

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-NH-030-1(24)	2000	86	139

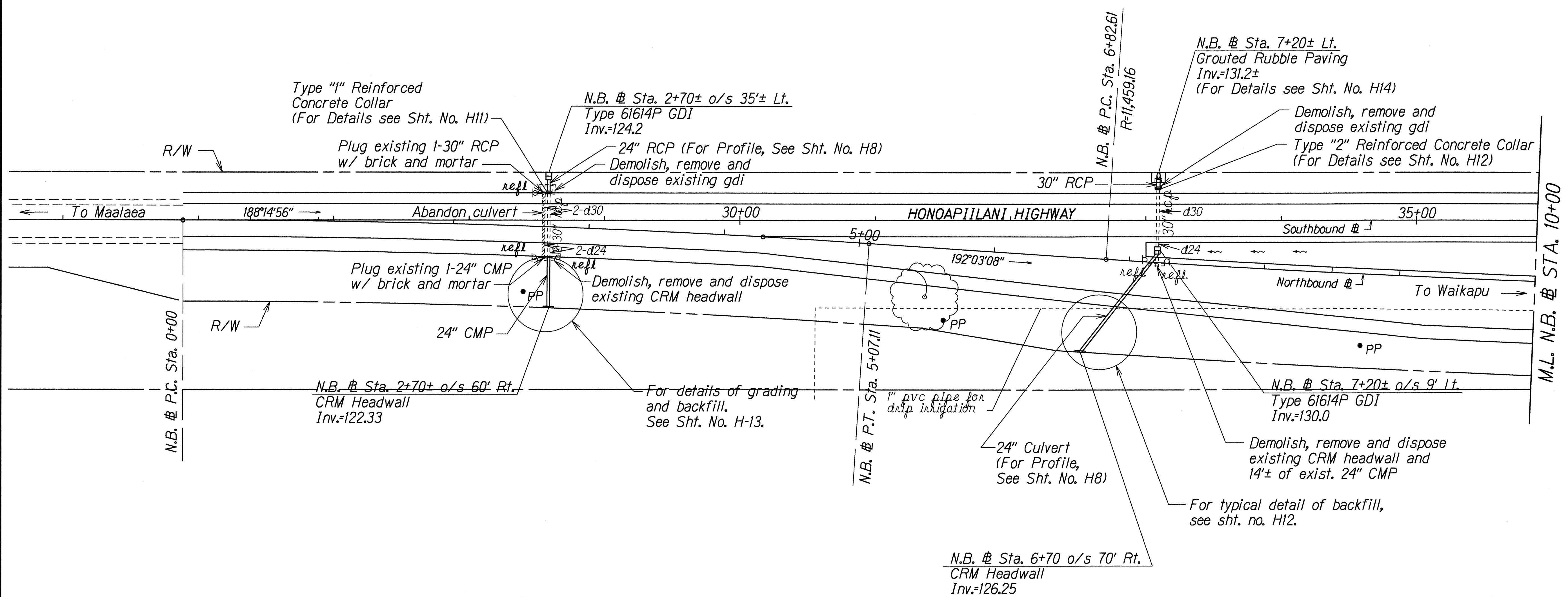
PROJECT NO. : BR-NH-030-1(24)

SHEET No. *H1* OF *19* SHEETS

ORIGINAL PLAN	SURVEY PLOTTED BY _____ DATE <u>7/31/95</u>
NOTE BOOK 4424urfls.bhor pbhomsmlagn N# _____	DRAWN BY <u>R. Sato</u>
	TRACED BY _____
	DESIGNED BY <u>C. Matsuda</u>
	QUANTITIES BY _____
	CHECKED BY _____

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-NH-030-1(24)	2000	87	139

TRUE NORTH
SCALE: 1" = 40'



DRAINAGE NOTES

- Existing drainage systems will be functional at all times during construction. The Contractor is to furnish materials, equipment, labor, tools and incidentals necessary to accomplish maintenance of flow. The cost shall be incidental to the various Contract Items.
- The Contractor shall verify the locations and size of all existing culverts and utilities in the field. Any existing culverts and utilities damaged during construction shall be repaired or replaced by the Contractor at his own expense.
- Only non-pneumatic type of drill as approved by the Engineer will be permitted for drilling holes in concrete.
- Plugging existing 24-inch and 30-inch culvert with brick and mortar shall not be paid for separately but shall be considered incidental to the various Contract Items.
- Grading and backfilling in the vicinity of N.B. Sta. 2+70± Rt. and N.B. Sta. 6+70± Rt. shall not be paid for separately, but shall be considered incidental to the various Contract Items.
- Demolishing, removing, and disposing existing grated drop inlets, headwalls, and culverts shall not be paid for separately but shall be considered incidental to the various Contract Items.
- For details of new corrugated metal pipe (CMP) connections to existing CMP, see Standard Plan H-22 and H-23. The connections shall not be paid for separately but shall be considered incidental to the various Contract Items.
- For details of Concrete Headwalls, see Standard Plan H-16 unless otherwise noted.
- For details of CRM Headwalls, see Standard Plan H-16.
- For details of 61614P Grated Drop Inlets, see Standard Plan H-11 and Sht No. H-19.

ORIGINAL PLAN	DATE
DESIGNED BY	7/2/95
DRAWN BY	
CHECKED BY	
NOTED BY	
QUANTITIES BY	
APPROVED BY	

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

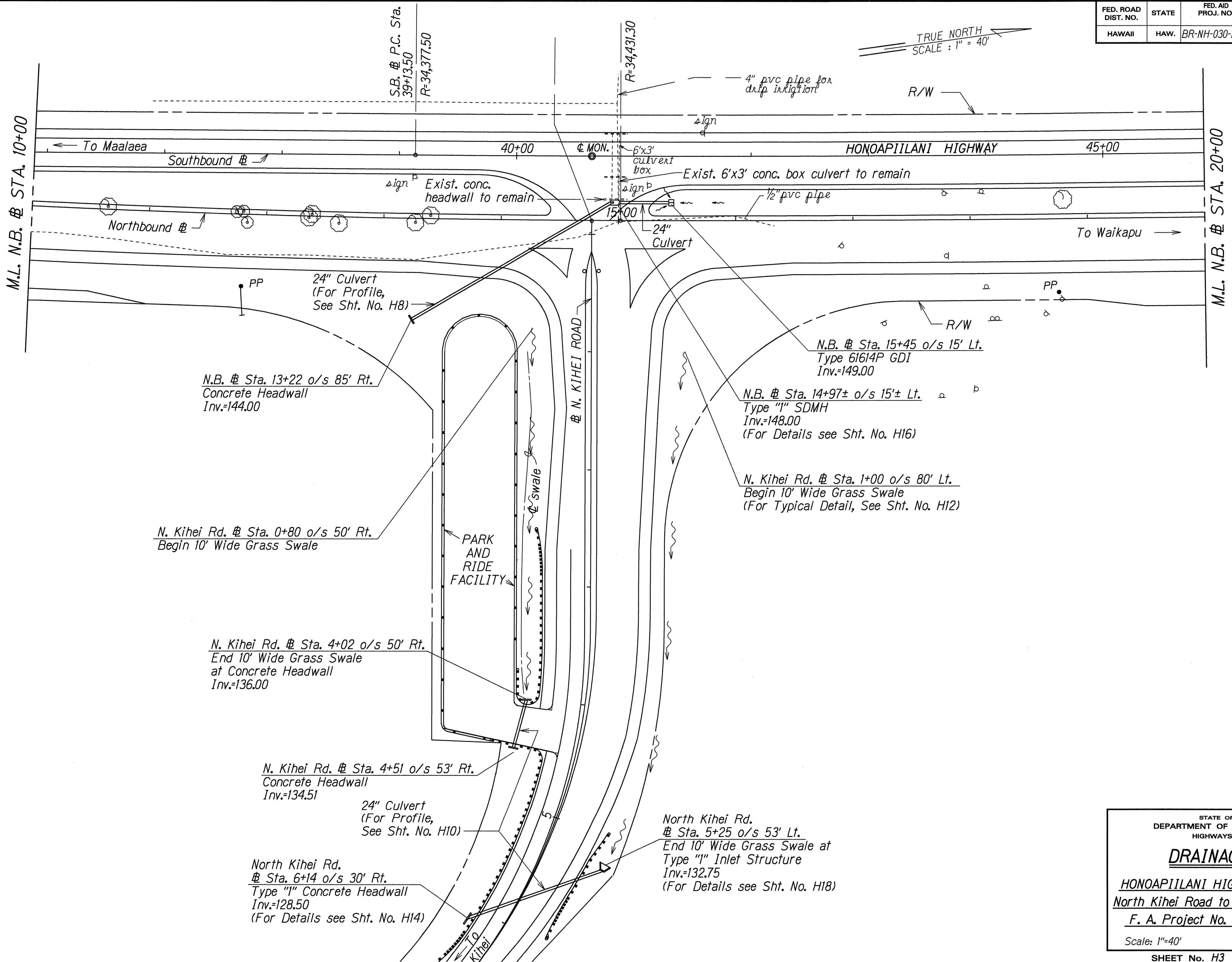
DRAINAGE PLAN

HONOAPIILANI HIGHWAY WIDENING
North Kihei Road to Kuihelani Highway
F. A. Project No. BR-NH-030-1(24)

Scale: 1"=40' Date: Jan. 1999

SHEET No. H2 OF 19 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-NH-030-1(24)	2000	88	139



ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
NOTED	DRAWN BY A. Namura, I. Cockett	7/2/96
DESIGNED BY G. Matsuda		
CHECKED BY		

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

DRAINAGE PLAN

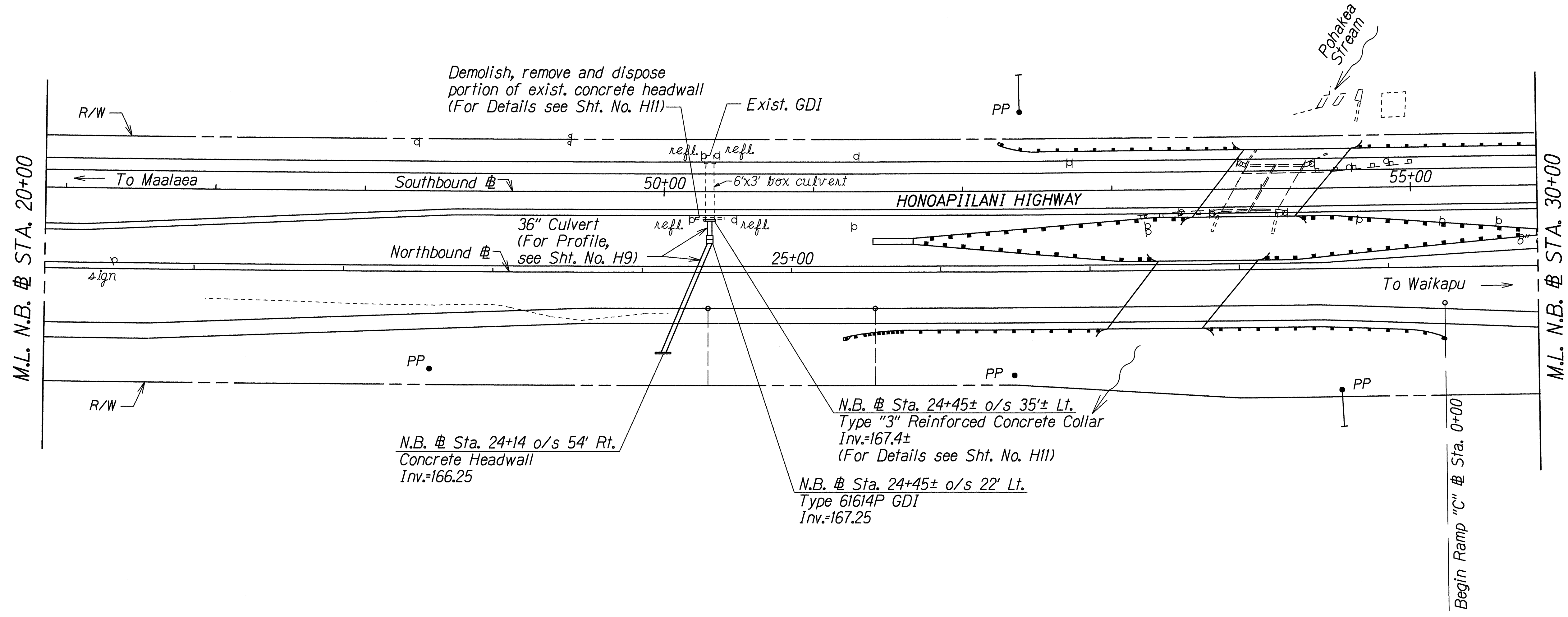
HONOAPIILANI HIGHWAY WIDENING
North Kihei Road to Kiihelani Highway
F. A. Project No. BR-NH-030-1(24)

Scale: 1"=40' Date: Jan. 1999

SHEET No. H3 OF 19 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-NH-030-1(24)	2000	89	139

TRUE NORTH
SCALE : 1" = 40'



ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
NOTED	DRAWN BY A. Naniwa L. Coakett	7/22/96
DESIGNED BY C. Matsuda		
CHECKED BY		

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

DRAINAGE PLAN

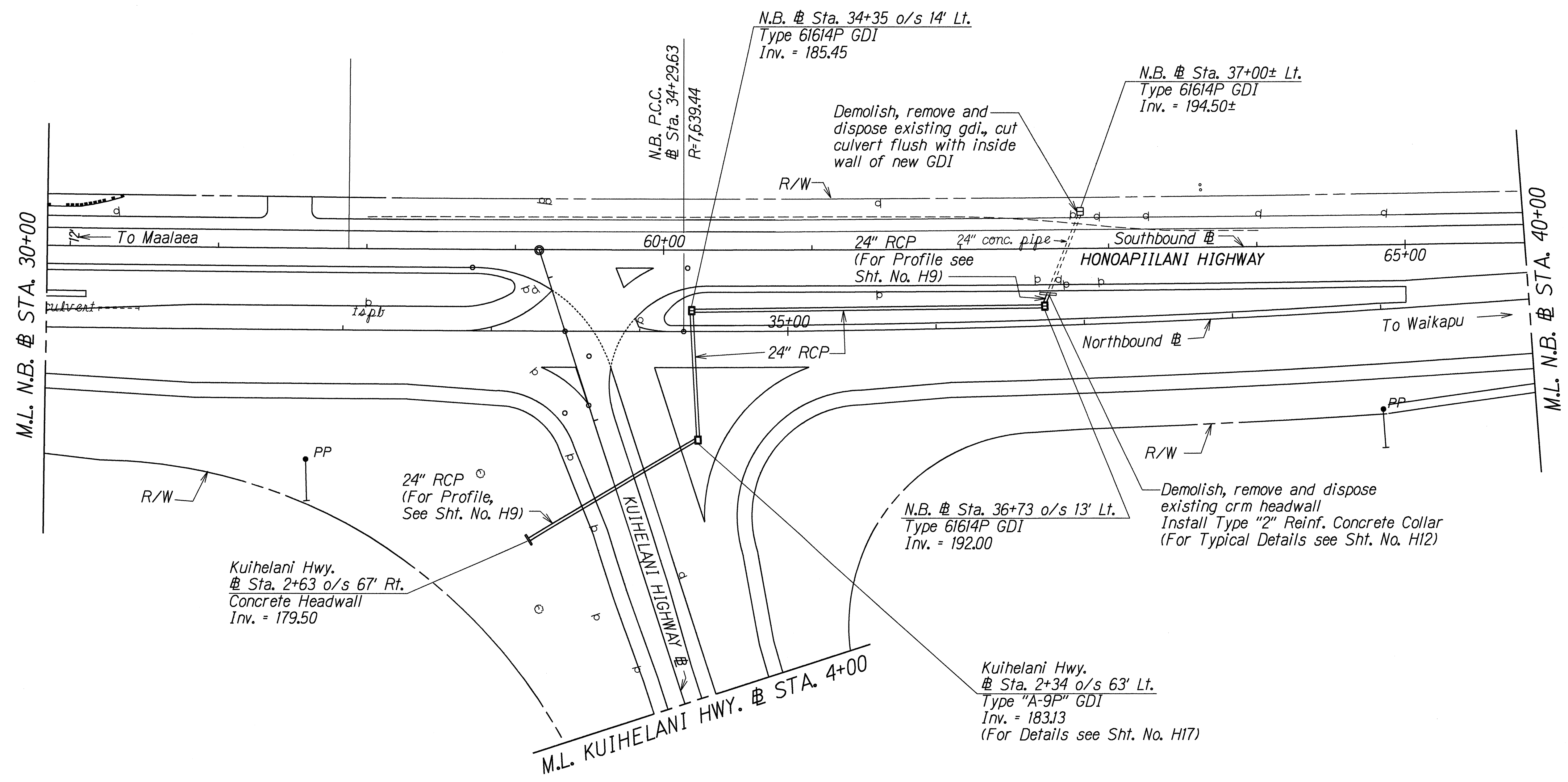
HONOAPIILANI HIGHWAY WIDENING
North Kihei Road to Kuihelani Highway
F. A. Project No. BR-NH-030-1(24)

Scale: 1"=40' Date: Jan. 1999

SHEET No. H4 OF 19 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-NH-030-1(24)	2000	90	139

TRUE NORTH
SCALE: 1" = 40'



ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
NOTE BOOK	DRAWN BY A. Nomura, I. Coadell	1/22/96
QUANTITIES BY	TRACED BY C. Matsuda	
CHECKED BY		

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

DRAINAGE PLAN

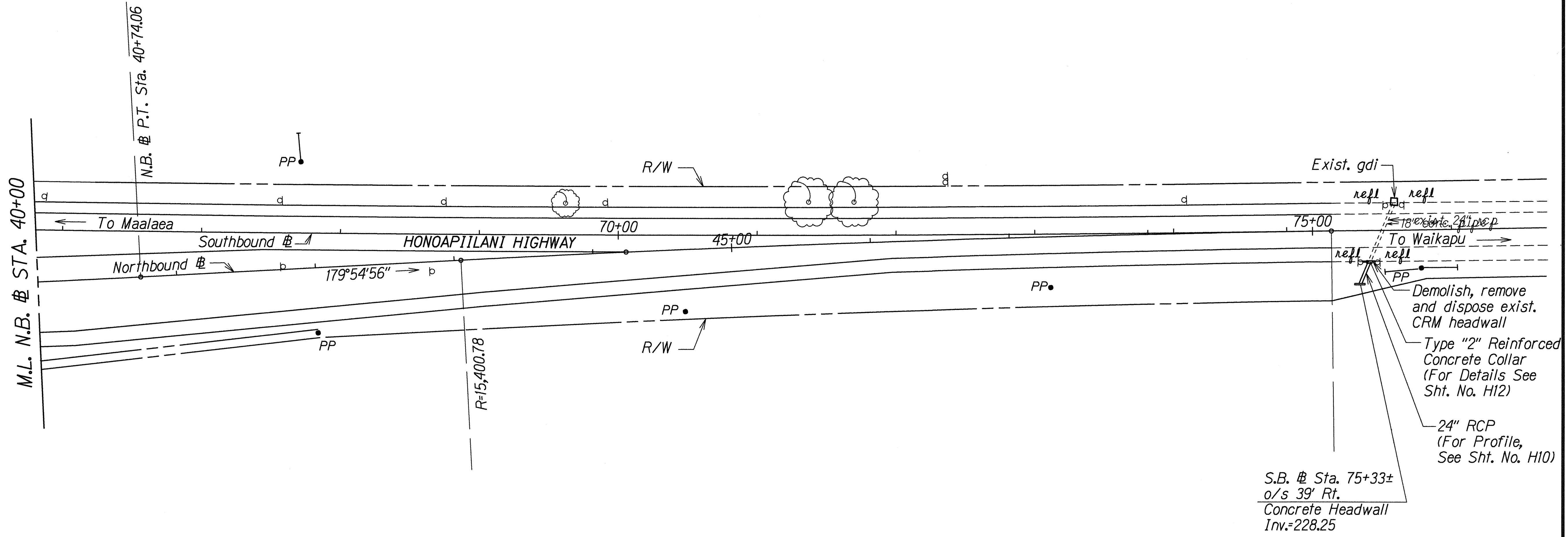
HONOAPIILANI HIGHWAY WIDENING
North Kihei Road to Kuihelani Highway
F. A. Project No. BR-NH-030-1(24)

Scale: 1"=40' Date: Jan. 1999

SHEET No. H5 OF 19 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-NH-030-1(24)	2000	91	139

TRUE NORTH
SCALE : 1" = 40'



ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
NOTE BOOK	DRAWN BY A. Nomaia, I. Cockett	7/2/96
CHECKED BY	TRACED BY C. Matsuda	
	QUANTITIES BY	
	CHECKED BY	

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

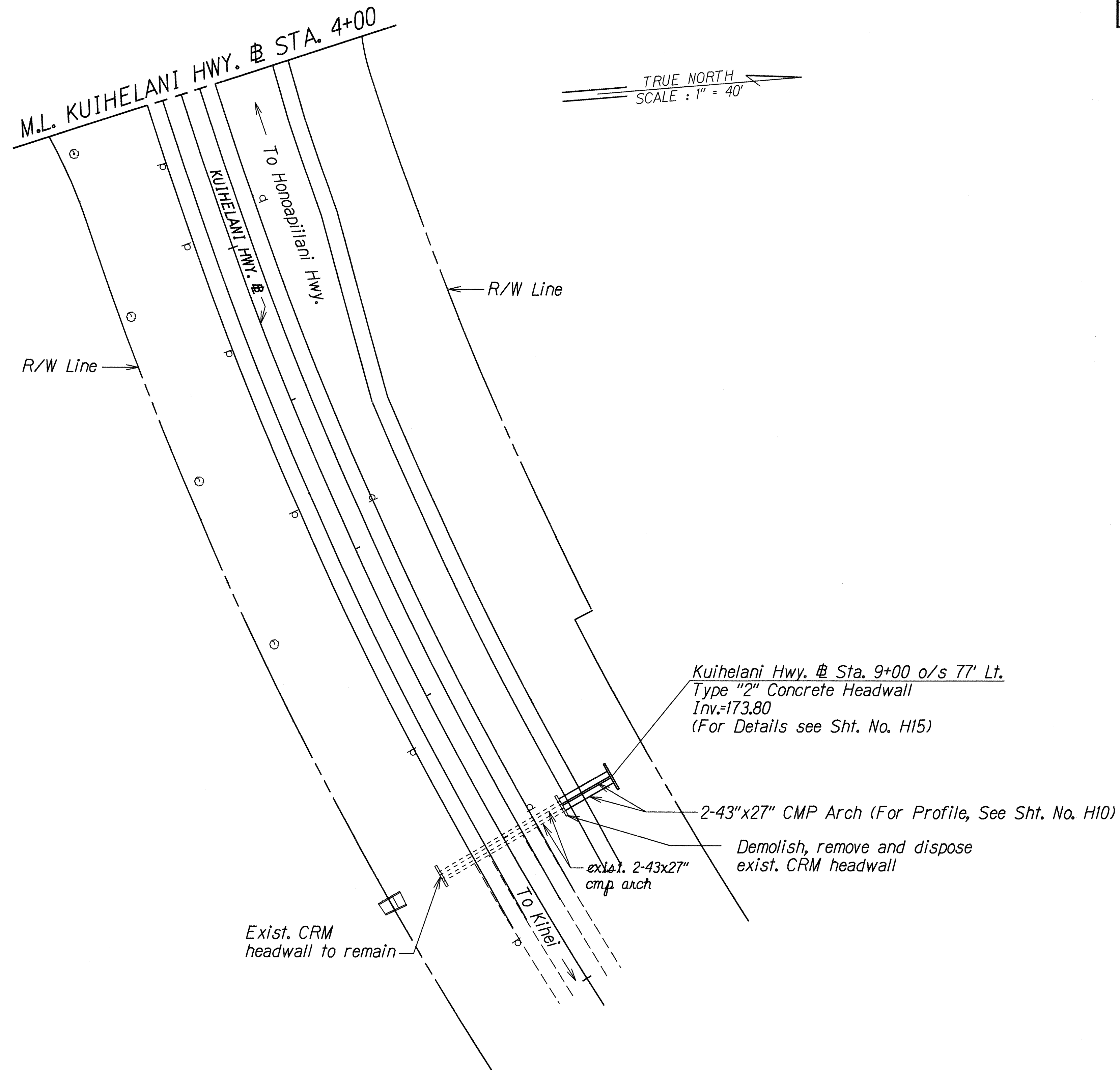
DRAINAGE PLAN

HONOAPIILANI HIGHWAY WIDENING
North Kihei Road to Kuihelani Highway
F. A. Project No. BR-NH-030-1(24)

Scale: 1"=40' Date: Jan. 1999

SHEET No. H6 OF 19 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-NH-030-1(24)	2000	92	139



ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
NOTE BOOK	DRAWN BY A. Nishida	1/24/99
DESIGNED BY C. Matsuda		
CHECKED BY		

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

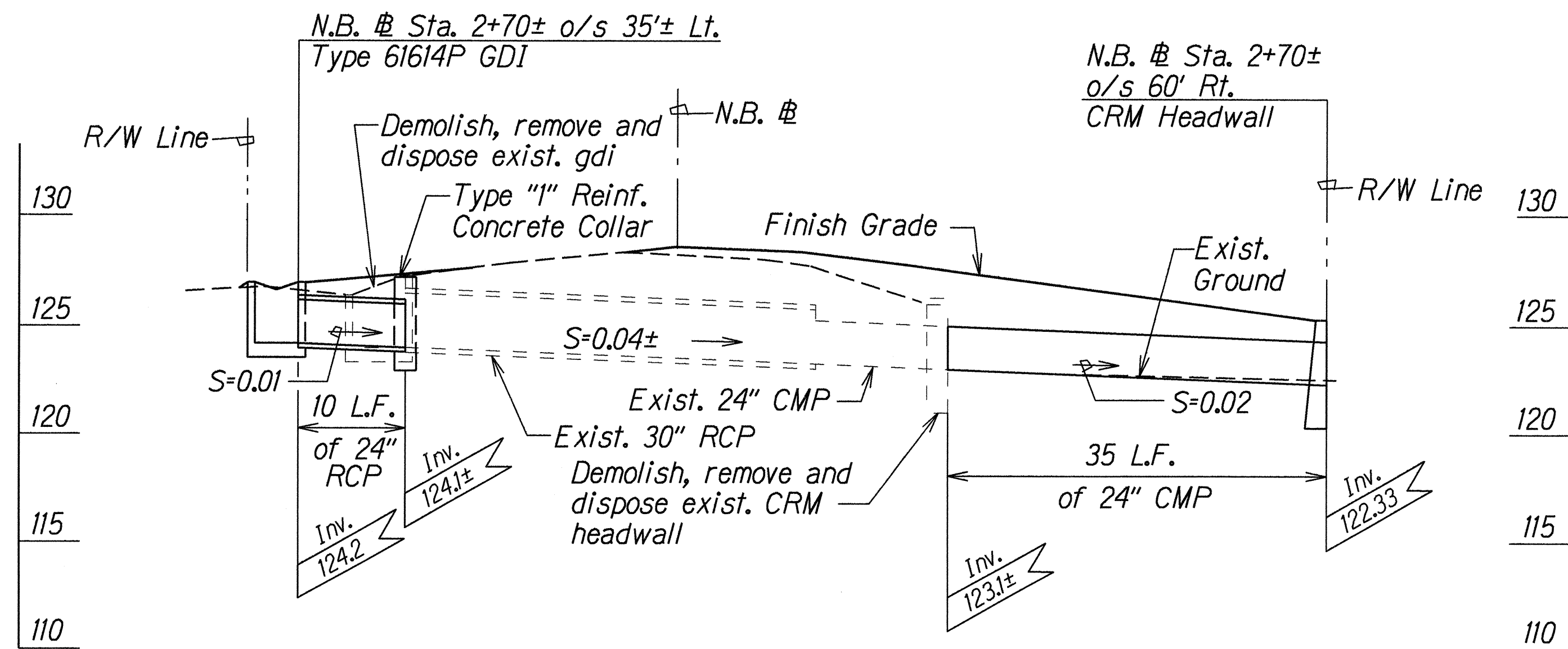
DRAINAGE PLAN

HONOAPIILANI HIGHWAY WIDENING
North Kihai Road to Kuihelani Highway
F. A. Project No. BR-NH-030-1(24)

Scale: 1"=40' Date: Jan. 1999

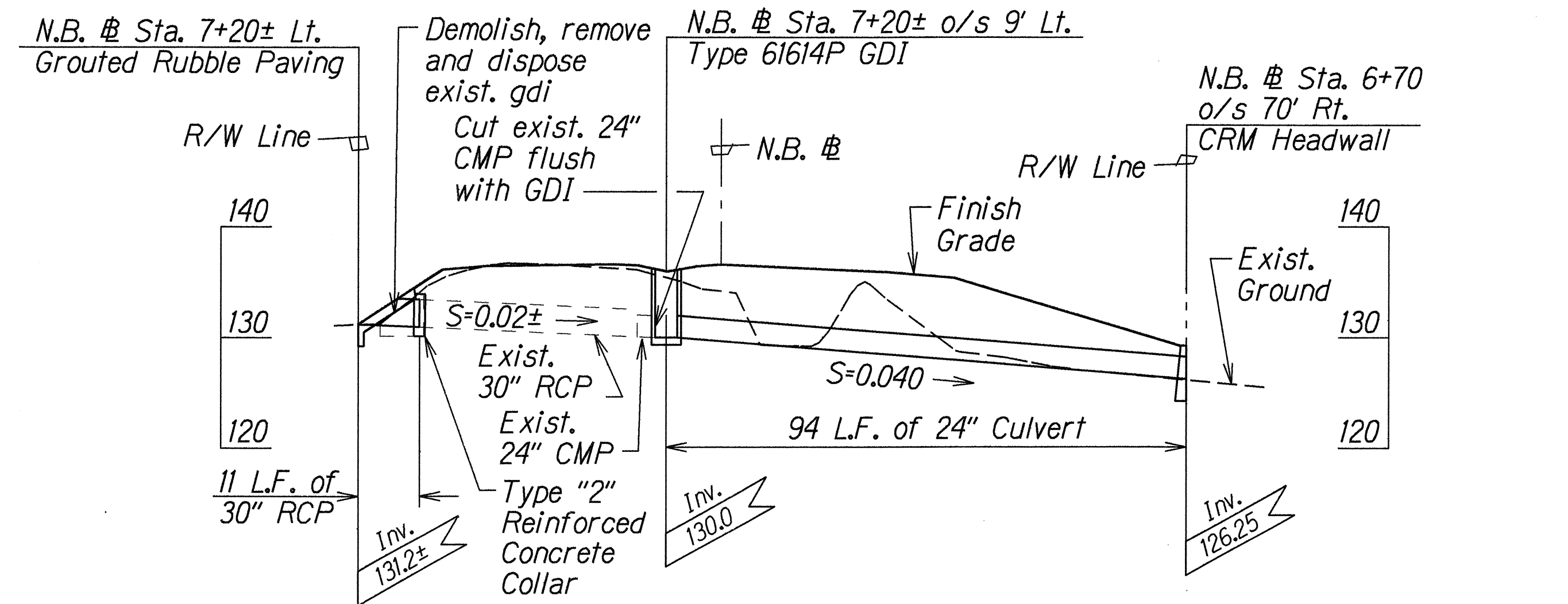
SHEET No. H7 OF 19 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-NH-030-1(24)	2000	93	139



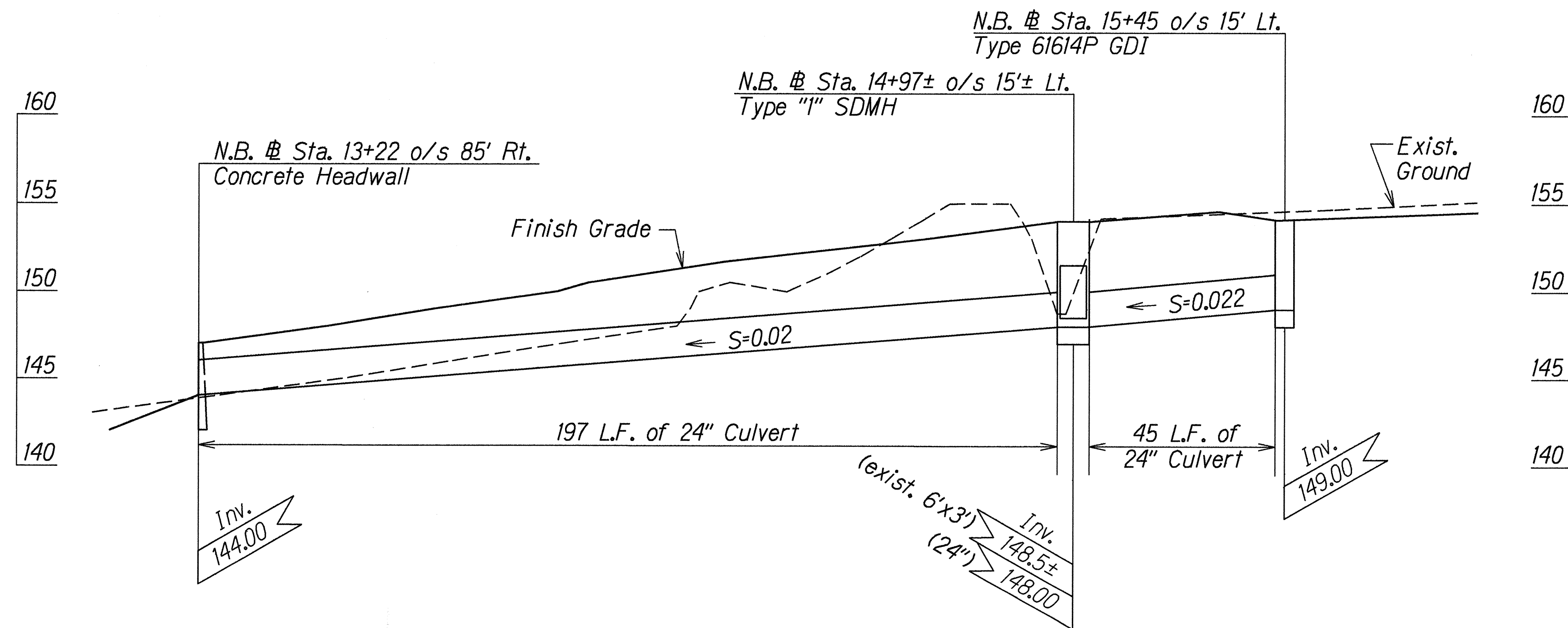
PROFILE OF 24" CULVERT AT N.B. STA. 2+70±

Scale: Horiz. 1"=10'
Vert. 1"=5'



PROFILE OF 24" AND 30" CULVERT AT N.B. STA. 6+70 TO N.B. STA. 7+20±

Scale: Horiz. 1"=20'
Vert. 1"=10'



PROFILE OF 24" CULVERT AT N.B. STA. 14+85±

Scale: Horiz. 1"=20'
Vert. 1"=5'

ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
NOTE BOOK	DRAWN BY A. Kama	7/2/99
QUANTITIES BY	DESIGNED BY C. Matsuda	
CHECKED BY		

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

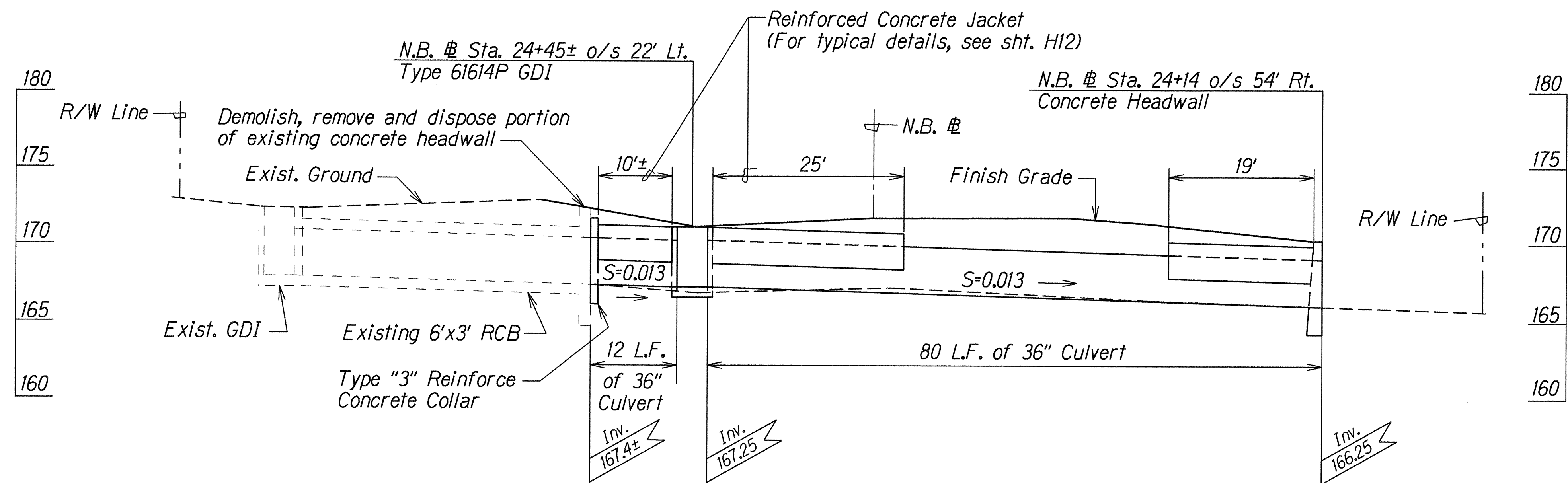
DRAINAGE PROFILE

HONOAPIILANI HIGHWAY WIDENING
North Kihei Road to Kuihelani Highway
F. A. Project No. BR-NH-030-1(24)

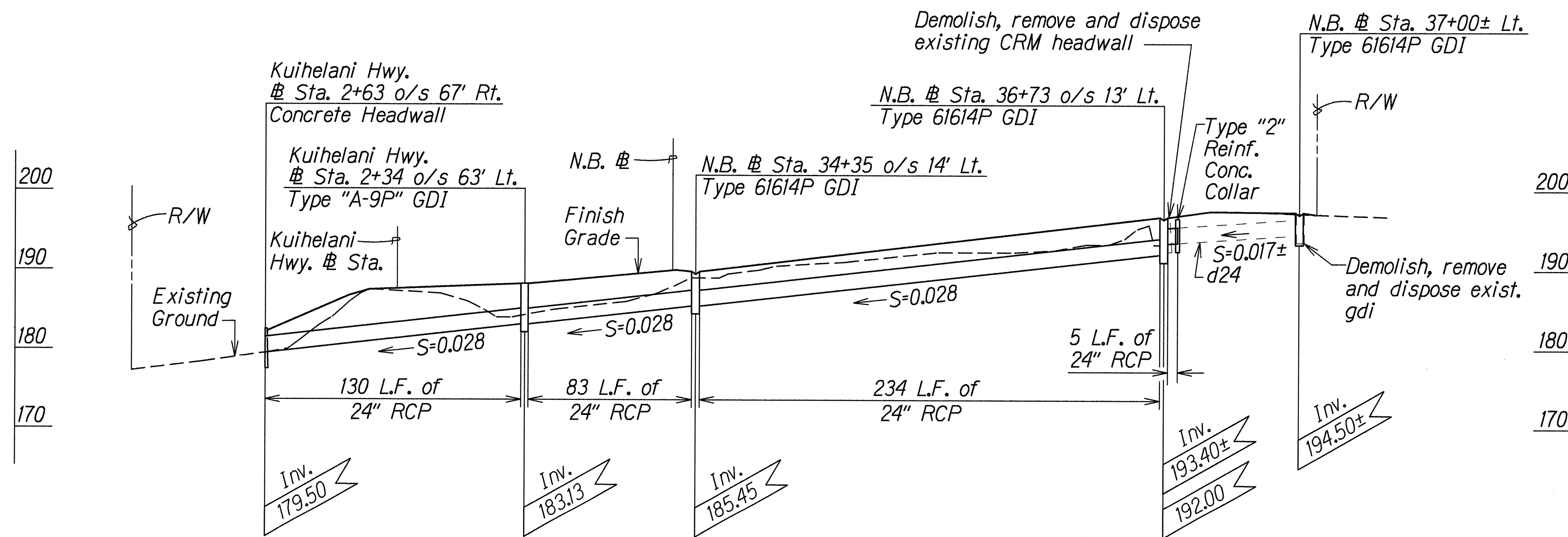
Scale: As Shown Date: Jan. 1999

SHEET No. H8 OF 19 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-NH-030-1(24)	2000	94	139



PROFILE OF 36" CULVERT AT N.B. STA. 24+45±
Scale: Horiz. 1"=10'
Vert. 1"=5'



PROFILE - KUIHELANI HWY. STA. 2+63 RT. TO N.B. STA. 36+73 LT.
Scale: Horiz. 1"=40'
Vert. 1"=10'

ORIGINAL PLAN	DATE	1/10/96
SURVEY PLOTTED BY		
DRAWN BY		
DESIGNED BY		
QUANTITIES BY		
CHECKED BY		

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

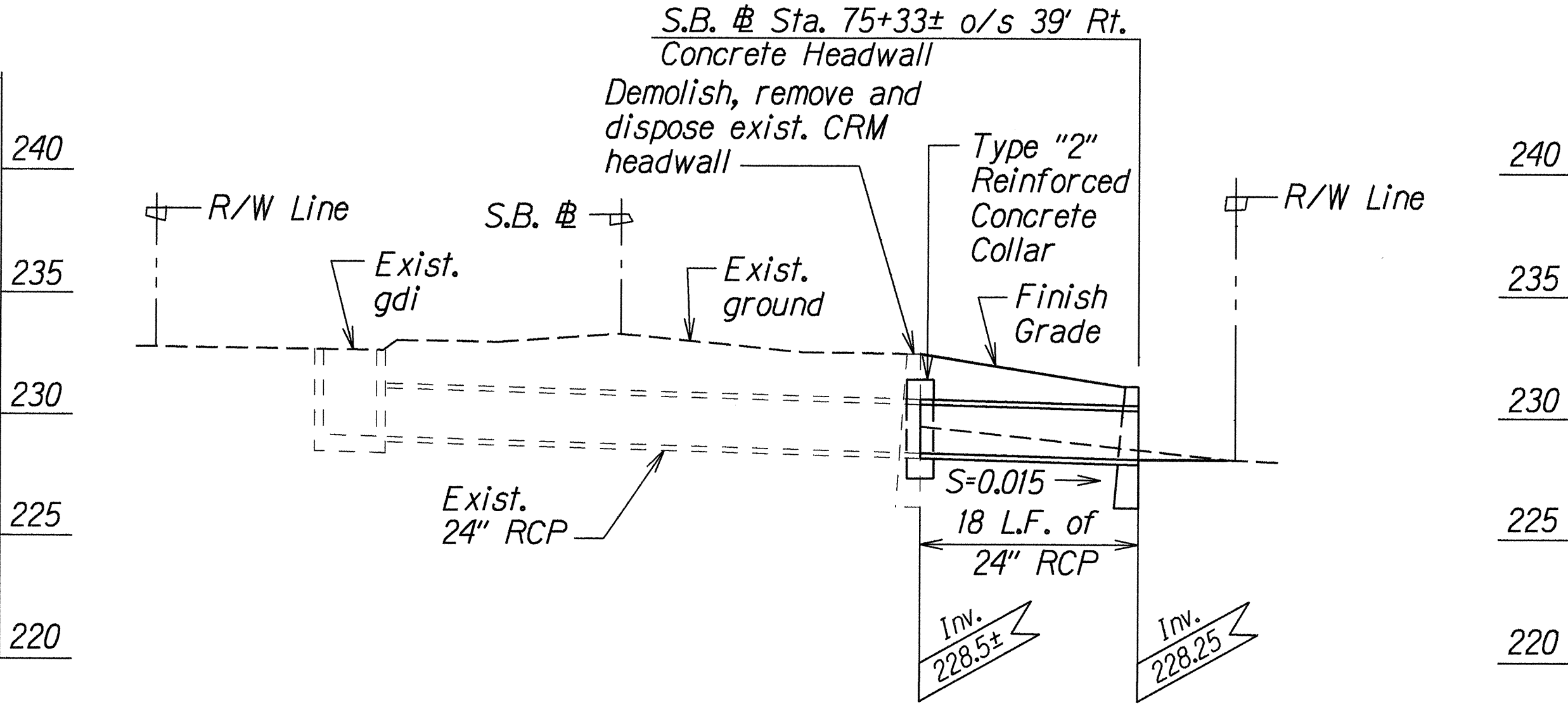
DRAINAGE PROFILE

HONOAPIILANI HIGHWAY WIDENING
North Kihei Road to Kuihelani Highway
F. A. Project No. BR-NH-030-1(24)

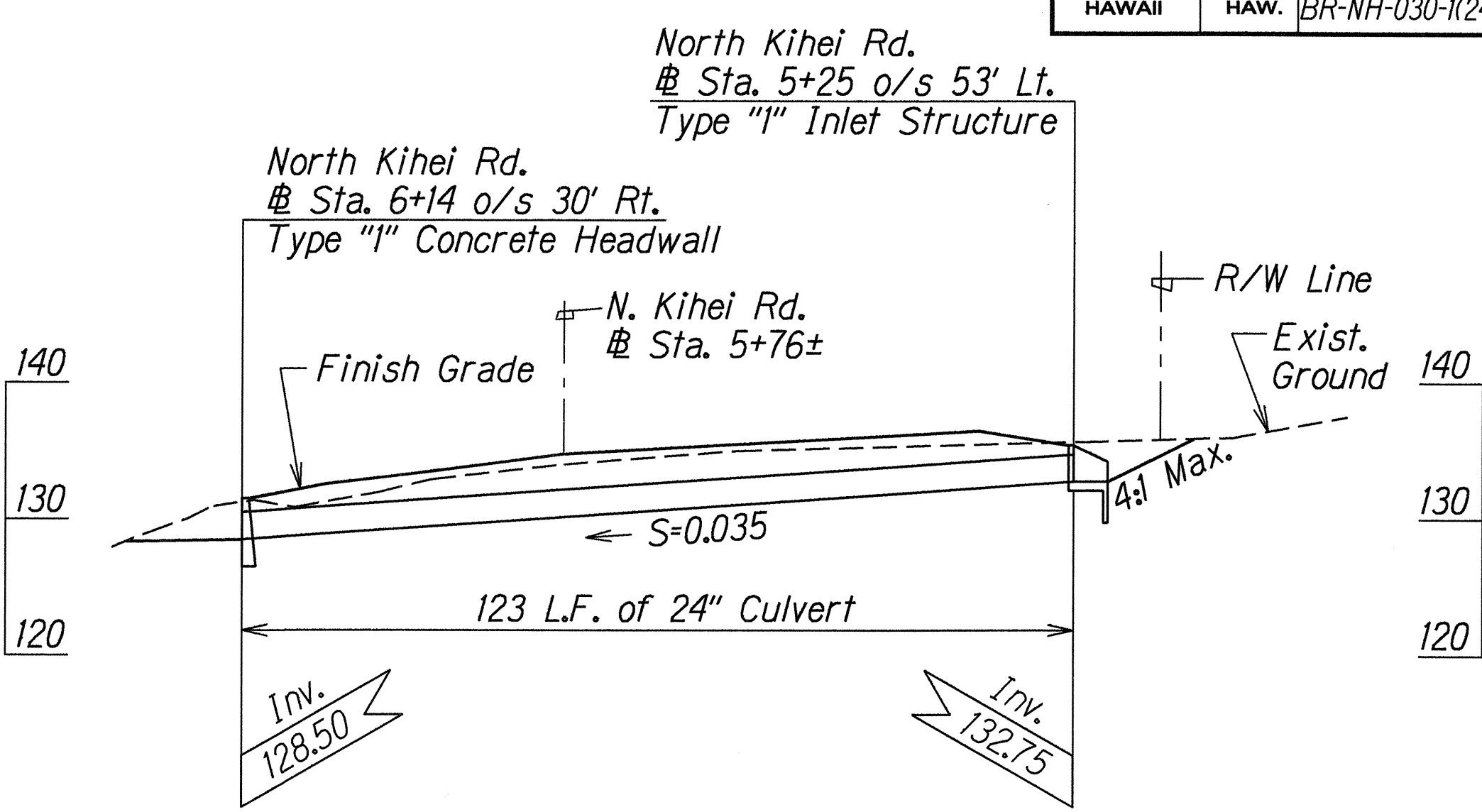
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SHEET No. H9 OF 19 SHEETS

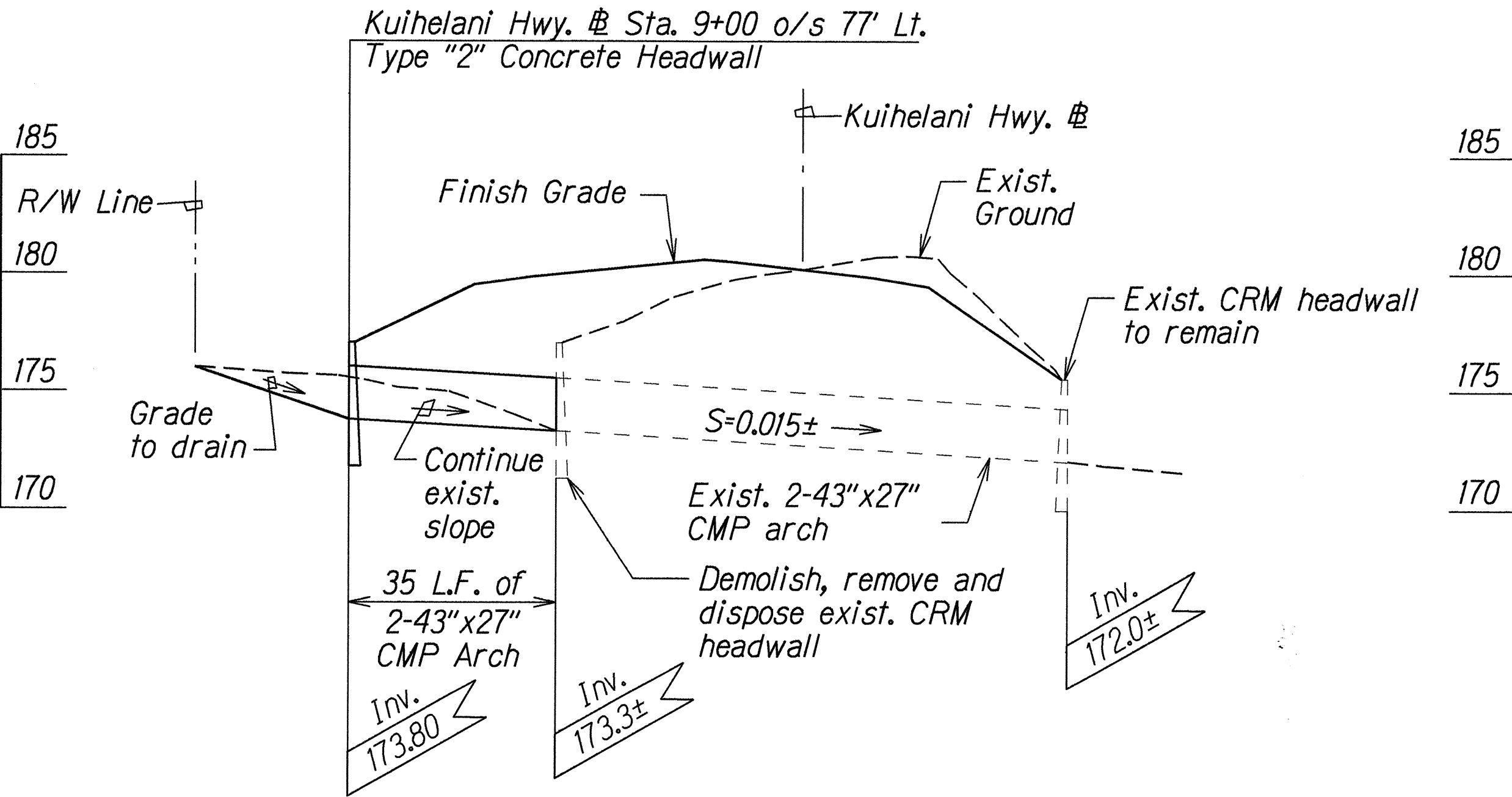
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HAWAII	HAW.	BR-NH-030-1(24)	2000	95	139



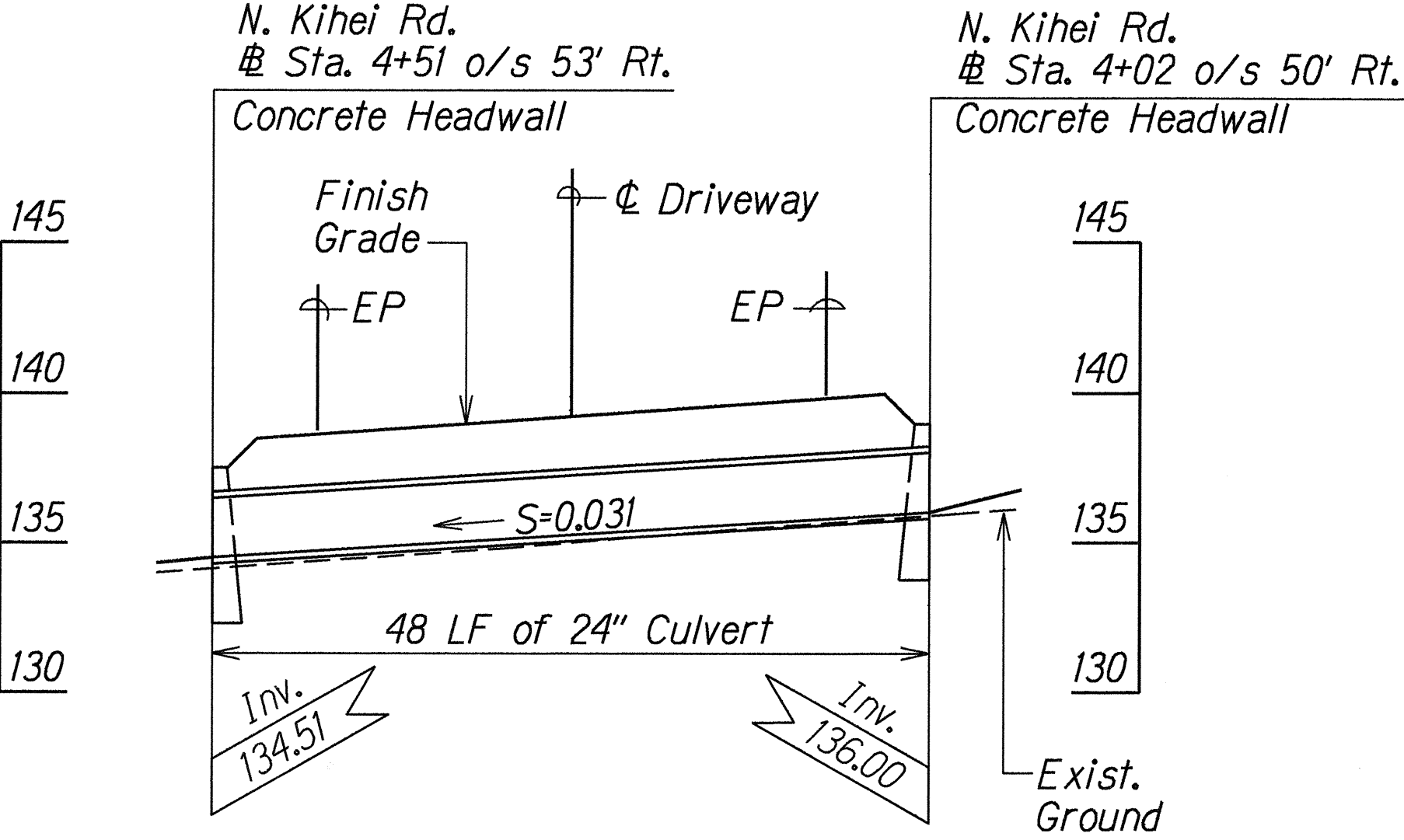
PROFILE OF 24" CULVERT AT S.B. STA. 75+33±
Scale: Horiz. 1"=10'
Vert. 1"=5'



PROFILE OF 24" CULVERT AT
NORTH KIHAI RD. STA. 5+76±
Scale: Horiz. 1"=20'
Vert. 1"=10'



PROFILE OF 2-43"x27" CMP ARCH AT KUIHELANI HWY. STA. 9+00
Scale: Horiz. 1"=20'
Vert. 1"=5'



PROFILE OF 24" CULVERT AT N. KIHAI RD.
STA. 4+51 RT. TO 4+02 RT.
Scale: Horiz. 1"=10'
Vert. 1"=5'

ORIGINAL PLAN	DATE	7/11/98
SURVEY PLOTTED BY		
DESIGNED BY		
CHECKED BY		
NOTED BY		
QUANTITIES BY		
APPROVED BY		

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

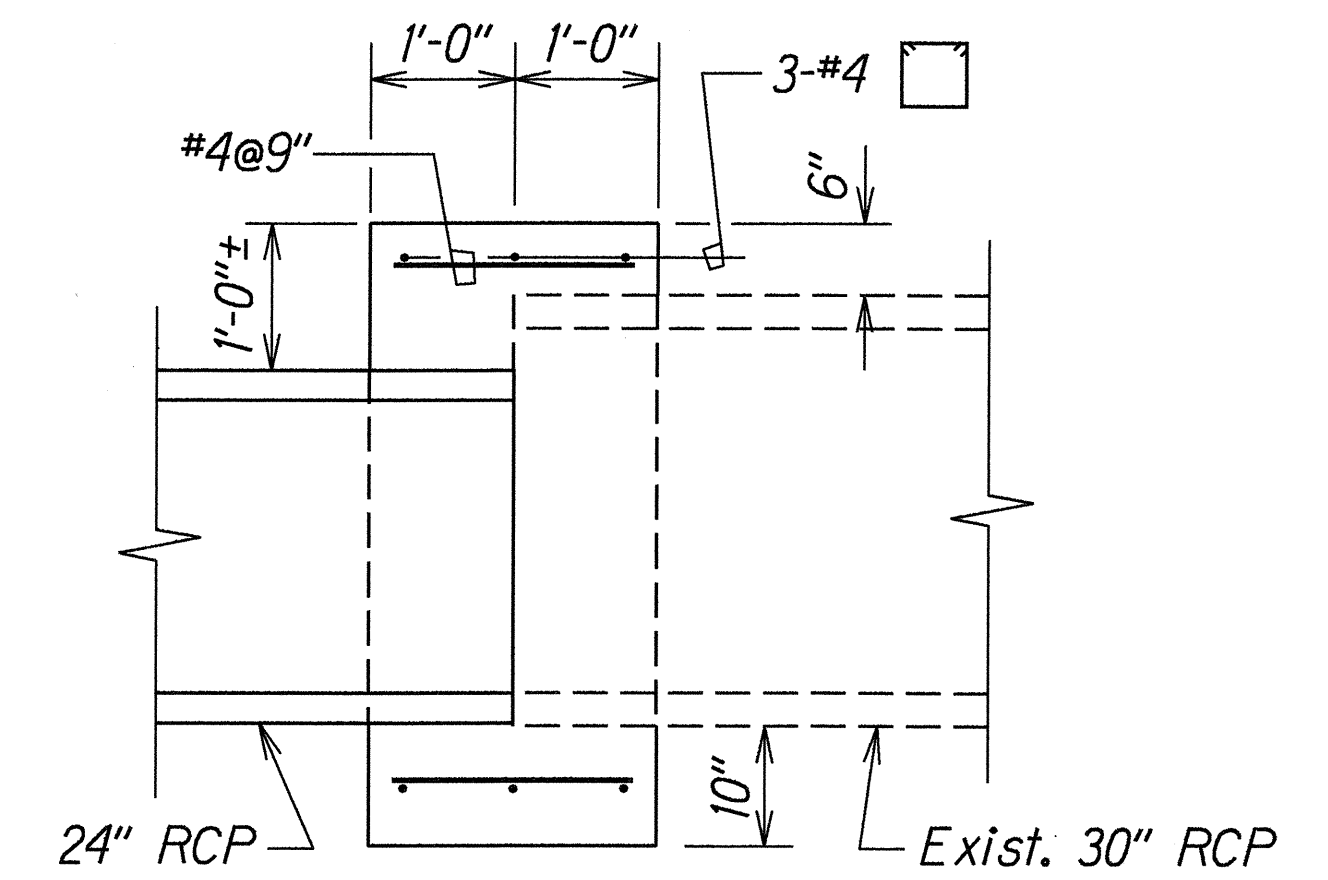
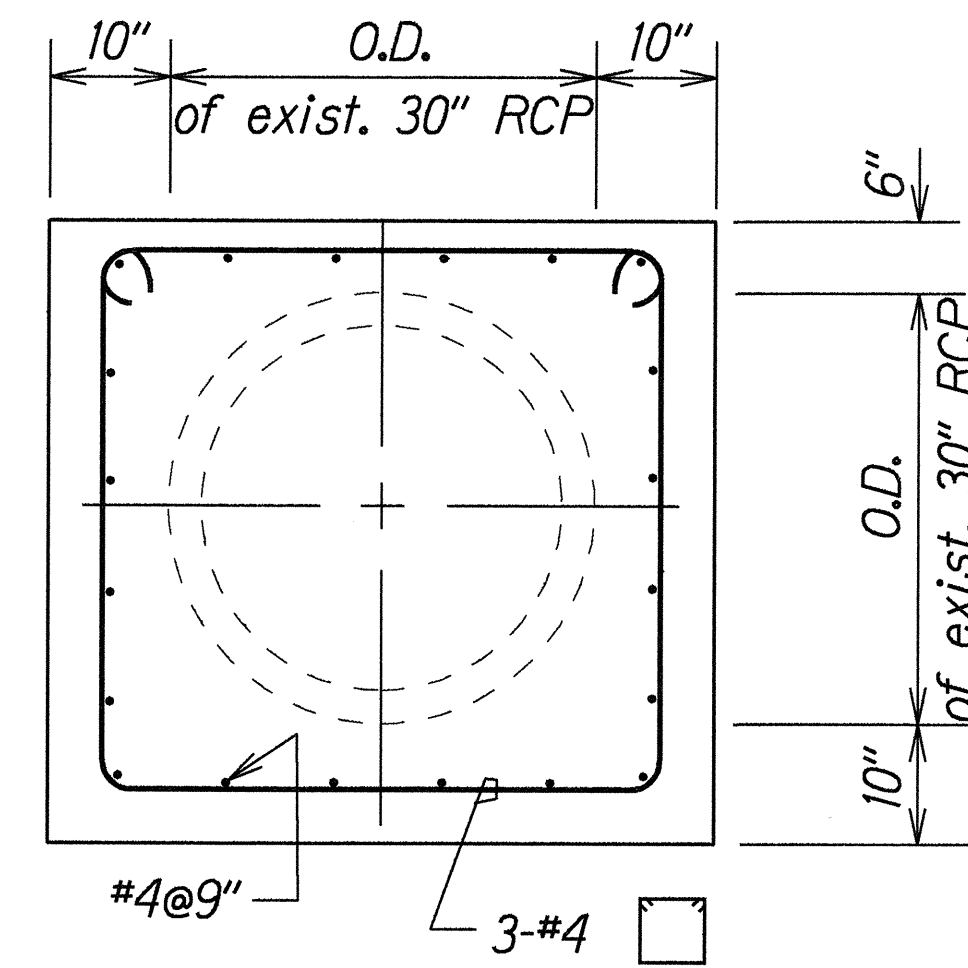
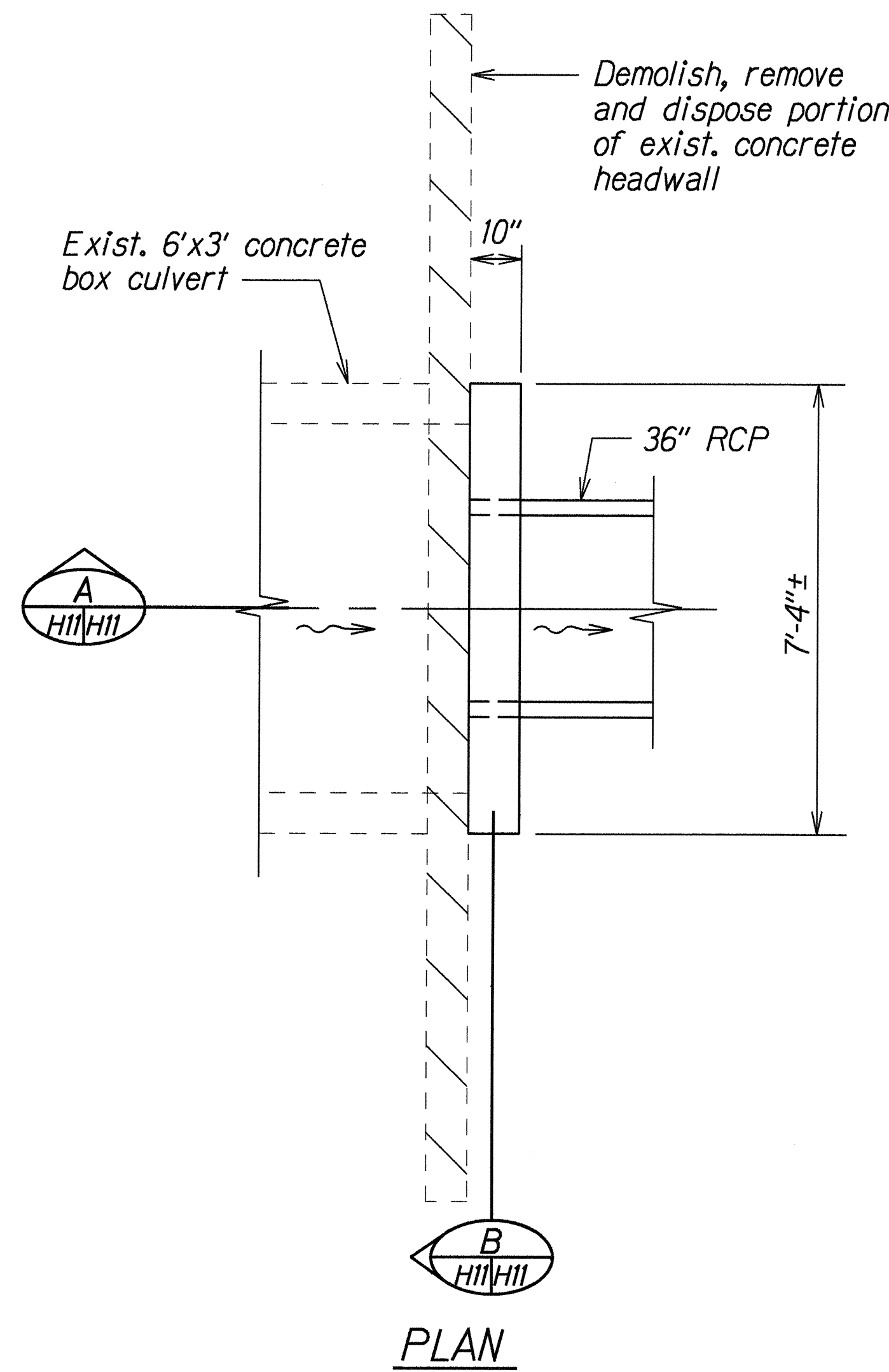
DRAINAGE PROFILE

HONOAPIILANI HIGHWAY WIDENING
North Kihei Road to Kuihelani Highway
F. A. Project No. BR-NH-030-1(24)

Scale: As Shown
Date: Jan. 1999

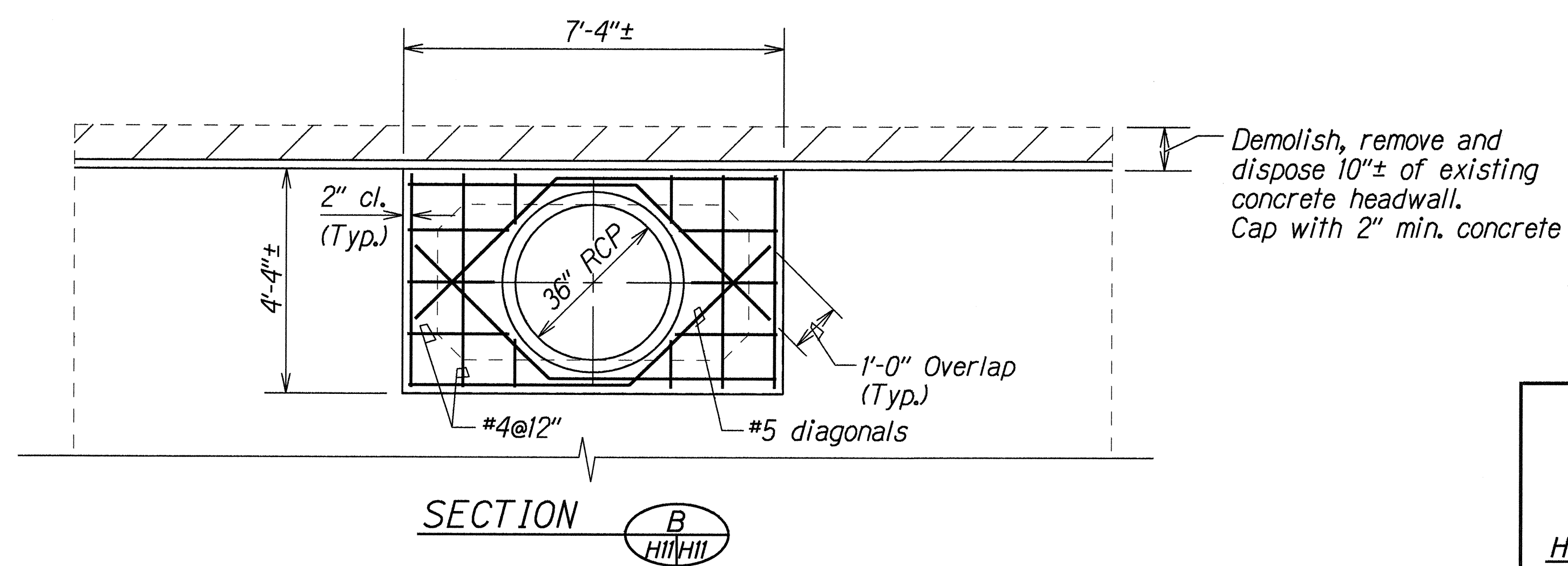
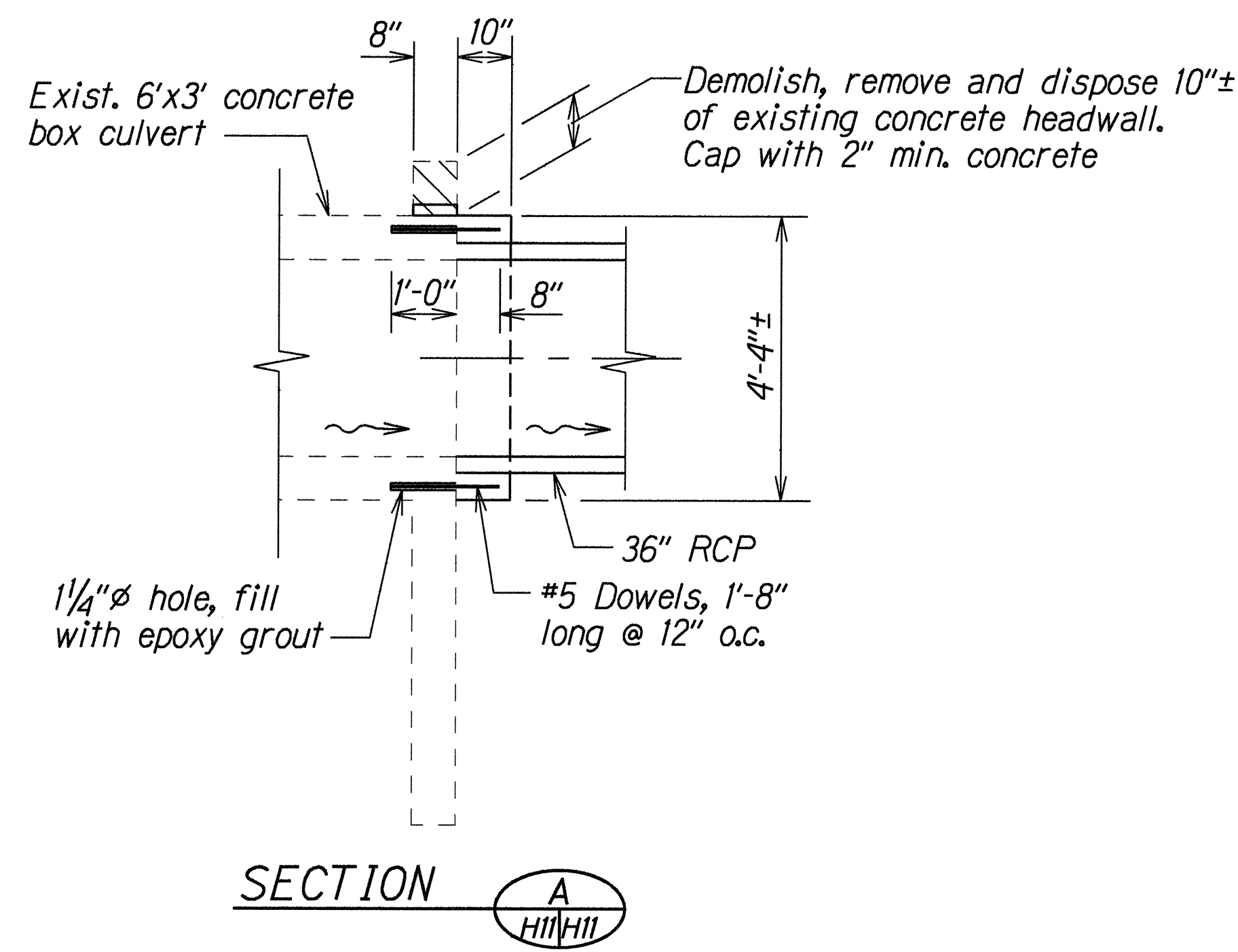
SHEET No. 110 OF 19 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-NH-030-1(24)	2000	96	139



TYPICAL DETAILS OF TYPE "1" REINFORCED CONCRETE COLLAR

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



DETAILS OF TYPE "3" REINFORCED CONCRETE COLLAR

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

ORIGINAL PLAN	DATE	7/24/96
SURVEY PLOTTED BY		
DRAWN BY		
DESIGNED BY		
CHECKED BY		
NOTED BY		
QUANTITIES BY		
APPROVED BY		

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

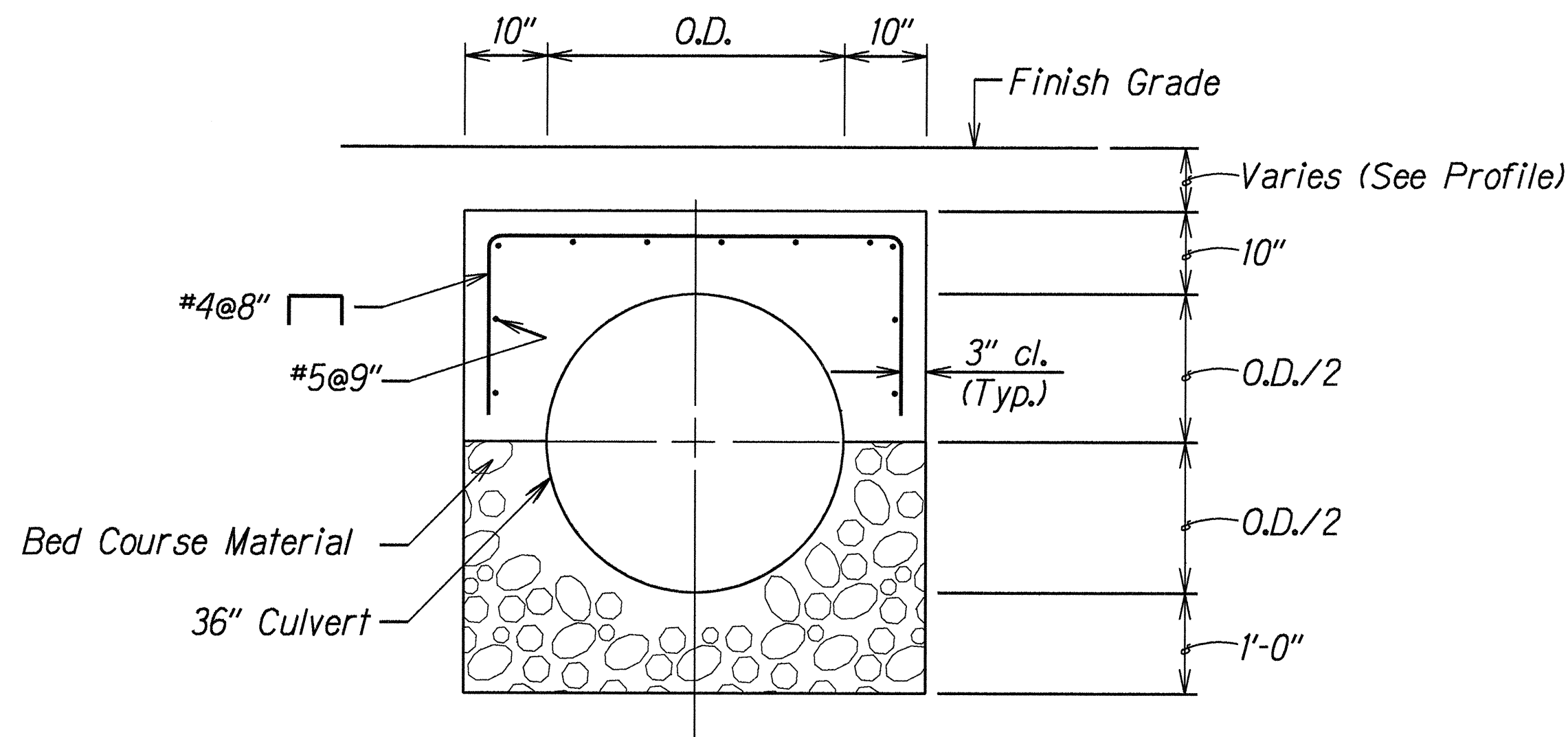
DRAINAGE DETAILS

HONOAPIILANI HIGHWAY WIDENING
North Kihei Road to Kuihelani Highway
F. A. Project No. BR-NH-030-1(24)

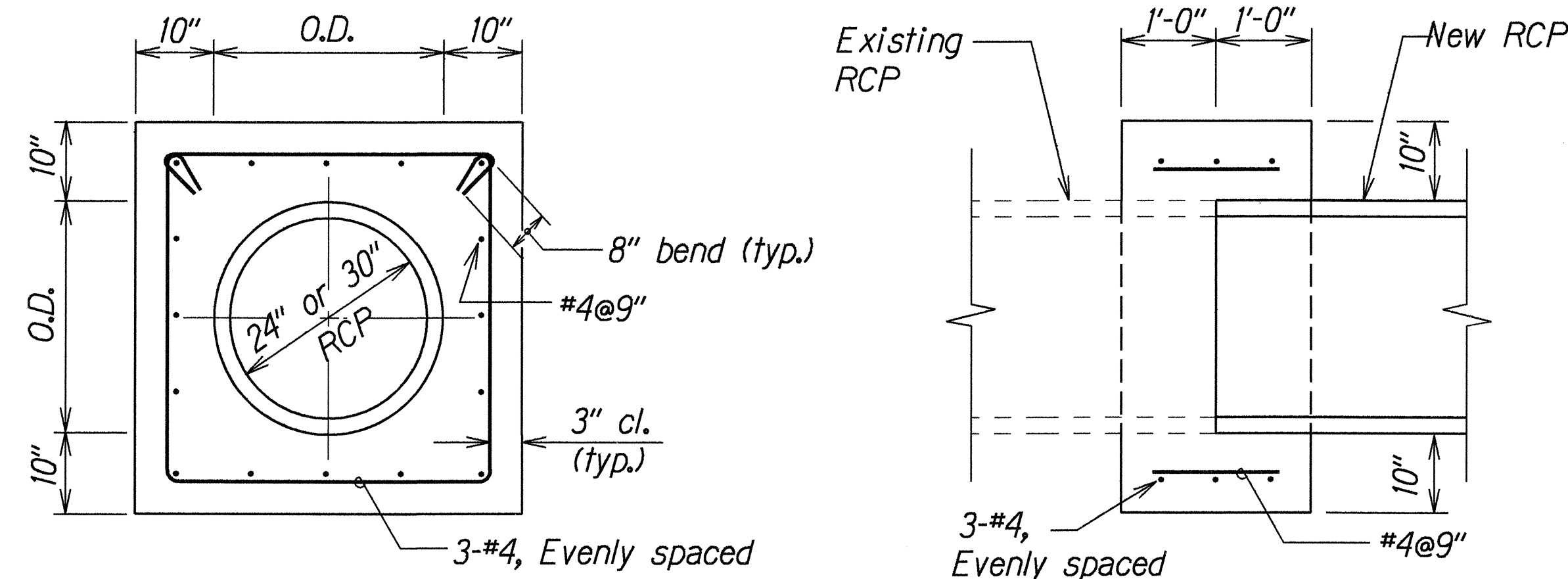
Scale: As Shown Date: Jan. 1999

SHEET No. III OF 19 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-NH-030-1(24)	2000	97	139



TYPICAL DETAILS OF REINFORCED CONCRETE JACKET

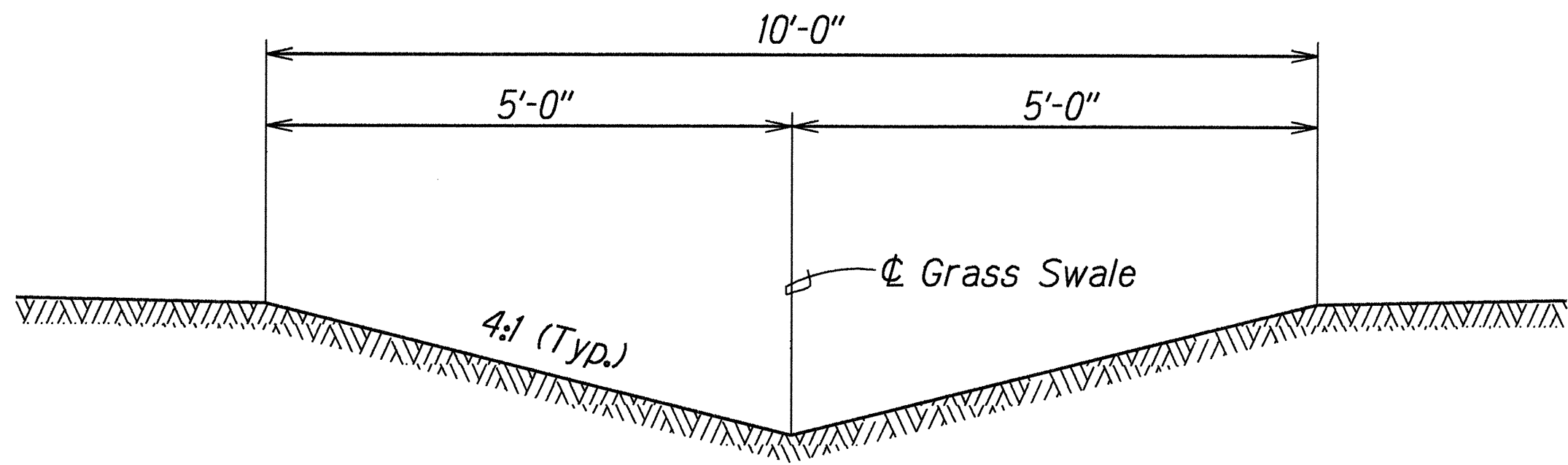


ELEVATION

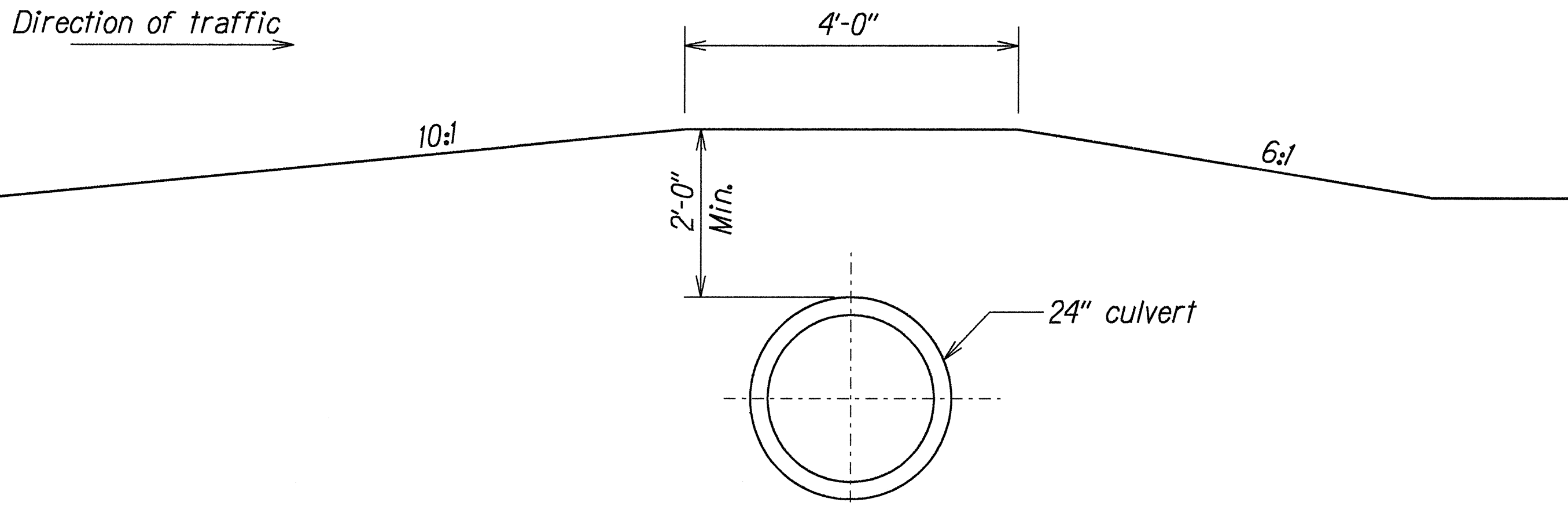
SECTION

Note: Reinforcing Steel for Concrete Collar shall conform to the requirements of ASTM 615-Grade 60.

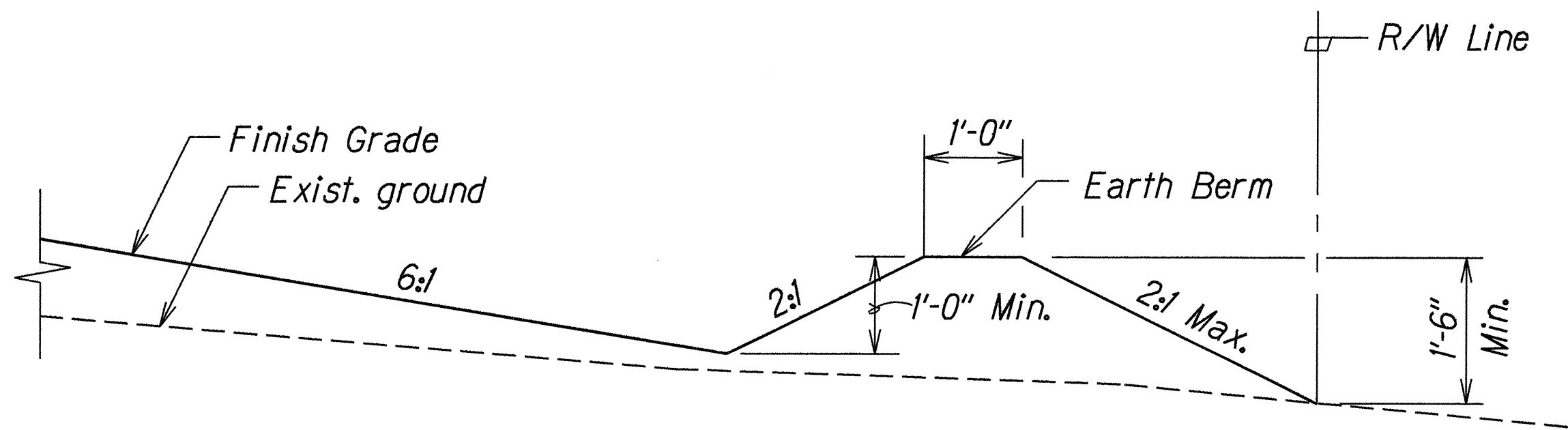
TYPICAL DETAILS OF TYPE "2" REINFORCED CONCRETE COLLAR



TYPICAL DETAIL OF 10' WIDE GRASS SWALE



DETAILS OF CULVERT BACKFILL AT N.B. STA. 6+70± RT.



TYPICAL DETAIL OF EARTH BERM

N.B. STA. 4+00 RT. TO N.B. STA. 6+50 RT.

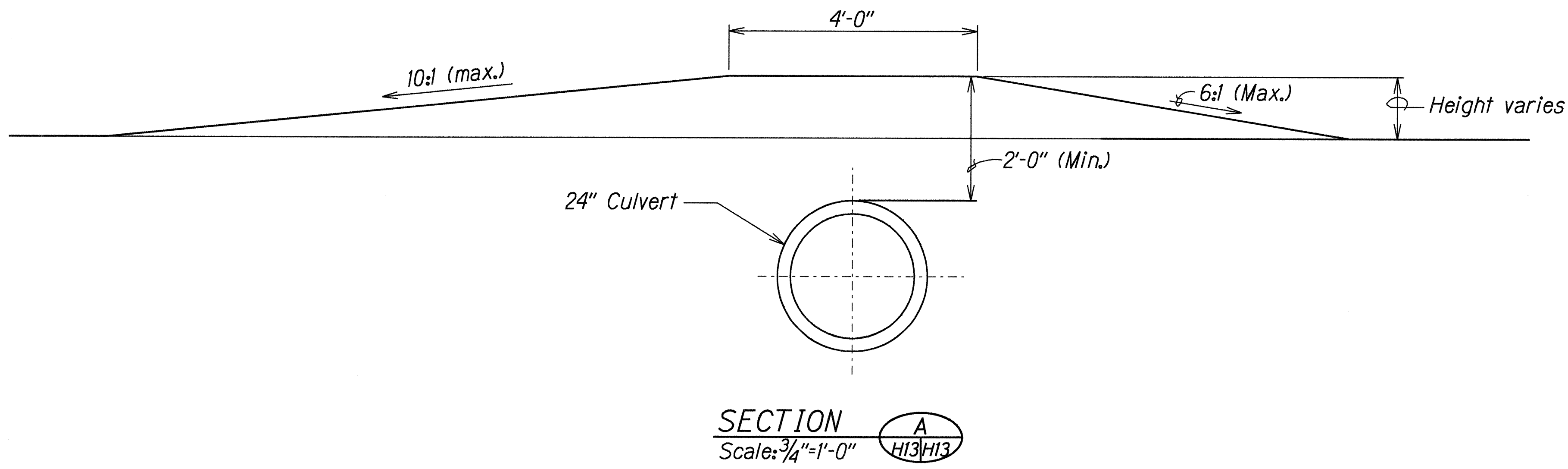
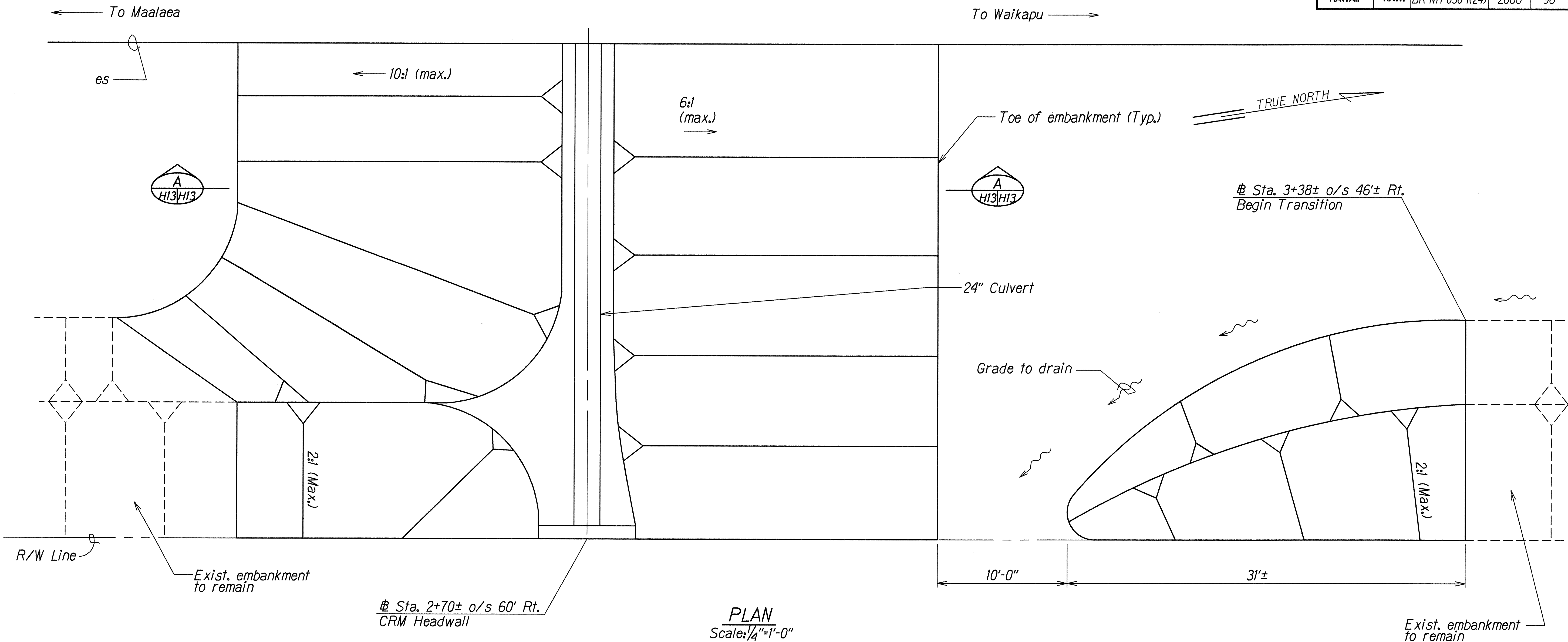
N.B. STA. 7+00 RT. TO N.B. STA. 13+00 RT.

ORIGINAL PLAN	DATE	1/16/99
SURVEY PLOTTED BY	DATE	1/16/99
DRAWN BY	DATE	1/16/99
DESIGNED BY	DATE	1/16/99
CHECKED BY	DATE	1/16/99
NOTED BY	DATE	1/16/99
APPROVED BY	DATE	1/16/99

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

DRAINAGE DETAILS
HONOAPIILANI HIGHWAY WIDENING
North Kihei Road to Kuihelani Highway
F. A. Project No. BR-NH-030-1(24)
Scale: 3/4"=1'-0" Date: Jan. 1999
SHEET No. H12 OF 19 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-NH-030-1(24)	2000	98	139



GRADING IN THE VICINITY OF N.B. STA. 2+70 RT.

ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
NOTE BOOK	DRAWN BY	1/16/01
DESIGNED BY	DESIGNED BY	
CHECKED BY	CHECKED BY	

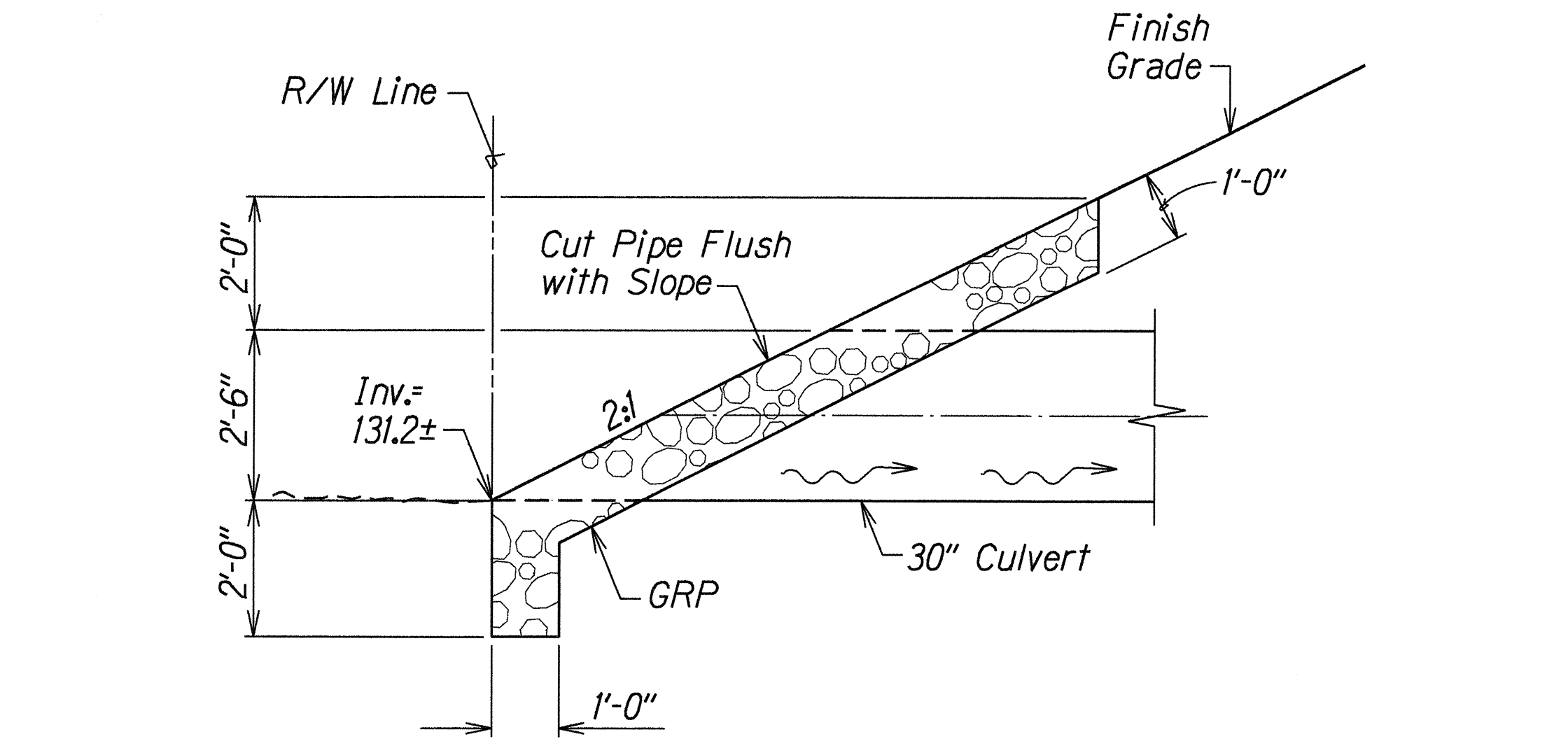
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

DRAINAGE DETAILS
HONOAPIILANI HIGHWAY WIDENING
North Kihei Road to Kuihelani Highway
F. A. Project No. BR-NH-030-1(24)

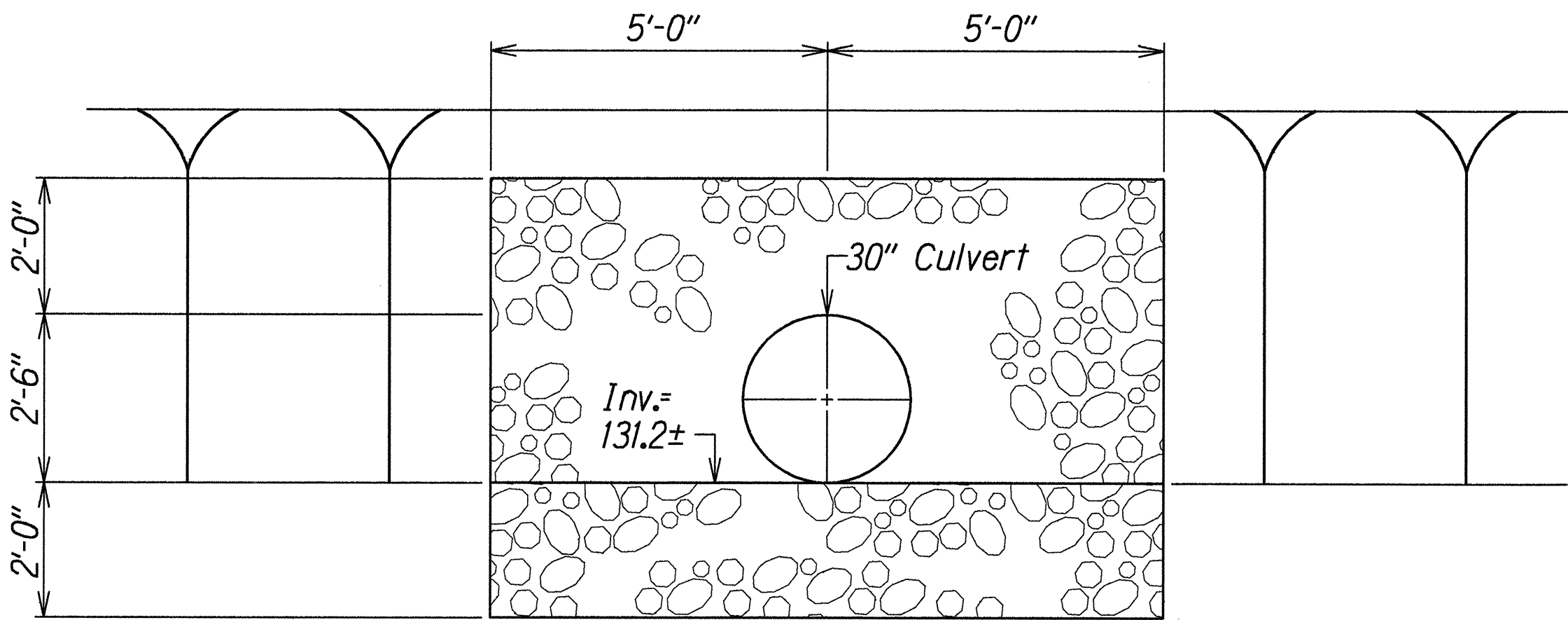
Scale: As Shown
Date: Jan. 1999

SHEET No. H13 OF 19 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-NH-030-1(24)	2000	99	139



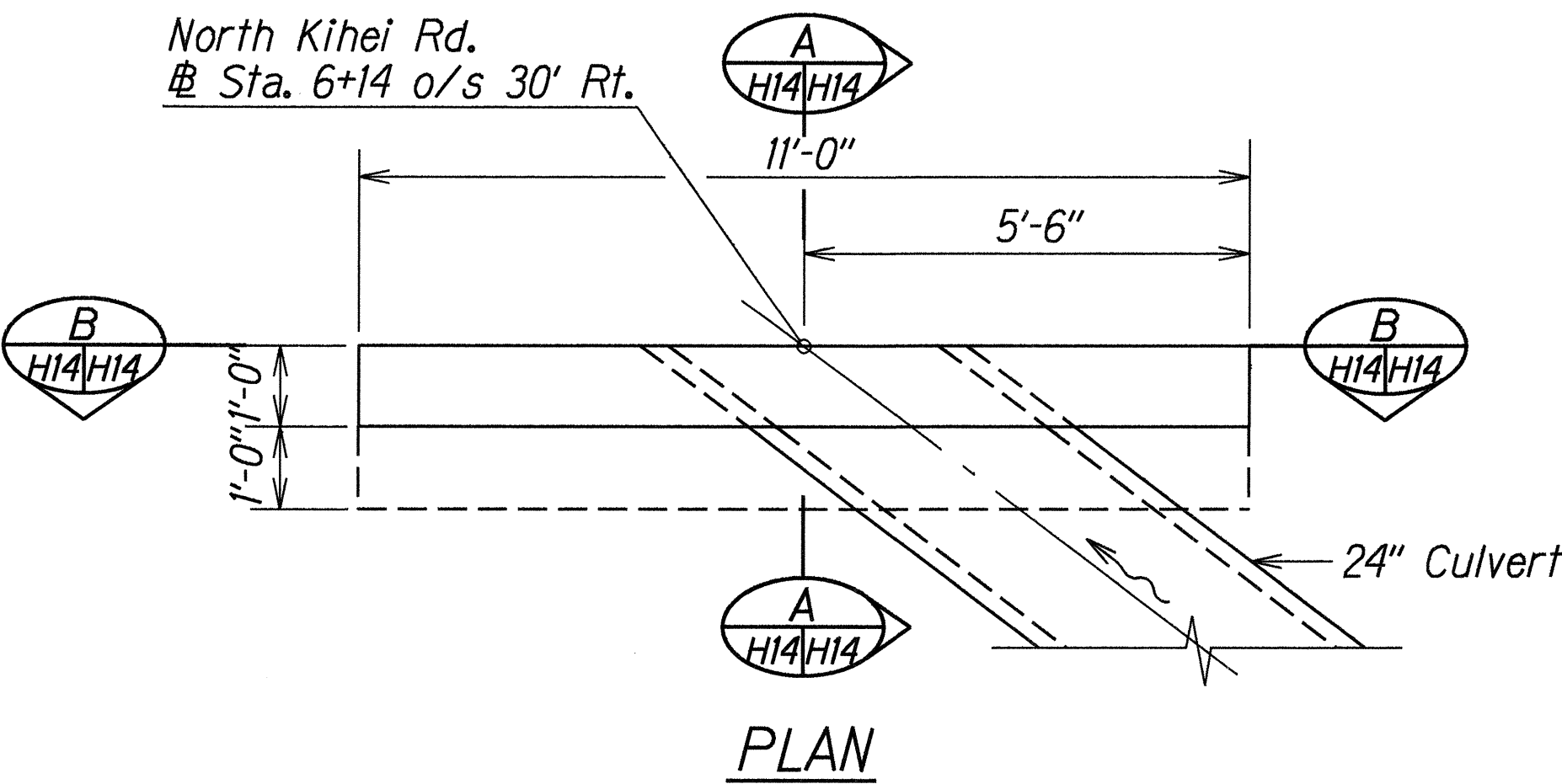
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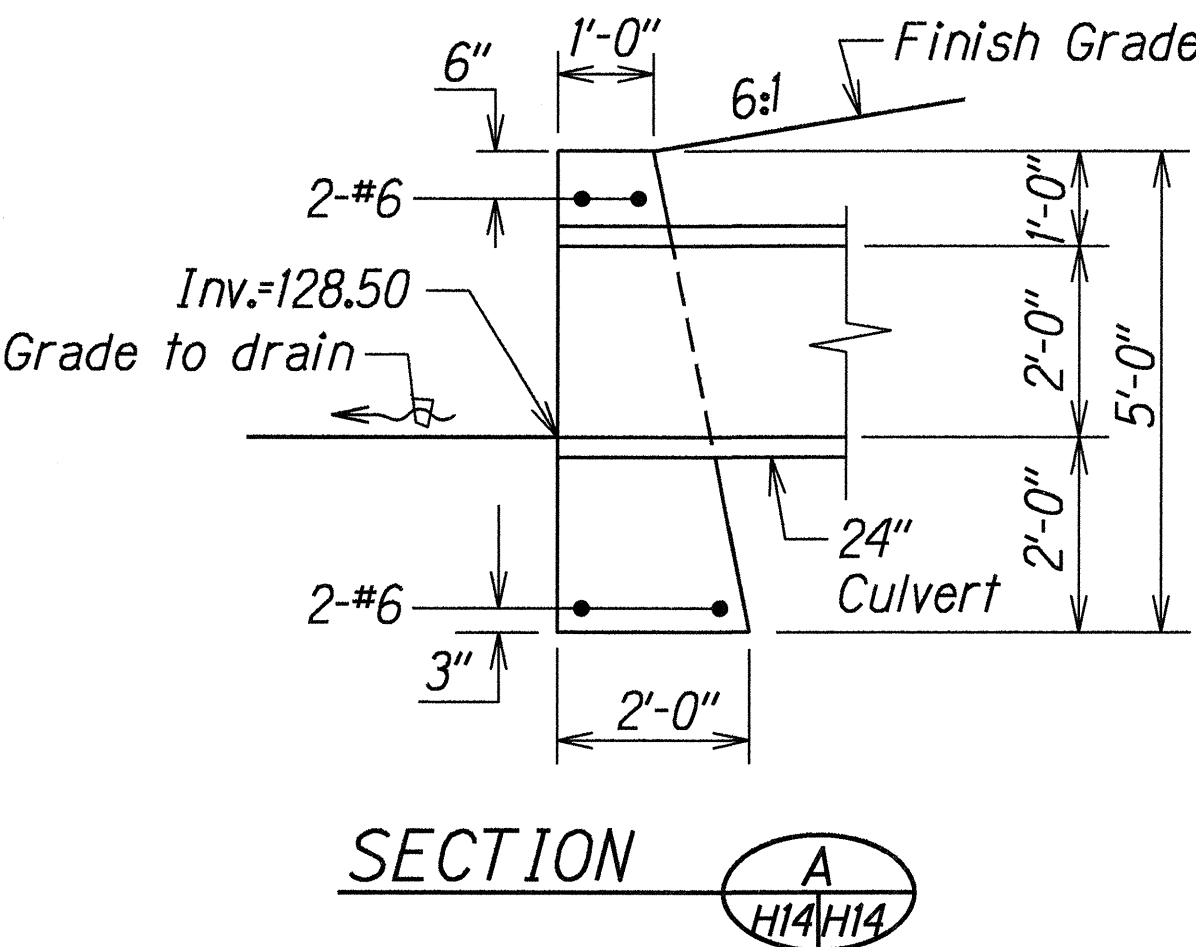
ELEVATION

DETAILS OF GROUTED RUBBLE PAVING

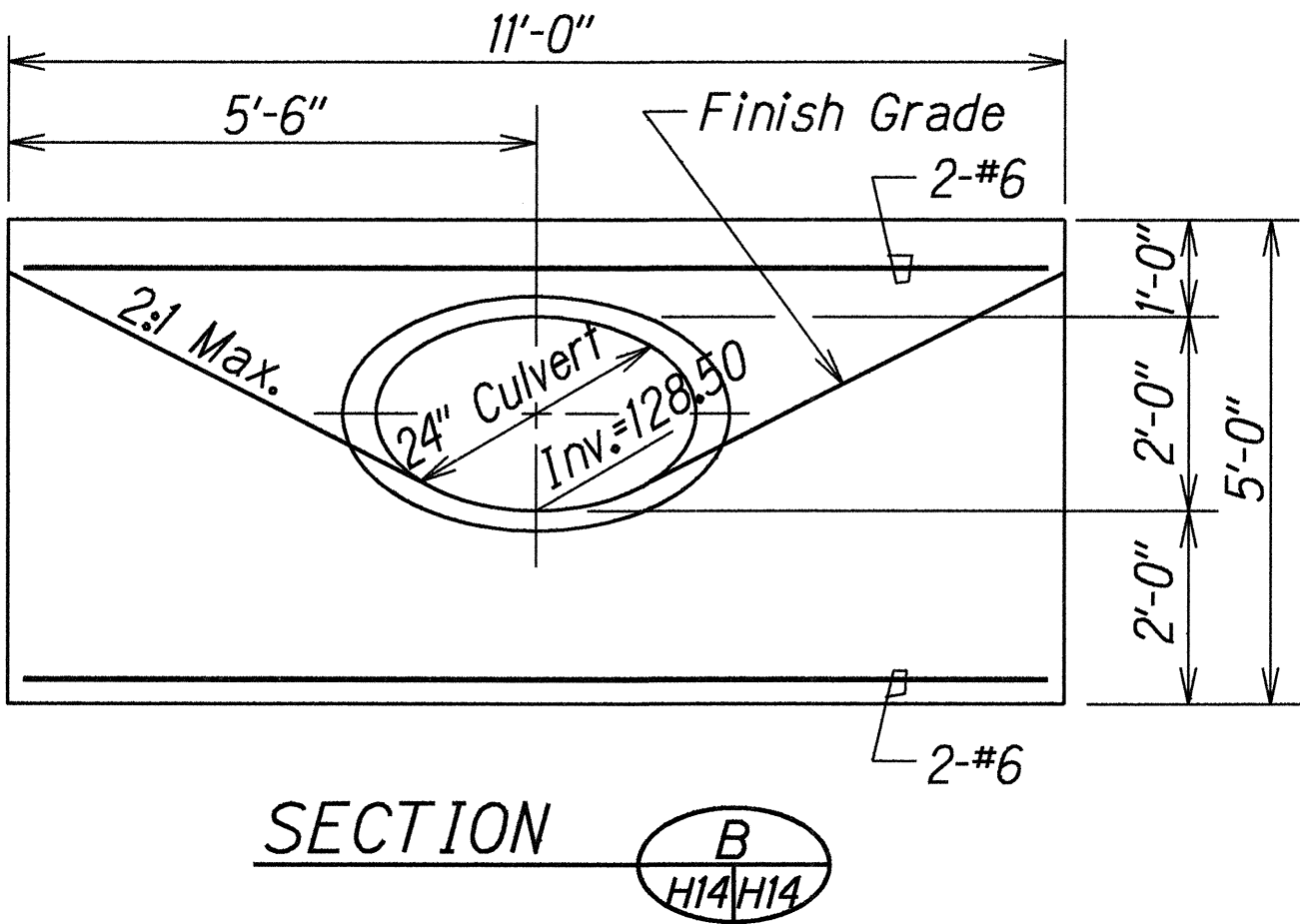
Scale: 1/2"=1'-0"



PLAN



SECTION A



SECTION B

DETAILS OF TYPE "I" CONCRETE HEADWALL

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

ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
NOTE BOOK	DRAWN BY A. Nomura & R. Sato	7/8/99
QUANTITIES BY	DESIGNED BY C. Matsuda	
CHECKED BY		

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

DRAINAGE DETAILS

HONOAPIILANI HIGHWAY WIDENING

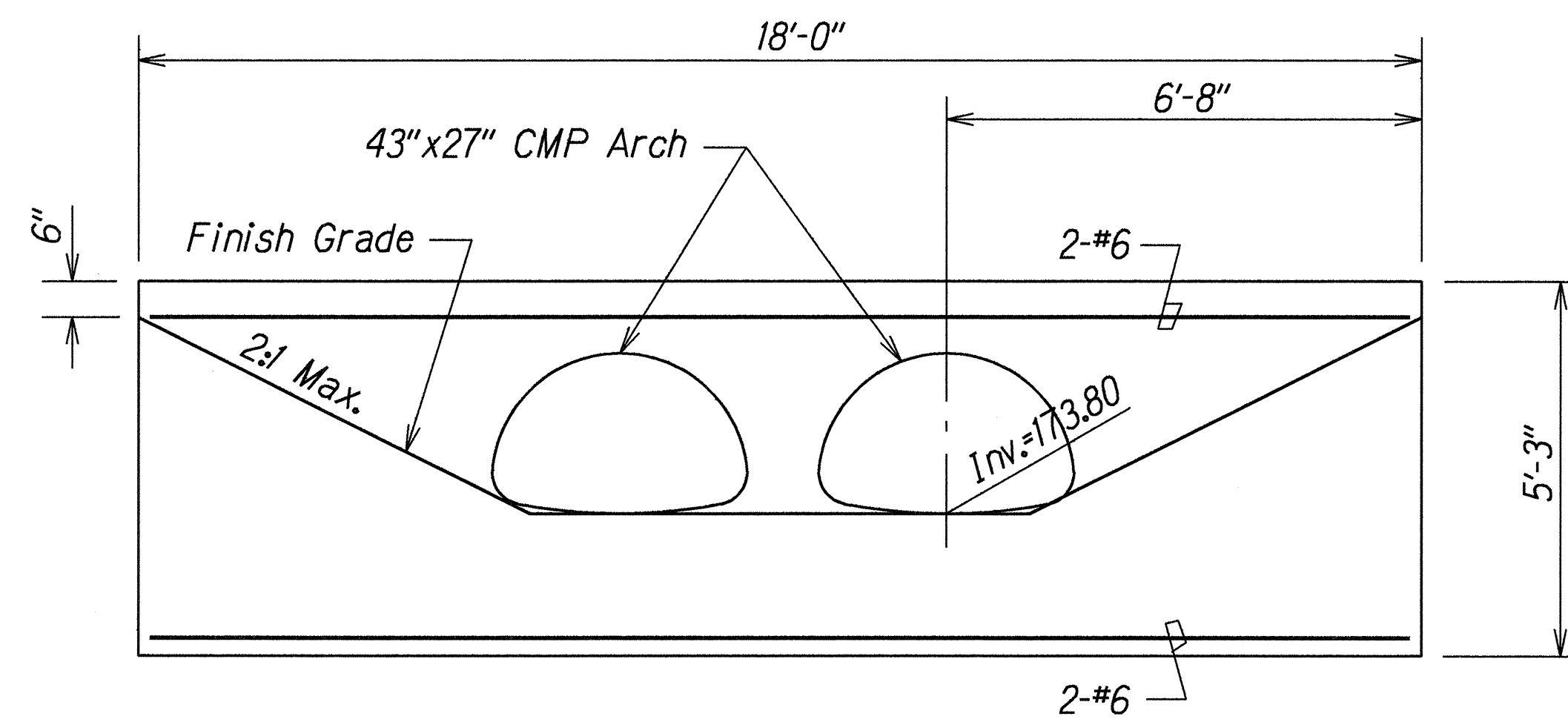
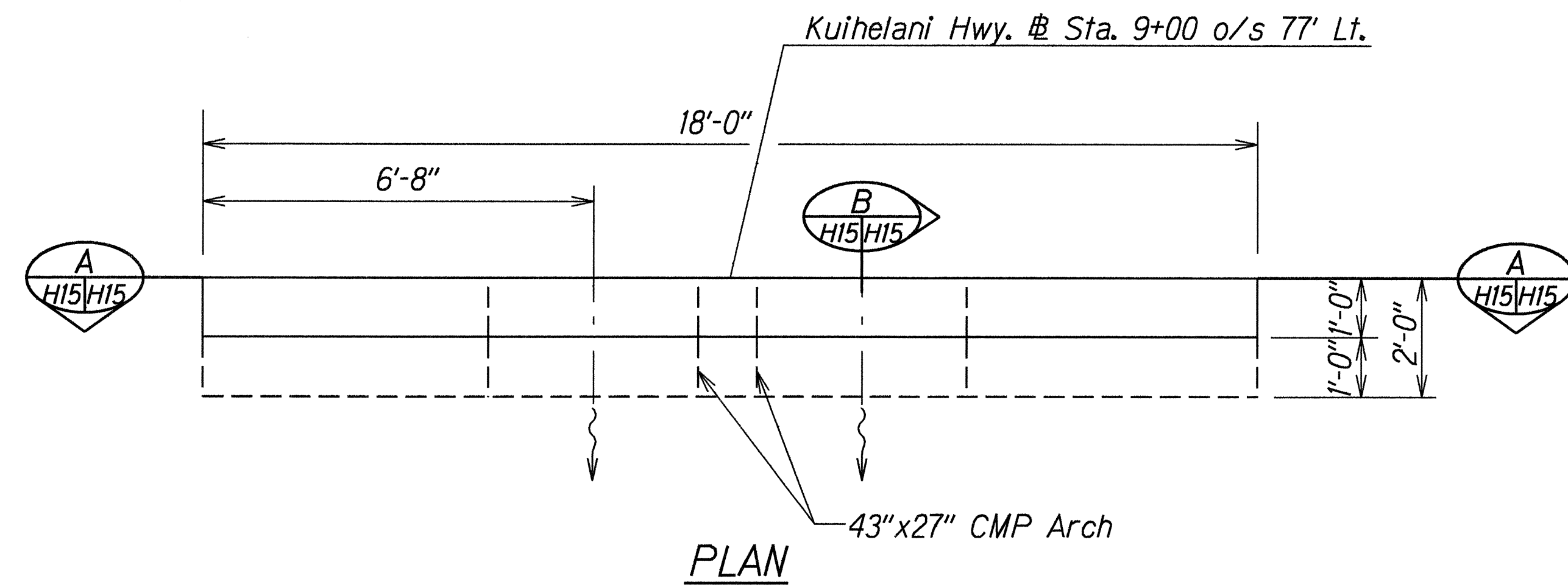
North Kihei Road to Kuihelani Highway

F. A. Project No. BR-NH-030-1(24)

Scale: 1/2"=1'-0" Date: Jan. 1999

SHEET No. H14 OF 19 SHEETS

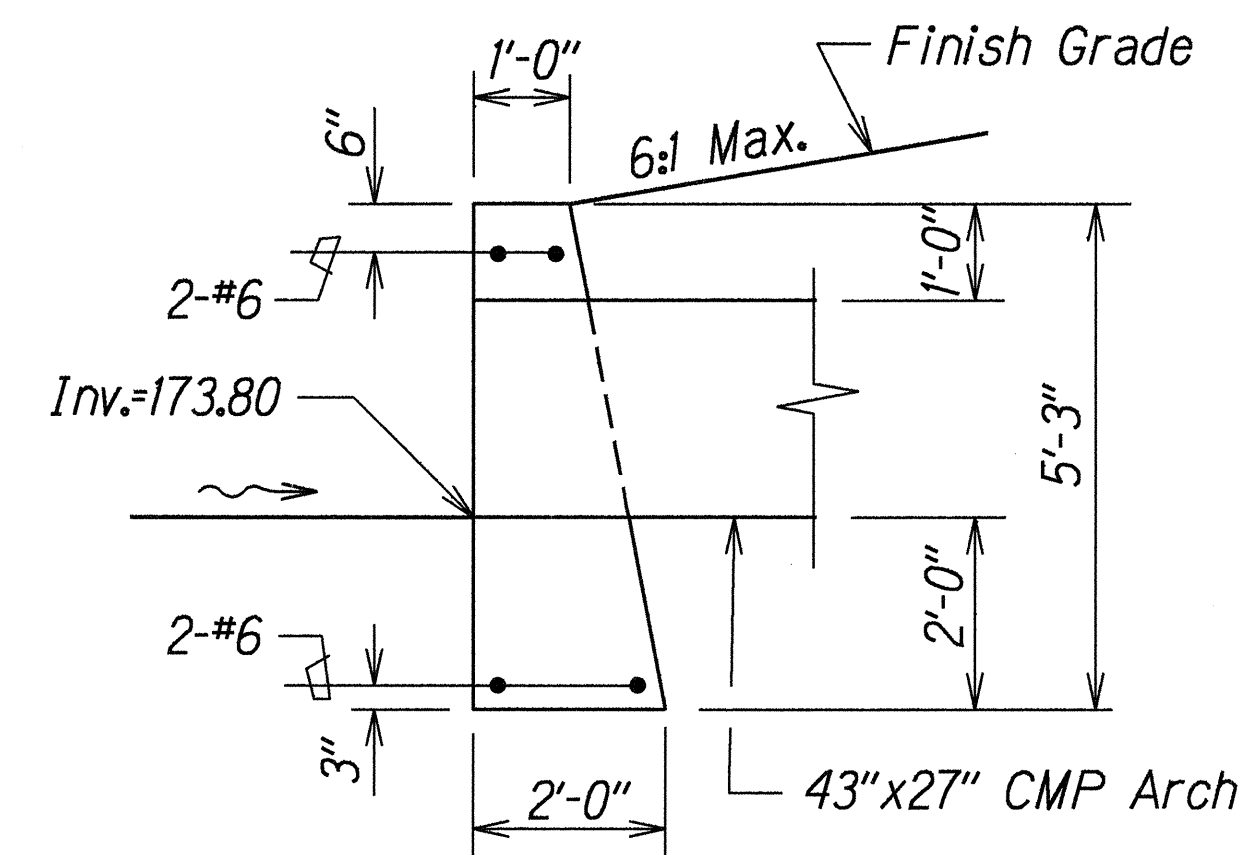
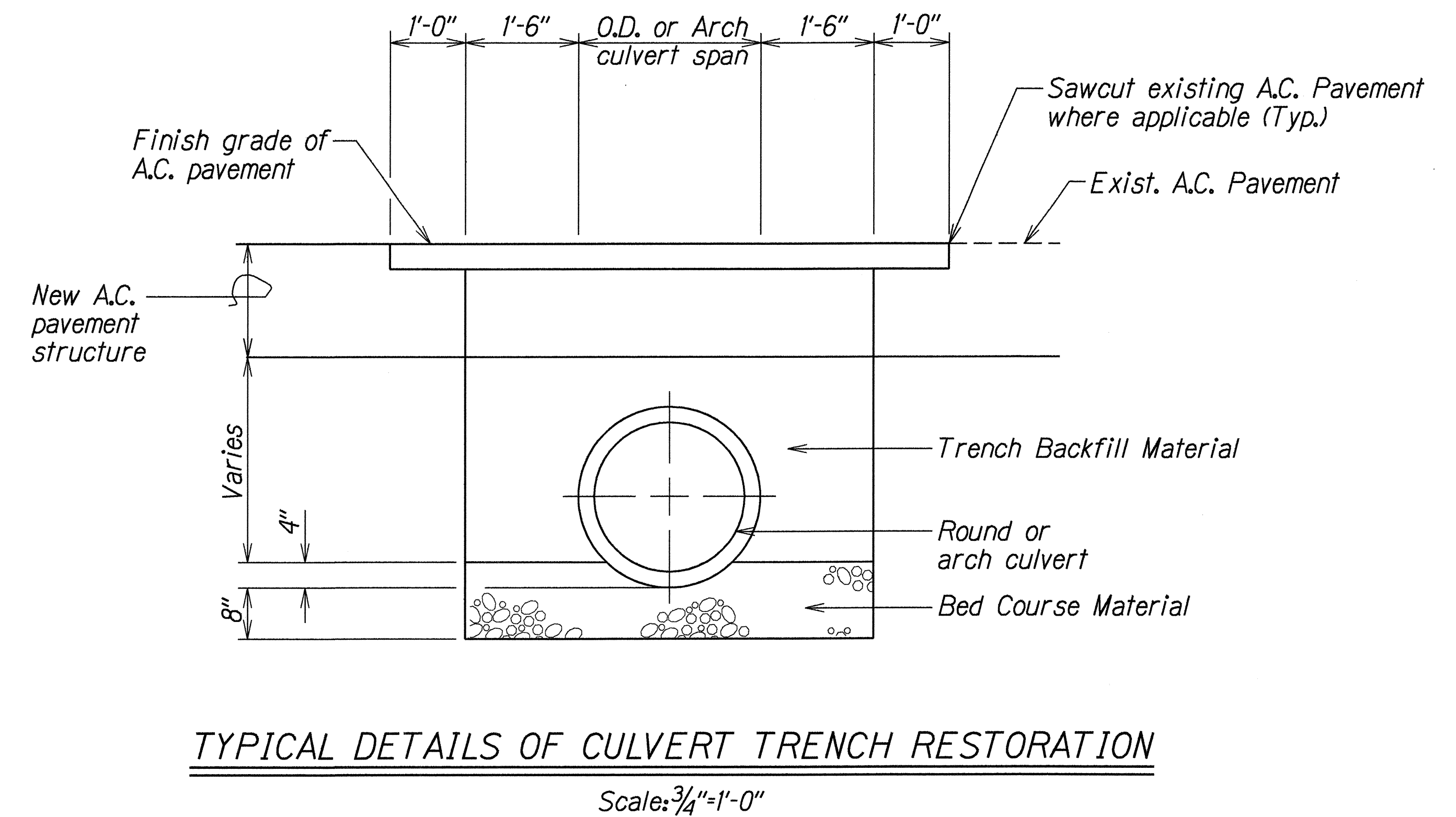
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-NH-030-1(24)	2000	100	139



SECTION A

DETAILS OF TYPE "2" CONCRETE HEADWALL

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

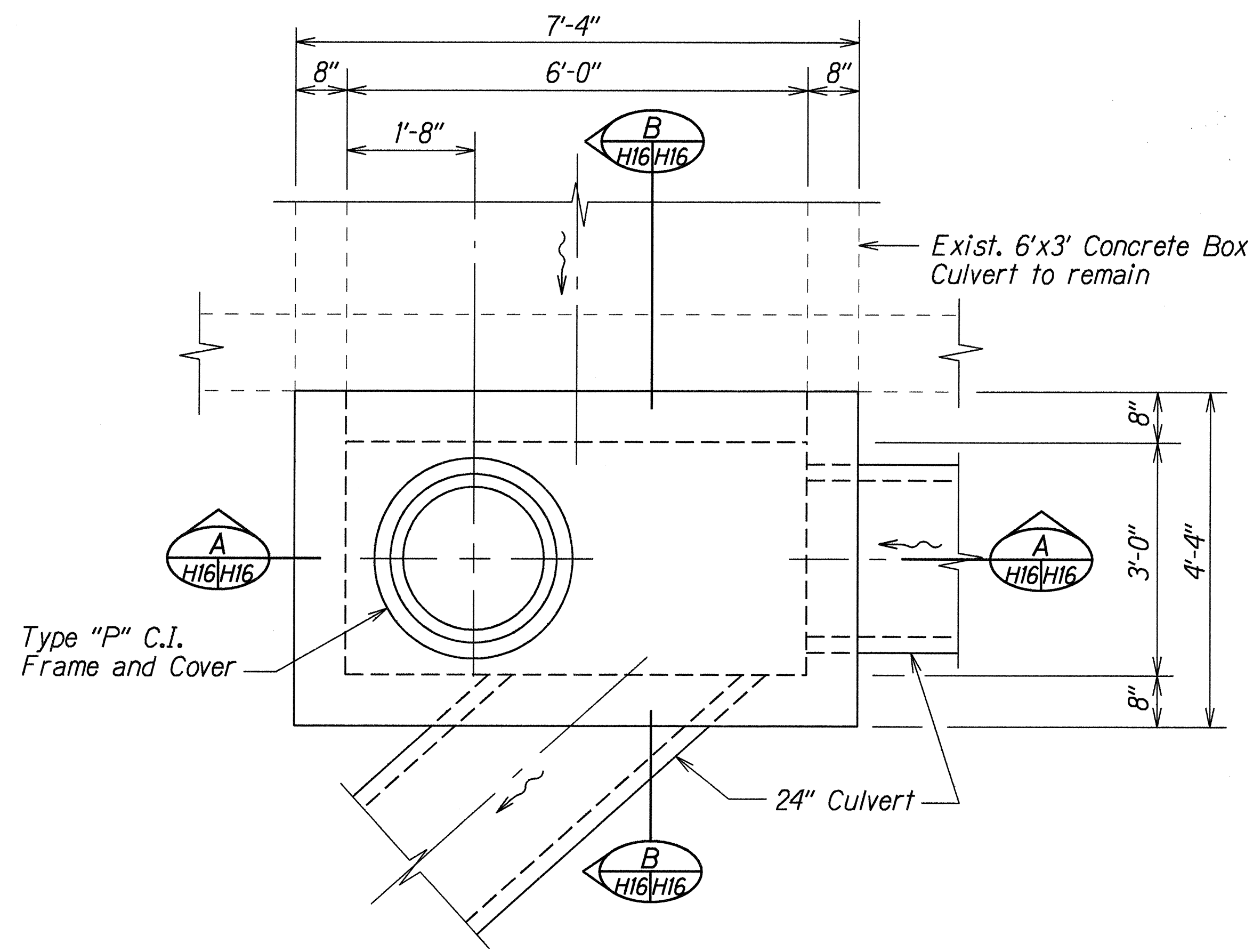


SECTION B

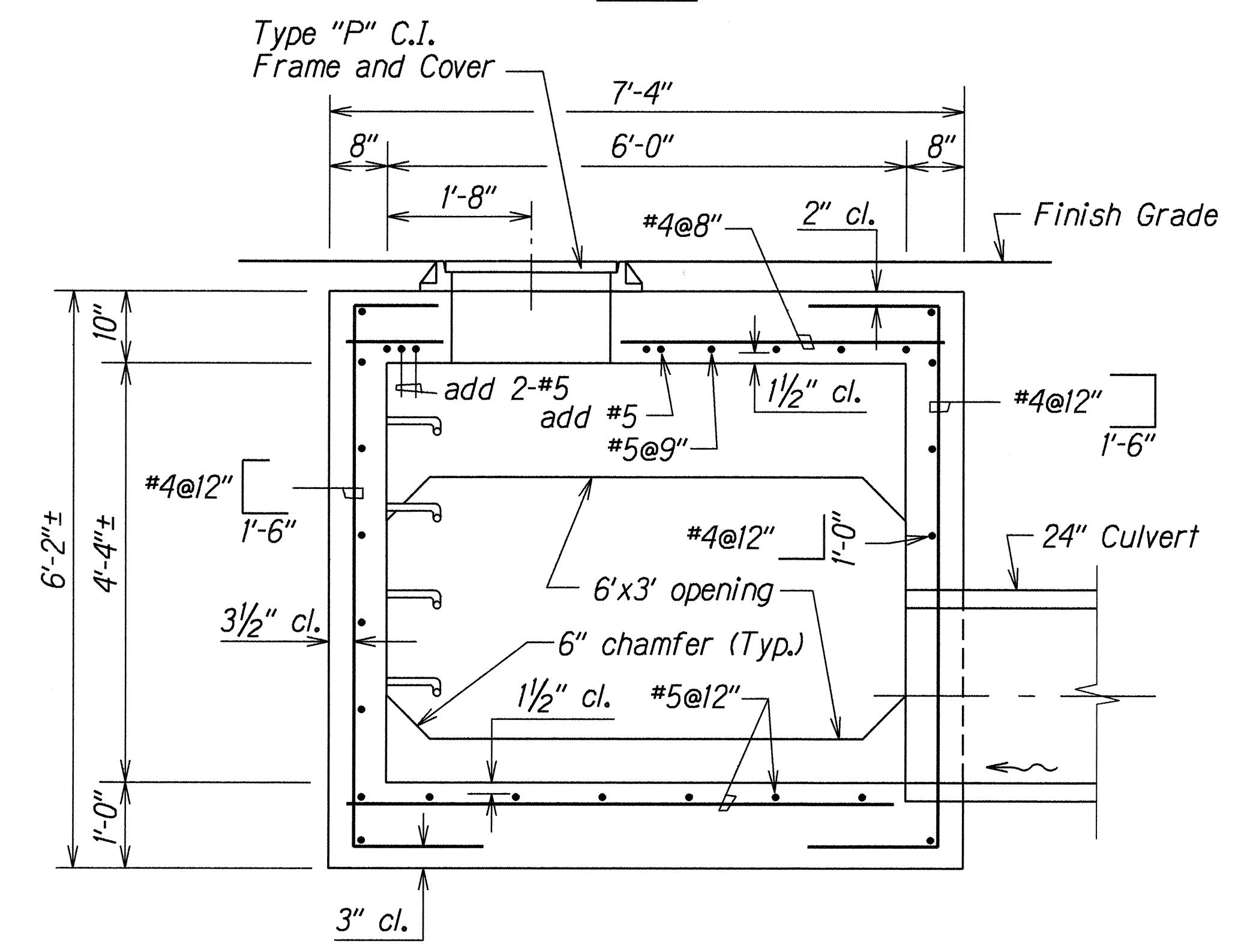
ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
NOTE BOOK	DRAWN BY A. Maita	2/5/97
DESIGNED BY C. Matsuda	CHECKED BY	
QUANTITIES BY		
CHECKED BY		

STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION
DRAINAGE DETAILS
HONOAPIILANI HIGHWAY WIDENING North Kihei Road to Kuihelani Highway F. A. Project No. BR-NH-030-1(24)
Scale: As shown Date: Jan. 1999
SHEET No. H15 OF 19 SHEETS

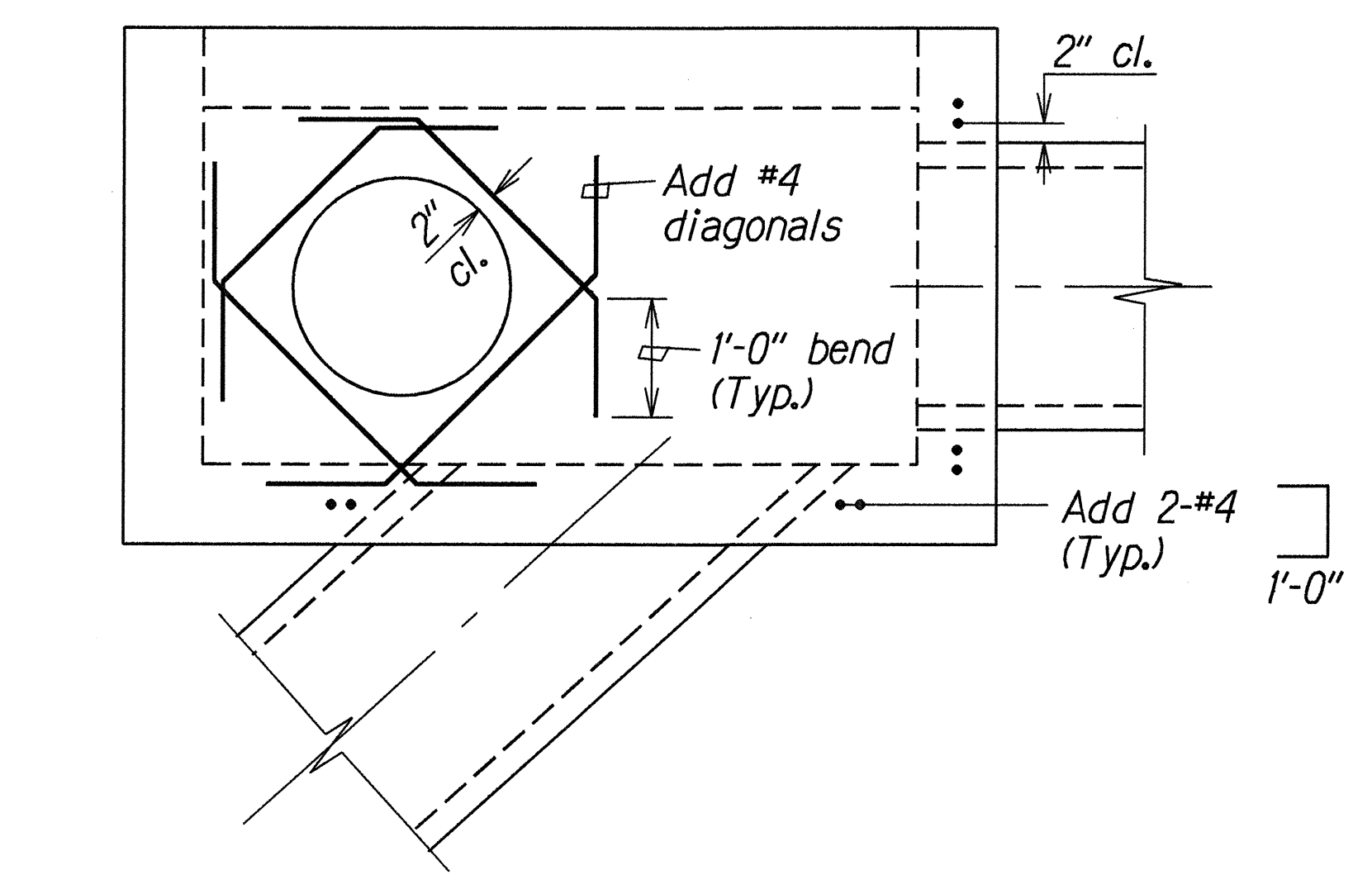
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-NH-030-1(24)	2000	101	139



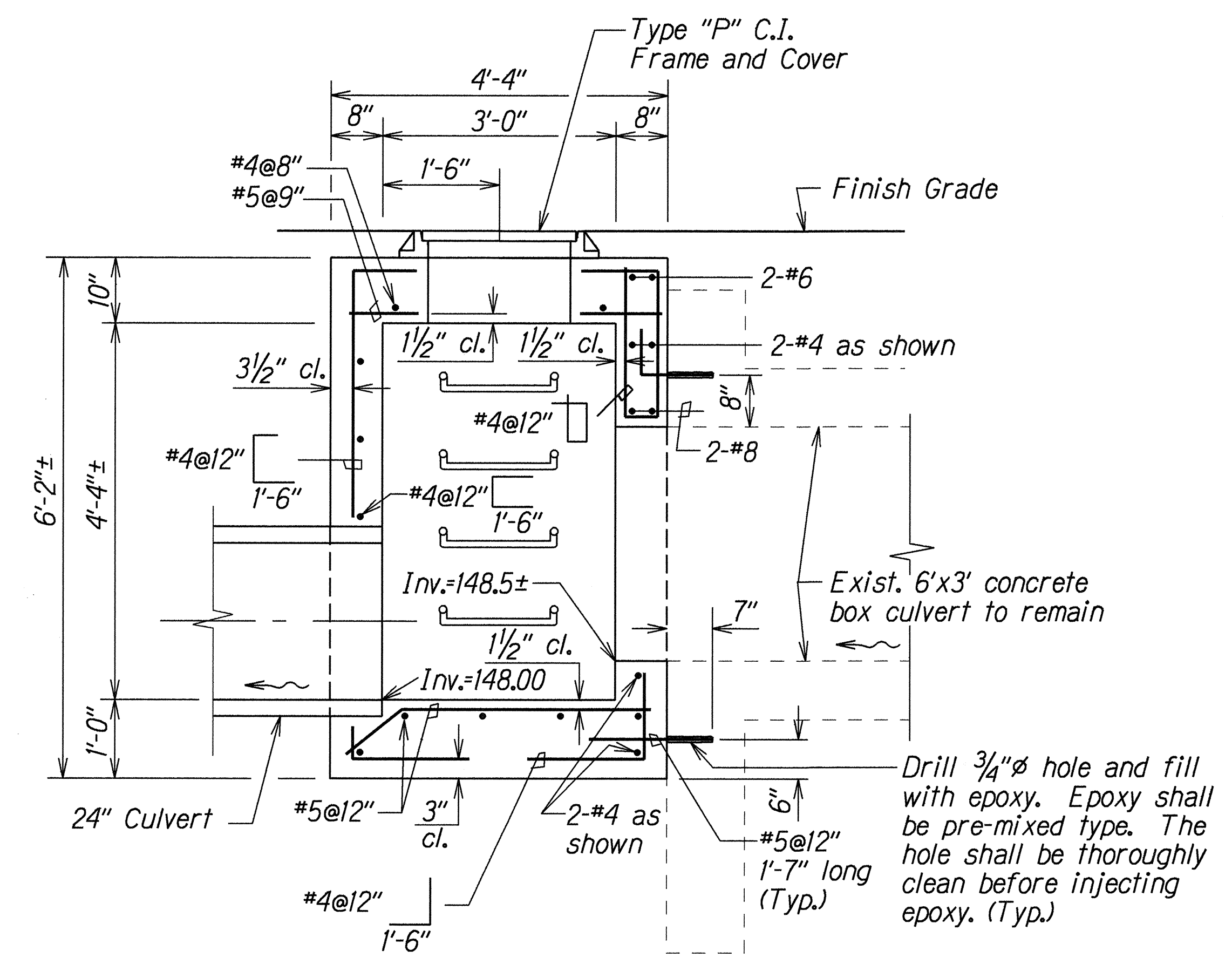
PLAN



SECTION A
H16/H16



ADDED REINFORCING AT
MANHOLE AND CULVERT OPENINGS



SECTION B
H16/H16

DETAILS OF TYPE "1" STORM DRAIN MANHOLE

ORIGINAL PLAN	DATE	12/5/96
SURVEY PLOTTED BY		
DRAWN BY	A. Nomura	
DESIGNED BY	C. Matsuda	
CHECKED BY		
NOTED BY		

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

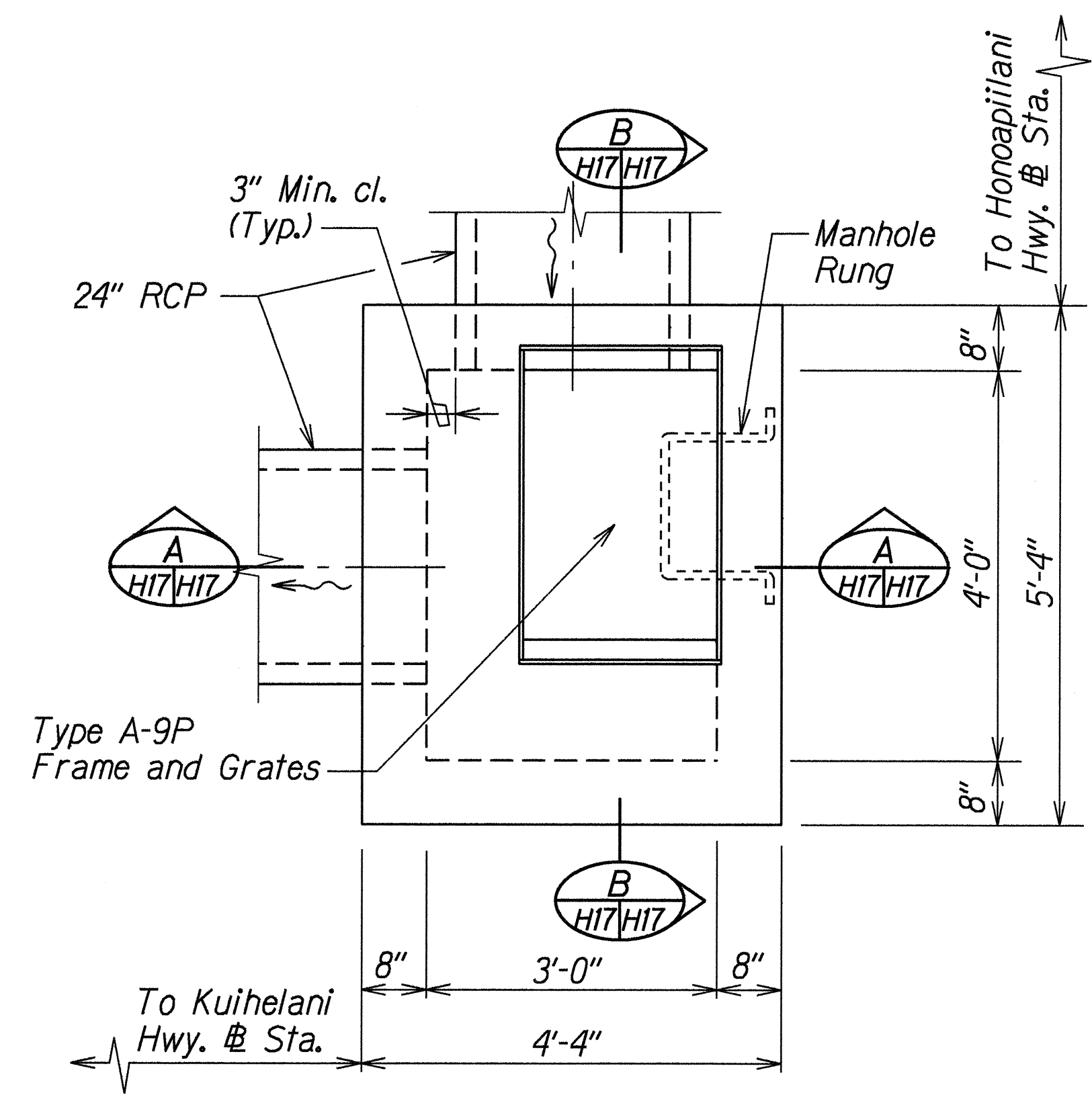
DRAINAGE DETAILS

HONOAPIILANI HIGHWAY WIDENING
North Kihei Road to Kuihelani Highway
F. A. Project No. BR-NH-030-1(24)

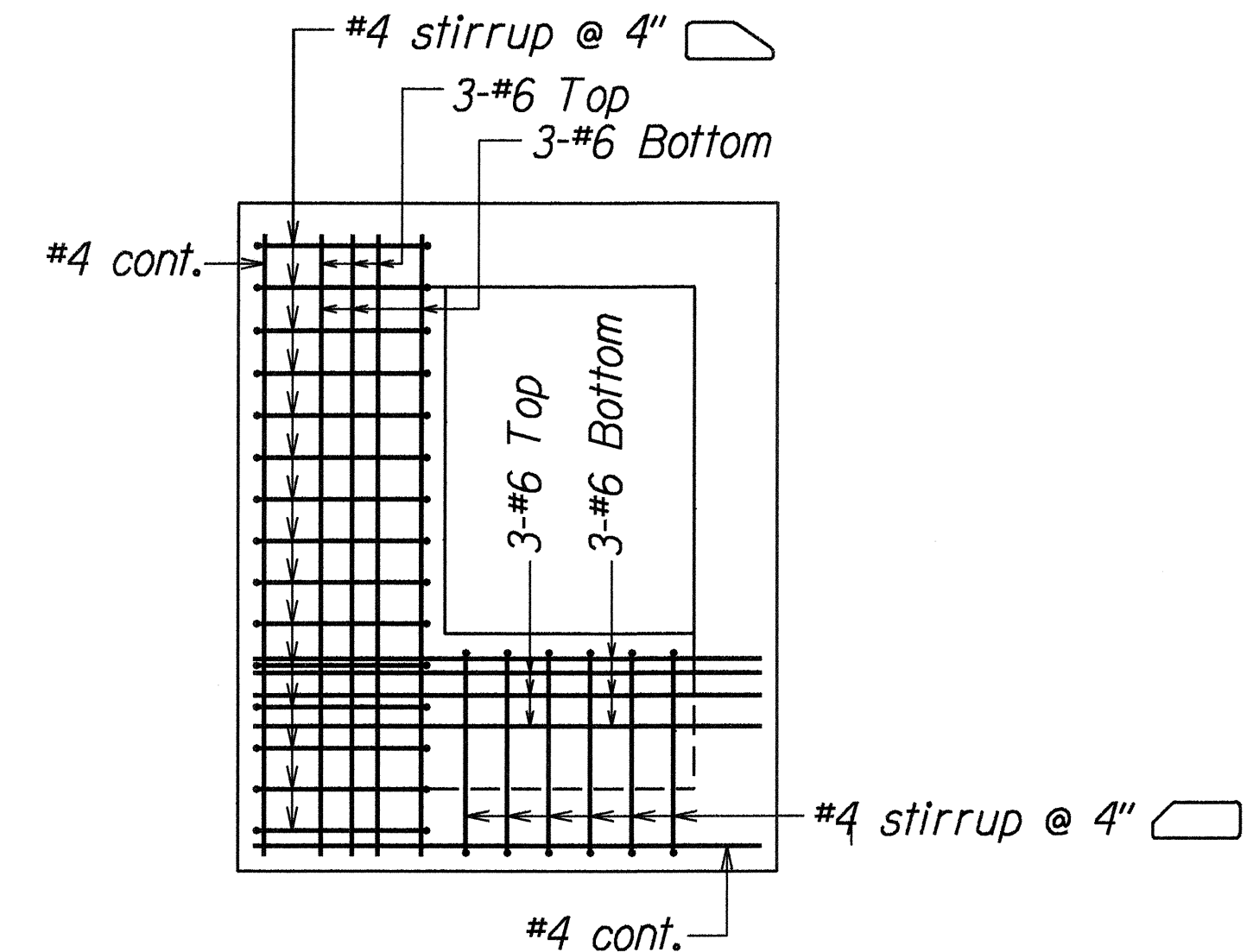
Scale: 3/4"=1'-0" Date: Jan. 1999

SHEET No. H16 OF 19 SHEETS

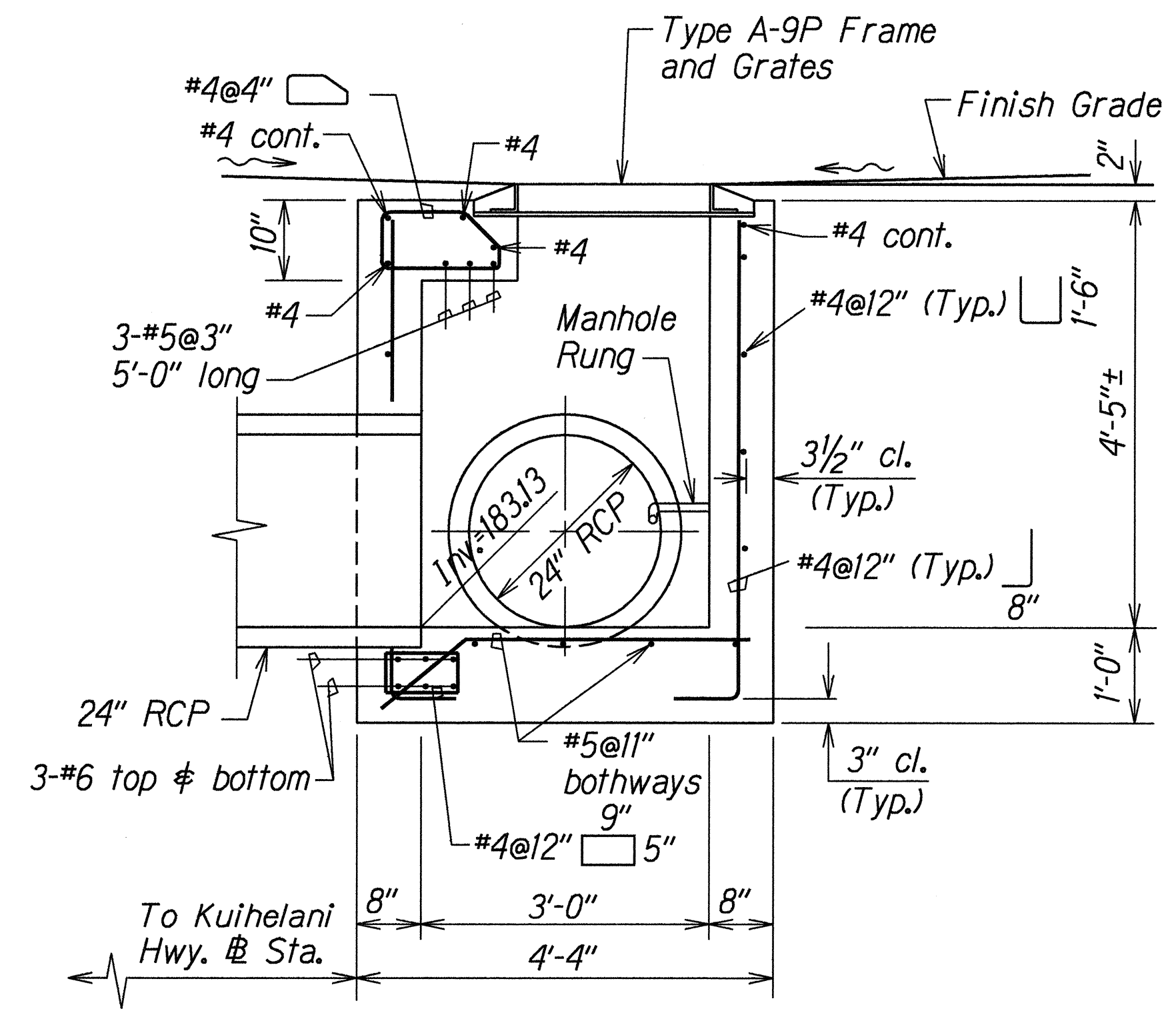
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-NH-030-1(24)	2000	102	139



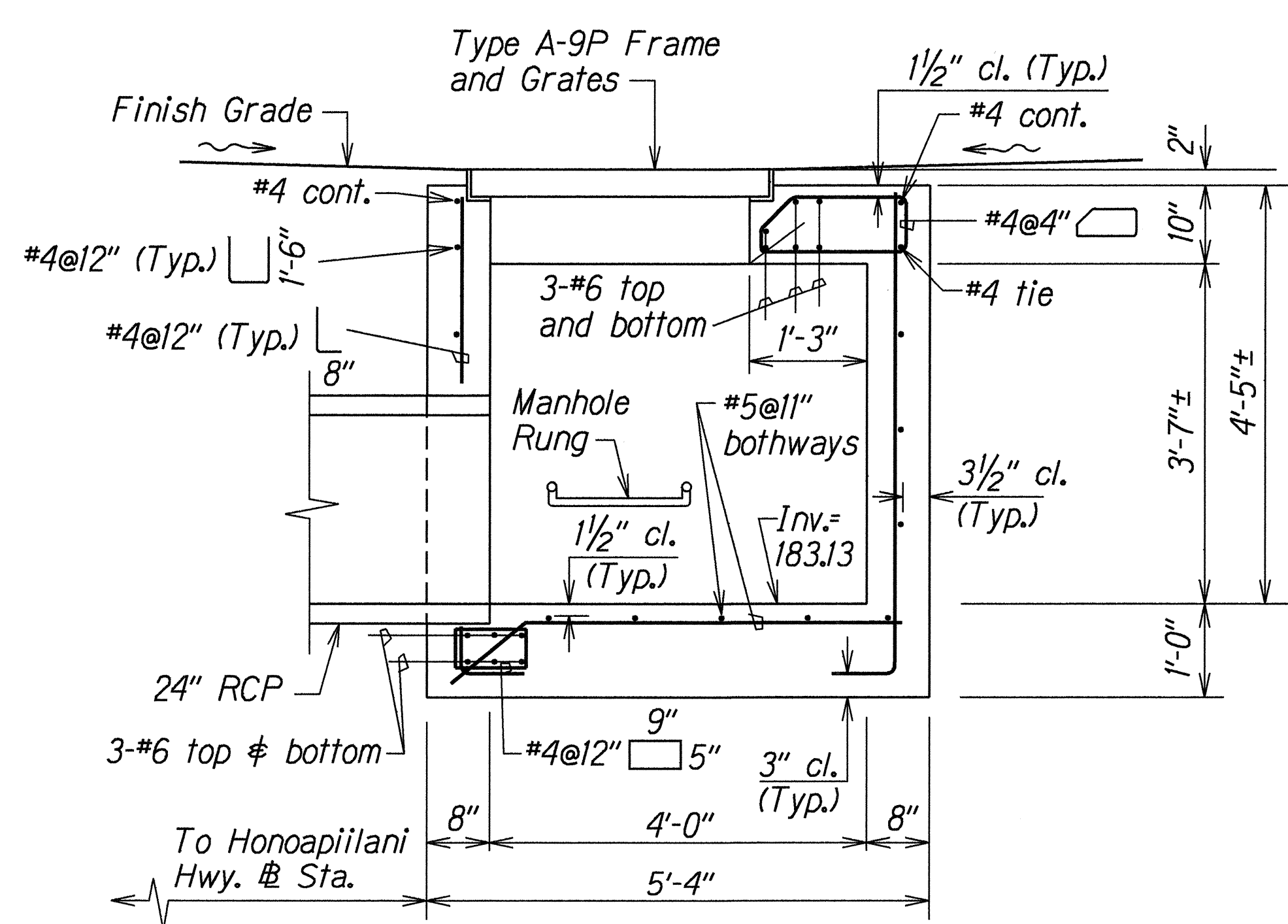
PLAN



PLAN VIEW OF TOP SLAB REINFORCING



SECTION A A



SECTION B B

DETAILS OF TYPE "A-9P" GRATED DROP INLET

ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
NOTE BOOK	DRAWN BY	9/11/96
DESIGNED BY	CHECKED BY	
QUANTITIES BY		
CHECKED BY		

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

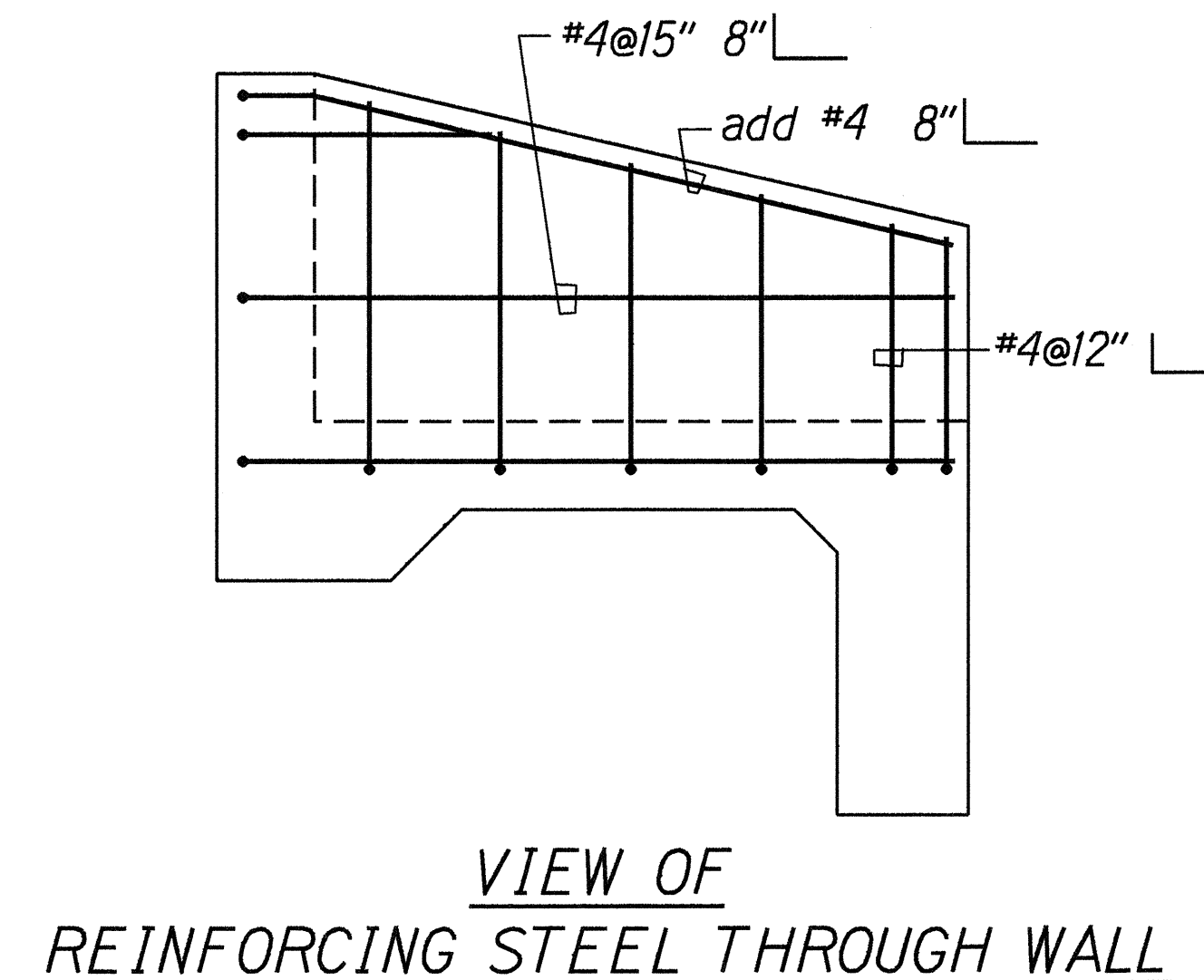
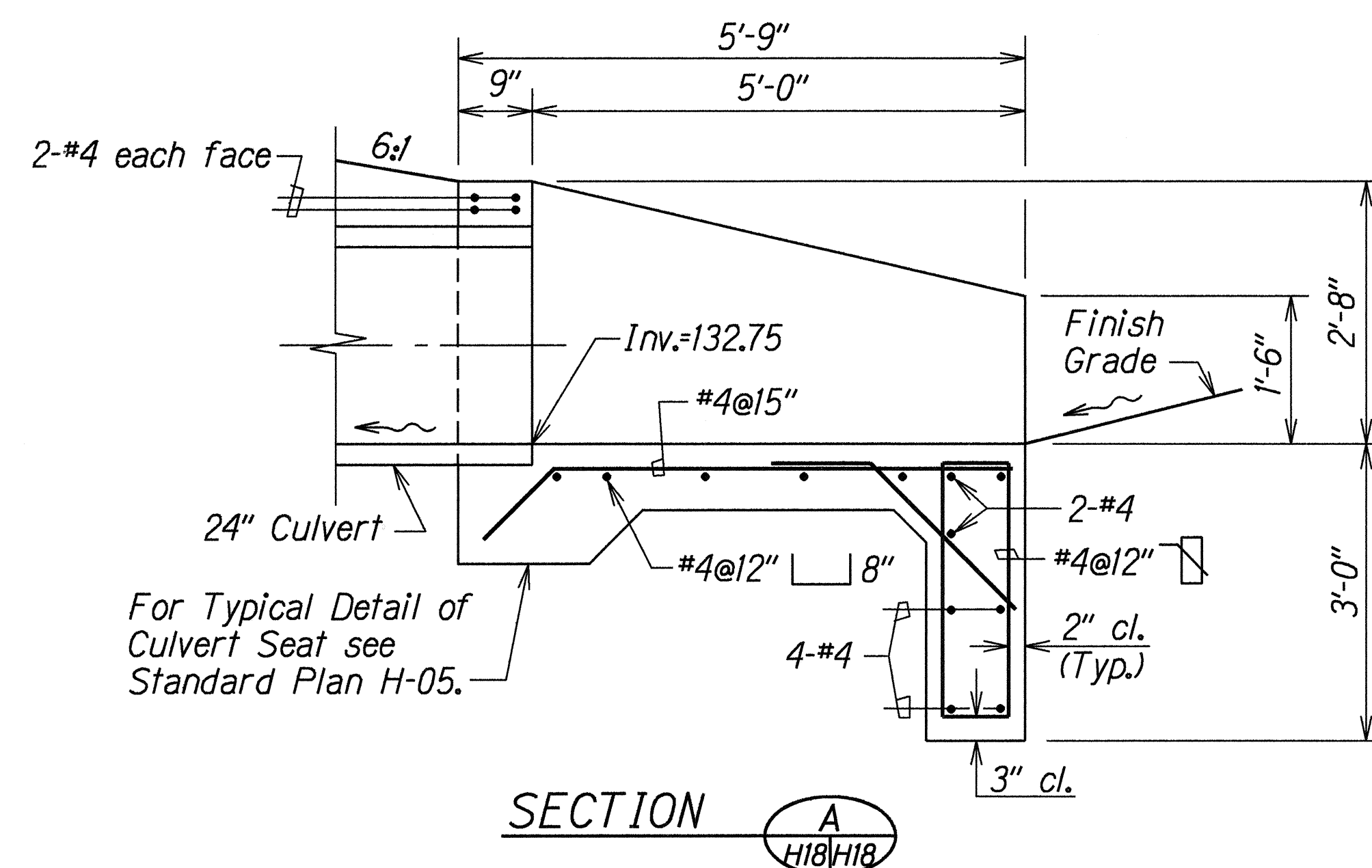
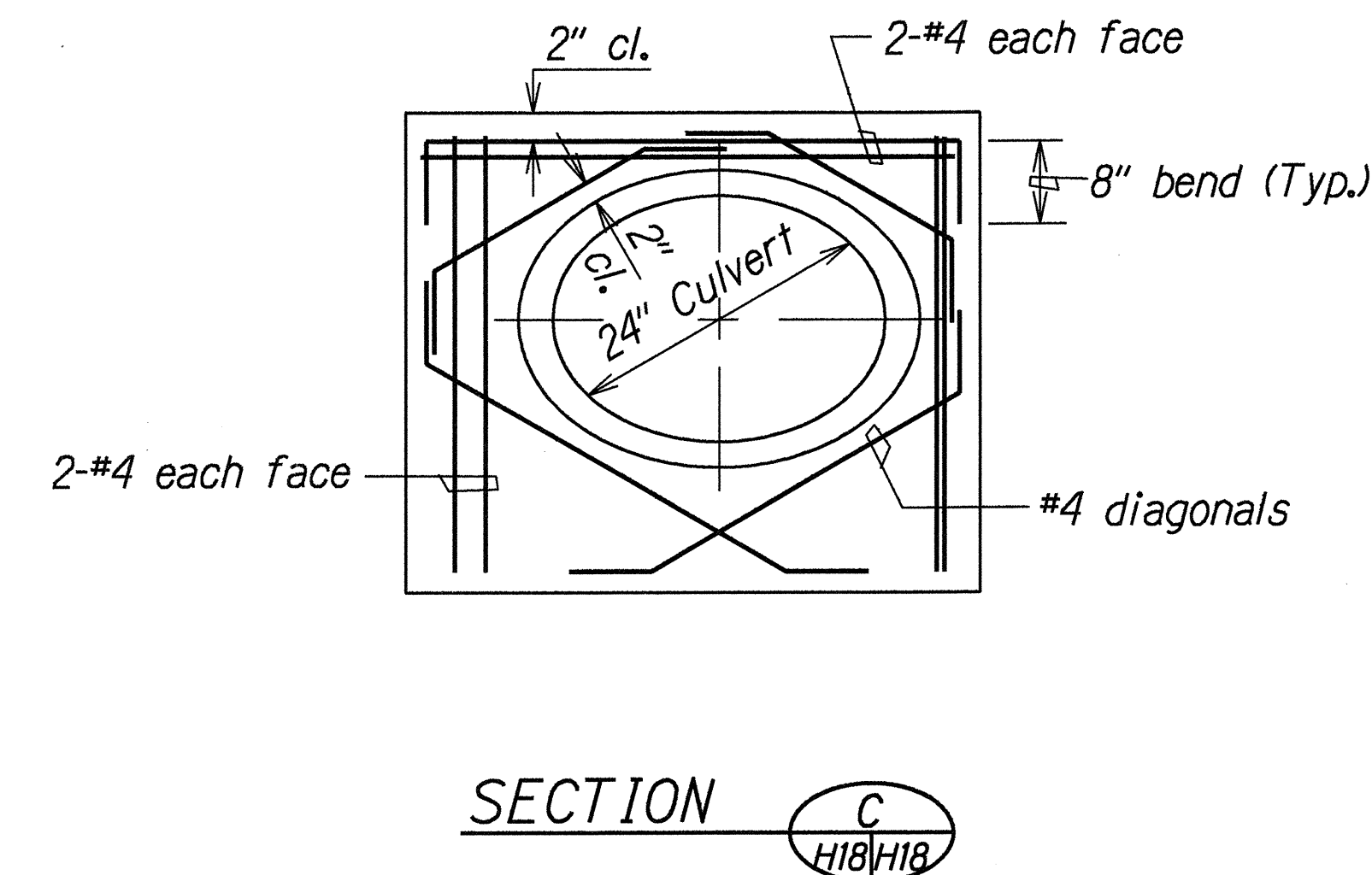
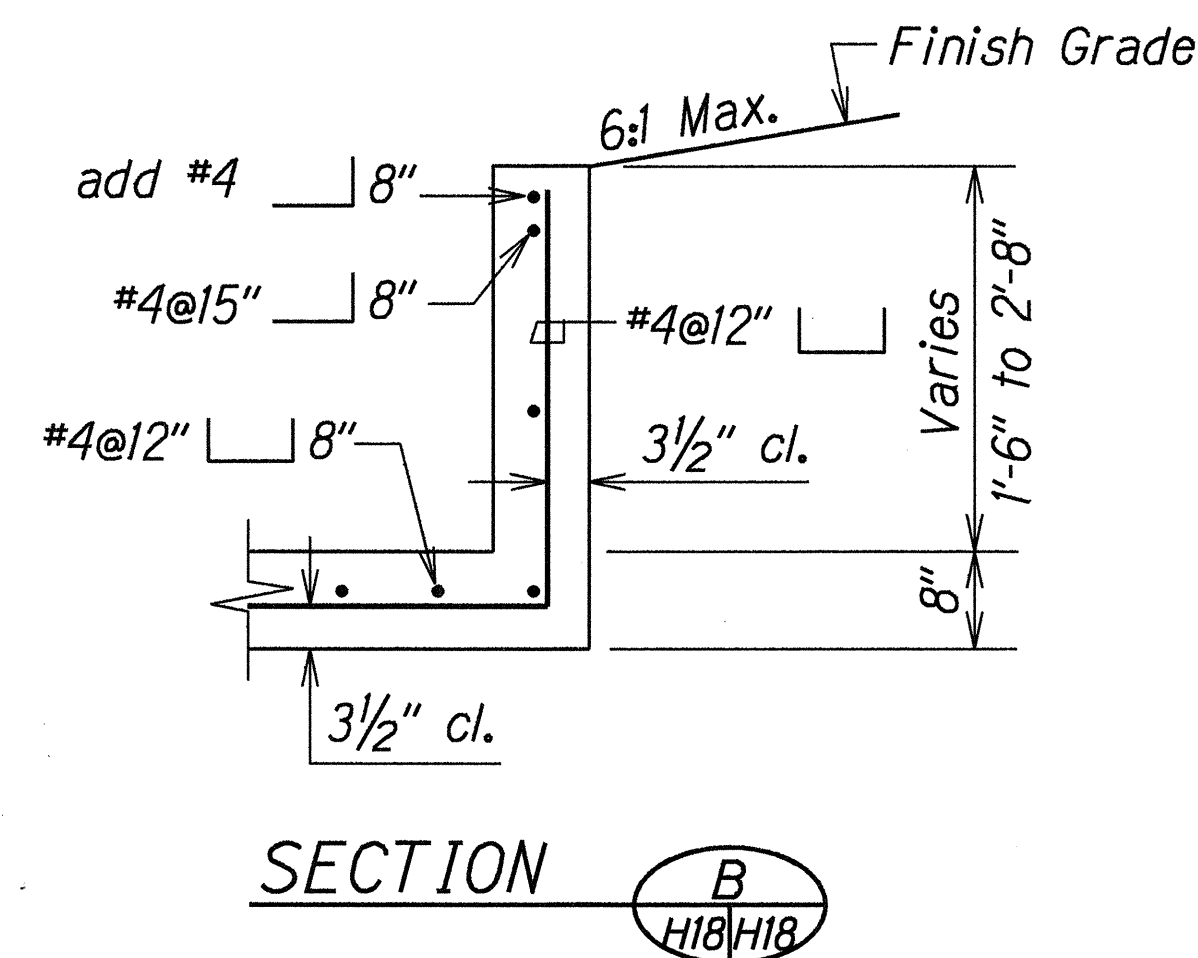
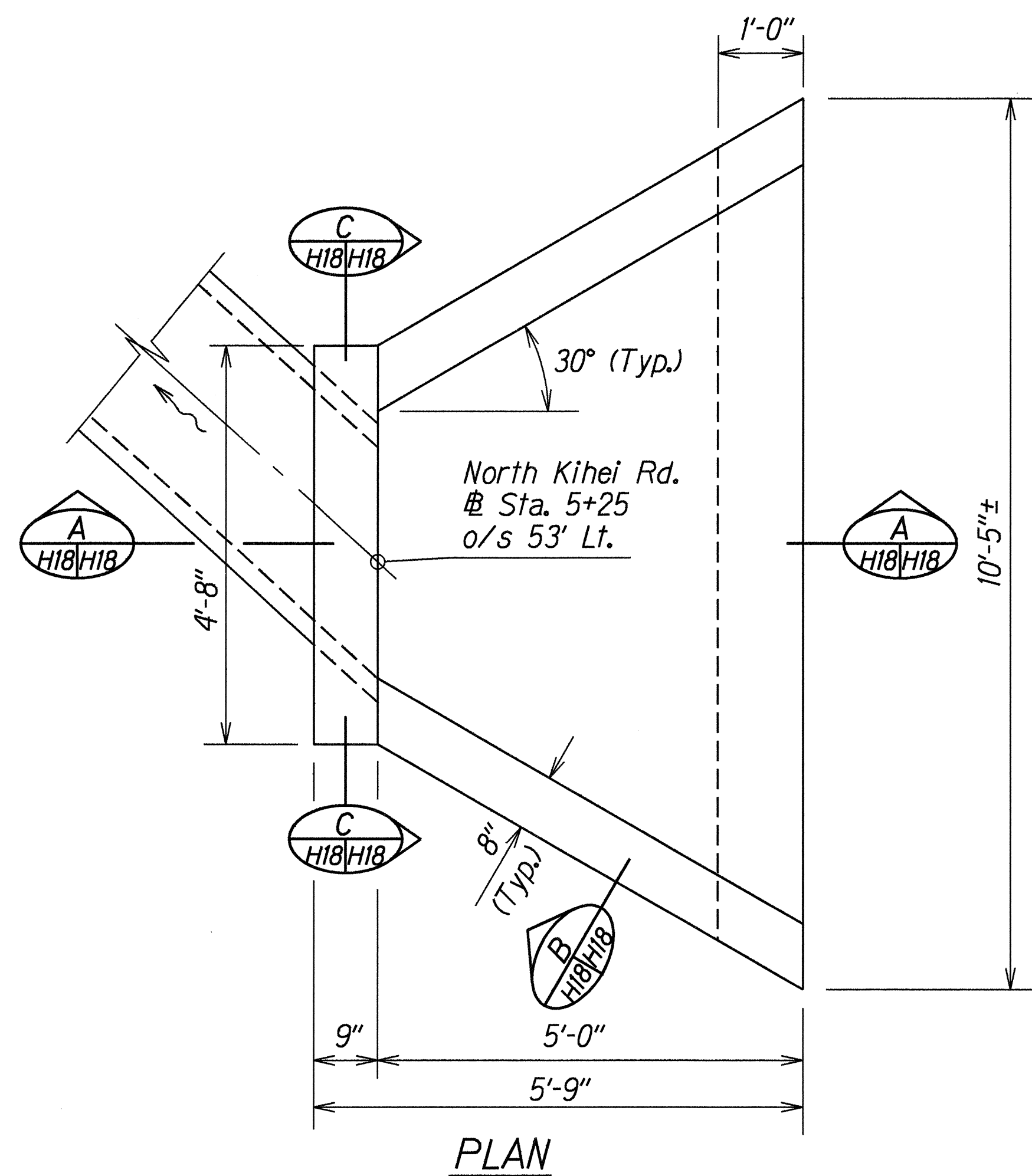
DRAINAGE DETAILS

HONOAPIILANI HIGHWAY WIDENING
North Kihei Road to Kuihelani Highway
F. A. Project No. BR-NH-030-1(24)

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

SHEET No. H17 OF 19 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-NH-030-1(24)	2000	103	139



DETAILS OF TYPE "1" INLET STRUCTURE AT NORTH KIHAI RD. Sta. 5+25 o/s 53' LT.

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

ORIGINAL PLAN	DATE	11/27/99
SURVEY PLOTTED BY		
DRAWN BY	A. Mulla	
DESIGNED BY	C. Matsuda	
CHECKED BY		
NOTED BY		

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

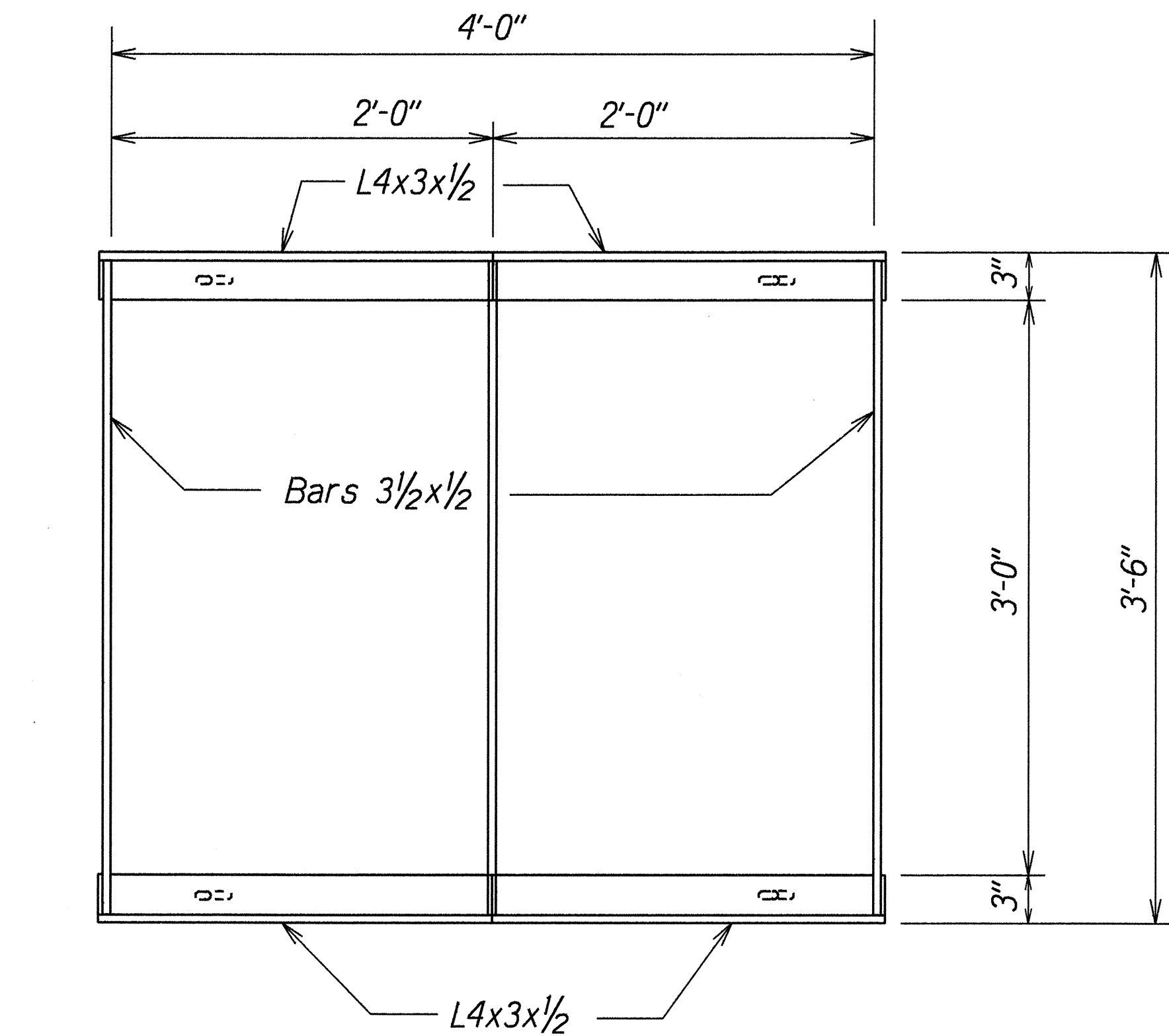
DRAINAGE DETAILS

HONOAPIILANI HIGHWAY WIDENING
North Kihei Road to Kuihelani Highway
F. A. Project No. BR-NH-030-1(24)

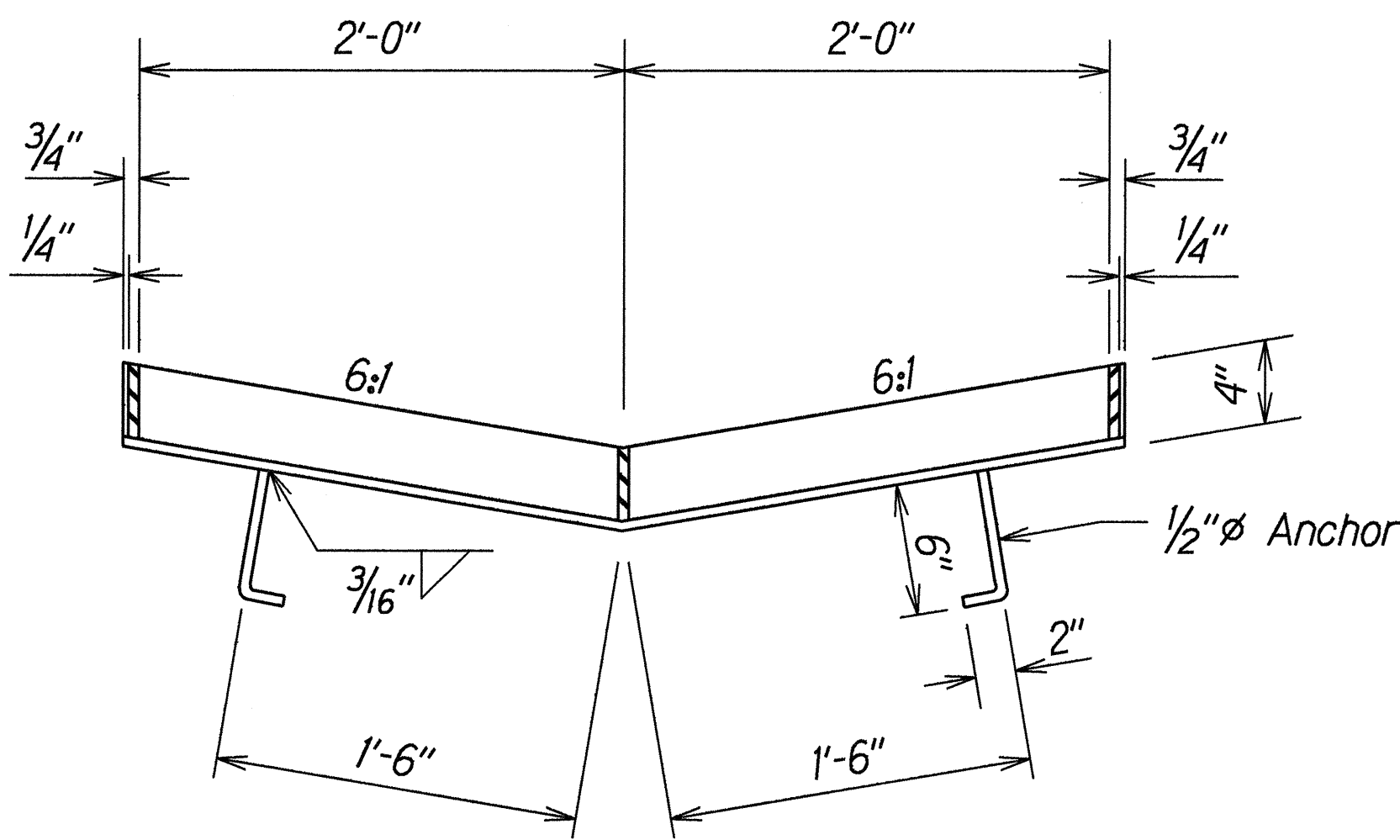
Scale: 3/4"=1'-0" Date: Jan. 1999

SHEET No. H18 OF 19 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-NH-030-1(24)	2000	104	139



PLAN

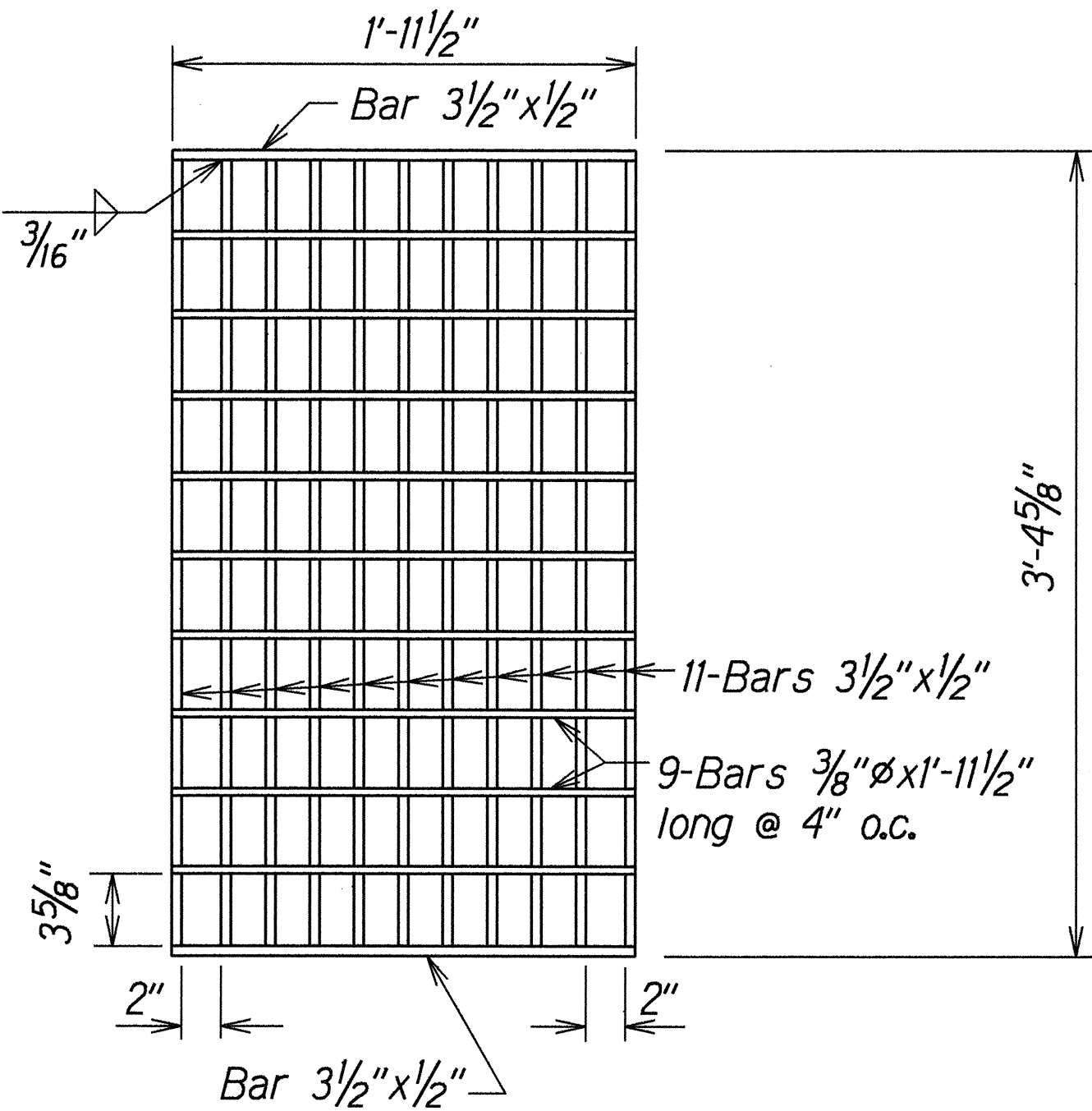


SECTION

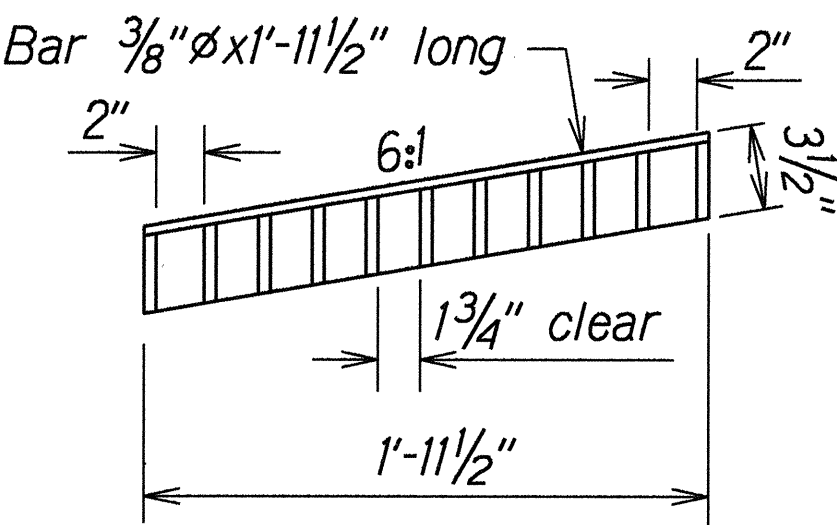
FRAME

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

NOTE:
All welds 3/8" unless otherwise noted.



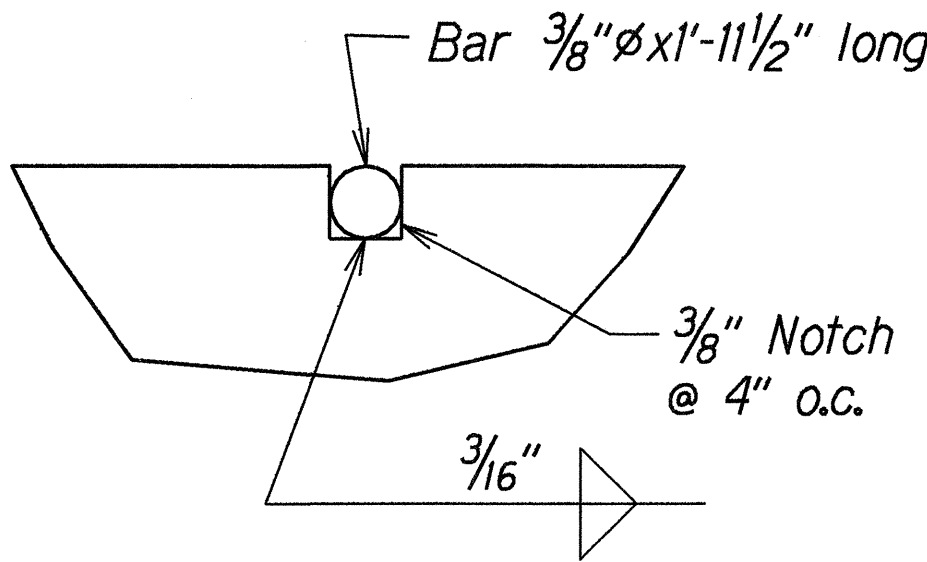
PLAN



SECTION

GRATE

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



NOTCH DETAIL

Full Size

ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
NOTE BOOK	DRAWN BY A. Noma	1/23/95
4/20/11/15/95	TRACED BY	
4/20/11/15/95	CHECKED BY C. Matsuda	
4/20/11/15/95	QUANTITIES BY	
4/20/11/15/95	CHECKED BY	

TYPICAL DETAILS OF TYPE 61614P STEEL FRAME AND GRATES

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

DRAINAGE DETAILS

HONOAPIILANI HIGHWAY WIDENING
North Kihei Road to Kuihelani Highway
F. A. Project No. BR-NH-030-1(24)

Scale: As Shown
Date: Jan. 1999

SHEET No. H19 OF 19 SHEETS