

**CASTLE HILLS ACCESS ROAD
DRAINAGE IMPROVEMENTS
Project No. HWY-O-04-98**

Application for:

Department of the Army Nationwide Permit

**State of Hawaii
Department of Transportation
Highways Division
869 Punchbowl Street
Honolulu, Hawaii 96813**

April 2009

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

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

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

20. Reason(s) for Discharge
Installation of 60-inch pipe culvert to divert stream flow while a new concrete drop structure outlet with a gabion apron is constructed. Sheet piles and dewatering will be required to construct the new structure.

21. Type(s) of Material Being Discharged and the Amount of Each Type in Cubic Yards
Less than 25 CY of fill #3 rock cushion, geotextile fabric and gabions will be placed within the wetlands.

22. Surface Area in Acres of Wetlands or Other Waters Filled (see instructions)
Approximately 165 square feet of gabion apron will be installed with the wetland/stream.

23. Is Any Portion of the Work Already Complete? Yes _____ No 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).
All adjoining properties to Kapunahala Stream have been obtained by the State of Hawaii.

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

*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

4-28-09

DATE

SIGNATURE OF AGENT

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.

**Castle Hills Access Road Drainage Improvements
Department of the Army Permit Application**

14. Project Street Address

Address	Tax Map Key	Area (Sq. Ft.) / (Ac.)
45-708 Pilina Way, Kaneohe, HI 96744	4-5-024: 002	5,452 Sq. Ft. / 0.125 Ac.
45-714 Pilina Way, Kaneohe, HI 96744	4-5-024: 003	5,667 Sq. Ft. / 0.130 Ac.
45-720 Pilina Way, Kaneohe, HI 96744	4-5-024: 005	6,145 Sq. Ft. / 0.141 Ac.
45-801 Kupohu Street, Kaneohe, HI 96744	4-5-108: 068	6,106 Sq. Ft. / 0.140 Ac.
45-805 Kupohu Street, Kaneohe, HI 96744	4-5-108: 069	8,146 Sq. Ft. / 0.187 Ac.
45-809 Kupohu Street, Kaneohe, HI 96744	4-5-108: 070	8,391 Sq. Ft. / 0.193 Ac.
45-813 Kupohu Street, Kaneohe, HI 96744	4-5-108: 071	5,940 Sq. Ft. / 0.136 Ac.
45-817 Kupohu Street, Kaneohe, HI 96744	4-5-108: 072	6,353 Sq. Ft. / 0.146 Ac.
45-821 Kupohu Street, Kaneohe, HI 96744	4-5-108: 073	6,629 Sq. Ft. / 0.152 Ac.
45-823 Kupohu Street, Kaneohe, HI 96744	4-5-108: 074	21,559 Sq. Ft. / 0.495 Ac.

17. Directions to the Site

From Honolulu proceed on the H-1 then on the Likelike Highway (63) to Kaneohe. After passing through the Wilson Tunnel, turn onto Kahekili Highway (83). Travel to Kahekili Highway for approximately 0.6 miles heading in the northerly direction. Turn left onto Keaahala Road at the Kaneohe District Park. Make a left turn onto Pookela Street approximately 1000-fee from the intersection at Kahekili Highway. Kupohu Street will be the next left after crossing the Kapunahala Stream.

18. Nature of Activity

The proposed project consists of the replacement of an outlet structure located in Kapunaha Stream, immediately below Pookela Street. The activity will consist of the removal of an existing crm walled riprap structure that will be replaced by a concrete outlet structure and a gabion apron. Less than 25 cubic yards of the gabion apron will be located within the wetland. The concrete outlet structure is located outside of the wetland limits. Approximately 15 linear feet of gabion apron will be located within the wetland.

No historic resources will be affected by the proposed action. While a portion of the project is located within delineated wetlands, no sensitive environmental areas will be affected.

19. Project Purpose

The purpose of the project is to slow steam waters at the proposed drop structure. Appurtenant improvements include the installation of gabion walls outside of the high water mark to stabilize the stream bank adjacent to the outlet structure. Other areas outside of the stream will be graded and grasses as this former residential area was condemned due to unstable soil conditions which endangered the existing residences that will also be removed as part of the project.

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	HWY-0-04-98	2009	10	33

True North
Scale: 1"=20'

Legend:
 - - - - Silt Fence
 ———— Dust Screen/Silt Fence



THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.

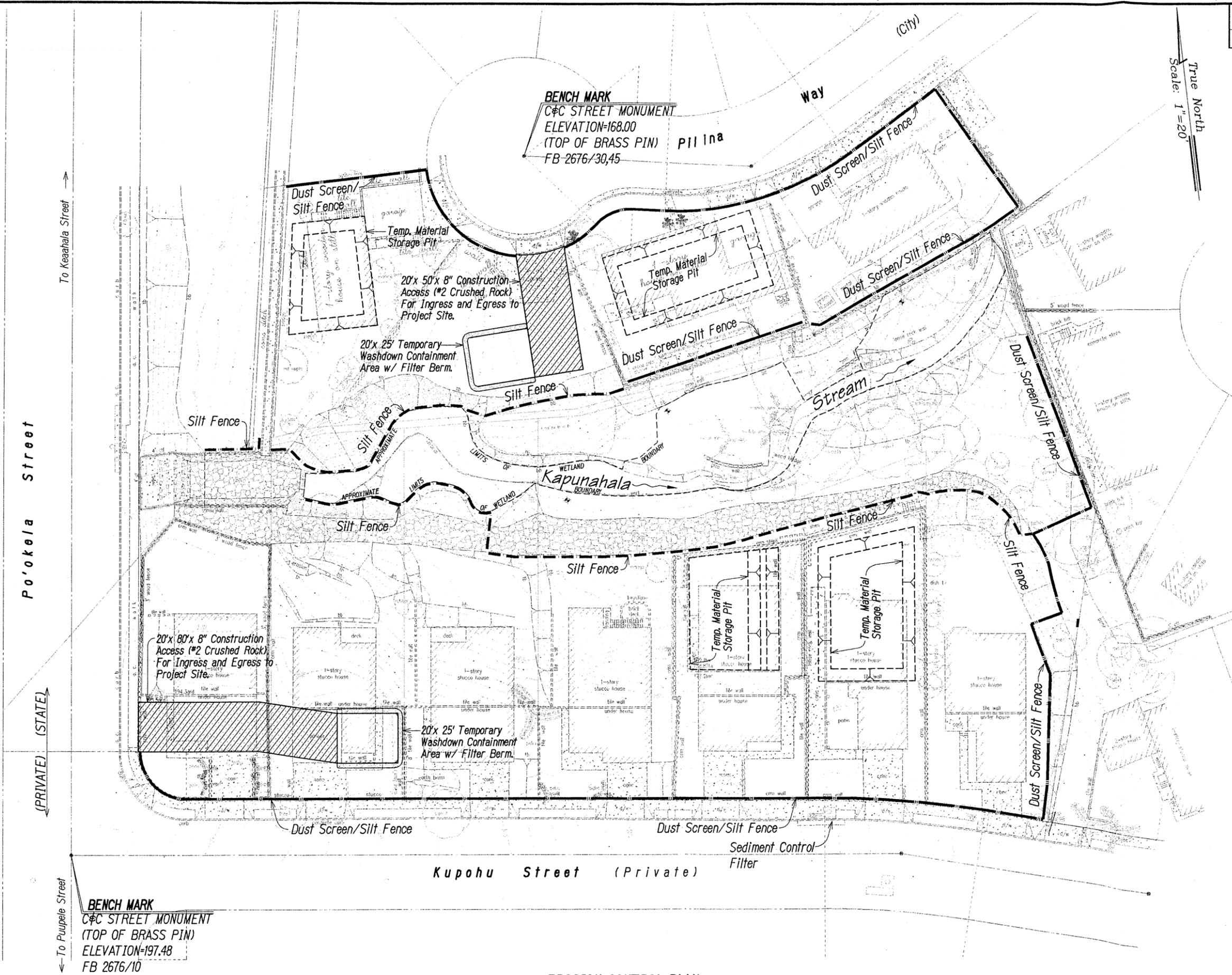
APRIL 30, 2010
LIC. EXP. DATE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

EROSION CONTROL PLAN
CASTLE HILLS ACCESS ROAD
 Drainage Improvements
 Project No. HWY-0-04-98

Scale: As Shown Date: March 2009

SHEET No. *EC1* OF *EC1* SHEETS



EROSION CONTROL PLAN
SCALE: 1"=20'

DATE	REVISION

DATE	
DESIGNED BY	
TRACED BY	
NOTE BOOK	
DESIGNED BY	
QUANTITIES BY	
CHECKED BY	
No.	

Thu, 09 Apr 2009 - 1:36pm
D:\Projects\Kanehaha\Castle Hills\Design\10-Castle Hills-Erosion Control.dwg

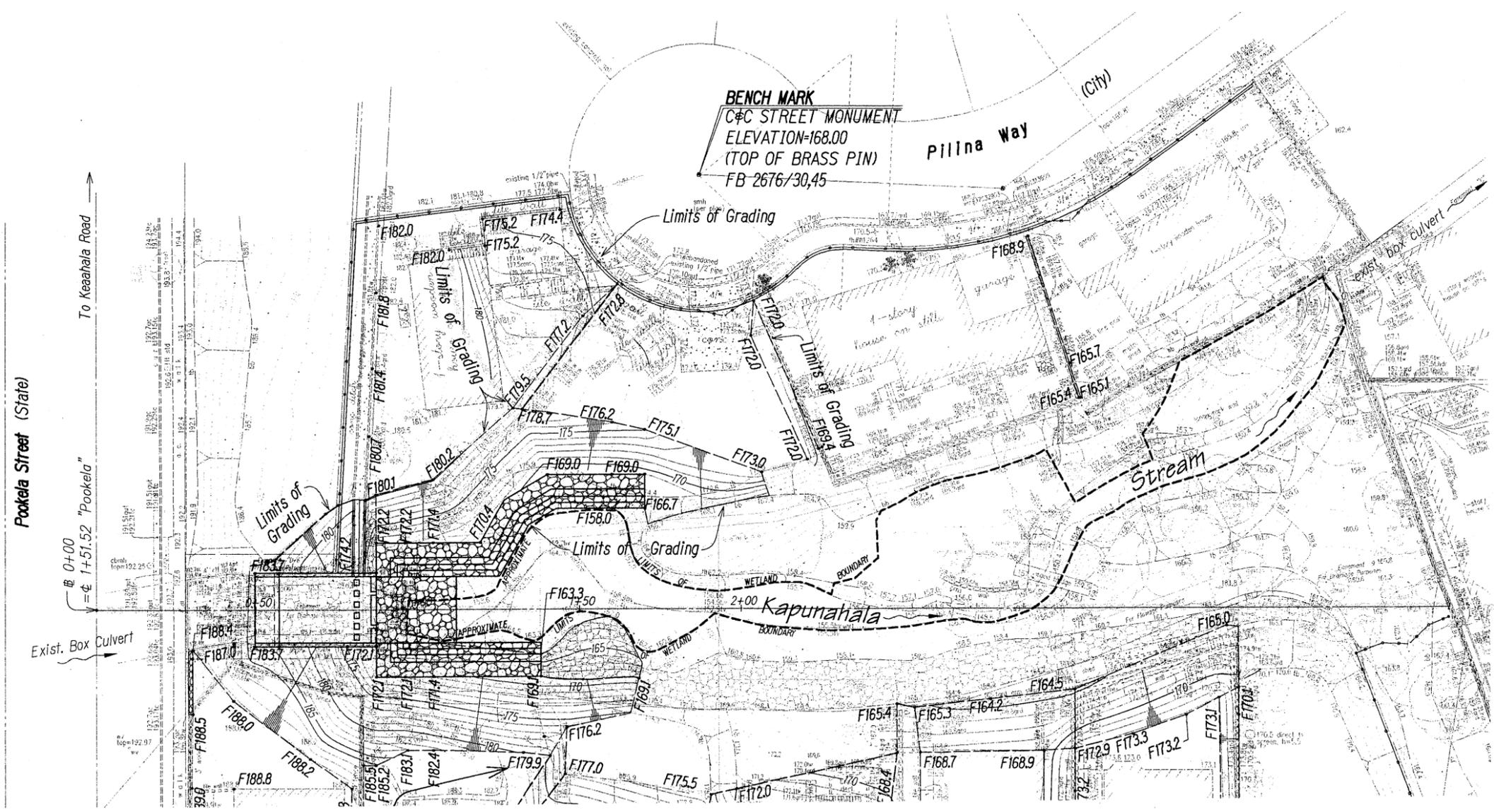
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	HWY-0-04-98	2009	14	33

Legend:

- 180 —— Finish 5-ft Contour
- 180 —— Finish 1-ft Contour
- Existing 5-ft Contour
- Existing 1-ft Contour
- Limits of Grading
- F179.9 Finish Grade Elevation
- 182.0 Existing Ground Elevation
- Grade Bank



True North
Scale: 1"=20'



Match Line
(See Sheet *)



THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.

APRIL 30, 2010
LIC. EXP. DATE

PerEn, Inc.
dba PARK ENGINEERING

GRADING PLAN - NORTH OF STREAM
SCALE: 1"=20'

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
GRADING PLAN
NORTH OF STREAM
CASTLE HILLS ACCESS ROAD
Drainage Improvements
Project No. HWY-0-04-98

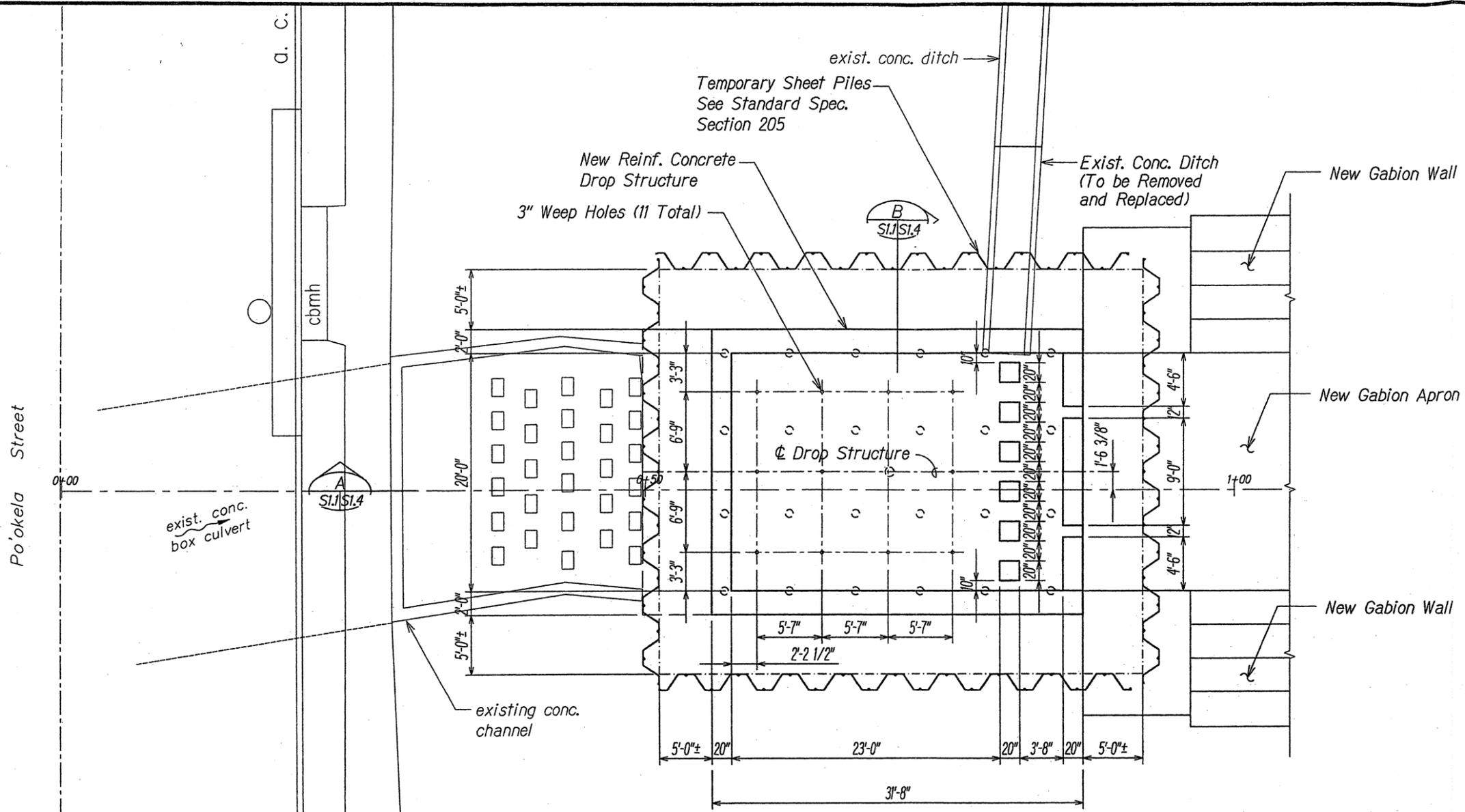
Scale: As Shown Date: March 2009
SHEET No. GPI OF GP2 SHEETS

DATE	REVISION

FILED BY: _____ DATE: _____
DESIGNED BY: _____
CHECKED BY: _____
NOTED BY: _____
QUANTITIES BY: _____
No. _____

Thu, 09 Apr 2009 - 1:37PM
D:\Projects\Kanehe\Castle Hills\Design\14-Cashills-Grac_North.dwg

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	HWY-0-04-98	2009	00	X



DROP STRUCTURE PLAN
Scale: 3/16" = 1'-0"

DATE	_____
DESIGNED BY	_____
CHECKED BY	_____
NO. _____	_____

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.
APRIL 30, 2010
KSF, INC. LIC. EXP. DATE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

DROP STRUCTURE PLAN

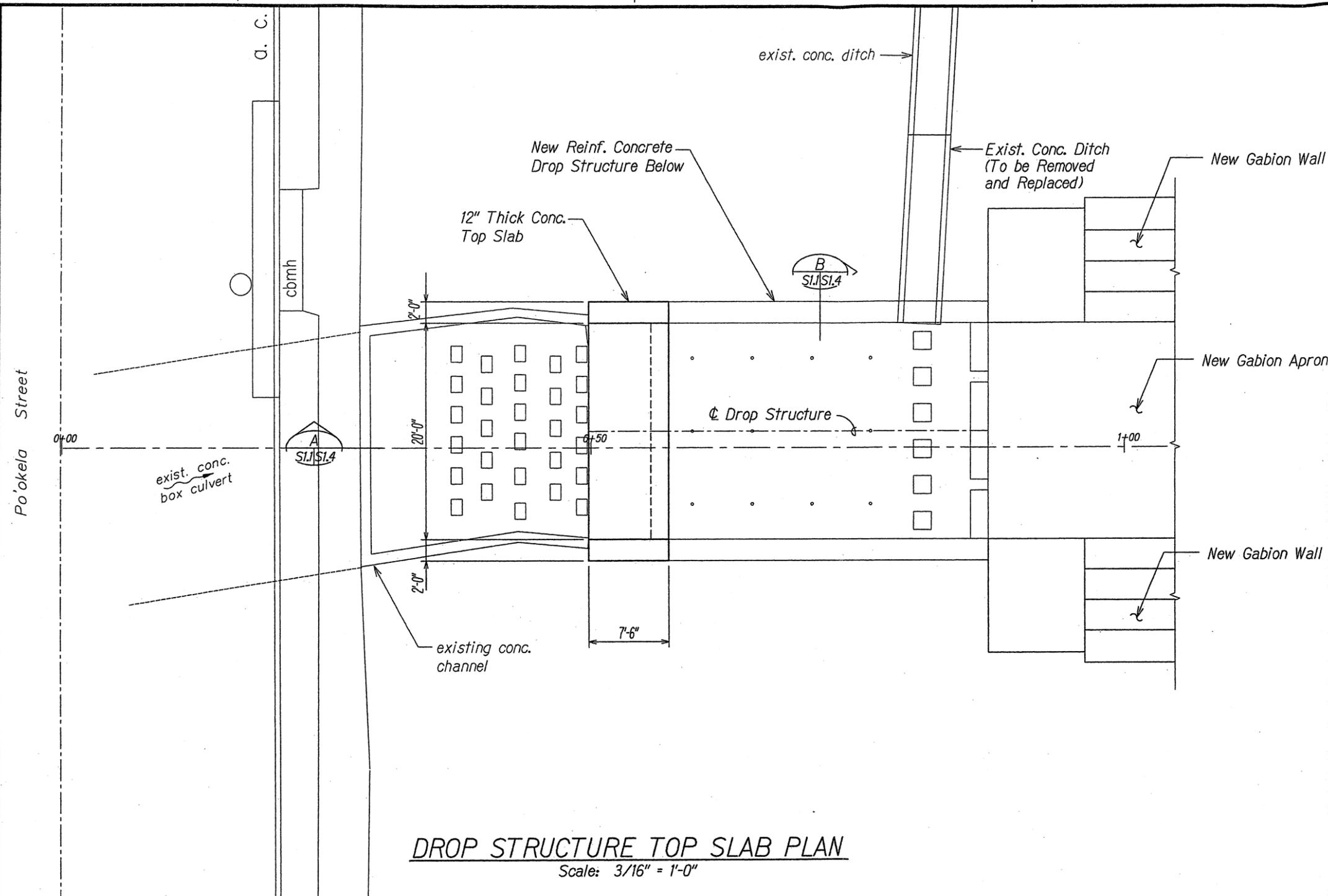
CASTLE HILLS ACCESS ROAD
Drainage Improvements
Project No. HWY-0-04-98

Scale: As Shown Date: March 2009

SHEET No. **SI.2** OF **11** SHEETS

DATE	_____	REVISION	_____
------	-------	----------	-------

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	HWY-0-04-98	2009	00	X



DROP STRUCTURE TOP SLAB PLAN

Scale: 3/16" = 1'-0"

ORIGIN	DATE
REVISION	DATE
PLAN	DATE
DESIGNED BY	DATE
CHECKED BY	DATE
DATE	DATE

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.

APR 30 2010
KSF, INC. LIC. EXP. DATE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

DROP STRUCTURE TOP SLAB PLAN

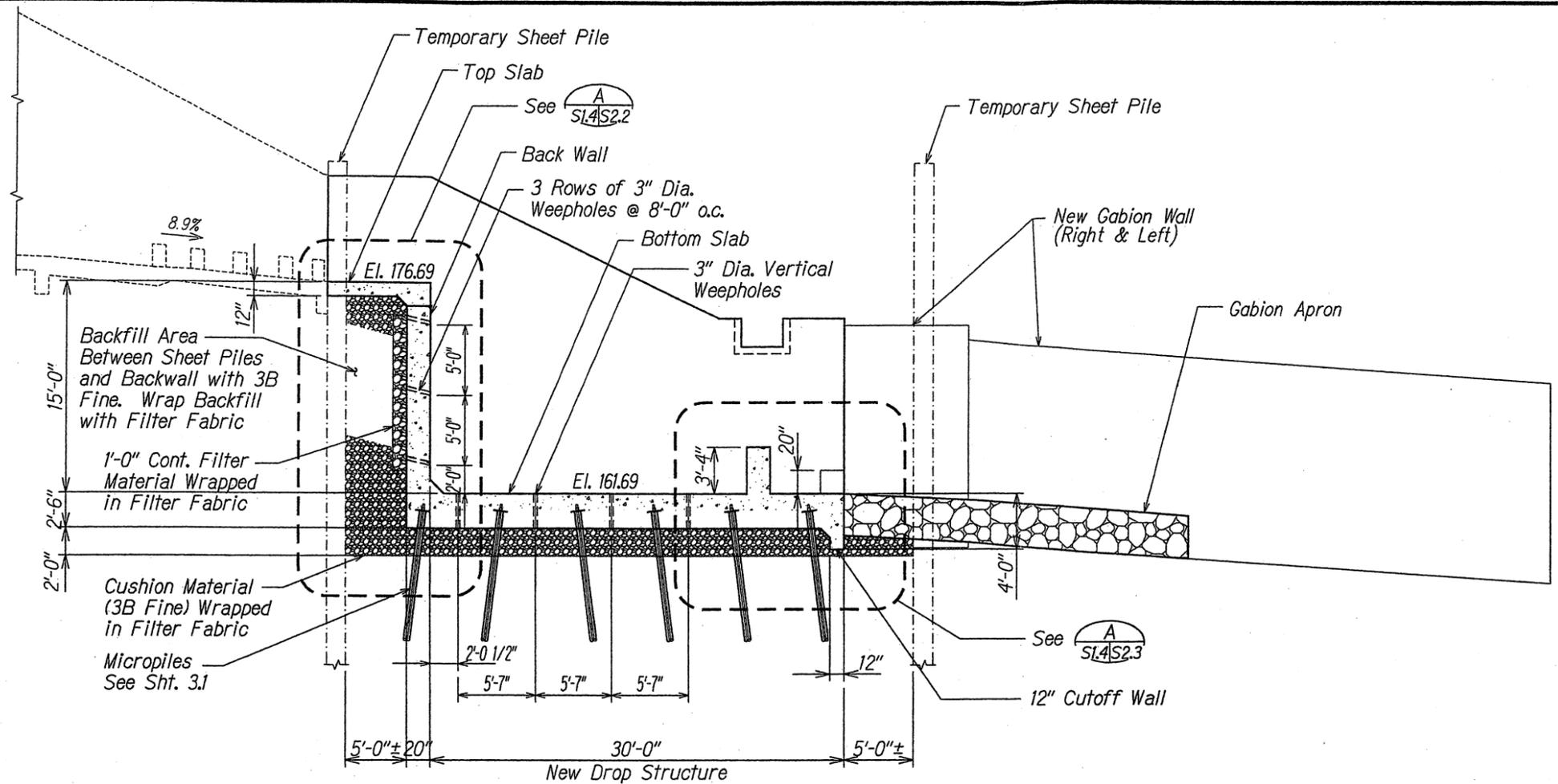
CASTLE HILLS ACCESS ROAD
Drainage Improvements
Project No. HWY-0-04-98

Scale: As Shown Date: March 2009

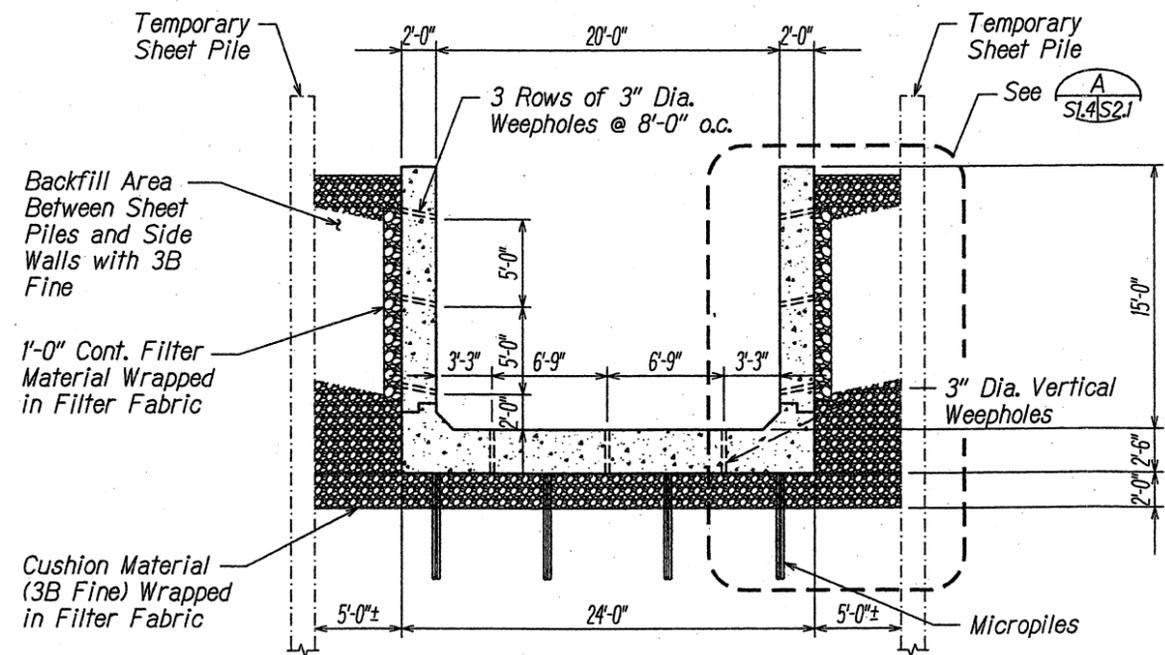
SHEET No. SI.3 OF 11 SHEETS

DATE	REVISION

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	HWY-0-04-98	2009	00	X



LONGITUDINAL SECTION A
Scale: 3/16" = 1'-0"
S1.1 | S1.4



TRANSVERSE SECTION B
Scale: 3/16" = 1'-0"
S1.1 | S1.4

DESIGNED BY	DATE
CHECKED BY	
APPROVED BY	
NO. OF SHEETS	
TOTAL SHEETS	

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.
APRIL 30, 2010
KSF, INC. LIC. EXP. DATE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

DROP STRUCTURE SECTIONS

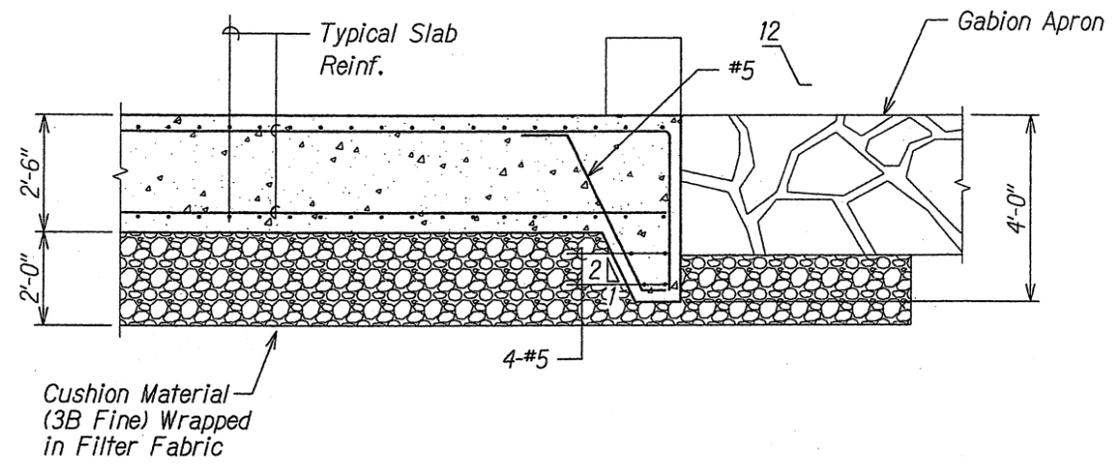
CASTLE HILLS ACCESS ROAD
Drainage Improvements
Project No. HWY-0-04-98

Scale: As Shown Date: March 2009

SHEET No. S1.4 OF 11 SHEETS

DATE	REVISION

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	HWY-0-04-98	2009	00	X



**DROP STRUCTURE
CUTOFF WALL SECTION**
Scale: 1/2" = 1'-0"
A
S1.4 S2.3

BY PLOTTED BY	DATE
TRACED BY	
DESIGNED BY	
QUANTITIES BY	
CHECKED BY	
ORIGINAL PLAN	
NOTE BOOK	
No.	

THIS WORK WAS PREPARED BY ME.
OR UNDER MY SUPERVISION.
APRIL 30, 2010
LIC. EXP. DATE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

DROP STRUCTURE SECTION

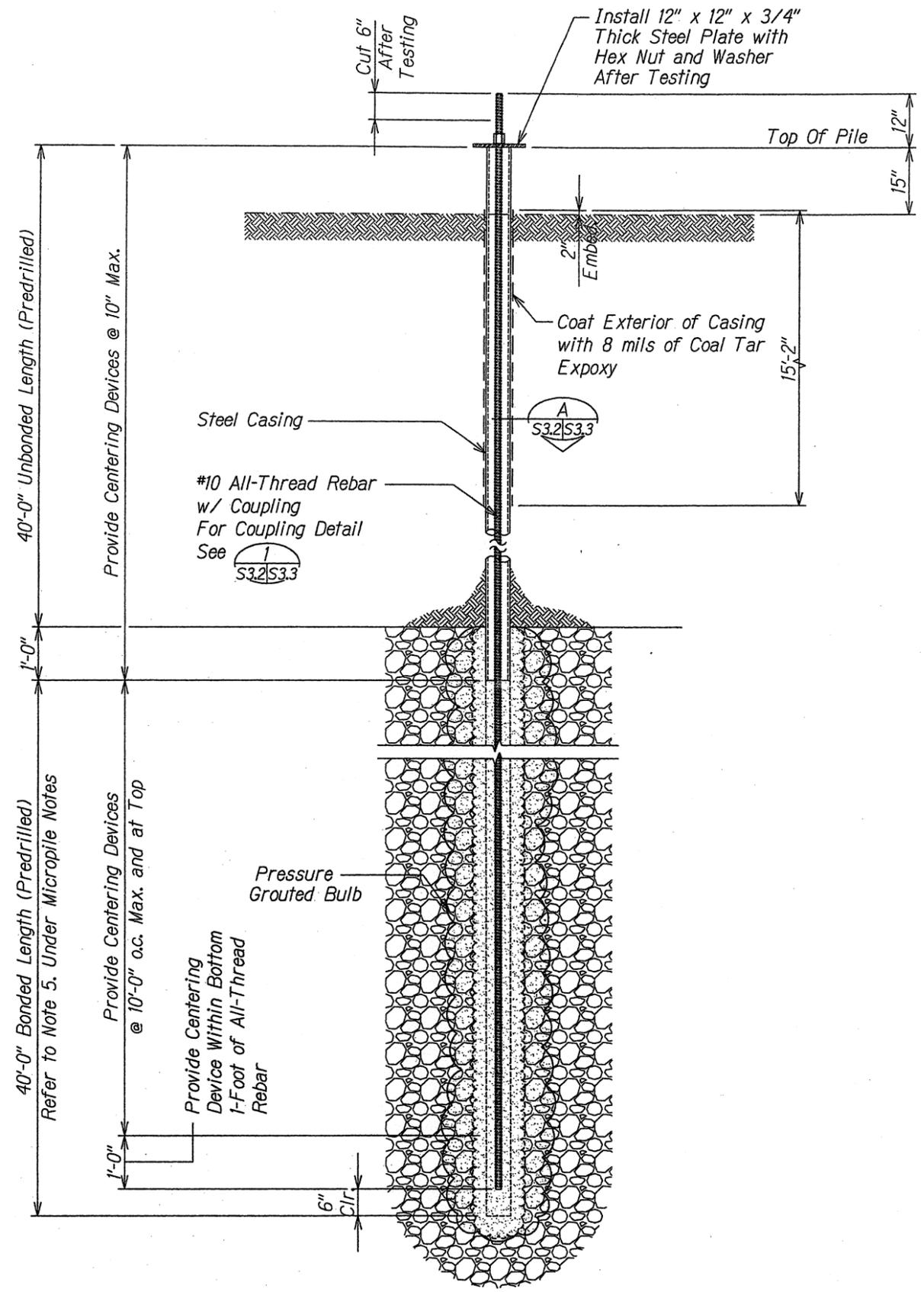
CASTLE HILLS ACCESS ROAD
Drainage Improvements
Project No. HWY-0-04-98

Scale: As Shown Date: March 2009

SHEET No. S23 OF 11 SHEETS

DATE	REVISION

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	HWY-0-04-98	2009	00	X



DESIGNED BY	DATE
TRACED BY	
DESIGNED BY	
QUANTITIES BY	
CHECKED BY	
NO.	

TYPICAL PREPRODUCTION MICROPILE DETAIL $\frac{1}{S3.2|S3.2}$
 Scale: 3/4" = 1'-0"

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.
 KSF, INC. APRIL 30, 2010 U.C. EXP. DATE

STATE OF HAWAII
 DEPARTMENT OF TRANSPORTATION
 HIGHWAYS DIVISION

PREPRODUCTION MICROPILE DETAIL

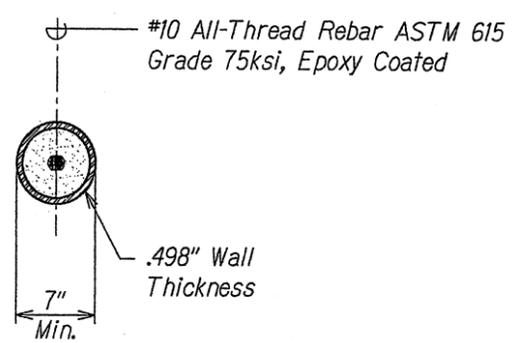
CASTLE HILLS ACCESS ROAD
Drainage Improvements
Project No. HWY-0-04-98

Scale: As Shown Date: March 2009

SHEET No. S3.2 OF 11 SHEETS

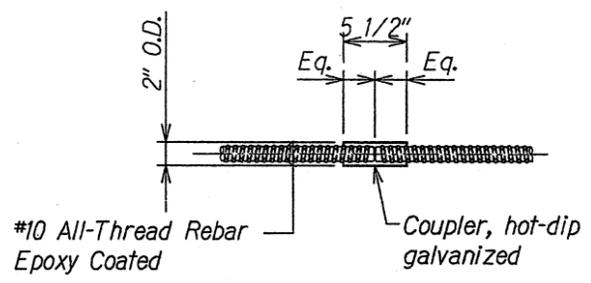
DATE	REVISION

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	HWY-0-04-98	2009	00	X



- NOTES:**
1. Centering devices (centralizers) shall be fabricated from plastic or material non-detrimental to the reinforcing steel.
 2. The centralizer shall support the reinforcing such that a minimum of 2" of grout cover is provided and shall permit grout to flow freely up the drill hole.

TYPICAL MICROPILE SECTION A
Scale: 1 1/2" = 1'-0" S3.1 | S3.3



NOTE:
Coupler to develop full ultimate tensile strength of All-Thread Rebar.

COUPLER DETAIL OF ALL-THREAD REBAR 1
Scale: 1 1/2" = 1'-0" S3.1 | S3.3

COUPLER INSTALLATION PROCEDURE

1. Apply corrosion inhibiting grease to the bare ends of the bars and the inside of the coupler.
2. Connect the two bar ends with the coupler. Each end shall be screwed into the coupler half the length of the coupler.
3. Add another coat of grease to bare bar and coupler and wrap with two layers of denso tape.

PREPARATION FOR FIELD CUT BARS

1. Cut corrosion protection and all-thread rebar with an abrasive saw (DO NOT USE A TORCH).

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.
KSF, INC. APRIL 30, 2010 U.C. EXP. DATE

DESIGNED BY	DATE
CHECKED BY	
IN CHARGE	
APPROVED BY	
DATE	
REVISION	
NO.	

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

MICROPILE DETAIL AND SECTION

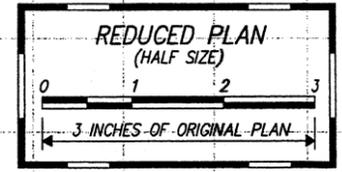
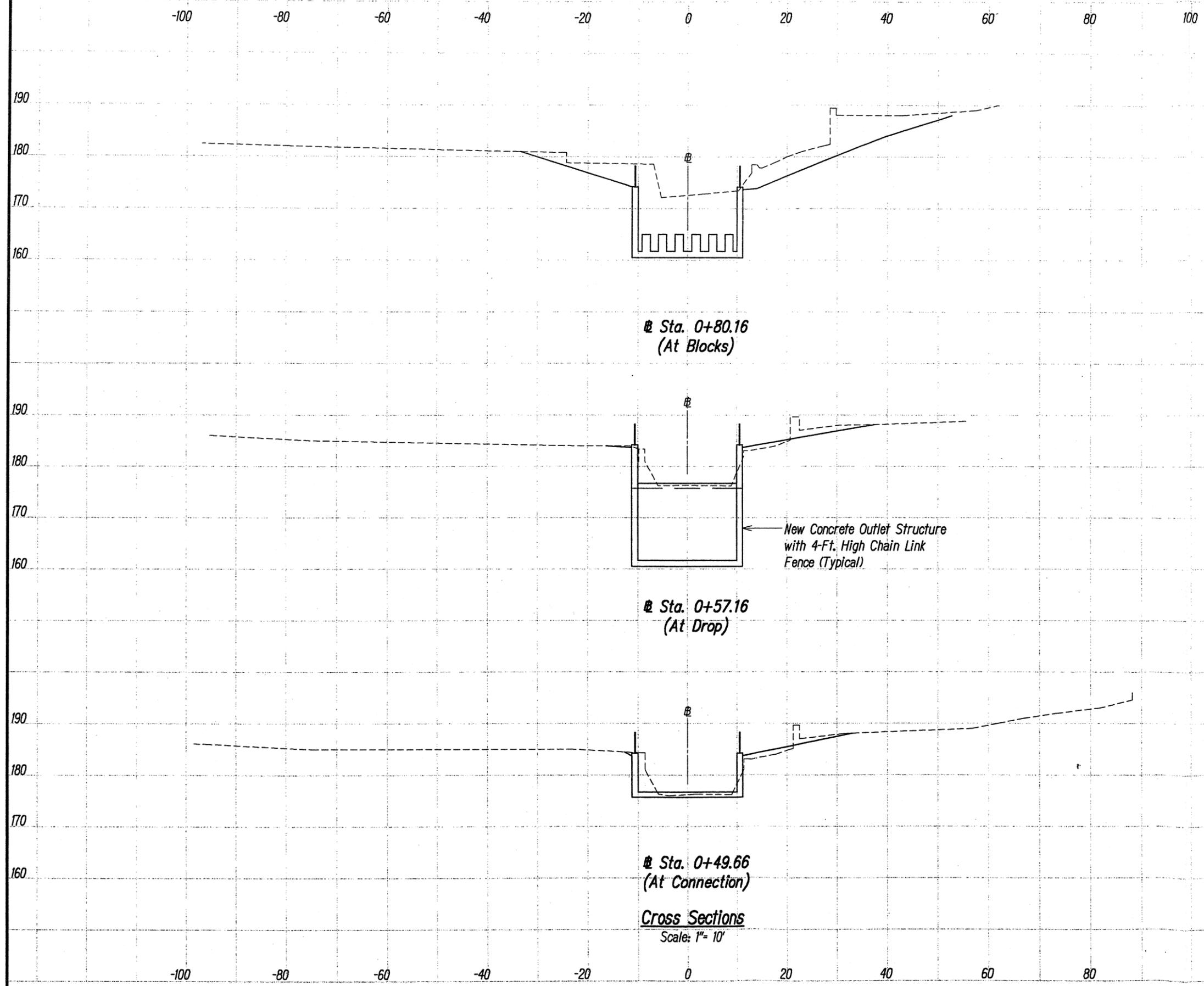
CASTLE HILLS ACCESS ROAD
Drainage Improvements
Project No. HWY-0-04-98

Scale: As Shown Date: March 2009

SHEET No. S3.3 OF 11 SHEETS

DATE	REVISION

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	HWY-0-04-98	2009	31	33



THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.

APRIL 30, 2010
 Lic. Exp. Date
 PerEn, Inc.
 dba PAPE ENGINEERING

STATE OF HAWAII
 DEPARTMENT OF TRANSPORTATION
 HIGHWAYS DIVISION

CROSS SECTIONS

CASTLE HILLS ACCESS ROAD
 Drainage Improvements
 Project No. HWY-0-04-98

Scale: As Shown Date: March 2009

SHEET No. XSI OF XS3 SHEETS

Sta. 0+49.66
 (At Connection)

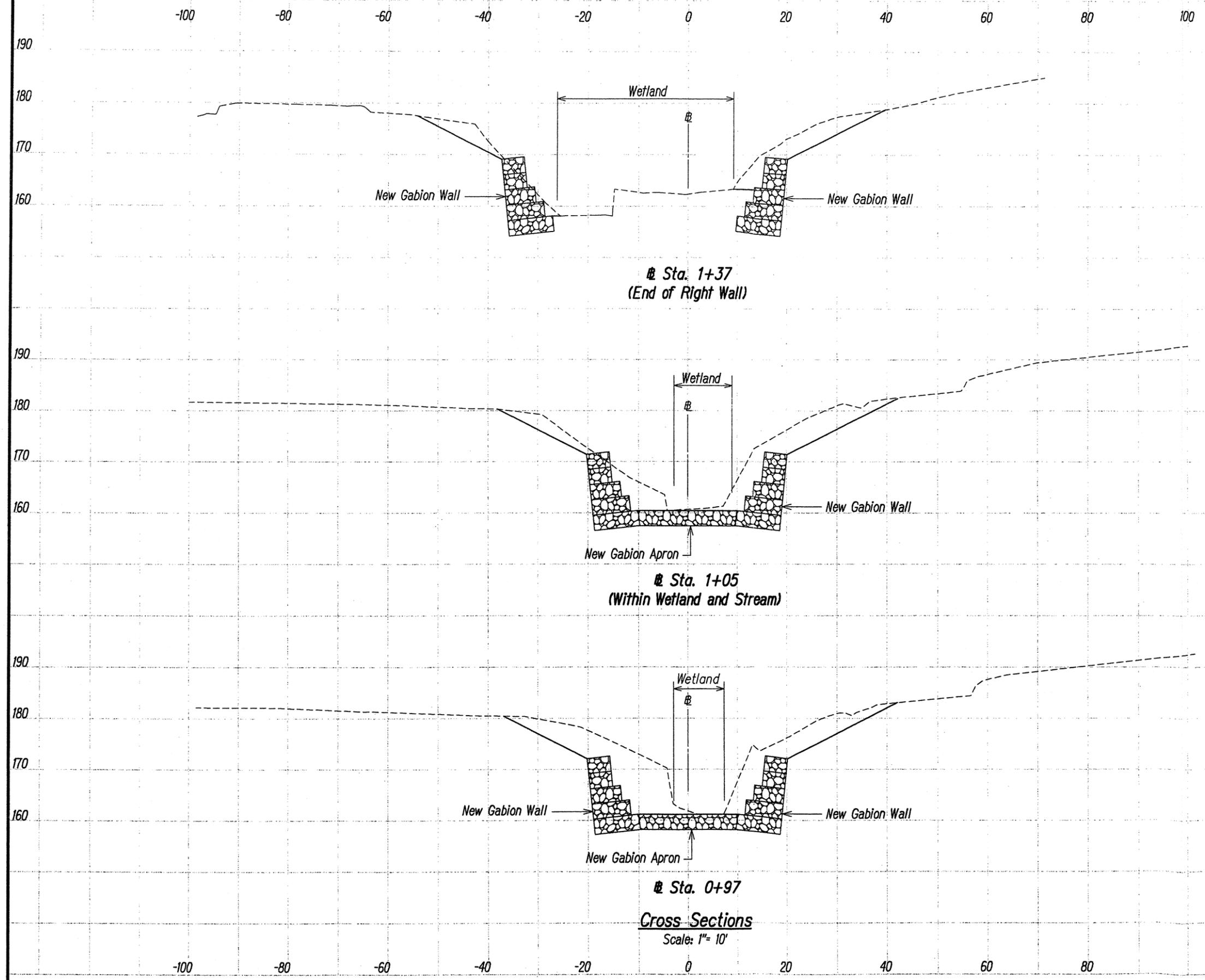
Cross Sections
 Scale: 1" = 10'

ORIG. DATE	URVEY PLOTTED BY
PLAN	DRAWN BY
NOTE BOOK	DESIGNED BY
No.	QUANTITIES BY
	CHECKED BY

Mod. 18 Mar 2009 - 11:05am
 D:\PROJECTS\CASTLE HILLS ACCESS ROAD\31-Cashills-XSect-01.dwg

DATE	REVISION

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	HWY-0-04-98	2009	32	33



THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.

APRIL 30, 2010
LIC. EXP. DATE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

CROSS SECTIONS
CASTLE HILLS ACCESS ROAD
Drainage Improvements
Project No. HWY-0-04-98

Scale: As Shown Date: March 2009
SHEET No. XS2 OF XS3 SHEETS

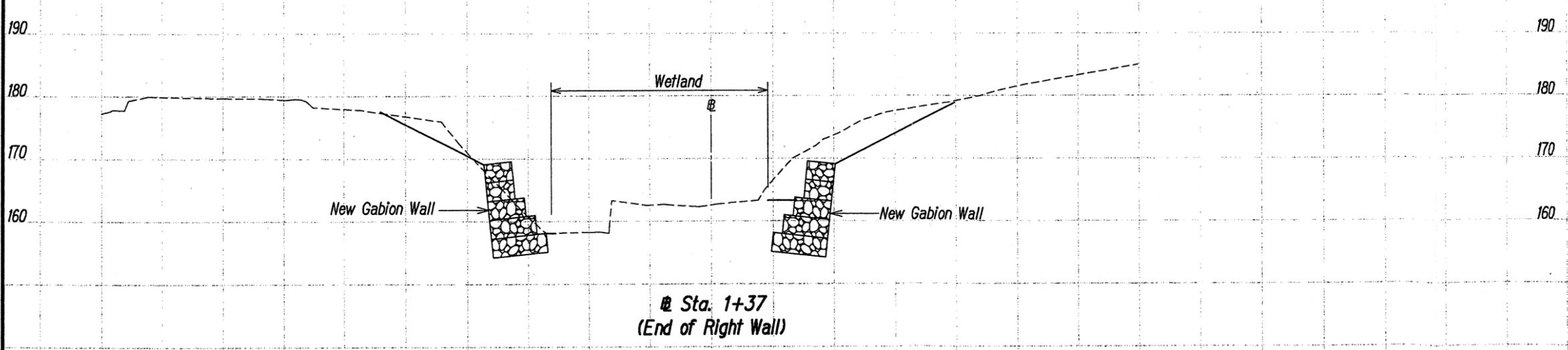
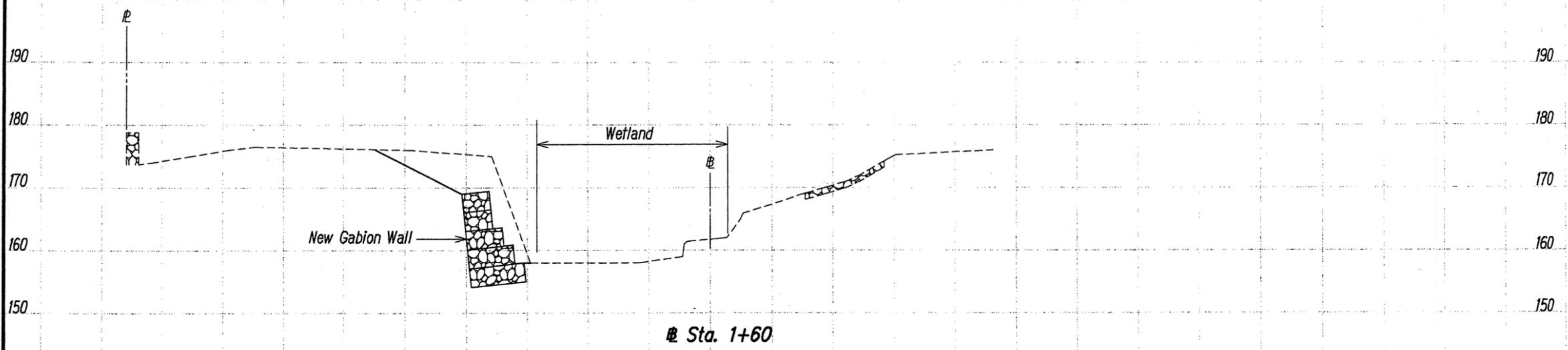
DATE	
ORIGIN	
DESIGNED BY	
TRACED BY	
NOTE BOOK	
QUANTITIES BY	
CHECKED BY	
No.	

Mar 18 2009 10:42 am
D:\PROJECTS\CASTLE HILLS ACCESS ROAD\32-Cashills-XSect-02.dwg

DATE	REVISION

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	HWY-0-04-98	2009	33	33

-100 -80 -60 -40 -20 0 20 40 60 80 100



Cross Sections
Scale: 1" = 10'

REDUCED PLAN
(HALF SIZE)

0 1 2 3

3 INCHES OF ORIGINAL PLAN



THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.

APRIL 30, 2010
LIC. EXP. DATE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

CROSS SECTIONS

CASTLE HILLS ACCESS ROAD
Drainage Improvements
Project No. HWY-0-04-98

Scale: As Shown Date: March 2009

SHEET No. XS3 OF XS3 SHEETS

DATE	REVISION

DATE	
CHECKED BY	
DESIGNED BY	
QUANTITIES BY	
NOTE BOOK	
PLAN	
DATE	

Wed, 18 Mar 2009 - 10:43am
D:\PROJECTS\CASTLE HILLS ACCESS ROAD\33-Cashills-XSect-03.dwg