

Point ID	North	East	Elevation	Description
ABFL1A	-13417.947	6917.018	62.863	FENCE LINE
ABFL2AG	-13384.390	6899.452	64.274	GATE OPENING
ABFL3AG	-13371.066	6892.415	64.314	GATE OPENING
ABFL4A	-13338.370	6857.191	60.174	FENCE LINE
ABFL5A	-13253.471	6821.796	60.173	"
ABFL6A	-13260.075	6803.866	60.373	"
ABFL7A	-13266.080	6785.553	60.115	"
ABFL8A	-13271.145	6766.984	59.569	"
ABFL9A	-13275.253	6747.646	59.891	"
ABFL10A	-13276.818	6728.040	60.415	"
ABFL11A	-13276.354	6718.316	60.616	"
ABFL12A	-13273.905	6708.886	60.679	"
ABFL13A	-13270.271	6699.781	60.782	"
ABFL14A	-13265.611	6690.962	64.038	"
ABFL15A	-13254.851	6674.690	64.356	"
ABFL16A	-13241.122	6659.291	64.394	"
ABFL17A	-13226.632	6645.881	64.478	"
ABFL18A	-13210.816	6635.855	64.458	"
ABFL19A	-13193.265	6625.919	64.754	"
ABFL20A	-13175.531	6616.481	64.873	"
ABFL21A	-13149.425	6603.750	64.905	"
ABFL22A	-13122.135	6593.095	64.896	"

Earthwork Summary Additive Quantities
for Bid Additive Alternate 1
(For Permit Purposes Only)

Exc. =	0 cy
Emb. =	173,000 cy
Total Exc. =	173,000 cy

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

A circular professional engineer seal for Greg H. Hiyakunoto. The outer ring contains the text "GREG H. HIYAKUNOTO" at the top and "HAWAII, U.S.A." at the bottom, separated by two stars. The center of the seal contains the text "LICENSED PROFESSIONAL ENGINEER" and "No. 6662-C".

THIS WORK WAS PREPARED BY ME OR
UNDER MY SUPERVISION.

4/12/08 April 30, 2008
SIGNATURE EXPIRATION DATE OF
THE LICENSE

Channel & Curve Data

$\Delta = 65^{\circ}20'20''$
 $\frac{\Delta}{2} = 32^{\circ}40'10''$
 $R = 1,223.00'$
 $T = 784.23'$
 $C = 1,320.33'$
 $L_c = 1,394.68'$

		As Built - FO#12
X 21.2		As Built - RFI#3
		As Built - FO#4
		As Built - RFI#6
1/18/05		As Built - RFI#1
DATE	REVISION	

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

DRAINAGE CHANNEL PLAN - 1

North-South Road
Phase 1A
F.A.I. Proj. No. STP-8930(1)

Scale: 1" = 100' Date: Dec 22, 2004

SHEET No. AC1.1 OF 8 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	STP-8930(1)	2005	134	144

DESIGNED BY	DATE
CHECKED BY	
NOTED BY	
QUANTITIES BY	
CHECKED BY	

Matchline: @ Sta. 17+00 Drainage Channel - See Sht. AC1.1

Matchline: @ Sta. 47+00 Drainage Channel - See Sht. AC1.3

Channel Curve Data

$\Delta = 25^{\circ}06'00''$
 $\Delta/2 = 12^{\circ}33'00''$
 $R = 1,777.00'$
 $T = 395.58'$
 $C = 772.25'$
 $L_c = 778.46'$

Bid Additive Alternate 1
Channel Bottom Widened to 60'

Distance Units: US Survey Feet

Point ID	North	East	Elevation	Description
FNCE1	-11458.236	7312.689	80.881	FENCE LINE
FNCE2	-11459.564	7314.112	80.368	"
FNCE3	-11422.329	7342.011	80.446	"
GATE1	-11442.565	7325.378	80.571	GATE OPENING
GATE2	-11454.556	7315.683	80.554	"

Drainage Channel Plan - 2

Scale: 1" = 100'

Note:
Aerial Topographic
Survey is in Meters.

Graphic Scale:

1" = 100' 100' 50' 0 100' 200'
Scale in Feet

LEGEND FOR AS-BUILT POSTINGS

Squiggly line for as-built deletion
 Double line for as-built deletion
 Roadway Text for as-built posting



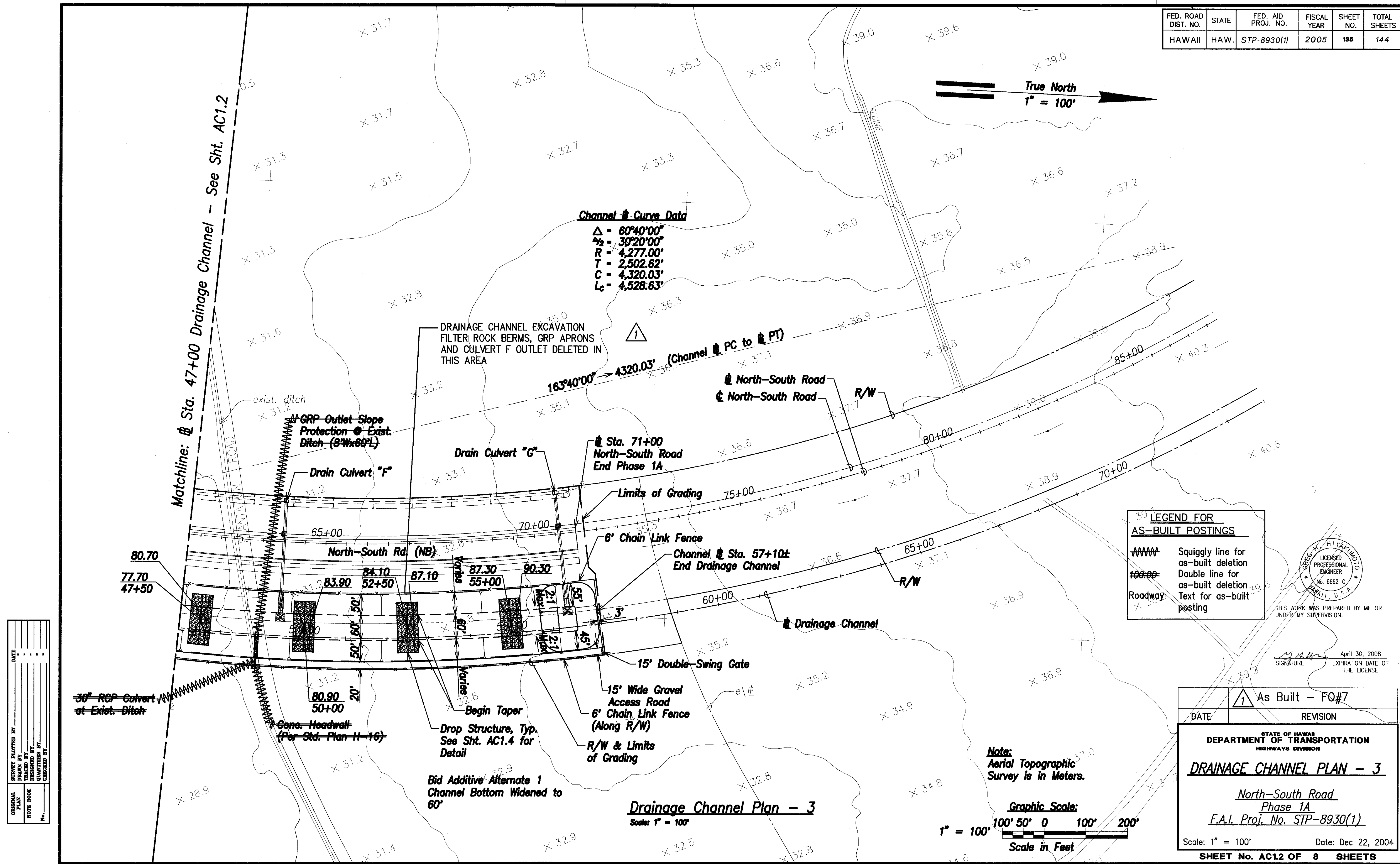
THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.

April 30, 2008
 SIGNATURE EXPIRATION DATE OF THE LICENSE

1/18/05	As Built - FO#7
DATE	REVISION
STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION DRAINAGE CHANNEL PLAN - 2 North-South Road Phase 1A F.A.I. Proj. No. STP-8930(1)	
Scale: 1" = 100'	Date: Dec 22, 2004
SHEET No. AC1.2 OF 8 SHEETS	

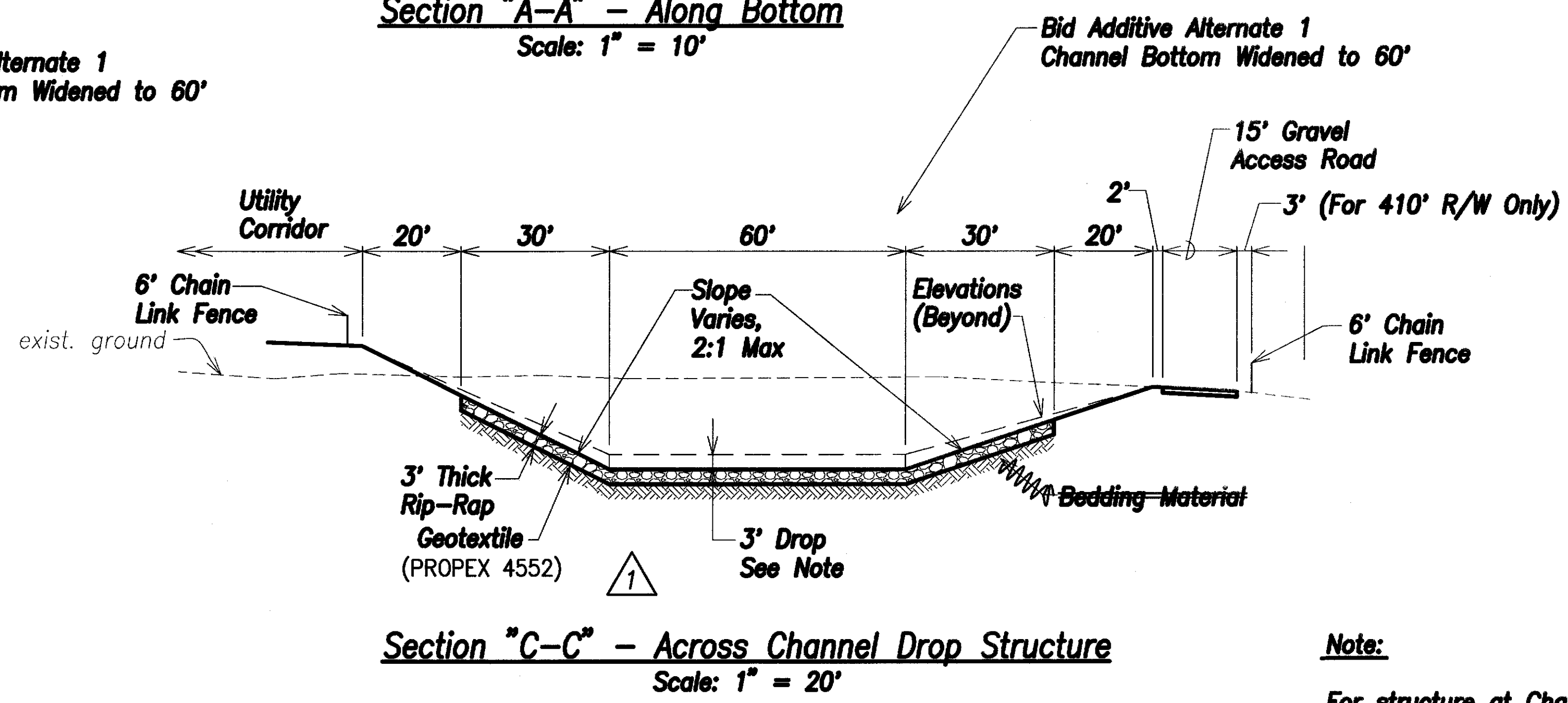
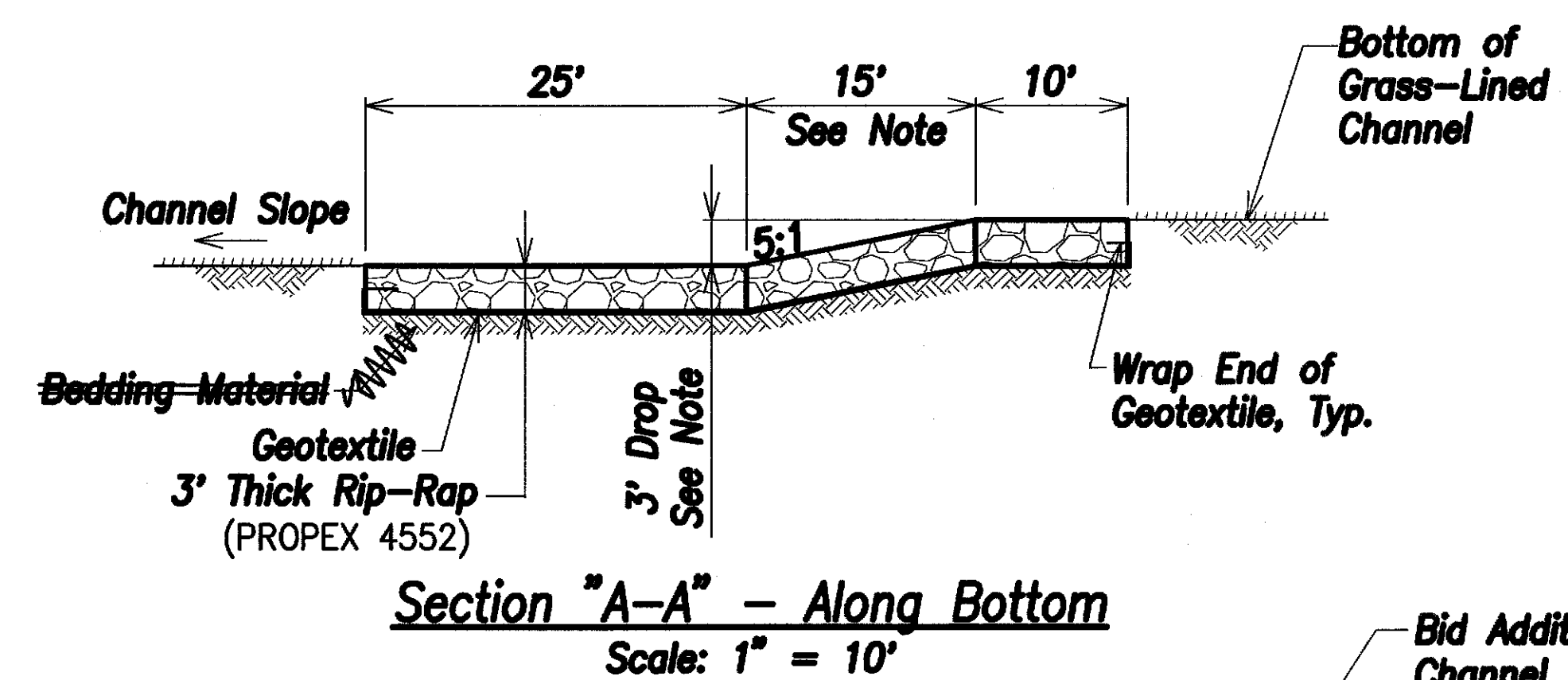
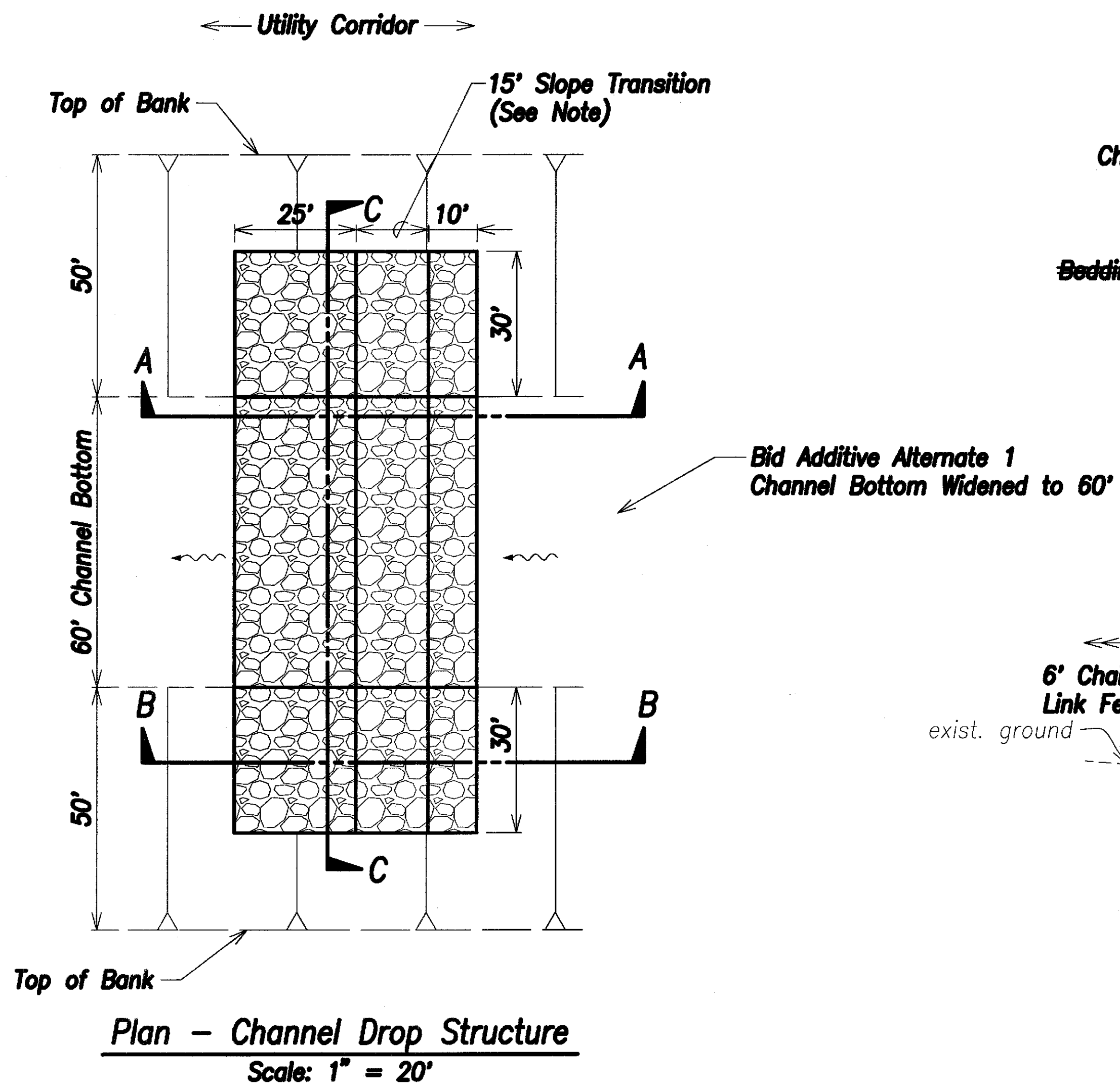
"AS-BUILT" Bid Additive Alternate 1 134

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEET.
HAWAII	HAW.	STP-8930(1)	2005	135	144

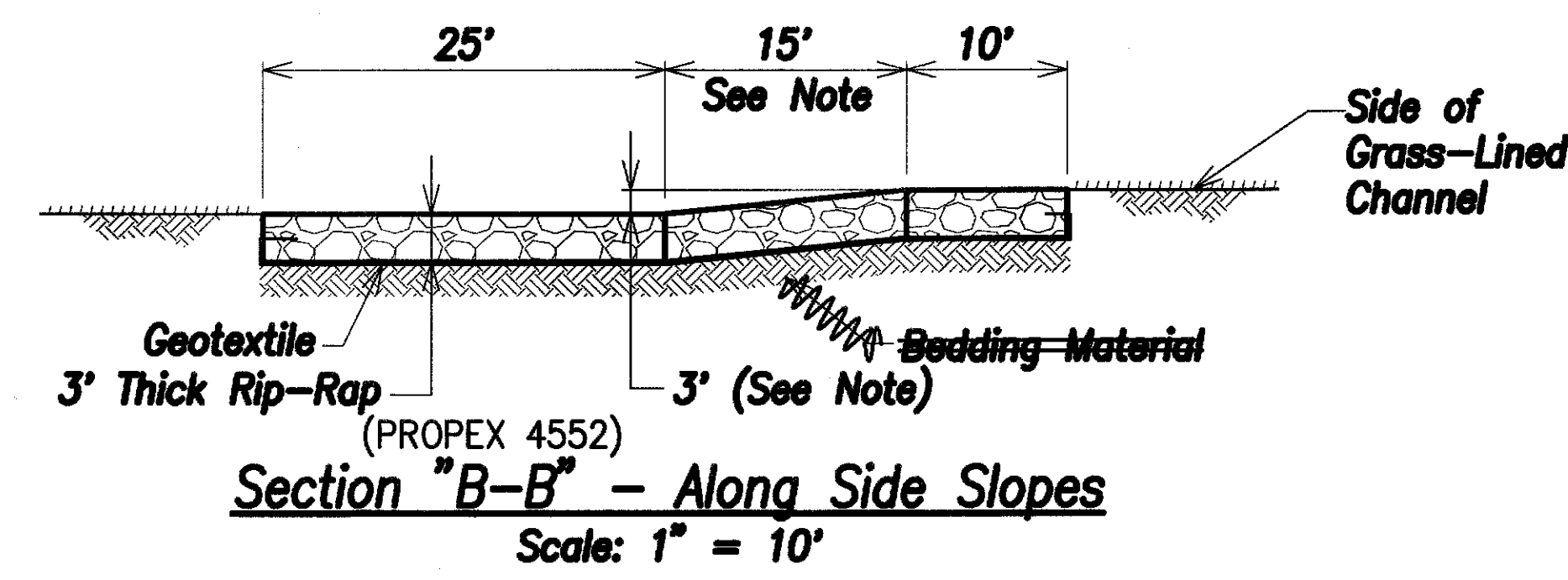


"AS-BUILT" Bld Additive Alternate 1 135

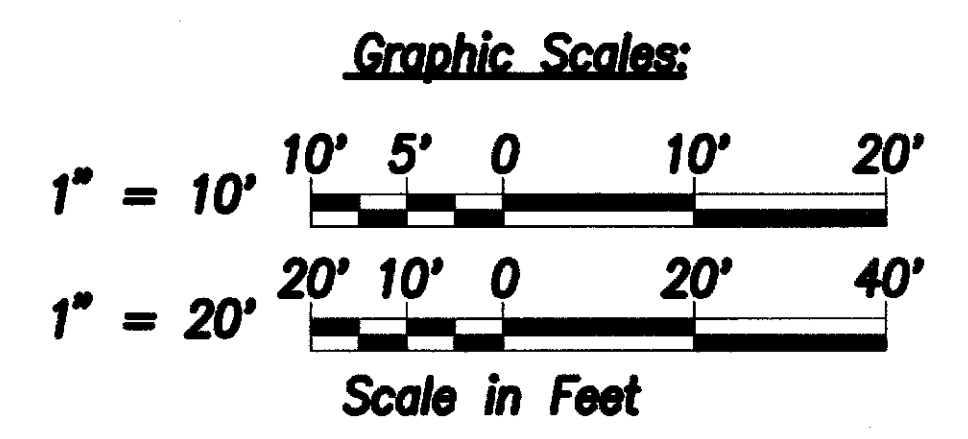
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	STP-8930(1)	2005	136	144



Note:
For structure at Channel Sta. 28+00, drop height is 2' and length is 10'.



LEGEND FOR AS-BUILT POSTINGS	
	Squiggly line for as-built deletion
	Double line for as-built deletion
	Text for as-built posting



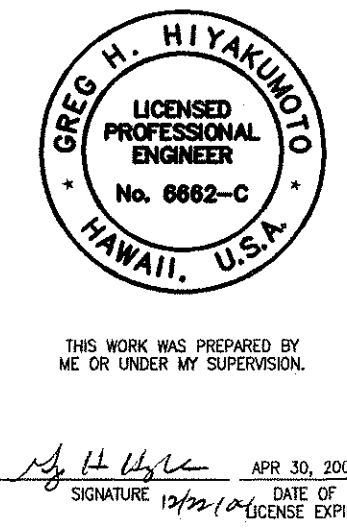
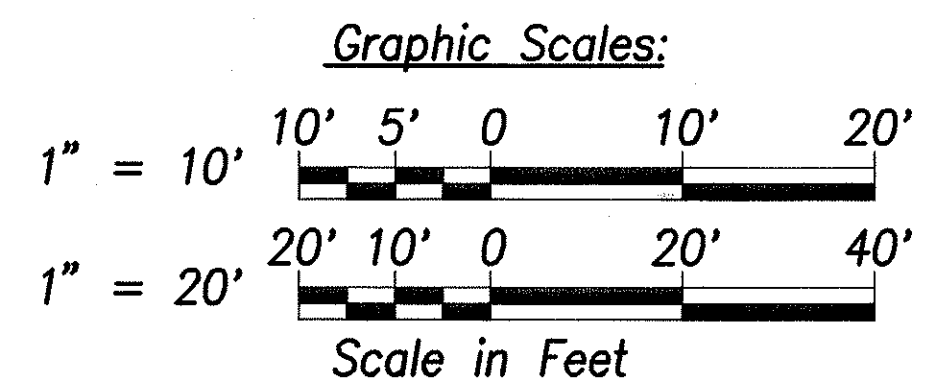
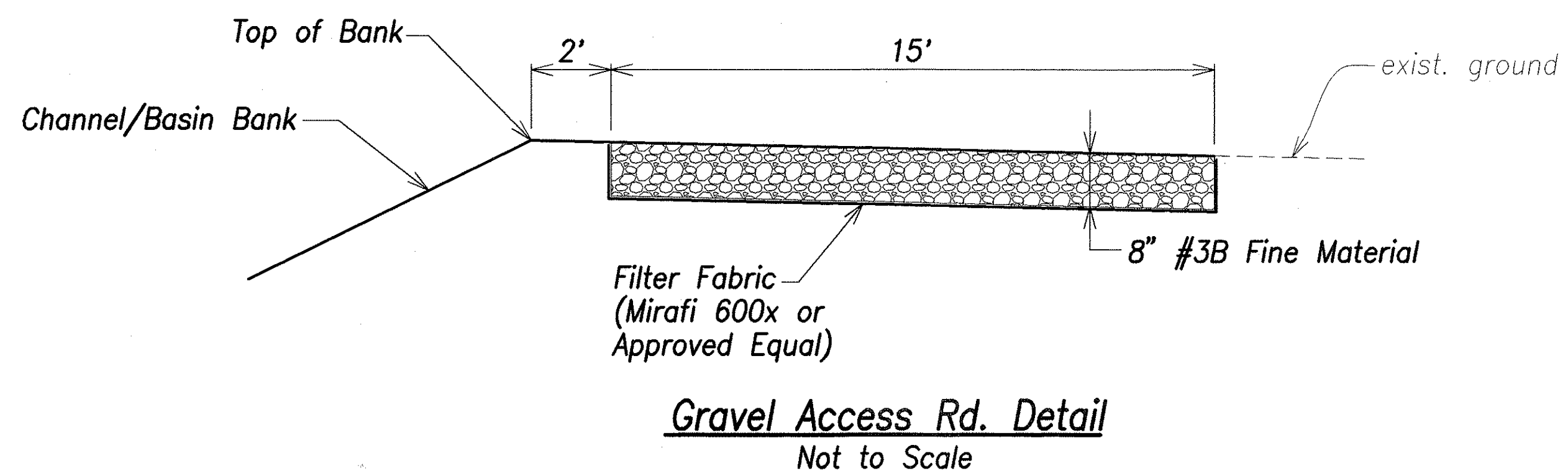
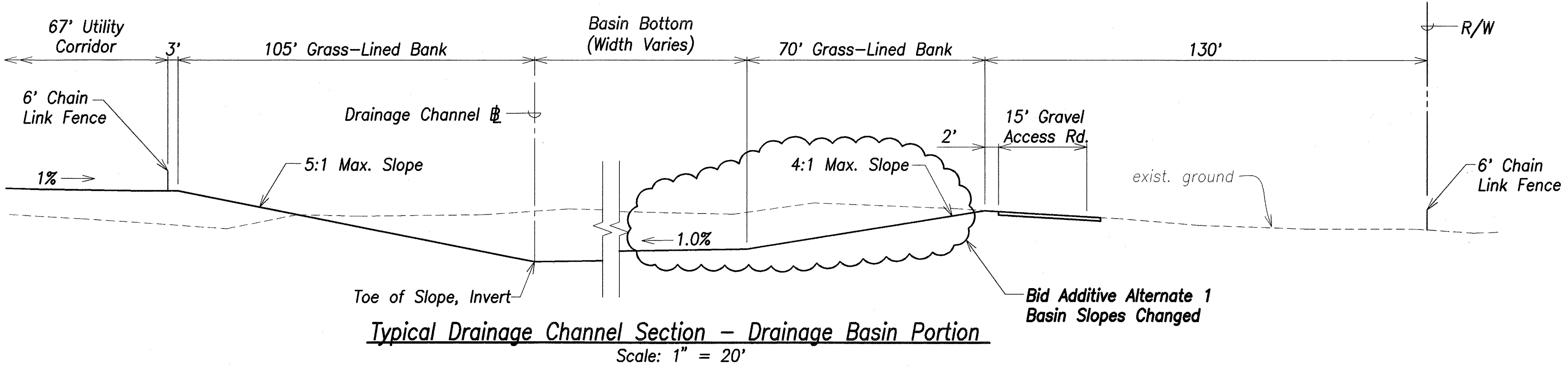
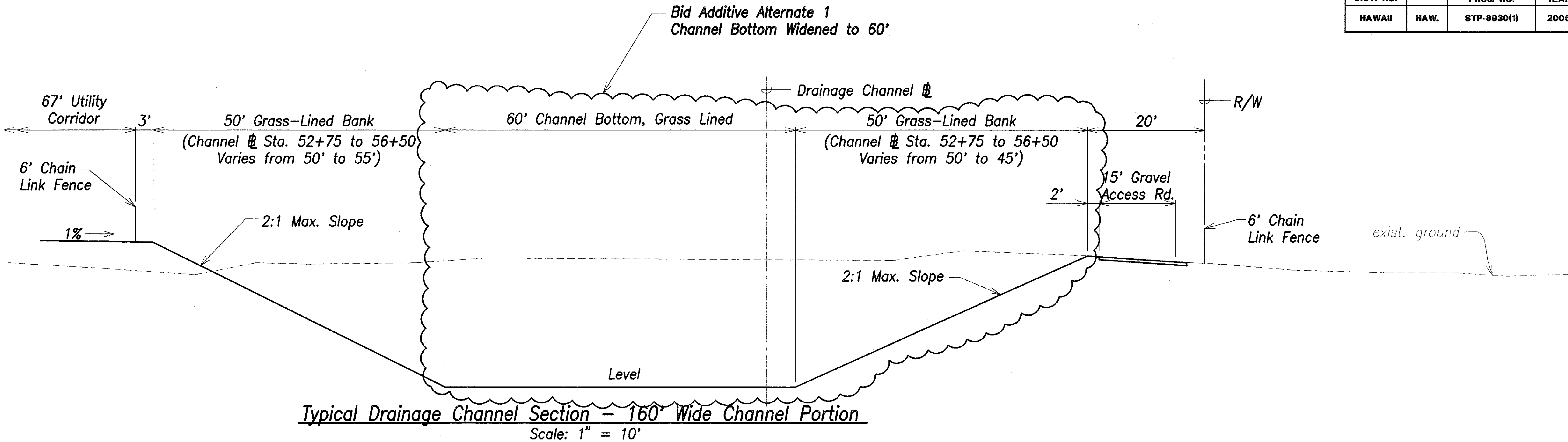
GREG H. HIYAKUNO
LICENSED PROFESSIONAL ENGINEER
No. 6662-C
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.

Signature: *[Signature]* April 30, 2008
EXPIRATION DATE OF THE LICENSE

1/18/05	As Built - RFI#13
DATE	REVISION
STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION	
DROP STRUCTURE DETAIL	
North-South Road Phase 1A F.A.I. Proj. No. STP-8930(1)	
Scale: As Shown	Date: Dec 22, 2004
SHEET No. AC1.4 OF SHEETS	

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	STP-8930(1)	2005	137	144



STATE OF HAWAII

DEPARTMENT OF TRANSPORTATION

HIGHWAYS DIVISION

DRAINAGE CHANNEL TYPICAL

SECTIONS & ACCESS ROAD DETAIL

North-South Road

Phase 1A

F.A.I. Proj. No. STP-8930(1)

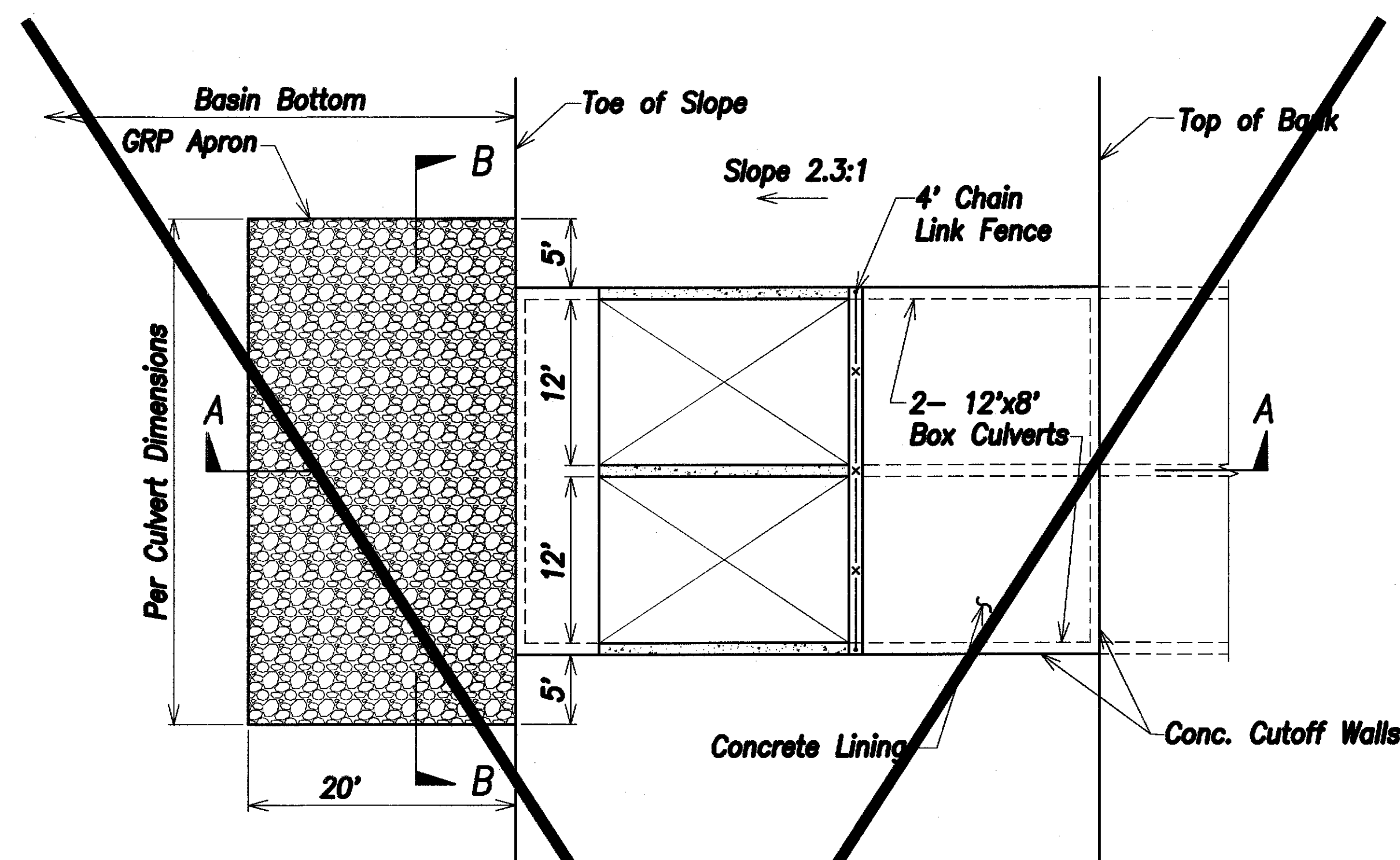
Scale: As Shown

Date: Dec 22, 2004

SHEET No.AC1.5 OF 59 SHEETS

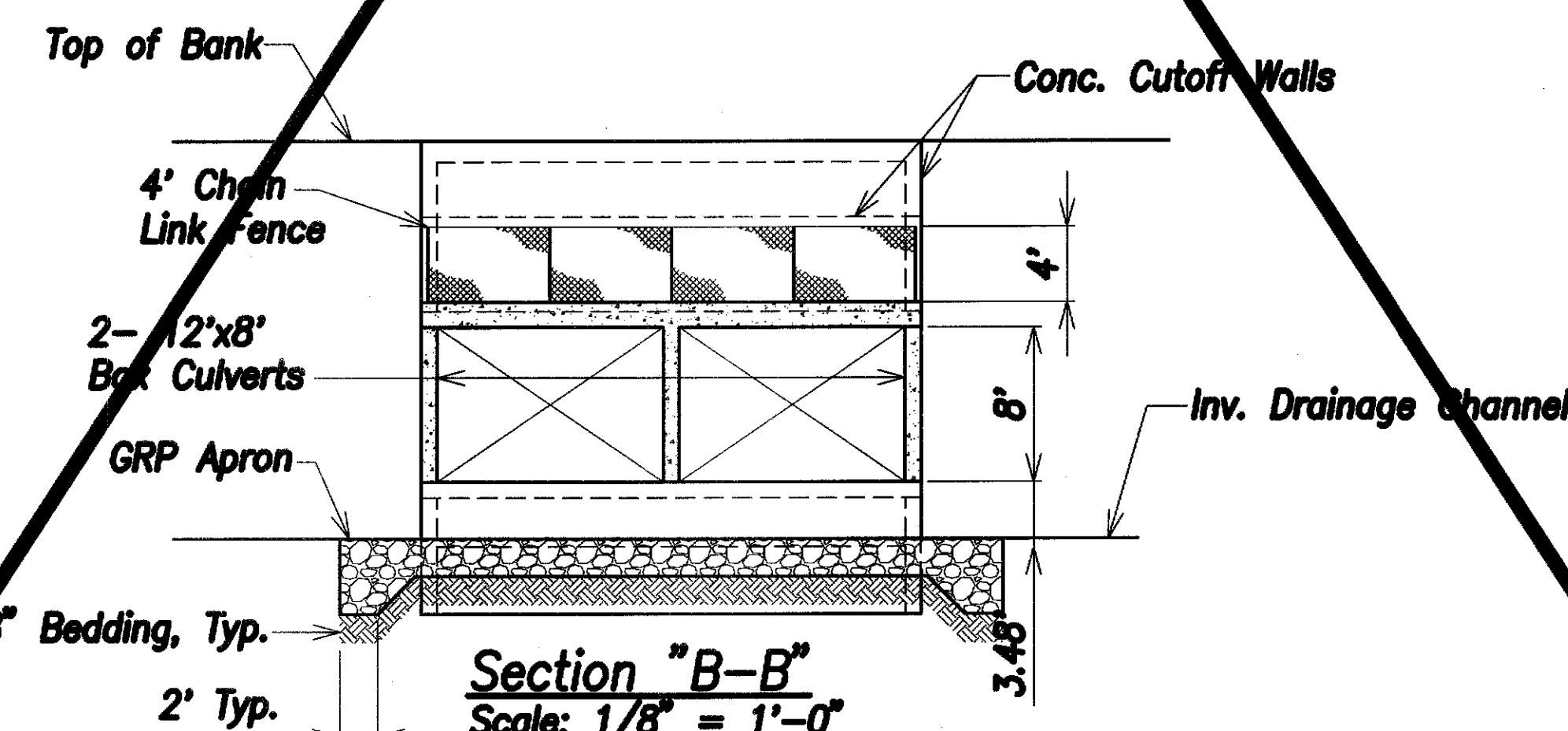
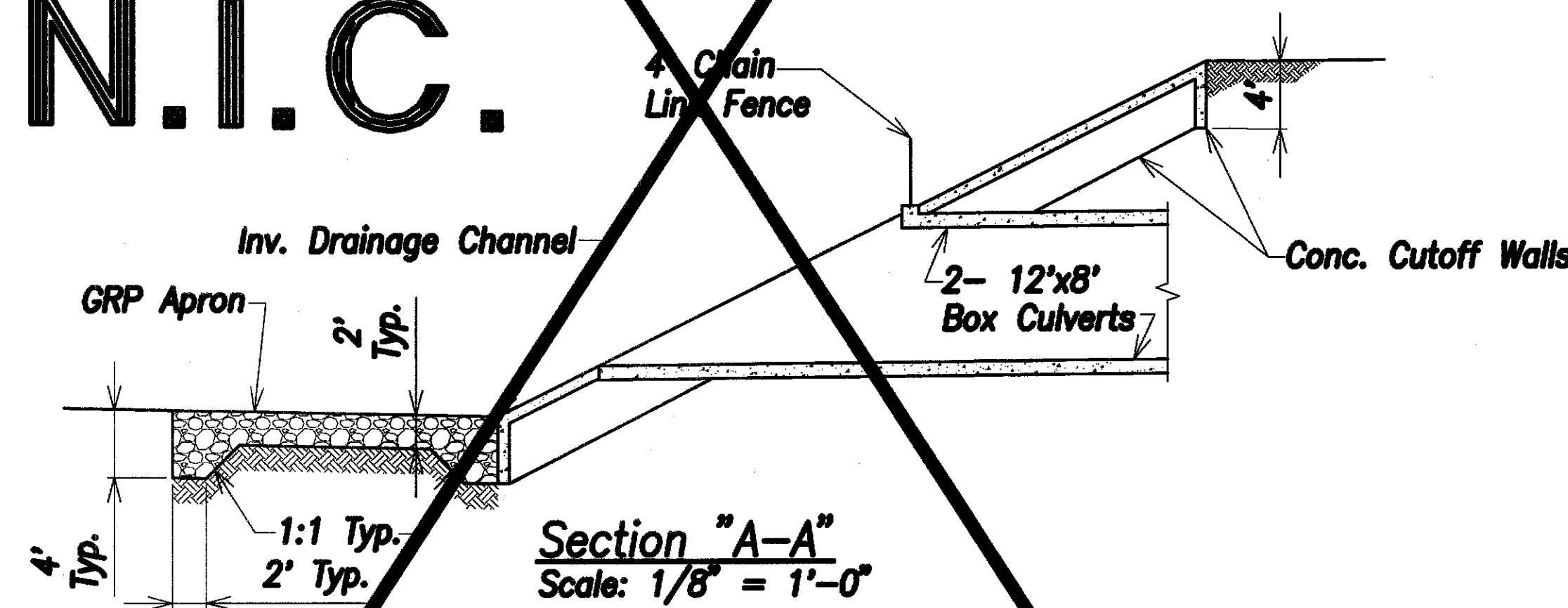
DESIGNED BY	DATE
CHECKED BY	
NOTED BY	
QUANTITIES BY	
TRACED BY	
PLANNED BY	
ORIGINAL PLAN	
No.	

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	STP-8930(1)	2005	CO 138	144

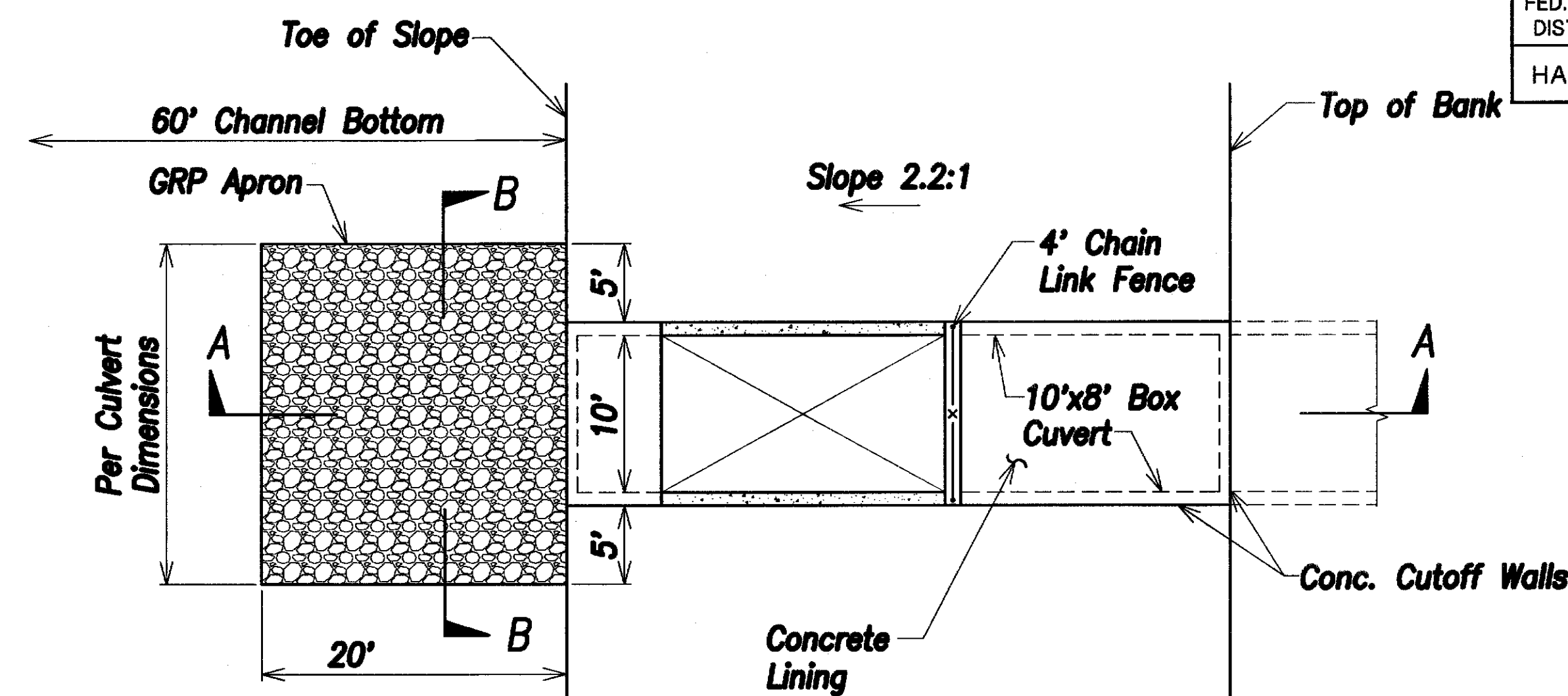


Plan
Scale: 1/8" = 1'-0"

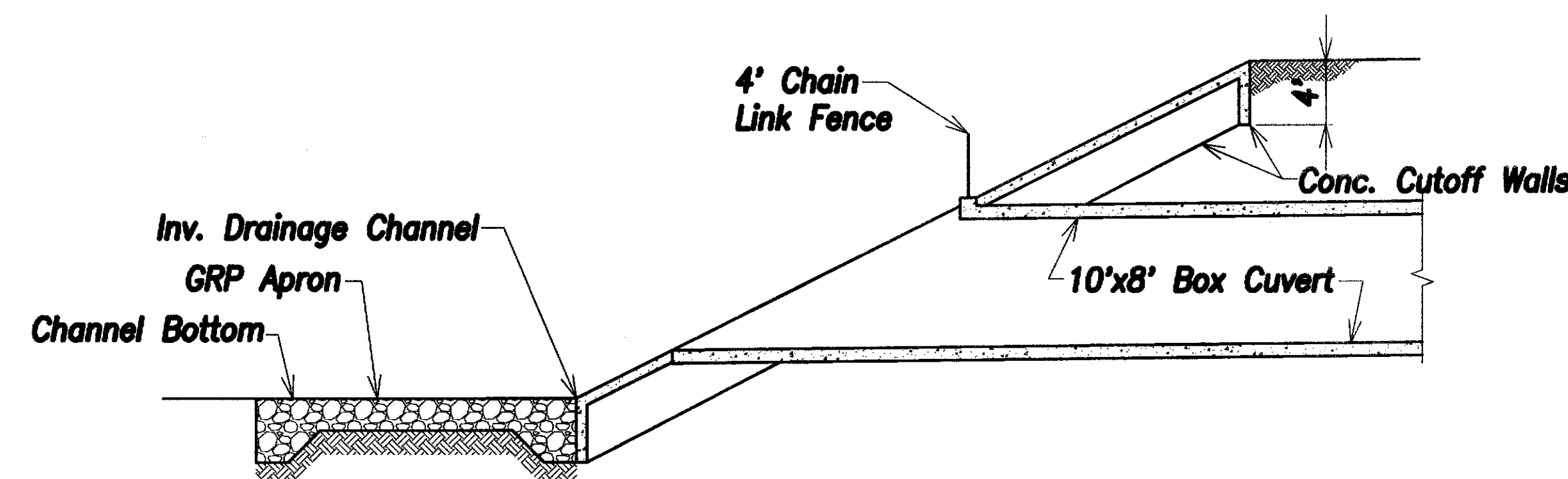
N.I.C.



Drain Culvert "C"
Scale: 1/8" = 1'-0"

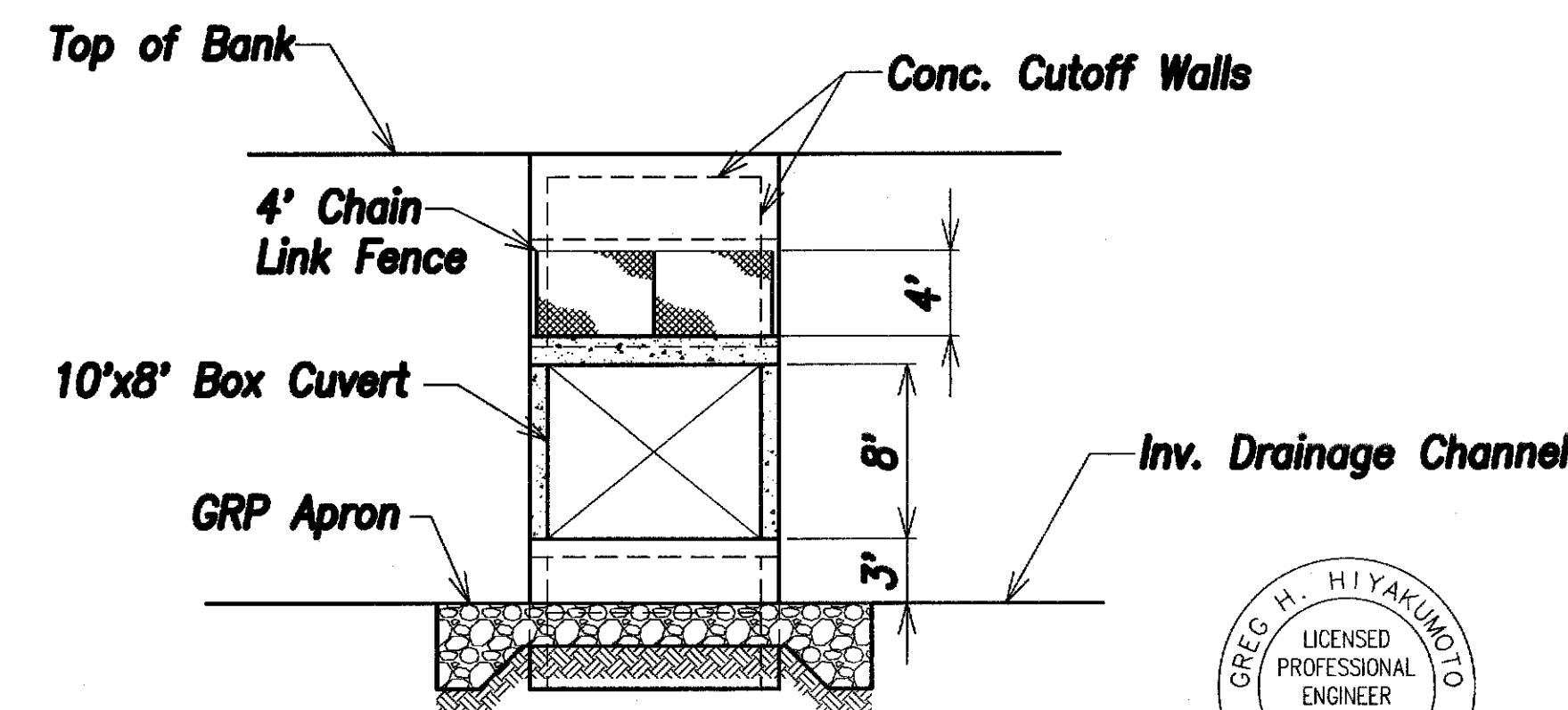


Plan
Scale: 1/8" = 1'-0"

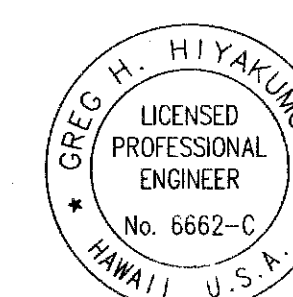


Section "A-A"
Scale: 1/8" = 1'-0"

Graphic Scales:
1/8" = 1'-0"
8' 4' 0' 8' 16'
Scale in Feet



Drain Culvert "D"
Scale: 1/8" = 1'-0"



THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.

SIGNATURE April 30, 2008 EXPIRATION DATE OF THE LICENSE

6/22/06	Deleted Culvert C
DATE	REVISION
STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION	
OUTLET DETAILS - 1	
North-South Road Phase 1A F.A.I. Proj. No. STP-8930(1)	
Scale: As Shown	Date: Dec 22, 2004
SHEET No. AC16 OF 8 SHEETS	

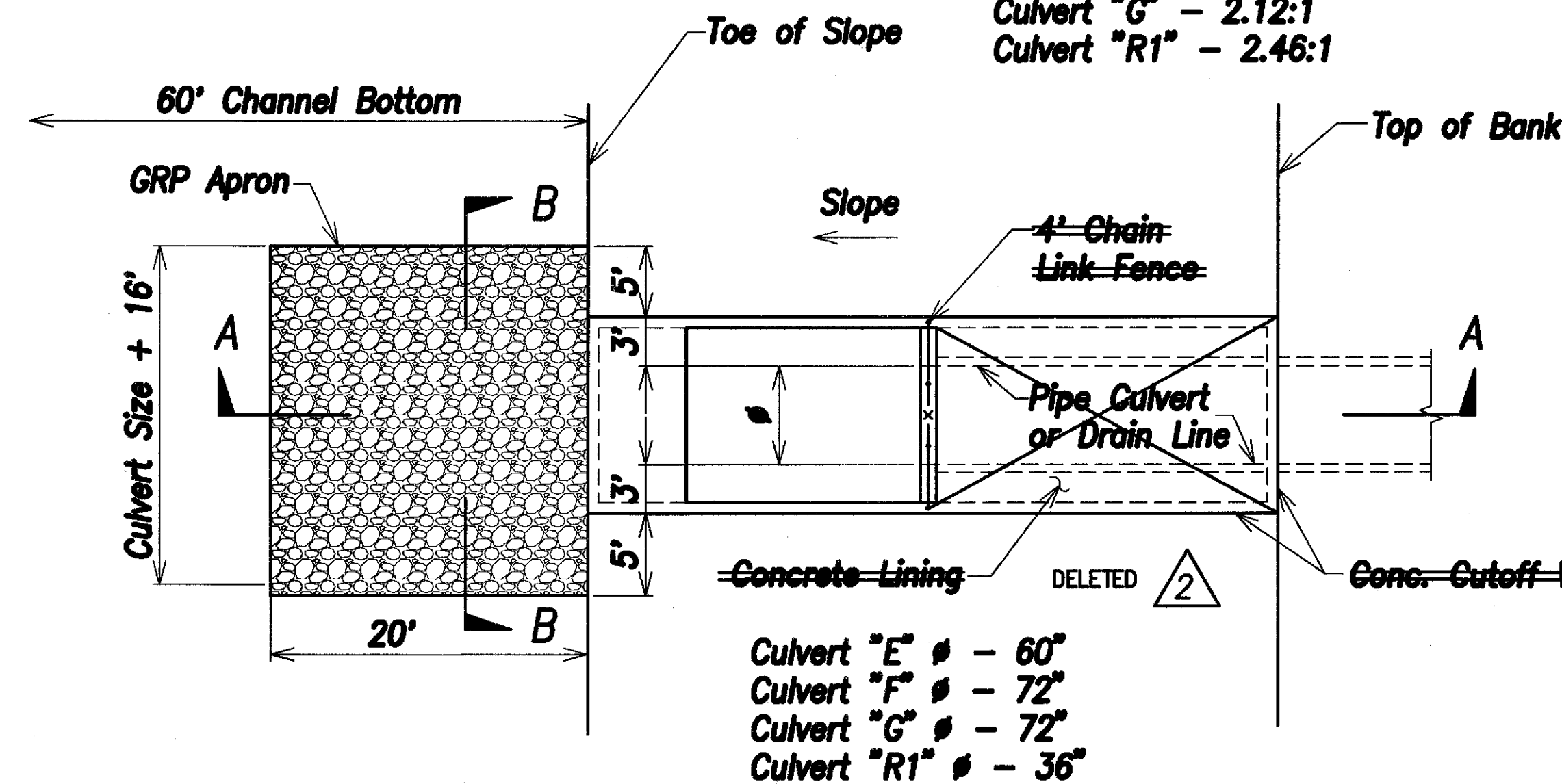
"AS-BUILT" Bid Additive Alternate 1 CO 138

SURVEY PLOTTED BY	DATE
DESIGNED BY	
TRACED BY	
NOTED BY	
QUANTITIES BY	
CHECKED BY	
ORIGINAL PLAN	No.

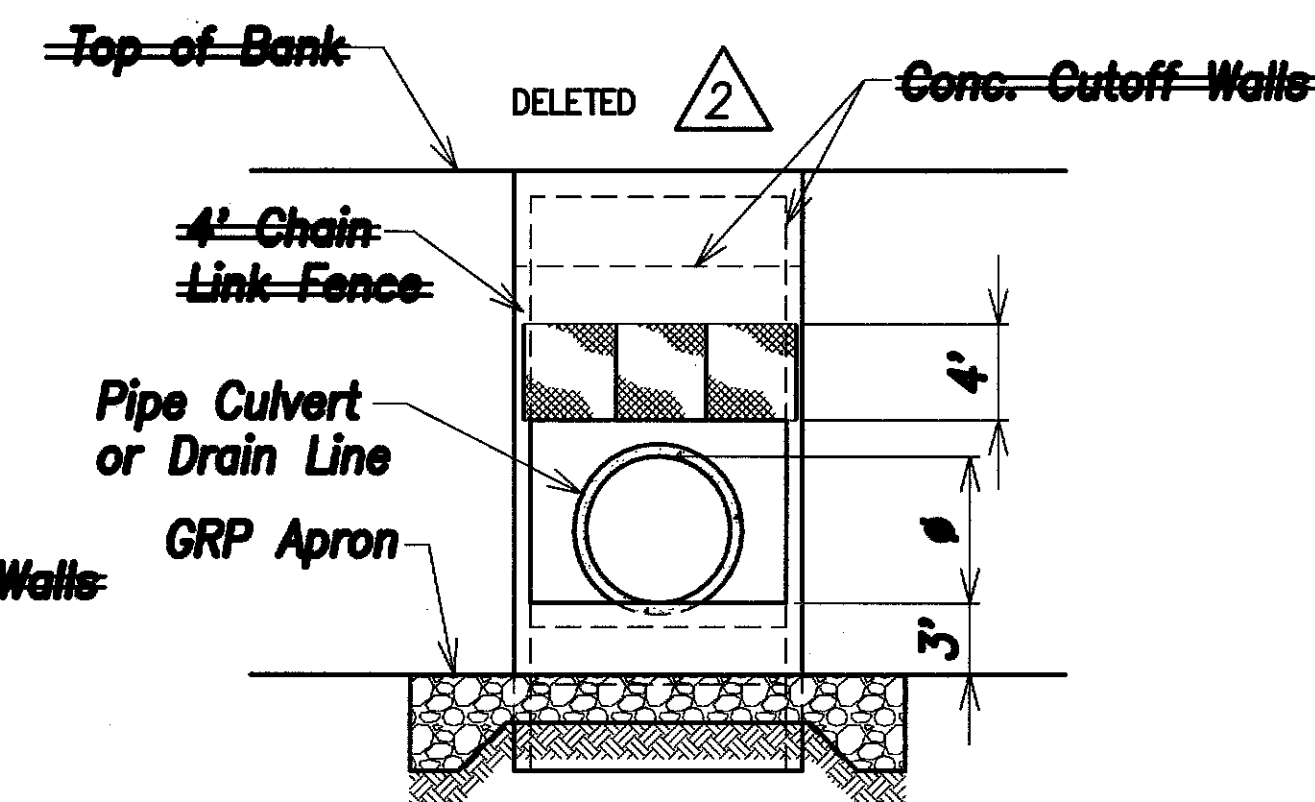
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	STP-8930(1)	2005	139	144

Bid Additive Alternate 1
Channel Bottom Widened to 60',
Change in Shape of Apron

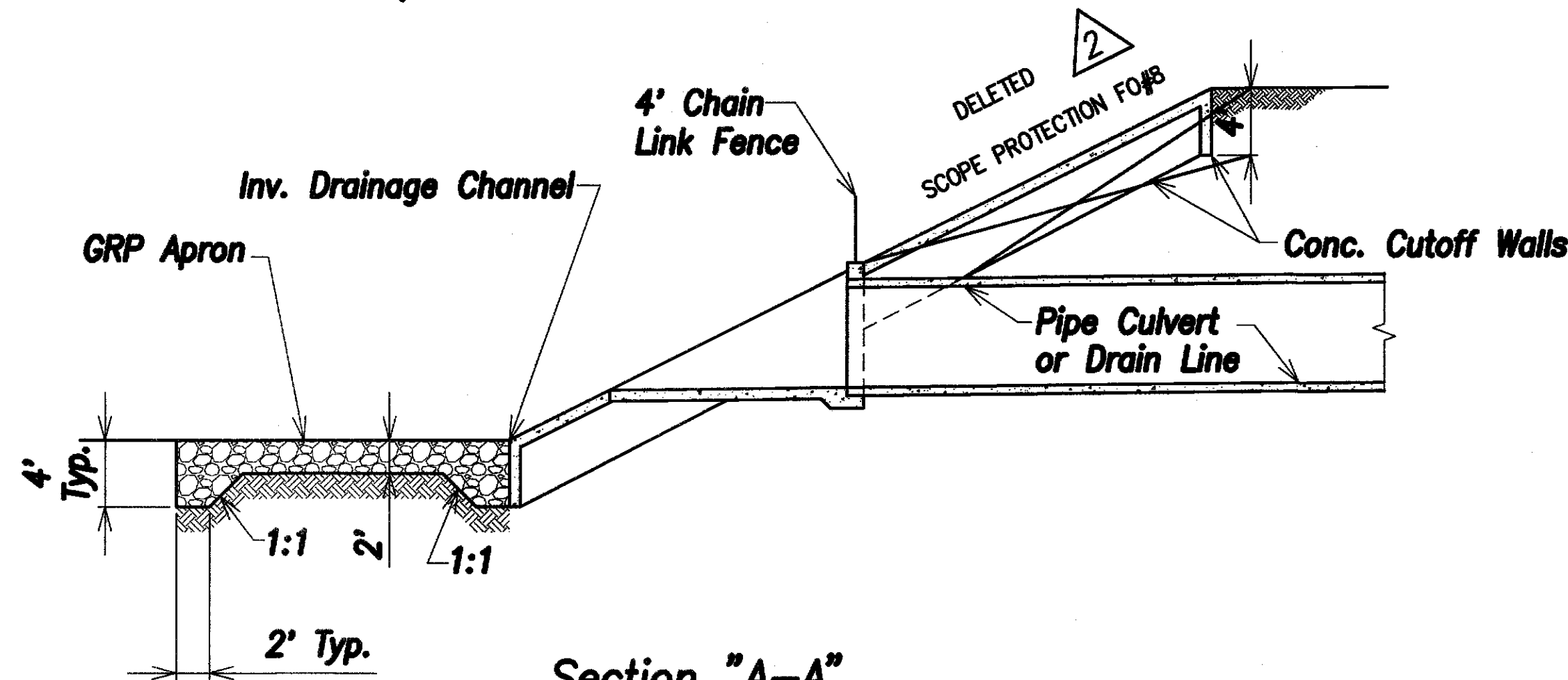
Channel Wall Slopes:
Culvert "E" - 2:39:1 2:1
Culvert "F" - 2.12:1
Culvert "G" - 2.12:1
Culvert "R1" - 2.46:1



Plan
Scale: 1/8" = 1'-0"



Section "B-B"
Scale: 1/8" = 1'-0"



Section "A-A"
Scale: 1/8" = 1'-0"

Bid Additive Alternate 1
Channel Bottom Widened to 60',
Change in Shape of Apron

Drain Culvert "E", "F" & "G" & "R1"
Scale: 1/8" = 1'-0"

LEGEND FOR AS-BUILT POSTINGS	
~~~~~	Squiggly line for as-built deletion
==	Double line for as-built deletion
Roadway	Text for as-built posting

		As Built - FO#8
		As Built - RFI#36
DATE	REVISION	

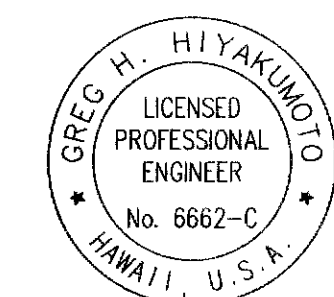
STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION

**OUTLET DETAILS - 2**

North-South Road  
Phase 1A  
F.A.I. Proj. No. STP-8930(1)

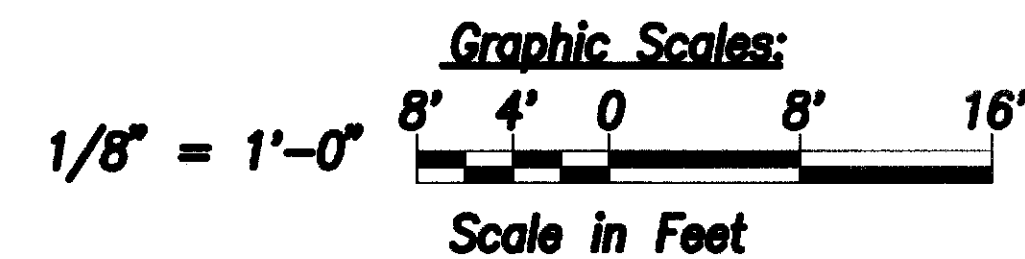
Scale: As Shown      Date: Dec 22, 2004

**SHEET No. AC17 OF 8 SHEETS**



THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.

SIGNATURE: [Signature] April 30, 2008  
EXPIRATION DATE OF THE LICENSE



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



DRAINAGE SUMMARY

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	STP-8930(1)	2005	140	144

STRUCTURES			CULVERTS		ESTIMATED ADDITIONAL QUANTITIES FOR BID ADDITIVE ALTERNATE 1														
SHEET NUMBER	STRUCTURE NUMBER	STRUCTURE TYPE	ITEM NO.		611.0200														
			FROM STRUCTURES	TO STRUCTURES	RIP-RAP FOR CHANNEL DROP STRUCTURE														
						UNIT	C.Y.												
C6.1		DRAINAGE CHANNEL	0+00	17+00															
C6.2		DRAINAGE CHANNEL	17+00	47+00															
		DROP STRUCTURE			277														
		DROP STRUCTURE			277														
		DROP STRUCTURE			277														
		DROP STRUCTURE			277														
		DROP STRUCTURE			277														
		DROP STRUCTURE			277														
		DROP STRUCTURE			277														
C6.3		DRAINAGE CHANNEL	47+00	57+10															
		DROP STRUCTURE			277														
		DROP STRUCTURE			277														
		DROP STRUCTURE			277														
		DROP STRUCTURE			277														
SUB-TOTAL THIS SHEET					3047														
TOTAL					3047														

ORIGINAL  
PLAN

NOTE BOOK

No.

SURVEY PLOTTED BY

DRAWN BY

TRACED BY

DESIGNED BY

QUANTITIES BY

CHECKED BY

DATE