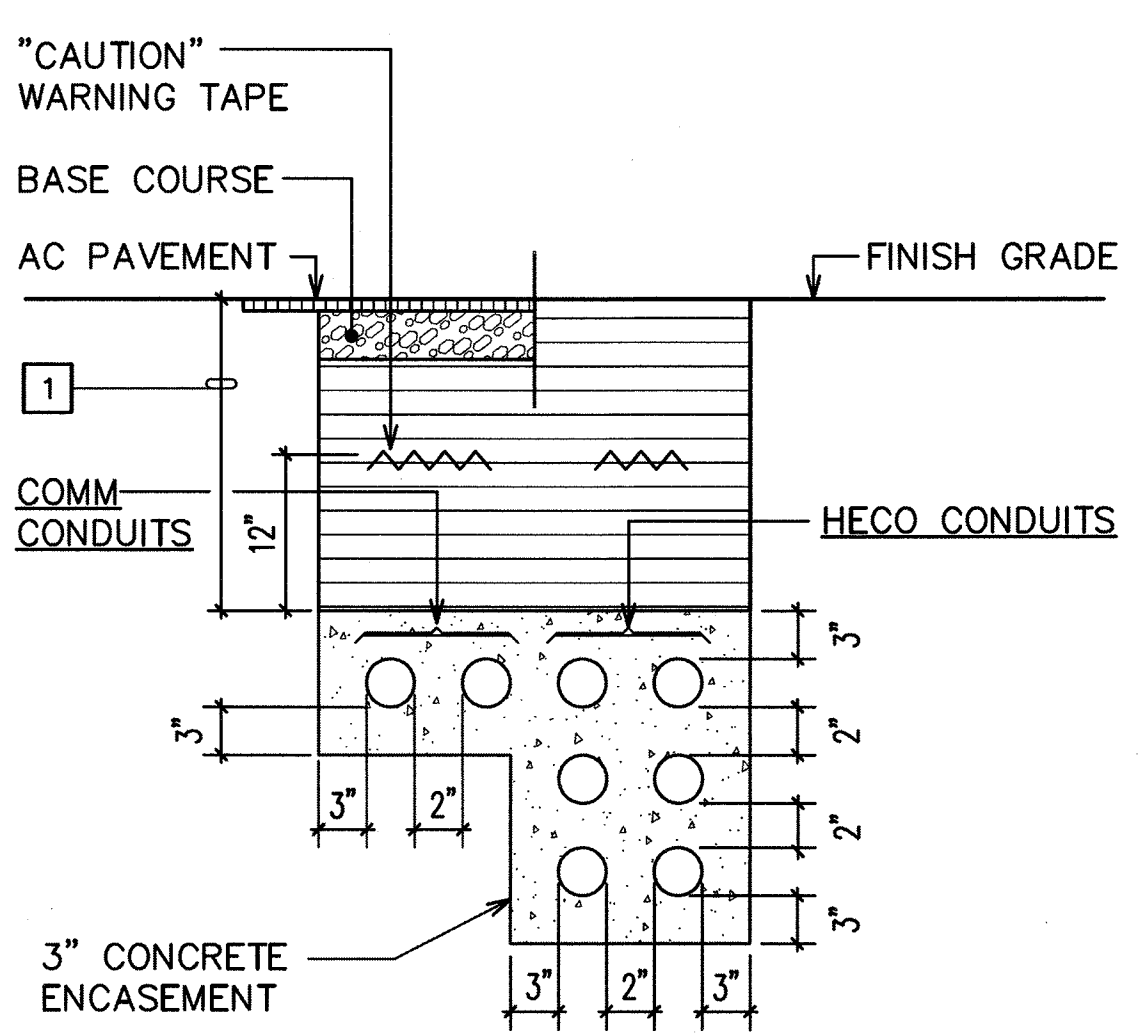
GRAPHIC SCALE



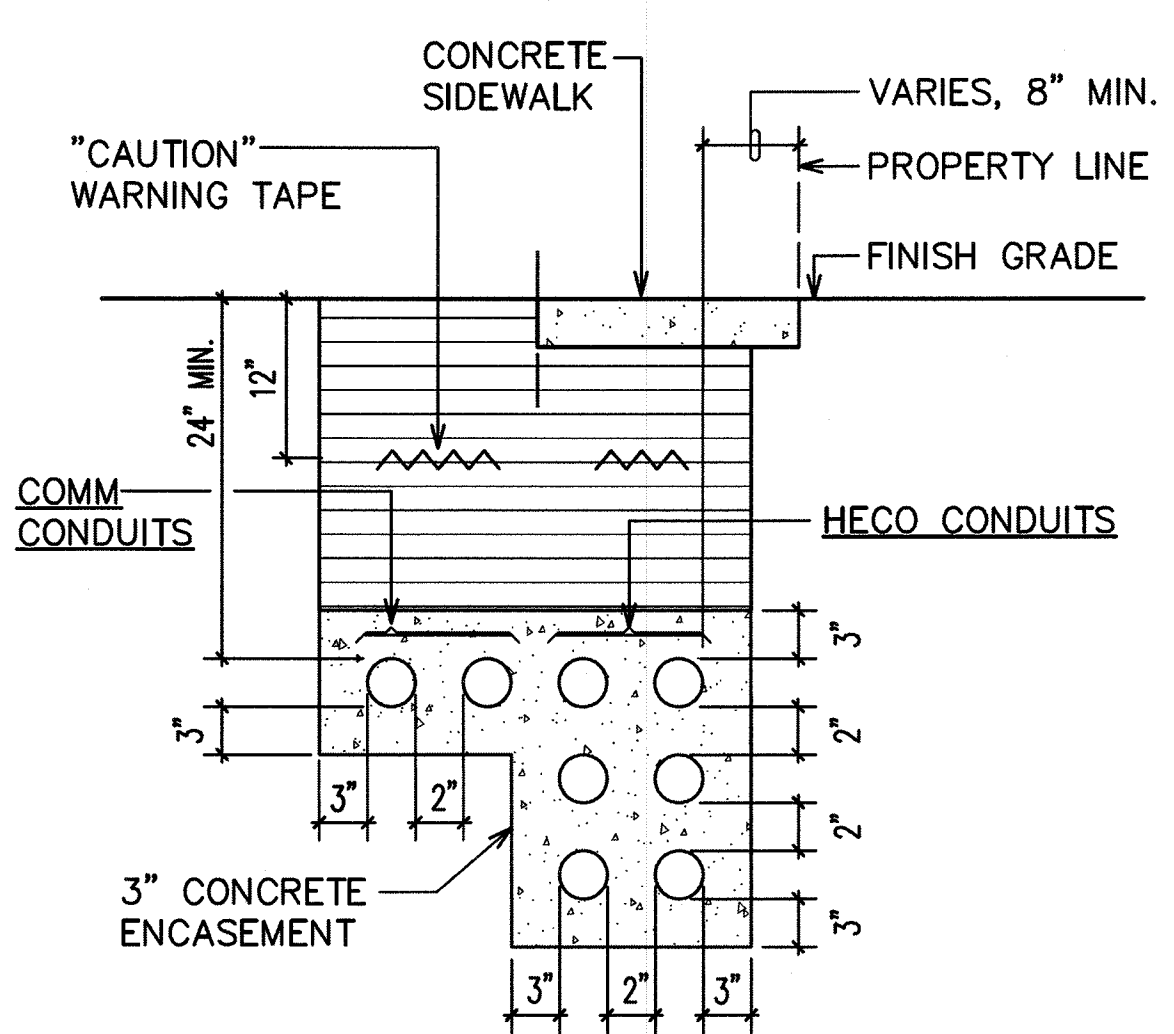
DWG. NO. **E-14**



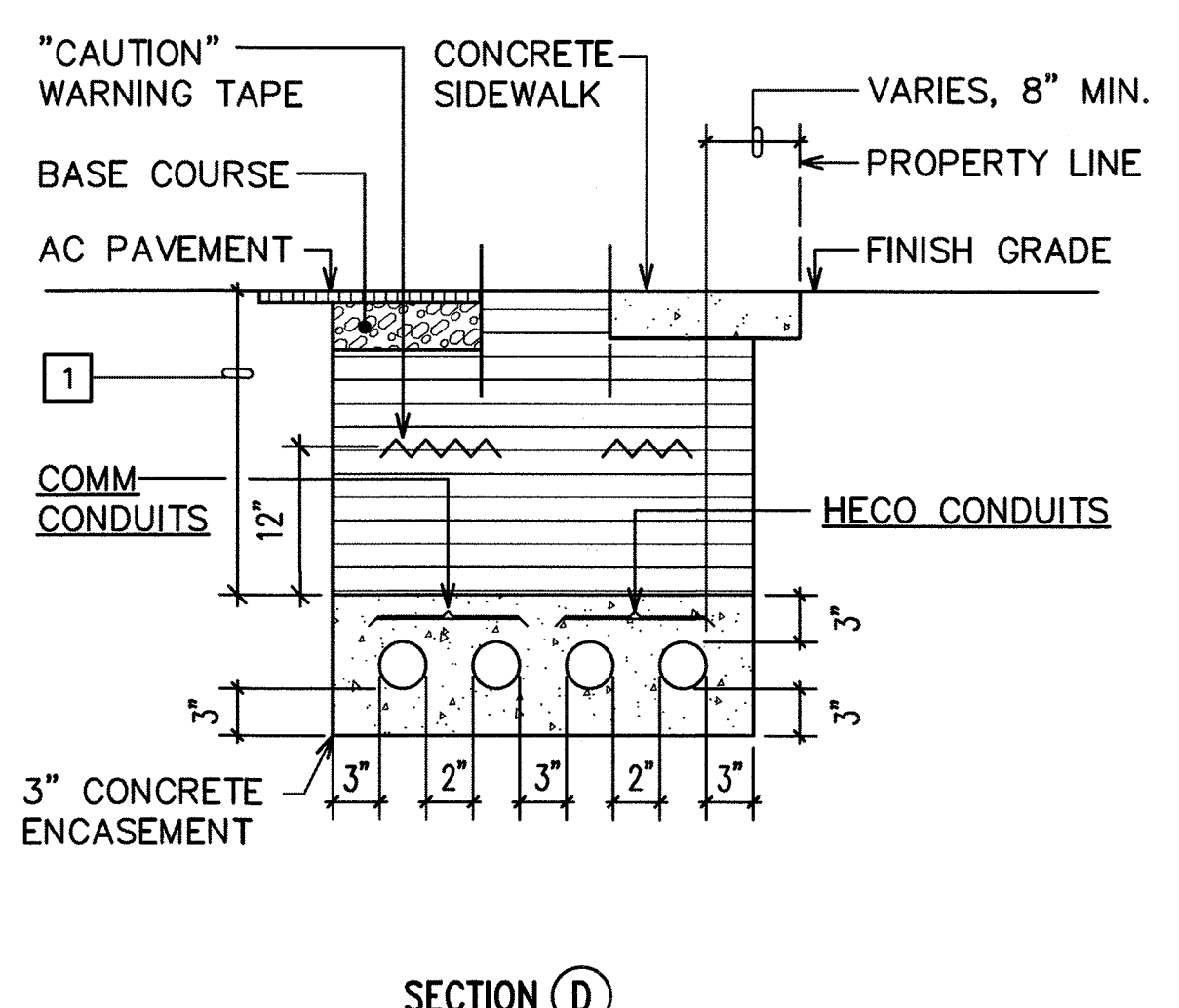
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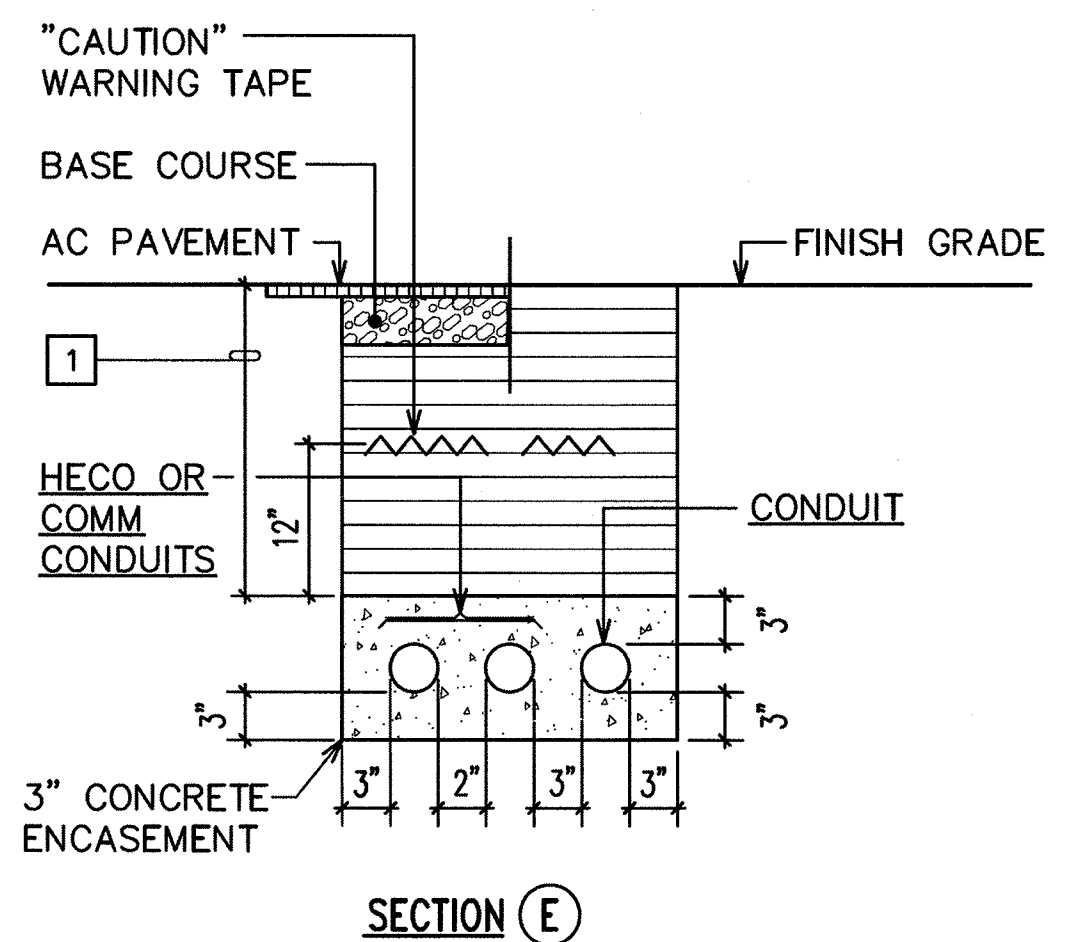
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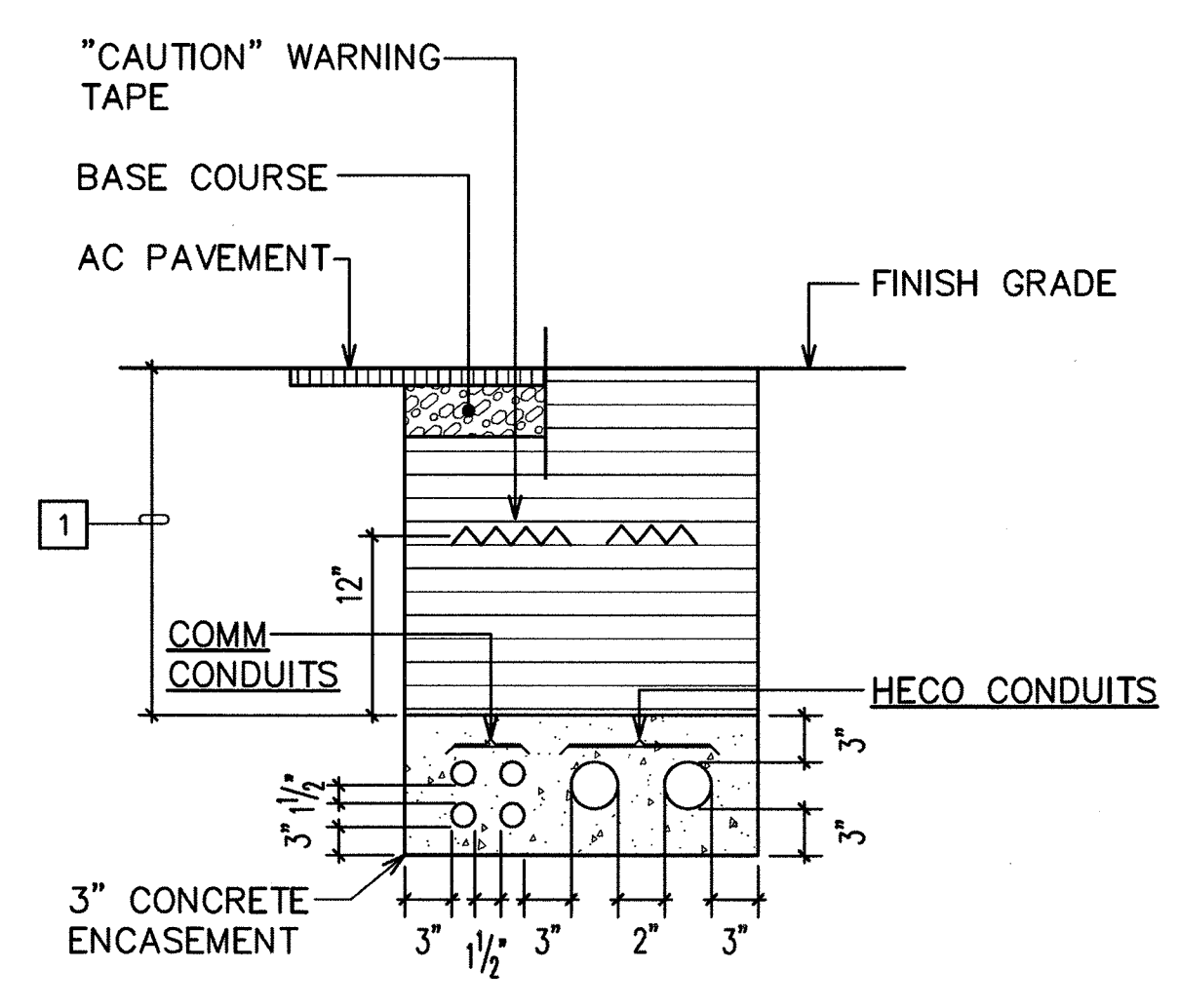
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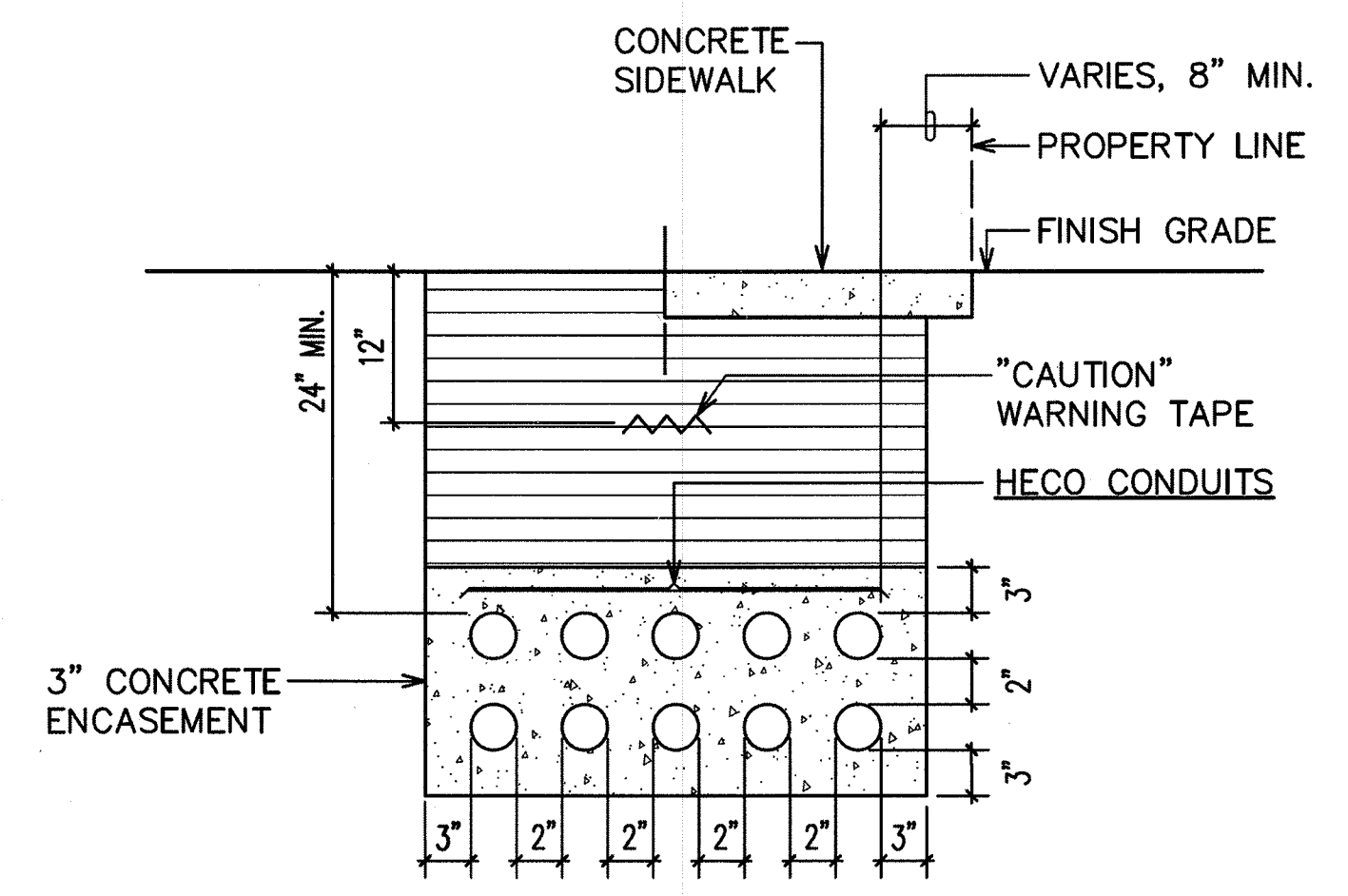
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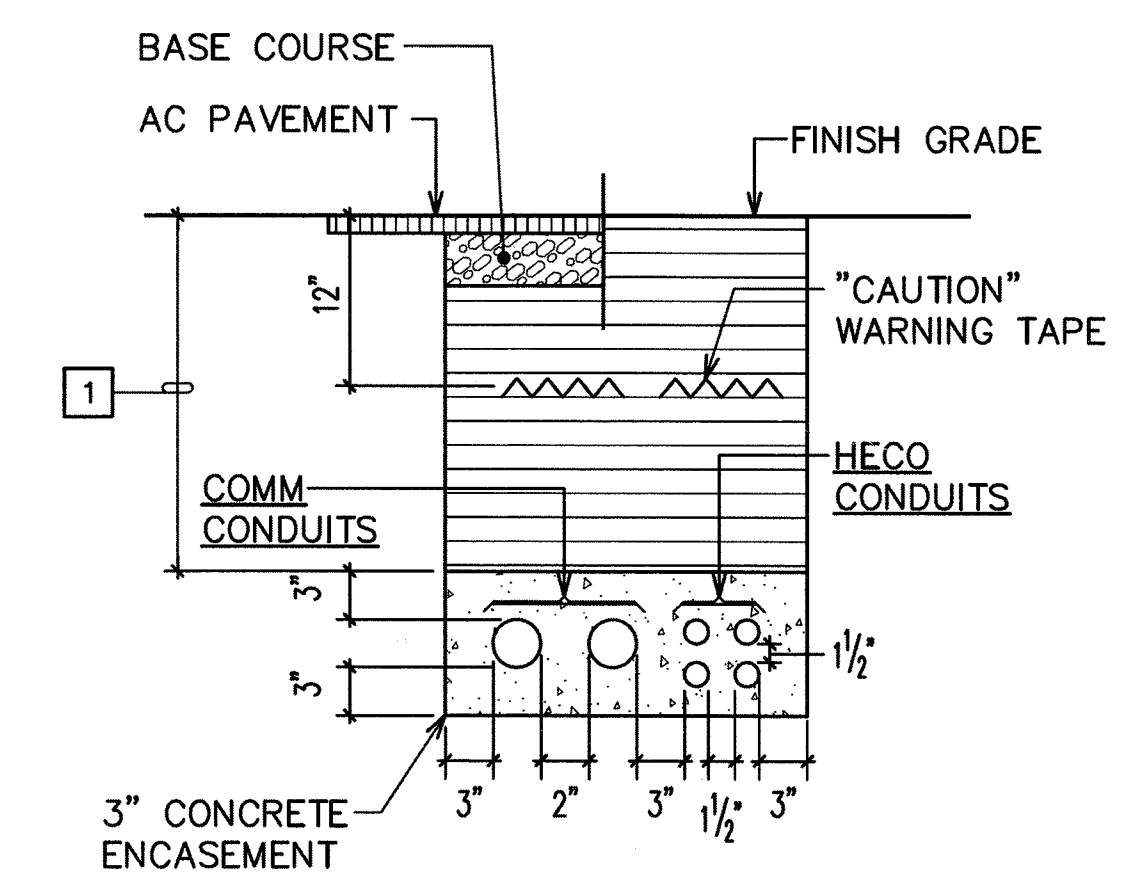
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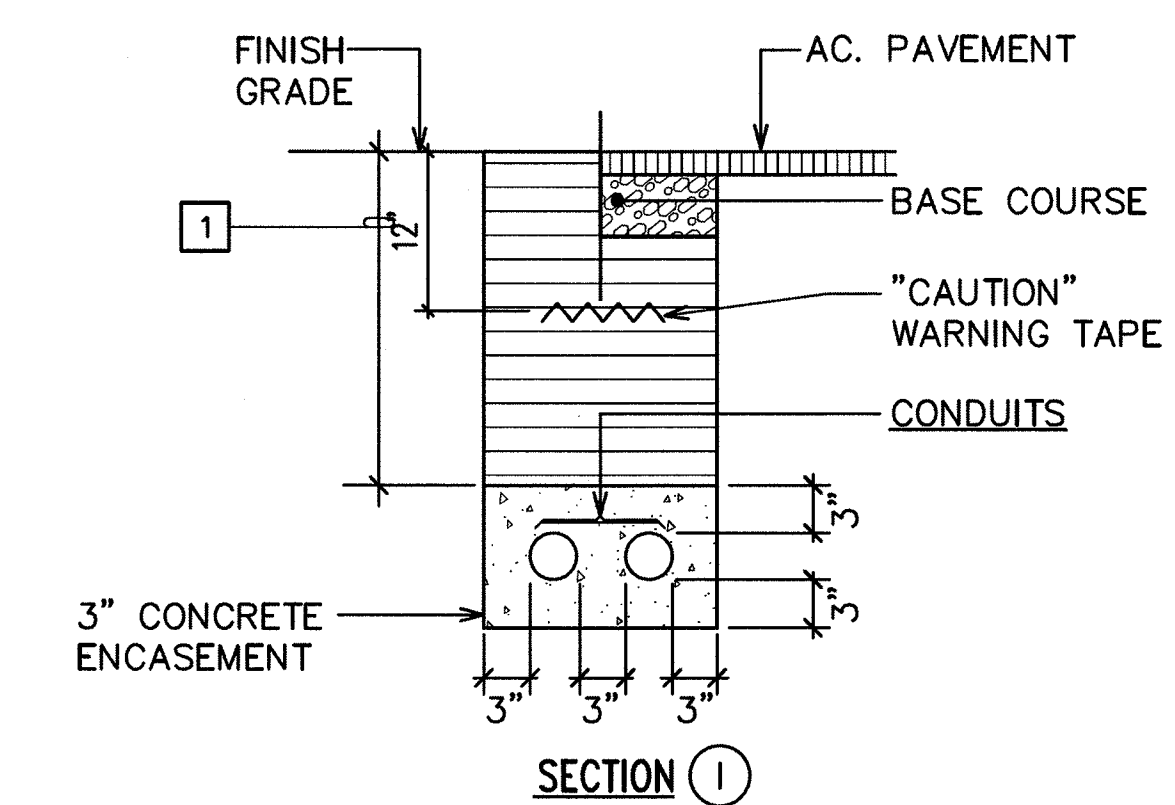
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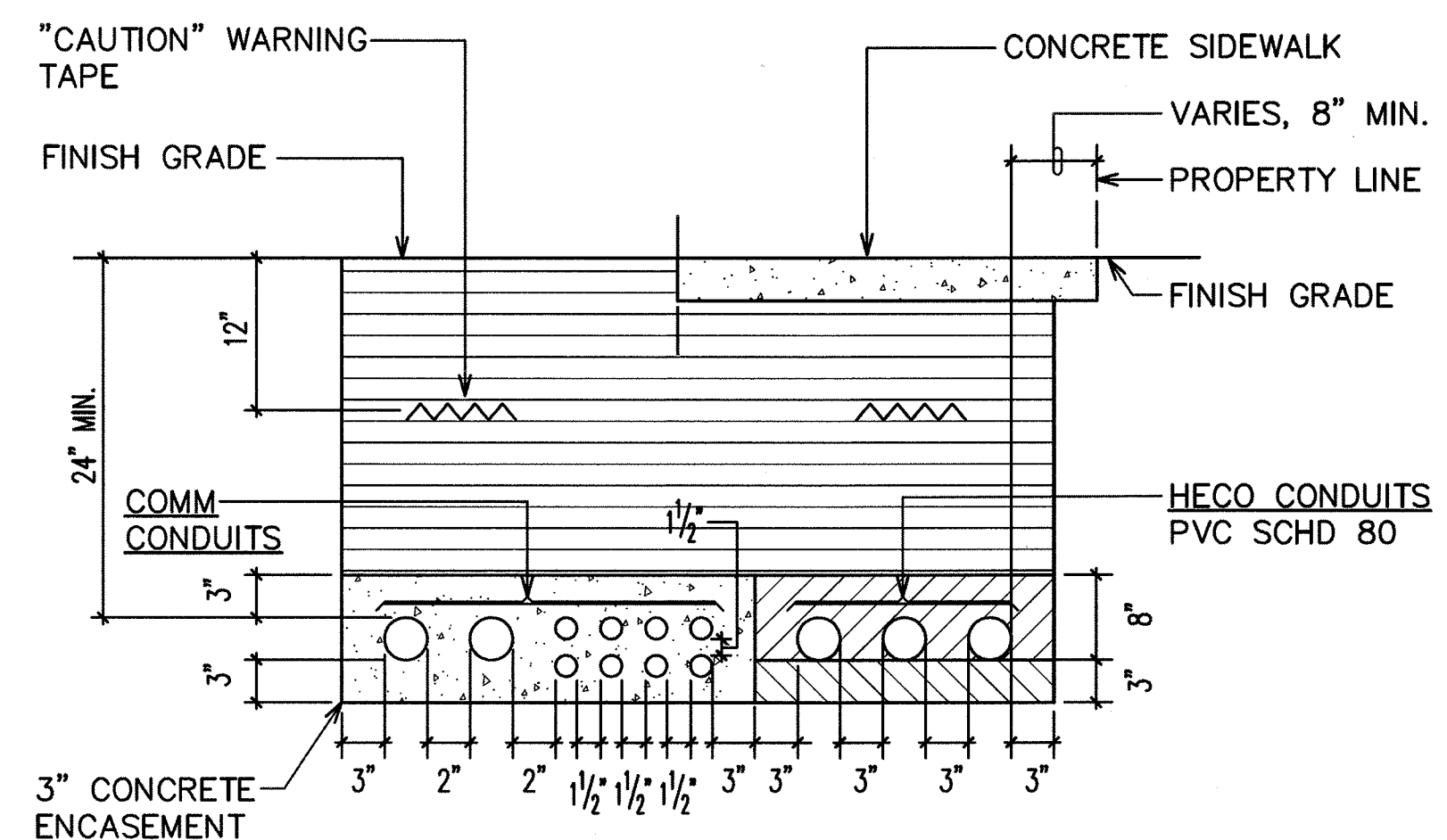
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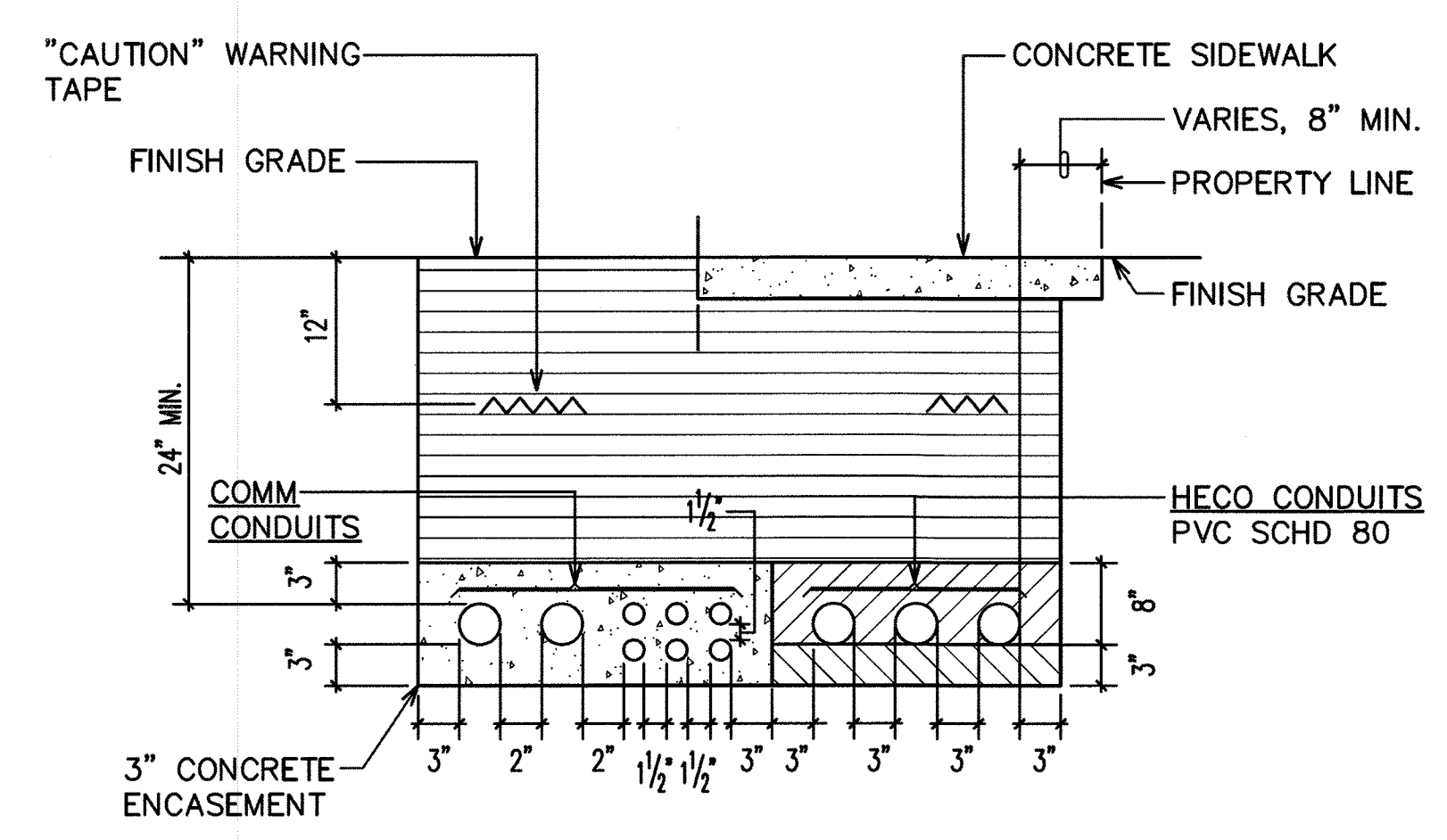
SECTION H



SECTION I



SECTION J



SECTION K

- BACKFILL NOTES:**
- TYPE "A" BACKFILL - EARTH & GRAVEL. ROCK SIZE TO BE 1" MAX & THE MIXTURE TO CONTAIN NOT MORE THAN 50% BY VOLUME OF ROCK PARTICLES. THE MATERIAL SHALL BE NONEXPANSIVE. 95% COMPACTION.
 - TYPE "B" BACKFILL - EARTH & GRAVEL. MIXTURE MUST PASS A 1/2" MESH SCREEN & CONTAIN NOT MORE THAN 20% BY VOLUME OF ROCK PARTICLES. 95% COMPACTION.
 - NOTE - IF NORMAL MATERIAL AT BOTTOM OF TRENCH IS NOT TYPE "B", AN ADDITIONAL 3" SHALL BE EXCAVATED & TYPE "B" BACKFILL PROVIDED.
 - CONCRETE - 3" ENCASEMENT, 2500 PSI COMPRESSIVE STRENGTH @ 28 DAYS.

- NOTES:**
- 1 DEPTH VARIES; 36" MIN. UNDER AC PAVEMENT, AND 24" MIN. BEYOND AC PAVEMENT.
 - 2 SEE CIVIL DETAILS FOR CONSTRUCTION OF IMPROVEMENTS IN CITY ROADWAY RIGHT-OF-WAY.

NOTE: SEE PLAN SHEETS FOR QUANTITY & SIZE OF CONDUITS

TYPICAL DUCT SECTIONS
NOT TO SCALE

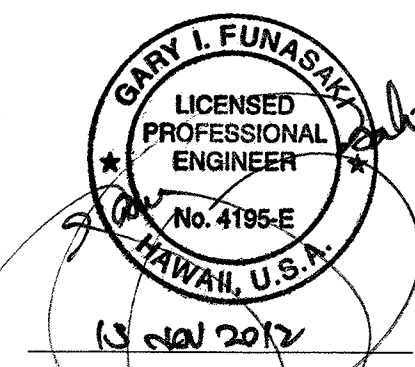
DRAWING REVIEW

Reviewed for HECO's Facilities Only

Date 12/18/12 By [Signature]
Customer Installation Department
Hawaiian Electric Company, Inc.

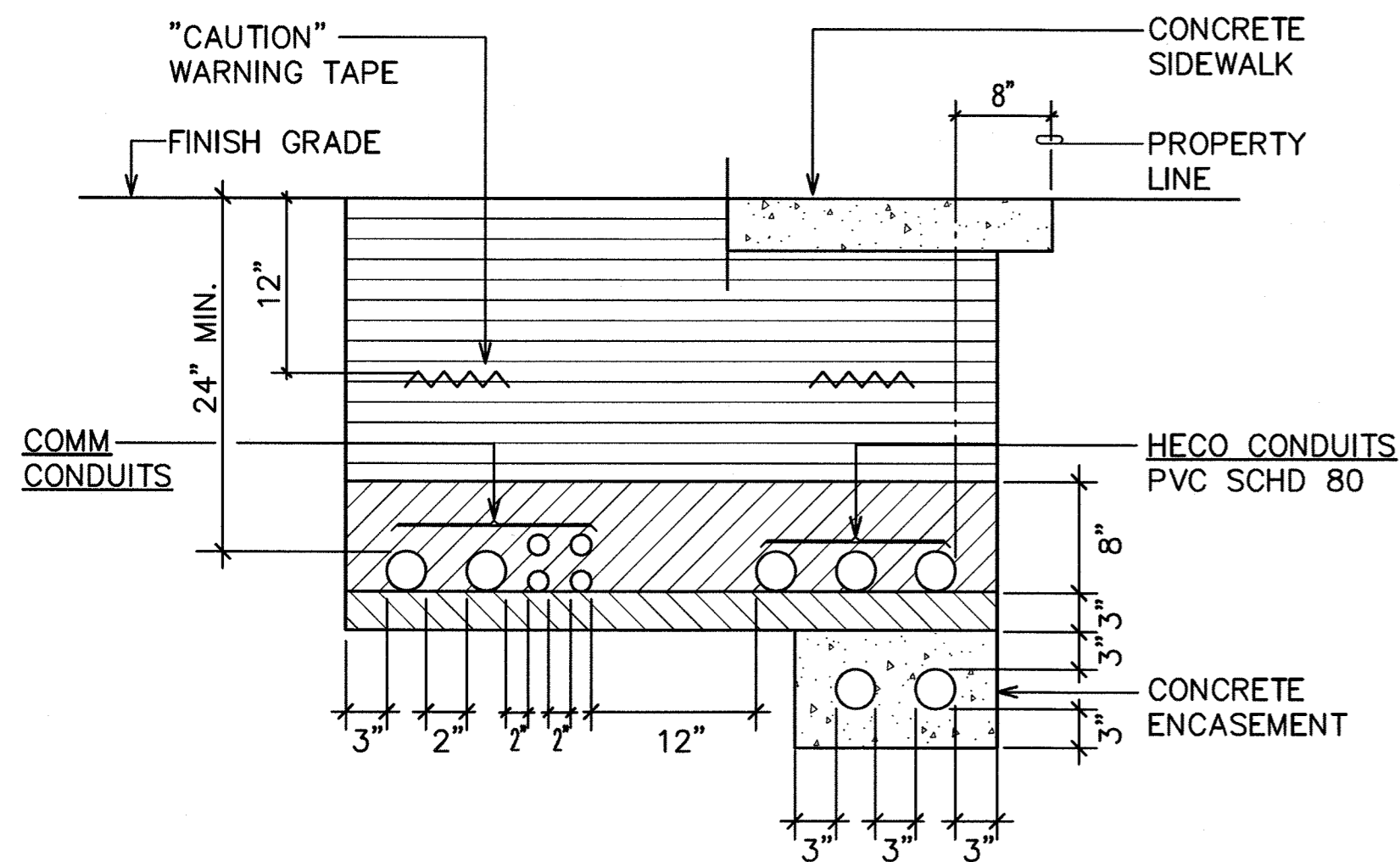
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APPROVED BY:
M. [Signature] 6/28/13
CHIEF, CIVIL ENGINEERING BRANCH
DEPT. OF PLANNING AND PERMITTING
1/28/13
CHIEF, TRAFFIC SIGNALS AND TECHNOLOGY
DEPT. OF TRANSPORTATION SERVICES

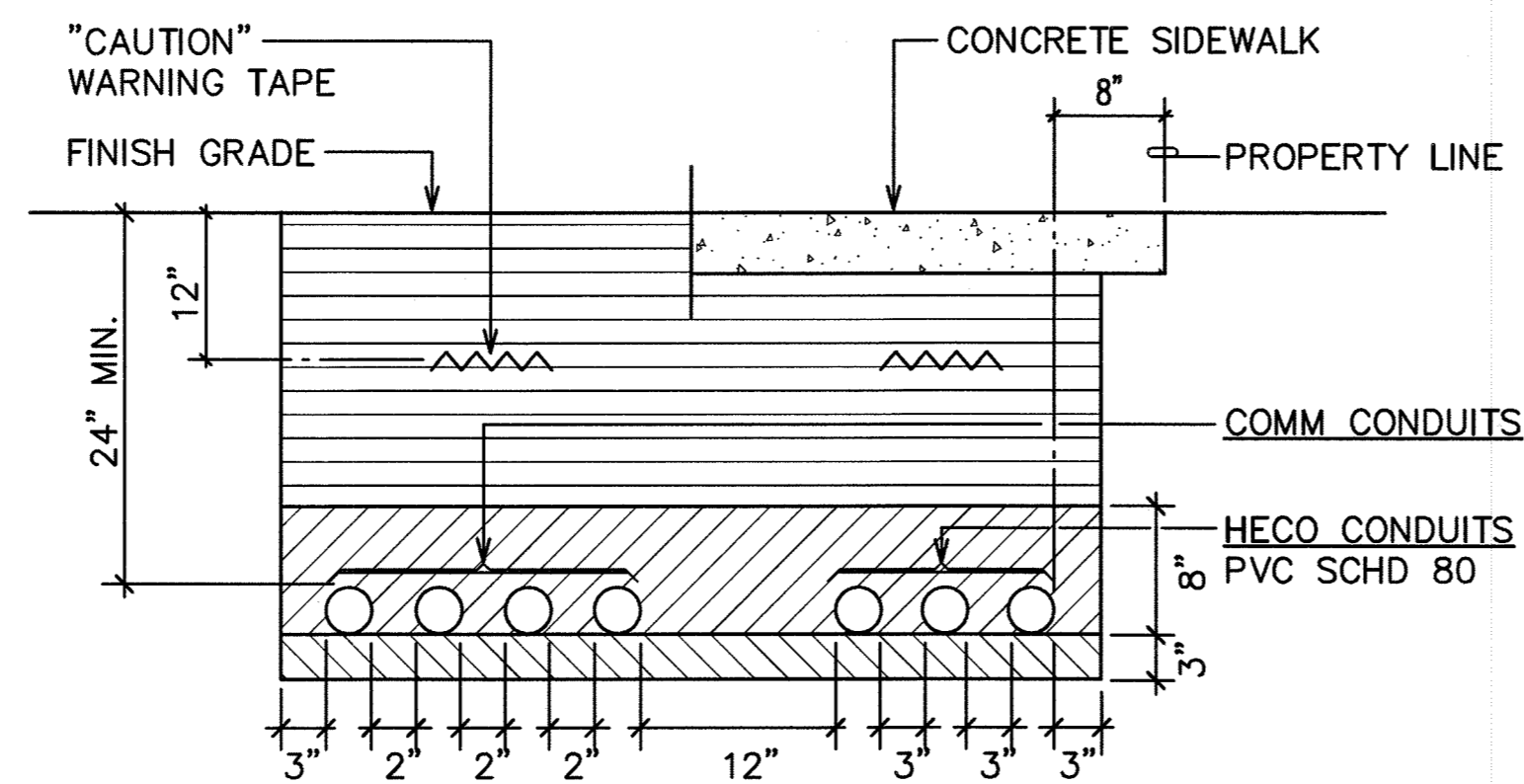


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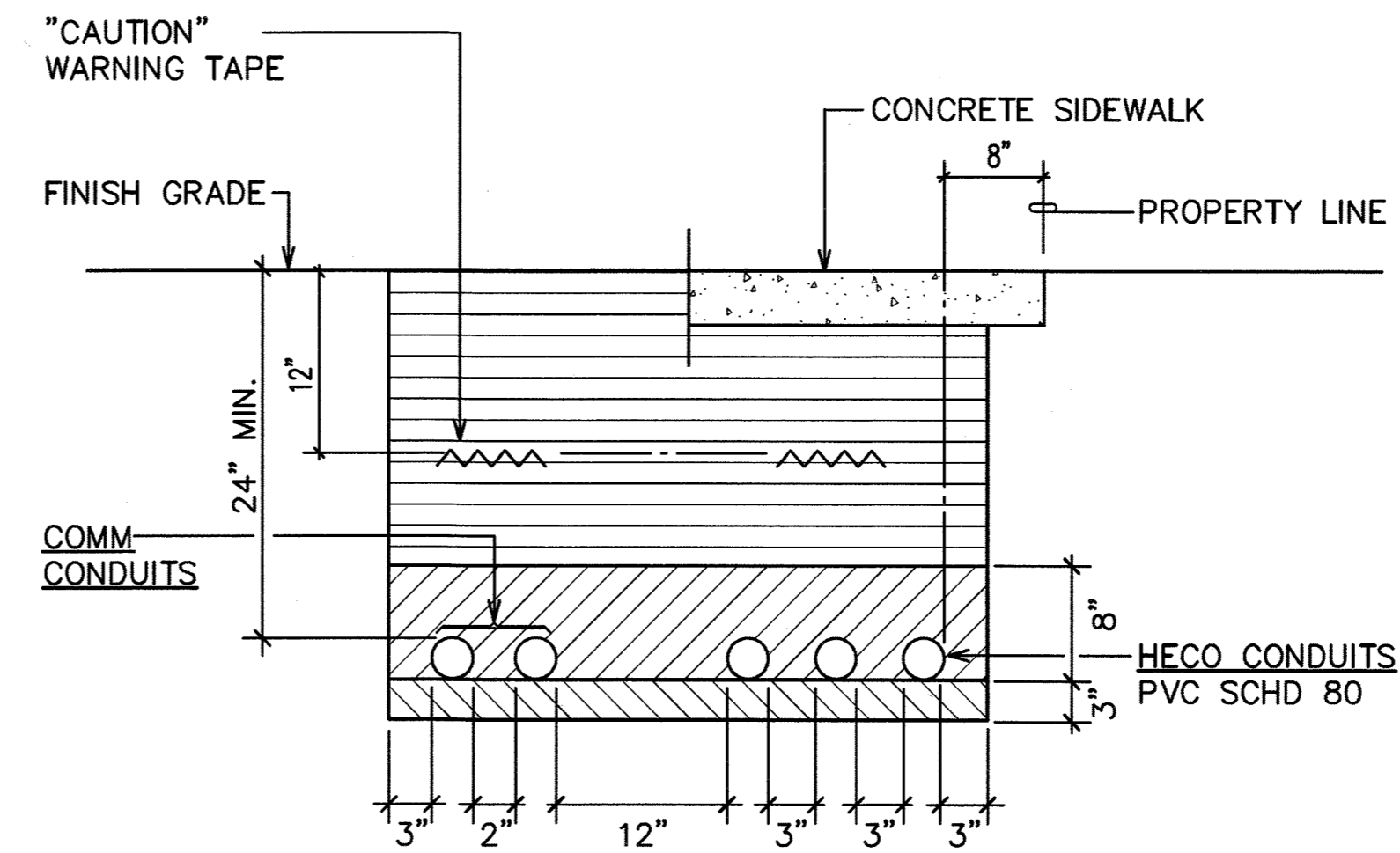
REVISION DATE	DESCRIPTION	MADE BY	APPROVED
<p>Community Planning and Engineering, Inc. Engineering Design Construction Management Infrastructure Planning 1100 Alakoa Street, Sixth Floor Honolulu, Hawaii</p> <p>EAST KAPOLEI II DEVELOPMENT INCREMENT 2B HONOLULU, EWA, OAHU, HAWAII (DPP SUBD. FILE NO. 2011/SUB-155) OWNER & DEVELOPER: DEPARTMENT OF HAWAIIAN HOME LANDS TAX MAP KEY: 9-1-17: Portion 110</p> <p>TYPICAL DUCT SECTIONS I</p>			
DRAWN BY: CAD		ENGINEER: GF	CHECKED BY: GF
APPROVED:			
HAWAIIAN ELECTRIC CO.		DATE: 12/19/12	DATE: 12/19/12
SANDWICH ELEC COMMUNICATIONS, INC.		DATE: 12/19/12	DATE: 12/19/12



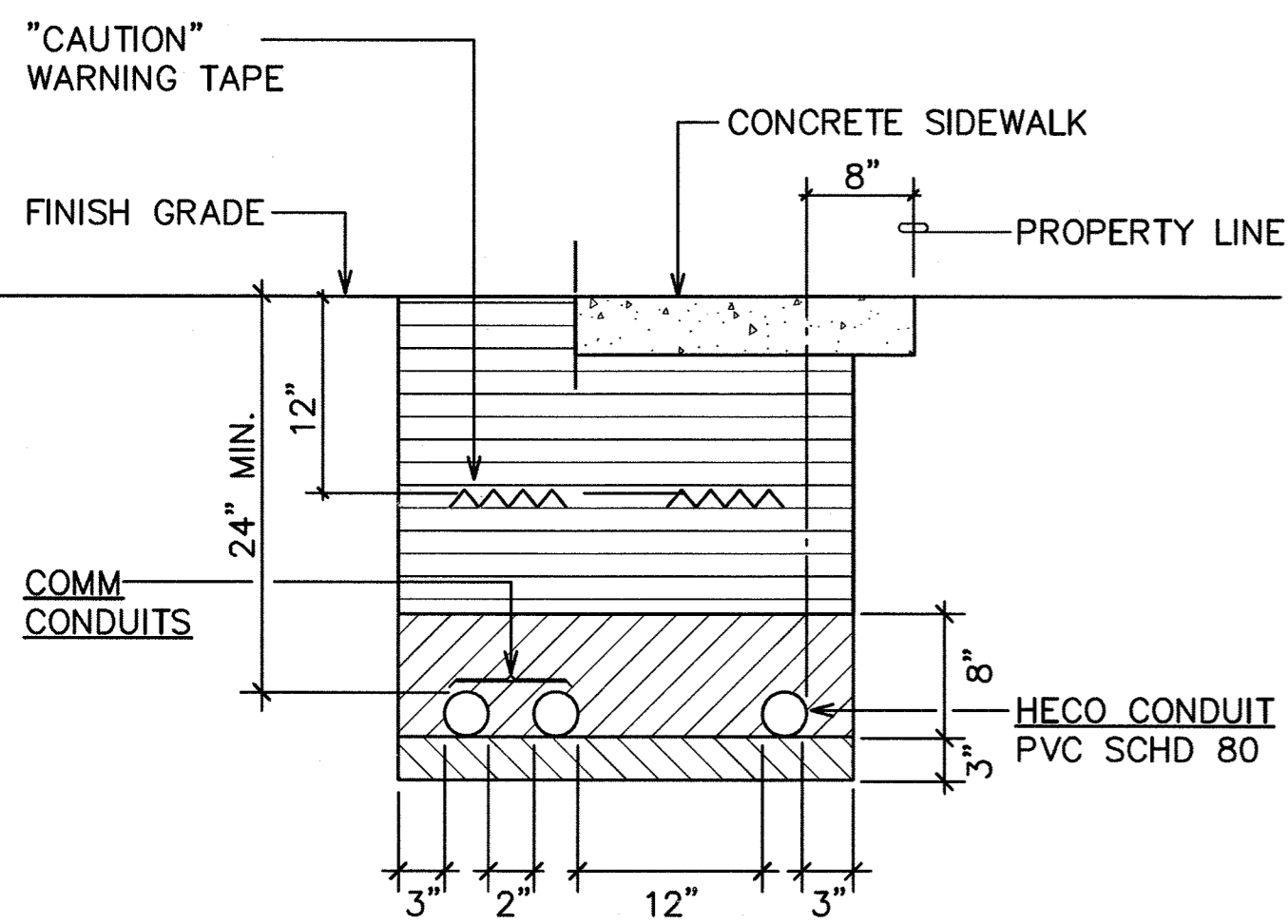
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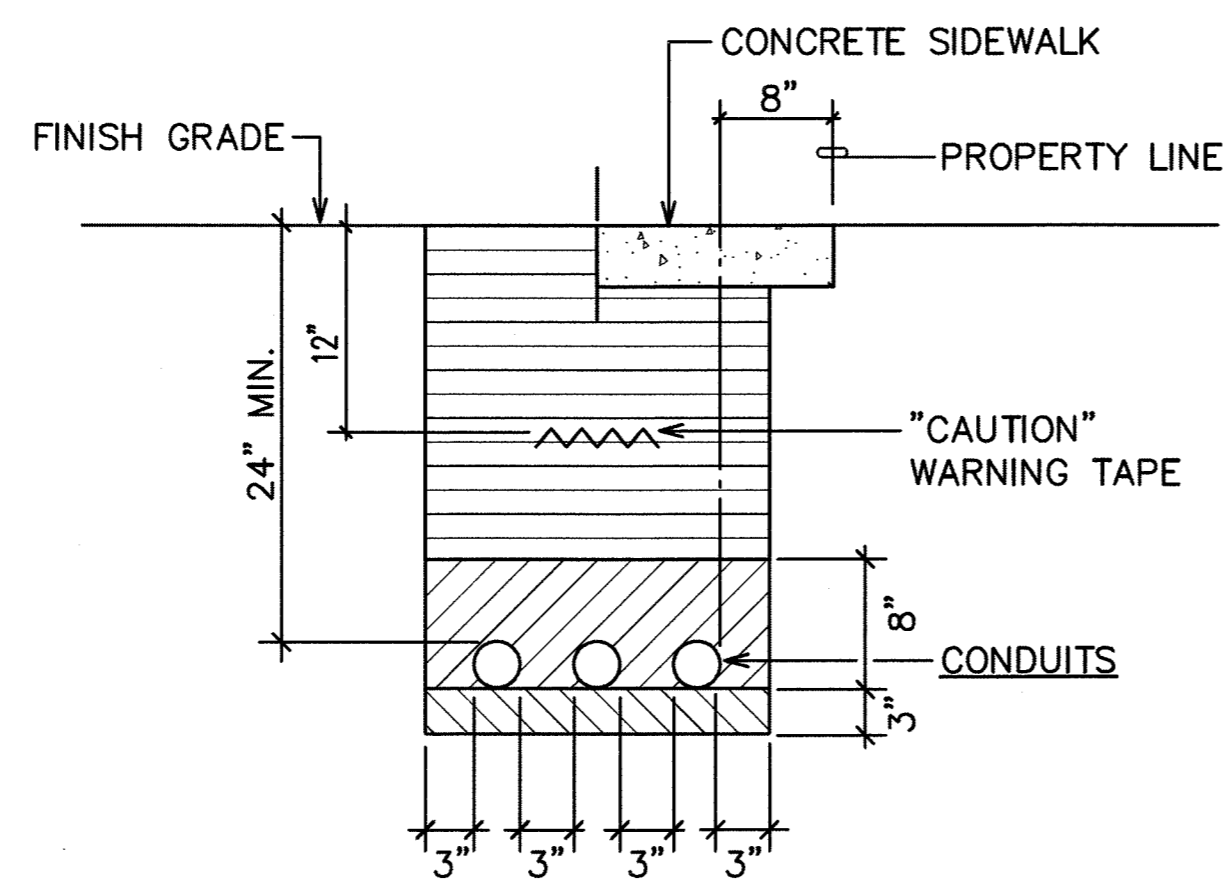
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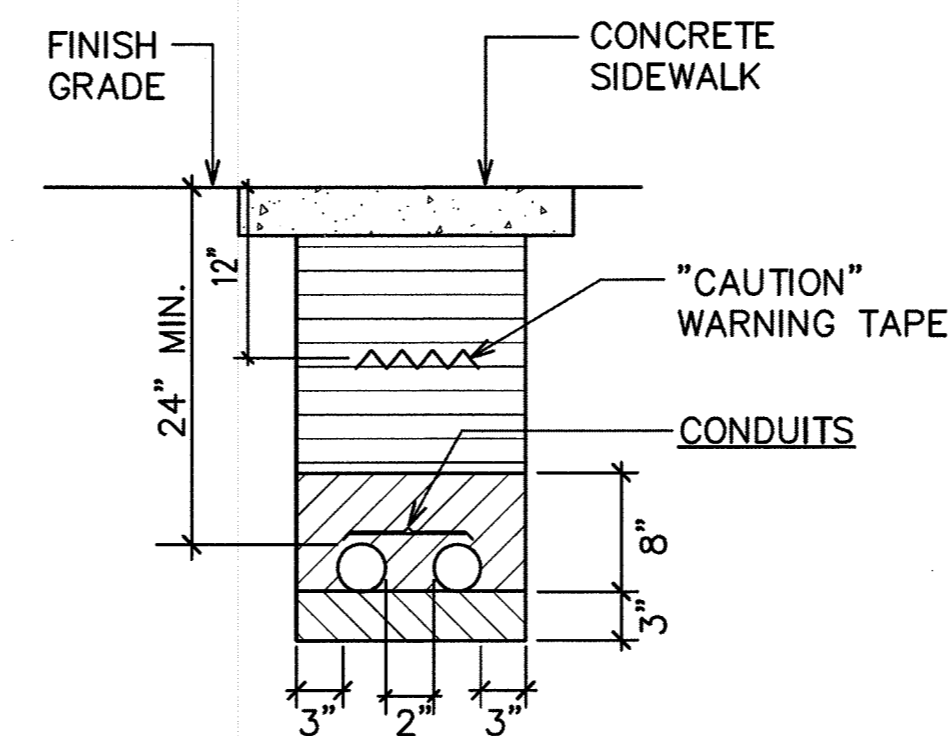
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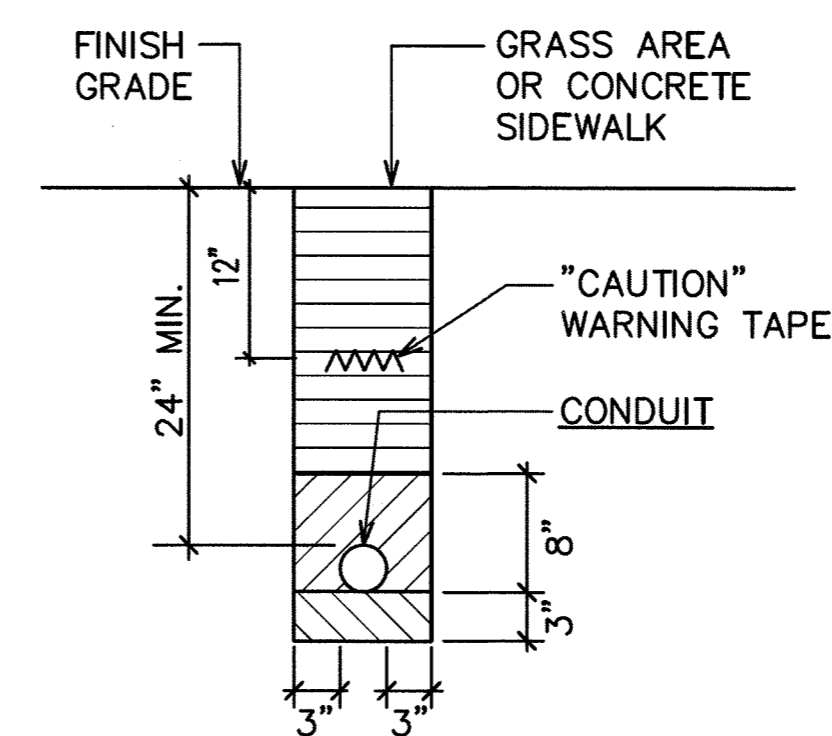
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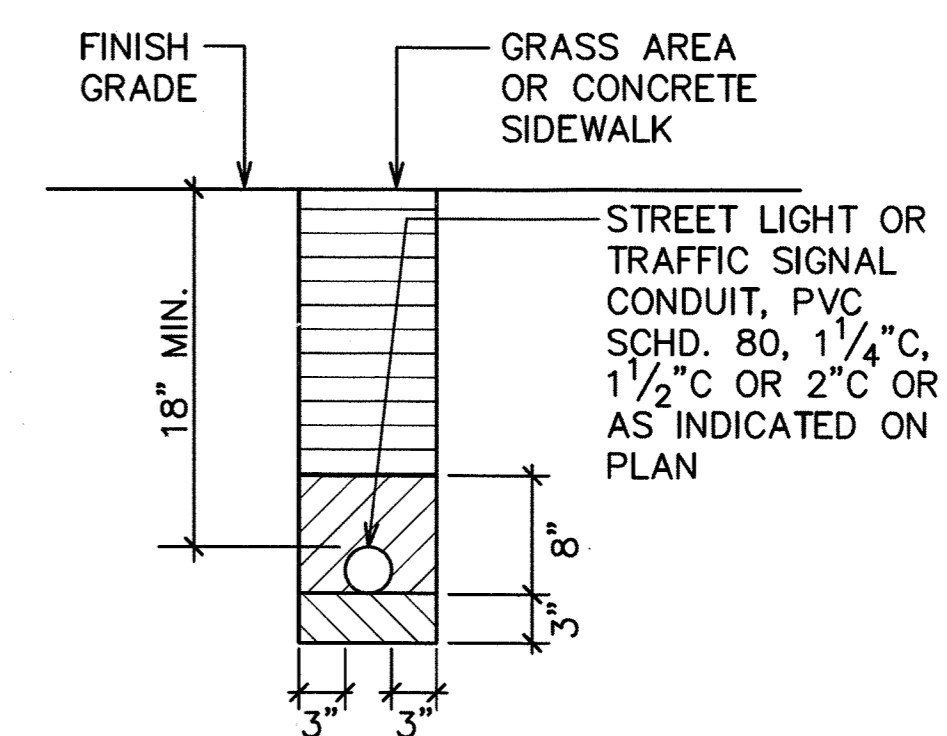
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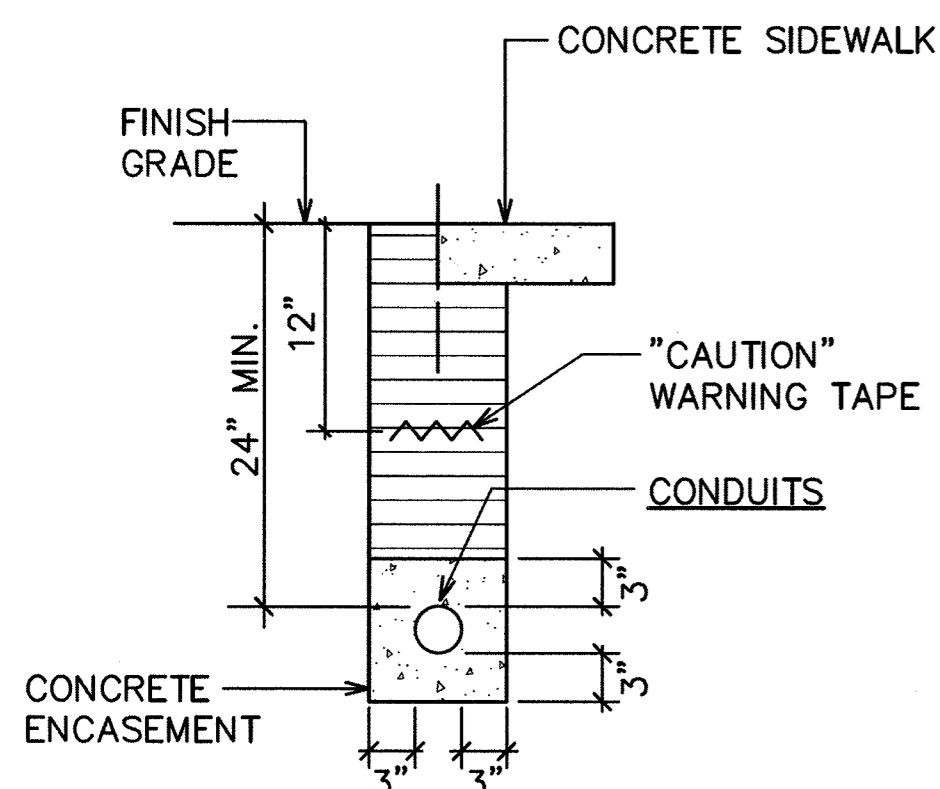
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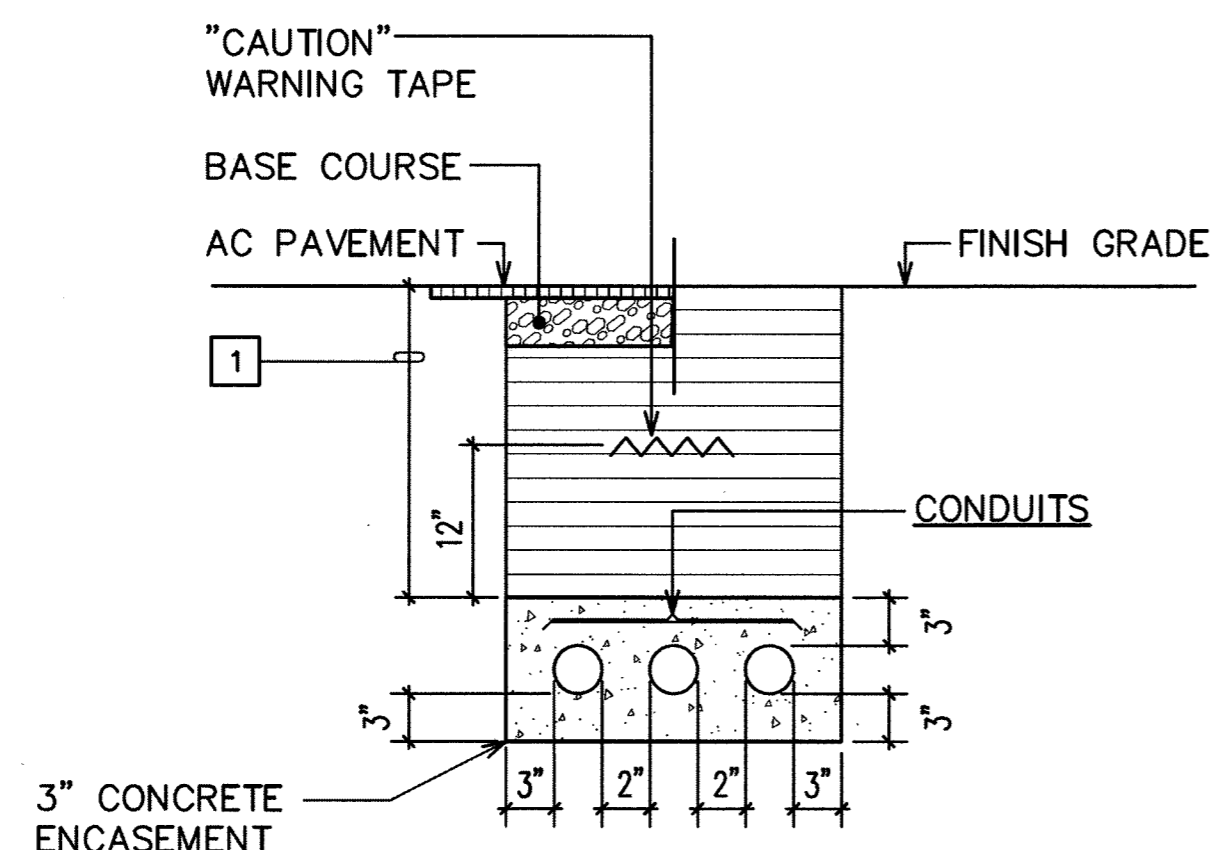
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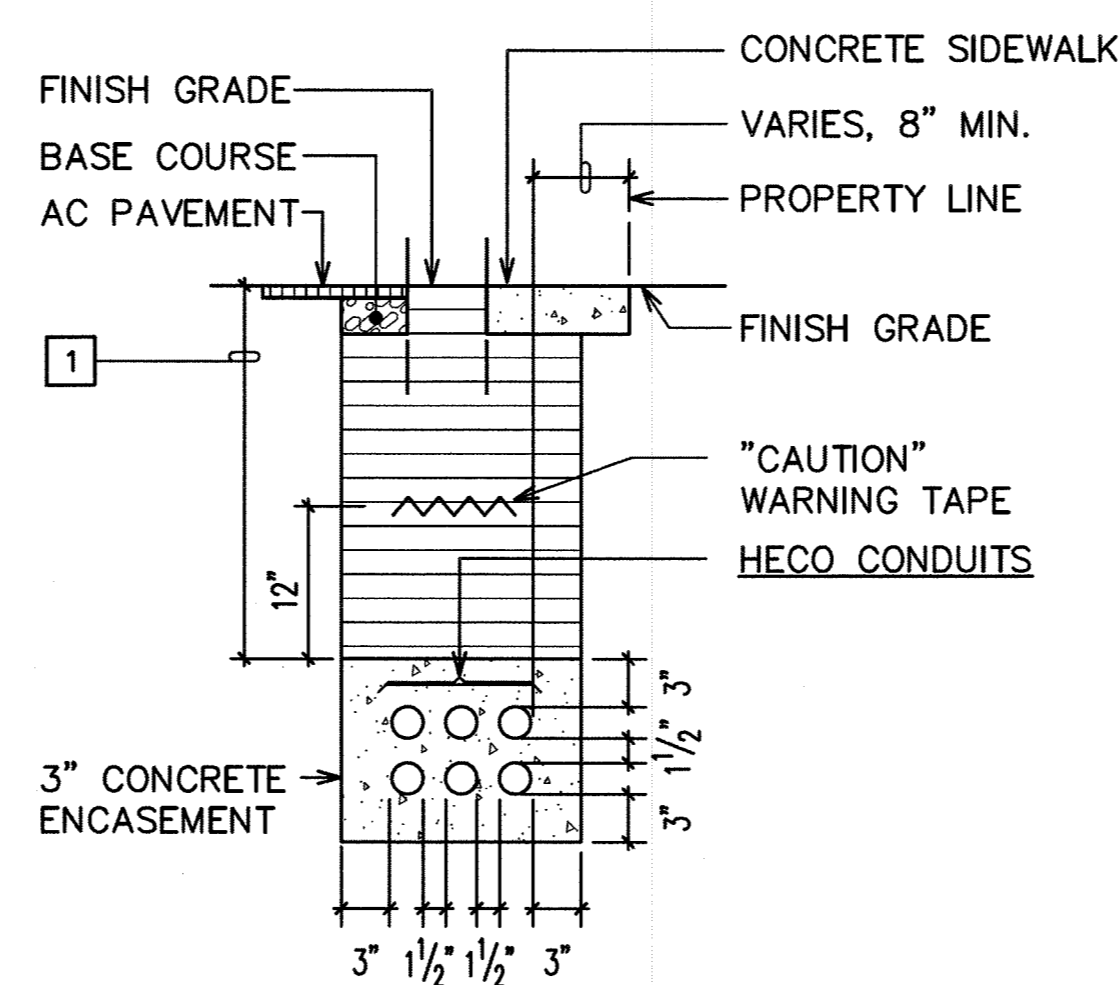
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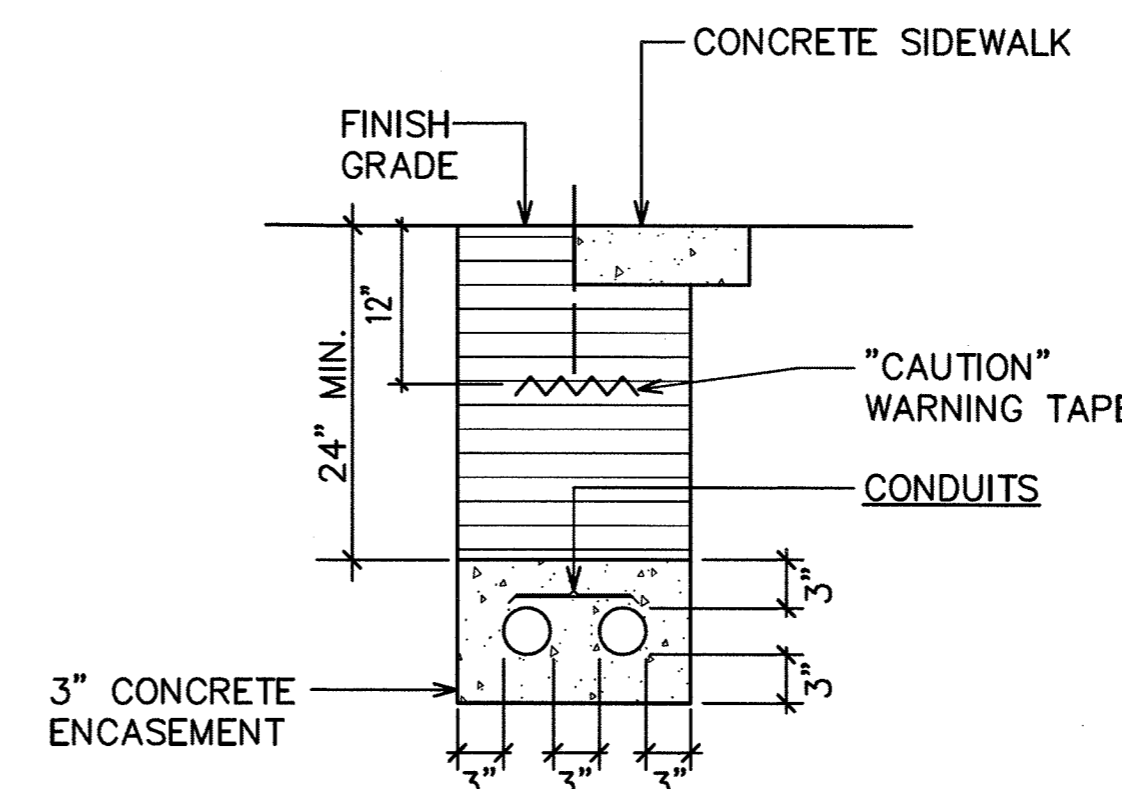
SECTION T



SECTION U



SECTION V



SECTION W

BACKFILL NOTES:

- TYPE "A" BACKFILL - EARTH & GRAVEL. ROCK SIZE TO BE 1" MAX & THE MIXTURE TO CONTAIN NOT MORE THAN 50% BY VOLUME OF ROCK PARTICLES. THE MATERIAL SHALL BE NONEXPANSIVE. 95% COMPACTION.
- TYPE "B" BACKFILL - EARTH & GRAVEL. MIXTURE MUST PASS A 1/2" MESH SCREEN & CONTAIN NOT MORE THAN 20% BY VOLUME OF ROCK PARTICLES. 95% COMPACTION.
- NOTE - IF NORMAL MATERIAL AT BOTTOM OF TRENCH IS NOT TYPE "B", AN ADDITIONAL 3" SHALL BE EXCAVATED & TYPE "B" BACKFILL PROVIDED.
- CONCRETE - 3" ENCASEMENT, 2500 PSI COMPRESSIVE STRENGTH @ 28 DAYS.

NOTES:

- DEPTH VARIES; 36" MIN. UNDER AC PAVEMENT, AND 24" MIN. BEYOND AC PAVEMENT.
- SEE CIVIL DETAILS FOR CONSTRUCTION OF IMPROVEMENTS IN CITY ROADWAY RIGHT-OF-WAY.

NOTE: SEE PLAN SHEETS FOR QUANTITY & SIZE OF CONDUITS

TYPICAL DUCT SECTIONS 2

NOT TO SCALE

DRAWING REVIEW

Reviewed for HECO's Facilities Only

Date 12/18/12 By [Signature]

Customer Installation Department
Hawaiian Electric Company, Inc.

HECO's review of these drawings shall in no way relieve the Customer, its Consultant, its Contractor or anyone acting on the Customer's behalf of their responsibility for engineering, design, materials and any other liability associated with this project.

APPROVED BY:

M. [Signature] 6/28/13
CHIEF, CIVIL ENGINEERING BRANCH
DEPT. OF PLANNING AND PERMITTING
[Signature] 1/28/13
CHIEF, TRAFFIC SIGNALS AND TECHNOLOGY
DEPT. OF TRANSPORTATION SERVICES

GARY I. FUNASAK
LICENSED PROFESSIONAL ENGINEER
No. 495-E
HAWAII, U.S.A.
13 NOV 2012

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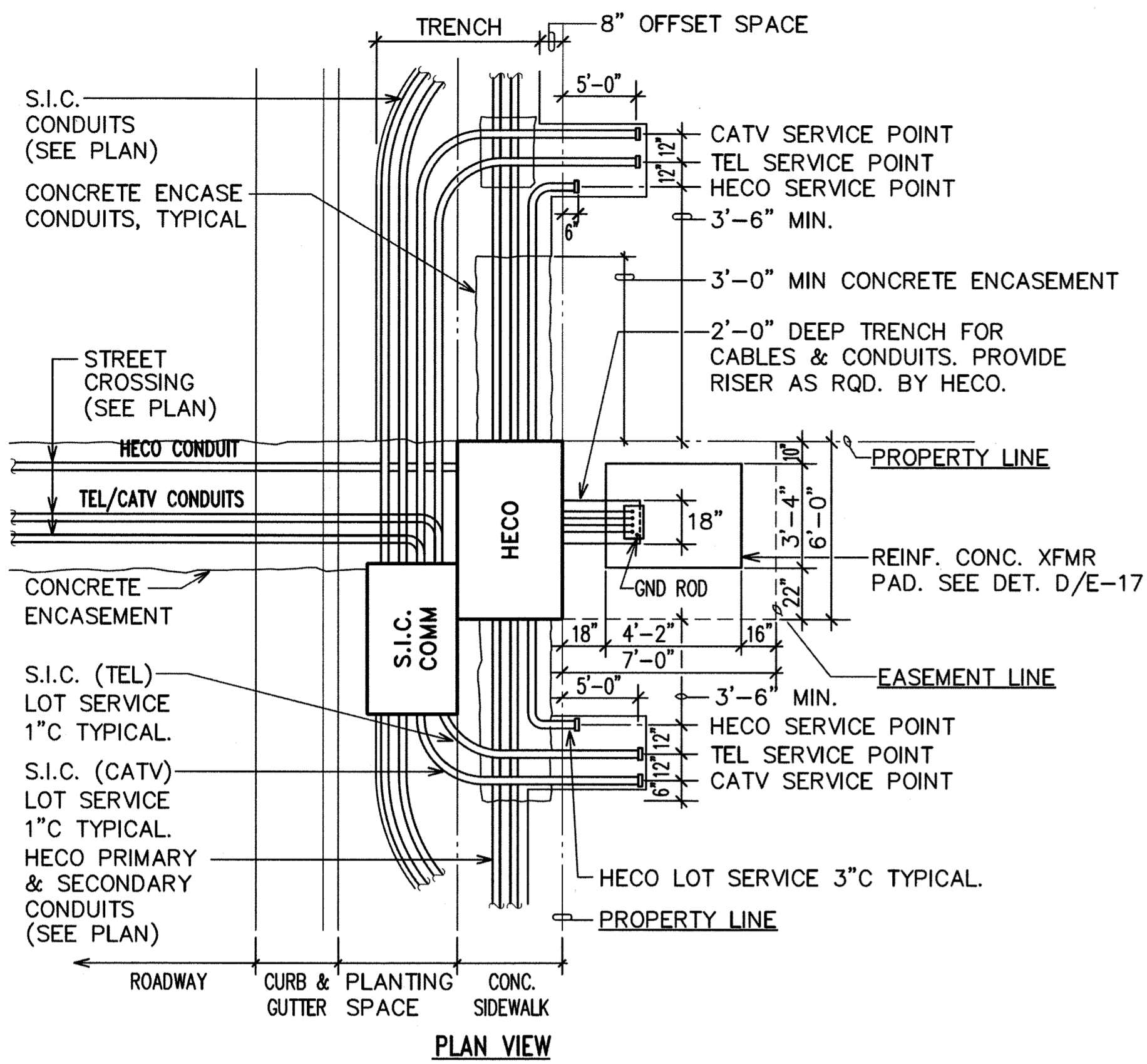
Community Planning and Engineering, Inc.
Engineering Design | Construction Management | Infrastructure Planning
1100 Alahehe Street, 8th Floor Honolulu, Hawaii

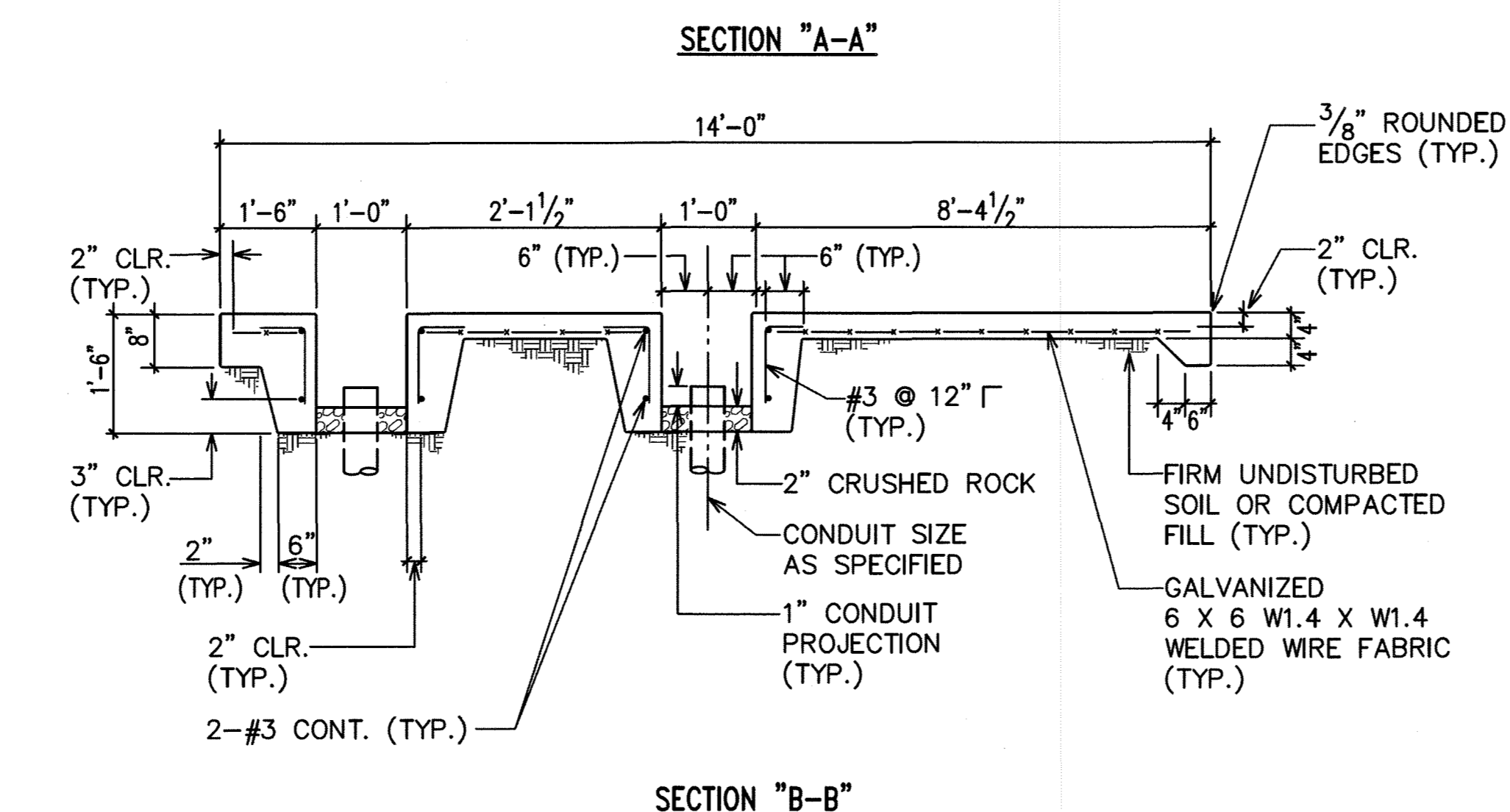
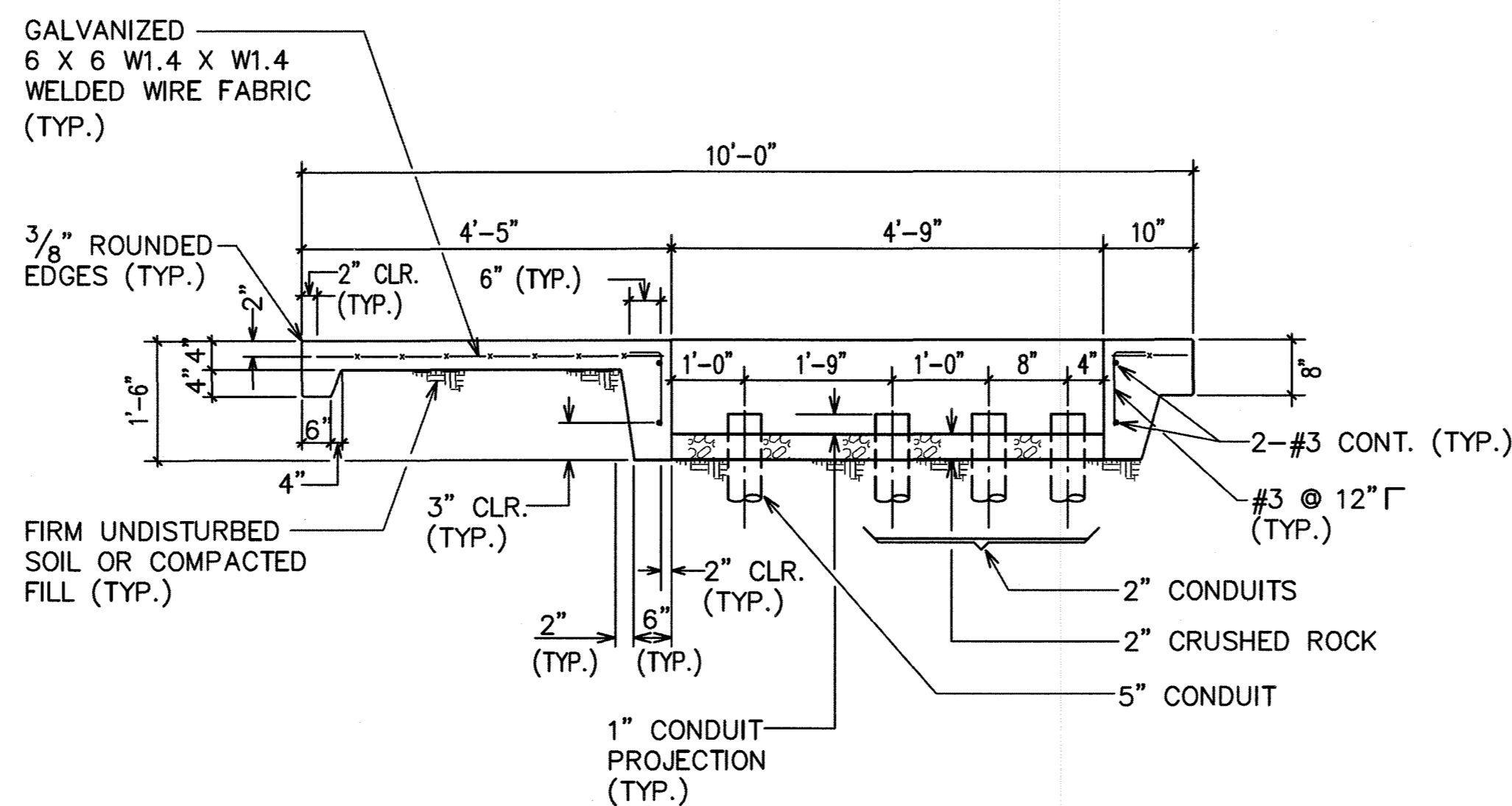
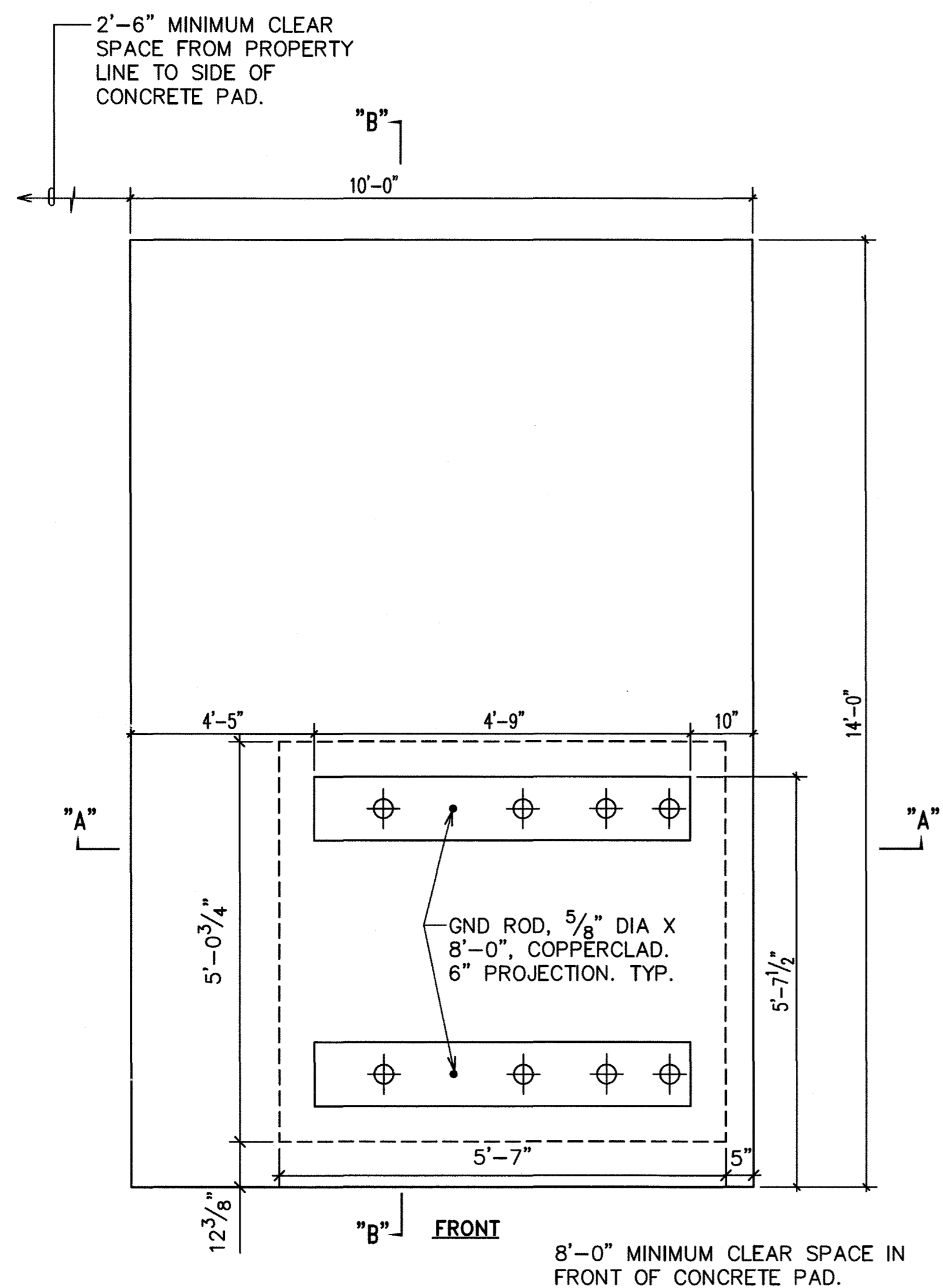
EAST KAPOLEI II DEVELOPMENT INCREMENT 2B
HONOLULU, EWA, OAHU, HAWAII
(OPP SUBD. FILE NO. 2011/SUB-155)
OWNER & DEVELOPER: DEPARTMENT OF HAWAIIAN HOME LANDS
TAX MAP KEY: 9-1-17: Portion 110

TYPICAL DUCT SECTIONS II

DRAWN BY: CAD	ENGINEER: GF	CHECKED BY: GF
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APPROVED: [Signature] 12/19/12
HAWAIIAN ELECTRIC CO. DATE
[Signature] 1/21/2013
SANDWICH EYES COMMUNICATIONS, INC. DATE

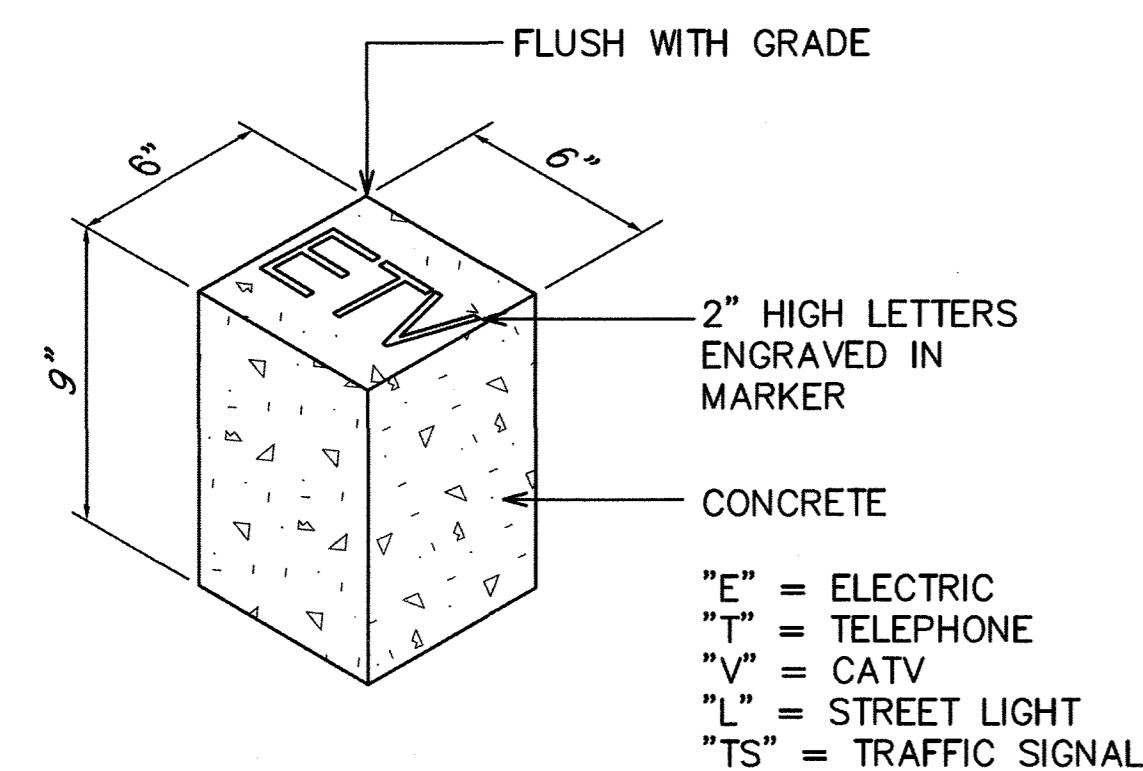




NOTES:

- CONCRETE COMPRESSIVE STRENGTH: 3000 PSI 28 DAYS. HECO STD. SPECIFICATION CS7401.
- REINFORCING: CLEAN AND NEW ROUND DEFORMED BARS (GR 40) AND GALVANIZED 6 X 6 W1.4 X W1.4 WELDED WIRE FABRIC.
- TOP OF CONCRETE PAD TO BE SMOOTH AND TRUE. OTHER EXPOSED SURFACES TO BE SMOOTH AND FREE FROM DEFECTS.
- REFER TO STD. 30-5002 FOR SLOPE AND RETAINING WALL CLEARANCE REQUIREMENTS FOR SURROUNDING PROPERTY. WATER SPRINKLER SHOULD BE COORDINATED WITH THE LANDSCAPE ARCHITECT SO AS TO NOT SPRAY WATER ONTO ELECTRICAL EQUIPMENT.
- CONSTRUCTION TO COMPLY WITH ACI 318 AS AMENDED.
- WEIGHT OF SWITCHGEAR EQUALS 2,150 POUNDS.

A AUTOMATIC TRANSFER SWITCHING EQUIPMENT PAD E-18 NOT TO SCALE



B CONCRETE STUB UP MARKER E-18 NOT TO SCALE

CONDUIT SCHEDULE

ITEM	DESCRIPTION
(2E)	HECO 2" CONDUIT
(2-2)	HECO 2-2" CONDUITS
(3-2)	HECO 3-2" CONDUITS
(6-2)	HECO 6-2" CONDUITS
(3E)	HECO 3" CONDUIT
(2-3)	HECO 2-3" CONDUITS
(4E)	HECO 4" CONDUIT
(2-4)	HECO 2-4" CONDUITS
(4-4)	HECO 4-4" CONDUITS
(2-5)	HECO 2-5" CONDUITS
(4-5)	HECO 4-5" CONDUITS
(2-10)	SANDWICH ISLES COMM UD(2x1-1")
(4-10)	SANDWICH ISLES COMM UD(4x1-1")
(6-10)	SANDWICH ISLES COMM UD(3x2-1")
(8-10)	SANDWICH ISLES COMM UD(4x2-1")
(12-10)	SANDWICH ISLES COMM UD(6x2-1")
(4C)	SANDWICH ISLES COMM UD(1x1-4")
(2-4C)	SANDWICH ISLES COMM UD(2x1-4")
(4-4C)	SANDWICH ISLES COMM UD(2x2-4")
(6-4C)	SANDWICH ISLES COMM UD(3x2-4")
(1/4)	STREET LIGHT 1 1/4" CONDUIT WITH WIRING
(1/2)	STREET LIGHT 1 1/2" CONDUIT WITH WIRING
(2L)	STREET LIGHT 2" CONDUIT WITH WIRING
(2S)	TRAFFIC SIGNAL 2" CONDUIT
(2-2S)	TRAFFIC SIGNAL 2-2" CONDUITS
(2V)	CATV 2" CONDUIT
(4V)	CATV 4" CONDUIT
(2-4V)	CATV 2-4" CONDUIT
(2VS)	CATV 2" POWER SUPPLY CONDUIT
(1P)	SECONDARY POWER 1" CONDUIT
(2P)	SECONDARY POWER 2" CONDUIT
(2-2P)	SECONDARY POWER 2-2" CONDUITS
(3-2P)	SECONDARY POWER 3-2" CONDUITS
(3P)	SECONDARY POWER 3" CONDUIT

NOTE: DASHED SYMBOL INDICATES EXST

DRAWING REVIEW

Reviewed for HECO's Facilities Only

Date 1/28/13 By [Signature]

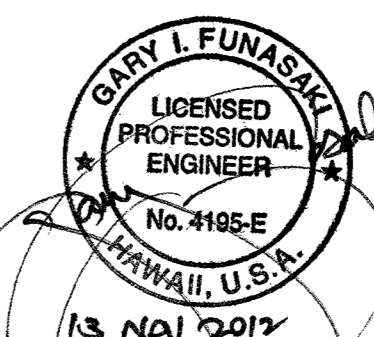
Customer Installation Department
Hawaiian Electric Company, Inc.

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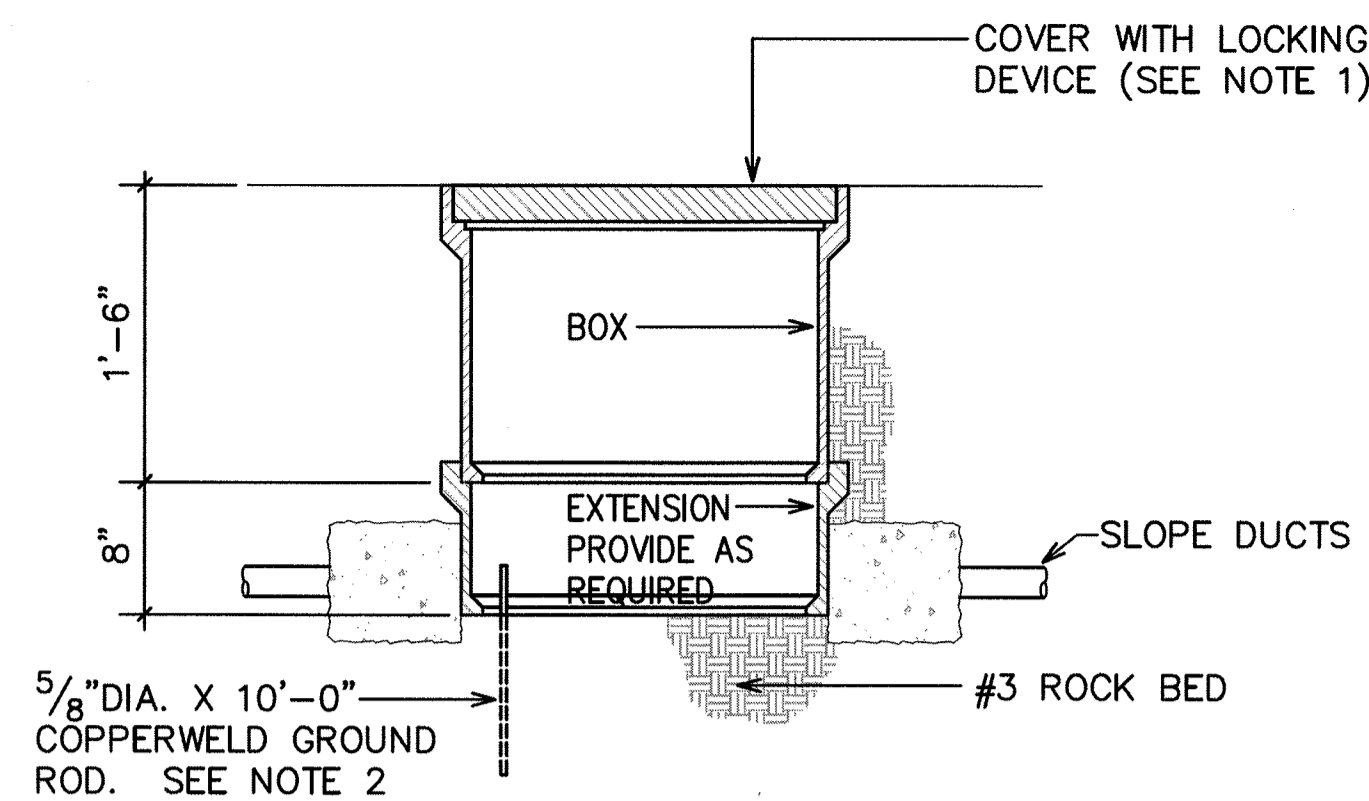
[Signature]
CHIEF, TRAFFIC SIGNALS AND TECHNOLOGY
DEPT. OF TRANSPORTATION SERVICES
CITY & COUNTY OF HONOLULU

1/28/13
DATE



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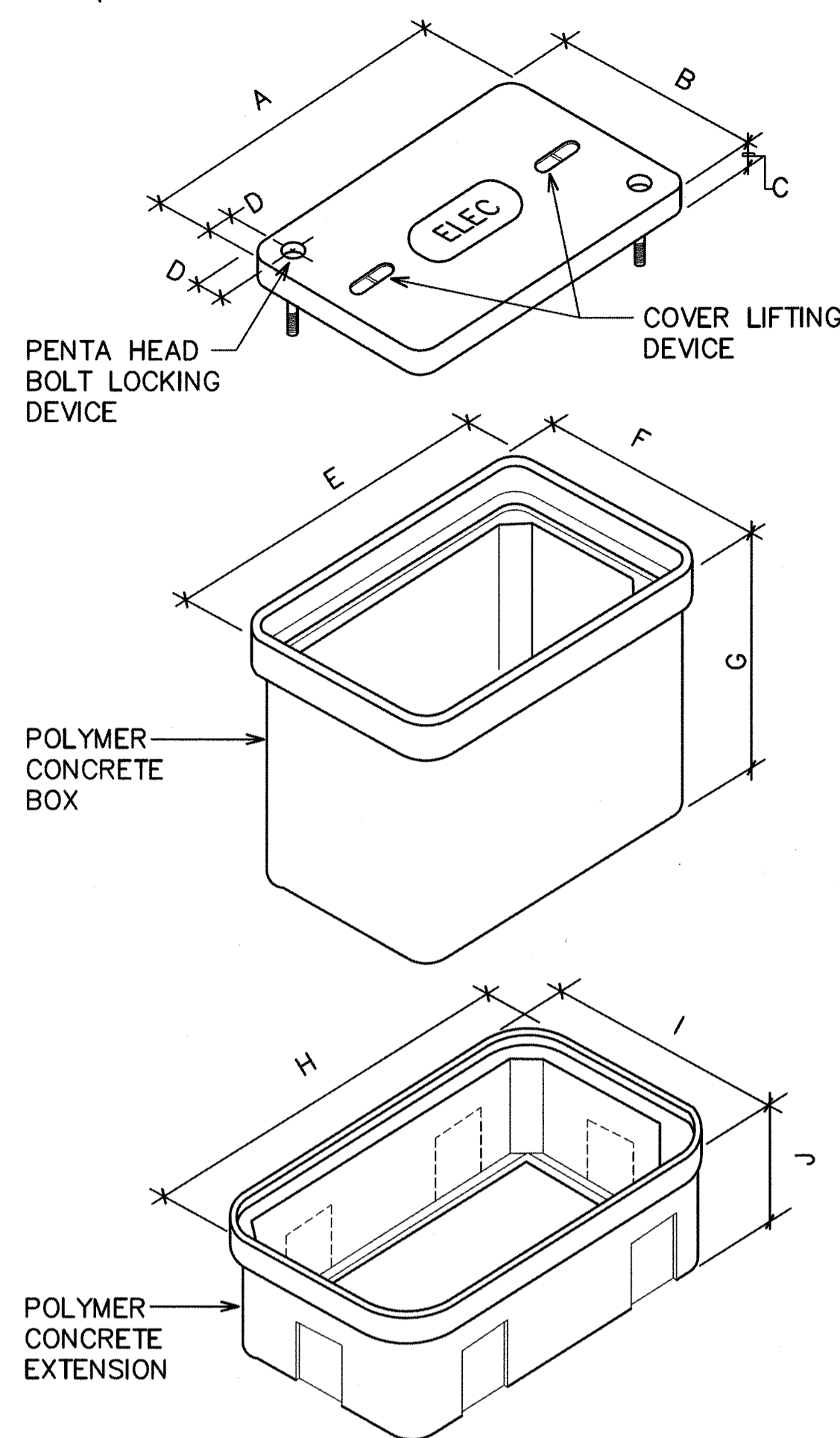
REVISION DATE	DESCRIPTION	MADE BY	APPROVED
<p>Community Planning and Engineering, Inc. Engineering Design Construction Management Infrastructure Planning 1100 Alakoa Street, Sixth Floor Honolulu, Hawaii</p> <p>EAST KAPOLEI II DEVELOPMENT INCREMENT 2B HONOLULU, EWA, OAHU, HAWAII (OPP SUBD. FILE NO. 2011/SUB-155) OWNER & DEVELOPER: DEPARTMENT OF HAWAIIAN HOME LANDS TAX MAP KEY: 9-1-17: Portion 110</p> <p>MISCELLANEOUS DETAILS & SCHEDULES</p>			
DRAWN BY: CAD	ENGINEER: GF	CHECKED BY: GF	APPROVED:
<p>HAWAIIAN ELECTRIC CO. DATE 1/28/13 CHIEF, TRAFFIC REVIEW BRANCH, OPP. DATE 1/28/13 [Signature] SANDWICH ISLES COMMUNICATIONS, INC. DATE 1/28/13 CHIEF, TECHNICAL/ELECTRICAL DIVISION, DDC. DATE 1/28/13</p>			



ELEVATION

NOTES:

- TO PROPERLY SECURE THE COVER, BE SURE THAT THE PENTAHEAD BOLTS ARE IN PLACE AND TIGHTENED. THE PENTA BOLTS SHALL BE FASTENED SECURELY TO THE COVERS (BY MEANS OF A COTTER PIN, FOR EXAMPLE), SO THE BOLTS CANNOT BE EASILY REMOVED FROM THE COVERS, EVEN WHEN THE COVERS ARE REMOVED FROM THE BOXES.
- GROUND ROD SHALL BE INSTALLED IN THE CORNER, 6" FROM EACH WALL AND 6" ABOVE FINAL FLOOR GRADE.
- NON-CONCRETE BOXES, COVERS, AND EXTENSIONS SHALL BE RATED FOR A VERTICAL LOAD OF 20,000 LBS (20K) MINIMUM.

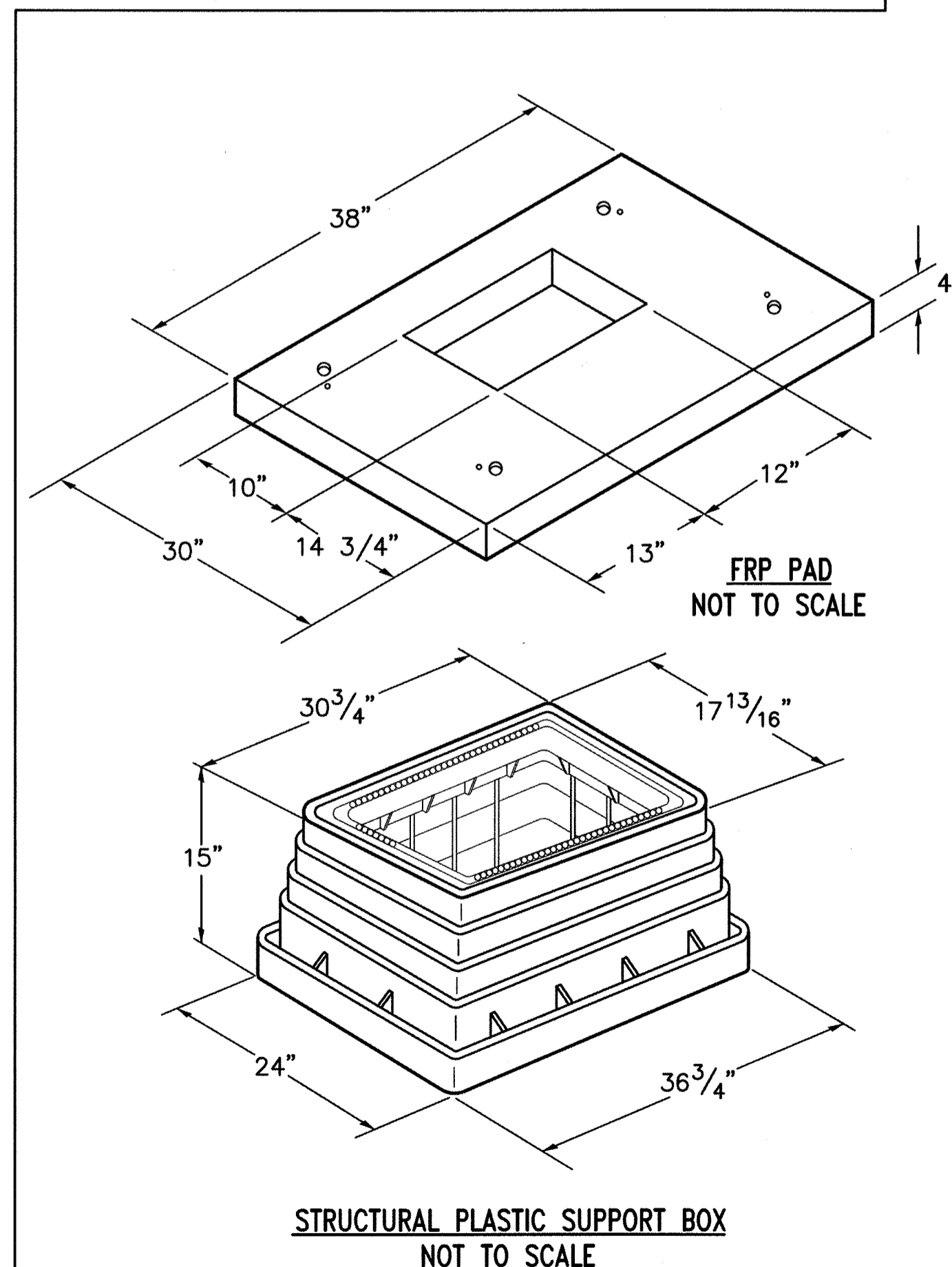


NON-CONCRETE BOX SCHEDULE

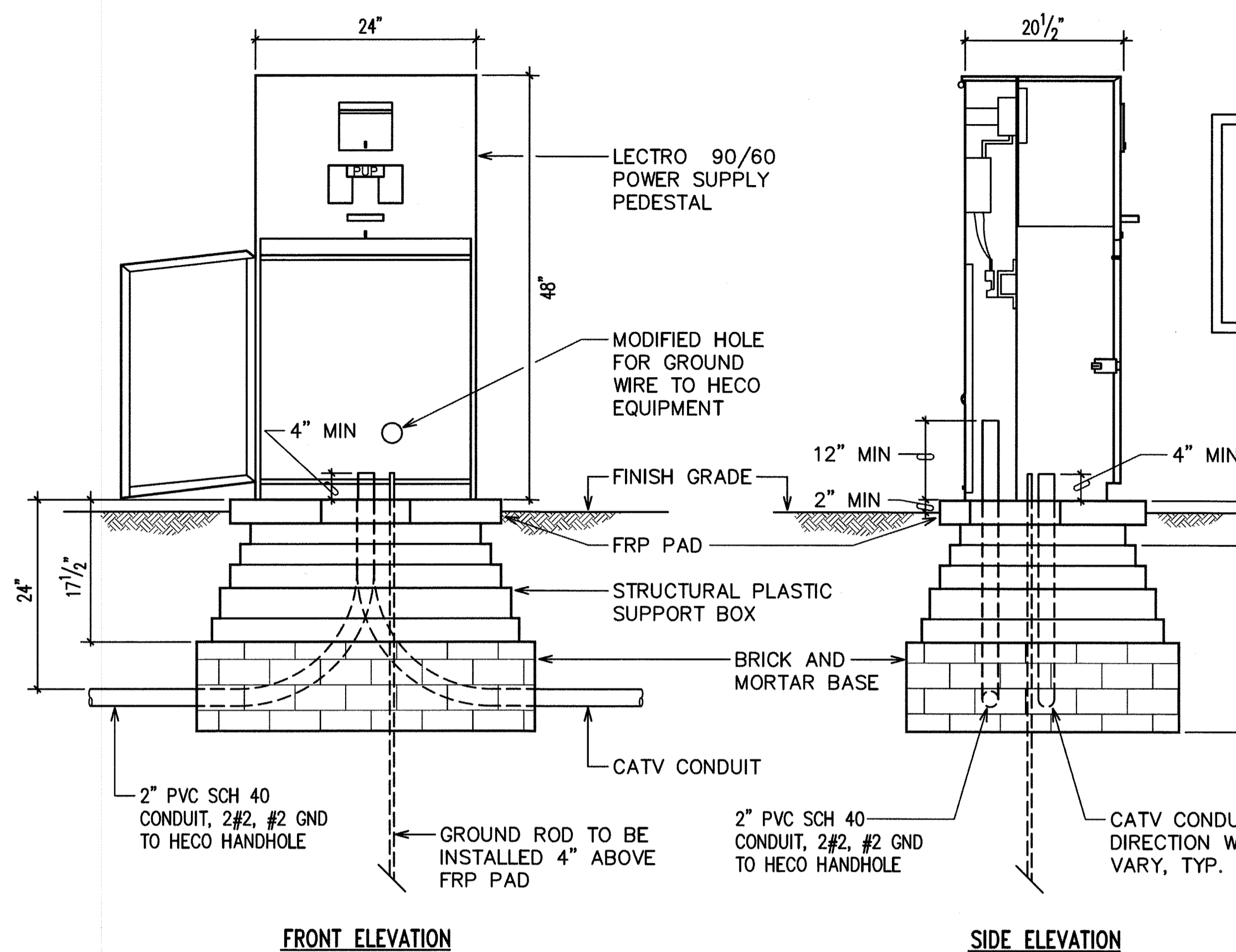
ITEM	13" X 24" PULLBOX	17" X 30" PULLBOX	24" X 36" PULLBOX
A	23 1/4	30 1/2	35 5/8
B	13 3/4	17 1/2	24
C	2	2	3
D	1 3/4	2 1/2	2 3/4
E	24 1/2	31 3/4	36 7/8
F	15	18 3/4	25 1/4
G	18	18	18
H	29 1/4	36 1/2	41 7/8
I	19 3/4	23 1/2	30 1/4
J	9	9	9

NOTE: ALL DIMENSIONS ARE IN INCHES & ARE NOMINAL.

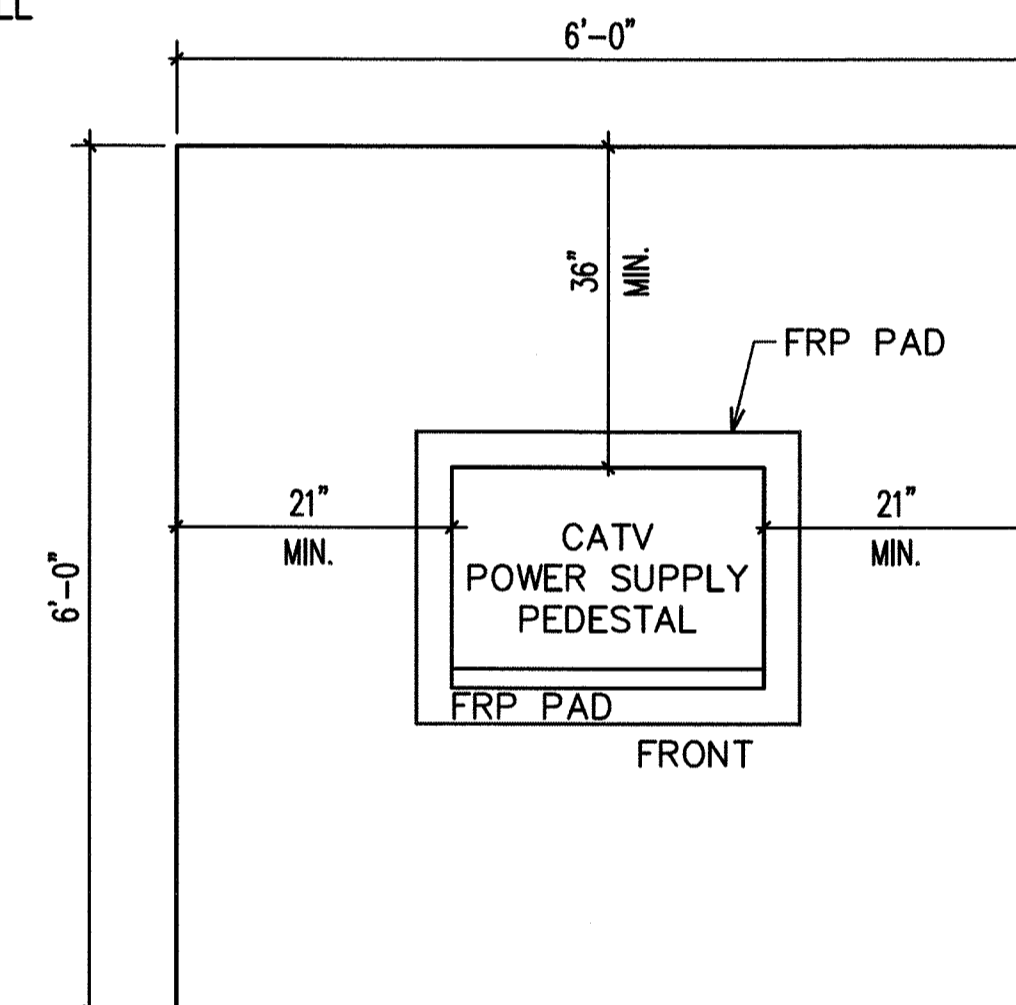
A NON-CONCRETE SIGNAL BOX
E-19 NOT TO SCALE



B CATV POWER SUPPLY PEDESTAL DETAILS
E-19 NOT TO SCALE

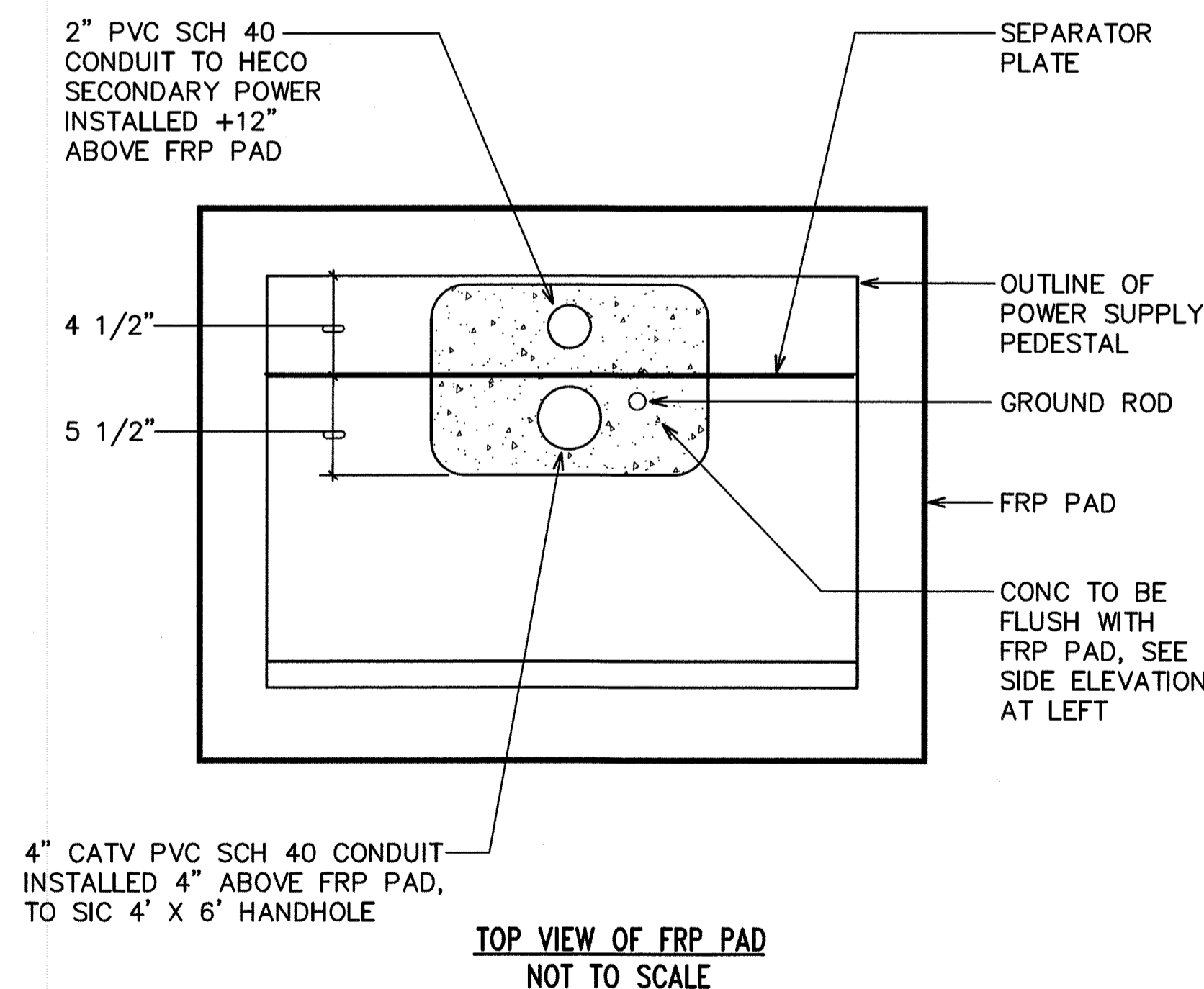


NOTE: POWER SUPPLY PEDESTAL, FRP PAD AND PLASTIC SUPPORT BOX TO BE FURNISHED BY OCEANIC CABLE AND INSTALLED BY CONTRACTOR. COORDINATE PICK UP AT OCEANIC CABLE BASEYARD WITH OCEANIC CABLE'S INSPECTOR. COORDINATE ENERGIZING OF POWER SUPPLY WITH HECO AND OCEANIC CABLE.



CATV 6'-0" X 6'-0" EASEMENT

EASEMENT SITE PLAN
NOT TO SCALE



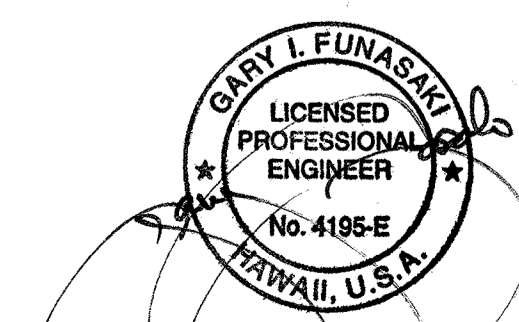
DRAWING REVIEW

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Date 12/19/12 By [Signature]

Customer Installation Department
Hawaiian Electric Company, Inc.

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REVISION DATE	DESCRIPTION	MADE BY	APPROVED

Community Planning and Engineering, Inc.
Engineering Design | Construction Management | Infrastructure Planning
1100 Alakoa Street, Sixth Floor Honolulu, Hawaii

EAST KAPOLEI II DEVELOPMENT INCREMENT 2B
HONOLULU, EWA, OAHU, HAWAII
(OPP SUBD. FILE NO. 2011/SUB-155)
OWNER & DEVELOPER: DEPARTMENT OF HAWAIIAN HOME LANDS
TAX MAP KEY: 9-1-17: Portion 110

CATV POWER SUPPLY & PULLBOX DETAILS

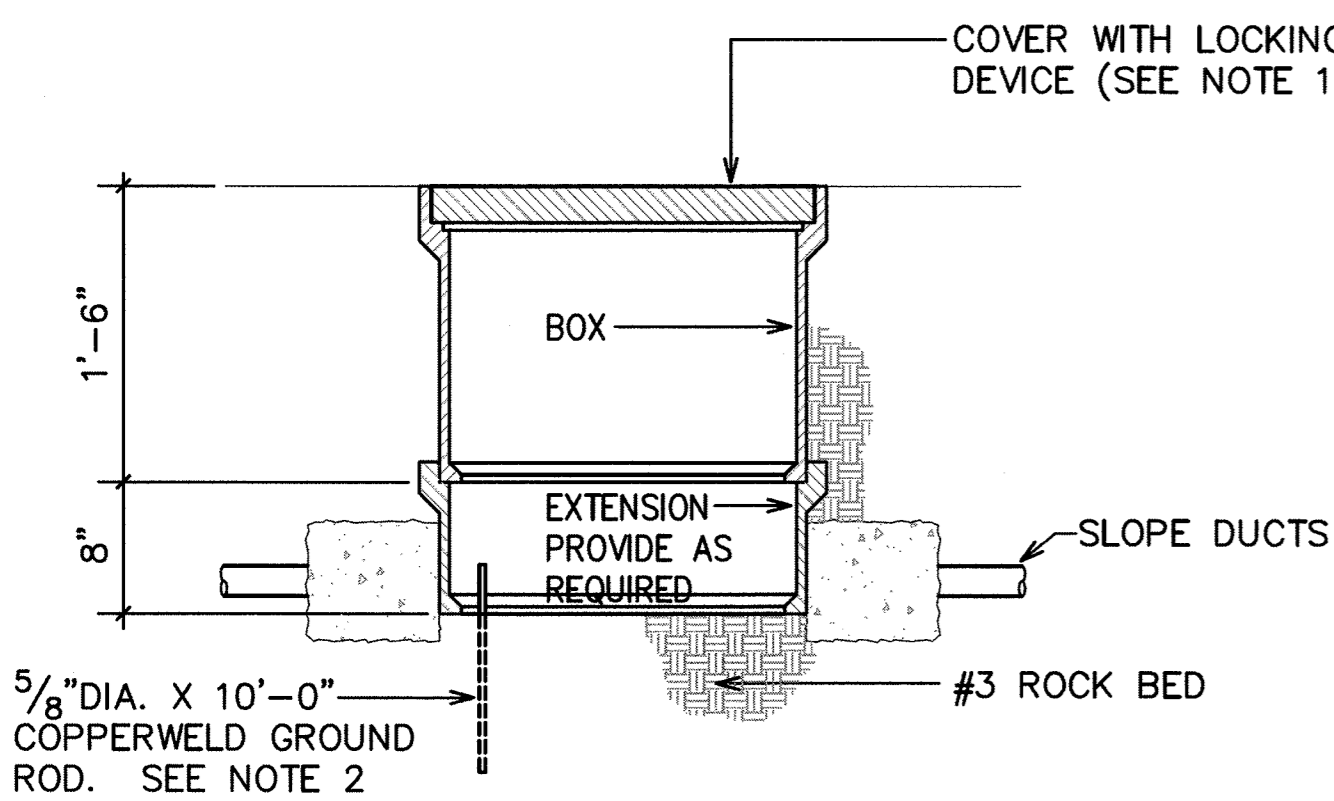
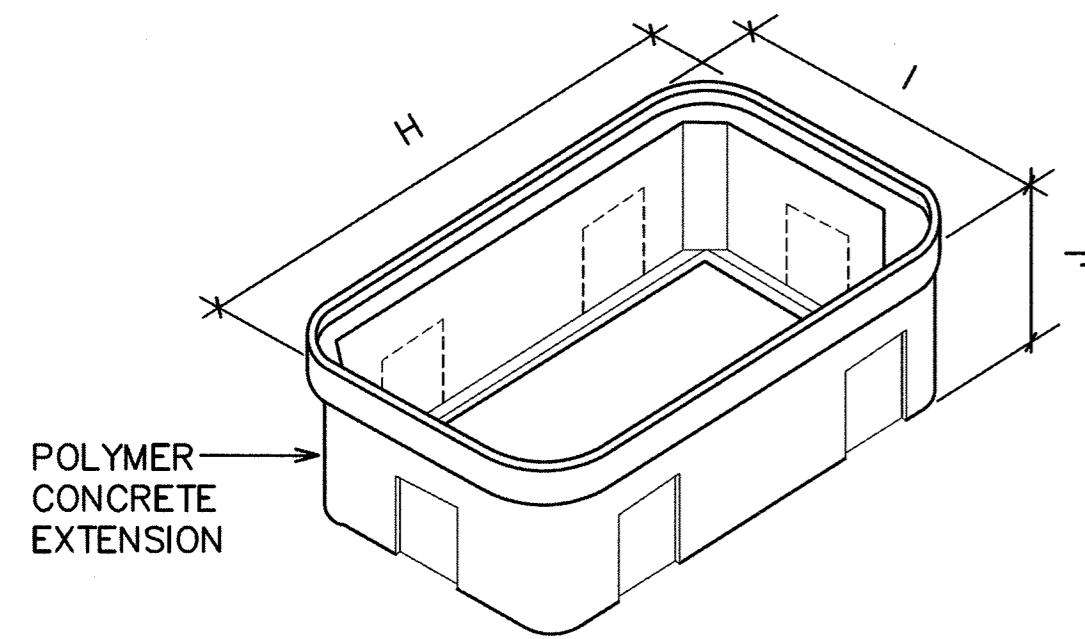
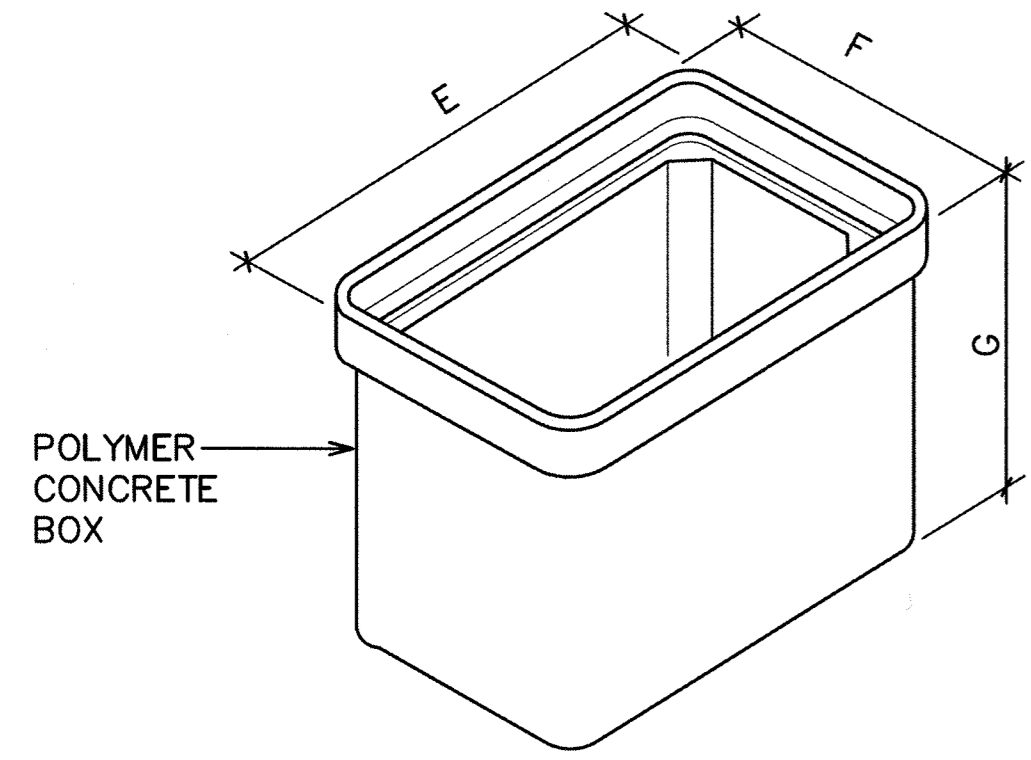
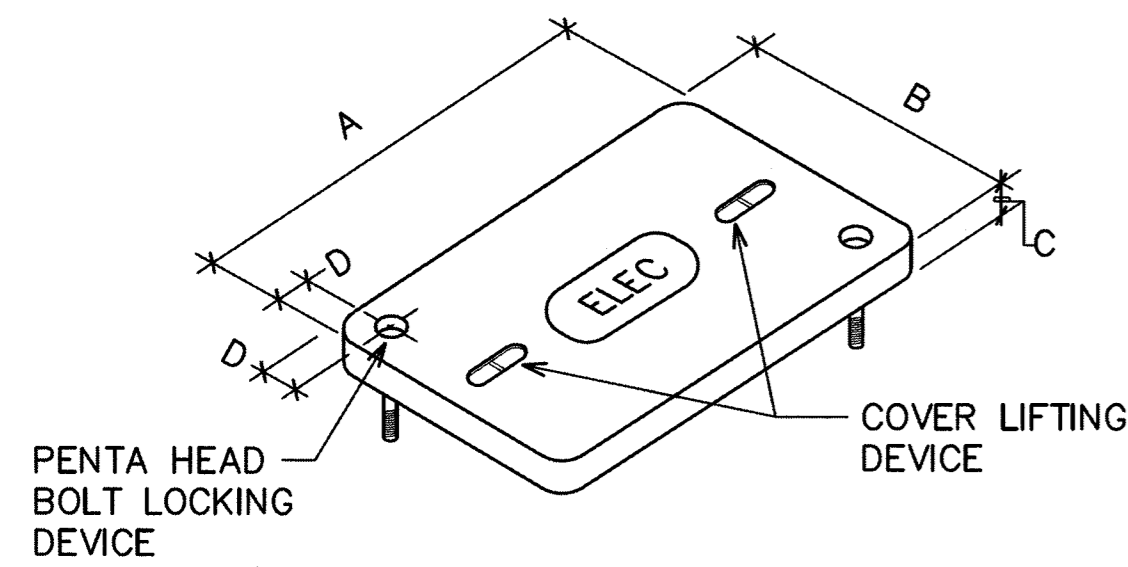
DRAWN BY: CAD ENGINEER: GF CHECKED BY: GF

APPROVED: [Signature]

HAWAIIAN ELECTRIC CO. DATE OCEANIC TIME WARNER CABLE DATE

12/19/12

SANDWICH COMMUNICATIONS, INC. DATE



ELEVATION

A
E-21 **NON-CONCRETE SECONDARY POWER PULLBOX DETAIL**
NOT TO SCALE

NOTES:

1. TO PROPERLY SECURE THE COVER, BE SURE THAT THE PENTAHEAD BOLTS ARE IN PLACE AND TIGHTENED. THE PENTA BOLTS SHALL BE FASTENED SECURELY TO THE COVERS (BY MEANS OF A COTTER PIN, FOR EXAMPLE), SO THE BOLTS CANNOT BE EASILY REMOVED FROM THE COVERS, EVEN WHEN THE COVERS ARE REMOVED FROM THE BOXES.
2. GROUND ROD SHALL BE INSTALLED IN THE CORNER, 6" FROM EACH WALL AND 6" ABOVE FINAL FLOOR GRADE.
3. NON-CONCRETE BOXES, COVERS, AND EXTENSIONS SHALL BE RATED FOR A VERTICAL LOAD OF 20,000 LBS (20K) MINIMUM.

NON-CONCRETE BOX SCHEDULE			
ITEM	13" X 24" PULLBOX	17" X 30" PULLBOX	24" X 36" PULLBOX
A	23 1/4	30 1/2	35 5/8
B	13 3/4	17 1/2	24
C	2	2	3
D	1 3/4	2 1/2	2 3/4
E	24 1/2	31 3/4	36 7/8
F	15	18 3/4	25 1/4
G	18	18	18
H	29 1/4	36 1/2	41 7/8
I	19 3/4	23 1/2	30 1/4
J	9	9	9

NOTE: ALL DIMENSIONS ARE IN INCHES & ARE NOMINAL.

KIM-AR SERIES
MANUF. CAT. NO.:
1A/AR3/70HPS120/DB/A-25
PRA14-4125/A/DBA

LUMINAIRE:
DIE CAST ALUM. HOUSING
THK. NOM., ONE-PIECE
SPECTRAL ALZAK FIN.
REFLECTOR, CLEAR ANODIZED
PROTECTIVE UNDERCOAT WITH
PAINTED DARK BRONZE FINISH,
TYPE III DISTRIBUTION, 120V

LAMP:
70W HIGH PRESSURE SODIUM

POLE:
4" RD. EXTRUDED SEAMLESS
ALUM. 0.125" THK. WALL
WELDED TO BASE PLATE, DARK
BRONZE ANODIZED FINISH.

BALLAST:
HIGH POWER FACTOR
BALLAST FOR 120V OPERATION

HANDHOLE
LEVELING NUTS (8 TOTAL)
CHAMFER GROUT

#6 B.C. GND. WIRE TO GROUNDING
LUG ACROSS HANDHOLE OPENING
THERMOWELD CONN. OR EQUAL

CLEAR ANODIZED PROTECTIVE
UNDERCOAT WITH PAINTED DARK
BRONZE FINISH, CAST. ALUM.
BASE COVER SECURED WITH
STAINLESS STEEL SCREWS

WEEP HOLE

ANCHOR BOLTS-SIZE &
SPACING PER MANUF.
REQUIREMENTS

FINISH GRADE

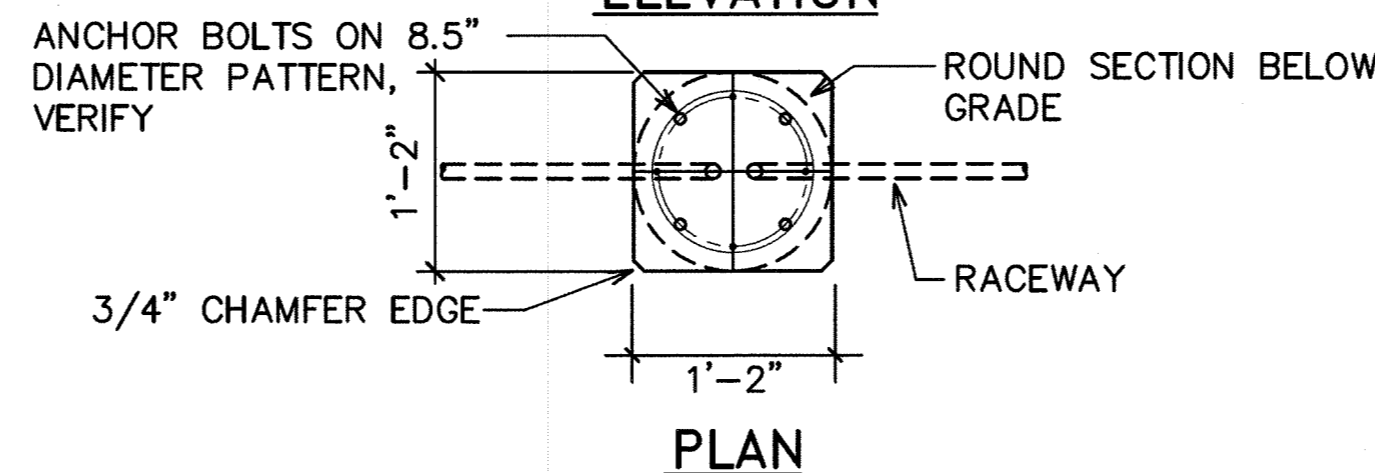
ROADWAY PAVEMENT

5/8" DIA. X 10'-0" COPPER
WELD GND. ROD. PROVIDE
ADDITIONAL GND. ROD. IF
RESISTANCE EXCEEDS
25 OHMS.

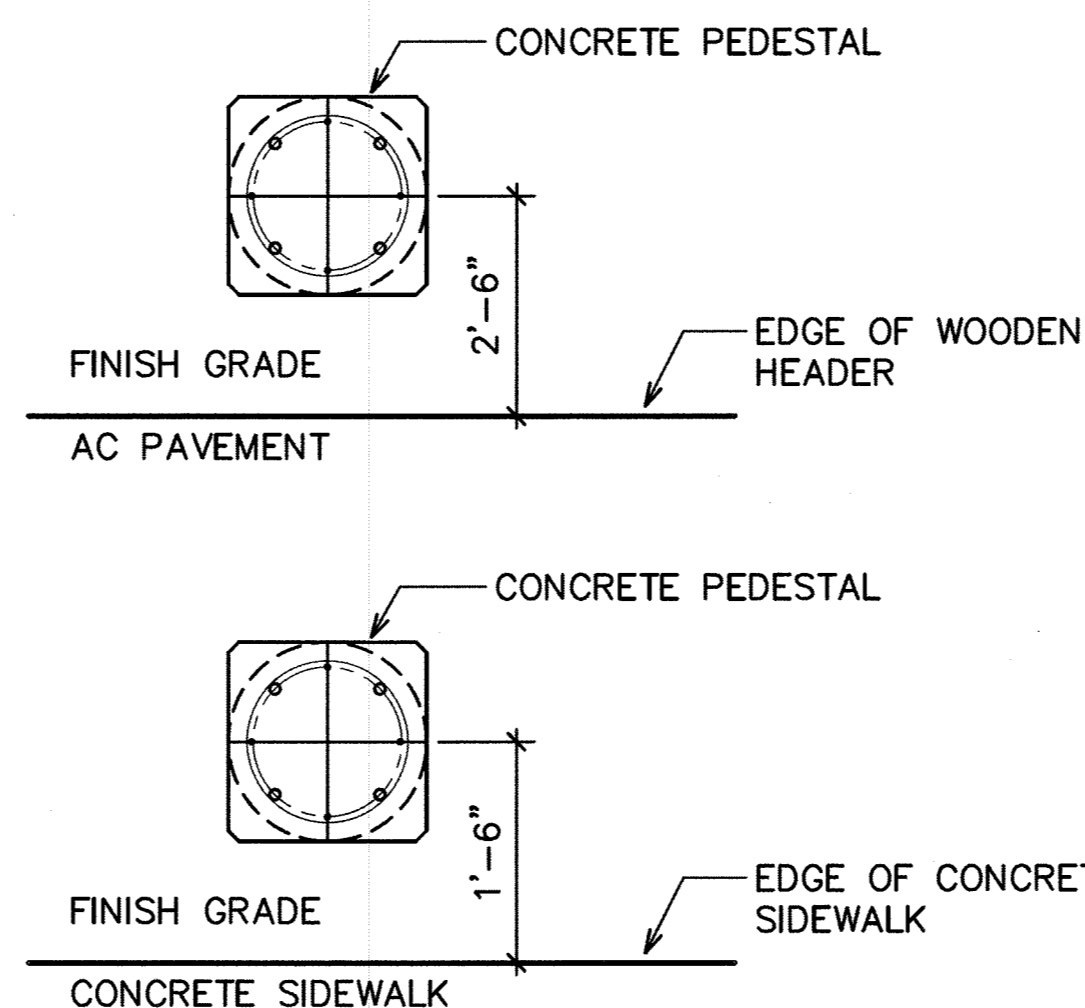
SEE C/E-21

SEE STRUCTURAL DRAWING
S-1 FOR PEDESTAL NOTES
AND DETAILS

ELEVATION



B
E-21 **PARKING LOT LIGHT DETAIL**
N.T.S.



C
E-21 **PARKING LIGHT LOCATION DETAIL**
N.T.S.

SECONDARY POWER PULLBOX,
(TYP.)

FUSE CABLE CONNECTOR
KIT WITH 6 AMP FUSE
(TYP.)

2 #10 RHW-USE, 600V
(TYP.)

FISHER PIERCE PHOTOCELL
& RECEPTACLE, 120V (TYP.)

70W HPS LUMINAIRE WITH
INTEGRAL HPF CONSTANT
WATTAGE BALLAST, 120V
(TYP.)

POLE BASE (TYP.)

INSULATED SPLIT BOLT
CONNECTION, WP. (TYP.)

NOTES:

1. WIRE TO BE RHW-USE, 600V
WITH OUTER COVERING.
2. CONDUIT-PVC SCHD. 80 DIRECT
BURIED @ SIDEWALK.
PVC SCHD. 40 WITH 3" CONC.
JACKET @ ROAD CROSSINGS.
3. CONTRACTOR SHALL IDENTIFY ALL
CIRCUIT CABLES WITH LEAD TAG IN
EACH PULLBOX AS SHOWN.
ALL NEUTRAL CONDUCTORS SHALL BE
IDENTIFIED WITH WHITE INSULATION.
OTHER MEANS OF IDENTIFICATION
ARE NOT ACCEPTABLE.
5. INSTALL PULLBOXES ON 6" OF #3 CRUSHED
ROCK BASE.
6. SEAL ALL CONDUIT ENDS WITH DUCT SEAL.

TO METERING CABINET "A"
SEE SHEET E-20 FOR CONT.

CONDUIT & WIRE SCHEDULE	
ITEM	DESCRIPTION
①	1 1/4"C, 2#10 RHW-USE, #10 GND
②	2"C, 3#10 RHW-USE, #10 GND
③	2"C (SPARE), PULLWIRE
④	1 1/4"C, 3#10 RHW-USE, #10 GND

D
E-21 **PARKING LIGHT CONNECTION DIAGRAM**
NOT TO SCALE

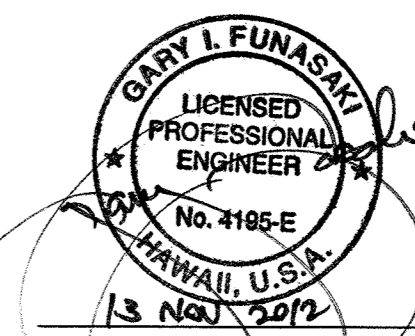
DRAWING REVIEW

Reviewed for HECO's Facilities Only

Date 12/13/14 By Gary L. Funesan

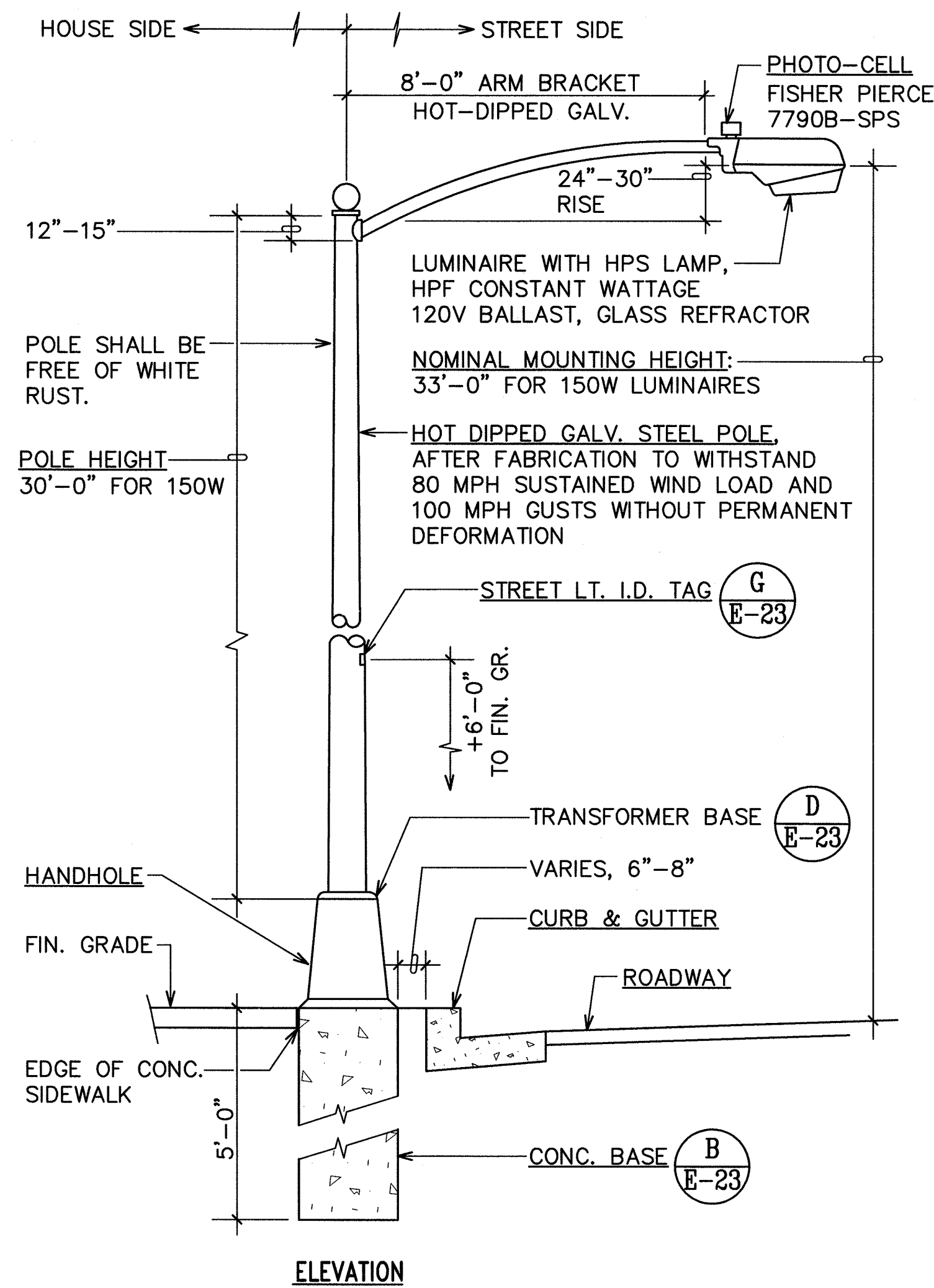
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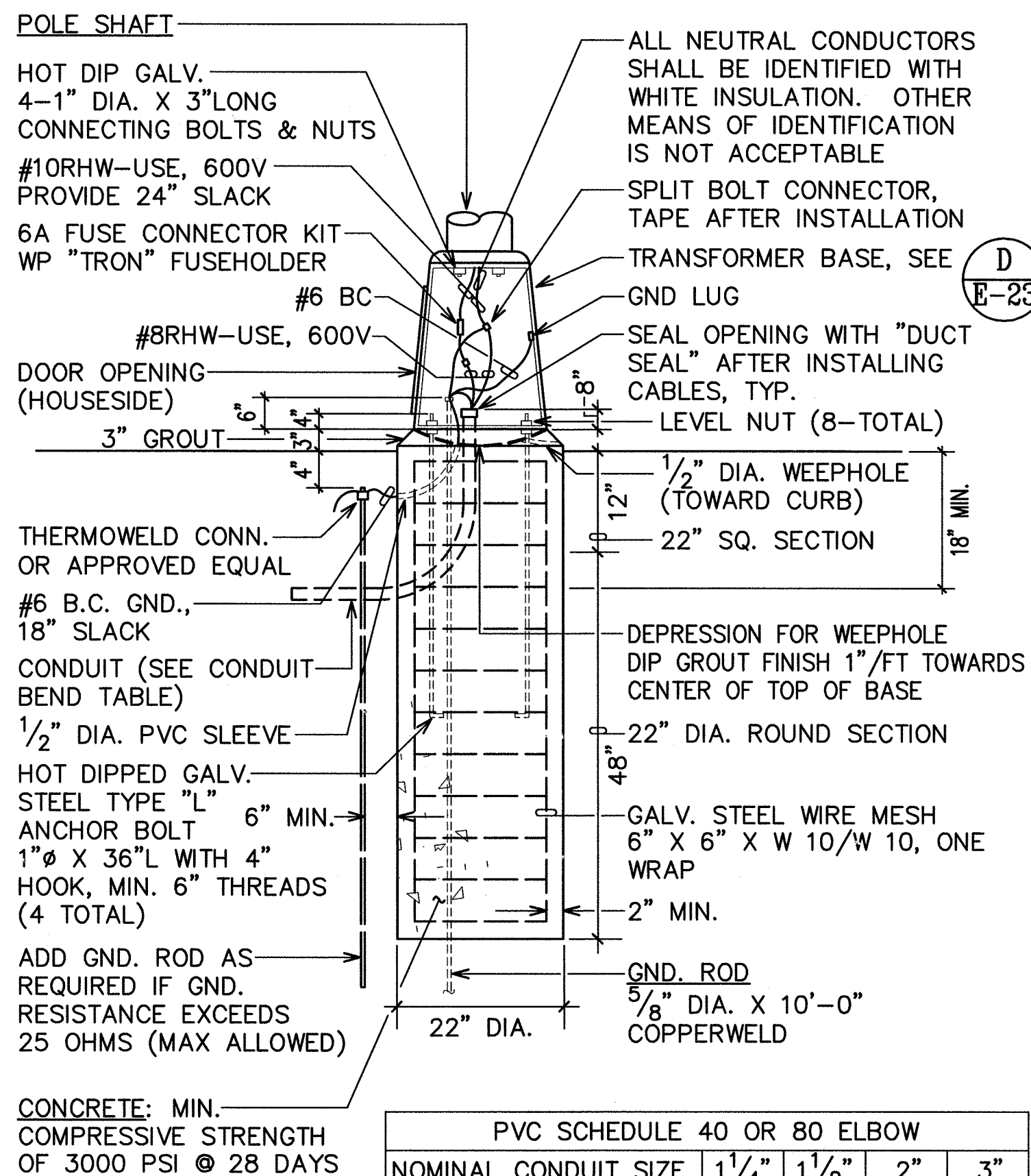


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LICENSE EXPIRATION DATE: 04/30/14

REVISION DATE	DESCRIPTION	MADE BY	APPROVED
Community Planning and Engineering, Inc. Engineering Design Construction Management Infrastructure Planning 1100 Alakoa Street, 8th Floor Honolulu, Hawaii			
EAST KAPOLEI II DEVELOPMENT INCREMENT 2B HONOLULU, EWA, OAHU, HAWAII (DPP SUBD. FILE NO. 2011/SUB-155) OWNER & DEVELOPER: DEPARTMENT OF HAWAIIAN HOME LANDS TAX MAP KEY: 9-1-17: Portion 110			
PARKING LOT LIGHT DETAILS & CONNECTION DIAGRAM			
DRAWN BY: CAD	ENGINEER: GF	CHECKED BY: GF	
APPROVED: _____			
DATE: _____			
DATE: _____			
DATE: _____			

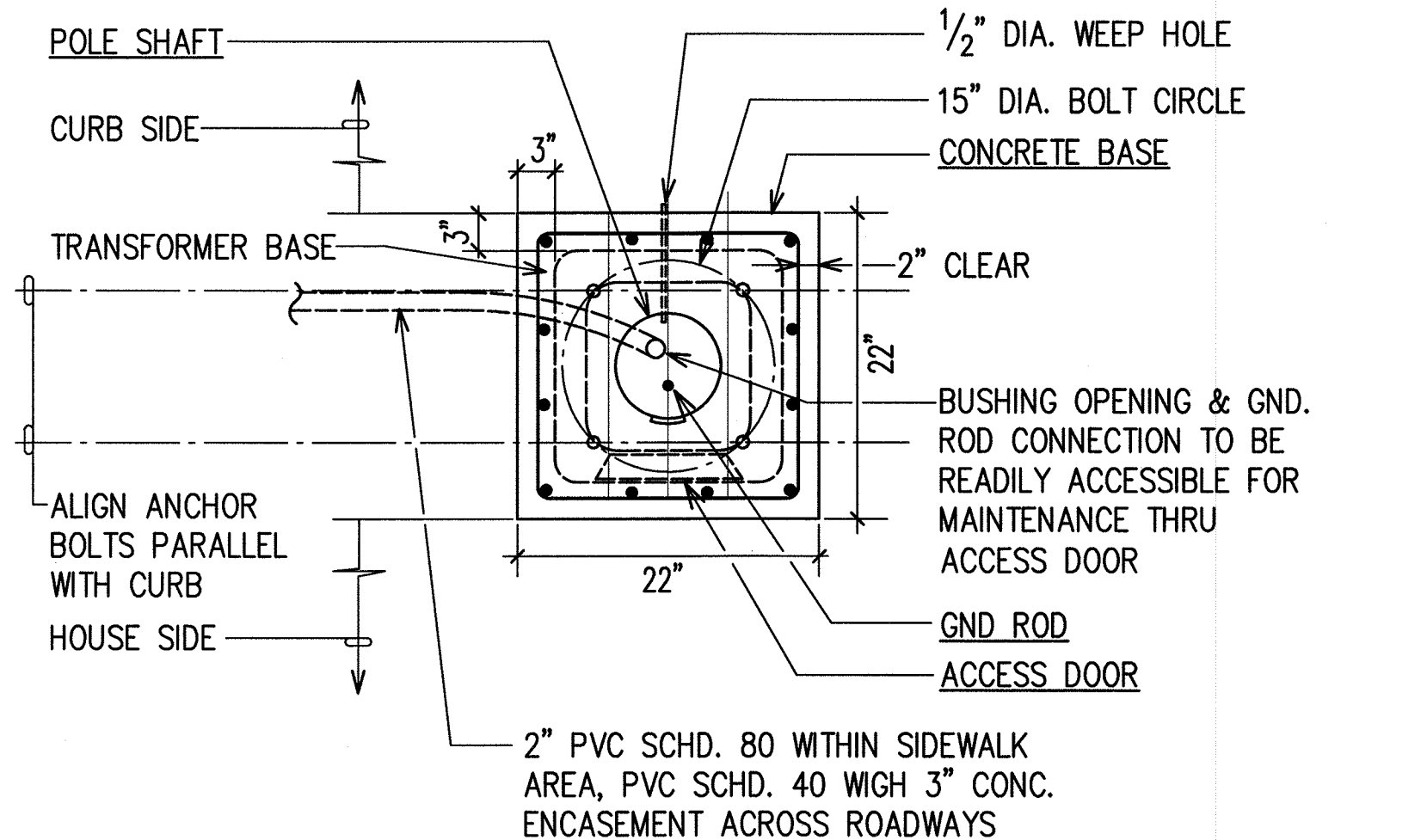


A STREET LIGHT STANDARD
E-23 N.T.S. METERED SYSTEM

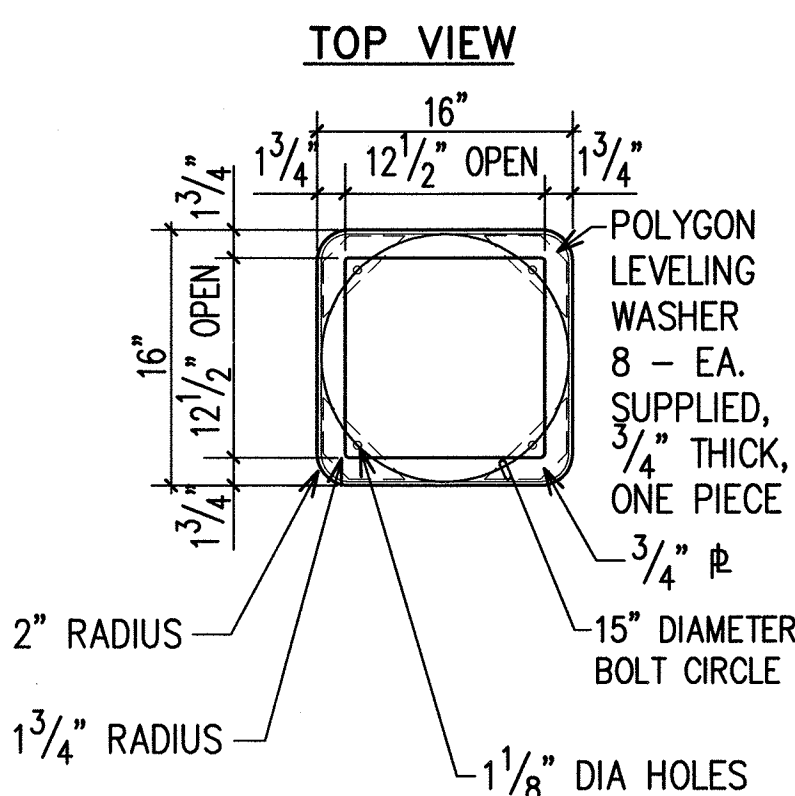
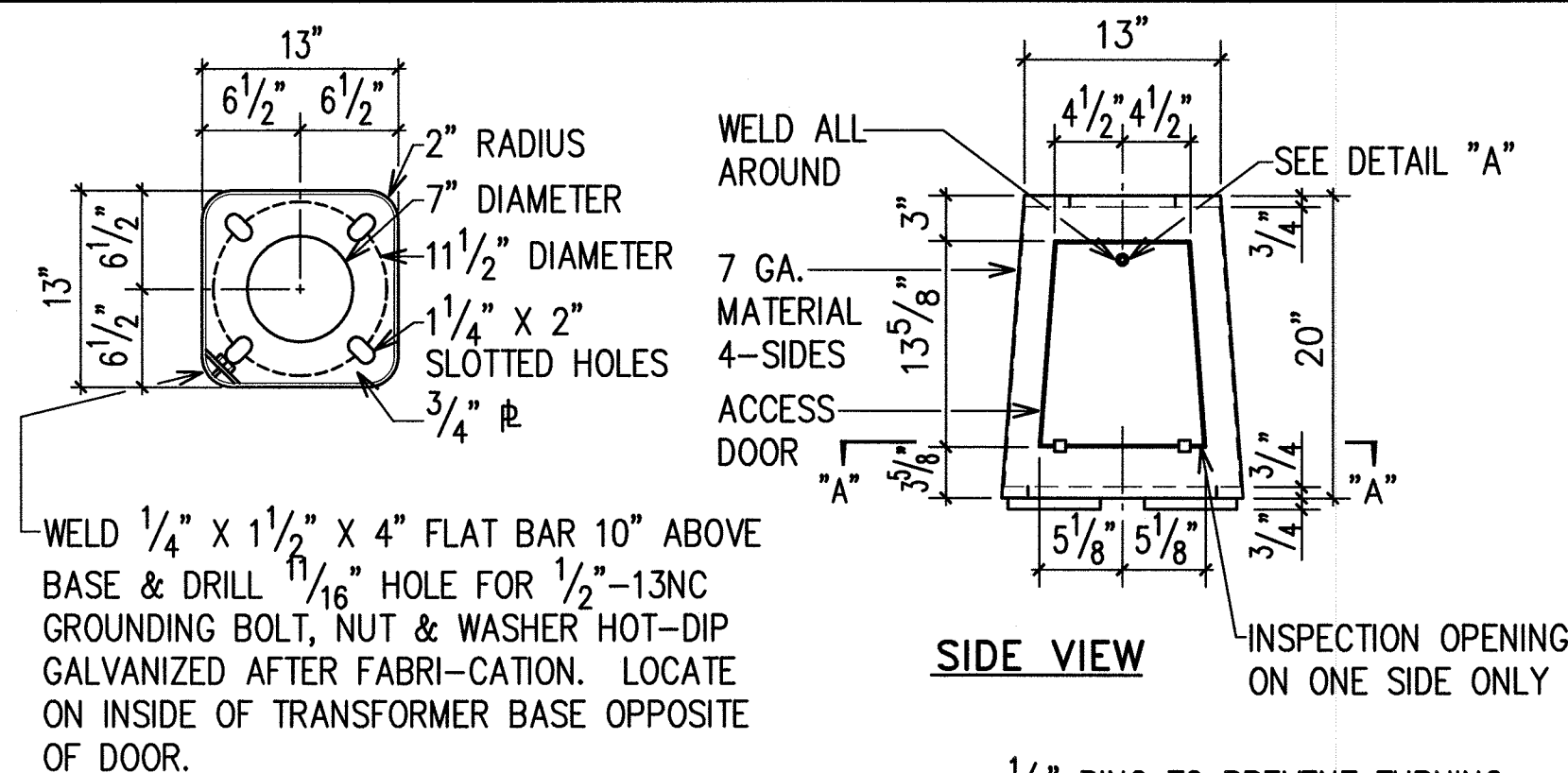


B CONCRETE BASE ELEVATION
E-23 N.T.S.

PVC SCHEDULE 40 OR 80 ELBOW			
NOMINAL CONDUIT SIZE	1 1/4"	1 1/2"	2"
MINIMUM RADIUS BEND	8"	10"	12"

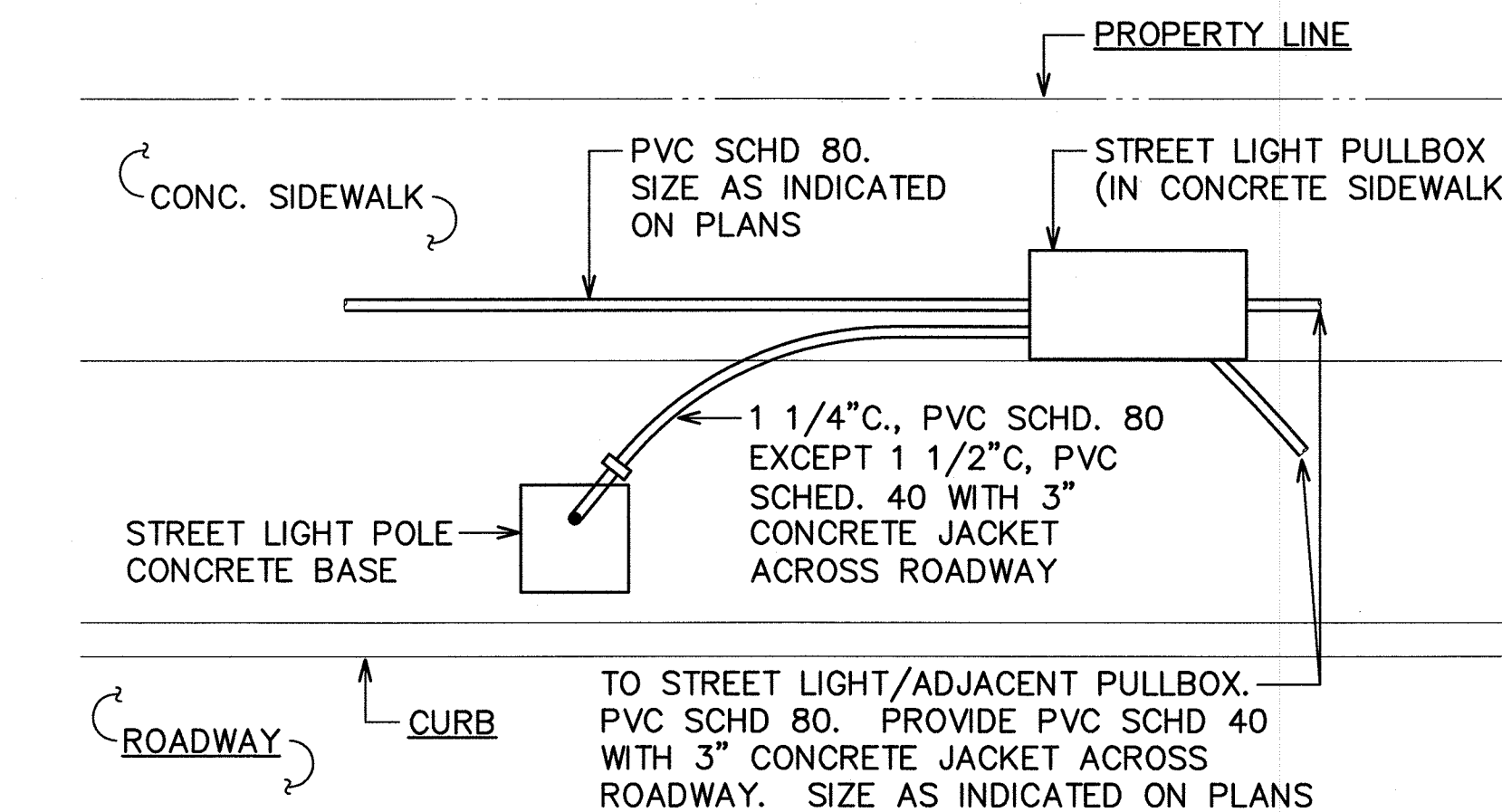


C CONCRETE BASE PLAN
E-23 N.T.S.

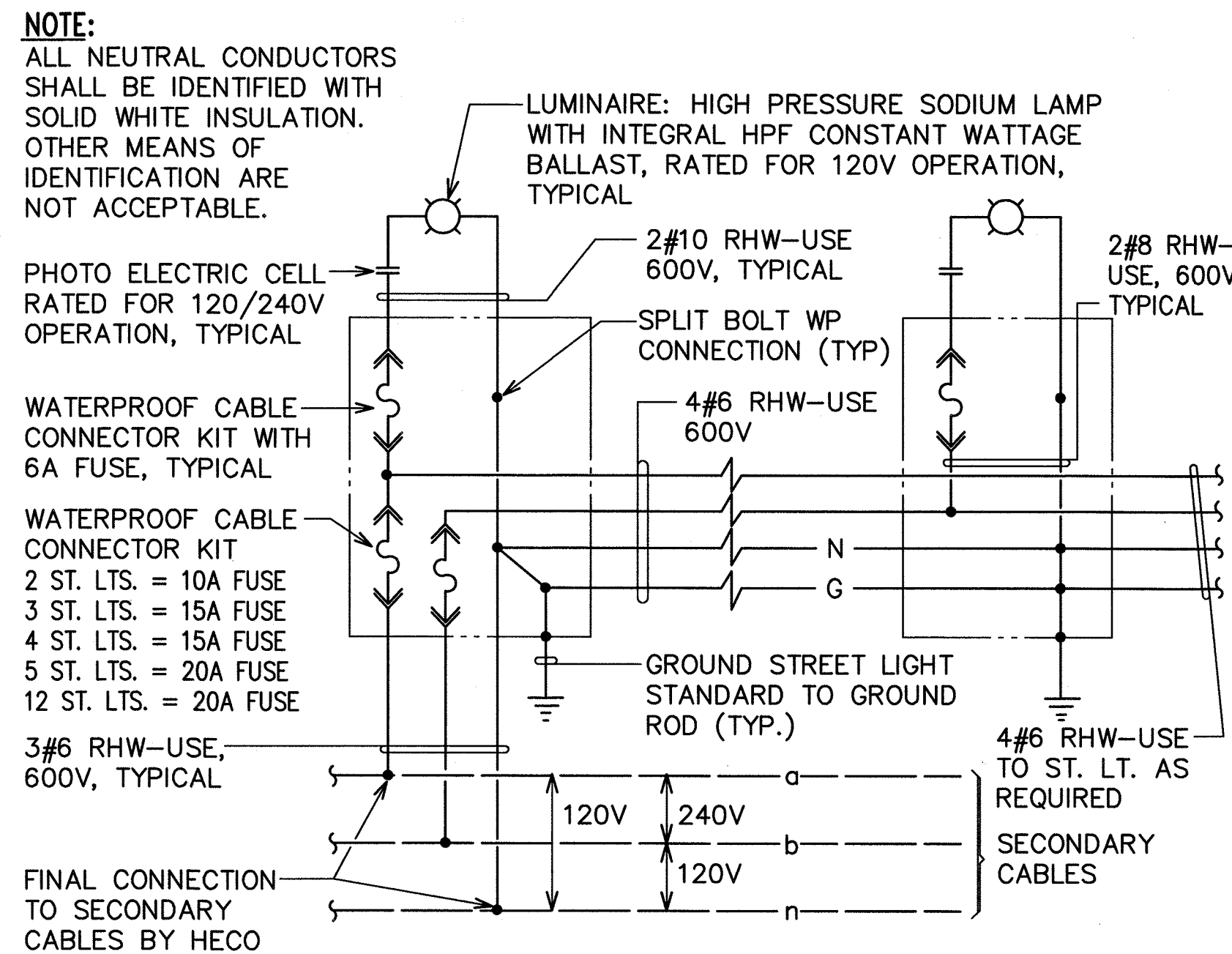


SECTION "A-A"

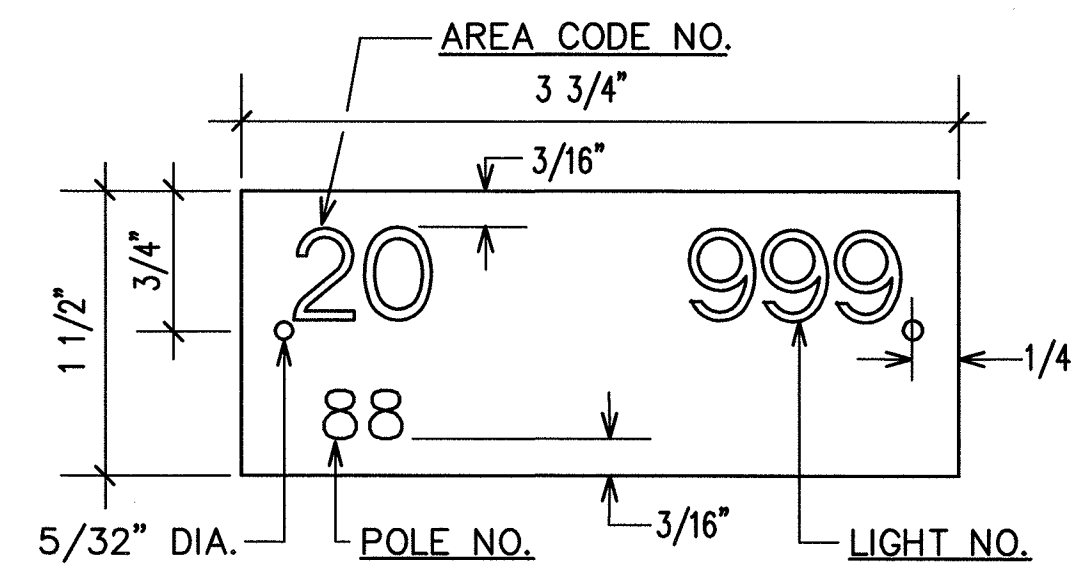
D TRANSFORMER BASE DETAIL
E-23 N.T.S.



E TYPICAL STREET LIGHT/PULLBOX PLAN
E-23 NOT TO SCALE



F STREET LIGHT MULTIPLE CONNECTION DIAGRAM
E-23

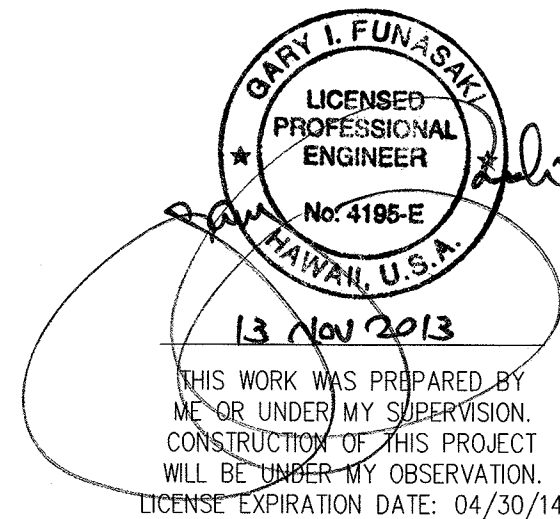


NOTES:

1. USE 3 PLY LAMINATED FLEXIBLE PLASTIC, BLACK-WHITE-BLACK THICKNESS: BLACK CAP SHEET-0.010", WHITE SHEET-0.052", BLACK BASE SHEET-0.010".
2. AREA CODE AND LIGHT NUMBER SHALL BE 5/8" HIGH, 1/8" STROKE, WHITE IN COLOR (NUMBER AS REQUIRED).
3. POLE NUMBER SHALL BE 1/4" HIGH, 1/16" STROKE, WHITE IN COLOR (NUMBER AS REQUIRED).
4. ATTACH TO STEEL POLES WITH NO. 8 STAINLESS STEEL, 1/2" LONG DRIVE SCREWS IN 1/8" DRILL HOLE.
5. NUMBERS ARE INSCRIBED BY CUTTING THROUGH "BLACK CAP SHEET" TO EXPOSE "WHITE" LETTERS.

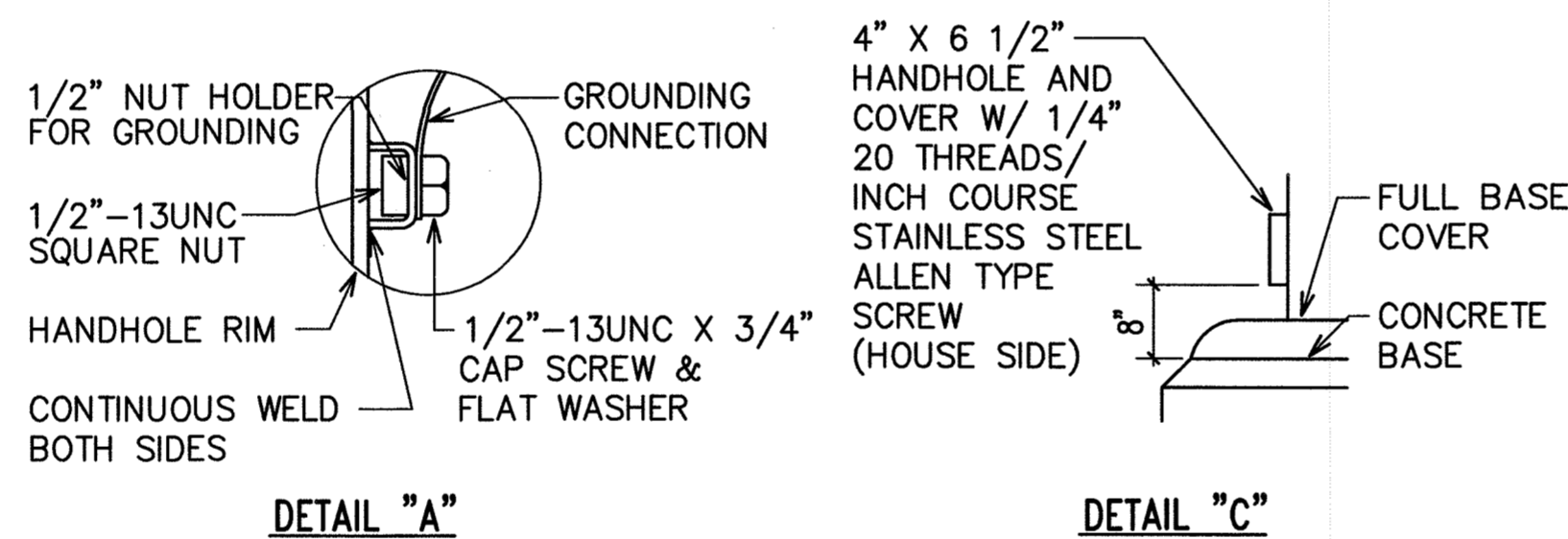
G STREET LIGHT I.D. TAG DETAIL
E-23 NOT TO SCALE (MULTIPLE SYSTEM)

REVISION DATE	DESCRIPTION	MADE BY	APPROVED
Community Planning and Engineering, Inc. Engineering Design Construction Management Infrastructure Planning 1100 Alakoa Street, 8th Floor Honolulu, Hawaii			
EAST KAPOLEI II DEVELOPMENT INCREMENT 2B HONOLULU, EWA, OAHU, HAWAII (DPP SUBD. FILE NO. 2011/SUB-155) OWNER & DEVELOPER: DEPARTMENT OF HAWAIIAN HOME LANDS TAX MAP KEY: 9-1-17: Portion 110			
STREET LIGHT DETAILS I			
DRAWN BY: CAD	ENGINEER: GF	CHECKED BY: GF	
APPROVED:			
DATE: <u>11/15/13</u> BY: <u>[Signature]</u> DATE: <u>11/15/13</u> BY: <u>[Signature]</u>			
THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION. CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION. LICENSE EXPIRATION DATE: 04/30/14			





CONCRETE BASE ELEVATION






STREET LIGHT STANDARD HANDHOLE DETAILS

CONDUIT ELBOW RADIUS BEND TABLE			
PVC SCHEDULE 40 OR 80 ELBOW			
NOMINAL CONDUIT SIZE	1 1/4"	1 1/2"	2"
MINIMUM RADIUS BEND	8"	10"	12"

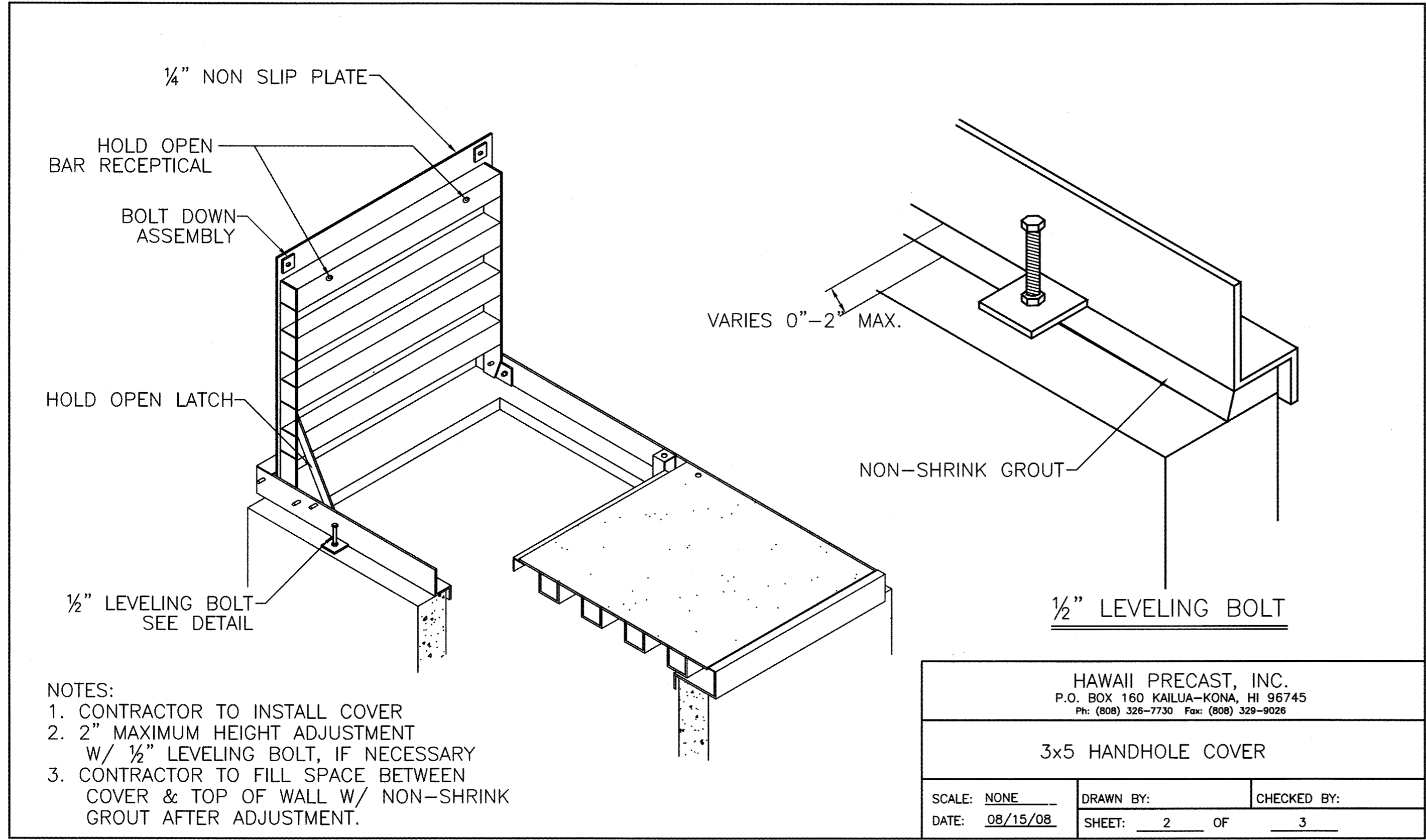
1. STREET LIGHT SYSTEM FOR THIS SUBDIVISION TO BE UNDER HAWAIIAN ELECTRIC COMPANY INC. (HECO) AREA CODE NO. 20 (MULTIPLE SYSTEM)
2. STREET LIGHT NUMBERS FOR THIS SUBDIVISION TO BE 4958 TO 5035, INCLUSIVELY (MULTIPLE SYSTEM).
3. ALL SECONDARY FEEDER EXTENSIONS TO HECO SECONDARY CABLES TO BE PROVIDED BY THE CONTRACTOR. CONNECTIONS THERETO SHALL BE BY HECO, & PAID FOR BY THE CONTRACTOR.
4. PRIOR TO THE INSTALLATION OF HECO. SECONDARY CABLES, CONTRACTOR SHALL COORDINATE & INFORM HECO OF PROJECT STREET LIGHT LOCATIONS.
5. CONTRACTOR TO NOTIFY & COORDINATE WORK WITH MECHANICAL/ELECTRICAL DIVISION, DEPARTMENT OF DESIGN & CONSTRUCTION, 3 WORKING DAYS IN ADVANCE OF COMMENCING INSTALLATION OF STREET LIGHT SYSTEM (PHONE 768-8431).
6. LUMINAIRES TO BE HIGH PRESSURE SODIUM (HPS) TYPE WITH I.E.S. TYPE II LIGHT DISTRIBUTION EXCEPT AS NOTED ON PLAN, WATTAGES TO BE AS INDICATED ON THE PLANS.
7. TYPICAL CONSTRUCTION DETAILS TO BE PER THIS SHEET & APPLICABLE STANDARD DETAILS OF THE MECHANICAL/ELECTRICAL DIVISION, DEPARTMENT OF DESIGN AND CONSTRUCTION.
8. ON BOTTOM OF PHOTO-CELL, CONTRACTOR SHALL STENCIL THE DATE OF INSTALLATION.
9. LUMINAIRE & POLE COUNT:

POLES:	25'-0" = 72
	30'-0" = 6
LUMINAIRES:	70W = 57
	100W = 15
	150W = 6
10. AT ALL TIMES DURING CONSTRUCTION PERIOD, CONTRACTOR SHALL MAINTAIN ONE SET OF APPROVED PLANS AT THE PROJECT SITE.
11. THE CONTRACTOR SHALL MEASURE AND RECORD THE GROUND RESISTANCE AT EACH STANDARD WITH NO EXTERNAL GROUND WIRES CONNECTED TO THE GROUND ROD. CONTRACTOR SHALL SCHEDULE GROUND RESISTANCE MEASUREMENTS 48 HOURS IN ADVANCE AND SHALL NOT PROCEED WITH MEASUREMENTS UNTIL APPROVAL IS GRANTED. SCHEDULES ARE SUBJECT TO CHANGE DEPENDING UPON WEATHER CONDITIONS. REPORTS SHALL INCLUDE NAME OF PERSONNEL CONDUCTING THE TEST, METER TYPE AND SERIAL NUMBER, DATE OF TEST AND SOIL CONDITIONS. TEST RESULTS SHALL BE CERTIFIED BY THE CONTRACTOR AND SUBMITTED TO THE CITY.
12. CONTRACTOR SHALL ARRANGE FOR HECO TO ENERGIZE STREET LIGHTS A MINIMUM OF SIX HOURS BEFORE FINAL INSPECTION & ACCEPTANCE. CONTRACTOR TO PAY FOR ALL COSTS, 6 HOURS BEFORE & DURING INSPECTION.
13. FINAL ACCEPTANCE AND INSPECTION WILL BE UNDERTAKEN ONLY AFTER ALL WORK HAS BEEN COMPLETED & THE "AS-BUILT" VELLUM TRACINGS HAVE BEEN RECEIVED BY THE CITY & COUNTY OF HONOLULU, DEPARTMENT OF DESIGN & CONSTRUCTION.
14. UPON COMPLETION OF FINAL INSPECTION BY ENGINEER & THE CITY & COUNTY, CONTRACTOR SHALL OBTAIN WRITTEN ACCEPTANCE OF STREET LIGHT SYSTEM FROM THE MECHANICAL/ELECTRICAL DIVISION, DEPARTMENT OF DESIGN & CONSTRUCTION, CITY AND COUNTY OF HONOLULU.
15. CONTRACTOR SHALL NOT BACKFILL TRENCHES UNTIL WORK IS APPROVED BY THE STREET LIGHT INSPECTOR.
16. THE CONTRACTOR SHALL INFORM THE STREET LIGHT INSPECTOR OF ALL CONCRETE POURS AT LEAST 2 WORKING DAYS IN ADVANCE. CONCRETE SHALL NOT BE POURED UNTIL APPROVAL IS GRANTED BY THE CITY AND COUNTY STREET LIGHT INSPECTOR.
17. SUBMIT SHOP DRAWINGS FOR ALL STREET LIGHT COMPONENTS INCLUDING PULLBOXES FOR APPROVAL.

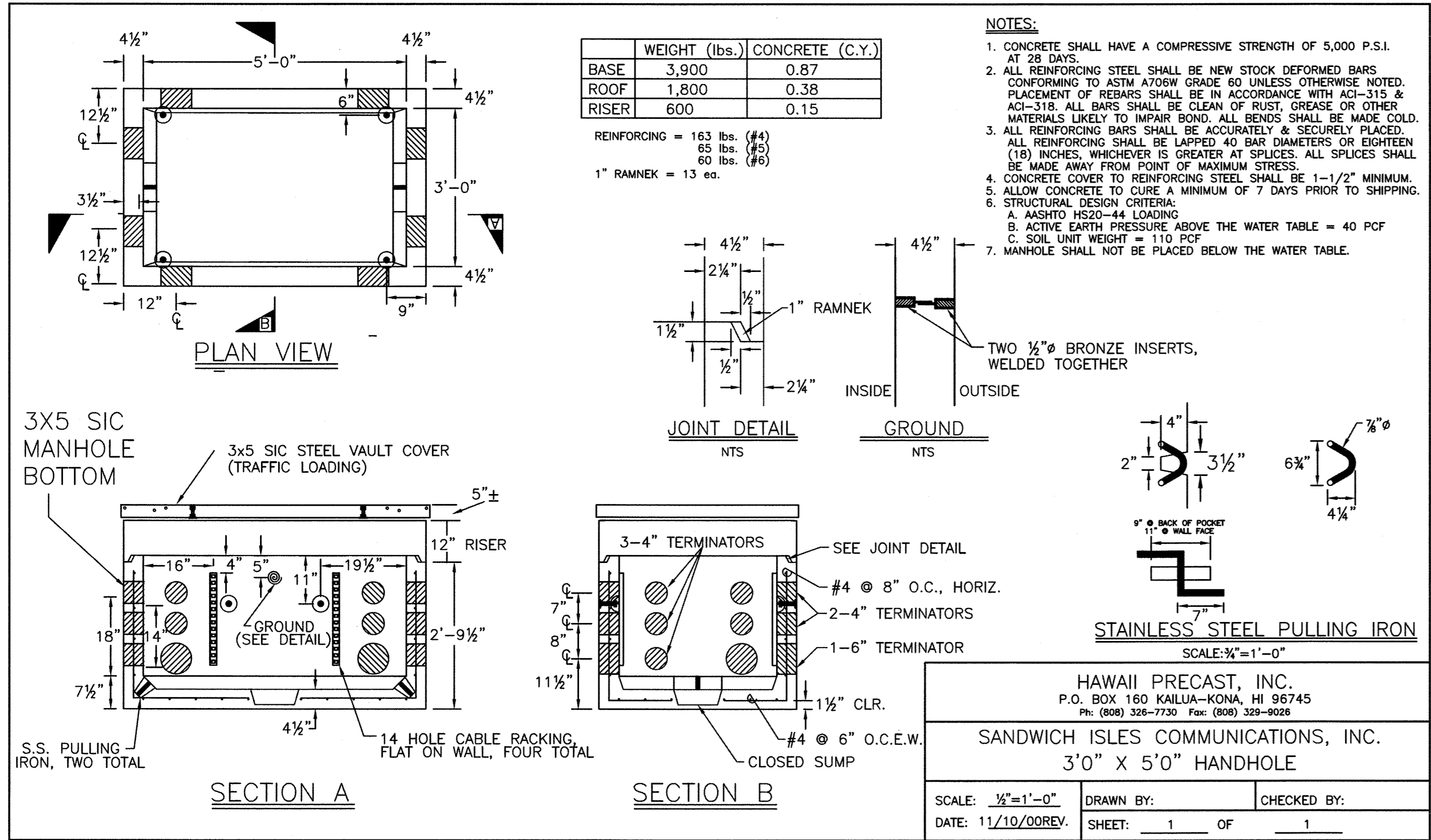
POLES:	25'-0" = 72
	30'-0" = 6
LUMINAIRES:	70W = 57
	100W = 15
	150W = 6

REVISION DATE	DESCRIPTION	MADE BY	APPROVED
 Community Planning and Engineering, Inc. Engineering Design Construction Management Infrastructure Planning 1100 Alakoa Street, Sixth Floor Honolulu, Hawaii			
<h1>EAST KAPOLEI II DEVELOPMENT</h1> <h2>INCREMENT 2B</h2> <p>HONOLULU, EWA, OAHU, HAWAII (OPP SUBD. FILE NO. 2011/SUB-155 OWNER & DEVELOPER: DEPARTMENT OF HAWAIIAN HOME LANDS TAX MAP KEY: 9-1-17: Portion 110</p>			
<h1>STREET LIGHT DETAILS II</h1>			
DRAWN BY: CAD		ENGINEER: GF	CHECKED BY: GF
APPROVED: <div style="display: flex; justify-content: space-between; align-items: flex-end; margin-top: 20px;"> <div> DATE _____ DATE _____ </div> <div style="text-align: right;">  CHIEF, TRAFFIC REVIEW BRANCH, D.P.P., <i>cc</i> DATE <u>1/15/12</u>  CHIEF, MECHANICAL/ELECTRICAL DIVISION, D.D.C. DATE <u>2/4/2013</u> </div> </div>			

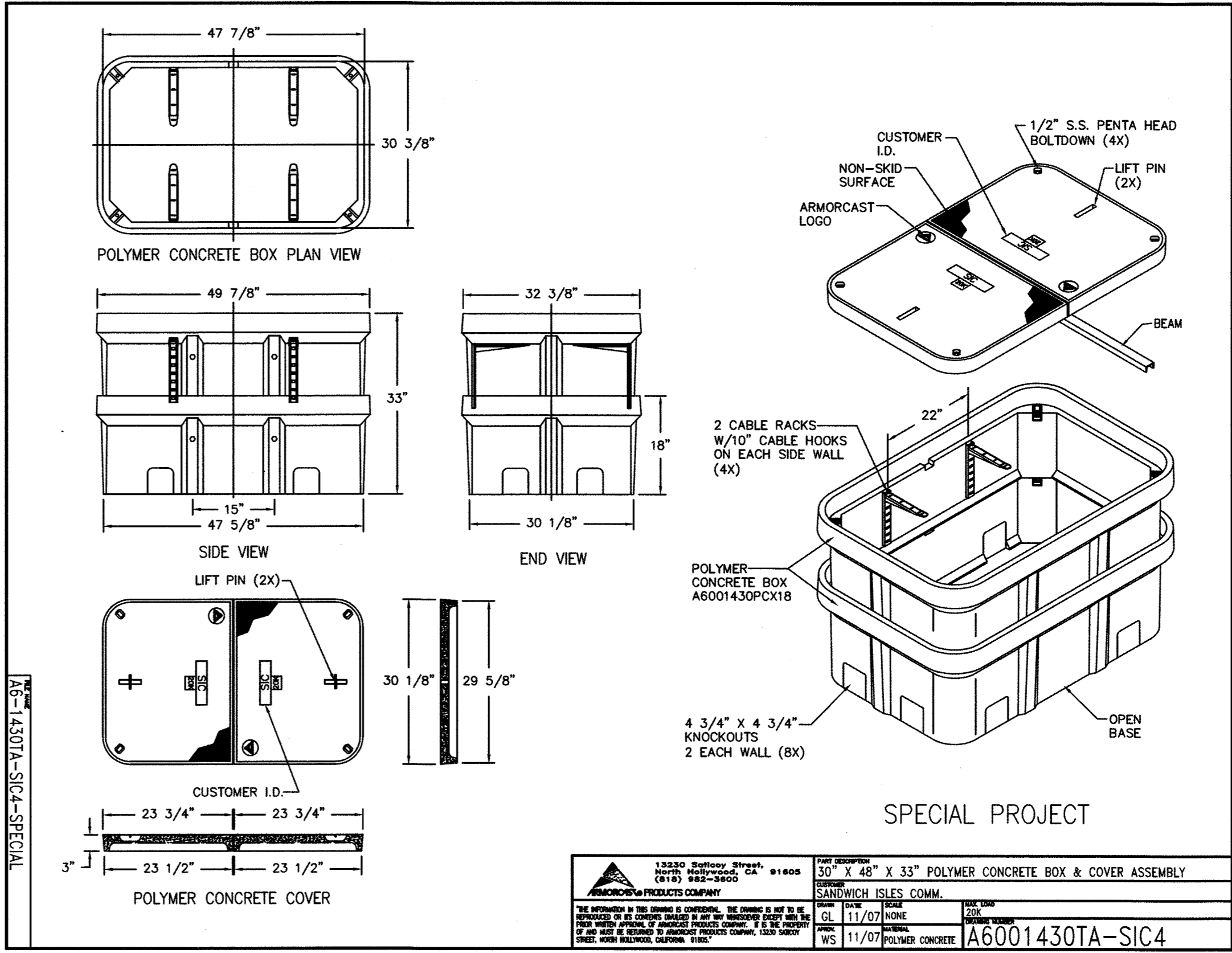
THIS WORK WAS PREPARED BY
ME OR UNDER MY SUPERVISION.
CONSTRUCTION OF THIS PROJECT
WILL BE UNDER MY OBSERVATION.
LICENSE EXPIRATION DATE: 04/30/1



UH 3x5 COVER



UH 3x5



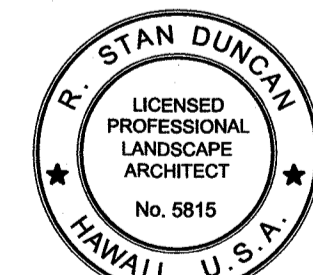
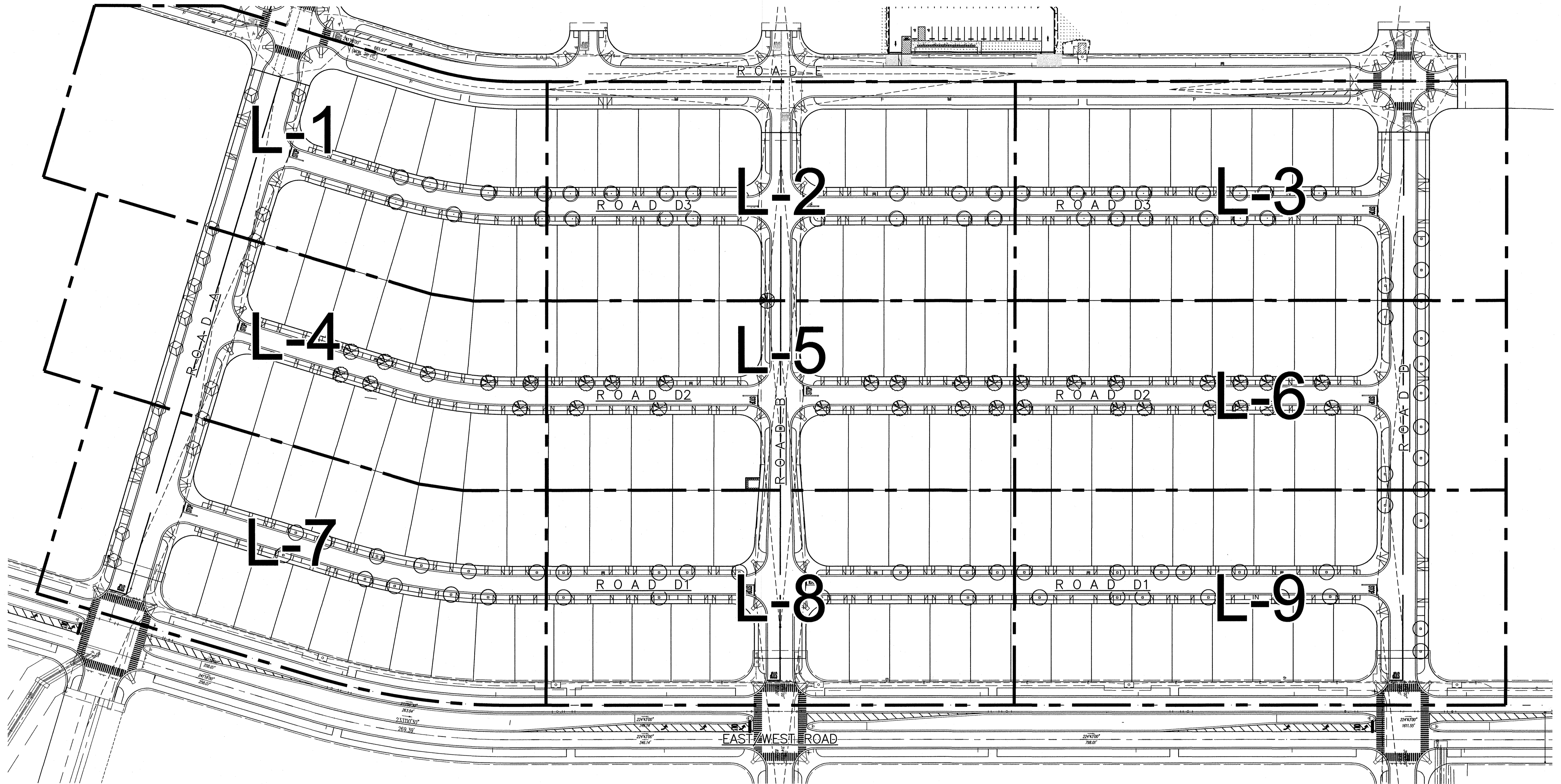
UHC 30x48x33

REVISION DATE	DESCRIPTION	MADE BY	APPROVED
Community Planning and Engineering, Inc. Engineering Design Construction Management Infrastructure Planning 1100 Alakoa Street, 8th Floor Honolulu, Hawaii			
EAST KAPOLEI II DEVELOPMENT INCREMENT 2B HONOLULU, EWA, OAHU, HAWAII (DPP SUBD. FILE NO. 2011/SUB-155) OWNER & DEVELOPER: DEPARTMENT OF HAWAIIAN HOME LANDS TAX MAP KEY: 9-1-17: Portion 110			
SIC REFERENCE DRAWINGS			
DRAWN BY: CAD	ENGINEER: GF	CHECKED BY: GF	
APPROVED:			
DATE: 11/19/12			
SANDWICH ISLES COMMUNICATIONS, INC.			
FILE	POCKET	FOLDER	NO.

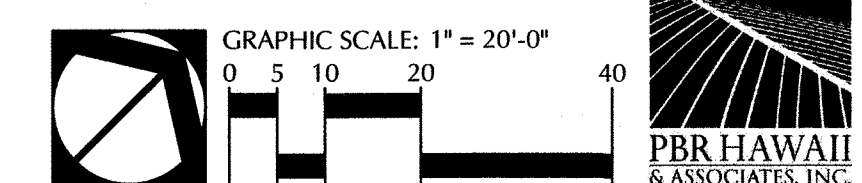
THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION. CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION. LICENSE EXPIRATION DATE: 04/30/14

FOR REFERENCE ONLY

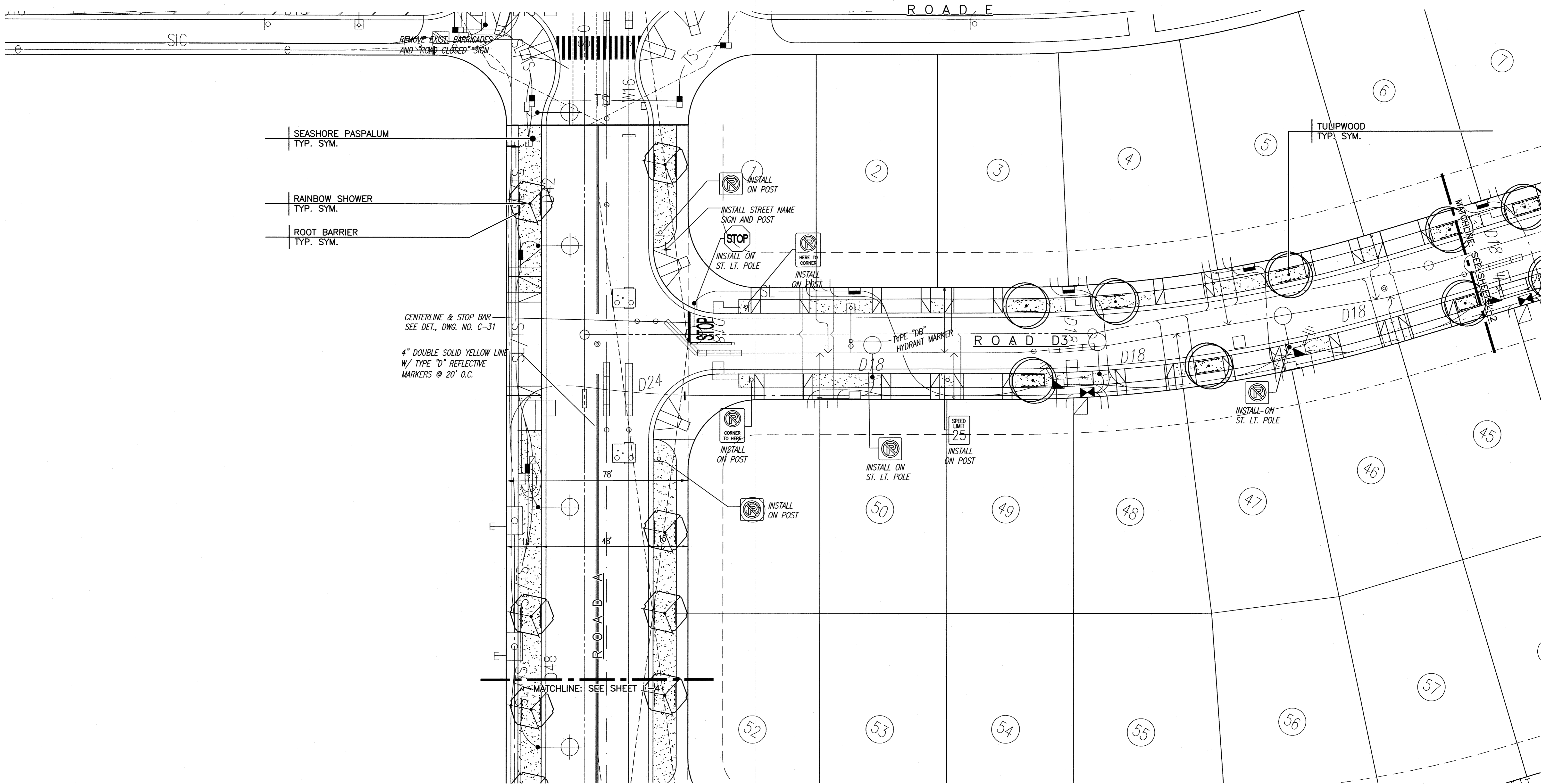
P:\PROJECTS\OAHU\Kapolei\East Kapolei phase 2B\CD\L-0.dwg



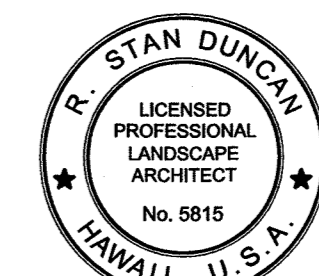
R. Stan Duncan
THIS WORK WAS PREPARED BY
ME OR UNDER MY SUPERVISION AND
CONSTRUCTION OF THIS PROJECT
WILL BE UNDER MY OBSERVATION



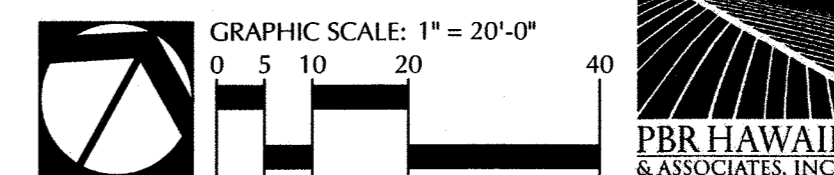
REVISION DATE	DESCRIPTION	MADE BY	APPROVED
Community Planning and Engineering, Inc. Engineering Design Construction Management Infrastructure Planning 1100 Alakoa Street, Sixth Floor Honolulu, Hawaii			
EAST KAPOLEI II DEVELOPMENT INCREMENT 2B HONOLULU, EWA, OAHU, HAWAII (DPP SUBD. FILE NO. 2011/SUB-155) OWNER & DEVELOPER: DEPARTMENT OF HAWAIIAN HOME LANDS TAX MAP KEY: 9-1-17: Portion 110			
PLANTING SITE PLAN			
DRAWN BY: CB	ENGINEER: SD	CHECKED BY: RH	
APPROVED:			
<i>Anthony X. Chiu</i> 4/5/13 DATE			
FILE	PROJECT	FOLDER	NO.



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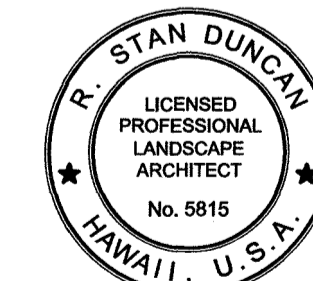
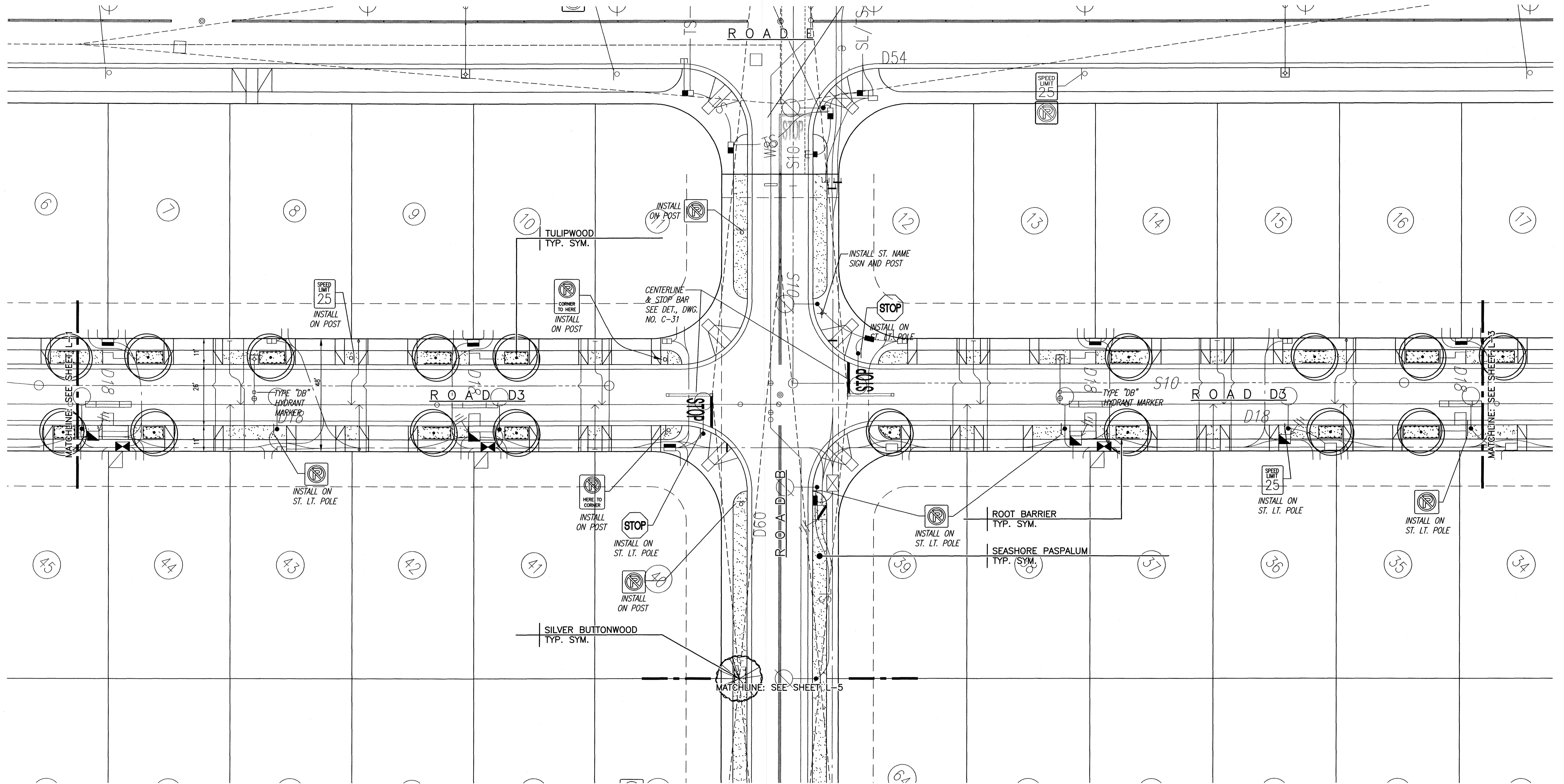


R. Stan Duncanson
 SIGNATURE
 EXPIRATION DATE OF LICENSE
 THIS WORK WAS PREPARED BY
 ME OR UNDER MY SUPERVISION AND
 CONSTRUCTION OF THIS PROJECT
 WILL BE UNDER MY OBSERVATION

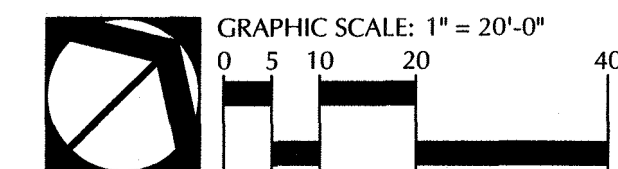


REVISION DATE	DESCRIPTION	MADE BY	APPROVED
Community Planning and Engineering, Inc. Engineering Design Construction Management Infrastructure Planning 1100 Alakoa Street, Sixth Floor Honolulu, Hawaii			
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PLANTING PLAN 1			
DRAWN BY: CB	ENGINEER: SD	CHECKED BY: RH	
APPROVED: <i>Anthony X. Ching</i> 4/5/13 CHIEF, URBAN DESIGN DIVISION DPP			
FILE	PROJECT	FOLDER	NO.

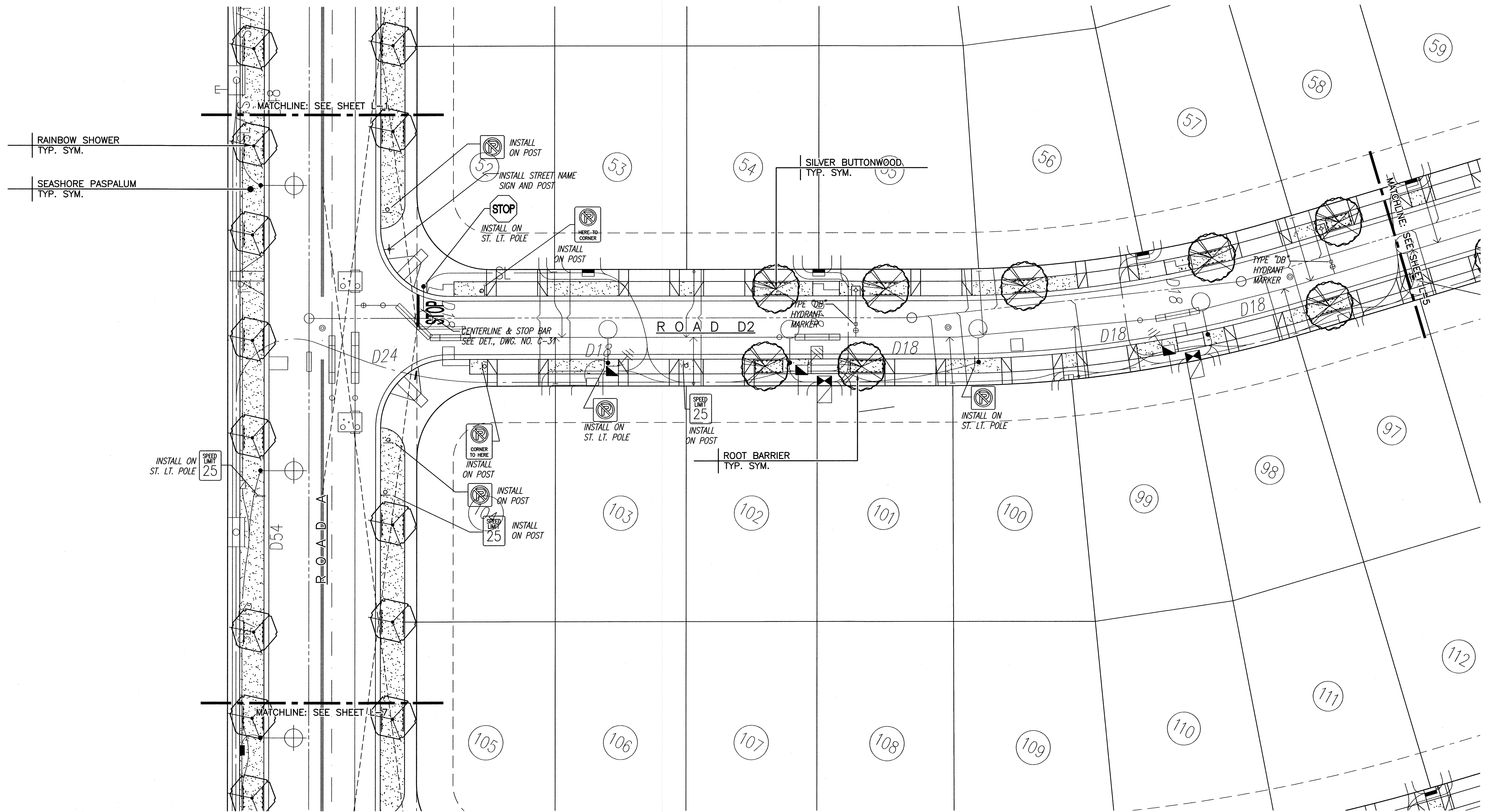
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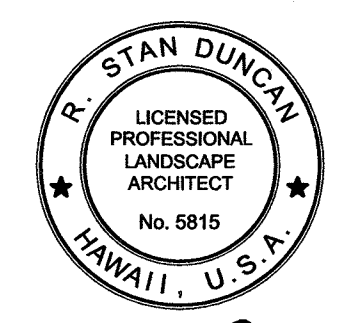
R. Stan Duncan
SIGNATURE
EXPIRATION DATE OF LICENSE
THIS WORK WAS PREPARED BY
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CONSTRUCTION OF THIS PROJECT
WILL BE UNDER MY OBSERVATION



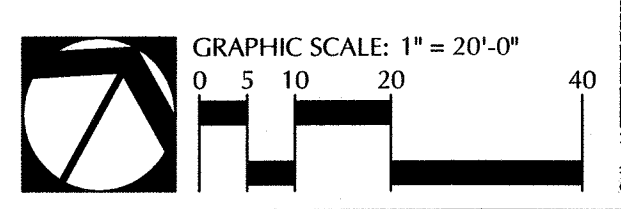
REVISION DATE	DESCRIPTION	MADE BY	APPROVED
cp&e Community Planning and Engineering, Inc. Engineering Design Construction Management Infrastructure Planning 1000 Alakoa Street, 8th Floor Honolulu, Hawaii			
EAST KAPOLEI II DEVELOPMENT INCREMENT 2B HONOLULU, EWA, OAHU, HAWAII (OPP SUBD. FILE NO. 2011/SUB-155) OWNER & DEVELOPER: DEPARTMENT OF HAWAIIAN HOME LANDS TAX MAP KEY: 9-1-17: Portion 110			
PLANTING PLAN 2			
DRAWN BY: CB	ENGINEER: SD	CHECKED BY: RH	
APPROVED: <i>Anthony X. Olney</i> 4/5/13 CHIEF, URBAN DESIGN BRANCH D.P.P. CHIEF			



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REVISION DATE	DESCRIPTION	MADE BY	APPROVED

Community Planning and Engineering, Inc.
Engineering Design | Construction Management | Infrastructure Planning
1100 Alakea Street, Sixth Floor Honolulu, Hawaii

**EAST KAPOLEI II DEVELOPMENT
INCREMENT 2B**
HONOLULU, EWA, OAHU, HAWAII
(DPP SUBD. FILE NO. 2011/SUB-155)
OWNER & DEVELOPER: DEPARTMENT OF HAWAIIAN HOME LANDS
TAX MAP KEY: 9-1-17: Portion 110

PLANTING PLAN 4

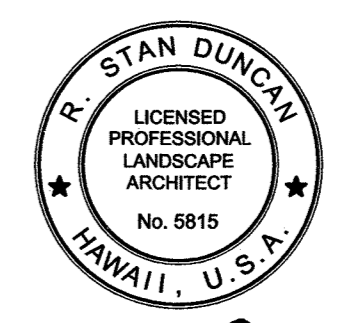
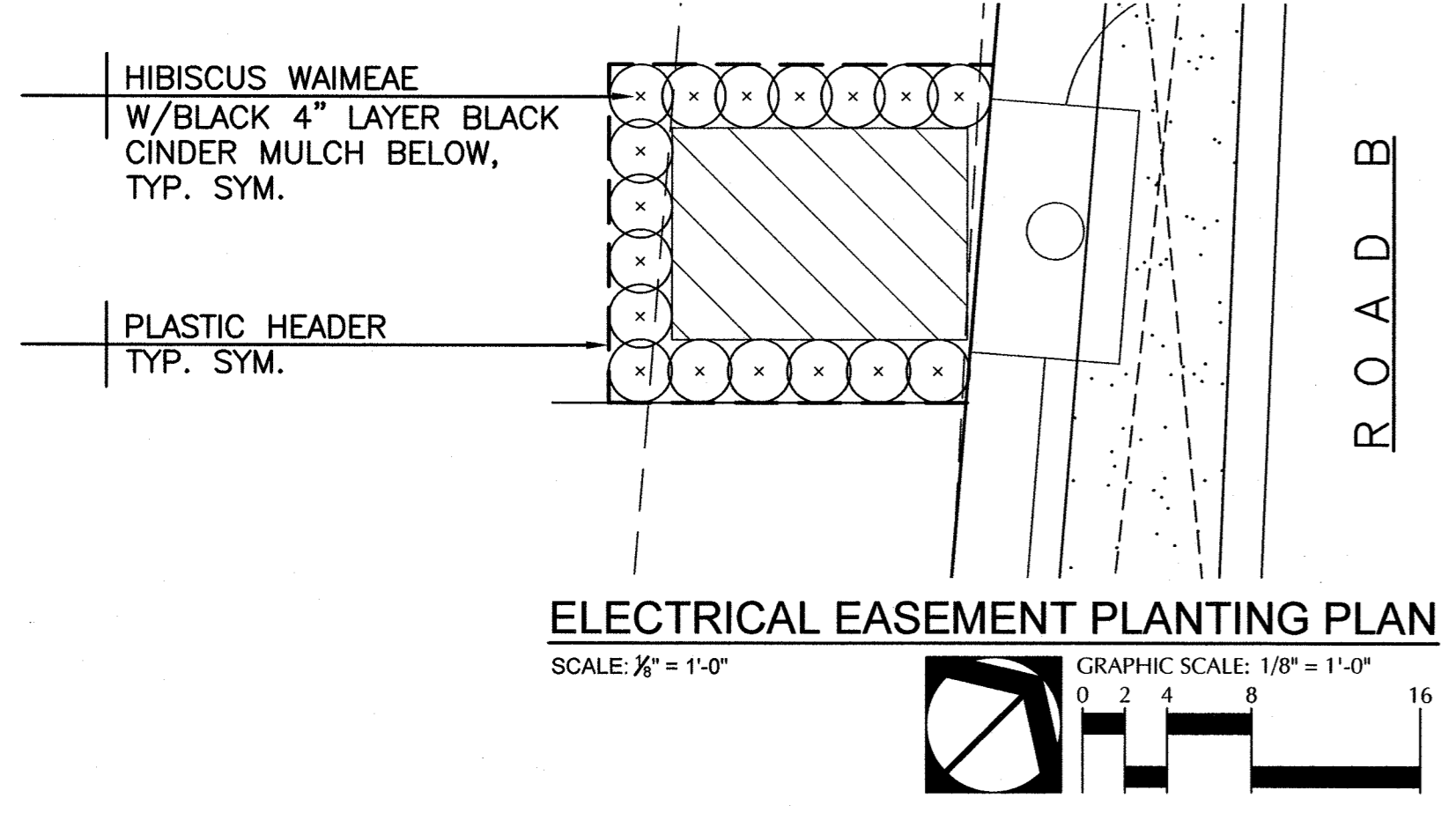
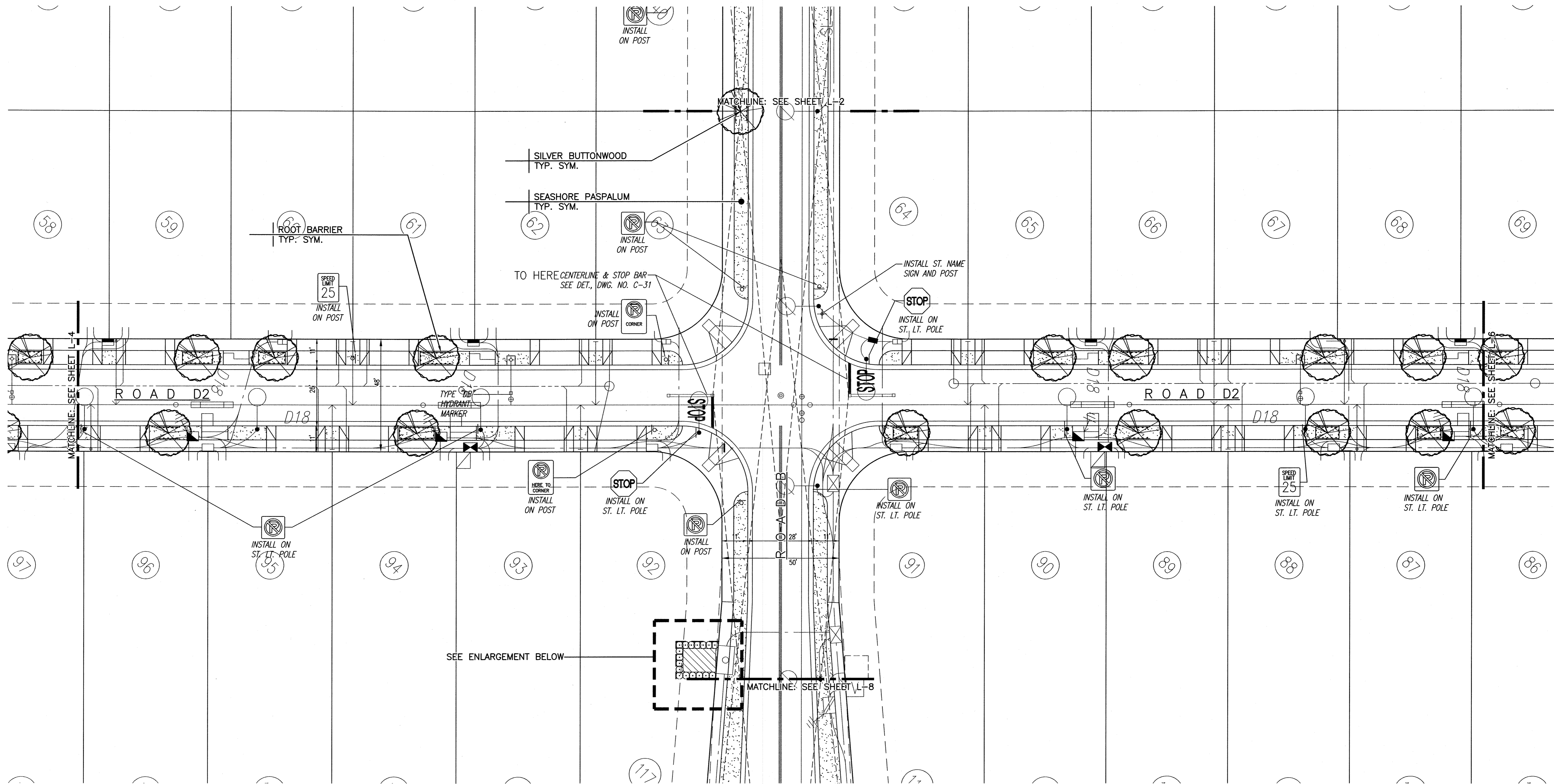
DRAWN BY: CB ENGINEER: SD CHECKED BY: RH

APPROVED:

Anthony X. Ching 4/5/13
DATE

FILE	POCKET	FOLDER	NO.

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R. Stan Duncan
SIGNATURE
EXPIRATION DATE OF LICENSE
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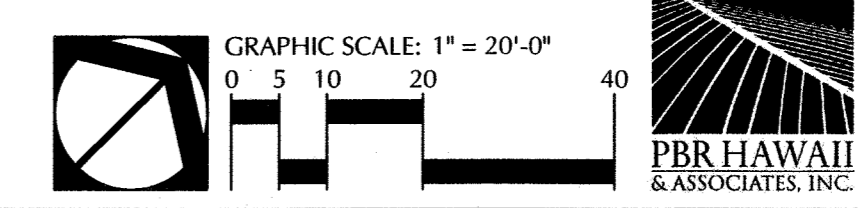
REVISION DATE	DESCRIPTION	MADE BY	APPROVED

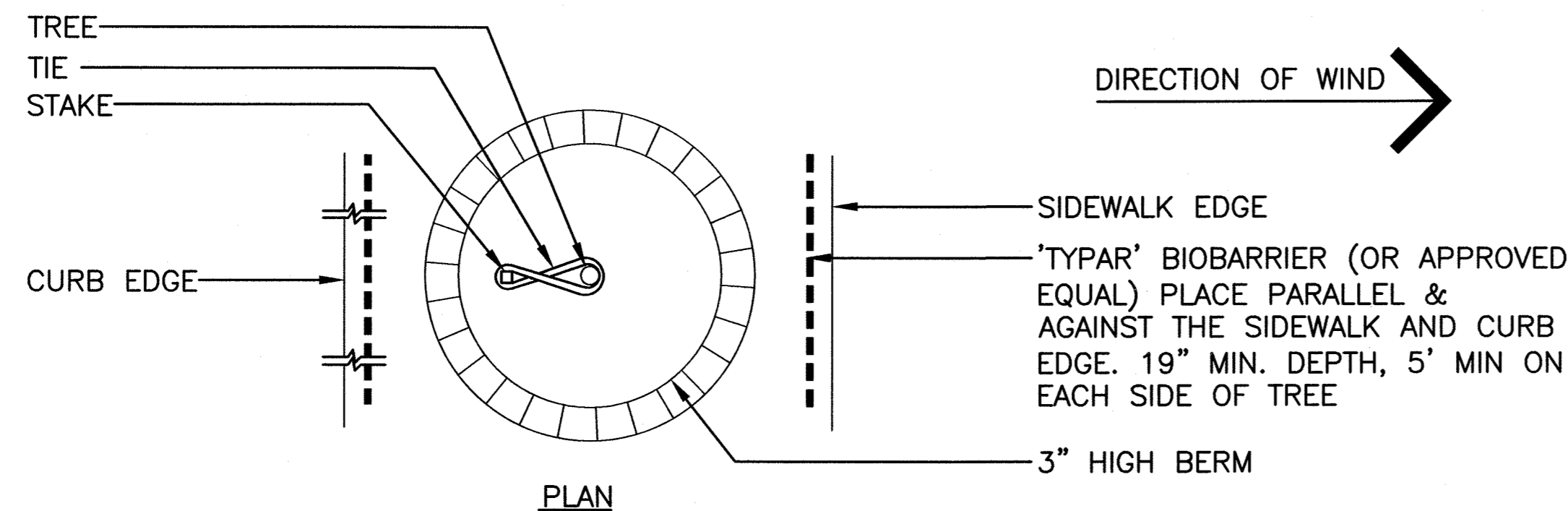
Community Planning and Engineering, Inc.
Engineering Design | Construction Management | Infrastructure Planning
1100 Alakoa Street, 8th Floor Honolulu, Hawaii
EAST KAPOLEI II DEVELOPMENT INCREMENT 2B
HONOLULU, EWA, OAHU, HAWAII
(DPP SUBD. FILE NO. 2011/SUB-155)
OWNER & DEVELOPER: DEPARTMENT OF HAWAIIAN HOME LANDS
TAX MAP KEY: 9-1-17: Portion 110

PLANTING PLAN 5

DRAWN BY: CB	ENGINEER: SD	CHECKED BY: RH
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APPROVED:
Anthony X. Oling 4/5/13
DATE: 4/5/13





DO NOT STAKE THROUGH ROOTBALL
2" DIA X 8" LONG REDWOOD OR
TREATED STAKE OR ACCEPTABLE W/
DPR. BEAUTIF. DIV., HAMMERED INTO
SUBGRADE. AVOID ROOTBALL. DO
NOT ALLOW TREE TO RUB AGAINST
STAKE, PROVIDE ADDITIONAL STAKES
AS REQUIRED.

PROVIDE 3" LAYER COURSE GRADE
ORGANIC MULCH IN TREE BASIN.
KEEP CLEAR OF TREE TRUNK.

SLOW RELEASE TABLETS SPREAD
EVENLY AROUND ROOTBALL AT MID
DEPTH DEEP AWAY FROM ROOTBALL.

HORIZONTAL BRANCH
8'-0" CLEAR TO LOWEST

FINISH GRADE
CURB

TYPAR BIOBARRIER, TYP.

LOOSEN SIDES OF PLANTING PIT W/ PICK
SLOPE THE SIDES OF THE PLANT PIT

SCARIFY SIDES OF HOLE

UNDISTURBED SUBGRADE

LET TOP OF TREE SWAY—
SECURE BOTTOM OF TREE WITH
FLEXIBLE RUBBER/PLASTIC TREE
TIE WRAPPED AROUND TRUNK
AND STAKE IN FIGURE EIGHT,
SECURED WITH ONE GALV. NAIL
THROUGH TIE AND STAKE.
MINIMUM TWO TIES AS
REQUIRED TO HOLD BOTTOM
OF TREE STRAIGHT AND
SECURE.

INSTALL EXPANDING TRIM GUARD
AT TRUNK OF EACH TREE

SET CROWN OF ROOTBALL
FLUSH WITH FINISH GRADE.

3" BERM AROUND PLANTING PIT
TO BE REMOVED AT END OF
MAINTENANCE PERIOD UNLESS
OTHERWISE DIRECTED.

PLANT PIT DUG TO THE DEPTH
OF ROOTBALL

BACKFILL MIX TO BE EXISTING
SOIL EXCAVATED FROM PLANTING
PIT OR TOPSOIL IF EXISTING
SOIL IS EXTREMELY POOR.
WATER IN BACK FILL MIX WITH
WATER PROBE.

STREET TREE PLANTING DETAIL

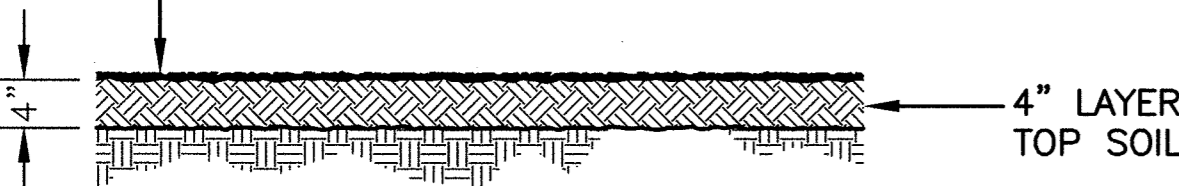
NOTE:
DIRECTION OF MAIN BRANCHING SHALL BE PARALLEL TO PLANTING STRIP AND NOT ONTO ROADWAY.

1 STREET TREE DETAIL

1" = 1'-0"

329343.16-24

HYDRO SEED/ HYDRO SPRIG:
SHALL BE SPECIFICALLY PROCESSED FIBER
CONTAINING NO GROWTH OR GERMINATION
INHIBITING FACTORS. IT SHALL BE SUCH THAT
AFTER ADDITION AND AGITATION IN THE HYDRAULIC
EQUIPMENT WITH SEEDS/SPRINGS, FERTILIZER,
WATER AND, OTHER ADDITIVES NOT DETRIMENTAL
TO PLANT GROWTH. THE FIBERS WILL FORM A
HOMOGENEOUS SLURRY. WHEN HYDRAULICALLY
SPRAYED ON THE SOIL, THE FIBERS SHALL FORM
A BLOTTER-LIKE GROUND COVER WHICH READILY
ABSORBS WATER AND ALLOWS INFILTRATION,
COMPLETE COVERAGE OF THE SURFACE SHALL BE
ATTAINED.



3 HYDRO-SEED/SPRIG DETAIL

NOT TO SCALE

329313-04

UB 24-2 SPECIFICATIONS 24" DEEPROOT TREE ROOT BARRIERS

SPECIFIED TREE ROOT BARRIERS ARE A MECHANICAL BARRIER AND
ROOT DEFLECTOR TO PREVENT TREE ROOTS FROM DAMAGING
HARDSCAPES AND LANDSCAPES. ASSEMBLED IN 2' LONG MODULES TO
CREATE VARYING SIZES OF CYLINDERS FOR SURROUNDING ROOT BALLS
(SURROUND PLANTING STYLE) OR FOR LINEAR APPLICATIONS DIRECTLY
BESIDE A HARDSCAPE ADJACENT TO ONE SIDE OF THE TREES (LINEAR
PLANTING STYLE).

A. MATERIALS

- THE CONTRACTOR SHALL FURNISH AND INSTALL TREE ROOT
BARRIERS AS SPECIFIED. THE TREE ROOT BARRIERS SHALL BE
PRODUCT # UB 24-2 AS MANUFACTURED BY DEEP ROOT
PARTNERS, L.P. 81 LANGTON ST. #4 SAN FRANCISCO, CA
(800-458-7668), OR APPROVED EQUAL. THE BARRIER SHALL BE
BLACK, INJECTION MOLDED PANELS, OF 0.085" (2.16MM) WALL
THICKNESS IN MODULES 24" (61CM) LONG BY 24" (61 CM) DEEP;
MANUFACTURED WITH A MINIMUM 50% POST CONSUMER
RECYCLED POLYPROPYLENE PLASTIC WITH ADDED ULTRAVIOLET
INHIBITORS; RECYCLABLE. EACH PANEL SHALL HAVE: NOT LESS
THAN 4 MOLDED INTEGRAL VERTICAL ROOT DEFLECTING RIBS OF AT
LEAST 0.085" (2.16MM) THICKNESS PROTRUDING 1/2" (12.7MM) AT
90° FROM INTERIOR OF THE BARRIER PANEL, SPACED 6" (15.24CM)
APART. (SEE PANEL DRAWING BELOW) A DOUBLE TOP EDGE
CONSISTING OF TWO PARALLEL, INTEGRAL, HORIZONTAL RIBS AT THE
TOP OF THE PANEL OF A MINIMUM 0.085" (2.16MM) THICKNESS,
3/8" (9.53MM) WIDE AND 1/4" (6.35MM) APART WITH THE LOWER
RIB ATTACHED TO THE VERTICAL ROOT DEFLECTING RIBS.(SEE DETAIL
"A") A MINIMUM OF 9 ANTI-LIFT GROUND LOCK TABS CONSISTING
OF INTEGRAL HORIZONTAL RIDGES OF A MINIMUM 0.085" (2.16MM)
THICKNESS IN THE SHAPE OF A SEGMENT OF A CIRCLE, THE 2"
(50.8MM) CHORD OF THE SEGMENT JOINING THE PANEL WALL AND
THE SEGMENT, PROTRUDING 3/8" (9.53MM) FROM THE PANEL. THE
NINE GROUND LOCKS ON EACH PANEL SHALL BE ABOUT EQUALLY
SPACED BETWEEN EACH OF THE VERTICAL ROOT DEFLECTING RIBS
(3 BETWEEN EACH SET OF RIBS, SEE DETAIL "B"). AN INTEGRATED
ZIPPER JOINING SYSTEM PROVIDING FOR INSTANT ASSEMBLY BY
SLIDING ONE PANEL INTO ANOTHER. (SEE DETAIL "C")

- THE BASIC PROPERTIES OF THE MATERIAL SHALL BE: TEST ASTM
TEST METHOD TYPICAL VALUE COPOLYMER POLYPROPYLENE

TENSILE STRENGTH @ YIELD - WALL	D638	2,354 PSI
TENSILE STRENGTH @ YIELD - HINGE	D638	2,846 PSI
YIELD ELONGATION - WALL	D638	7.44%
YIELD ELONGATION - HINGE	D638	7.01%
FLEXURAL MODULUS	D790B	119,625 PSI
3.84 (FT-LBS) D256A NOTCHED IZOD IMPACT - WALL		

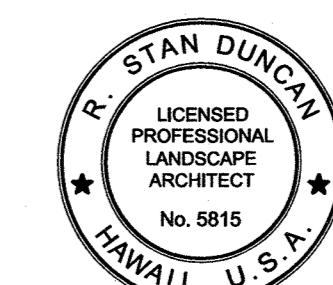
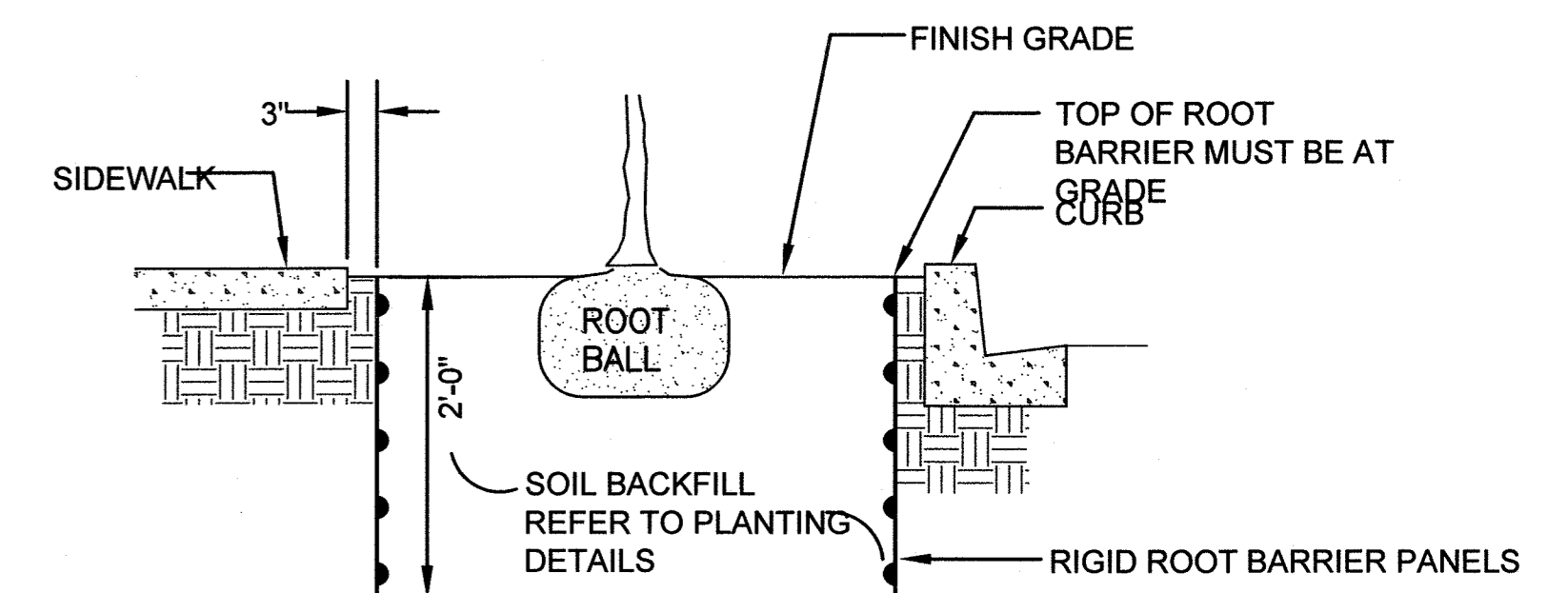
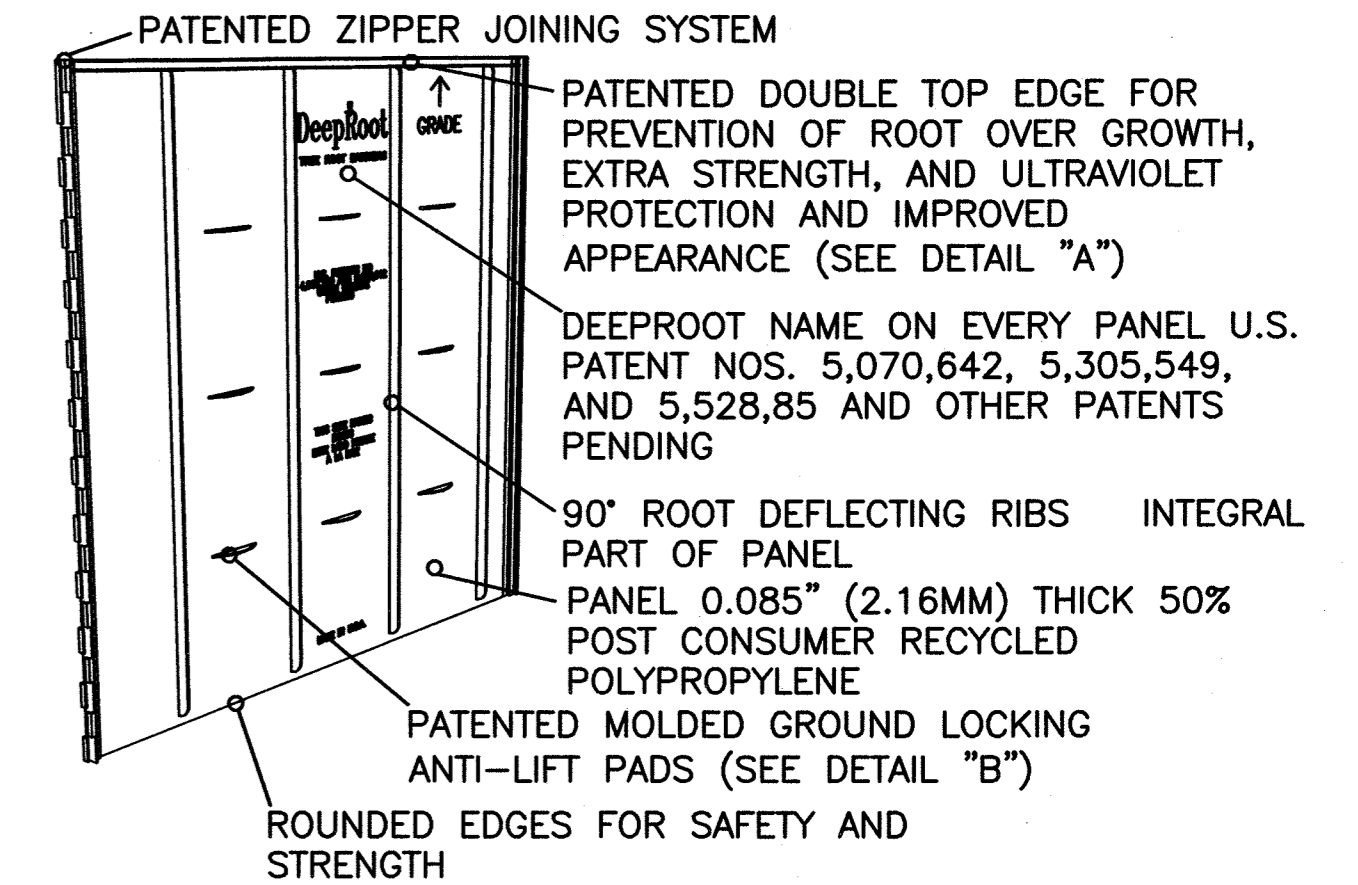
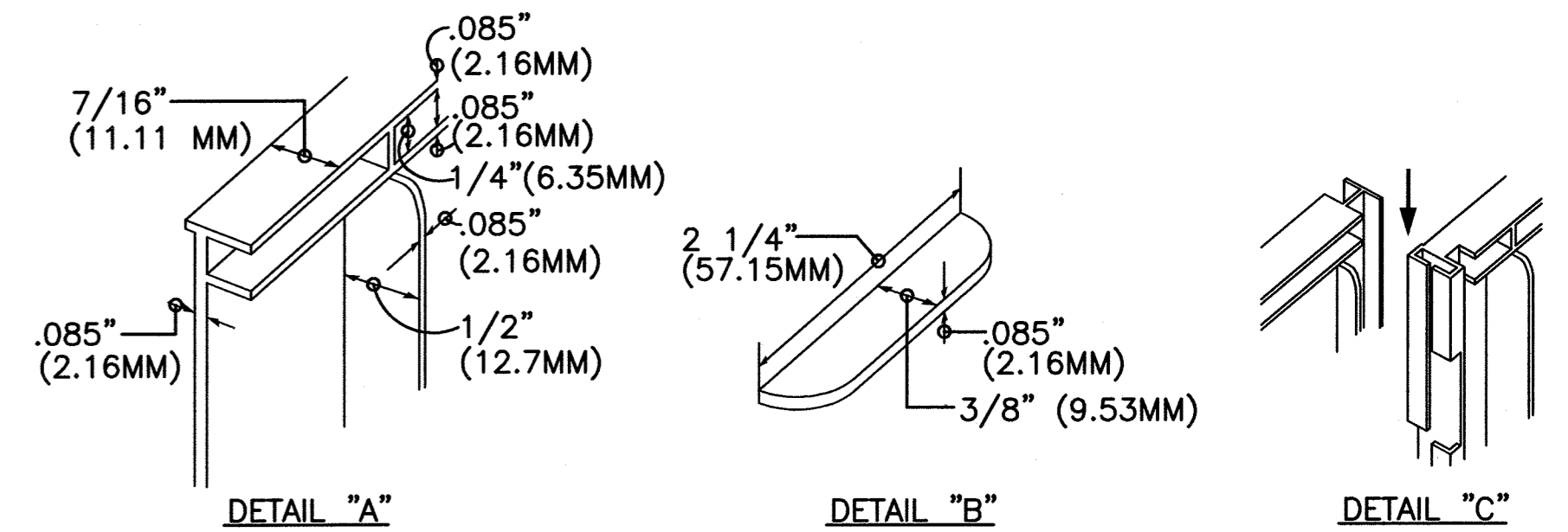
ROCKWELL HARDNESS R. SCALE - WALL D785A 84.4
U.S. PATENTS: 5,070,642 , 5,305,549 AND 5,528,857. OTHER
PATENTS PENDING.

B. CONSTRUCTION AND INSTALLATION:

- THE CONTRACTOR SHALL INSTALL THE TREE ROOT BARRIERS WITH
THE NUMBER OF PANELS AND IN THE MANNER SHOWN ON THE
DRAWINGS. THE VERTICAL ROOT DEFLECTING RIBS SHALL BE FACING
INWARDS TO THE ROOT BALL AND THE DOUBLE TOP EDGE SHALL
BE 1/2" (12.7MM) ABOVE GRADE. EACH OF THE REQUIRED NUMBER
OF PANELS SHALL BE CONNECTED TO FORM A CIRCLE AROUND THE
ROOT BALL OR JOINED IN A LINEAR FASHION AND PLACED ALONG
THE ADJACENT HARDSCAPE.
- EXCAVATION AND SOIL PREPARATION SHALL CONFORM TO THE
DRAWINGS.

2 DEEP ROOT BARRIER DETAIL

1" = 1'-0"



THIS WORK WAS PREPARED BY
ME OR UNDER MY SUPERVISION AND
CONSTRUCTION OF THIS PROJECT
WILL BE UNDER MY OBSERVATION

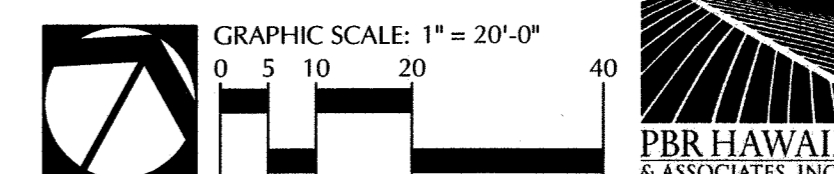
REVISION DATE	DESCRIPTION	MADE BY	APPROVED

Community Planning and Engineering, Inc.
Engineering Design | Construction Management | Infrastructure Planning
1100 Alakoa Street, 8th Floor Honolulu, Hawaii

**EAST KAPOLEI II DEVELOPMENT
INCREMENT 2B**
HONOLULU, EWA, OAHU, HAWAII
(DPP SUBD. FILE NO. 2011/SUB-155)
OWNER & DEVELOPER: DEPARTMENT OF HAWAIIAN HOME LANDS
TAX MAP KEY: 9-1-17: Portion 110

PLANTING DETAILS

DRAWN BY: CB ENGINEER: SD CHECKED BY: RH
APPROVED:

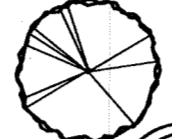

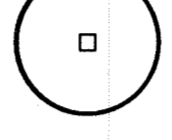
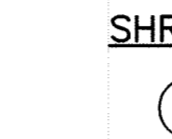
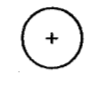



Antony X. Chiu 4/5/13
CHIEF, DESIGN DESIGN DEPT.



STREET TREE PLANTING NOTES

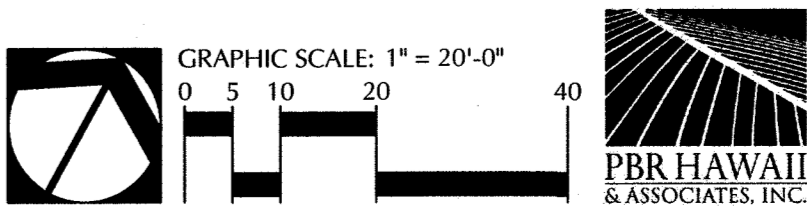
1. NEW TREES SHALL BE PRE-APPROVED AT THE NURSERY BY THE LANDSCAPE ARCHITECT CONSULTANT AND CONCURRED BY DUF (DIVISION OF URBAN FORESTRY) TWO WEEKS PRIOR TO THEIR DELIVERY TO THE PROJECT SITE. CONTACT MR. BRANDON AU, PARKS GROUNDS IMPROVEMENT SUPERVISOR II OF DUF, AT 971-7151 TO SCHEDULE AN INSPECTION. TREES THAT DO NOT HAVE WELL ESTABLISHED ROOT SYSTEMS WILL BE REJECTED.
2. UPON INSTALLATION OF THE STREET TREES, THE INSTALLER/CONTRACTOR SHALL CONTACT DPR, DUF AT 971-7151 TO SCHEDULE AN INSPECTION OF THE TREE(S) INSTALLATION. NOTIFICATION MUST BE GIVEN AT LEAST SEVEN (7) DAYS PRIOR TO PRE-MAINTENANCE AND FINAL INSPECTIONS. A NOTICE TO ACCEPTANCE WILL BE ISSUED BY THE DPR WHEN THEY HAVE DETERMINED THE TREES HAVE BEEN PROPERLY INSTALLED AND MAINTAINED.
3. ADJACENT PROPERTY OWNERS AND/OR THE COMMUNITY ASSOCIATION WILL BE RESPONSIBLE FOR THE ON-GOING MAINTENANCE AND REPAIR OF THE STREET TREES AND MEDIAN TREES, TREE WELLS, GRATES, GROUND COVERS, MOWING, FERTILIZING, IRRIGATION SYSTEM AND PAYMENT FOR THE WATER AND ELECTRICAL USAGE WITHIN THE ROAD RIGHT-OF-WAY BEFORE AND AFTER THE STREETS ARE DEDICATED TO THE "CITY AND COUNTY OF HONOLULU".
4. THE STREET TREE MAINTENANCE PERIOD SHALL BE FOR NINETY (90) CALENDAR DAYS OR UNTIL PROJECT MAINTENANCE HAS BEEN ASSUMED BY ABUTTING PROPERTY OWNER.
5. THE STANDARD CITY AND COUNTY OF HONOLULU, DEPARTMENT OF PARKS AND RECREATION SPECIFICATIONS FOR STREET TREE PLANTING AND LANDSCAPING SHALL BE MADE PART OF THE CONSTRUCTION DOCUMENTS.
6. STREET TREE PLANTING THAT HAVE BEEN REVISED OR PROJECTS THAT HAVEN'T STARTED CONSTRUCTION WITHIN TWO (2) YEARS OF THE DATE OF THE DEPARTMENT OF PLANNING AND PERMITTING (DPP) APPROVAL WILL BE SUBJECT TO RE-APPROVAL. WHEN SUBSTITUTION OF TREE TYPES ARE REQUESTED BY THE DEVELOPER OR CONTRACTOR DUE TO UNAVAILABILITY, THE PLANS SHALL BE REVISED (AFTER NOTIFICATION OF TREE SELECTION) AND (THE PLANS) SUBMITTED FOR RE-APPROVAL.
7. PRIOR TO ACCEPTANCE OF THE TREE INSTALLATION BY THE DIVISION OF URBAN FORESTRY, DEPARTMENT OF PARKS AND RECREATION, THE STREET INSTALLER IS REQUIRED TO SUBMIT REPRODUCIBLE AS-BUILT PLANS TO THE DEPARTMENT OF PARKS AND RECREATION.
8. APPROVAL IS FOR STREET TREE PLANTING WITHIN THE ROAD RIGHT-OF-WAY ONLY. IT IS NOT AN APPROVAL OF THE PLANTING AND IRRIGATION PLAN OUTSIDE OF THE ROAD RIGHT-OF-WAY.
9. THE STREET LIGHTING SYSTEM SHALL BE KEPT OPERATIONAL DURING CONSTRUCTION. ANY RELOCATION REQUIRED SHALL BE APPROVED BY THE MECHANICAL/ELECTRICAL DESIGN AND ENGINEERING DIVISION, DEPARTMENT OF DESIGN AND CONSTRUCTION, AND PAID FOR BY THE CONTRACTOR.
10. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGES TO THE CITY'S EXISTING STREET LIGHTING FACILITIES, TRAFFIC SIGNAL FACILITIES (INCLUDING THE TRAFFIC SIGNAL INTERCONNECT SYSTEM, COMMUNICATIONS FIBER OPTIC CABLE SYSTEM AND TRAFFIC SIGNAL FIBER OPTIC CABLE SYSTEM). ANY AND ALL DAMAGES TO THESE FACILITIES SHALL BE REPAIRED BY THE CONTRACTOR AT HIS COST IN ACCORDANCE WITH THE REQUIREMENTS OF THE CITY AND COUNTY OF HONOLULU.
11. AFTER INSTALLATION OF PLANTING, LANDSCAPE CONTRACTOR TO PROVIDE MARK-UP INFORMATION OF ANY CHANGES MADE IN THE FIELD TO THE FINAL DESIGN PLANS.



PLANT SCHEDULE

TREES	QTY	BOTANICAL NAME	COMMON NAME	CONT	CAL	SIZE	REMARKS
	19	CASSIA X NEALIAE	RAINBOW SHOWER	25 GAL	2" CAL	6'-8' HT.	
	36	CONOCARPUS ERECTUS SERICEUS	SILVER BUTTON WOOD	25 GAL	2" CAL	6'-8' HT.	
	35	HARPULLIA PENDULA	TULIPWOOD	25 GAL	2" CAL	6'-8' HT.	
	50	TABEBUIA CARAIBA	SILVER TRUMPET	25 GAL	2" CAL	6'-8' HT.	
SHRUBS	QTY	BOTANICAL NAME	COMMON NAME	CONT	O.C.		REMARKS
	17	HIBISCUS WAIMEAE	WHITE KAUAI HIBISCUS	3 GAL @ 3" OC	AS SHOWN		
SOD/SEED	QTY	BOTANICAL NAME	COMMON NAME	CONT			REMARKS
	45,513 SF	PASPALUM VAGINATUM	SEASHORE PASPALUM	HYDROSEED			

MISCELLANEOUS

SYMBOL	DESCRIPTION	QTY
	PLASTIC ROOT BARRIER	3,515 LF
	PLASTIC HEADER	51 LF
	2" LAYER SOIL AMENDMENT*	45,871 SF
	4" LAYER IMPORTED TOP SOIL*	566.3 CY
	4" LAYER BLACK CINDER MULCH*	1.68 CY
	*NOT INDICATED ON PLANS	



REVISION DATE	DESCRIPTION	MADE BY	APPROVED
 Community Planning and Engineering, Inc. Engineering Design Construction Management Infrastructure Planning 1000 Alakoa Street, Sixth Floor Honolulu, Hawaii			
EAST KAPOLEI II DEVELOPMENT INCREMENT 2B HONOLULU, EWA, OAHU, HAWAII (DPP SUBD. FILE NO. 2011/SUB-155) OWNER & DEVELOPER: DEPARTMENT OF HAWAIIAN HOME LANDS TAX MAP KEY: 9-1-17: Portion 110			
PLANTING NOTES & LEGEND			
DRAWN BY: GB	ENGINEER: SD	CHECKED BY: RH	
APPROVED:  4/5/13 DATE			