



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: June 3, 2013
Expiration Date: July 3, 2013
Permit File Number: POH-2012-00129

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

APPLICANT: City and County of Honolulu, Department of Design and Construction, 650 South King Street, 11th Floor, Honolulu, HI 96813

AGENT: Mr. Taeyong Kim, Environmental Communications, Inc., 1188 Bishop Street, Suite 2210, Honolulu, HI 96813

LOCATION: Various locations at West Loch Golf Course, 91-1126 Okupe Street, Ewa Beach, Oahu Isle, Hawaii. TMK: (1) 9-1-017: 060. Coordinates: 19.91511 °N, 155.89100 °W.

WORK: The applicant proposes to construct a new silt basin in uplands in the northwest corner of the golf course adjacent to the Number 6 green, requiring appurtenant inlet and outlet structures to connect and direct flow from and back to the Honouliuli Stream during storm events. Two (2) separate portions of the stream would be lined with poured concrete and grouted boulder riprap from the top of the stream banks down to the bed to protect areas within the stream from erosion and scour around the new inlet and outlet.

The proposed new inlet structure would be constructed by artificially-lining an approximately 77-foot long by 8-foot wide portion the stream's bed and banks with a poured concrete weir channel flanked between grouted riprap aprons. Approximately 92.2 cubic yards (cy) of fill material consisting of riprap boulder, concrete, and different sized aggregate rock is required for the new inlet structure. A short distance downstream, the proposed new outlet structure would be constructed by artificially lining an approximately 120-foot long by average 50-foot wide portion of the stream with only grouted riprap boulders. Approximately 101.1 cy of riprap boulders is required for the new outlet. A total estimate of 0.05 acres of waters of the U.S. would be permanently lost for both the inlet [66 square feet (sf) (0.0175 acre)] and outlet [1,260 sf (0.0289 acre)] structures combined.

The applicant also proposes to replace four (4) existing 10-inch pipe culverts with three (3) 12-foot high by 7-foot wide by 12-foot long precast concrete culverts located at Number 3 fairway stream crossing. The proposed work at this location would re-route the existing cart path approximately 40

feet downstream and would include dredging of the stream bed to remove accumulated sediments and grading of the stream banks to widen the stream to accommodate the new culverts. The bed and banks both upstream and downstream of the new culverts would be lined in concrete to prevent gradual erosion areas directly abutting the new culverts culvert. An estimated 284.1 cy of fill material consisting of concrete, different sized aggregate rock, and pre-cast concrete culverts is required for the new stream crossing, which would result in a permanent loss of 1,143.2 sf (0.0262 acre) of waters of the U.S.

Other maintenance work proposed at the Number 3 fairway includes replacing an existing drainage pipe with a new concrete inlet and outlet to stabilize eroded areas. Perennial flow from an unnamed spring located southeast of the Number 3 green has caused gradual erosion of areas around the inlet and outlet ends of the drainage pipe, which requires stabilization. The proposed inlet/outlet stabilization work would include grading and a discharge of an estimated 32.24 cy of fill material consisting of concrete and base course to cover approximately 562.2 sf (0.0129 acre) spring tributary.

Project plans (Appendix A) are included with this notice.

PURPOSE: To improve and maintain the flood control capacity of the golf course, which protects adjacent residential communities and receiving harbor waters, and to upgrade and improve existing drainage structures to prevent further damage from flooding and erosion.

ADDITIONAL INFORMATION: The West Loch Golf Course was created for public recreation and to protect low-lying residential subdivisions adjacent to Honouliuli Stream from flooding. When the golf course was constructed, portions of the stream were widened to increase flow capacity; however, agricultural activities in upstream areas have contributed to sediment accumulation within the stream, causing higher than expected flooding and damage to the golf course. The proposed drainage improvements are intended to improve and maintain existing drainageways and the flood control capacity of the golf course, respectively.

MITIGATION: The applicant has stated alternative locations, reduced capacities, and construction designs, including a no-build alternative, were considered to avoid and minimize impacts to waters of the U.S.. The no-build, reduced capacity, and design options for reducing and eliminating stream linings were determined to not be practicable based on the applicant's need to maintain the existing flood capacity of the stream and the existing drainage structures. The applicant's preferred upland and upstream location for the proposed silt basin and appurtenant structures avoids work activities in stream areas containing flow and aquatic resources. Further, the applicant has also proposed to implement best management practices (BMPs), which includes installing silt fences and other temporary erosion controls to minimize turbidity in downstream waters, proper management and disposal of construction wastes (i.e., trash, hazardous, and sanitary), and temporary and permanent stabilization of stockpiles and disturbed areas, respectively, to minimize impacts to the aquatic environments. Based on the above, the applicant has proposed that no compensatory mitigation is warranted because of the minor loss of waters of the U.S., and the anticipated water quality improvements to the aquatic environment as a result of the proposed project.

WATER QUALITY CERTIFICATION: The proposed action would result in a discharge of fill material into a water of the U.S. and would require authorization from the Corps under Section 404 of the Clean Water Act of 1972 (33 U.S.C. 1344) (CWA). Under Section 401 of the CWA, the Corps may not issue a permit for the described work until the applicant obtains a certification, or a waiver of certification, from the State of Hawaii, Department of Health, Clean Water Branch.

COASTAL ZONE MANAGEMENT ACT CERTIFICATION: The proposed action will affect land or water uses in the Coastal Zone. Under Section 307(c)(3) of the Coastal Zone Management Act of

1972, as amended (16 U.S.C. 1456(c)(3)) (CZMA), the Corps may not issue a permit for the described work until the applicant obtains a CZM Consistency Concurrence from the State of Hawaii, Department of Business, Economic Development, and Tourism, Office of Planning, CZM Program.

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 latest published versions of the National and State Registers of Historic Places (NRHP and SRHP, respectively) have been consulted for the presence or absence of historic properties, including those listed in or eligible for inclusion in the NRHP. The City's West Loch Golf Course is bounded within tax map key (TMK) (1) 9-1-017: 060, which is in the vicinity of several parcels comprising Ewa Villages (site number 80-12-9786), a listed historic site on the SRHP. Because the historic sites are determined to possibly be adjacent to the proposed project areas, a determination of effect will be made in consultation with the State Historic Preservation Officer (SHPO). This application is being coordinated with SHPO. Any comments SHPO may have concerning presently unknown archeological or historic data that may be lost or destroyed by work under the requested permit will be considered in our final assessment of the described work.

ENDANGERED SPECIES: Section 7 of the Endangered Species Act of 1973 (16 U.S.C. 1531 *et seq.*) (ESA) requires federal agencies to consult with the National Marine Fisheries Service (NMFS) and/or U.S. Fish and Wildlife Service (USFWS) on any action that may affect a species listed (or proposed for listing) under the ESA as threatened or endangered or any designated critical habitat. Concurrently with the issuance of this public notice, the USACE will evaluate the potential impacts to proposed and/or listed species and their designated critical habitat and provide consultation letters to the NMFS and/or USFWS, as required, with the USACE's effects determination for the proposed project.

ESSENTIAL FISH HABITAT: The proposed work is being evaluated for possible effects to Essential Fish Habitat (EFH) pursuant to Section 305(b) the Magnuson Stevens Fishery Conservation and Management Act of 1996 (16 U.S.C. 1855(b)) (MSFCMA) and associated federal regulations found at 50 CFR Part 600 Subpart K. The Honolulu District area of responsibility includes areas of EFH as Fishery Management Plans. We have reviewed the January 20, 1999, Western Pacific Fishery Management Council's Environmental Assessment to locate EFH area as identified by the National Marine Fisheries Service (NMFS). Concurrently with the issuance of this public notice, the USACE will evaluate the potential impacts to EFH and provide a consultation letter to the NMFS, as required, with the USACE's effects determination for the proposed project.

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

() Perform work in or affecting navigable waters of the United States – Section 10 of the Rivers and Harbors Act 1899 (33 U.S.C. 403).

(X) Discharge dredged or fill material into waters of the United States – Section 404 of the Clean Water Act (33 U.S.C. 1344). The Corps' public interest review will consider the guidelines developed under Section 404(b)(1) of the CWA, which are promulgated at 40 CFR Part 230.

() Transport dredged material for the purpose of dumping it into ocean waters - Section 103 Marine Protection, Research, and Sanctuaries Act of 1972 (33 U.S.C. 1413). The Corps' public interest review will consider the criteria established under authority of Section 102(a) of the Marine Protection, Research and Sanctuaries Act of 1972, as amended (40 CFR Parts 220 to 229), as appropriate.

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 proposed work. 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 **joy.n.anamizu@usace.army.mil**. Conventional mail comments should be sent U.S. Army Corps of Engineers, Honolulu District, Building 230 (Attn: CEPOH-EC-R/J. Anamizu), Ft. Shafter, HI 96858-5440. Both conventional mail and e-mail comments must include the permit applicant's name and reference number, as shown below, and the commentor's name, address, and phone number. **Both 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 reference number: POH-2012-00129.**

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 Ms. Joy Anamizu at **(808) 835-4308** if further information is desired concerning this notice. This public notice is issued by the Chief, Regulatory Branch.

District Engineer.
U.S. Army, Corps of Engineers

Attachments

Appendix A: DA permit application and construction drawings

**APPLICATION FOR DEPARTMENT OF THE ARMY PERMIT
(33 CFR 325)**

OMB APPROVAL NO. 0710-003

Public reporting burden for this collection of information is estimated to average 5 hours per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Department of Defense, Washington Headquarters Service Directorate of Information Operations and Reports, 1215 Jefferson Davis Highway, Suite 1204, Arlington, VA 22202-4302; and to the Office of Management and Budget, Paperwork Reduction Project (0710-0003), Washington, DC 20503. Please DO NOT RETURN your form to either of those addresses. Completed applications must be submitted to the District Engineer having jurisdiction over the location of the proposed activity.

PRIVACY ACT STATEMENT

Authority: 33 USC 401, Section 10: 1413, Section 404. Principal Purpose: These laws require authorizing activities in, or affecting, navigable waters of the United States, the discharge or fill material into waters of the United States, and the transportation of dredged material for the purpose of dumping it into ocean waters. Routine Uses: Information provided on this form will be used in evaluating the application for a permit. Disclosure: Disclosure of requested information is voluntary. If information is not provided, however, the permit application cannot be processed nor can a permit be issued. One set of original drawings or good reproducible copies which show the location and character of the proposed activity must be attached to this application (see sample drawings and instructions) and be submitted to the District Engineer having jurisdiction over the location of the proposed activity. An application that is not completed in full will be returned.

(ITEMS 1 THRU 4 TO BE FILLED BY THE CORPS)


1. APPLICATION NO.	2. FIELD OFFICE CODE	3. DATE RECEIVED	4. DATE APPLICATION COMPLETED
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(ITEMS BELOW TO BE FILLED BY APPLICANT)

5. APPLICANT'S NAME City and County of Honolulu Dept. of Design and Construction	8. AUTHORIZED AGENT'S NAME AND TITLE (an agent is not required) Environmental Communications, Inc. Taeyong Kim, Principal Planner
6. APPLICANT'S ADDRESS 650 South King Street, 11 th Floor Honolulu, HI 96813	9. AGENT'S ADDRESS 1188 Bishop Street, Suite 2210 Honolulu, HI 96813
7. APPLICANT'S PHONE NOs. W/AREA CODE a. Residence b. Business 808-768-8461	10. AGENT'S PHONE NOs. W/AREA CODE a. Residence b. Business 808-528-4661

11. STATEMENT OF AUTHORIZATION

I hereby authorize, Environmental Communications, Inc to act in my behalf as my agent in the processing of this application and to furnish, upon request, supplemental information in support of this permit application.


APPLICANT'S SIGNATURE

Eg

4/27/12
DATE

NAME, LOCATION, AND DESCRIPTION OR PROJECT OR ACTIVITY

12. PROJECT NAME OR TITLE (see instructions) <u>Golf Course Improvements at West Loch Golf Course</u>	
13. NAME OF WATERBODY, IF KNOWN (if applicable) <u>Honouliuli Stream</u>	14. PROJECT STREET ADDRESS (if applicable) <u>91-1126 Okupe Street</u> <u>Ewa Beach, Hawaii 96706</u>
15. LOCATION OF PROJECT <u>Ewa</u> COUNTY <u>Hawaii</u> STATE	
16. OTHER LOCATION DESCRIPTIONS, IF KNOWN (see instructions) Section, Township, Range, Lat/Lon, and/or Accessors's Parcel Number, for example. <u>Tax Map Key: 9-1-017-: 060</u>	
17. DIRECTIONS TO THE SITE <u>Areas subject of this permit application are located within and around Honouliuli Stream which bifurcates the golf course in a west to east Direction. The stream crosses the 3rd, 13th, 15th, and 18th holes as well as Fort Weaver Road.</u>	

18. Nature of Activity (Description of project, include all features)

A silt basin will be constructed at the northeast corner near the 6th hole to reduce silt that builds with the lower portions of the stream. The basin work includes inlet and outlet structures with the stream and its banks. An existing cart path crossing pipe culvert structure located at the 3rd hole will be replaced with a new concrete culvert box structure to reduce the amount of silt that builds upstream of the existing pipe culvert.

19. Project Purpose (Describe the reason or purpose of the project, see instructions)

The West Loch Golf Course was created as recreational and flood control facility for the West Loch subdivision. While portions of the Honuliuli Stream were widened to increase flow capacity, it was anticipated and planned that the golf course would experience flooding since it is serving as a drainage detention basin limiting the amount of sediment entering Pearl Harbor. Agricultural activities further upstream have contributed to sediment and silt accumulation on the golf course causing excessive flooding. The proposed improvements will restore the facility to its original design capacity.

USE BLOCKS 20-22 IF DREDGED AND/OR FILL MATERIAL IS TO BE DISCHARGED

20. Reason(s) for Discharge

Culvert improvements will require that some work be conducted within the stream. Dredging and maintenance functions will involve work within the Stream.

21. Type(s) of Material Being Discharged and the Amount of Each Type in Cubic Yards

Silt Basin Inlet Structure Area:
Boulder Rip Rap = 22.2 C.Y.
Concrete = 17.5 C.Y.
Bedding (3B Fine Aggregate) = 10.5 C.Y.
Subgrade Stabilization (No. 2 Rock) = 42.0 C.Y.

Silt Basin Outlet Structure Area:
Boulder Rip Rap = 23.3 C.Y.
Stream Lining Rip Rap = 77.8 C.Y.

3rd Hole Culvert Crossing:
Concrete = 42.6 C.Y.
Bedding (3B Fine Aggregate) = 19.6 C.Y.
3rd hole crossing 143.5 cubic yards
Subgrade Stabilization (No. 2 Rock) = 78.4 C.Y.

Note: perennial water flow starts approximately 100 yards above 3rd hole crossing

22. Surface Area in Acres of Wetlands or Other Waters Filled (see instructions)

Silt Basin Inlet Structure Area: 766.3 s.f
Silt Basin Outlet Structure Area: 1,260 s.f.
3rd Hole Culvert Crossing: 1,143.2 s.f.

23. Is Any Portion of the Work Already Complete? Yes ___ No X IF YES, DESCRIBE THE COMPLETED WORK

24. Addresses of Adjoining Property Owners, Lessees, Etc., Whose Property Adjoins the Waterbody (if more than can be entered here, please attach a supplemental list).

Work will be conducted solely within the golf course boundaries and will have no impact on adjoining properties.

25. List of Other Certifications or Approvals/Denials Received from other Federal, State, or Local Agencies for Work Described in This Application.

AGENCY	TYPE APPROVAL*	IDENTIFICATION NUMBER	DATE APPLIED	DATE APPROVED	DATE DENIED
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* Would include but is not restricted to zoning, building, and flood plain permits

26. Application is hereby made for a permit or permits to authorize the work described in this application. I certify that the information in this application is complete and accurate. I further certify that I possess the authority to undertake the work described herein or am acting as the duly authorized agent of the applicant.

SIGNATURE OF APPLICANT

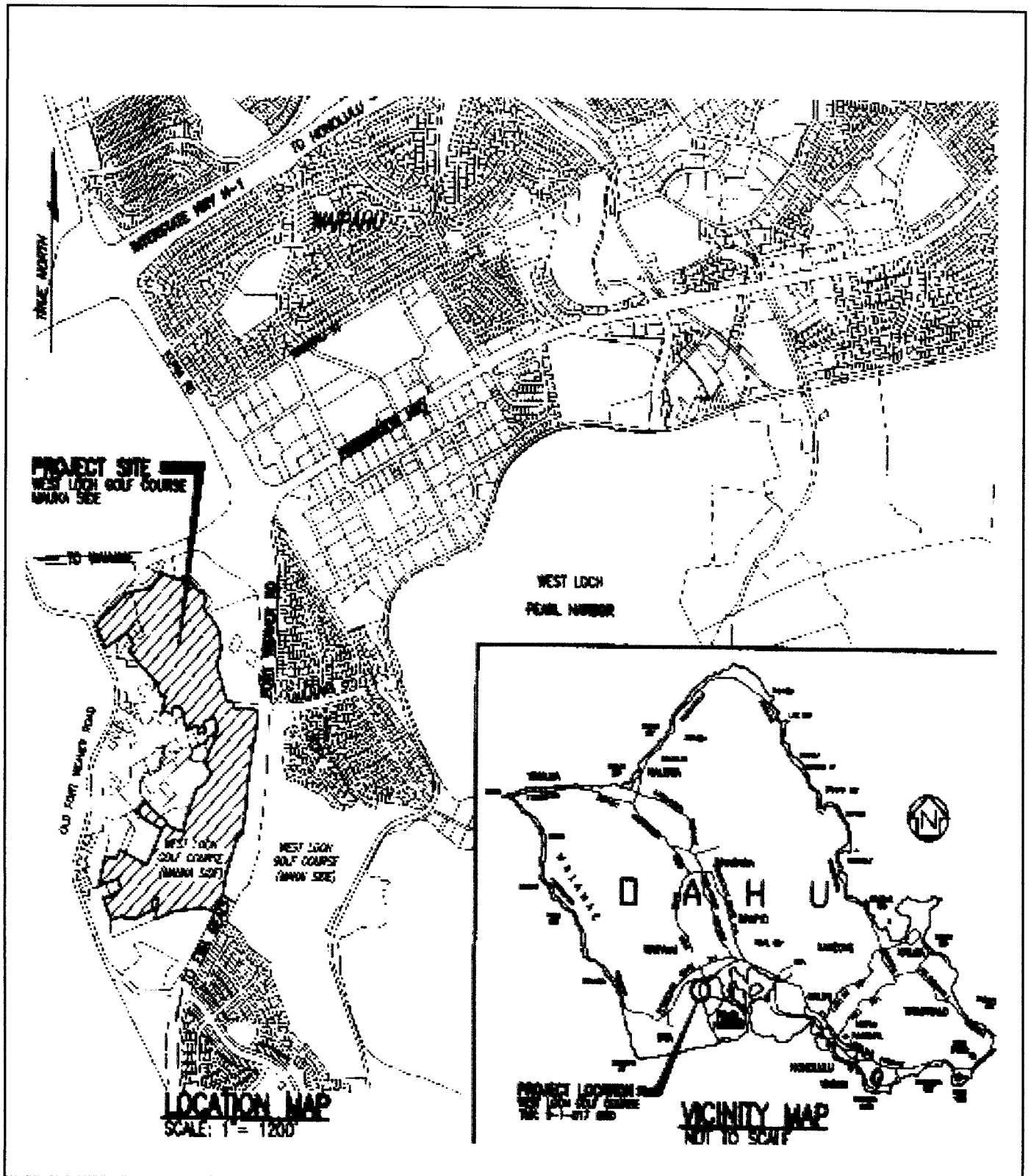
DATE


SIGNATURE OF AGENT

5/1/12
DATE

The application must be signed by the person who desires to undertake the proposed activity (applicant) or it may be signed by a duly authorized agent if the statement in block 11 has been filled out and signed.

18 U.S.C. Section 1001 provides that: Whoever, in any manner within the jurisdiction of any department or agency of the United States knowingly and willfully falsifies, conceals, or covers up any trick, scheme, or disguises a material fact or makes any false, fictitious or fraudulent statements or representations or makes or uses any false writing or document knowing same to contain any false, fictitious or fraudulent statements or entry, shall be fined not more than \$10,000 or imprisoned not more than five years or both.

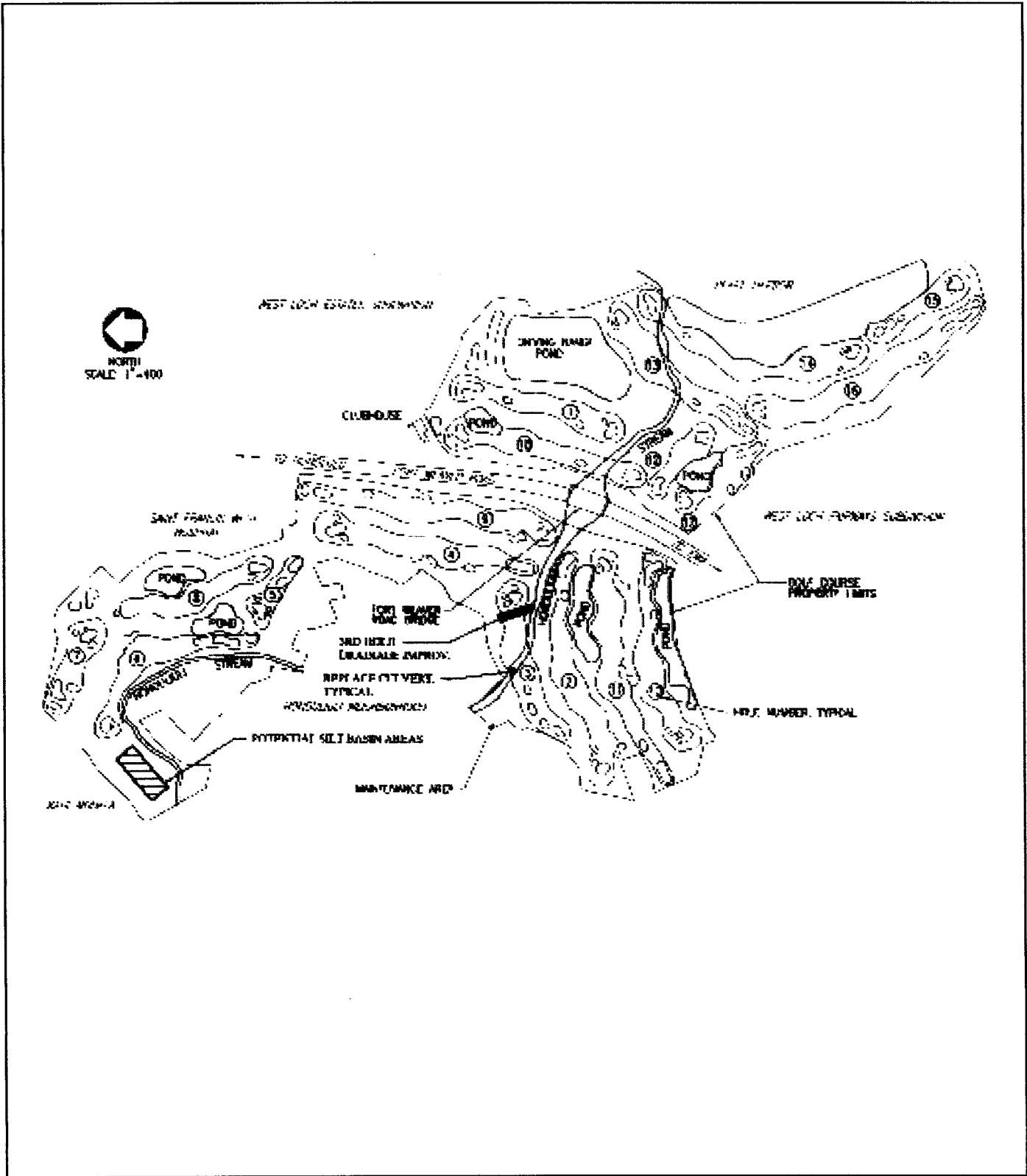


**West Loch Golf Course
Drainage Improvements**

Location Map

Prepared by: Environmental Communications, Inc.
Source: Shimabukuro, Endo & Yoshizaki, Inc.

Figure 1
Page 2-2



**West Loch Golf Course
Drainage Improvements**

General Plan

Prepared by: Environmental Communications, Inc.
Source: Shimabukuro, Endo & Yoshizaki, Inc.

Figure 2
Page 2-3

DEPARTMENT OF DESIGN AND CONSTRUCTION
 FACILITIES DIVISION
 CITY AND COUNTY OF HONOLULU

WEST LOCH GOLF COURSE DRAINAGE IMPROVEMENTS, - PHASE I

JOB NO. 11-P-14

91-1126 OKUPE STREET
 EWA BEACH, OAHU, HAWAII 96706-3555
 TMK: 9-1-017 :060

LOCATION & VICINITY MAPS	INDEX OF DRAWINGS	APPROVED																																																																		
<p>LOCATION MAP SCALE: 1" = 1200'</p> <p>VICINITY MAP NOT TO SCALE</p>	<table border="1"> <thead> <tr> <th>SHT. NO.</th> <th>DWG. NO.</th> <th>DESCRIPTION</th> </tr> </thead> <tr><td>1</td><td>T-1</td><td>TITLE SHEET</td></tr> <tr><td>2</td><td>G-1</td><td>GENERAL NOTES</td></tr> <tr><td>3</td><td>G-2</td><td>EROSION CONTROL NOTES</td></tr> <tr><td>4</td><td>G-3</td><td>GENERAL PLAN, LEGEND, ABBREVIATIONS AND BMP CHECKLIST</td></tr> <tr><td>5</td><td>G-4</td><td>BORING LOGS</td></tr> <tr><td>6</td><td>C-1</td><td>SILT BASIN SITE PLAN 1</td></tr> <tr><td>7</td><td>C-2</td><td>SILT BASIN SITE PLAN 2</td></tr> <tr><td>8</td><td>C-3</td><td>SILT BASIN GRADING PLAN 1</td></tr> <tr><td>9</td><td>C-4</td><td>SILT BASIN GRADING PLAN 2</td></tr> <tr><td>10</td><td>C-5</td><td>SILT BASIN SITE SECTIONS 1</td></tr> <tr><td>11</td><td>C-6</td><td>SILT BASIN SITE SECTIONS 2</td></tr> <tr><td>12</td><td>C-7</td><td>SILT BASIN SITE SECTIONS 3</td></tr> <tr><td>13</td><td>C-8</td><td>3RD HOLE CULVERT CROSSING</td></tr> <tr><td>14</td><td>C-9</td><td>CULVERT CROSSING DETAILS</td></tr> <tr><td>15</td><td>C-10</td><td>3RD HOLE DRAINAGE IMPROVEMENTS</td></tr> <tr><td>16</td><td>C-11</td><td>DRAINAGE IMPROVEMENT DETAILS</td></tr> <tr><td>17</td><td>C-12</td><td>DRAIN LINE PROFILE AND DETAILS</td></tr> <tr><td>18</td><td>C-13</td><td>CHAIN LINK FENCE DETAILS</td></tr> <tr><td>19</td><td>S-1</td><td>MISCELLANEOUS STRUCTURAL DETAILS 1</td></tr> <tr><td>20</td><td>S-2</td><td>MISCELLANEOUS STRUCTURAL DETAILS 2</td></tr> <tr><td>21</td><td>S-3</td><td>MISCELLANEOUS STRUCTURAL DETAILS 3</td></tr> </table> <p>CONSULTANTS: SEY ENGINEERS - CIVIL ENGINEERS SHIGEMURA LAU SAKANASHI HIGHUCHI & ASSOC. INC. - STRUCTURAL ENGINEERS GEOLABS, INC. - GEOTECHNICAL ENGINEERS CONTROL POINT SURVEYING, INC. - SURVEYORS</p>	SHT. NO.	DWG. NO.	DESCRIPTION	1	T-1	TITLE SHEET	2	G-1	GENERAL NOTES	3	G-2	EROSION CONTROL NOTES	4	G-3	GENERAL PLAN, LEGEND, ABBREVIATIONS AND BMP CHECKLIST	5	G-4	BORING LOGS	6	C-1	SILT BASIN SITE PLAN 1	7	C-2	SILT BASIN SITE PLAN 2	8	C-3	SILT BASIN GRADING PLAN 1	9	C-4	SILT BASIN GRADING PLAN 2	10	C-5	SILT BASIN SITE SECTIONS 1	11	C-6	SILT BASIN SITE SECTIONS 2	12	C-7	SILT BASIN SITE SECTIONS 3	13	C-8	3RD HOLE CULVERT CROSSING	14	C-9	CULVERT CROSSING DETAILS	15	C-10	3RD HOLE DRAINAGE IMPROVEMENTS	16	C-11	DRAINAGE IMPROVEMENT DETAILS	17	C-12	DRAIN LINE PROFILE AND DETAILS	18	C-13	CHAIN LINK FENCE DETAILS	19	S-1	MISCELLANEOUS STRUCTURAL DETAILS 1	20	S-2	MISCELLANEOUS STRUCTURAL DETAILS 2	21	S-3	MISCELLANEOUS STRUCTURAL DETAILS 3	<p><i>Colleen J. H.</i> 6-1-2011 DIRECTOR, DEPARTMENT OF DESIGN AND CONSTRUCTION CITY & COUNTY OF HONOLULU DATE</p> <p>_____ DIRECTOR, DEPARTMENT OF ENTERPRISE SERVICES CITY & COUNTY OF HONOLULU DATE</p> <p>T-1 SHEET 01 OF 21 SHEETS</p> <p>FILE NO. 157/26</p>
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WEST LOCH GOLF COURSE - DRAINAGE IMPROVEMENTS, PHASE I

CONSTRUCTION NOTES

- 1. ALL APPLICABLE CONSTRUCTION WORK SHALL BE DONE IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION, SEPTEMBER 1986 (CITY STANDARD SPECIFICATIONS) 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 PROVIDE ACCESS TO AND FROM DRIVEWAYS AND PUBLIC STREETS AT ALL TIMES EXCEPT AS NOTED ON THE PLANS.
3. 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 TO THE VARIOUS ITEMS LISTED IN THE PROPOSAL.
4. VERIFY AND CHECK ALL DIMENSIONS AND DETAILS SHOWN ON THE DRAWINGS PRIOR TO THE START OF CONSTRUCTION. ANY DISCREPANCY SHALL BE IMMEDIATELY BROUGHT TO THE ATTENTION OF THE ENGINEER FOR CLARIFICATION.
5. THE LOCATIONS AND DEPTHS OF EXISTING SURFACE AND UNDERGROUND UTILITIES WHETHER OR NOT SHOWN ON THE PLANS SHALL BE VERIFIED BY THE CONTRACTOR. THE CONTRACTOR SHALL NOT ASSUME THAT WHERE NO UTILITIES ARE SHOWN, THAT NONE EXIST. EXERCISE PROPER CARE WHEN EXCAVATING IN THE AREA AND PROTECT EXISTING UTILITIES AT ALL TIMES DURING CONSTRUCTION. ANY DAMAGE TO THEM SHALL BE REPAIRED AND PAID FOR BY THE CONTRACTOR. CONTACT APPROPRIATE UTILITY COMPANIES TO TONE AND LOCATE UTILITIES IN THE AREA.
6. 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 ALL UTILITIES AND EXERCISE PROPER CARE IN EXCAVATING IN THE AREA. WHEREVER CONNECTIONS OF NEW UTILITIES TO EXISTING UTILITIES ARE SHOWN ON THE PLANS, THE CONTRACTOR SHALL EXPOSE THE EXISTING LINES AT THE PROPOSED CONNECTIONS TO VERIFY THEIR LOCATIONS AND DEPTHS PRIOR TO EXCAVATION OF THE TRENCHES FOR THE NEW LINES.
7. THE CONTRACTOR SHALL RESTORE TO THEIR ORIGINAL CONDITION ALL IMPROVEMENTS DAMAGED AS A RESULT OF THE CONSTRUCTION AND PAVING, INCLUDING PAVEMENTS, PAVEMENT MARKINGS AND STRIPING, EMBANKMENTS, CURBS, SIGNS, LANDSCAPING, STRUCTURES, UTILITIES, WALLS, FENCES, ETC. AT NO COST TO THE OWNER.
8. BENCHMARKS ARE SHOWN ON THE SITE PLANS.
9. 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.
10. RE-APPROVAL MAY BE REQUIRED IF THIS PROJECT IS NOT UNDER CONSTRUCTION WITHIN A PERIOD OF TWO YEARS. THE CONTRACTOR SHALL CHECK WITH ALL APPROVING AGENCIES LISTED ON DRAWING T-1 AND OBTAIN RE-APPROVAL AS REQUIRED.
11. NO CONTRACTOR SHALL PERFORM ANY CONSTRUCTION OPERATION SO AS TO CAUSE FALLING ROCKS, SOIL OR DEBRIS IN ANY FORM TO FALL, SLIDE OR FLOW INTO EXISTING CITY DRAINAGE SYSTEMS, OR 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.
12. THE CONTRACTOR SHALL PROVIDE, INSTALL AND MAINTAIN ALL NECESSARY SIGNS, LIGHTS, FLARES, BARRICADES, MARKERS, CONES AND OTHER PROTECTIVE FACILITIES AND SHALL TAKE NECESSARY PRECAUTIONS FOR THE PROTECTION, CONVENIENCE AND SAFETY OF THE PUBLIC.
13. PURSUANT TO CHAPTER 6E, HRS, IN THE EVENT ANY ARTIFACTS OR HUMAN REMAINS ARE UNCOVERED DURING CONSTRUCTION OPERATIONS, THE CONTRACTOR SHALL IMMEDIATELY SUSPEND WORK AND NOTIFY THE HONOLULU POLICE DEPARTMENT, AND THE STATE DEPARTMENT OF LAND AND NATURAL RESOURCES-HISTORIC PRESERVATION DIVISION (692-8015). IN ADDITION THE CONTRACTOR SHALL NOTIFY THE FACILITIES DIVISION CONSTRUCTION INSPECTOR, DEPARTMENT OF DESIGN AND CONSTRUCTION.

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, AS AMENDED, AND THE "FINAL GEOTECHNICAL ENGINEERING EXPLORATION" REPORT FOR THE PROJECT PREPARED BY GEOLABS, INC.
2. NO CONTRACTOR SHALL PERFORM ANY GRADING OPERATION SO AS TO CAUSE FALLING ROCKS, SOIL OR DEBRIS IN ANY FORM TO FALL, SLIDE OR FLOW ONTO ADJOINING PROPERTIES, STREETS OR NATURAL WATERCOURSES. SHOULD SUCH VIOLATIONS OCCUR, THE CONTRACTOR MAY BE CITED AND THE CONTRACTOR SHALL IMMEDIATELY MAKE ALL REMEDIAL ACTIONS NECESSARY.
3. THE CONTRACTOR, AT HIS OWN EXPENSE, SHALL KEEP THE PROJECT AREA AND SURROUNDING AREA FREE FROM DUST NUISANCE. THE WORK SHALL BE IN CONFORMANCE WITH THE AIR POLLUTION CONTROL STANDARDS CONTAINED IN THE HAWAII ADMINISTRATIVE RULES, TITLE 11, CHAPTER 60.1, "AIR POLLUTION CONTROL."
4. 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.
5. ALL SLOPES AND EXPOSED AREAS SHALL BE SODDED 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.
6. FILLS ON SLOPES STEEPER THAN 5:1 SHALL BE KEYED.
7. THE CITY SHALL BE INFORMED OF THE LOCATION OF THE BORROW/DISPOSAL SITE FOR THE PROJECT WHEN THE APPLICATION FOR A GRADING PERMIT IS MADE. THE BORROW/DISPOSAL SITE MUST ALSO FULFILL THE REQUIREMENTS OF THE GRADING ORDINANCE.
8. 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."
9. THE LIMITS OF THE AREA TO BE GRADED SHALL BE FLAGGED BEFORE COMMENCEMENT OF THE GRADING WORK.
10. 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.
11. 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.
12. TEMPORARY EROSION CONTROLS SHALL NOT BE REMOVED BEFORE PERMANENT EROSION CONTROLS ARE IN-PLACE AND ESTABLISHED.
13. TEMPORARY EROSION CONTROL PROCEDURES SHALL BE SUBMITTED FOR APPROVAL PRIOR TO APPLICATION FOR GRADING PERMIT.
14. IF THE GRADING WORK INVOLVES CONTAMINATED SOIL, THEN ALL GRADING WORK SHALL BE DONE IN CONFORMANCE WITH APPLICABLE STATE AND FEDERAL REQUIREMENTS.
15. BUILDING PERMIT FOR DRAINAGE STRUCTURES AND CEMENT RUBBLE MASONRY WALLS CONSTRUCTION SHALL BE OBTAINED PRIOR TO COMMENCEMENT OF GRADING WORK ON SITE.
16. PURSUANT TO CHAPTER 6E, HRS, IN THE EVENT ANY ARTIFACTS OR HUMAN REMAINS ARE UNCOVERED DURING CONSTRUCTION OPERATIONS, THE CONTRACTOR SHALL IMMEDIATELY SUSPEND WORK AND NOTIFY THE HONOLULU POLICE DEPARTMENT AND THE STATE DEPARTMENT OF LAND AND NATURAL RESOURCES-HISTORIC PRESERVATION DIVISION (692-8015). IN ADDITION, THE CONTRACTOR SHALL NOTIFY THE CIVIL DIVISION CONSTRUCTION INSPECTOR, DEPARTMENT OF DESIGN AND CONSTRUCTION.
17. FOR NON-CITY PROJECTS, THE CONTRACTOR SHALL NOTIFY THE CIVIL ENGINEERING BRANCH, D.P.P. AT 768-8084 TO ARRANGE FOR INSPECTIONAL SERVICES AND SUBMIT TWO (2) SETS OF APPROVED CONSTRUCTION PLANS SEVEN (7) DAYS PRIOR TO COMMENCEMENT OF CONSTRUCTION WORK. FOR CITY PROJECTS, THE CONTRACTOR SHALL COORDINATE INSPECTIONAL SERVICES WITH THE RESPONSIBLE CITY AGENCY.
18. ALL GRADING AND CONSTRUCTION WORK SHALL IMPLEMENT MEASURES TO ENSURE THAT THE DISCHARGE OF POLLUTANTS FROM THE CONSTRUCTION SITE WILL BE REDUCED TO THE MAXIMUM EXTENT PRACTICABLE AND WILL NOT CAUSE OR CONTRIBUTE TO AN EXCEEDANCE OF WATER QUALITY STANDARDS.
19. NON-COMPLIANCE TO ANY OF THE ABOVE REQUIREMENTS SHALL MEAN IMMEDIATE SUSPENSION OF ALL WORK, AND REMEDIAL WORK SHALL COMMENCE IMMEDIATELY. ALL COSTS INCURRED SHALL BE BILLED TO THE VIOLATOR. FURTHERMORE, VIOLATORS SHALL BE SUBJECT TO ADMINISTRATIVE, CIVIL AND/OR CRIMINAL PENALTIES.

BEST MANAGEMENT PRACTICES NOTES

- 1. THE CONTRACTOR SHALL INSTALL EROSION CONTROL BERMS AND SILT FENCES AS REQUIRED AS SOON AS PRACTICABLE.
2. THE CONSTRUCTION SITE INGRESS AND EGRESS SHALL HAVE A 8" THICK 1" TO 3" COARSE AGGREGATE OR LARGER (7" MAX) LAYER LOCATED AT A LOCATION APPROVED BY THE CONTRACTOR AND THE CITY AND TO THE DIMENSIONS AS SHOWN ON THE PLANS. SHOULD THE CONTRACTOR REQUIRE A INGRESS AND EGRESS OTHER THAN WHAT IS SHOWN ON THE ECP OR APPROVED BY THE CITY, THE CONTRACTOR SHALL BE RESPONSIBLE TO OBTAIN ALL NECESSARY APPROVALS, INCLUDING THAT FOR RELOCATION OF THE COARSE AGGREGATE AREA AS REQUIRED.
3. SLOPE AND EXPOSED AREAS SHALL BE SODDED OR PLANTED AS SOON AS FINAL GRADES HAVE BEEN ESTABLISHED. PLANTING SHALL NOT BE DELAYED UNTIL ALL GRADING HAS BEEN COMPLETED. GRADING TO FINAL GRADE SHALL BE CONTINUOUS AND ANY AREA WITHIN WHICH WORK HAS BEEN INTERRUPTED OR DELAYED SHALL BE PLANTED.
UNLESS INDICATED OTHERWISE IN THE SPECIAL PROVISIONS OR PROPOSAL, PAYMENT FOR PLANTING OR GRASSING REQUIRED UNDER THIS ITEM (OTHER THAN THAT SPECIFIED FOR LANDSCAPING) SHALL NOT BE PAID FOR DIRECTLY, BUT SHALL BE CONSIDERED INCIDENTAL TO AND INCLUDED IN THE PRICES BID FOR GRADING.
4. ALL BEST MANAGEMENT PRACTICES (BMPs) SHALL NOT BE REMOVED UNTIL ALL PERMANENT EROSION CONTROLS ARE IN PLACE AND ESTABLISHED.
5. AT THE END OF GRADING OPERATIONS AND AT THE COMPLETION OF THE PROJECT, EXISTING CB'S, DMH'S AND DOWNSTREAM DITCHES SURROUNDING THE PROJECT SITE SHALL BE INSPECTED AND ANY ACCUMULATED SEDIMENT AND DEBRIS FOUND IN THE DRAIN STRUCTURES SHALL BE REMOVED. FLUSHING INTO THE CBs, DMHs AND DOWNSTREAM DITCHES ARE PROHIBITED.
6. THE CONTRACTOR SHALL INSPECT AND CLEAN THE TEMPORARY SILT FENCES AFTER EACH STORM EVENT. ANY REQUIRED REPAIRS SHALL BE DONE IMMEDIATELY.
7. SHOULD THE FABRIC ON THE SILT FENCE DECOMPOSE OR BECOME INEFFECTIVE PRIOR TO THE END OF THE EXPECTED USABLE LIFE OF THE BARRIER STILL BE NECESSARY, THE FABRIC SHALL BE REPLACED PROMPTLY.
EROSION CONTROL NOTES
1. MEASURES TO CONTROL EROSION AND OTHER POLLUTANTS SHALL BE IN PLACE BEFORE ANY DEMOLITION OR EXCAVATION WORK IS INITIATED. THESE MEASURES SHALL BE PROPERLY CONSTRUCTED AND MAINTAINED THROUGHOUT THE CONSTRUCTION PERIOD.
2. ALL CONTROL MEASURES SHALL BE CHECKED AND REPAIRED AS NECESSARY.
3. ALL TEMPORARY EROSION CONTROL MEASURES SHALL BE REMOVED BY THE CONTRACTOR AFTER COMPLETION OF THE PROJECT PRIOR TO FINAL ACCEPTANCE OR AS DIRECTED BY THE ENGINEER IN THE FIELD.
4. GOOD HOUSEKEEPING SHALL BE UTILIZED TO ENSURE PROTECTION OF THE ROADWAYS FROM MUD, DIRT, AND DEBRIS.
5. SEE "BEST MANAGEMENT PRACTICE NOTES" ON THIS DRAWING.
6. THE CONTRACTOR SHALL FOLLOW THE GUIDELINES IN THE CITY AND COUNTY OF HONOLULU'S "BEST MANAGEMENT PRACTICES MANUAL FOR CONSTRUCTION SITES IN HONOLULU", IN DEVELOPING, INSTALLING AND MAINTAINING THE BEST MANAGEMENT PRACTICES (BMPs) FOR THE PROJECT.
7. THE CONTRACTOR SHALL FOLLOW THE GUIDELINES IN THE CITY AND COUNTY OF HONOLULU'S "RULES FOR SOIL EROSION STANDARDS AND GUIDELINES" FOR THE PROJECT.

PUBLIC HEALTH, SAFETY & CONVENIENCE NOTES

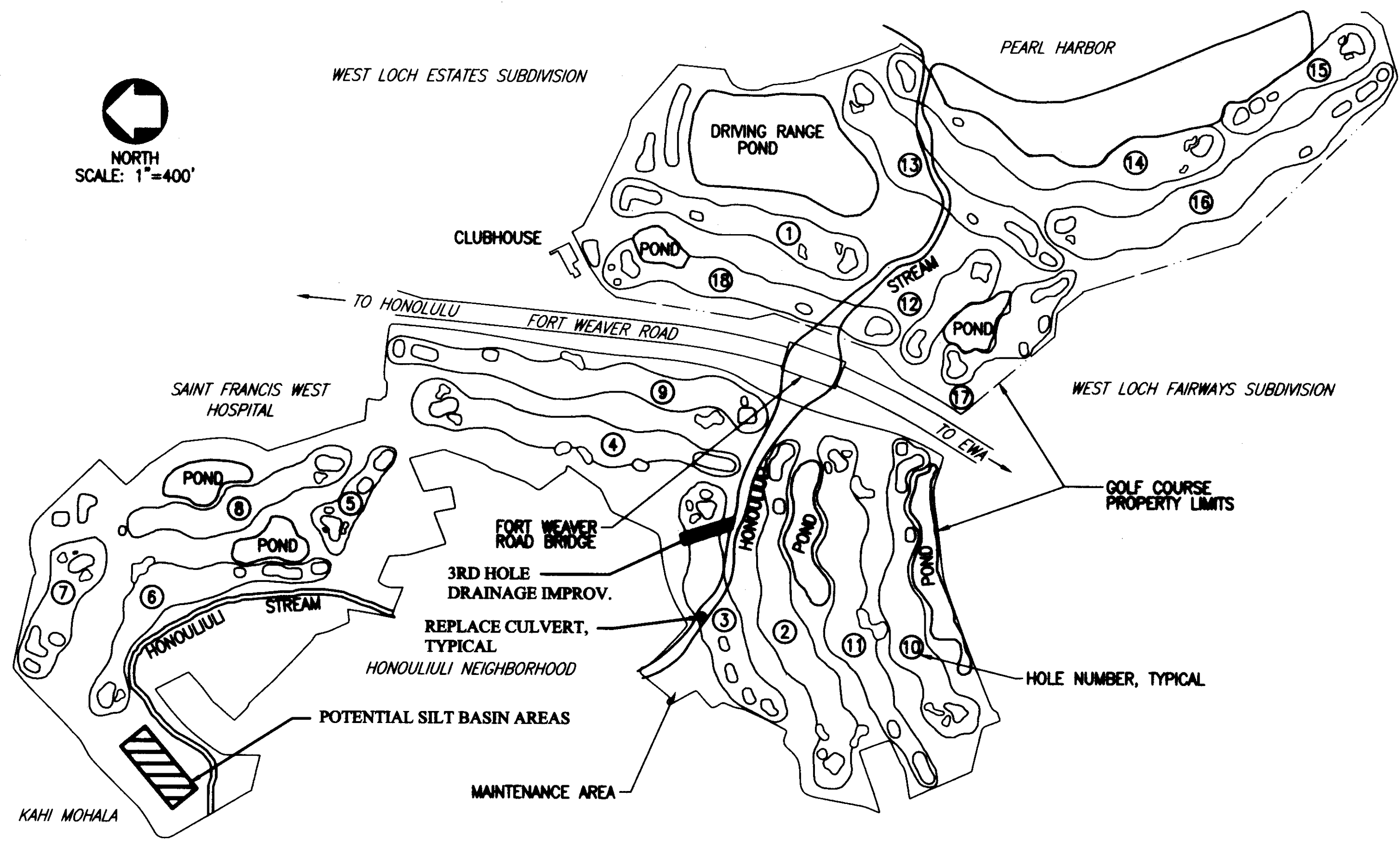
- 1. THE CONTRACTOR SHALL OBSERVE AND COMPLY WITH ALL FEDERAL, STATE, AND LOCAL LAWS REQUIRED FOR THE PROTECTION OF PUBLIC HEALTH, SAFETY, AND ENVIRONMENTAL QUALITY.
2. THE CONTRACTOR, AT HIS OWN EXPENSE, SHALL KEEP THE PROJECT AREA AND SURROUNDING AREA FREE FROM DUST NUISANCE. THE WORK SHALL BE IN CONFORMANCE WITH THE AIR POLLUTION STANDARDS AND REGULATIONS OF THE STATE DEPARTMENT OF HEALTH. THE CITY MAY REQUIRE SUPPLEMENTARY MEASURES AS NECESSARY.
3. THE CONTRACTOR'S ATTENTION IS DIRECTED TO CHAPTER 46 PUBLIC HEALTH REGULATIONS, DEPARTMENT OF HEALTH, STATE OF HAWAII, "COMMUNITY NOISE CONTROL FOR OAHU" IN WHICH MAXIMUM ALLOWABLE NOISE LEVELS HAVE BEEN SET. IF THE CONSTRUCTION ACTIVITIES FOR THIS PROJECT WILL EXCEED THE ALLOWABLE NOISE LEVELS, THE CONTRACTOR IS REQUIRED TO OBTAIN A PERMIT FROM THE DIRECTOR OF THE DEPARTMENT OF HEALTH. THE CONTRACTOR SHALL OBTAIN A COPY OF CHAPTER 46 AND BECOME FAMILIAR WITH THE NOISE LEVEL RESTRICTIONS AND THE PROCEDURES FOR OBTAINING A PERMIT FOR CONSTRUCTION ACTIVITIES.

TRAFFIC NOTES FOR WORK ON CITY AND COUNTY STREETS

- 1. A PERMIT SHALL BE OBTAINED FROM THE DEPARTMENT OF TRANSPORTATION SERVICES BEFORE WORK ON ANY PORTION OF A PUBLIC STREET OR HIGHWAY MAY BEGIN. CONSTRUCTION TRAFFIC CONTROL PLANS APPROVED BY THE DEPARTMENT OF TRANSPORTATION SERVICES AND/OR THE DEPARTMENT OF PLANNING AND PERMITTING MUST BE PROVIDED WHEN APPLYING FOR THE PERMIT.
2. THE CONTRACTOR SHALL PROVIDE, INSTALL AND MAINTAIN ALL NECESSARY SIGNS AND OTHER PROTECTIVE FACILITIES WHICH SHALL CONFORM WITH THE "HAWAII ADMINISTRATIVE RULES GOVERNING THE USE OF TRAFFIC CONTROL DEVICES AT WORK SITES ON OR ADJACENT TO PUBLIC STREETS AND HIGHWAYS" ADOPTED BY THE DIRECTOR OF TRANSPORTATION, AND THE CURRENT U.S. FEDERAL HIGHWAY ADMINISTRATION'S "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS, PART VI-TRAFFIC CONTROLS FOR STREET AND HIGHWAY CONSTRUCTION AND MAINTENANCE OPERATIONS."
3. WORK ON ANY CITY STREET AREA MAY BE PERFORMED ONLY BETWEEN THE HOURS OF 8:30 A.M. TO 3:30 P.M., MONDAY THROUGH FRIDAY, UNLESS OTHERWISE PERMITTED BY THE DEPARTMENT OF TRANSPORTATION SERVICES.
4. DURING WORKING HOURS, THE CONTRACTOR SHALL PROVIDE FOR THROUGH TRAFFIC. DURING NON-WORKING HOURS, ALL TRENCHES SHALL BE COVERED WITH A SAFE NON-SKID BRIDGING MATERIAL AND ALL LANES SHALL BE OPEN TO TRAFFIC.
5. AS REQUIRED BY THE DEPARTMENT OF TRANSPORTATION SERVICES, THE CONTRACTOR SHALL PROVIDE SPECIAL-DUTY POLICE OFFICERS TO CONTROL THE FLOW OF TRAFFIC.
6. WHERE PEDESTRIAN WALKWAYS EXIST, THEY SHALL BE MAINTAINED IN PASSABLE CONDITION IN ACCORDANCE WITH ADAAG 4.1.1(4) AND 4.3, OR OTHER FACILITIES FOR PEDESTRIANS SHALL BE PROVIDED. PASSAGE BETWEEN WALKWAYS AT INTERSECTIONS SHALL LIKEWISE BE PROVIDED.
7. DRIVEWAYS SHALL BE KEPT OPEN UNLESS THE OWNERS OF THE PROPERTY USING THESE RIGHTS-OF-WAY ARE OTHERWISE PROVIDED FOR SATISFACTORILY.
8. CONTRACTOR SHALL REFERENCE TO THE APPROVAL OF THE DEPARTMENT OF TRANSPORTATION SERVICES AND THE DEPARTMENT OF PLANNING AND PERMITTING, ALL EXISTING TRAFFIC SIGNS, POSTS AND PAVEMENT MARKINGS PRIOR TO THE COMMENCEMENT OF CONSTRUCTION. THE CONTRACTOR SHALL REPLACE OR REPAIR ALL TRAFFIC SIGN, POSTS AND PAVEMENT MARKINGS DISTRIBUTED BY HIS ACTIVITIES.
9. THE CONTRACTOR SHALL NOTIFY THE DEPARTMENT OF PLANNING AND PERMITTING AT 768-8084 ONE (1) WEEK PRIOR TO ANY WORK TO BE DONE ON SIGNS, POSTS AND PAVEMENT MARKINGS.
10. NO EQUIPMENT SHALL BE STORED WITHIN CITY RIGHTS-OF-WAY EXCEPT AT LOCATIONS DESIGNATED IN WRITING AND APPROVED BY THE DEPARTMENT OF TRANSPORTATION SERVICES.
11. THE DEPARTMENT OF DESIGN AND CONSTRUCTION SHALL ENSURE THAT THE CONTRACTOR INSTALLS THE CONSTRUCTION TRAFFIC CONTROL DEVICES IN ACCORDANCE WITH THE MUTCD AND HAWAII ADMINISTRATIVE RULES AS SPECIFIED IN TRAFFIC NOTE #2.
12. THE CONTRACTOR SHALL BECOME FAMILIAR WITH AND SHALL MEET THE LATEST REQUIREMENTS OF THE CITY DEPARTMENT OF TRANSPORTATION SERVICES (DTS). THE CONTRACTOR SHALL SUBMIT A TRAFFIC CONTROL PLAN TO THE CITY DEPARTMENT OF PLANNING AND PERMITTING (DPP), TRAFFIC REVIEW BRANCH FOR REVIEW AND APPROVAL BEFORE APPLYING FOR A STREET USAGE PERMIT. THE TRAFFIC CONTROL PLAN SHALL MEET ALL DTS AND DPP REQUIREMENTS INCLUDING PREPARATION BY, OR UNDER THE SUPERVISOR OF, A LICENSED PROFESSIONAL ENGINEER.

Professional Engineer stamp for Scott A. Kumana, License No. 7257-C, Hawaii, U.S.A. Includes signature, date (MAY 2011), and project details: DEPARTMENT OF DESIGN AND CONSTRUCTION, WEST LOCH GOLF COURSE DRAINAGE IMPROVEMENTS - PHASE 1, GENERAL NOTES. JOB NO. 11-P-14, DRAWING NO. G-1, SHEET NO. 02 OF 21, FILE NO. 157/26.

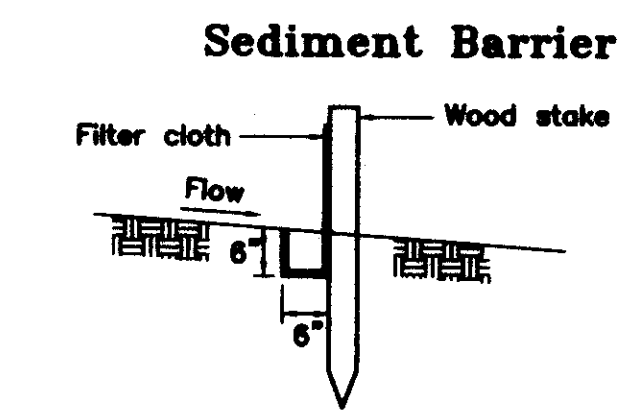
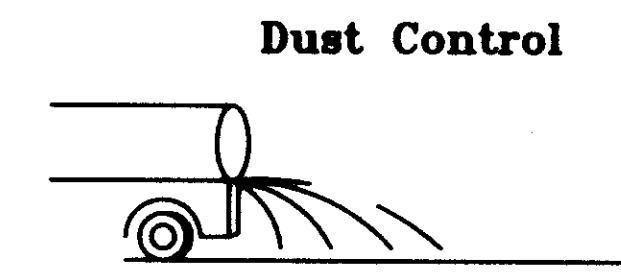
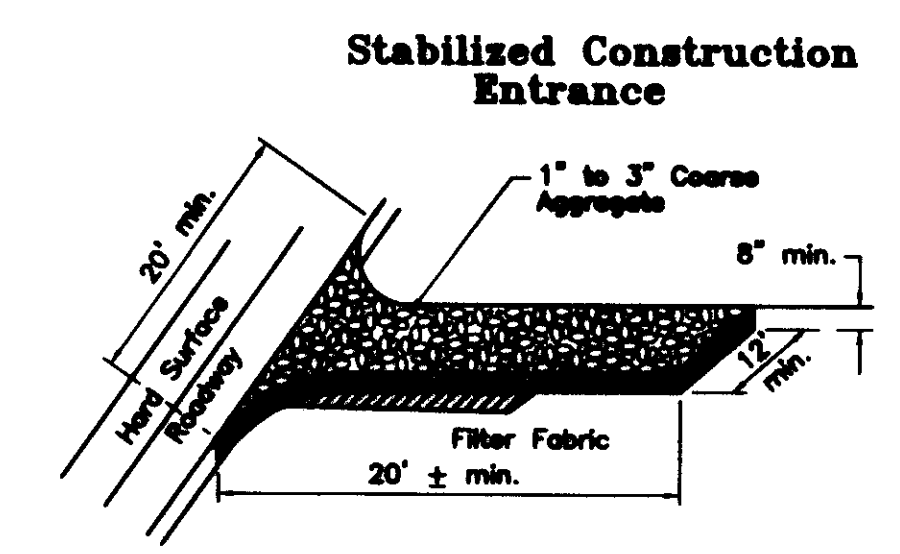
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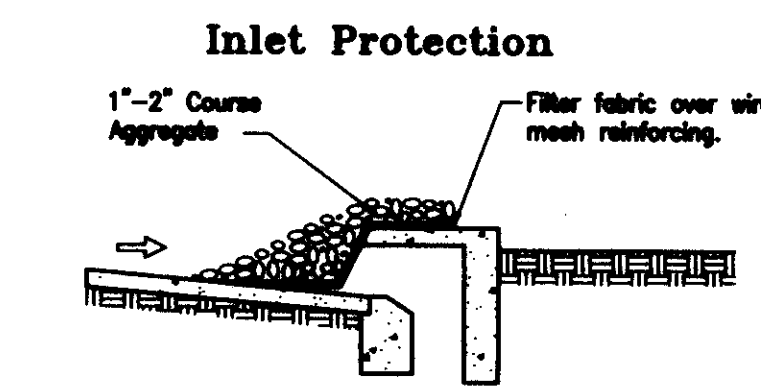
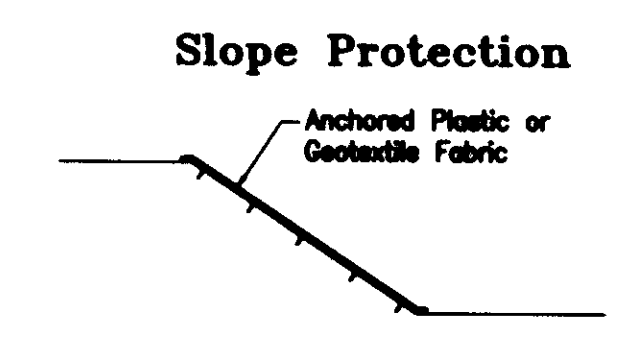
GENERAL PLAN
SCALE: 1" = 400'
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C-1

MINIMUM BMP CHECKLIST

- STABILIZED CONSTRUCTION ENTRANCE**
ALL POINTS OF EGRESS AND INGRESS TO A SITE SHALL BE PROTECTED WITH A STABILIZED CONSTRUCTION ENTRANCE.
- STOCKPILES**
STOCKPILES SHALL NOT BE LOCATED IN DRAINAGE WAYS OR OTHER AREAS OF CONCENTRATED FLOWS. DURING PERIODS OF WET WEATHER, SUCH AS THE RAINY SEASON, STOCKPILES SHALL BE STABILIZED. COVER STOCKPILES IN PLASTIC WHEN NOT IN USE.
- DUST CONTROL**
DUST CONTROL SHOULD BE APPLIED TO REDUCE DUST EMISSIONS. CONTRACTOR TO SPRAY WATER AS NECESSARY.
- TEMPORARY STABILIZATION**
DISTURBED AREAS WHICH ARE AT FINAL GRADE OR WILL NOT BE WORKED FOR LONGER THAN (14) DAYS SHALL BE STABILIZED.
- SEDIMENT BARRIERS OR TRAPS**
SEDIMENT TRAPPING DEVICES SUCH AS FENCES, TRAPS, BASINS OR BARRIERS SHALL BE USED DOWN SLOPE OF ALL DISTURBED AREAS AND AROUND THE BASE OF ALL MATERIAL STOCKPILES. COVER STOCKPILES WITH PLASTIC.



- SLOPE PROTECTION**
SURFACE FLOW FROM ABOVE AN EXPOSED SLOPE SHALL NOT BE ALLOWED TO FLOW OVER THE SLOPE WITHOUT PROTECTION. SLOPE PROTECTION SHALL BE USED ON AREAS WITH SLOPES GREATER THAN 50% AND ON AREAS OF MODERATE SLOPES THAT ARE PRONE TO EROSION. SLOPE PROTECTION SHALL ALSO BE USED ON GROUND SURFACES AND STOCKPILES EXPOSED DURING WET WEATHER. ANCHOR PLASTIC OVER RETAINING WALL EXCAVATION.
- INLET PROTECTION**
ALL STORM DRAIN INLETS ON SITE, AND THOSE OFFSITE WHICH MAY RECEIVE RUNOFF FROM THE SITE SHALL USE AN INLET PROTECTION DEVICE.
- PERMANENT STABILIZATION**
ALL DISTURBED AREAS SHALL BE PERMANENTLY STABILIZED PRIOR TO REMOVING EROSION AND SEDIMENT MEASURES. ALL TEMPORARY EROSION AND SEDIMENT MEASURES SHALL BE REMOVED WITHIN 30 DAYS AFTER FINAL SITE STABILIZATION OR AFTER THE TEMPORARY MEASURES ARE NO LONGER NEEDED. TRAPPED SEDIMENT AND AREAS OF DISTURBED SOIL WHICH RESULT FROM THE REMOVAL OF THE TEMPORARY MEASURES SHALL BE IMMEDIATELY PERMANENTLY STABILIZED.



AREAS TO BE PERMANENTLY SEEDED/MULCHED WITHIN 14 DAYS OR FINAL GRADE EXCEPT PAVED AREAS WHICH WILL BE FORMED AND SLABBED WITHIN 14 DAYS.

LEGEND

- EXISTING (SLANT LETTERING)**
- CATV BOX
 - TEL. BOX
 - ELECTRIC BOX
 - UTILITY POLE & STREET LIGHT
 - WATER METER BOX
 - WATER VALVE & BOX
 - SIGN
 - TRAVERSE STATION
 - TREE
 - SLOPE
 - CRM WALL
 - WOOD FENCE
 - EXISTING TELEPHONE (UNDERGROUND)
 - EXISTING ELECTRICAL/TELEPHONE /STREET LIGHT LINES (OVERHEAD)
 - EXISTING WATER LINE W/ SIZE
 - PROPERTY LINE
- NEW (VERTICAL LETTERING)**
- DIRECTION OF RUNOFF FLOW
 - DETAIL NUMBER OR SECTION LETTER
 - DRAWING ON WHICH DETAIL OR SECTION IS SHOWN
 - CONCRETE IMPROVEMENT
 - CRM WALL
 - CURVE W/ DESIGNATION
 - BORING LOCATION W/ DESIGNATION
 - TEMPORARY SILT FENCE

ABBREVIATIONS

- | EXISTING (SLANT LETTERING) | NEW (VERTICAL LETTERING) |
|----------------------------|--------------------------|
| ABAND | ABANDONED |
| A.C. | ASPHALT CONCRETE |
| APPROX. | APPROXIMATE |
| BOT. | BOTTOM |
| BW | BOTTOM WALL |
| C | CHORD |
| CATV | CABLE TELEVISION |
| C.L. | CHAIN LINK |
| CL | CENTER LINE |
| CMP | CORRUGATED METAL PIPE |
| CONC. | CONCRETE |
| CRM | CEMENT RUBBLE MASONRY |
| D | DIAMETER OR DRAIN |
| DWY. | DRIVEWAY |
| E/ELEC. | ELECTRIC |
| ELEV./EL. | ELEVATION |
| EXIST. | EXISTING |
| G.P. | GATE POST |
| GND. | GROUND |
| G.W. | GUY WIRE |
| H | HEIGHT |
| INV. | INVERT |
| NOM. | NOMINAL |
| O/H | OVERHEAD |
| PAV'T. | PAVEMENT |
| S.L. | STREET LIGHT |
| ST. | STREET |
| STA. | STATION |
| T.M.K. | TAX MAP KEY |
| T/TEL. | TELEPHONE |
| TP | TOP PIPE |
| TW | TOP WALL |
| TYP. | TYPICAL |
| U.P. | UTILITY POLE |
| U/G | UNDERGROUND |
| W | WIDTH |
| W/W | WITH |
| WM | WATER METER |
| WV | WATER VALVE |
| A.C. | ASPHALT CONCRETE |
| APPROX. | APPROXIMATE |
| B | BASELINE |
| BOT. | BOTTOM |
| BCW | BOTTOM OF CUTOFF WALL |
| BW | BOTTOM OF WALL |
| C | CHORD |
| CL | CENTER LINE |
| CLF | CHAIN LINK FENCE |
| CLR. | CLEAR |
| CMP | CORRUGATED METAL PIPE |
| CONC. | CONCRETE |
| CONT. | CONTINUOUS |
| CRM | CEMENT RUBBLE MASONRY |
| CW | CUTOFF WALL |
| CY | CUBIC YARD |
| DEMO | DEMOLISH |
| DET. | DETAIL |
| DIA. | DIAMETER |
| DWG. | DRAWING |
| E.F. | EACH FACE |
| ELEV. | ELEVATION |
| EXIST. | EXISTING |
| FT. | FOOT OR FEET |
| FTG | FOOTING |
| GRD | GROUND |
| G.S. | GALVANIZED STEEL |
| H/ HT. | HEIGHT |
| H/ HORZ. | HORIZONTAL |
| I/ INV. | INVERT |
| JKT. | JACKET |
| L | LENGTH OF CURVE |
| L.F. | LINEAR FEET |
| MAX. | MAXIMUM |
| MIN. | MINIMUM |
| NO. | NUMBER |
| NOM. | NOMINAL |
| O.C. | ON CENTERS |
| O.D. | OUTSIDE DIAMETER |
| PC | POINT OF CURVATURE |
| PT | POINT OF TANGENCY |
| PVC | POLYVINYL CHLORIDE |
| R | RADIUS |
| R/W | RIGHT OF WAY |
| S | SLOPE |
| SF | SQUARE FEET |
| SHT. | SHEET |
| SQ. | SQUARE |
| STA. | STATION |
| STRUCT. | STRUCTURAL |
| T | TANGENT |
| TC | TOP OF CONCRETE |
| TCW | TOP OF CUTOFF WALL |
| T.M.K | TAX MAP KEY |
| TW | TOP OF WALL |
| TYP. | TYPICAL |
| V/ VERT. | VERTICAL |
| W | WIDTH |
| W/ | WITH |
| W | DIAMETER |
| W | AND |
| W | AT |
| % | PERCENT |
| ± | PLUS OR MINUS |
| Δ | CURVE ANGLE |

DEPARTMENT OF DESIGN AND CONSTRUCTION
CITY & COUNTY OF HONOLULU

**WEST LOCH GOLF COURSE
DRAINAGE IMPROVEMENTS - PHASE I**

GEN. PLAN, LEGEND, ABBREY, AND BMP CHK. LIST

DESIGNED BY: SAK
REVIEWED BY: SAK
DRAWN BY: CAE
DATE: MAY 2011
ACCEPTED: [Signature]
CHECKED: [Signature]

EXPIRES: 4/30/12

JOB NO. 11-P-14
DRAWING NO. G-3
SHEET NO. 04 OF 21
FILE NO. 157/26

APPROVED: [Signature]
DATE: 6-2-11
ADD. NO. 1 - REVISED NOTE

SCOTT A. KUMANA
LICENSED PROFESSIONAL ENGINEER
No. 7257-C
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION AND CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION.

ADDENDUM NO.1 (SHEET 4 OF 21)

05/31/11 4:25:00 PM S:\SAK\WEST LOCH G.C.\DRAINAGE IMPROVEMENTS PHASE-1\DRAW\G-3 - GENERAL PLAN & SYMBOLS.DWG

06/31/11 4:25:05 PM S:\SAK\WEST LOCH C.C.\DRAINAGE IMPROVEMENTS PHASE-1\DRAW\05 - BORING LOGS.DWG

BORING 1									
Laboratory					Field				
Other Tests	Moisture Content (%)	Dry Density (pcf)	Cone Recovery (%)	RDD (%)	Penetration Resistance (blows/foot)	Pocket Pen. (tsf)	Depth (feet)	Graphic	UBCS
	14	73		24					
	15			13					
	16	72		14			5		
	17			10					
	17	76		32			10		
	17			16					
	18	77		78			15		
	12				256*		20		
					+100*				

BORING 2									
Laboratory					Field				
Other Tests	Moisture Content (%)	Dry Density (pcf)	Cone Recovery (%)	RDD (%)	Penetration Resistance (blows/foot)	Pocket Pen. (tsf)	Depth (feet)	Graphic	UBCS
	21	76		29					
	5			19					
Sieve	13	76		17			5		
	18			7					
	15	71		41			10		
	8			16			15		

BORING 3									
Laboratory					Field				
Other Tests	Moisture Content (%)	Dry Density (pcf)	Cone Recovery (%)	RDD (%)	Penetration Resistance (blows/foot)	Pocket Pen. (tsf)	Depth (feet)	Graphic	UBCS
	11	84		43					
	8			16					
LL=95 PI=14	14	74		17			5		
				32					
	5				100*		10		
	4				100*		15		
					150*		20		

BORING 4									
Laboratory					Field				
Other Tests	Moisture Content (%)	Dry Density (pcf)	Cone Recovery (%)	RDD (%)	Penetration Resistance (blows/foot)	Pocket Pen. (tsf)	Depth (feet)	Graphic	UBCS
	6	101		41					
	4			63			5		
	9	88		22					
	8			28					
	9	101		19			10		
	7			16			15		
	8	101		14			20		
					200*				

BORING 10									
Laboratory					Field				
Other Tests	Moisture Content (%)	Dry Density (pcf)	Cone Recovery (%)	RDD (%)	Penetration Resistance (blows/foot)	Pocket Pen. (tsf)	Depth (feet)	Graphic	UBCS
Direct Shear	30	86		8	2.0				
TV=0.75	43			1					
LL=66	40	86			100-150		5		
PI=37					pal				
Concol.	98			2					
	52	62			100-150		10		
					pal				
Sieve	88			3			15		
	25	104		9			20		
TV=0.1	62			3			25		

NOTES

- LOGS OF BORINGS WERE TAKEN FROM THE "GEOTECHNICAL ENGINEERING EXPLORATION, WEST LOCH GOLF COURSE IMPROVEMENTS, EWA, OAHU, HAWAII" DATED MAY 13, 2011 HAS BEEN PREPARED BY GEOLABS, INC. A COPY OF THE REPORT IS ON FILE AT THE OFFICE OF THE ENGINEER FOR REVIEW BY THE CONTRACTOR.
- THE INFORMATION PRESENTED IN THE LOGS OF BORINGS DEPICT THE SUBSURFACE CONDITIONS ENCOUNTERED AT THAT SPECIFIED LOCATION AND AT THE TIME OF THE FIELD EXPLORATION ONLY. VARIATIONS OF SUBSOIL CONDITIONS FROM THOSE DEPICTED IN THE LOGS OF BORINGS MAY OCCUR BETWEEN AND BEYOND THE BORINGS.
- THE PENETRATION RESISTANCE SHOWN ON THE LOGS OF BORINGS INDICATE THE NUMBER OF BLOWS REQUIRED FOR THE SPECIFIC SAMPLER TYPE USED. THE BLOW COUNTS MAY NEED TO BE FACTORED TO OBTAIN THE STANDARD PENETRATION TEST (SPT) BLOW COUNTS.
- THE DATA GIVEN IS FOR GENERAL INFORMATION ONLY. BIDDERS SHALL EXAMINE THE SITE AND THE BORING DATA AND DRAW THEIR OWN CONCLUSIONS THEREFROM AS TO THE CHARACTER OF MATERIALS TO BE ENCOUNTERED. THE ENGINEER WILL NOT ASSUME RESPONSIBILITY FOR VARIATIONS OF SUBSOIL QUALITY OR CONDITIONS OTHER THAN AT THE BORING LOCATIONS SHOWN AND AT THE TIME THE BORINGS WERE TAKEN.
- FOR LOCATIONS OF BORINGS SEE DRAWINGS C-1, C-2 & C-8.

BORING LOGS LEGEND

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

DATE: 6-2-11
REVISION: 1
ADD. NO. 1 - REVISED FILE NUMBER: SAK 2/2
MADE BY: APPROVED

Shimabara, Eide & Yoshida, Inc.
Civil Engineers

SCOTT A. KUIHONA
LICENSED PROFESSIONAL ENGINEER
No. 7257-C
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION AND CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION.

Scott A. Kuihona
SIGNATURE
EXP. DATE: 4/30/12

ISSUED BY: SAK
REVIEWED BY: SAK
DRAWN BY: CAE
DATE: MAY 2011
ACCEPTED: [Signature]
CHECKED: [Signature]

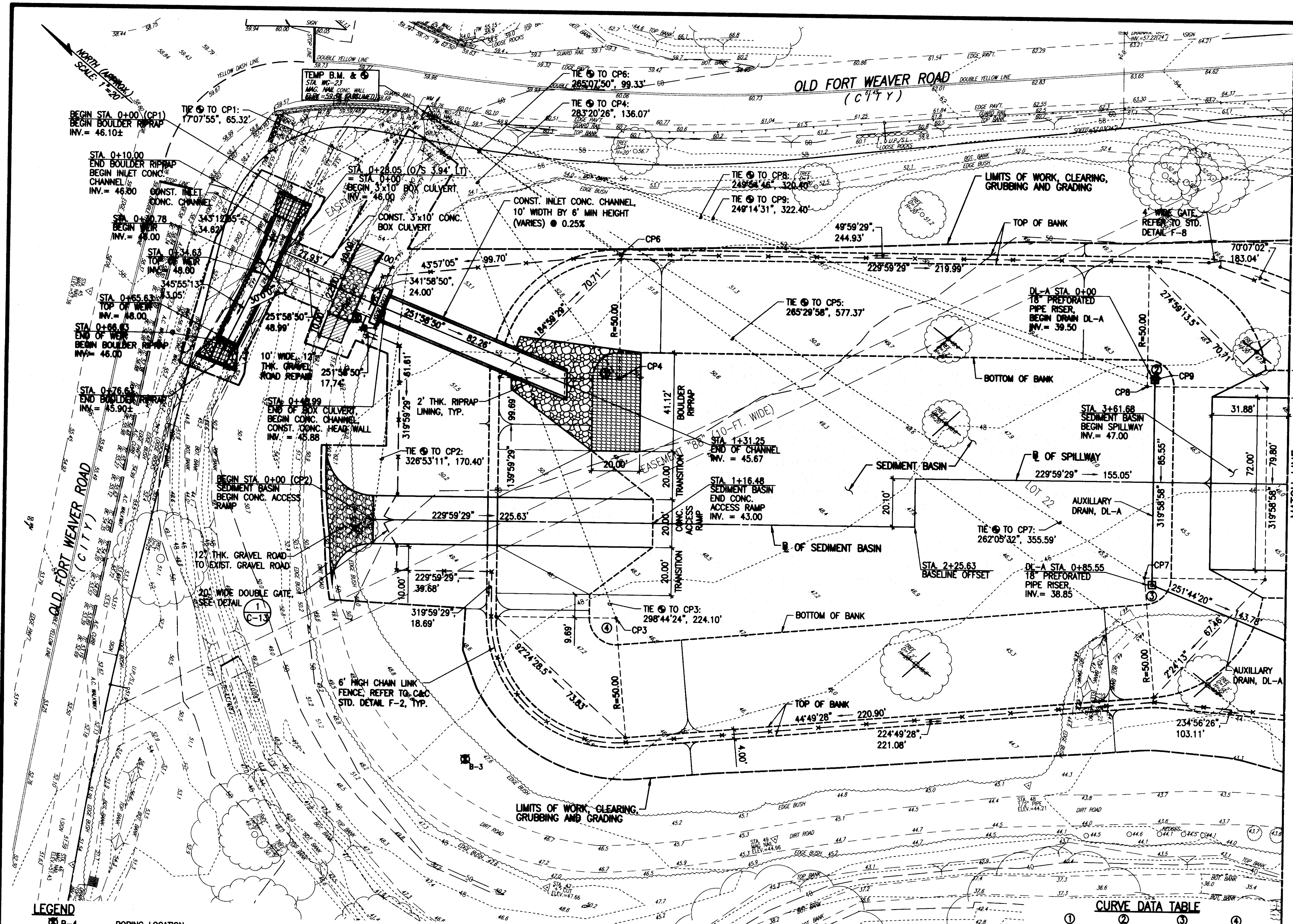
DEPARTMENT OF DESIGN AND CONSTRUCTION
CITY & COUNTY OF HONOLULU

**WEST LOCH GOLF COURSE
DRAINAGE IMPROVEMENTS - PHASE I**

BORING LOGS

JOB NO. 11-P-14
DRAWING NO. Q-4
SHEET NO. 05 OF 21
FILE NO. 157/26

05/31/11 6:34:33 PM S:\SAK\WEST LOCH GC\DRAW\ADD NO.1\0461K C01.DWG



- LEGEND**
- B-4 BORING LOCATION
 - EXISTING TREE TO BE REMOVED
 - LIMITS OF CLEARING, GRUBBING & GRADING
 - PROPERTY LINE

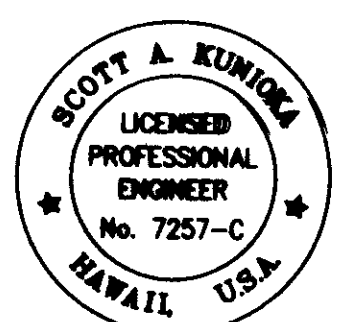
SILT BASIN SITE PLAN 1
SCALE: 1"=20'

CURVE DATA TABLE

①	②	③	④
90°00'00"	89°59'29"	84°50'30"	95°10'01"
45°00'00"	44°59'44.5"	42°25'15"	47°35'00.5"
50.00'	50.00'	50.00'	50.00'
50.00'	49.99'	45.69'	54.73'
70.71'	70.71'	67.46'	73.83'
78.54'	78.53'	74.04'	83.05'

MATCH LINE
STA. 3+80.88
SEE DWG. NO. C-2 FOR CONTINUATION

<p>DEPARTMENT OF DESIGN AND CONSTRUCTION CITY & COUNTY OF HONOLULU</p> <p style="text-align: center;">WEST LOCH GOLF COURSE DRAINAGE IMPROVEMENTS - PHASE I</p> <p style="text-align: center;">SILT BASIN SITE PLAN 1</p>	<p>DESIGNED BY: SAK REVIEWED BY: SAK DRAWN BY: CAE DATE: MAY 2011 ACCEPTED: [Signature]</p> <p>ENGINEER: [Signature] EXPIRES: 4/30/12</p> <p>JOB NO. 11-P-14 DRAWING NO. C-1 SHEET NO. 06 OF 21 FILE NO. 157/26</p>
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[Signature]

EXP. DATE: 4/30/12

DESIGNED BY: SAK	REVIEWED BY: SAK	DRAWN BY: CAE	DATE: MAY 2011
ACCEPTED: [Signature]	ENGINEER: [Signature]	EXPIRES: 4/30/12	

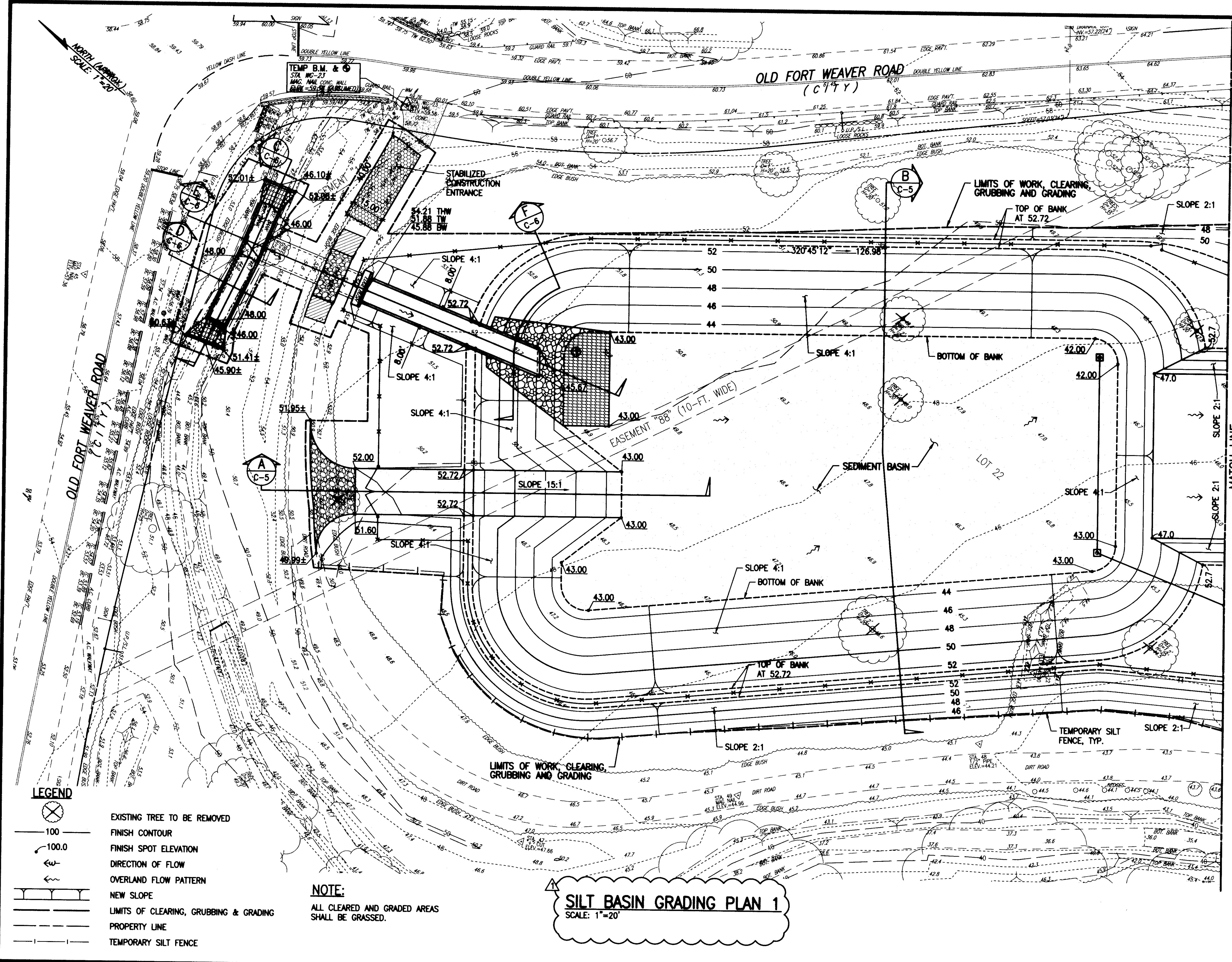
DEPARTMENT OF DESIGN AND CONSTRUCTION
CITY & COUNTY OF HONOLULU

**WEST LOCH GOLF COURSE
DRAINAGE IMPROVEMENTS - PHASE I**

SILT BASIN SITE PLAN 1

JOB NO. 11-P-14
DRAWING NO. C-1
SHEET NO. 06 OF 21
FILE NO. 157/26

05/31/11 6:26:14 PM S:\SAK\WEST LOCH GC\DRAW\ADD NO.1\0461K C03.DWG



- LEGEND**
- EXISTING TREE TO BE REMOVED
 - 100 FINISH CONTOUR
 - 100.0 FINISH SPOT ELEVATION
 - DIRECTION OF FLOW
 - OVERLAND FLOW PATTERN
 - NEW SLOPE
 - LIMITS OF CLEARING, GRUBBING & GRADING
 - PROPERTY LINE
 - TEMPORARY SILT FENCE

NOTE:
ALL CLEARED AND GRADED AREAS SHALL BE GRASSED.

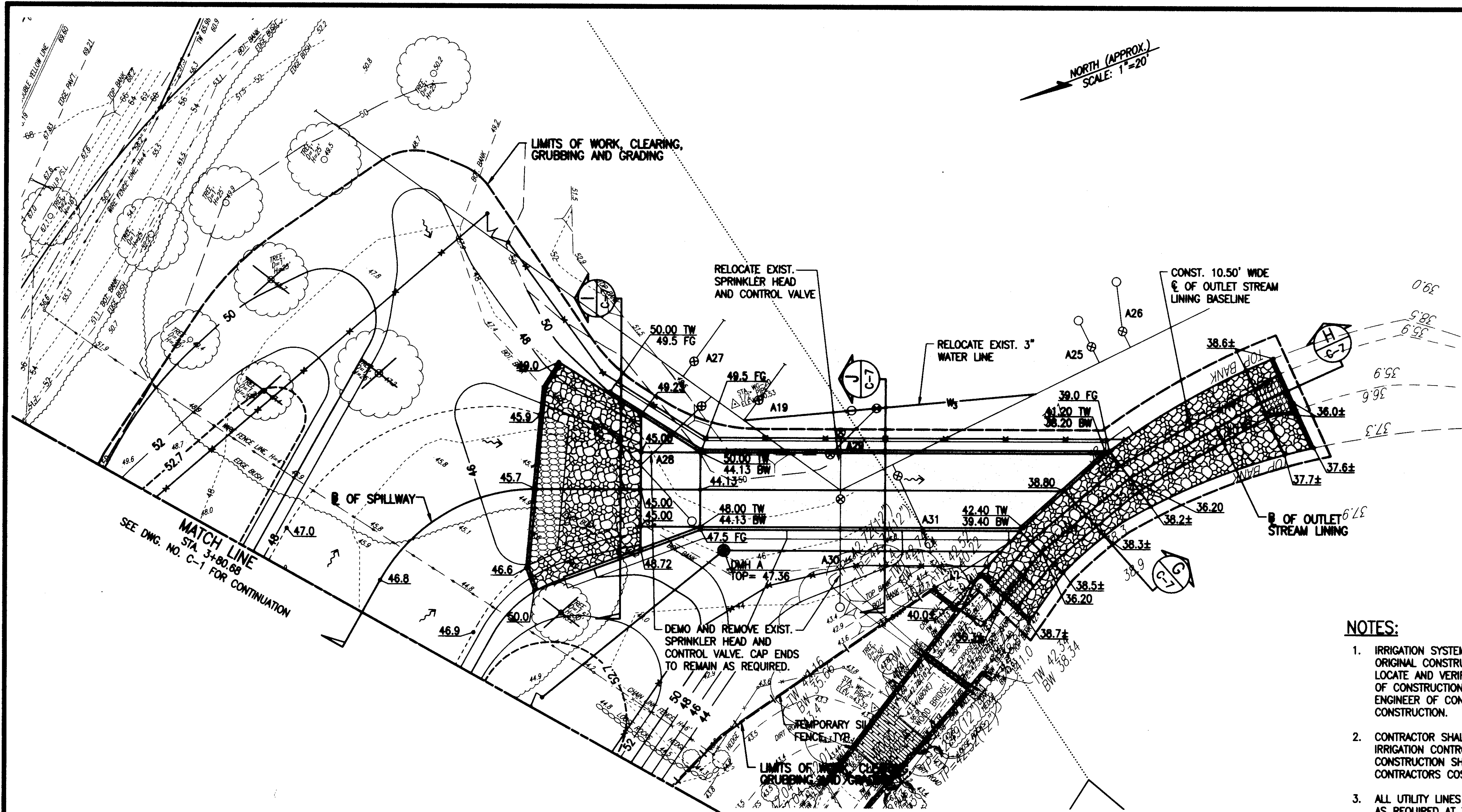
SILT BASIN GRADING PLAN 1
SCALE: 1"=20'

MATCH LINE
STA. 28+50
SEE DWG. NO. C-2 FOR CONTINUATION

DESIGNED BY:	SAK	REVIEWED BY:	SAK	DATE:	MAY 2011	ACCEPTED:	
DRAWN BY:	CAE	DATE:	MAY 2011	EXP. DATE:	4/30/12	SIGNATURE	
DEPARTMENT OF DESIGN AND CONSTRUCTION CITY & COUNTY OF HONOLULU		WEST LOCH GOLF COURSE DRAINAGE IMPROVEMENTS - PHASE I		SILT BASIN GRADING PLAN 1			
JOB NO. 11-P-14		DRAWING NO. C-3		SHEET NO. 08 OF 21		FILE NO. 157/26	
				ADD. NO. 1 - REVISED GRADING PLAN		DATE 6-2-11	
				REVISION		APPROVED	
				DATE		BY SAK	
				DESCRIPTION		MADE BY	
				DATE		APPROVED	

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05/31/11 11:58:49 PM S:\SAK\WEST LOCH G.C\DRAW\ADD NO.1\0461K C04.DWG

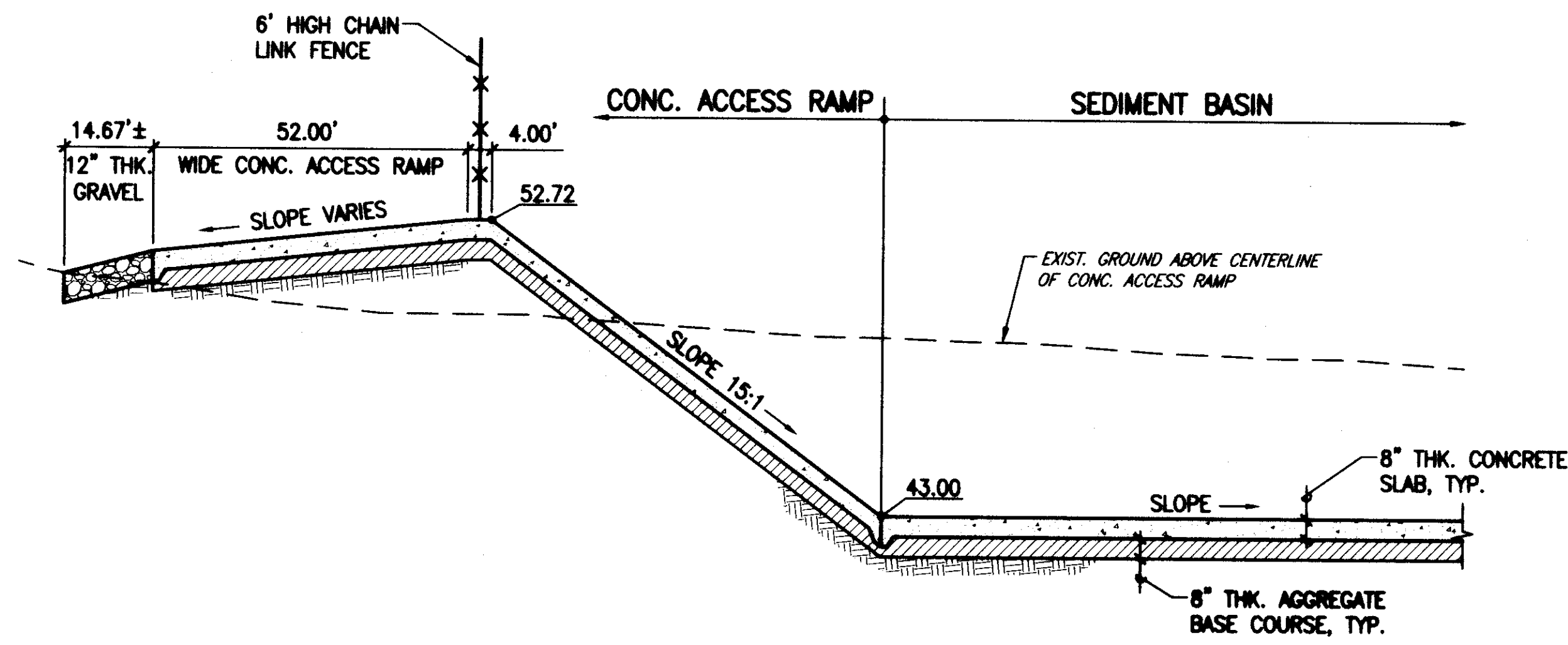


SILT BASIN GRADING PLAN 2
 SCALE: 1"=20'

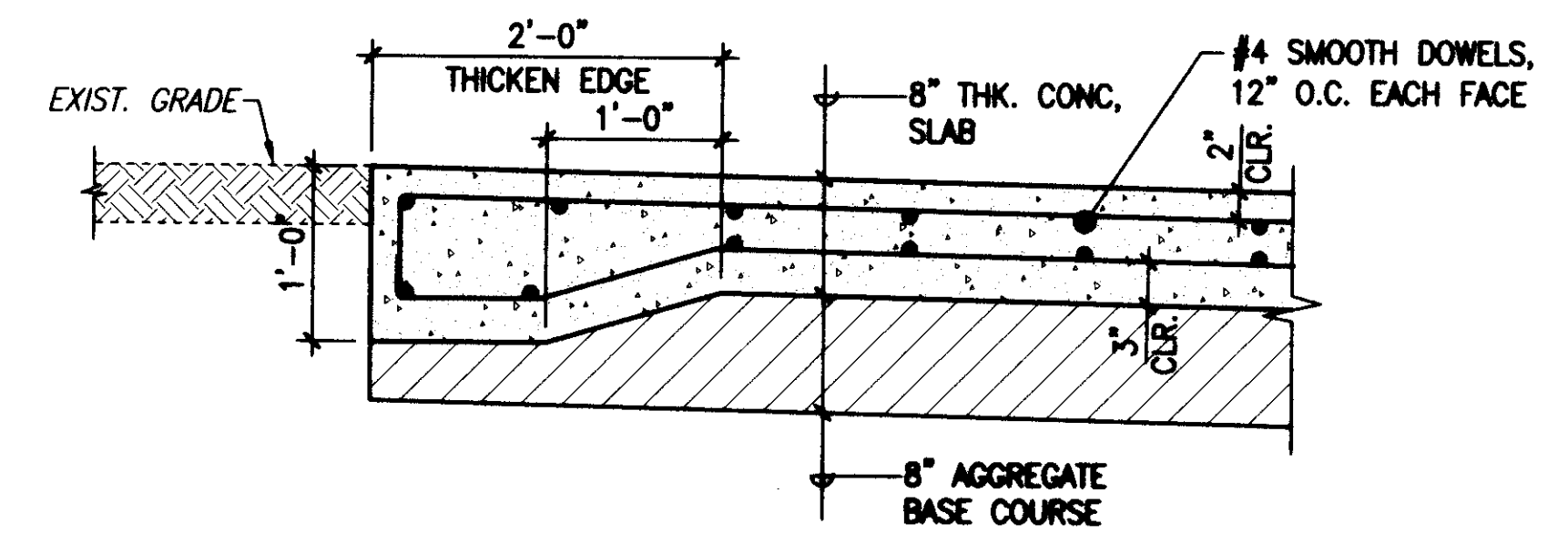
LEGEND	
	NEW WATER LINE
	SPRINKLER HEAD, WITH SYSTEM ID
	SPRINKLER CONTROL VALVE
	EXISTING TREE TO BE REMOVED
	FINISH CONTOUR
	FINISH SPOT ELEVATION
	DIRECTION OF FLOW
	OVERLAND FLOW PATTERN
	NEW SLOPE
	LIMITS OF CLEARING, GRUBBING & GRADING
	PROPERTY LINE
	TEMPORARY SILT FENCE

- NOTES:**
- IRRIGATION SYSTEM LOCATION AND LABELS ARE FROM ORIGINAL CONSTRUCTION PLANS. CONTRACTOR TO LOCATE AND VERIFY IN THE FIELD BEFORE THE START OF CONSTRUCTION IMPROVEMENTS. NOTIFY THE ENGINEER OF CONFLICTS PRIOR TO THE START OF CONSTRUCTION.
 - CONTRACTOR SHALL LOCATE AND PROTECT EXISTING IRRIGATION CONTROL WIRES. ALL WIRE DAMAGED DURING CONSTRUCTION SHALL BE REPAIRED AT THE CONTRACTORS COSTS.
 - ALL UTILITY LINES ENCOUNTERED SHALL BE ADJUSTED AS REQUIRED AT THE CONTRACTORS COSTS.

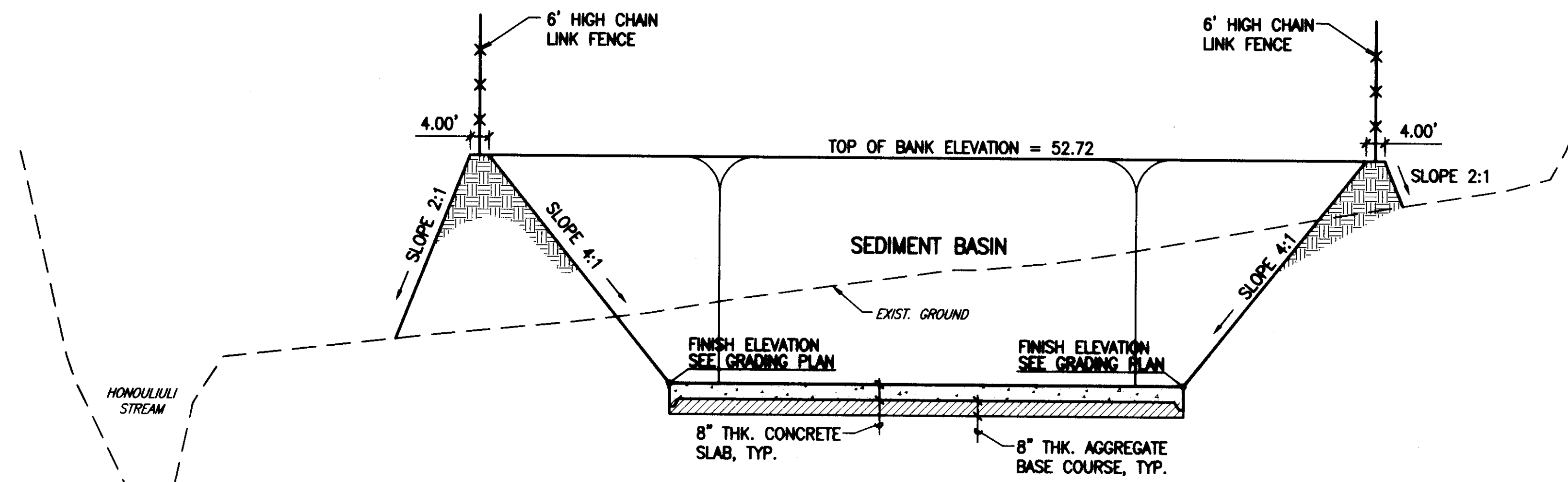
	THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION AND CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION.						
<i>Scott A. Kuntzka</i> SIGNATURE EXP. DATE: 4/30/12							
DESIGNED BY: SAK	REVIEWED BY: SAK	DRAWN BY: CAE	DATE: MAY 2011	ACCEPTED:	DATE: MAY 2011	CHECKED: SAK	DATE: MAY 2011
DEPARTMENT OF DESIGN AND CONSTRUCTION CITY & COUNTY OF HONOLULU WEST LOCH GOLF COURSE DRAINAGE IMPROVEMENTS - PHASE I SILT BASIN GRADING PLAN 2							
JOB NO. 11-P-14							
DRAWING NO. C-4							
SHEET NO. 08 OF 21				FILE NO. 157/26			



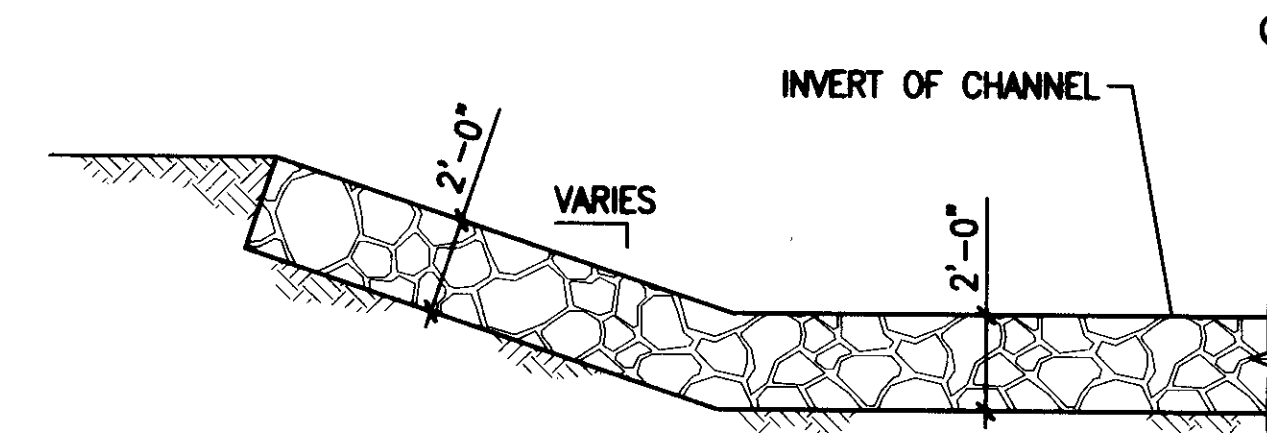
GRADING SECTION A
NOT TO SCALE
C-5



CONCRETE SLAB DETAIL 1
NOT TO SCALE
C-5



GRADING SECTION B
NOT TO SCALE
C-5



NOTE: ONLY HALF SECTION SHOWN

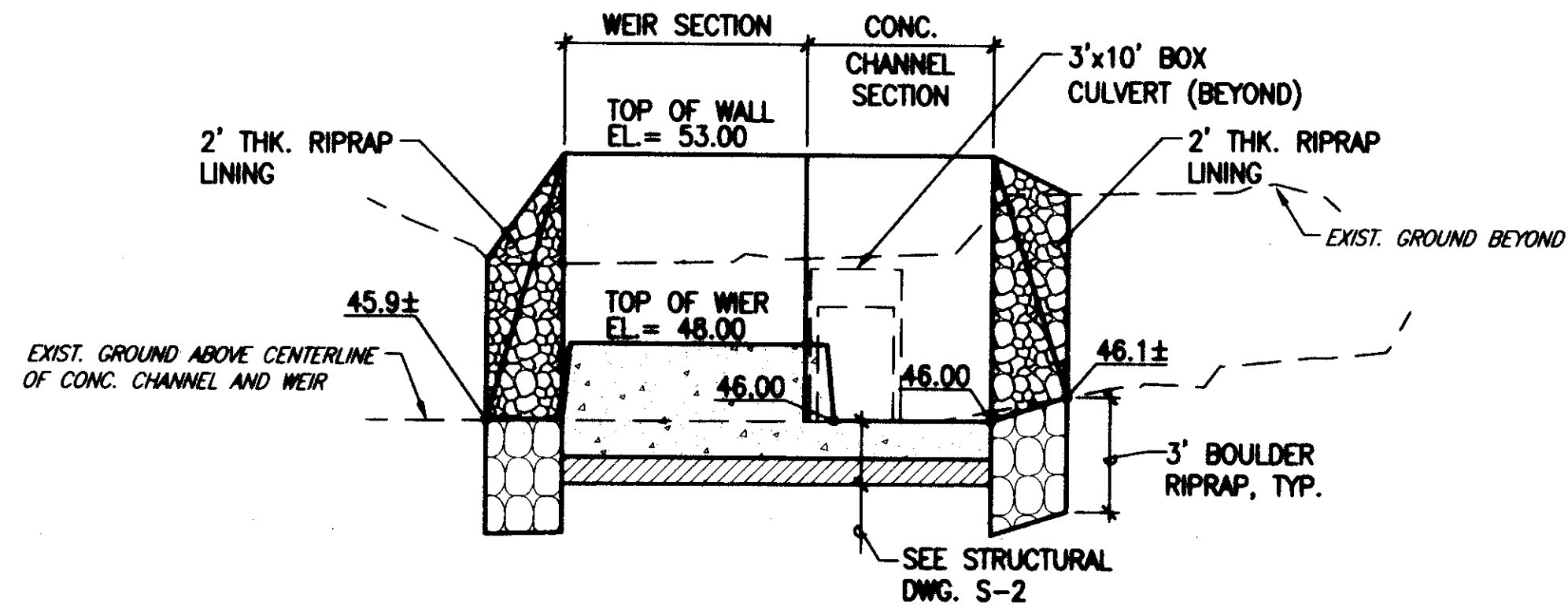
GRouted RIPRAP LINING SECTION 2
NOT TO SCALE
C-5

NOTES:

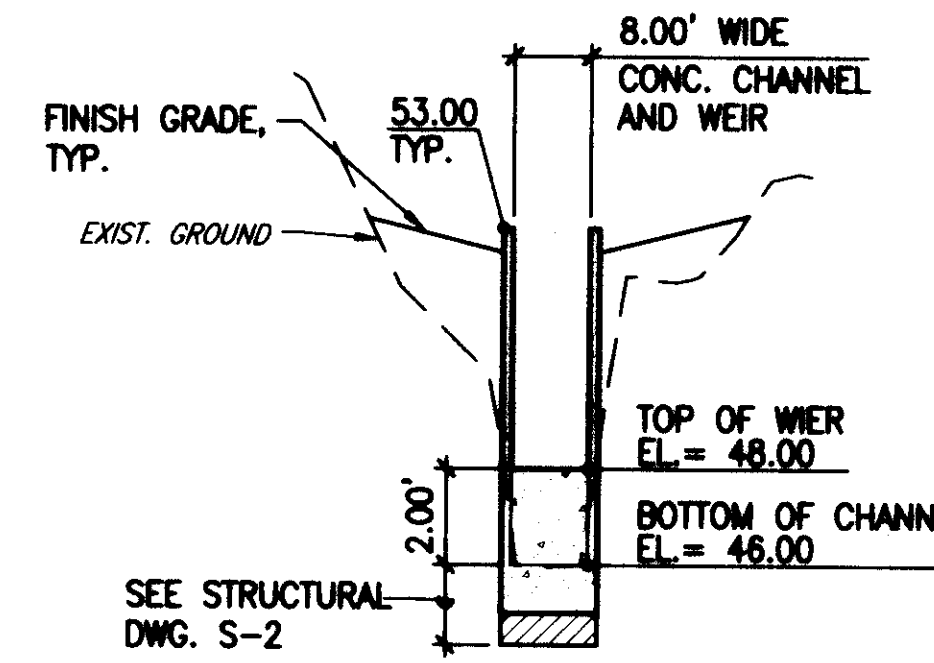
1. PROVIDE JOINTS PER STD. DETAILS AND STD. SPECS. TRANSVERSE AND LONGITUDINAL JOINTS SPACING SHALL BE 15' MAX. IN EACH DIRECTION. EXPANSION JOINTS SHALL BE DOWELED AT 60' MAX. IN EACH DIRECTION.
2. ALL CONCRETE PAVEMENT EDGES SHALL BE THICKENED.

05/31/11 7:35:49 PM S:\SA\WEST LOCH G.C\DRAW\ADD NO.1\0461K C05.DWG

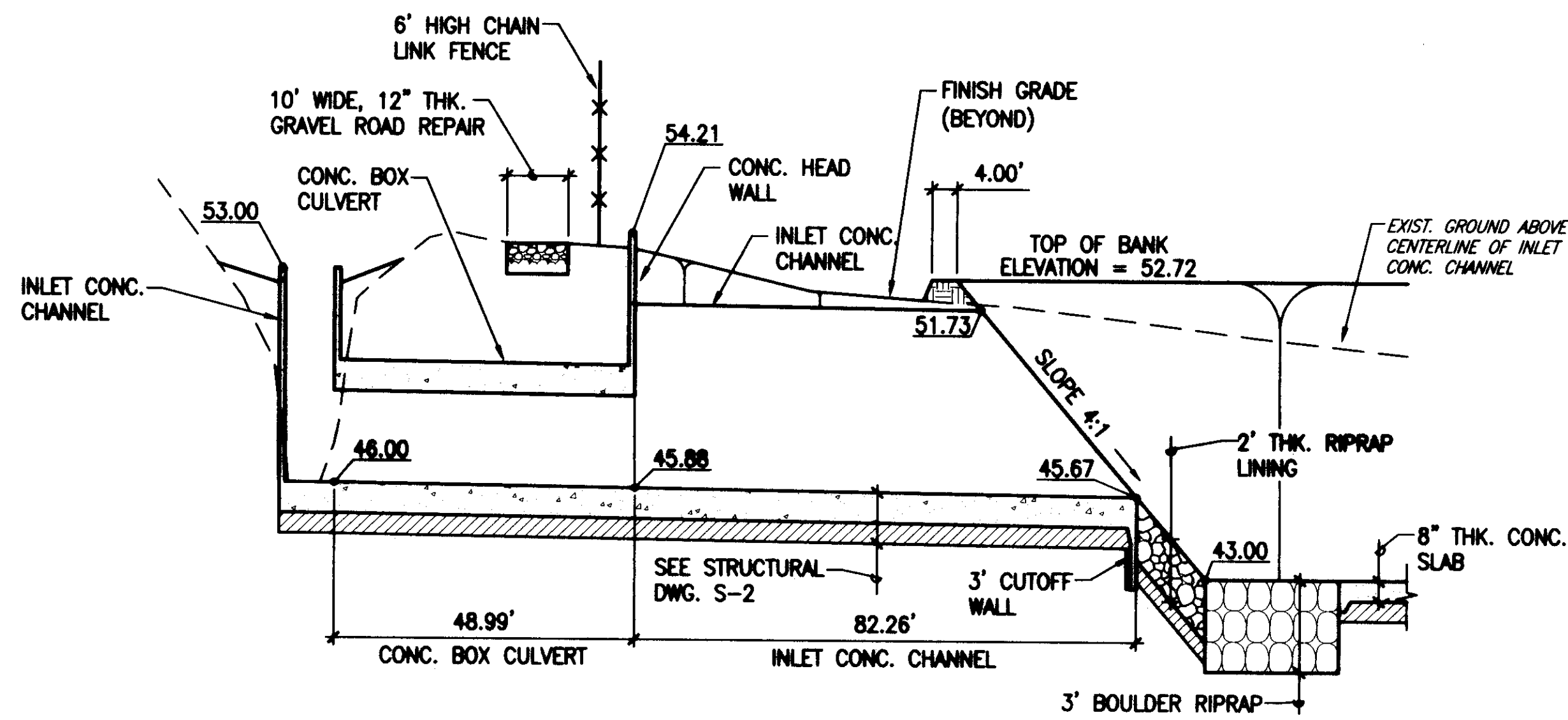
DESIGNED BY: SAK	REVIEWED BY: SAK	DRAWN BY: CAE	DATE: MAY 2011	ACCEPTED: [Signature]	CHECKED: [Signature]
DEPARTMENT OF DESIGN AND CONSTRUCTION CITY & COUNTY OF HONOLULU					
WEST LOCH GOLF COURSE DRAINAGE IMPROVEMENTS - PHASE I					
SILT BASIN SITE SECTIONS 1 AND MISC DETAILS					
JOB NO. 11-P-14					
DRAWING NO. C-5					
SHEET NO. 10 OF 21			FILE NO. 157/26		
<p style="text-align: right;"> THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION AND CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION. </p>					
<p style="text-align: right;"> SIGNATURE: [Signature] EXP. DATE: 4/30/12 </p>					
<p style="text-align: right;"> ADD. NO. 1 - REV. SECTIONS & ADDED DETAIL DATE: [Blank] REVISION: [Blank] </p>					
<p style="text-align: right;"> MADE BY: SAK APPROVED: [Signature] </p>					



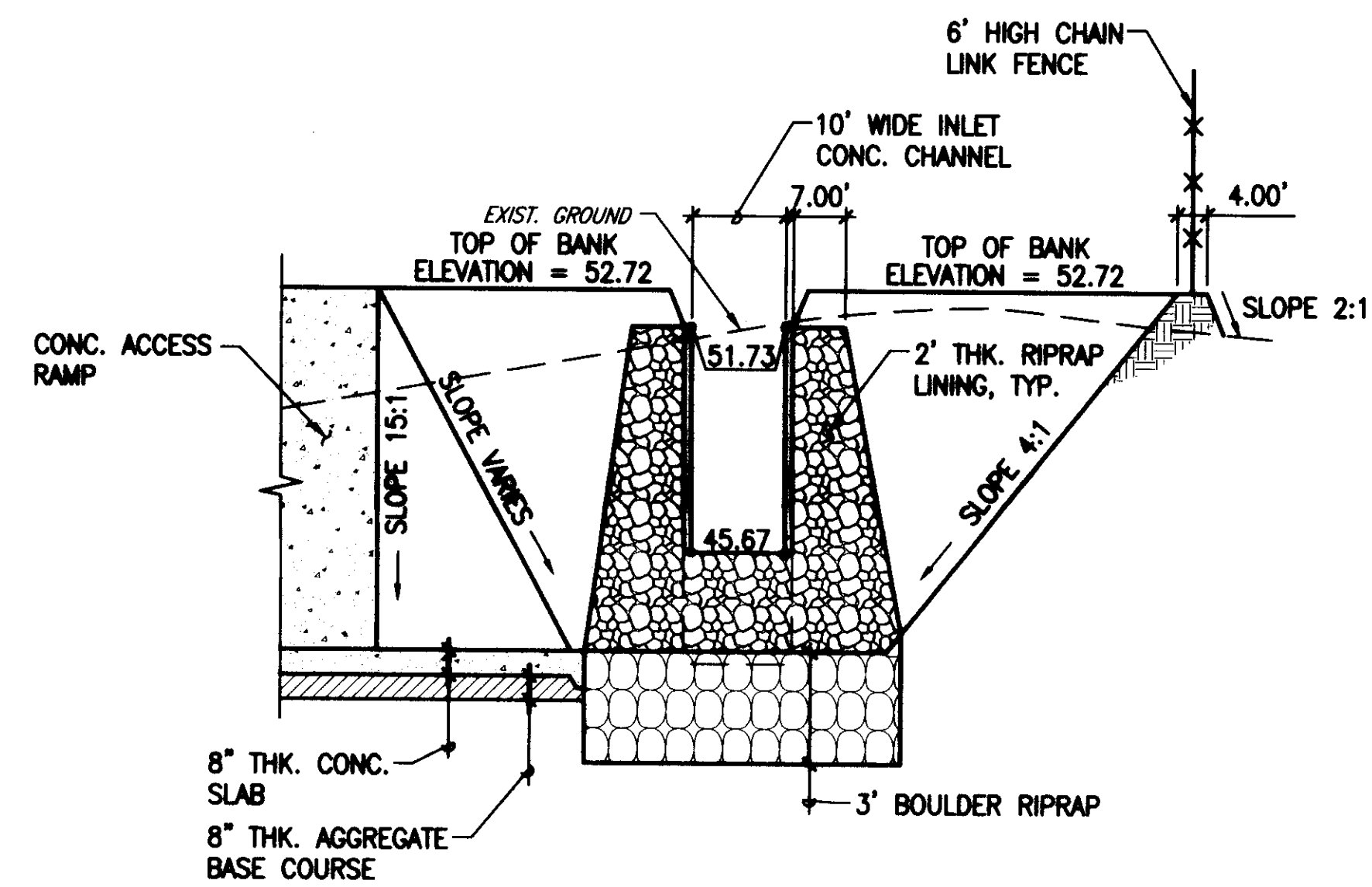
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NOT TO SCALE



GRADING SECTION D
NOT TO SCALE



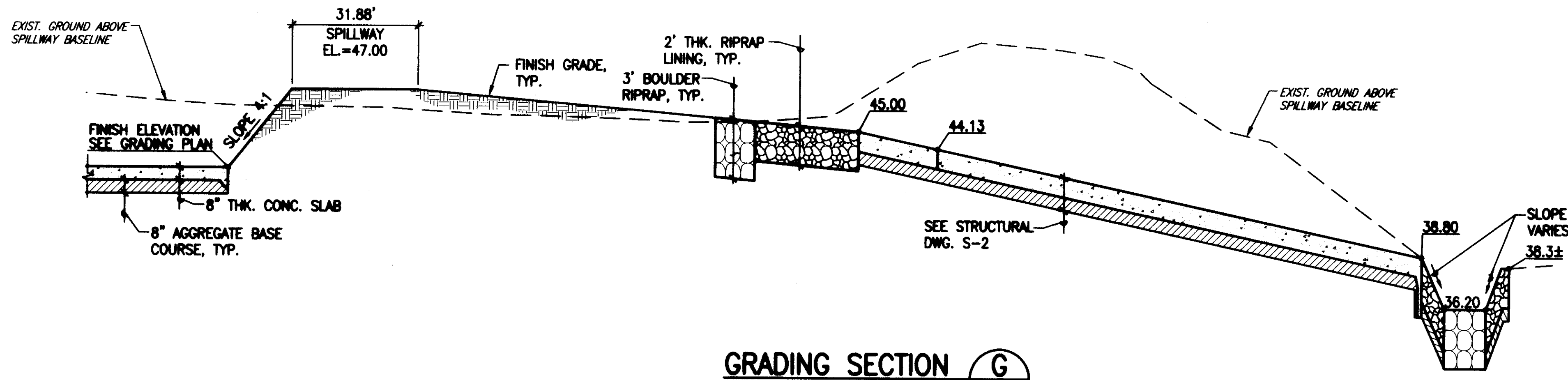
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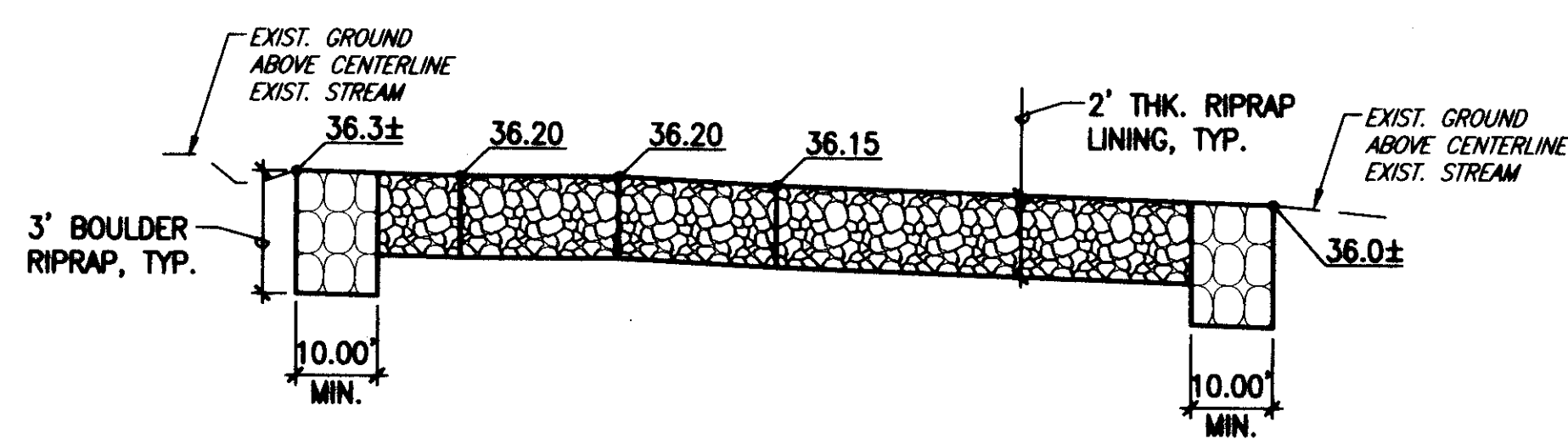
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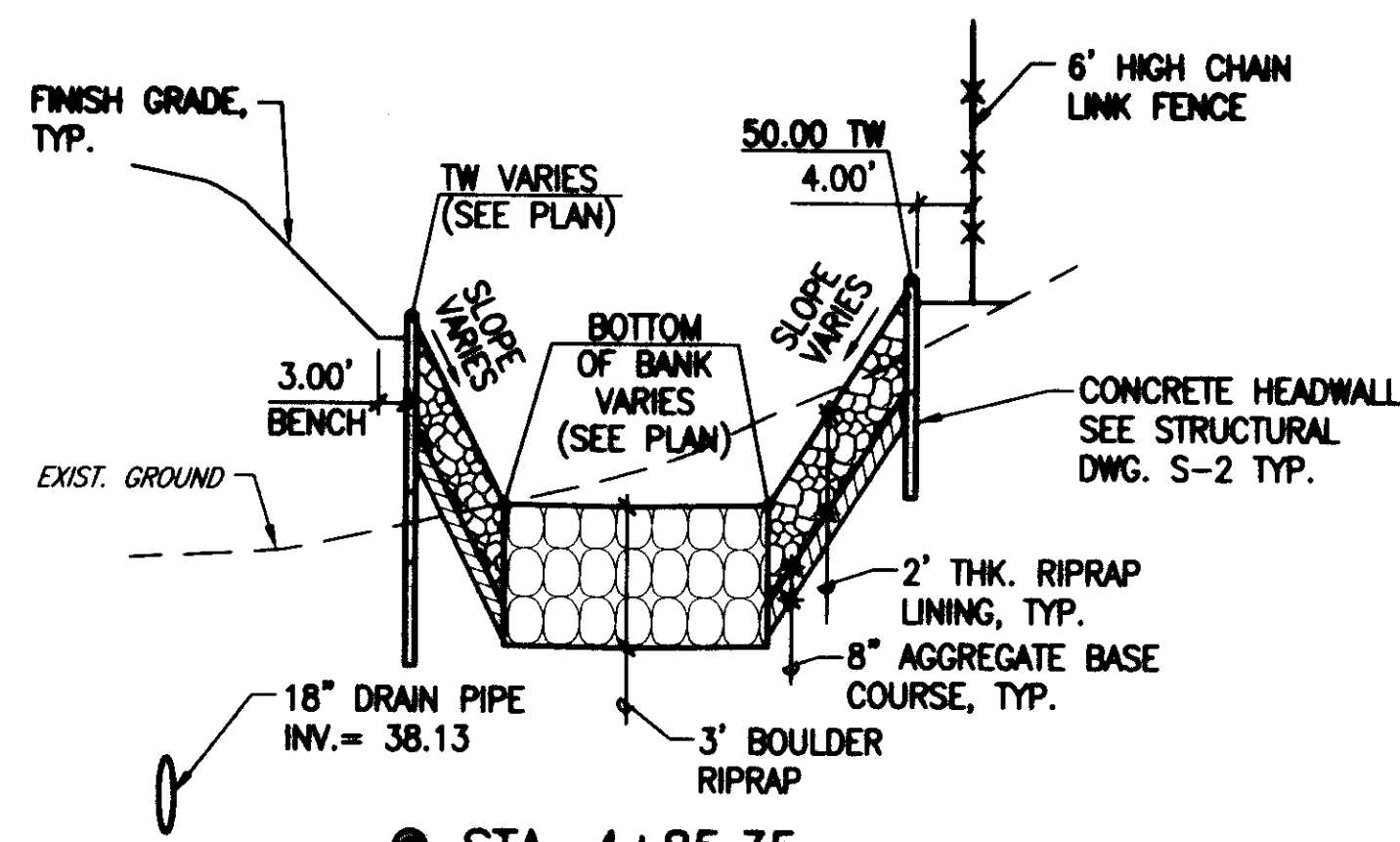
DESIGNED BY: SAK	REVIEWED BY: SAK	DRAWN BY: CAE	DATE: MAY 2011	ACCEPTED: [Signature]	CHECKED: [Signature]
<p>DEPARTMENT OF DESIGN AND CONSTRUCTION CITY & COUNTY OF HONOLULU</p> <p>WEST LOCH GOLF COURSE DRAINAGE IMPROVEMENTS - PHASE I</p> <p>SILT BASIN SITE SECTIONS 2</p>					
<p>JOB NO. 11-P-14</p> <p>DRAWING NO. C-6</p> <p>SHEET NO. 11 OF 21 FILE NO. 157/26</p>					
<p>SCOTT A. KUNIOKA LICENSED PROFESSIONAL ENGINEER No. 7257-C HAWAII, U.S.A.</p> <p>THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION AND CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION.</p> <p>[Signature] SIGNATURE EXP. DATE: 4/30/12</p>					
<p>Shimabara, Ende & Yoshida, Inc. Civil Engineers</p> <p>ADD. NO. 1 - REV. SECTIONS</p> <p>DATE: 6-2-11</p> <p>REVISION: [Symbol]</p> <p>MADE BY: SAK</p> <p>APPROVED: [Signature]</p>					



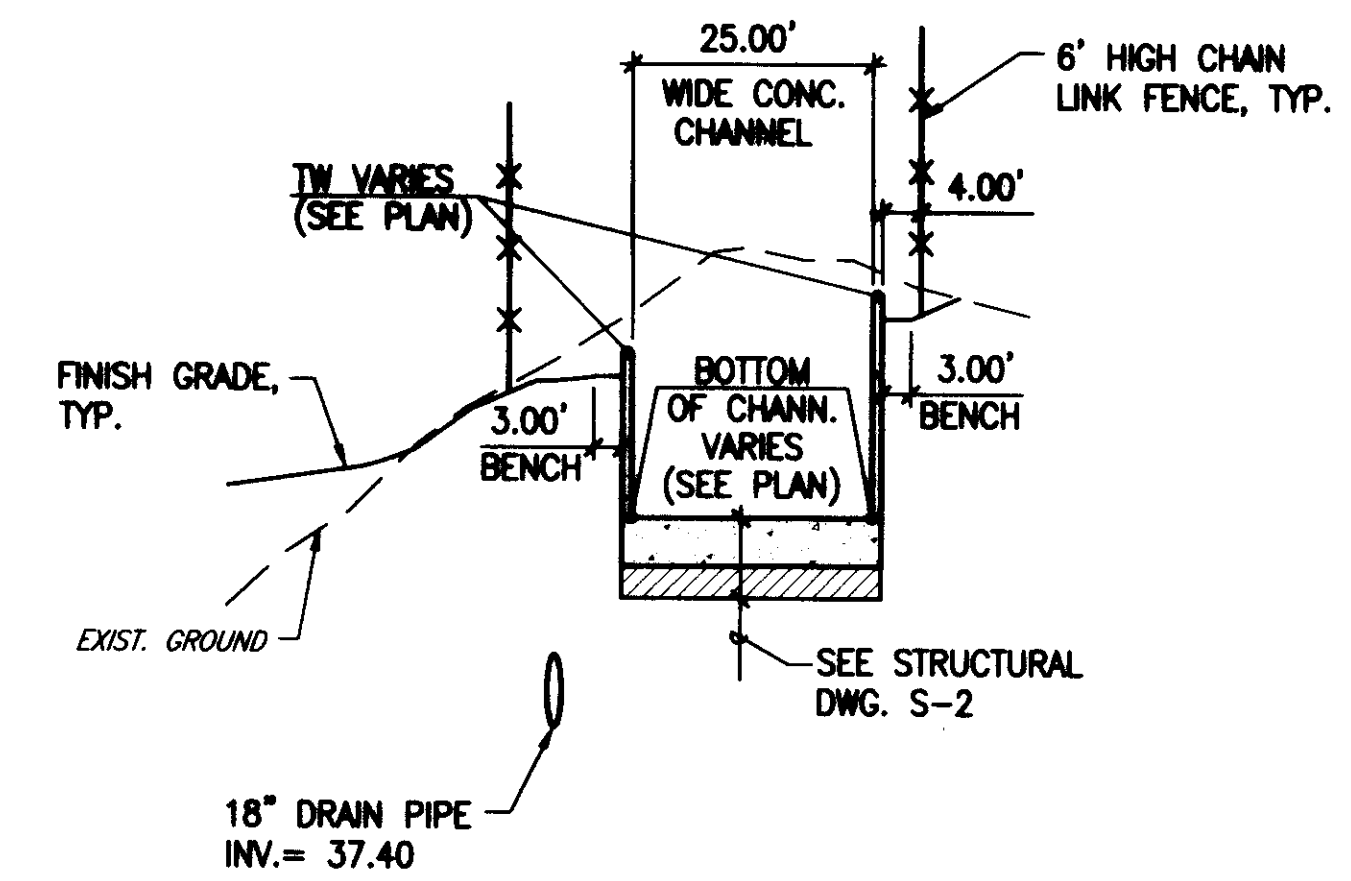
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NOT TO SCALE



GRADING SECTION **I**
NOT TO SCALE



GRADING SECTION **J**
NOT TO SCALE

05/23/11 8:07:14 PM S:\SAK\WEST LOCH G.C\DRAW\ADD NO.1\0461K C07.DWG

NO.	DATE	REVISION	DESCRIPTION
1	6-2-11	ADD NO. 1 - REV. SECTIONS	

Shimaburo, Ende & Yoshida, Inc.
Civil Engineers

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION AND CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION.

Scott A. Kumigata
SIGNATURE
EXP. DATE: 4/30/12

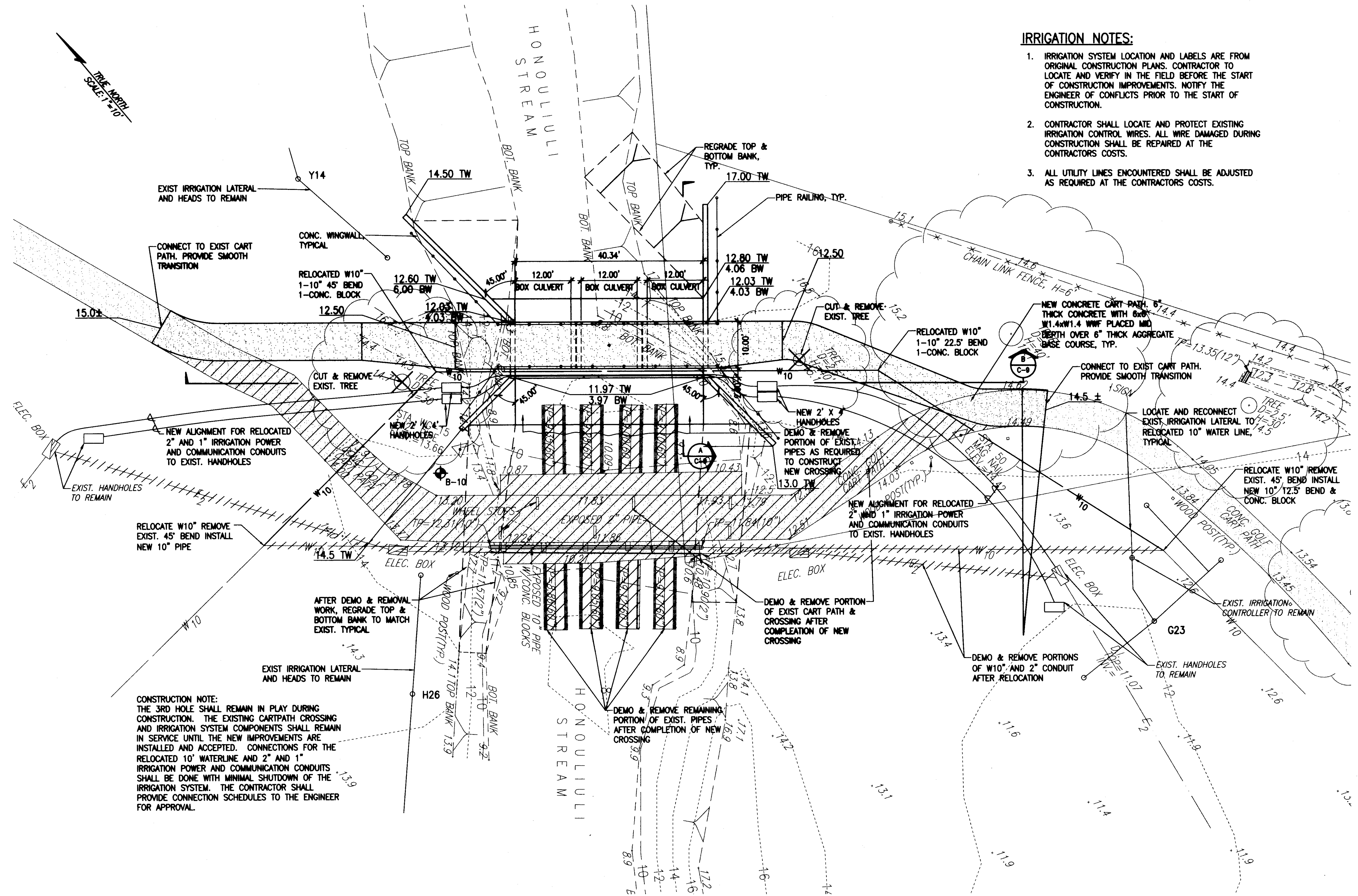
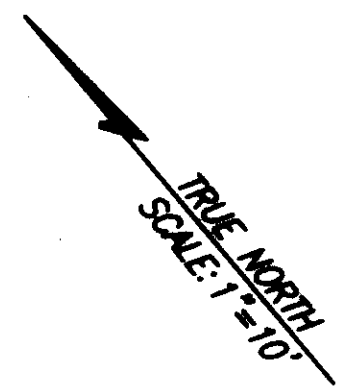
DESIGNED BY:	SAK
REVIEWED BY:	SAK
DRAWN BY:	CAE
DATE:	MAY 2011
ACCEPTED:	<i>[Signature]</i>
CHECKED:	REGISTERED ENGINEER

DEPARTMENT OF DESIGN AND CONSTRUCTION
CITY & COUNTY OF HONOLULU

**WEST LOCH GOLF COURSE
DRAINAGE IMPROVEMENTS - PHASE I**

SILT BASIN SITE SECTIONS 3

JOB NO.	11-P-14
DRAWING NO.	C-7
SHEET NO.	12 OF 21
FILE NO.	157/26

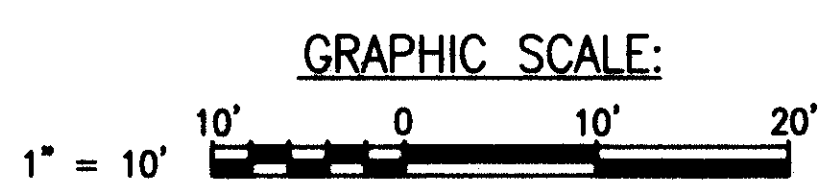
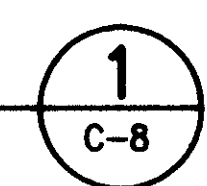


- IRRIGATION NOTES:**
1. IRRIGATION SYSTEM LOCATION AND LABELS ARE FROM ORIGINAL CONSTRUCTION PLANS. CONTRACTOR TO LOCATE AND VERIFY IN THE FIELD BEFORE THE START OF CONSTRUCTION IMPROVEMENTS. NOTIFY THE ENGINEER OF CONFLICTS PRIOR TO THE START OF CONSTRUCTION.
 2. CONTRACTOR SHALL LOCATE AND PROTECT EXISTING IRRIGATION CONTROL WIRES. ALL WIRE DAMAGED DURING CONSTRUCTION SHALL BE REPAIRED AT THE CONTRACTORS COSTS.
 3. ALL UTILITY LINES ENCOUNTERED SHALL BE ADJUSTED AS REQUIRED AT THE CONTRACTORS COSTS.

CONSTRUCTION NOTE:
 THE 3RD HOLE SHALL REMAIN IN PLAY DURING CONSTRUCTION. THE EXISTING CARPATH CROSSING AND IRRIGATION SYSTEM COMPONENTS SHALL REMAIN IN SERVICE UNTIL THE NEW IMPROVEMENTS ARE INSTALLED AND ACCEPTED. CONNECTIONS FOR THE RELOCATED 10' WATERLINE AND 2" AND 1" IRRIGATION POWER AND COMMUNICATION CONDUITS SHALL BE DONE WITH MINIMAL SHUTDOWN OF THE IRRIGATION SYSTEM. THE CONTRACTOR SHALL PROVIDE CONNECTION SCHEDULES TO THE ENGINEER FOR APPROVAL.

3RD HOLE CULVERT CROSSING PLAN

SCALE: 1" = 10'-0"



DATE	DESCRIPTION	BY	CHKD
6-2-11	ADD. NO. 1 - REVISED CULVERT PLAN	SAK	SAK
6-2-11		SAK	SAK
6-2-11		CAE	SAK
6-2-11		MAY 2011	SAK

DESIGNED BY: SAK
 REVIEWED BY: SAK
 DRAWN BY: CAE
 DATE: MAY 2011
 ACCEPTED: [Signature]
 CHIEF, FACILITIES DIVISION

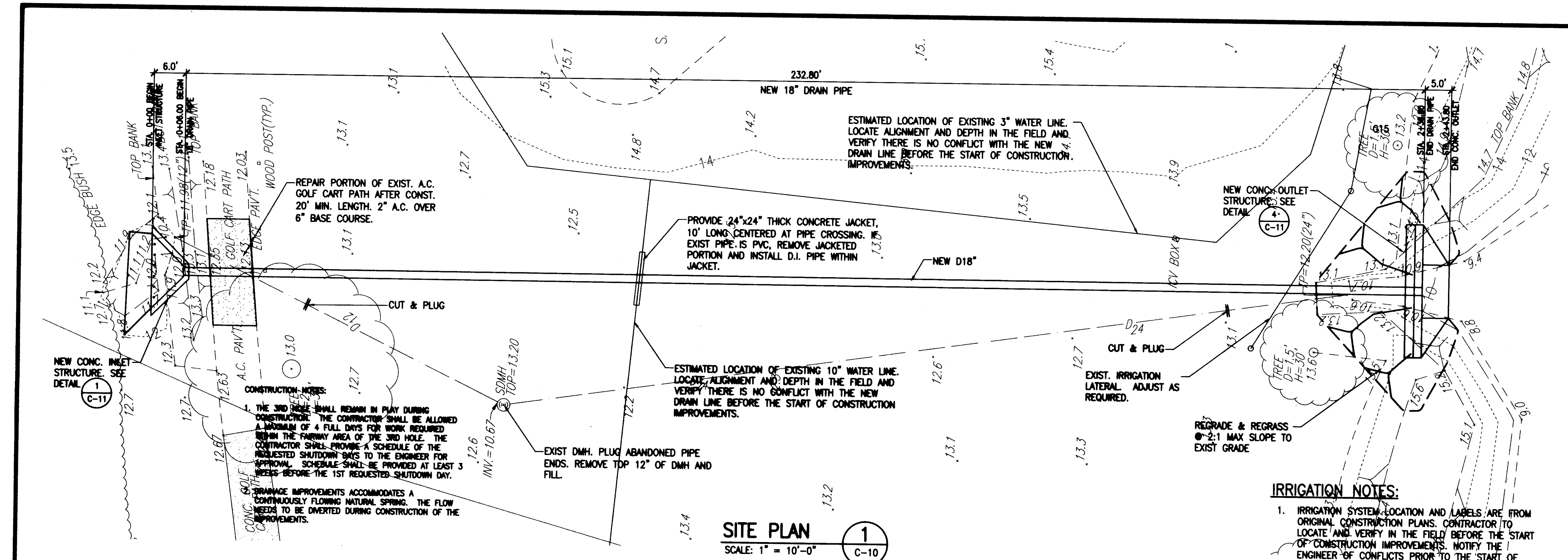
DEPARTMENT OF DESIGN AND CONSTRUCTION
 CITY & COUNTY OF HONOLULU

**WEST LOCH GOLF COURSE
 DRAINAGE IMPROVEMENTS - PHASE I**

3RD HOLE CULVERT CROSSING PLAN

JOB NO. 11-P-14
 DRAWING NO. C-8
 SHEET NO. 13 OF 21
 FILE NO. 157/26

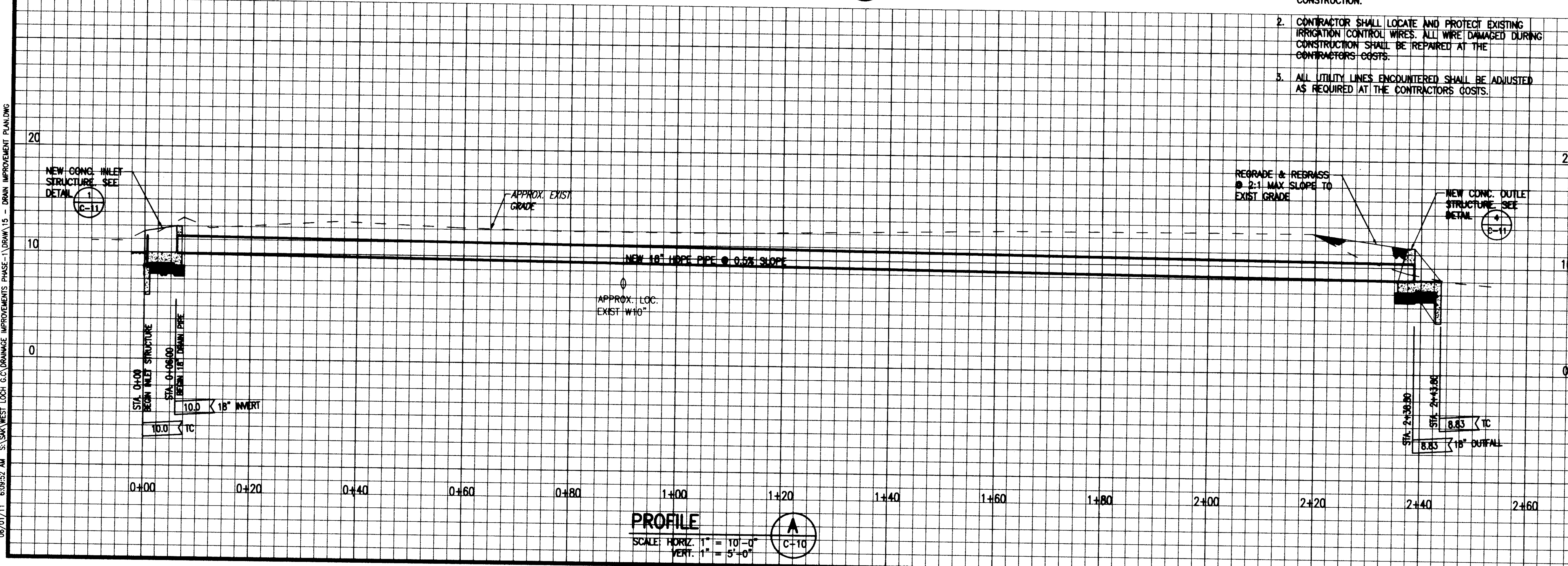
ADDENDUM NO.1 (SHEET 13 OF 21)



SITE PLAN
SCALE: 1" = 10'-0"
1
C-10

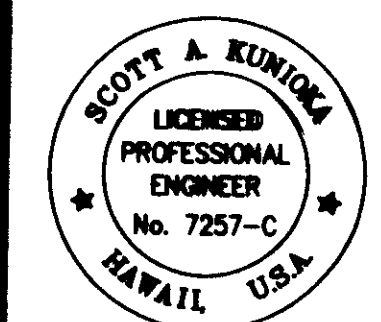
IRRIGATION NOTES:

- IRRIGATION SYSTEM LOCATION AND LABELS ARE FROM ORIGINAL CONSTRUCTION PLANS. CONTRACTOR TO LOCATE AND VERIFY IN THE FIELD BEFORE THE START OF CONSTRUCTION IMPROVEMENTS. NOTIFY THE ENGINEER OF CONFLICTS PRIOR TO THE START OF CONSTRUCTION.
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- ALL UTILITY LINES ENCOUNTERED SHALL BE ADJUSTED AS REQUIRED AT THE CONTRACTORS COSTS.



PROFILE
SCALE: HORIZ. 1" = 10'-0"
VERT. 1" = 5'-0"
1
C-10

DESIGNED BY: SAK	REVIEWED BY: SAK	DRAWN BY: CAE	DATE: MAY 2011	ACCEPTED BY: [Signature]	CHECK: [Signature]
DATE: 4/30/12	SIGNATURE				
DEPARTMENT OF DESIGN AND CONSTRUCTION CITY & COUNTY OF HONOLULU					
WEST LOCH GOLF COURSE DRAINAGE IMPROVEMENTS - PHASE I					
3RD HOLE DRAINAGE IMPROVEMENTS					
JOB NO. 11-P-14	DRAWING NO. C-10				
SHEET NO. 15 OF 21	FILE NO. 157/26				
ADDENDUM NO.1 (SHEET 15 OF 21)					



THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION AND CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION.

[Signature]

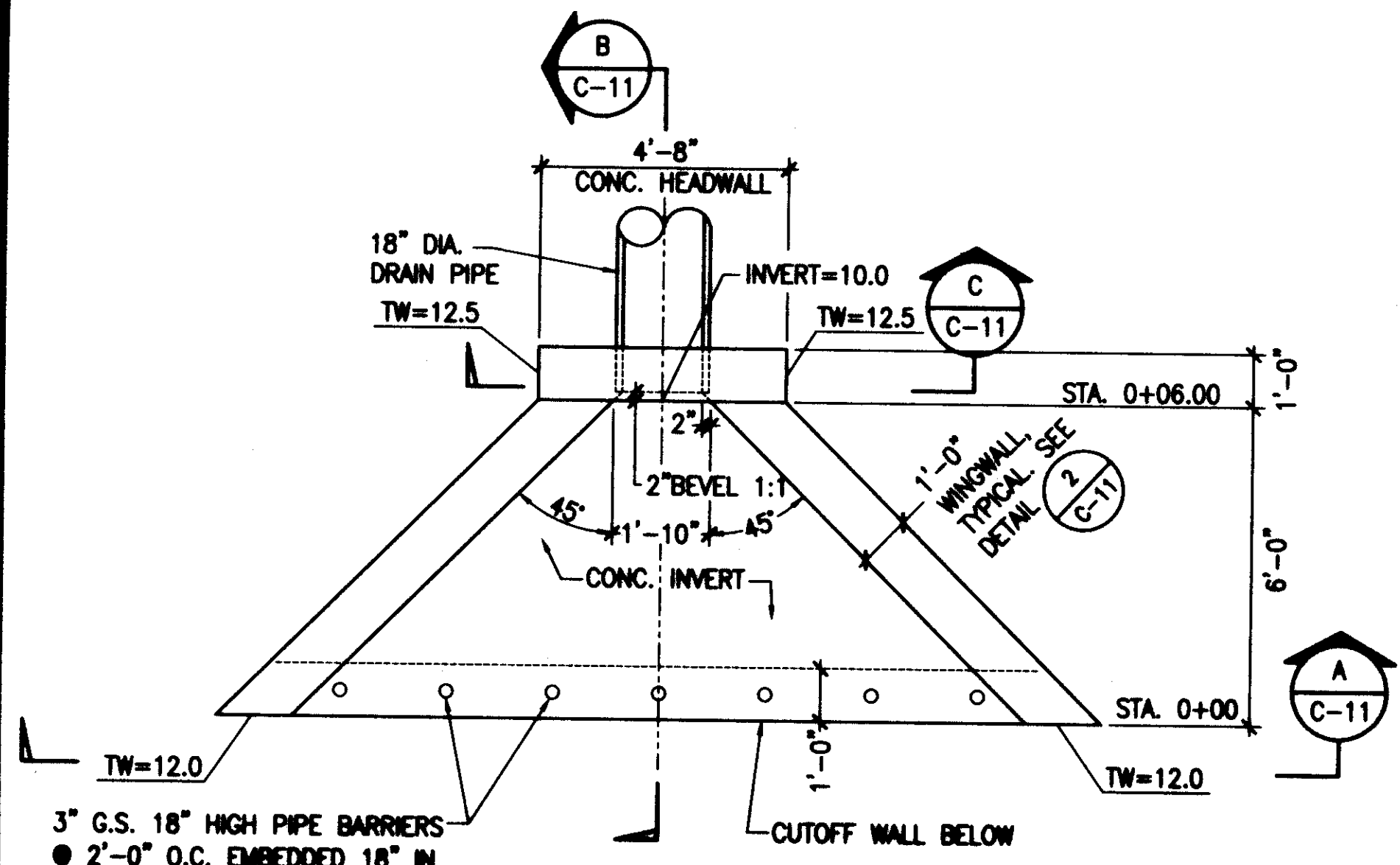
EXP. DATE: 4/30/12

DESIGNED BY: SAK
REVIEWED BY: SAK
DRAWN BY: CAE
DATE: MAY 2011
ACCEPTED BY: [Signature]
CHECK: [Signature]

DEPARTMENT OF DESIGN AND CONSTRUCTION
CITY & COUNTY OF HONOLULU
WEST LOCH GOLF COURSE
DRAINAGE IMPROVEMENTS - PHASE I
3RD HOLE DRAINAGE IMPROVEMENTS

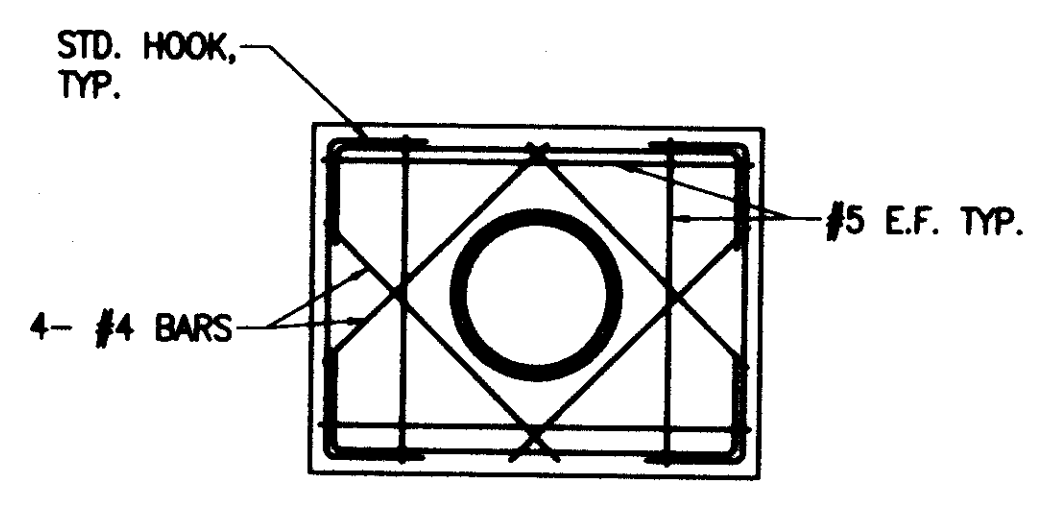
JOB NO. 11-P-14
DRAWING NO. C-10
SHEET NO. 15 OF 21
FILE NO. 157/26

05/31/11 4:35:13 PM S:\SAK\WEST LOCH GOLF COURSE IMPROVEMENTS PHASE-1\DRAW\16 - DRAIN IMPROVEMENT DETAILS.DWG

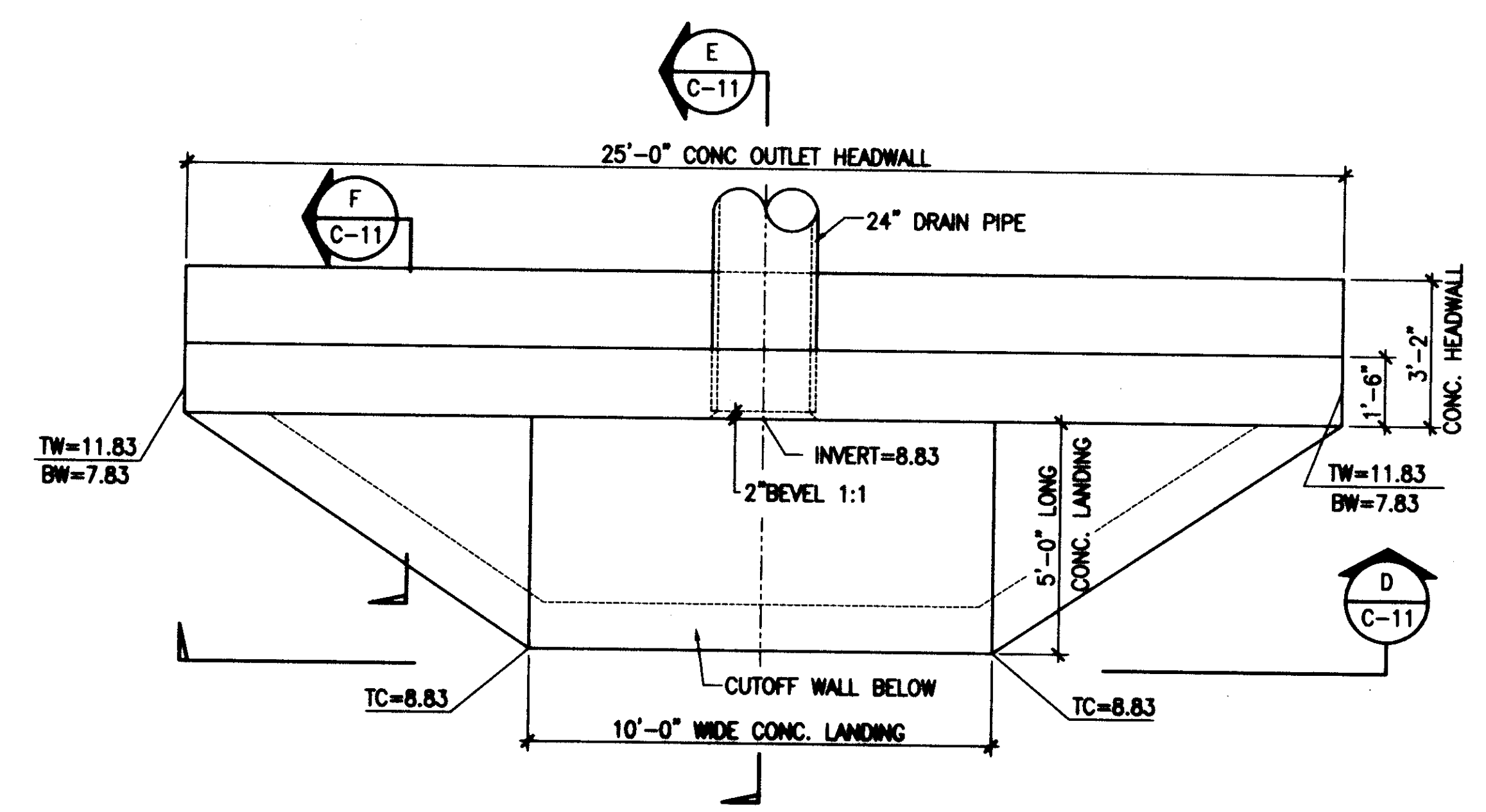


3" G.S. 18" HIGH PIPE BARRIERS
 ● 2'-0" O.C. EMBEDDED 18" IN CUTOFF WALL

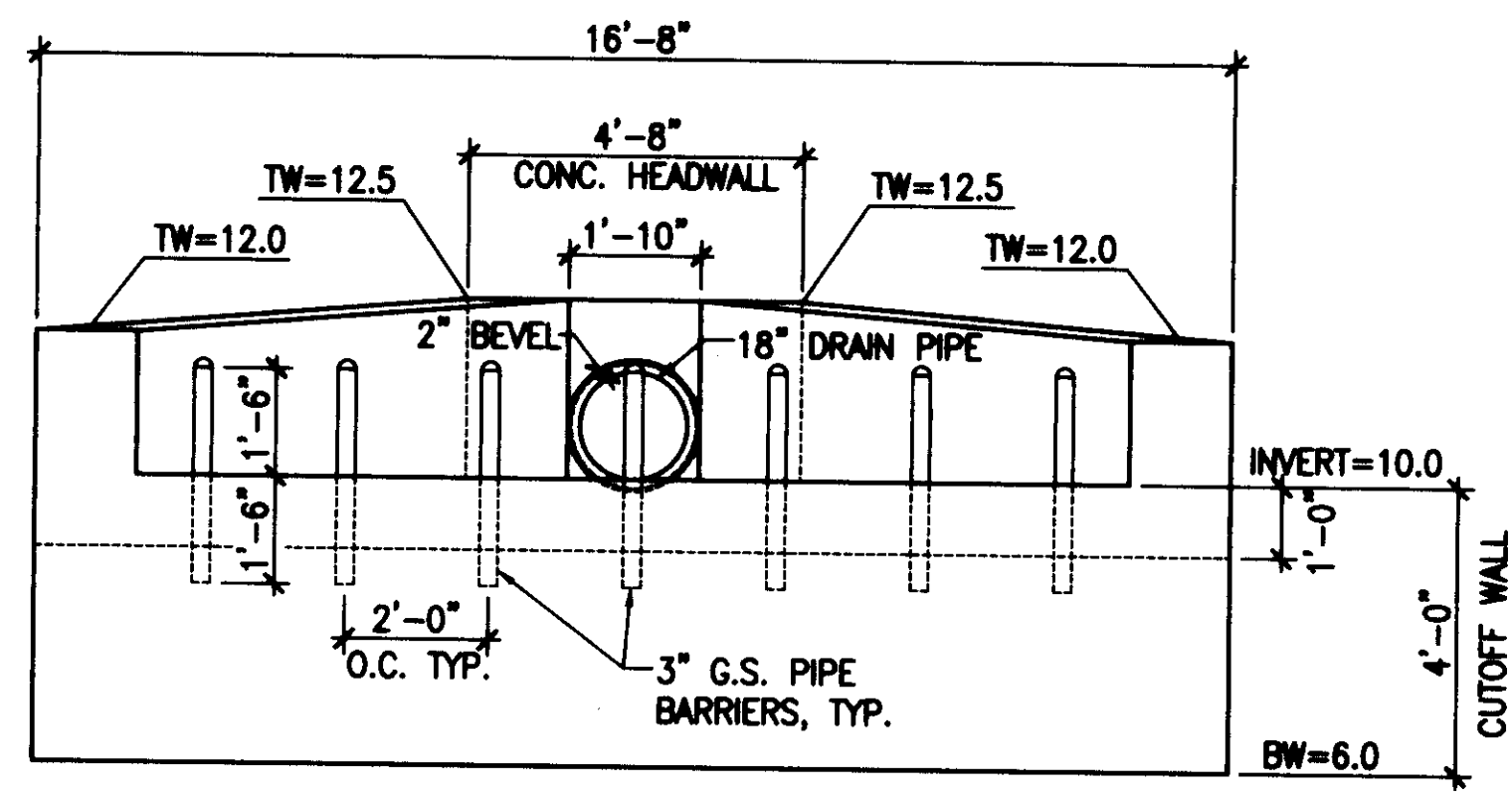
CONCRETE INLET STRUCTURE DETAIL
 SCALE: 3/8" = 1'-0"
 SECTION C-11



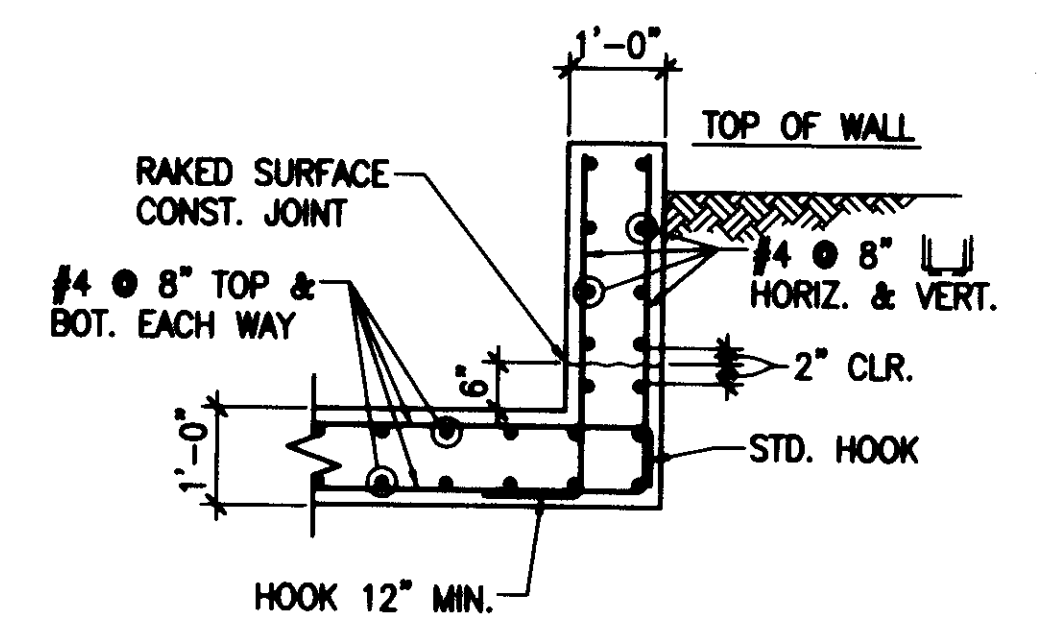
SECTION C-11
 SCALE: 1/2" = 1'-0"



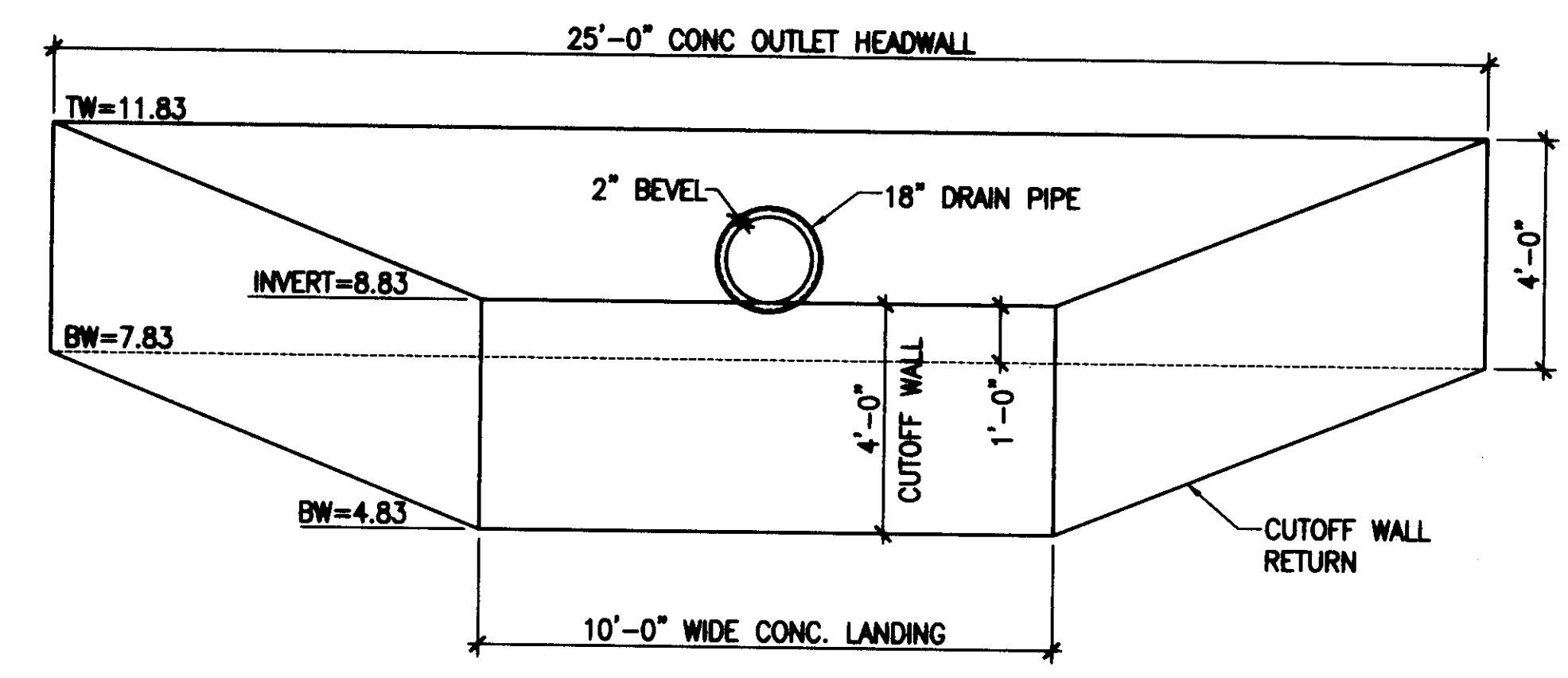
CONCRETE OUTLET STRUCTURE DETAIL
 SCALE: 3/8" = 1'-0"
 SECTION C-11



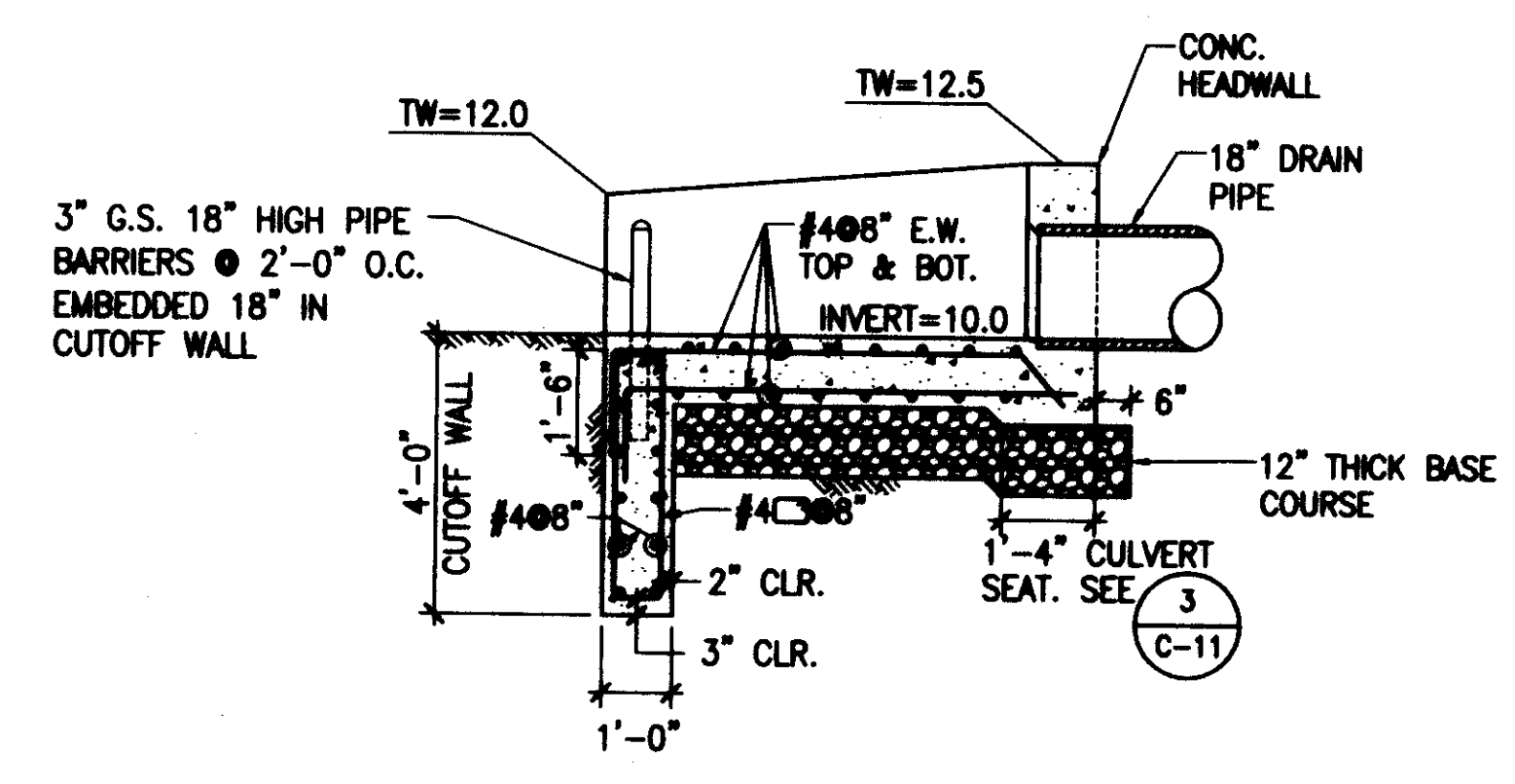
SECTION A-11
 SCALE: 3/8" = 1'-0"



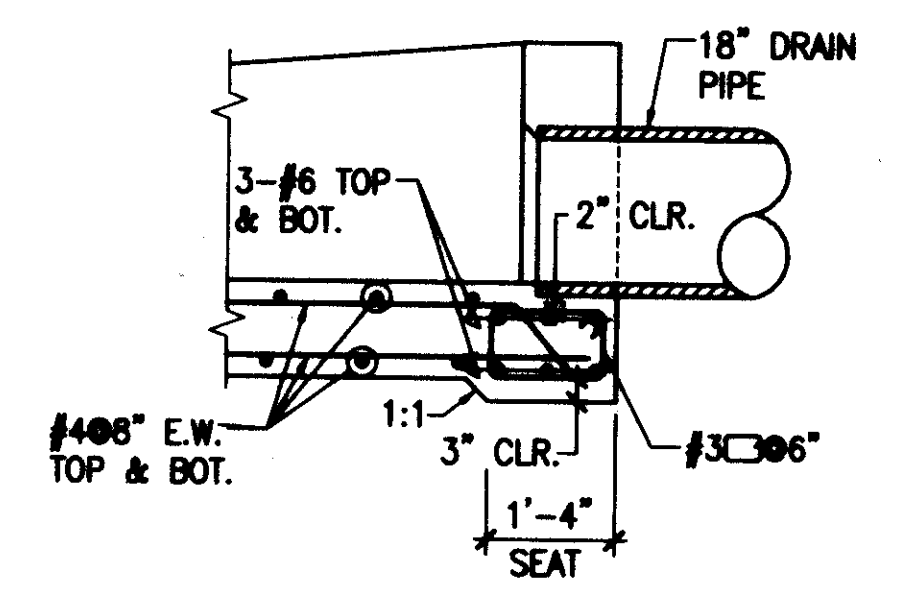
TYPICAL WINGWALL REINFORCING
 SCALE: 1/2" = 1'-0"
 SECTION C-11



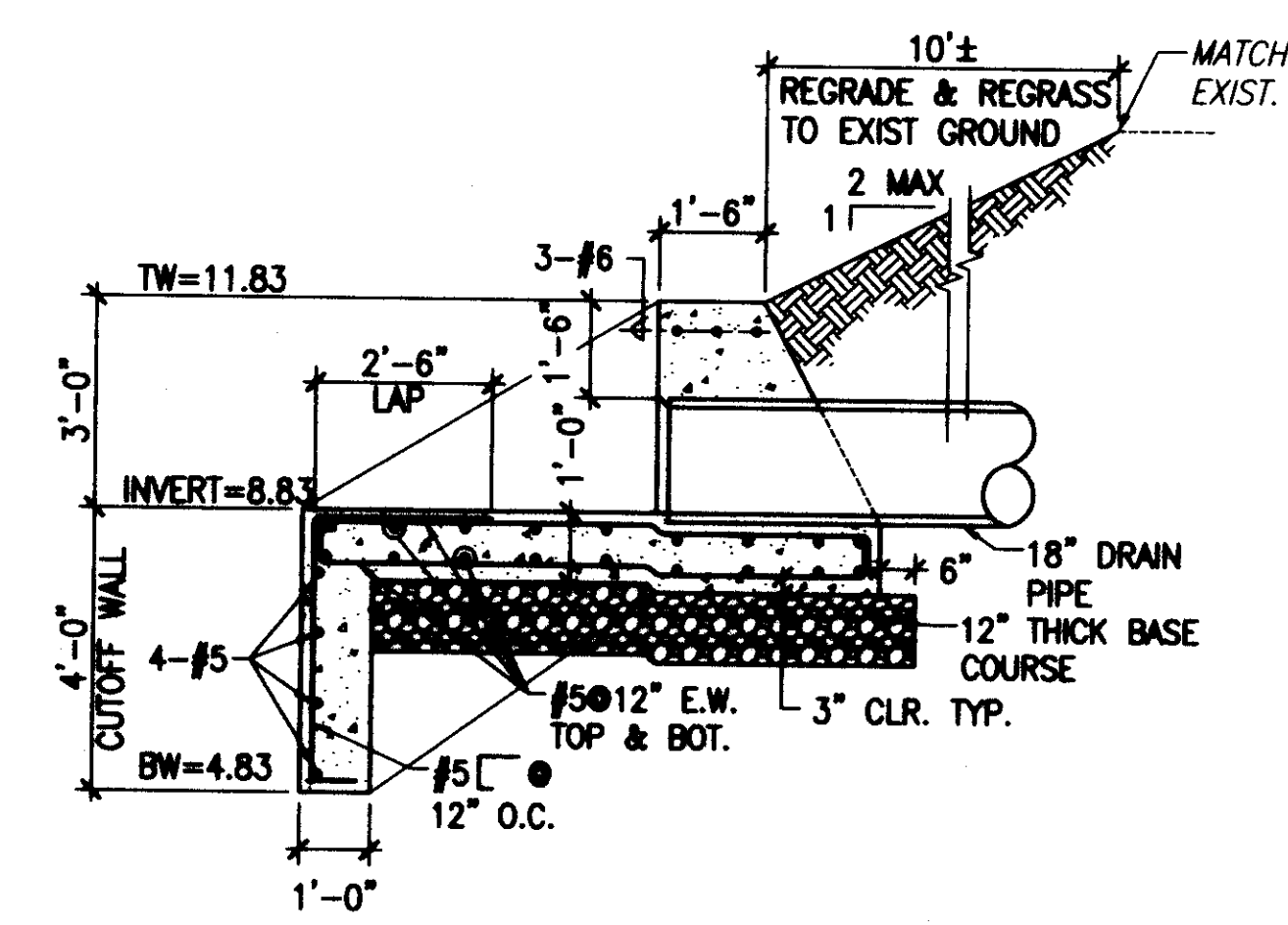
SECTION D-11
 SCALE: 3/8" = 1'-0"



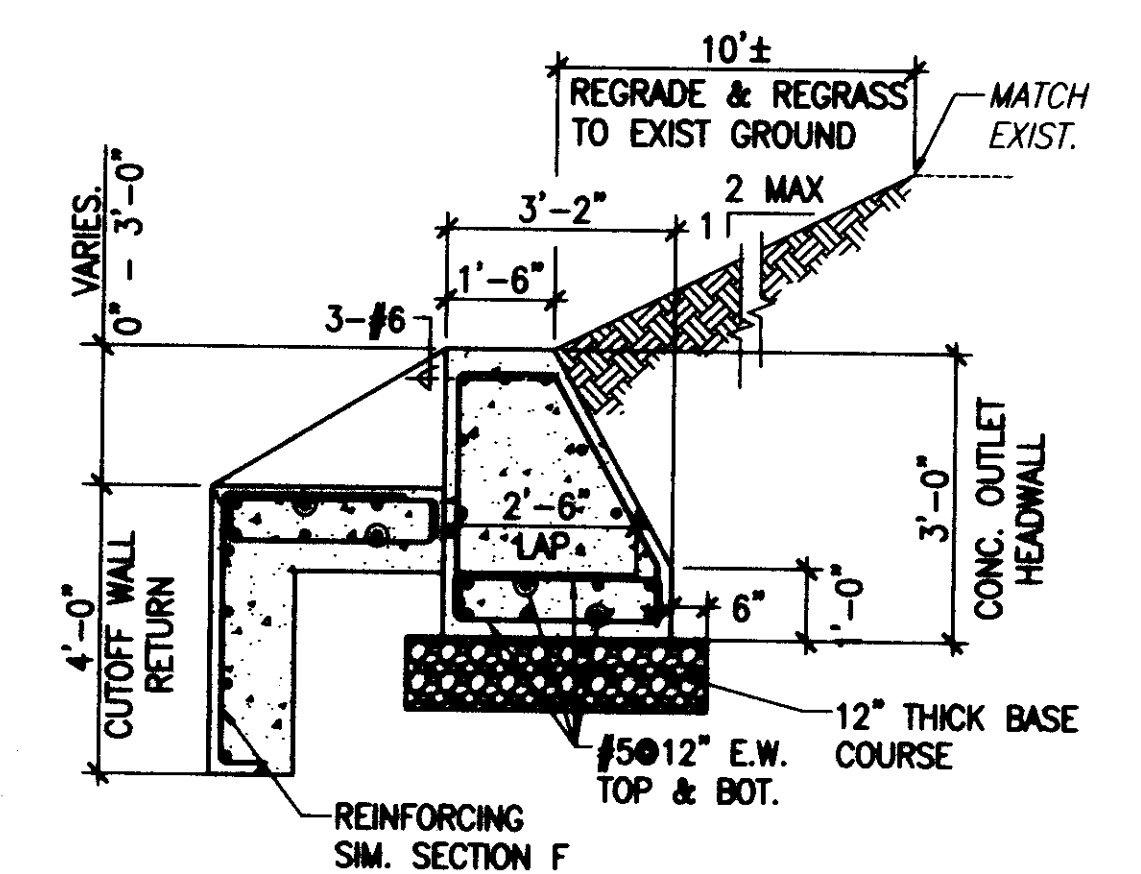
SECTION B-11
 SCALE: 3/8" = 1'-0"



CULVERT SEAT DETAIL
 SCALE: 1/2" = 1'-0"
 SECTION C-11

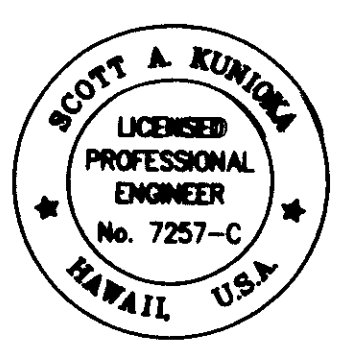


SECTION E-11
 SCALE: 3/8" = 1'-0"

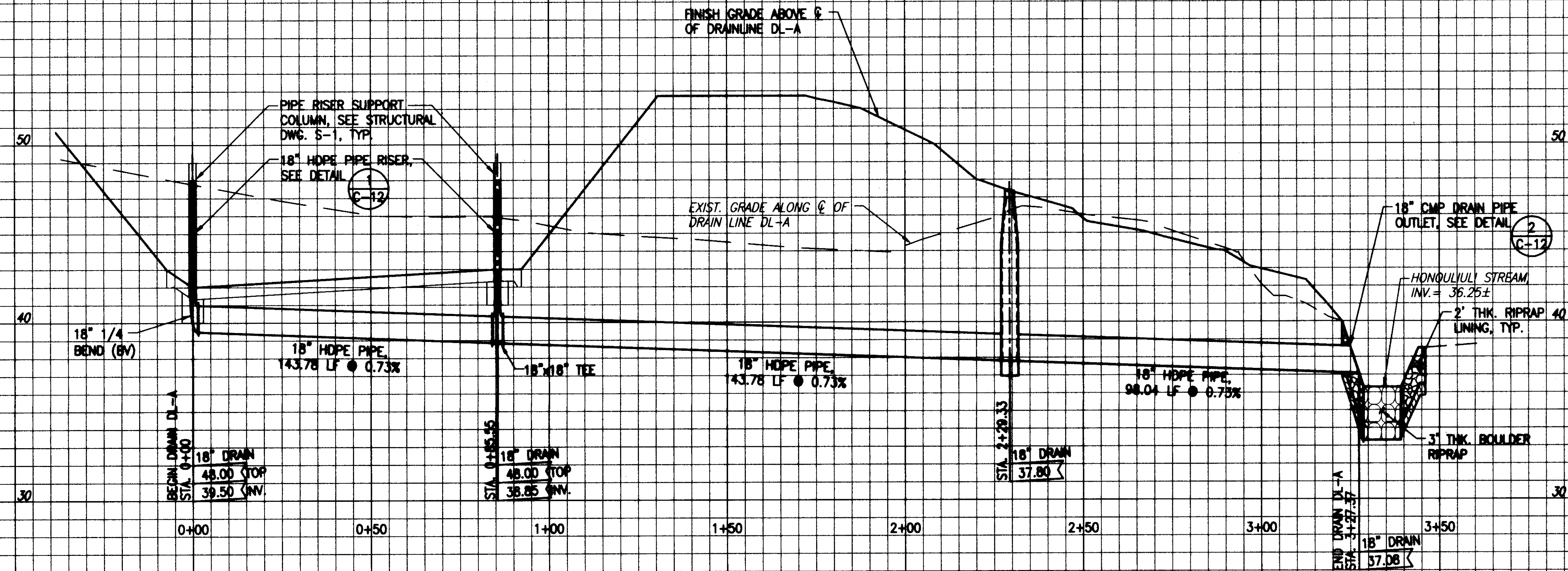


SECTION F-11
 SCALE: 3/8" = 1'-0"

DESIGNED BY: SAK	REVIEWED BY: SAK	DRAWN BY: CAE	DATE: MAY 2011	ACCEPTED: [Signature]	CURT. FACILITIES DESIGNER
EXP. DATE: 4/30/12 SIGNATURE: [Signature] DATE: 6-2-11 ADD. NO. 1 - REVISED DETAILS SAK MADE BY: [Signature]					APPROVED: [Signature] DATE: 6-2-11 ADD. NO. 1 - REVISED DETAILS SAK MADE BY: [Signature]
DEPARTMENT OF DESIGN AND CONSTRUCTION CITY & COUNTY OF HONOLULU WEST LOCH GOLF COURSE DRAINAGE IMPROVEMENTS - PHASE I DRAINAGE IMPROVEMENT DETAILS JOB NO. 11-P-14 DRAWING NO. C-11 SHEET NO. 16 OF 21 FILE NO. 157/26					

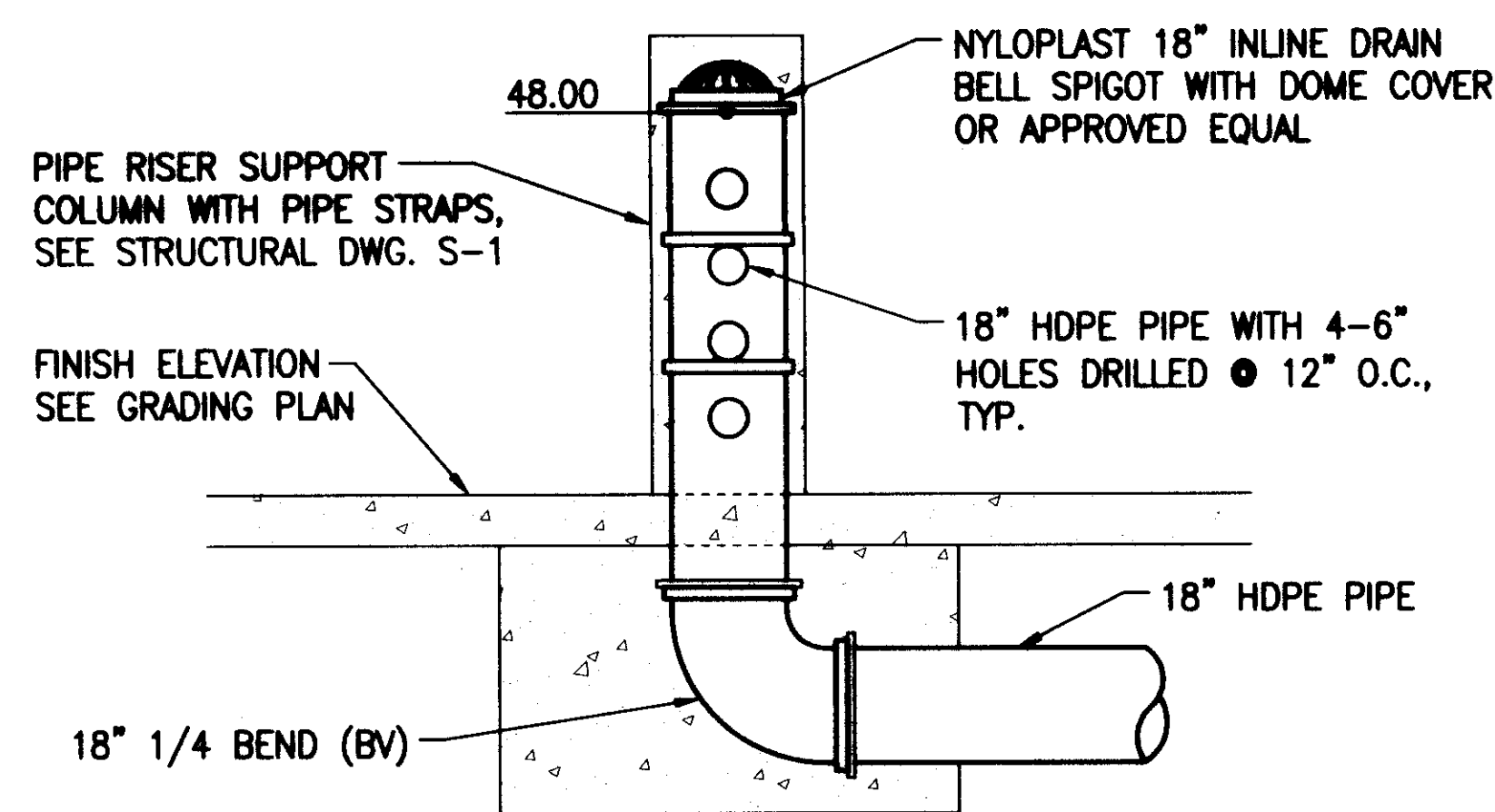
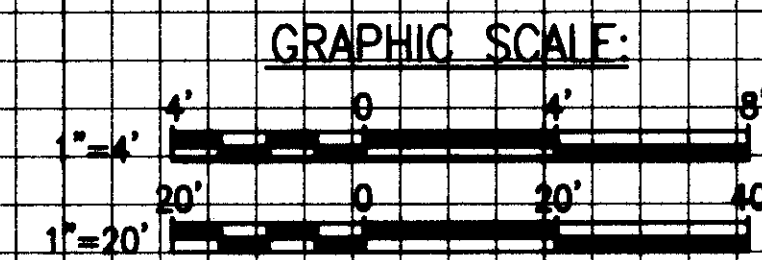


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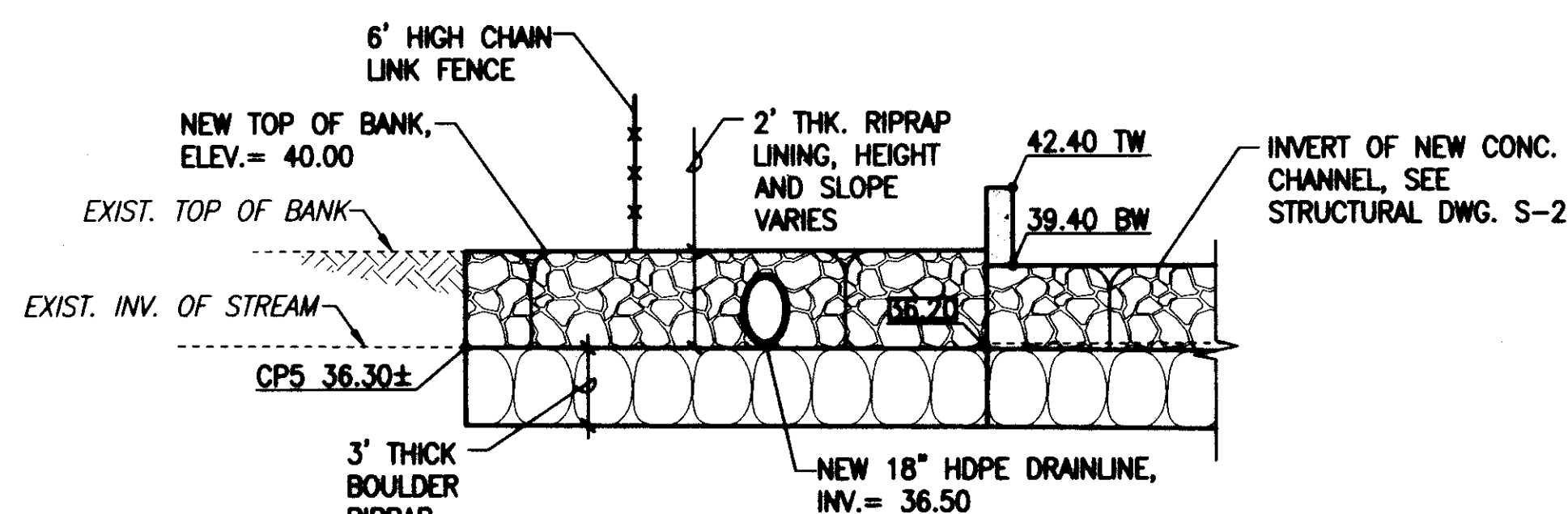


PROFILE DRAINLINE DL-A

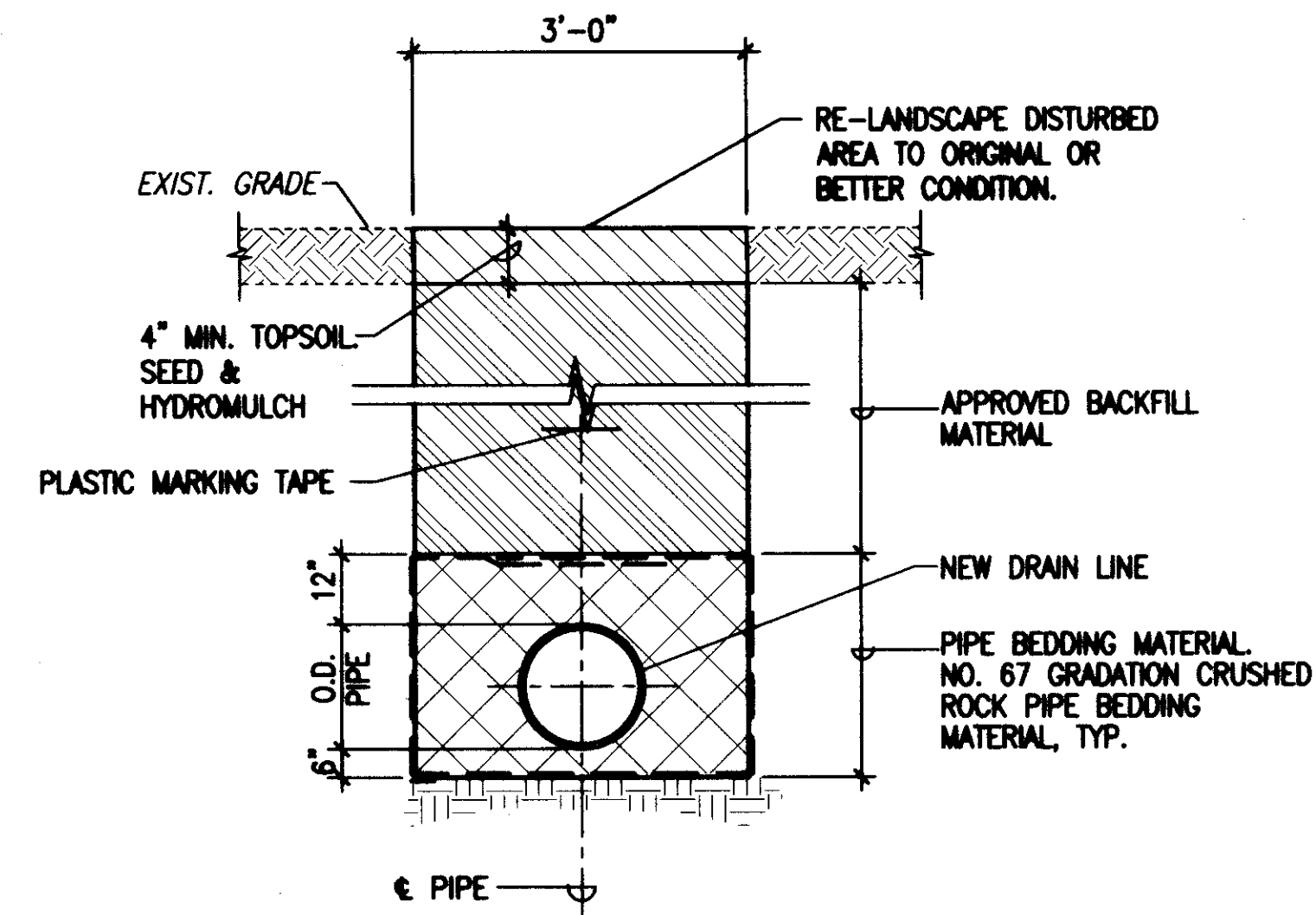
SCALE: HORIZ. 1"=20'
VERT. 1"=4'



PIPE RISER DETAIL 1
NOT TO SCALE



DRAINLINE OUTLET 2
NOT TO SCALE



DRAINLINE TRENCH AND RESTORATION 3
NOT TO SCALE

05/31/11 11:27:00 PM S:\SAK\WEST LOCH G.C\DRAW\ADD NO.1\0461K C08.DWG

	<p>THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION AND CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION.</p>						
<p>SCOTT A. KUNJORA LICENSED PROFESSIONAL ENGINEER No. 7257-C HAWAII, U.S.A.</p>							
<p>DESIGNED BY: SAK REVIEWED BY: SAK DRAWN BY: CAE DATE: MAY 2011</p>							
<p>DEPARTMENT OF DESIGN AND CONSTRUCTION CITY & COUNTY OF HONOLULU</p>							
<p>WEST LOCH GOLF COURSE DRAINAGE IMPROVEMENTS - PHASE I</p>							
<p>DRAIN LINE PROFILE & DETAILS</p>							
<p>JOB NO. 11-P-14</p>							
<p>DRAWING NO. C-12</p>							
<p>SHEET NO. 17 OF 21</p>				<p>FILE NO. 157/26</p>			

GENERAL NOTES:

1. THE CONTRACTOR SHALL VERIFY ALL FIELD DIMENSIONS AND CONDITIONS PRIOR TO STARTING WORK. ALL DISCREPANCIES SHALL BE PROMPTLY REPORTED TO THE ENGINEER.
2. ALL OMISSIONS OR CONFLICTS BETWEEN THE VARIOUS ELEMENTS OF THE WORKING DRAWINGS AND/OR SPECIFICATIONS SHALL BE BROUGHT TO THE ATTENTION OF THE ARCHITECT OR STRUCTURAL ENGINEER BEFORE PROCEEDING WITH ANY WORK SO INVOLVED.
3. ALL WORK SHALL CONFORM TO THE INTERNATIONAL BUILDING CODE, 2003 EDITION, AS AMENDED BY THE CITY AND COUNTY OF HONOLULU.
4. UNLESS SPECIFICALLY DETAILED ELSEWHERE, CONTRACTOR SHALL FOLLOW TYPICAL DETAILS SHOWN ON THIS SHEET.
5. WHERE CONDITIONS HAVE NOT BEEN SPECIFICALLY INDICATED BUT ARE SIMILAR TO TYPICAL DETAILS SHOWN, MODIFY TYPICAL DETAILS AS DIRECTED TO MEET SPECIAL CONDITIONS.
6. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL SHORING. THE CONTRACTOR SHALL PROVIDE TEMPORARY ERECTION BRACING AND SHORING FOR ALL STRUCTURAL MEMBERS AS REQUIRED FOR STRUCTURAL STABILITY OF THE STRUCTURE DURING ALL PHASES OF CONSTRUCTION.
7. STRUCTURAL DRAWINGS, WHERE INDICATED, HAVE BEEN DRAWN TO APPROXIMATE SCALE. UNLESS DRAWINGS SPECIFICALLY PROVIDES A DIMENSION, THE CONTRACTOR SHALL NOT USE STRUCTURAL DRAWINGS TO DETERMINE DIMENSIONS. DRAWINGS SHALL NOT BE SCALED TO DETERMINE DIMENSIONS.

REINFORCING STEEL:

1. ALL REINFORCING BARS SHALL CONFORM TO ASTM A615 GRADE 60 AND SHALL BE EPOXY COATED IN ACCORDANCE WITH ASTM A775.
2. REINFORCING BARS SHALL NOT BE WELDED.
3. REINFORCING SHALL BE SPLICED ONLY AS SHOWN OR NOTED. SPLICES AT OTHER LOCATIONS SHALL BE MADE AWAY FROM POINTS OF MAXIMUM STRESS AND APPROVED BY THE ENGINEER. SEE TYPICAL LAP SPLICE DETAIL.
4. ALL REINFORCING STEEL, ANCHOR BOLTS AND OTHER INSERTS SHALL BE SECURED IN POSITION PRIOR TO PLACING CONCRETE.
5. CONCRETE COVER FOR REINFORCING STEEL SHALL BE UNLESS OTHERWISE SHOWN:
 CONCRETE CAST AGAINST EARTH 3"
 CONCRETE NOT CAST AGAINST EARTH:
 #6 AND LARGER BARS 2"
 #5 AND SMALLER BARS 1 1/2"

WITH THE EXCEPTION OF FORMED SOFFITS OR MEMBERS 4" OR LESS IN THICKNESS, TOLERANCE FOR COVER SHALL BE +/- 3/8" FOR MEMBERS 12" THICK OR LESS AND +/- 1/2" FOR MEMBERS GREATER THAN 12" THICK. FOR FORMED SOFFITS OR MEMBERS 4" OR LESS THICK, THE TOLERANCE FOR COVER SHALL BE +/- 3/8", HOWEVER, FOR ALL CASES, THE COVER SHALL NOT BE LESS THAN 1/3 OF WHAT IS INDICATED AND REQUIRED BY THE DRAWINGS AND SPECIFICATIONS.

CONCRETE:

1. ALL CONCRETE WORK SHALL CONFORM TO ACI 318-02.
2. PIPES AND SLEEVES SHALL NOT BE PLACED IN STRUCTURAL CONCRETE UNLESS SPECIFICALLY DETAILED OR APPROVED.
3. SECURE ALL BOLTS, ANCHORS, INSERTS, ETC. AND VERIFY ALL GROOVES, SLOTS, AND FINISHES PRIOR TO PLACING CONCRETE.
4. VERIFY LOCATIONS AND DIMENSIONS OF SLOTS, ANCHORS, DUCTS, ETC., RELATING TO MECHANICAL, ELECTRICAL AND ARCHITECTURAL WORK BEFORE POURING CONCRETE.
5. ALL CONCRETE WORK SHALL BE THOROUGHLY CONSOLIDATED DURING PLACEMENT USING A MECHANICAL VIBRATOR. ALL CONCRETE SHALL BE CURED FOR A PERIOD OF NOT LESS THAN 14 DAYS.
6. LOCATIONS OF ALL CONSTRUCTION OR COLD JOINTS SHALL BE COORDINATED WITH AND APPROVED BY THE ENGINEER.
7. 48 HOURS PRIOR TO THE POURING OF ANY STRUCTURAL CONCRETE, THE CONTRACTOR SHALL NOTIFY THE ENGINEER SO AN INSPECTION CAN BE MADE OF ALL FORMS AND REINFORCING STEEL.
8. THE CAST-IN-PLACE CONCRETE 28 DAY COMPRESSIVE STRENGTH, MAXIMUM AGGREGATE SIZE AND MAXIMUM WATER-TO-CEMENT RATIO TO BE AS FOLLOWS:

	STRENGTH (PSI)	MAX. AGGREGATE SIZE	MAX. W/C RATIO
ALL STRUCTURAL CONCRETE	4,000	3/4"	0.45

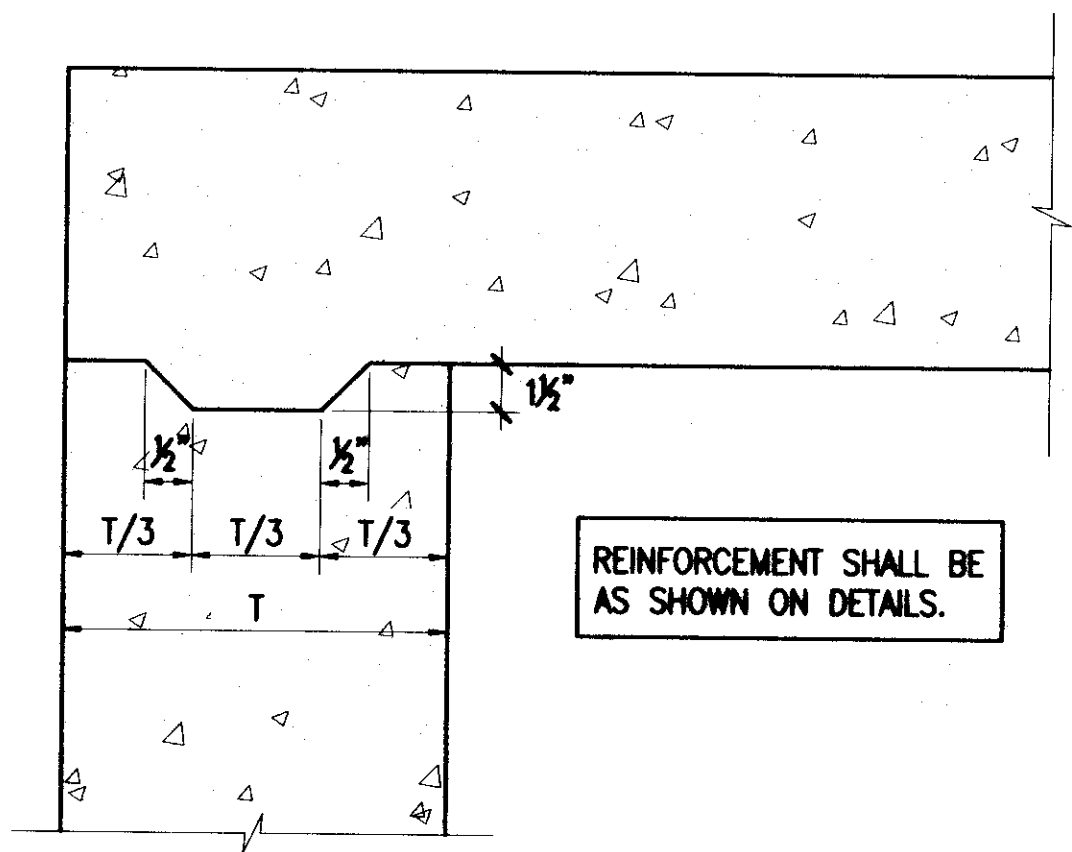
9. CONCRETE MIXES SHALL BE DESIGNED BY A QUALIFIED TESTING LABORATORY AND SHALL BE SUBMITTED TO THE ENGINEER FOR REVIEW AND ACCEPTANCE AT LEAST 21 DAYS BEFORE ACTUAL CONCRETE PLACING OPERATIONS.
10. THE USE OF CALCIUM CHLORIDE IN ANY CONCRETE IS PROHIBITED.
11. CONCRETE SURFACES EXPOSED TO TRAFFIC SHALL BE FINISHED TO A SMOOTH SKID-RESISTANT TEXTURE BY EITHER BURLAP DRAGGING OR BROOMING. THE TEXTURE AND METHOD EMPLOYED SHALL BE SUBMITTED FOR APPROVAL TO THE ENGINEER.
12. JOINT SEALING COMPOUND SHALL BE POLYSULFIDE OR URETHANE COMPOUND CONFORMING TO ASTM C 920, TYPE S OR M, CLASS 100/50, USE T.
13. EXPANSION JOINT FILLER SHALL BE PREMOULDED MATERIAL COMPOSED OF NONCELLULOSE RUBBER MATERIAL CONFORMING TO ASTM D 1752. THICKNESS SHALL BE AS DESIGNATED IN THE PLANS.
14. 1/2" DIAMETER SMOOTH DOWELS FOR EXPANSION JOINTS SHALL CONFORM TO ASTM A 36 AND SHALL BE HOT-DIPPED GALVANIZED AFTER FABRICATION.
15. EPOXY BONDING AGENT USED TO BOND FRESH CONCRETE TO HARDENED CONCRETE SHALL CONFORM TO ASTM C 881, GRADE 1 OR 2, CLASS C, TYPE V.
16. CONCRETE COMPRESSIVE STRENGTH SHALL BE VERIFIED BY TEST CYLINDERS. SEE SPECIFICATIONS. COST OF REQUIRED TESTING SHALL BE BORNE BY THE CONTRACTOR.
17. EPOXY BONDING AGENT USED TO BOND FRESH CONCRETE TO HARDENED CONCRETE SHALL CONFORM TO ASTM C 881, GRADE 1 OR 2, CLASS C, TYPE V.

DESIGN LOADS:

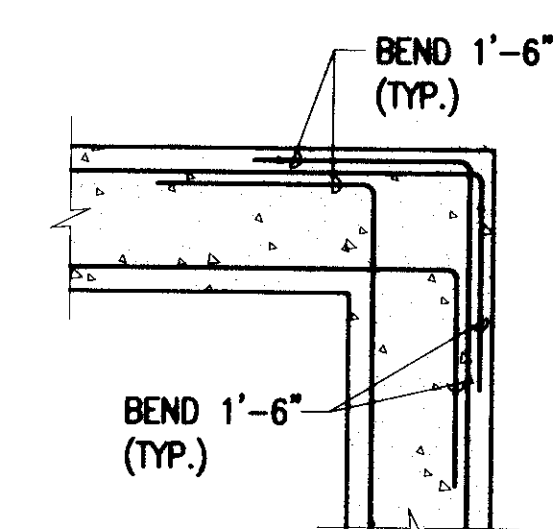
1. DESIGN IN CONFORMANCE WITH AASHTO LRFD DESIGN SPECIFICATIONS, 5th EDITION, 2010.
2. LIVE LOADS:
 ROADS HL-93 TRUCK
 CART PATHS 100 PSF
 OTHER AREAS 40 PSF

FOUNDATION NOTES:

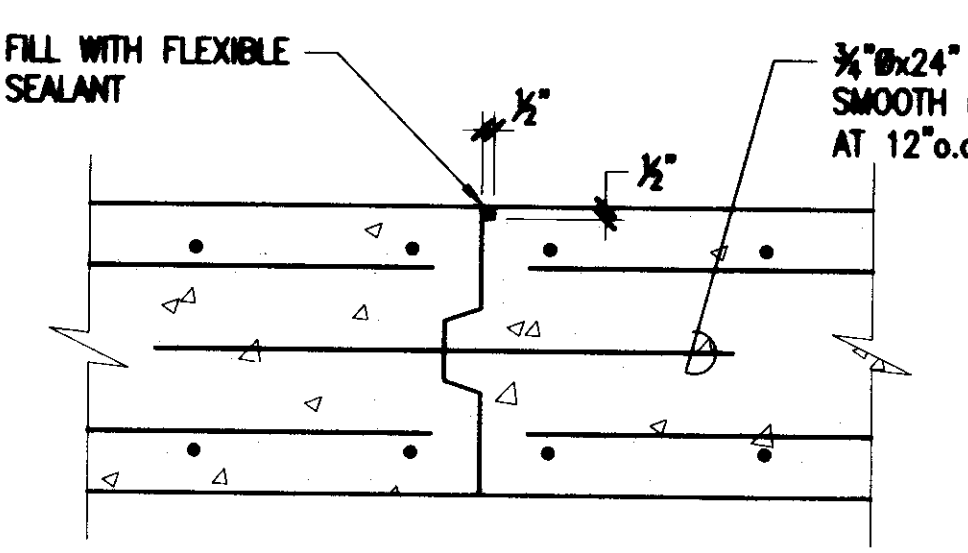
1. DESIGN IS BASED ON THE GEOTECHNICAL REPORT BY GEOLABS, INC. TITLED "GEOTECHNICAL ENGINEERING EXPLORATION, WEST LOCH GOLF COURSE IMPROVEMENTS, EWA, OAHU, HAWAII", DATED MAY 13, 2011.
2. DESIGN PARAMETERS:
 ALLOWABLE BEARING PRESSURE 3,000 PCF
 COEFFICIENT OF FRICTION 0.3
 PASSIVE PRESSURE 300 PCF
 LATERAL PRESSURE:
 LEVEL BACKFILL 40 PCF ACTIVE, 60 PCF AT-REST
 SLOPING BACKFILL 58 PCF ACTIVE, 76 PCF AT-REST
3. STRUCTURES SHALL BE SUPPORTED ON A GRANULAR BEDDING LAYER CONSISTING OF 6 INCHES OF NO. 38 FINE (ASTM C33, NO. 67 GRADATION) OVER A SUBGRADE STABILIZATION LAYER CONSISTING OF 24 INCHES OF NO. 2 ROCK (ASTM C33, NO. 4 GRADATION) WRAPPED IN A NON-WOVEN FILTER FABRIC (MIRAFI 180N OR EQUIVALENT). THE GRANULAR BEDDING AND STABILIZATION LAYERS SHALL EXTEND BEYOND THE STRUCTURE BY A MINIMUM OF 24 INCHES.
4. SOFT OR LOOSE MATERIALS ENCOUNTERED AT THE BOTTOM OF EXCAVATIONS SHALL BE OVER-EXCAVATED UNTIL DENSE AND/OR STIFF MATERIALS ARE EXPOSED. THE OVER-EXCAVATION SHALL BE BACKFILLED WITH AGGREGATE SUBBASE MATERIALS MOISTURE-CONDITIONED TO ABOVE THE OPTIMUM MOISTURE CONTENT. THE BOTTOM OF EXCAVATIONS SHALL BE COMPACTED TO AT LEAST 90 PERCENT RELATIVE COMPACTION PRIOR TO PLACING REINFORCING STEEL OR CONCRETE.
5. PROVIDE A DRAINAGE SYSTEM BEHIND ALL BACKFILLED WALLS CONSISTING OF A 12-INCH WIDE ZONE OF PERMEABLE MATERIAL, SUCH AS NO. 38 FINE GRAVEL (ASTM C33, NO. 67 GRADATION) DIRECTLY AROUND A PERFORATED PIPE (PERFORATIONS FACING DOWN) AT THE BASE OF WALLS DISCHARGING TO AN APPROPRIATE OUTLET.



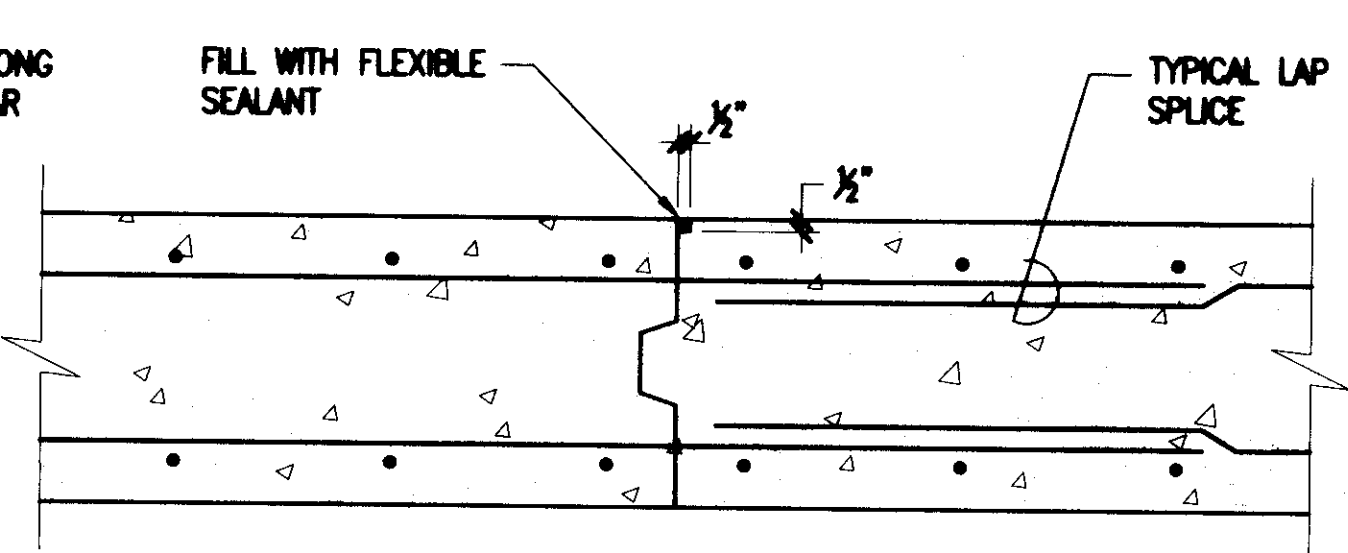
A TYPICAL KEY DETAIL
S-1 NOT TO SCALE



TYP. HORIZONTAL REINF. AT CORNERS
S-1 NOT TO SCALE

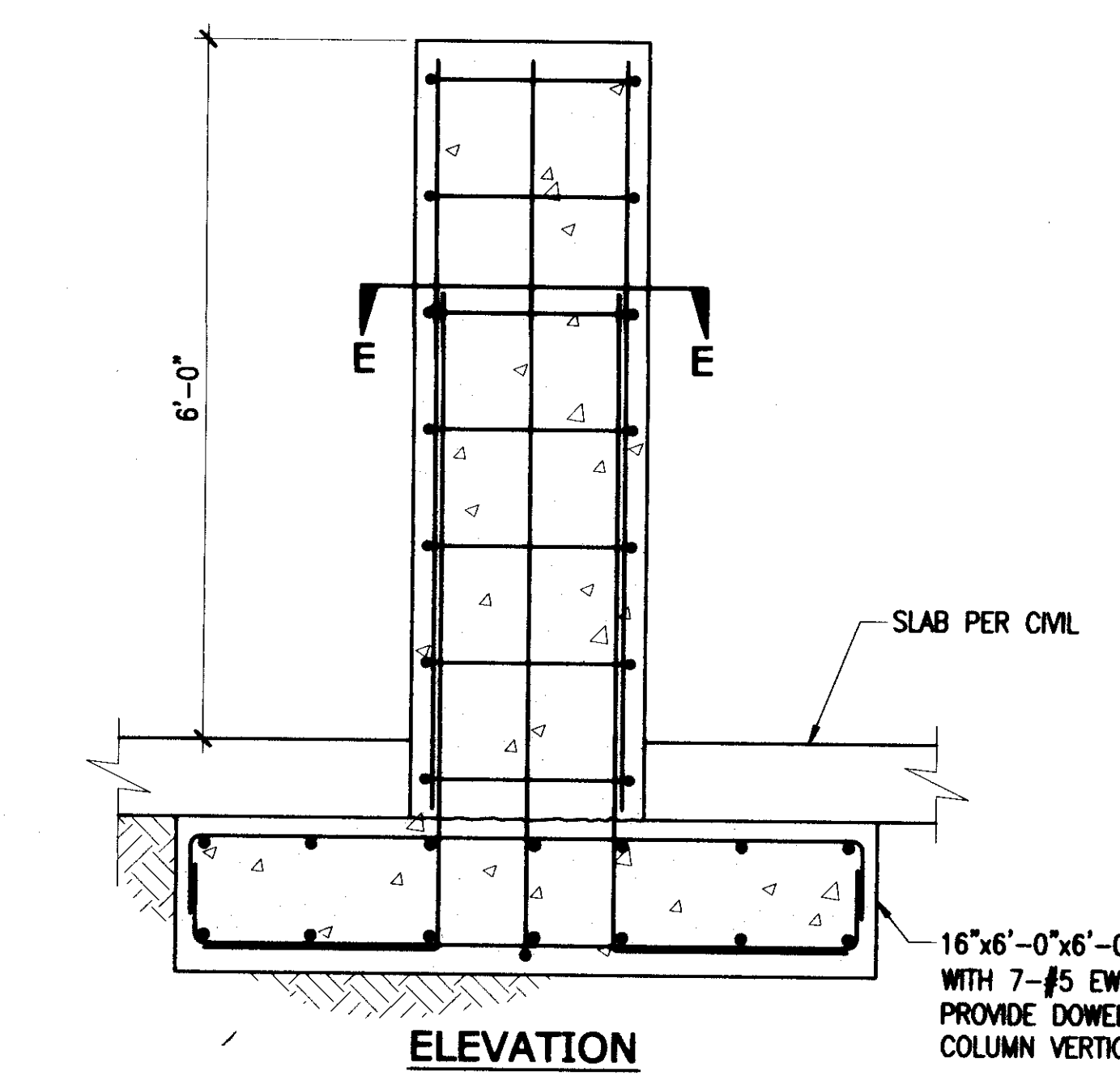
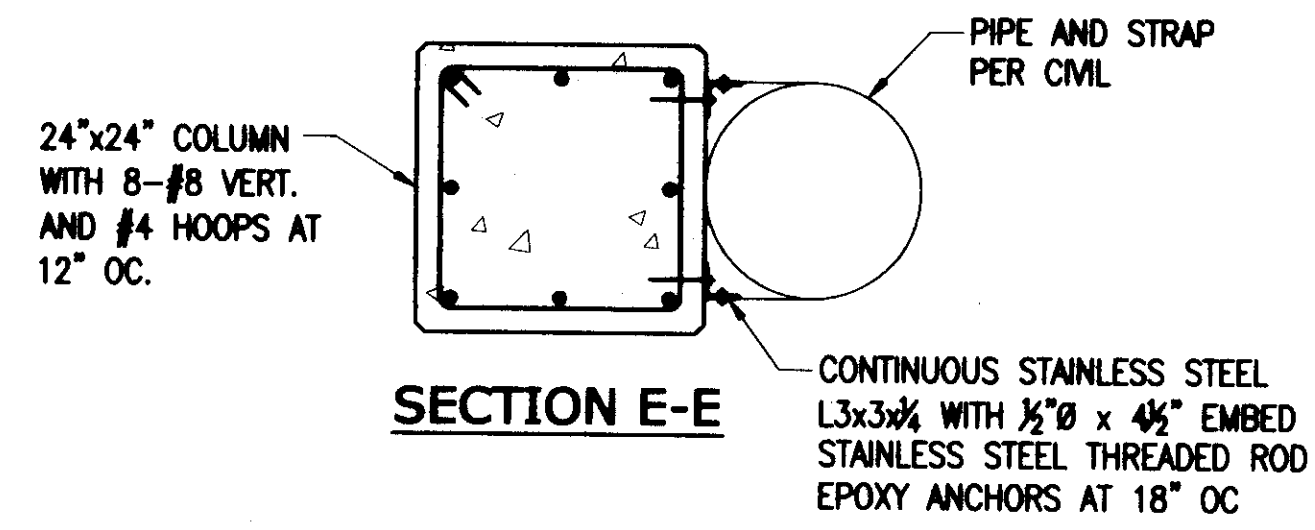


EXPANSION JOINT
NOTE: DISCONTINUE ALL HORIZ. REINFORCEMENT AT JOINT.

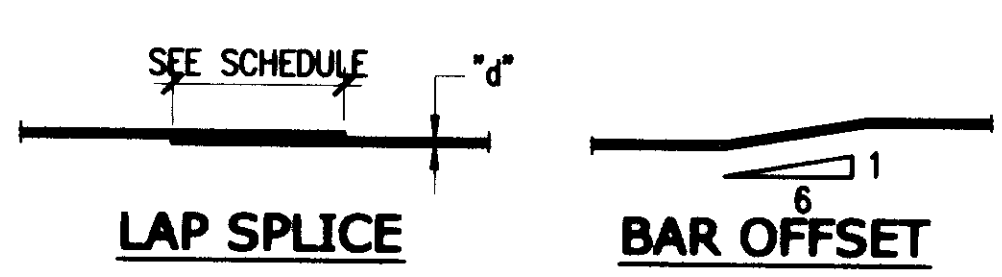


CONSTRUCTION JOINT
NOTE: LAP SPLICE AND REINF. AT JOINT.

C TYPICAL EXPANSION AND CONSTRUCTION JOINT DETAIL
S-1 NOT TO SCALE



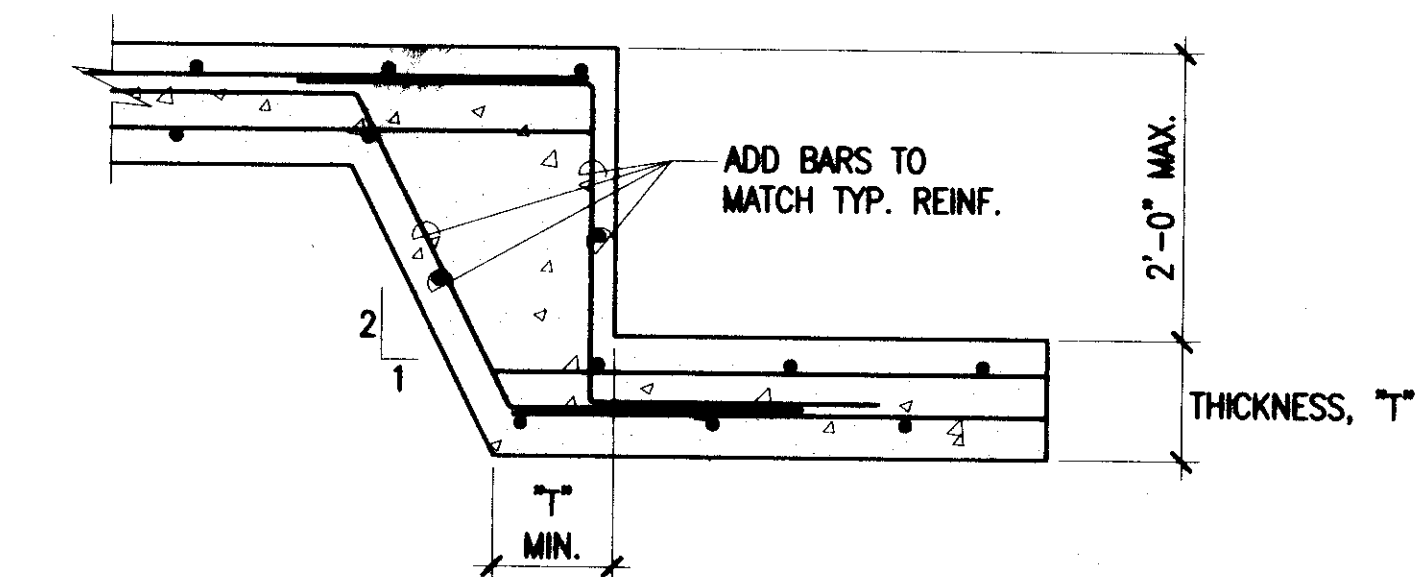
E TYP. PIPE RISER SUPPORT COLUMN DETAIL
S-1 NOT TO SCALE



D TYPICAL LAP SPLICE DETAIL
S-1 NOT TO SCALE

BAR SIZE	f'c = 4000 PSI	
	TOP BARS	OTHER BARS
#3	24"	24"
#4	26"	24"
#5	32"	28"
#6	38"	34"
#7	55"	49"
#8	67"	59"
#9	85"	75"

NOTE: "TOP BARS" HAVE 12 INCHES OR MORE OF FRESH CONCRETE CAST BELOW.



F TYPICAL STEPPED FOOTING/SLAB DETAIL
S-1 NOT TO SCALE

05/23/11 4:39:57 PM C:\US\2011\110649 - WEST LOCH GOLF COURSE DRAINAGE\S-1 GENERAL NOTES.DWG

DEPARTMENT OF DESIGN AND CONSTRUCTION
 CITY & COUNTY OF HONOLULU

WEST LOCH GOLF COURSE
 DRAINAGE IMPROVEMENTS - PHASE I

MISCELLANEOUS STRUCTURAL DETAILS 1

JOB NO. 11-P-14
 DRAWING NO. 9-1
 SHEET NO. 19 OF 21
 FILE NO. 157/26

DESIGNED BY: JE
 REVIEWED BY: CS
 DRAWN BY: JE, MML, LS
 DATE: MAY 2011
 ACCEPTED: [Signature]
 CHIEF, FACILITIES DIVISION

6-2-11 DATE
 REVISION
 ADD. NO. 1 - ADDED NEW SHEET
 MADE BY: JE

SHIPMAN, LEE, SALAMON, HIGASHI & ASSOCIATES, INC. Structural Engineers

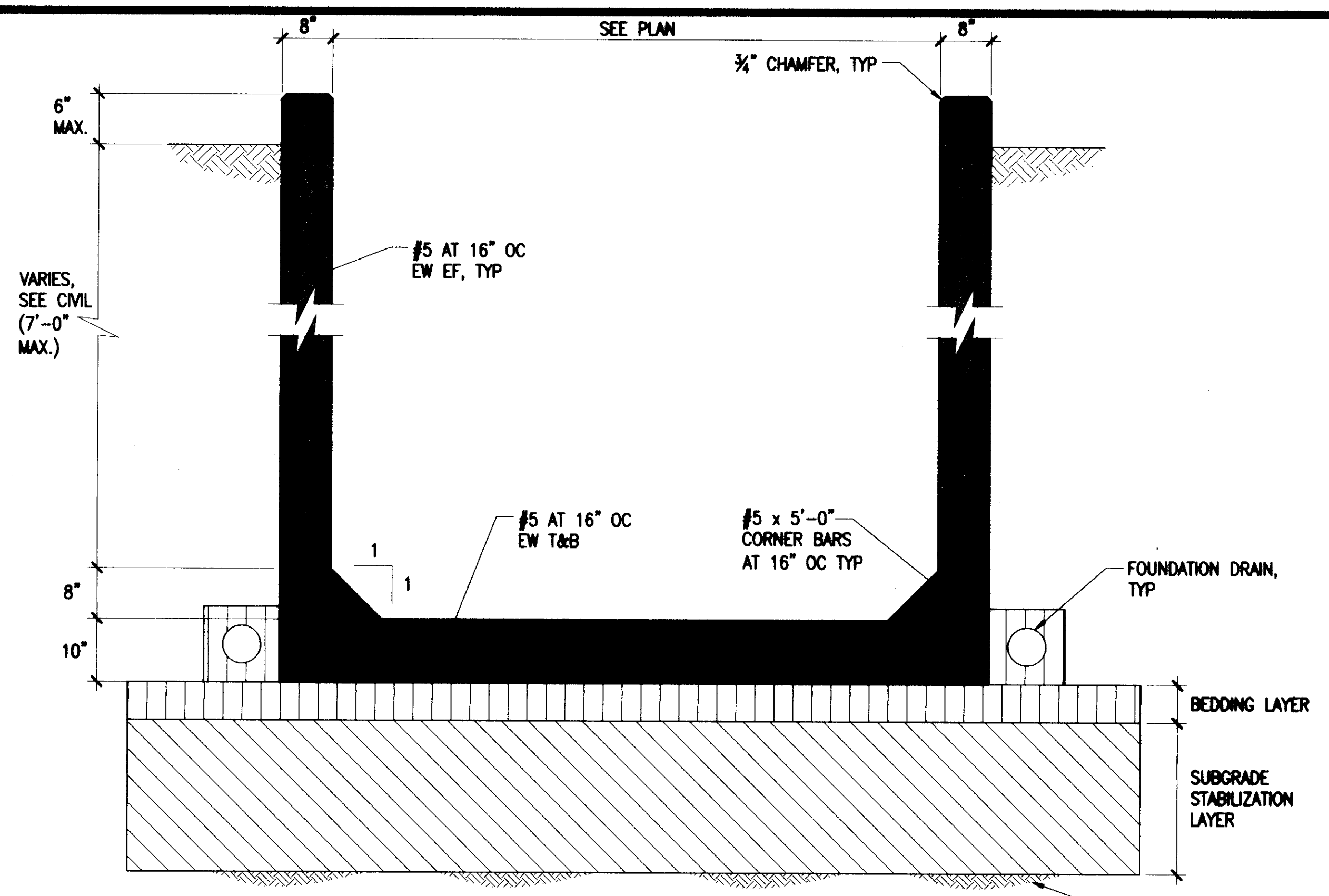
CRIG H. SAKAMOTO
 LICENSED PROFESSIONAL ENGINEER
 No. 8888-G
 HAWAII, U.S.A.

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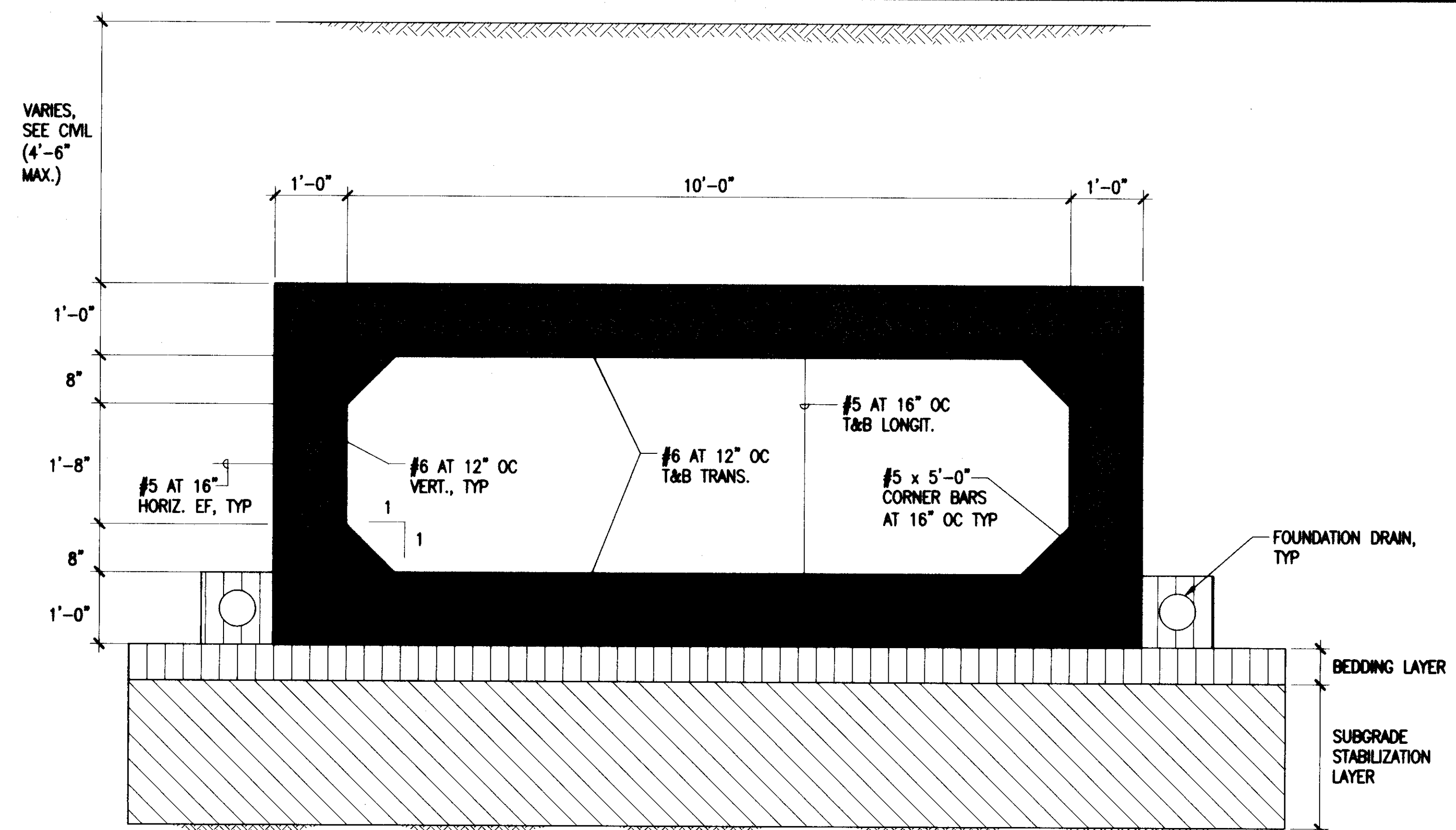
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 EXP. DATE: 4/30/12

SCALE: 1

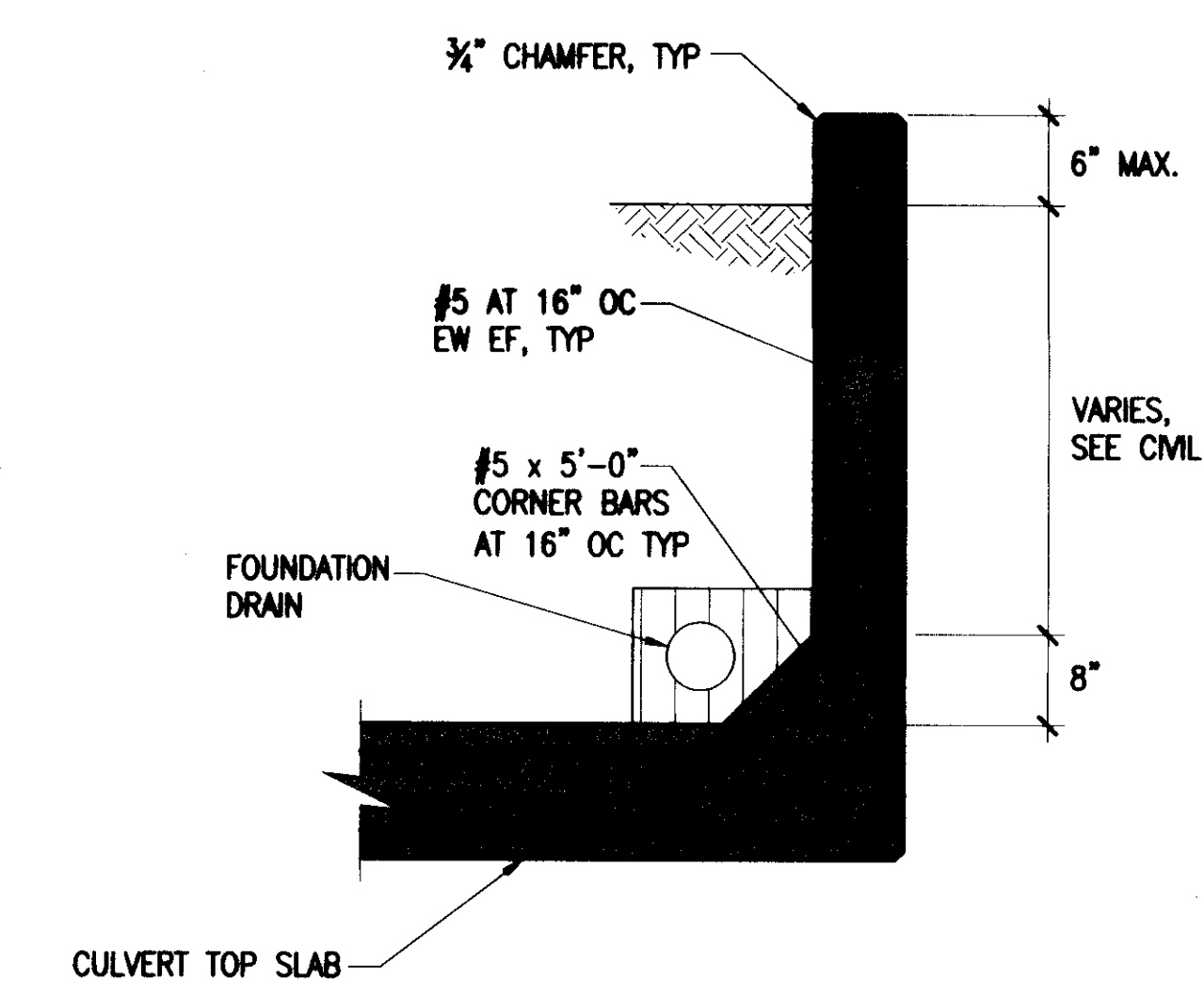
ADDENDUM NO.1 (SHEET 19 OF 21)



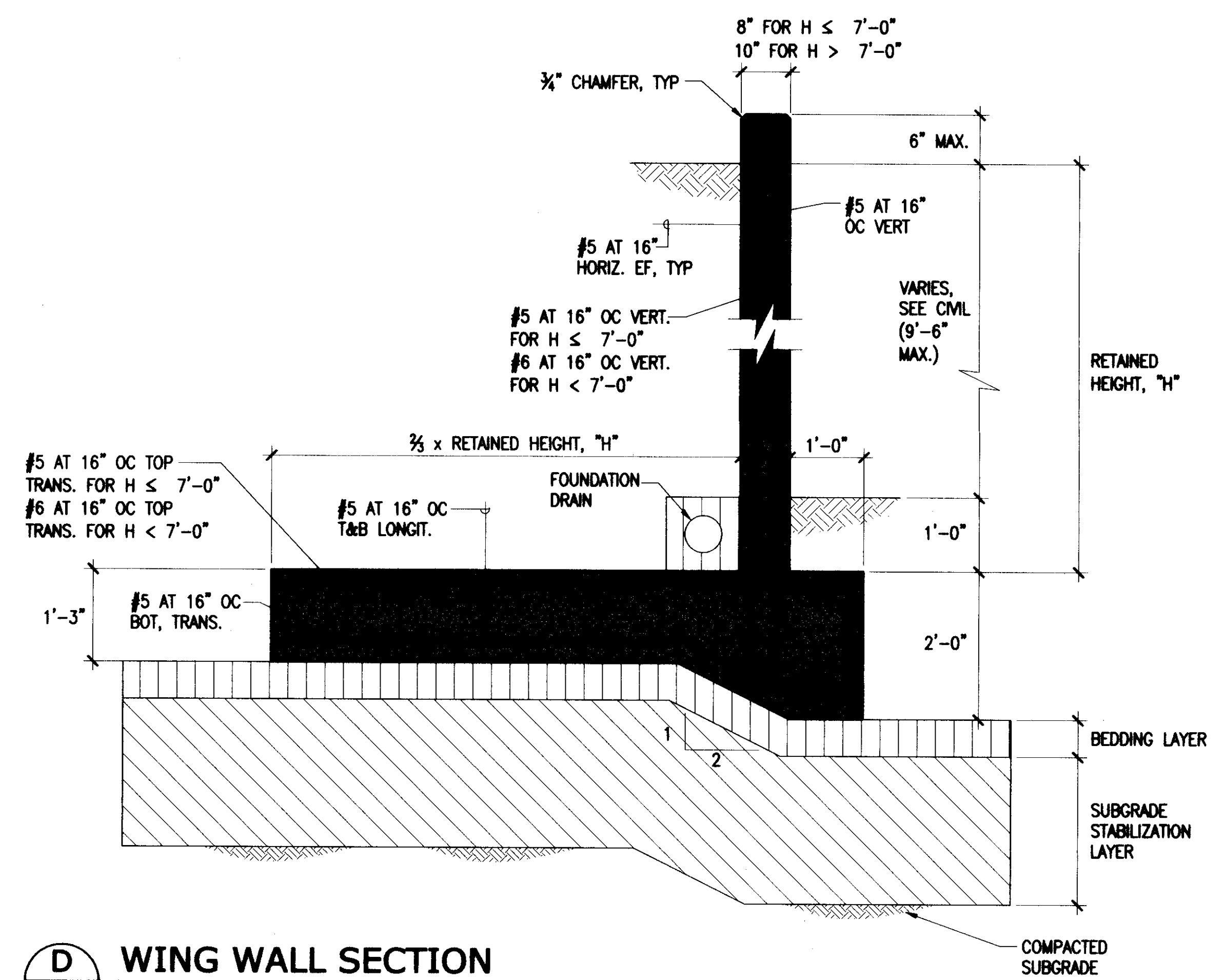
A CHANNEL SECTION
S-3 3/4" = 1'-0"



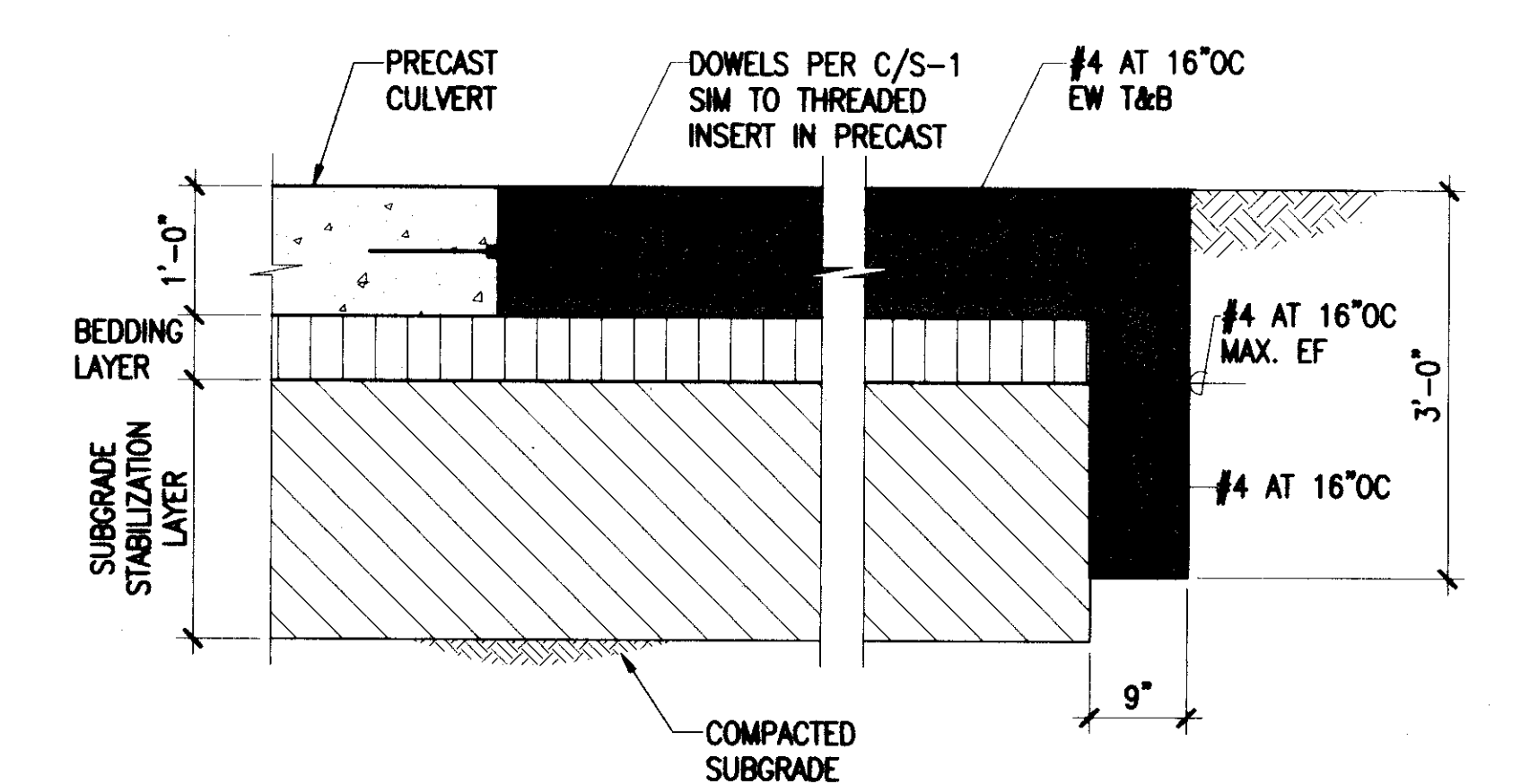
B CAST-IN-PLACE BOX CULVERT SECTION
S-3 3/4" = 1'-0"



C HEAD WALL SECTION
S-3 3/4" = 1'-0"



D WING WALL SECTION
S-3 3/4" = 1'-0"



E PRECAST CULVERT APRON SECTION
S-3 3/4" = 1'-0"

05/31/11 4:38:46 PM C:\LS\2011\11049 - WEST LOCH GOLF COURSE DRAINAGE S-3 SECTIONS.DWG

APPROVED	DATE	REVISION	DESCRIPTION
JE	6-2-11	1	ADDED NEW SHEET
CS			
JE			

Shigemura, Liu, Schwanik, Higuchi & Associates, Inc. Structural Engineers

CRAIG H. SAKAMOTO
LICENSED PROFESSIONAL ENGINEER
No. 9880-S
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION AND CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION.

Signature: *[Signature]*
EXP. DATE: 4/30/12

REVISIONS:
JE CS
JE, MA, LS
MAY 2011

DEPARTMENT OF DESIGN AND CONSTRUCTION
CITY & COUNTY OF HONOLULU

**WEST LOCH GOLF COURSE
DRAINAGE IMPROVEMENTS - PHASE I**

MISCELLANEOUS STRUCTURAL DETAILS 3

JOB NO. 11-P-14
DRAWING NO. 8-3
SHEET NO. 21 OF 21
FILE NO. 157/28

SCALE: 1

ADDENDUM NO.1 (SHEET 21 OF 21)