STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

ADDENDUM NO. 1
for
SAND ISLAND ACCESS ROAD, TRUCK WEIGH STATION
NH-064-1(010)

The following amendments shall be made to the Bid Documents:

A. TABLE OF CONTENTS

1. Replace the Table of Contents pages dated 9/14/2018 with the attached revised Table of Contents dated r5/17/2021.

B. NOTICE TO BIDDERS

1. Prospective bidders are hereby notified that the deadline for the receiving of sealed bids previously schedule for Monday, May 24, 2021 at 2:00pm HST, is hereby RESCHEDULED for 2:00pm HST, Monday, June 14, 2021.

2. Replace the NOTICE TO BIDDERS with the attached revised NOTICE TO BIDDERS date r5/17/2021.

C. DISADVANTAGED BUSINESS ENTERPRISE (DBE) REQUIREMENTS

1. Replace the DBE Requirements dated 11/17/2017 with the attached DBE Requirements dated 5/13/2021.

D. SPECIAL PROVISIONS

1. Replace the DIVISION 100 – GENERAL PROVISIONS dated 10/01/2017 with the attached DIVISION 100 – GENERAL PROVISIONS dated r5/17/2021. The definition of subcontractor was revised.

2. Replace the SECTION 635 – E-CONSTRUCTION with the attached SECTION 636 – E-CONSTRUCTION dated r5/17/2021. The section number was corrected to 636.

E. FEDERAL WAGE RATES

1. Replace the Federal Wage Rates dated 4/17/2021 with the attached Federal Wage Rates dated 5/13/2021.

F. PROPOSAL

1. Replace Proposal page P-1 dated 1/31/2018 with the attached Proposal page P-1 dated r5/17/2021.

2. Replace Proposal pages P-2,P-3, and P-4 dated 6/13/2017 with the attached Proposal pages P-2,P-3, and P-4 dated r5/17/2021.

3. Replace Proposal page P-5 dated 6/13/2017 with the attached Proposal page P-5 dated r5/17/2021.

4. Replace Proposal page P-6 dated 6/13/2017 with the attached Proposal page P-6 dated r5/17/2021.

5. Replace Proposal Schedule pages P-8 to P-12 dated 1/27/2021 with the attached Proposal Schedule pages P-8 to P-12 dated r5/17/2021.

G. SAMPLE FORMS

1. Remove Confirmation by DBE form dated 6/17/2017.

2. Add the DBE Contract Goal Verification and Good Faith Efforts Documentation For Construction form dated 5/13/2021 to the sample forms in the special provisions.

3. Add the DBE Confirmation and Commitment Agreement – Trucking Company form dated 5/13/2021 to the sample forms in the special provisions.

4. Add the DBE Confirmation and Commitment Agreement – Subcontractor, Manufacturer, or Supplier form dated 5/13/2021 to the sample forms in the special provisions.

   Bidders must complete and submit these forms to the Engineer by email at lawrence.m.laus@hawaii.gov and ryan.k.kunselman@hawaii.gov by 4:45pm Monday, June 24, 2021, per added requirements of the attached NOTICE TO BIDDERS dated r5/17/2021.

H. PRE-BID MEETING MINUTES

1. Meeting minutes is attached for information and shall include a list of attendees.

I. ANSWERS TO QUESTIONS FROM PROSPECTIVE BIDDERS

1. Attached are Requests For Information and responses.

2. The Geotechnical Report is attached for reference.

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

JADE T. BUTAY
Director of Transportation

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Labor and Material Payment Bond

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NOTICE TO BIDDERS
(Chapter 103D, HRS)

The receiving of SEALED BIDS for Sand Island Access Road, Truck Weigh Station Project No. NH-064-1(010), will begin as advertised in HIePRO. Bidders are to register and submit bids through HIePro only. See the following HIePRO link for important information on registering: https://hiepro.ehawaii.gov/welcome.html.

Deadline to submit bids is - Monday, June 14, 2021, at 2:00pm HST. Bids received after said due date and time shall not be considered.

The intent of including applicable permit documents is to assist potential bidders to determine lump sum cost for various environmental-related line items in the Proposal Schedule. The following permit documents such as the Notice of Intent, Notice of General Permit Coverage, and Storm Water Pollution Prevention Plan will be included in HIEPRO.

The scope of work consists of (provide a brief description of the project). The estimated cost of construction is between $7,000,000.00 and $8,000,000.00.

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

A pre-bid conference is scheduled for May 5, 2021, at 10:00am on Microsoft Teams. All prospective bidders or their representatives (employees) are encouraged to attend, but attendance is not mandatory. Due to the impacts of COVID 19, the pre-bid meeting will be conducted virtually. Questions applicable to the Project Specifications should be submitted to the Project Manager no later than two days prior to the scheduled date of the pre-bid meeting.

Contact Lawrence Laus, Project Manager, by phone, at (808) 692-7575, or by email at Lawrence.m.laus@hawaii.gov address to obtain the venue for the pre-bid meeting.

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

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

Campaign contributions by State and County Contractors. Contractors are hereby notified of the applicability of Section 11-355, HRS, which states that campaign contributions are prohibited from specified State or county government contractors during the term of the contract if the contractors are paid with funds appropriated by the legislative body. For more information, contact the Campaign Spending Commission at (808) 586-0285.

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

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

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

Bidders are directed to read and be familiar with the DBE Requirements for Federal-Aid Projects regarding DBE, which establishes the program requirements pursuant to Title 49 CFR Part 26 and, particularly, the requirements of certification, method of award, and evidence of good faith. All Bidders must e-mail the Engineer at lawrence.m.laus@hawaii.gov and ryan.k.kunselman@hawaii.gov, the DBE Contract Goal Verification and Good Faith Efforts Documentation for Construction, DBE Confirmation and Commitment Agreement – Trucking Company and DBE Confirmation and Commitment Agreement – Subcontractor, Manufacturer, or Supplier by 4:45pm Monday, June 24, 2021. Failure to provide these documents shall be cause for bid/proposal rejection.

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

For additional information, contact Lawrence Laus, Project Manager, by phone at (808) 692-7575, by fax at (808) 692-7590 or email at lawrence.m.laus@hawaii.gov .

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

JADE T. BUTAY
Director of Transportation

Posted:

DISADVANTAGED BUSINESS ENTERPRISE REQUIREMENTS

I. GENERAL

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

II. POLICY

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

III. DBE ASSURANCES

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

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

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

IV. BIDDER/OFFEROR RESPONSIBILITIES

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

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

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

A. Bidders/offerors shall take all necessary steps to ensure that DBEs have an opportunity to participate in this contract.

B. DBEs may participate as a consultant, prime contractor, subcontractor, trucking company, or vendor of materials or supplies. DBEs may also team with other DBE or non-DBE firms as part of a joint venture or partnership.

C. Agreements between a bidder/offeror and a DBE in which a DBE promises not to provide subcontracting quotations to other bidders/offerors are strictly prohibited.

D. A DBE shall be certified by the Department under the appropriate North American Industry Classification System (NAICS) code and work in their registered field of work in order for credit to be allowed.

E. Information regarding the current certification status of DBEs is available on the Internet at https://hidot.hawaii.gov/administration/ocr/dbe/.

F. Commercially Useful Function ("CUF"). A DBE must perform a CUF. This means that a DBE must be responsible for the execution of a distinct element of the work, must carry out its responsibility by actually performing, managing, and supervising at least 30% of the work involved by using its own employees and equipment, must negotiate price, determine quality and quantity, order and install material (when applicable), and must pay for the material itself.[1]

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

V. PROPOSAL REQUIREMENTS

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

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

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

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

1. DBE Confirmation and Commitment Agreement. This form must be **signed by the bidder/offeror and each DBE** subcontractor, manufacturer, supplier, or trucking company and submitted to the State Project Manager. Information to be provided on the form shall include, among other things, the project number, the DBE's NAICS codes, description of work, bid items with corresponding price information, prime contractor name and contact information DBE name and contact information and subcontractor name and contact information if the DBE is a second tier subcontractor.

2. DBE Contract Goal Verification and Good Faith Efforts (GFE) Documentation for Construction. List the dollar amount of all subcontractors, manufacturers, suppliers, and trucking companies (both DBE and non-DBE firms) for all subcontractors, trucking companies, manufacturers and suppliers. Bidder/offeror must also list the DBE project goal on this form (See paragraph D below regarding goal calculation). If the project goal is not met, the bidder/offeror shall submit documentation of good faith efforts including quotations for both DBE and non-DBE subcontractors when a non-DBE is selected over a DBE for the project.

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

D. Calculation of the DBE contract goal for this project is the proportionate contract dollar value of work performed, materials, and goods to be supplied by DBEs. This DBE contract goal is applicable to all the contract work performed for this project and is calculated as follows:

1. DBE contract goal percentage = Contract Dollar Value of the work to be performed by DBE subcontractors and manufacturers, plus 60% of the contract dollar value of DBE suppliers, divided by the sum of all contract items (sum of all contract items is the total amount for comparison of bids less mobilization, force account items, and allowance items).

2. The Department shall adjust the bidder's/offeror's DBE contract goal to the amount of the project goal if it finds that the bidder/offeror met the goal but erroneously calculated a lower percentage. If the amount the

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

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

VI. COUNTING DBE PARTICIPATION TOWARDS CONTRACT GOAL

A. Count the entire amount of the portion of a contract (or other contract not covered by paragraph B below) that is performed by the DBE's own forces. Include the cost of supplies and materials obtained by the DBE for the work on the contract, including supplies purchased or equipment leased by the DBE (except supplies and equipment the DBE subcontractor purchases or leases from the prime contractor or its affiliate).

B. Count the entire amount of fees or commissions charged by a DBE firm for providing a bona fide service, such as professional, technical, consultant, or managerial services, or for providing bonds or insurance specifically required for the performance of a USDOT-assisted contract, toward DBE goals, provided the Department determines the fee to be reasonable and not excessive as compared with fees customarily allowed for similar services.

C. When a DBE subcontracts part of the work of its contract to another firm, the value of the subcontracted work may be counted toward DBE goals only if the DBE's subcontractor is itself a DBE. Work that a DBE subcontracts to a non-DBE firm does not count toward DBE goals.

D. When a DBE performs as a participant in a joint venture, count a portion of the total dollar value of the contract equal to the distinct, clearly defined portion of the work of the contract that the DBE performs with its own forces toward DBE goals.

E. Count expenditures to a DBE contractor toward DBE goals only if the DBE is performing a CUF on that contract.

F. The following is a list of appropriate DBE credit to be allowed for work to be performed by a DBE subcontractor. Count expenditures with DBEs for materials or supplies toward DBE goals as provided in the following:

1. If the materials or supplies are obtained from a DBE manufacturer, count 100 percent of the cost of the materials or supplies toward DBE goals;
2. For purposes of determining DBE goal credit, a manufacturer is a firm that operates or maintains a factory or establishment that produces (on the premises) the materials, supplies, articles, or equipment required under the contract and of the general character described by the specifications;
3. If the materials or supplies are purchased from a DBE regular dealer, count 60 percent of the cost of the materials or supplies toward DBE goals;
4. For purposes of determining DBE goal credit, a regular dealer is a firm that owns, operates, or maintains a store, warehouse, or other

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

5. To be a regular dealer, the firm must be an established, regular business that engages, as its principal business and under its own name, in the purchase and sale or lease of the products in question;

6. A person may be a regular dealer in such bulk items as petroleum products, steel, cement, gravel, stone, or asphalt without owning, operating, or maintaining a place of business as provided in the DBE Regulations, if the person both owns and operates distribution equipment for the products. Any supplementing of a regular dealers' own distribution equipment shall be by a long-term lease agreement and not on an ad hoc or contract-by-contract basis;

7. Packagers, brokers, manufacturers' representatives, or other persons who arrange or expedite transactions are not regular dealers;

8. With respect to materials or supplies purchased from a DBE, which is neither a manufacturer nor a regular dealer, count the entire amount of fees or commissions charged for assistance in the procurement of the materials and supplies, or fees or transportation charges for the delivery of materials or supplies required on a job site, toward DBE goals, provided that the Department determines the fees to be reasonable and not excessive as compared with fees customarily allowed for similar services. Do not count any portion of the cost of the materials and supplies themselves toward DBE goals; however,

9. If a firm is not currently certified as a DBE in accordance with standards of this part at the time of the execution of the contract, do not count the firm's participation toward any DBE goals, except as provided for in §26.87(i);

10. Do not count the dollar value of work performed under a contract with a firm after it has ceased to be certified toward the Department's overall goal; and

11. Do not count the participation of a DBE subcontractor toward a contractor's final compliance with its DBE obligations on a contract until the amount being counted has actually been paid to the DBE.

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

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

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

   EXAMPLE: DBE firm X uses two (2) of its own trucks on a contract, leases two (2) trucks from DBE Firm Y and six (6) trucks from non-DBE Firm Z. DBE credit would be awarded for the total value of transportation services provided by Firm X and Firm Y, and may also be awarded for the total value of transportation services provided by four (4) of the six (6) trucks provided by Firm Z. In all, full credit would be allowed for the participation of eight (8) trucks. With respect to the other two (2) trucks provided by Firm Z, DBE credit could be awarded only for the fees or commissions pertaining to those trucks Firm X receives as a result of the lease with Firm Z;
6. The DBE may lease trucks without drivers from a non-DBE truck leasing company. If the DBE leases trucks from a non-DBE truck leasing company and uses its own employees as drivers, it is entitled to credit for the total value of these hauling services.

   EXAMPLE: DBE Firm X uses two (2) of its own trucks on a contract. It leases two (2) additional trucks from non-DBE Firm Z. Firm X uses its own employees to drive the trucks leased from Firm Z. DBE credit would be awarded for the total value of the transportation services provided by all four (4) trucks; and
7. For purposes of determining whether a trucking firm performs a CUF, a lease must indicate that the DBE has exclusive use of and control over the truck. This does not preclude the leased truck from working for others during the term of the lease with the consent of the DBE, so long as the lease gives the DBE absolute priority for use of the leased truck. Leased trucks must display the name and identification number of the DBE.

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

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

I. Effects of a Summary Suspension of a DBE. When a DBE's certification is suspended, the DBE may not be considered to meet a contract goal on a new contract and any work it does on a contract received during the suspension shall not be counted towards the overall goal. The DBE may continue to perform work under an existing contract executed before the DBE received a Notice of Suspension and may be counted towards the contract goal during the period of suspension as long as the DBE is performing a CUF under the existing contract.

J. Effects of Decertification of a DBE. Should a DBE become decertified during the term of the subcontract for reasons beyond the control of and with no fault or negligence on the part of the contractor, the work remaining under the subcontract may be credited towards the contract goal, but are not included in the overall accomplishments.

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

VII. USE OF JOINT CHECKS UNDER THE DBE PROGRAM

A. The following guidelines apply to the use of joint checks:

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

B. Contractors and DBEs should review the following general guidelines when determining whether to use joint checks closely to avoid abuse:

1. That standard industry practice applies to all contractors (federal and state contracts);
2. Use of joint checks must be available to all subcontractors;
3. Material industry sets the standard industry practice, not prime contractors;
4. Short term, not to exceed reasonable time (i.e., one (1) year, two (2) years) to establish/increase a credit line with the material supplier;
5. No exclusive arrangement between one (1) prime and one (1) DBE in the use of joint checks that might bring the independence of the DBE into question;
6. Non-proportionate ratio of DBE's normal capacity to size of contract and quantity of material to be provided under the contract;
7. The DBE is normally responsible to install and furnish the work item; and
8. The DBE must be more than an extra participant in releasing the check to the material supplier.

C. The Department shall allow the use of joint checks if the following general conditions are met:

1. DBE submits request to the Department for action;
2. There is a formalized agreement between all parties that specify the conditions under which the arrangement shall be permitted;
3. There is a full and prompt disclosure of the expected use of joint checks;
4. The Department will provide prior approval;
5. DBE remains responsible for all other elements of 49 CFR 26.55(c)(1);
6. The agreement states clearly and determines that independence is not threatened because the DBE retains final decision making responsibility;
7. The Department will determine that the request is not an attempt to artificially inflate DBE participation;
8. Standard industry practice is only one (1) factor;
9. The Department will monitor and maintain oversight of the arrangement by reviewing cancelled checks and/or certification statement of payment; and
10. The Department will verify there is no requirement by prime contractor that the DBE is to use a specific supplier nor the prime contractor's negotiated unit price.

VIII. DEMONSTRATION OF GOOD FAITH EFFORTS FOR CONTRACT AWARD

A. When a project goal is not met, the Department shall conduct the initial review of GFE submitted by the bidder/offeror and shall determine whether the bidder/offeror has performed the quality, quantity, and intensity of efforts that demonstrate a reasonably active and aggressive attempt to meet the contract goal in accordance with 49 CFR Part 26, Appendix A.

B. The bidder/offeror bears the responsibility of demonstrating that it met the contract goal, or if the contract goal was not met, by documenting the GFE it made in an attempt to meet the goal. It is the sole responsibility of the bidder/offeror to submit any and all documents, logs, correspondence, and any other records or information to the Department that will demonstrate that the bidder/offeror made good faith efforts to meet the DBE goal.

C. In its good faith evaluation, the Department shall perform the following as part of its evaluation: a) request additional information and documents from the bidder/offeror; b) compare the bidder's/offeror's bid against the bids/offers of other bidders/offerors, and compare the DBEs and DBE work areas utilized by the bidder/offeror with the DBEs listed in other bids/offers submitted for this contract (If other bidders obtained DBEs in a particular work area in which the low bidder did not, the Department shall take this into consideration in its evaluation);; c) verify contacts by bidders/offerors with DBEs; and d) compare the DBE and the categories of DBE work targeted by the bidder/offeror for participation in the contract, with the total pool of available DBEs ready, willing and able to perform work on each particular subcontract targeted by the bidder/offeror.

D. Actions on the part of the bidder/offeror that will be considered demonstrative of good faith efforts include, but are not limited to, the following:

1. Whether the bidder/offeror submitted the required information at the time of bid opening (i.e. DBE name, address, NAICS code, description of work, project name, and number), and dollar amounts for all subcontractors, within five (5) days of bid opening;
2. Whether the bidder/offeror solicited through all reasonable and available means (e.g. attendance at pre-bid meetings, advertising and/or written notices) the interest of all certified DBEs who have the capability to perform part or all of the work to be included under the contract. The Department will also consider whether the bidder/offeror solicited the participation of potential DBEs as early in the procurement process as practicable, and allowed sufficient time for the DBEs to properly inquire about the project and respond to the solicitation. The Department will also review whether the bidder/offeror took appropriate steps to follow up with interested DBEs in a timely manner to facilitate participation by DBEs in this project;
3. Whether the bidder/offeror identified and broke up portions of work that can be performed by DBEs in order to increase the likelihood that a DBE will be able to participate, and that the DBE goal could be achieved (e.g. breaking out contract items into economically feasible units to facilitate

DBE participation even when the bidder/offeror might otherwise prefer to self-perform these work items with its own forces);

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

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

IX. ADMINISTRATIVE RECONSIDERATION.

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

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

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

B. The reconsideration official, or his or her designee (referred to as "reconsideration official"), shall not have played any role in the original determination that the bidder/offeror failed to meet the goal or make adequate good faith efforts to do so.

C. As part of this reconsideration, the bidder/offeror will have the opportunity to provide written documentation or argument concerning the issue of whether it met the goal or made adequate GFE to do so. The bidder/offeror will have the opportunity to meet in person with the reconsideration official to discuss the issue of whether it met the goal or made adequate GFE to do so.

D. In an administrative reconsideration, the reconsideration official will review all previously submitted documents, oral and written arguments, and other evidence presented in the reconsideration, in making the decision.

E. The Department shall inform the bidder/offeror of the decision within thirty (30) days of the proceeding. The decision will state the Department's findings, and explain the basis of those findings, with respect to whether or not the bidder/offeror met the contract goal, or whether or not the bidder/offeror made adequate GFE to achieve the contract goal.

F. The reconsideration decision is not administratively appealable to USDOT but is appealable under HRS 103D-709.

X. AWARD OF CONTRACT

A. In a sealed bid procurement, the Department reserves the right to reject any or all bids. The award of contract, if it is awarded, will be to the lowest responsive and responsible bidder who meets or exceeds the DBE project goal, or who makes good faith efforts to meet or exceed the DBE project goal, as determined by the Department.

B. If the lowest responsible bidder does not meet the DBE project goal and does not demonstrate to the satisfaction of the Department that it made good faith efforts to meet the DBE project goal, such bid shall be rejected as non-responsive. The Department will then consider the next lowest responsive and responsible bidder for award in accordance with paragraph A above.

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

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

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

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

The written notice by the contractor must include the following:

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

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

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

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

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

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

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

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

XII. CONTRACT COMPLIANCE

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

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

XIII. PAYMENT

A. The Department will make an estimate in writing each month based on the items of work performed and materials incorporated in the work and the value therefore at the unit prices or lump sum prices set forth in the contract. All progress estimates and payments will be approximate only and shall be subject to correction at any time prior to or in the final estimate and payment. The Department will not withhold any amount from any payment to the contractor, including retainage.

B. The contractor shall pay all subcontractors within ten (10) calendar days after receipt of any progress payments from the Department. This clause applies to both DBE and non-DBE subcontractors, and all tiers of subcontracts.

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

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

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

XIV. RECORDS

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

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

XV. FAILURE TO COMPLY WITH DBE REQUIREMENTS

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

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

"DIVISION 100 - GENERAL PROVISIONS

SECTION 101 - TERMS, ABBREVIATIONS, AND DEFINITIONS

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

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

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

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

AREA	American Railway Engineering Association
ASA	American Standards Association
ASCE	American Society of Civil Engineers
ASLA	American Society of Landscape Architects
ASTM	American Society for Testing and Materials
AWG	American Wire Gauge
AWPA	American Wood Preserver's Association
AWS	American Welding Society
AWWA	American Water Works Association
BMP	Best Management Practice
CCO	Contract Change Order
CFR	Code of Federal Regulations
CRSI	Concrete Reinforcing Steel Institute
DCAB	Disability and Communication Access Board, Department of Health, State of Hawaii
DOTAX	Department of Taxation, State of Hawaii
EPA	U.S. Environmental Protection Agency
FHWA	Federal Highway Administration, U.S. Department of Transportation
FSS	Federal Specifications and Standards, General Services Administration, U.S. Department of Defense
HAR	Hawaii Administrative Rules
HDOT	Department of Transportation, State of Hawaii
HIOSH	Occupational Safety and Health, Department of Labor and Industrial Relations, State of Hawaii

HMA	Hot Mix Asphalt
HRS	Hawaii Revised Statutes
ICEA	Insulated Cable Engineers Association (formerly IPCEA)
IMSA	International Municipal Signal Association
IRS	Internal Revenue Service
ITE	Institute of Transportation Engineers
MUTCD	Manual on Uniform Traffic Control Devices for Streets and Highways, FHWA, U.S. Department of Transportation
NCHRP	National Cooperative Highway Research Program
NEC	National Electric Code
NEMA	National Electrical Manufacturers Association
NFPA	National Forest Products Association
NPDES	National Pollutant Discharge Elimination System
OSHA	Occupational Safety and Health Administration/Act, U.S. Department of Labor
SAE	Society of Automotive Engineers
SI	International Systems of Units
UFAS	Uniform Federal Accessibility Standards
UL	Underwriter's Laboratory
USGS	U.S. Geological Survey
VECP	Value Engineering Cost Proposal

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

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

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

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

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

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

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

Bag - 94 pounds of cement.

Barrel - 376 pounds of cement.

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

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

Bid - See Proposal.

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

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

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

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

Calendar Day - See Day.

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

Completion - See Substantial Completion and Final Completion.

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

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

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

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

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

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

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

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

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

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

Contracting Officer - See Engineer.

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

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

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

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

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

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

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

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

Field Order - A written order issued by the Engineer or the Engineer's authorized representative to the Contractor requiring a change or changes to the contract work. A field order may (1) establish a price adjustment or time adjustment; or

(2) may declare that no adjustment will be made to contract price or contract time; or (3) may request the Contractor to submit a proposal for an adjustment to the contract price or contract time.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Pre-Final Inspection - Inspection scheduled when Contractor notifies Engineer that all physical work on the project, with the exception of planting period and plant

establishment period, has been completed. Notice from Contractor of substantial completion will suspend contract time until Contractor receives punchlist from Engineer.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Subcontractor - An individual, partnership, firm, corporation, joint venture or other legal entity, as licensed or required to be licensed under Chapter 444, Hawaii

Revised Statutes, as amended, which enters into an agreement with the Contractor to perform a portion of the work**.**

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

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

(1) All traffic lanes (including shoulders, ramps, sidewalks and bike paths) are in their final configuration as designed and the final wearing surface has been installed;

(2) All operational and safety devices have been installed in accordance with the contract documents including guardrails, end treatments, traffic barriers, required signs and pavement markings, drainage, parapet, and bridge and pavement structures;

(3) All required illumination and lighting for normal and safe use and operation is installed and functional in accordance with the contract documents;

(4) All utilities and services are connected and working;

(5) The need for temporary traffic controls or lane closures at any time has ceased, except for lane closures required for routine maintenance;

(6) The building, structure, improvement or facility can be used for its intended purpose.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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END OF SECTION 101

Make the following Section a part of the Standard Specifications:

"SECTION 636 – E-CONSTRUCTION

636.01 Description. This section is for furnishing e-construction software for the Project.

636.02 General Requirements. The Contractor shall:

(A) Provide licenses for the E-Construction platform designated by HDOT.

636.03 Not used.

636.04 Measurement. The Engineer will measure the fee for the license(s) associated with the "E-Construction Program" on a force account basis in accordance with Subsection 109.06 – Force Account Provisions and Compensation.

636.05 Payment. The Engineer will pay for the fee for the license for the E-construction Program on a force account basis in accordance with Subsection 109.06 – Force Account Provisions and Compensation. Payment will be full compensation for the "E-Construction" licensing fee as prescribed in this section and contract documents. The actual amount to be paid will be the sum shown on the accepted force account records whether this sum be more or less than the estimated amount allocated in the proposal schedule."

Pay Item	Pay Unit
E-Construction license	Force Account

END SECTION 636

"General Decision Number: HI20210001 05/07/2021

Superseded General Decision Number: HI20200001

State: Hawaii

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

Counties: Hawaii Statewide.

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

Note: Under Executive Order (EO) 13658, an hourly minimum wage of $10.95 for calendar year 2021 applies to all contracts subject to the Davis-Bacon Act for which the contract is awarded (and any solicitation was issued) on or after January 1, 2015. If this contract is covered by the EO, the contractor must pay all workers in any classification listed on this wage determination at least $10.95 per hour (or the applicable wage rate listed on this wage determination, if it is higher) for all hours spent performing on the contract in calendar year 2021. If this contract is covered by the EO and a classification considered necessary for performance of work on the contract does not appear on this wage determination, the contractor must pay workers in that classification at least the wage rate determined through the conformance process set forth in 29 CFR 5.5(a)(1)(ii) (or the EO minimum wage rate,if it is higher than the conformed wage rate). The EO minimum wage rate will be adjusted annually. Please note that this EO applies to the above-mentioned types of contracts entered into by the federal government that are subject to the Davis-Bacon Act itself, but it does not apply to contracts subject only to the Davis-Bacon Related Acts, including those set forth at 29 CFR 5.1(a)(2)-(60). Additional information on contractor requirements and worker protections under the EO is available at www.dol.gov/whd/govcontracts.

Modification Number	Publication Date
0	01/01/2021
1	01/08/2021
2	01/22/2021
3	02/12/2021
4	02/19/2021
5	03/19/2021
6	05/07/2021

ASBE0132-001 08/30/2020

	Rates	Fringes
Asbestos Workers/Insulator Includes application of all insulating materials, protective coverings, coatings and finishes to all types of mechanical systems. Also the application of		

firestopping material for wall openings and penetrations in walls, floors, ceilings and curtain walls	$ 41.90	25.65

BOIL0627-005 01/01/2013

	Rates	Fringes
BOILERMAKER	$ 35.20	27.35

BRHI0001-001 08/31/2020

	Rates	Fringes
BRICKLAYER		
Bricklayers and Stonemasons	$ 45.95	29.59
Pointers, Caulkers and Weatherproofers	$ 46.21	29.59

BRHI0001-002 08/31/2020

	Rates	Fringes
Tile, Marble & Terrazzo Worker		
Terrazzo Base Grinders	$ 41.69	28.11
Terrazzo Floor Grinders and Tenders	$ 40.14	28.11
Tile, Marble and Terrazzo Workers	$ 43.50	28.11

CARP0745-001 08/31/2020

	Rates	Fringes
Carpenters:		
Carpenters; Hardwood Floor Layers; Patent Scaffold Erectors (14 ft. and over); Piledrivers; Pneumatic Nailers; Wood Shinglers and Transit and/or Layout Man	$ 50.50	23.59
Millwrights and Machine Erectors	$ 50.75	23.59
Power Saw Operators (2 h.p. and over)	$ 50.65	23.59

CARP0745-002 08/31/2020

	Rates	Fringes
Drywall and Acoustical Workers and Lathers	$ 50.50	23.59

ELEC1186-001 08/23/2020

	Rates	Fringes
Electricians:		
Cable Splicers	$ 56.71	31.16
Electricians	$ 51.55	29.58
Telecommunication worker	$ 32.69	12.96

ELEC1186-002 08/23/2020

	Rates	Fringes
Line Construction:		
Cable Splicers	$ 56.71	31.16
Groundmen/Truck Drivers	$ 38.66	25.63
Heavy Equipment Operators	$ 46.40	28.00
Linemen	$ 51.55	29.58
Telecommunication worker	$ 32.69	12.96

ELEV0126-001 01/01/2021

	Rates	Fringes
ELEVATOR MECHANIC	$ 63.18	35.825+a+b

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

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

ENGI0003-002 09/03/2018

	Rates	Fringes
Diver (Aqua Lung) (Scuba))		
Diver (Aqua Lung) (Scuba) (over a depth of 30 feet)	$ 66.00	31.26
Diver (Aqua Lung) (Scuba) (up to a depth of 30 feet)	$ 56.63	31.26
Stand-by Diver (Aqua Lung) (Scuba)	$ 47.25	31.26
Diver (Other than Aqua Lung)		
Diver (Other than Aqua Lung)	$ 66.00	31.26
Diver Tender (Other than Aqua Lung)	$ 44.22	31.26
Stand-by Diver (Other than Aqua Lung)	$ 47.25	31.26
Helicopter Work		
Airborne Hoist Operator for Helicopter	$ 45.80	31.26
Co-Pilot of Helicopter	$ 45.98	31.26
Pilot of Helicopter	$ 46.11	31.26
Power equipment operator - tunnel work		
GROUP 1	$ 42.24	31.26
GROUP 2	$ 42.35	31.26
GROUP 3	$ 42.52	31.26
GROUP 4	$ 42.79	31.26
GROUP 5	$ 43.10	31.26
GROUP 6	$ 43.75	31.26
GROUP 7	$ 44.07	31.26
GROUP 8	$ 44.18	31.26
GROUP 9	$ 44.29	31.26
GROUP 9A	$ 44.52	31.26
GROUP 10	$ 44.58	31.26
GROUP 10A	$ 44.73	31.26
GROUP 11	$ 44.88	31.26
GROUP 12	$ 45.24	31.26

GROUP 12A	$ 45.60	31.26
Power equipment operators:		
GROUP 1	$ 41.94	31.26
GROUP 2	$ 42.05	31.26
GROUP 3	$ 42.22	31.26
GROUP 4	$ 42.49	31.26
GROUP 5	$ 42.80	31.26
GROUP 6	$ 43.45	31.26
GROUP 7	$ 43.77	31.26
GROUP 8	$ 43.88	31.26
GROUP 9	$ 43.99	31.26
GROUP 9A	$ 44.22	31.26
GROUP 10	$ 44.28	31.26
GROUP 10A	$ 44.43	31.26
GROUP 11	$ 44.58	31.26
GROUP 12	$ 44.94	31.26
GROUP 12A	$ 45.30	31.26
GROUP 13	$ 42.22	31.26
GROUP 13A	$ 42.49	31.26
GROUP 13B	$ 42.80	31.26
GROUP 13C	$ 43.45	31.26
GROUP 13D	$ 43.77	31.26
GROUP 13E	$ 43.88	31.26

POWER EQUIPMENT OPERATORS CLASSIFICATIONS

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

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

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

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

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

GROUP 6: Boom Truck or Dual Purpose ""A""Frame Truck (over 5 tons); Combination Loader/Backhoe (up to and including 3/4 cu. yd.); Concrete Batch Plants (wet or dry); Concrete Cutter, Groover and/or Grinder (self-propelled unit on streets, highways, airports, and canals); Conveyor or Concrete Pump (Truck or Equipment Mounted); Drilling Machinery (not to apply to waterliners, wagon drills or jack hammers); Fork Lift (over 10 tons); Loader (up to and including 3 and 1/2 cu. yds); Lull High Lift (under 40 feet); Lubrication and Service Engineer (Mobile); Maginnis Internal Full Slab Vibrator (on airports, highways, canals and warehouses); Man or Material Hoist; Mechanical Concrete Finisher (Large Clary, Johnson Bidwell, Bridge Deck and similar); Mobile Truck Crane Driver; Portable Shotblast Concrete Cleaning Machine; Portable Boring Machine (under

streets, highways, etc.); Portable Crusher; Power Jumbo Operator (setting slip forms, etc., in tunnels); Rollers (over 5 tons); Self-propelled Compactor (single engine); Self-propelled Pavement Breaker; Skidsteer Loader with attachments; Slip Form Pumps (Power driven by hydraulic, electric, air, gas, etc., lifting device for concrete forms); Small Rubber Tired Tractors; Trencher (up to and including 6 feet); Underbridge Personnel Aerial Platform (50 feet of platform or less).

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

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

GROUP 9: Combination Mixer and Compressor (gunite); Do-Mor Loaderand 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, Liebher, Linden, and similar types of Tower Cranes (in the erection, dismantling, and moving of equipment there shall be an additional Operating Engineer or Heavy Duty Repairman); Yo-Yo Cat or Dozer.

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

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

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

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

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

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

BOOMS AND/OR LEADS (HOURLY PREMIUMS):

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

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

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

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

ENGI0003-004 09/04/2017

	Rates	Fringes
Dredging: (Boat Operators)		
Boat Deckhand	$ 41.22	30.93
Boat Operator	$ 43.43	30.93
Master Boat Operator	$ 43.58	30.93
Dredging: (Clamshell or Dipper Dredging)		
GROUP 1	$ 43.94	30.93
GROUP 2	$ 43.28	30.93
GROUP 3	$ 42.88	30.93
GROUP 4	$ 41.22	30.93
Dredging: (Derricks)		
GROUP 1	$ 43.94	30.93
GROUP 2	$ 43.28	30.93
GROUP 3	$ 42.88	30.93
GROUP 4	$ 41.22	30.93
Dredging: (Hydraulic Suction Dredges)		
GROUP 1	$ 43.58	30.93
GROUP 2	$ 43.43	30.93
GROUP 3	$ 43.28	30.93
GROUP 4	$ 43.22	30.93
GROUP 5	$ 37.88	26.76

Group 5	$ 42.88	30.93
GROUP 6	$ 37.77	26.76
Group 6	$ 42.77	30.93
GROUP 7	$ 36.22	26.76
Group 7	$ 41.22	30.93

CLAMSHELL OR DIPPER DREDGING CLASSIFICATIONS

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

HYDRAULIC SUCTION DREDGING CLASSIFICATIONS

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

DERRICK CLASSIFICATIONS

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

ENGI0003-044 09/03/2018

	Rates	Fringes
Power Equipment Operators (PAVING)		
Asphalt Concrete Material Transfer	$ 42.92	32.08
Asphalt Plant Operator	$ 43.35	32.08
Asphalt Raker	$ 41.96	32.08
Asphalt Spreader Operator	$ 43.44	32.08
Cold Planer	$ 43.75	32.08
Combination Loader/Backhoe (over 3/4 cu.yd.)	$ 41.96	32.08
Combination Loader/Backhoe (up to 3/4 cu.yd.)	$ 40.98	32.08
Concrete Saws and/or Grinder (self-propelled unit on streets, highways, airports and canals)	$ 42.92	32.08
Grader	$ 43.75	32.08
Laborer, Hand Roller	$ 41.46	32.08
Loader (2 1/2 cu. yds. and under)	$ 42.92	32.08
Loader (over 2 1/2 cu. yds. to and including 5 cu. yds.)	$ 43.24	32.08
Roller Operator (five tons and under)	$ 41.69	32.08
Roller Operator (over five tons)	$ 43.12	32.08
Screed Person	$ 42.92	32.08

Soil Stabilizer	$ 43.75	32.08

IRON0625-001 09/01/2020

	Rates	Fringes
Ironworkers:	$ 42.50	36.84

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

LABO0368-001 09/02/2020

	Rates	Fringes
Laborers:		
Driller	$ 39.70	22.68
Final Clean Up	$ 29.65	18.17
Gunite/Shotcrete Operator and High Scaler	$ 39.20	22.68
Laborer I	$ 38.70	22.68
Laborer II	$ 36.10	22.68
Mason Tender/Hod Carrier	$ 39.20	22.68
Powderman	$ 39.70	22.68
Window Washer (bosun chair)	$ 38.20	22.68

LABORERS CLASSIFICATIONS

Laborer I: Air Blasting run by electric or pneumatic compressor; Asphalt Laborer, Ironer, Raker, Luteman, and Handroller, and all types of Asphalt Spreader Boxes; Asphalt Shoveler; Assembly and Installation of Multiplates, Liner Plates, Rings, Mesh, Mats; Batching Plant (portable and temporary); Boring Machine Operator (under streets and sidewalks); Buggymobile; Burning and Welding; Chainsaw, Faller, Logloader, and Bucker; Compactors (Jackson Jumping Jack and similar); Concrete Bucket Dumpman; Concrete Chipping; Concrete Chuteman/Hoseman (pouring concrete) (the handling of the chute from ready-mix trucks for such jobs as walls, slabs, decks, floors, foundations, footings, curbs, gutters, and sidewalks); Concrete Core Cutter (Walls, Floors, and Ceiling); Concrete Grinding or Sanding; Concrete: Hooking on, signaling, dumping of concrete for treme work over water on caissons, pilings, abutments, etc.; Concrete: Mixing, handling, conveying, pouring, vibrating, otherwise placing of concrete or aggregates or by any other process; Concrete: Operation of motorized wheelbarrows or buggies or machines of similar character, whether run by gas, diesel, or electric power; Concrete Placement Machine Operator: operation of Somero Hammerhead, Copperheads, or similar machines; Concrete Pump Machine (laying, coupling, uncoupling of all connections and cleaning of equipment); Concrete and/or Asphalt Saw (Walking or Handtype) (cutting walls or flatwork) (scoring old or new concrete and/or asphalt) (cutting for expansion joints) (streets and ways for laying of pipe, cable or conduit for all purposes); Concrete Shovelers/Laborers (Wet or Dry); Concrete Screeding for Rough Strike-Off: Rodding or striking-off, by hand or mechanical means prior to finishing; Concrete Vibrator Operator; Coring Holes: Walls, footings, piers or other obstructions for passage of pipes or conduits for any purpose and the pouring of concrete to secure the hole; Cribbers, Shorer, Lagging, Sheeting, and

Trench Jacking and Bracing, Hand-Guided Lagging Hammer Whaling Bracing; Curbing (Concrete and Asphalt); Curing of Concrete (impervious membrane and form oiler) mortar and other materials by any mode or method; Cut Granite Curb Setter (setting, leveling and grouting of all precast concrete or stone curbs); Cutting and Burning Torch (demolition); Dri Pak-It Machine; Environmental Abatement: removal of asbestos, lead, and bio hazardous materials (EPA and/or OSHA certified); Falling, bucking, yarding, loading or burning of all trees or timber on construction site; Forklift (9 ft. and under); Gas, Pneumatic, and Electric tools; Grating and Grill work for drains or other purposes; Green Cutter of concrete or aggregate in any form, by hand, mechanical means, grindstone or air and/or water; Grout: Spreading for any purpose; Guinea Chaser (Grade Checker) for general utility trenches, sitework, and excavation; Headerboard Man (Asphalt or Concrete); Heat Welder of Plastic (Laborers' AGC certified workers) (when work involves waterproofing for waterponds, artificial lakes and reservoir) heat welding for sewer pipes and fusion of HDPE pipes; Heavy Highway Laborer (Rigging, signaling, handling, and installation of pre-cast catch basins, manholes, curbs and gutters); High Pressure Nozzleman - Hydraulic Monitor (over 100# pressure); Jackhammer Operator; Jacking of slip forms: All semi and unskilled work connected therewithin; Laying of all multi-cell conduit or multi-purpose pipe; Magnesite and Mastic Workers (Wet or Dry)(including mixer operator);Mortar Man; Mortar Mixer (Block, Brick, Masonry, and Plastering); Nozzleman (Sandblasting and/or Water Blasting): handling, placing and operation of nozzle; Operation, Manual or Hydraulic jacking of shields and the use of such other mechanical equipment as may be necessary; Pavement Breakers; Paving, curbing and surfacing of streets, ways, courts, under and overpasses, bridges, approaches, slope walls, and all other labor connected therewith; Pilecutters; Pipe 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, HDPE, metallic or non-metallic, conduit, and any other stationary-type of tubular device used for conveying of any substance or element, whether water, sewage, solid, gas, air, or other product whatsoever and without regard to the nature of material from which tubular material is fabricated; No-joint pipe and stripping of same, Pipewrapper, Caulker, Bander, Kettlemen, and men applying asphalt, Laykold, treating Creosote and similar-type materials (6-inch) pipe and over); Piping: resurfacing and paving of all ditches in preparation for laying of all pipes; Pipe laying of lateral sewer pipe from main or side sewer to buildings or structure (except Contactor may direct work be done under proper supervision); Pipe laying, leveling and marking of the joint used for main or side sewers and storm sewers; Laying of all clay, terra cotta, ironstone, vitrified concrete, HDPE or other pipe for drainage; Placing and setting of water mains, gas mains and all pipe including removal of skids; Plaster Mortar Mixer/Pump; Pneumatic Impact Wrench; Portable Sawmill Operation: Choker setters, off bearers, and lumber handlers connected with clearing; Posthole Digger (Hand Held, Gas, Air and Electric); Powderman's Tender; Power Broom Sweepers (Small); Preparation and Compaction of roadbeds for railroad track laying, highway construction, and the

preparation of trenches, footings, etc., for cross-country transmission by pipelines, electrical transmission or underground lines or cables (by mechanical means); Raising of structure by manual or hydraulic jacks or other methods and resetting of structure in new locations, including all concrete work; Ramming or compaction; Rigging in connection with Laborers' work (except demolition), Signaling (including the use of walkie talkie) Choke Setting, tag line usage; Tagging and Signaling of building materials into high rise units; Riprap, Stonepaver, and Rock Slinger (includes placement of stacked concrete, wet or dry and loading, unloading, signaling, slinging and setting of other similar materials); Rotary Scarifier (including multiple head concrete chipping Scarifier); Salamander Heater, Drying of plaster, concrete mortar or other aggregate; Scaffold Erector Leadman; Scaffolds: (Swing and hanging) including maintenance thereof; Scaler; Septic Tank/Cesspool and Drain Fields Digger and Installer; Shredder/Chipper (tree branches, brush, etc.); Stripping and Setting Forms; Stripping of Forms: Other than panel forms which are to be re-used in their original form, and stripping of forms on all flat arch work; Tampers (Barko, Wacker, and similar type); Tank Scaler and Cleaners; Tarman; Tree Climbers and Trimmers; Trencher (includes hand-held, Davis T-66 and similar type); Trucks (flatbed up to and including 2 1/2 tons when used in connection with on-site Laborers'work; Trucks (Refuse and Garbage Disposal) (from job site to dump); Vibra-Screed (Bull Float in connection with Laborers' work); Well Points, Installation of or any other dewatering system.

Laborer II: Asphalt Plant Laborer; Boring Machine Tender; Bridge Laborer; Burning of all debris (crates, boxes, packaging waste materials); Chainman, Rodmen, and Grade Markers; Cleaning, clearing, grading and/or removal for streets, highways, roadways, aprons, runways, sidewalks, parking areas, airports, approaches, and other similar installations; Cleaning or reconditioning of streets, ways, sewers and waterlines, all maintenance work and work of an unskilled and semi-skilled nature; Concrete Bucket Tender (Groundman) hooking and unhooking of bucket; Concrete Forms; moving, cleaning, oiling and carrying to the next point of erection of all forms; Concrete Products Plant Laborers; Conveyor Tender (conveying of building materials); Crushed Stone Yards and Gravel and Sand Pit Laborers and all other similar plants; Demolition, Wrecking and Salvage Laborers: Wrecking and dismantling of buildings and all structures, with use of cutting or wrecking tools, breaking away, cleaning and removal of all fixtures, All hooking, unhooking, signaling of materials for salvage or scrap removed by crane or derrick; Digging under streets, roadways, aprons or other paved surfaces; Driller's Tender; Chuck Tender, Outside Nipper; Dry-packing of concrete (plugging and filling of she-bolt holes); Fence and/or Guardrail Erector: Dismantling and/or re-installation of all fence; Finegrader; Firewatcher; Flagman (Coning, preparing, stablishing and removing portable roadway barricade devices); Signal Men on all construction work defined herein, including Traffic Control Signal Men at construction site; General Excavation; Backfilling, Grading and all other labor connected therewith; Digging of trenches, ditches and manholes and the leveling, grading and other preparation prior to laying pipe or conduit for any purpose; Excavations and foundations for buildings, piers, foundations and holes, and all other construction.

Preparation of street ways and bridges; General Laborer: Cleaning and Clearing of all debris and surplus material. Clean-up of right-of-way. Clearing and slashing of brush or trees by hand or mechanical cutting. General Clean up: sweeping, cleaning, wash-down, wiping of construction facility and equipment (other than ""Light Clean up (Janitorial) Laborer. Garbage and Debris Handlers and Cleaners. Appliance Handling (job site) (after delivery unlading in storage area); Ground and Soil Treatment Work (Pest Control); Gunite/Shotcrete Operator Tender; Junk Yard Laborers (same as Salvage Yard); Laser Beam ""Target Man"" in connection with Laborers' work; Layout Person for Plastic (when work involves waterproofing for 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 signaling from truck, conveyance or stockpile; Material Yard Laborers; Pipelayer Tender; Pipewrapper, Caulker, Bander, Kettlemen, and men applying asphalt, Laykold, Creosote, and similar-type materials (pipe under 6 inches); Plasterer Laborer; Preparation, construction and maintenance of roadbeds and sub-grade for all paving, including excavation, dumping, and spreading of sub-grade material; Prestressed or precast concrete slabs, walls, or sections: all loading, unloading, stockpiling, hooking on of such slabs, walls or sections; Quarry Laborers; Railroad, Streetcar, and Rail Transit Maintenance and Repair; Roustabout; Rubbish Trucks in connection with Building Construction Projects (excluding clearing, grubbing, and excavating); Salvage Yard: All work connected with cutting, cleaning, storing, stockpiling or handling of materials, all cleanup, removal of debris, burning, back-filling and landscaping of the site; Sandblasting Tender (Pot Tender): Hoses and pots or markers; Scaffolds: Erection, planking and removal of all scaffolds used for support for lathers, plasters, brick layers, masons, and other construction trades crafts; Scaffolds: (Specially designed by carpenters) laborers shall tend said carpenter on erection and dismantling thereof, preparation for foundation or mudsills, maintenance; Scraping of floors; Screeds: Handling of all screeds to be reused; handling, dismantling and conveyance of screeds; Setting, leveling and securing or bracing of metal or other road forms and expansion joints; Sheeting Piling/trench shoring (handling and placing of skip sheet or wood plank trench shoring); Ship Scalers; Shipwright Tender; Sign Erector (subdivision traffic, regulatory, and street-name signs); Sloper; Slurry Seal Crews (Mixer Operator, Applicator, Squeegee Man, Shuttle Man, Top Man); Snapping of wall ties and removal of tie rods; Soil Test operations of semi and unskilled labor such as filling sand bags; Striper (Asphalt, Concrete or other Paved Surfaces); Tool Room Attendant (Job Site); Traffic Delineating Device Applicator; Underpinning, lagging, bracing, propping and shoring, loading, signaling, right-of-way clearance along the route of movement, The clearance of new site, excavation of foundation when moving a house or structure from old site to new site; Utilities employees; Water Man; Waterscape/Hardscape Laborers; Wire Mesh Pulling (all concrete pouring operations); Wrecking,

stripping, dismantling and handling concrete forms an false work.

LABO0368-002 09/01/2020

	Rates	Fringes
Landscape & Irrigation Laborers		
GROUP 1	$ 26.40	14.25
GROUP 2	$ 27.40	14.25
GROUP 3	$ 21.70	14.25

LABORERS CLASSIFICATIONS

GROUP 1: Installation of non-potable permanent or temporary irrigation water systems performed for the purposes of Landscaping and Irrigation architectural horticultural work; the installation of drinking fountains and permanent or temporary irrigation systems using potable water for Landscaping and Irrigation architectural horticultural purposes only. This work includes (a) the installation of all heads, risers, valves, valve boxes, vacuum breakers (pressure and non-pressure), low voltage electrical lines and, provided such work involves electrical wiring that will carry 24 volts or less, the installation of sensors, master control panels, display boards, junction boxes, conductors, including all other components for controllers, (b) and metallic (copper, brass, galvanized, or similar) pipe, as well as PVC or other plastic pipe including all work incidental thereto, i.e., unloading, handling and distribution of all pipes fittings, tools, materials and equipment, (c) all soldering work in connection with the above whether done by torch, soldering iron, or other means; (d) tie-in to main lines, thrust blocks (both precast and poured in place), pipe hangers and supports incidental to installation of the entire irrigation system, (e) making of pressure tests, start-up testing, flushing, purging, water balancing, placing into operation all irrigation equipment, fixtures and appurtenances installed under this agreement, and (f) the fabrication, replacement, repair and servicing oflandscaping 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 09/02/2020

	Rates	Fringes
Underground Laborer		
GROUP 1	$ 39.30	22.68
GROUP 2	$ 40.80	22.68
GROUP 3	$ 41.30	22.68
GROUP 4	$ 42.30	22.68
GROUP 5	$ 42.65	22.68
GROUP 6	$ 42.90	22.68
GROUP 7	$ 43.35	22.68

GROUP 1: Watchmen; Change House Attendant.

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

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

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

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

GROUP 6: Shifter

GROUP 7: Shifter (Shaft Work & Raiser)

PAIN1791-001 01/01/2021

	Rates	Fringes
Painters:		
Brush	$ 38.90	30.09
Sandblaster; Spray	$ 38.90	30.09

PAIN1889-001 07/01/2020

	Rates	Fringes
Glaziers	$ 39.50	34.85

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* PAIN1926-001 02/28/2021

	Rates	Fringes
Soft Floor Layers	$ 37.77	32.07

PAIN1944-001 01/05/2020

	Rates	Fringes
Taper	$ 43.10	29.90

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* PLAS0630-001 08/31/2020

	Rates	Fringes
PLASTERER	$ 43.69	31.68

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* PLAS0630-002 08/31/2020

	Rates	Fringes
Cement Masons:		
Cement Masons	$ 42.65	32.29

Trowel Machine Operators....$ 42.80 32.29

PLUM0675-001 01/03/2021

	Rates	Fringes
Plumber, Pipefitter, Steamfitter & Sprinkler Fitter	$ 51.43	24.55

ROOF0221-001 09/06/2020

	Rates	Fringes
Roofers (Including Built Up, Composition and Single Ply)	$ 41.80	20.50

SHEE0293-001 09/02/2018

	Rates	Fringes
Sheet metal worker	$ 42.55	27.44

SUHI1997-002 09/15/1997

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

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

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Note: Executive Order (EO) 13706, Establishing Paid Sick Leave for Federal Contractors applies to all contracts subject to the Davis-Bacon Act for which the contract is awarded (and any solicitation was issued) on or after January 1, 2017. If this contract is covered by the EO, the contractor must provide employees with 1 hour of paid sick leave for every 30 hours they work, up to 56 hours of paid sick leave each year. Employees must be permitted to use paid sick leave for their own illness, injury or other health-related needs, including preventive care; to assist a family member (or person who is like family to the employee) who is ill, injured, or has other health-related needs, including preventive care; or for reasons resulting from, or to assist a family member (or person who is like family to the employee) who is a victim of, domestic violence, sexual assault, or stalking. Additional information on contractor requirements and worker protections under the EO is available at www.dol.gov/whd/govcontracts.

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

The body of each wage determination lists the classification

and wage rates that have been found to be prevailing for the cited type(s) of construction in the area covered by the wage determination. The classifications are listed in alphabetical order of ""identifiers"" that indicate whether the particular rate is a union rate (current union negotiated rate for local), a survey rate (weighted average rate) or a union average rate (weighted union average rate).

Union Rate Identifiers

A four letter classification abbreviation identifier enclosed in dotted lines beginning with characters other than ""SU"" or ""UAVG"" denotes that the union classification and rate were prevailing for that classification in the survey. Example: PLUM0198-005 07/01/2014. PLUM is an abbreviation identifier of the union which prevailed in the survey for this classification, which in this example would be Plumbers. 0198 indicates the local union number or district council number where applicable, i.e., Plumbers Local 0198. The next number, 005 in the example, is an internal number used in processing the wage determination. 07/01/2014 is the effective date of the most current negotiated rate, which in this example is July 1, 2014.

Union prevailing wage rates are updated to reflect all rate changes in the collective bargaining agreement (CBA) governing this classification and rate.

Survey Rate Identifiers

Classifications listed under the ""SU"" identifier indicate that no one rate prevailed for this classification in the survey and the published rate is derived by computing a weighted average rate based on all the rates reported in the survey for that classification. As this weighted average rate includes all rates reported in the survey, it may include both union and non-union rates. Example: SULA2012-007 5/13/2014. SU indicates the rates are survey rates based on a weighted average calculation of rates and are not majority rates. LA indicates the State of Louisiana. 2012 is the year of survey on which these classifications and rates are based. The next number, 007 in the example, is an internal number used in producing the wage determination. 5/13/2014 indicates the survey completion date for the classifications and rates under that identifier.

Survey wage rates are not updated and remain in effect until a new survey is conducted.

Union Average Rate Identifiers

Classification(s) listed under the UAVG identifier indicate that no single majority rate prevailed for those classifications; however, 100% of the data reported for the classifications was union data. EXAMPLE: UAVG-OH-0010 08/29/2014. UAVG indicates that the rate is a weighted union average rate. OH indicates the state. The next number, 0010 in the example, is an internal number used in producing the wage determination. 08/29/2014 indicates the survey completion date for the classifications and rates under that identifier.

A UAVG rate will be updated once a year, usually in January of each year, to reflect a weighted average of the current negotiated/CBA rate of the union locals from which the rate is based.

WAGE DETERMINATION APPEALS PROCESS

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

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

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

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

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

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

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

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

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

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

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

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END OF GENERAL DECISION"

PROPOSAL TO THE

STATE OF HAWAII

DEPARTMENT OF TRANSPORTATION

PROJECT:	**Sand Island Access Road Truck Weigh Station District of Honolulu Island of Oahu**
FEDERAL AID PROJECT NO.:	**NH-064-1(010)**
COMPLETION TIME:	**213 Working days from the date indicated in the Notice to Proceed from the Department.**
DBE PROJECT GOAL:	**13.2%**

DESIGN PROJECT MANAGER:

NAME	**Mr. Lawrence Laus**
ADDRESS	**601 Kamokila Boulevard, Room 609**
PHONE NO.	**(808) 682-7575**
EMAIL.	**lawrence.m.laus@hawaii.gov**
FAX NO.	**(808) 692-7590**

Director of Transportation
869 Punchbowl Street
Honolulu, Hawaii 96813

Dear Sir:

The undersigned bidder declares the following:

1. It has not, either directly or indirectly, entered into any agreement, participated in any collusion, or otherwise taken any action in restraint of free competitive bidding in connection with this proposal.

2. It has not been assisted or represented on this matter by any individual who has, in a State capacity, been involved in the subject matter of this contract within the past two years.

3. It has not and will not, either directly or indirectly offered or given a gratuity (i.e., an entertainment or gift) to any State or County employee to obtain a contract or favorable treatment under a contract.

4. It will not maintain for its employees any segregated facilities at any of its establishments.

5. Does not and will not permit its employees to perform their services at any location under its control, where segregated facilities are maintained.

The undersigned bidder further agrees to the following:

1. If this proposal is accepted, it shall execute a contract with the Department to provide all necessary labor, machinery, tools, equipment, apparatus and any other means of construction, to do all the work and to furnish all the materials specified in the contract in the manner and within the time therein prescribed in the contract, and that it shall accept in full payment therefore the sum of the unit and/or lump sum prices as set forth in the attached proposal schedule for the actual quantities of work performed and materials furnished and furnish satisfactory security in accordance with Section 103D-324, Hawaii Revised Statutes, within 10 days after the award of the contract or within such time as the Director of Transportation may allow after the undersigned has received the contract documents for execution, and is fully aware that non-compliance with the aforementioned terms will result in the forfeiture of the full amount of the bid guarantee required under Section 103D-323, Hawaii Revised Statutes.

2. That the quantities given in the attached proposal schedule are approximate only and are intended principally to serve as a guide in determining and comparing the bids.

3. That the Department does not either expressly or by implication, agree that the actual amount of work will correspond therewith, but reserves the right to increase or decrease the amount of any class or portion of the work, or to omit portions of the work, as may be deemed necessary or advisable by the Director of Transportation, and that all increased or decreased quantities of work shall be performed at the unit prices set forth in the attached proposal schedule except as provided for in the specifications.

4. In case of a discrepancy between unit prices and the totals in said Proposal Schedule, the unit prices shall prevail.

5. Unless amended by Special Provision, agrees to begin work within 10 working days after the date of notification to commence with the work, which date is in the notice to proceed, and shall finish the entire project within the time prescribed.

6. The Director of Transportation reserves the right to reject any or all bids and to waive any defects when in the Director's opinion such rejections or waiver will be for the best interest of the public.

The bidder acknowledges receipt of and certifies that it has completely examined the following listed items: Hawaii Standard Specifications for Road and Bridge Construction, 2005, the Notice to Bidders, the Special Provisions, the Technical Provisions, the Proposal, the Contract and Bond Forms, and the Project Plans.

In accordance with Section 103D-323, Hawaii Revised Statutes, this proposal is accompanied with a bid security in the amount of 5% of the total amount bid, in the form checked below. (Check applicable bid security submitted with bid.)

_____ Surety Bid Bond (Use standard form),

_____ Cash,

_____ Cashier's Check,

_____ Certified Check, or

_____ _____
(Fill in other acceptable security.)

The undersigned bidder acknowledges receipt of any addendum issued by the Department by recording in the space below the date of receipt.

Addendum No. 1 _____ Addendum No. 3 _____

Addendum No. 2 _____ Addendum No. 4 _____

In accordance with Section 103D-302, Hawaii Revised Statutes, the undersigned as bidder has listed the name of each person or firm, who will be engaged by the bidder on the project as Joint Contractor or Subcontractor and the nature of work to be done by each. The bidder must adequately and unambiguously disclose the unique nature and scope of the work to be performed by each Joint Contractor or Subcontractor. For each listed firm, the Bidder declares the respective firm is a Sub- or Joint Contractor and subject to evaluation as a Sub- or Joint Contractor. It is understood that failure to comply with the aforementioned requirements may be cause for rejection of the bid submitted.

The undersigned bidder asserts that affirmative action has been taken to seek out and consider Disadvantaged Business Enterprises (DBEs) for portions of the work which can be subcontracted, and the affirmative actions of the bidder are fully documented in its records and are available upon request by the Department. It is also understood that it must meet or exceed the DBE contact goal listed on page P-1 or demonstrate that it made good faith efforts to meet the DBE project goal. The undersigned as bidder, agrees to utilize each participating DBE that it submitted to meet the contract goal of _____% (percentage to be completed by bidder) DBE participation if the contract is awarded to it, and shall maintain such DBE participation during the construction of this project.

SUBCONTRACTOR LISTING
(Attach additional sheets if necessary.)

	NAME OF FIRM	NATURE OF WORK
SUBCONTRACTOR:		
1.		
1a[1].		
2.		
2a.		
3.		
3a.		
4.		
4a.		
5.		
5a.		
6.		
6a.		
7.		
7a.		

NOTES:

The Name of Firm and Nature pf Work shall be indicated for all listed firms. The Bidder must adequately and unambiguously disclose the unique nature and scope of the work to be performed by each Sub- or Joint Contractor.

For each listed firm, the Bidder declares the respective firm is a Sub- or Joint Contractor and subject to evaluation as a Sub- or Joint Contractor.

[1] Second tier subcontractors

JOINT CONTRACTOR LISTING
(Attach additional sheets if necessary.)

	NAME OF FIRM	NATURE OF WORK
JOINT CONTRACTOR:		
1.	_____	_____
1a[1].	_____	_____
2.	_____	_____
2a.	_____	_____
3.	_____	_____
3a.	_____	_____
4.	_____	_____
4a.	_____	_____
5.	_____	_____
5a.	_____	_____
6.	_____	_____
6a.	_____	_____
7.	_____	_____
7a.	_____	_____

NOTES:

The Name of Firm and Nature pf Work shall be indicated for all listed firms. The Bidder must adequately and unambiguously disclose the unique nature and scope of the work to be performed by each Sub- or Joint Contractor.

For each listed firm, the Bidder declares the respective firm is a Sub- or Joint Contractor and subject to evaluation as a Sub- or Joint Contractor.

[1] Second tier subcontractors

PROPOSAL SCHEDULE

ITEM NO.	ITEM	APPROX. QUANTITY	UNIT	UNIT PRICE	AMOUNT
201.2000	Clearing and Grubbing	1400	S.Y.	$_____	$_____
203.0100	Roadway Excavation	2100	C.Y.	$_____	$_____
204.1000	Trench Excavation for Water Pipe	70	C.Y.	$_____	$_____
204.2000	Trench Excavation for Sewer Pipe	50	C.Y.	$_____	$_____
206.2020	Excavation for Drain Pipe and Utility Vaults	30	C.Y.	$_____	$_____
209.1000	Installation, Maintenance, Monitoring, and Removal of BMP	L.S.	L.S.	L.S.	$_____
209.2000	Additional Water Pollution, Dust, and Erosion Control	F.A.	F.A.	F.A.	$ 15,000.00
301.0100	Hot Mix Asphalt Base Course	3830	Tons	$_____	$_____
406.0600	SMA Pavement	1915	Tons	$_____	$_____
406.0610	Third-Party Profile Testing and Equipment	Allow.	Allow.	Allow.	$ 20,000.00
406.0620	Third-Party Dispute Resolution Profile Testing	Allow.	Allow.	Allow.	$ 20,000.00
503.6000	Concrete for Utility Vaults	20	C.Y.	$_____	$_____
602.6000	Reinforcing Steel for Utility Vaults	2610	Pounds	$_____	$_____

PROPOSAL SCHEDULE

ITEM NO.	ITEM	APPROX. QUANTITY	UNIT	UNIT PRICE	AMOUNT
604.2300	Type 1211214P Steel Frame and Grate	3	Each	$_____	$_____
604.6000	Type 1211214P Grated Drop Inet	3	Each	$_____	$_____
607.0060	6- Feet, Chain Link Fence	8	L.F.	$_____	$_____
607.6100	Chain Link Gate, 6 Feet High and 12 Feet Wide	2	Each	$_____	$_____
622.1001	Highway Lighting Standard, LED, 10,000 Lumens	6	Each	$_____	$_____
622.1002	Highway Lighting Luminaire and Bracket Arm	2	Each	$_____	$_____
622.2001	Highway Lighting Pullbox, 2' x 4', Traffic Rated	1	Each	$_____	$_____
622.3001	Remove Wood Pole/Highway Lighting Luminaire	5	Each	$_____	$_____
622.5001	Highway Lighting Ductline, One- 2 Inch PVC Schedule 80, Concrete Encased	990	L.F.	$_____	$_____
622.6001	Highway Lighting Conductors, #2 AWG	3150	L.F.	$_____	$_____
622.6002	Highway Lighting Conductors, #4 AWG	1050	L.F.	$_____	$_____
623.1001	Traffic Signal Standard, Type I	2	Each	$_____	$_____
623.1005	Traffic Signal Head	3	Each	$_____	$_____

PROPOSAL SCHEDULE

ITEM NO.	ITEM	APPROX. QUANTITY	UNIT	UNIT PRICE	AMOUNT
623.2001	Traffic Signal Pullbox, 2' x 4', Traffic Rated	2	Each	$_____	$_____
623.4001	Loop Detector Sensing Unit (6' x 6'), 1 Loop	6	Each	$_____	$_____
623.5001	Traffic Signal Ductline, One-2 Inch PVC Schedule 80, Concrete Encased	320	L.F.	$_____	$_____
623.6001	Traffic Signal Cable, Type 2, 2/C #14	290	L.F.	$_____	$_____
624.1000	Water Laterals	1	Each	$_____	$_____
624.2000	Fire Hydrants and Fire Hydrant Laterals	2	Each	$_____	$_____
629.1010	4-Inch Pavement Striping (Thermoplastic Extrusion)	3200	L.F.	$_____	$_____
629.1012	8-Inch Pavement Striping (Thermoplastic Extrusion)	3000	L.F.	$_____	$_____
629.1013	12-Inch Pavement Striping (Thermoplastic Extrusion)	28	L.F.	$_____	$_____
629.2001	Pavement Arrow (Thermoplastic Extrusion)	7	Each	$_____	$_____
629.2002	Pavement Word (Thermoplastic Extrusion)	1	Each	$_____	$_____
629.2003	Pavement Symbol (Thermoplastic Extrusion)	14	Each	$_____	$_____
629.3010	Type C Pavement Marker	150	Each	$_____	$_____

PROPOSAL SCHEDULE

ITEM NO.	ITEM	APPROX. QUANTITY	UNIT	UNIT PRICE	AMOUNT
629.3020	Type H Pavement Marker	115	Each	$_____	$_____
631.1001	Regulatory Sign	4	Each	$_____	$_____
636.1000	E-Construction License	F.A.	F.A.	F.A.	$ 110,000.00
638.1000	Curb, Type 2D	186	L.F.	$_____	$_____
645.1000	Traffic Control	L.S.	L.S.	L.S.	$_____
645.2000	Additional Police Officers, Additional Traffic Control Devices, and Advertisement	F.A.	F.A.	F.A.	$ 50,000.00
648.1000	Field-Posted Drawings	L.S.	L.S.	L.S.	$_____
651.2001	HECO Pullbox, 2' x 4', LRFD Rated	1	Each	$_____	$_____
651.2002	HT Pullbox, 2' x 4', Traffic Rated	1	Each	$_____	$_____
651.5001	HECO Ductline, One 3-Inch PVC Schedule 40, Concrete Encased	150	L.F.	$_____	$_____
651.5002	HT Ductline, One 2-Inch PVC Schedule 40, Concrete Encased	150	L.F.	$_____	$_____
651.8001	Utility Company Service Charges	F.A.	F.A.	F.A.	$ 50,000.00
679.1000	Weigh In Motion System	L.S.	L.S.	L.S.	$_____

PROPOSAL SCHEDULE

ITEM NO.	ITEM	APPROX. QUANTITY	UNIT	UNIT PRICE	AMOUNT
682.1000	Truck Weigh Station	L.S.	L.S.	L.S.	$_____
696.2000	Field Office Trailer (Not to Exceed $50,000)	F.A.	F.A.	F.A.	$50,000.00
699.1000	Mobilization (Not to Exceed 6% of the Sum of All Items Excluding the Bid Price of This Item).	L.S.	L.S.	L.S.	$_____
	Sum of All Items				$_____

NOTES:

1. Bids shall include all Federal, State, County and other applicable taxes.
2. The SUM OF ALL ITEMS will be used to determine the lowest responsible bidder.
3. In case of a discrepancy between unit price and the total in said bid, the unit price shall prevail.
4. Bidders must complete all unit prices and amounts. Failure to do so may be grounds for rejection of bid.

Disadvantaged Business Enterprise (DBE)
Contract Goal Verification and Good Faith Efforts (GFE) Documentation
For Construction

Project #:	**County:**
DBE Project Goal:	**Prime Contractor:**

As required by the specifications "*Disadvantaged Business Enterprise Requirements*," the dollar amount of each subcontract (both DBE and non-DBE firms) for all subcontractors, manufacturers, suppliers, and trucking companies listed in the proposal is due five (5) days after bid opening. **Failure to provide required information shall be cause for bid/proposal rejection.**

Calculation of the DBE contract goal for this project is the proportionate contract dollar value of work performed, materials, and goods to be supplied by DBEs. This DBE contract goal is applicable to all the contract work performed for this project and is calculated as follows:

1. DBE contract goal percentage = Contract Dollar Value of the work to be performed by DBE subcontractors and manufacturers, plus 60% of the contract dollar value of DBE suppliers, divided by the sum of all contract items (sum of all contract items is the total amount for comparison of bids less mobilization, force account items, and allowance items).

2. The Department shall adjust the bidder's/offeror's DBE contract goal to the amount of the project goal if it finds that the bidder/offeror met the goal but erroneously calculated a lower percentage. If the amount the bidder/offeror submits as its contract goal exceeds the project goal, the bidder/offeror shall be held to the higher goal.

Name of Subcontractor, Supplier, Manufacturer, and Trucking Company	DBE (Y/N)	Bid Item Number and Description	Approx. Quantity/ Hours	Unit	Unit Price/ Rate	Dollar Amount

A. Dollar amount of the work to be performed by DBE subcontractors, manufacturers, and trucking companies, plus 60% of the dollar amount of DBE suppliers	
B. Sum of all work items less mobilization, force account items, allowance items	
A/B = DBE contract goal	

NAME and SIGNATURE of AUTHORIZED REPRESENTATIVE of BIDDER: DATE:

_____ _____

Summary of Good Faith Efforts (GFE)

As required by the specifications "*Disadvantaged Business Enterprise Requirements*," if the DBE goal is not met, documentation of GFE shall be submitted within five (5) calendar days of bid opening. The bidder is required to respond to the following questions and describe efforts to obtain DBE participation. Each item will require an explanation. Copies of correspondence return receipts, telephone logs, or other documentation will be required to support GFE. Attach additional sheets, if necessary. Based on responses given, HDOT shall make a determination of the bidders' GFE. **Failure to provide required information shall be cause for bid/proposal rejection.**

1. Did you submit the required information at the time of bid opening (i.e. DBE name, address, NAICS code, description of work, project name, and number)?

2. Explain your GFE if any, to solicit through all reasonable and available means (e.g. attendance at pre-bid meetings, advertising and/or written notices) the interest of all certified DBEs who have the capability to perform part or all of the work to be included under the contract.

    a. Explain your GFE if any, to solicit the participation of potential DBEs as early in the procurement process as practicable.

    b. Explain your GFE if any, to allow sufficient time for the DBEs to properly inquire about the project and respond to the solicitation.

    c. Explain your GFE if any, to take appropriate steps to follow up with interested DBEs in a timely manner to facilitate participation by DBEs in this project.

3. Explain your GFE if any, to identify and break up portions of work that can be performed by DBEs in order to increase the likelihood that a DBE will be able to participate, and that the DBE goal could be achieved (e.g. breaking out contract items into economically feasible units to facilitate DBE participation even when you might otherwise prefer to self-perform these work items).

4. Explain your GFE if any, to make available or provide interested DBEs with adequate information about the plans, specifications, and requirements of the project in a timely manner, and assist them in responding to your solicitation.

5. Explain your GFE if any, to negotiate in good faith with interested DBEs. Evidence of such negotiations includes documenting: a) the names, addresses and telephone numbers of DBEs that were contacted; b) a description of the information that was provided to DBEs regarding the plans and specifications; and c) detailed explanation for not utilizing individual DBEs on the project.

6. Did you solely rely on price in determining whether to use a DBE? If yes please explain. The fact that there may be additional or higher costs associated with finding and utilizing DBEs are not, by themselves, sufficient reasons for your refusal to utilize a DBE or failure to meet the DBE goal, provided that such additional costs are not unreasonable. Also, the ability or desire to perform a portion of the work with your own forces, that could have been undertaken by an available DBE, does not relieve you of the responsibility to make good faith efforts to meet the DBE goal, and to make available and solicit DBE participation in other areas of the project to meet the DBE goal.

7. Did you reject DBEs as being unqualified without sound reasons based on a thorough investigation of their capabilities? If yes, please explain. The DBEs standing within the industry, membership in specific groups, organizations or associates, and political or social affiliation are not legitimate basis for the rejection or non-solicitation of bids from particular DBEs.

8. Explain your GFE to assist interested DBEs in obtaining bonding, lines of credit, or insurance.

9. Explain your GFE if any, to assist interested DBEs in obtaining necessary equipment, supplies, materials or related assistance or services.

10. If you selected a non-DBE over a DBE subcontractor, please provide the quotes of each DBE and non-DBE subcontractor submitted to you for work on the contract; and for each DBE that was contacted but not utilized for a contract, provide a detailed written explanation for each DBE detailing the reasons for not utilizing or allowing the DBE to participate in the contract.

11. Explain your GFE if any, to effectively use the services of available minority/women community organizations, minority/women business groups, contractors' groups, and local, state and federal minority/women business assistance offices or other organizations to provide assistance in recruitment and placement of DBEs.

Disadvantaged Business Enterprise (DBE)
Contract Goal Verification and Good Faith Efforts (GFE) Documentation
For Construction
INSTRUCTIONS

Project #	Self-explanatory
County	County where project is located
DBE Project Goal	Indicate DBE goal listed in the proposal on P-1
Prime Contractor	Name of prime contractor
Name of Subcontractor, Supplier, Manufacturer, and Trucking Firm	Company name of subcontractor, supplier, manufacturer, or trucking firm
DBE Y/N	Y for yes and N for no
Bid Item Number and Description	Pay item and description
Approx. Quantity/ Hours	Self-explanatory
Unit	Unit of measure
Unit Price/ Rate	Self-explanatory
Dollar Amount	Total dollar amount committed to subcontractor, supplier, manufacturer, or trucking firm
A. Dollar amount of the work to be performed by DBE subcontractors, manufacturers, and trucking firms, plus 60% of the dollar amount of DBE suppliers	Total amount of DBE participation
B. Sum of all work items less mobilization, force account items, allowance items	Total of work items minus mobilization, force accounts and allowances
A/B = DBE contract goal	Self-explanatory
Name and Signature of Authorized Representative of Bidder	Self-explanatory
Date	Date form is signed
Summary of Good Faith Efforts (GFE)	Complete by answering each question in detail and providing documentation to support your GFE

Disadvantaged Business Enterprise (DBE) Confirmation and Commitment Agreement
Trucking Company

This commitment is subject to the award and receipt of a signed contract from the Hawaii Department of Transportation (HDOT) for the subject project. DBE's must be certified by the bid opening date.

Project #:	**County:**
NAICS CODE/DESCRIPTION OF WORK:	**SECONDARY NAICS CODE:**

*All quantities and units should match the bid tab item whenever possible.

The prime contractor shall inform HDOT the dates when the trucking firm starts and completes all work under the subcontract.

Estimated Beginning Date (Month/Year):	**Estimated Completion Date (Month/Year):**

TRUCKING COMPANY:	Item No.	Item Description	Unit	Unit Price / Rate	Amount
				$	$
				$	$
				$	$
	TOTAL COMMITMENT AMOUNT				**$**

1. Number of hours contracted or quantities to be hauled: _____
2. Number of fully operational trucks to be used: _____ Tractor/trailers: _____Dump trucks: _____
3. Number of fully operational trucks owned by DBE: _____ Dump trucks: _____Tractors/trailers: _____

4. If Owner Operators or additional trucking companies are to be used, answer the following and provide a copy of lease agreement(s):

Name of Trucking Company	**DBE Y/N**	**Dollar Amount of Contract/Agreement**	**Number and Type of Trucks (specify)**
		$	
		$	

The prime contractor certifies by signature on this agreement to utilize the DBE trucking company as listed on the agreement form. If a DBE trucking company is unable to perform the work as listed on this agreement form, the prime contractor will follow the substitution/replacement approval process as outlined in the contract DBE requirements. **IMPORTANT! The signatures of the DBE, prime contractor, and subcontractor (only if the DBE will be a second tier sub) confirms that all information on this Agreement is true and correct. Parties should sign Agreement in the order in which they are listed.**

DBE NAME:		Name/Title (please print):
Address:		Signature:
Phone:	Fax:	
Email:		Date:
Prime Contractor:		Name/Title (please print):
Address:		Signature:
Phone:	Fax:	
Email:		Date:
Subcontractor (only if the DBE will be a second tier sub):		Name/Title (please print):
Address:		Signature:
Phone:	Fax:	
Email:		Date:

HDOT retains the information collected through this form. With few exceptions, you are entitled on request to be informed about the information that we collect about you.

Disadvantaged Business Enterprise (DBE) Confirmation and Commitment Agreement
Trucking Company
INSTRUCTIONS

The purpose of this agreement is to secure the commitment of the bidder/offeror to utilize the listed DBE trucking company, and the DBE's confirmation that it will perform work for the bidder/offeror on this project. The information on this form shall be provided by the DBE.

Project #	Self-explanatory
County	County where project is located
NAICS Code/Description of Work	Primary North American Industry Classification System code under which DBE is certified to perform and description of work to be done
Secondary NAICS Code	List other NAICS codes firm is certified to perform
Estimated Beginning Date (Month/Year)	Date DBE shall begin work on the project
Estimated Completion Date (Month/Year)	Date DBE's work will be completed
Trucking Company	Name of DBE trucking company
Item No.	List pay item number
Item Description	Description of item
Unit	Unit of measure – e.g. weight or hours
Unit Price/Rate	Cost per unit or hourly rate
Amount	Total amount per pay item
Total Commitment Amount	Sum of all pay items and total commitment of bidder/offeror to DBE
Number of hours contracted or quantities to be hauled	Approximate number of hours or tonnage to be hauled
Number of fully operational trucks to be used:	Total number of trucks to be used for the project
Tractor/Trailers	Number of tractor trailers to be used
Dump Trucks	Number of dump trucks to be used
Number of fully operational trucks owned by DBE	Number of listed DBE's trucks to be used on this project
Name of Trucking Company	If other trucking companies (DBE or non-DBE) are to be leased, list name and information about type of trucks in this section
Dollar Amount of Contract/Agreement	Provide information about cost to lease trucks
Number of Dump Trucks, Tractor/Trailer	Self-explanatory
DBE NAME	DBE Company name
Name/Title	Name and title of DBE's representative
Address	Self-explanatory
Phone	Self-explanatory
Fax	Self-explanatory
Email	Self-explanatory
Signature	Signature of DBE's representative
Date	Date agreement is signed
Prime Contractor	Company name
Name/Title	Name and title of prime contractor's representative

Address	Self-explanatory
Phone	Self-explanatory
Fax	Self-explanatory
Email	Self-explanatory
Signature	Signature of prime contractor's representative
Date	Date agreement was signed
Subcontractor (only if the DBE will be a second tier sub):	Name of subcontractor only if the listed DBE trucking company will be performing work under this subcontractor
Name/Title	Name and title of the subcontractor's representative
Address	Self-explanatory
Phone	Self-explanatory
Fax	Self-explanatory
Email	Self-explanatory
Signature	Signature of subcontractor
Date	Date agreement signed

Disadvantaged Business Enterprise (DBE) Confirmation and Commitment Agreement

Subcontractor, Manufacturer, or Supplier

This commitment is subject to the award and receipt of a signed contract from the Hawaii Department of Transportation (HDOT) for the subject project. DBE's must be certified by the bid opening date.

Project #:	**County:**
NAICS CODE/DESCRIPTION OF WORK:	**SECONDARY NAICS CODE:**

*All quantities and units should match the bid tab item whenever possible.

The prime contractor shall inform HDOT of the dates when the subcontractor starts and completes all work under the subcontract.

Estimated Beginning Date (Month/Year):	**Estimated Completion Date (Month/Year):**

SUBCONTRACTOR:	Item No.	Item	Approx. Quantity	Unit	Unit Price	Amount
					$	$
					$	$
					$	$
					$	$
				TOTAL COMMITMENT AMOUNT		$

MANUFACTURER:	Item No.	Item	Approx. Quantity	Unit	Unit Price	Amount
					$	$
					$	$
				TOTAL COMMITMENT AMOUNT		$

SUPPLIER:	Item No.	Item	Approx. Quantity	Unit	Unit Price	Amount
					$	$
					$	$
				TOTAL COMMITMENT AMOUNT		$

The prime contractor certifies by signature on this agreement that subcontracts will be executed between the prime contractor and the DBE subcontractors as listed on the agreement form. If a DBE subcontractor is unable to perform the work as listed on this agreement form, the prime contractor will follow the substitution/replacement approval process as outlined in the contract DBE requirements. **IMPORTANT! The signatures of the DBE, prime contractor, and subcontractor (only if the DBE will be a second tier sub) confirms that all information on this Agreement is true and correct. Parties should sign Agreement in the order in which they are listed.**

DBE NAME:		Name/Title (please print):
Address:		Signature:
Phone:	Fax:	
Email:		Date:
Prime Contractor:		Name/Title (please print):
Address:		Signature:
Phone:	Fax:	
Email:		Date:
Subcontractor (only if the DBE will be a second tier sub):		Name/Title (please print):
Address:		Signature:
Phone:	Fax:	
Email:		Date:

HDOT retains the information collected through this form. With few exceptions, you are entitled on request to be informed about the information that we collect about you.

Disadvantaged Business Enterprise (DBE) Confirmation and Commitment Agreement
Subcontractor, Manufacturer, or Supplier
INSTRUCTIONS

The purpose of this agreement is to secure the commitment of the bidder/offeror to utilize the listed DBE, and the DBE's confirmation that it will perform work for the bidder/offeror on this project. The information on this form shall be provided by the DBE.

Project #	Self-explanatory
County	County where project is located
NAICS Code/Description of Work	Primary North American Industry Classification System code under which DBE is certified to perform and description of work to be done
Secondary NAICS Code	List other NAICS codes firm is certified to perform
Estimated Beginning Date (Month/Year)	Date DBE shall begin work on the project
Estimated Completion Date (Month/Year)	Date DBE's work will be completed
Subcontractor	Name of DBE subcontractor (company name)
Item No.	List pay item number
Item	Description of item
Approx. Quantity	Self-explanatory
Unit	List unit of measure
Unit Price	Cost per unit
Amount	Total amount per pay item
Total Commitment Amount	Sum of all pay items and total commitment of bidder/offeror to DBE
Manufacturer	Name of DBE manufacturer
Supplier	Name of DBE supplier (aka regular dealer)
DBE NAME	DBE Company name
Name/Title	Name and title of DBE's representative
Address	Self-explanatory
Phone	Self-explanatory
Fax	Self-explanatory
Email	Self-explanatory
Signature	Signature of DBE's representative
Date	Date agreement is signed
Prime Contractor	Company name
Name/Title	Name and title of prime contractor's representative
Address	Self-explanatory
Phone	Self-explanatory
Fax	Self-explanatory
Email	Self-explanatory
Signature	Signature of prime contractor's representative
Date	Date agreement was signed
Subcontractor (only if the DBE will be a second tier sub):	Name of subcontractor only if the listed DBE will be performing work under this subcontractor as a second tier subcontractor/supplier/manufacturer

Name/Title	Name and title of the subcontractor that the listed DBE will work under as a second tier subcontractor/supplier/manufacturer
Address	Self-explanatory
Phone	Self-explanatory
Fax	Self-explanatory
Email	Self-explanatory
Signature	Signature of subcontractor
Date	Date agreement signed

Sand Island Access Road, Truck Weigh Station NH-064-1(010) Pre-Bid Meeting.

Wednesday May 5, 2021 10:00am – 11:00am.

Microsoft Teams

Attendees:

Department of Transportation – HWY-DD – Ryan Kunselman

Office of Civil Rights (OCR) – Dan Williams, Melanie Martin

R.M. Towill – Craig Luke, Waylen Miyashiro (Design Consultant)

Pacific Architects – Dennis Kimura (Architect)

Mechanical Enterprises – Ross Okuda (Mechanical Engineer)

KAI Hawaii – Saeid Pourjalali (Structural Engineer)

ECS – Michele Adolfo (Electrical Engineer)

Contractors:

Group Pacific Inc.– Chip Doyle

Jas. W. Glover Ltd. – Sam Peng Ho

International Road Dynamics - Roy Czinku

Maui Kupono Builders – Kevin Yamabayashi

Prebid meeting was started at 10:02 am:

"This meeting is being recorded."

"Anything said at this meeting is for clarification only, the bid documents shall govern over anything said today and discrepancies shall be clarified by addendum. For any questions to be officially answered, all questions should be submitted to HIePRO."

Office of Civil Rights – Dan Williams & Melanie Martin

- Gave presentation of DBE program and requirements.

- New forms: Revised proposal P-5 & P-6, DBE Trucking, DBE Subcontractor, Manufacturer, or Supplier and Good Faith Effort form.

Meeting was open to questions from attendees.

Questions:

Kevin – Maui Kupono Builders.

Is this the first project the new forms will be used with?

- This is the first project forms will be used on.

With new forms, would DBEs be listed on only new forms not on P-5 or P6?

- DBE's will be listed on new confirmation and commitment forms.
- P-5 and P-6 are reserved for listing licensed contractors.
- Non licensed non-DBE contractors are not to be listed on P-5 or DBE forms.

Sam – Jas. W. Glover

On form P-5 and P-6 are only subcontractors listed with the new forms?

- P-5 is for listing subcontractors and P-6 is for listing joint contractors

Kevin – Maui Kupono Builders.

Will there be any changes to the definition of "Subcontractor"?

- Please submit this question onto HIePRO for official response.

No additional questions were asked, meeting was concluded at 10:28 am.

Questions for solicitation: B21001718 Sand Island Access Road, Truck Weigh Station
05/05/2021

1. **Please provide a soils report and boring log for drilled shaft foundations (detail 4 & 5, sheet S-7) at Camera Pole locations and Traffic Signal Pole locations.**

Please see attached Geotechnical report for reference.

2. **We request the State to allow adequate time after new bid forms are issued, to be able to ask questions related to the form.**

Additional question period will be opened due to bid open postponement.

3. **According to the Pre-bid Meeting, only licensed subcontractors will be required to be listed on the subcontractor listing page P-5. Will the State change the definitions of "subcontractor" and "work" in the specifications? Currently, there is a conflict in the definitions that may require the listing of unlicensed subcontractors.**

Please see attached revised Division 100 sheets included in Addendum 1 for the definition of "Subcontractor".

4. **If second tier DBE service provider are used, will they have to submit a separate DBE Confirmation and Commitment? What if it's a second tier non-DBE service provider?**

If a second tier DBE service provider is used, they will need to submit a separate DBE Confirmation and Commitment Agreement.

If the second-tier service provider is a non-DBE services provider, then the third section "*(Subcontractor (only if the DBE will be a second-tier sub)"* does not need to be completed. That section only needs to be completed if the second-tier sub is a DBE.

5. **In the new confirmation and commitment form, there are line items for Item No. and Item Description. I assume these are related to the bid items. There is also a column for "Unit" but no column for the unit of measure. If the bid item unit of measure is in SY but the DBE is getting paid by the hour, what quantity should be used and how do we denote what the unit of measure is?**

The unit used for the items should match the unit on the proposal schedule. The quantity may be written in the item description or unit boxes. In the event there is not space to include the quantity, the quantity may be calculated by amount divided by unit price/rate by the office processing the forms.

6. **If the unit of measure for the bid item is in SY and the contractor commits to the DBE based on the SY quantity in the proposal, will the contractor be held to paying the DBE the total dollar amount if the actual SY quantity performed and paid for is less?**

At the time of bid, quantities may be an estimate and the actual amount may vary (due to additions or reductions of work items/scope of work). The focus is on the cost per unit of measure. We want to ensure that when the subcontract is executed, that the amount per unit is the same as what was stated on the Confirmation and Commitment Agreement for Trucking and/or Subcontractor, Manufacturer or Supplier. The prime may not have control over additions or reductions of work

7. **Test**

It is confirmed that the test post worked.

8. **Please consider a bid option to replace the AC pavement (5" AC and 10" AC Concrete Base), with a concrete pavement and aggregate base section that meets the design requirements.**

Bid accordingly to drawings and special provisions.

9. **Please confirm where the Demo of AC existing pavement is to be paid. Please confirm existing pavement AC thickness.**

Demolition and removal shall be considered to be incidental to the various contract items. Contractor to review soils report boring information and make assumption on thickness and assume risk.

10. **There are a bid items for the Fire Hydrant, the Water Laterals, but no bid item for the Sewer line work. Please provide a Bid Item for the Sewer line work**

Contractor may assume the sewer lateral to be incidental to the Truck Weigh Station 682.1000 item of work.

11. **Please confirm where grassing and topsoil is to be paid**

Contractor to assume grassing and topsoil are incidental to the various items of work.

12. **"Projects in Conflict with BWS Projects" - Please provide details of the "Sand Island Water System Improvements" Project, including conflicts with this project.**

The future BWS water system project in vicinity of the Sand Island Access Road, Truck Weigh Station project is currently in preliminary design and subject to change. Coordination and information about

the Sand Island Access Road, Truck Weigh Station project were provided to BWS during the design process.

13. **Please provide the size and depth of the 3 each existing fuel lines in the Vaults that are to be Reconstructed per Detail 2/S-7**

The depth and size of the fuel lines are unknown. The Contractor shall bid accordingly and assume risk related to fuel line size and depth. Coordination and information were provided to Par Hawaii Refining during the design phase of the Sand Island Access Road, Truck Weigh Station project.

14. **Please direct our attention to the location of the 8 LF of chain link fence required per Item No. 607.0060.**

Please refer to the Architectural drawings A-11. It was assumed some chain link fencing may be required to close any gaps between the D-02 swing gate and scale storage building.

15. **Please confirm what scope of work are included as part of Item No. 203.0100 Roadway Excavation. Grading work to the bottom of the new pavement seems to be short of the 2100 CY proposal quantity.**

The roadway excavation is to the pavement subgrade and does not include scarification and recompacting. Scarifying and recompacting the existing subgrade is considered incidental to the various contract items. The grading quantity has been confirmed.

16. **Sheet C-4 indicates the "Future Grade Retaining Wall to be Constructed as part of H.C. 10502 - The New Kapalama Container Terminal Yard Design." Please confirm that this retaining wall will be constructed prior to the grading work for this project.**

The construction of the “future grade retaining wall” has been already been completed.

17. **Sheet C-3 indicates "Demolish and Remove Concrete Curb, to be Constructed as part of H.C. 10502 - The New Kapalama Container Terminal Yard Design." Please clarify if the demolition of this curb is part of this project. Please clarify if the construction of this curb is part of this project.**

The construction of the concrete curb has been completed by the H.C. 10502 project. The current project will be responsible for demolishing the portion of the concrete curb that is in conflict with the construction drawings (as shown in construction drawings).

SOIL REPORT

KAI HAWAII
STRUCTURAL & FORENSIC ENGINEERS

GEOTECHNICAL ENGINEERING EXPLORATION

NEW KAPALAMA TERMINAL

HONOLULU, OAHU, HAWAII

W.O. 6826-00 OCTOBER 27, 2016

Prepared for

R.M. TOWILL CORPORATION

and

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HARBORS DIVISION

GEOLABS, INC.
Geotechnical Engineering and Drilling Services

GEOTECHNICAL ENGINEERING EXPLORATION
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HARBORS DIVISION

JOHN Y.L. CHEN
LICENSED PROFESSIONAL ENGINEER
No. 10029-C
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY
ME OR UNDER MY SUPERVISION.

John Chen 4-30-18

SIGNATURE EXPIRATION DATE OF THE LICENSE

GEOLABS, INC.
Geotechnical Engineering and Drilling Services
2006 Kalihi Street • Honolulu, HI 96819

Hawaii • California

GEOLABS, INC.
Geotechnical Engineering and Drilling Services

October 27, 2016
W.O. 6826-00

Mr. Craig Luke
R.M. Towill Corporation
2024 N. King Street, Suite 200
Honolulu, HI 96819

Dear **Mr. Luke:**

Geolabs, Inc. is pleased to submit our revised report entitled "Geotechnical Engineering Exploration, New Kapalama Terminal, Honolulu, Oahu, Hawaii" prepared for the design and construction of the proposed project. The revision reflects updates for site preparation and grading procedures.

Our work was performed in general accordance with the scope of services outlined in our revised fee proposal dated January 11, 2013.

Please note that the soil samples recovered during our field exploration (remaining after testing) will be stored for a period of two months from the date of this report. The samples will be discarded after that date unless arrangements are made for a longer sample storage period. Please contact our office for alternative sample storage requirements, if appropriate.

Detailed discussion and specific design recommendations are contained in the body of this report. If there is any point that is not clear, please contact our office.

Very truly yours,

GEOLABS, INC.

John Chen

John Y.L. Chen, P.E.
Vice President

JC:as

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Hawaii • California

GEOTECHNICAL ENGINEERING EXPLORATION

NEW KAPALAMA TERMINAL

HONOLULU, OAHU, HAWAII

W.O. 6826-00 October 27, 2016

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SUMMARY OF FINDINGS AND RECOMMENDATIONS

Our field exploration indicated that the project site generally is underlain by dense/stiff surface fills and soft/loose lagoonal materials over variable coralline deposits. Lagoonal material about 4 to 12.5 feet thick, was encountered in a majority of the borings drilled for the project, except those that were drilled generally along the northern and southern boundary of the property. A layer of landfill material about 3 to 4 feet thick was encountered at depths of 4 to 13 feet below the existing ground surface near the northwestern corner of the site. Groundwater levels were encountered from depths of about 4.5 to 10.3 feet below the existing ground surface, corresponding to Elevations -0.9 to +3.7 feet MLLW.

The project site was divided into five pavement zones subject to various types of vehicles and repetitions. The pavement design was based on typical container handler forklift (Hyster H1050-1150HD-CH) and trailer truck (HS20-44) used in Hawaii with 25 and 50 years of design life. To optimize the concrete pavement design, we recommend using 750 pounds per square inch (psi) concrete flexural strength, which is higher than 650 psi traditionally used in Hawaii concrete pavement industry, to design the container yard concrete pavement. The design pavement sections are summarized in the following table. For comparison, the thickness of Portland cement concrete (PCC) may be increased from about 15 to 16.5 inches if using the lower flexural strength of 650 psi in Pavement Areas A, C and D.

SUMMARY OF PAVEMENT STRUCTURAL SECTION

Container Pavement Area	Recommended Pavement Sections	
	50-Year Design Life	25-Year Design Life
A	15.0-inch PCC + 6.0-inch AB	14.5-inch PCC + 6.0-inch AB
C	15.0-inch PCC + 6.0-inch AB	14.0-inch PCC + 6.0-inch AB
D	14.0-inch PCC + 6.0-inch AB	13.5-inch PCC + 6.0-inch AB
B	8.0-inch PCC + 6.0-inch AB or 4.5-inch AC + 10.0-inch ACB	7.5-inch PCC + 6.0-inch AB or 4.0-inch AC + 9.0-inch ACB
E	2.0-inch AC + 6.0 AB	

We recommend proof-rolling the subgrade soils at the bottom of the pavement structural sections, to obtain a firm and unyielding surface. We recommend a minimum of 12-inch over-excavation if yielding/pumping condition is encountered during the proof-rolling

operation. We recommend using select granular material to backfill the over-excavation compacted to a minimum of 95 percent relative compaction, with a layer of geotextile fabric, such as Mirafi 180N or equivalent, placed at the bottom of the over-excavation.

Within the identified landfill areas, we recommend over-excavating a minimum of 12 inches below the existing ground surface (in fill area) or below finished subgrade (in cut area), and proof-rolling with a 20-ton roller at the bottom of the over-excavation. The over-excavation should be backfilled with select granular material, compacted to a minimum of 95 percent relative compaction. A layer of triaxial geogrid, such as Tensar TX-160 or equivalent, should be placed at the bottom of the pavement section over the entire identified landfill areas.

Soft/loose lagoonal deposits were encountered below the limits of the old fish ponds. To reduce potential pavement depression due to consolidation settlement induced by the new fills, we recommend the following grading sequence.

1. Demolish and remove all existing buildings and utilities on site;
2. In the identified landfill areas, over-excavation a minimum of 12 inches below existing ground surface (in fill areas) or below finished subgrade (in cut areas) and backfill with select granular material;
3. In other grading areas, grade to subgrade with 8 inches of scarification
4. Proof-roll with 20-ton vibratory compactor at existing grade in fill areas and at finished subgrade in cut areas;
5. In yielding areas (except the identified landfill areas), over-excavate a minimum of 12 inches and place a layer of geotextile fabric, and survey location of yielding areas;
6. Backfill over-excavation with select granular material with a minimum of 95% relative compaction;
7. Install settlement gauges for 2 to 3 months of settlement monitoring;
8. Surcharge the fill areas if the new fill is greater than 3 feet thick;
9. Once consolidation of fill areas is complete, fine grade entire site to finished subgrade elevation;
10. Install drainage and utilities (pipes and structures);
11. Place a layer of triaxial geogrid over entire landfill areas;
12. Place aggregate base course;
13. Construct concrete pavements.

The surcharge fill may consist of stockpiling 4 feet of materials for a period of 2 to 3 months. The settlement monitoring should be conducted optically by a qualified surveyor and reviewed by Geolabs.

We recommend an allowable bearing pressure of 1,500 psf for design of below-grade structures, such as drainage inlets, supported on a stabilization layer. The stabilization layer may consist of 2 feet of 3B Fine gravel (ASTM C33, No. 67 gradation) wrapped in a filter fabric, such as Mirafi 180N or equivalent. We also recommend an allowable bearing pressure of 3,000 psf for design of shallow foundations supporting the compacted granular material for the new comfort station and retaining walls.

We recommend using 48-inch diameter drilled shafts with an embedment depth of at least 25 feet below the pavement surface to support the new container yard light poles. The text of this report should be referred to for detailed discussion and specific design recommendations.

END OF SUMMARY OF FINDINGS AND RECOMMENDATIONS

SECTION 1. GENERAL

1.1 Introduction

This report presents the results of our geotechnical engineering exploration performed for the proposed *New Kapalama Terminal* project in Honolulu on the Island of Oahu, Hawaii. The project location and general vicinity are shown on the Project Location Map, Plate 1.

This report summarizes the findings from our field exploration and laboratory testing and presents our geotechnical recommendations derived from our analyses for the project. These recommendations are intended for the design of pavements, below-grade structures, shallow foundation, light pole foundations, underground utility lines, and site grading only. The findings and recommendations presented herein are subject to the limitations noted at the end of this report.

1.2 Project Considerations

The proposed Kapalama Terminal project is part of the Harbor Modernization program, to increase the container storage capacity of Honolulu Harbor by about 1 million TEUs (Twenty Foot Equivalent Units) per year. We understand that the total project area encompasses approximately 90 acres within the existing Kapalama Military Reservation near the western end of Honolulu Harbor, adjacent to Pier 41 to the east and Sand Island Access Bridge to the south.

We understand that Kapalama Terminal development includes construction of new wharves/piers and container terminal. The new wharves/piers will consist of 1,840 feet of berthing to Pier 42 and Pier 43 (designed by others). The container terminal developments include on-site and off-site work. Off-site work includes a weight station, roadway improvements and other infrastructure. The scope of work presented in this report is for the on-site container terminal development, including container yard concrete pavements supporting industrial heavy container forklift loads (such as Hyster-H1050-1150HD-CH or equivalent) during storage, toplift, and transportation loading.

The project also involves lighting system development within the new container yard. We envision that containers will be stacked up to four high, requiring the

construction of new 80-foot light poles. Details for the new light poles were not available at the time of this report preparation. The following preliminary structural loading information was provided for our foundation analysis by the project structural engineer, KAI Hawaii, Inc.

80-FOOT TALL LIGHT POLE LOADS		
Axial (kips)	**Shear** (kips)	**Overturning Moment** (ft-kips)
9.5	7.7	377

We envision drilled shaft foundations will be required for foundation support of the new light poles to resist the high overturning moment demands. Due to the presence of shallow groundwater conditions, concrete placement for the drilled shaft foundations will require placement by tremie methods.

In addition, the new infrastructures such as underground structures, storm drain inlets/manholes, comfort station, water, sanitary and others are also required as part of the container terminal development. Two three-story buildings are planned as new terminal offices, designed by others.

Based on the topographic map provided, the existing grades at the project site vary from about +5 to +10 feet Mean Lower Low Water (MLLW). We anticipate that site grading consisting of cuts and fills up to about 4 to 5 feet will be needed to achieve the design finished grades for the proposed project. In addition, we anticipate that some deep excavations of up to about 6 to 10 feet deep may be required for construction of the waterlines and/or drainage structures.

Based on the information presented on the U.S. Geological Survey map published by the International Archaeological Research Institute, Inc., dated July 2002, the project site was previously occupied by two large fish ponds (Ananaho Pond and Auiki Pond) prior to WWII. Based on the project EA study report, portions of the site were used as a municipal dump during the 1930s and 1940s. Therefore, our field exploration focused on identification and quantification of the soft/loose soil and delineating dump site limits for design of the site grading.

Based on the information provided, portions of the site were expected to be contaminated with petroleum-based hydrocarbons and potential chlordane by-product may be encountered under the existing warehouse concrete slab. The drilling equipment was prepared to be decontaminated under environmental protocol, if contaminated soil was encountered in the boring. In addition, environmental samples were collected by others for the environmental assessment.

1.3 Purpose and Scope

The purpose of our geotechnical engineering exploration was to obtain a general overview of the surface and subsurface conditions to formulate a summary of the soil and/or rock conditions for design of the pavements, below-grade structures, shallow foundations, light pole foundations, underground utility lines, and site grading. In order to accomplish these objectives, we conducted an exploration program generally consisting of the following tasks and work efforts:

1. Review of in-house boring logs and geology information in the project vicinity.

2. Preparation of an Accident Prevention Plan specific to the work being performed by Geolabs personnel for the project, with consideration of potential contamination encountered in the borings and environmental protocol.

3. Application of the necessary excavation permits and One-Call application and coordinating with existing warehouse tenants for clearance of boring access.

4. Mobilization and demobilization of a truck-mounted drill rig for the borings located outside of the existing warehouses and a track-mounted drill rig for the borings located inside of the warehouses, and two operators to the project site and back.

5. Drilling and sampling of 20 borings extending to depths of about 30 to 123.5 feet below the existing ground surface for a total of approximately 848.6 lineal feet of exploration.

6. Conducting decontamination and environmental protocol for the upper 10 to 15 feet of drilling by installing 6-inch diameter PVC casing and grouting with cement-bentonite grout.

7. Performance of three percolation tests to evaluate in-situ soil permeability characteristics.

8. Coordination of the field exploration, boring stakeout, and logging of the borings by our geologist.

9. Laboratory testing of selected soil samples obtained during the field exploration as an aid in classifying the materials and evaluating their engineering properties.

10. Analyses of the field and laboratory data to develop geotechnical recommendations for the design of pavements, below-grade structures, shallow foundations, light pole foundations, underground utility lines, and site grading.

11. Preparation of this report summarizing our work on the project and presenting our findings and geotechnical recommendations.

12. Coordination of our work on the project by our engineer.

13. Quality assurance of our overall work on the project and client/design team consultation by our principal engineer.

14. Miscellaneous work efforts such as drafting, word processing, clerical support, and reproductions.

Detailed descriptions of our field exploration and Logs of Borings are presented in Appendix A. Results of the laboratory tests performed on selected soil samples are presented in Appendix B. Results of the in-situ permeability tests performed at selected locations and depths are presented in Appendix C.

END OF GENERAL

SECTION 2. SITE CHARACTERIZATION

2.1 Regional Geology

The Island of Oahu was built by the extrusion of basaltic lavas from the Waianae and Koolau shield volcanoes. The older Waianae Volcano is estimated to be middle to late Pliocene in age and forms the bulk of the western third of the island. The younger Koolau Volcano is estimated to be late Pliocene to early Pleistocene (Ice Age) in age and forms the majority of the eastern two-thirds of the island. Waianae became extinct while Koolau Volcano was still active, and its eastern flank was partially buried below Koolau lavas banking against its eastern flank. After a long period of volcanic inactivity, during which time erosion incised deep valleys into the Koolau Shield, volcanic activity returned with a series of lava flows followed by cinder and tuff cone formations. These series are referred to as the Honolulu Volcanic Series.

The project site is on the coastal plain of Southern Oahu. The coastal plain was built on the eroded flanks of the Koolau Volcano, which forms the eastern two-thirds of the Island of Oahu. The coastal plain was built by extensive accumulation of alluvium derived from erosion of the volcano, interbedded with coral reefs and associated deposits.

During the Pleistocene Epoch (Ice Age), sea levels fluctuated in response to the cycles of continental glaciation. Most of the coastal plains were developed during the Pleistocene Epoch when the sea levels fluctuated significantly. As the glaciers grew and advanced, less water was available to fill the oceanic basins such that sea levels fell below the present stands of the sea. When the glaciers melted and receded, an excess of water became available such that the sea levels rose to above the present sea.

The processes of erosion and deposition were affected by these glacio-eustatic sea level fluctuations. When the sea level was low, the erosional base level was correspondingly lower, and valleys were carved to depths below the present sea level. When the sea level was high, the erosional base level was raised such that sediments accumulated at higher elevations.

The project site generally is underlain by deposits of calcareous sediments and alluvium. The deposition of soils at the site is likely associated with the nearby Kapalama

Stream/Basin, lagoonal deposits from old fishponds and from Honolulu Harbor, and coralline formation. A surface layer of man-made fill was placed over these deposits to extend the shoreline for the development of Honolulu Harbor within the last century.

2.2 Site Description

The Kapalama Terminal project site is near the western end of the existing Honolulu Harbor in the District of Honolulu on the Island of Oahu, Hawaii. It is adjacent to Keehi Lagoon and Kapalama Basin. The project site is bounded by Pier 41 to the east, Auiki Street to the north, Sand Island Access Road to the west, and Honolulu Harbor to the south, as shown on the Site Plan, Plate 2.

The project site was previously owned by the U.S. Navy as the Kapalama Military Reservation and was turned over to the State of Hawaii under the jurisdiction of Department of Transportation – Harbors Division. Currently, the warehouses on site are rented by various venders, including University Marine Research Center, Island Movers, Pacific Shipyard, Pacific Commercial Services, and other small venders. Majority of the project site is covered by either asphaltic concrete pavement or gravel for industrial access and parking. Most of the existing warehouses were built about 3 to 4 feet above the adjacent ground surface.

Based on the topographic map provided, the project site is relatively level. The existing ground elevations at the project site range from approximately +5 to +10 feet MLLW.

2.3 Subsurface Conditions

Our field exploration at the project site consisted of drilling and sampling 20 borings, designated as Boring Nos. 101 through 118, 201 and 202, extending to depths of about 30 to 123.5 feet below the existing ground surface. The approximate boring locations are shown on the Site Plan, Plate 2.

In general, the project site is underlain by surface fill and lagoonal deposits overlying coralline deposits. Granular surface fill materials were encountered with the consistency of dense to medium dense, extending to depths varying from 2.5 to 14 feet below the existing ground surface. The granular surface fills were underlain by soft/loose

lagoonal deposits extending to a depth of up to about 22 feet deep. Coralline deposits consisting of dense coral formation, sandstone, and medium dense coralline detritus with localized loose/soft pockets with variable consistency extended to the maximum depth explored of about 123.5 feet below the existing ground surface.

Two large fish ponds (Ananaho Pond and Auiki Pond) located in the project site prior to WWII were documented on the U.S. Geological Survey map published by the International Archaeological Research Institute, Inc., dated July 2002. Some of the soft/loose lagoonal deposits may be from the old fish ponds. Based on the vicinity where the soft/loose lagoonal deposits were encountered, the approximate fish pond limits were delineated as presented on the Site Plan, Plate 2. Thickness of the soft/loose lagoonal deposits ranged from about 4 to 12.5 feet in the borings within the approximate fish pond limits.

In addition, landfill materials consisting of metal, glass and other debris were encountered in Boring Nos. 105, 107, 111 and 112 at depths of 4 to 10 feet below the existing ground surface. The landfill materials may be from a documented dump site during the 1930s and 1940s. An approximate landfill limit was estimated in the vicinity where the landfill materials were encountered in the borings, as also presented on the Site Plan, Plate 2. Thickness of the landfill materials varied from 3 to 4 feet in the borings drilled within the approximate landfill limit.

Four sets of California Bearing Ratio (CBR) tests were performed on bulk samples of the near-surface soils to evaluate the strength characteristics for pavement subgrade support. Each set of CBR tests were conducted with two compaction densities, to simulate various compaction efforts ranging from 90 to 100 percent relative compaction.

We encountered groundwater at depths of about 4.5 to 10.3 feet below the existing ground surface, corresponding to elevations from -0.9 to +3.7 feet MLLW, at the time of our field exploration. Due to the proximity of the project site to the Pacific Ocean, groundwater levels are expected to change with tidal fluctuations. Seasonal precipitation, storm surge condition, surface water runoff, and other factors may also influence the groundwater levels at the project site.

Detailed descriptions of the materials encountered from our field exploration are presented on the Logs of Borings, Plates A-1.1 through A-20 of Appendix A. Laboratory tests were performed on selected soil samples, and the test results are presented in Appendix B.

2.4 In-Situ Permeability Testing

Three in-situ permeability tests were conducted at Boring Nos. 106, 115 and 201 to evaluate the infiltration characteristics of the subsurface materials encountered at the project site. The locations are shown on the Site Plan, Plate 2.

The permeability tests were typically performed at a depth of about 15 feet below the existing ground surface. Depending on rate of percolation, either constant head tests or falling head permeability tests were performed to determine the average hydraulic conductivity of the underlying subsurface materials. Water was introduced into the boring and the stabilized water level under a constant injection rate was measured in the boring for the constant head test, while the drop of the water level in the boring was measured along with time for the falling head test until reaching equilibrium steady state.

FIELD PERMEABILITY TEST RESULTS			
Test Location	**Test Depth** (feet)	**Test Soil**	**Hydraulic Conductivity** (centimeters/second)
B-106	14	Coral	1.2×10^{-2}
B-115	16	Coralline Detritus	1.4×10^{-5}
B-201	16	Coralline Detritus	3.0×10^{-5}

Based on the in-situ permeability test results, the calculated hydraulic conductivity (k-value) at each test location is summarized in the above table. It should be noted that the permeability of the subsurface soils may range broadly and also vary locally in terms of orders of magnitude. The results of our permeability tests are presented on Plates C-1 through C-3 of Appendix C.

END OF SITE CHARACTERIZATION

SECTION 3. DISCUSSION AND RECOMMENDATIONS

Our field exploration indicated that the project site is generally underlain by surface fills and lagoonal materials over coralline deposits. The surface fills consisted of granular coralline gravel and sand with occasional silty or clayey soils, extending to depths of about 4 to 14 feet below existing ground surface. The lagoonal materials were comprised of soft/loose silty or sandy soils with thickness varying from 4 to 12.5 feet. It should be noted that the lagoonal material was not encountered in the borings drilled generally along the northern and southern boundary of the property. The coralline deposits primarily consisted of hard coral formation/sandstone and variable coralline detritus extending to the maximum depth drilled of approximately 123.5 feet below the existing ground surface. Groundwater levels were encountered from depths of about 4.5 to 10.3 feet below the existing ground surface.

Based on the traffic loading information provided and the pavement subgrade conditions anticipated, the pavement design was divided into five container pavement areas, designated as Areas A through E, for both 50 and 25 years of design life. Due to the heavy industrial container handler forklift loads, we believe that a rigid pavement section consisting of 13.5 to 15.0 inches of Portland cement concrete over 6 inches of aggregate base course may be used for the container yard pavement at Pavement Areas A, C and D. A higher concrete flexural strength of 750 psi was used to optimize the above concrete pavement design. However, the thickness of concrete pavement sections would increase to 15 to 16.5 inches of Portland cement concrete over 6 inches of aggregate base course, if the lower conventional flexural strength of 650 psi is used. Pavement Area B will be primarily subjected to trailer truck vehicles. Therefore, either rigid pavement section or flexible pavement section may be considered in the channelized entry and exit for the container trucks. Light-duty flexible pavement section may be designed for Pavement Area E to support primarily passenger cars and pickup trucks with occasional heavy trucks.

In order to provide a stable subgrade for the pavement structural section, we recommend proof-rolling the subgrade soils (at finished subgrade in cut areas and at existing ground surface in fill areas). If yielding or pumping condition is encountered

during the proof-rolling, we recommend over-excavating a minimum of 12 inches and replacing with select granular material with a layer of geotextile fabric, such as Mirafi 180N or equivalent, placed at the bottom of the over-excavation.

Within the identified landfill areas, we recommend over-excavating a minimum of 12 inches below the subgrade soils (finished subgrade in cut areas, and existing ground surface in fill areas) with subsequent proof-rolling using 20-ton vibratory roller at the bottom of the over-excavation. The over-excavation should be backfilled with select granular material. The select granular material should be compacted to at least 95 percent relative compaction. In addition, a layer of triaxial geogrid, such as Tensar TX-160 or equivalent, should be placed at the bottom of the pavement section over the entire identified landfill areas.

To reduce risk of potential pavement depression due to consolidation settlement caused by the new fills over the soft/loose lagoonal soils in the old fish pond areas, we recommend a surcharge and settlement monitoring program. The surcharge should consist of 4 feet of material placed for a period of 2 to 3 months in the fill areas where the fill thickness is greater than 3 feet. Where the fill thickness is less than 3 feet, the surcharge may be eliminated, but a waiting period should be implemented. The waiting period may consist of placing select granular material to design finished subgrade with settlement monitoring for a period of 2 to 3 months. The settlement monitoring should be conducted optically by a qualified surveyor and reviewed by Geolabs.

In addition, we recommend using 48-inch diameter drilled shafts with an embedment depth of at least 25 feet below the pavement surface to support the new container yard light poles. Detailed discussions of these items and our geotechnical recommendations for design are presented in the following sections.

3.1 Pavement Design

It is desired to construct concrete pavement to support the heavy container handler forklift at the container yard in the new Kapalama Terminal. The design procedures used in determining the new rigid pavement sections are based on the "Design of Heavy Industrial Concrete Pavements" developed by the Portland Cement Association.

3.1.1 Design Traffic Loading Conditions

We envision the new concrete pavement sections at the new container yard will be subjected to traffic loads from various types of container handlers similar to Hyster H1050-1150HD-CH with a maximum axle capacity of about 229,369 pounds. Other heavy container handlers, such as Taylor TXLC-975 with a maximum axle capacity of about 221,000 pounds (less than the capacity of Hyster H1050-1150HD-CH), may also be considered. Therefore, the design vehicle of the new concrete pavements is assumed to be the Hyster H1050-1150HD-CH Container Handler Forklift.

We understand that a typical 40-foot standard container generally has a maximum gross weight of 68,000 lbs. As suggested by Interpave, reduction of the gross weight up to 40 percent may be used while containers are stacked in a block arrangement up to five high. To be conservative, a reduction of 30 percent for the gross weight is considered in the pavement design. This translates to a maximum front axle load of about 203,409 pounds for the Hyster H1050-1150HD-CH Container Handler Forklift. Detailed information and design parameters for the controlling vehicle are presented in the following table.

DESIGN TRAFFIC PARAMETERS (Hyster H1050-1150HD-CH Container Handler Forklift Truck)	
Pavement Classification	Heavy Industrial
Maximum Front Axle Load (with reduced 49,000 pounds container)	203,409 pounds
Maximum Single Wheel Load	50,852 pounds
Tire Ground Contact Pressure	98 psi
Tire Ground Contact Area	605 square inches
Dual Tire Separation (center to center)	26.7 inches
Dual Wheel Spacing (center to center)	143 inches

3.1.2 Design Subgrade Conditions

Based on our field exploration, the proposed new container yard generally is underlain by granular fills extending to depths of about 4 to 14 feet below the existing ground surface. The granular materials are underlain by lagoonal deposits consisting of soft silty and sandy soil extending to depths of about 6.5 to 22 feet deep.

Based on our field exploration and the anticipated design grades for the project, we believe the pavement subgrade soils will consist of the medium dense to dense granular materials overlying the soft lagoonal deposits. We recommend using a CBR value of about 20 with a modulus of subgrade reaction (k-value) of about 250 pounds per square inch of deflection (pci) for pavement design.

Since soft lagoonal deposits may be present at shallow depths in localized areas, we envision yielding or pumping conditions may be encountered during pavement subgrade proof-rolling. If the yielding or pumping occurs at the subgrade, we recommend a minimum of 12 inches over-excavation to remove the yielding soft soils. The over-excavation should be backfilled with select granular material and a layer of geotextile fabric, such as Mirafi 180N or equivalent, placed at the bottom of the over-excavation.

Additional subgrade preparation requirements are presented in the "Subgrade Preparation Below Pavement Section" subsection.

3.1.3 Design Pavement Sections

Based on the pavement zone map provided, we understand that heavy industrial container forklift is anticipated in Area A (container storage yard fronting Pier 41), Area C (container storage yard fronting Piers 42 and 43), and Area D (storage for empty container and maintenance). Approximate pavement zone locations are shown on Plate 4, Pavement Area Map. Based on the information provided, we understand that the tare weight of a 40-foot container is about 7,000 pounds. In addition, we understand that traffic in Area B (channelized gate lanes) primarily consists of 5-axle trailer trucks, such as HS20-44 or equivalent. Based on information provided, the repetitions of the vehicles at each zone are interpreted and summarized

in the following table. Pavement design life of 50-year and 25-year was considered in the design for comparison.

SUMMARY OF VEHICLE REPETITION				
Container Pavement Area	**Design Vehicle**	**Single Wheel Load** (pounds)	**Repetition** (Avg. per year)	
			50-yr	25-yr
A	Hyster H1050-1150HD-CH Container Forklift	50,852	3,267	3,200
C		50,852	3,200	2,400
D		43,896	6,533	6,400
B	HS20-44		270,844	240,472
E	Passenger Cars and Pickup Trucks with Occasional Heavy Trucks			

Rigid concrete pavement for the proposed container yard under heavy container forklift is preferred within the container Pavement Areas A, C and D. At the channelized entry and exit gate access Area B, the pavement structural sections design is assumed to support the trailer truck loads, such as HS20-44. Both rigid and flexible concrete pavements may be considered due to the lower traffic loads. In addition, light-duty flexible pavements are considered for Area E due to vehicular traffic primarily consisting of passenger cars and light pickup trucks with occasional heavy trucks.

Based on the above assumptions and a properly prepared subgrade, we recommend the following pavement structural sections within the proposed container pavement area for the new Kapalama Terminal project.

SUMMARY OF PAVEMENT STRUCTURAL SECTION (750 psi of Flexural Strength)		
Container Pavement Area	**Recommended Pavement Sections**	
	50-Year Design Life	**25-Year Design Life**
A (Toplift)	15.0-inch PCC + 6.0-inch AB	14.5-inch PCC + 6.0-inch AB
C (Toplift)	15.0-inch PCC + 6.0-inch AB	14.0-inch PCC + 6.0-inch AB

SUMMARY OF PAVEMENT STRUCTURAL SECTION (750 psi of Flexural Strength)		
Container Pavement Area	**Recommended Pavement Sections**	
	50-Year Design Life	**25-Year Design Life**
D (Empty Container Storage)	14.0-inch PCC + 6.0-inch AB	13.5-inch PCC + 6.0-inch AB
B (Channelized Gate Access)	8.0-inch PCC + 6.0-inch AB or 4.5-inch AC + 10.0-inch ACB	7.5-inch PCC + 6.0-inch AB or 4.0-inch AC + 9.0-inch ACB
E (Parking Lots)	2.0-inch AC + 6.0 AB	
Remarks: PCC – Portland Cement Concrete AC – Asphaltic Concrete AB – Aggregate Base Course ACB – Asphaltic Concrete Base		

It should be noted that the above pavement structural sections were calculated based on a minimum concrete flexural strength of 750 psi when tested in accordance with ASTM C78, which is higher than the conventional flexural strength of 650 psi used in the Hawaii concrete industry. If the concrete flexural strength of 650 psi is used, the thickness of the Portland cement concrete will need to be increased from 15 to 16.5 inches.

SUMMARY OF PAVEMENT STRUCTURAL SECTION (650 psi of Flexural Strength)		
Container Pavement Area	**Recommended Pavement Sections**	
	50-Year Design Life	**25-Year Design Life**
A (Toplift)	16.5-inch PCC + 6.0-inch AB	16.0-inch PCC + 6.0-inch AB
C (Toplift)	16.5-inch PCC + 6.0-inch AB	16.0-inch PCC + 6.0-inch AB
D (Empty Container Storage)	15.5-inch PCC + 6.0-inch AB	15.0-inch PCC + 6.0-inch AB
B (Channelized Gate Access)	8.0-inch PCC + 6.0-inch AB or 4.5-inch AC + 10.0-inch ACB	7.5-inch PCC + 6.0-inch AB or 4.0-inch AC + 9.0-inch ACB
E (Parking Lots)	2.0-inch AC + 6.0 AB	

The pavement subgrade soils should be scarified to a depth of at least 8 inches, moisture-conditioned to above the optimum moisture content, and compacted to no less than 95 percent relative compaction. Relative compaction refers to the in-place dry density of soil expressed as a percentage of the maximum dry density of the same soil determined in accordance with ASTM D1557 (AASHTO T 180). Optimum moisture is the water content (percentage by dry weight) corresponding to the maximum dry density.

The asphalt concrete base material should consist of asphalt treated basalt aggregates compacted to a density of no less than 91 percent of the maximum theoretical specific gravity determined in accordance with ASTM D2041 or AASHTO T 209. The aggregate base course should consist of basaltic aggregates compacted to a minimum of 95 percent relative compaction.

We recommend performing CBR and field density tests on the actual pavement subgrade materials encountered during construction to confirm the adequacy of the recommended pavement sections.

3.1.4 Subgrade Preparation Below Pavement Section

As previously mentioned, localized soft lagoonal soil may be near the bottom of the aggregate base course layer. Therefore, we recommend proof-rolling the subgrade soils (at the existing grade in fill areas and finished subgrade in cut areas) to obtain a firm and unyielding surface.

If yielding or pumping condition is encountered during the proof-rolling operation, we recommend a minimum of 12-inch over-excavation to remove soft/yielded material. The over-excavation should be backfilled with select granular material and a layer of geotextile fabric, such as Mirafi 180N or equivalent, placed at the bottom of the over-excavation. The select granular backfill should be compacted to a minimum of 95 percent relative compaction. Relative compaction refers to the in-place dry density of soil expressed as a percentage of the maximum dry density of the same soil established in accordance with ASTM D1557. Optimum moisture is the water content (percentage by dry weight) corresponding to the maximum dry density.

A Geolabs representative should further evaluate the need for over-excavation in the field during construction due to the soft and/or loose subgrade soil conditions.

Therefore, contract documents should include unit prices for additional over-excavation and compacted fill placement to account for variations in the over-excavation quantities. For preliminary budgeting purposes, we recommend allocating a contingency fund for an additional over-excavation of 12 inches below the aggregate base course layer and replacement with compacted select granular material underlain by a layer of geotextile fabric, such as Mirafi 180N or equivalent. Based on our field exploration, we estimate the additional over-excavation may entail approximately 15 percent of the pavement area within the project site.

3.1.5 Subgrade Preparation in Old Landfill Area

Landfill materials were encountered in Boring Nos. 105, 107, 111 and 112 at depths of 4 to 13 feet below the existing ground surface. The landfill materials may be part of the former dump site as documented in the project EA report. Approximate landfill limit is presented in the Site Plan, Plate 2.

The landfill materials encountered in our borings consisted primarily of inert glass, metal and plastic debris. Ideally, this landfill debris should be over-excavated and replaced with compacted select granular fill. However, due to the large volume of material, this may be cost prohibitive. Since the landfill debris is at some depth and in a relatively dense condition, we believe that it may remain in place.

To reduce risk of pavement depression overlying the compressible landfill materials, we recommend over-excavating a minimum of 12 inches below existing ground surface (in fill areas) or below the finished subgrade (in cut areas). The bottom of the over-excavation should be proof-rolled with a minimum 20-ton vibratory roller, prior to backfilling with the select granular material. The select granular backfill material should be placed in two lifts and compacted to a minimum of 95 percent relative compaction. In addition, a layer of triaxial geogrid, such as Tensar TX-160 or equivalent, should be placed at the bottom of the pavement section over the entire identified of landfill areas.

3.2 Pavement Drainage

One of the primary distress mechanisms in pavement structures is pumping due to saturation of the subgrade soils. Therefore, the pavement surface should be sloped, and drainage gradients should be maintained to carry surface water off the pavement to appropriate drainage structures. Surface water ponding should not be allowed on-site during or after construction. Where landscaping is planned adjacent to the pavement areas, we recommend constructing a subdrain system to collect the excess water from landscaping irrigation and to reduce the potential for migration of landscape water into the pavement section. The recommended pavement sections assume that good drainage will be provided for the paved areas.

3.3 Pavement Joints

Due to the rigidity of the Portland cement concrete pavements, significant stresses may develop in the concrete from variations in temperature and moisture content. In order to relieve the high level of stress and to reduce the potential for cracking, adequate joints should be provided in the Portland cement concrete pavement. The following describes the various types of joints and general guidelines that should be implemented in the design of concrete pavements.

3.3.1 Crack Control Joints (Contraction Joints)

In general, decrease in temperature or moisture content, such as that during concrete curing, will cause the concrete to contract and possibly crack. Crack control joints are used to provide controlled cracking due to volume changes and relieve the stresses caused by curling or warping. Crack control joints, such as saw cut joints or formed grooves, are provided to a depth of generally one-fourth (¼) the slab thickness. These saw cut joints or formed grooves (crack control joints) provide a weakened plane, which will likely crack through the full depth as the concrete shrinks during the curing process.

In general, the spacing of crack control joints should be limited to a maximum of 20 feet. Smaller joint spacing should be used if the concrete pavement will be subjected to extreme temperature gradients during the placement and/or life span of the pavement. The crack control joints should be provided in both longitudinal and

transverse directions. The transverse joint spacing should not vary from the longitudinal joint spacing by more than 25 percent.

3.3.2 Expansion Joints (Isolation Joints)

Expansion joints are typically used to relieve compressive stresses developed at critical locations due to fluctuations in temperature. Expansion joints are cut to the full depth of the concrete slab, and compressible filler materials are placed in the cut. These joints allow for isolated lateral movement of the slabs and reduce the potential for damage to the adjoining concrete (spalling of the edges of the concrete slabs).

Expansion joints should be used at pavement intersections and at intersections of pavements with fixed structures, such as the light pole structures. Because expansion joints generally do not provide for load transfer across the joint, placement of dowels with lubrication on one end of the dowel should be considered for load transfer across the expansion joint, where required.

3.3.3 Construction Joints

Construction joints are generally required when two abutting slabs are placed at different times. Therefore, construction joints usually form the edges of each day's work. For the relatively thick concrete slab (13 to 16 inches) planned for this project, the construction joints should consist of a keyed or butted joint. In general, construction joints should be aligned with the crack control or expansion joints to reduce the number of pavement joints required.

3.4 Below-Grade Structures

Based on the information provided, we understand below-grade structures, such as storm drain inlets, electrical hand holes, and valve vaults, will be installed as part of the terminal development. We anticipate the bottom of these below-grade structures may be embedded within the upper 10 feet below the existing ground surface. Based on our field exploration results, we envision that the bottom of these structures will be underlain by the soft lagoonal deposits encountered at depths of about 4 to 12.5 feet below the existing ground surface. On this basis, we believe that an allowable bearing pressure of up to 1,500 pounds per square foot (psf) may be used for the foundation design of the

below-grade structures bearing on a stabilization layer as described below. This allowable bearing pressure is for dead-plus-live loads and may be increased by one-third (1/3) for transient loads, such as temporary wind and/or seismic forces.

Due to the presence of soft subsurface soils near the foundation subgrade level of the below-grade structures, we recommend providing a stabilization layer consisting of at least 2 feet of 3B Fine gravel (ASTM C33, No. 67 gradation) wrapped in a filter fabric, such as Mirafi 180N or equivalent, below the underground structures for uniform bearing support. In addition, the stabilization layer also would serve as a working platform during construction. In order to reduce the potential for significant settlement of the underground structures, we recommend sewing the filter fabric (in lieu of overlapping) and using light compaction equipment during installation of the below-grade structures. In addition, the minimum 2-foot thick stabilization layer should extend at least 2 feet beyond the edges of the structures.

Resistance to uplift loads resulting from buoyancy forces may be mobilized by the dead weight of the underground structure. Contribution of dead weight from the backfill, if applicable, may be estimated using a unit weight of 135 pounds per cubic foot (pcf) above the groundwater table and 70 pcf below the groundwater table. For side shear between the structure and the backfill material, a nominal value of 100 psf may be used in design. For evaluating uplift forces due to hydrostatic pressures, a high groundwater level of Elevation +3 feet MLLW may be used for design to take into consideration tidal fluctuations.

Settlements of the underground structures may result from compression of the soft and/or loose soil layer due to the placement of the backfill material and/or disturbance of the soft and/or loose subsurface soils during construction. We estimate the total settlement of the underground structures to be on the order of about 1 inch. We believe that most of the settlements should occur during the grading period.

Because of the soft and/or loose subsurface soils encountered, some movement of soils around the underground structure excavations should be anticipated due to changes in the earth stresses during and after construction, especially during extraction

of the sheet pile shoring system, where provided. In addition, it should be noted that dewatering for construction of adjacent structures in the future may result in settlement of these underground structures. Therefore, we recommend incorporating some flexibility in the connection of the piping network to the underground structures in the design to accommodate possible earth movements.

The lateral earth pressures acting on the proposed underground structures will depend on the type of backfill used, the extent of backfill, and the compactive effort on the backfill material around the structures. For backfill below the groundwater table, we anticipate it may be desirable to backfill behind the retaining structure using a free-draining type of backfill, such as No. 3B Fine gravel (ASTM C33, No. 67 gradation). This is to reduce the compactive effort required and to facilitate backfill below the groundwater table or in a wet environment. If a free-draining type of backfill is used, a filter fabric should be used to wrap around the free-draining backfill.

Underground structures planned at the container yard site should be designed to resist the lateral earth pressures due to the adjacent soil and surcharge effects. Based on the subsurface conditions encountered at the site, we recommend using the following lateral earth pressures, expressed in equivalent fluid pressures of pounds per square foot per foot of depth (pcf), in the design of retaining structures planned at the container yard site.

The values provided below assume that the on-site sandy soils or imported non-expansive, select granular fill materials will be used to backfill behind the structures. It is assumed that the backfill behind retaining structures will be compacted to between 90 and 95 percent relative compaction. Over-compaction of the retaining structure backfill should be avoided. In general, an active condition may be used for gravity retaining walls and structures that are free to deflect by as much as 0.5 percent of the wall height. If the tops of the walls are not free to deflect beyond this degree, or are restrained, the walls should be designed for the at-rest condition.

LATERAL EARTH PRESSURES FOR DESIGN RETAINING STRUCTURES			
Groundwater Conditions	**Active** (pcf)	**At-Rest** (pcf)	**Passive** (pcf)
Above Groundwater	38	60	250
Below Groundwater	84	95	160

Due to the proximity of the project site to the Pacific Ocean, we recommend using a static groundwater level of +3 feet MLLW in the design of retaining structures. Retaining structures that extend below Elevation +3 feet MLLW should be designed based on the lateral earth pressures for the below groundwater condition presented in the table above.

Surcharge stresses due to areal surcharges, traffic loads, line loads, and point loads within a horizontal distance equal to the depth of the structure should be considered in the design. For uniform surcharge stresses imposed on the loaded side of the underground structure (restrained condition), a rectangular distribution with uniform pressure equal to 56 percent of the vertical surcharge pressure acting over the entire depth of the structure may be used in design. Additional analyses during design may be needed to evaluate the surcharge effects of point loads and line loads.

3.5 Building Foundations

Based on the preliminary site plan provided, we understand that a comfort station is planned near the southwestern side of the new terminal. Based on our field exploration, the subsurface conditions in this vicinity consisted of granular fills overlying coralline detritus and coral formation. Therefore, we recommend supporting the new building on a shallow foundation system consisting of spread and/or continuous footings bearing on recompacted on-site granular material. An allowable bearing pressure of up to 3,000 pounds per square foot (psf) may be used for the design of footings bearing on on-site granular materials. This allowable bearing pressure is for dead-plus-live loads and may be increased by one-third (1/3) for transient loads, such as temporary wind and/or seismic forces.

Footings should be embedded a minimum of 18 inches below the lowest adjacent grade. In addition, foundations next to other foundations, utility trenches, or easements should be embedded below a 45-degree imaginary plane extending upward from the bottom edge of the structure or utility trench, or the footings should extend to a depth as deep as the inverts of the utility lines. This requirement is necessary to avoid surcharging adjacent below-grade structures with additional structural loads and to reduce the potential for appreciable foundation settlement.

Soft and/or loose materials encountered at the bottom of footing excavations should be over-excavated until dense materials or to a maximum of 2 feet deep in the footing excavation. The over-excavation should be backfilled with select granular fill materials moisture-conditioned to above the optimum moisture content and compacted to a minimum of 90 percent relative compaction.

If the foundations are designed and constructed in strict accordance with our recommendations, we estimate the total settlements of the foundations to be less than 1 inch. Differential settlements between adjacent footings supported on similar materials may be on the order of about 0.5 inch or less.

Lateral loads acting on the structure may be resisted by friction between the bottom of the foundation and the bearing soil and by passive earth pressure acting against the near-vertical faces of the foundation system. A coefficient of friction of 0.4 may be used for footings bearing on on-site granular fill material. Resistance due to passive earth pressure may be estimated using an equivalent fluid pressure of 450 pounds per square foot per foot of depth (pcf) assuming that the soils around the footings are well compacted. The passive resistance in the upper 12 inches of the soil should be neglected unless covered by pavements or slabs.

A Geolabs representative should observe footing excavations prior to the placement of reinforcing steel and concrete to confirm the foundation bearing conditions and the required embedment depths. Observation of the foundation excavations should be designated a "Special Inspection" item in accordance with Section 1704 of the International Building Code (2006).

3.6 Retaining Walls

We understand that retaining walls may be required at the project site. The following general guidelines may be used for design of the conventional retaining walls planned.

3.6.1 Retaining Wall Foundations

We believe that retaining wall foundations may be designed in accordance with the recommendations and parameters presented in the "Building Foundations" section herein. In addition, retaining wall foundations should be at least 18 inches wide and should be embedded a minimum of 24 inches below the lowest adjacent finished grade.

For sloping ground conditions, the footing should extend deeper to obtain a minimum 6-foot setback distance measured horizontally from the outside edge of the footing to the face of the slope. Wall footings oriented parallel to the direction of the slope should be constructed in stepped footings.

3.6.2 Lateral Earth Pressures

Retaining structures should be designed to resist the lateral earth pressures due to the adjacent soils and surcharge effects. The recommended lateral earth pressures for design of retaining walls, expressed in equivalent fluid pressures of pounds per square foot per foot of depth (pcf), are presented in the following table.

LATERAL EARTH PRESSURES FOR DESIGN OF RETAINING STRUCTURES

Backfill Condition	Earth Pressure Component	Active (pcf)	At-Rest (pcf)
Level Backfill	Horizontal	38	60
	Vertical	None	None
Maximum 2H:1V Sloping Backfill	Horizontal	50	70
	Vertical	25	35

It should be noted that the above lateral earth pressures do not include hydrostatic pressures that might be caused by groundwater trapped behind the structures. The values provided above assume that on-site granular fill materials will be used to backfill behind the wall. It is assumed that the backfill behind retaining structures will be compacted to between 90 and 95 percent relative compaction. Over-compaction of the retaining wall backfill should be avoided.

The at-rest condition should be used for retaining structures where the top of the structure is restrained from movement prior to backfilling of the wall. The active condition should be used only for gravity retaining walls and retaining structures that are free to deflect by as much as 0.5 percent of the wall height.

Surcharge stresses due to areal surcharges, line loads, and point loads within a horizontal distance equal to the depth of the retaining structures should be considered in the design. For uniform surcharge stresses imposed on the loaded side of the retaining structure, a rectangular distribution with uniform pressure equal to 44 percent of the vertical surcharge pressure acting on the entire height of the structure, which is restrained, may be used in design. For retaining structures that are free to deflect (cantilever), a rectangular distribution equal to 28 percent of the vertical surcharge pressure acting over the entire height of the structure may be used for design.

3.6.3 Wall Drainage

Retaining walls should be well drained to reduce the build-up of hydrostatic pressures. A typical drainage system would consist of a 12-inch wide zone of permeable material, such as No. 3B Fine gravel (ASTM C33, No. 67 gradation), placed directly around a perforated pipe (perforations facing down) at the base of the wall discharging to an appropriate outlet or weepholes. As an alternative, a prefabricated drainage product, such as MiraDrain or EnkaDrain, may be used instead of the drainage material. The prefabricated drainage product should also be connected hydraulically to a perforated pipe at the base of the wall.

The backfill from the bottom of the wall to the bottom of the weephole should consist of relatively impervious materials to reduce the potential for significant water infiltration into the subsurface. In addition, the upper 12 inches of the retaining wall backfill should consist of relatively impervious materials to reduce the potential for significant water infiltration behind the retaining structure unless covered by concrete slabs at the surface.

3.7 Light Pole Foundations

Based on the information provided, light poles are planned at the new terminal development. The project structural engineer provided the following structural loads pertaining to the foundation design of the proposed new light poles.

- Vertical Load per pole: 9.5 kips
- Lateral Load at the top of drilled shaft: 7.7 kips
- Overturning Moment at the top of drilled shaft: 377 foot-kips

Based on preliminary information provided by the structural engineer, we envision that the 80-foot light pole may consist of a 24 by 24 inches base plate mounted on concrete foundation system. Based on the above structural loads and the subsoil conditions encountered at the project site, we recommend using a single cast-in-place drilled shaft with a minimum diameter of 48 inches at each light pole planned for the project. The cast-in-place concrete drilled shafts would derive vertical support principally from skin friction between the shafts and the surrounding soils. We recommend supporting the light pole structures on drilled shaft foundations having an embedment length of no less than 25 feet below the design finished grades.

It should be noted that difficult drilling conditions will likely be encountered and should be expected due to the potential for caving-in of the soft subsoil and hard coral formation anticipated during the drilled shaft installation. Temporary casing should be required during the drilled shaft construction for the light pole foundations to reduce the potential for caving-in of the drilled holes. Performance of drilled shaft foundations depends significantly upon the contractor's method of construction, construction procedures, and workmanship. Therefore, special attention should be given to the

"Construction Considerations" in the preparation of the drilled shaft specifications for the project.

It should be noted that the performance of the drilled shafts is generally sensitive to changes in the consistency of the subsurface materials. Therefore, it is critical that the design assumptions and recommendations presented in this report be confirmed in the field during construction. If the actual exposed subsurface conditions encountered during construction are different from those assumed or considered in this report, then appropriate modifications to the design (extending the depths of the drilled shafts) should be made.

3.7.1 Lateral Load Resistance

In general, lateral load resistance of drilled shafts is a function of the stiffness of the surrounding soil, the stiffness of the shaft, allowable deflection at the top of the shaft, and induced moment in the shaft. Based on provided preliminary structural loads at the top of the drilled shaft, we evaluated the required drilled shaft lengths using the computer program, LPILE. The analyses were based on a free-head boundary condition at the top of the drilled shaft. This program is a microcomputer adaptation of a finite difference, laterally loaded pile program originally developed at the University of Texas at Austin. The program solves for deflection and bending moment along a drilled shaft under lateral loads as a function of depth. The analysis was carried out with the use of internally generated non-linear "p-y" curves to represent soil moduli. The lateral deflection was then computed using the appropriate soil moduli at various depths. The analyses were performed for a laterally loaded, cast-in-place concrete drilled shaft. The results of our engineering analyses are summarized in the following table.

FOUNDATION ANALYSES FOR LATERAL LOAD AND MAXIMUM INDUCED MOMENT IN DRILLED SHAFTS				
Drilled Shaft Diameter (inches)	**Drilled Shaft Depth** (feet)	**Lateral Deflection at Ground Line** (inches)	**Maximum Induced Moment** (foot-kips)	**Depth to Maximum Moment** (feet)
48	25	0.22	398	4
NOTE: Drilled Shaft Depth and Depth to Maximum Moment is measured below ground surface.				

3.7.2 Construction Considerations

The performance of drilled shafts depends significantly upon the contractor's method of construction, construction procedures, and workmanship. As a result, a Geolabs representative should be present to observe the installation of drilled shafts during construction. In our opinion, the following may have an impact on the effectiveness and cost of the drilled shaft foundations at the site.

Based on the subsurface conditions encountered, we anticipate that drilling through soft soils over coralline deposits with localized hard coral formation with relatively shallow groundwater conditions will be required during construction of the drilled shaft foundations. Therefore, some difficult drilling conditions likely will be encountered at the project site and should be expected. The drilled shaft contractor will need to have the appropriate equipment and tools to drill through the hard layers. To reduce the potential for caving-in of the drilled holes, temporary casing of the drilled holes should be required during construction. Installation of the casing may be achieved by vibration, driving or twisting to advance the casing. Therefore, the contractor should be made aware that temporary casing of the drilled holes will be required based on the subsurface conditions encountered at the site.

In addition, care should be exercised during removal of the temporary casing to reduce the potential for "necking" of the drilled shaft. Therefore, a minimum 5-foot head of concrete should be maintained above the bottom of the casing and/or groundwater level during removal of the casing.

The load carrying capacity of drilled shafts depends, to a large extent, on the contact between the drilled shafts and the surrounding soils. Therefore, proper construction techniques are important. The contractor should exercise care in drilling the shaft holes and in placing concrete in the holes. The bottom of the drilled shafts should be cleaned of disturbed materials prior to constructing the shaft. The bottom of the drilled shaft hole should also be relatively level. In addition, backfill against the drilled shaft foundations should not be allowed.

Drilling by methods utilizing drilling fluids (mineral and/or polymer slurry) generally is not recommended. Groundwater conditions are anticipated, therefore, placement of concrete by wet construction methods using a tremie pipe will be required. A low-shrink concrete mix with high slump (7 to 9-inch slump range) should be used to provide close contact between the drilled shafts and the surrounding soils. The concrete should be placed in a suitable manner to reduce the potential for segregation of the aggregates from the concrete mix and to displace disturbed material from the bottom of the drilled shaft. Due to the soft consistency of the subsoils and porous coralline formation, we anticipate additional concrete volume, beyond the theoretical size of the drilled shaft, will be required to construct the shaft.

3.8 Site Grading

Based on the information provided, we understand that the proposed site grading may consist of cuts and fills of up to about 4 to 5 feet relative to the existing ground surface. In addition, deeper excavations of up to about 6 to 10 feet in depth may be anticipated for construction of the drainage structures. Items of grading that are addressed in the following subsections include the following:

- Site Preparation
- Fills and Backfills
- Fill Placement and Compaction Requirements
- Excavation

As mentioned previously, two large fish ponds were documented at the project site prior to WWII. The soft/loose lagoonal deposits with thickness varying from 4 to 12.5 feet were encountered in the borings drilled. The approximate fish pond limit is illustrated on the Site Plan, Plate 2. Based on results of the settlement evaluation, we anticipate

approximately 3 to 8 inches of settlements may be induced from up to 5 feet of new fills within the approximate fish ponds limit.

To reduce potential pavement depression due to consolidation settlements, we recommend implementing a surcharge and settlement monitoring program to evaluate the magnitude and rates of the ground settlements. A 4-foot high surcharge is recommended in the areas where the new fill thickness is greater than 3 feet. The surcharge should remain for 2 to 3 months of settlement monitoring. Where the new fill thickness is less than 3 feet, the surcharge may be eliminated, but a waiting period should be implemented for 2 to 3 months of settlement monitoring.

The settlement monitoring should be performed between the end of grading and concrete pavement placement. To monitor the fill settlement, we recommend installing settlement gauges. A typical settlement gauge detail is presented on Plate 5. The settlement gauges should be read optically by a qualified surveyor, and the readings should be transmitted to Geolabs for review in a timely manner. We recommend that two readings (minimum 24 hours apart) for each settlement gauge be taken at the start of the settlement monitoring period to establish a baseline. Subsequent readings of the settlement gauges should be taken on a bi-weekly for about 2 to 3 months.

We understand that the grading construction may be conducted in phases. Based on the preliminary grading plan provided, we understand that excessive fill will be generated from site grading. We believe that the excessive fill material may be used for the surcharge and waiting period fills. The following grading sequence summarizes our recommendations.

1. Demolish and remove all existing buildings and utilities on site;
2. In the identified landfill areas, over-excavation a minimum of 12 inches below existing ground surface (in fill areas) or below finished subgrade (in cut areas) and backfill with select granular material;
3. In other grading areas, grade to subgrade with 8 inches of scarification
4. Proof-roll with 20-ton vibratory compactor at existing grade in fill areas and at finished subgrade in cut areas;
5. In yielding areas (except the identified landfill areas), over-excavate a minimum of 12 inches and place a layer of geotextile fabric, and survey location of yielding areas;

6. Backfill over-excavation with select granular material with a minimum of 95% relative compaction;
7. Install settlement gauges for 2 to 3 months of settlement monitoring;
8. Surcharge the fill areas if the new fill is greater than 3 feet thick;
9. Once consolidation of fill areas is complete, fine grade entire site to finished subgrade elevation;
10. Install drainage and utilities (pipes and structures);
11. Place a layer of triaxial geogrid over entire landfill areas;
12. Place aggregate base course;
13. Construct concrete pavements.

A Geolabs representative should monitor site grading operations to observe whether undesirable materials are encountered during the excavation and proof-rolling process and to confirm whether the exposed soil and/or rock conditions are similar to those encountered in our exploration.

3.8.1 Site Preparation

At the on-set of earthwork, areas within the contract grading limits should be cleared and grubbed thoroughly. Old pavements, vegetation, debris, deleterious materials, and other unsuitable materials should be removed and disposed of properly off-site.

Finished subgrades and areas designated to receive fill should be scarified to a depth of about 8 inches, moisture conditioned to above the optimum moisture content, and compacted to at least 95 percent relative compaction. Loose or soft spots encountered at the subgrade level should be removed to expose dense material and replaced with select granular material compacted to a minimum of 95 percent relative compaction. Relative compaction refers to the in-place dry density of soil expressed as a percentage of the maximum dry density as determined by ASTM D1557 (AASHTO T 180). Optimum moisture is the water content (percentage by weight) corresponding to the maximum dry density.

In addition, special attention should be given to the recommendations presented in the "Subgrade Preparation Below Pavement Section" subsection.

3.8.2 Fills and Backfills

The excavated on-site base materials, subbase materials or granular materials may be re-used as fill or backfill materials. Imported materials should consist of aggregate

base course material. For backfill behind retaining structures, the maximum particle size of the backfill should be limited to 3 inches in maximum dimension. Imported material should be observed and/or tested by Geolabs for its suitability prior to being transported to the site for the intended use.

3.8.3 Fill Placement and Compaction Requirements

Fills and backfills should be placed in level lifts not exceeding 8 inches in loose thickness, moisture-conditioned to above the optimum moisture content, and compacted to a minimum of 95 percent relative compaction. Relative compaction refers to the in-place dry density of soil expressed as a percentage of the maximum dry density as determined by ASTM D1557 (AASHTO T 180). Optimum moisture is the water content (percentage by weight) corresponding to the maximum dry density.

Compaction should be accomplished by sheepfoot rollers, vibratory rollers, multiple-wheel pneumatic-tired rollers, or other types of acceptable compaction equipment. Field density tests should be performed on the compacted fills and backfills in general accordance with ASTM D6938-10, Standard Test Method for In-Place Density and Water Content of Soil and Soil-Aggregate by Nuclear Methods (Shallow Depth). In general, field density tests should be performed at the frequencies presented in the following table.

FIELD DENSITY TESTING FREQUENCY		
Material	**Location of Material**	**Test Frequency**
Aggregate Base	Container Yard / Access Road	One test per 2,500 SF / 100 LF per lift
Aggregate Subbase	Container Yard / Access Road	One test per 2,500 SF / 100 LF per lift
Subgrade	Container Yard / Access Road	One test per 2,500 SF / 100 LF per lift
Backfill	Utility Trenches / Retaining Walls	One test per 200 LF per lift of backfill

3.8.4 Excavation

We understand that drainage structures will be constructed for this project. Excavations of up to about 6 to 10 feet below the existing ground surface are

estimated for construction of the drainage structures. Based on our field exploration, the proposed project site is underlain by granular fills and lagoonal deposits. It is anticipated that the near-surface fills and the lagoonal deposits may be excavated with normal heavy excavation equipment, such as large excavators.

3.9 Underground Utility Lines

We understand some new utility lines and connections will be installed. In general, we recommend providing granular bedding consisting of 6 inches of open-graded gravel (ASTM C33, No. 67 gradation) below the pipes for uniform support. Where soft and/or loose soils are encountered at or near the invert of the pipes, a stabilization layer consisting of an additional 24 inches of open-graded gravel wrapped in a non-woven filter fabric (Mirafi 180N or equivalent) should be provided below the bedding layer for uniform support. A typical section of the trench detail is presented on Plate 6.

Free-draining granular materials, such as open-graded gravel (ASTM C33, No. 67 gradation), should also be used for the initial trench backfill up to about 12 inches above the pipes or about 12 inches above the groundwater level to provide adequate support around the pipes. It is critical to use free-draining materials around the pipes to reduce the potential for formation of voids below the haunches of pipes and to provide adequate support around the sides of the pipes. Improper trench backfill around the pipe could result in backfill settlement and pipe damage.

The upper portion of the trench backfill from the level 12 inches above the pipes or groundwater level to the top of the subgrade may consist of the excavated on-site granular soils, provided that they are free of deleterious materials and over-sized materials (greater than 3 inches in maximum particle size). Due to the relatively shallow groundwater table, the excavated on-site soils may require aeration to reduce the moisture content of the soils prior to being re-used as backfill materials. The backfill should be moisture-conditioned to above the optimum moisture, placed in maximum 8-inch level loose lifts, and mechanically compacted to a minimum of 90 percent relative compaction to reduce the potential for appreciable future ground subsidence. Where trenches will be located below areas subjected to vehicular traffic, the upper 3 feet of the

trench backfill below the pavement grade should be compacted to a minimum of 95 percent relative compaction.

3.10 Design Review

Preliminary and final drawings and specifications for the proposed construction should be forwarded to Geolabs, Inc. for review and written comments prior to bid advertisement. This review is necessary to evaluate conformance of the plans and specifications with the intent of the geotechnical recommendations provided herein. If this review is not made, Geolabs, Inc. will not be responsible for misinterpretation of our recommendations.

3.11 Post-Design Services/Services During Construction

We recommend retaining Geolabs to provide geotechnical engineering services during construction of the proposed project. The critical items of construction monitoring that require "Special Inspection" include the following:

- Observation of subgrade preparation and proof-rolling
- Review of settlement monitoring data
- Observation of geotextile/geogrid placement
- Observation of fill placement and compaction
- Observation of subgrade preparation for shallow foundation
- Observation of drilled shaft foundation installation

A Geolabs representative should monitor other aspects of the earthwork construction to observe compliance with the intent of the design concepts, specifications, or recommendations and to expedite suggestions for design changes that may be required in the event that subsurface conditions differ from those anticipated at the time this report was prepared. The recommendations provided herein are contingent upon such observations. If the actual exposed subsurface conditions encountered during construction are different from those assumed or considered in this report, then appropriate modifications to the design should be made.

END OF DISCUSSION AND RECOMMENDATIONS

SECTION 4. LIMITATIONS

The analyses and recommendations submitted herein are based, in part, upon information obtained from field borings. Variations of subsoil conditions between and beyond the field 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 re-evaluate the recommendations provided herein.

The field boring locations indicated herein were taped with reference to the features shown on the Site Plan transmitted by R.M. Towill Corporation on April 9, 2013. Boring elevations were obtained by interpolating between the spot elevations shown on the same plan. The physical locations and field boring elevations should be considered accurate only to the degree implied by the method 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. Water level data from the borings were measured at the times shown on the graphic representations and/or presented in the text of this report. These data have been reviewed and interpretations made in the formulation of this report. However, it must be noted that fluctuation is expected due to tides, variation in rainfall, temperature, and other factors.

This report has been prepared for the exclusive use of R.M. Towill Corporation and their client, State of Hawaii - Department of Transportation, Harbors Division, for specific application to the proposed *New Kapalama Terminal* project at Kapalama Military Reservation 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 engineer in the design of the proposed project. Therefore, this report may not contain sufficient data, or the 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 conditions, such as perched groundwater, soft deposits, hard layers, or cavities may occur in localized areas and may require additional 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 possible extra costs.

The geotechnical engineering exploration conducted at the project site was not intended to investigate the potential presence of existing hazardous materials. It should be noted that the equipment, techniques, and personnel used to conduct a geoenvironmental exploration differ substantially from those applied in geotechnical engineering.

END OF LIMITATIONS

CLOSURE

The following plates and appendices are attached and complete this report:

-ΩΩΩΩΩΩΩΩΩ-

Respectfully submitted,

GEOLABS, INC.

By _____
John Y.L. Chen, P.E.
Vice President

JC:as

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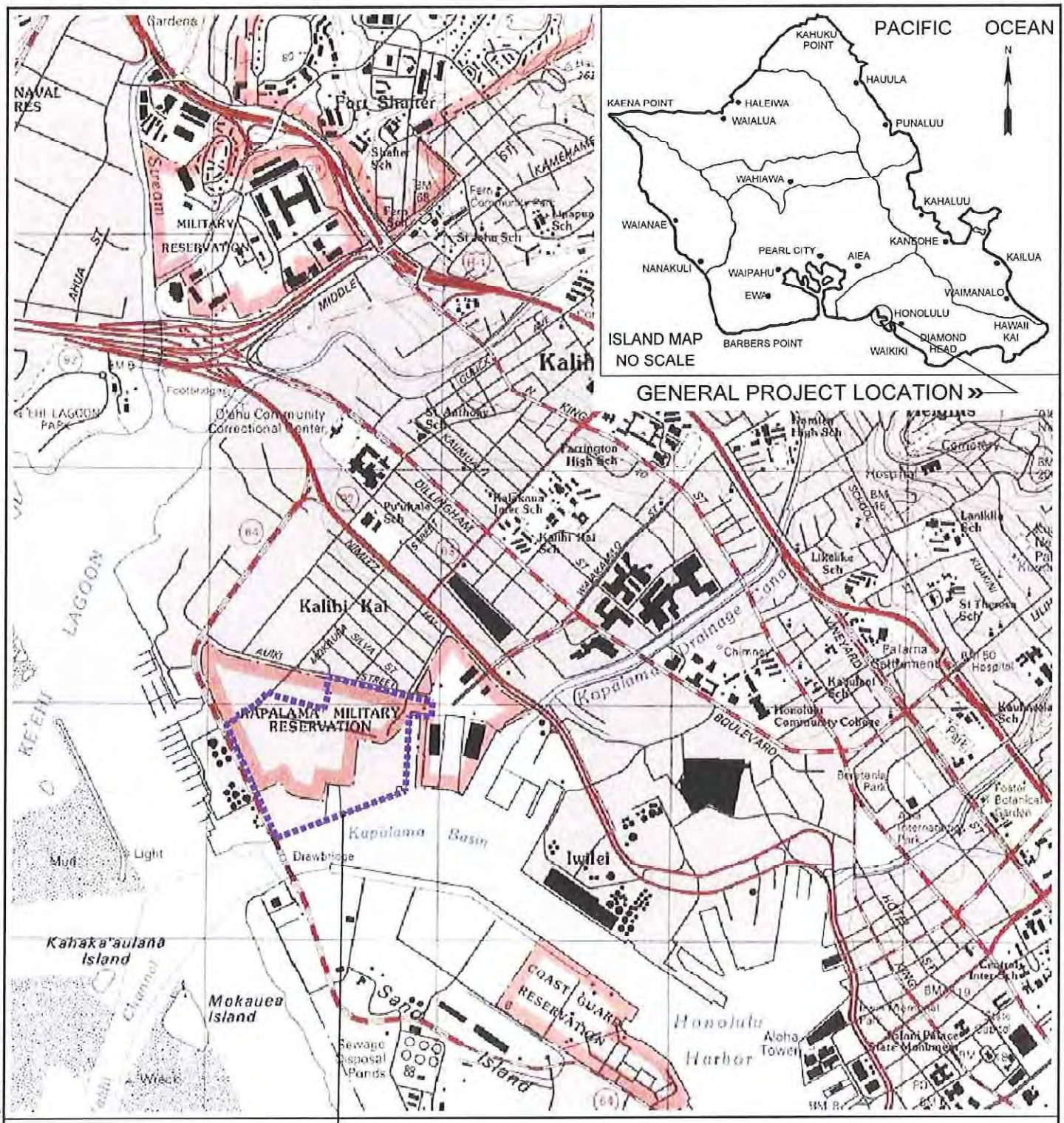
PLATES



PROJECT LOCATION MAP

NEW KAPALAMA TERMINAL
HONOLULU, OAHU, HAWAII

2000 1000 0 2000 FT.

GRAPHIC SCALE

N

REFERENCE: MAP CREATED WITH TOPO!® ©2010 NATIONAL GEOGRAPHIC; ©2007 TELE ATLAS, REL. 1/2007.

GEOLABS, INC.

Geotechnical Engineering

DATE	DRAWN BY	PLATE
MAY 2014	JRP	1
SCALE	W.O.	
1" = 2,000'	6826-00	

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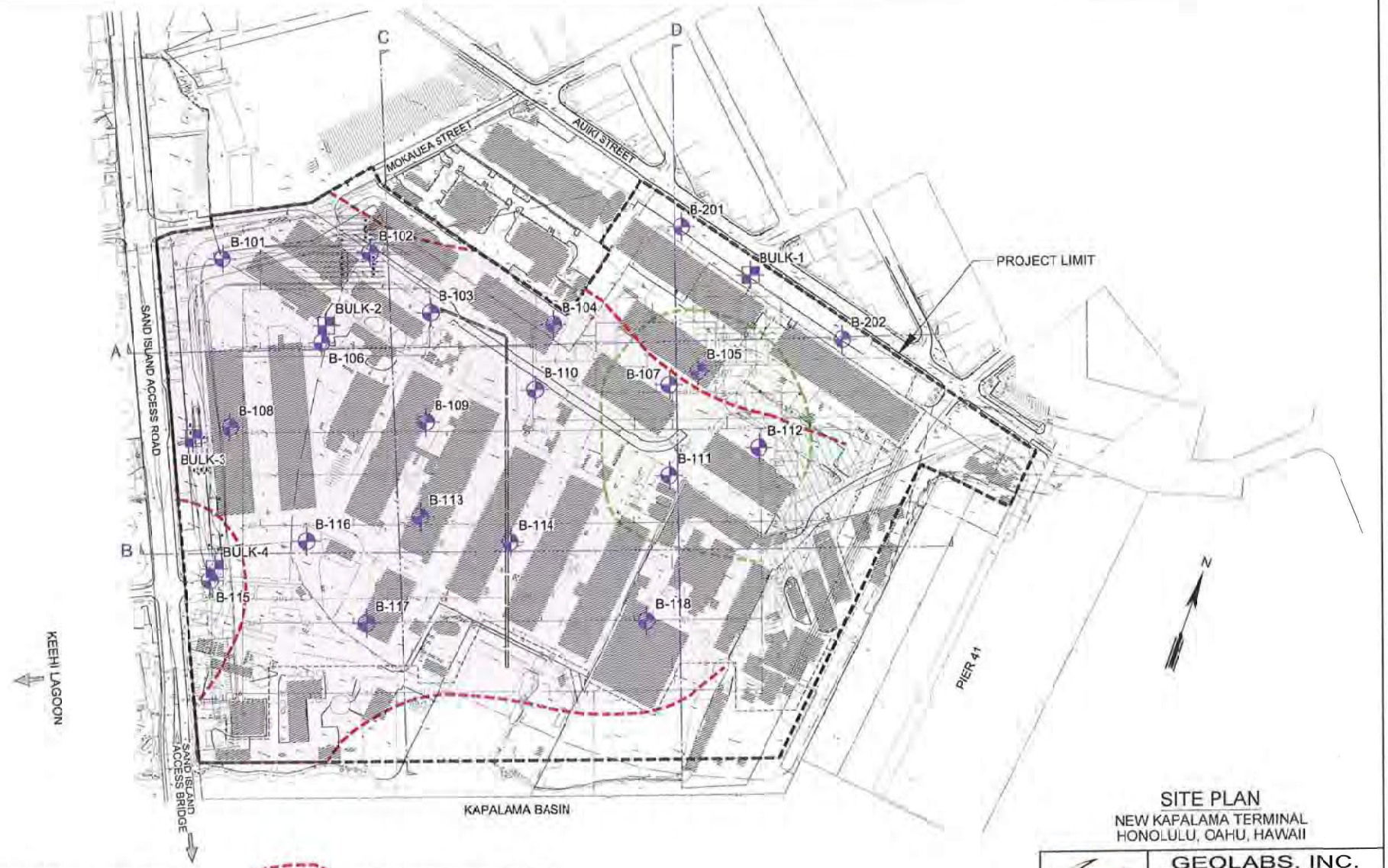

SITE PLAN

NEW KAPALAMA TERMINAL
HONOLULU, OAHU, HAWAII

LEGEND:

- APPROXIMATE BORING LOCATION
- APPROXIMATE BULK SAMPLE LOCATION
- APPROXIMATE FISH POND LIMIT
- APPROXIMATE LANDFILL (DUMP SITE) LIMIT

REFERENCE: TOPOGRAPHIC SURVEY PLAN TRANSMITTED BY R. M. TOWILL CORPORATION ON MAY 14, 2013.

0 150 300 600 900 FT
GRAPHIC SCALE

GEOLABS, INC.
Geotechnical Engineering

DATE	DRAWN BY	PLATE
MAY 2014	JRP	2
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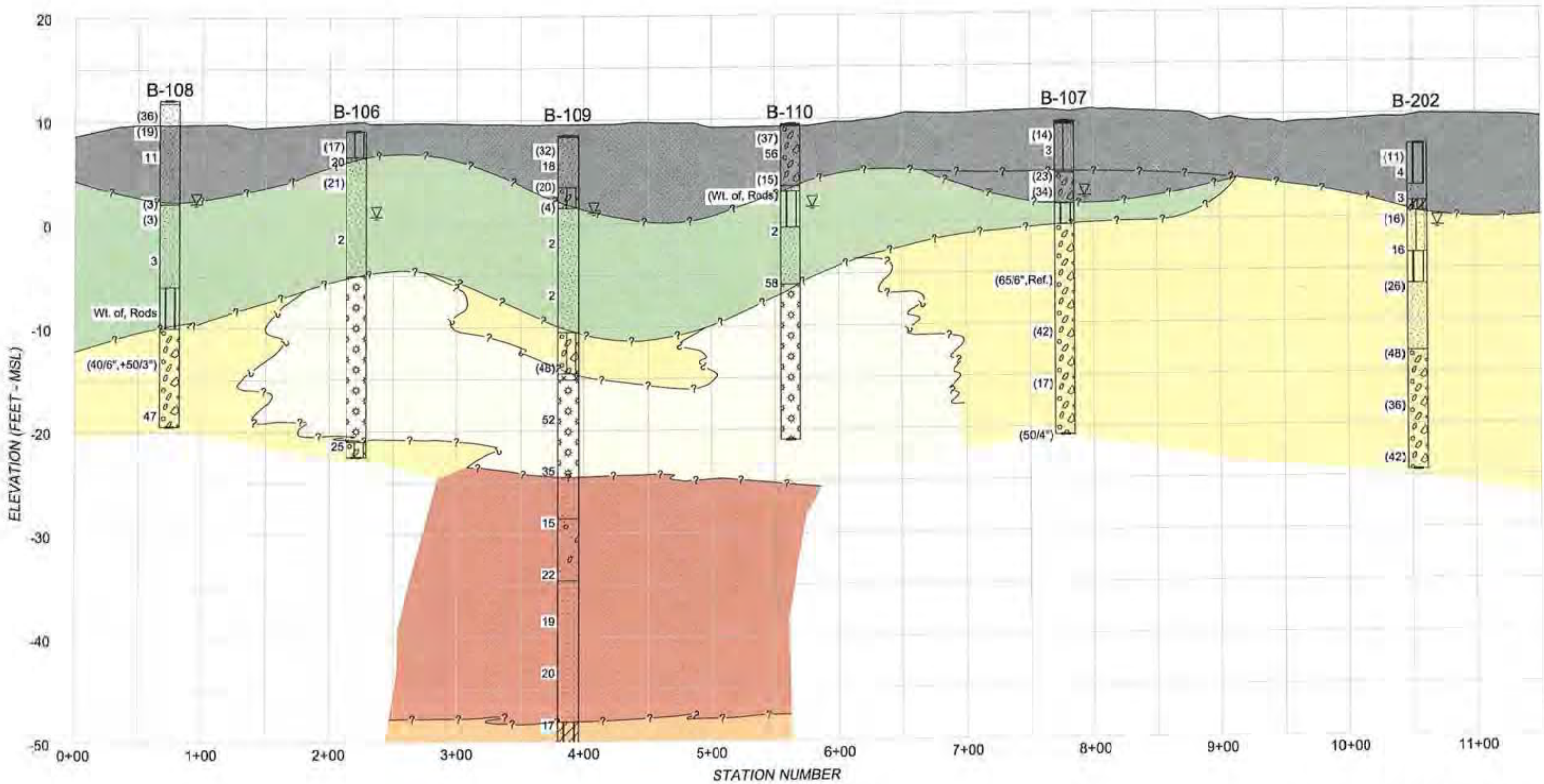

CROSS-SECTION A-A'

LEGEND:

20 BLOW COUNT REQUIRED FOR 12 INCHES OF PENETRATION OF A 2-INCH O.D. STANDARD PENETRATION SAMPLER

(20) BLOW COUNT REQUIRED FOR 12 INCHES OF PENETRATION OF A 3-INCH O.D. MODIFIED CALIFORNIA SAMPLER

FILL
LAGOONAL DEPOSIT
CORAL FORMATION
CORALLINE DETRITUS
ALLUVIUM
SANDSTONE

0 40 80 160 240 FT.
HORIZONTAL GRAPHIC SCALE

0 5 10 20 30 FT.
VERTICAL GRAPHIC SCALE

NOTE: THE CONDITIONS ILLUSTRATED ARE BASED ON OUR BORINGS AND GEOLOGICAL INTERPRETATIONS. WHILE THESE ARE BELIEVED TO BE GENERALLY CORRECT, THE CONDITIONS MAY VARY LOCALLY FROM THOSE INDICATED.

GENERALIZED SUBSURFACE PROFILE

NEW KAPALAMA TERMINAL
HONOLULU, OAHU, HAWAII

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DATE	DRAWN BY	PLATE
MAY 2014	JRP	
SCALE	W.O.	3.1
AS SHOWN	6826-00	

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CROSS-SECTION B-B'

LEGEND

20 BLOW COUNT REQUIRED FOR 12 INCHES OF PENETRATION OF A 2-INCH O.D. STANDARD PENETRATION SAMPLER

(20) BLOW COUNT REQUIRED FOR 12 INCHES OF PENETRATION OF A 3-INCH O.D. MODIFIED CALIFORNIA SAMPLER

FILL

LAGOONAL DEPOSIT

CORAL FORMATION

CORALLINE DETRITUS

HORIZONTAL GRAPHIC SCALE: 0, 40, 80, 160, 240 FT.

VERTICAL GRAPHIC SCALE: 0, 5, 10, 20, 30 FT.

NOTE: THE CONDITIONS ILLUSTRATED ARE BASED ON OUR BORINGS AND GEOLOGICAL INTERPRETATIONS. WHILE THESE ARE BELIEVED TO BE GENERALLY CORRECT, THE CONDITIONS MAY VARY LOCALLY FROM THOSE INDICATED.

GENERALIZED SUBSURFACE PROFILE

NEW KAPALAMA TERMINAL
HONOLULU, OAHU, HAWAII

GEOLABS, INC.
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DATE	DRAWN BY	PLATE
MAY 2014	JRP	3.2
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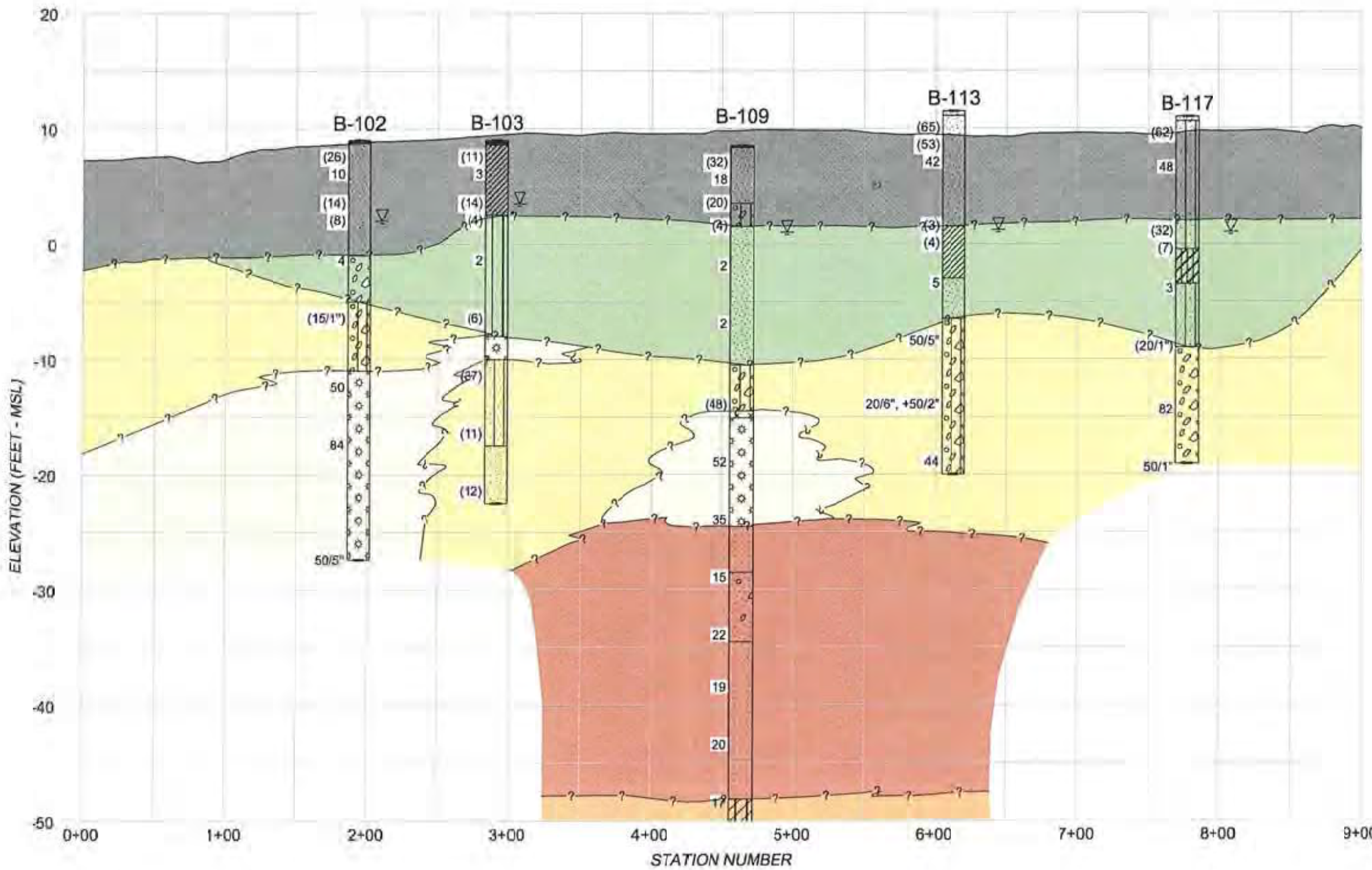

CROSS-SECTION C-C'

LEGEND

20 BLOW COUNT REQUIRED FOR 12 INCHES OF PENETRATION OF A 2-INCH O.D. STANDARD PENETRATION SAMPLER

(20) BLOW COUNT REQUIRED FOR 12 INCHES OF PENETRATION OF A 3-INCH O.D. MODIFIED CALIFORNIA SAMPLER

FILL
LAGOONAL DEPOSIT
CORAL FORMATION
CORALLINE DETRITUS
ALLUVIUM
SANDSTONE

0 40 80 160 240 FT.
HORIZONTAL GRAPHIC SCALE

0 5 10 20 30 FT.
VERTICAL GRAPHIC SCALE

NOTE: THE CONDITIONS ILLUSTRATED ARE BASED ON OUR BORINGS AND GEOLOGICAL INTERPRETATIONS. WHILE THESE ARE BELIEVED TO BE GENERALLY CORRECT, THE CONDITIONS MAY VARY LOCALLY FROM THOSE INDICATED.

GENERALIZED SUBSURFACE PROFILE

NEW KAPALAMA TERMINAL
HONOLULU, OAHU, HAWAII

GEOLABS, INC.
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DATE	DRAWN BY	PLATE
MAY 2014	JRP	3.3
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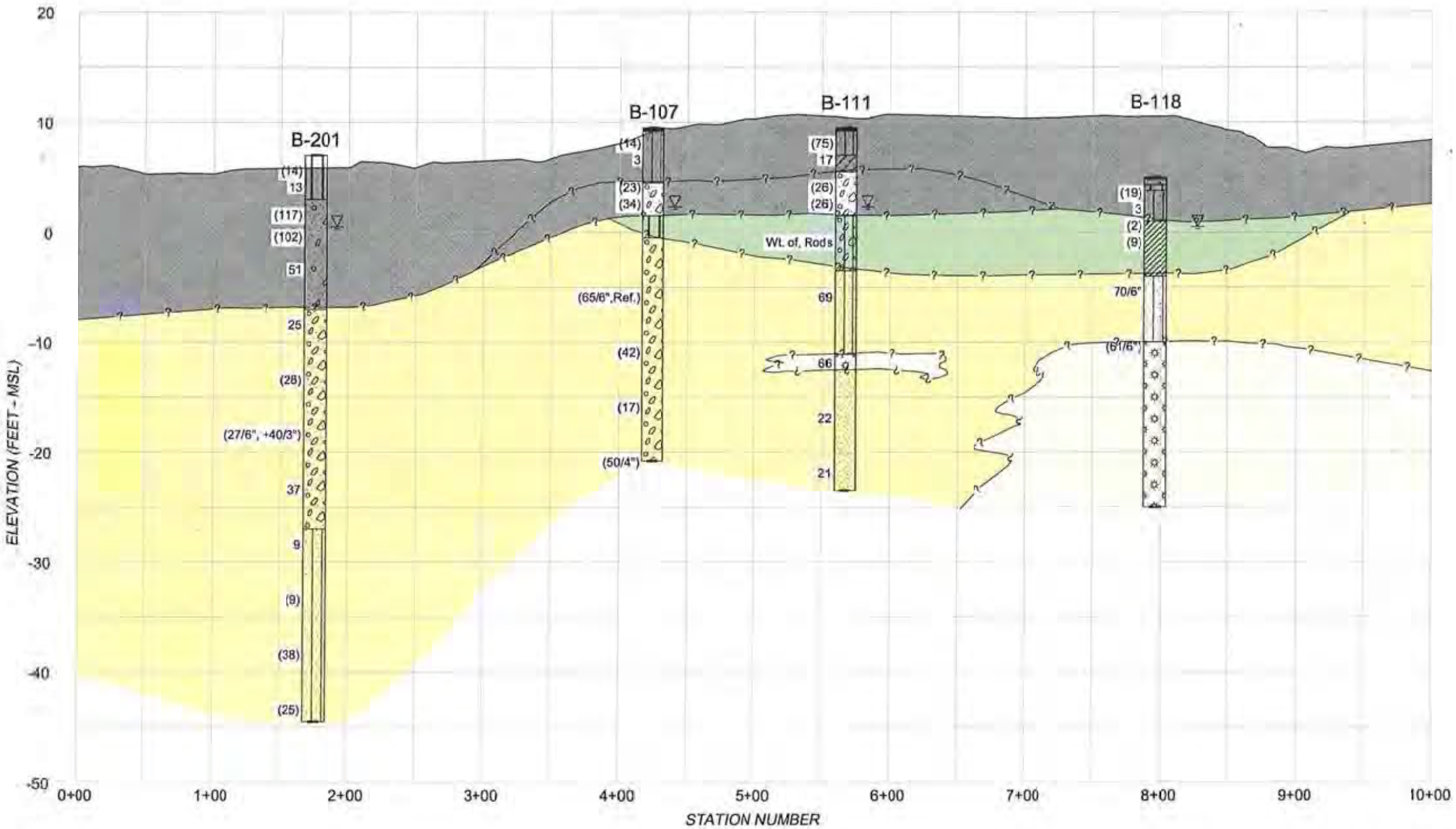

CROSS-SECTION D-D'

LEGEND:

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(20) BLOW COUNT REQUIRED FOR 12 INCHES OF PENETRATION OF A 3-INCH O.D. MODIFIED CALIFORNIA SAMPLER

FILL

LAGOONAL DEPOSIT

CORAL FORMATION

CORALLINE DETRITUS

0 40 80 160 240 FT.
HORIZONTAL GRAPHIC SCALE

0 5 10 20 30 FT.
VERTICAL GRAPHIC SCALE

NOTE: THE CONDITIONS ILLUSTRATED ARE BASED ON OUR BORINGS AND GEOLOGICAL INTERPRETATIONS. WHILE THESE ARE BELIEVED TO BE GENERALLY CORRECT, THE CONDITIONS MAY VARY LOCALLY FROM THOSE INDICATED.

GENERALIZED SUBSURFACE PROFILE

NEW KAPALAMA TERMINAL
HONOLULU, OAHU, HAWAII

GEOLABS, INC.
Geotechnical Engineering

DATE	DRAWN BY	PLATE
MAY 2014	JRP	3.4
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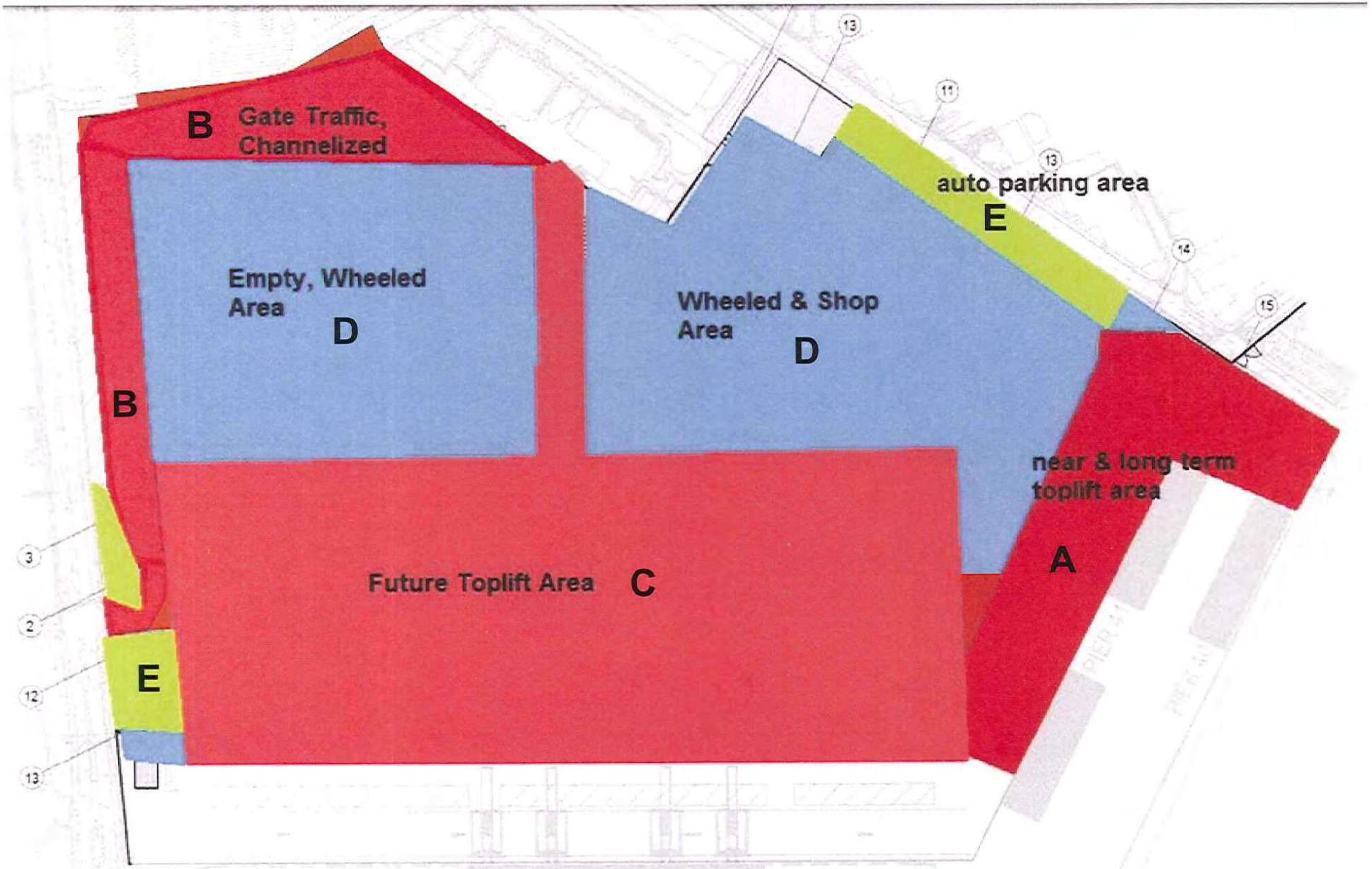
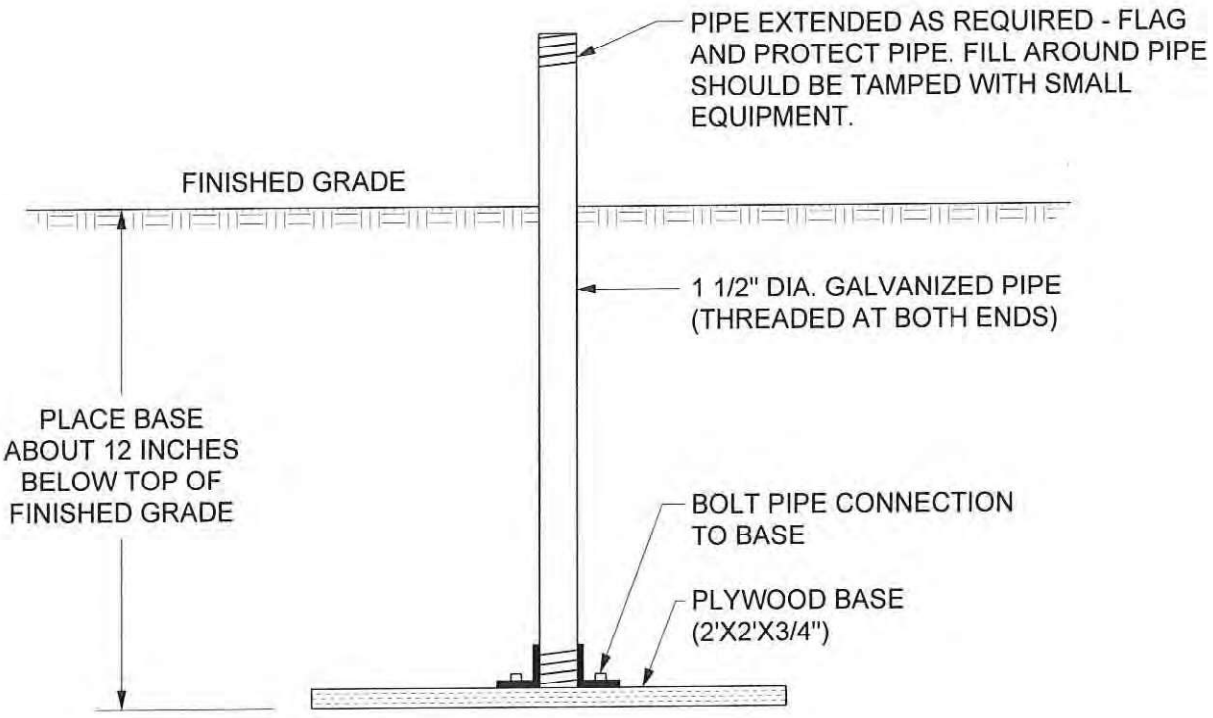


PAVEMENT AREA MAP



TYPICAL SETTLEMENT GAUGE

NEW KAPALAMA TERMINAL
HONOLULU, OAHU, HAWAII

GEOLABS, INC.
Geotechnical Engineering

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MAY 2014	JRP	5
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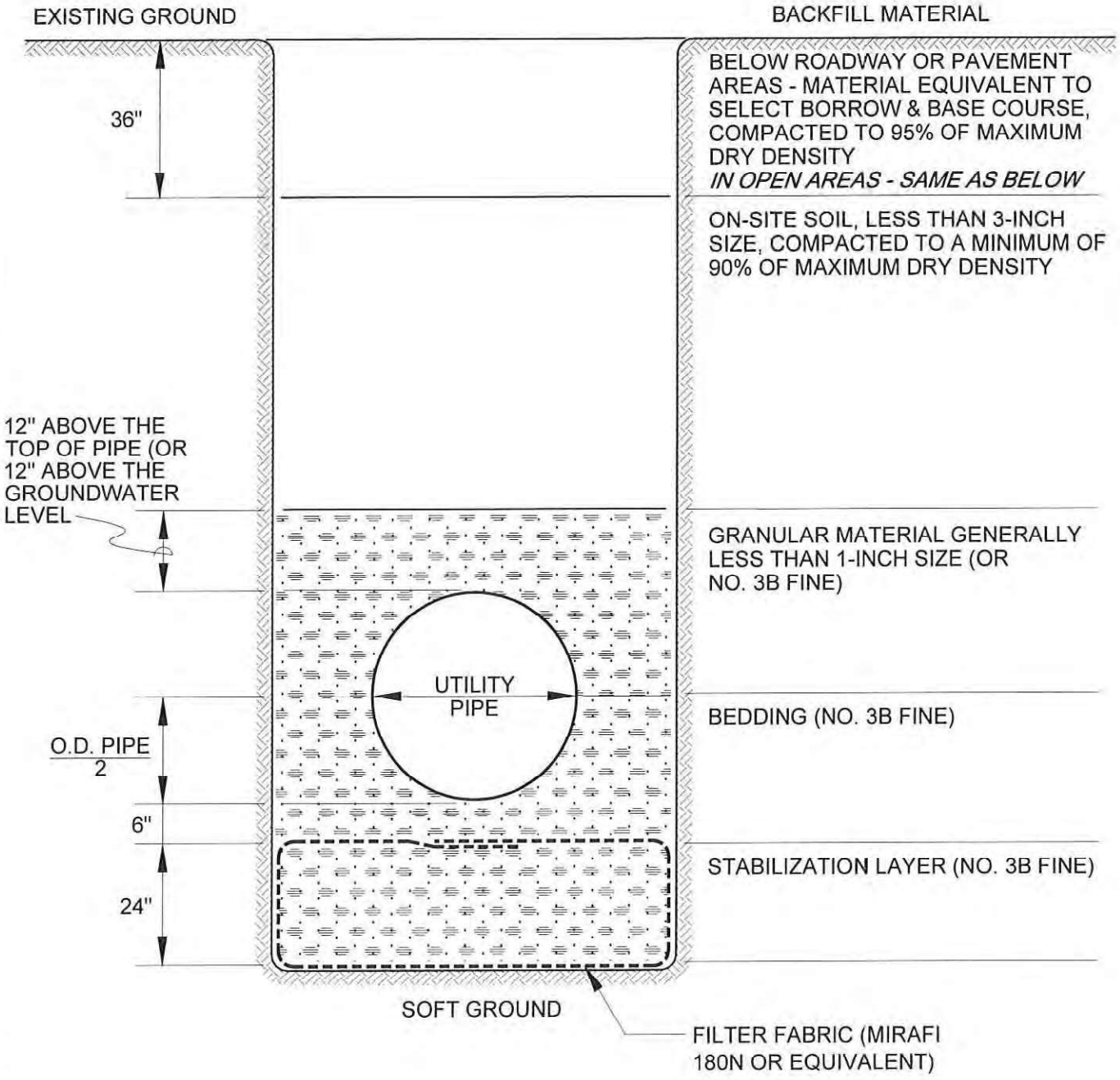

TYPICAL TRENCH DETAIL

NEW KAPALAMA TERMINAL
HONOLULU, OAHU, HAWAII

GEOLABS, INC.
Geotechnical Engineering

DATE	DRAWN BY	PLATE
MAY 2014	JRP	6
SCALE	W.O.	
NOT TO SCALE	6826-00	

APPENDIX A

APPENDIX A

Field Exploration

We explored the subsurface conditions at the site by drilling and sampling 20 borings, designated as Boring Nos. 101 through 118, and 201 and 202, extending to depths of approximately 30 to 123.5 feet below the existing ground surface. The approximate boring locations are shown on the Site Plan, Plate 2. We drilled the borings using truck-mounted or track-mounted drill equipment equipped with rotary coring tools.

The materials encountered in the borings were classified by visual and textural examination in the field by our geologist, who monitored the drilling operations on a near-continuous basis. Soils were classified in general conformance with the Unified Soil Classification System as shown on the Soil Log Legend, Plate A-01. Graphic representations of the materials encountered are presented on the Logs of Borings, Plates A-1.1 through A-20.

Relatively "undisturbed" soil samples were obtained in general accordance with ASTM D3550, Ring-Lined Barrel Sampling of Soils, by driving a 3-inch OD Modified California sampler with a 140-pound hammer falling 30 inches. In addition, we obtained some samples from the drilled borings in general accordance with ASTM D1586, Penetration Test and Split-Barrel Sampling of Soils, by driving a 2-inch OD standard penetration sampler using the same hammer and drop. The blow counts needed to drive the sampler the second and third 6 inches of an 18-inch drive are shown as the "Penetration Resistance" on the Logs of Borings at the appropriate sample depths.

Core samples of the coral/rock formations encountered at the site were obtained using diamond core drilling techniques in general accordance with ASTM D2113, Diamond Core Drilling for Site Investigation. Core drilling is a rotary drilling method that uses a hollow bit to cut into the coral/rock formation. The material left in the hollow core of the bit is mechanically recovered for examination and description. Rock cores were described in general accordance with the Rock Description System as shown on the Rock Log Legend, Plate A-0.2.

Recovery (REC) is used as a subjective guide to the interpretation of the relative quality of coral/rock masses. Recovery is defined as the actual length of material recovered from a coring attempt versus the length of the core attempt. For example, if 3.7 feet of material is recovered from a 5.0-foot core run, the recovery would be 74 percent and would be shown on the Logs of Borings as REC = 74%.

The Rock Quality Designation (RQD) is also a subjective guide to the relative quality of coral/rock masses. RQD is defined as the percentage of the core run that is sound material in excess of 4 inches in length without discontinuities, discounting drilling induced fractures or breaks. If 2.5 feet of sound material is recovered from a 5.0-foot core run, the RQD would be 50 percent and would be shown on the Logs of Borings as RQD = 50%. Generally, the following is used to describe the relative quality of the rock, based on the "Practical Handbook of Physical Properties of Rocks and Minerals."

Rock Quality	**RQD** (%)
Very Poor	0 – 25
Poor	25 – 50
Fair	50 – 75
Good	75 – 90
Excellent	90 – 100

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Soil Log Legend

UNIFIED SOIL CLASSIFICATION SYSTEM (USCS)

MAJOR DIVISIONS			USCS	TYPICAL DESCRIPTIONS
COARSE-GRAINED SOILS	GRAVELS	CLEAN GRAVELS	GW	WELL-GRADED GRAVELS, GRAVEL-SAND MIXTURES, LITTLE OR NO FINES
	MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	LESS THAN 5% FINES	GP	POORLY-GRADED GRAVELS, GRAVEL-SAND MIXTURES, LITTLE OR NO FINES
		GRAVELS WITH FINES	GM	SILTY GRAVELS, GRAVEL-SAND-SILT MIXTURES
		MORE THAN 12% FINES	GC	CLAYEY GRAVELS, GRAVEL-SAND-CLAY MIXTURES
MORE THAN 50% OF MATERIAL RETAINED ON NO. 200 SIEVE	SANDS	CLEAN SANDS	SW	WELL-GRADED SANDS, GRAVELLY SANDS, LITTLE OR NO FINES
	50% OR MORE OF COARSE FRACTION PASSING THROUGH NO. 4 SIEVE	LESS THAN 5% FINES	SP	POORLY-GRADED SANDS, GRAVELLY SANDS, LITTLE OR NO FINES
		SANDS WITH FINES	SM	SILTY SANDS, SAND-SILT MIXTURES
		MORE THAN 12% FINES	SC	CLAYEY SANDS, SAND-CLAY MIXTURES
FINE-GRAINED SOILS	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
50% OR MORE OF MATERIAL PASSING THROUGH NO. 200 SIEVE	SILTS AND CLAYS	LIQUID LIMIT 50 OR MORE	MH	INORGANIC SILT, MICACEOUS OR DIATOMACEOUS FINE SAND OR SILTY SOILS
			CH	INORGANIC CLAYS OF HIGH PLASTICITY
			OH	ORGANIC CLAYS OF MEDIUM TO HIGH PLASTICITY, ORGANIC SILTS
HIGHLY ORGANIC SOILS			PT	PEAT, HUMUS, SWAMP SOILS WITH HIGH ORGANIC CONTENTS

NOTE: DUAL SYMBOLS ARE USED TO INDICATE BORDERLINE SOIL CLASSIFICATIONS

LEGEND

	(2-INCH) O.D. STANDARD PENETRATION TEST	LL	LIQUID LIMIT (NP=NON-PLASTIC)
	(3-INCH) O.D. MODIFIED CALIFORNIA SAMPLE	PI	PLASTICITY INDEX (NP=NON-PLASTIC)
S	SHELBY TUBE SAMPLE	TV	TORVANE SHEAR (tsf)
G	GRAB SAMPLE	PEN	POCKET PENETROMETER (tsf)
	CORE SAMPLE	UC	UNCONFINED COMPRESSION (psi)
▽	WATER LEVEL OBSERVED IN BORING AT TIME OF DRILLING	UU	UNCONSOLIDATED UNDRAINED TRIAXIAL COMPRESSION (ksf)
▼	WATER LEVEL OBSERVED IN BORING AFTER DRILLING		

Plate

A-0.1

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Rock Log Legend

ROCK DESCRIPTIONS

	BASALT		FINGER CORAL
	BOULDERS		LIMESTONE
	BRECCIA		SANDSTONE
	CLINKER		SILTSTONE
	COBBLES		TUFF
	CORAL		VOID/CAVITY

ROCK DESCRIPTION SYSTEM

ROCK FRACTURE CHARACTERISTICS

The following terms describe general fracture spacing of a rock:

Massive: Greater than 24 inches apart

Slightly Fractured: 12 to 24 inches apart

Moderately Fractured: 6 to 12 inches apart

Closely Fractured: 3 to 6 inches apart

Severely Fractured: Less than 3 inches apart

DEGREE OF WEATHERING

The following terms describe the chemical weathering of a rock:

Unweathered: Rock shows no sign of discoloration or loss of strength.

Slightly Weathered: Slight discoloration inwards from open fractures.

Moderately Weathered: Discoloration throughout and noticeably weakened though not able to break by hand.

Highly Weathered: Most minerals decomposed with some corestones present in residual soil mass. Can be broken by hand.

Extremely Weathered: Saprolite. Mineral residue completely decomposed to soil but fabric and structure preserved.

HARDNESS

The following terms describe the resistance of a rock to indentation or scratching:

Very Hard: Specimen breaks with difficulty after several "pinging" hammer blows.
Example: Dense, fine grain volcanic rock

Hard: Specimen breaks with some difficulty after several hammer blows.
Example: Vesicular, vugular, coarse-grained rock

Medium Hard: Specimen can be broked by one hammer blow. Cannot be scraped by knife. SPT may penetrate by ~25 blows per inch with bounce.
Example: Porous rock such as clinker, cinder, and coral reef

Soft: Can be indented by one hammer blow. Can be scraped or peeled by knife. SPT can penetrate by ~100 blows per foot.
Example: Weathered rock, chalk-like coral reef

Very Soft: Crumbles under hammer blow. Can be peeled and carved by knife. Can be indented by finger pressure.
Example: Saprolite

Plate
A-0.2

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NEW KAPALAMA TERMINAL
HONOLULU, OAHU, HAWAII

Log of Boring 101

Laboratory			Field								
Other Tests	Moisture Content (%)	Dry Density (pcf)	Core Recovery (%)	RQD (%)	Penetration Resistance (blows/foot)	Pocket Pen. (tsf)	Depth (feet)	Sample	Graphic	USCS	Approximate Ground Surface Elevation (feet): 9 * Description
										GW	1.5-inch **ASPHALTIC CONCRETE**
	10	91			28						Light brown **SANDY GRAVEL**, dense, moist (fill)
LL=58 PI=41	13				16						grades with clay
										CH	Brown **CLAY** with gravel (coralline), medium stiff, moist (fill)
	33	86			5		5				
					3					SP-SM	Gray **SILTY SAND** with gravel (coralline), loose (lagoonal deposit)
Sieve - #200 = 7.7%	33				2		10				
	38				13		15			SM	Light tan angular **SILTY SAND** with gravel (coralline), very dense (coralline detritus)
	17				118		20				
			100	10							Tannish white vugular **CORAL**, closely to severely fractured, moderately weathered, medium hard
			20	0			25				
	13				26		30			GM	Light tan subangular **SANDY GRAVEL (CORALLINE)** with a little silt, medium dense (coralline detritus)
							35				

Date Started:	February 16, 2013	Water Level: ▽ 8.5 ft. 02/16/2013 1000 HRS	Plate
Date Completed:	February 23, 2013		
Logged By:	M. Gruver	Drill Rig: CME-75GY	
Total Depth:	31.5 feet	Drilling Method: 4" Auger, 6" HS Auger & PQ Coring	A - 1.1
Work Order:	6826-00	Driving Energy: 140 lb. wt., 30 in. drop	

BORING_LOG 6826-00.GPJ GEOLABS.GDT 5/17/13

GEOLABS, INC. Geotechnical Engineering	NEW KAPALAMA TERMINAL HONOLULU, OAHU, HAWAII	Log of Boring 101

Laboratory			Field								
Other Tests	Moisture Content (%)	Dry Density (pcf)	Core Recovery (%)	RQD (%)	Penetration Resistance (blows/foot)	Pocket Pen. (tsf)	Depth (feet)	Sample	Graphic	USCS	Description
											(Continued from previous plate)
											Boring terminated at 31.5 feet * Elevations estimated from Topographic Survey Plan transmitted by R. M. Towill Corporation on April 9, 2013.
							40				
							45				
							50				
							55				
							60				
							65				
							70				

Date Started:	February 16, 2013	Water Level: ▽ 8.5 ft. 02/16/2013 1000 HRS	Plate
Date Completed:	February 23, 2013		
Logged By:	M. Gruver	Drill Rig: CME-75GY	
Total Depth:	31.5 feet	Drilling Method: 4" Auger, 6" HS Auger & PQ Coring	A - 1.2
Work Order:	6826-00	Driving Energy: 140 lb. wt., 30 in. drop	

BORING LOG 6826-00.GPJ GEOLABS.GDT 5/17/13

GEOLABS, INC.

Geotechnical Engineering

NEW KAPALAMA TERMINAL
HONOLULU, OAHU, HAWAII

Log of Boring **102**

Approximate Ground Surface Elevation (feet): 9 *

Laboratory: Other Tests	Laboratory: Moisture Content (%)	Laboratory: Dry Density (pcf)	Field: Core Recovery (%)	Field: RQD (%)	Field: Penetration Resistance (blows/foot)	Field: Pocket Pen. (tsf)	Depth (feet)	Sample	Graphic	USCS	Description
							0				3-inch **ASPHALTIC CONCRETE**
	16	93			26					SP-SM	Tan **SILTY SAND (CORALLINE)** with some gravel (coralline), medium dense, moist to wet (fill)
Sieve - #200 = 10.3%	14				10						
	25	72			14		5				
					8	▽					
Sieve - #200 = 6.4%	45				4		10			GP-GM	Gray **SILTY GRAVEL (CORALLINE)** with some sand (coralline), loose (lagoonal deposit)
	50	68	20	0	15/1"		15			GM	Tannish white with some gray **SILTY GRAVEL (CORALLINE)** with some sand, dense (coralline detritus)
	17				50		20				Tannish white **CORAL**, severely fractured, moderately to highly weathered, soft to medium hard
			31	0							
	16				84		25				
			33	0							
							30				
			3	0							
							35				

Date Started:	February 14, 2013	Water Level: ▽ 7.0 ft. 02/15/2013 1424 HRS	Plate
Date Completed:	February 27, 2013		
Logged By:	S. Latronic	Drill Rig: CME-75GY	A - 2.1
Total Depth:	36.4 feet	Drilling Method: 4" Auger, 6" HS Auger & PQ Coring	
Work Order:	6826-00	Driving Energy: 140 lb. wt., 30 in. drop	

BORING_LOG 6826-00.GPJ GEOLABS.GDT 5/17/13

GEOLABS, INC. Geotechnical Engineering	NEW KAPALAMA TERMINAL HONOLULU, OAHU, HAWAII	Log of Boring 102

Laboratory			Field							
Other Tests	Moisture Content (%)	Dry Density (pcf)	Core Recovery (%)	RQD (%)	Penetration Resistance (blows/foot)	Pocket Pen. (tsf)	Depth (feet)	Sample	Graphic	USCS

(Continued from previous plate)

Description

	17				50/5"						grades to hard
											Boring terminated at 36.4 feet

40 45 50 55 60 65 70

Date Started:	February 14, 2013	Water Level: ▽ 7.0 ft. 02/15/2013 1424 HRS	Plate
Date Completed:	February 27, 2013		
Logged By:	S. Latronic	Drill Rig: CME-75GY	
Total Depth:	36.4 feet	Drilling Method: 4" Auger, 6" HS Auger & PQ Coring	A - 2.2
Work Order:	6826-00	Driving Energy: 140 lb. wt., 30 in. drop	

BORING LOG 6826-00.GPJ GEOLABS.GDT 5/17/13

GEOLABS, INC.

Geotechnical Engineering

NEW KAPALAMA TERMINAL
HONOLULU, OAHU, HAWAII

Log of Boring 103

Other Tests	Moisture Content (%)	Dry Density (pcf)	Core Recovery (%)	RQD (%)	Penetration Resistance (blows/foot)	Pocket Pen. (tsf)	Depth (feet)	USCS	Description
									Approximate Ground Surface Elevation (feet): 9 *
									5-inch ASPHALTIC CONCRETE
					11	2.5		CH	Tannish brown **CLAY** with a little gravel (coralline), stiff, moist (fill)
LL=64 PI=50	19				3	0.5			grades to soft
TXUU	27	89			14	2.9 ▽	5		grades to stiff
					4			ML	Gray **CLAYEY SILT** with some sand (coralline), very soft (lagoonal deposit)
Sieve - #200 = 93.5%	36				2	<0.5	10		
Consol.	33	91			6	0.5	15		
			40	0					White **CORAL**, severely fractured, moderately to highly weathered, hard
	24	97			37		20	SM	White **SILTY SAND (CORALLINE)** with gravel, dense (coralline detritus)
			10						grades to medium dense
	34	85			11		25		
			71					SP	White fine **SAND**, medium dense
	41	81			12		30		
							35		Boring terminated at 31.5 feet

Date Started:	February 15, 2013	Water Level: ▽ 5.5 ft. 02/22/2013 1615 HRS	Plate
Date Completed:	February 22, 2013		
Logged By:	M. Gruver	Drill Rig: CME-75GY	
Total Depth:	31.5 feet	Drilling Method: 4" Auger, 6" HS Auger & PQ Coring	A - 3
Work Order:	6826-00	Driving Energy: 140 lb. wt., 30 in. drop	

BORING LOG 6826-00.GPJ GEOLABS.GDT 5/17/13

GEOLABS, INC.

Geotechnical Engineering

NEW KAPALAMA TERMINAL
HONOLULU, OAHU, HAWAII

Log of Boring 104

Approximate Ground Surface Elevation (feet): 8.5 *

Laboratory: Other Tests	Laboratory: Moisture Content (%)	Laboratory: Dry Density (pcf)	Field: Core Recovery (%)	Field: RQD (%)	Field: Penetration Resistance (blows/foot)	Field: Pocket Pen. (tsf)	Depth (feet)	Sample	Graphic	USCS	Description
											5-inch **ASPHALTIC CONCRETE**
	12	95			44					SP-SM	Tan **SILTY SAND (CORALLINE)** with some gravel (coralline), dense, moist (fill)
	16				32						
	35	87			16		5			ML	Gray **SANDY SILT** with a little gravel (coralline), stiff, wet (lagoonal deposit)
					4	▽					grades to soft
										CL	Gray **SILTY CLAY** with some sand and gravel (coralline) and coralline gravel, soft (lagoonal deposit)
LL=32 PI=16	39				4	<0.5	10				
										CH	Dark brownish gray **CLAY**, stiff (lagoonal deposit)
TXUU	52	70			13	2.5	15				
			86	55							Tannish white vugular **CORAL**, closely to severely fractured, moderately weathered, medium hard
UC			77	33			20				
UC			100	67			25				
							30				Boring terminated at 30 feet
							35				

Date Started:	February 15, 2013	Water Level: ▽ 7.0 ft. 02/15/2013 1300 HRS	Plate
Date Completed:	February 22, 2013		
Logged By:	M. Gruver	Drill Rig: CME-75GY	A - 4
Total Depth:	30 feet	Drilling Method: 4" Auger, 6" HS Auger & PQ Coring	
Work Order:	6826-00	Driving Energy: 140 lb. wt., 30 in. drop	

BORING LOG 6826-00.GPJ GEOLABS.GDT 5/17/13

GEOLABS, INC.

Geotechnical Engineering

NEW KAPALAMA TERMINAL
HONOLULU, OAHU, HAWAII

Log of Boring 105

Approximate Ground Surface Elevation (feet): 12.5 *

Laboratory: Other Tests	Laboratory: Moisture Content (%)	Laboratory: Dry Density (pcf)	Field: Core Recovery (%)	Field: RQD (%)	Field: Penetration Resistance (blows/foot)	Field: Pocket Pen. (tsf)	Depth (feet)	Sample	Graphic	USCS	Description
											5-inch **CONCRETE SLAB**
					46					SW	Light brown **GRAVELLY SAND (CORALLINE)**, medium dense to dense, damp (fill)
Sieve - #200 = 8.3%	10				23						
	17				11		5			GW	Brown **SANDY GRAVEL (CORALLINE)**, medium dense, damp (fill)
					24		▽ 10			GW	Dark brown **SANDY GRAVEL** with glass and metal debris, medium dense (landfill)
	28	79			17					GW	Tannish brown **SANDY GRAVEL (CORALLINE)**, medium dense
	32				17		15				
	23				45		20				grades to dense
	27				43		25				grades with shell fragments
	17				24/6" +25/3"		30				grades with finger coral
							35				Boring terminated at 31.3 feet

Date Started:	February 17, 2013	Water Level: ▽ 9.5 ft. 02/17/2013 1215 HRS	Plate
Date Completed:	February 17, 2013		
Logged By:	J. Chen	Drill Rig: CME-45B	A - 5
Total Depth:	31.3 feet	Drilling Method: 4" Auger, 6" HS Auger & PQ Coring	
Work Order:	6826-00	Driving Energy: 140 lb. wt., 30 in. drop	

BORING_LOG 6826-00.GPJ GEOLABS.GDT 5/17/13

GEOLABS, INC.

Geotechnical Engineering

NEW KAPALAMA TERMINAL
HONOLULU, OAHU, HAWAII

Log of Boring **106**

Laboratory			Field							
Other Tests	Moisture Content (%)	Dry Density (pcf)	Core Recovery (%)	RQD (%)	Penetration Resistance (blows/foot)	Pocket Pen. (tsf)	Depth (feet)	Sample	Graphic	USCS	Approximate Ground Surface Elevation (feet): 9 * Description
	8	84			17					SM	Light brown **SILTY SAND (CORALLINE)** with gravel, medium dense, dry (fill)
Sieve - #200 = 9.2%	9				20					SP-SM	Light brown **SILTY SAND** with gravel, medium dense, dry (lagoonal deposit)
					21		5				
											grades to loose
Sieve - #200 = 7.7%	40				2		10				
UC	22		100	83	105/6" Ref.		15				Tannish white vugular **CORAL**, closely to severely fractured, moderately weathered, medium hard
			88	27							
			60	0			20				
	20		58	0	24/6" +15/0"		25				
	11				25		30			GM	Light tan subangular **SANDY GRAVEL** with a little silt, medium dense (coralline detritus)
											Boring terminated at 31.5 feet
							35				

Date Started:	February 22, 2013	Water Level: ▽ 8.3 ft. 02/15/2013 1314 HRS	Plate
Date Completed:	February 22, 2013		
Logged By:	M. Gruver	Drill Rig: CME-75GY	
Total Depth:	31.5 feet	Drilling Method: 4" Auger, 6" HS Auger & PQ Coring	A - 6
Work Order:	6826-00	Driving Energy: 140 lb. wt., 30 in. drop	

BORING LOG 6826-00.GPJ GEOLABS.GDT 5/7/13

GEOLABS, INC.

Geotechnical Engineering

NEW KAPALAMA TERMINAL
HONOLULU, OAHU, HAWAII

Log of Boring 107

Approximate Ground Surface Elevation (feet): 9.5 *

Laboratory: Other Tests	Laboratory: Moisture Content (%)	Laboratory: Dry Density (pcf)	Field: Core Recovery (%)	Field: RQD (%)	Field: Penetration Resistance (blows/foot)	Field: Pocket Pen. (tsf)	Depth (feet)	Sample	Graphic	USCS	Description
							0				4-inch **ASPHALTIC CONCRETE**
	11	78			14					SM	Tan **SILTY SAND (CORALLINE)** with gravel, medium dense, damp (fill)
Sieve - #200 = 28.9%	27				3						grades to loose
	25	104			23		5			GW	Black **SANDY GRAVEL** with asphalt and glass debris, medium dense, moist (landfill)
					34			▽			
										ML	Gray **SANDY SILT** with some gravel (coralline), very soft (lagoonal deposit)
	24				30/2"		10			GP	Whitish tan **SANDY GRAVEL (CORALLINE)**, very dense
	24	98			65/6" Ref.		15				grades to tan
	19	81			42		20				
	13				17		25				grades to medium dense
	11	96			50/4"		30				Boring terminated at 30.3 feet
							35				

Date Started:	February 14, 2013	Water Level: ▽ 7.2 ft. 02/14/2013 1418 HRS	Plate
Date Completed:	February 20, 2013		
Logged By:	D. Gremminger	Drill Rig: CME-75GY	A - 7
Total Depth:	30.3 feet	Drilling Method: 6" Hollow-Stem Auger & 4" Casing	
Work Order:	6826-00	Driving Energy: 140 lb. wt., 30 in. drop	

BORING LOG 6826-00.GPJ GEOLABS.GDT 5/17/13

GEOLABS, INC.

Geotechnical Engineering

NEW KAPALAMA TERMINAL
HONOLULU, OAHU, HAWAII

Log of Boring **108**

Approximate Ground Surface Elevation (feet): 12 *

Laboratory: Other Tests	Laboratory: Moisture Content (%)	Laboratory: Dry Density (pcf)	Field: Core Recovery (%)	Field: RQD (%)	Field: Penetration Resistance (blows/foot)	Field: Pocket Pen. (tsf)	Depth (feet)	Sample	Graphic	USCS	Description
											4-inch **CONCRETE SLAB**
	12	80			36					SP-SM	Brown **SILTY SAND (CORALLINE)** with gravel, medium dense, damp (fill)
					19						
Sieve - #200 = 7.9%	11				11		5				
					3		10			SP-SM	Gray **SILTY SAND** with gravel, loose (lagoonal deposit)
Consol.	57	64			3						
Sieve - #200 = 11.2%	39				3		15				
										ML	Gray **SANDY SILT**, soft (lagoonal deposit)
	94				Wt. of Rods		20				
										GP	Tannish brown **SANDY GRAVEL (CORALLINE)**, hard (coralline detritus)
	17	101			40/6" +50/3"		25				
	22				47		30				
							35				Boring terminated at 31.5 feet

Date Started:	February 17, 2013	Water Level: ▽ 10.0 ft. 02/17/2013 0915 HRS	Plate
Date Completed:	February 17, 2013		
Logged By:	M. Gruver	Drill Rig: CME-75GY	A - 8
Total Depth:	31.5 feet	Drilling Method: 6" Hollow-Stem Auger	
Work Order:	6826-00	Driving Energy: 140 lb. wt., 30 in. drop	

BORING_LOG 6826-00.GPJ GEOLABS.GDT 5/17/13

GEOLABS, INC. Geotechnical Engineering	NEW KAPALAMA TERMINAL HONOLULU, OAHU, HAWAII	Log of Boring 109

Approximate Ground Surface Elevation (feet): 8.5 *

Other Tests (Laboratory)	Moisture Content (%)	Dry Density (pcf)	Core Recovery (%)	RQD (%)	Penetration Resistance (blows/foot)	Pocket Pen. (tsf)	Depth (feet)	USCS	Description
							0	SP	1.5-inch **ASPHALTIC CONCRETE**
					32				Light brown **SILTY SAND** with some gravel (coralline), medium dense, moist (fill)
Sieve - #200 = 4.9%	9				18				
	13	80			20		5	GM	Tannish white **SILTY GRAVEL (CORALLINE)** with some sand, medium dense, moist (fill)
					4			SP-SM	Gray **SILTY SAND** with a little gravel (coralline), soft, loose, moist (lagoonal deposit)
Sieve - #200 = 9.5%	45				2		10		
					2		15		
							20	GM	Light gray **SILTY GRAVEL (CORALLINE)** with a little sand, medium dense (coralline detritus)
	52	77			48				
UC			100	74					Greenish gray with some white bedded **SILTSTONE**, closely fractured, moderately weathered, medium hard
							25		Grayish white to tannish white **CORAL**, moderately fractured, slightly weathered, medium hard to hard
	18				52				
			100	40					
UC							30		
	22				35				
UC			100	48			35		

Water Level: ∇ 7.5 ft.

Date Started:	February 15, 2013	Water Level: ∇	7.5 ft. 02/22/2013 1530 HRS	Plate
Date Completed:	February 22, 2013			
Logged By:	S. Latronic	Drill Rig:	CME-75DG1	A - 9.1
Total Depth:	121.5 feet	Drilling Method:	4" Auger, 6" HS Auger & PQ Coring	
Work Order:	6826-00	Driving Energy:	140 lb. wt., 30 in. drop	

BORING_LOG 6826-00.GPJ GEOLABS.GDT 5/17/13

GEOLABS, INC.

Geotechnical Engineering

NEW KAPALAMA TERMINAL
HONOLULU, OAHU, HAWAII

Log of Boring **109**

Laboratory			Field							
Other Tests	Moisture Content (%)	Dry Density (pcf)	Core Recovery (%)	RQD (%)	Penetration Resistance (blows/foot)	Pocket Pen. (tsf)	Depth (feet)	Sample	Graphic	USCS

(Continued from previous plate)

Description

Other Tests	Moisture Content (%)	Core Recovery (%)	RQD (%)	Penetration Resistance (blows/foot)	Depth (feet)	USCS	Description
							Tannish white calcareous **SANDSTONE**, moderately fractured, moderately weathered, medium hard to hard (coralline sandstone)
Sieve - #200 = 7.5%	34			15		SW-SM	Light tannish white **SILTY SAND** with gravel, medium dense (weathered sandstone)
		56			40		
	27			22			
		100	36				Light tan calcareous **SANDSTONE**, moderately fractured, slightly to moderately weathered, soft to medium hard (coralline sandstone)
	31			19	45		
		100	40				
	34			20	50		
		33	12				
	36			17	55	MH	Brown **CLAYEY SILT**, very stiff (alluvium)
		43	21				
					60		Grayish white **CORAL**, moderately fractured, moderately weathered, medium hard
	14			9		GM	Light grayish white **SILTY GRAVEL (CORALLINE)** with a little sand, medium dense (coralline detritus)
		0			65		
	21			37			
		0	0			SM	Light tannish white **CORAL**, severely fractured, moderately to highly weathered, soft to medium hard
					70		

Date Started:	February 15, 2013	Water Level: ▽ 7.5 ft. 02/22/2013 1530 HRS	Plate
Date Completed:	February 22, 2013		
Logged By:	S. Latronic	Drill Rig: CME-75DG1	
Total Depth:	121.5 feet	Drilling Method: 4" Auger, 6" HS Auger & PQ Coring	A - 9.2
Work Order:	6826-00	Driving Energy: 140 lb. wt., 30 in. drop	

BORING LOG 6826-00.GPJ GEOLABS.GDT 5/17/13

GEOLABS, INC.

Geotechnical Engineering

NEW KAPALAMA TERMINAL
HONOLULU, OAHU, HAWAII

Log of Boring 109

Laboratory			Field							
Other Tests	Moisture Content (%)	Dry Density (pcf)	Core Recovery (%)	RQD (%)	Penetration Resistance (blows/foot)	Pocket Pen. (tsf)	Depth (feet)	Sample	Graphic	USCS	(Continued from previous plate) Description
	15		87	28	12					SM	Light grayish white **SILTY SAND** with some gravel, medium dense (coralline detritus)
			17	0			75				Light tannish white calcareous **SANDSTONE**, moderately fractured, slightly weathered, hard (coralline sandstone)
	19		36		12		80			GM	Light tan with some brown **SILTY GRAVEL (CORALLINE)**, medium dense
	20		100	28	24		85			GM-GP	Light tannish white **SILTY GRAVEL (CORALLINE)**, medium dense (coralline detritus)
			63	23			90				White **CORAL**, moderately fractured, slightly weathered, hard
			7	0			95				
	15		0		35		100			GM	Light tannish white **SILTY GRAVEL (CORALLINE)**, medium dense to dense (coralline detritus)
							105				

Date Started:	February 15, 2013	Water Level: ▽ 7.5 ft. 02/22/2013 1530 HRS	Plate
Date Completed:	February 22, 2013		
Logged By:	S. Latronic	Drill Rig: CME-75DG1	
Total Depth:	121.5 feet	Drilling Method: 4" Auger, 6" HS Auger & PQ Coring	A - 9.3
Work Order:	6826-00	Driving Energy: 140 lb. wt., 30 in. drop	

BORING_LOG 6826-00.GPJ GEOLABS.GDT 5/17/13

GEOLABS, INC.

Geotechnical Engineering

NEW KAPALAMA TERMINAL
HONOLULU, OAHU, HAWAII

Log of Boring
109

Laboratory			Field								
Other Tests	Moisture Content (%)	Dry Density (pcf)	Core Recovery (%)	RQD (%)	Penetration Resistance (blows/foot)	Pocket Pen. (tsf)	Depth (feet)	Sample	Graphic	USCS	(Continued from previous plate) Description
	14		0		16		110			GM	grades with sandstone seams
	18		0		8		115				
	14		58		14		120				
											Boring terminated at 121.5 feet
							125				
							130				
							135				
							140				

Date Started:	February 15, 2013	Water Level: ▽ 7.5 ft. 02/22/2013 1530 HRS	Plate
Date Completed:	February 22, 2013		
Logged By:	S. Latronic	Drill Rig: CME-75DG1	
Total Depth:	121.5 feet	Drilling Method: 4" Auger, 6" HS Auger & PQ Coring	A - 9.4
Work Order:	6826-00	Driving Energy: 140 lb. wt., 30 in. drop	

BORING LOG 6826-00.GPJ GEOLABS.GDT 5/17/13

GEOLABS, INC.

Geotechnical Engineering

NEW KAPALAMA TERMINAL
HONOLULU, OAHU, HAWAII

Log of Boring 110

Approximate Ground Surface Elevation (feet): 9.5 *

Laboratory: Other Tests	Laboratory: Moisture Content (%)	Laboratory: Dry Density (pcf)	Field: Core Recovery (%)	Field: RQD (%)	Field: Penetration Resistance (blows/foot)	Field: Pocket Pen. (tsf)	Depth (feet)	USCS	Description
							0	GW	1.5-inch **ASPHALTIC CONCRETE**
	9	99			37				Light brownish tan **SANDY GRAVEL (CORALLINE)** with a little silt and traces of shells, dense, moist (fill)
	10				56				
	33	89			15		5		
					Wt. of Rods			SP ML	Gray poorly graded fine **SAND**, loose, moist (lagoonal deposit)
									Gray **CLAYEY SILT**, soft, wet (lagoonal deposit)
Sieve - #200 = 7.4%	47				2		10	SP-SM	Brownish gray **SILTY SAND (CORALLINE)** with gravel, loose (coralline detritus)
	28				58		15		Tannish white **CORAL**, moderately fractured, slightly weathered, hard
UC			94	52					
			57	7			20		
									grades to severely fractured, moderately to highly weathered, soft to medium hard
UC			87	33			25		grades to moderately fractured, slightly weathered, hard
							30		Boring terminated at 30.5 feet
							35		

Date Started:	February 16, 2013	Water Level: ▽ 8.0 ft. 02/16/2013 1630 HRS	Plate
Date Completed:	February 27, 2013		
Logged By:	S. Latronic	Drill Rig: CME-75GY	
Total Depth:	30.5 feet	Drilling Method: 6" Hollow-Stem Auger & PQ Coring	A - 10
Work Order:	6826-00	Driving Energy: 140 lb. wt., 30 in. drop	

BORING LOG 6826-00.GPJ GEOLABS.GDT 5/17/13

GEOLABS, INC.

Geotechnical Engineering

NEW KAPALAMA TERMINAL
HONOLULU, OAHU, HAWAII

Log of Boring 111

Approximate Ground Surface Elevation (feet): 9.5 *

Laboratory: Other Tests	Laboratory: Moisture Content (%)	Laboratory: Dry Density (pcf)	Field: Core Recovery (%)	Field: RQD (%)	Field: Penetration Resistance (blows/foot)	Field: Pocket Pen. (tsf)	Depth (feet)	Sample	Graphic	USCS	Description
										SM	4-inch **ASPHALTIC CONCRETE**
	12	108			75						Tan **GRAVELLY SAND (CORALLINE)** with a little silt, very dense, moist (fill)
	22				17					SC	Gray **CLAYEY SAND (CORALLINE)** with gravel (coralline), medium dense, moist (fill)
	20	100			26					GW	Black **SANDY GRAVEL** with asphalt and glass debris, medium dense, moist (landfill)
					26		5				
										GM	Gray **SANDY GRAVEL (CORALLINE)** with some silt, loose (lagoonal deposit)
					Wt. of Rods		10				
										SM	Whitish tan **GRAVELLY SAND (CORALLINE)** with a little silt, dense (weathered coral)
	20				69		15				
			9	9							
							20				
	30				66						Light tannish white **CORAL**, severely fractured, moderately weathered, medium hard to hard
			0							SP	Tan poorly graded medium to coarse **SAND** with traces of gravel and silt, medium dense (weathered sandstone)
							25				
Sieve - #200 = 9.8%	26				22						
			0								
							30				
	28				21						
							35				Boring terminated at 33 feet

Date Started:	February 15, 2013	Water Level: ▽ 7.2 ft. 02/25/2013 0835 HRS	Plate
Date Completed:	February 28, 2013		
Logged By:	Gremminger & Latronic	Drill Rig: CME-75GY	A - 11
Total Depth:	33 feet	Drilling Method: 6" HS Auger, 4" Casing & PQ Coring	
Work Order:	6826-00	Driving Energy: 140 lb. wt., 30 in. drop	

BORING LOG 6826-00.GPJ GEOLABS.GDT 5/17/13

GEOLABS, INC.

Geotechnical Engineering

NEW KAPALAMA TERMINAL
HONOLULU, OAHU, HAWAII

Log of Boring 112

Laboratory			Field							Approximate Ground Surface Elevation (feet): 9.5 *
Other Tests	Moisture Content (%)	Dry Density (pcf)	Core Recovery (%)	RQD (%)	Penetration Resistance (blows/foot)	Pocket Pen. (tsf)	Depth (feet)	Sample	USCS	Description
							0		GM	3-inch **ASPHALTIC CONCRETE**
	23	103			13					Tan **SILTY GRAVEL (CORALLINE)** with sand, medium dense, moist (fill)
Sieve - #200 = 24.7%	21				4					grades to loose
					38		5		GW	Black **SANDY GRAVEL** with asphalt and glass debris, medium dense, moist (landfill)
	15	60			6				GM	Gray **SILTY GRAVEL (CORALLINE)** with some sand, loose (lagoonal deposit)
	43				4		10			
									GP	Whitish tan **SANDY GRAVEL (CORALLINE)**, dense
	24				34		15			
									GM	Tannish white **SILTY GRAVEL (CORALLINE)**, very dense (coralline detritus)
	12				83		20			
	21	93			60/6" Ref.		25			
	36	84			16		30		GP	Tannish white **SILTY GRAVEL (CORALLINE)**, medium dense
										Boring terminated at 31.5 feet
							35			

Date Started:	February 15, 2013	Water Level: ▽ 5.8 ft. 02/15/2013 0857 HRS	Plate
Date Completed:	February 20, 2013		
Logged By:	D. Gremminger	Drill Rig: CME-75GY	A - 12
Total Depth:	31.5 feet	Drilling Method: 6" Hollow Stem Auger, 4" Casing	
Work Order:	6826-00	Driving Energy: 140 lb. wt., 30 in. drop	

BORING LOG 6826-00.GPJ GEOLABS.GDT 5/17/13

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NEW KAPALAMA TERMINAL
HONOLULU, OAHU, HAWAII

Log of Boring **113**

Approximate Ground Surface Elevation (feet): 11.5 *

Laboratory: Other Tests	Laboratory: Moisture Content (%)	Laboratory: Dry Density (pcf)	Field: Core Recovery (%)	Field: RQD (%)	Field: Penetration Resistance (blows/foot)	Field: Pocket Pen. (tsf)	Depth (feet)	Sample	Graphic	USCS	Description
											5-inch **CONCRETE**
					65					SP-SM	Tan **SILTY SAND (CORALLINE)** with gravel, dense, moist (fill)
	11	107			53						
Sieve - #200 = 9.0%	12				42		5				
					3		10			CH	Gray **CLAY** with some fine sand, very soft, wet (lagoonal deposit)
LL=83 PI=57 Consol.	65	69			4	<0.5					
Sieve - #200 = 9.2%	40				5		15			SP-SM	Gray **SILTY SAND (CORALLINE)** with gravel (coralline), loose (lagoonal deposit)
	17				50/5"		20			GM	Tan **SILTY GRAVEL (CORALLINE)** with some sand, very dense
	23				20/6" +50/2"		25				
	18				44		30				
							35				Boring terminated at 31.5 feet

Date Started:	February 16, 2013	Water Level: ▽ 10.3 ft. 02/16/2013 1328 HRS	Plate
Date Completed:	February 25, 2013		
Logged By:	D. Gremminger	Drill Rig: CME-75GY	A - 13
Total Depth:	31.5 feet	Drilling Method: 6" Hollow Stem Auger, 4" Casing	
Work Order:	6826-00	Driving Energy: 140 lb. wt., 30 in. drop	

BORING_LOG 6826-00.GPJ GEOLABS.GDT 5/17/13

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NEW KAPALAMA TERMINAL
HONOLULU, OAHU, HAWAII

Log of Boring 114

Approximate Ground Surface Elevation (feet): 8.5 *

Laboratory: Other Tests	Laboratory: Moisture Content (%)	Laboratory: Dry Density (pcf)	Field: Core Recovery (%)	Field: RQD (%)	Field: Penetration Resistance (blows/foot)	Field: Pocket Pen. (tsf)	Depth (feet)	USCS	Description
							0		4-inch **ASPHALTIC CONCRETE**
	14	99			36			SP-SM	Tan **SILTY SAND (CORALLINE)** with some gravel (coralline), medium dense, damp (fill)
	11				17				
	21	93			33		5		
					13			MH	Brown **CLAYEY SILT** with some sand (coralline), stiff to medium stiff, moist (lagoonal deposit)
								ML	Gray **CLAYEY SILT** with some sand and gravel (coralline), very soft (lagoonal deposit)
					3		10		
								GM	Light gray **SILTY GRAVEL** with a little wood and broken glass, loose (lagoonal deposit)
	29	74			50/4"		15		
	41				5				
			3	0					Light tannish white **CORAL**, severely fractured, moderately weathered, medium hard
	14				65		20		
UC			100	60					Light grayish white **CORAL**, moderately fractured, slightly weathered, hard
							25		
			20	8					Grayish white to tannish white **CORAL**, severely fractured, moderately to highly weathered, soft to medium hard
							30		
	14				29				
			53	0			35		

Date Started:	February 15, 2013	Water Level: ▽ 7.2 ft. 02/25/2013 0835 HRS	Plate
Date Completed:	February 25, 2013		
Logged By:	Gremminger & Latronic	Drill Rig: CME-75GY	
Total Depth:	123.5 feet	Drilling Method: 6" HS Auger, 4" Casing & PQ Coring	A - 14.1
Work Order:	6826-00	Driving Energy: 140 lb. wt., 30 in. drop	

BORING_LOG 6826-00.GPJ GEOLABS.GDT 5/17/13

GEOLABS, INC.

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NEW KAPALAMA TERMINAL
HONOLULU, OAHU, HAWAII

Log of Boring 114

Laboratory			Field							
Other Tests	Moisture Content (%)	Dry Density (pcf)	Core Recovery (%)	RQD (%)	Penetration Resistance (blows/foot)	Pocket Pen. (tsf)	Depth (feet)	Sample	Graphic	USCS	(Continued from previous plate) Description
	12				25						
			28	0			40				
	11				22						
			31	17						GM	Tan **SILTY GRAVEL (CORALLINE)** with a little sand, medium dense (coralline detritus)
							45				
	27				25/1"						Light grayish white **CORAL**, closely fractured, slightly weathered, medium hard to hard
			70	13							
UC							50				
			72	38							
							55				
			13	0						SM	Tannish white **SILTY SAND** with a little gravel, loose to medium dense (coralline detritus)
							60				
	28				14						
	20										Light tannish white **CORAL**, moderately fractured, slightly to moderately weathered, medium hard
			86	28			65				
			15	0						SP	Tan poorly graded **SAND**, medium dense (weathered sandstone)
							70				

Date Started:	February 15, 2013	Water Level: ▽ 7.2 ft. 02/25/2013 0835 HRS	Plate
Date Completed:	February 25, 2013		
Logged By:	Gremminger & Latronic	Drill Rig: CME-75GY	
Total Depth:	123.5 feet	Drilling Method: 6" HS Auger, 4" Casing & PQ Coring	A - 14.2
Work Order:	6826-00	Driving Energy: 140 lb. wt., 30 in. drop	

BORING LOG 6826-00.GPJ GEOLABS.GDT 5/17/13

GEOLABS, INC. Geotechnical Engineering	NEW KAPALAMA TERMINAL HONOLULU, OAHU, HAWAII	Log of Boring 114

Laboratory			Field							
Other Tests	Moisture Content (%)	Dry Density (pcf)	Core Recovery (%)	RQD (%)	Penetration Resistance (blows/foot)	Pocket Pen. (tsf)	Depth (feet)	Sample	Graphic	USCS

(Continued from previous plate)

Description

Moisture Content (%)	Core Recovery (%)	RQD (%)	Penetration Resistance (blows/foot)	Depth (feet)	USCS	Description
					SP	
13			39			White **CORAL**, severely fractured, moderately to highly weathered, soft to medium hard
	31	0		75		
17			21			
	28	0		80		
16			22			Light tannish white calcareous **SANDSTONE**, severely fractured, moderately to highly weathered, soft (coralline sandstone)
	33	0		85		
18			24			
	53	0		90		
					SM	Light tan **SILTY SAND** with traces of gravel, loose to medium dense (weathered sandstone)
32			9			
	92	39		95		Light tannish white calcareous **SANDSTONE**, moderately fractured, slightly weathered, medium hard (coralline sandstone)
	42	17				
					GM	Tan with some light brown **SILTY GRAVEL (CORALLINE)** with some sand, medium dense (alluvium with coral debris)
23			17	100		
	19	0				grades with rounded gravel
				105		

Date Started:	February 15, 2013	Water Level: ▽ 7.2 ft. 02/25/2013 0835 HRS		Plate
Date Completed:	February 25, 2013			
Logged By:	Gremminger & Latronic	Drill Rig:	CME-75GY	A - 14.3
Total Depth:	123.5 feet	Drilling Method:	6" HS Auger, 4" Casing & PQ Coring	
Work Order:	6826-00	Driving Energy:	140 lb. wt., 30 in. drop	

BORING_LOG 6826-00.GPJ GEOLABS.GDT 5/17/13

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Geotechnical Engineering

NEW KAPALAMA TERMINAL
HONOLULU, OAHU, HAWAII

Log of Boring 114

Laboratory			Field							
Other Tests	Moisture Content (%)	Dry Density (pcf)	Core Recovery (%)	RQD (%)	Penetration Resistance (blows/foot)	Pocket Pen. (tsf)	Depth (feet)	Sample	Graphic	USCS

(Continued from previous plate)

Description

Moisture Content (%)	Core Recovery (%)	RQD (%)	Penetration Resistance (blows/foot)	USCS	Description
17			36		Tan calcareous **SANDSTONE**, severely fractured, moderately to highly weathered, soft (coralline sandstone)
18	62	15		GP	Tan with some gray **SANDY GRAVEL (BASALTIC)**, very dense (river deposit)
					Tannish white **CORAL**, moderately fractured, slightly weathered, hard
	2	0		SM	Light tannish white **SILTY SAND** with traces of gravel, medium dense (weathered sandstone)
22			14		
	0				
16			26		
					Boring terminated at 123.5 feet

110 115 120 125 130 135 140

Date Started:	February 15, 2013	Water Level: ▽ 7.2 ft. 02/25/2013 0835 HRS	Plate
Date Completed:	February 25, 2013		
Logged By:	Gremminger & Latronic	Drill Rig: CME-75GY	A - 14.4
Total Depth:	123.5 feet	Drilling Method: 6" HS Auger, 4" Casing & PQ Coring	
Work Order:	6826-00	Driving Energy: 140 lb. wt., 30 in. drop	

BORING_LOG 6826-00.GPJ GEOLABS.GDT 5/17/13

GEOLABS, INC.

Geotechnical Engineering

NEW KAPALAMA TERMINAL
HONOLULU, OAHU, HAWAII

Log of Boring 115

Approximate Ground Surface Elevation (feet): 8 *

Laboratory: Other Tests	Laboratory: Moisture Content (%)	Laboratory: Dry Density (pcf)	Field: Core Recovery (%)	Field: RQD (%)	Field: Penetration Resistance (blows/foot)	Field: Pocket Pen. (tsf)	Depth (feet)	Sample	Graphic	USCS	Description
	12	100			35					GW	1.5-inch **ASPHALTIC CONCRETE** Brown **SANDY GRAVEL (CORALLINE)**, dense, moist (fill)
	10				47					CL SM	Brown **SILTY CLAY** with some sand and a little gravel (coralline), soft, moist (fill)
	31	83			28		5				Tannish white **SILTY SAND** with some gravel (coralline), dense, moist (fill)
					4					ML	Dark gray **SANDY SILT**, soft (lagoonal deposit)
Sieve - #200 = 5.3%	38				4		10			GP-GM	Tannish gray **SILTY GRAVEL (CORALLINE)** with a little sand, loose (coralline detritus)
					1		15				
			0								
							20				
			100	43	60/6"						Light grayish white **CORAL**, moderately fractured, slightly to moderately weathered, medium hard to hard
UC			72	20			25				
							30			SM	Brownish tan **SILTY SAND** with some gravel and a little cobbles (coralline), dense (coralline detritus)
			23				35				

Date Started:	February 16, 2013	Water Level: ▽ 4.5 ft. 02/26/2013 0945 HRS	Plate
Date Completed:	February 26, 2013		
Logged By:	S. Latronic	Drill Rig: CME-75GY	
Total Depth:	37.5 feet	Drilling Method: 6" HS Auger, 4" Casing & PQ Coring	A - 15.1
Work Order:	6826-00	Driving Energy: 140 lb. wt., 30 in. drop	

BORING LOG 6826-00.GPJ GEOLABS.GDT 5/17/13

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NEW KAPALAMA TERMINAL
HONOLULU, OAHU, HAWAII

Log of Boring 115

Laboratory			Field							
Other Tests	Moisture Content (%)	Dry Density (pcf)	Core Recovery (%)	RQD (%)	Penetration Resistance (blows/foot)	Pocket Pen. (tsf)	Depth (feet)	Sample	Graphic	USCS
	13				74					SM

(Continued from previous plate)

Description

Boring terminated at 37.5 feet

Date Started:	February 16, 2013	Water Level: ▽ 4.5 ft. 02/26/2013 0945 HRS	Plate
Date Completed:	February 26, 2013		
Logged By:	S. Latronic	Drill Rig: CME-75GY	
Total Depth:	37.5 feet	Drilling Method: 6" HS Auger, 4" Casing & PQ Coring	A - 15.2
Work Order:	6826-00	Driving Energy: 140 lb. wt., 30 in. drop	

BORING LOG 6826-00.GPJ GEOLABS.GDT 5/17/13

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NEW KAPALAMA TERMINAL
HONOLULU, OAHU, HAWAII

Log of Boring 116

Approximate Ground Surface Elevation (feet): 8.5 *

Laboratory: Other Tests	Laboratory: Moisture Content (%)	Laboratory: Dry Density (pcf)	Field: Core Recovery (%)	Field: RQD (%)	Field: Penetration Resistance (blows/foot)	Field: Pocket Pen. (tsf)	Depth (feet)	Sample	Graphic	USCS	Description
										GW	1.5-inch **ASPHALTIC CONCRETE**
	22	84			24					SM	Brown **SANDY GRAVEL**, medium dense, damp (fill)
	53				2						Brown **SILTY SAND**, medium dense, damp (fill) grades to gray, very loose, moist at 2.5 feet
										GW	Light tannish brown **SANDY GRAVEL (CORALLINE)**, dense, moist (fill)
	32	77			38		5				
					2					ML	Dark gray to black **SANDY SILT**, very soft, wet (lagoonal deposit)
Sieve - #200 = 8.7%	38				4		10			SP-SM	Grayish tan **SILTY SAND (CORALLINE)** with gravel, loose (coralline detritus)
	31				53		15				Tannish white **CORAL**, moderately fractured, slightly weathered, hard
			74	22							
UC							20				
			100	68							
UC							25				
			90	28							
							30				
			42	12							
UC										SM	
							35				

Date Started:	February 16, 2013	Water Level: ▽ 8.1 ft. 02/25/2013 1450 HRS	Plate
Date Completed:	February 25, 2013		
Logged By:	S. Latronic	Drill Rig: CME-75GY	
Total Depth:	42.5 feet	Drilling Method: 6" HS Auger, 4" Casing & PQ Coring	A - 16.1
Work Order:	6826-00	Driving Energy: 140 lb. wt., 30 in. drop	

BORING_LOG 6826-00.GPJ GEOLABS.GDT 5/17/13

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NEW KAPALAMA TERMINAL
HONOLULU, OAHU, HAWAII

Log of Boring

116

Laboratory			Field							
Other Tests	Moisture Content (%)	Dry Density (pcf)	Core Recovery (%)	RQD (%)	Penetration Resistance (blows/foot)	Pocket Pen. (tsf)	Depth (feet)	Sample	Graphic	USCS
	23		52		42		40			SM

(Continued from previous plate)

Description

Tannish white **SILTY SAND** with a little gravel (coralline), medium dense (weathered sandstone)

Boring terminated at 42.5 feet

45 50 55 60 65 70

Date Started:	February 16, 2013	Water Level: ▽ 8.1 ft. 02/25/2013 1450 HRS	Plate
Date Completed:	February 25, 2013		
Logged By:	S. Latronic	Drill Rig: CME-75GY	
Total Depth:	42.5 feet	Drilling Method: 6" HS Auger, 4" Casing & PQ Coring	A - 16.2
Work Order:	6826-00	Driving Energy: 140 lb. wt., 30 in. drop	

BORING LOG 6826-00.GPJ GEOLABS.GDT 5/17/13

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NEW KAPALAMA TERMINAL
HONOLULU, OAHU, HAWAII

Log of Boring 117

Approximate Ground Surface Elevation (feet): 11 *

Laboratory: Other Tests	Laboratory: Moisture Content (%)	Laboratory: Dry Density (pcf)	Field: Core Recovery (%)	Field: RQD (%)	Field: Penetration Resistance (blows/foot)	Field: Pocket Pen. (tsf)	Depth (feet)	Sample	Graphic	USCS	Description
							0				5-inch **CONCRETE SLAB**
	8	91			62					SM	Tan **SILTY SAND (CORALLINE)** with gravel, dense, moist (fill)
Sieve - #200 = 12.0%	11				48		5				
					32		10			SM	Gray **SILTY SAND (CORALLINE)** with a little gravel (coralline), medium dense, wet (lagoonal deposit)
	57	69			7	<0.5				CL	Gray **SILTY CLAY** with some fine sand, very soft (lagoonal deposit)
Sieve - #200 = 29.0%	39				3		15			SM	Gray **SILTY SAND** with gravel (coralline), very soft (lagoonal deposit)
	63	62			20/1"		20			GP	Tan **SANDY GRAVEL (CORALLINE)**, very dense (coralline detritus)
	20				82		25				
					50/1"		30				Boring terminated at 30.1 feet
							35				

Date Started:	February 16, 2013	Water Level: ▽ 10.0 ft. 02/16/2013 2227 HRS	Plate
Date Completed:	February 23, 2013		
Logged By:	Gremminger & Latronic	Drill Rig: CME-45B	
Total Depth:	30.1 feet	Drilling Method: 6" HS Auger, 4" Casing	A - 17
Work Order:	6826-00	Driving Energy: 140 lb. wt., 30 in. drop	

BORING_LOG 6826-00.GPJ GEOLABS.GDT 5/17/13

GEOLABS, INC.

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NEW KAPALAMA TERMINAL
HONOLULU, OAHU, HAWAII

Log of Boring 118

Laboratory			Field								
Other Tests	Moisture Content (%)	Dry Density (pcf)	Core Recovery (%)	RQD (%)	Penetration Resistance (blows/foot)	Pocket Pen. (tsf)	Depth (feet)	Sample	Graphic	USCS	Description
											Approximate Ground Surface Elevation (feet): 5 *
											2-inch **ASPHALTIC CONCRETE**
	26	89			19					ML	6-inch **CONCRETE**
Sieve - #200 = 10.0%	35				3					SM	Tannish brown **CLAYEY SILT** with some sand and gravel, stiff, moist (fill)
					2		▽			CH	Tan **SILTY SAND (CORALLINE)** with a little gravel (coralline), very loose, wet (fill)
LL=54 PI=33 Consol.	62	67			9	<0.5	5				Gray **CLAY** with some fine sand and gravel (coralline), very soft, wet (lagoonal deposit) grades with some cobbles (coralline) at 5.5 feet
										GM	Tan **SILTY GRAVEL (CORALLINE)** with sand, very dense (coralline detritus)
	21				70/6"		10				
	31		89	26	61/6"		15				Light tannish white **CORAL**, severely to closely fractured, moderately weathered, medium hard
UC			92	37			20				
UC			63	7			25				
							30				Boring terminated at 30 feet
							35				

Date Started:	February 16, 2013	Water Level: ▽ 4.5 ft. 02/16/2013 1549 HRS	Plate
Date Completed:	March 2, 2013		
Logged By:	D. Gremminger	Drill Rig: CME-75GY	A - 18
Total Depth:	30 feet	Drilling Method: 6" Hollow Stem Auger & PQ Coring	
Work Order:	6826-00	Driving Energy: 140 lb. wt., 30 in. drop	

BORING_LOG 6826-00.GPJ GEOLABS.GDT 5/17/13

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NEW KAPALAMA TERMINAL
HONOLULU, OAHU, HAWAII

Log of Boring **201**

Laboratory			Field								
Other Tests	Moisture Content (%)	Dry Density (pcf)	Core Recovery (%)	RQD (%)	Penetration Resistance (blows/foot)	Pocket Pen. (tsf)	Depth (feet)	Sample	Graphic	USCS	Description
											Approximate Ground Surface Elevation (feet): 7 *
											Description
Sieve - #200 = 53.7%	20	95			14					ML	Tannish gray **SANDY SILT** with a little gravel (coralline), stiff, dry (fill)
	18				13						grades to medium stiff
	20	102			117		5			SW	Tan **GRAVELLY SAND (CORALLINE)**, very dense, dry
					102						
	24				51		10				
	20				25		15			GW-GM	Tan **SANDY GRAVEL (CORALLINE)** with a little silt, cemented, medium dense to very dense (coralline detritus)
			71								
Sieve - #200 = 8.1%	11	107			28		20				
	9				27/6" +40/3"		25				
	15				37		30				
							35			SM	

Date Started:	February 14, 2013	Water Level: ▽ 6.5 ft. 02/21/2013 1000 HRS	Plate
Date Completed:	February 21, 2013		
Logged By:	D. Gremminger	Drill Rig: CME-75GY	
Total Depth:	51.5 feet	Drilling Method: 6" HS Auger, 4" Casing & PQ Coring	A - 19.1
Work Order:	6826-00	Driving Energy: 140 lb. wt., 30 in. drop	

BORING LOG 6826-00.GPJ GEOLABS.GDT 5/17/13

GEOLABS, INC.

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NEW KAPALAMA TERMINAL
HONOLULU, OAHU, HAWAII

Log of Boring

201

Laboratory			Field							
Other Tests	Moisture Content (%)	Dry Density (pcf)	Core Recovery (%)	RQD (%)	Penetration Resistance (blows/foot)	Pocket Pen. (tsf)	Depth (feet)	Sample	Graphic	USCS
	8				9					SM
	18	95			9		40			
	21	94			38		45			
	23	98			25		50			
							55			
							60			
							65			
							70			

(Continued from previous plate)

Description

Tan **SILTY SAND (CORALLINE)** with some gravel, loose (coralline detritus)

grades to cemented, medium dense

Boring terminated at 51.5 feet

Date Started:	February 14, 2013	Water Level: ▽ 6.5 ft. 02/21/2013 1000 HRS	Plate
Date Completed:	February 21, 2013		
Logged By:	D. Gremminger	Drill Rig: CME-75GY	
Total Depth:	51.5 feet	Drilling Method: 6" HS Auger, 4" Casing & PQ Coring	A - 19.2
Work Order:	6826-00	Driving Energy: 140 lb. wt., 30 in. drop	

BORING LOG 6826-00.GPJ GEOLABS.GDT 5/17/13

GEOLABS, INC.

Geotechnical Engineering

NEW KAPALAMA TERMINAL
HONOLULU, OAHU, HAWAII

Log of Boring 202

Approximate Ground Surface Elevation (feet): 7 *

Laboratory: Other Tests	Laboratory: Moisture Content (%)	Laboratory: Dry Density (pcf)	Field: Core Recovery (%)	Field: RQD (%)	Field: Penetration Resistance (blows/foot)	Field: Pocket Pen. (tsf)	Depth (feet)	Sample	Graphic	USCS	Description
	10	99			11					ML	Tannish gray **SANDY SILT** with a little gravel (coralline), stiff, damp (fill)
	10				4						grades to soft
							5			SP	Tan **SAND (CORALLINE)** with a little gravel (coralline), loose, moist (fill)
	37				3	<0.5				CL	Grayish brown **SILTY CLAY** with some fine sand, soft, moist (fill)
										SM	Tan **SILTY SAND (CORALLINE)** with gravel, medium dense, moist (coralline detritus)
					16			▽			
	84				16		10			ML	Tan **SANDY SILT**, very stiff
Sieve - #200 = 12.9%	23	99			26		15			SP-SM	Tan **SILTY SAND (CORALLINE)** with gravel, medium dense
	23	88			48		20			GW	Tannish brown **SANDY GRAVEL (CORALLINE)**, dense
	27	81			36		25				
	8	90			42		30				
											Boring terminated at 31.5 feet
							35				

Date Started:	February 14, 2013	Water Level: ▽ 7.9 ft. 02/15/2013 0841 HRS	Plate
Date Completed:	February 20, 2013		
Logged By:	D. Gremminger	Drill Rig: CME-75GY	
Total Depth:	31.5 feet	Drilling Method: 6" HS Auger, 4" Casing	A - 20
Work Order:	6826-00	Driving Energy: 140 lb. wt., 30 in. drop	

BORING LOG 6826-00.GPJ GEOLABS.GDT 5/17/13

APPENDIX B

APPENDIX B

Laboratory Tests

Moisture Content and Dry Density tests were performed on selected soil samples to aid in defining the interface between the various soil layers encountered and correlating the layers between test borings. The moisture content tests were performed in general accordance with ASTM D2216. The test results are presented on the Logs of Borings at the appropriate sample depths.

Five (5) Atterberg Limits tests (ASTM D4318) were performed on selected soil samples to evaluate the liquid limit (LL), plastic limit (PL), and plasticity index (PI), as an aid in classifying the soils. The Atterberg Limits tests were performed in general accordance with ASTM D4318. The test results are summarized on the Logs of Borings at the appropriate sample depths. Graphic presentation of the test results are provided on Plate B-1.

Twenty-six (26) Sieve Analysis tests (ASTM C117 & C136) were performed to evaluate the gradation characteristics and to aid in soil classification. The tests were performed in accordance with ASTM C117 and C136. Graphic presentation of the test results are provided on Plates B-2 through B-7.

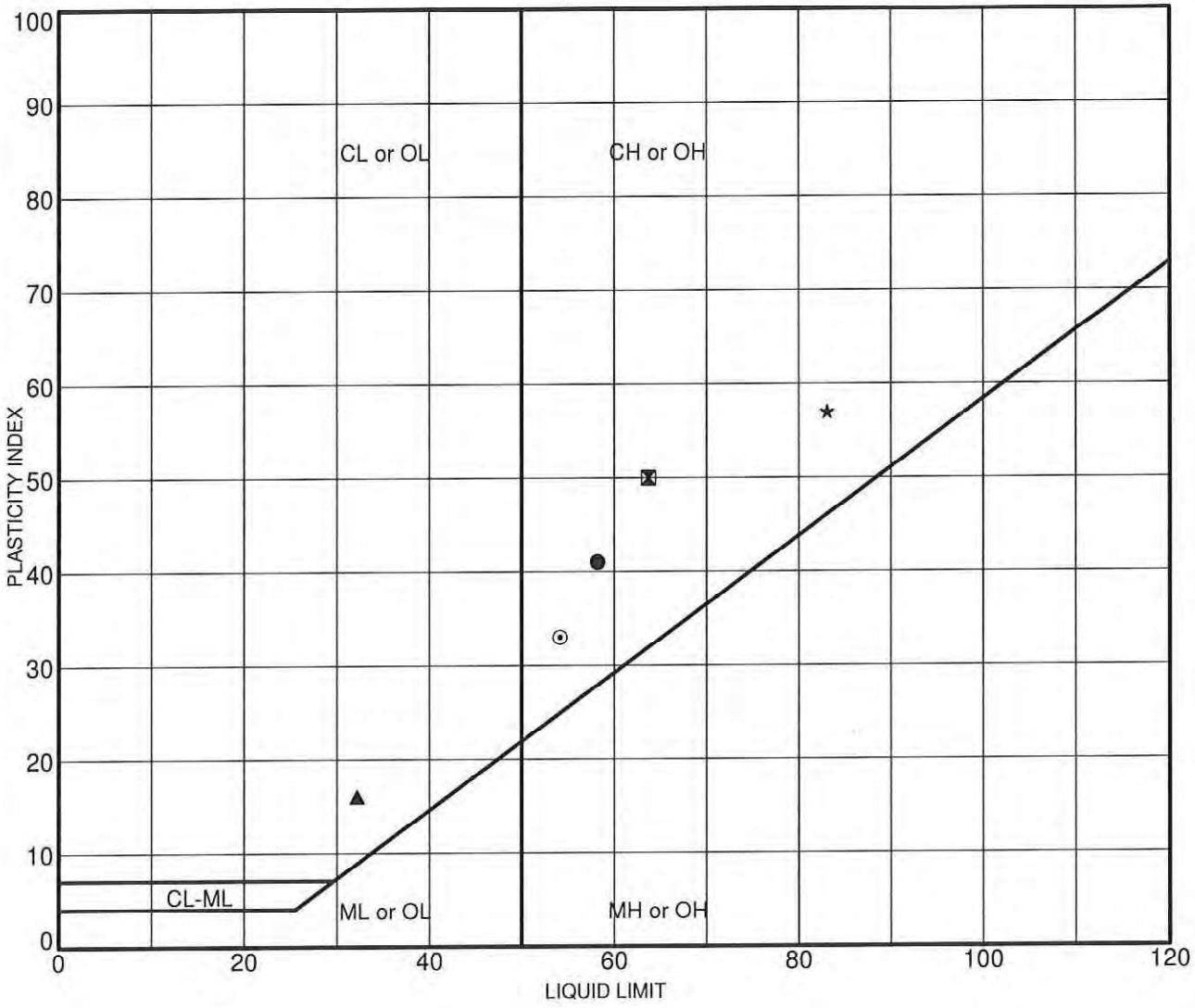
Four (4) Consolidation tests (ASTM D2435) were performed on samples of the soft compressible soils to evaluate the compressibility characteristics of the materials encountered. The test results are presented on Plates B-8 through B-11.

Two (2) Unconsolidated Undrained Triaxial Compression (TXUU) tests (ASTM D2850) were performed on selected soil samples to evaluate the undrained shear strength of the silty and clayey soils encountered. The approximate in-situ effective overburden pressure was used as the applied confining pressure for the relatively "undisturbed" soil sample. The test results and the stress-strain curves are presented on Plates B-12 and B-13.

Four sets of California Bearing Ratio (CBR) tests (ASTM D1883) were performed on bulk samples of the near-surface soils to evaluate the strength characteristics for pavement subgrade support. Each set of CBR test was conducted with two compaction densities, to simulate various compaction efforts ranging from 90 to 100 percent relative compaction. CBR test results are presented on Plates B-14 through B-21.

Four Modified Proctor compaction tests (ASTM D1557) were performed on bulk samples of the near-surface soils to evaluate the relationship between the moisture content and the dry density of the near-surface soils as fill materials. The test results are presented on Plates B-22 through B-25.

Sixteen Unconfined Compression tests (ASTM D7012 Method C) were performed on selected rock cores to evaluate their unconfined compressive strength of the rock formation encountered. Unconfined compression test results are presented on Plate B-26.



	Sample	Depth (ft)	LL	PL	PI	Description
●	B-101	2.5-4.0	58	17	41	Tannish brown clay (CH) with some gravel (coralline)
⊠	B-103	2.5-4.0	64	14	50	Brown clay (CH) with some sand and traces of gravel (coralline)
▲	B-104	10.0-11.5	32	16	16	Gray silty clay (CL) with little gravel (coralline)
★	B-113	11.0-12.5	83	26	57	Gray clay (CH) with some fine sand
⊙	B-118	5.5-7.0	54	21	33	Gray clay (CH) with sand and traces of gravel (coralline)

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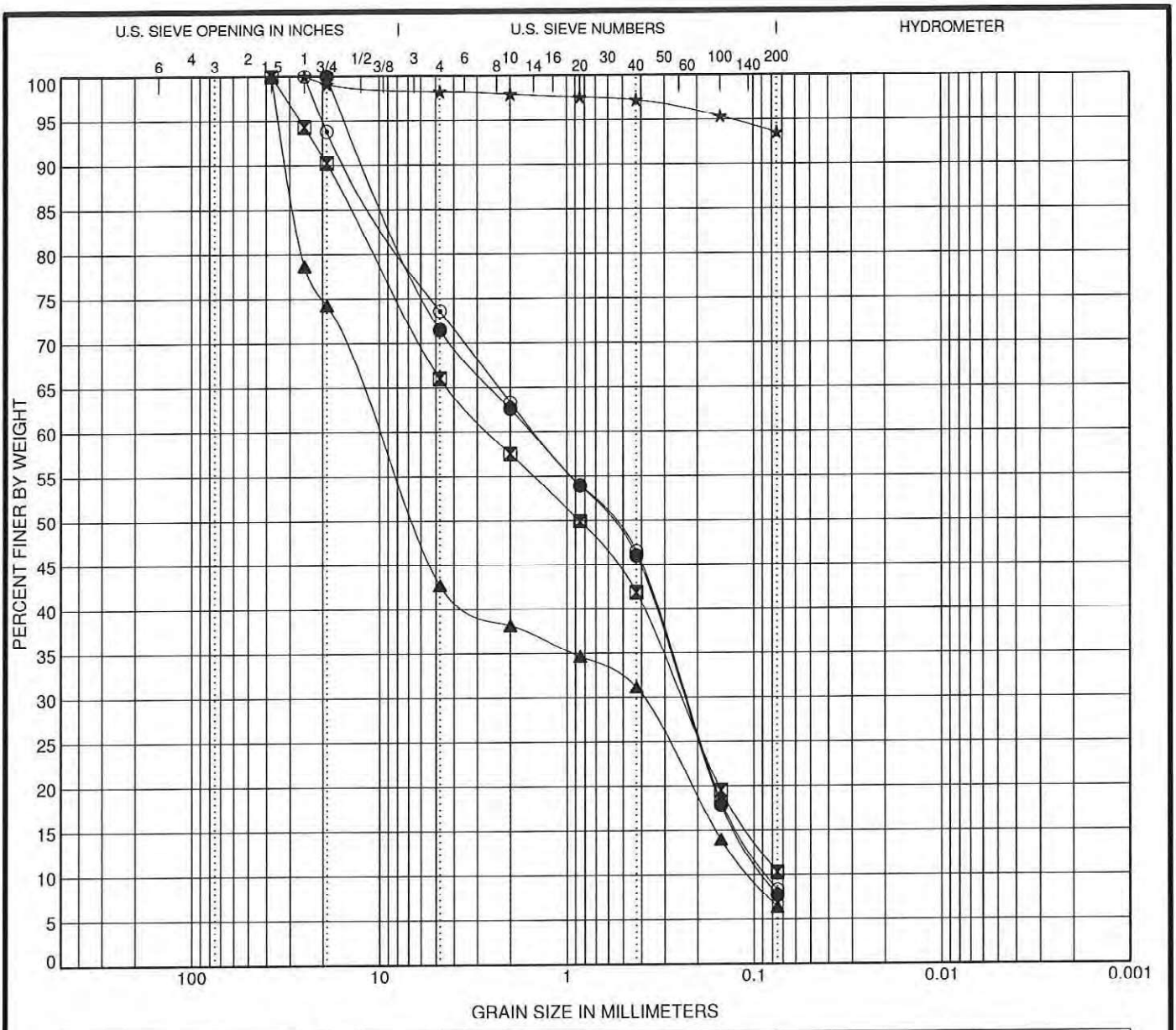
ATTERBERG LIMITS TEST RESULTS - ASTM D 4318

NEW KAPALAMA TERMINAL
HONOLULU, OAHU, HAWAII

Plate
B - 1

G ATTERBERG 6826-00.GPJ GEOLABS.GDT 5/17/13



COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

	Sample	Depth (ft)	Description	LL	PL	PI	Cc	Cu
●	B-101	10.0-11.5	Gray silty sand (SP-SM) with gravel (coralline)				0.4	17.7
⊠	B-102	2.5-4.0	Brown silty sand (SP-SM) with gravel (coralline)				0.3	35.1
▲	B-102	10.0-11.5	Gray sandy gravel (GP-GM) with a little silt				0.1	97.2
★	B-103	10.0-11.5	Gray silt (ML) with traces of sand and gravel					
⊙	B-105	2.5-4.0	Tan silty sand (SP-SM) with some gravel				0.4	17.6

	Sample	Depth (ft)	D100 (mm)	D60 (mm)	D30 (mm)	D10 (mm)	%Gravel	%Sand	%Fine
●	B-101	10.0-11.5	19	1.553	0.235	0.088	28.5	63.8	7.7
⊠	B-102	2.5-4.0	37.5	2.582	0.245		34.0	55.7	10.3
▲	B-102	10.0-11.5	37.5	10.154	0.396	0.104	57.3	36.4	6.4
★	B-103	10.0-11.5	25				1.8	4.7	93.5
⊙	B-105	2.5-4.0	25	1.48	0.231	0.084	26.4	65.3	8.3

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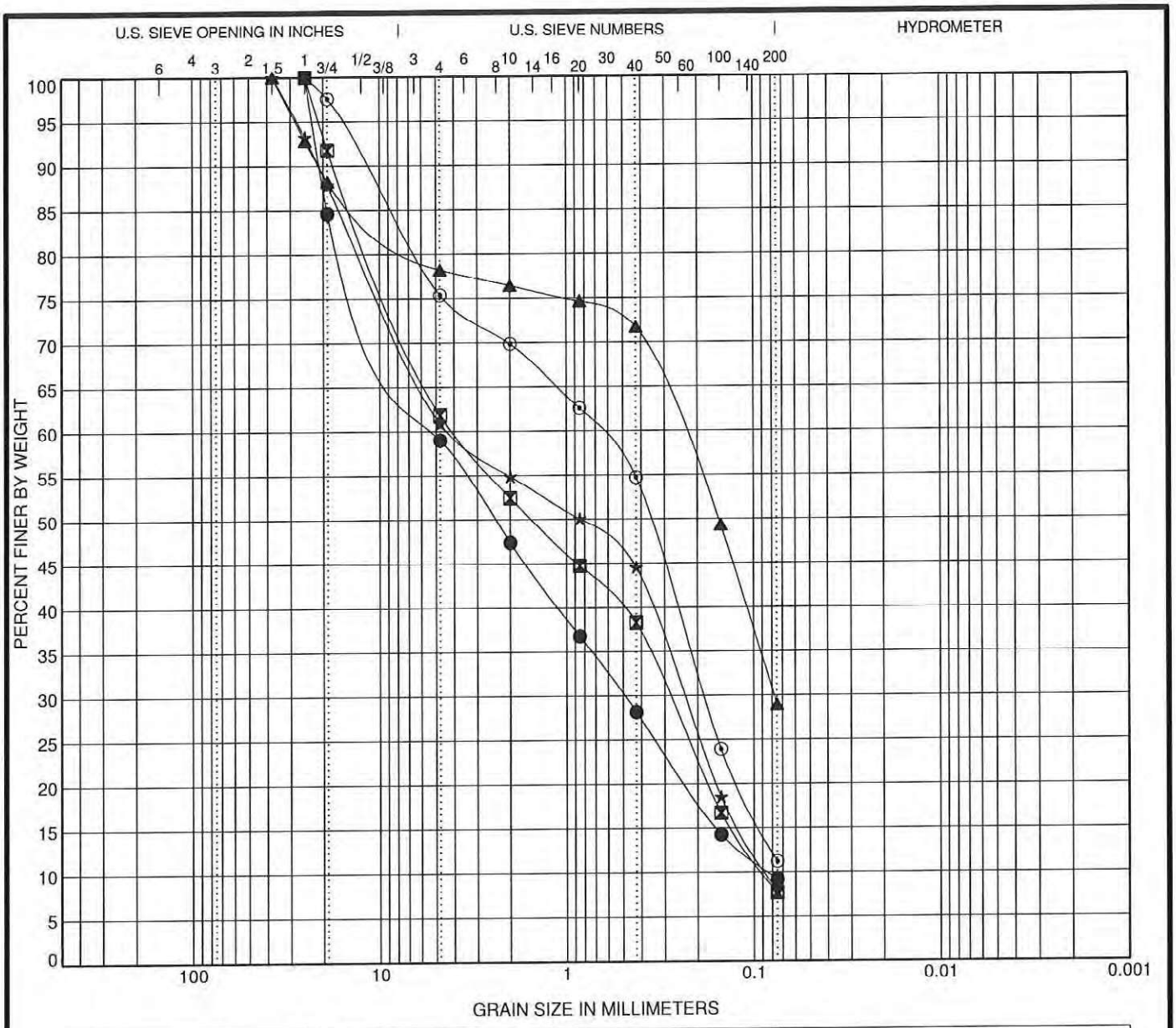
GRAIN SIZE DISTRIBUTION - ASTM C 117 & C 136

NEW KAPALAMA TERMINAL
HONOLULU, OAHU, HAWAII

Plate
B - 2

G GRAIN SIZE MOD 6826-00.GPJ GEOLABS.GDT 5/17/13



COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

	Sample	Depth (ft)	Description	LL	PL	PI	Cc	Cu
●	B-106	2.5-4.0	Brownish tan silty sand (SP-SM) with gravel				0.6	60.1
⊠	B-106	10.0-11.5	Grayish brown silty sand (SP-SM) with gravel				0.2	45.0
▲	B-107	2.5-4.0	Tannish brown silty sand (SM) with some gravel					
★	B-108	5.0-6.5	Brown silty sand (SP-SM) with gravel				0.2	48.8
⊙	B-108	15.0-16.5	Gray silty sand (SP-SM) with gravel				0.7	9.7

	Sample	Depth (ft)	D100 (mm)	D60 (mm)	D30 (mm)	D10 (mm)	%Gravel	%Sand	%Fine
●	B-106	2.5-4.0	25	5.019	0.493	0.084	41.0	49.8	9.2
⊠	B-106	10.0-11.5	25	4.033	0.285	0.09	38.2	54.1	7.7
▲	B-107	2.5-4.0	37.5	0.247	0.078		21.8	49.3	28.9
★	B-108	5.0-6.5	37.5	4.196	0.237	0.086	39.1	53.0	7.9
⊙	B-108	15.0-16.5	25	0.679	0.184		24.6	64.2	11.2

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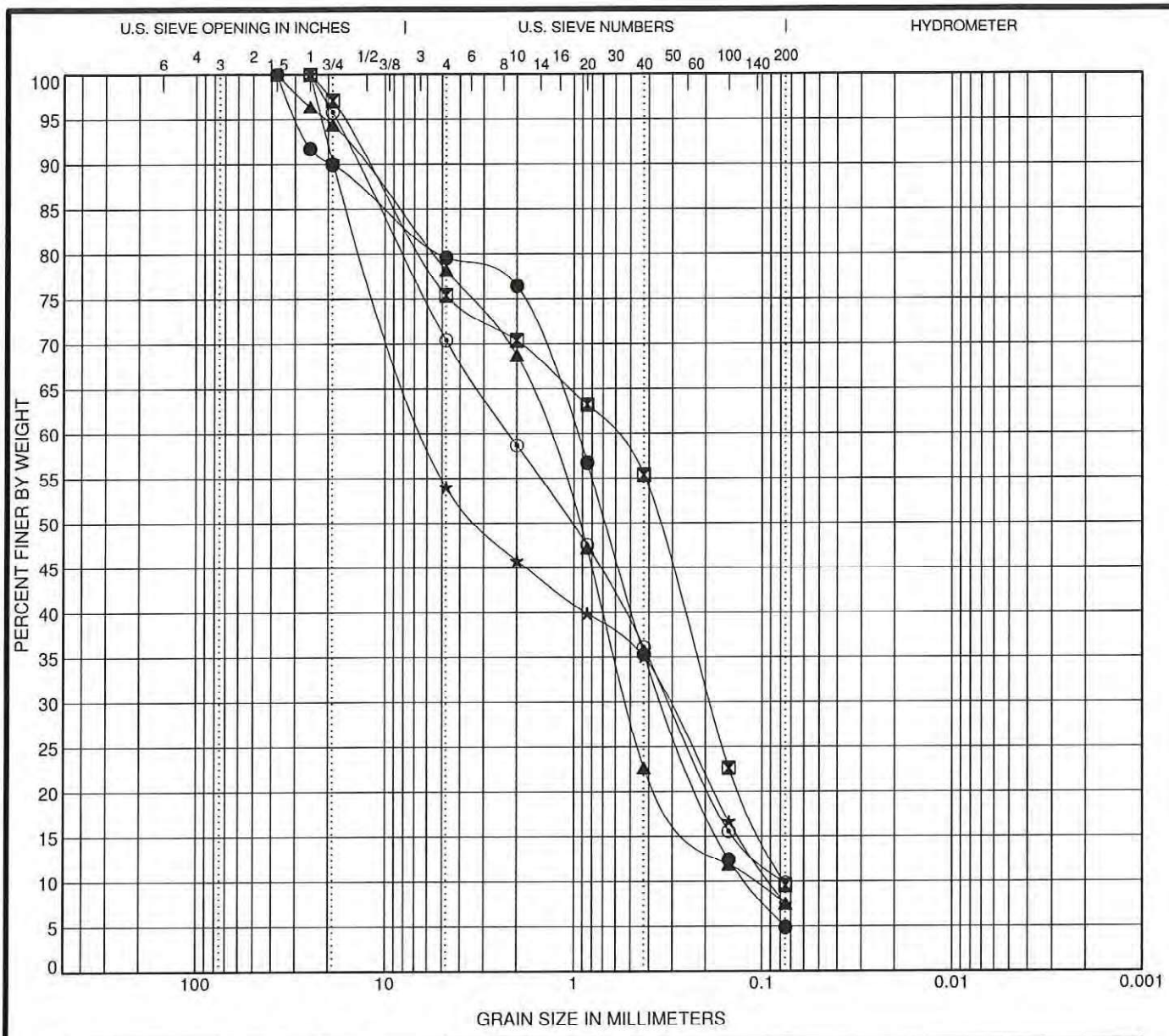
NEW KAPALAMA TERMINAL
HONOLULU, OAHU, HAWAII

Plate
B - 3

G GRAIN SIZE MOD 6826-00.GPJ GEOLABS.GDT 5/17/13



COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

	Sample	Depth (ft)	Description	LL	PL	PI	Cc	Cu
●	B-109	2.5-4.0	Tan silty sand (SP) with gravel				0.9	8.1
⊠	B-109	10.0-11.5	Gray silty sand (SP-SM) with gravel				0.7	8.3
▲	B-109	37.0-39.0	Tan gravelly sand (SW-SM) with a little silt				1.7	12.7
★	B-110	10.0-11.5	Gray silty sand (SP-SM) with gravel				0.2	65.6
⊙	B-111	26.0-28.0	Tan gravelly sand (SP-SM) with a little silt				0.6	28.8

	Sample	Depth (ft)	D100 (mm)	D60 (mm)	D30 (mm)	D10 (mm)	%Gravel	%Sand	%Fine
●	B-109	2.5-4.0	37.5	0.98	0.334	0.12	20.4	74.7	4.9
⊠	B-109	10.0-11.5	25	0.641	0.19	0.077	24.6	65.9	9.5
▲	B-109	37.0-39.0	37.5	1.415	0.523	0.112	21.8	70.7	7.5
★	B-110	10.0-11.5	25	5.973	0.319	0.091	46.0	46.6	7.4
⊙	B-111	26.0-28.0	25	2.21	0.312	0.077	29.6	60.6	9.8

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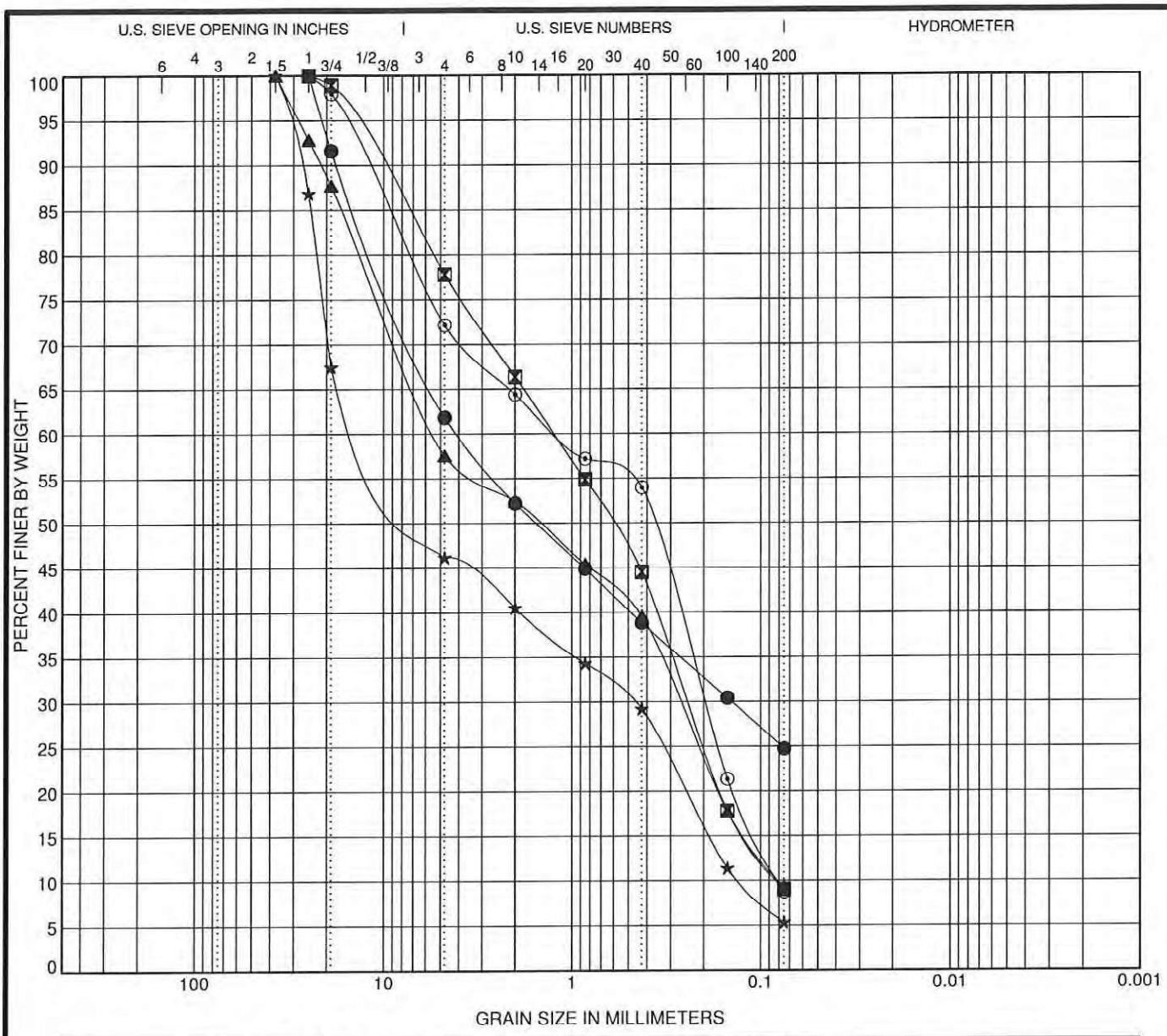
GRAIN SIZE DISTRIBUTION - ASTM C 117 & C 136

NEW KAPALAMA TERMINAL
HONOLULU, OAHU, HAWAII

Plate
B - 4

G GRAIN SIZE MOD 6826-00.GPJ GEOLABS.GDT 5/17/13



COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

	Sample	Depth (ft)	Description	LL	PL	PI	Cc	Cu
●	B-112	2.5-4.0	Grayish brown silty gravel (GM) with some sand					
⊠	B-113	4.0-5.5	Tan silty sand (SP-SM) with gravel				0.6	15.3
▲	B-113	14.5-16.0	Gray silty sand (SP-SM) with gravel				0.2	66.4
★	B-115	10.0-11.5	Gray silty gravel (GP-GM) with a little sand				0.1	91.1
⊙	B-116	10.0-11.5	Gray silty sand (SP-SM) with gravel				0.4	14.8

	Sample	Depth (ft)	D100 (mm)	D60 (mm)	D30 (mm)	D10 (mm)	%Gravel	%Sand	%Fine
●	B-112	2.5-4.0	25	4.033	0.143		38.2	37.1	24.7
⊠	B-113	4.0-5.5	25	1.246	0.241	0.081	22.2	68.8	9.0
▲	B-113	14.5-16.0	37.5	5.314	0.269	0.08	42.4	48.4	9.2
★	B-115	10.0-11.5	37.5	11.685	0.473	0.128	53.8	40.9	5.3
⊙	B-116	10.0-11.5	25	1.189	0.198	0.08	27.8	63.4	8.7

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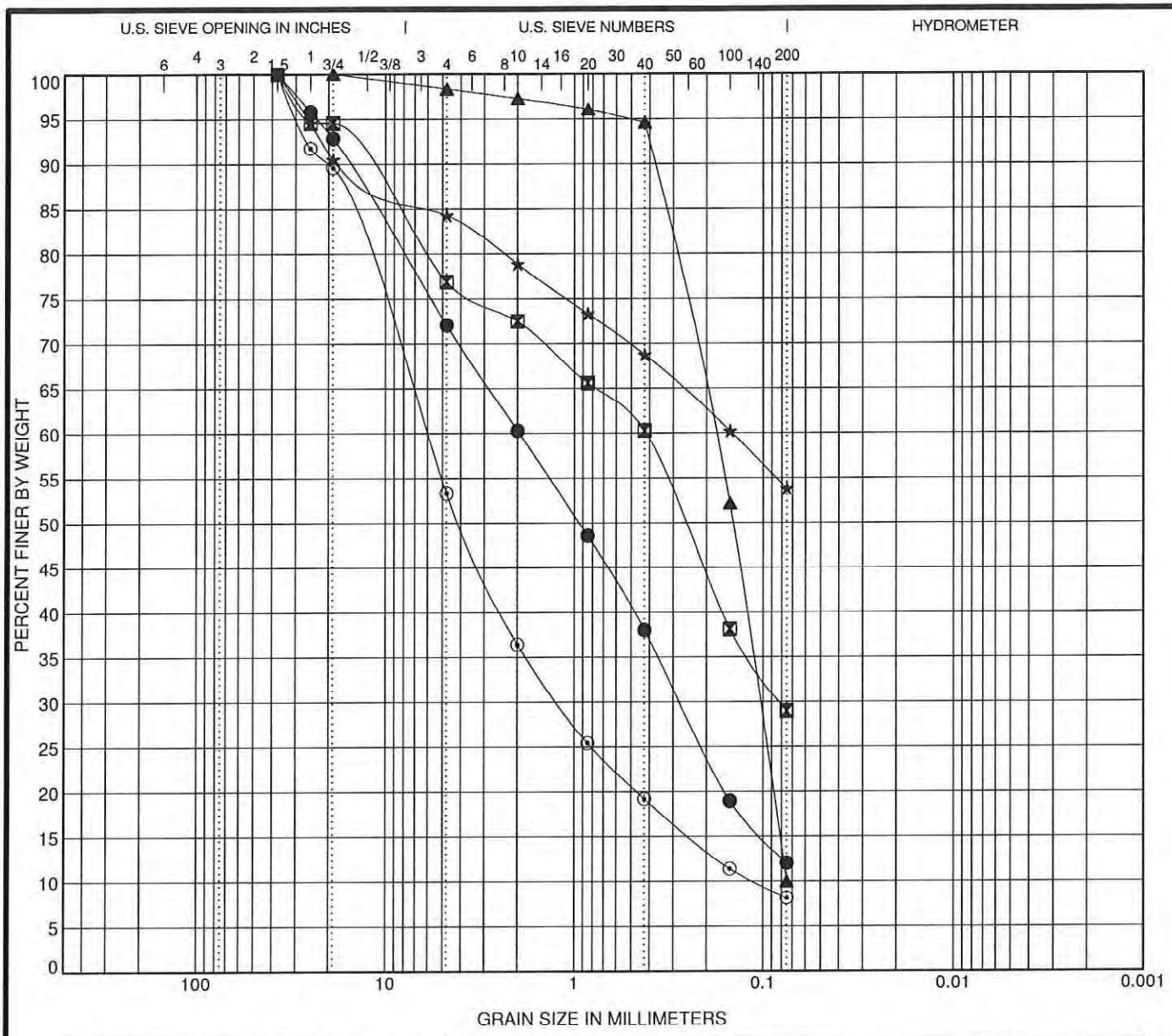
Plate
B - 5

G GRAIN SIZE MOD 6826-00.GPJ GEOLABS.GDT 5/17/13



COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

	Sample	Depth (ft)	Description	LL	PL	PI	Cc	Cu
●	B-117	4.0-5.5	Brown gravelly sand (SM) with a little silt				0.6	31.9
⊠	B-117	14.5-16.0	Gray silty sand (SM) with some gravel					
▲	B-118	2.5-4.0	Brown silty sand (SP-SM) with traces of gravel				0.8	2.4
★	B-201	1.0-2.5	Brown sandy silt (ML) with some gravel					
⊙	B-201	20.0-21.5	Tan sandy gravel (GW-GM) with a little silt				2.1	54.7

	Sample	Depth (ft)	D100 (mm)	D60 (mm)	D30 (mm)	D10 (mm)	%Gravel	%Sand	%Fine
●	B-117	4.0-5.5	37.5	1.96	0.274		27.9	60.0	12.0
⊠	B-117	14.5-16.0	37.5	0.42	0.081		23.1	47.9	29.0
▲	B-118	2.5-4.0	19	0.182	0.104	0.075	1.6	88.4	10.0
★	B-201	1.0-2.5	37.5	0.147			15.7	30.6	53.7
⊙	B-201	20.0-21.5	37.5	6.136	1.213	0.112	46.7	45.2	8.1

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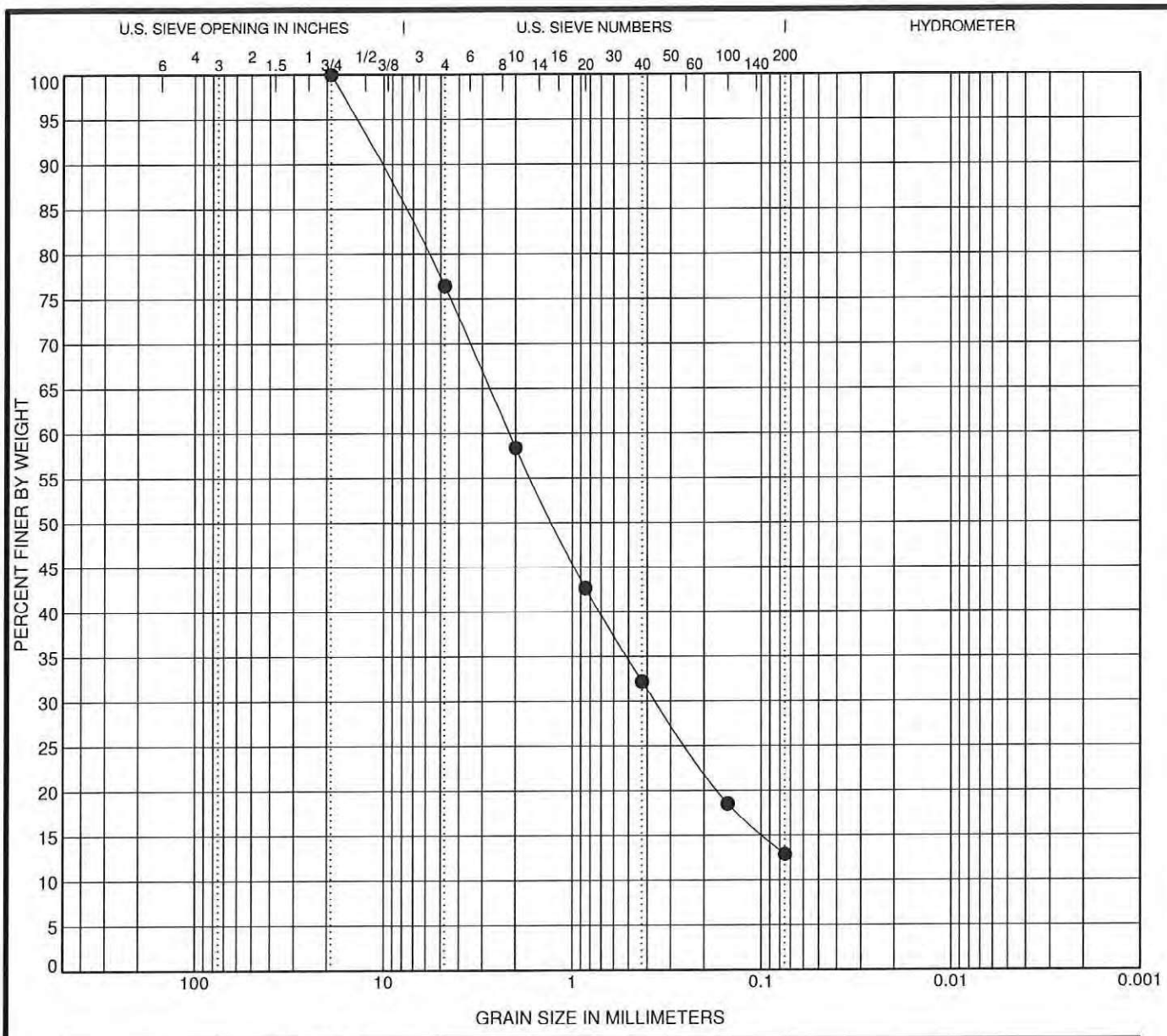
NEW KAPALAMA TERMINAL
HONOLULU, OAHU, HAWAII

Plate
B - 6

G GRAIN SIZE MOD 6826-00.GPJ GEOLABS.GDT 5/17/13



COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

	Sample	Depth (ft)	Description	LL	PL	PI	Cc	Cu
●	B-202	13.5-15.0	Tan silty sand (coralline) (SP-SM) with some gravel					

	Sample	Depth (ft)	D100 (mm)	D60 (mm)	D30 (mm)	D10 (mm)	%Gravel	%Sand	%Fine
●	B-202	13.5-15.0	19	2.164	0.359		23.6	63.6	12.9

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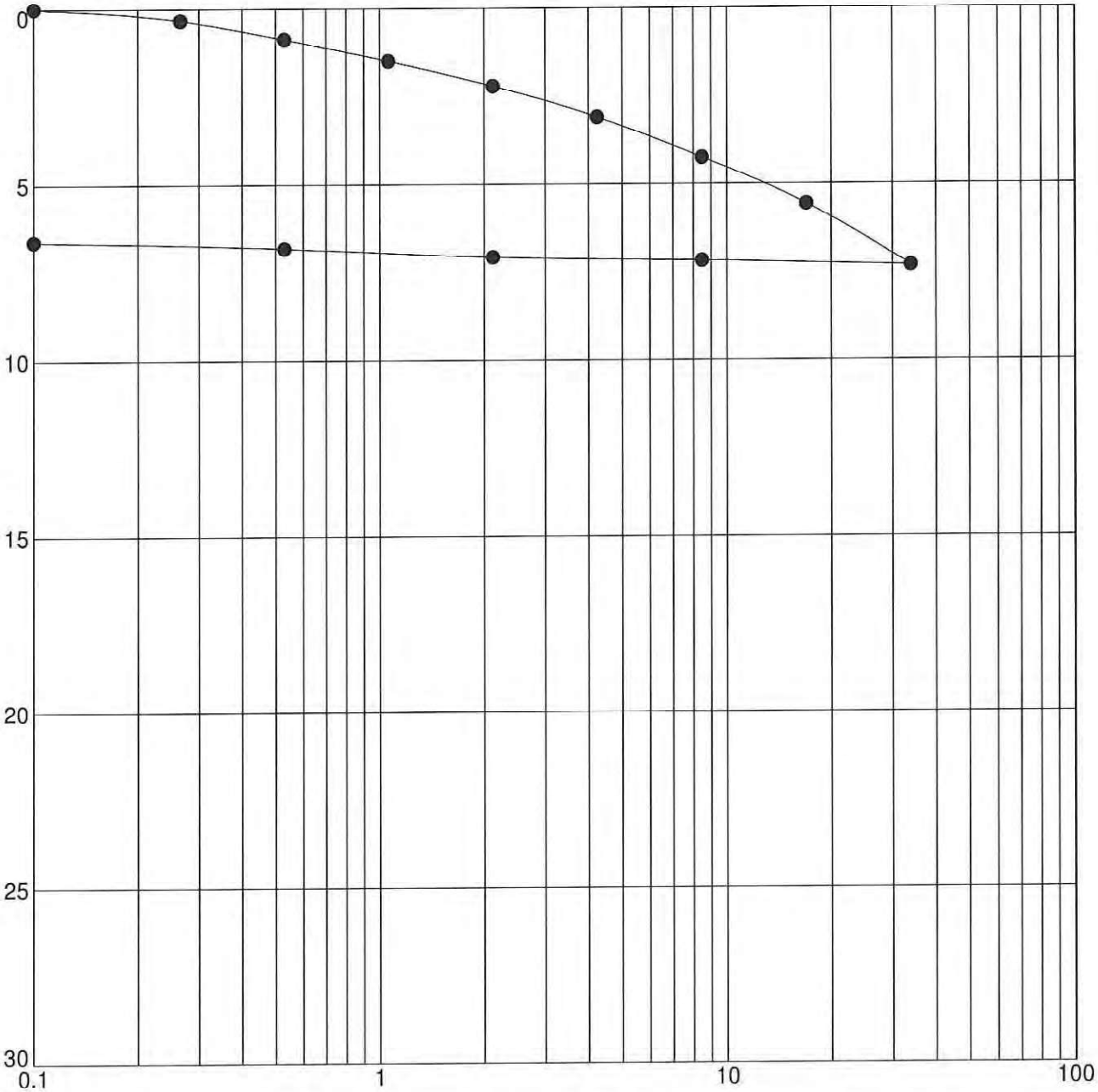
GRAIN SIZE DISTRIBUTION - ASTM C 117 & C 136

NEW KAPALAMA TERMINAL
HONOLULU, OAHU, HAWAII

Plate
B - 7

G_GRAIN SIZE_MOD 6826-0C.GPJ GEOLABS.GDT 5/17/13



Sample: B-103
Depth: 15.0 feet
Description: Gray clayey silt with some sand (coralline)

Liquid Limit = N/A Plasticity Index = N/A

	Initial	Final
Water Content, %	32.7	28.3
Dry Density, pcf:	90.5	96.9
Void Ratio	0.909	0.783
Degree of Saturation, %	99.5	100.0
Sample Height, inches	1.0000	0.9079

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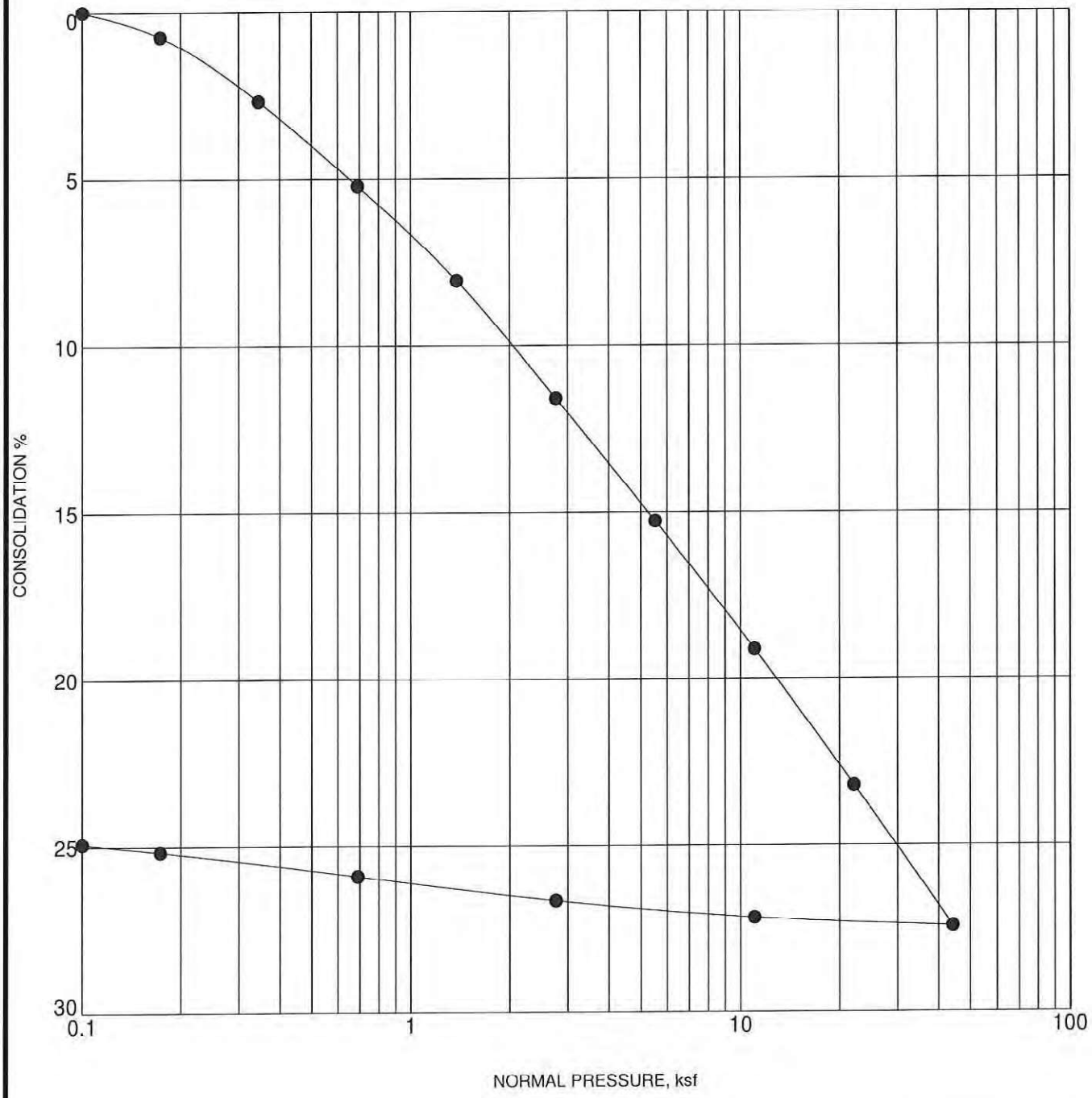
CONSOLIDATION TEST - ASTM D 2435

NEW KAPALAMA TERMINAL
HONOLULU, OAHU, HAWAII

Plate
B - 8

G CONSOL 6826-00.GPJ GEOLABS.GDT 5/17/13



Sample: B-108
Depth: 11.0 - 12.5 feet
Description: Gray silty sand

Liquid Limit = N/A Plasticity Index = N/A

	Initial	Final
Water Content, %	53.0	31.0
Dry Density, pcf:	71.2	94.9
Void Ratio	1.523	0.894
Degree of Saturation, %	100.3	100.0
Sample Height, inches	1.0000	0.7186

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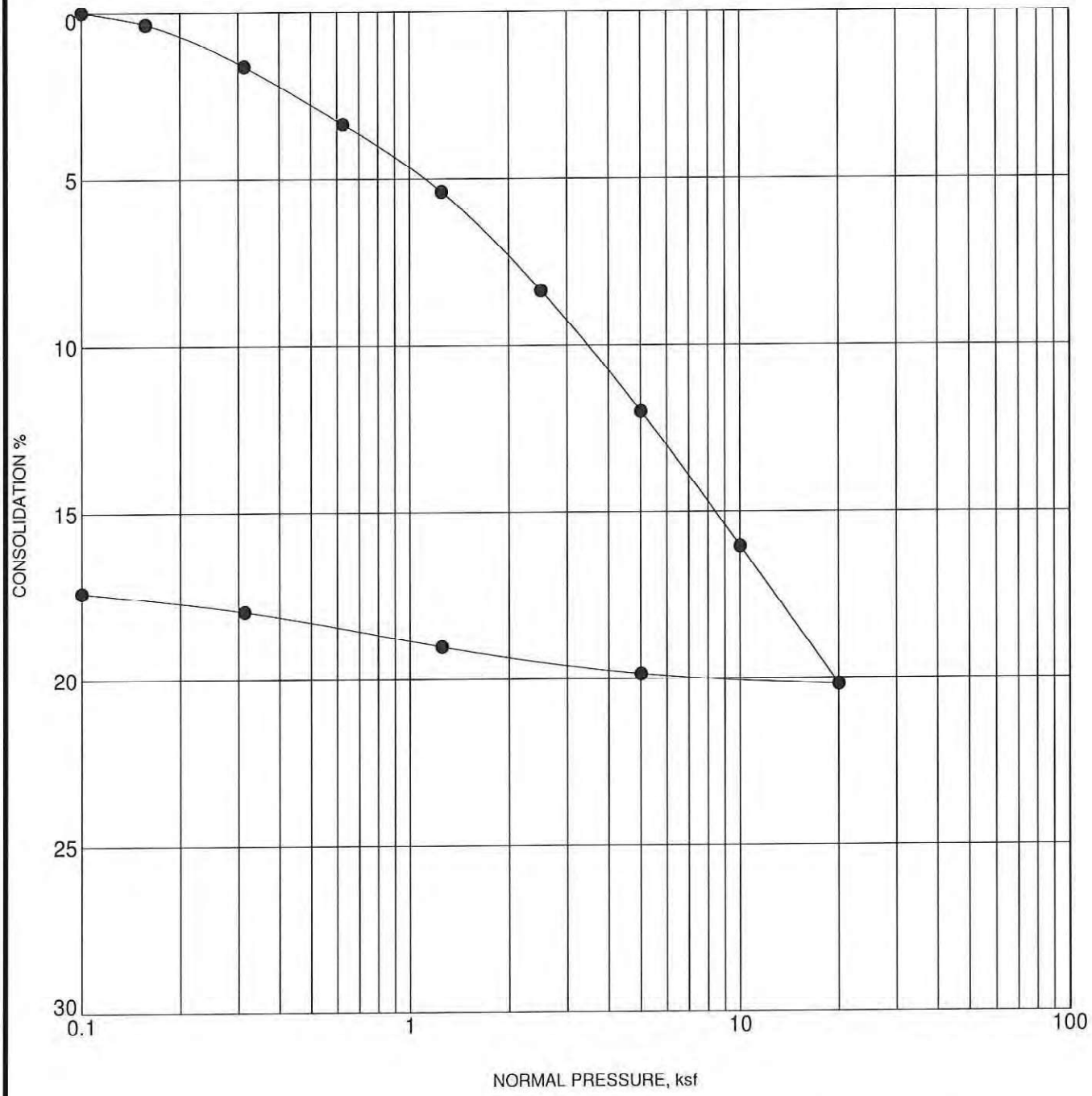
CONSOLIDATION TEST - ASTM D 2435

NEW KAPALAMA TERMINAL
HONOLULU, OAHU, HAWAII

Plate
B - 9

G CONSOL 6826-00.GPJ GEOLABS.GDT 5/17/13



Sample: B-113

Depth: 11.0 - 12.5 feet

Description: Gray clay (CH) with some fine sand

Liquid Limit = 83 Plasticity Index = 57

	Initial	Final
Water Content, %	52.6	37.8
Dry Density, pcf:	69.5	84.1
Void Ratio	1.467	1.038
Degree of Saturation, %	98.4	100.0
Sample Height, inches	1.0000	0.7972

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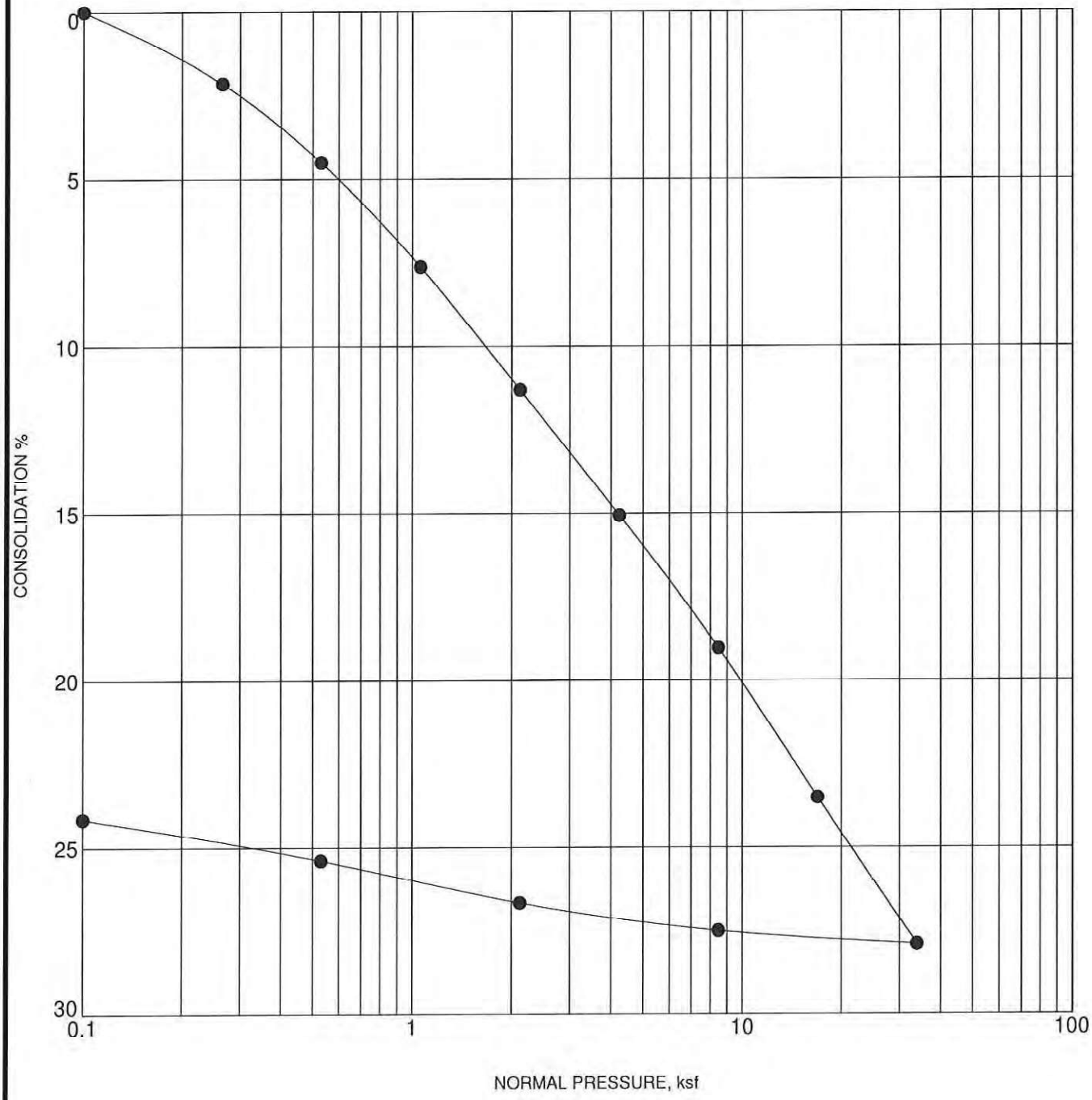
CONSOLIDATION TEST - ASTM D 2435

NEW KAPALAMA TERMINAL
HONOLULU, OAHU, HAWAII

Plate
B - 10

G_CONSOL 6826-00.GPJ GEOLABS.GDT 5/17/13



Sample: B-118
Depth: 5.5 - 7.0 feet
Description: Gray clay (CH) with sand and traces of gravel (coralline)

Liquid Limit = 54 Plasticity Index = 33

	Initial	Final
Water Content, %	59.4	35.8
Dry Density, pcf:	66.3	87.3
Void Ratio	1.639	1.002
Degree of Saturation, %	101.5	100.0
Sample Height, inches	1.0000	0.7165

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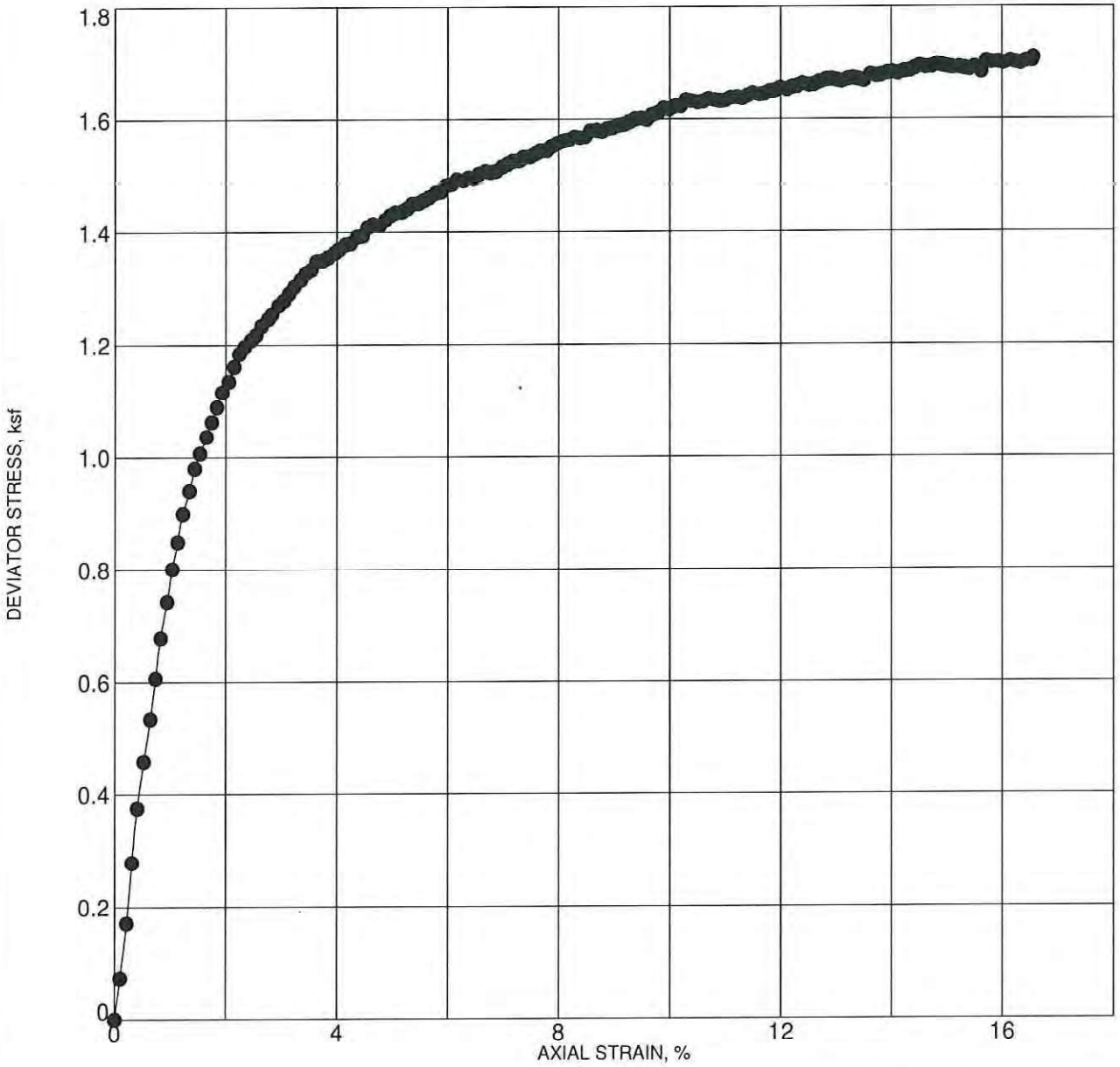
CONSOLIDATION TEST - ASTM D 2435

NEW KAPALAMA TERMINAL
HONOLULU, OAHU, HAWAII

Plate
B - 11

G CONSOL 6826-00.GPJ GEOLABS.GDT 5/17/13



Max. Deviator Stress (ksf):	1.7
Confining Stress (ksf):	0.5

Location: B-103
Depth: 5.0 - 6.5 feet
Description: Brown clay with some gravel (coralline)
Test Date: 3/15/2013

Dry Density (pcf)	88.6	Sample Diameter (inches)	2.347
Moisture (%)	27.1	Sample Height (inches)	4.887
Axial Strain at Failure (%)	15.0	Strain Rate (% / minute)	1.01

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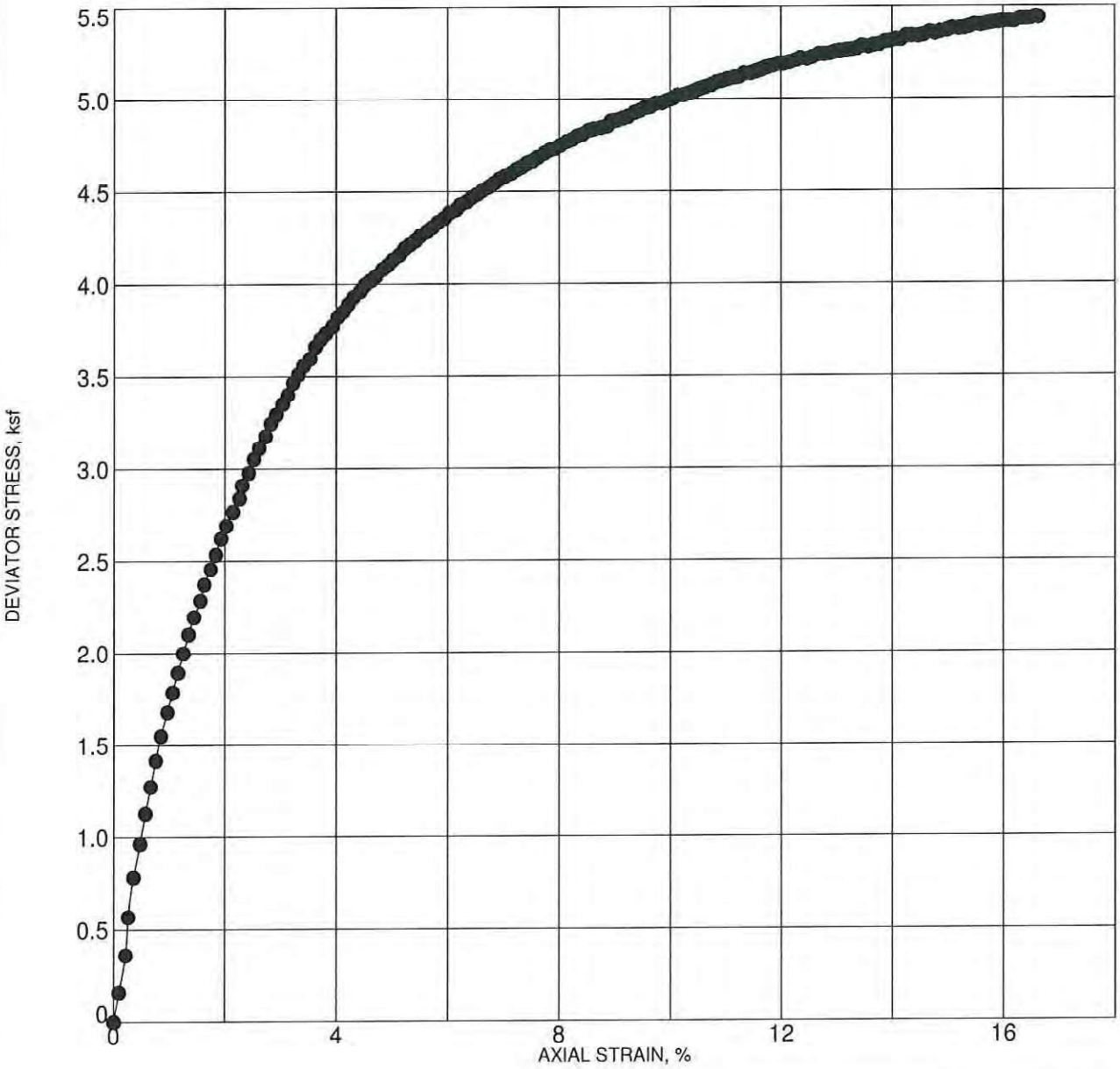
TRIAXIAL UU COMPRESSION TEST - ASTM D 2850

NEW KAPALAMA TERMINAL
HONOLULU, OAHU, HAWAII

Plate
B - 12

G TXUU 6826-00.GPJ GEOLABS.GDT 5/17/13



Max. Deviator Stress (ksf):	5.4
Confining Stress (ksf):	1.2

Location: B-104
Depth: 15.0 - 16.5 feet
Description: Dark brown clay
Test Date: 3/15/2013

Dry Density (pcf)	70.1	Sample Diameter (inches)	2.397
Moisture (%)	52.2	Sample Height (inches)	4.897
Axial Strain at Failure (%)	15.0	Strain Rate (% / minute)	1.01

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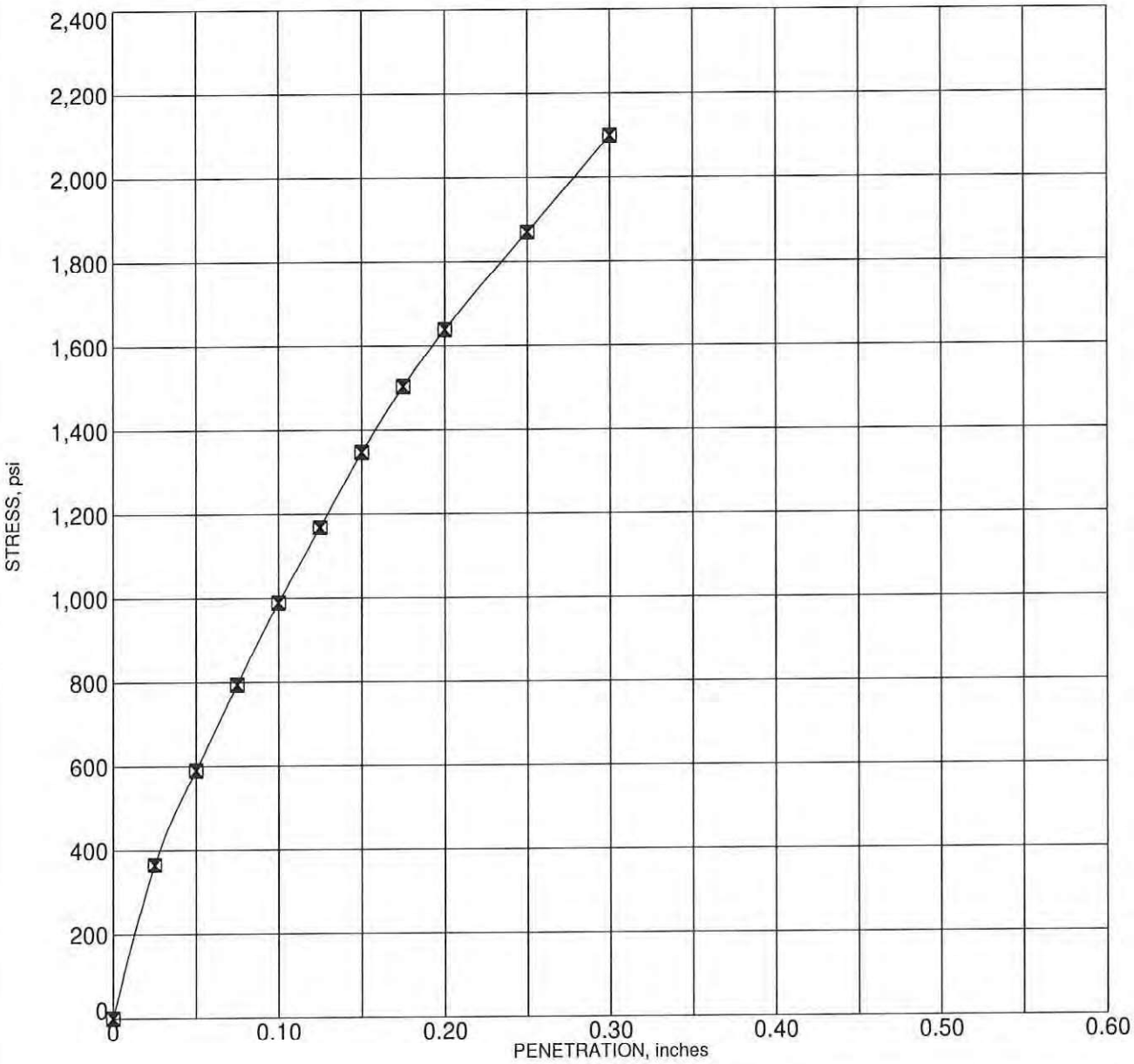
TRIAXIAL UU COMPRESSION TEST - ASTM D 2850

NEW KAPALAMA TERMINAL
HONOLULU, OAHU, HAWAII

Plate
B - 13

G TXUU 6826-00.GPJ GEOLABS.GDT 5/17/13



Corr. CBR @ 0.1"	98.9
Corr. CBR @ 0.2"	109.2
Swell (%)	0.13

Sample: BULK-1 @ 56 blows
Depth: Surface
Description: Tannish brown silty gravel (coralline) with sand

Molding Dry Density (pcf)	122.6	Hammer Wt. (lbs)	10
Molding Moisture (%)	9.7	Hammer Drop (inches)	18
Days Soaked	3	No. of Blows	56
Aggregate	3/4 inch minus	No. of Layers	5

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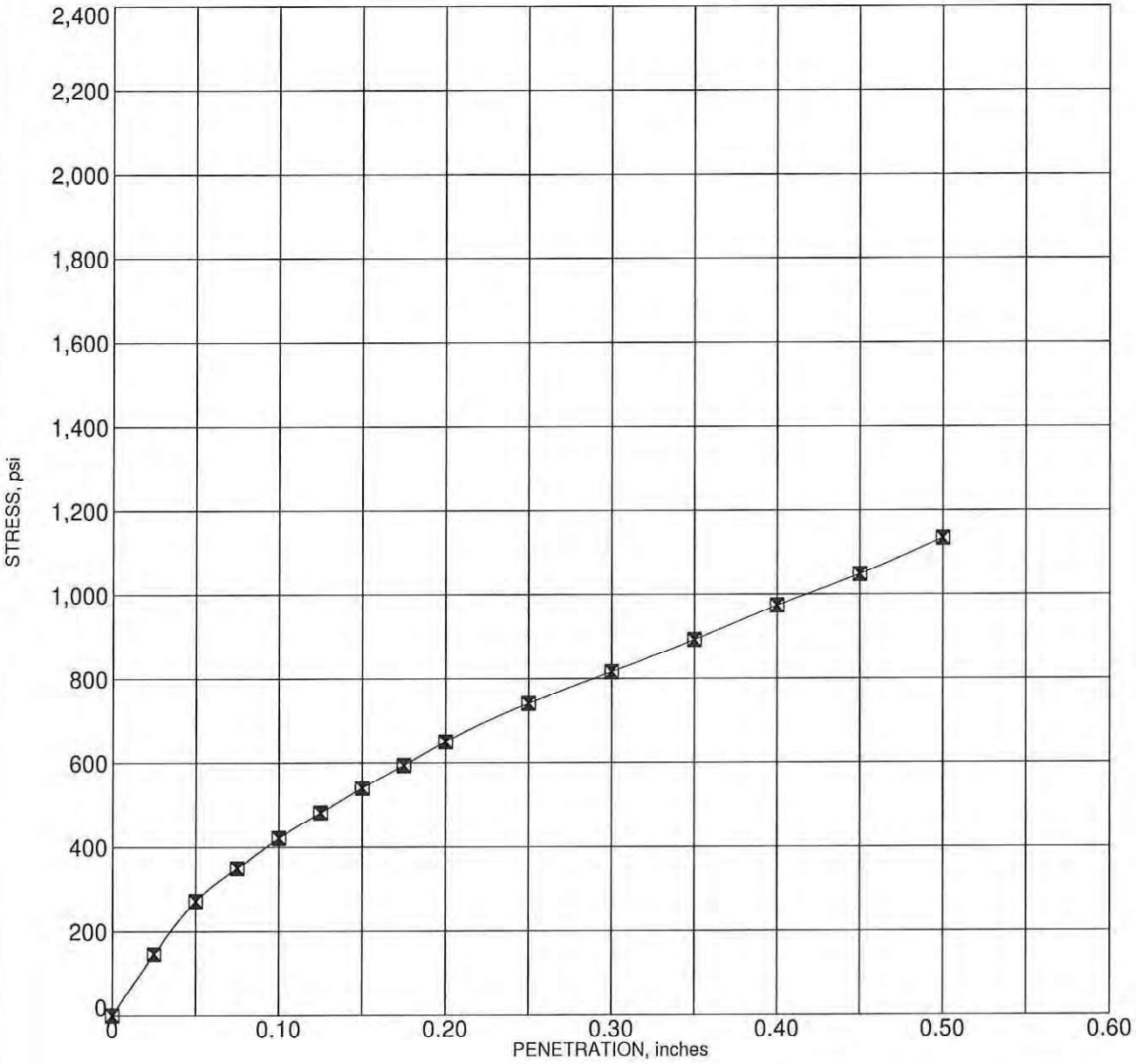
CALIFORNIA BEARING RATIO - ASTM D 1883

NEW KAPALAMA TERMINAL
HONOLULU, OAHU, HAWAII

Plate
B - 14

G CBR 6826-00.GPJ GEOLABS.GDT 5/17/13



Corr. CBR @ 0.1"	42.1
Corr. CBR @ 0.2"	43.3
Swell (%)	0.04

Sample: BULK-1 @ 25 blows
Depth: Surface
Description: Tannish brown silty gravel (coralline) with sand

Molding Dry Density (pcf)	115.2	Hammer Wt. (lbs)	10
Molding Moisture (%)	9.2	Hammer Drop (inches)	18
Days Soaked	3	No. of Blows	25
Aggregate	3/4 inch minus	No. of Layers	5

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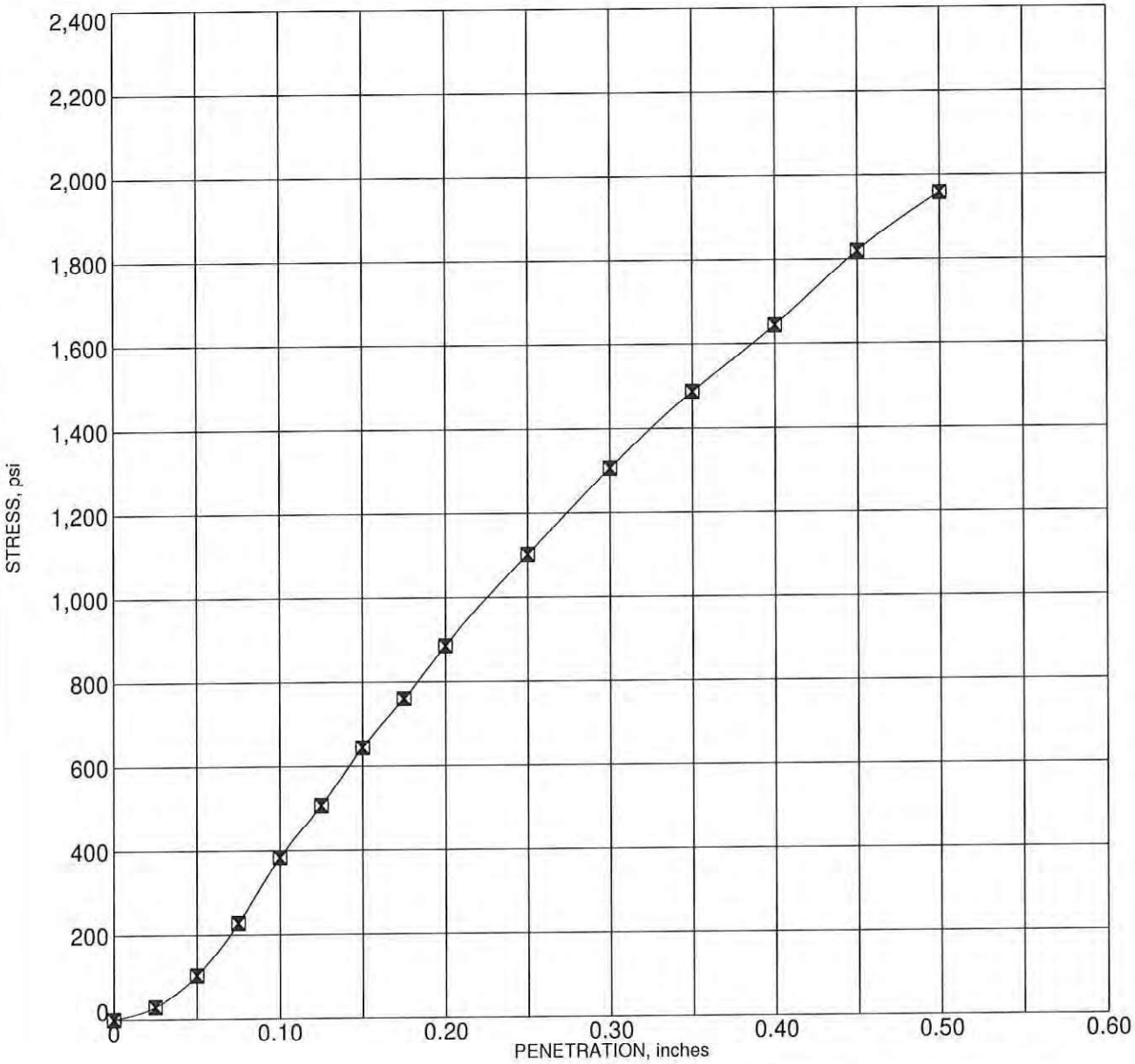
CALIFORNIA BEARING RATIO - ASTM D 1883

NEW KAPALAMA TERMINAL
HONOLULU, OAHU, HAWAII

Plate
B - 15

G C3R 6826-00.GPJ GEOLABS.GDT 5/17/13



Corr. CBR @ 0.1"	57.5
Corr. CBR @ 0.2"	70.7
Swell (%)	0.00

Sample: BULK-2 @ 56 blows
Depth: Surface
Description: Dark tannish brown silty sand with gravel (coralline)

Molding Dry Density (pcf)	113.6	Hammer Wt. (lbs)	10
Molding Moisture (%)	15.1	Hammer Drop (inches)	18
Days Soaked	3	No. of Blows	56
Aggregate	3/4 inch minus	No. of Layers	5

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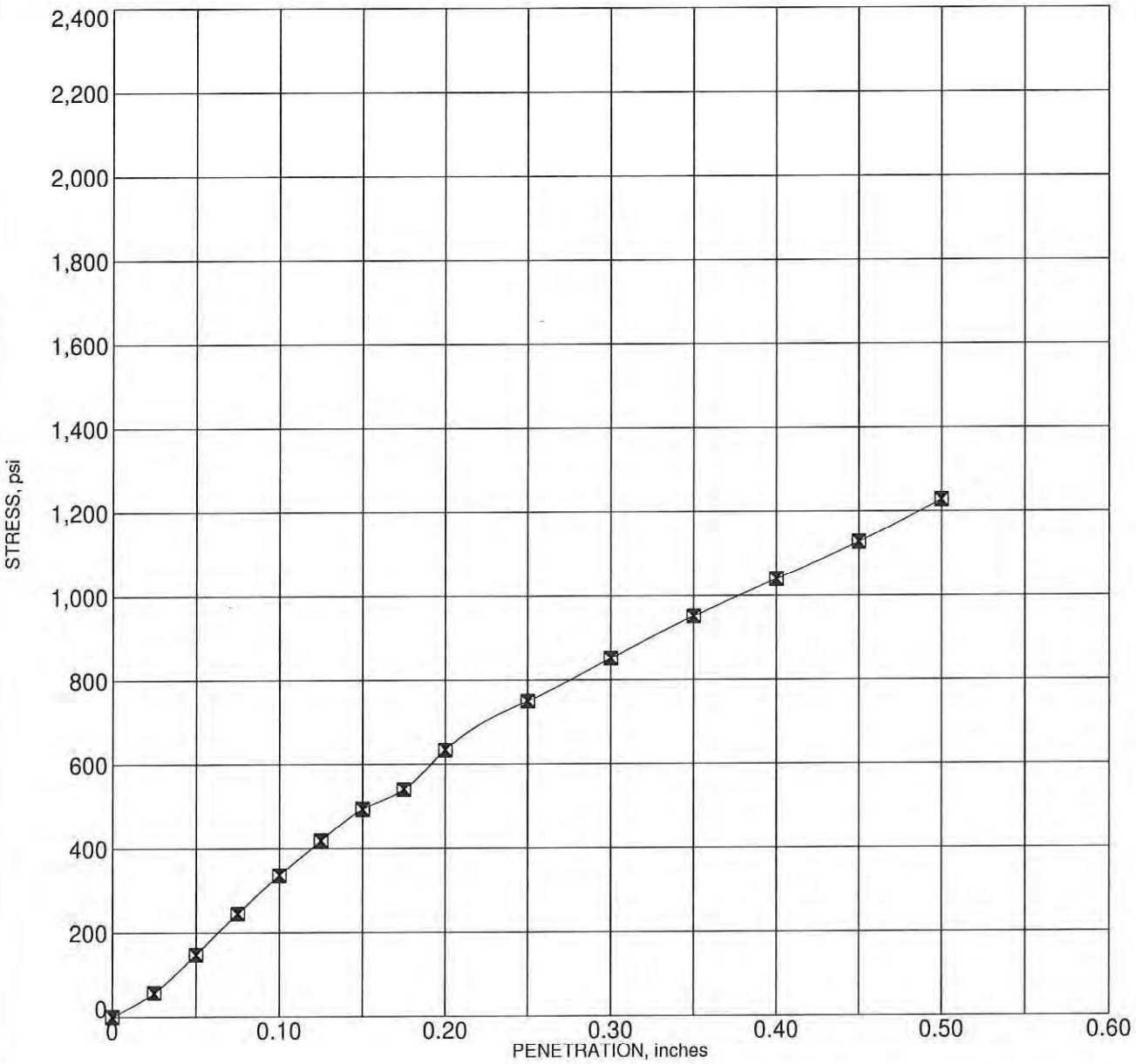
CALIFORNIA BEARING RATIO - ASTM D 1883

NEW KAPALAMA TERMINAL
HONOLULU, OAHU, HAWAII

Plate
B - 16

G_CBR_6826-00.GPJ GEOLABS.GDT 5/17/13



Corr. CBR @ 0.1"	36.6
Corr. CBR @ 0.2"	44.0
Swell (%)	0.04

Sample: BULK-2 @ 25 blows
Depth: Surface
Description: Dark tannish brown silty sand with gravel (coralline)

Molding Dry Density (pcf)	107.6	Hammer Wt. (lbs)	10
Molding Moisture (%)	14.5	Hammer Drop (inches)	18
Days Soaked	3	No. of Blows	25
Aggregate	3/4 inch minus	No. of Layers	5

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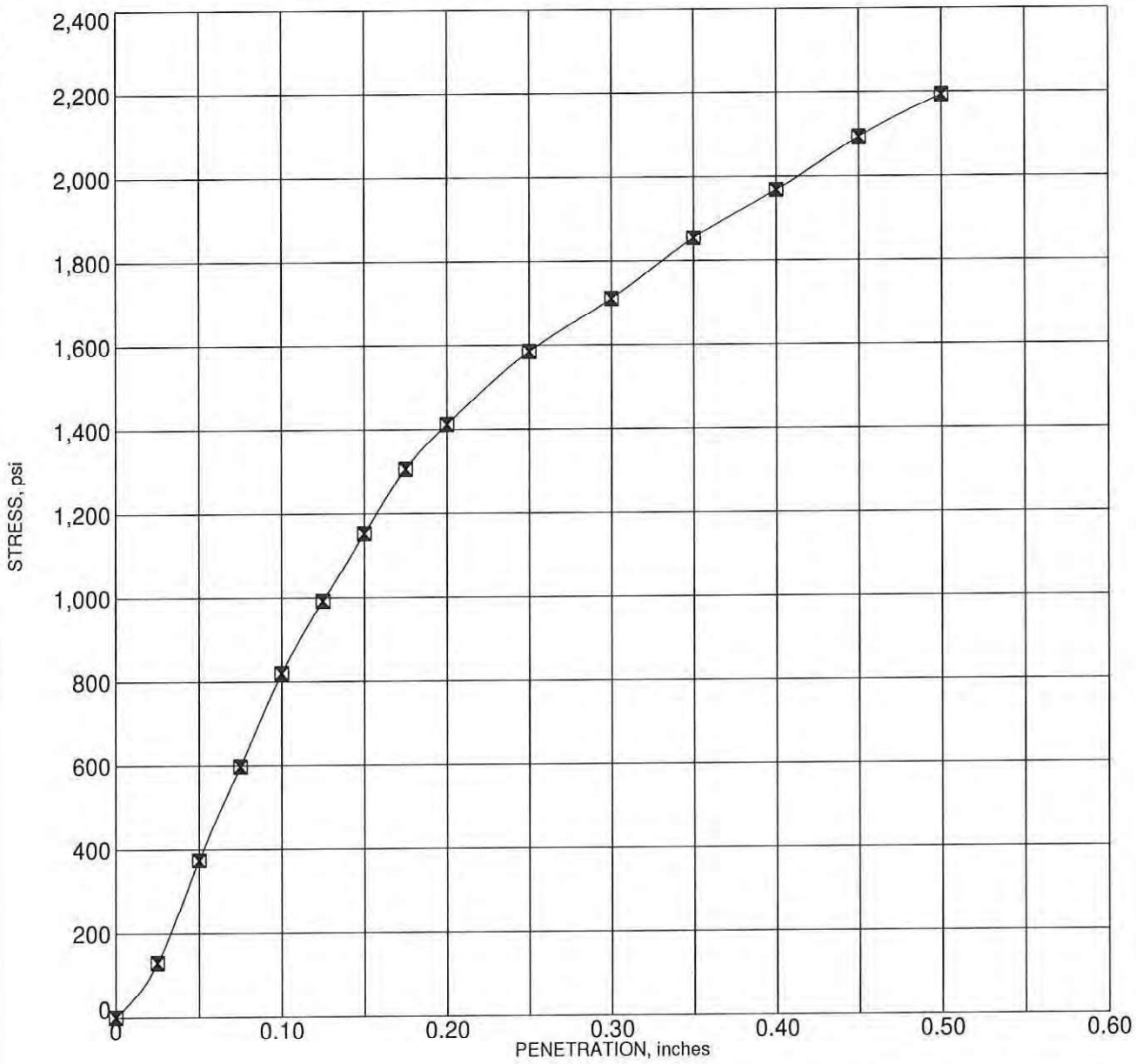
CALIFORNIA BEARING RATIO - ASTM D 1883

NEW KAPALAMA TERMINAL
HONOLULU, OAHU, HAWAII

Plate
B - 17

G_CBR_6826-00.GPJ_GEOLABS.GDT 5/17/13



Corr. CBR @ 0.1"	92.5
Corr. CBR @ 0.2"	97.3
Swell (%)	0.00

Sample: BULK-3 @ 56 blows
Depth: Surface
Description: Tan sand (coralline) with some gravel

Molding Dry Density (pcf)	109.2	Hammer Wt. (lbs)	10
Molding Moisture (%)	11.4	Hammer Drop (inches)	18
Days Soaked	2	No. of Blows	56
Aggregate	3/4 inch minus	No. of Layers	5

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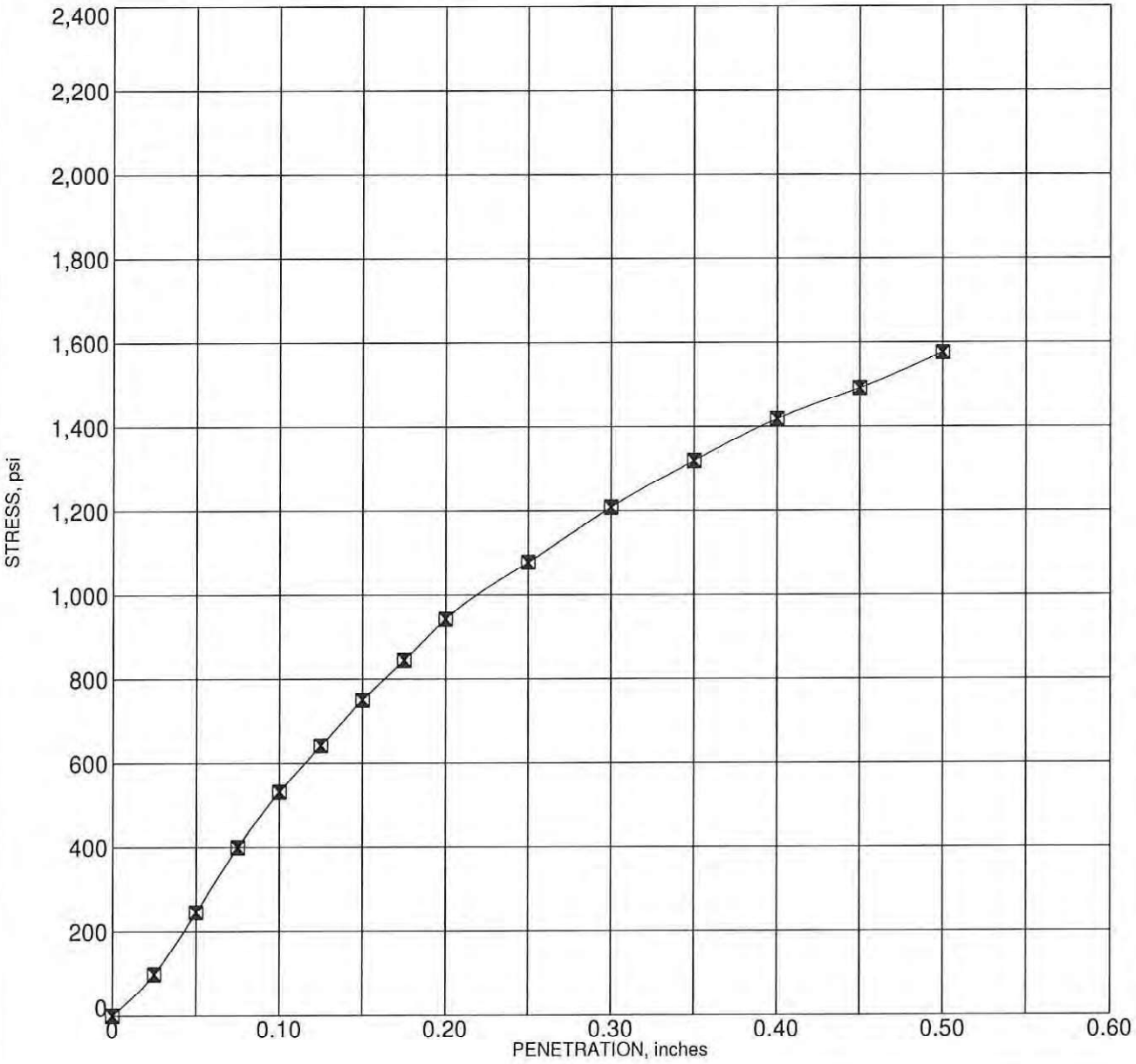
CALIFORNIA BEARING RATIO - ASTM D 1883

NEW KAPALAMA TERMINAL
HONOLULU, OAHU, HAWAII

Plate
B - 18

G CBR 6826-00.GPJ GEOLABS.GDT 5/17/13



Corr. CBR @ 0.1"	56.3
Corr. CBR @ 0.2"	64.2
Swell (%)	0.00

Sample: BULK-3 @ 25 blows
Depth: Surface
Description: Tan sand (coralline) with some gravel

Molding Dry Density (pcf)	106.3	Hammer Wt. (lbs)	10
Molding Moisture (%)	11.2	Hammer Drop (inches)	18
Days Soaked	2	No. of Blows	25
Aggregate	3/4 inch minus	No. of Layers	5

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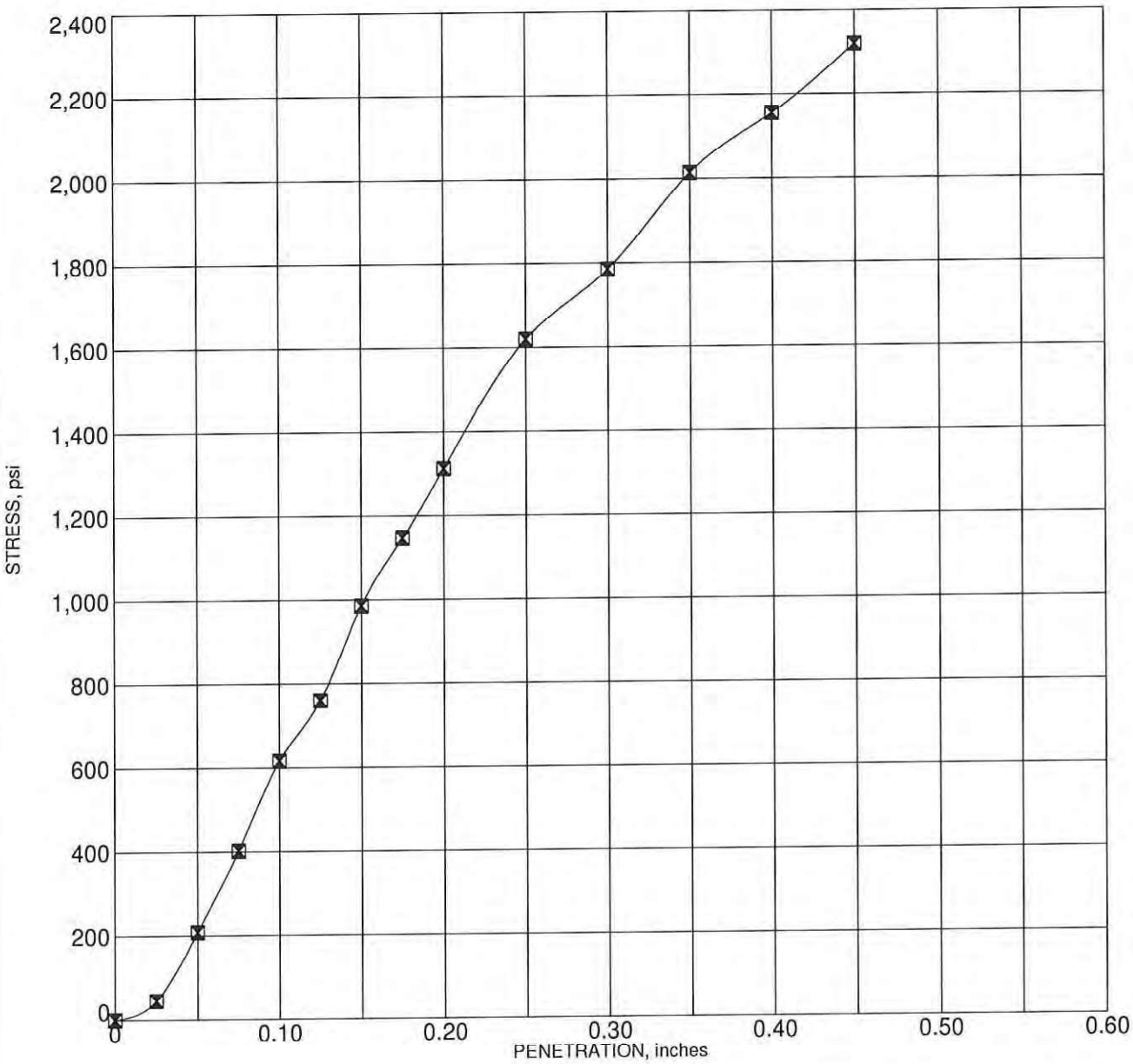
CALIFORNIA BEARING RATIO - ASTM D 1883

NEW KAPALAMA TERMINAL
HONOLULU, OAHU, HAWAII

Plate
B - 19

G_CBR 6826-00.GPJ GEOLABS.GDT 5/17/13



Corr. CBR @ 0.1"	77.7
Corr. CBR @ 0.2"	98.9
Swell (%)	0.00

Sample: BULK-4 @ 56 blows
Depth: Surface
Description: Tan silty sand with gravel (coralline)

Molding Dry Density (pcf)	117.7	Hammer Wt. (lbs)	10
Molding Moisture (%)	13.2	Hammer Drop (inches)	18
Days Soaked	2	No. of Blows	56
Aggregate	3/4 inch minus	No. of Layers	5

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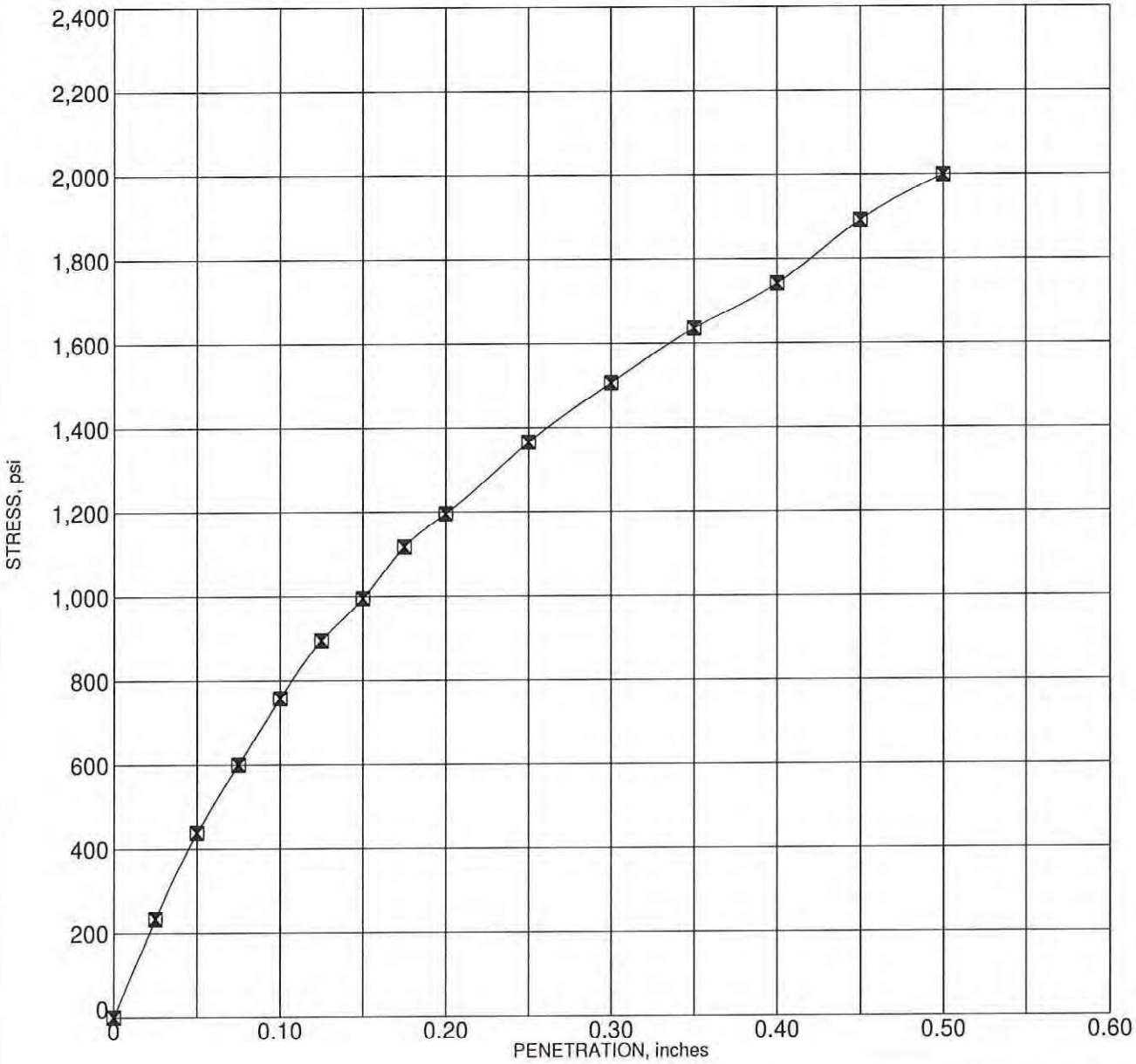
W.O. 6826-00

CALIFORNIA BEARING RATIO - ASTM D 1883

NEW KAPALAMA TERMINAL
HONOLULU, OAHU, HAWAII

Plate
B - 20

G_CBR 6826-00.GPJ GEOLABS.GDT 5/17/13



Corr. CBR @ 0.1"	75.7
Corr. CBR @ 0.2"	79.7
Swell (%)	0.04

Sample: BULK-4 @ 25 blows
Depth: Surface
Description: Tan silty sand with gravel (coralline)

Molding Dry Density (pcf)	113.3	Hammer Wt. (lbs)	10
Molding Moisture (%)	13.1	Hammer Drop (inches)	18
Days Soaked	2	No. of Blows	56
Aggregate	3/4 inch minus	No. of Layers	5

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W.O. 6826-00

CALIFORNIA BEARING RATIO - ASTM D 1883

NEW KAPALAMA TERMINAL
HONOLULU, OAHU, HAWAII

Plate
B - 21

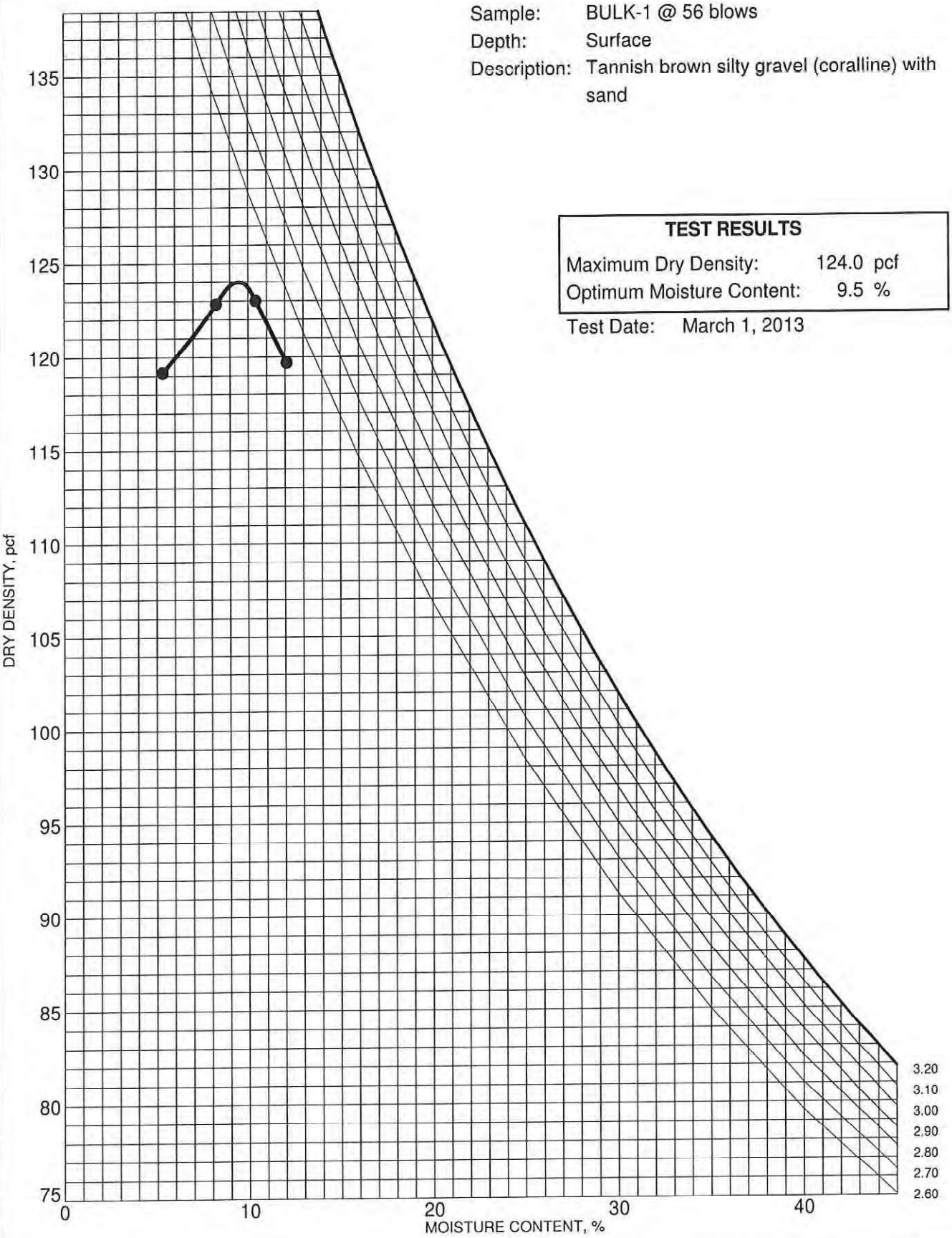
G CBR 6826-00.GPJ GEOLABS.GDT 5/17/13

Sample: BULK-1 @ 56 blows
Depth: Surface
Description: Tannish brown silty gravel (coralline) with sand

TEST RESULTS

Maximum Dry Density:	124.0 pcf
Optimum Moisture Content:	9.5 %

Test Date: March 1, 2013



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GEOTECHNICAL ENGINEERING

W.O. 6826-00

MOISTURE-DENSITY RELATIONSHIP - ASTM D 1557 C

NEW KAPALAMA TERMINAL
HONOLULU, OAHU, HAWAII

Plate
B - 22

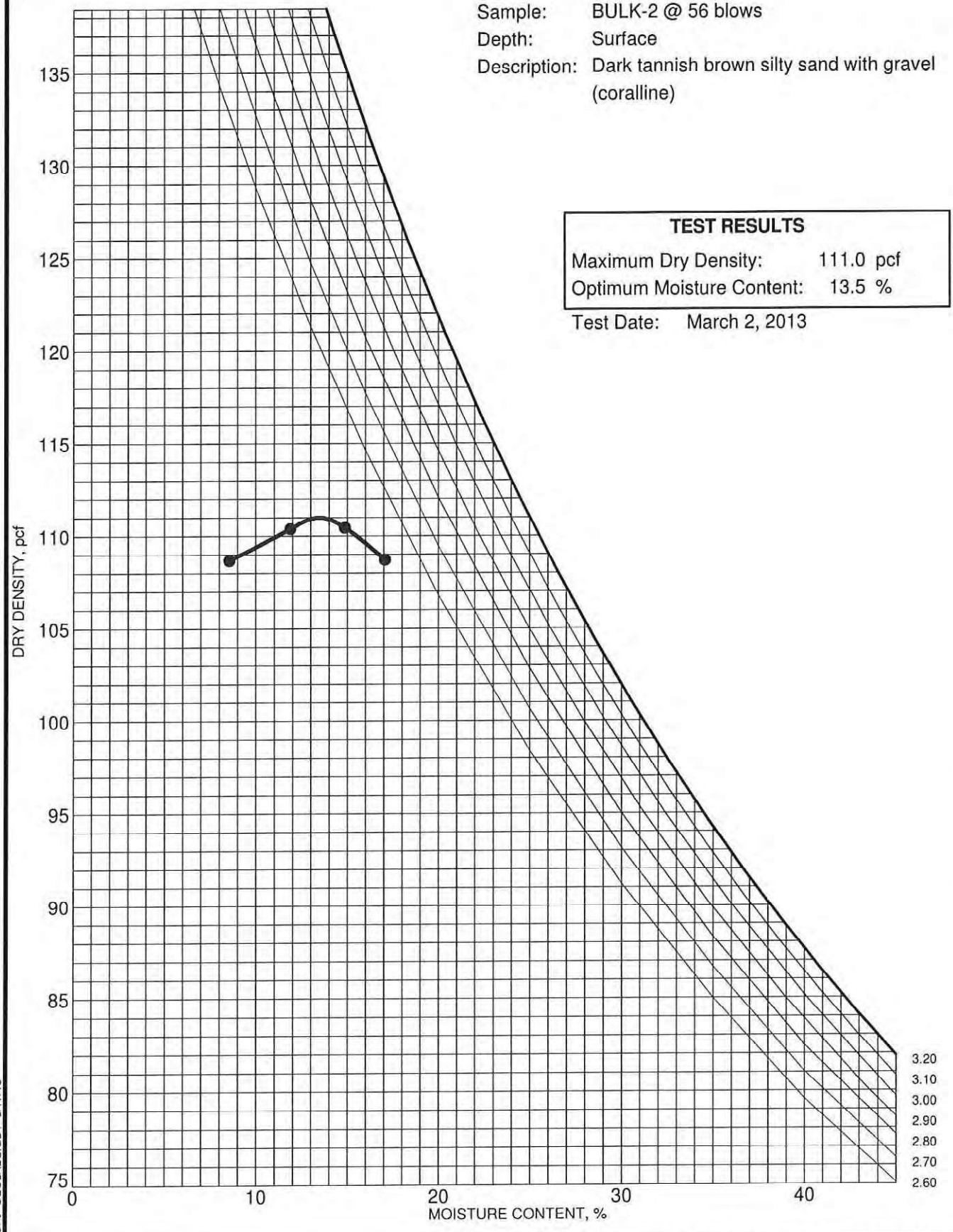
G_COMPACTION 6826-00.GPJ, GEOLABS.GDT 5/17/13

Sample: BULK-2 @ 56 blows
Depth: Surface
Description: Dark tannish brown silty sand with gravel (coralline)

TEST RESULTS

Maximum Dry Density:	111.0 pcf
Optimum Moisture Content:	13.5 %

Test Date: March 2, 2013



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GEOTECHNICAL ENGINEERING

W.O. 6826-00

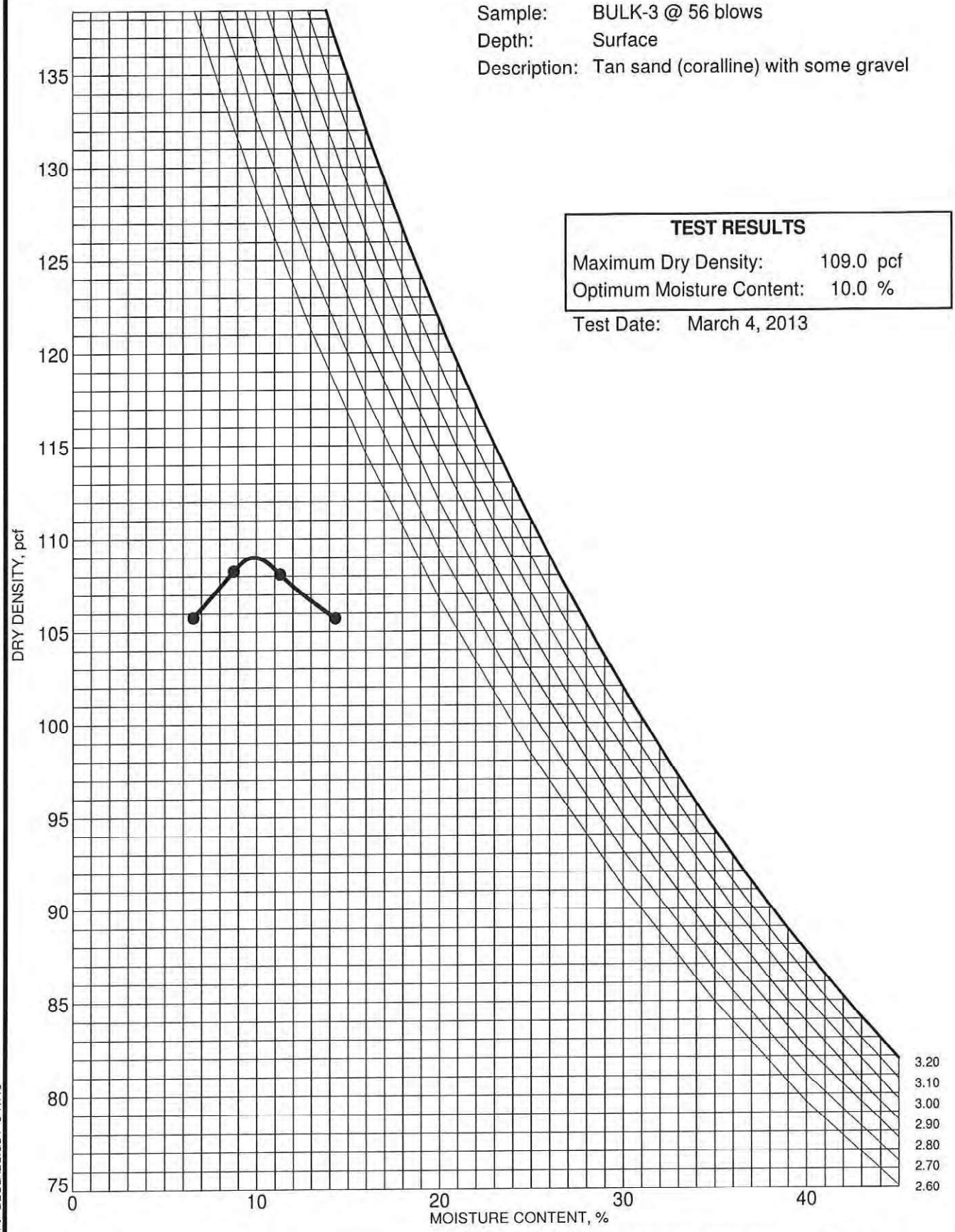
MOISTURE-DENSITY RELATIONSHIP - ASTM D 1557 A

NEW KAPALAMA TERMINAL
HONOLULU, OAHU, HAWAII

Plate
B - 23

G_COMPACTION 6826-00.GPJ GEO_ABS.GDT 5/17/13

Sample: BULK-3 @ 56 blows
Depth: Surface
Description: Tan sand (coralline) with some gravel



TEST RESULTS

Maximum Dry Density:	109.0 pcf
Optimum Moisture Content:	10.0 %

Test Date: March 4, 2013

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GEOTECHNICAL ENGINEERING

W.O. 6826-00

MOISTURE-DENSITY RELATIONSHIP - ASTM D 1557 B

NEW KAPALAMA TERMINAL
HONOLULU, OAHU, HAWAII

Plate
B - 24

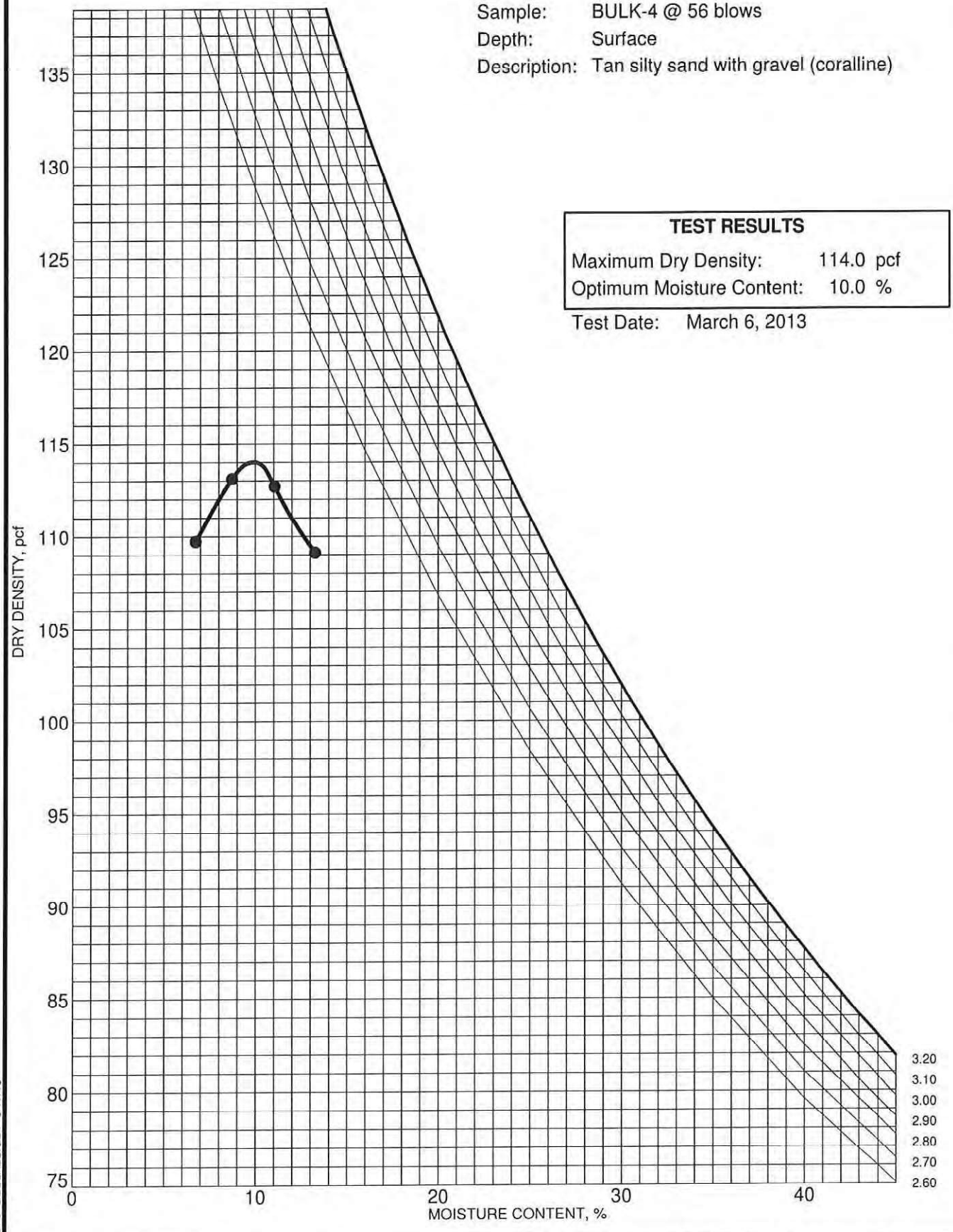
G_COMPACTION 6826-00.GPJ GEOLABS.GDT 5/17/13

Sample: BULK-4 @ 56 blows
Depth: Surface
Description: Tan silty sand with gravel (coralline)

TEST RESULTS

Maximum Dry Density:	114.0 pcf
Optimum Moisture Content:	10.0 %

Test Date: March 6, 2013



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GEOTECHNICAL ENGINEERING

W.O. 6826-00

MOISTURE-DENSITY RELATIONSHIP - ASTM D 1557/698

NEW KAPALAMA TERMINAL
HONOLULU, OAHU, HAWAII

Plate
B - 25

G_COMPACTION 6826-00.GPJ GEO_ABS.GDT 5/17/13

Location	Depth	Length	Diameter	Length/ Diameter Ratio	Density	Load	Compressive Strength
	(feet)	(inches)	(inches)	(pcf)	(pcf)	(lbs.)	(psi)
B-104	20 - 23	6.900	3.180	2.17	109.5	2,040	260
B-104	25 - 28	6.100	3.140	1.94	121.4	2,410	310
B-106	15 - 18	4.910	3.200	1.53	108.8	3,030	380
B-109	24 - 27	6.900	3.260	2.12	119.7	4,520	540
B-109	30 - 33	6.700	3.240	2.07	122.4	2,920	350
B-109	34 - 37	6.800	3.260	2.09	113.6	1,220	150
B-110	16 - 19	5.780	3.250	1.78	117.7	5,590	670
B-110	25 - 28	5.200	3.250	1.60	105.2	3,630	440
B-114	23 - 26	6.700	3.260	2.06	102.9	8,110	970
B-114	50 - 53	6.800	3.250	2.09	134.9	4,520	540
B-115	25 - 28	6.900	3.260	2.12	122.2	2,290	270
B-116	20 - 23	6.700	3.250	2.06	127.0	3,350	400
B-116	24 - 27	6.800	3.250	2.09	131.8	1,820	220
B-116	32 - 35	4.670	3.250	1.44	117.8	6,870	830
B-118	20 - 23	6.500	3.250	2.00	107.1	2,700	330
B-118	23 - 25	6.800	3.240	2.10	118.1	2,410	290

ASTM D 7012 (METHOD C)

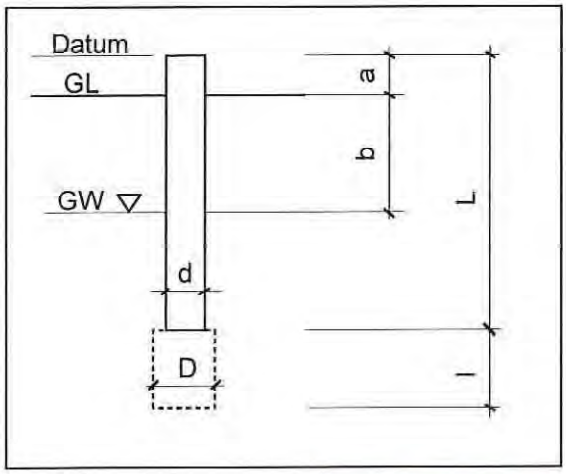
APPENDIX C

APPENDIX C

In-Situ Permeability Tests

Three In-Situ Percolation tests using constant head or falling head methods were performed in selected locations (B-106, B-115 and B-201). The in-situ percolation tests provide the coefficient of permeability within the testing interval. For the constant head testing, the flow rate was recorded by timing and calculating the volume as a relatively constant flow rate was achieved. For the falling head testing, the water level was measured versus time until reached equilibrium steady state. The results of the percolation tests are presented on Plates C-1 through C-3.

Percolation Test Calculation Sheet (Constant Head Method: Well point-filter in uniform soil)



Boring:	B-106	
GW table, b (from ground):	7.5	feet
Datum, a (above ground):	0	feet
Depth of casing:	0	feet
Length, L (from datum):	0	feet
Open hole Length, I:	14	feet
Diameter of open hole (D):	4.5	inches
Diameter of casing (d):	4.5	inches
Constant flow rate, Q:	26.09	gpm
Constant water level (FD):	0.00	feet

Constant flow rate, Q = 26.09 gpm

= 3.49 feet³/min

Piezometer head, H_c= 7.50 feet

Factor of m ($\sqrt{\frac{k_h}{k_v}}$) = 1.00

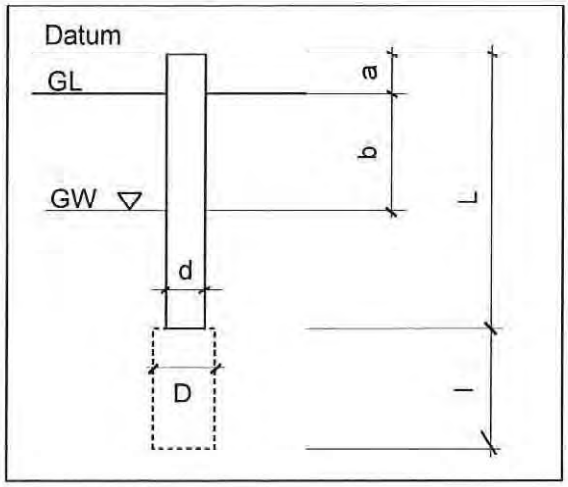
Permeability, k

$$k = \frac{q \times \ln[\frac{mI}{D} + \sqrt{1+(\frac{mI}{D})^2}]}{2 \times \pi \times I \times H_c}$$

= 0.023 feet/min

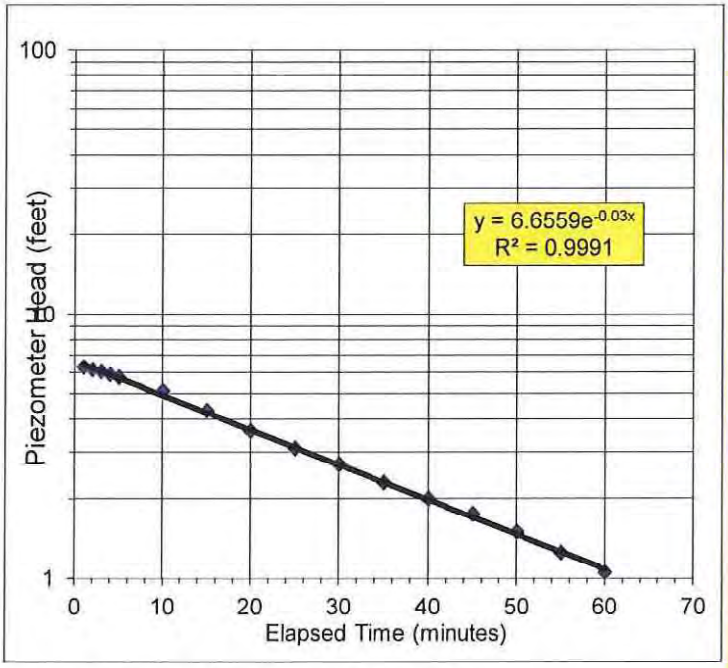
0.012 cm/s

Percolation Test Calculation Sheet (Falling Head Method: Well point-filter in uniform soil)



Boring:	B-115	
GW table, b (from ground):	4	feet
Datum, a (above ground):	2.5	feet
Depth of casing:	16	feet
Length, L (from datum):	18.5	feet
Open hole Length, l:	5	feet
Diameter of open hole (D):	4.5	inches
Diameter of casing (d):	4	inches

Factor of m ($\sqrt{\frac{k_h}{k_v}}$) = 1.00



Time (min)	Depth of water (from datum) (feet)	Piezometer Head, H_c (feet)
0.0	0.0	6.5
1.0	0.2	6.3
2.0	0.4	6.2
3.0	0.5	6.1
4.0	0.6	5.9
5.0	0.8	5.8
10.0	1.4	5.1
15.0	2.2	4.3
20.0	2.9	3.6
25.0	3.4	3.1
30.0	3.8	2.7
35.0	4.2	2.3
40.0	4.5	2.0
45.0	4.8	1.8
50.0	5.0	1.5
55.0	5.3	1.3
60.0	5.5	1.1

Constant factor of the trendline $y = \lambda e^{cx}$

λ= 6.6559

c= -0.0300

$$\frac{\ln(H_{1c}/H_{2c})}{(t_2-t_1)} = 0.03$$

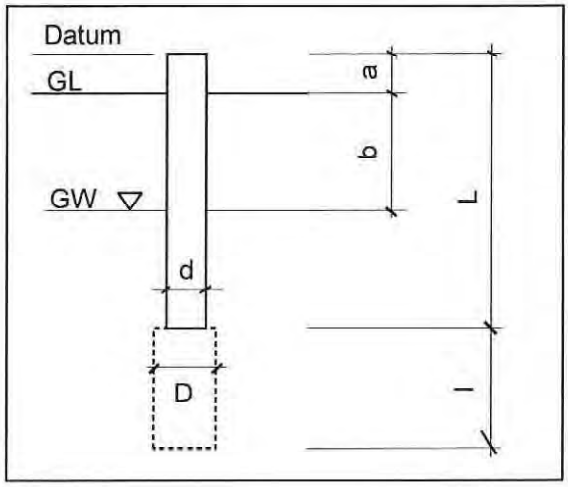
Permeability, k, When 2ml/D <= 4,

$$k = \frac{d^2 \times \ln[\frac{ml}{D} + \sqrt{1+(\frac{ml}{D})^2}]}{8 \times l \times (t_2 - t_1)} \times \ln(\frac{H_{1c}}{H_{2c}}) = \begin{matrix} 2.7E\text{-}04 \\ 1.4E\text{-}04 \end{matrix}$$

Permeability, k, When 2ml/D > 4,

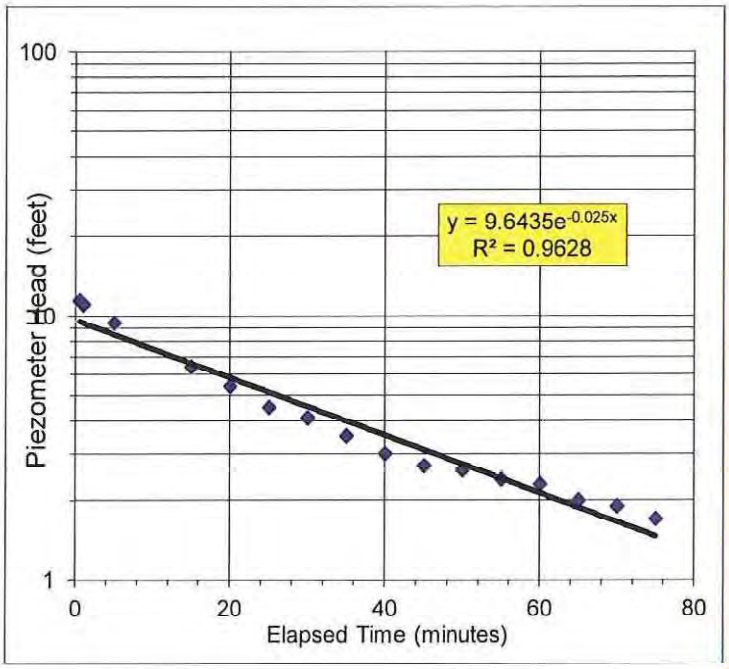
$$k = \frac{d^2 \times \ln(\frac{2ml}{D})}{8 \times l \times (t_2 - t_1)} \times \ln(\frac{H_{1c}}{H_{2c}}) = \begin{matrix} 2.7E\text{-}04 \\ 1.4E\text{-}04 \end{matrix} \text{ cm/s}$$

Percolation Test Calculation Sheet (Falling Head Method: Well point-filter in uniform soil)



Boring:	B-201	
GW table, b (from ground):	8.6	feet
Datum, a (above ground):	3.3	feet
Depth of casing:	16	feet
Length, L (from datum):	19.3	feet
Open hole Length, l:	1	feet
Diameter of open hole (D):	4.5	inches
Diameter of casing (d):	4	inches

Factor of m ($\sqrt{\frac{k_h}{k_v}}$) = 1.00



Time (min)	Depth of water (from datum) (feet)	Piezometer Head, H_c (feet)
0.0	0.0	11.9
0.5	0.5	11.4
1.0	0.9	11.0
5.0	2.5	9.4
15.0	5.5	6.4
20.0	6.5	5.4
25.0	7.4	4.5
30.0	7.8	4.1
35.0	8.4	3.5
40.0	8.9	3.0
45.0	9.2	2.7
50.0	9.3	2.6
55.0	9.5	2.4
60.0	9.6	2.3
65.0	9.9	2.0
70.0	10.0	1.9
75.0	10.2	1.7
80.0	10.3	1.6
85.0	10.3	1.6
90.0	10.4	1.5
95.0	10.4	1.5
100.0	10.5	1.4
105.0	10.5	1.4

Constant factor of the trendline $y = \lambda e^{cx}$

λ= 9.6435

c= -0.0250

$\frac{\ln(H_{1c}/H_{2c})}{(t_2-t_1)}$ = 0.03

Permeability, k, When 2ml/D <= 4,

$$k = \frac{d^2 \times \ln[\frac{ml}{D} + \sqrt{1+(\frac{ml}{D})^2}]}{8 \times l \times (t_2 - t_1)} \times \ln(\frac{H_{1c}}{H_{2c}}) =$$ 5.9E-04 / 3.0E-04

Permeability, k, When 2ml/D > 4,

$$k = \frac{d^2 \times \ln(\frac{2ml}{D})}{8 \times l \times (t_2 - t_1)} \times \ln(\frac{H_{1c}}{H_{2c}}) =$$ 5.8E-04 / 3.0E-04 cm/s

STORM WATER POLLUTION PREVENTION PLAN (SWPPP)

Project Title: Sand Island Access Road, Truck Weigh Station

Project No.: NH-064-1(010)

DOH NGPC File No. XXXXX
Prepared by: Department of Transportation, Highways Division, Design Branch
Date: XXXX XXXX

Storm Water Pollution Prevention Plan (SWPPP)

Notice of General Permit Coverage (NGPC) File No. XXX
Preparation Date XXXXX

Table of Contents

7.0 Preface

The following documents are referenced throughout the SWPPP:

1) *Hawaii Administrative Rules, Chapter 11-55*

2) *HDOT Construction Best Management Practices Field Manual*

3) *Hawaii Standard Specifications for Road and Bridge Construction dated 2005 and applicable special provisions.*

7.0.1 Notes for Contractor/HDOT Construction Personnel

- *Items in red need to be updated by the Contractor once the project is awarded prior to construction. The Contractor shall be responsible for updating the SWPPP during construction.*
- *Items in blue should be done by the designer. Remove this note and blue font when preparing the SWPPP.*

Contractor Staging/Storage Areas

- *HDOT has permitted all outfalls and disturbed potential Contractor Staging/Storage Areas within the project limits as identified in the project's Notice of Intent or NPDES Permit Application.*

- *The Contractor may use any disturbed area acceptable to the Engineer for Staging/Storage.*

- *Staging/Storage Areas outside disturbed areas or outside the project limits may require a new NPDES submittal. See permitting requirements in Section 209 of the Specifications and applicable Special Provisions.*

Outfalls 1, 2, 3, 4, 5, 6, 7, and 8 discharge to nutrient or sediment impaired waters. The following applies to construction areas discharging to these outfalls:

1) *Construction BMPs shall be inspected weekly, and within 24 hours of any rainfall event of 0.25 inches or greater in a 24 hour period and daily during periods of prolonged rainfall. For more details see section 7.2.12 of this SWPPP.*

2) *Immediately initiate and complete stabilization within 7 calendar days on areas of the site in which earth-disturbing activities have temporarily or permanently ceased. For more details see section 7.2.10.2 of the SWPPP.*

Outfalls X, X, and X discharge to waters not impaired for nutrients or sediments. The following applies to construction areas discharging to these outfalls:

1) *Construction BMPs shall be inspected weekly. For more details see section 7.2.12 of this SWPPP.*

2) *Immediately initiate and complete stabilization within 14 calendar days on areas of the site in which earth-disturbing activities have temporarily or permanently ceased. For more details see section 7.2.10.2 of the SWPPP.*

7.2.1 Storm Water Team

The permittee shall assemble and oversee a "storm water team," which is responsible for the development of the SWPPP, any later modifications to it, and for compliance with the requirements in the Notice of General Permit Coverage (NGPC) or Individual NPDES permit. The SWPPP must identify the personnel (by name or position) that are part of the storm water team, as well as their individual responsibilities. Each member of the storm water team must have ready access to an electronic or paper copy of applicable portions of this permit, the most updated copy of the SWPPP, and other relevant documents or information that must be kept with the SWPPP.

The Contractor shall include their personnel information once the project is awarded.

1) Name: HDOT Engineer(Or Consultant)

Company: Hawaii Department of Transportation

Position:HDOT Engineer

Contact Number: (808)692-XXXX

Responsibilities: Develop SWPPP during the design process

2) Name:

Company: Hawaii Department of Transportation

Position: HDOT Resident Engineer

Contact Number: (808)xxx-xxxx

Responsibilities:

3) Name:

Company: Hawaii Department of Transportation

Position: HDOT Construction Project Engineer

Contact Number: (808)xxx-xxxx

Responsibilities:

4) Name:

Company: Hawaii Department of Transportation

Position: HDOT Construction Project Engineer

Contact Number: (808)xxx-xxxx

Responsibilities:

5) Name:

Company: Contractor

Position: Contractor Designated Representative

Contact Number: (808)xxx-xxxx

Responsibilities:

6) Name:

Company: Contractor

Position: Contractor

Contact Number: (808)xxx-xxxx

Responsibilities:

7) Name:

Company: Contractor

Position: Contractor

Contact Number: (808)xxx-xxxx

Responsibilities:

8) Name:

Company: Contractor

Position: Contractor

Contact Number: (808)xxx-xxxx

Responsibilities:

7.2.2 Nature of Construction Activities Form C.6

What is the function of the construction activity (Please check all applicable activity(ies))?
☐ Residential ☐ Commercial ☐ Industrial ☒ Road Construction ☐ Linear Utility
☐ Other (please specify):_____

For construction site estimates, see NOI Form C, Section C.3.

What is being constructed? The roadway, sidewalks, gutters, and Bridge End Posts are being reconstructed. The median is being landscaped.

Describe the scope of work and major construction activities covered in this NOI, including baseyards and staging areas. Include only project areas where the locations of impervious structures are known; project areas where the final grades are known; and work areas that will be performed by one (1) general contractor. A separate NOI will be required for all other project areas. (Note: Per Section 209 of the specifications and applicable special provisions, the maximum surface area of earth material which may be exposed at any time is 300,000 square feet.)
Construction activities include reconstructing the travelway, repairing sidewalks and gutters, median landscaping, and upgrading bridge endposts. The locations of the staging and storage

areas may be changed by the Contractor depending on his construction means and methods. The Contractor shall submit to the Engineer the locations of his staging and storage areas once the project is awarded for review and acceptance.

7.2.3 Emergency Related Projects

☒ *Not Applicable*

☐ *Applicable (If this box is checked, provide additional information as described below)*

If conducting earth-disturbing activities in response to a public emergency (see section 1.3.), the permittee shall document the cause of the public emergency (e.g., natural disaster, extreme flooding conditions, etc.), information substantiating its occurrence (e.g., state disaster declaration or similar state declaration), and a description of the construction necessary to reestablish effected public services. The declaration of emergency or imminent threat to public health is required to be from the state governor or the director. See Attachment H for additional information.

7.2.4 Identification of Prime Contractor and Other Site Contractors

The SWPPP must include a list of both the prime contractor and all other contractors (e.g., sub-contractors) who will be engaged in construction activities at the site, and the areas of the site over which each contractor has control. List prime contractor and sub-contractors below and attach map showing areas of control in ***Attachment A. Complete and attach a Subcontractor Certification/Agreement in Attachment D.***

(General Contractor Company Name) The general contractor information will be submitted at least 30 calendar days before the start of construction activities.	
(General Contractor Contact Person Name)	
(General Contractor Mailing Address)	
(General Contractor Mailing City)	*(General Contractor Mailing State and Zip*
(General Contractor Telephone Number)	
(General Contractor Email Address)	

(Sub-Contractor #1 Company Name, as needed)	
(Sub-Contractor Contact Person Name)	
(Sub-Contractor Mailing Address)	
(Sub-Contractor Mailing City)	*(Sub-Contractor Mailing State and Zip Code)*
(Sub-Contractor Telephone Number)	
(Sub-Contractor Email Address)	

(Sub-Contractor #2 Company Name, as needed)	
(Sub-Contractor Contact Person Name)	
(Sub-Contractor Mailing Address)	
(Sub-Contractor Mailing City)	*(Sub-Contractor Mailing State and Zip Code)*
(Sub-Contractor Telephone Number)	
(Sub-Contractor Email Address)	

(Sub-Contractor #3 Company Name, as needed)	
(Sub-Contractor Contact Person Name)	
(Sub-Contractor Mailing Address)	
(Sub-Contractor Mailing City)	*(Sub-Contractor Mailing State and Zip Code)*
(Sub-Contractor Telephone Number)	
(Sub-Contractor Email Address)	

❑ *Attach maps showing areas of Contractor/Subcontractor Control in Attachment A.*

❑ *Complete and attach a Subcontractor Certification/Agreement in Attachment D.*

7.2.5 Sequence and Estimated Dates of Construction Activities

In Attachment C, attach the proposed construction schedule which shall include, at a minimum: The Contractor shall submit to the Engineer an update of the dates once the project is awarded for inclusion in the SWPPP.

☒ *Installation of storm water control measures, and when they will be made operational, including an explanation of how the sequence and schedule for installation of storm water control measures complies with section 5.1.1.3.1. and of any departures from manufacturer specifications pursuant to section 5.1.1.3.2., including removal procedures of the storm water control measures after construction has ceased.*

☒ *Commencement and duration of earth-disturbing activities, including clearing and grubbing, mass grading, site preparation (i.e., excavating, cutting and filling), final grading, and creation of soil and vegetation stockpiles requiring stabilization.*

☒ *Cessation, temporarily or permanently, of construction activities on the site, or in designated portions of the site.*

☒ *Final or temporary stabilization of areas of exposed soil. The dates for stabilization must reflect the applicable deadlines to which the permittee is subject to in section 5.2.1.*

☒ *Removal of temporary storm water conveyances/channels and other storm water control measures, removal of construction equipment and vehicles, and cessation of any pollutant-generating activities.*

7.2.6.1 Property Boundary Maps

Boundaries of the property and of the locations where construction activities will occur. Attach, title, and identify all maps (pdf - minimum 300 dpi) listed below, in Attachment A.

a. *Legal boundaries of the project. See NOI, Form C, Section C.8*
b. *Locations where earth-disturbing activities will occur, noting any sequencing of construction activities. See NOI, Form C, Section C.8*
c. *Pre-Construction Topography including approximate slopes and drainage patterns for the entire Facility/Project site to the receiving storm water drainage system (if applicable) or to the receiving State water(s) (with flow arrows). Note areas of steep slopes (15% or greater in grade). See NOI, Form C, Section C.8*
d. *During-Construction Topography (after major grading activities) including approximate slopes and drainage patterns for the entire Facility/Project site to the receiving storm water drainage system (if applicable) or to the receiving State water(s) (with flow arrows) Note areas of steep slopes (15% or greater in grade). See NOI, Form C, Section C.8*
e. *Post-Construction Topography including approximate slopes and drainage patterns for the entire Facility/Project site to the receiving storm water drainage system (if applicable) or to*

the receiving State water(s) (with flow arrows). Note areas of steep slopes (15% or greater in grade). See NOI, Form C, Section C.8

f. *Locations where sediment, soil, or other construction materials will be stockpiled 7.2.6.1c. See SWPPP Attachment A. Stockpile locations may be changed by the Contractor depending on his construction means and methods. The Contractor shall submit to the Engineer for his review and acceptance the locations of stockpiles once the project is awarded and will be included in the SWPPP. The Contractor shall submit to the Engineer for his review and acceptance any updates/changes to stockpile areas during construction for inclusion in the SWPPP.*

g. *Locations of any contaminated soil or contaminated soil stockpiles 7.2.6.1d. No areas of contaminated soil are expected to be encountered in the area. If any areas are encountered, the locations will be included in the SWPPP.*

h. *Locations of any crossings of state waters 7.2.6.1e. Nuuanu Stream is shown in NOI Form C, Attachment A-1.*

i. *Designated points on the site where vehicles will exit onto paved roads 7.2.6.1f. See SWPPP Attachment A. Stabilized entrance locations may be changed by the Contractor depending on his construction means and methods. The Contractor shall submit to the Engineer the locations of stabilized entrances once the project is awarded for his review and acceptance and will be included in the SWPPP. The Contractor shall submit to the Engineer for his review and acceptance any updates/changes to stabilized entrances during construction for inclusion in the SWPPP.*

j. *Location(s) of impervious structures (including buildings, roads, parking lots, etc.) after construction is completed 7.2.6.1g. See NOI, Form C, Section C.8*

k. *Locations of construction support activity areas covered by this permit 7.2.6.1h. See SWPPP Attachment A. The locations of the staging and storage areas may be changed by the Contractor depending on his construction means and methods. The Contractor shall submit to the Engineer the locations of his staging and storage areas for his review and acceptance once the project is awarded. The Contractor shall submit to the Engineer any updates/changes to staging and storage areas during construction for his review and acceptance and inclusion in the SWPPP.*

7.2.6.2 to 7.2.6.8 State Waters and BMP Maps

Attach, title, and identify all maps (pdf - minimum 300 dpi) listed below, in Attachment A.

Please reference which maps account for the features listed below.

a. *Locations of all state waters, including wetlands, that exist within or in the immediate vicinity of the site and indicate which waterbodies are listed as impaired 7.2.6.2. See NOI, Form C, Section C.8*

b. *The boundary lines of any natural buffers provided consistent with section 5.1.2.1.1, 7.2.6.3. Natural buffers are not feasible on Vineyard Boulevard in the vicinity of Nuuanu Stream. See Section 7.2.9*

c. *Topography of the site, existing vegetative cover (e.g., forest, pasture, pavement, structures), and drainage pattern(s) of storm water onto, over, and from the site property before and after major grading activities 7.2.6.4. See NOI, Form C, Section C.8*

d. *Storm water discharge locations, including: a) Locations of any storm drain inlets on the site and in the immediate vicinity of the site to receive storm water runoff from the project; See NOI, Form C, Section C.8*
and b) Locations where storm water will be discharged to state waters (including wetlands)7.2.6.5. See NOI, Form C, Section C.8

e. *Locations of all potential pollutant-generating activities identified in section 7.2.7, 7.2.6.6. See SWPPP Attachment A (Construction Activity BMP Map)*

f. *Locations of storm water control measures 7.2.6.7. See SWPPP Attachment A. The Contractor may change the locations of storm water control measures by construction activity and construction sequence depending on his construction means and methods. The Contractor shall submit changes to the Engineer for his review and acceptance once the project is awarded. The Contractor shall submit a separate map for each phase of construction which changes the drainage pattern. The Contractor shall submit to the Engineer for his review and acceptance any updates/changes to storm water control measures during construction for inclusion in the SWPPP. (Include maps by Construction Activity and Construction Sequence)*

g. *Locations where chemicals will be used and stored 7.2.6.8. For locations where chemicals will be used, see SWPPP Attachment A Construction Activity BMP Map. The table below shows possible chemicals which may be used on site and which construction activity they are associated with. The locations where chemicals may be used and stored may be changed by the Contractor depending on his construction means and methods. The Contractor shall submit to the Engineer for his review and acceptance any updates/changes to locations where chemicals will be used and stored during construction for inclusion in the SWPPP.*

Chemical	***Location***	***Major Construction Activity***
Hydraulic oils/ fluids	• *Vehicle Refueling area* • *Leaks from broken hoses on equipment* • *Vehicles shall be maintained off site. If a maintenance area is necessary on-site, the Contractor shall submit to the Engineer the locations and BMPs for his review and acceptance for inclusion in the SWPPP.*	*Roadway Demolition and Construction, Landscaping*
Antifreeze/Coolants	• *Vehicle Refueling area* • *Leaks from broken hoses on equipment* • *Vehicles shall be maintained off site. If a maintenance area is necessary on-site, the Contractor shall submit to the Engineer the locations and BMPs for his review and acceptance for inclusion in the SWPPP.*	*Roadway Demolition and Construction, Landscaping*
Glue, Adhesives	• *Roadway construction*	*Roadway Demolition and Construction*
Concrete Curing Compounds/ Form Release Oils	• *Roadway construction involving concrete*	*Roadway Demolition and Construction*
Pesticides	• *Landscaping areas*	*Landscaping*
Herbicides	• *Landscaping areas*	*Landscaping*
Insecticides	• *Landscaping areas*	*Landscaping*
Fertilizers	• *Landscaping areas*	*Landscaping*

7.2.7 Construction Site Pollutants

For each pollutant-generating activity, an inventory of pollutants or pollutant constituents (e.g., sediment, fertilizers and/or pesticides, paints, solvents, fuels) associated with that activity, which could be exposed to rainfall and could be discharged from the construction site. The Contractor shall take into account where potential spills and leaks could occur that contribute pollutants to storm water discharges. The Contractor shall also document for the Engineer's review and acceptance any departures from the manufacturer's specifications for applying fertilizers containing nitrogen and phosphorus, as required in Section 5.3.5.1 under Attachment H.

All solid waste shall be disposed of at DOH, Solid and Hazardous Waste Branch (SHWB), Solid Waste Section (SWS) permitted facilities. If not, contact the SHWB-SWS at (808) 586-4226 as additional permits may be required.

Source/Material	***Description of How Potential Pollutant Source will be Prevented from Discharging with Storm Water Runoff***	***Major Construction Activity***
Construction debris, green waste, general litter	• *See Section 7.2.10 for Site Specific BMPs*	*Roadway Demolition and Construction, Landscaping*
Materials associated with the operation and maintenance of equipment, such as oil, fuel, and hydraulic fluid leakage	• *See Section 7.2.10 for Site Specific BMPs*	*Roadway Demolition and Construction, Landscaping*
Soil erosion from the disturbed areas	• *See Section 7.2.10 for Site Specific BMPs*	*Roadway Demolition and Construction, Landscaping*
Sediment from soil stockpiles	• *See Section 7.2.10 for Site Specific BMPs*	*Roadway Demolition and Construction, Landscaping*

Emulsified asphalt or prime/tack coat	• *See Section 7.2.10 for Site Specific BMPs*	*Roadway Demolition and Construction, Landscaping*
Materials associated with painting, such as paint and paint wash solvent	• *See Section 7.2.10 for Site Specific BMPs*	*Roadway Demolition and Construction, Landscaping*
Industrial chemicals, fertilizers, and/or pesticides	• *See Section 7.2.10 for Site Specific BMPs*	*Roadway Demolition and Construction, Landscaping*
Hazardous waste (Batteries, Solvents, Treated Lumber, etc.)	• *See Section 7.2.10 for Site Specific BMPs*	*Roadway Demolition and Construction, Landscaping*
Metals and Building Materials	• *See Section 7.2.10 for Site Specific BMPs*	*Roadway Demolition and Construction, Landscaping*
Existing Pollution Sources	• *See Section 7.2.10 for Site Specific BMPs*	*Roadway Demolition and Construction, Landscaping*
Other (Contaminated Soil)	• *See Section 7.2.10 for Site Specific BMPs*	*Roadway Demolition and Construction, Landscaping*

7.2.8 –Sources of Non-Storm Water

The SWPPP must also identify all sources of non-storm water and information, including, but not limited to, the design, installation, and maintenance of the control measures to prevent its discharge.

All solid waste shall be disposed of at DOH, Solid and Hazardous Waste Branch (SHWB), Solid Waste Section (SWS) permitted facilities. If not, the Contractor shall contact the SHWB-SWS at (808) 586-4226 and notify the Engineer for his agreement the disposal locations. Additional permits may be required.

Source	***Description of How Potential Non-Storm Water Pollution Source will not be Discharged to State Waters***	***Major Construction Activity***
Dust Control Water	• *See Section 7.2.10 for Site Specific BMPs*	*Roadway Demolition and Construction, Landscaping*
Concrete Truck Wash Water	• *See Section 7.2.10 for Site Specific BMPs*	*Roadway Demolition and Construction, Landscaping*
Sediment Track Out	• *See Section 7.2.10 for Site Specific BMPs*	*Roadway Demolition and Construction, Landscaping*
Irrigation Water	• *See Section 7.2.10 for Site Specific BMPs*	*Roadway Demolition and Construction, Landscaping*
Hydrotesting Effluent	• *See Section 7.2.10 for Site Specific BMPs*	*Roadway Demolition and Construction, Landscaping*

Source	***Description of How Potential Non-Storm Water Pollution Source will not be Discharged to State Waters***	***Major Construction Activity***
Dewatering Effluent	• *See Section 7.2.10 for Site Specific BMPs*	*Roadway Demolition and Construction, Landscaping*
Saw-cutting Slurry	• *See Section 7.2.10 for Site Specific BMPs*	*Roadway Demolition and Construction, Landscaping*
Concrete Curing Water	• *See Section 7.2.10 for Site Specific BMPs*	*Roadway Demolition and Construction, Landscaping*
Plaster Waste Water	• *See Section 7.2.10 for Site Specific BMPs*	*Roadway Demolition and Construction, Landscaping*
Water-Jet Wash Water	• *See Section 7.2.10 for Site Specific BMPs*	*Roadway Demolition and Construction, Landscaping*
Sanitary/Septic Waste	• *See Section 7.2.10 for Site Specific BMPs*	*Roadway Demolition and Construction, Landscaping*

7.2.9 –Buffer Documentation

If required to comply with section 5.1.2.1. because a state water is located within 50 feet of the project's earth disturbances, describe which compliance alternative has been selected for the site, and comply with any additional requirements to provide documentation in Section 5.1.2.1.

Delineate, and clearly mark off, with flags, tape, or other similar marking device all natural buffer areas. Use velocity dissipation devices if necessary to prevent erosion caused by storm water within the buffer. Ensure all discharges are first treated by erosion and sediment controls. Note: Buffer compliance requirements must be maintained until construction on the area discharging to the buffer is complete, and the area is restored and stabilized (as applicable).

☐ *Option 1*

Provide and maintain a 50-foot undisturbed natural buffer and sediment control.
Note: If the earth disturbances are located 50 feet or further from a state water and have installed sediment control, then the permittee has complied with this alternative. If the buffer is located outside State Highways Right of Way, include written permission from the owner of the land in SWPPP Attachment H.

*Width of Buffer*_____*feet*

☐ *Option 2*

Provide and maintain an undisturbed natural buffer that is less than 50 feet and double sediment control (e.g., double perimeter control) spaced a minimum of 5 feet apart.

*Width of Buffer*_____*feet*

☐ *Option 3*

If it is infeasible to provide and maintain an undisturbed natural buffer of any size, the permittee shall provide and maintain double sediment control (e.g., perimeter control) spaced a minimum of 5 feet apart and complete stabilization within 7 calendar days of the temporary or permanent cessation of earth-disturbing activities. Provide documentation why it is infeasible to provide buffer of any size in Attachment H.

☐ *Exception 1*

There is no discharge of storm water to state waters through the area between the site and any state waters located within 50 feet of the site, the permittee is not required to comply with the requirements in this section. This includes situations where control measures have been implemented, such as a berm or other barrier, that will prevent such discharges.

☒ *Exception 2*

For "linear construction projects" where "linear construction projects" means the construction of roads, bridges, conduits, substructures, pipelines, sewer lines, towers, poles, cables, wires, connectors, switching, regulating and transforming equipment and associated ancillary facilities in a long, narrow area, the permittee is not required to comply with the requirements in this section if site constraints (e.g., limited right-of-way) prevent the permittee from meeting any of the compliance alternatives in section 5.1.2.1.1., provided that, to the extent practicable, the permittee limit disturbances within 50 feet of state waters and/or the permittee provide erosion and sediment controls to treat storm water discharges from earth disturbances within 50 feet of the state water. The permittee shall also document below the rationale as to why it is infeasible to comply with the requirements in section 5.1.2.1.1., and describe any buffer width retained and/or erosion and sediment controls installed below.

Vineyard Boulevard crosses Nuuanu Stream at Nuuanu Bridge. Grass strips in the vicinity of the bridge do not intercept runoff from the disturbed area since there is a raised curb and sidewalk adjacent to the stream. The sidewalk in the vicinity of the stream is graded towards the concrete gutter in the roadway. Disturbed areas discharging to the stream are conveyed by HDOT's MS4 system directly into Nuuanu Stream. Drainage Inlets will be protected using Inlet Protection BMPs.

☐ *Exception 3*

The following disturbances within 50 feet of a state water are exempt from the requirements in this Part: construction approved under a CWA 404 permit; or construction of a water-dependent structure or water access area (e.g., pier, boat ramp, trail).

The permittee shall document in the SWPPP if any of the above disturbances will occur within the buffer area on the site below.
N/A

7.2.10 Storm Water Control Measures

Please refer to Hawaii Department of Transportation Construction Best Management Practices Field Manual dated January 2008 and Supplemental Sheets. For any conflicting requirements between the Manual and applicable bid documents, the applicable bid documents will govern. Should a requirement not be clearly described within the applicable bid documents, the Contractor shall notify the Engineer immediately for interpretation. For the purposes of

clarification under "applicable bid documents" include the construction plans, standard specifications, Special Provisions, Permits, and the SWPPP.

BMP Details

Complete the table below. Note: Bold text in the table are requirements of HAR 11-55. The Designer will provide an installation detail of all proposed BMPs (From HDOT Construction BMP Field Manual) identified in Section 7.2.6.7, including the proposed BMPs that will be used to mitigate the potential pollutants identified in Sections 7.2.7 and 7.2.8. Attach the details and design calculations, if applicable, in SWPPP Attachment A(7.2.10.1a). The Contractor shall include the specific product sheets (e.g. Tru-Dam or Gutter Buddy, etc.) and any changes to the proposed BMPs above for the Engineer's review and acceptance.

Check the appropriate boxes below verifying the following requirements are met. If not applicable indicate on the blank lines below (7.2.10.1):

☒ *The specific perimeter sediment controls will be installed and made operational prior to conducting earth-disturbing activities in any given portion of the site that will receive storm water from earth-disturbing activities are described below (7.2.10.1b). See below. Perimeter sediment control devices are impracticable.*

☒ *If contaminated soil exists on-site, control measures will be taken to either prevent the contact of storm water with the contaminated soil, including any contaminated soil stockpiles, or prevent the discharge of any storm water runoff which has contacted contaminated soil or any contaminated soil stockpiles are described below (7.210.1.c). N/A Soil contamination is not anticipated on site. The Contractor shall add the BMP measures and locations if any contamination is found on-site for the Engineer's review and acceptance.*

☒ *For exit points on the site (or any areas which exit onto a paved street), stabilization techniques and any additional controls that are planned to remove sediment prior to vehicle exit consistent with Section 5.1.2.3 will be taken and are described below (7.2.10.1d). Stabilized entrance locations may be changed by the Contractor depending on his construction means and methods. The Contractor shall submit to the Engineer for his review and acceptance the locations of stabilized entrances once the project is awarded for inclusion in the SWPPP. The Contractor shall submit to the Engineer for his review and acceptance any updates/changes to stabilized entrances during construction for inclusion in the SWPPP.*

☒ *The project is linear, and the use of perimeter controls on portions of the site is impracticable for the following reasons (7.2.10.1e): The limits of the site (State Highways Right of Way) often include connections to C&C of Honolulu roadways such as Punchbowl Street, other HDOT*

roadways such as Liliha Street, and private driveways. Installing sediment controls in these areas would not be possible without closing vehicle traffic. Drain Inlets receiving runoff from disturbed areas will be protected in lieu of perimeter sediment control.

Pollutant Source	***Appropriate Site-Specific BMP to be Implemented***	***BMP Requirements***
Construction debris, green waste, general litter	• *Separate contaminated clean up materials from construction and demolition (C&D) wastes.* • ***Provide waste containers (e.g., dumpster or trash receptacle) of sufficient size and number to contain construction and domestic wastes.*** • *Inspect construction waste and recycling areas regularly.* • *Schedule solid waste collection regularly.* • *Schedule recycling activities based on construction/demolition phases.* • *Empty waste containers weekly or when they are two-thirds full, whichever is sooner.* • ***Do not allow containers to overflow. Clean up immediately if they do.*** • ***On work days, clean up and dispose of waste in designated waste containers.*** • *Cover dumpster or trash receptacle with impermeable cover at the end of the workday.* • *See Solid Waste Management Section SM-6 for additional requirements.* • *Provide Storm Drain Inlet Protection and/or Perimeter Sediment Controls as applicable.* • *The Contractor shall submit for the Engineer's review and acceptance and SWPPP inclusion a Litter Management Plan.*	*See Solid Waste Management Section SM-6. Protect Storm Drain Inlets SC-2, and Perimeter Sediment Controls where applicable.* *Contractor to include Litter Management plan in Appendix G or use the included plan once the project is awarded.*
Materials associated	• *Use off-site wash racks, repair and maintenance facilities, and*	*See Vehicle and*

Pollutant Source	***Appropriate Site-Specific BMP to be Implemented***	***BMP Requirements***
with the operation and maintenance of equipment, such as oil, fuel, and hydraulic fluid leakage	*fueling sites when practical.* • ***Designate bermed wash area if cleaning on site is necessary.*** • ***Place drip pans or drop cloths under vehicles and equipment to absorb spills or leaks.*** • ***Provide an ample supply of readily available spill cleanup materials.*** • ***Clean up spills immediately, using dry clean-up methods where possible, and dispose of used materials properly.*** • ***Do not clean surfaces or spills by hosing the area down.*** • ***Eliminate the source of the spill to prevent a discharge or a continuation of an ongoing discharge.*** • *Inspect on-site vehicles and equipment regularly and immediately repair leaks.* • *Regularly inspect fueling areas and storage tanks.* • *Train employees on proper maintenance and spill practices and procedures and fueling and cleanup procedures.* • ***Store diesel fuel, oil, hydraulic fluid, or other petroleum products or other chemicals in water-tight containers and provide cover or secondary containment.*** • *Do not remove original product labels and* ***comply with manufacturer's labels for proper disposal.*** • *Dispose of containers only after all the product has been used.* • ***Dispose of or recycle oil or oily***	*Equipment Cleaning, Maintenance, and Refueling, Sections SM-11, SM-12, and SM-13, and Material Delivery, Storage and Material Use Sections SM-2 and SM-3, and* ***Spill Prevention and Control SM-10.***

Pollutant Source	***Appropriate Site-Specific BMP to be Implemented***	***BMP Requirements***
	wastes according to Federal, State, and Local requirements. • ***Store soaps, detergents, or solvents under cover or other means to prevent contact with rainwater.*** • *See Vehicle and Equipment Cleaning, Maintenance, and Refueling, Sections SM-11, SM-12, and SM-13 and Material Use Section SM-3 for additional requirements.*	

Pollutant Source	***Appropriate Site-Specific BMP to be Implemented***	***BMP Requirements***
Soil erosion from the disturbed areas	• *Provide Soil Stabilization, Slope Protection, Storm Drain Inlet Protection SC-2, Perimeter Controls and Sediment Barriers, Sediment Basins and Detention Ponds, Check Dams SC-9 ,Level Spreader SC-10, Paving Operations SM-19, Construction Road Stabilization EC-1, Controlling Storm Water Flowing Onto and Through the Project, Post-Construction BMPs, and Non-Structural BMPs (Employee Training SM-1, Scheduling SM-14, Location of Potential Sources of Sediment SM-15, Preservation of Existing Vegetation SM-16)* **.** • ***Delineate, and clearly mark off, with flags, tape, or other similar marking device all natural buffer areas defined in the SWPPP.*** • ***Preserve native topsoil where practicable.*** • ***In areas where vegetative stabilization will occur, restrict vehicle/equipment use in areas to avoid soil compaction or condition soil to promote vegetative growth.*** • ***For Storm Drain Inlet Protection, clean, or remove and replace, the protection measures as sediment accumulates, the filter becomes clogged, and/or performance is compromised.***	*Soil Stabilization* 1. *SM-21 Topsoil Management* 2. *EC-5 Seeding and Planting* 3. *EC-6 Mulching* 4. *EC-7 Geotextiles and Mats* *Slope Protection* 1. *EC-5 Seeding and Planting* 2. *EC-6 Mulching* 3. *EC-7 Geotextiles and Mats* 4. *EC-9 Slope Roughening, Terracing, and Rounding* 5. *SC-11 Slope Drains and Subsurface Drains* 6. *SC-12 Top and Toe of Slope Diversion Ditches and Berms* *SC-2 Storm Drain Inlet Protection*

Pollutant Source	***Appropriate Site-Specific BMP to be Implemented***	***BMP Requirements***
	• ***Where there is evidence of sediment accumulation adjacent to the inlet protection measure, remove the deposited sediment by the end of the same day in which it is found or by the end of the following work day if removal by the same day is not feasible.*** • ***Sediment basins shall be designed and maintained in accordance with HAR 11-55.*** • ***Minimize disturbance on steep slopes (Greater than 15% in grade).*** • ***If disturbance of steep slopes are unavoidable, phase disturbances and use stabilization techniques designed for steep grades.*** • ***For temporary drains and swales use velocity dissipation devices within and at the outlet to minimize erosive flow velocities.***	*Perimeter Controls and Sediment Barriers* 1. *SC-1 Silt Fence* 2. *SC-5 Vegetated Filter Strips and Buffers* 3. *SC-8 Compost Filter Berm* 4. *SC-13 Sandbag Barrier* 5. *SC-14 Brush or Rock Filter* *Sediment Basins and Detention Ponds* 1. *SC-15 Sediment Trap* 2. *SC-16 Sediment Basin* *SC-9 Check Dams* *SC-10 Level Spreader* *SM-19 Paving Operations* *EC-1 Construction Road Stabilization* *Controlling Storm Water Flowing onto and Through the Project* 1. *EC-8 Run-On Diversion*

Pollutant Source	***Appropriate Site-Specific BMP to be Implemented***	***BMP Requirements***
		2. *SC-6 Earth Dike* 3. *SC-7 Temporary Drains and Swales* *Post Construction BMPs* 1. *EC-4 Flared Culvert End Sections* 2. *SC-3 Rip-Rap and Gabion Inflow Protection* 3. *SC-4 Outlet Protection and Velocity Dissipation Devices* 4. *SM-21 Topsoil Management* *Non-Structural BMPs* 1. *SM-1 Employee Training* 2. *SM-14 Scheduling* 3. *SM-15 Location of Potential Sources of Sediment* 4. *SM-16 Preservation of Existing Vegetation*

Pollutant Source	***Appropriate Site-Specific BMP to be Implemented***	***BMP Requirements***
Sediment from soil stockpiles	• *Locate stockpiles a minimum of 50 feet or as far as practicable from concentrated runoff* ***or outside of any natural buffers identified on the SWPPP****.* • *Place bagged materials on pallets and under cover.* • *Provide physical diversion to protect stockpiles from concentrated runoff.* • ***Cover stockpiles with plastic or comparable material when practicable.*** • ***Place silt fence, fiber filtration tubes, or straw wattles around stockpiles.*** • ***Do not hose down or sweep soil or sediment accumulated on pavement or other impervious surfaces into any storm water conveyance (unless connected to a sediment basin, sediment trap, or similarly effective control), storm drain inlet, or state water.*** • ***Unless infeasible, contain and securely protect stockpiles from the wind.*** • *Provide Storm Drain Inlet Protection and/or Perimeter Sediment Controls as applicable.* • *See Protection of Stockpiles Section SM-4 for additional requirements.*	*See Protection of Stockpiles Section SM-4. Protect Storm Drain Inlets SC-2, and Perimeter Sediment Controls where applicable. Note: Stockpiles include soil or sediment material stored for multiple days awaiting transportation for disposal.*
Emulsified asphalt or prime/tack coat	• *Provide training for employees and contractors on proper material delivery and storage practices and procedures.* • *Restrict paving operations during wet weather to prevent paving materials from being discharged.*	*See Material Delivery and Storage Section SM-2* ***and Material Use Section SM-3****, Paving Operations Section SM-19, Protect Storm Drain*

Pollutant Source	***Appropriate Site-Specific BMP to be Implemented***	***BMP Requirements***
	• *Use asphalt emulsions such as prime coat when possible.* • *Protect drain inlet structures and manholes during application of tack coat, seal coat, slurry seal, and fog seal.* • ***Keep ample supplies of drip pans and absorbent materials on site.*** • *Inspect inlet protection devices.* • *See Material Delivery and Storage Section SM-2 and Paving Operations Section SM-19 for additional requirements.* • *Provide Storm Drain Inlet Protection and/or Perimeter Sediment Controls as applicable.*	*Inlets SC-2, and Perimeter Sediment Controls where applicable.*

Pollutant Source	***Appropriate Site-Specific BMP to be Implemented***	***BMP Requirements***
Materials associated with painting, such as paint and paint wash solvent	• *Hazardous chemicals shall be well-labeled and stored in original containers.* • ***Keep ample supply of cleanup materials on site.*** • *Dispose container only after all of the product has been used.* • *Remove as much paint from brushes on painted surface.* • *Rinse from water-based paints shall be discharged into the sanitary sewer system where possible. If not,* ***direct all washwater into a leak-proof container or leak-proof pit. The container or pit must be designed so that no overflows can occur due to inadequate sizing or precipitation.*** • ***Locate on-site wash area a minimum of 50 feet away or as far as practicable from storm drain inlets, open drainage facilities, or water bodies.*** • ***Do not dump liquid wastes into the storm drainage system.*** • *Filter and re-use solvents and thinners.* • *Dispose of oil-based paints and residue as a hazardous waste.* • *Ensure collection, removal, and disposal of hazardous waste complies with regulations.* • ***Immediately clean up spills and leaks.*** • *Properly store paints, solvents, and epoxy compounds.* • *Properly store and dispose waste materials generated from painting and structure repair and construction activities.*	*See Material Delivery and Storage Section SM-2, Material Use Section SM-3, Hazardous Waste Management Section SM-9, Waste Management, Spill Prevention and Control Section SM-10, and Structure Construction and Painting Section SM-20, Protect Storm Drain Inlets SC-2, and Perimeter Sediment Controls where applicable.*

Pollutant Source	***Appropriate Site-Specific BMP to be Implemented***	***BMP Requirements***
	• *Mix paints in a covered and contained area when possible to minimize adverse impacts from spills.* • *Do not apply traffic paint or thermoplastic if rain is forecasted.* • *See Material Delivery and Storage Section SM-2, Material Use SM-3, Waste Management, Hazardous Waste Management Section SM-9, Waste Management, Spill Prevention and Control Section SM-10, and Structure Construction and Painting Section SM-20 for additional requirements.* • *Provide Storm Drain Inlet Protection and/or Perimeter Sediment Controls as applicable.*	

Pollutant Source	***Appropriate Site-Specific BMP to be Implemented***	***BMP Requirements***
Industrial chemicals, fertilizers, and/or pesticides	• *Hazardous chemicals shall be well-labeled and stored in original containers.* • ***Keep ample supply of cleanup materials on site.*** • ***Clean up spills immediately, using dry clean-up methods where possible, and dispose of used materials properly.*** • ***Do not clean surfaces or spills by hosing the area down.*** • ***Eliminate the source of the spill to prevent a discharge or a furtherance of an ongoing discharge.*** • *Dispose container only after all of the product has been used.* • *Retain a complete set of safety data sheets (formerly MSDS) on site.* • ***Store industrial chemicals in water-tight containers and provide either cover or secondary containment.*** • ***Provide cover when storing fertilizers or pesticides to prevent these chemicals from coming into contact with rainwater.*** • *Restrict amount of pesticide prepared to quantity necessary for the current application.* • ***Do not apply fertilizers or pesticides during or just before a rain event.*** • ***Do not apply to stormwater conveyance channels with flowing water*** • ***Comply with fertilizer and pesticide manufacturer's recommended usage and disposal instructions. Document departures from manufacturer's***	*See Material Delivery and Storage Section SM-2, Material Use Section SM-3, and Hazardous Waste Management Section SM-9, and* ***Spill Prevention and Control SM-10***

Pollutant Source	***Appropriate Site-Specific BMP to be Implemented***	***BMP Requirements***
	specifications in Attachment H. • ***Apply fertilizers at the appropriate time of year for the location, and preferably timed to coincide as closely as possible to the period of maximum vegetation uptake and growth.*** • ***Follow federal, state, and local laws regarding fertilizer application.*** • ***Do not dispose of toxic liquid wastes (solvents, used oils, and paints) or chemicals (additives, acids, and curing compounds) in dumpsters allocated for construction debris.*** • ***Ensure collection, removal, and disposal of hazardous waste complies with regulations. Hazardous waste that cannot be reused or recycled shall be disposed of by a licensed hazardous waste hauler.*** • *See Material Delivery and Storage Section SM2, Material Use SM-3, and Waste Management, Hazardous Waste Management Section SM-9 for additional requirements.*	
Hazardous waste (Batteries, Solvents, Treated Lumber, etc.)	• *Do not dispose of toxic materials in dumpsters allocated for construction debris.* • ***Ensure collection, removal, and disposal of hazardous waste complies with regulations.*** • ***Hazardous waste that cannot be reused or recycled shall be disposed of by a licensed hazardous waste hauler.*** • *Segregate and recycle wastes from vehicle/equipment maintenance activities such as*	*See Hazardous Waste Management Section SM-9 and Vehicle and Equipment Maintenance SM-12*

Pollutant Source	***Appropriate Site-Specific BMP to be Implemented***	***BMP Requirements***
	used oil or oil filters, greases, cleaning solutions, antifreeze, automotive batteries, and hydraulic and transmission fluids. • ***Store waste in sealed containers, which are constructed of suitable materials to prevent leakage and corrosion, and which are labeled in accordance with applicable Resource Conservation and Recovery Act (RCRA) requirements and all other applicable federal, state, and local requirements.*** • ***All containers stored outside shall be kept away from surface waters and within appropriately-sized secondary containment (e.g., spill berms, decks, spill containment pallets). Provide cover if possible.*** • ***Clean up spills immediately, using dry clean-up methods where possible, and dispose of used materials properly.*** • ***Do not clean surfaces or spills by hosing the area down.*** • ***Eliminate the source of the spill to prevent a discharge or a continuation of an ongoing discharge.*** • ***Ensure collection, removal, and disposal of hazardous waste complies with manufacturer's recommendations and is in compliance with federal, state, and local requirements.*** • *See Hazardous Waste Management Section SM-9 and Vehicle and Equipment Management, Vehicle and Equipment Maintenance SM-12*	

Pollutant Source	***Appropriate Site-Specific BMP to be Implemented***	***BMP Requirements***
	for additional requirements.	
Metals and Building Materials	• *Inspect construction waste and recycling areas regularly.* • *Schedule solid waste collection regularly.* • ***If building materials or metals are stored on site (such as rebar) store under cover under tarps or in containers.*** • *Minimize the amount of material stored on site.* • ***Do not stockpile uncovered metals or other building materials in close proximity to discharge points.*** • *See Solid Waste Management Section SM-6 for additional requirements.*	*See Solid Waste Management Section SM-6*
Contaminated Soil	• *See Waste Management, Contaminated Soil Management Section SM-8 and/or Hazardous Waste Management Section SM-9 for additional requirements.* • ***At minimum contain contaminated material soil by surrounding with impermeable lined berms or cover exposed contaminated material with plastic sheets.***	*See Waste Management, Contaminated Soil Management Section SM-8 and/or Hazardous Waste Management Section SM-9*
Fugitive Dust Control and Dust Control Water	• *Do not over spray water for dust control purposes which will result in runoff from the area.* • ***Apply water as conditions require.*** • *Washing down of debris or dirt into drainage, sewage systems, or State waters is not allowed.* • *Minimize exposed areas through*	*See Dust Control Section SM-18, Fugitive Dust Control Plan, and DOH Clean Air Branch Fugitive Dust Fact Sheet in Appendix H*

Pollutant Source	***Appropriate Site-Specific BMP to be Implemented***	***BMP Requirements***
	the schedule of construction activities. • *Utilize vegetation, mulching, sprinkling, and stone/gravel layering to quickly stabilize exposed soil.* • *Direct construction vehicle traffic to stabilized roadways.* • *Cover dump trucks hauling material from the site with a tarpaulin.* • *See Dust Control Section SM-18 for additional requirements.*	

Pollutant Source	***Appropriate Site-Specific BMP to be Implemented***	***BMP Requirements***
Concrete Truck Wash Water	• *Disposal of concrete truck wash water via percolation is prohibited.* • *Wash concrete-coated vehicles or equipment off-site or in the designated wash area.* • *Locate on-site wash area a minimum of 50 feet away* ***or as far as practicable*** *from storm drain inlets, open drainage facilities, or water bodies.* • *Runoff from the on-site concrete wash area shall be contained in a temporary pit or level bermed area where the concrete can set.* • ***Design the area so that no overflow can occur due to inadequate wash area sizing or precipitation.*** • *The temporary pit shall be lined with plastic to prevent seepage of wash water into the ground.* • *Allow wash water to evaporate or collect wash water and all concrete debris in a concrete washout system bin.* • ***Do not dump liquid wastes into storm drainage system.*** • ***Dispose of liquid and solid concrete wastes in compliance with federal, state, and local standards.*** • *See Waste Management, Concrete*	*See Waste Management, Concrete Waste Management Section SM-5*

Pollutant Source	***Appropriate Site-Specific BMP to be Implemented***	***BMP Requirements***
	Waste Management Section SM-5 for additional requirements.	
Sediment Track-Out	• ***Include Stabilized Construction Entrance at all points that exit onto paved roads.*** • *A sediment trapping device is required if a wash rack is used in conjunction with the stabilized construction entrance/exit.* • *The pavement shall not be cleaned by washing down the street.* • *If sweeping is ineffective or it is necessary to wash the streets, wash water must be contained either by construction of a sump, diverting the water to an acceptable disposal area, or vacuuming the wash water.* • *Use BMPs for adjacent drainage structures.* • ***Remove sediment tracked onto the street by the end of the day in which the track-out occurs.*** • ***Restrict vehicle use to properly designated exit points.*** • *Include additional BMPs that remove sediment prior to exit when minimum dimensions can not be met.* • *See Stabilized Construction Entrance Section EC-2 for additional requirements.*	*See Stabilized Construction Entrance Section EC-2*
Irrigation Water	• *Consider irrigation requirements.*	*See Seeding and*

Pollutant Source	***Appropriate Site-Specific BMP to be Implemented***	***BMP Requirements***
	• *Where possible, avoid species which require irrigation.* • *Design timing and application methods of irrigation water to eliminate the runoff of excess irrigation water into the storm water drainage system.* • *See Seeding and Planting Section EC-5 and California Stormwater BMP Handbook SD-12 Efficient Irrigation included in SWPPP Attachment A for additional requirements.*	*Planting Section EC-5 and California Stormwater BMP Handbook SD-12 Efficient Irrigation*

Pollutant Source	***Appropriate Site-Specific BMP to be Implemented***	***BMP Requirements***
Hydrotesting Effluent	• *If work includes removing, relocation or installing waterlines, and Contractor elects to flush waterline or discharge hydrotesting effluent into State waters or drainage systems, the Contractor shall prepare and obtain HDOT acceptance of a NOI/NPDES Permit Form F application for HDOT submittal to DOH CWB at least 30 calendar days prior to the start of Hydrotesting Activities if necessary. Site specific BMPs will be included in the NOI/NPDES Permit Form F submittal.*	*Site specific BMPs will be included in the NOI/NPDES Permit Form F submittal.*
Dewatering Effluent	• *If excavation or backfilling operations require dewatering, and Contractor elects to discharge dewatering effluent into State waters or existing drainage systems, Contractor shall prepare and obtain HDOT acceptance of a NOI/NPDES Permit Form G application for HDOT submittal to DOH CWB at least 30 calendar days prior to the start of Dewatering Activities if necessary. See Site Planning and General Practices, Dewatering Operations Section SM-17 for additional requirements.*	*See Dewatering Operations SM-17. Site specific BMPs will be included in the NOI/NPDES Permit Form G submittal.*
Saw-cutting Slurry	• *Saw cut slurry shall be removed from the site by vacuuming.* • *Provide storm drain protection*	*See Paving Operations Section SM-19, Storm Drain Inlet Protection*

Pollutant Source	***Appropriate Site-Specific BMP to be Implemented***	***BMP Requirements***
	during saw cutting. See Paving Operations Section SM-19 for additional requirements. • *Provide Storm Drain Inlet Protection and/or Perimeter Sediment Controls as applicable.*	*SC-2, Perimeter sediment controls where applicable*
Concrete Curing Water	• *Avoid overspraying of curing compounds.* • *Apply an amount of compound that covers the surface, but does not allow any runoff of the compound.* • *See California Stormwater BMP Handbook NS-12 Concrete Curing included in SWPPP Attachment A for additional requirements.*	*See California Stormwater BMP Handbook NS-12 Concrete Curing*
Plaster Waste Water	• ***Direct all washwater into a leak-proof container or leak-proof pit. The container or pit must be designed so that no overflows can occur due to inadequate sizing or precipitation.*** • ***Locate on-site wash area a minimum of 50 feet away or as far as practicable from storm drain inlets, open drainage facilities, or water bodies.*** • *Any significant residual materials remaining on the ground after the completion of construction shall be removed and properly disposed. If the residual materials contaminate the soil, then the contaminated soil shall also be*	*See Material Delivery and Storage Section SM-2, Material Use Section SM-3, and Hazardous Waste Management Section SM-9*

Pollutant Source	***Appropriate Site-Specific BMP to be Implemented***	***BMP Requirements***
	removed and properly disposed of. • ***Plaster waste water shall not be allowed to flow into drainage structures or State waters.*** • *See Material Delivery and Storage Section SM-2, Material Use SM-3, and Hazardous Waste Management Section SM-9 for additional requirements.*	

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

7.2.10.2 – Stabilization Practices

Describe the specific vegetative and/or non-vegetative practices that will be used to comply with the requirements in HAR 11-55, section 5.2., including if the permittee will be complying with

the stabilization deadlines specified in HAR 11-55, section 5.2.1.3.2. Document the circumstances that prevent the permittee from meeting the deadlines specified in sections 5.2.1.1. and/or 5.2.1.2.

The term "immediately" is used to define the deadline for initiating stabilization measures. In the context of this SWPPP section, "immediately" means as soon as practicable, but no later than the end of the next work day, following the day when the earth-disturbing activities have temporarily or permanently ceased (5.2.1.1).

For the purposes of this SWPPP section, any of the following types of activities constitutes initiation of stabilization (5.2.1.1):

a) Prepping the soil for vegetative or non-vegetative stabilization;
b) Applying mulch or other non-vegetative product to the exposed area;
c) Seeding or planting the exposed area;
d) Starting any of the activities in a) – c) on a portion of the area to be stabilized, but not on the entire area; and
e) Finalizing arrangements to have stabilization product fully installed in compliance with the applicable deadline for completing initial stabilization activities.

For the purposes of this SWPPP section, any of the following types of activities constitutes completion of initial stabilization activities (5.2.1.1):

a) For vegetative stabilization, all activities necessary to initially seed or plant the area to be stabilized; and/or
b) For non-vegetative stabilization, the installation or application of all such non-vegetative measures.

If the Contractor is unable to meet the deadlines above due to circumstances beyond the Contractor's control, and the Contractor is using vegetative cover for temporary or permanent stabilization, the Contractor may comply with the following stabilization deadlines instead as agreed to by the Engineer (5.2.1.3.1):

5.2.1.3.1.1.
Immediately initiate, and complete within the timeframe shown below, the installation of temporary non-vegetative stabilization measures to prevent erosion;

5.2.1.3.1.2.
Complete all soil conditioning, seeding, watering or irrigation installation, mulching, and other required activities related to the planting and initial establishment of vegetation as soon as conditions or circumstances allow it on the site; and

5.2.1.3.1.3.

The Contractor shall notify and provide documentation to the Engineer the circumstances that prevent the Contractor from meeting the deadlines required in sections 5.2.1.1. and/or 5.2.1.2. and the schedule the Contractor will follow for initiating and completing initial stabilization and as agreed to by the Engineer. Include this information in the SWPPP below.

The Contractor shall follow the applicable requirements of the specifications and special provisions including Sections 209, 619 and 641.

Final Stabilization
To be considered adequately stabilized, the permittee shall meet the criteria below depending on the type of cover the permittee is using, either vegetative or non-vegetative.

5.2.2.1. Vegetative stabilization.

5.2.2.1.1.1.
If the permittee is vegetatively stabilizing any exposed portion of the site through the use of seed or planted vegetation, the permittee shall provide established uniform vegetation (e.g., evenly distributed without large bare areas), which provides 70 percent or more of the density of coverage that was provided by vegetation prior to commencing earth-disturbing activities. The permittee should avoid the use of invasive species; (HDOT requires 98% coverage for permanent hydromulch per specification and special provision sections 619 and 641.) The Designer needs to meet the 70% requirement above when designing plantings and ground cover which do not involve hydromulch. If the Designer uses a soil test to determine amounts, rates, and type of fertilizer, and the amount and rate is not consistent with manufacturer's specifications, the Designer should document this in the SWPPP in Attachment H.

5.2.2.1.1.2.
For final stabilization, vegetative cover must be perennial; and

5.2.2.1.1.3.
Immediately after seeding or planting the area to be vegetatively stabilized, to the extent necessary to prevent erosion on the seeded or planted area, the Contractor shall install non-vegetative erosion controls that provide cover (e.g., mulch, rolled erosion control products) to the area while vegetation is becoming established.

5.2.2.2. Non-Vegetative Stabilization.
If the permittee is using non-vegetative controls to stabilize exposed portions of the site, or if the Contractor is using such controls to temporarily protect areas that are being vegetatively stabilized, the Contractor shall provide effective non-vegetative cover.

The stabilization schedule for this project is:

Outfalls 1, 2, 3, 4, 5, 6, 7, and 8 discharge to nutrient or sediment impaired waters. The following applies to construction areas discharging to these outfalls:

> *Immediately initiate and complete stabilization within 7 calendar days on areas of the site in which earth-disturbing activities have temporarily or permanently ceased.*

Outfalls X, X, and X discharge to waters not impaired for nutrients or sediments. The following applies to construction areas discharging to these outfalls:

> *Immediately initiate and complete stabilization within 14 calendar days on areas of the site in which earth-disturbing activities have temporarily or permanently ceased.*

All areas of soil disturbance will be overlaid with Asphalt Concrete or concrete. Median areas will be stabilized permanently with grass and trees. Nuuanu Stream, Pacific Ocean, and Kapalama Canal are impaired waters for TSS, Turbidity, and Nitrogen. HDOT will be complying with the deadlines in 5.2.1.3.2, with completion of initial plantings within 7 calendar days of completion of prepping the soil for planting. Mulch will be applied to the exposed areas. The Contractor shall notify the Engineer for his agreement if any stabilization practices or timetables to complete stated above will not be followed and document the reasons in the SWPPP below.

The deadlines for initiating and completing stabilization in sections 5.2.1.1. and/or 5.2.1.2. cannot be met because of the following (Note: Document location(s,)reasons, and schedule)

7.2.10.3 – Post Construction Measures

Descriptions of measures that will minimize the discharge of pollutants via storm water discharges after construction operations have been finished. Examples include: open, vegetated swales and natural depressions; structures for storm water retention, detention, or recycle; velocity dissipation devices to be placed at the outfalls of detention structures or along with the length of outfall channels; and other appropriate measures. All projects require post construction BMPs to minimize the discharge of pollutants via storm water discharges after construction operations have been finished. Examples include: open, vegetated swales and natural depressions; structures for storm water retention, detention, or recycle; velocity

dissipation devices to be placed at the outfalls of detention structures or along with the length of outfall channels; and other appropriate measures. All projects require post-construction BMPs to minimize the discharges of pollutants via storm water discharges after construction operations have finished.

Grass and trees planted in the median will stabilize the area and will help prevent erosion.

7.2.11.1 – Spill Prevention and Response Procedures

The SWPPP must describe procedures that the permittee will follow to prevent and respond to spills and leaks consistent with section 5.3., including:

a. Procedures for expeditiously stopping, containing, and cleaning up spills, leaks, and other releases. Identify the name or position of the employee(s) responsible for detection and response of spills or leaks; and

b. Procedures for notification of appropriate facility personnel, emergency response agencies, and regulatory agencies where a leak, spill, or other release containing a hazardous substance or oil in an amount equal to or in excess of a reportable quantity consistent with section 5.3.4. and established under either 40 CFR Part 110, 40 CFR Part 117, or 40 CFR Part 302, occurs during a 24-hour period. The Contractor shall post contact information in locations that are readily accessible and available.

Where a leak, spill, or other release containing a hazardous substance or oil in an amount equal to or in excess of a reportable quantity established under either 40 CFR Part 110, 40 CFR Part 117, or 40 CFR Part 302 occurs during a 24-hour period, the Contractor shall notify the National Response Center (NRC) at (800) 424-8802, the Clean Water Branch during regular business hours at 586-4309, and the Hawaii State Hospital Operator at 247-2191, the Clean Water Branch (DOH-CWB) via email at cleanwaterbranch@doh.hawaii.gov during non-business hours immediately, and the Engineer. The Contractor shall also provide to the Engineer, within 7 calendar days of knowledge of the release, a description of the release, the circumstances leading to the release, and the date of the release. The Engineer will provide this information to the DOH-CWB. The Engineer will provide information to the NRC if requested. State and local requirements may necessitate additional reporting of spills or discharges to local

emergency response, public health, or drinking water supply agencies (HAR 11-55 5.3.4). The Contractor shall submit to the Engineer information necessary to complete the reporting requirements.

☒ *The Spill Prevention and Response Procedures are included in SWPPP Attachment F.*
The Contractor shall update the Spill Prevention and Response Procedures in the SWPPP once the project is awarded for the Engineer's review and acceptance.

7.2.11.2 – Waste Management Procedures

The SWPPP must describe procedures for how the permittee will handle and dispose of all wastes generated at the site, including, but not limited to, clearing and demolition debris, sediment removed from the site, construction and domestic waste, hazardous or toxic waste, and sanitary waste.
☒ *The Waste Management Procedures are included in SWPPP Attachment G.*
The Contractor shall update the Waste Management Procedures in the SWPPP once the project is awarded for the Engineer's review and acceptance.

7.2.12 – Procedures for Inspection, Maintenance, and Corrective Action

The SWPPP must describe the procedures the permittee will follow for maintaining the storm water control measures, conducting site inspections, and, where necessary, taking corrective actions, in accordance with section 5.1.1.4., section 5.3.2., section 9, and section 10 of the permit. The following information must also be included in the SWPPP:

a. Personnel responsible for conducting inspections: Field Office Engineer and/or Inspector, and Contractor Representatives. Field Office Engineer and/or Inspector, and Contractor Representatives will be included in the SWPPP once the contract is awarded.

Qualifications: HDOT construction staff and HDOT Contractors attend Stormwater BMP Classes annually. Contractor representatives selected for the inspection and maintenance responsibilities shall receive training from the Contractor. The Contractor's Representatives shall be trained in all the inspection and maintenance practices necessary for keeping the erosion and sediment controls used onsite in good working order. The Contractor's Representative(s) inspecting the site shall be knowledgeable in the principles and practice of erosion and sediment controls and pollution prevention, who possesses the skills to assess conditions at the construction site that could impact storm water quality, and the skills to assess the

effectiveness of any storm water controls selected and installed to meet the requirements of this permit.

b. The inspection schedule the permittee will be as follows, which is based on whether the site is subject to section 9.1.2. or section 9.1.3., and whether the site qualifies for any of the allowances for reduced inspection frequencies in 9.1.4. If the permittee will be conducting inspections in accordance with the inspection schedule in section 9.1.2.a. or section 9.1.2.b., the location of the rain gauge on the site or the address of the weather station the permittee will be using to obtain rainfall data;
Describe the inspection schedules and procedures you have developed for the site. Include the maintenance requirements for each BMP (e.g., level of sediment buildup allowed):
All Construction BMPs shall be inspected weekly, and within 24 hours of any rainfall event of 0.25 inches or greater in a 24 hour period. The Contractor shall submit a copy of the SWPPP Inspection and Maintenance Report Form to the Engineer within 24 hours of the inspection.

Maintenance requirements for specific BMPs are included in the HDOT Construction BMP Field Manual. The Contractor shall initiate work to fix the problem immediately after discovering the problem, and complete such work by the close of the next work day, if the problem does not require significant repair or replacement, or if the problem can be corrected through routine maintenance. In this section, immediately means the Contractor shall take all reasonable measures to minimize or prevent discharge of pollutants until a permanent solution is installed and made operational. If a problem is identified at a time in the day in which it is too late to initiate repair, initiation of repair shall begin on the following work day. When installation of a new pollution prevention control or a significant repair is needed, the Contractor shall install the new or modified control and make it operational, or complete the repair, by no later than 7 calendar days from the time of discovery. If it is infeasible to complete the installation or repair within 7 calendar days, the Contractor shall provide notice to the Engineer and document why it is infeasible to complete the installation or repair within the 7 calendar day timeframe and document the schedule for installing the storm water control(s) and making it operational as soon as practicable after the 7 calendar day timeframe and as agreed to by the Engineer. Where these actions result in changes to any of the pollution prevention controls or procedures documented in the SWPPP, modify the SWPPP accordingly. The Contractor will attach product specific maintenance practices in the SWPPP once the project is awarded.

c. Use the Corrective Action Report Form for any the following (10.2.1 and 10.4.1):

- *A required storm water control was never installed, was installed incorrectly, or not in accordance with the requirements in HAR sections 5 and/or 6.*

- *The Contractor/Engineer becomes aware that the storm water controls installed and being maintained are not effective enough for the discharge to meet applicable water quality standards or applicable requirements in HAR section 6.1.*
- *One of the prohibited discharges below is occurring or has occurred:*
  - *Wastewater from washout of concrete*
  - *Wastewater from washout and cleanout of stucco, paint, form release oils, curing compounds and other construction materials*
  - *Fuels, oils, or other pollutants used in vehicle and equipment operation and maintenance*
  - *Soaps, solvents, or detergents used in vehicle and equipment washing*
  - *Toxic or hazardous substances from a spill or other release*
- *Corrective actions required by the Department of Health or EPA*

Note: Corrective actions must be included with the monthly compliance report in Attachment J.

d. Any inspection or maintenance checklists or other forms that will be used.

☒ *The Inspection Report Form provided in SWPPP Attachment E will be used.*

☒ *The Corrective Action Report Form provided in SWPPP Attachment I will be used for projects on Kauai, Maui District, and Hawaii Island. The Corrective Action Report Form in Attachment E2 will be used for projects on Oahu.*

7.2.13 – Staff Training

The SWPPP must include documentation that the required personnel were trained in accordance with the following:

Prior to the commencement of earth-disturbing activities or pollutant-generating activities, whichever occurs first, the permittee shall ensure that the following personnel understand the requirements of this permit and their specific responsibilities with respect to those requirements:

a. Personnel who are responsible for the design, installation, maintenance, and/or repair of storm water controls (including pollution prevention measures);

b. Personnel who are responsible for the application and storage of chemicals (if applicable);

c. Personnel who are responsible for conducting inspections as required in Part 4.1.1; and

d. Personnel who are responsible for taking corrective actions as required in Part 5.

The Contractor is responsible for ensuring that all activities on the site comply with the requirements of this permit. The Contractor is not required to provide or document formal training for subcontractors or other outside service providers, but must ensure that such personnel understand any requirements of the permit that may be affected by the work they are subcontracted to perform.

At a minimum, personnel must be trained to understand the following if related to the scope of their job duties (e.g., only personnel responsible for conducting inspections need to understand how to conduct inspections):
a. The location of all storm water controls on the site required by this permit, and how they are to be maintained;
b. The proper procedures to follow with respect to the permit's pollution prevention requirements; and
c. When and how to conduct inspections, record applicable findings, and take corrective actions.

The Engineer will discuss the roles and responsibilities of HDOT and the Contractor in the SWPPP during the Water Pollution, Dust, and Erosion Control Meeting.

☒ *The Contractor Certification is included in Attachment B.*

7.2.14 – Documentation of Compliance with Safe Drinking Water Act Underground Injection Control (UIC) Requirements for Certain Subsurface Storm Water Controls

Document any contact with the DOH Safe Drinking Water Branch if any of the following storm water controls are used at the site:

❑ *Infiltration trenches (if storm water is directed to any bored, drilled, driven shaft or dug hole that is deeper than its widest surface dimension, or has a subsurface fluid distribution system);*

❑ *Commercially manufactured precast or pre-built proprietary subsurface detention vaults, chambers, or other devices designed to capture and infiltrate storm water flow;*

❑ *Drywells, seepage pits, or improved sinkholes (if storm water is directed to any bored, drilled, driven shaft or dug hole that is deeper than its widest surface dimension, or has a subsurface fluid distribution system).*

If any of the boxes above are checked, attach documentation in SWPPP Attachment H.

These devices are not part of the design plans. If the Contractor elects to install any of these devices for erosion control purposes, the Contractor shall attach the necessary documentation once the project is awarded.

7.2.15 –Other State, Federal, or County Permits

Include in SWPPP Attachment H any of the following permits or approvals:

☒ *Attach the Drainage System Owner(s) Approval to Discharge, in Attachment (See Below) .*

A Letter of Agreement to allow the DOT to discharge runoff into the City and County of Honolulu's MS4 system will be submitted at least 30 days prior to the start of construction.

☒ *Check this box if the Certifying Person is responsible for the overall operation and maintenance of the Separate Drainage System and approves of the storm water discharge into their drainage system.*

County-approved Erosion and Sediment Control Plan and/or Grading Permit

a. *Is a County-approved Erosion and Sediment Control Plan and/or Grading Permit, where applicable for the activity and schedule for implementing each control, required?*
   - ☐ *Yes. Please complete Section b below and skip Section c.*
   - ☒ *No. Please complete Section c below and skip Section b.*

b. *Is a copy County-approved Erosion and Sediment Control Plan and/or Grading Permit, as appropriate for the activity and schedule for implementing each control, attached?*
   - ☐ *Yes, see Attachment _____*
   - ☐ *No, the County-approved Erosion and Sediment Control Plan and/or Grading Permit, as appropriate for the activity and schedule for implementing each control, will be submitted at least 30 calendar days before the start of construction activities.*

c. *Please select and complete at least one (1) of the following items to demonstrate that a County-approved Erosion and Sediment Control Plan and/or Grading Permit, as appropriate for the activity and schedule for implementing each control, is not required.*
   ❑ *See Attachment _____ for the County written determination.*
   ❑ *Provide the County contact person information (Name, Department, Phone Number, and Date Contacted): _____*
   ☒ *Other (specify): Per letter of agreement with the City and County of Honolulu, this project falls under the typical project not requiring a grading permit (Road Rehabilitation/Landscape Improvement). A copy of the letter of agreement is included in Form C Attachment A-4.*

☒ *Department of the Army Permit (Section 404) and Section 401 Water Quality Certification: If the project requires work in, above, under or adjacent to State waters, please contact the Army Corps of Engineers (COE) Regulatory Branch at (808) 438-9258 regarding their permitting requirements. Provide a copy of the COE permitting jurisdictional determination (JD) or the JD with COE Person's Name, Phone Number, and Date Contacted.*
N/A

☒ *List other permits below (No copy necessary in Attachment H)*
N/A

7.2.16 –Other Information As Requested by the Director

☒ *Does DOH require any additional information per section 7.2.16? If so attach in Attachment H.*

N/A

7.2.17 Certification of the CWB SWPPP

The certifying person and duly authorized representative shall meet the requirements of Hawaii Administrative Rules 11-55, Appendix A, Section 15.

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Signature: _____ *Date:* _____

Person Name: Jade T. Butay

Person Position Title: Director of Transportation

Person Company or Agency: Department of Transportation

Department: Department of Transportation

Division: Department of Transportation, Highways Division

Phone Number: (808) 587-2150 *Fax No.:* (808) 587-2167

Person Email: Jade.Butay@hawaii.gov

7.2.18 Post-Authorization Additions to the SWPPP

After the issuance of the NGPC include the following documents as part of the SWPPP in Attachment K:

a. A copy of the NOI submitted to the department along with any correspondence exchanged between HDOT and DOH related to coverage under this permit;

b. A copy of the NGPC and all attachments included with the NGPC (an electronic copy easily available to the storm water team is acceptable)

7.4 Required SWPPP Modifications

Modify the SWPPP, including the site map(s), in response to any of the following conditions:

7.4.1.1.
Whenever new contractors become active in construction activities on the site, or changes are made to the construction plans, storm water control measures, pollution prevention measures, or other activities at the site that are no longer accurately reflected in the SWPPP. This includes changes made in response to corrective actions triggered under section 10.

7.4.1.2.
To reflect areas on the site map where operational control has been transferred (and the date of transfer) since initiating permit coverage;

7.4.1.3.
If inspections or investigations by site staff, or by local, state, or federal officials determine that SWPPP modifications are necessary for compliance with this permit;

7.4.1.4.
Where DOH determines it is necessary to impose additional requirements on the discharge, the following must be included in the SWPPP:

a. A copy of any correspondence describing such requirements; and
b. A description of the storm water control measures that will be used to meet such requirements.

7.4.1.5.
To reflect any revisions to applicable federal, state, and local requirements that affect the storm water control measures implemented at the site; and

7.4.2. Deadlines for SWPPP modifications.

The permittee shall complete required revisions to the SWPPP within 7 calendar days following the occurrence of any of the conditions listed in section 7.4.1.

7.4.3. SWPPP modification records.
The permittee shall maintain records showing the dates of all SWPPP modifications. The records must include a signature of the person authorizing each change (see section 7.2.17), date, and a brief summary of all changes. Log all changes and include relevant attachments in Attachment L.

7.4.4. Certification requirements.
All modifications made to the SWPPP consistent with section 7.4. must be certified, signed, and dated by the Certifying Person that meets the requirements in section 15 of appendix A, chapter 11-55 or the duly authorized representative that meets the requirements of 11-55-07(b). (See section 7.2.17)

7.4.5. Required notice to other contractors.
Upon determining that a modification to the SWPPP is required, if there are multiple contractors covered under this permit, the Contractor shall immediately notify any contractors who may be impacted by the change to the SWPPP.

13.0 Monthly Compliance Report Submittal Requirements

Submit to the Engineer a monthly compliance report, which shall include but is not limited to information as required in the NGPC, any updates to NOI information already on file with DOH, and any incidences of non-compliance and corrective actions. Submit this information within 2 working days of the end of the month. The monthly compliance report shall be kept on-site and available by the end of the next business day when requested by DOH.

☒ *HDOT's form in Attachment J will be used for projects on Kauai, Maui District, or Hawaii Island. HDOT's form in Attachment E4 will be used for projects on Oahu.*

SWPPP Attachments

***Attachment A –** Contractor/Sub-Contractor Control Maps, Property Boundary Maps, State Waters and BMP Maps, and BMP Details (SWPPP Sections 7.2.4, 7.2.6.1,7.2.6.2 to 7.2.6.8 & 7.2.10)*

MAPS SHOWING LOCATIONS OF CONTRACTOR/SUB-CONTRACTOR CONTROL, PROJECT SITE MAPS, CONSTRUCTION PLANS/DRAWINGS, BMP LOCATION MAPS, AND BMP DETAILS

Project and State Waters Map (Outfall Locations) for Areas Outside HDOT provided NOI/NPDES Permit

Property Boundary Maps for Areas Outside HDOT Provided NOI/NPDES Permit

Drainage Maps for Areas Outside of HDOT provided NOI/NPDES Permit

Contractor/Sub-Contractor Control Map

Site-Specific Best Management Plan and Phasing Plans

Staging Area Plans

Catalog Pages and Information on Storm Water Control Materials

Attachment B – HDOT SWPPP Training Log (SWPPP Section 7.2.13)

Instructions

Check Appropriate Box and Include Additional Sheet for Each of the Training Classes Listed Below on the Training Log Form:

A) Attendance at Department of Transportation, Highways Division Annual Construction Site Runoff Control, Pollution Prevention, and Good Housekeeping Training for Contractors.

B) Attendance at Non-HDOT sponsored Stormwater BMP Training Courses.

C) Participation in viewing Annual HDOT Construction Site Runoff Control, Pollution Prevention, and Good Housekeeping Training for Contractors on DVD provided by HDOT.

TRAINING LOG

❑ *Department of Transportation, Highways Division Annual Construction Site Runoff Control, Pollution Prevention, and Good Housekeeping Training for Contractors*

❑ *Non-HDOT Sponsored Stormwater BMP Training Courses*
*Name of Course/Sponsor*_____

❑ *Annual HDOT Construction Site Runoff Control, Pollution Prevention, and Good Housekeeping Training for Contractors on DVD Provided by HDOT*

Project Name:
Project Location:
Instructor's Name(s):
Instructor's Title(s):

Course Location: _____ *Date:* _____

Course Length (hours): _____

Stormwater Training Topic: (check as appropriate)

❑ *Erosion Control BMPs*
❑ *Sediment Control BMPs*
❑ *Non-Stormwater BMPs*
❑ *Emergency Procedures*
❑ *Good Housekeeping BMPs*

*Specific Training Objective:*_____

_____

Attendee Roster:

No.	***Name of Attendee***	***Company***
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		

Add rows as needed

Attachment C - Construction Schedule (SWPPP Section 7.2.5)

CONSTRUCTION SCHEDULE

The date when the SWPPP, including erosion control measures will be implemented: Jan 2, 2013

All Perimeter Sediment Control and Inlet Protection BMPs (except for the perimeter sediment controls around the median) will be installed prior to construction. These BMPs meet Section 5.1.1.3.1 as the inlets protected and the perimeter control BMPs are downstream of the paving work. The perimeter sediment controls around the median will be installed on August 26, 2013 as work on the median landscaping will commence. These BMPs will be installed per the manufacturer's recommendations.

The date when the general contractor will begin the earth-disturbing activities: Jan 14, 2013

Cessation, temporarily or permanently, of construction activities on the site: August 30, 2013
Resurfacing, sidewalk and gutter repairs, and bridge endpost upgrades will be completed on August 30, 2013. Work will commence on the median landscaping on August 30, 2013.

Final or temporary stabilization of areas of exposed soil: Aug 30, 2013
Resurfacing areas will be stabilized with asphalt. Sidewalk and gutter repair areas will be stabilized with concrete.

Cessation, temporarily or permanently, of construction activities on the site: Sept 30, 2013
Median Landscaping work will be completed on October 15, 2013.

Final or temporary stabilization of areas of exposed soil: Nov 14, 2013
The grass in the median and planted trees are expected to be of uniform distribution without large bare areas and 70% of the density of the previous coverage by November 14, 2013 .

The date when the general contractor will end site disturbance: Nov 14, 2013

The date when erosion control measures will be removed: Nov 30, 2013

The date when the Notice of Cessation form will be submitted: Dec 7, 2013

Attachment D – Subcontractor Certifications/Agreements (SWPPP Section 7.2.4)

SUBCONTRACTOR CERTIFICATION

*NGPC File No: HIR10*_____

Project Title: _____

Operator(s): _____

As a subcontractor, you are required to comply with the Storm Water Pollution Prevention Plan (SWPPP) for any work that you perform on-site. Any person or group who violates any condition of the SWPPP may be subject to substantial penalties or loss of contract. You are encouraged to advise each of your employees working on this project of the requirements of the SWPPP. A copy of the SWPPP is available for your review at the office trailer.

Each subcontractor engaged in activities at the construction site that could impact storm water must be identified and sign the following certification statement:

I certify under the penalty of law that I have read and understand the terms and conditions of the SWPPP for the above designated project and agree to follow the BMPs and practices described in the SWPPP.

This certification is hereby signed in reference to the above named project:

*Company:*_____

*Address:*_____

*Telephone Number:*_____

*Type of construction service to be provided:*_____

_____

Signature: _____

Title: _____

Date: _____

Attach copies, retain originals on-site.

Oahu Attachment E1 – SWPPP Inspection Report Form for Oahu(SWPPP Section 7.2.12) Rev. 1/28/2015

(See Next Page)

SITE-SPECIFIC BEST MANAGEMENT PRACTICE/STORM WATER POLLUTION PREVENTION INSPECTION AND MAINTENANCE REPORT

DATE: _____ PERMIT NO. _____ ☐ INDIVIDUAL NPDES PERMIT PROJECT (RECEIVING STATE WATERS INSPECTIONS REQUIRED)

PROJECT NO.: _____ PROJECT: _____

☐ PRE-CONSTRUCTION VERIFICATION INSPECTION REPORT PHASE: _____ ☐ INDEPENDENT (THIRD-PARTY) INSPECTION

☐ WEEKLY REPORT ☐ EVENT REPORT _____ INCHES OF RAIN FOR THE PAST 24 HOURS (if rain event) ☐ OTHER _____

BMP Measures and Devices Currently Installed on the Project:

LOCATION	ACTIVITY AND TYPE OF BMP MEASURE/DEVICE	ACTION REQUIRED?		NOTES/COMMENTS
		Y	N	

BMP Deficiencies Found and Corrective Actions Taken:

DATE FOUND	LOCATION	ACTIVITY AND TYPE OF BMP MEASURE/DEVICE	DATE CONTRACTOR NOTIFIED	NOTES/COMMENTS	AMENDMENT REQUIRED? (Y/N)	DATE CORRECTED	ACTION TAKEN - NOTES/COMMENTS

CHECK ALL THAT ARE APPLICABLE:

☐ There is evidence of a discharge.

☐ There is evidence that a polluted discharge is leaving or has left the project site.

☐ The polluted discharge was contained prior to reaching the storm drain system/receiving waters.

NOTE: If any of the boxes above were checked, fill out HDOT Construction Discharge Report.

Included Attachments: ☐ A. Photographs (Required for BMP Deficiencies) ☐ B. Other attachments

Describe: _____

_____

_____

_____

Comments/Remarks: _____

_____

_____

_____

_____

I certify that I am the person who performed the inspection documented above and that all information recorded on this form is a true and accurate representation of what was observed at the construction site recorded above.

Inspector Name and Title	Signature	Date

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Page 2 of 2 Project No. Date

Oahu Attachment E2 – Corrective Action Reports (SWPPP Section 7.2.12) Rev. 02/25/14

Hawaii Department of Transportation Corrective Action Report

Section 10.1 "Corrective Actions" Defined

Corrective actions are actions taken in compliance with this section to:

a. Repair, modify, or replace any storm water control used at the site
b. Clean up and properly dispose of spills, releases, or other deposits
c. Remedy a permit violation

Section 10.2.1. Triggering Events

The following are triggers that require corrective action be taken (this triggering condition is to be documented within 24 hours of discovering the occurrence):

- ❑ *A required storm water control was never installed, was installed incorrectly, or not in accordance with the requirements in HAR Chapter 11-55, Sections 5 and/or 6.*
- ❑ *The Contractor/Engineer becomes aware that the storm water controls installed and being maintained are not effective enough for the discharge to meet applicable water quality standards or applicable requirements in HAR Chapter 11-55, Section 6.1. The Contractor shall notify the Engineer immediately. The Engineer will notify the Department of Health by the end of the next work day.*

  *Date/time Engineer notified by Contractor*_____

  *Date/time DOH notified by Engineer*_____

- ❑ *One of the prohibited discharges below is occurring or has occurred:*
  - ❒ *Wastewater from washout of concrete*
  - ❒ *Wastewater from washout and cleanout of stucco, paint, form release oils, curing compounds and other construction materials*
  - ❒ *Fuels, oils, or other pollutants used in vehicle and equipment operation and maintenance*
  - ❒ *Soaps, solvents, or detergents used in vehicle and equipment washing*
  - ❒ *Toxic or hazardous substances from a spill or other release*

Section 10.2. Requirements for Taking Corrective Actions

The Contractor shall complete corrective actions in accordance with the deadlines specified below. In all circumstances, the Contractor shall immediately take all reasonable steps to minimize or prevent the discharge of pollutants until a permanent solution is installed and made operational, including cleaning up any contaminated surfaces so that the material will not discharge in subsequent storm events. Immediately means the same day the condition is discovered, unless it is too late in the day, in which initiation of corrective action must begin on the following work day.

Following any of the above triggering events, the Contractor shall install a new or modified control and make it operational, or complete the repair, by no later than 7 calendar days from the time of discovery. If it is infeasible to complete the installation or repair within 7 calendar days, the Contractor shall document and submit to the Engineer, for his agreement, why it is infeasible to complete the installation or repair within the 7

calendar day timeframe and document a schedule for installing the storm water control(s) and making it operational as soon as practicable after the 7-day timeframe.

*Date installation/repair completed or date/time prohibited discharge ceased*_____

Reason it is infeasible to complete installation or repair within 7 calendar days and proposed schedule (if applicable) _____

10.4.1. Initial Report (24 Hours)

Within 24 hours of discovering the occurrence of one of the triggering conditions in HAR Chapter 11-55, Section 10.2.1. at the site, the Contractor must complete the following:

- *The nature of the condition identified*
- *The date and time of the condition identified and how it was identified*

10.4.2. Final Report (7 Days)

Within 7 calendar days of discovering the occurrence of one of the triggering conditions in HAR Chapter 11-55, Section 10.2.1. at the site, the Contractor must complete a report of the following:

- *Any follow-up actions taken to review the design, installation, and maintenance of storm water controls, including the dates such actions occurred*
- *A summary of storm water control modifications taken or to be taken, including a schedule of activities necessary to implement changes, and the date the modifications are completed or expected to be completed*
- *Notice of whether SWPPP modifications are required as a result of the condition identified or corrective action*

Section 10.2.2. SWPPP Modification Due to Corrective Actions

Where corrective actions result in changes to any of the storm water controls or procedures documented in the SWPPP, modify the SWPPP accordingly within 7 calendar days of completing corrective action work.

❑ *Date SWPPP modified should be indicated in the Amendment Log*

Section 10.3 Corrective Actions Required by the Department of Health (DOH)

The Contractor shall comply with any corrective actions required by the department as a result of permit violations found during an inspection by DOH or EPA.

Was the Corrective Action triggered by a DOH/EPA inspection?

❑ *Yes* ❑ *No*

- ❑ *Date of DOH/EPA Inspection*_____

Section 10.4.3. Certification

The certifying person and duly authorized representative shall meet the requirements of Hawaii Administrative Rules 11-55, Appendix A, Section 15.

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Section 10.4.4. Corrective Action Report

NOTE: Corrective Actions shall be documented in the Site-Specific Best Management Practice/Storm Water Pollution Prevention Inspection and Maintenance Report, See Attachment E1.

Oahu Attachment E3 – HDOT Highways Oahu Construction Discharge Response Flow Chart, Rev. 11/17/2015; HDOT Construction Discharge Report Form (SWPPP Section 7.2.12) Rev. 1/28/15

(See Next Pages)

HDOT CONSTRUCTION DISCHARGE REPORT

☐ **CHECK IF DISCHARGE OBSERVED IS DURING AN INSPECTION**

DATE: _____ **INSPECTOR/ENGINEER:** _____
PROJECT NO.: _____ **DOH FILE NO.:** _____
PROJECT: _____
WEATHER CONDITIONS: _____ **INCHES OF RAIN IN THE PAST 24 HOURS:** _____

LOCATION OF WORK ACTIVITIES: _____
DESCRIPTION OF WORK ACTIVITIES: _____

This report is required when a non-stormwater or polluted stormwater discharge may have or may have potentially entered a storm drain or Receiving State Waters, if a discharge (e.g., spill) has occurred, if a polluted discharge is observed leaving the project limits, or if there is evidence of an unreported polluted discharge leaving project limits prior to inspection (such as: silty trail, eroded areas beyond site limits).

1) General Information

Date of Incident: _____
Incident Identified or reported by: _____
Time of Incident (note if time is approximate): _____
Duration of Incident (note if duration is approximate): _____
Source/Cause of Incident:
_____
Describe the Incident:
_____

Is the suspected reason for the discharge that a storm water control is clearly not operating as intended or is in need of maintenance?
☐ BMP needs maintenance ☐ BMP not operating as intended ☐ BMP is not a factor

2) Specific Discharge Information

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A. Nature of the Discharge:	B. Characteristic of Immediate Area Where Discharge Occurred:
a. ☐ Sediment – Amount: _____ b. ☐ Concrete – Amount: _____ c. ☐ Oil/Grease – Amount: _____ d. ☐ Hazardous Material (describe): _____ – Amount: _____ e. ☐ Other (describe): _____ – Amount: _____	a. ☐ Receiving Water(s) – Name(s): _____ b. ☐ Storm Drain - MS4 Owner: _____ c. ☐ Soil - Type: _____ d. ☐ Asphalt/Concrete Surface e. ☐ Other - Describe: _____
C. Location Where Discharge Originated (include location map and photos on attached template): _____ ☐ Map or Photos attached	D. Description of Path of Discharge (include map and/or photos on attached template): _____ Where did the polluted discharge ultimately go? ☐ Entered a drainage system. ☐ Directly entered State waters (discharged directly to stream or other water body). ☐ Other (describe): _____ ☐ Map or Photos attached If the polluted discharge entered a drainage system or receiving water (e.g., stream, ocean), complete section 3.

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3) Inlets, Outfalls, and Receiving Water Information

List all inlets and corresponding receiving water outfall locations from each drainage system. If discharge went directly to receiving waters, list the point where discharge entered receiving waters. At each point check the characteristics of the water upstream (if applicable), at discharge or outfall location, and downstream of discharge or outfall location (if applicable) and describe (turbidity, color, odor, floating, settled, or suspended solids, foam, oil sheen, and other obvious indicators of storm water pollutants).

If the discharge did not enter a drainage system or receiving water (e.g., stream, ocean), skip this section.

Inlet Location / Drainage System Owner (if applicable)	**Outfall / Discharge Location**	**Characteristics of water (turbidity, color, odor, floating, settled, or suspended solids, foam, oil sheen, and other obvious indicators of storm water pollutants)**		**Notes** (include information about other inlets entering drainage system prior to outfall, etc.)
		Upstream of Location (if applicable)	**At Outfall/Discharge Location**	

4) Action Taken

a. Describe Immediate Measures Taken (include photos on attached template):

_____

☐ Photos attached

b. Describe Additional Follow-Up Measures Taken (include photos on attached template):

_____

☐ Photos attached

5) Other Notes/Comments

_____

I certify that I am the person who performed the inspection documented above and that all information recorded on this form is a true and accurate representation of what was observed at the construction site recorded above.

Inspector Name and Title	**Signature**	**Date**

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

George Abcede	**Date**

Duly Authorized Person's Name: George Abcede

Duly Authorized Person's Position Title: Oahu District Engineer

Duly Authorized Person's Company or Agency Information:

Company or Agency:	State of Hawaii Department of Transportation, Highways Division	**Phone:**	831-6700 ext. 126
Address:	727 Kakoi Street	**Fax:**	831-6725
	Honolulu, Hawaii 96819	**Email:**	george.abcede@hawaii.gov

LOCATION MAP

PROJECT NO.: _____ DOH FILE NO.: _____

PROJECT NAME: _____

PROJECT LOCATION: _____

DESCRIPTION: _____

PHOTOS

PHOTOS TAKEN BY: _____

PROJECT NO.: _____ DOH FILE NO.: _____

PROJECT: _____

Oahu Attachment E4 – Monthly Compliance Report

Hawaii Department of Transportation Monthly Compliance Report

A Monthly Compliance Report is required to be completed within 2 working days of the end of the month. This report must be kept on-site and made available by the end of the next business day when requested by DOH. The following is required to be addressed in the Monthly Compliance Reports and include attachments as necessary.

- ❑ *Any instances of non-compliance or corrective actions*
- ❑ *Changes to the information on file with DOH*

If the activity is in compliance and none of the information on file with the department requires updating, or there were no incidences of non-compliance, preparation of the monthly compliance information is still required which states:

- ❑ *No changes, updates, or any incidences of non-compliance to report.*

The certifying person and duly authorized representative shall meet the requirements of Hawaii Administrative Rules 11-55, Appendix A, Section 15. The certifying person or duly authorized representative is required to sign the Monthly Compliance Reports with the following certification statement:

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

MONTHLY COMPLIANCE REPORT

Reporting Month/Year: _____

Project Name: _____
Location/Address: _____
DOH NGPC File No.: _____ **Project No.:** _____
County/Island: _____ **Acreage Disturbed (acres):** _____
Construction Start Date: _____ **Percent of Work Completed (%):** _____

This form must be completed within 2 working days of the end of the month and must be kept on-site and made available by the end of the next business day when requested by DOH. In addition, this form is required to be submitted to DOH with the Notice of Cessation at the completion of the project.

1. BMP Deficiencies and Associated Corrective Actions

Date Found	Location	Activity and Type of BMP Measure/Device	Date Contractor Notified	Notes/Comments	Date Corrected	Action Taken

2. Discharges This Month

Date Discharge Occurred	Outfall	Receiving Waterbody Discharged To	Date DOH Notified	Notes

3. Other Major Incidents Reported to DOH This Month

Date/Time Incident Occurred (if applicable)	Date/Time Incident Discovered	Date/Time Reported to DOH	Description of Incident	Notes

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

George Abcede **Date**

Duly Authorized Person's Name: George Abcede
Duly Authorized Person's Position Title: Oahu District Engineer
Duly Authorized Person's Company or Agency Information:
Company or Agency: State of Hawaii Department of Transportation, Highways Division
Address: 727 Kakoi Street
Honolulu, Hawaii 96819
Phone: 831-6700 ext. 126
Fax: 831-6725
Email: george.abcede@hawaii.gov

Oahu Attachment E5 – Receiving State Waters Inspection Report for Individual NPDES Permits (SWPPP Section 7.2.12) Rev. 01/28/15

Permit NO. HISXXXXXX, A. General Requirements, Item 6:

Inspect, at a minimum of once per week, the receiving state waters, storm water runoff and control measures and BMPs to detect violations of and conditions which may cause or contribute to a violation of the basic water quality criteria as specified in HAR, Chapter 11-54, Section 11-54-4 (e.g., the Permittee shall look at storm water discharges and receiving state waters for turbidity, color, floating oil and grease, floating debris and scum, materials that will settle, substances that will produce taste in the water or detectable off-flavor in fish, and inspect for items that may be toxic or harmful to human or other life).

The Receiving State Waters Inspection Report for Individual NPDES Permits shall be used to document the weekly inspections of the receiving state waters.

SITE-SPECIFIC BEST MANAGEMENT PRACTICE INSPECTION AND MAINTENANCE REPORT
RECEIVING STATE WATERS INSPECTION REPORT FOR INDIVIDUAL NPDES PERMITS

TO BE COMPLETED A MINIMUM OF ONCE PER WEEK, TYPICALLY ALONG WITH WEEKLY BMP INSPECTION ☐ CHECK IF STAND-ALONE INSPECTION

DATE: _____ **INSPECTOR/ENGINEER:** _____
PROJECT NO.: _____ **DOH FILE NO.:** _____
PROJECT: _____
WEATHER CONDITIONS: _____ **INCHES OF RAIN IN THE PAST 24 HOURS:** _____

LOCATION OF WORK ACTIVITIES: _____
DESCRIPTION OF WORK ACTIVITIES: _____

This report is required if the project is covered under an Individual NPDES Permit and there is a requirement to inspect the receiving state waters.

List all receiving water outfall/discharge locations at which inspection occurred. At each point check the characteristics of the water upstream (if applicable), at discharge or outfall location, and downstream of discharge or outfall location (if applicable) and describe (turbidity, color, odor, floating, settled, or suspended solids, foam, oil sheen, and other obvious indicators of storm water pollutants).

OUTFALL/DISCHARGE LOCATION	CHARACTERISTICS OF WATER UPSTREAM OF LOCATION (IF APPLICABLE)	CHARACTERISTICS OF WATER AT OUTFALL/DISCHARGE LOCATION	NOTES (INCLUDE INFORMATION ABOUT OTHER INLETS ENTERING DRAINAGE SYSTEM PRIOR TO OUTFALL, ETC.)	EVIDENCE OF PROJECT RELATED POLLUTED DISCHARGE?*

*YES = FILL OUT ATTACHMENT A: DISCHARGE REPORT
NO = NO ACTION REQUIRED

DATE: _____ **INSPECTOR/ENGINEER:** _____
PROJECT NO.: _____ **DOH FILE NO.:** _____
PROJECT: _____

I certify that I am the person who performed the inspection documented above and that all information recorded on this form is a true and accurate representation of what was observed at the construction site recorded above.

Inspector/Engineer Name and Title	Signature	Date

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

George Abcede	Date

Duly Authorized Person's Name: George Abcede
Duly Authorized Person's Position Title: Oahu District Engineer
Duly Authorized Person's Company or Agency Information:

Company or Agency:	State of Hawaii Department of Transportation, Highways Division	**Phone:**	831-6700 ext. 126
Address:	727 Kakoi Street	**Fax:**	831-6725
	Honolulu, Hawaii 96819	**Email:**	george.abcede@hawaii.gov

DATE: _____ INSPECTOR/ENGINEER: _____
PROJECT NO.: _____ DOH FILE NO.: _____
PROJECT: _____

OUTFALL/PHOTO LOCATION: _____
DESCRIPTION: _____
DATE: _____ TIME: _____

PHOTO:

INSERT PHOTO HERE

SITE-SPECIFIC BEST MANAGEMENT PRACTICE INSPECTION AND MAINTENANCE REPORT
RECEIVING STATE WATERS INSPECTION REPORT FOR INDIVIDUAL NPDES PERMITS
Rev 01/28/15

PAGE 3 OF 3

Kauai/Maui/Hawaii Attachment E1 – HDOT Inspection Report for Kauai, Maui, and Big Island

HDOT INSPECTION REPORT FORM

*Date:*_____ *Project/Site:*_____ *Permit No.: HI*_____

*Inspector's Name:*_____

*Inspector's Title:*_____

*Weather:*_____

*Rain Gauge Site and Amount in Inches (If applicable)*_____ _____ *inches*

The Following Areas Have been Inspected	***Yes***	***No***	***N/A***	***Notes***
9.1.5a All areas that have been cleared, graded, or excavated and that have not yet completed stabilization consistent with section 5.2				
9.1.5b All storm water controls (including pollution prevention measures) installed at the site to comply with this permit				
9.1.5c Material, waste, borrow, or equipment storage and maintenance areas that are covered by this permit				
9.1.5d All areas where storm water typically flows within the site, including drainageways designed to divert, convey, and/or treat storm water				
9.1.5e All points of discharge from the site				
9.1.5f All locations where stabilization measures have been implemented				

9.1.5 Were any portions of the site not inspected due to unsafe conditions? YES ❑ NO ❑

If answering yes above, provide reasons why inspection of the site (or portions thereof) were unsafe and locations not inspected

Site Specific Best Management Practices (BMPs) Plan	***Yes***	***No***	***N/A***	***Date Corrected***	***Notes***
Is a copy of the Site Specific BMPs plan available at the site?					
Is the Site Specific BMPs plan certified, signed, and dated?					
Is the Site Specific BMPs plan current and up-to-date?					
Are accompanying erosion and sediment control (ESC) drawings available at the site?					
Are the Erosion and Sediment Control (ESC) drawings up-to-date?					
Are all NPDES permits available at the site?					
Are inspection records available at the site?					

Insert or removes rows, fill in blanks to tailor to your site.

Best Management Practices	***Location***	***Installed Per Specifications (Y/N)***	***Adequate***	***Needs Maintenance***	***N/A***	***Date Corrected***	***Notes***
Controlling Storm Water Flowing onto and through the Project (run-on diversion, silt fence, vegetated filter strips and buffers, etc.							
Soil Stabilization (topsoil management, seeding and planting, mulching, geotextiles and mats, etc.)							
Slope Protection (seeding and planting; mulching; geotextiles and mats; slope roughening, terracing and rounding, etc.)							
Storm Drain Inlet Protection							
Perimeter Controls and Sediment Barriers (silt fence, vegetated filer strips and buffers, etc.)							
Sediment Basins and Detention Ponds (sediment traps, sediment basins, etc.)							
Stabilized Ingress/Egress Structures							
Additional Erosion and Sediment Control BMPs							

Best Management Practices	***Location***	***Installed Per Specifications (Y/N)***	***Adequate***	***Needs Maintenance***	***N/A***	***Date Corrected***	***Notes***
Material Handling and Waste Management (hazardous waste management, concrete waste management, etc.)							
Material Storage							
Spill Prevention/Control							
Baseyards/Staging Areas							
Washout Areas							
Concrete Washout/Waste							
Paint Washout/Waste							
Proper Equipment/Vehicle Fueling and Maintenance Practices							
Equipment/Vehicle Fueling							
Equipment/Vehicle Cleaning							
Equipment/Vehicle Maintenance							
Additional Non-Erosion or Sediment Control BMPs							
Post Construction BMPs (flared culvert end sections, rip-rap and gabion inflow protection, outlet protection and velocity dissipation devices, etc.)							
Other							
Sawcutting							
Dust Control							
Dewatering							

Best Management Practices	Location	Installed Per Specifications (Y/N)	Adequate	Needs Maintenance	N/A	Date Corrected	Notes

Insert or removes rows, fill in blanks to tailor to your site.

Site Conditions	Yes	No	N/A	Notes and Corrective Actions
9.1.6.1 Do all erosion and sediment controls and pollution prevention controls installed, appear to be operational, and working as intended to minimize pollutants discharges?				
9.1.6.1 Any controls need to be replaced, repaired, or maintained in accordance with HAR Ch. 11-55 sections 5.1.1.4 and 5.3.2?				
9.1.6.2 Any conditions present that could lead to spills, leaks, or other accumulations of pollutants on the site?				
9.1.6.3 Any locations where new or modified storm water controls are necessary to meet the requirements of HAR Ch. 11-55 sections 5 and/or 6?				
9.1.6.5 Any incidents of noncompliance observed?				
Are off-site flows entering the construction site?				
9.1.6.4 At points of discharge are there signs of visible erosion and sedimentation that have occurred and are attributable to the discharge?				
9.1.6.4 On the banks of any state waters flowing within the property boundaries are there signs of visible erosion and sedimentation that have occurred and are attributable to the discharge?				

Site Conditions	*Yes*	*No*	*N/A*	*Notes and Corrective Actions*
9.1.6.4 On the banks of any state waters flowing adjacent to the property are there signs of visible erosion and sedimentation that have occurred and are attributable to the discharge?				
Are construction materials/debris/trash/soil stored or disposed of properly at the site?				
Is there vehicle tracking from the site to receiving streets?				
Do locations exist where additional or revised BMPs are needed?				
Do locations exist where BMPs may no longer be necessary and may be removed?				
Does your site evaluation indicate a need to update or revise the current Site Specific BMPs plan and/or accompanying erosion and sediment control drawings?				

9.1.6.6 Discharges Observed During Inspection

Is a discharge occurring during the inspection? YES ❑ NO ❑

If answering YES above answer the following:

*9.1.6.6a Identify all points of the property from which there is a discharge*_____

9.1 Is there a potential for downstream erosion? YES ❑ NO ❑

If YES continue to the next question. If NO go to 9.1.6.6b and inspect at the ***Receiving Water****.*

9.1 Does the discharge enter an MS4 or separate drainage system prior to the receiving water? YES ❑ NO ❑

*If YES go to 9.1.6.6b and inspect **Where it Enters the Drainage System**. If NO continue to the next question.*

9.1 Does the effluent comingle with offsite water or pollutant sources prior to discharging to the receiving water? YES ❑ NO ❑

*If YES go to 9.1.6.6b and inspect at a **Location Representative of the Discharge Quality Prior to Comingling**.*

*If NO go to 9.1.6.6b and inspect at the **Receiving Water** if safe to do so. If unsafe, document in section 9.15 above.*

*9.1.6.6b What color is the discharge?*_____

*9.1.6.6b Is there an odor? Describe if possible.*_____

*9.1.6.6b Are there floating, settled, or suspended solids? If so, describe?*_____

*9.1.6.6b Is there foam?*_____

*9.1.6.6b Does the discharge contain an oil sheen?*_____

9.1.6.6b Are there any other obvious indicators of storm water pollutants in the discharge? _____

_____

9.1.6.6c Is the suspected reason for the discharge that a storm water control is clearly not operating as intended or is in need of maintenance?

_____

_____

Photos

Photos taken during the BMP inspection documented above are:

- ❑ *Attached*
- ❑ *Inserted*
- ❑ *Not taken, attached, or inserted.*

(Insert photos in this section if you so choose.)

I certify that I am the person who performed the inspection documented above and that all information recorded on this form is a true and accurate representation of what was observed at the construction site recorded above. Any photographs attached that were taken during the inspection are a true, accurate, and unaltered representation of what was observed during the inspection documented above.

Inspector's Printed Name: _____ *Title:* _____

Inspector's Signature: _____ *Date of Inspection:* _____

Inspector's Printed Name: _____ *Title:* _____

Inspector's Signature: _____ *Date of Inspection:* _____

The certifying person and duly authorized representative shall meet the requirements of Hawaii Administrative Rules 11-55, Appendix A, Section 15.

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Signature: _____ *Date:* _____

Duly Authorized Person's Name: Lawrence J. Dill

Duly Authorized Person's Position Title: Kauai District Engineer

Duly Authorized Person's Company or Agency: Department of Transportation

Department: Department of Transportation

Division: Department of Transportation, Highways Division

Phone Number: (808) 241-3000 *Fax No.:* (808) 241-3011

Person Email: lawrence.j.dill@hawaii.gov

Attachment F – Spill Prevention and Response Procedures (SWPPP Section 7.2.11.1)

Spill Prevention and Control Plan (SM-10)

Description	*Practices and procedures to reduce or prevent leaks or spills of fuels, oil, and other chemicals which may be discharged into the storm drain system or adjacent water bodies.*
Applications	*Construction projects involving the storage of chemicals or hazardous substances.*
Installation and Implementation Requirements	*General Requirements include the following:* *• Store hazardous materials and wastes in covered containers and protect containers from vandalism;* *• Maintain an ample supply of cleanup materials for spills shall be readily accessible;* *• Train employees on proper spill prevention and cleanup; and* *• Review spill response requirements at all applicable work sites.* *Cleanup Requirements include the following:* *• Immediately clean up leaks and spills;* *• Use minimal water to clean up spills on paved surfaces. For small spills, use a rag. For general cleanup, use a damp mop. For larger spills, use absorbent materials. Properly dispose of materials used to clean up hazardous materials;* *• Do not hose down or bury spills; and* *• Eliminate the source of the spill to prevent a discharge or continuation of an ongoing discharge.* *Reporting includes the following:* *• Report significant spills to the U.S. coast Guard, DOH Clean Water Branch, Hawaii State Office of Hazard Evaluation and Emergency Response, and City and County of Honolulu agencies, such as the Fire Department and* *• Per federal regulations, report significant spills of oil onto an adjoining shoreline or into a water body to the National Response Center at 800-424-8802 (24 hour).* *Vehicle and equipment maintenance activities requirements include the following:* *• Use a designated area and/or secondary containment for on-site repair or maintenance activities. These areas shall be located away from drainage courses;* *• Complete regular inspections of on-site vehicles and equipment, including delivery trucks and employees' vehicles, for leaks. Do not allow vehicles or equipment with leaks on-site. Provide Vehicle and Equipment Maintenance BMPs in SM-12 if repair must be made on site.* *• Secondary containment devices such as drop cloths and drain pans shall be used to catch leaks or spills while removing or changing fluids from vehicles or equipment;* *• Place drip pans or absorbent materials under paving equipment not in use;* *• Use absorbent materials on small spills. Do not hose down or bury spills. Remove and properly dispose of cleanup materials;* *• Immediately transfer used fluids to the appropriate waste or*

	recycling containers. Avoid leaving full drip pans and open containers on-site; *• Drain excess oil from oil filters prior to disposal by placing filter in a funnel over a waste oil recycling drum. Recycle oil filters if this service is available or dispose in accordance with Federal, State, and Local requirements;*
Installation and Implementation Requirements (Continued)	*• Store all cracked batteries in a non-leaking secondary container with cover even if the acid appears to have drained out. Handle dropped batteries as cracked batteries until assured it is not leaking.* *• Dispose of or recycle oil in accordance with Federal, State, and Local requirements. Store in water-tight container and provide cover to prevent containers from coming into contact with rainwater or secondary containment.* *Vehicle and equipment fueling activities requirements include the following:* *• Use designated areas for required on-site fueling. Fueling areas shall be located away from drainage courses;* *• Avoid "topping off" of fuel tanks; and* *• Use secondary containment devices such as drain pans to catch spills or leaks while fueling.*
Limitations	*Use of a private spill cleanup company may be necessary.*
Inspections and Maintenance	*• Update spill prevention and control plans and stock necessary cleanup materials as the chemicals used or stored on-site change.* *• Ample supplies of materials for spill control and cleanup shall be located on-site near maintenance and material storage or unloading areas.*

Emergency Spill Response Plan

Procedures for expeditiously stopping, containing, and cleaning up spills, leaks, and other releases (7.2.11.1a).

Spill Coordinator
The Contractor shall appoint a Primary and Secondary Emergency Spill Response Coordinator who will be responsible for the reporting of spills, coordinating contractor personnel for spill cleanup, subsequent site investigations, and associated reports. In the event of a spill, the Emergency Spill Response Coordinator will be responsible for determining the extent of the containment/isolation area and cleanup methods. Include Names, positions, and emergency contact information.
The Contractor shall make contact with a Spill Cleanup Emergency Response Contractor prior to start of construction to provide sufficient information for the spill contractor to be prepared should they receive a call in the event of an emergency.

Immediate Response
All spills regardless of size must be reported to the Emergency Spill Response Coordinator and the (HDOT Construction Resident Engineer/Project Engineer/Construction Inspector). The person observing the incident will take the following actions:
• Assess the safety of the situation (including the risk to the surrounding public).
• Alert nearby personnel and secure the immediate area for safety.

If the person is aware the chemical spilled is not toxic or a known petroleum product do the following:
• Make every effort to remove potential ignition sources and stop the source of the spill.
• Clean the spill using absorbent materials available on-site. Do not hose down or bury spills. Remove and properly dispose of cleanup materials.
• Promptly notify the Emergency Spill Response Coordinator. Report name, the spill location, material spilled, and the extent of the incident.

Upon learning of the spill, the Emergency Spill Response Coordinator will implement the following measures:
• Assess the safety of the situation (including the risk to the surrounding public).
• If the source of the spill is toxic or unknown, immediately notify the Fire Department and ask for assistance from the HAZMAT team.
• Secure the area by stopping traffic if necessary and install barricades or safety fencing around the area.
•If safe to do so, prevent hazardous material from entering the stormwater or sewer system or any waterbodies by covering/blocking any drains in the spill area, and providing containment BMPs to either prevent stormwater from contacting hazardous material or contain commingled stormwater.
•If safe to do so, absorbent materials will be applied to the spill area. Contaminated soils and vegetation will be excavated and temporarily placed on and covered by plastic sheeting or in an appropriate container or surrounded by impermeable lined berms in a containment area a minimum of 100 feet away from any wetland or waterbody, until proper disposal is arranged.
• Notify appropriate agencies as required by Federal, State, and local regulations.
•For petroleum spills, provide notification if the release meets any of conditions the below:
a) Greater than 25 gallons
b) Not cleaned within 72 hours
c) Enters a storm drainage system or state waters
• Arrange for proper disposal (including contaminated personal protective equipment and/or cleanup supplies) in accordance with Federal, State, and local regulations and Manufacturer's instructions if known.
• If a spill is beyond the scope of on-site equipment and personnel, contact the Spill Cleanup Emergency Response Contractor to further contain and clean up the spill.
• Notify the (HDOT Construction Resident Engineer/Project Engineer/Construction Inspector).

Contents of the Spill kits shall be determined by the Contractor based on the anticipated type and quantity of hazardous material to be stored/used on-site. The kit should contain at minimum:
•55 gallon drum with lid
•absorbent pads (50)
•absorbent socks (12)
•absorbent pillows (5)
•1 pair goggles or faceshield
•1 pair elbow length gloves
•1 disposable apron
•disposable bags with ties (3)
•Include additional materials such as Absorbent Skimmers or Booms for work adjacent or over State Waters as needed.
•Include additional materials as necessary to secure the spill area.

Procedures for notification of appropriate facility personnel, emergency response agencies, and regulatory agencies where a leak, spill, or other release containing a hazardous substance or oil in an amount equal to or in excess of a reportable quantity consistent with HAR 11-55 subsection 5.3.4. and established under either 40 CFR Part 110, 40 CFR Part 117, or 40 CFR Part 302, occurs during a 24-hour period (7.2.11.1.b).

• Contact information must be in locations that are readily accessible and available.

• The Contractor shall take all reasonable measures to protect human health and the environment.

• For emergencies or life-threatening situations, call 911 first.

• Notify responsible parties listed below as required and immediately notify DOH Clean Water Branch and the National Response Center of the incident. The notification shall also include the identity of the pollutant sources and the implemented control or mitigation measures. Notify other agencies as required by Federal/State/Local laws. List additional agencies or personnel below as required.

1. Owner Contact/Emergency Contact Number: (HDOT Construction Resident Engineer/Project Engineer/Construction Inspector)

2. Authorized Representative/ Emergency Contact Number: (HDOT District Engineer or designated representative who can contact Authorized Representative)

3. Contractor/ Emergency Contact Number: (Contractor Emergency Contact)

4. Department of Health
Clean Water Branch (During regular working hours): ……808-586-4309
Hawaii State Hospital Operator (After hours):…….. 808-247-2191

AND E-mail Clean Water Branch via email at cleanwaterbranch@doh.hawaii.gov

5. Hawaii Hazard Evaluation and Emergency Response (HEER) ……..808-586-4249
(After Hours) ……...808-247-2191

AND

Appropriate Local Emergency Planning Committee (LEPC)

For projects on Hawaii Island
Henry Silva, Hawaii County LEPC……808-936-0858

For projects on Oahu

Leland Nakai Department of Emergency Management……808-723-8958
LEPC……808-723-8960
(After Hours)……911

For projects on Kauai
Clifford Ikeda, Kauai Civil Defense……808-241-1800
(After Hours)……808-241-6711

For projects in Maui County
Scott Kekuewa, Maui Fire Department……808-270-7911
(After Hours)……911

6. National Response Center (NRC)……(800)424-8802

7. Coast Guard Operations Center, Honolulu (working hours) …… 808-522-8246
(After hours)……808-247-2191

8. County Fire Department/Police…… 911

9. HDOT Tunnels Emergency Contact Number (After Hours)……808-485-6200

10. Contractor's Spill Cleanup Emergency Response Contractor……xxx-xxx-xxxx

• *If required, fill in and follow the requirements of the HDOT Corrective Action Report.*

Attachment G – Waste Management Procedures (SWPPP Section 7.2.11.2)

Waste Management Procedures

The Contractor shall submit the DOH "Solid Waste Disclosure Form for Construction Sites" to the Engineer within 30 calendar days of contract execution. The form can be downloaded at:
http://health.hawaii.gov/shwb/files/2013/06/swdiscformnov2008.pdf

Provide a copy of all the disposal receipts from the facility permitted by the Department of Health to receive solid waste to the Engineer monthly, this should also include documentation from any intermediary facility where solid waste is handled or processed, or as directed by the Engineer.

Solid Waste Management (SM-6)

Description	*Practices and procedures to prevent or reduce the discharge of pollutants from construction site wastes to the drainage system or adjacent water bodies.*
Applications	*Construction projects generating non-hazardous solid wastes from construction and demolition (C&D) activities. These wastes include C&D wastes, inert fill material, and recycle/reuse material.* *C&D wastes include materials originating from the demolition of roads, buildings, or other structures. Materials generated from these activities include concrete, brick, bituminous concrete, wood, masonry, composition roofing, roofing paper, steel, plaster, and minor amounts of metals.* *Inert fill materials are wastes that are not contaminated with hazardous materials such as asbestos or lead-based paint. Inert fill materials do not decompose or produce leachate or other products harmful to the environment. Inert fill materials include earth, soil, rock, cured asphalt, brick, and clean concrete (no exposed steel-reinforcing rod) with no dimension greater than eight inches.* *Recycle/reuse materials include but are not limited to: asphalt pavement, cardboard, concrete aggregate (no LBP, asbestos-free), electronic equipment, excavated rock, soil (uncontaminated), Freon from appliances, glass, green waste, metals, ferrous/non-ferrous, used tires, wood and lumbers, furniture, etc.*
Installation and Implementation Requirements	*• Separate contaminated clean up materials from C&D wastes. Contamination may be from hazardous substances, friable asbestos, waste paint, solvents, sealers, or adhesives. (See Section SM-9 Hazardous Waste Management)* *• Inert fill material shall not contain vegetation, organic material, or other solid waste.* *• Inert fill materials shall not be mixed with other C&D waste.* *• Provide waste containers of sufficient size and number to contain construction and domestic waste. Dumpsters should be securely lidded. Roll off containers should have a cover to keep rain out or loss of waste during windy conditions. Waste containers shall meet all local and State solid waste management regulations* *• Clean up and dispose of waste in designated waste containers.* *• The Contractor's supervisory personnel shall be instructed regarding the correct practices for waste disposal. Post notices stating these practices in the office*

trailer and the Contractor shall be responsible for seeing that these practices are followed.

Limitations

None

Inspections and Maintenance

• Inspect construction waste and recycling areas regularly.
• Schedule solid waste collection regularly. Empty waste containers weekly or when they are two-thirds full, whichever is sooner.
• Schedule recycling activities based on construction/demolition phases.
• Do not allow containers to overflow and clean up immediately if they do.

Sanitary/Septic Waste Management (SM-7)

Description	*Practices and procedures to reduce or prevent the discharge of sanitary wastes from construction sites into the storm drain system or adjacent water bodies.*
Applications	*Construction sites with temporary or portable sanitary/septic waste systems.*
Installation and Implementation Requirements	*• Locate sanitary facilities in a convenient place away from drainage facilities and State Waters.* *• Untreated wastewater shall not be discharged into the drainage system, State waters, to the ground or buried.* *• Position sanitary facilities where they are secure and will not be knocked down.* *• Comply with the State of Hawaii, Department of Health requirements when using an on-site disposal system such as a septic system.* *• Avoid illicit discharges by properly connecting temporary sanitary facilities to the sanitary sewer system.* *• Sanitary/septic systems discharging to the sanitary sewer shall comply with the local wastewater treatment plant requirements.* *• A licensed service provider shall maintain sanitary/septic facilities in good working order.* *• Schedule regular waste collection by a licensed transporter at least once a week or as required.*
Limitations	*None*
Inspections and Maintenance	*• Inspect and maintain facilities regularly.* *• Schedule regular waste collection.* *• Prevent illicit discharges.*

Hazardous Waste Management (SM-9)

Description

Practices and procedures to prevent the discharge of hazardous waste to the land, storm drain system, sewer system, or adjacent water bodies.

Applications

Handling procedures on construction sites involving one of the following hazardous wastes:
• Paints and solvents;
• Petroleum products such as oils, fuels, and grease;
• Herbicides;
• Acids for cleaning masonry;
• Concrete curing and repair compounds; and
• Contaminated waste material.

Hazardous waste management shall also be implemented for wastes from existing structures including:
• Sandblasted material such as grit or chips containing lead, cadmium, or chromium-based paints;
• Asbestos; and
• Polychlorinated Biphenyls (PCBs). Older transformers are a common source of PCBs.

Installation and Implementation Requirements

Recognize potentially hazardous waste by implementing the following:
• Review product label and shipping papers;
• Identify key words such as flammable or ignitable (able to catch fire); carcinogenic (causes cancer); toxic or poisonous (injures or harms people or animals); and hazardous, danger, caustic or corrosive (burns through chemical action). Hawaii Administrative Rules (HAR) Title 11, Chapter 261 includes a list of hazardous waste and criteria;
• Review safety data sheets (SDS), formerly material safety data sheets (MSDS) from the manufacturer and supplier of the product; and
• Contact DOH, Hazardous Waste Program Office at 586-4226 for additional questions and information.

Material use practices and procedures for hazardous waste management include the following:
• Dispose container only after all of the product has been used;
• Keep the original product label on the container since it includes important safety and disposal information;
• Restrict amount of herbicide prepared to quantity necessary for the current application. Comply with the recommended usage instructions. Do not apply herbicides during or just before a rain event; and
• Remove as much paint from brushes on painted surface. Do not clean or rinse water-based paint brushes in soil, streets, gutters, storm drains, or streams. Rinse from water-based paints shall be discharged into the sanitary sewer system. Filter and re-use solvents and thinners. Dispose of oil-based paints and residue as a hazardous waste.
• See SM-2 Material Delivery and Storage and SM-3 Material Use for other requirements.

Waste recycling and disposal practices and procedures for hazardous waste management include the following:
• Designate areas for collection of hazardous wastes;
• Store hazardous materials and wastes in covered containers and label according to applicable Resource Conservation and Recovery Act (RCRA) requirements and all other applicable federal, state, and local requirements;
• Provide appropriately-sized secondary containment for hazardous waste containers or cover to prevent from contact with rainwater and stormwater runoff;
• Keep wastes separate to prevent chemical reactions which make recycling and disposal difficult;
• Recycle useful materials such as oil or water-based paint;
• Do not dispose of toxic liquid wastes (solvents, used oils, and paints) or chemicals (additives, acids, and curing compounds) in dumpsters allocated for construction debris;
• Schedule periodic waste collection to prevent overflow of containers; and
• Ensure collection, removal, and disposal of hazardous waste complies with manufacturer's recommendations and in compliance with federal, state, and local requirements.
• Clean up spills immediately, using dry clean-up methods where possible, and dispose of used materials properly.
• Do not clean surfaces or spills by hosing the area down.
• Eliminate the source of the spill to prevent a discharge or a continuation of an ongoing discharge.

Hazardous waste management training shall include the following:
• Awareness of potential dangers from hazardous wastes;
• Identifying hazardous wastes;
• Proper hazardous waste storage and disposal procedures;
• Safety procedures for hazardous wastes;
• Placement of warning signs in areas recently treated with chemicals;
• Use of cleanup materials for spills.

Limitations

Hazardous waste that cannot be reused or recycled shall be disposed of by a licensed hazardous waste hauler.

Inspections and Maintenance

• Regularly inspect hazardous waste collection and storage areas and containers.
• Schedule hazardous waste collection regularly.

[Edit as applicable] *Litter Management Plan*

Project Name

A. *Construction site preparations.*

Before the start of construction activities, during the mobilization process, proper litter waste receptacles will be located at the construction site. Litter receptacles will be placed within the boundaries of the project right-of-way or within a project related vehicle on-site. Construction debris receptacles that accept mixed reuse may also act as litter control receptacles.

B. *Daily Construction Site Litter Prevention Activities.*

- *Pre-Construction activities litter prevention and control activities.*

  - *At the start of each work day, the active work areas of the construction site(s) will be inspected for litter debris.*
  - *Litter debris found will be collected and properly sorted into the proper debris receptacle.*
  - *Litter will be collected whether or not it was sourced from the job site and construction related activities.*
  - *After collection, litter will be disposed of in appropriate waste containers and all practices outlined in the Waste Management Plan will be followed.*
  - *Waste containers will be inspected regularly to prevent overfilling.*

- *Post-Construction Site Litter Prevention Activities*

  - *At the end of each work day, the active work areas of the construction site(s) will be inspected for litter debris.*
  - *Litter debris found will be collected a property sorted into the proper debris receptacle.*
  - *Litter will be collected whether or not it was sourced from the job site and construction related activities.*
  - *After collection, litter will be disposed of in appropriate waste containers and all practices outlined in the Waste Management Plan will be followed.*
  - *Waste containers will be inspected regularly to prevent overfilling.*

- *BMPs and Litter Control*

- *Construction Site BMPs will be inspected for litter debris when conducted weekly BMP inspection or after a significant rain event as litter debris may reduce the performance of BMPs.*

Attachment H – Emergency Related Projects, Departures from Manufacturer's Specifications for Fertilizers Containing Nitrogen or Phosphorus, Buffer Documentation, Documentation of Compliance with UIC Requirements, Other State/Federal/County Permits, Fugitive Dust Control Plan & Other Information as Requested by the Director (SWPPP Sections 7.2.3, 7.2.9, 7.2.14, 7.2.15, and 7.2.16)

Fugitive Dust Fact Sheet

Prepared by the Department of Health, Clean Air Branch
Rev October 2014

Hawaii Administrative-Rules, Section 11-60.1-33, Fugitive Dust-states, in part:

11-60.1-33(a): No person shall cause or permit visible fugitive dust to become airborne without taking reasonable precautions.

11-60.1-33(b): ...no person shall cause or permit the discharge of visible fugitive dust beyond the property lot line on which the fugitive dust originates.

An air permit for a facility may contain additional or more stringent fugitive dust requirements. Failure to comply with the fugitive dust requirements may result in civil and administrative fines of not more than $25,000 per day per violation.

Examples of Reasonable Precautions

The following are examples only, this list is not exclusive nor comprehensive. Reasonable precautions to control fugitive dust are determined on a case-by-case basis. The site topography and surroundings, soil conditions, meteorological conditions, site activities, site equipment, and types of material processed must be considered. The use of any or all of the example measures does not automatically mean compliance with the fugitive dust requirements. The owner, project manager or operator should assess the project activities and conditions daily and make adjustments so that reasonable precautions are taken to prevent fugitive dust from becoming airborne and crossing the property line. Generally, dry and windy conditions will require more control measures than rainy and calm periods.

General Measures

- Design, develop and implement a dust control plan.
- Use water or suitable chemical compounds in the demolition of existing structures, construction operations, and grading or clearing of land.
- Apply water, dust suppressants, or suitable compounds on roads and material stockpiles.
- Pave ingress and egress points to the site.
- Establish and monitor speed limits for on - site vehicles.
- Cover all moving, open-bodied trucks transporting dusty materials.
- Install and use enclosures, screens, hoods, vacuums, and filters to control the handling, sanding or finishing of dusty materials.
- Use trash chutes to direct waste downwards to the ground from upper levels
- Clean up material spills as soon as possible.
- Promptly remove soil or other "carry out"materials from roads adjacent to the site.
- Install dust screens or wind barriers around construction site.
- Where practical, provide a buffer zone between fugitive dust activities and residential areas.

Agricultural Activities

- Keep fallow land to a minimum.
- Use cover crops to minimize exposed soil.
- Limit vehicular speed during plowing activities and while traveling onsite.

Crushing and Screening

- Pre-wet material.
- Monitor crusher's visible dust emissions.
- Apply water to crushed material.
- Apply water at material transfer points.
- Stabilize material immediately after screening.
- Drop material through the screen slowly and minimize drop height.
- Install wind barrier upwind of screen.

Earth-moving activities

- Pre-apply and re-apply water as necessary to maintain soils in a damp condition.
- Limit the amount of exposed areas through planning and timing of project phases.
- Cover temporarily exposed areas with mulch.

Stockpiles

- Stabilize stockpile materials.
- Keep stockpiles wet or damp as needed
- Cover stockpile when not in use. Use mulch or synthetic cover based on usage of stockpile.
- Keep drop or pile height as low as possible.
- Install wind barriers
- Add or remove material from downwind portion of stockpile
- Maintain storage piles to avoid steep sides or faces.

Trucking

- Provide water while loading and unloading to prevent fugitive dust.
- Maintain at least six inches of freeboard on haul vehicles. Level the height of load.
- Limit vehicular speed while traveling onsite.
- Cover your load while travelling.
- Install a gravel pad and grizzly at exit.
- Reduce carry out with a tire wash or spray system.

Attachment I – Corrective Action Reports

Hawaii Department of Transportation Corrective Action Report

Section 10.1 "Corrective Actions" Defined

Corrective actions are actions taken in compliance with this section to:

a. Repair, modify, or replace any storm water control used at the site
b. Clean up and properly dispose of spills, releases, or other deposits
c. Remedy a permit violation

Section 10.2.1. Triggering Events

The following are triggers that require corrective action be taken (this triggering condition is to be documented within 24 hours of discovering the occurrence):

- ❑ *A required storm water control was never installed, was installed incorrectly, or not in accordance with the requirements in HAR Chapter 11-55, sections 5 and/or 6.*
- ❑ *The Contractor/Engineer becomes aware that the storm water controls installed and being maintained are not effective enough for the discharge to meet applicable water quality standards or applicable requirements in HAR Chapter 11-55, section 6.1. The Contractor shall notify the Engineer immediately. The Engineer will notify the Department of Health by the end of the next work day.*

  *Date/time Engineer notified by Contractor*_____

  *Date/time DOH notified by Engineer*_____

- ❑ *One of the prohibited discharges below is occurring or has occurred:*
  - ❒ *Wastewater from washout of concrete*
  - ❒ *Wastewater from washout and cleanout of stucco, paint, form release oils, curing compounds and other construction materials*
  - ❒ *Fuels, oils, or other pollutants used in vehicle and equipment operation and maintenance*
  - ❒ *Soaps, solvents, or detergents used in vehicle and equipment washing*
  - ❒ *Toxic or hazardous substances from a spill or other release*

Section 10.2. Requirements for Taking Corrective Actions

The Contractor shall complete corrective actions in accordance with the deadlines specified below. In all circumstances, the Contractor shall immediately take all reasonable steps to minimize or prevent the discharge of pollutants until a permanent solution is installed and made operational, including cleaning up any contaminated surfaces so that the material will not discharge in subsequent storm events. Immediately means the same day the condition is discovered, unless it is too late in the day, in which initiation of corrective action must begin on the following work day.

Following any of the above triggering events, the Contractor shall install a new or modified control and make it operational, or complete the repair, by no later than 7 calendar days from the time of discovery. If it is infeasible to complete the installation or repair within 7 calendar days, the Contractor shall document and submit to the Engineer, for his agreement, why it is infeasible to complete the installation or repair within the 7 calendar day timeframe and

document a schedule for installing the storm water control(s) and making it operational as soon as practicable after the 7-day timeframe.

*Date installation/repair completed or date/time prohibited discharge ceased*_____

_____

Reason it is infeasible to complete installation or repair within 7 calendar days and proposed schedule (if applicable) _____

_____

_____

_____

10.4.1. Initial Report (24 Hours)

Within 24 hours of discovering the occurrence of one of the triggering conditions in HAR Chapter 11-55, section 10.2.1. at the site, the Contractor must complete the following:

- *The nature of the condition identified*_____

  _____

  _____

- *The date and time of the condition identified and how it was identified* _____

  _____

  _____

10.4.2. Final Report (7 Days)

Within 7 calendar days of discovering the occurrence of one of the triggering conditions in HAR Chapter 11-55, section 10.2.1. at the site, the Contractor must complete a report of the following:

- *Any follow-up actions taken to review the design, installation, and maintenance of storm water controls, including the dates such actions occurred*_____

  _____

  _____

- *A summary of storm water control modifications taken or to be taken, including a schedule of activities necessary to implement changes, and the date the modifications are completed or expected to be completed*_____

  _____

  _____

- *Notice of whether SWPPP modifications are required as a result of the condition identified or corrective action*_____

  _____

  _____

Section 10.2.2. SWPPP Modification Due to Corrective Actions

Where corrective actions result in changes to any of the storm water controls or procedures documented in the SWPPP, modify the SWPPP accordingly within 7 calendar days of completing corrective action work.

❑ *Date SWPPP modified*_____

Section 10.3 Corrective Actions Required by the Department of Health (DOH)

The Contractor shall comply with any corrective actions required by the department as a result of permit violations found during an inspection by DOH or EPA.

Was the Corrective Action triggered by a DOH/EPA inspection?

❑ *Yes* ❑ *No*

❑ *Date of DOH/EPA Inspection*_____

Section 10.4.3. Certification

The certifying person and duly authorized representative shall meet the requirements of Hawaii Administrative Rules 11-55, Appendix A, Section 15.

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

*Signature:*_____ *Date:*_____

Person Name: *Donald Engineer*

Person Position Title: *District Engineer*

Person Company or Agency: *State of Hawaii*

Department: *Department of Transportation* *Division:* *Highways Division*

Phone Number: *(808) XXX-XXXX* *Fax No.:* *(808) XXX-XXXX*

Person Email: *donald.engineer@hawaii.gov*

Attachment J – Monthly Compliance Report

Hawaii Department of Transportation Monthly Compliance Report

*DOH NGPC File No.*_____
*Project Name:*_____
*Project No:*_____
*Reporting Month and Year:*_____
*Date Prepared:*_____

Complete this form within 2 working days of the end of the month. This report must be kept on-site and made available by the end of the next business day when requested by DOH. Check the applicable boxes below and include attachments when necessary.

❑ *Corrective Action Reports for this month are attached.*

❑ *Changes to the information on file with DOH for the past month are attached.*

❑ *No changes, updates, or any incidences of non-compliance to report.*

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

*Signature:*_____ *Date:*_____

Person Name: *Donald Engineer*

Person Position Title: *District Engineer*

Person Company or Agency: *State of Hawaii*

Department: *Department of Transportation* *Division:* *Highways Division*

Phone Number: *(808) XXX-XXXX* *Fax No.:* *(808) XXX-XXXX*

Person Email: *donald.engineer@hawaii.gov*

Attachment K – Post-Authorization Additions to the SWPPP

Attachment L – SWPPP Modification Log

MODIFICATION LOG

Each Modification must be signed by the authorized representative authorizing the changes in Section 7.2.17 within 7 calendar days following the occurrence of any of the conditions listed in section 7.4.1.

Project Name: _____

SWPPP Contact: _____

Modification No.	***Description of the Modification***	***Date of Modification***	***Modification Prepared by [Name(s) and Title]***

Add rows as needed.

Include any attachments on the following pages.