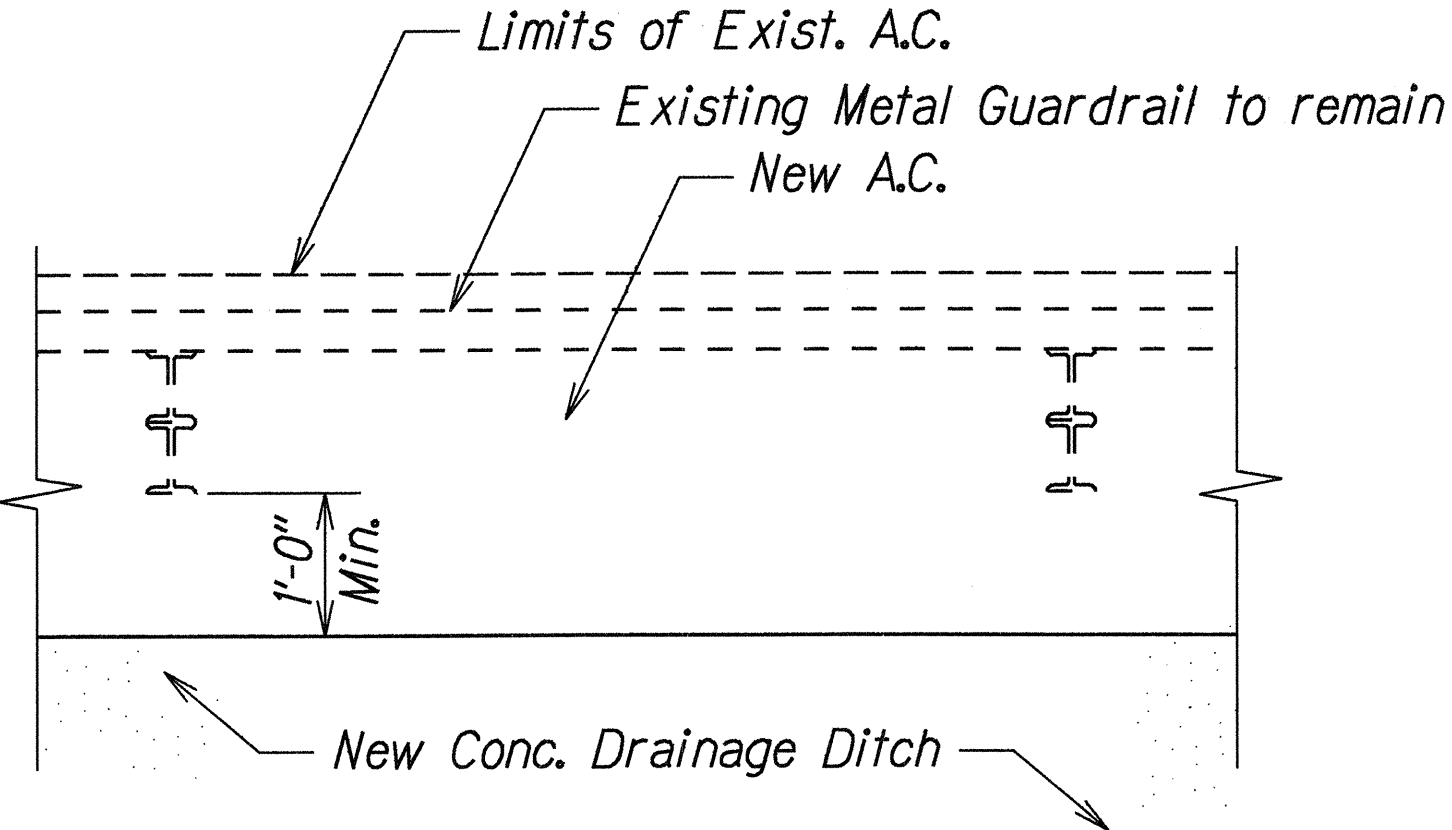
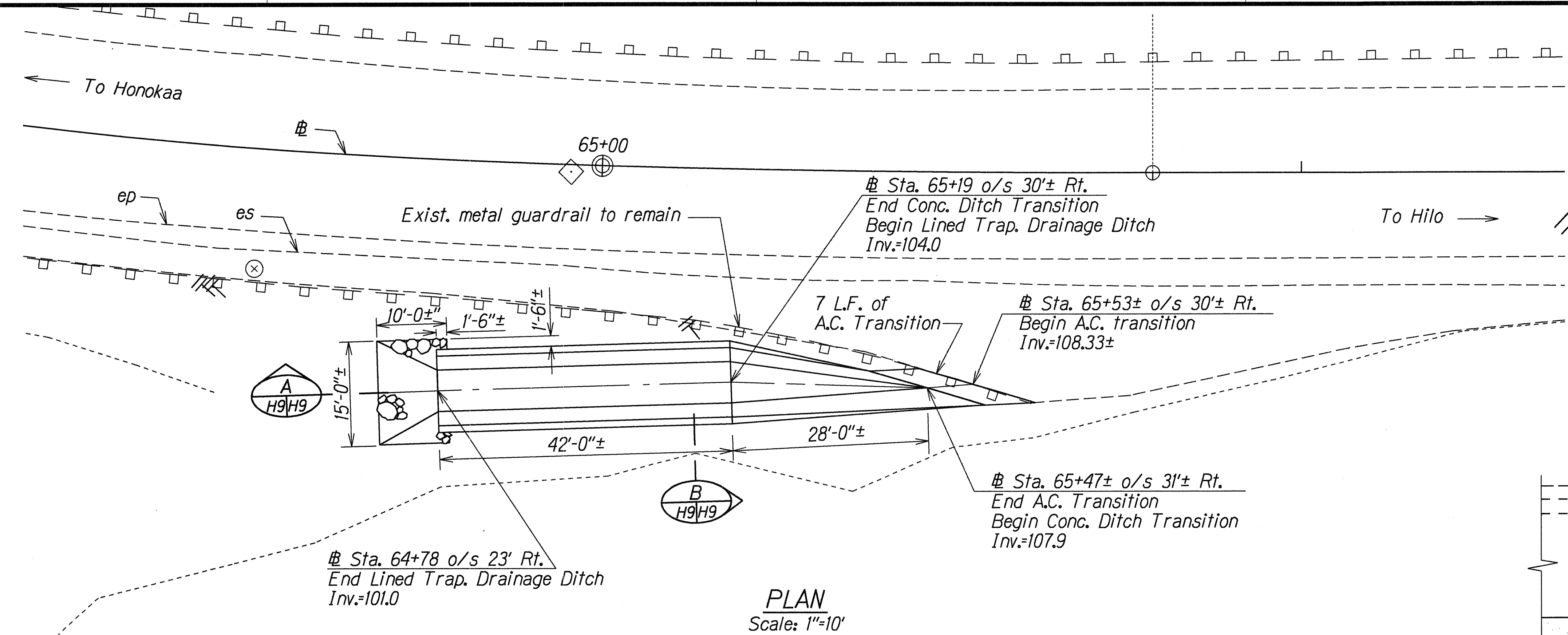
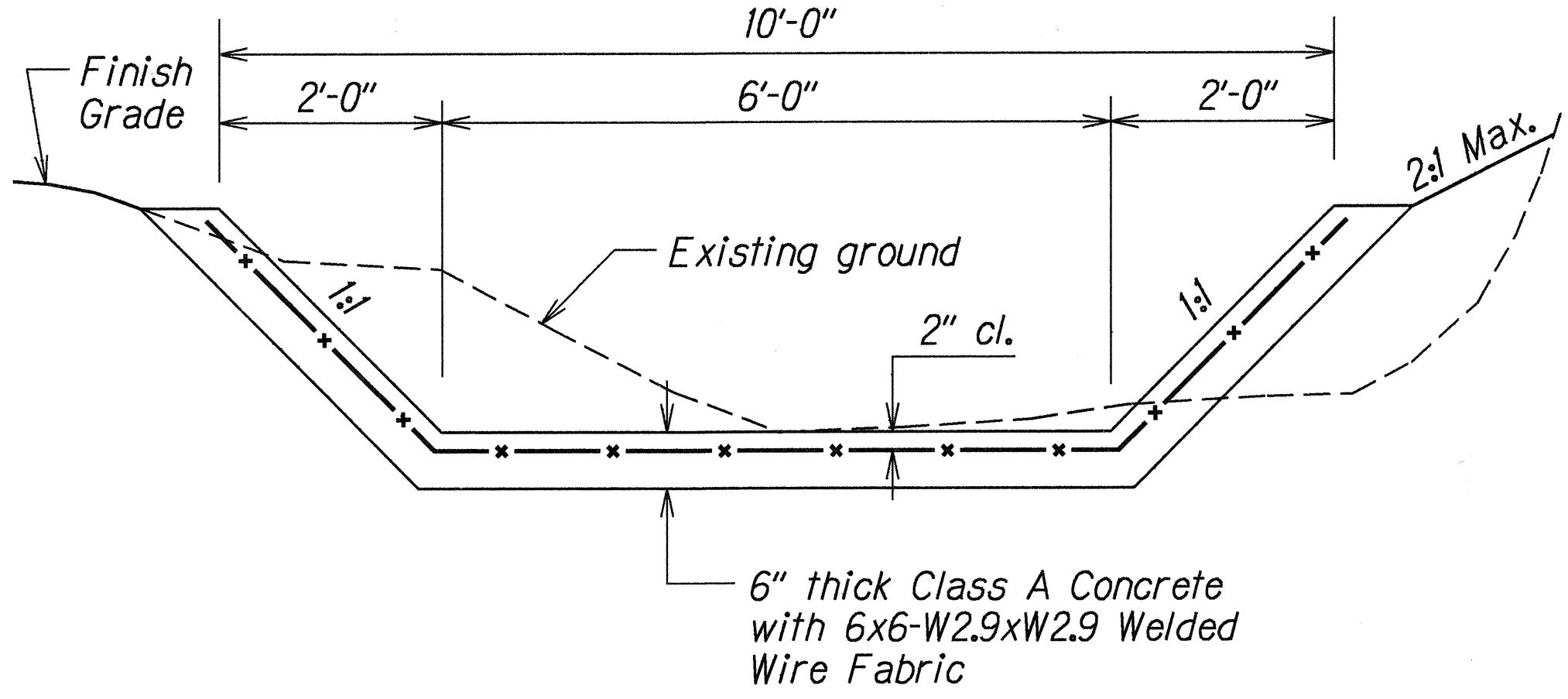
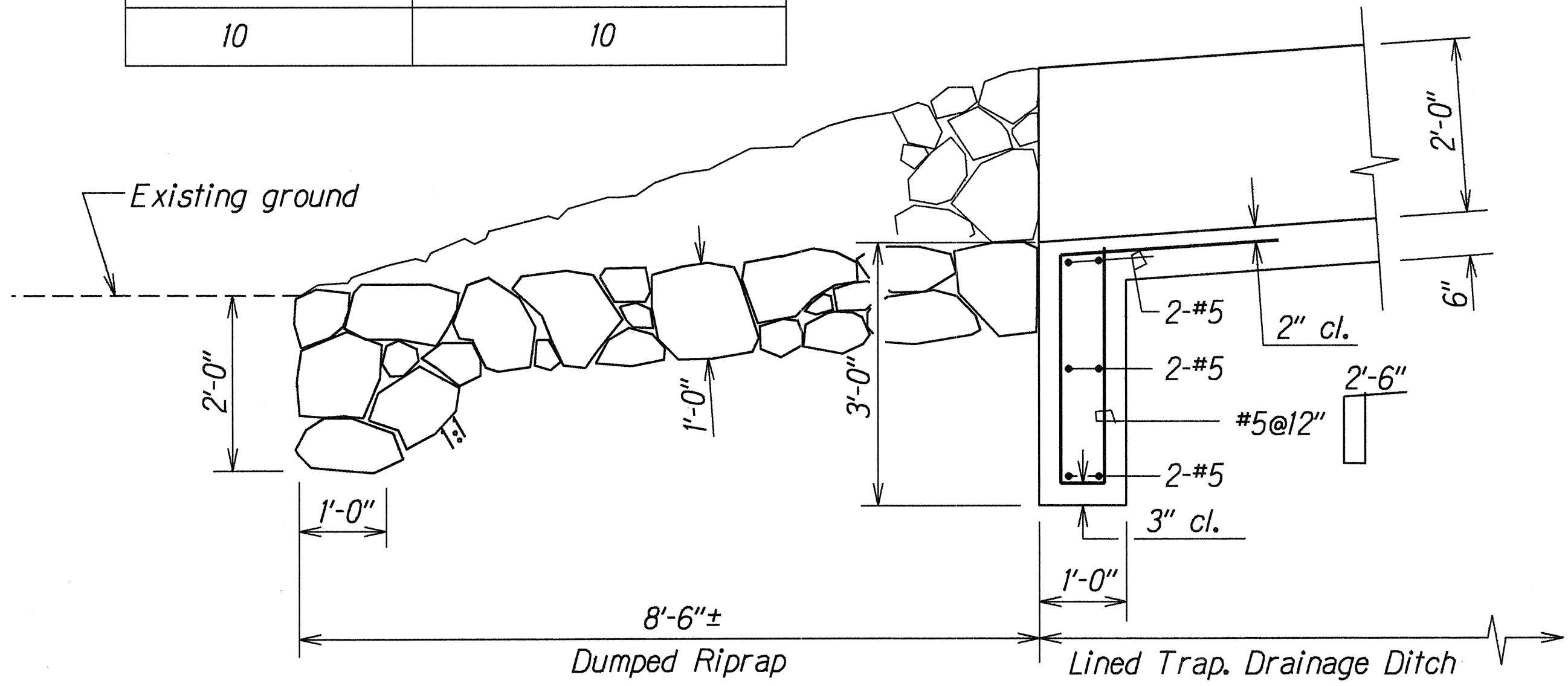


FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	19G-02-99	2000	12	27



DUMPED RIPRAP GRADATION	
STONE SIZE (lbs)	PERCENT OF STONE SMALLER THAN
100	100
50	50
10	10

PLAN VIEW AT METAL GUARDRAIL
Scale: 3/4"=1'-0"



SECTION A
Scale: 3/4"=1'-0"

SECTION B
Scale: 3/4"=1'-0"

DETAILS OF LINED TRAPEZOIDAL DRAINAGE DITCH AT STA. 65+47± o/s 31'± RT.
VICINITY OF LAUPAHOEHOE GULCH

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

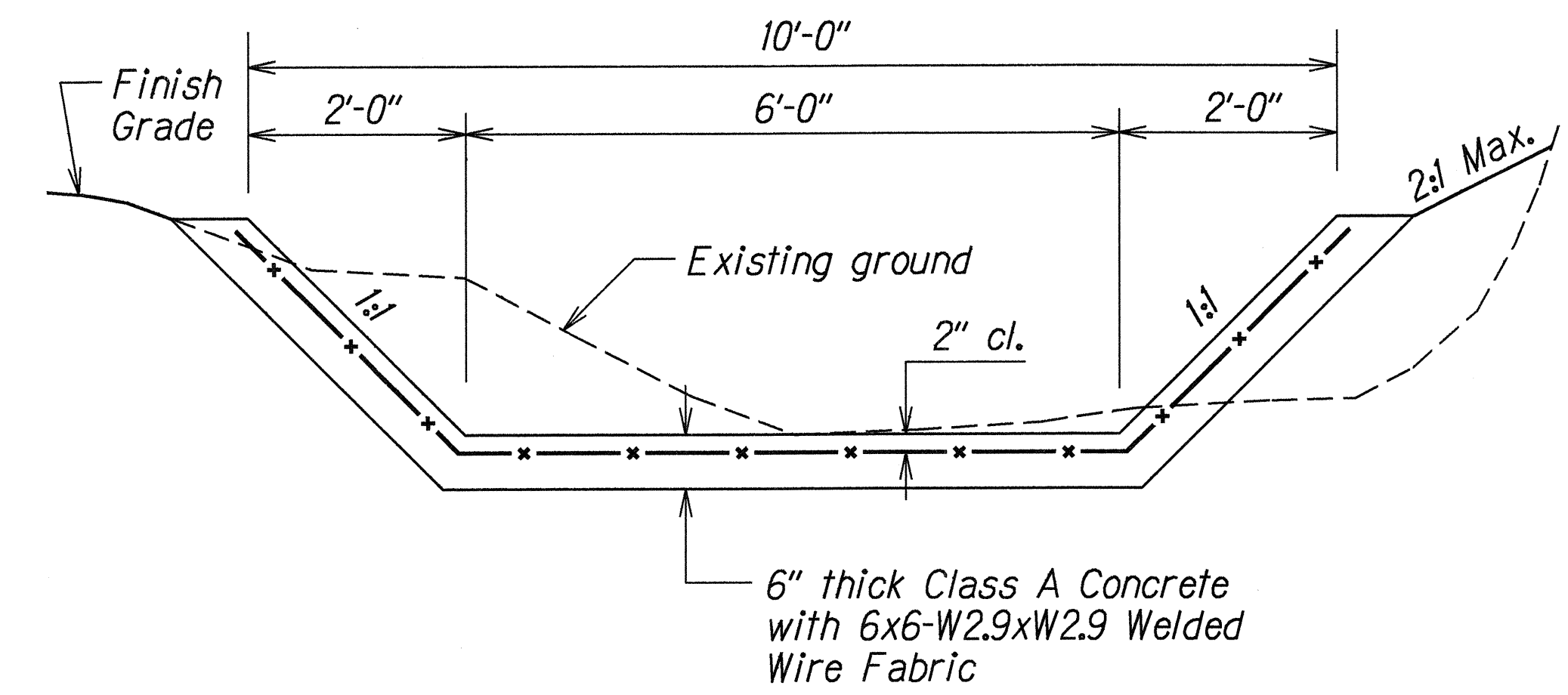
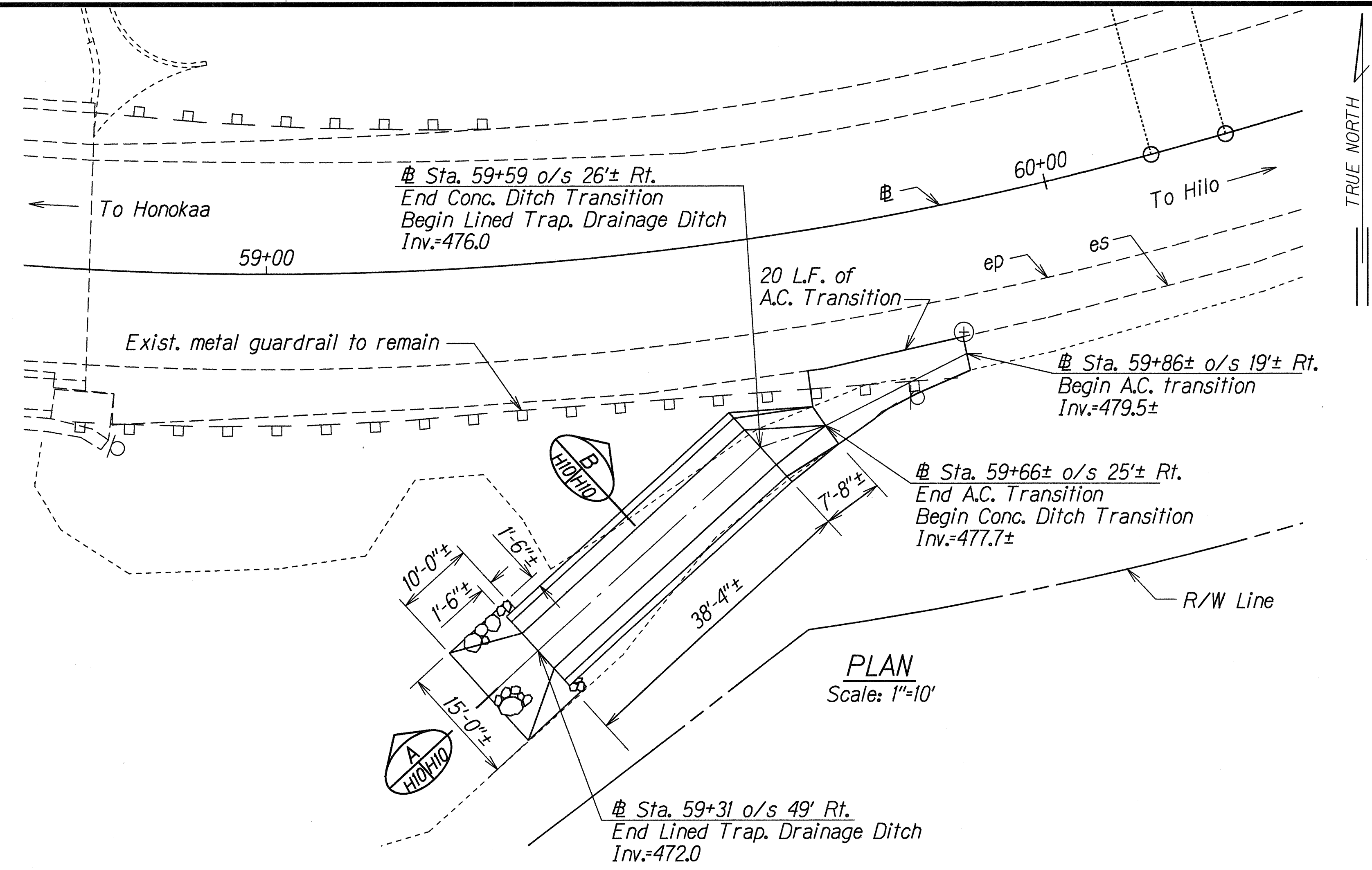
DRAINAGE DETAILS
HAWAII BELT RD. DRAINAGE IMP.
Vicinity of Maulua Gulch, Laupahoehoe
Gulch and Kaawalii Gulch
Project No. 19G-02-99
Scale: As Shown Date: Sept. 1999
SHEET No. H9 OF 16 SHEETS

ORIGINAL
PLAN

SURVEY PLOTTED BY
DRAWN BY A. Manuia
NOTED BY C. Malsada, P. Tola
DESIGNED BY
CHECKED BY

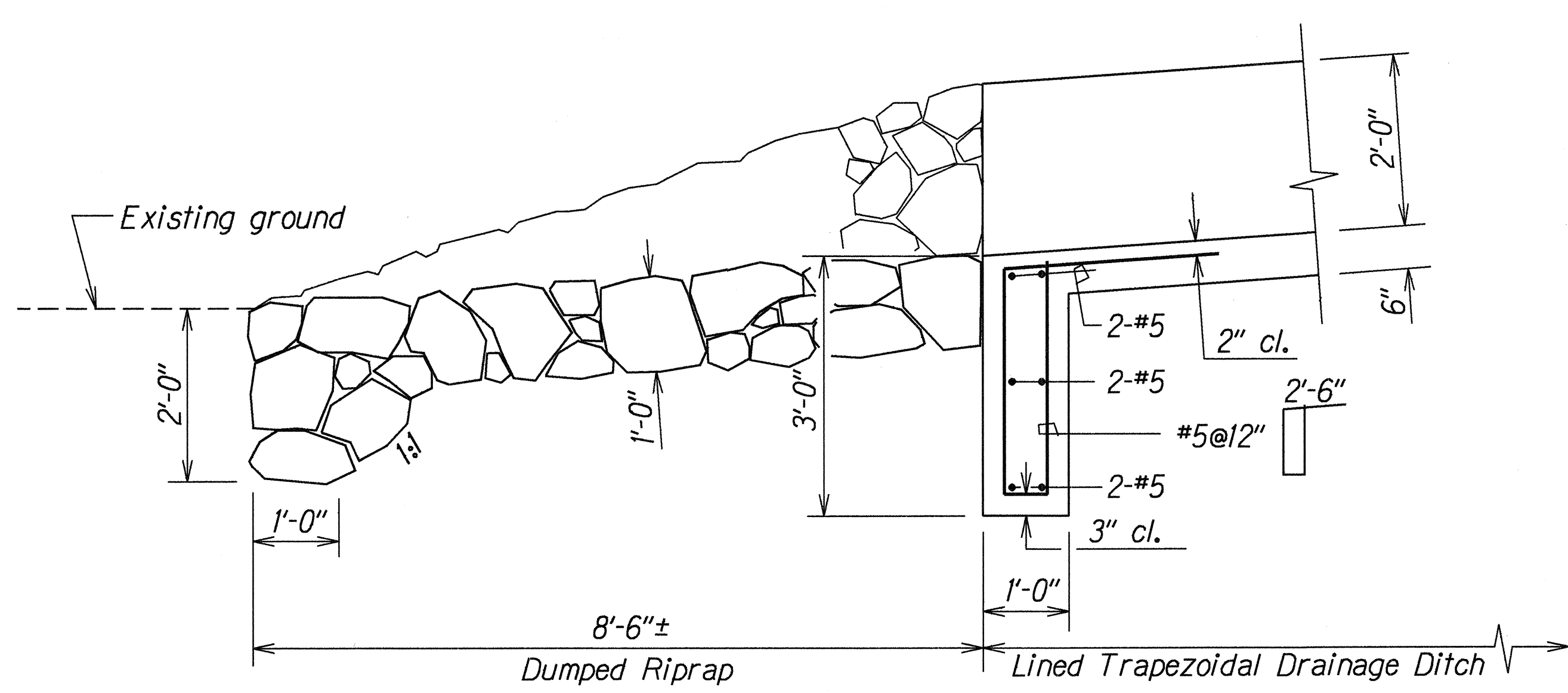
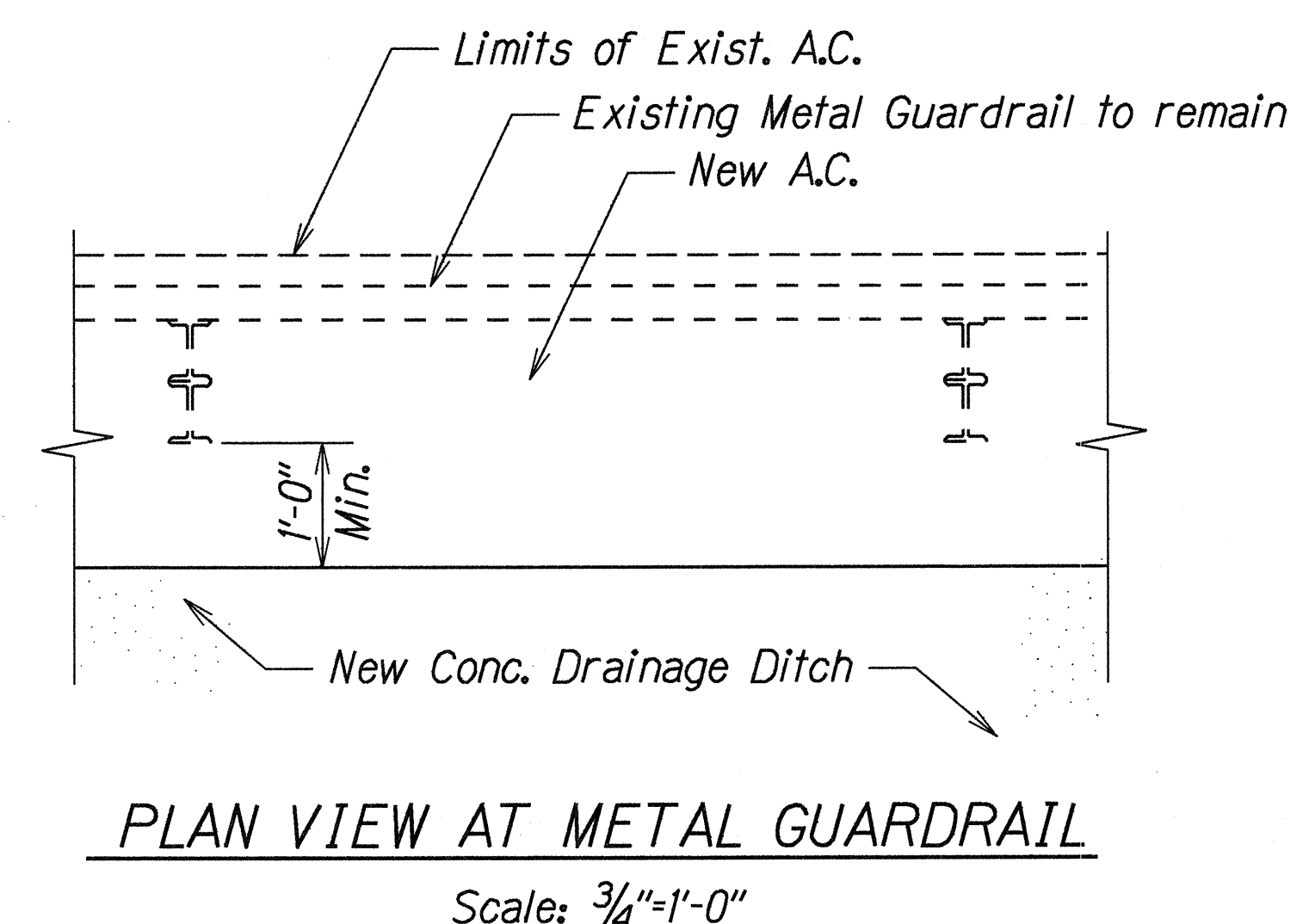
DATE
9/2/99

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	19G-02-99	2000	13	27



SECTION B
Scale: 3/4"=1'-0"

DUMPED RIPRAP GRADATION	
STONE SIZE (lbs)	PERCENT OF STONE SMALLER THAN
100	100
50	50
10	10



SECTION A
Scale: 3/4"=1'-0"

DETAILS OF LINED TRAPEZOIDAL DRAINAGE DITCH AT STA. 59+66± o/s 25'± RT.
VICINITY OF MAULUA GULCH

ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
PLAN	DRAWN BY A. Noma	8/3/99
NOTE BOOK	TRACED BY C. Matsuda	
3/3/2000	QUANTITIES BY	
4/3/2000	CHECKED BY	

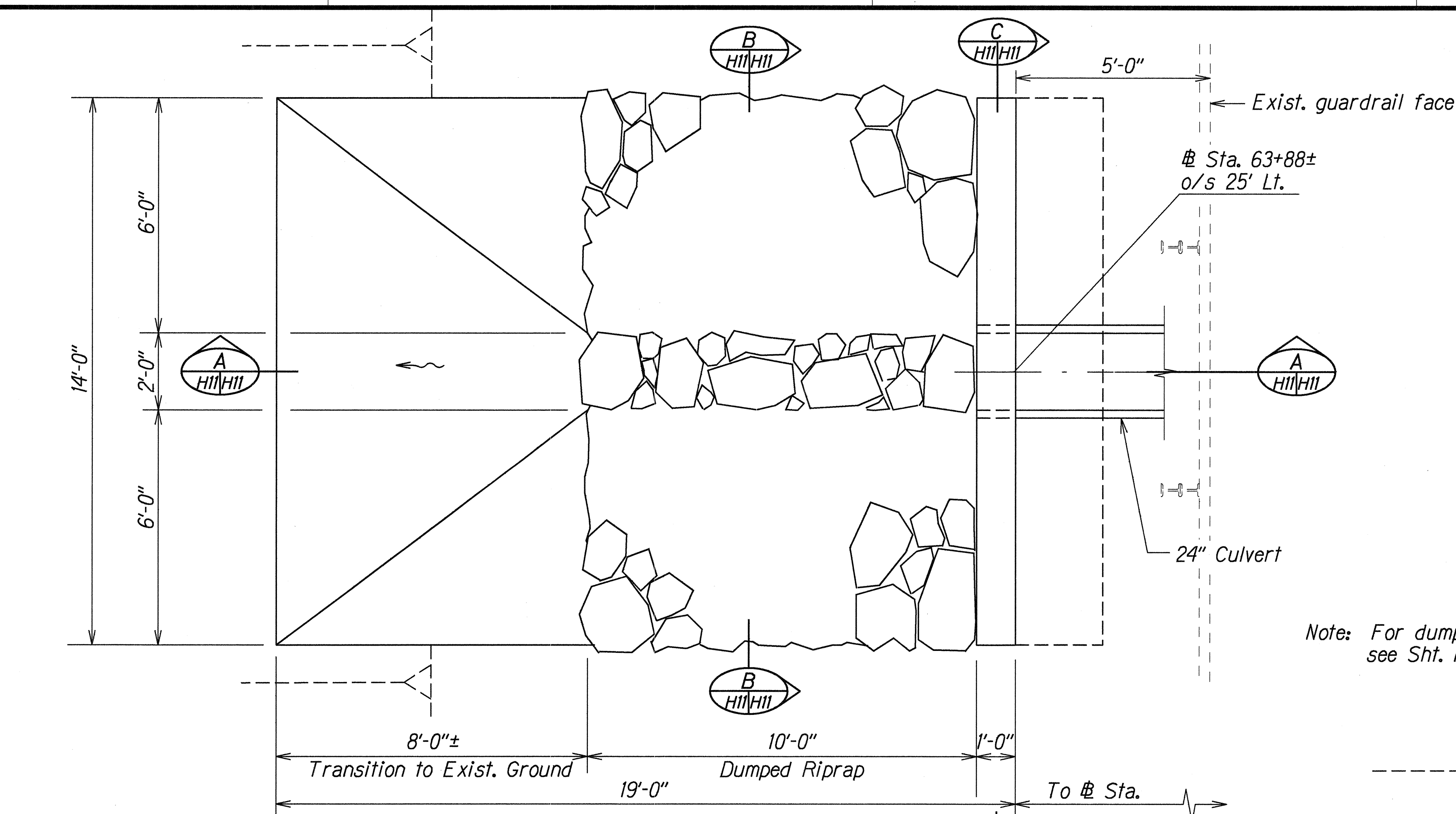
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

DRAINAGE DETAILS
HAWAII BELT RD. DRAINAGE IMP.
Vicinity of Maulua Gulch, Laupahoehoe
Gulch and Kaawalii Gulch
Project No. 19G-02-99

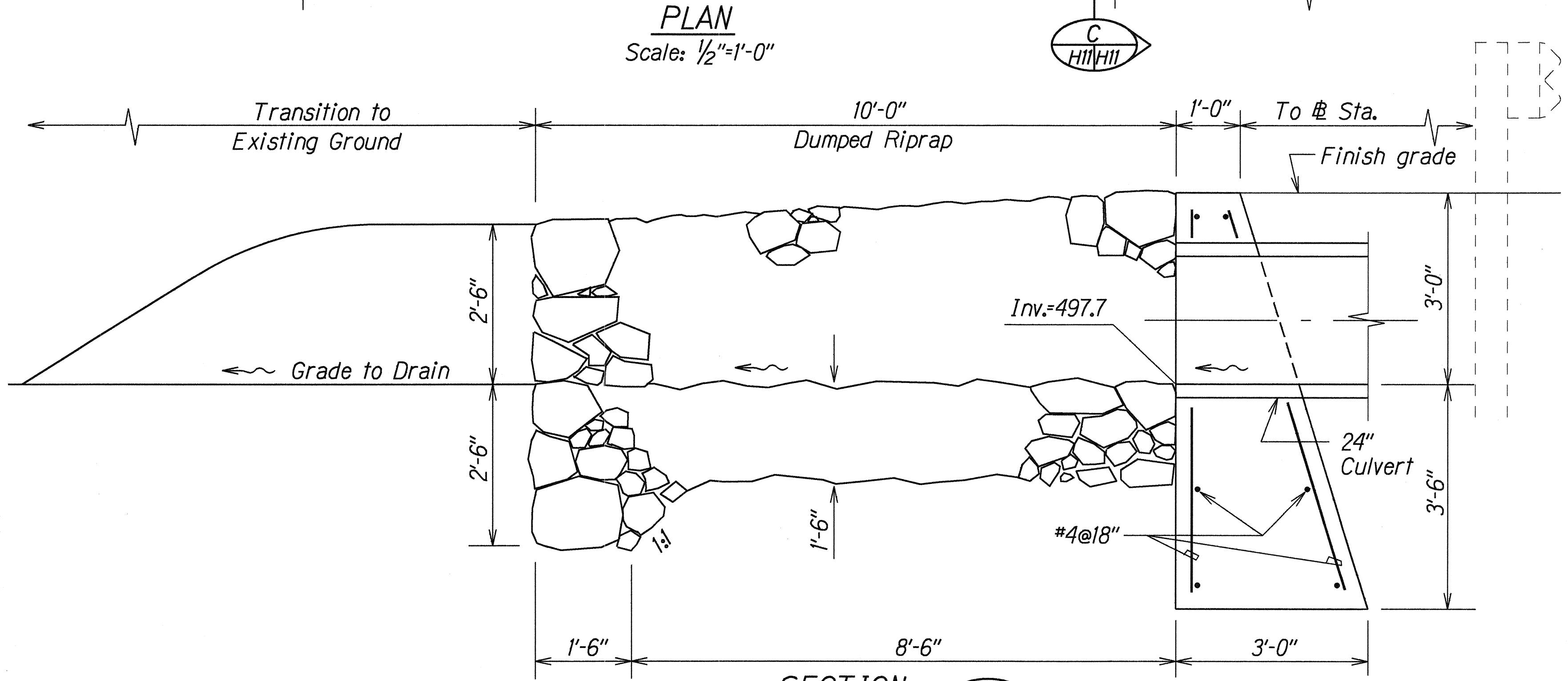
Scale: As Shown
Date: Aug. 1999

SHEET No. H10 OF 16 SHEETS

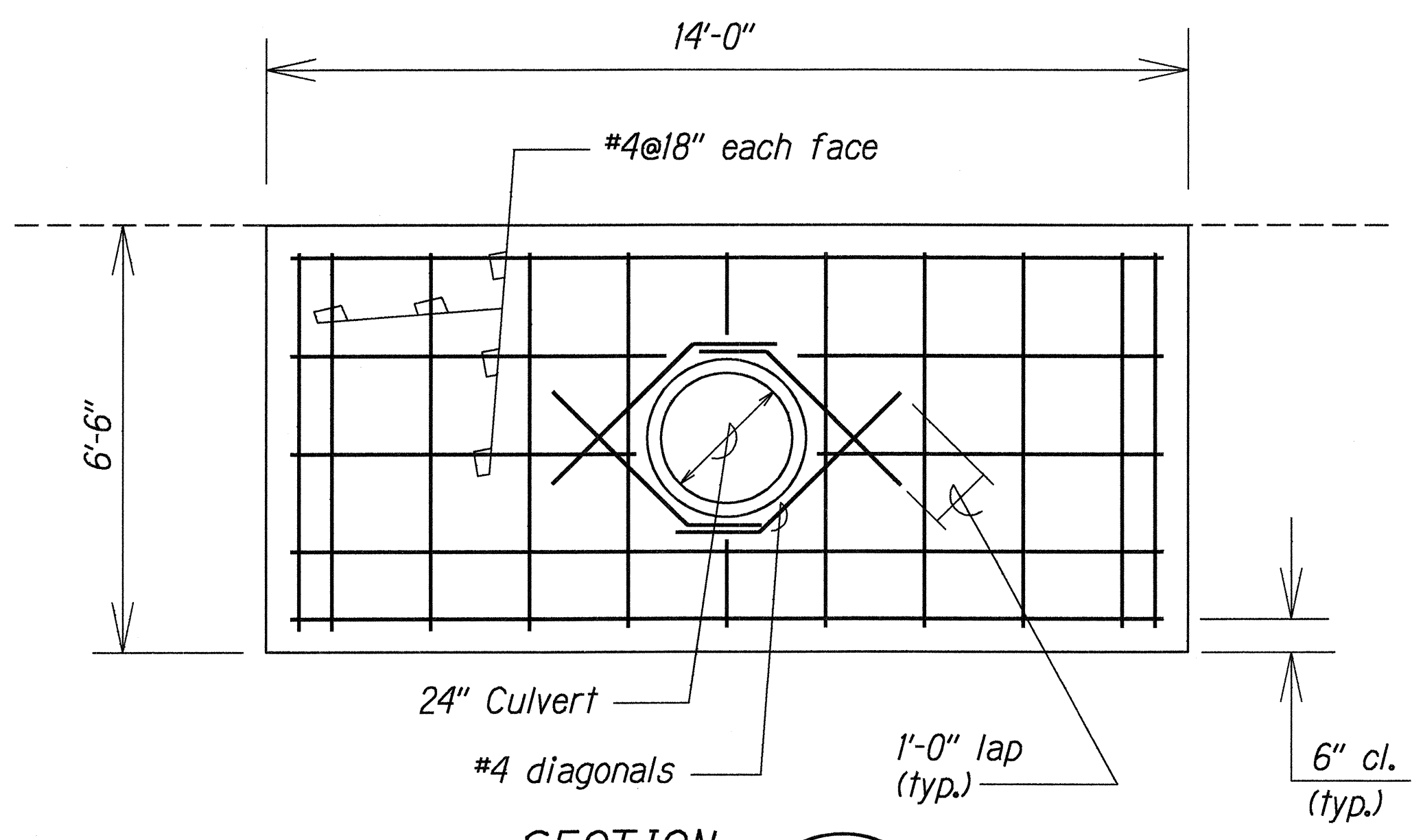
FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	19G-02-99	2000	14	27



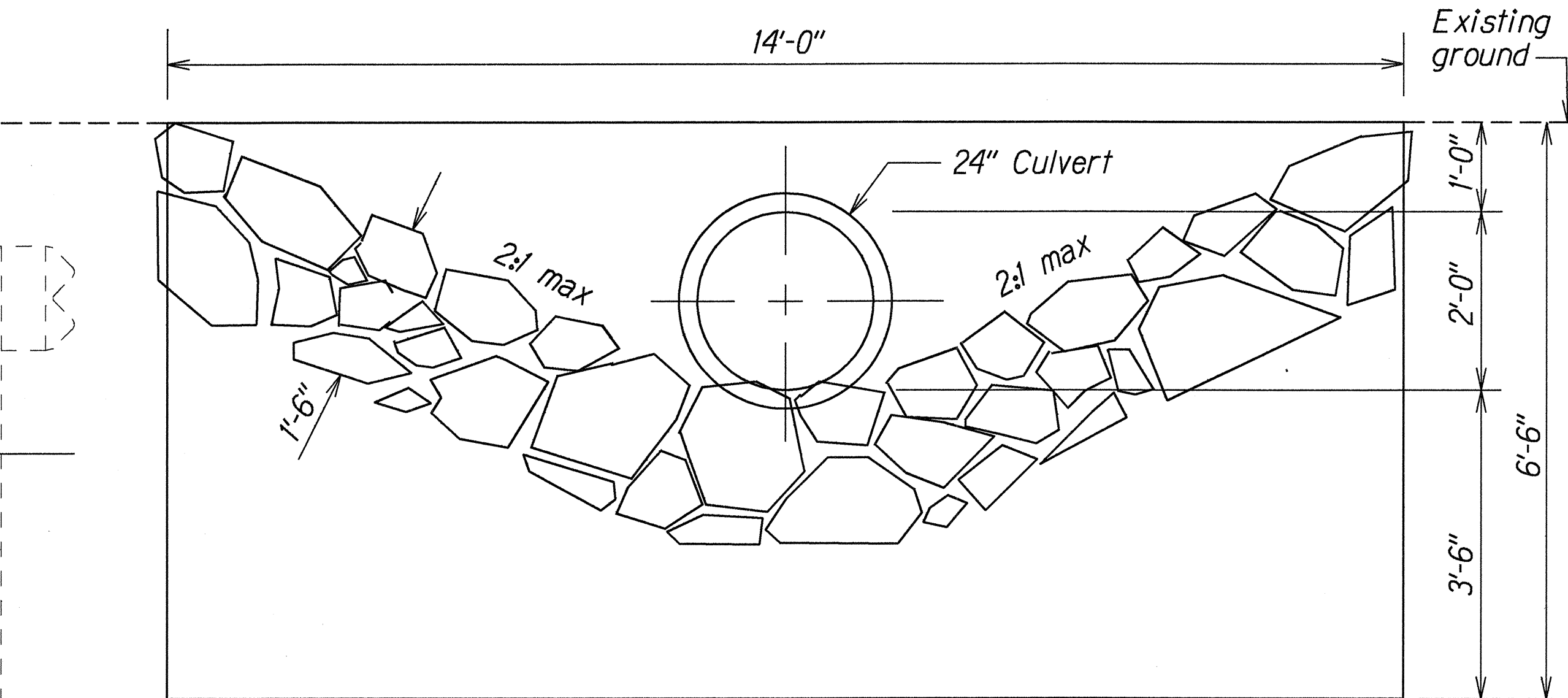
PLAN
Scale: 1/2"=1'-0"



SECTION A
Scale: 3/4"=1'-0"



SECTION C
Scale: 1/2"=1'-0"



SECTION B
Scale: 3/4"=1'-0"

DETAILS OF TYPE "I" CONC. HEADWALL AT STA. 63+88± o/s 25± LT.
VICINITY OF MAULUA GULCH

ORIGINAL PLAN	DATE
SURVEY PLATTED BY	1/29/99
DRAWN BY	A. Manuwa
DESIGNED BY	C. Matsuda, B. Toda
CHECKED BY	4/2/00

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

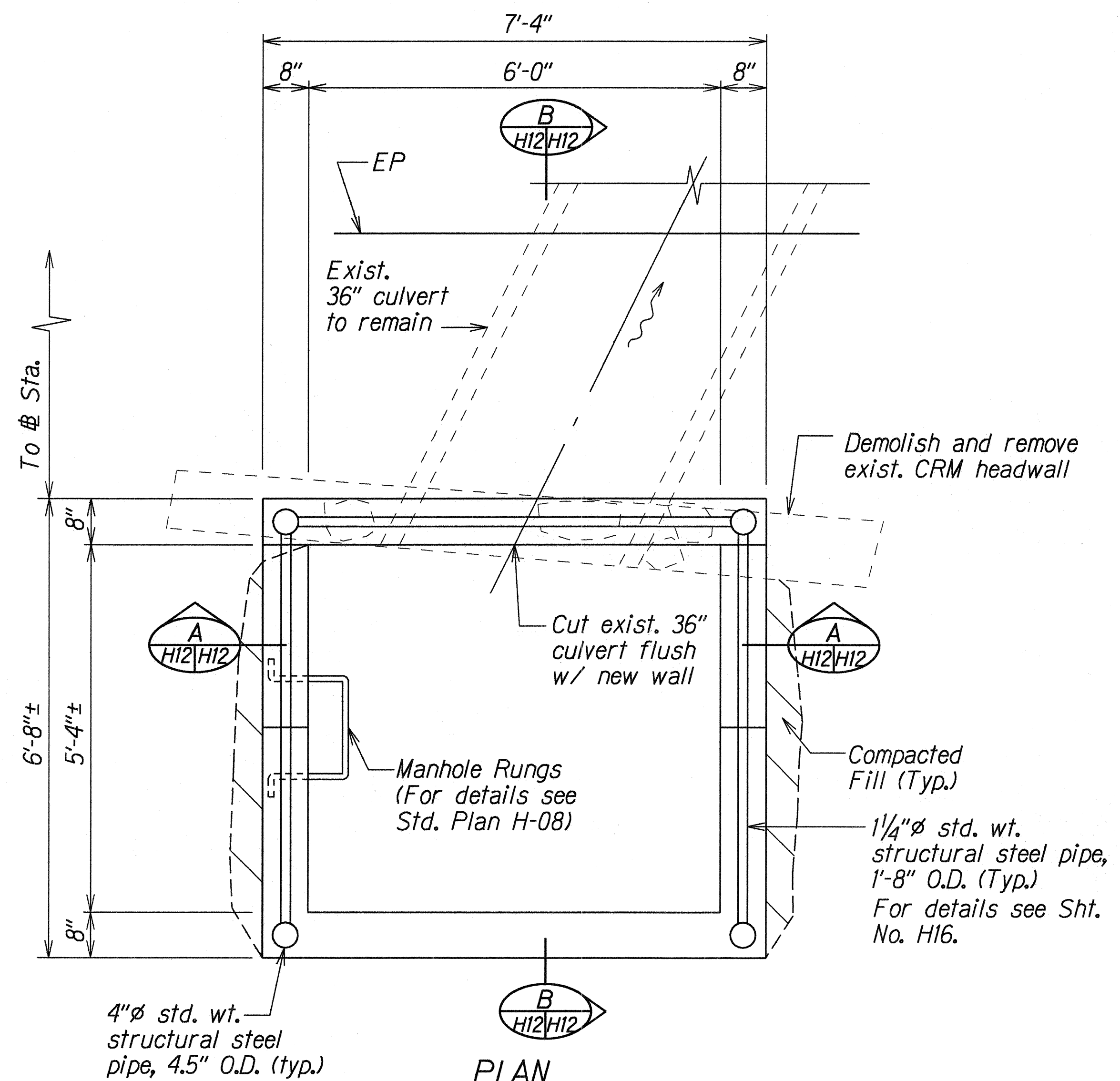
DRAINAGE DETAILS

HAWAII BELT RD. DRAINAGE IMP.
Vicinity of Maulua Gulch, Laupahoehoe
Gulch and Kaawalii Gulch
Project No. 19G-02-99

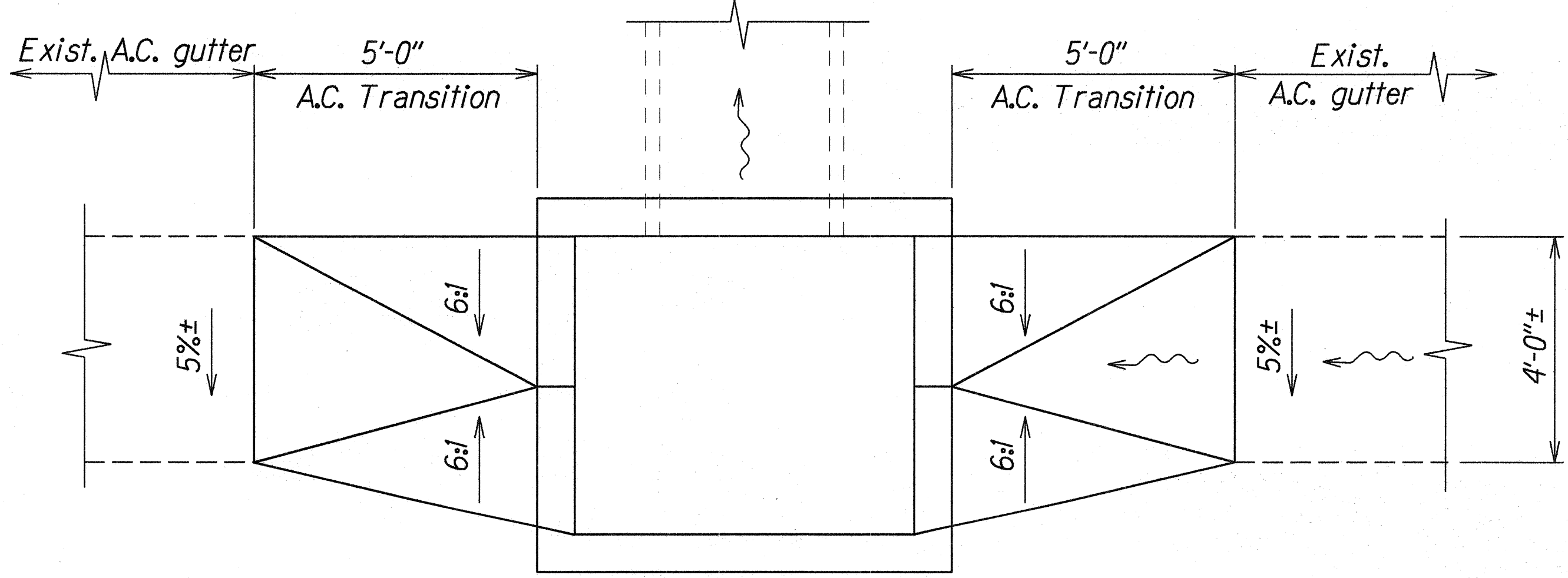
Scale: As Shown Date: July 1999

SHEET No. III OF 16 SHEETS

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	19G-02-99	2000	15	27

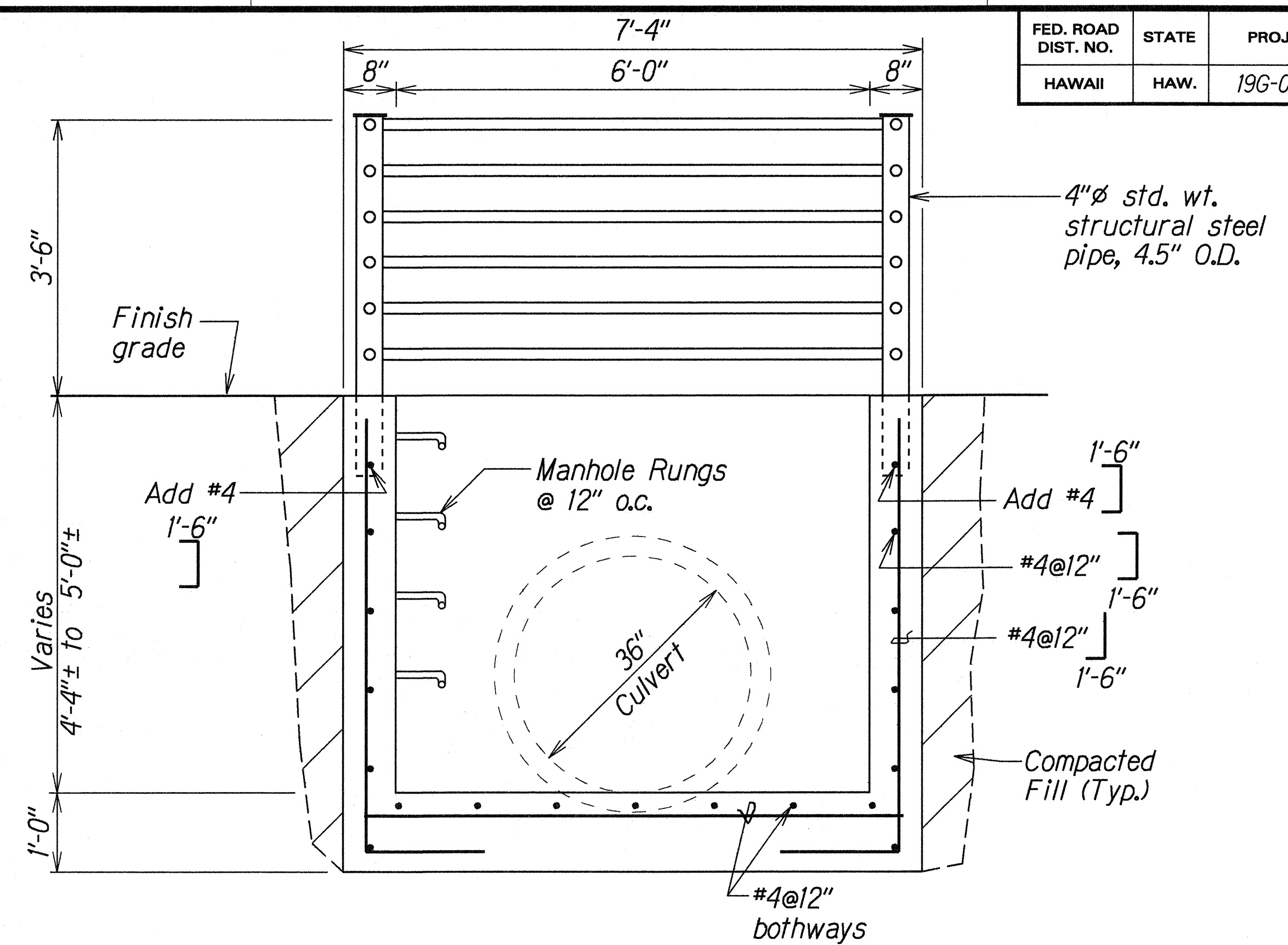


PLAN
Scale: 3/4"=1'-0"

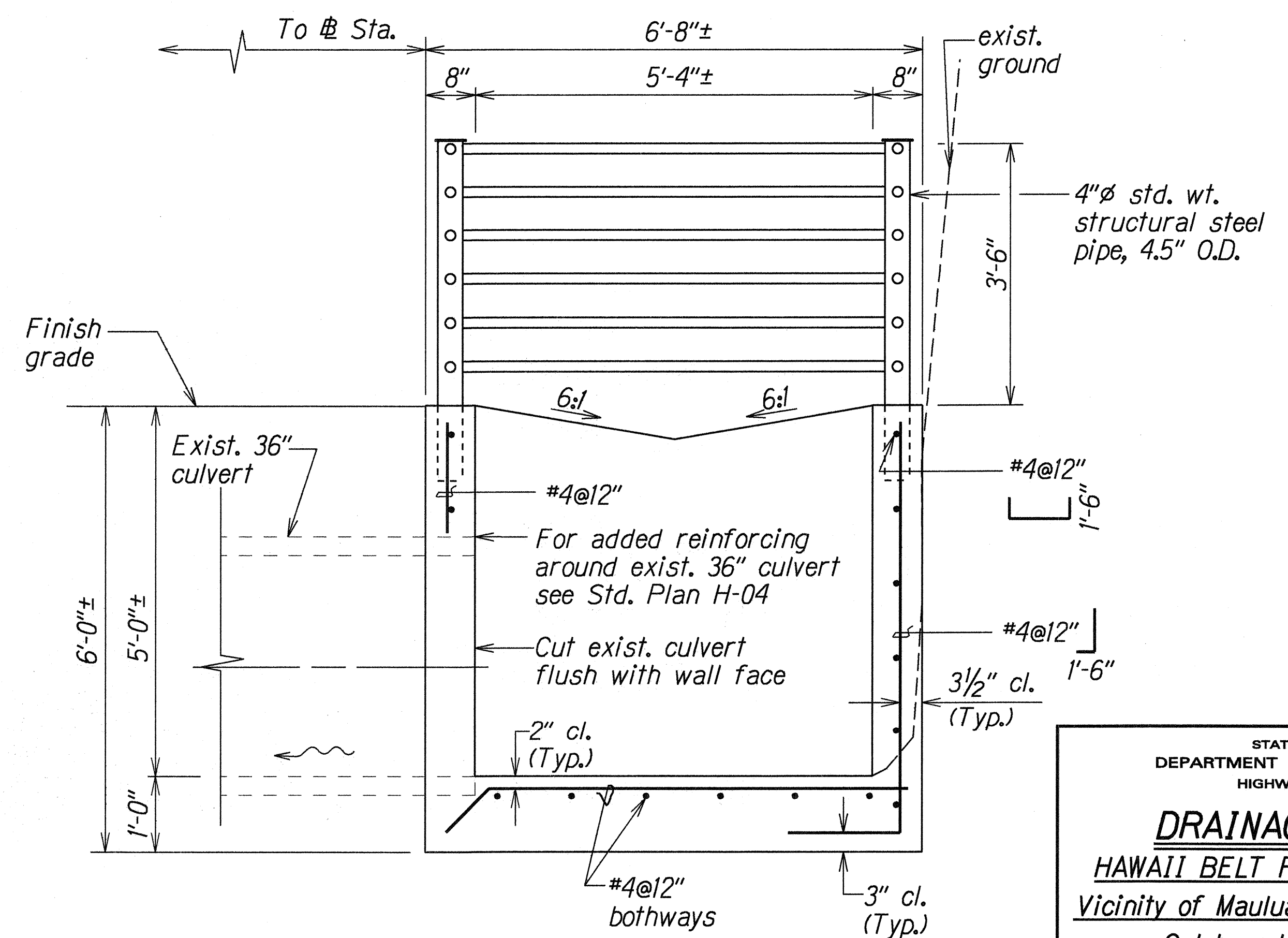


A.C. PAVEMENT TRANSITION DETAIL
Scale: 1/2"=1'-0"

**DETAILS OF TYPE "1" CONCRETE DROP INLET AT # STA. 140+34± RT.
VICINITY OF KAAWALII GULCH**



SECTION A
Scale: 3/4"=1'-0"



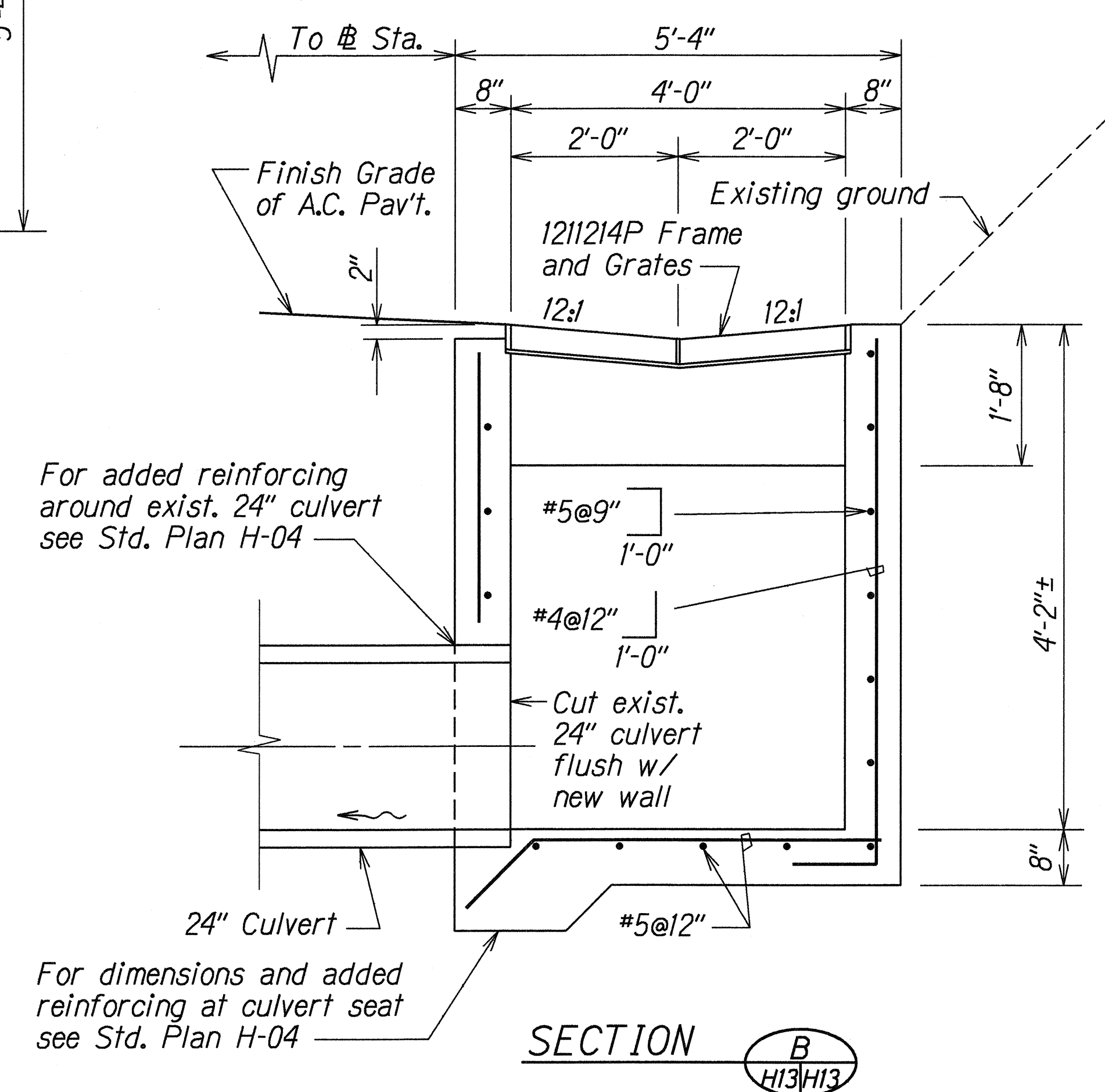
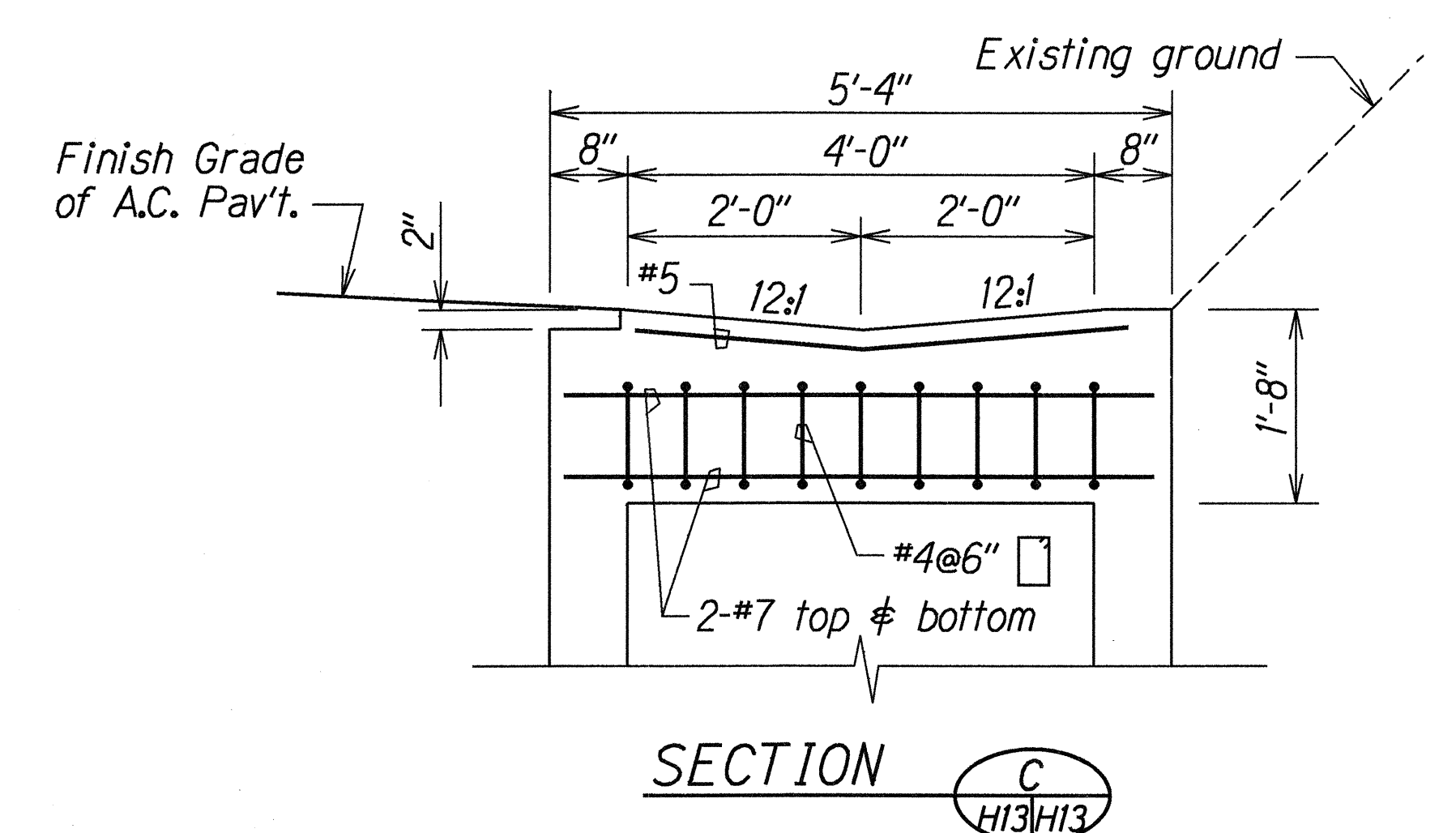
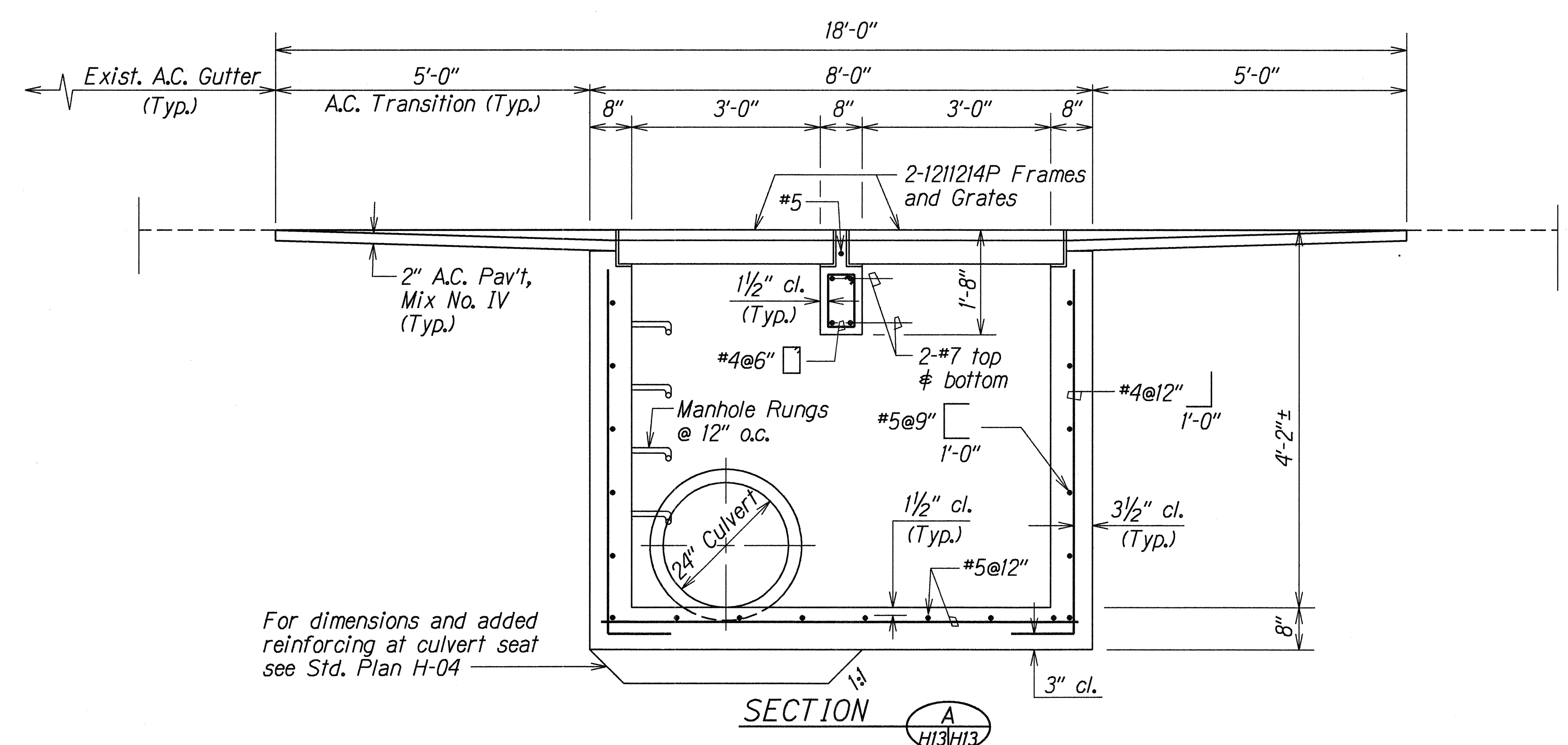
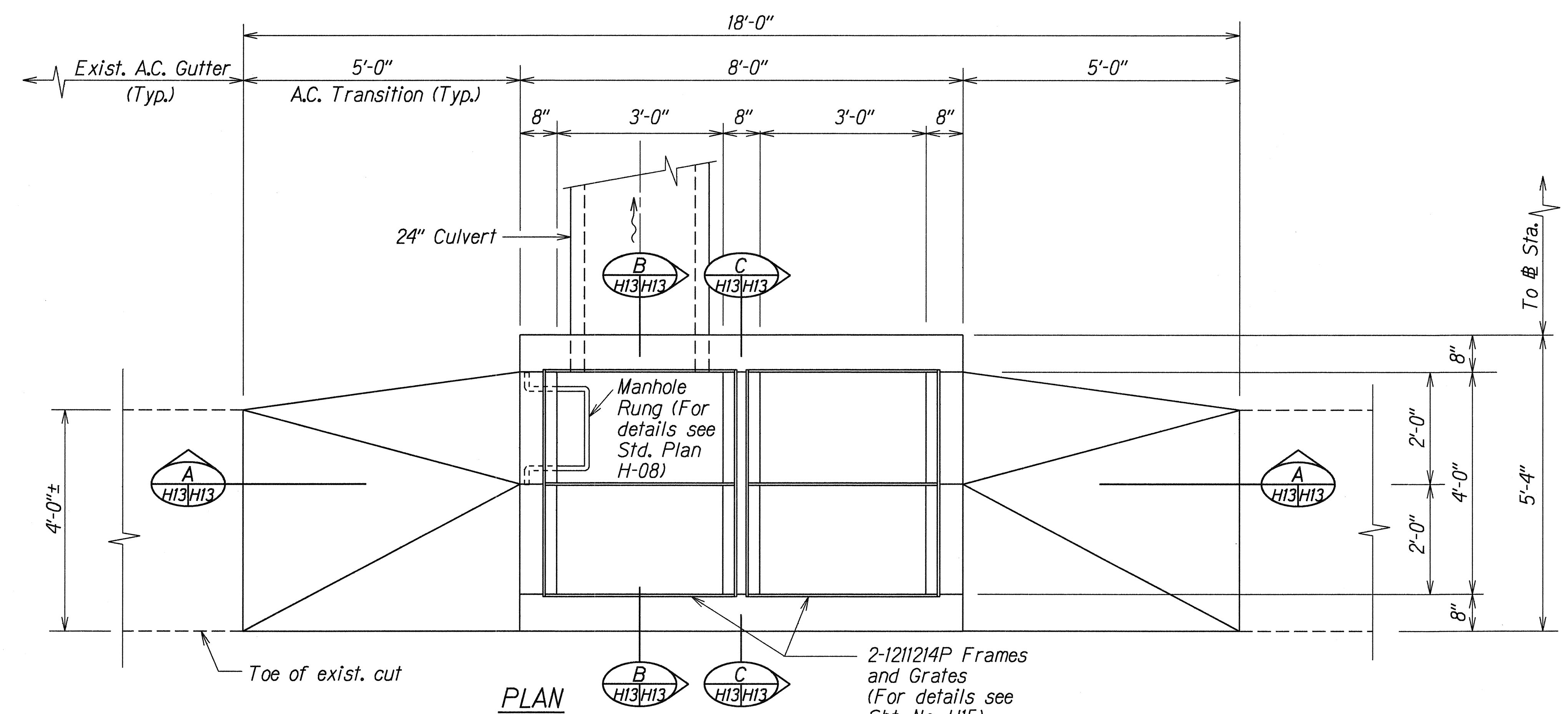
SECTION B
Scale: 3/4"=1'-0"

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

DRAINAGE DETAILS
HAWAII BELT RD. DRAINAGE IMP.
Vicinity of Maulua Gulch, Laupahoehoe
Gulch and Kaawalii Gulch
Project No. 19G-02-99
Scale: As shown Date: May, 1999

ORIGINAL PLAN	SURVEY DATED BY	DATE
NOTED	DRAWN BY	
DESIGNED BY		
QUANTITIES BY		
CHECKED BY		

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	19G-02-99	2000	16	27



DETAILS OF TYPE 2-1211214P GRATED DROP INLET AT STA. 63+88± o/s 17'± RT.
VICINITY OF MAULUA GULCH

ORIGINAL PLAN	DATE
DRAWN BY	
DESIGNED BY	
CHECKED BY	

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

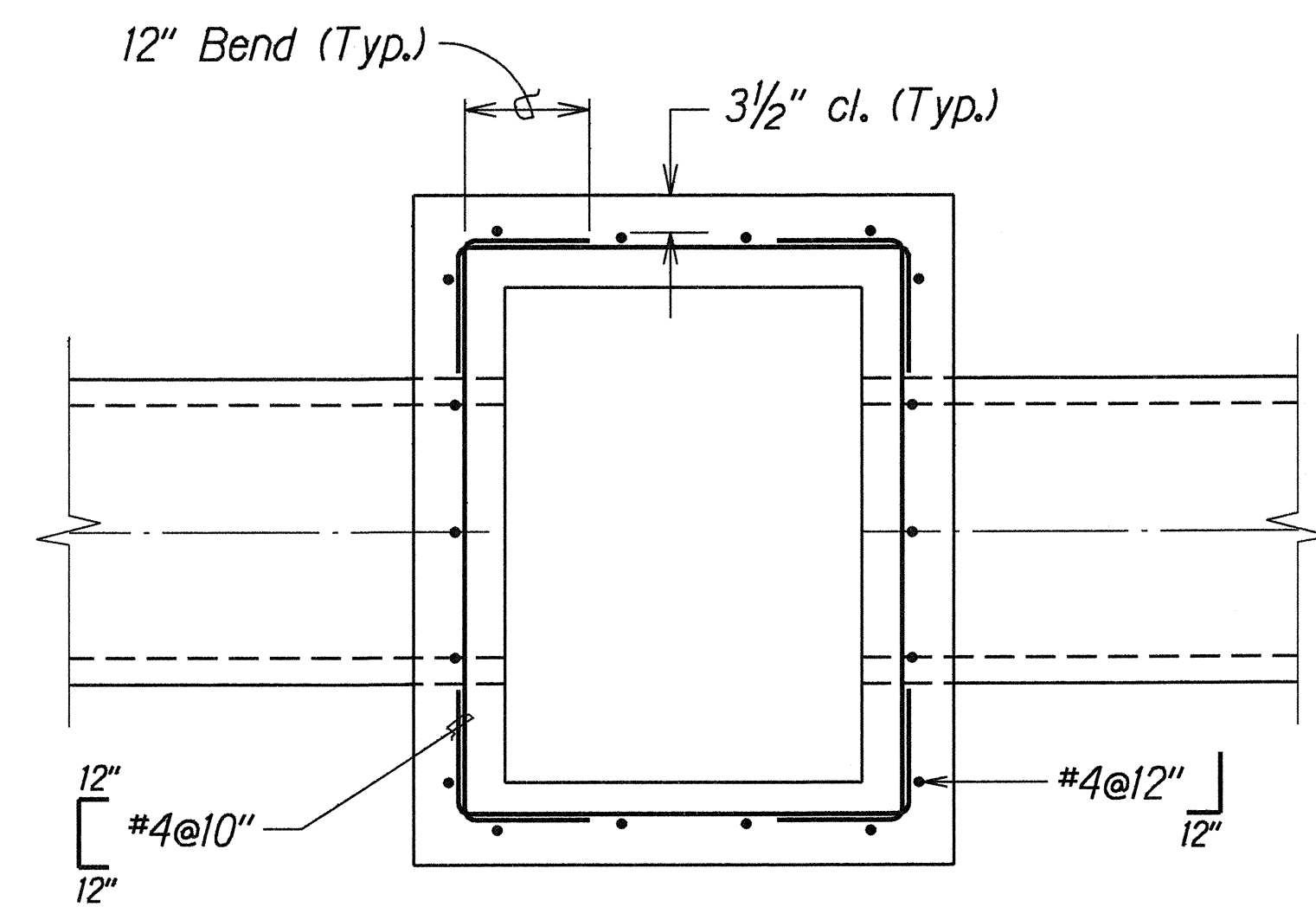
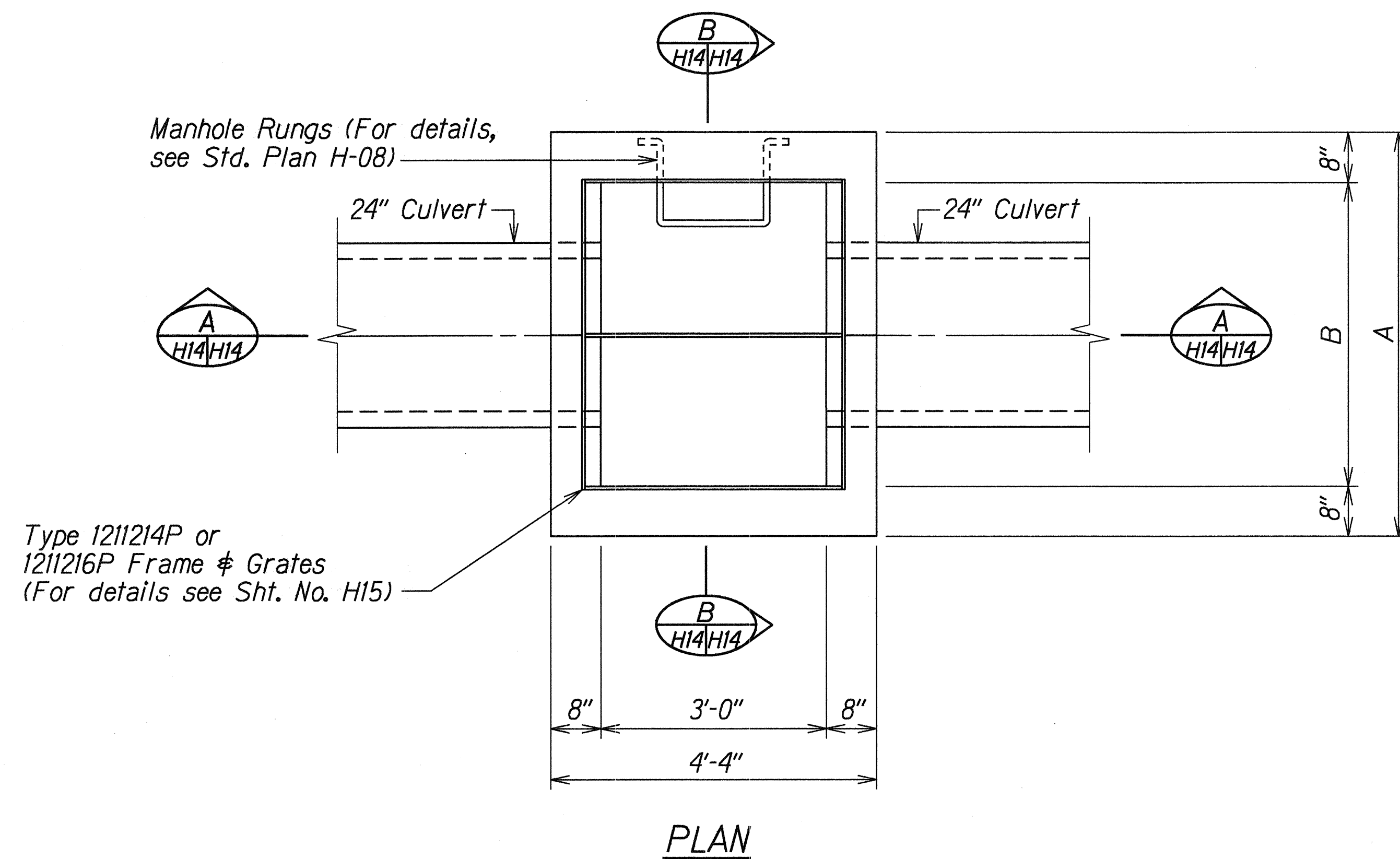
DRAINAGE DETAILS

HAWAII BELT RD. DRAINAGE IMP.
Vicinity of Maulua Gulch, Laupahoehoe
Gulch and Kaawalii Gulch
Project No. 19G-02-99

Scale: 3/4"=1'-0" Date: Sept. 1999

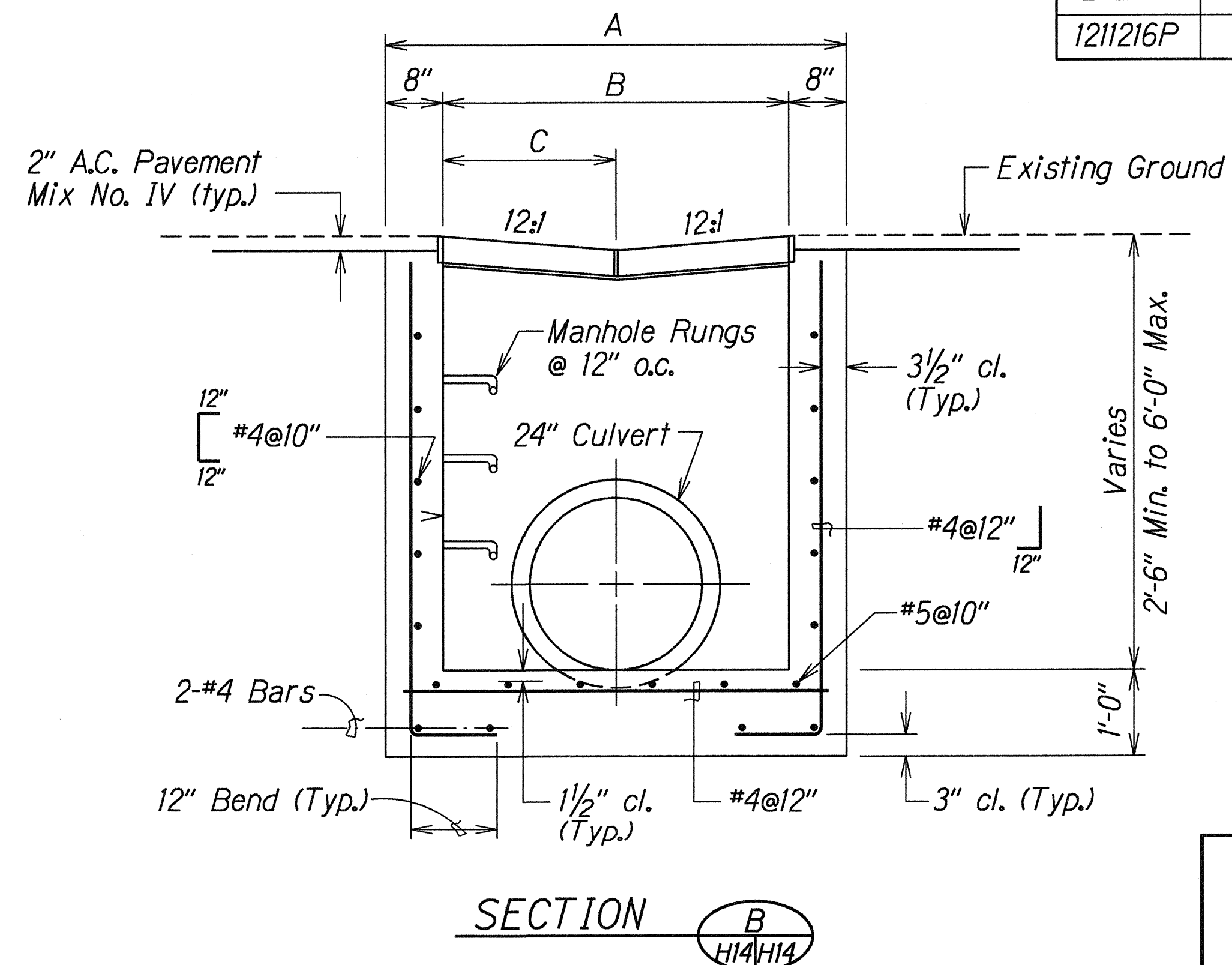
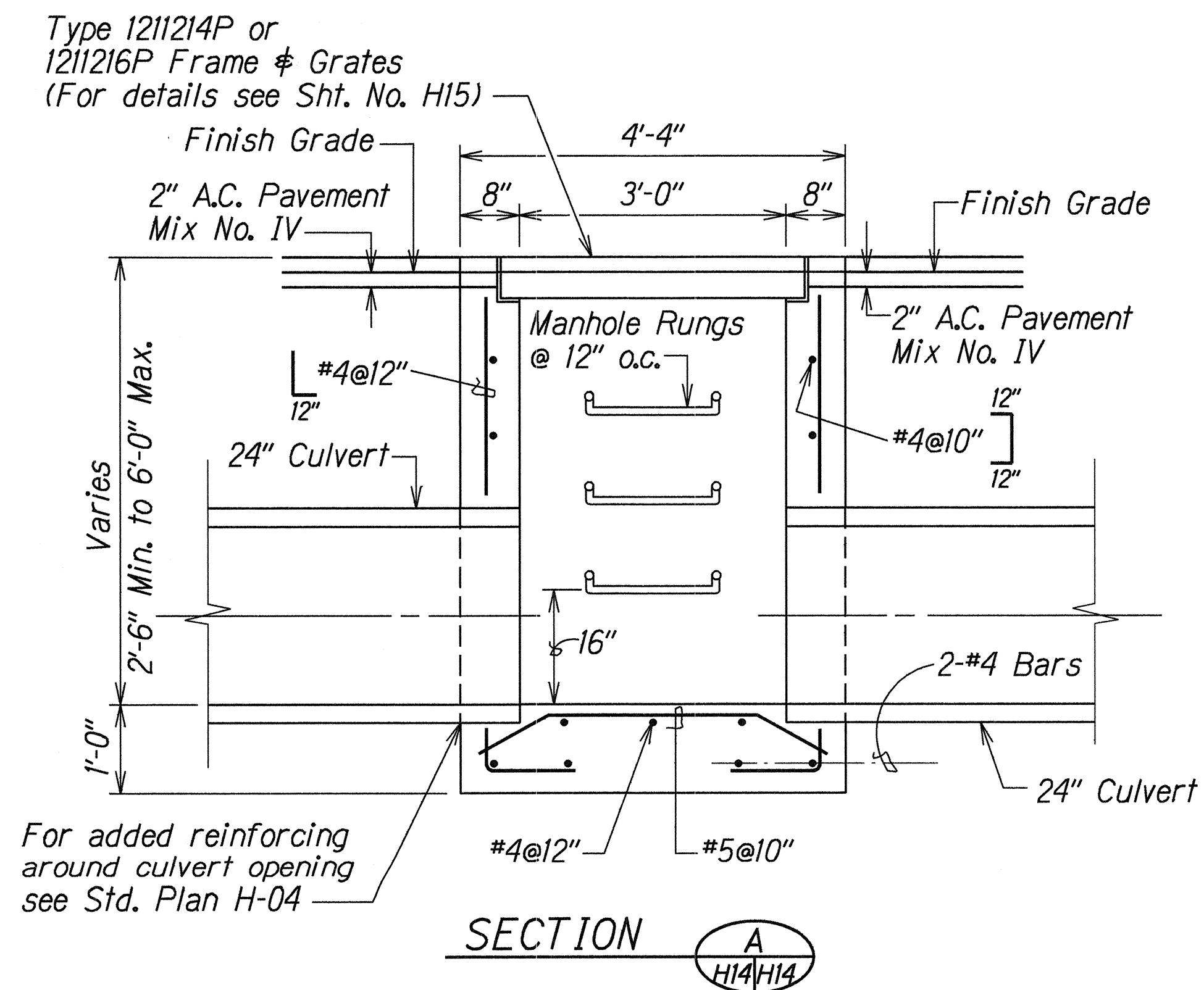
SHEET No. H13 OF 16 SHEETS

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	19G-02-99	2000	17	27



PLAN VIEW OF WALL REINFORCING

DIMENSIONS			
TYPE	A	B	C
1211214P	5'-4"	4'-0"	2'-0"
1211216P	7'-4"	6'-0"	3'-0"



NOTE: 2" A.C. Pavement Transition Detail shall be similar to Detail shown on Sht. No. H12.

TYPICAL DETAILS OF TYPE 1211214P AND 1211216P GRATED DROP INLET

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

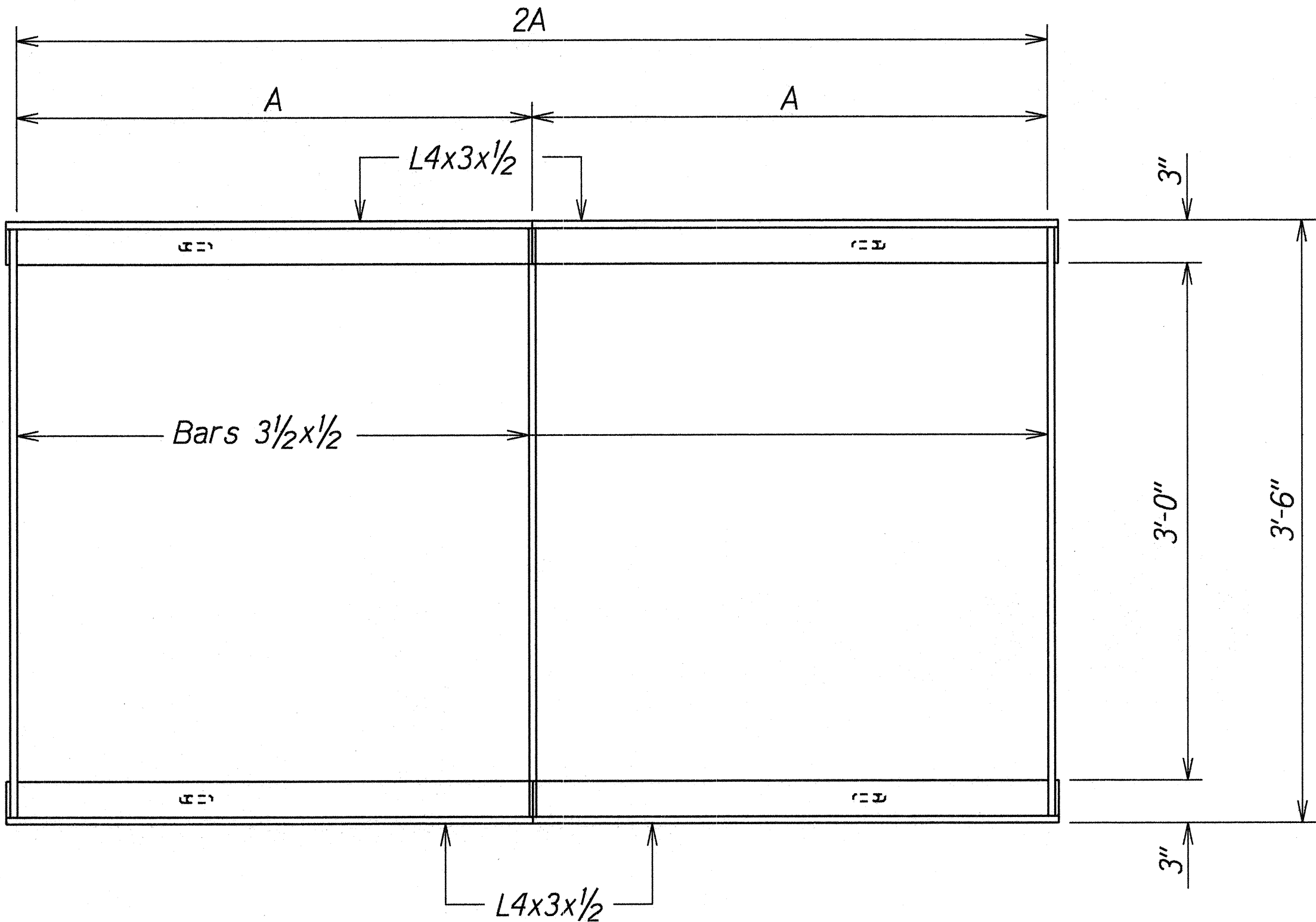
DRAINAGE DETAILS

HAWAII BELT RD. DRAINAGE IMP.
Vicinity of Maulua Gulch, Laupahoehoe
Gulch and Kaawali Gulch
Project No. 19G-02-99

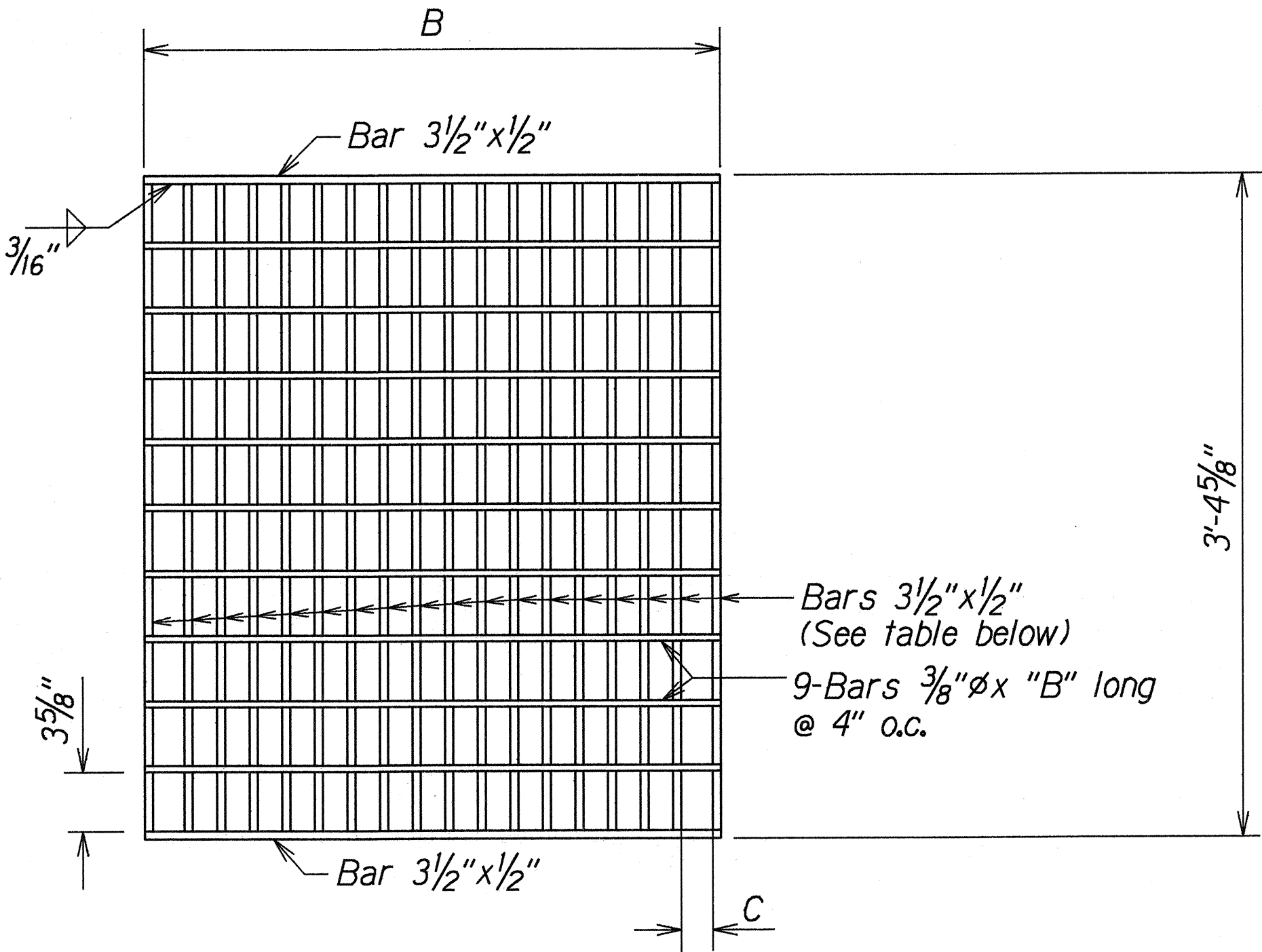
Scale: 3/4" = 1'-0" Date: Sept. 1999

SHEET No. H14 OF 16 SHEETS

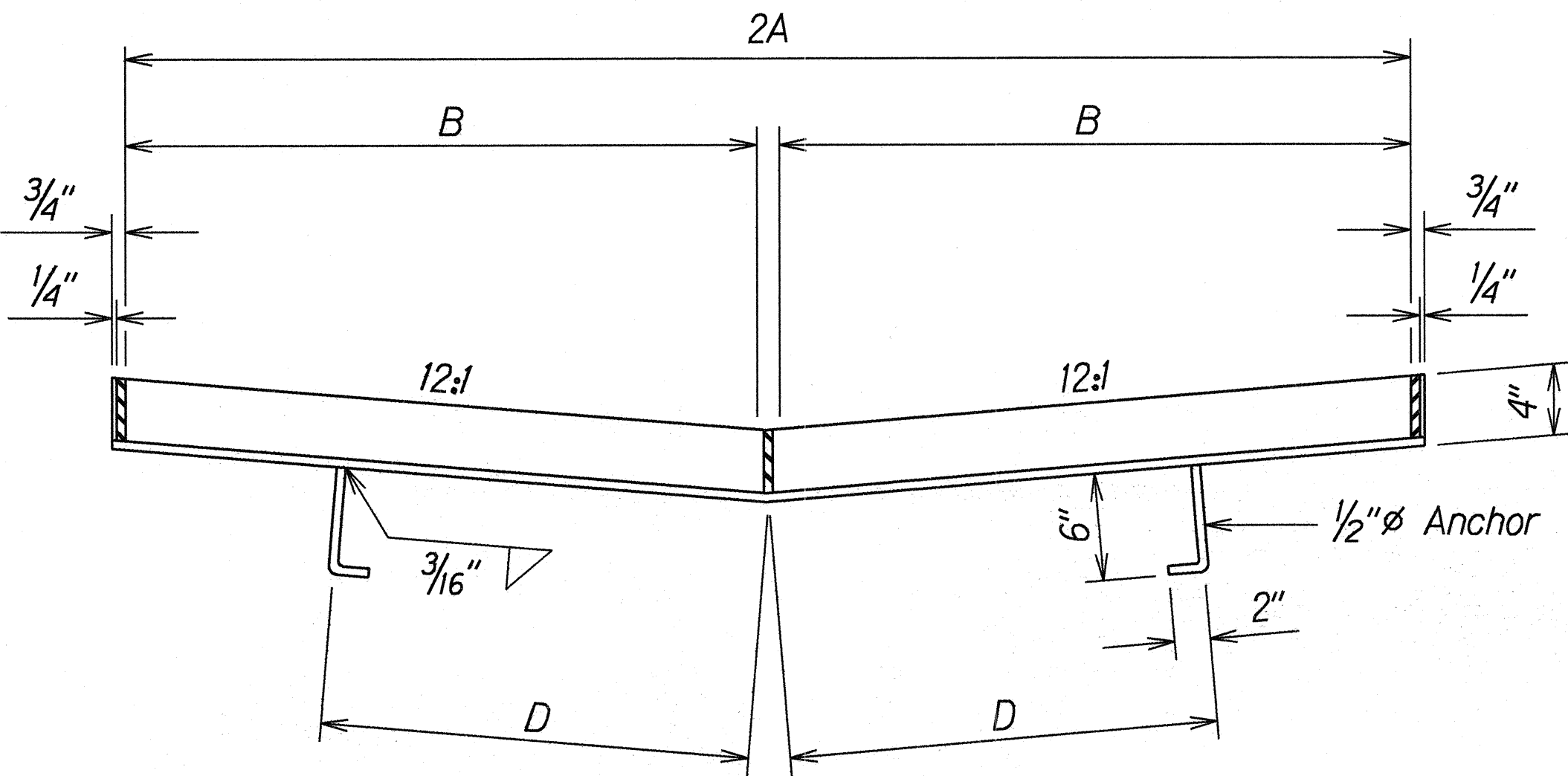
FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	19G-02-99	2000	18	27



PLAN



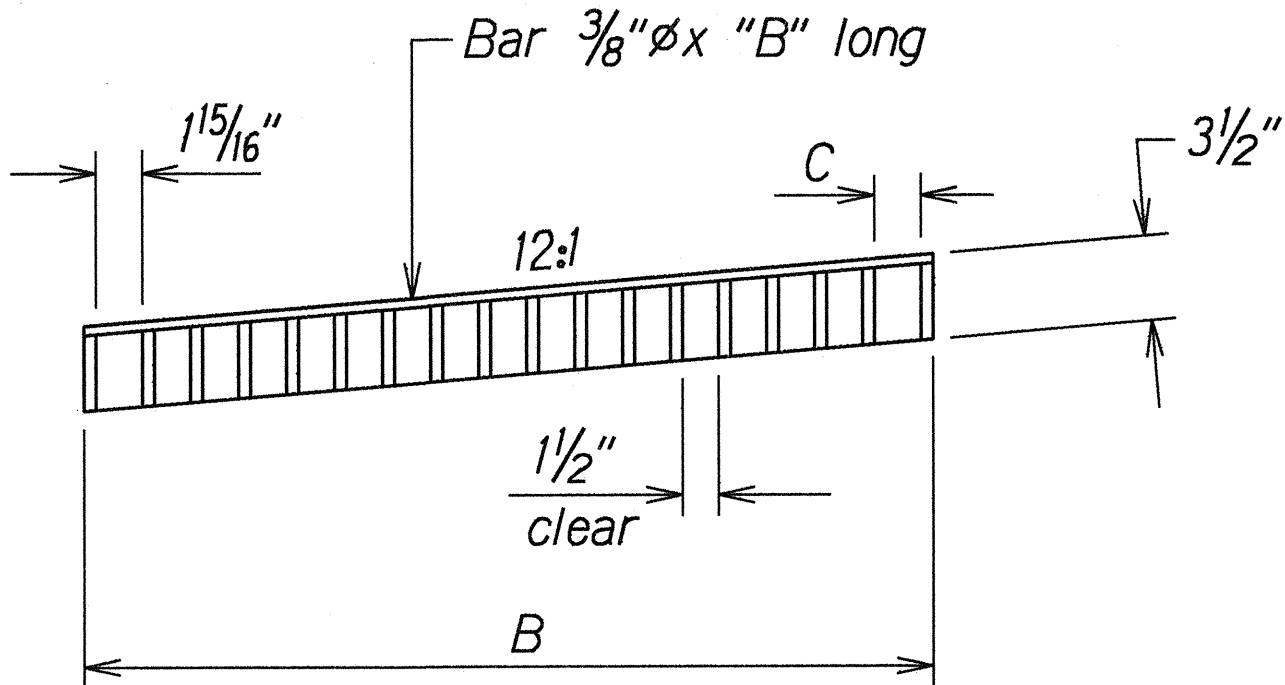
PLAN



SECTION

FRAME

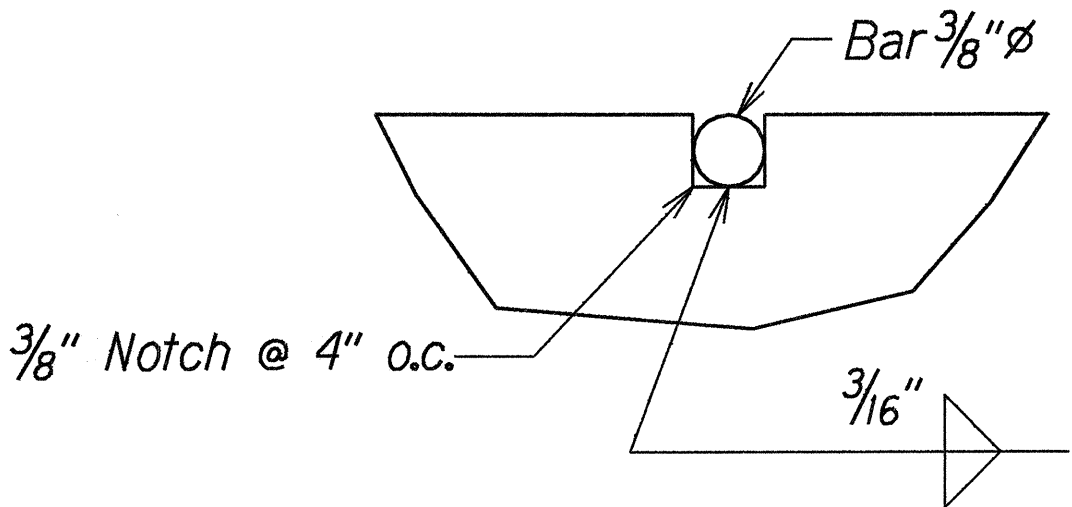
Scale: 1 1/2"=1'-0"



SECTION

GRATE

Scale: 1 1/2"=1'-0"



NOTCH DETAIL

Full Size

DIMENSIONS					
TYPE	NO. BARS	A	B	C	D
1211214P	12	2'-0"	1'-11 1/2"	2"	1'-6"
1211216P	18	3'-0"	2'-11 3/8"	1 15/16"	2'-0"

TYPE 1211214P & 1211216P STEEL FRAME AND GRATES

Scale: 1 1/2"=1'-0"

GENERAL NOTE

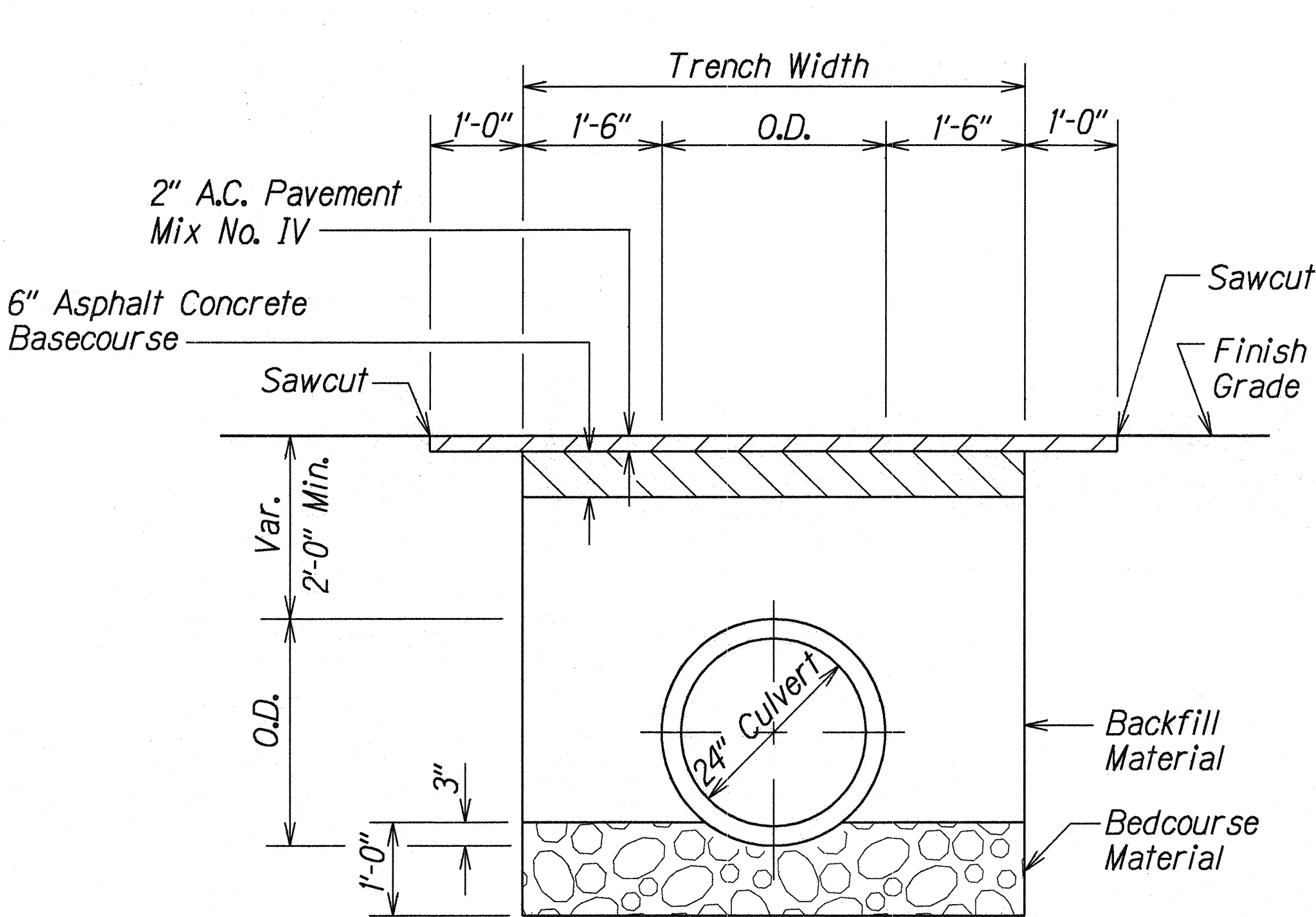
1. All welds 3/8" unless otherwise noted.

ORIGINAL PLAN	SURVEY PLOTTED BY DATE
NOTE BOOK DESIGNED BY CHECKED BY	DRAWN BY DESIGNED BY CHECKED BY

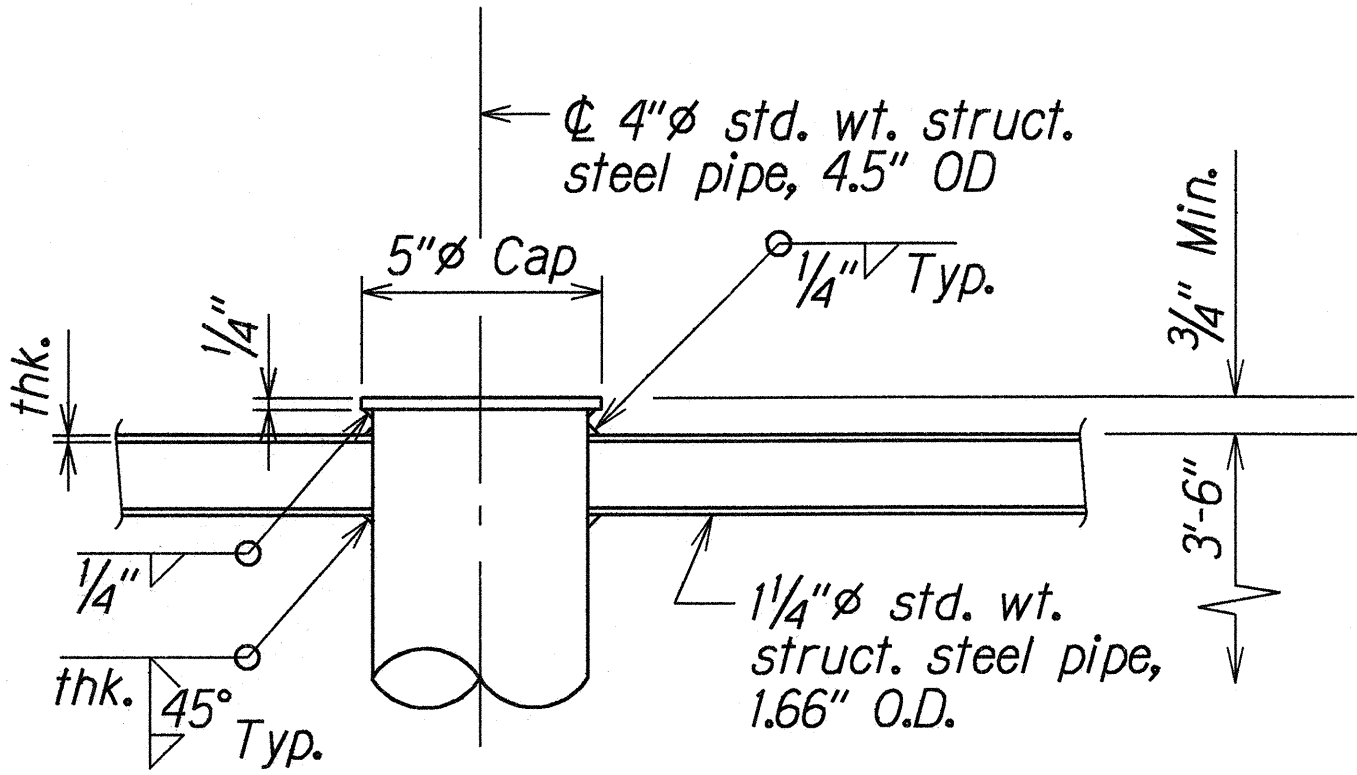
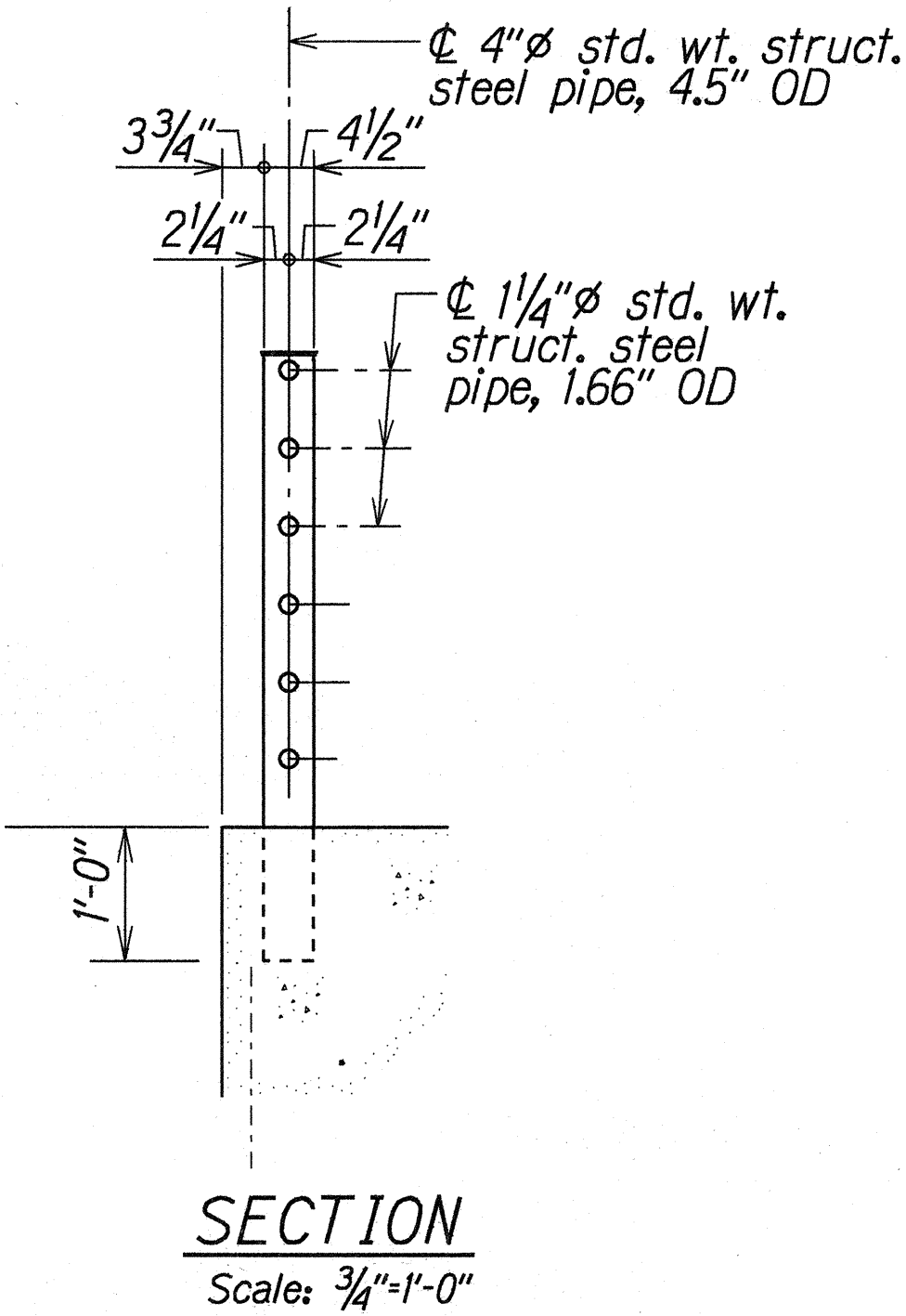
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

DRAINAGE PLAN
HAWAII BELT RD. DRAINAGE IMP.
Vicinity of Maulua Gulch, Laupahoehoe
Gulch and Kaawalii Gulch
Project No. 19G-02-99
Scale: As Noted Date: June 1999
SHEET No. H15 OF 16 SHEETS

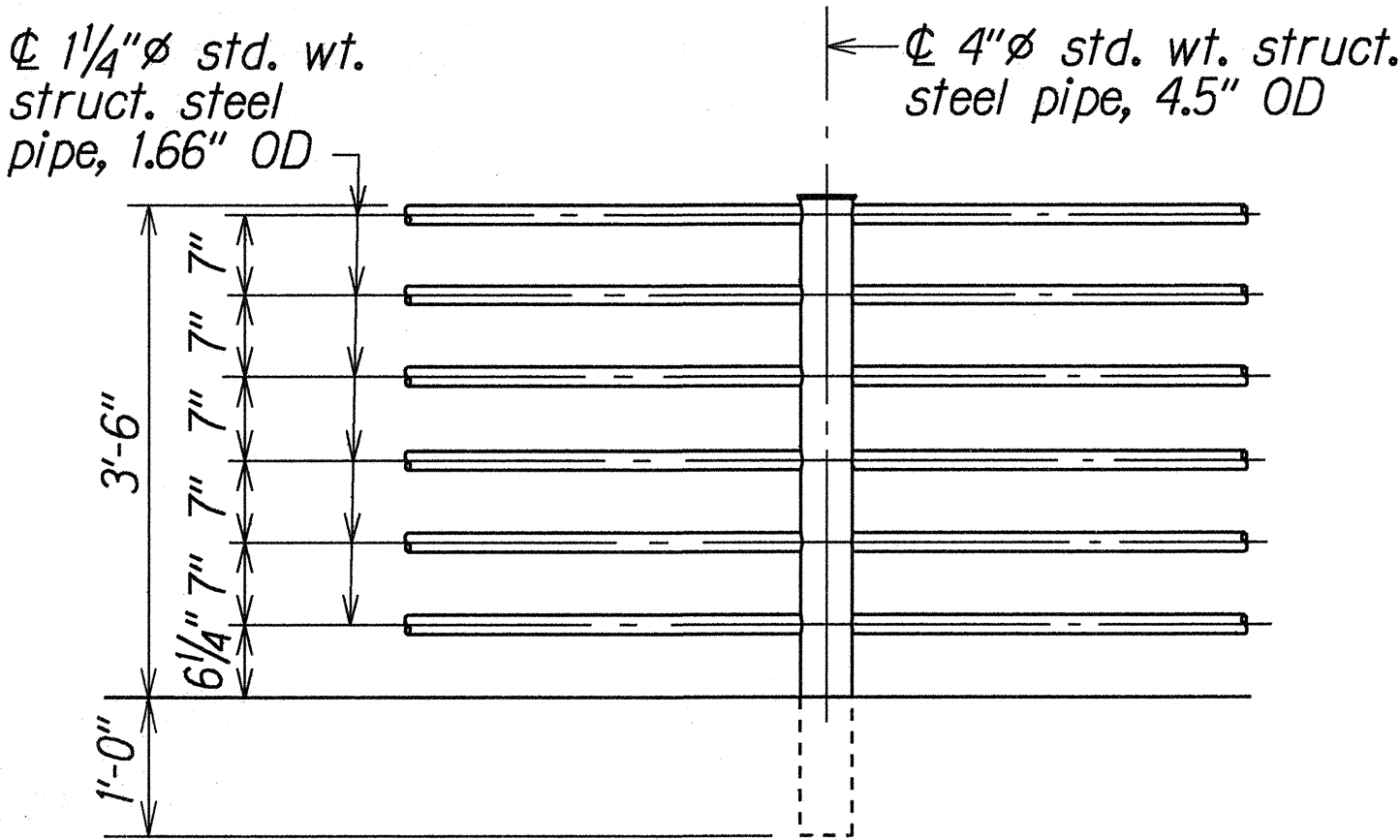
FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	19G-02-99	2000	19	27



**TYPICAL DETAIL OF CULVERT
TRENCH RESTORATION**
Scale: 3/4"=1'-0"



**TYPICAL WELD DETAILS
FOR PIPE RAILING**
Scale: 3"=1'-0"



ELEVATION
Scale: 3/4"=1'-0"

DETAILS OF PIPE RAILING

ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
NOTE BOOK	DRAWN BY A. Manula	9/13/99
designed by C. Matsuda, B. Toda		
checked by 44brnd05.dgn		

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

DRAINAGE DETAILS
HAWAII BELT RD. DRAINAGE IMP.
Vicinity of Maula Gulch, Laupahoehoe
Gulch and Kaawalii Gulch
Project No. 19G-02-99
Scale: As shown Date: Sept. 1999

SHEET No. H16 OF 16 SHEETS