



US Army Corps
of Engineers
Honolulu District

Public Notice of Application for Permit

Regulatory Branch (1145b)
Building 230
Fort Shafter, Hawaii 96858-5440

Public Notice Date: August 29, 2011
Expiration Date: September 30, 2011
Permit File Number: POH-2010-00112

Interested parties are hereby notified that an application has been received for a Department of the Army permit for certain work in waters of the United States as described below and shown on the attached drawings.

APPLICANT: Department of Accounting & General Services (DAGS), State of Hawaii, Honolulu, 1151 Punchbowl Street, Honolulu, HI, 96813-3047

AGENT: Oceanit, 828 Fort Street Mall, Suite 600, Honolulu, HI 96813

LOCATION: In Kolea Stream, at TMK 211001050 (20.87168 °N/ -156.18962 ° W), County of Maui, Hana District, Maui Island.

WORK: The proposed project is to breach Kolea Reservoir, an impoundment of Kolea Stream waters and construct a new stream channel section providing unimpeded flow of Kolea Stream to the Pacific Ocean (Attachment). The proposed improvement project consists of: 1) grading of about 9,600 cubic yards of soil, gravels and boulders within the 0.93 acre area reservoir to de-construct the reservoir structures, 2) discharge of about 9,077 cubic yards of earth to fill the drained reservoir basin and re-establish upland slopes, 3) discharge of about 211 cubic yards of rock to construct a new riprap apron and 6 check dams in the new 15-foot wide, 245-foot long artificial stream channel, and 4) place temporary structures in Kolea Stream to reduce impacts to the aquatic environment.

PURPOSE: To eliminate the hazard of a reservoir breach that could disrupt the use of Hana Highway downstream and to minimize stream bed and bank erosion and reduce sediment migration to receiving ocean waters 0.73 miles (3,845 feet) downstream.

ADDITIONAL INFORMATION: A Stream Channel Alteration Permit (SCAP, SDWP.2789.6) was issued on June 29, 2011 from the Commission on Water Resource Management (COWRM), Department of Land and Natural Resources, State of Hawaii.

MITIGATION: The applicant has proposed the following mitigation efforts to reduce impacts to the aquatic environment: construct a temporary stream water bypass berm upstream of the reservoir, place

siphon and drain lines for the temporary diversion of stream flows from the work area, construct a sediment containment berm downstream of the grading area, and install erosion control measures consisting of 62,745 square feet grass-seeded surface, 16,695 square feet of erosion control grass mats, and 217 lineal feet of silt fencing.

WATER QUALITY CERTIFICATION: A permit for the described work will not be issued until a certification or waiver of certification as required under Section 401 of the Clean Water Act (Public Law 95-217), has been received from the Clean Water Branch, Department of Health, State of Hawaii

COASTAL ZONE MANAGEMENT ACT CERTIFICATION: Section 307(c)(3) of the Coastal Zone, Management Act of 1972, as amended by 16 U.S.C. 1456(c)(3), requires the applicant to certify that the described activity affecting land or water uses in the Coastal Zone complies with the State of Hawaii Coastal Zone Management Program. A permit will not be issued until the Office of State Planning, Department of Business, Economic Development, and Tourism has concurred with the applicant's consistency determination.

PUBLIC HEARING: Any person may request, in writing, within the comment period specified in this notice, that a public hearing be held to consider this application. Requests for public hearings shall state clearly and concisely, the reasons and rationale for holding a public hearing.

CULTURAL RESOURCES:

The Area of Potential Effect (APE) considered by this Department of Army (DA) permit application includes Kolea Reservoir (SIHP-50-50-13-6683), a property likely to be eligible for listing on the National Register of Historic Places. A determination from the State Historic Preservation Officer (SHPO), dated 24 November 2010, acknowledges that the Kolea Reservoir will not be adversely affected by this proposed project provided the Applicant ensures that appropriate documentation is conducted before its destruction. These documentation measures are stipulated in the *Programmatic Agreement Between Department of Land and Natural Resources and The Hawaii Historic Preservation (SHPD) Regarding the Disposition of Dam Decommissioning Projects*, nd.

Further, the proposed project is not expected to result in the temporary or permanent loss of aquatic organisms or habitat which may be of significance to Native Hawaiian practitioners as a traditional cultural property for subsistence and access purposes. The Corps has determined, therefore, that issuance of a DA permit for the Breach of Kolea Reservoir Project will have "No Adverse Effect" on any eligible or listed historic and traditional cultural properties on the Hawaii and National Registers of Historic Places. Written comments and concurrence for this determination from SHPO and interested parties are requested.

This notice has been sent to the State Historic Preservation Officer, the State Office of Hawaiian Affairs, Hui Malama I Na Kupuna and the Aha Kiolo Advisory Committee. Any comments they have regarding historic properties and cultural resources will be considered before a final decision is made on the DA permit.

ENDANGERED SPECIES: The Endangered Species Act (ESA) requires federal agencies to consult with the National Marine Fisheries Service (NMFS) and/or U.S. Fish and Wildlife Service (USFWS) pursuant to Section 7 of ESA on all actions that may affect a species listed (or proposed for listing) under the ESA as threatened or endangered or any designated critical habitat.

The Corps has assessed potential impacts to Federal candidate, proposed, and listed endangered and threatened species in the project area. As the jurisdictional waters to be affected by this project are not tidally influenced or estuarine, there are no marine protected species that have the potential to occur within the project area. The

Corps has determined that this proposed project will also have **No Effect** on protected marine species and their designated critical habitat.

The Corps has assessed potential impacts to federally-listed and proposed species in the project area. No vascular plant species, insect, mollusk, fish, amphibian, avian or mammal species listed or proposed for listing under the Endangered Species Act (ESA) were recorded, observed or known to exist within, or transit through, the project area (AECOS, Inc., Report No. 1228, 15 Jun2 2010, *Biological Surveys for the Kolea Reservoir Dam Removal Project, East Maui*). The project, as proposed, is not likely to produce potential stressors that would reasonably be expected to interact directly with individual protected species.

In accordance with Section 7 of the Endangered Species Act, this project will therefore have **No Effect** on USFWS-protected species. There is no designated or proposed critical habitat for any ESA-listed species within the project area. Therefore this proposed project will also have **No Effect** on their designated critical habitat.

ESSENTIAL FISH HABITAT: The proposed work was also evaluated for possible effects to Essential Fish Habitat (EFH) pursuant to the Magnuson-Stevens Fishery Conservation and Management Act of 1996 (MSFCMA), 16 U.S.C. § 1801 *et seq.* and associated federal regulations found at 50 CFR 600 Subpart K. The Corps has determined that the proposal would not adversely affect EFH in accordance with the requirements of the MSFCMA.

SPECIAL AREA DESIGNATION: The project area is located within the State Land Use Conservation District, Protective and Resource Subzones

AUTHORITY: This permit application will be reviewed under the following authority:

Section 404, Clean Water Act (33 U.S.C. 1344), discharge of dredged or fill material into waters of the United States. The Corps' public interest review will consider the guidelines set forth under Section 404(b) of the Clean Water Act (40 CFR 230).

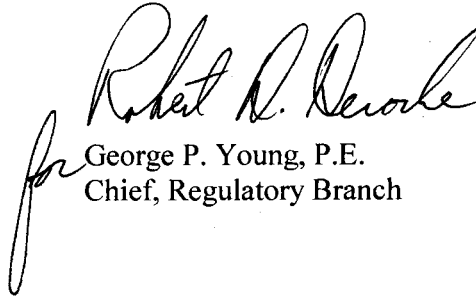
EVALUATION: The decision whether to issue a permit will be based on an evaluation of the probable impacts, including cumulative impacts, of the proposed activity on the public interest. That decision will reflect the national concern for both protection and utilization of important resources. The benefits, which reasonably may be expected to accrue from the proposal, must be balanced against its reasonably foreseeable detriments. All factors which may be relevant to the proposal will be considered, including the cumulative effects thereof; among those are conservation, economics, aesthetics, general environmental concerns, wetlands, historic properties, fish and wildlife values, flood hazards, floodplain values, land use, navigation, shoreline erosion and accretion, recreation, water supply and conservation, water quality, energy needs, safety, food and fiber production, mineral needs, considerations of property ownership, and, in general, the needs and welfare of the people.

The U.S. Army Corps of Engineers is soliciting comments from the public; Federal, State, and local agencies and officials; and other interested parties in order to consider and evaluate the impacts of this activity. Any comments received will be considered by the Corps to determine whether to issue, modify, condition or deny a permit for the work. To make this decision, comments are used to assess impacts on endangered species, historic properties, water quality, general environmental effects, and the other public interest factors listed above. Comments are used in the preparation of an Environmental Assessment and/or an Environmental Impact Statement pursuant to the National Environmental Policy Act. Comments are also used to determine the need for a public hearing and to determine the overall public interest of the activity.

COMMENT AND REVIEW PERIOD: Conventional mail or e-mail comments on this public notice will be accepted and made part of the record and will be considered in determining whether it would be in the public interest to authorize this proposal. In order to be accepted, e-mail comments must originate from the author's e-mail account and must include on the subject line of the e-mail message the permit applicant's name and reference number as shown below. All e-mail comments should be sent to Farley.K.Watanabe@usace.army.mil. Conventional mail comments should be sent U.S. Army Corps of Engineers, Regulatory Branch, Building 230, Ft. Shafter, HI 96848. Both conventional mail and e-mail comments must include the permit applicant's name and reference number, as shown below, and the commenter's name, address, and phone number. All comments whether conventional mail or e-mail must reach this office, no later than the expiration date of this public notice to ensure consideration. Please include the following name and reference number: **POH-2010-00112**.

Comments on the described work, with the reference number, should reach this office no later than the expiration date of this Public Notice to become part of the record and be considered in the decision. Please contact Farley Watanabe at (808) 438-7701 if further information is desired concerning this notice.

Project drawings, photographs, and historic site map (10 pages) are attached to this Public Notice.


for George P. Young, P.E.
Chief, Regulatory Branch

For and on behalf of:
Douglas B. Guttormsen
Lieutenant Colonel
District Engineer

Attachments:

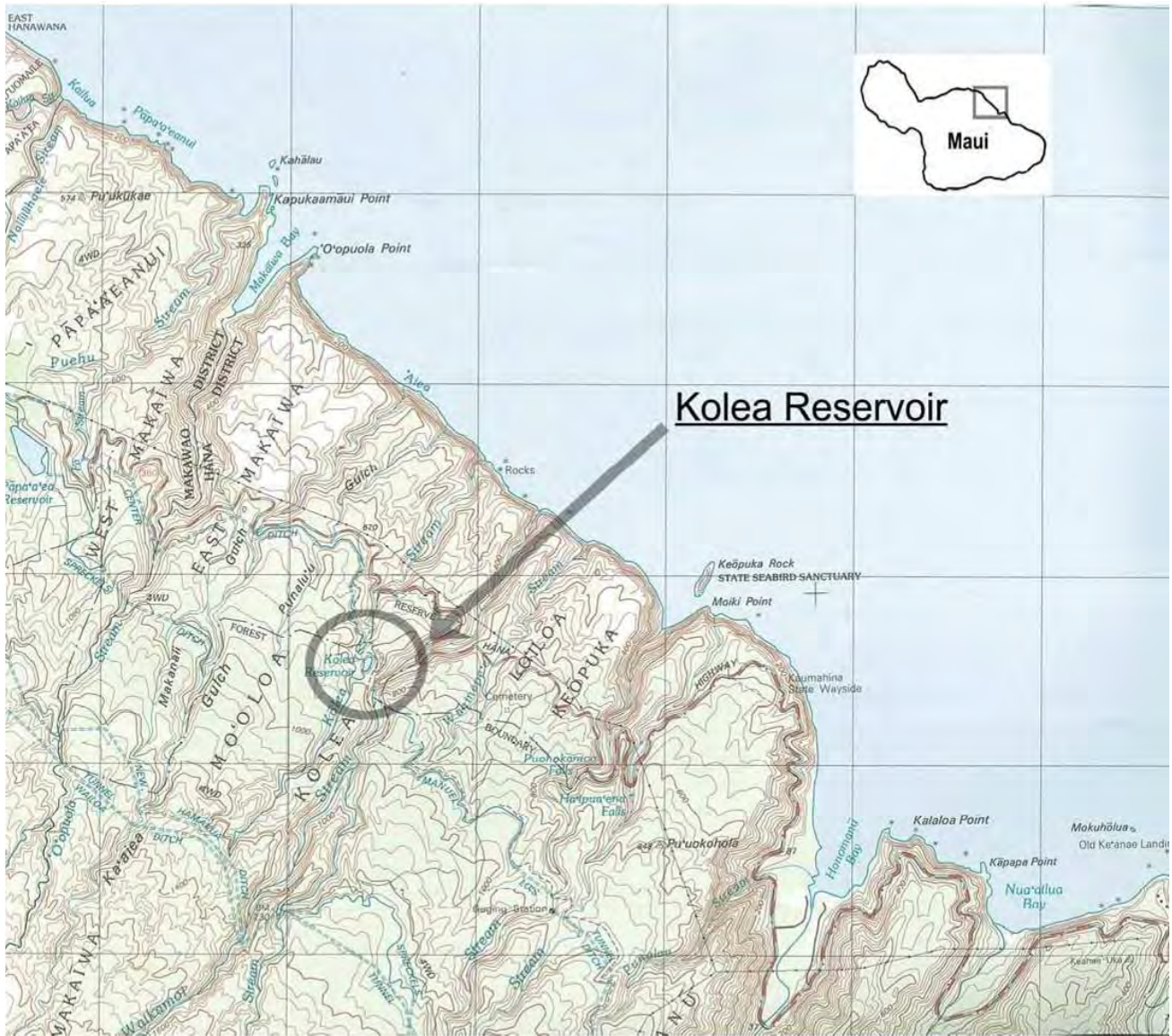


Figure 1-1. Location of Kōlea Reservoir

POH-2010-00112 Breach Kolea Reservoir Project, Kolea Stream, Hana District, Maui



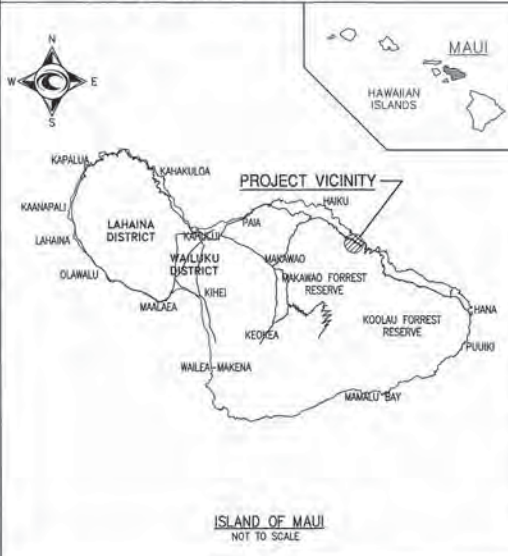
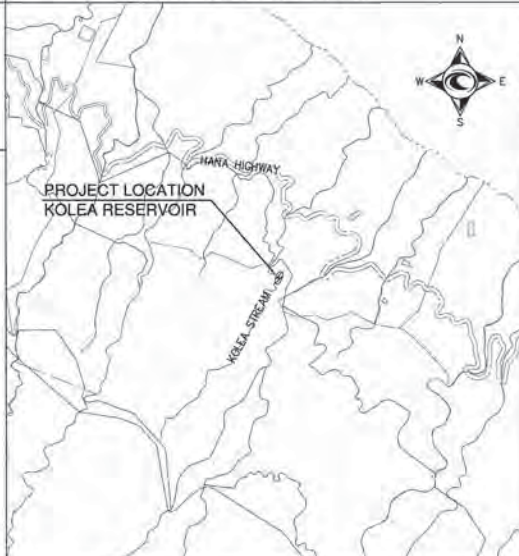
DLNR DAMS AND RESERVOIRS ON MAUI KOLEA RESERVOIR (HI00097) MAINTENANCE AND REMEDIATION IMPROVEMENTS

TAX MAP KEY: 1-1-001:050
HAIKU, MAUI, HAWAII

FOR THE
DEPARTMENT OF LAND AND NATURAL RESOURCES
STATE OF HAWAII

AND THE
DEPARTMENT OF ACCOUNTING AND GENERAL SERVICES
PUBLIC WORKS DIVISION
STATE OF HAWAII

D.A.G.S. JOB NO. 15-23-7409

| VICINITY MAP | LOCATION MAP | SHEET INDEX | APPROVED | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
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|  <p style="text-align: center;">ISLAND OF MAUI NOT TO SCALE</p> |  | <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>DWG. NO.</th> <th>SHT. NO.</th> <th>DESCRIPTION OF DRAWINGS</th> </tr> </thead> <tbody> <tr><td>T-1</td><td>1</td><td>TITLE SHEET</td></tr> <tr><td>T-2</td><td>2</td><td>NOTES</td></tr> <tr><td>T-3</td><td>3</td><td>NOTES</td></tr> <tr><td>EG-1</td><td>4</td><td>EXISTING SITE PLAN</td></tr> <tr><td>EG-2</td><td>5</td><td>DEMOLITION PLAN</td></tr> <tr><td>EC-1</td><td>6</td><td>STREAM DIVERSION AND EROSION CONTROL PLAN</td></tr> <tr><td>C-1</td><td>7</td><td>GRADING PLAN</td></tr> <tr><td>C-2</td><td>8</td><td>BREACH CHANNEL - PLAN & PROFILE</td></tr> <tr><td>C-3</td><td>9</td><td>BREACH CHANNEL - CROSS SECTIONS STA. 0+00 TO 0+75</td></tr> <tr><td>C-4</td><td>10</td><td>BREACH CHANNEL - CROSS SECTIONS STA. 1+00 TO 1+75</td></tr> <tr><td>C-5</td><td>11</td><td>BREACH CHANNEL - CROSS SECTIONS STA. 2+00 TO 3+00</td></tr> </tbody> </table> | DWG. NO. | SHT. NO. | DESCRIPTION OF DRAWINGS | T-1 | 1 | TITLE SHEET | T-2 | 2 | NOTES | T-3 | 3 | NOTES | EG-1 | 4 | EXISTING SITE PLAN | EG-2 | 5 | DEMOLITION PLAN | EC-1 | 6 | STREAM DIVERSION AND EROSION CONTROL PLAN | C-1 | 7 | GRADING PLAN | C-2 | 8 | BREACH CHANNEL - PLAN & PROFILE | C-3 | 9 | BREACH CHANNEL - CROSS SECTIONS STA. 0+00 TO 0+75 | C-4 | 10 | BREACH CHANNEL - CROSS SECTIONS STA. 1+00 TO 1+75 | C-5 | 11 | BREACH CHANNEL - CROSS SECTIONS STA. 2+00 TO 3+00 | <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>APPROVED</th> <th>DATE</th> </tr> </thead> <tbody> <tr> <td><i>[Signature]</i> CHAIRPERSON, DEPARTMENT OF LAND AND NATURAL RESOURCES STATE OF HAWAII</td> <td style="text-align: right;">6/5/2010</td> </tr> <tr> <td><i>[Signature]</i> COMPTROLLER, DEPARTMENT OF ACCOUNTING AND GENERAL SERVICES STATE OF HAWAII</td> <td style="text-align: right;">5/6/10</td> </tr> <tr> <td><i>[Signature]</i> PUBLIC WORKS ADMINISTRATOR, DEPARTMENT OF ACCOUNTING AND GENERAL SERVICES STATE OF HAWAII</td> <td style="text-align: right;">5/6/10</td> </tr> </tbody> </table> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 20%;"></td> <td style="width: 80%;"> <p style="text-align: center;">DEPT. OF ACCOUNTING & GENERAL SERVICES DIVISION OF PUBLIC WORKS STATE OF HAWAII</p> <p style="text-align: center;">DLNR DAMS AND RESERVOIRS ON MAUI KOLEA DAM (HI00097) MAINTENANCE AND REMEDIATION IMPROVEMENTS</p> <p style="text-align: center;">TAX MAP KEY: 1-1-001:050 HAIKU, MAUI, HAWAII</p> <p style="text-align: center;">TITLE SHEET</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 20%;">REVISION BY: JAC</td> <td style="width: 20%;">APPROVED BY: DE</td> <td style="width: 20%;">DATE: 10-23-7409</td> <td style="width: 40%;">DRAWING NO.: T-1</td> </tr> <tr> <td>CREATED BY: JAC</td> <td>APPROVED BY:</td> <td>DATE:</td> <td>SHEET: 1</td> </tr> <tr> <td colspan="3">SCALE: AS NOTED</td> <td>DATE: MAY 2010</td> </tr> </table> </td> </tr> </table> | APPROVED | DATE | <i>[Signature]</i> CHAIRPERSON, DEPARTMENT OF LAND AND NATURAL RESOURCES STATE OF HAWAII | 6/5/2010 | <i>[Signature]</i> COMPTROLLER, DEPARTMENT OF ACCOUNTING AND GENERAL SERVICES STATE OF HAWAII | 5/6/10 | <i>[Signature]</i> PUBLIC WORKS ADMINISTRATOR, DEPARTMENT OF ACCOUNTING AND GENERAL SERVICES STATE OF HAWAII | 5/6/10 | | <p style="text-align: center;">DEPT. OF ACCOUNTING & GENERAL SERVICES DIVISION OF PUBLIC WORKS STATE OF HAWAII</p> <p style="text-align: center;">DLNR DAMS AND RESERVOIRS ON MAUI KOLEA DAM (HI00097) MAINTENANCE AND REMEDIATION IMPROVEMENTS</p> <p style="text-align: center;">TAX MAP KEY: 1-1-001:050 HAIKU, MAUI, HAWAII</p> <p style="text-align: center;">TITLE SHEET</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 20%;">REVISION BY: JAC</td> <td style="width: 20%;">APPROVED BY: DE</td> <td style="width: 20%;">DATE: 10-23-7409</td> <td style="width: 40%;">DRAWING NO.: T-1</td> </tr> <tr> <td>CREATED BY: JAC</td> <td>APPROVED BY:</td> <td>DATE:</td> <td>SHEET: 1</td> </tr> <tr> <td colspan="3">SCALE: AS NOTED</td> <td>DATE: MAY 2010</td> </tr> </table> | REVISION BY: JAC | APPROVED BY: DE | DATE: 10-23-7409 | DRAWING NO.: T-1 | CREATED BY: JAC | APPROVED BY: | DATE: | SHEET: 1 | SCALE: AS NOTED | | | DATE: MAY 2010 |
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| T-2 | 2 | NOTES | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| T-3 | 3 | NOTES | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| EG-1 | 4 | EXISTING SITE PLAN | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| EG-2 | 5 | DEMOLITION PLAN | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| EC-1 | 6 | STREAM DIVERSION AND EROSION CONTROL PLAN | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| C-1 | 7 | GRADING PLAN | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| C-2 | 8 | BREACH CHANNEL - PLAN & PROFILE | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| C-3 | 9 | BREACH CHANNEL - CROSS SECTIONS STA. 0+00 TO 0+75 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| C-4 | 10 | BREACH CHANNEL - CROSS SECTIONS STA. 1+00 TO 1+75 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| C-5 | 11 | BREACH CHANNEL - CROSS SECTIONS STA. 2+00 TO 3+00 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
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GENERAL CONSTRUCTION NOTES

- 1. ALL APPLICABLE CONSTRUCTION WORK SHALL BE DONE IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION, SEPTEMBER 1986 AND STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION, SEPTEMBER 1984, AS AMENDED, OF THE DEPARTMENT OF PUBLIC WORKS, CITY AND COUNTY OF HONOLULU AND THE COUNTIES OF KAUAI, MAUI, AND HAWAII.
- 2. THE CONTRACTOR SHALL OBSERVE AND COMPLY WITH ALL FEDERAL, STATE, AND LOCAL LAWS REQUIRED FOR THE PROTECTION OF PUBLIC HEALTH, SAFETY, AND ENVIRONMENTAL QUALITY.
- 3. PERMITS SHALL BE OBTAINED BY THE CONTRACTOR.
- 4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONFORMANCE WITH THE APPLICABLE PROVISIONS OF THE WATER QUALITY AND WATER POLLUTION CONTROL STANDARDS CONTAINED IN HAWAII ADMINISTRATIVE RULES, TITLE 11, CHAPTER 54, "WATER QUALITY STANDARDS", AND TITLE 11, CHAPTER 55, "WATER POLLUTION CONTROL", AS WELL AS CHAPTER 14 OF THE REVISED ORDINANCES OF HONOLULU, AS AMENDED. BEST MANAGEMENT PRACTICES SHALL BE EMPLOYED AT ALL TIMES DURING CONSTRUCTION.
- 5. THE CONTRACTOR SHALL CONDUCT ALL TESTS SPECIFIED AND BE RESPONSIBLE FOR EXPENSES INCURRED IN CONDUCTING THESE TESTS.
- 6. VERIFY AND CHECK ALL DIMENSIONS AND DETAILS SHOWN ON THE DRAWINGS PRIOR TO THE START OF CONSTRUCTION. IF DIMENSIONAL ERRORS OR CONFLICTS OCCUR, THE CONTRACTOR SHALL NOTIFY THE OFFICER IN CHARGE (OIC) AND SHALL WAIT FOR CLARIFICATION BEFORE RESUMING OR COMMENCING WORK ON THE DISCREPANCY ITEM.
- 7. DIMENSIONS TAKE PRECEDENCE OVER SCALE.
- 8. THE STRUCTURAL DRAWINGS AND SPECIFICATIONS REPRESENT THE FINISHED STRUCTURE. THEY DO NOT INDICATE THE METHOD OF CONSTRUCTION. THE CONTRACTOR SHALL PROVIDE ALL MEASURES NECESSARY TO PROTECT THE STRUCTURE DURING CONSTRUCTION. SUCH MEASURES INCLUDE, BUT ARE NOT LIMITED TO, BRACING, SHORING FOR LOADS DUE TO CONSTRUCTION EQUIPMENT, WIND, SEISMIC, ETC. OBSERVATION VISITS TO THE SITE BY THE OIC SHALL NOT INCLUDE INSPECTION OF THE ABOVE ITEMS.
- 9. ALL MATERIALS SHALL CONFORM TO THE DRAWING AND SPECIFICATIONS.
- 10. THE CONTRACTOR SHALL COORDINATE THE STORAGE OF HIS MATERIAL WITH THE OIC.
- 11. RESTRICT ALL VEHICLES, MATERIAL STOCKPILES AND EQUIPMENT TO WITHIN THE CONTRACT LIMIT LINES. ANY TOOLS, MATERIALS, EQUIPMENT, FENCING, ETC. THAT THE CONTRACTOR KEEPS IN THIS AREA ARE STORED AT THE CONTRACTOR'S RISK. IF OTHER SHORT TERM STORAGE AREAS ARE NEEDED, THEY MAY BE ARRANGED THROUGH THE OIC.
- 12. NO CONSTRUCTION EQUIPMENT SHALL BE PARKED WITHIN THE FACILITY ROADWAYS IN SUCH A MANNER THAT THE EQUIPMENT WILL OBSTRUCT THE NORMAL MOVEMENT AND SIGHT DISTANCE OF THE DRIVING MOTORIST, EXCEPT DURING ACTUAL WORKING HOURS.
- 13. DAMAGE OUTSIDE THE CONTRACT ZONE LIMITS AS A RESULT OF CONSTRUCTION OPERATIONS SHALL BE RESTORED TO ITS ORIGINAL, BETTER CONDITION. SUCH RESTORATION SHALL BE TO THE SATISFACTION OF THE OIC.
- 14. ALL WORK CALLED FOR ON THE PLANS AND NOT ITEMIZED IN THE PROPOSAL AND ALL WORK NOT CALLED FOR BUT REQUIRED FOR THE CONSTRUCTION OF THIS PROJECT, SHALL BE CONSIDERED INCIDENTAL.
- 15. CONDITIONS OF THE WORK: ALL WORK SHALL BE PERFORMED IN A PROFESSIONAL AND WORKMANSHIP-LIKE MANNER. CONTRACTOR SHALL NOTIFY THE OIC SHOULD CONDITIONS EXIST WHICH WILL PREVENT SUCH PERFORMANCE AND/OR ANY ADDITIONAL WORK TO BE PERFORMED BEFORE STARTING WORK.
- 16. EXISTING TOPOGRAPHIC DATA WAS TAKEN FROM TOPOGRAPHIC MAP PREPARED BY PAREN, INC. (DBA PARK ENGINEERING), DATED MARCH 18, 2010.

WATER POLLUTION CONTROL NOTES

GENERAL:

- 1. THE CONTRACTOR IS REMINDED OF THE REQUIREMENTS OF SECTION 209 - WATER POLLUTION AND EROSION CONTROL, IN THE "HAWAII STANDARD SPECIFICATIONS FOR ROAD, BRIDGE AND PUBLIC WORKS CONSTRUCTION", SECTION 209 DESCRIBES BUT IS NOT LIMITED TO: SUBMITTAL REQUIREMENTS; SCHEDULING OF A WATER POLLUTION AND EROSION CONTROL CONFERENCE WITH THE OIC; CONSTRUCTION REQUIREMENTS; METHOD OF MEASUREMENT; AND BASIS OF PAYMENT.
- 2. THE CONTRACTOR SHALL FOLLOW THE GUIDELINES IN THE "BEST MANAGEMENT PRACTICES MANUAL FOR CONSTRUCTION SITES IN HONOLULU", DATED MAY 1999 IN DEVELOPING, INSTALLING AND MAINTAINING THE BEST MANAGEMENT PRACTICES (BMP) FOR THE PROJECT.
http://www.cleantwaterhonolulu.com/reports/bmp_manual.pdf

WATER POLLUTION CONTROL NOTES (CONT.)

- 3. THE OIC MAY ASSESS LIQUIDATED DAMAGES OF UP TO \$25,000 FOR NONCOMPLIANCE OF EACH BMP REQUIREMENT AND EACH REQUIREMENT STATED IN SECTION 209, FOR EVERY DAY OF NON-COMPLIANCE. THERE IS NO MAXIMUM LIMIT ON THE AMOUNT ASSESSED PER DAY.
- 4. THE OIC WILL DEDUCT THE COST FROM THE PROGRESS PAYMENT FOR ALL CITATIONS RECEIVED BY THE DEPARTMENT FOR NONCOMPLIANCE, OR THE CONTRACTOR SHALL REIMBURSE THE STATE FOR THE FULL AMOUNT OF THE OUTSTANDING COST INCURRED BY THE STATE.

WASTE DISPOSAL:

- 1. WASTE MATERIALS -- ALL WASTE MATERIALS SHALL BE COLLECTED AND DISPOSED OF PROPERLY BY END OF CONSTRUCTION. NO CONSTRUCTION WASTE MATERIALS SHALL BE BURIED ON SITE. THE CONTRACTOR'S SUPERVISORY PERSONNEL SHALL BE INSTRUCTED REGARDING THE CORRECT PROCEDURE FOR WASTE DISPOSAL. NOTICES STATING THESE PRACTICES SHALL BE POSTED IN THE OFFICE TRAILER AND THE CONTRACTOR SHALL BE RESPONSIBLE FOR SEEING THAT THESE PROCEDURES ARE FOLLOWED.
- 2. HAZARDOUS WASTE -- ALL HAZARDOUS WASTE MATERIALS SHALL BE DISPOSED OF IN THE MANNER SPECIFIED BY LOCAL OR STATE REGULATION OR BY THE MANUFACTURER. THE CONTRACTOR'S SITE PERSONNEL SHALL BE INSTRUCTED IN THESE PRACTICES AND SHALL BE RESPONSIBLE FOR SEEING THAT THESE PRACTICES ARE FOLLOWED. CLEAN CONCRETE SPOILS MAY BE DEPOSITED IN NELHA DESIGNATED SPOILS AREA. ALL CONCRETE SPOILS MUST BE CLEANED OF REBAR, METAL FASTENERS, ETC. BEFORE DEPOSITING IN NELHA SPOILS AREAS.
- 3. SANITARY WASTE -- ALL SANITARY WASTE SHALL BE COLLECTED FROM THE PORTABLE UNITS A MINIMUM OF ONCE PER WEEK, OR AS REQUIRED.

GOOD HOUSEKEEPING BEST MANAGEMENT PRACTICES:

1. MATERIALS POLLUTION PREVENTION PLAN

- A. APPLICABLE MATERIALS OR SUBSTANCES LISTED BELOW ARE EXPECTED TO BE PRESENT ON SITE DURING CONSTRUCTION. OTHER MATERIALS AND SUBSTANCES NOT LISTED BELOW SHALL BE ADDED TO THE INVENTORY.
 - DETERGENTS PETROLEUM BASED PRODUCTS
 - PAINTS (ENAMEL AND LATEX) CLEANING SOLVENTS
 - METAL STUDS WOOD
 - CONCRETE
- B. MATERIAL MANAGEMENT PRACTICES SHALL BE USED TO REDUCE THE RISK OF SPILLS OR OTHER ACCIDENTAL EXPOSURE OF MATERIALS AND SUBSTANCES TO STORM WATER RUNOFF. STORE ONLY ENOUGH PRODUCT AS IS REQUIRED TO DO THE JOB.
- C. ALL MATERIALS STORED ON SITE SHALL BE STORED IN A NEAT, ORDERLY MANNER IN THEIR APPROPRIATE CONTAINERS AND IF POSSIBLE UNDER A ROOF OR OTHER ENCLOSURE.
- D. PRODUCTS SHALL BE KEPT IN THEIR ORIGINAL CONTAINERS WITH THE ORIGINAL MANUFACTURER'S LABEL.
- E. SUBSTANCES SHALL NOT BE MIXED WITH ONE ANOTHER UNLESS RECOMMENDED BY THE MANUFACTURER.
- F. WHENEVER POSSIBLE, A PRODUCT SHALL BE USED UP COMPLETELY BEFORE DISPOSING OF THE CONTAINER.
- G. MANUFACTURER'S RECOMMENDATIONS FOR PROPER USE AND DISPOSAL SHALL BE FOLLOWED.
- H. THE CONTRACTOR SHALL CONDUCT A DAILY INSPECTION TO ENSURE PROPER USE AND DISPOSAL OF MATERIALS ON SITE.

2. HAZARDOUS MATERIAL POLLUTION PREVENTION PLAN

- A. PRODUCTS SHALL BE KEPT IN ORIGINAL CONTAINERS UNLESS THEY ARE NOT RESEALABLE.
- B. ORIGINAL LABELS AND MATERIAL SAFETY DATA SHEETS (MSDS) SHALL BE RETAINED.
- C. SURPLUS PRODUCTS SHALL BE DISPOSED OF ACCORDING TO MANUFACTURERS' INSTRUCTIONS OR LOCAL AND STATE RECOMMENDED METHODS.

3. ONSITE AND OFF SITE PRODUCT SPECIFIC PLAN

- A. THE FOLLOWING PRODUCT SPECIFIC PRACTICES SHALL BE FOLLOWED ONSITE:
 - 1) PETROLEUM BASED PRODUCTS -- ALL ONSITE VEHICLES SHALL BE MONITORED FOR LEAKS AND RECEIVE REGULAR PREVENTIVE MAINTENANCE TO REDUCE THE CHANCE OF LEAKAGE. PETROLEUM PRODUCTS SHALL BE STORED IN TIGHTLY SEALED CONTAINERS WHICH ARE CLEARLY LABELED.

WATER POLLUTION CONTROL NOTES (CONT.)



- 2) CONCRETE TRUCKS --
 - a. CONCRETE TRUCKS SHALL BE ALLOWED TO WASH OUT OR DISCHARGE DRUM WASH WATER ONLY AT SITE DESIGNATED BY OIC. WATER SHALL NOT BE DISCHARGED IN THE STREAMS. THE CONTRACTOR SHALL CONTACT DRINKING WATER BRANCH, DEPARTMENT OF HEALTH AT 586-4258 TO RECEIVE PERMISSION TO DESIGNATE A DISPOSAL SITE. THE CONTRACTOR SHALL CLEAN DISPOSAL SITE AS REQUIRED OR AS REQUESTED BY THE OWNER'S REPRESENTATIVE.
 - b. THE CONCRETE WASH WATER SHALL BE CONTAINED IN A PIT WITH AN IMPERMEABLE LINER TO PREVENT ANY INFILTRATION. A BERM SHALL BE CONSTRUCTED AROUND THE PIT TO PREVENT OVERFLOW OF WASH WATER AND THE ENTRY OF STORM WATER RUNOFF. THE PIT SHALL ALSO BE LARGE ENOUGH TO CONTAIN THE ANTICIPATED VOLUME OF WASH WATER.
- 4. SPILL CONTROL PLAN
 - A. A SPILL PREVENTION PLAN SHALL BE POSTED AND ADJUSTED TO INCLUDE A DESCRIPTION AND CAUSE OF EACH SPILL, MEASURES TO PREVENT AND CLEAN UP EACH SPILL.
 - B. THE CONTRACTOR SHALL BE THE SPILL PREVENTION AND CLEANUP COORDINATOR. THE CONTRACTOR SHALL DESIGNATE AT LEAST THREE SITE PERSONNEL WHO SHALL RECEIVE SPILL PREVENTION AND CLEANUP TRAINING. THESE INDIVIDUALS SHALL EACH BECOME RESPONSIBLE FOR A PARTICULAR PHASE OF PREVENTION AND CLEANUP. THE NAMES OF RESPONSIBLE SPILL PERSONNEL SHALL BE POSTED IN THE MATERIAL STORAGE AREA AND IN THE OFFICE TRAILER ONSITE.
 - C. MANUFACTURERS' RECOMMENDED METHODS FOR SPILL CLEANUP SHALL BE CLEARLY POSTED AND SITE PERSONNEL SHALL BE MADE AWARE OF THE PROCEDURES AND THE LOCATION OF THE INFORMATION AND CLEANUP SUPPLIES.
 - D. MATERIALS AND EQUIPMENT NECESSARY FOR SPILL CLEANUP SHALL BE KEPT IN THE MATERIAL STORAGE AREA ONSITE.
 - E. ALL SPILLS SHALL BE CLEANED UP IMMEDIATELY AFTER DISCOVERY. NOTIFY OIC IMMEDIATELY OF ALL SPILLS.
 - F. THE SPILL AREA SHALL BE KEPT WELL VENTILATED AND PERSONNEL SHALL WEAR APPROPRIATE PROTECTIVE CLOTHING TO PREVENT INJURY FROM CONTACT WITH A HAZARDOUS SUBSTANCE.
 - G. SPILLS OF TOXIC HAZARDOUS MATERIAL SHALL BE REPORTED TO THE APPROPRIATE STATE OR LOCAL GOVERNMENT AGENCY, REGARDLESS OF THE SIZE.

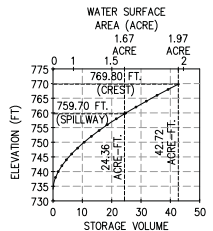
GRADING NOTES

- 1. ALL GRADING WORK SHALL BE DONE IN ACCORDANCE WITH CHAPTER 14, ARTICLES 13, 14, 15 AND 16, AS RELATED TO GRADING, SOIL EROSION AND SEDIMENT CONTROL OF THE REVISED ORDINANCES OF HONOLULU, 1990.
- 2. THE CONTRACTOR SHALL COMPLY WITH NATIONAL POLLUTION DISCHARGE ELIMINATION SYSTEM (NPDES) PERMIT REQUIREMENTS. THE CONTRACTOR SHALL NOT START CONSTRUCTION UNTIL NOTICE OF GENERAL PERMIT COVERAGE (NGPC) IS RECEIVED FROM THE DEPARTMENT OF HEALTH, STATE OF HAWAII AND HAS SATISFIED ANY OTHER APPLICABLE REQUIREMENTS OF THE NPDES PERMIT PROGRAM.
- 3. NO CONTRACTOR SHALL PERFORM ANY GRADING OPERATION SO AS TO CAUSE FALLING ROCKS, SOIL OR DEBRIS IN ANY FORM TO FALL, SLIDE OR FLOW ONTO ADJOINING PROPERTIES, STREETS OR NATURAL WATERCOURSES. SHOULD SUCH VIOLATIONS OCCUR, THE CONTRACTOR MAY BE CITED AND THE CONTRACTOR SHALL IMMEDIATELY MAKE ALL REMEDIAL ACTIONS NECESSARY.
- 4. THE CONTRACTOR, AT HIS OWN EXPENSE, SHALL KEEP THE PROJECT AREA AND SURROUNDING AREA FREE FROM DUST NUISANCE. THE WORK SHALL BE IN CONFORMANCE WITH THE AIR POLLUTION CONTROL STANDARDS CONTAINED IN THE HAWAII ADMINISTRATIVE RULES, TITLE 11, CHAPTER 60.1, "AIR POLLUTION CONTROL".
- 5. THE UNDERGROUND PIPES, CABLES OR DUCTLINES KNOWN TO EXIST BY THE ENGINEER FROM HIS SEARCH OF RECORDS ARE INDICATED ON THE PLANS. THE CONTRACTOR SHALL VERIFY THE LOCATIONS AND DEPTHS OF THE FACILITIES AND EXERCISE PROPER CARE IN EXCAVATING IN THE AREA. WHEREVER CONNECTIONS OF NEW UTILITIES ARE SHOWN ON THE PLANS, THE CONTRACTOR SHALL EXPOSE THE EXISTING LINES AT THE PROPOSED CONNECTIONS TO VERIFY THEIR LOCATIONS AND DEPTHS PRIOR TO EXCAVATION FOR THE NEW LINES.
- 6. ADEQUATE PROVISIONS SHALL BE MADE TO PREVENT SURFACE WATERS FROM DAMAGING THE CUT FACE OF AN EXCAVATION OR THE SLOPED SURFACES OF A FILL. FURTHERMORE, ADEQUATE PROVISIONS SHALL BE MADE TO PREVENT SEDIMENT-LADEN RUNOFF FROM LEAVING THE SITE.

GRADING NOTES

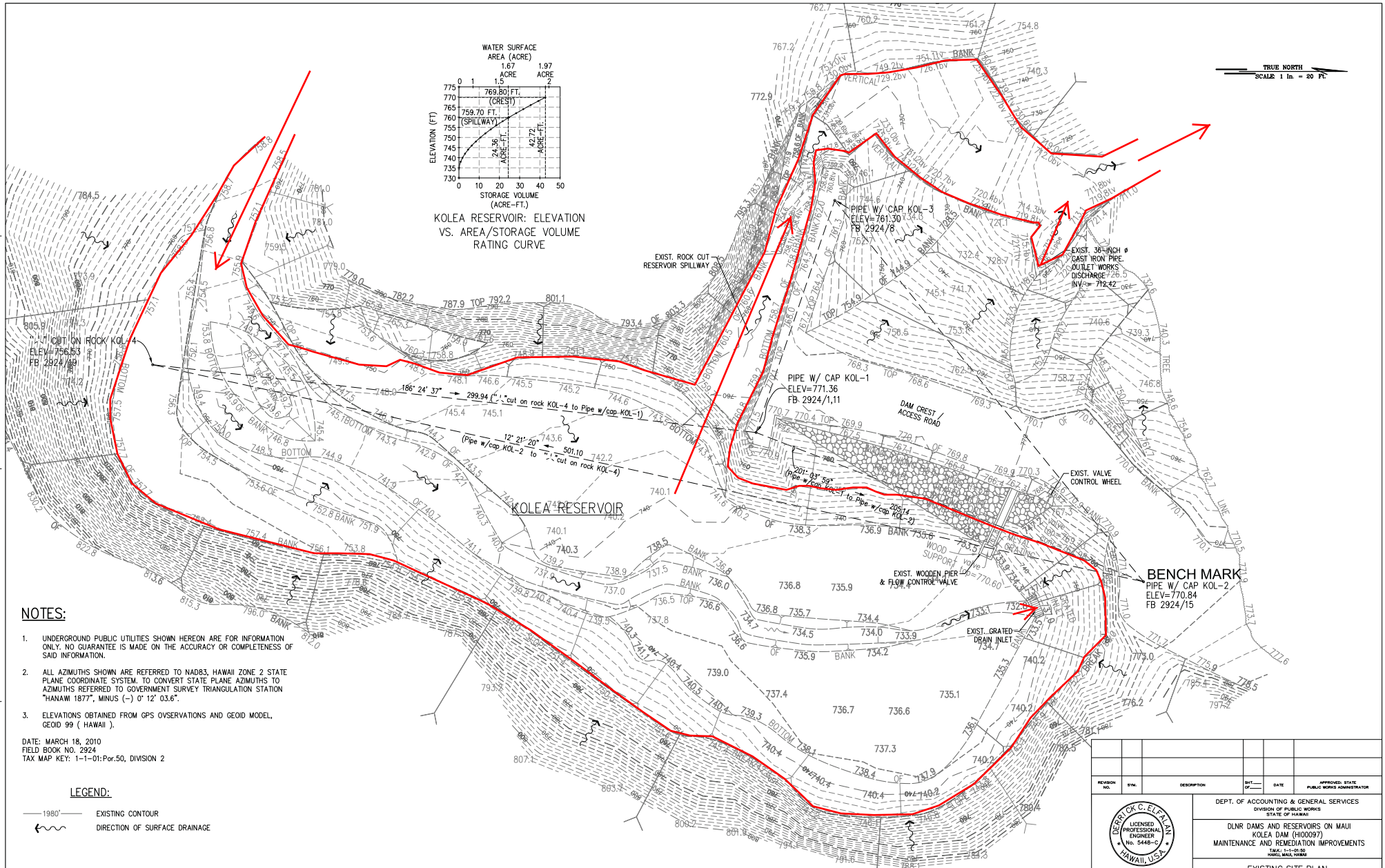
- 7. ALL SLOPES AND EXPOSED AREAS SHALL BE SOODED OR PLANTED AS SOON AS FINAL GRADES HAVE BEEN ESTABLISHED. PLANTING SHALL NOT BE DELAYED UNTIL ALL GRADING WORK HAS BEEN COMPLETED. GRADING TO FINAL GRADE SHALL BE CONTINUOUS, AND ANY AREA WITHIN WHICH WORK HAS BEEN INTERRUPTED OR DELAYED SHALL BE PLANTED.
- 8. FILLS ON SLOPES STEEPER THAN 5:1 SHALL BE KEPT.
- 9. PROJECT WHEN THE APPLICATION FOR A GRADING PERMIT IS MADE. THE BORROW/DISPOSAL SITE MUST ALSO FULFILL THE REQUIREMENTS OF THE GRADING ORDINANCE.
- 10. NO GRADING WORK SHALL BE DONE ON SATURDAYS, SUNDAYS AND HOLIDAYS AT ANY TIME WITHOUT PRIOR NOTICE TO THE DIRECTOR, D.P.P., PROVIDED SUCH GRADING WORK IS ALSO IN CONFORMANCE WITH THE COMMUNITY NOISE CONTROL STANDARDS CONTAINED IN THE HAWAII ADMINISTRATIVE RULES, TITLE 11, CHAPTER 46, "COMMUNITY NOISE CONTROL".
- 11. PURSUANT TO CHAPTER 6E, HRS. IN THE EVENT ANY ARTIFACTS OR HUMAN REMAINS ARE UNCOVERED DURING CONSTRUCTION OPERATIONS, THE CONTRACTOR SHALL IMMEDIATELY SUSPEND WORK AND NOTIFY THE HONOLULU PUBLIC DEPARTMENT, THE STATE DEPARTMENT OF LAND AND NATURAL RESOURCES--HISTORIC PRESERVATION DIVISION (692-8015). IN ADDITION, FOR NON-CITY PROJECTS, THE CONTRACTOR SHALL INFORM THE CIVIL ENGINEERING BRANCH, DEPARTMENT OF PLANNING AND PERMITTING (768-8084); AND FOR CITY PROJECTS, NOTIFY THE RESPONSIBLE CITY AGENCY.
- 12. THE LIMITS OF THE AREA TO BE GRADED SHALL BE FLAGGED BEFORE THE COMMENCEMENT OF THE GRADING WORK.
- 13. ALL GRADING OPERATIONS SHALL BE PERFORMED IN CONFORMANCE WITH THE APPLICABLE PROVISIONS OF THE WATER QUALITY AND WATER POLLUTION CONTROL STANDARDS CONTAINED IN HAWAII ADMINISTRATIVE RULES, TITLE 11, CHAPTER 54, "WATER QUALITY STANDARDS", AND TITLE 11, CHAPTER 55, "WATER POLLUTION CONTROL", AND IF APPLICABLE, THE NPDES PERMIT FOR THE PROJECT.
- 14. WHERE APPLICABLE AND FEASIBLE THE MEASURES TO CONTROL EROSION AND OTHER POLLUTANTS SHALL BE IN PLACE BEFORE ANY EARTH MOVING PHASE OF THE GRADING IS INITIATED.
- 15. TEMPORARY EROSION CONTROLS SHALL NOT BE REMOVED BEFORE PERMANENT EROSION CONTROLS ARE IN-PLACE AND ESTABLISHED.
- 16. TEMPORARY EROSION CONTROL PROCEDURES SHALL BE SUBMITTED FOR APPROVAL PRIOR TO APPLICATION FOR GRADING PERMIT.
- 17. IF THE GRADING WORK INVOLVES CONTAMINATED SOIL, THEN ALL GRADING WORK SHALL BE DONE IN CONFORMANCE WITH APPLICABLE STATE AND FEDERAL REQUIREMENTS.

| | | | | |
|--|----|--------------------------|----------------|---|
| REVISION NO. | BY | DESCRIPTION | DATE | APPROVED STATE PUBLIC WORKS ADMINISTRATOR |
|  | | | | |
| DEPT. OF ACCOUNTING & GENERAL SERVICES DIVISION OF PUBLIC WORKS STATE OF HAWAII DLNR DAMS AND RESERVOIRS ON MAUI KOLEA DAM (H100097) MAINTENANCE AND REMEDIATION IMPROVEMENTS HAWAII, MAUI, HAWAII | | | | |
| NOTES | | | | |
|  | | DATE JOB NO. | DRAWING NO. | |
| DESIGNED BY: AK | | 15-23-7409 | T-2 | |
| DRAWN BY: AK | | DATE: 04/29/12 | SHEET: 2 | |
| SCALE: AS NOTED | | APPROVED BY: [Signature] | DATE: MAY 2010 | |
| FILE | | DRAWER | | |



KOLEA RESERVOIR: ELEVATION VS. AREA/STORAGE VOLUME RATING CURVE

TRUE NORTH
SCALE 1 in. = 20 FT.



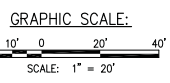
NOTES:

- UNDERGROUND PUBLIC UTILITIES SHOWN HEREON ARE FOR INFORMATION ONLY. NO GUARANTEE IS MADE ON THE ACCURACY OR COMPLETENESS OF SAID INFORMATION.
- ALL AZIMUTHS SHOWN ARE REFERRED TO NAD83, HAWAII ZONE 2 STATE PLANE COORDINATE SYSTEM. TO CONVERT STATE PLANE AZIMUTHS TO AZIMUTHS REFERRED TO GOVERNMENT SURVEY TRIANGULATION STATION "HANAWI 1877", MINUS (-) 0° 12' 03.6".
- ELEVATIONS OBTAINED FROM GPS OBSERVATIONS AND GEOID MODEL, GEOID 99 (HAWAII).

DATE: MARCH 18, 2010
FIELD BOOK NO. 2924
TAX MAP KEY: 1-1-01:Por.50, DIVISION 2

LEGEND:

- 1980— EXISTING CONTOUR
- ↘ DIRECTION OF SURFACE DRAINAGE



EXISTING SITE PLAN
SCALE: 1" = 20'-0"

IF THIS SHEET IS LESS THAN 36"x24", IT IS A REDUCED PRINT. SCALE REDUCED ACCORDINGLY.

| REVISION NO. | BY | DESCRIPTION | DATE | APPROVED STATE PUBLIC WORKS ADMINISTRATOR |
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|--------------------|-------------------|---|----------------------------|
| | | DEPT. OF ACCOUNTING & GENERAL SERVICES DIVISION OF PUBLIC WORKS STATE OF HAWAII | |
| | | DLNR DAMS AND RESERVOIRS ON MAUI KOLEA DAM (H100097) MAINTENANCE AND REMEDIATION IMPROVEMENTS TAX MAP 15-15-05 HAWAII, MAUI, HAWAII | |
| EXISTING SITE PLAN | | | |
| DESIGNED BY: AK | CHECKED BY: AK | DRAW JOB NO. 15-23-7409 | DRAWING NO. EG-1 |
| DRAWN BY: AK | APPROVED BY: | DATE MAY 2010 | SHEET 4 OF 11 SHEETS |
| SCALE: AS NOTED | DATE | FILE | DRAWER |

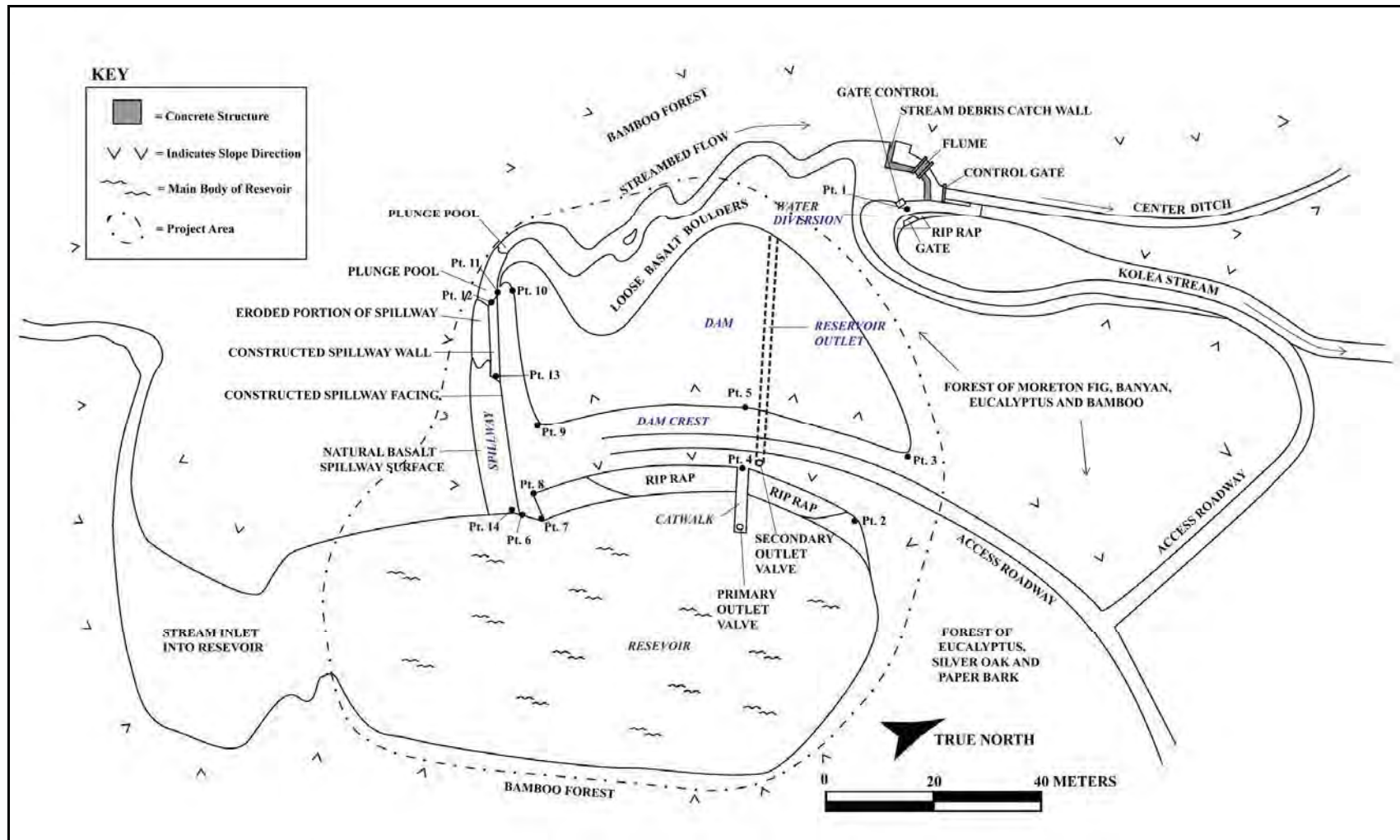
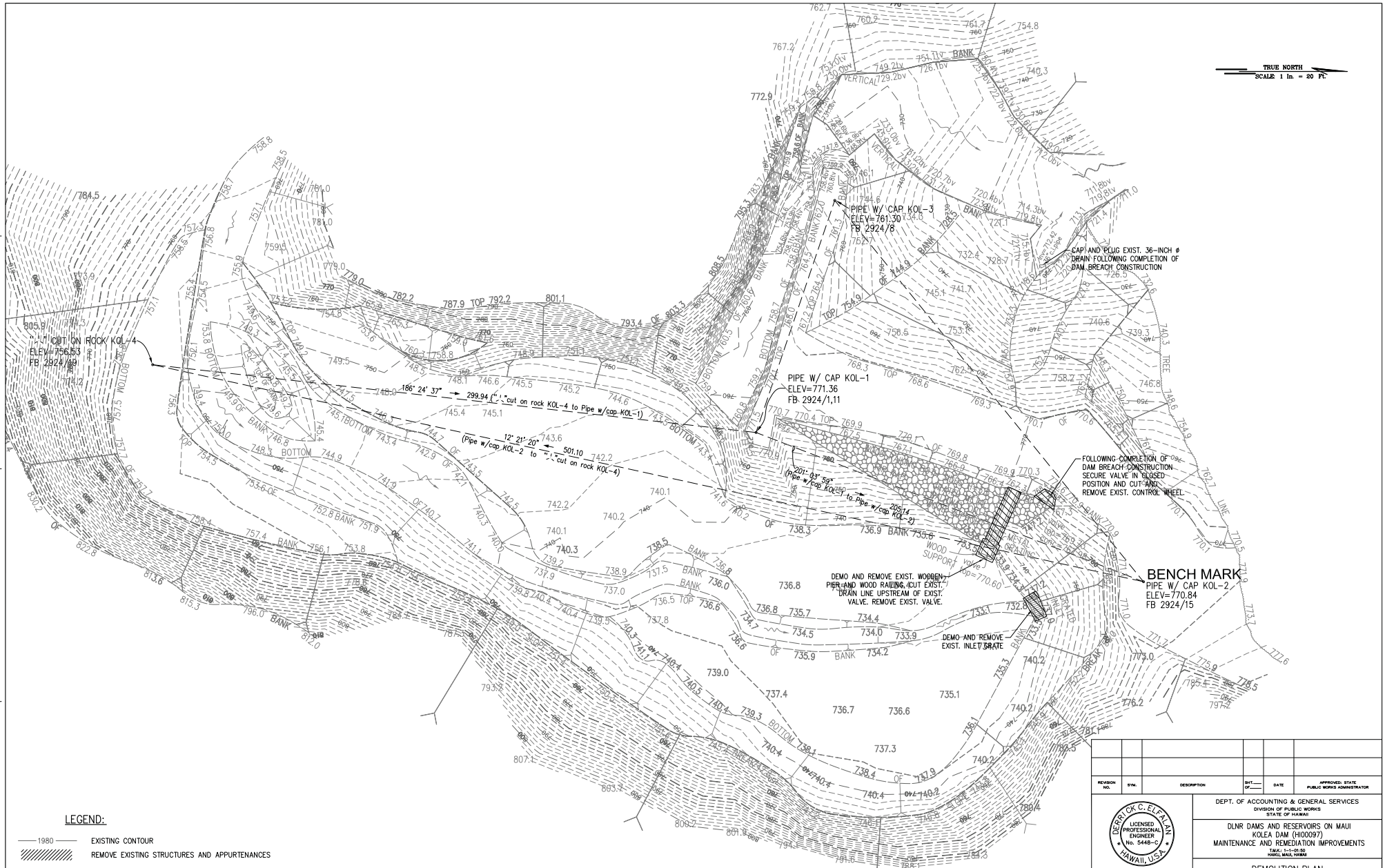
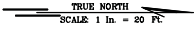


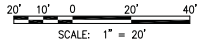
Figure 12. Field drawing of site CSH 1, features shown in blue.



LEGEND:

- 1980 EXISTING CONTOUR
- ▨ REMOVE EXISTING STRUCTURES AND APPURTENANCES

GRAPHIC SCALE:



DEMOLITION PLAN

SCALE: 1" = 20'-0"

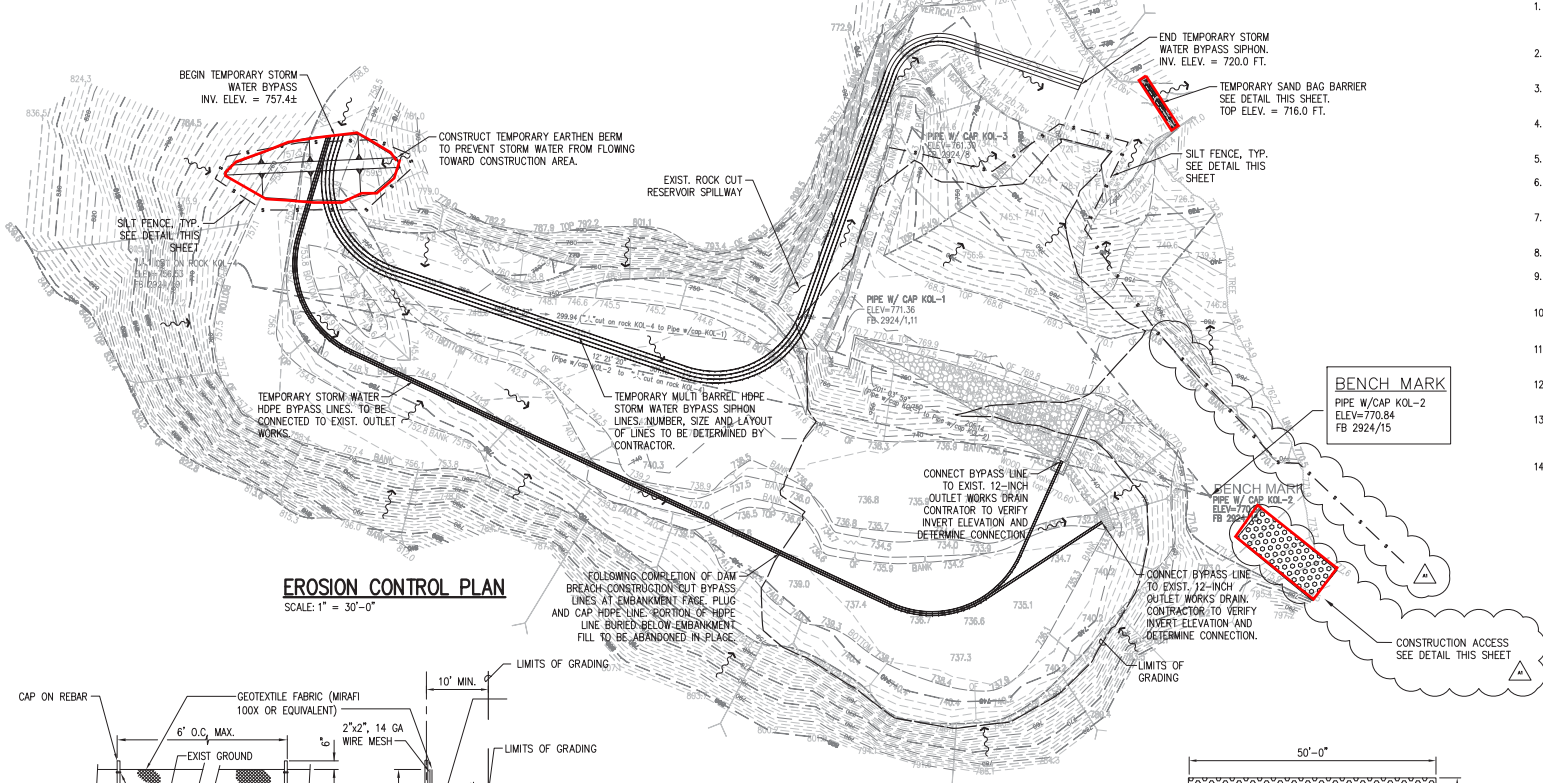
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| REVISION NO. | BY | DESCRIPTION | DATE | APPROVED STATE PUBLIC WORKS ADMINISTRATOR |
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| | | | | |
| DEPT. OF ACCOUNTING & GENERAL SERVICES DIVISION OF PUBLIC WORKS STATE OF HAWAII DLNR DAMS AND RESERVOIRS ON MAUI KOEIA DAM (H100097) MAINTENANCE AND REMEDIATION IMPROVEMENTS TANK: 15-11-05 HAWAII, MAUI, HAWAII | | | | |
| DEMOLITION PLAN | | | | |
| DESIGNED BY: AK | | CHECKED BY: GE | | DRAWING NO. EG-2 |
| DRAWN BY: AK | | APPROVED BY: [Signature] | | DATE: 04/26/12 |
| SCALE: AS NOTED | | DATE: MAY 2010 | | SHEET 5 OF 11 |

TRUE NORTH
SCALE: 1 in. = 80 FT.

EROSION CONTROL NOTES AND BEST MANAGEMENT PRACTICES (BMPs):

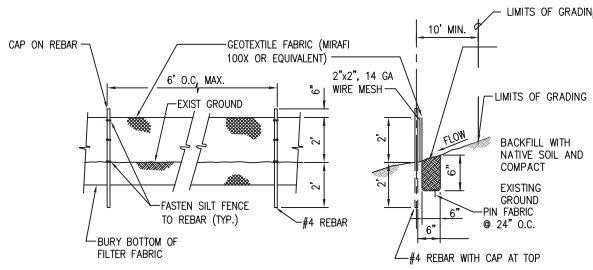
1. MEASURES TO CONTROL EROSION AND OTHER POLLUTANTS SHALL BE IN PLACE BEFORE ANY EARTH MOVING WORK IS INITIATED. THESE MEASURES SHALL BE PROPERLY CONSTRUCTED AND MAINTAINED THROUGHOUT THE CONSTRUCTION PERIOD.
2. LIQUID SOIL STABILIZER SHALL BE DIRT/GUOE POLYMER EMULSIONS BY DIRT/GUOE ENTERPRISES OR EQUAL.
3. LIQUID SOIL STABILIZATION SHALL BE RE-APPLIED AT THE END OF EACH WORK DAY WHEN SURFACE OF EXISTING SOIL STABILIZER IS DISTURBED.
4. CONSTRUCTION SHALL BE SEQUENCED TO MINIMIZE THE EXPOSURE TIME OF CLEARED SURFACE AREA.
5. ALL CONTROL MEASURES SHALL BE CHECKED AND REPAIRED AS NECESSARY.
6. CONSTRUCT FACILITIES TO RETAIN ON-SITE WASTEWATER SUCH AS CHLORINATED WATER, HYDROSTATIC TESTING WATER, ETC., AND PERCOLATE INTO THE SOIL.
7. MAINTAIN SEDIMENT TRAPS AT DISCHARGE POINTS DURING SITE WORK AND UNTIL PERMANENT EROSION CONTROLS ARE IN PLACE.
8. CONSTRUCT CONSTRUCTION ACCESS FOR EACH INGRESS AND EGRESS.
9. PRE-CONSTRUCTION VEGETATIVE GROUND COVER SHALL NOT BE DESTROYED, REMOVED OR DISTURBED MORE THAN TWENTY (20) CALENDAR DAYS PRIOR TO SITE DISTURBANCE.
10. TEMPORARY SOIL STABILIZATION WITH APPROPRIATE VEGETATION SHALL BE APPLIED ON AREAS THAT WILL REMAIN UNFINISHED FOR MORE THAN THIRTY (30) CALENDAR DAYS.
11. PERMANENT SOIL STABILIZATION WITH PERENNIAL VEGETATION SHALL BE APPLIED AS SOON AS PRACTICAL AFTER FINAL GRADING.
12. STORM WATER FLOWING TOWARD THE CONSTRUCTION AREA SHALL BE DIVERTED BY USING APPROPRIATE CONTROL MEASURES AS PRACTICAL.
13. THE SUGGESTED STORM WATER BYPASSING PLAN IS SCHEMATIC ONLY. THE CONTRACTOR IS WHOLLY RESPONSIBLE FOR THE DETERMINATION OF ADEQUACY, CONSTRUCTION SEQUENCE, AND RELATED BYPASSING REQUIRED FOR CONSTRUCTION OPERATIONS.
14. A TABLE SHOWING ESTIMATED STORM FLOWS FOR DIFFERENT STORM RECURRENCE INTERVALS IS PROVIDED ON THIS SHEET FOR THE CONTRACTOR'S CONVENIENCE IN SIZING OF STORM WATER BYPASS SYSTEM.



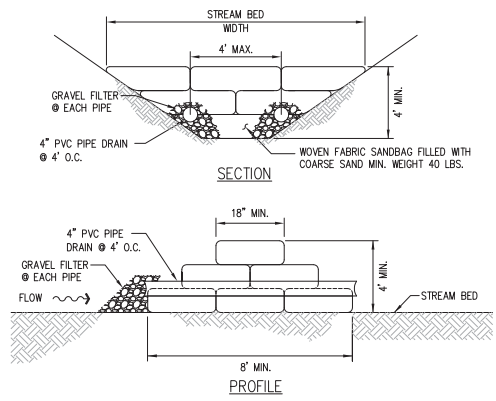
EROSION CONTROL PLAN
SCALE: 1" = 30'-0"

KOLEA RESERVOIR: ESTIMATED STORM FLOWS

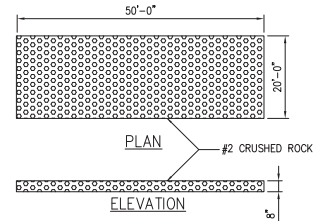
| RECURRENCE INTERVAL (YEARS) | 1-HOUR RAINFALL (INCHES) | KOLEA RESERVOIR BASIN INFLOW (CU. FT./SEC) |
|-----------------------------|--------------------------|--|
| 100 | 6.03 | 1,342 |
| 50 | 5.43 | 1,194 |
| 25 | 4.83 | 1,045 |
| 10 | 4.05 | 853 |
| 5 | 3.48 | 675 |
| 2 | 2.73 | 441 |



SILT FENCE DETAIL
NOT TO SCALE

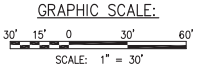


SANDBAG BARRIER DETAIL
NOT TO SCALE



CONSTRUCTION ACCESS
NOT TO SCALE

- LEGEND:**
- 1980' — EXISTING CONTOUR
 - - - LIMITS OF GRADING
 - · - · - SILT FENCE (TEMPORARY)
 - · - · - STORM WATER BYPASS SCHEMATIC (TEMPORARY)
 - DIRECTION OF SURFACE DRAINAGE
 - ▨ CONSTRUCTION ACCESS (TEMPORARY)
 - ▨ SANDBAG BARRIER (TEMPORARY)



| | | | | | |
|--------------|------|------------------------------------|-----|--------|---|
| ADD-1 | △ | EXTEND SILT FENCE | 1/2 | 6/8/20 | |
| ADD-1 | △ | REMOVE CONSTRUCTION ACCESS BARRIER | 1/2 | 6/8/20 | |
| REVISION NO. | SYM. | DESCRIPTION | BY | DATE | APPROVED STATE PUBLIC WORKS ADMINISTRATOR |

DEL FALAN
LICENSED PROFESSIONAL ENGINEER
NO. 5445-C-2
HAWAII, U.S.A.

DEPT. OF ACCOUNTING & GENERAL SERVICES
DIVISION OF PUBLIC WORKS
STATE OF HAWAII

DLNR DAMS AND RESERVOIRS ON MAUI
KOLEA DAM (H00097)
MAINTENANCE AND REMEDIATION IMPROVEMENTS
T.M.C. 11-1-01-20
HAWAII, U.S.A.

STREAM CHANNEL DIVERSION & EROSION CONTROL PLAN

| | | | |
|-----------------|----------------|-------------------------|-------------------|
| DESIGNED BY: AK | CHECKED BY: DE | DRAWING NO.: 15-23-7409 | DRAWING NO.: EC-1 |
| DRAWN BY: AK | APPROVED BY: | DATE: 04/20/20 | SHEET: 6 |
| SCALE: AS NOTED | | DATE: MAY 2010 | OF: 11 SHEETS |

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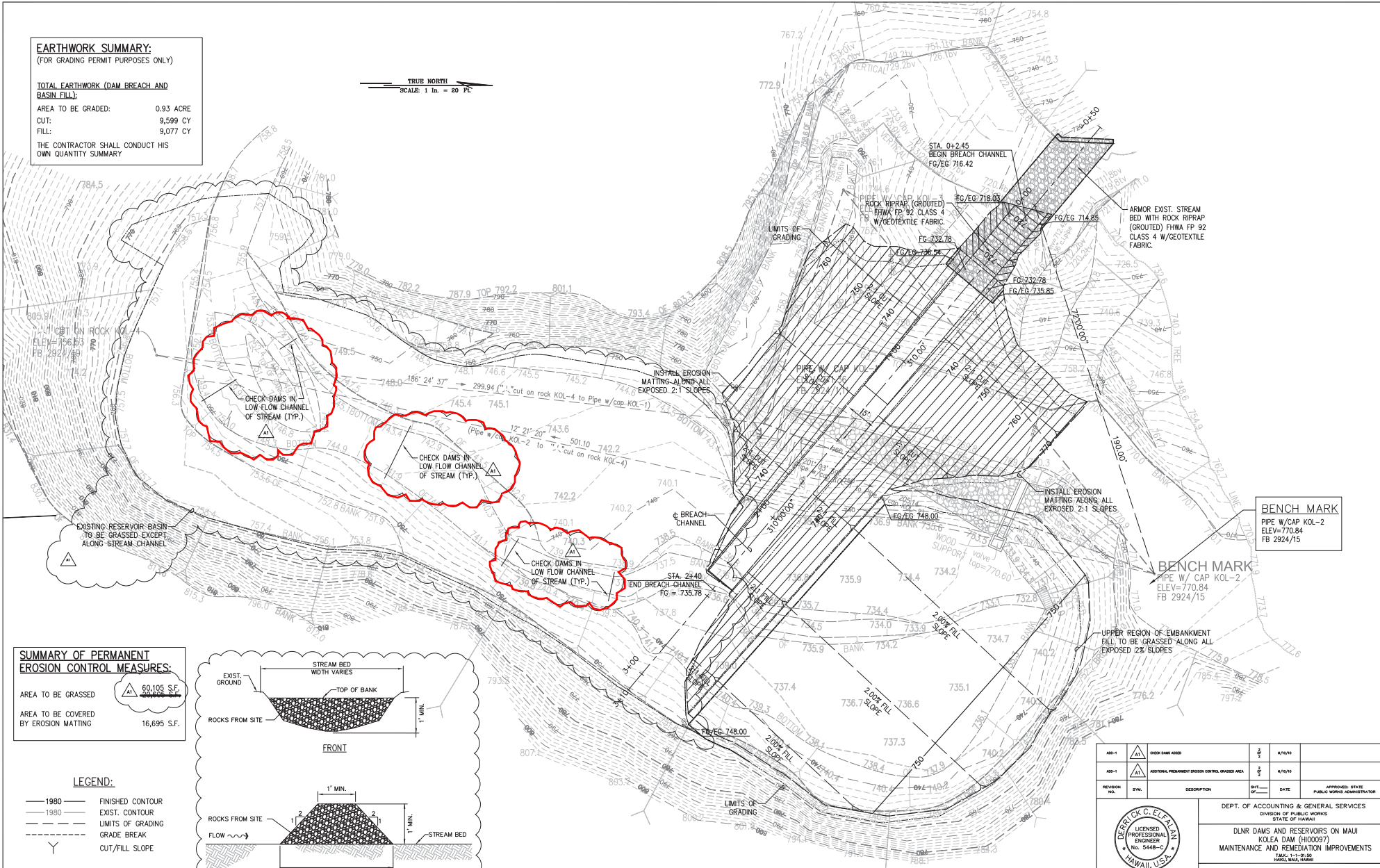
EARTHWORK SUMMARY:
(FOR GRADING PERMIT PURPOSES ONLY)

TOTAL EARTHWORK (DAM BREACH AND BASIN FILL):

AREA TO BE GRADED: 0.93 ACRE
CUT: 9,599 CY
FILL: 9,077 CY

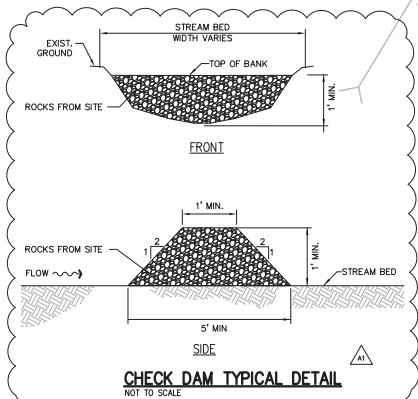
THE CONTRACTOR SHALL CONDUCT HIS OWN QUANTITY SUMMARY

TRUE NORTH
SCALE: 1 in. = 20 FE'



SUMMARY OF PERMANENT EROSION CONTROL MEASURES:

AREA TO BE GRASSED 60,105 S.F.
AREA TO BE COVERED BY EROSION MATTING 16,695 S.F.



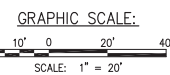
GRADING PLAN
SCALE: 1" = 20'-0"

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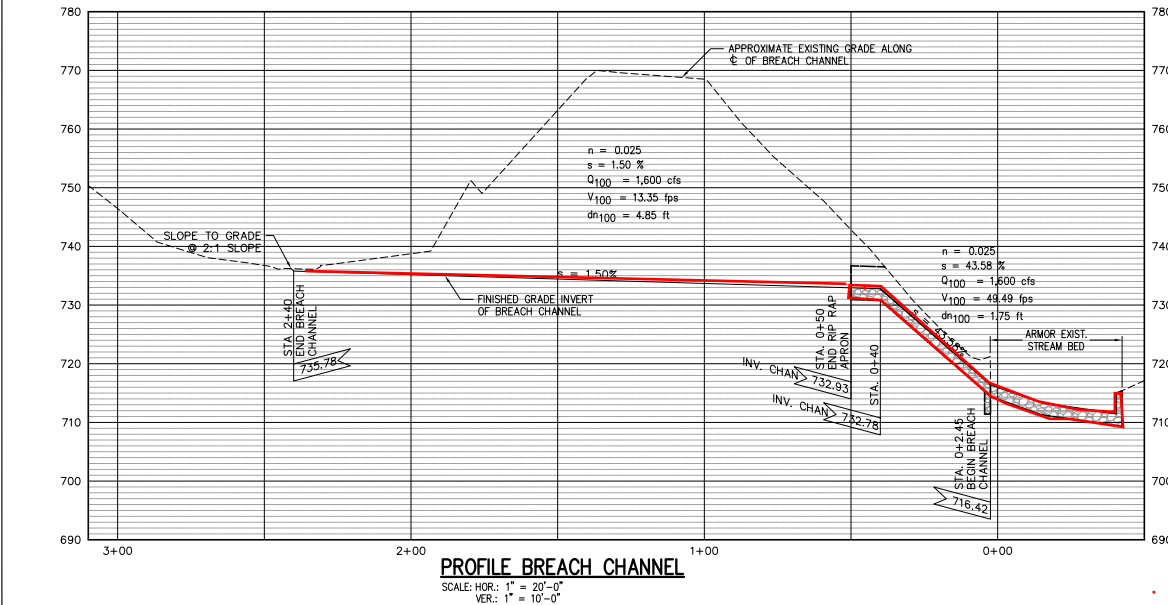
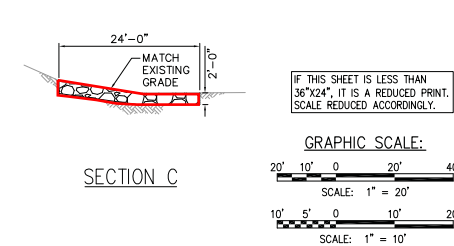
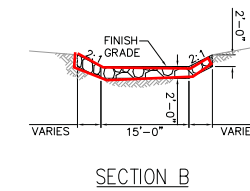
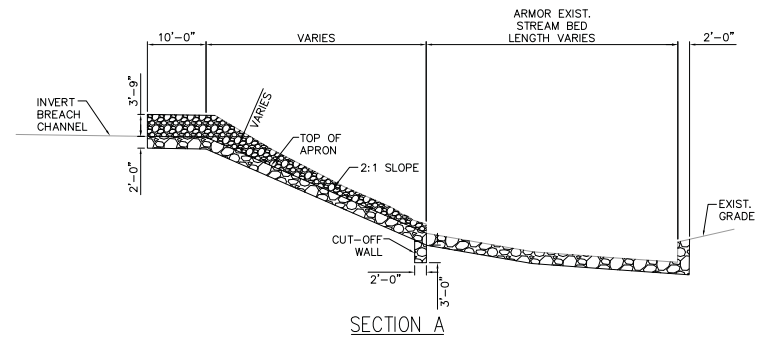
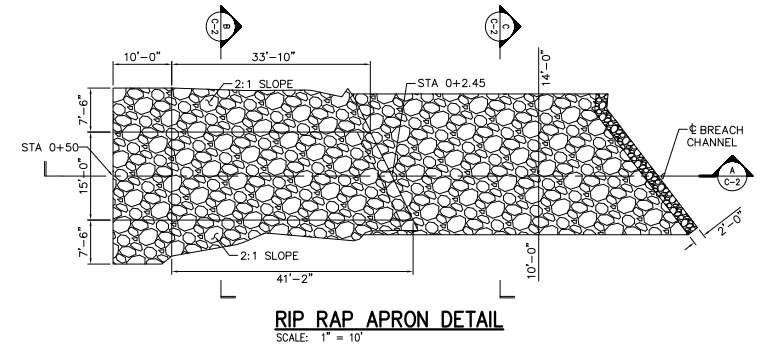
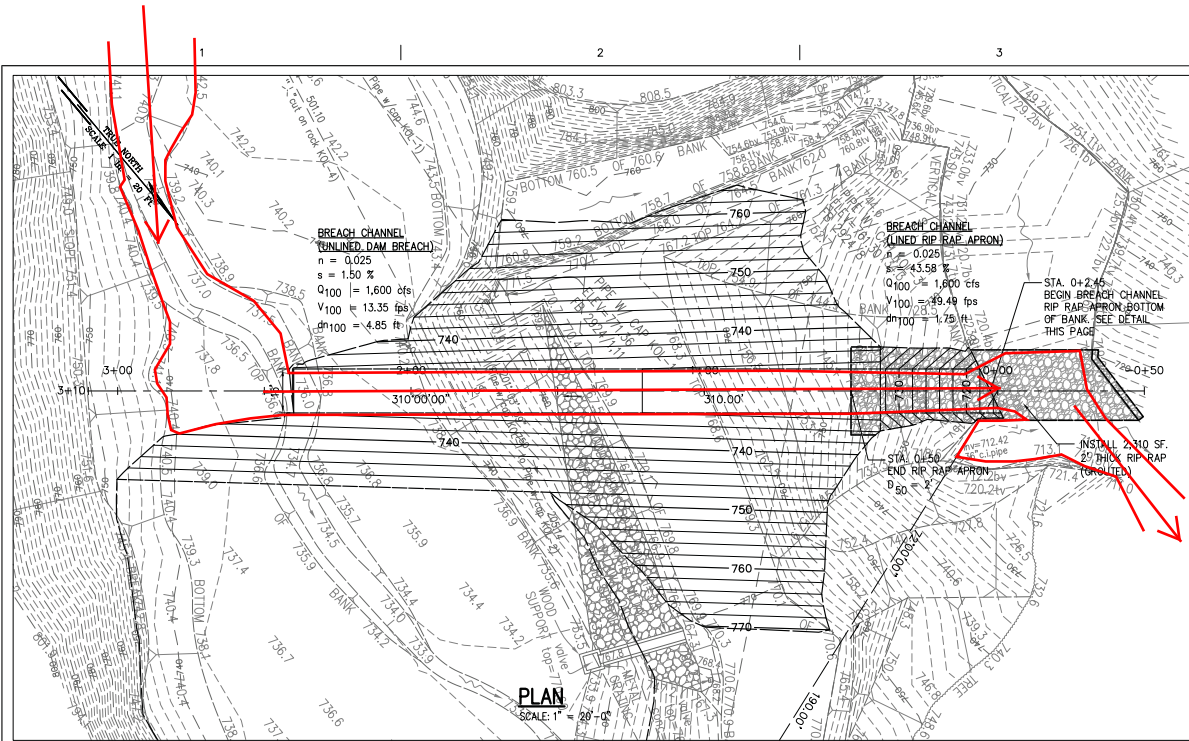
BENCH MARK
PIPE W/ CAP KOL-2
ELEV=770.84
FB 2924/15

BENCH MARK
PIPE W/ CAP KOL-2
ELEV=770.84
FB 2924/15

- LEGEND:**
- 1980 FINISHED CONTOUR
 - 1980 EXIST. CONTOUR
 - - - LIMITS OF GRADING
 - - - GRADE BREAK
 - Y CUT/FILL SLOPE



| | | | | |
|---------------------|----------------|---|----------------------|---|
| REV-1 | AT | CHECK DAM ASSED | 5/10/10 | |
| REV-1 | AT | ADDITIONAL PERMANENT EROSION CONTROL MEASURES | 5/10/10 | |
| REVISION NO. | SYM. | DESCRIPTION | DATE | APPROVED STATE PUBLIC WORKS ADMINISTRATOR |
| | | | | DEPT. OF ACCOUNTING & GENERAL SERVICES DIVISION OF PUBLIC WORKS STATE OF HAWAII DLNR DAMS AND RESERVOIRS ON MAUI KOLEA DAM (H00097) MAINTENANCE AND REMEDIATION IMPROVEMENTS HAWAII, U.S.A. |
| GRADING PLAN | | | | |
| DESIGNED BY: AK | CHECKED BY: DE | DWG. JOB NO.: 15-23-7409 | DRAWING NO.: C-1 | |
| DRAWN BY: AK | APPROVED BY: | DATE: 04/20/10 | SHEET 7 OF 11 SHEETS | |
| SCALE: AS NOTED | DATE: MAY 2010 | | | |



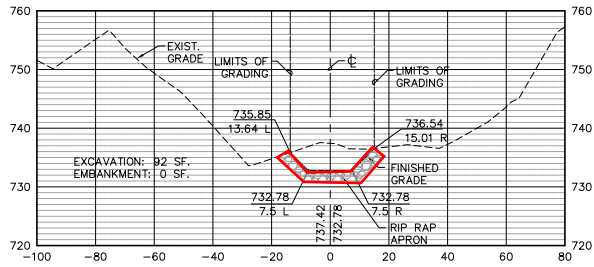
| REVISION NO. | BY | DESCRIPTION | DATE | APPROVED STATE PUBLIC WORKS ADMINISTRATOR |
|--------------|----|-------------|------|---|
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DEPT. OF ACCOUNTING & GENERAL SERVICES
 DIVISION OF PUBLIC WORKS
 STATE OF HAWAII
 DLNR DAMS AND RESERVOIRS ON MAUI
 KOLEA DAM (H100097)
 MAINTENANCE AND REMEDIATION IMPROVEMENTS
 TANK: 10-10-00
 MAUI, HAWAII, HAWAII

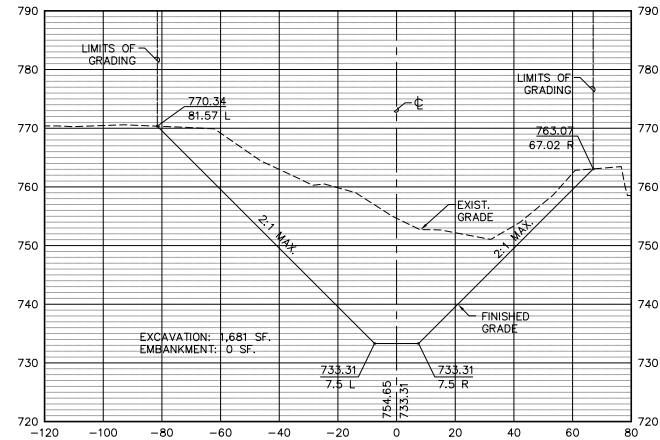
BREACH CHANNEL - PLAN & PROFILE

DESIGNED BY: **AK** CHECKED BY: **AK** DATE: 04/26/10
 DRAWN BY: **AK** APPROVED BY: **AK** DATE: 05/11/10
 SCALE: AS NOTED SHEET: 8 OF 11

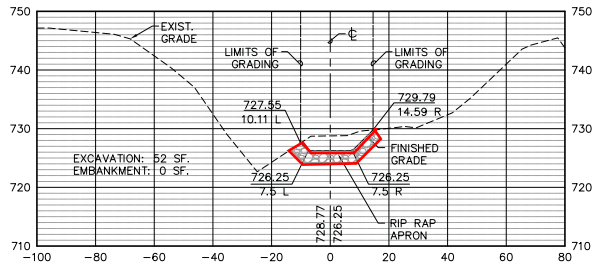
STA. 0+40



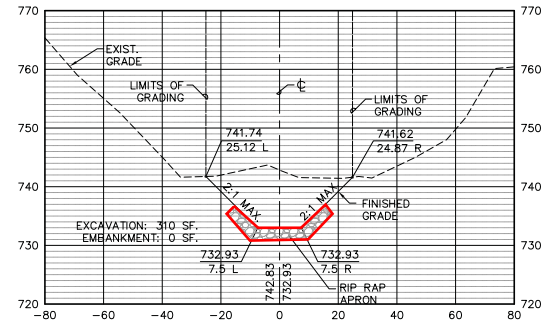
STA. 0+75



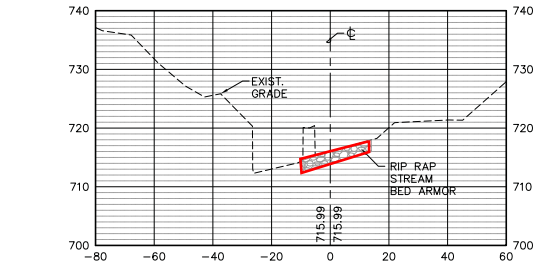
STA. 0+25



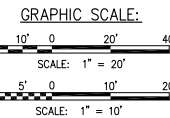
STA. 0+50



STA. 0+00



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LEGEND:

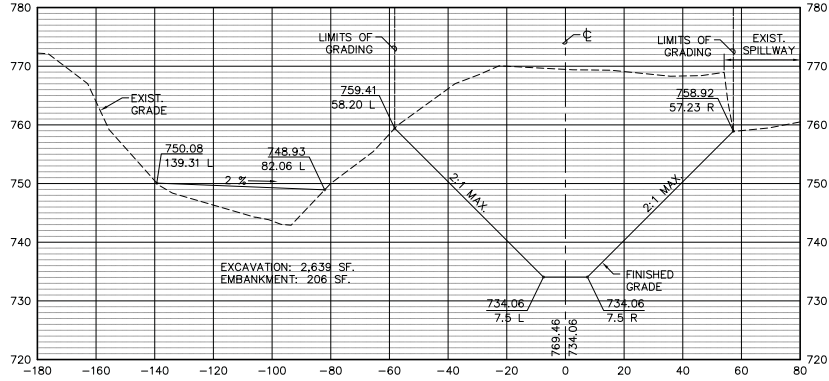
- EXISTING GRADE
- FINISHED GRADE
- ▨ GRouted RIP RAP
- ▲ ELEVATION
- ↖ OFFSET
- SPOT ELEVATION CALLOUT

BREACH CHANNEL CROSS SECTIONS

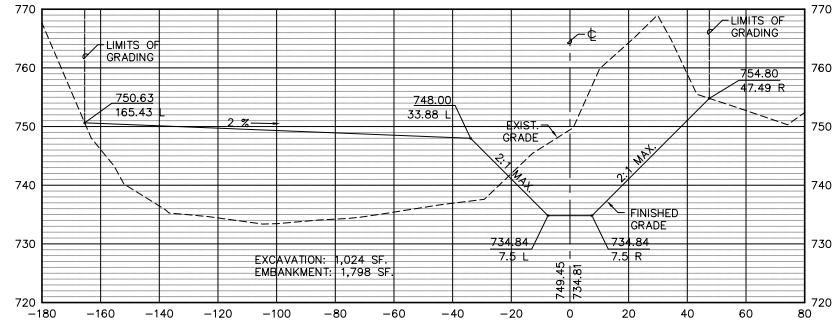
SCALE: HOR: 1" = 20'-0"
VER: 1" = 10'-0"

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|---|------|---|----|----------|---|
| REVISION NO. | DATE | DESCRIPTION | BY | DATE | APPROVED STATE PUBLIC WORKS ADMINISTRATOR |
| | | | | | |
|  | | DEPT. OF ACCOUNTING & GENERAL SERVICES DIVISION OF PUBLIC WORKS DLNR DAMS AND RESERVOIRS ON MAUI KOLEA DAM (H100097) MAINTENANCE AND REMEDIATION IMPROVEMENTS TARI: 10-10-00 HAWAII, MAUI, HAWAII | | | |
| DESIGNED BY: AK CHECKED BY: DE DATE: 04/26/12 SCALE: AS NOTED | | DASH JOB NO.: 15-23-7409 DRAWING NO.: C-3 SHEET: 9 OF: 11 SHEETS | | MAY 2010 | |

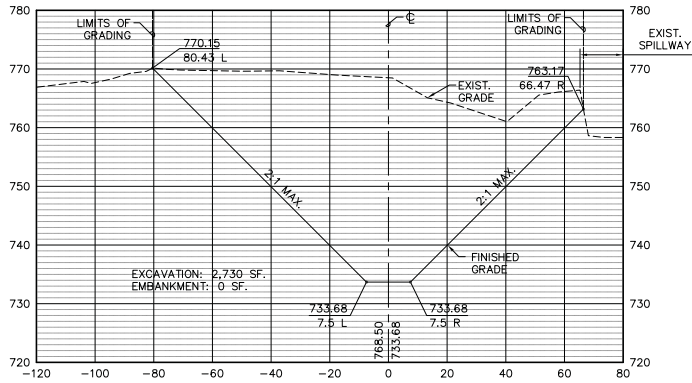
STA. 1+25



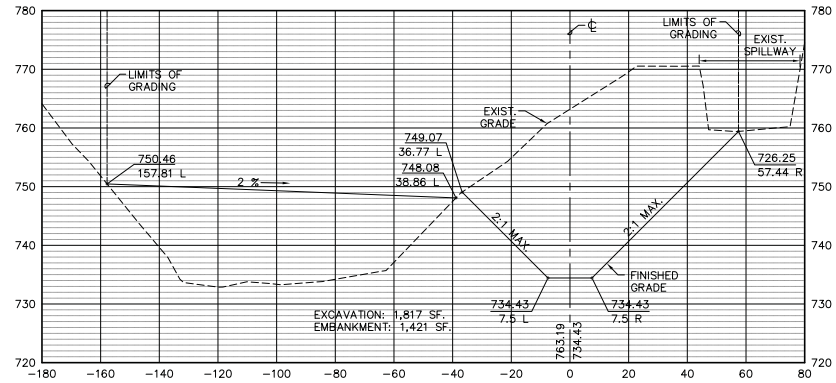
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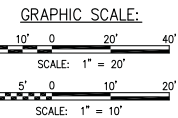
STA. 1+00



STA. 1+50



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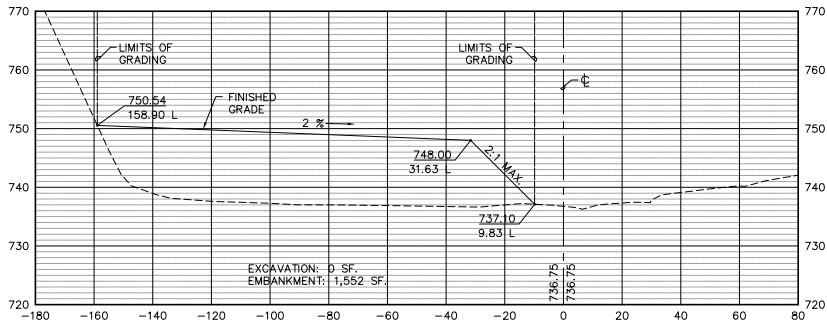
- EXISTING GRADE
- FINISHED GRADE
- ELEVATION
- ☉ OFFSET
- SPOT ELEVATION CALLOUT

BREACH CHANNEL CROSS SECTIONS

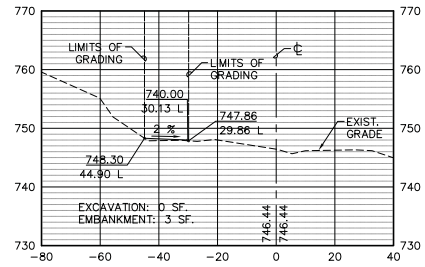
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| REVISION NO. | DATE | DESCRIPTION | SHEET NO. | DATE | APPROVED STATE PUBLIC WORKS ADMINISTRATOR |
| | | | | | |
| DEPT. OF ACCOUNTING & GENERAL SERVICES DIVISION OF PUBLIC WORKS STATE OF HAWAII DLNR DAMS AND RESERVOIRS ON MAUI KOLEA DAM (H00097) MAINTENANCE AND REMEDIATION IMPROVEMENTS TANK: 10-13-00 MAUI, HAWAII | | | | | |
| BREACH CHANNEL - CROSS SECTIONS STA. 1+00 TO 1+75 | | | | | |
| DESIGNED BY: AK | | CHECKED BY: GE | | DATE: 15-23-2409 | |
| DRAWN BY: AK | | APPROVED BY: | | DATE: MAY 2010 | |
| SCALE: AS NOTED | | SHEET 10 | | OF 11 SHEETS | |

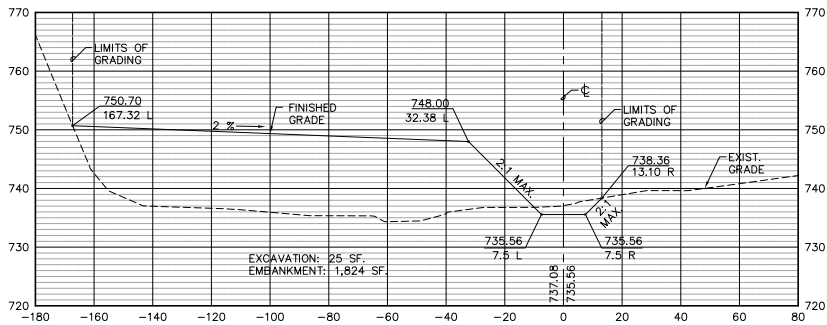
STA. 2+50



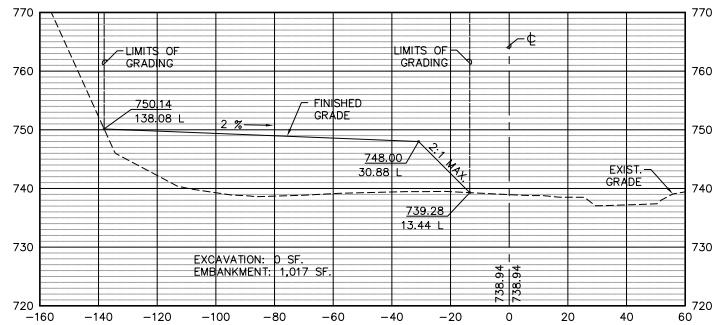
STA. 3+00



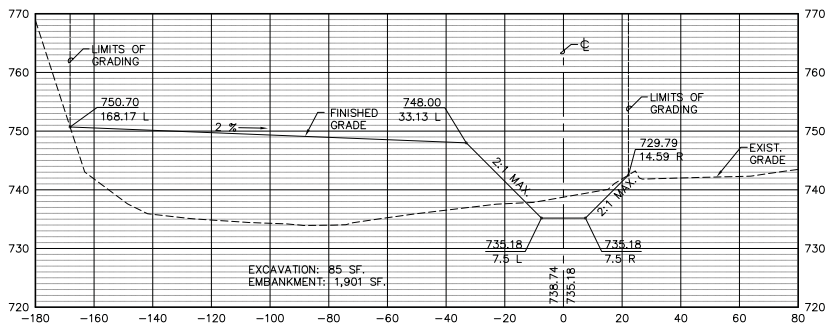
STA. 2+25



STA. 2+75



STA. 2+00

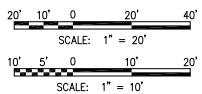


BREACH CHANNEL CROSS SECTIONS

SCALE: HOR. 1" = 20'-0"
VER. 1" = 10'-0"



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GRAPHIC SCALE:



LEGEND:

- EXISTING GRADE
- FINISHED GRADE
- ELEVATION
- ⊕ OFFSET
- SPOT ELEVATION CALLOUT

| | | | | | |
|--|-------------------|--------------------|--------------------------|---------------------------|---|
| REVISION NO. | SYN. | DESCRIPTION | SHT. OF | DATE | APPROVED STATE PUBLIC WORKS ADMINISTRATOR |
|  | | | | | |
| DEPT. OF ACCOUNTING & GENERAL SERVICES DIVISION OF PUBLIC WORKS DLNR DAMS AND RESERVOIRS ON MAUI KOLEA DAM (H100097) MAINTENANCE AND REMEDIATION IMPROVEMENTS <small>TITLE: 11-11-05 HAWAII, MAUI, HAWAII</small> | | | | | |
| BREACH CHANNEL - CROSS SECTIONS STA. 2+00 TO 3+00 | | | | | |
|  | | | | | |
| DESIGNED BY: AK | ORDERED BY: GE | DATE 15-23-2409 | | DRAWING NO. C-5 | |
| DRAWN BY: AK | APPROVED BY: | DATE MAY 2010 | SHEET 11 OF 11 SHEETS | | |
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APPENDIX A SITE PHOTOS

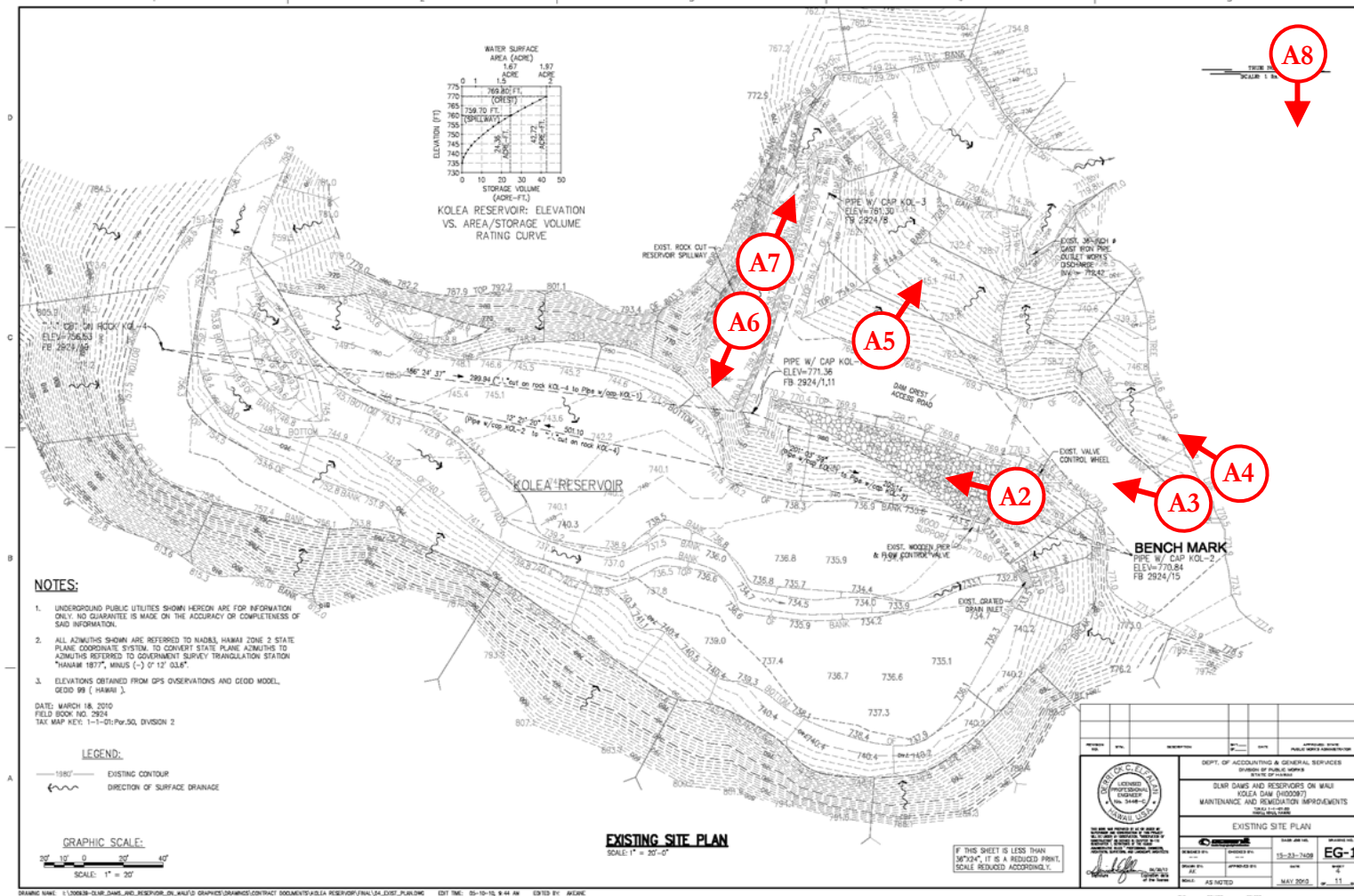


Figure A1: Photo Locations and Directions



Figure A2: Kolea Dam upstream face riprap looking upstream, September 2009



Figure A3: Kolea Dam crest and access road looking upstream, September 2009



Figure A4: Kolea Dam downstream face looking upstream, September 2009



Figure A5: Kolea Dam downstream face looking downstream, September 2009



Figure A6: Kolea Reservoir spillway looking upstream, March 2010



Figure A7: Kolea Reservoir spillway looking downstream, March 2010



Figure A8: Stream diversion into the Center Ditch downstream from reservoir, March 2010