

4- 7/9" Holes for 3/4" & ASTM A325 Bolts

Standard Metal Guardrail (For Def. See Standard Plan TE-50)

Use 11" x 10" x 1" Base Plate ASTM A36

11"

10"

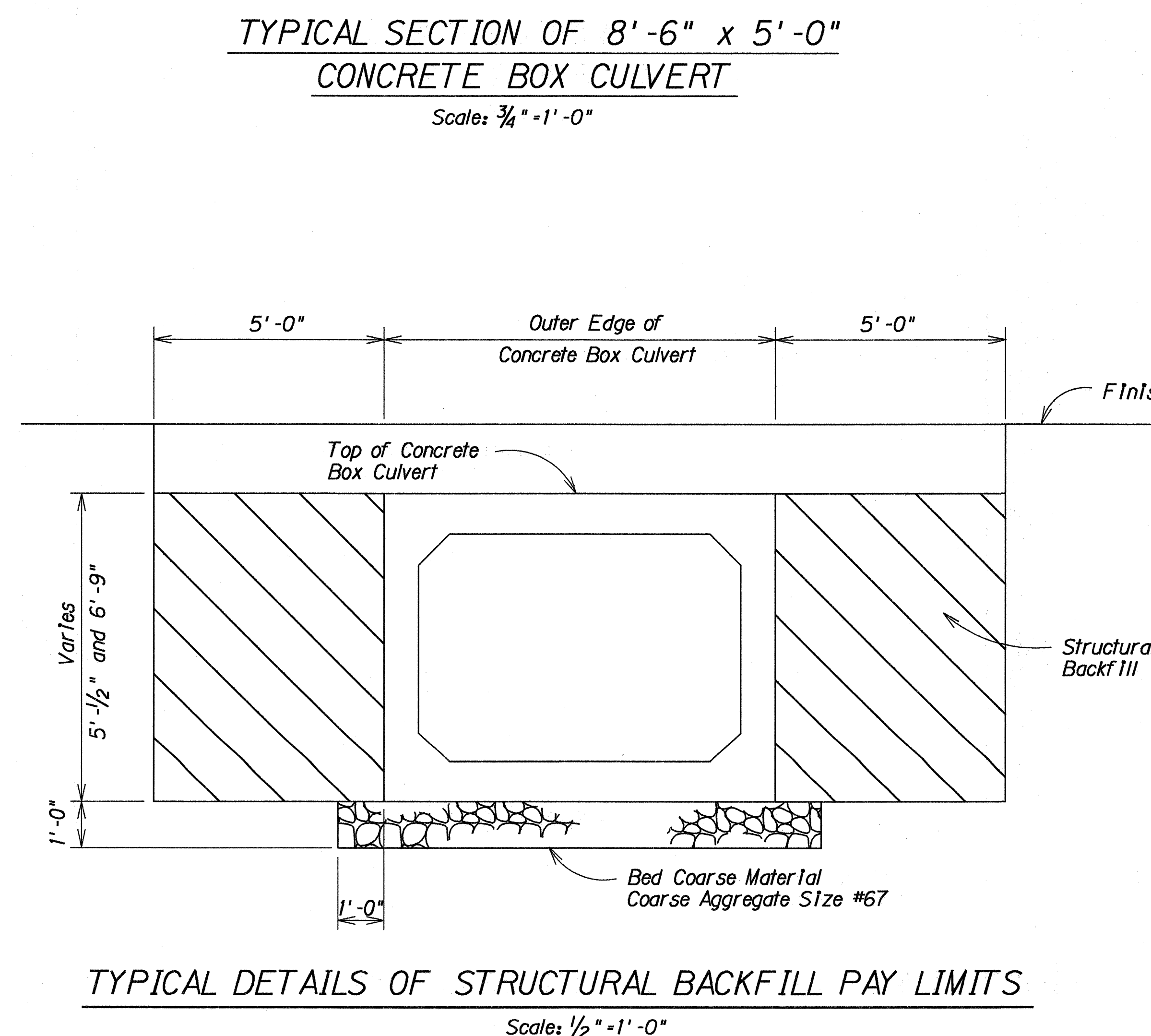
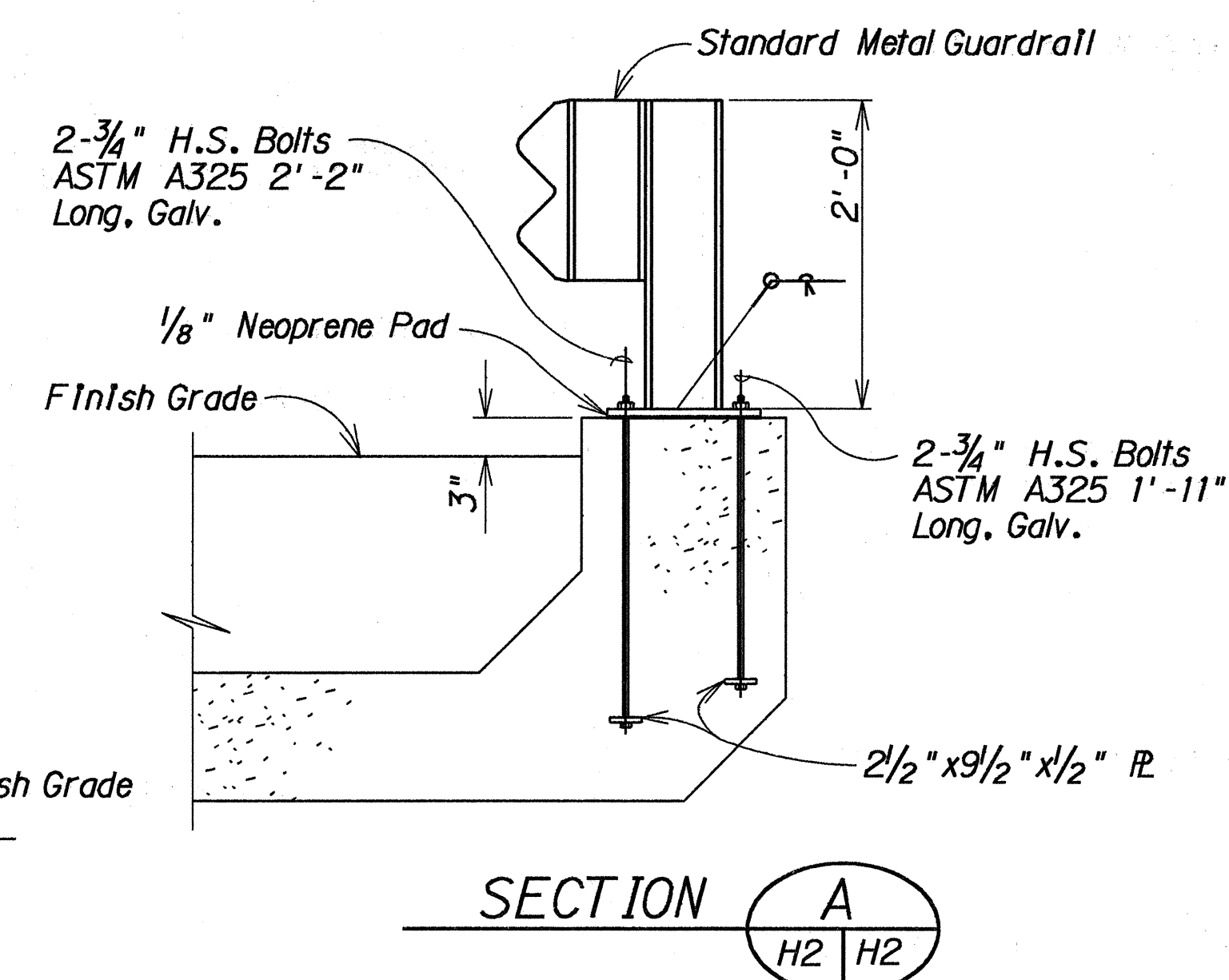
1 1/2" (Typ.)

1 1/2" (Typ.)

4"

4"

PLAN



STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

DRAINAGE DETAILS

HONOKAPIILANI HIGHWAY RESURFACING
Honokahua to Honokohau
PROJECT NO. 30A-01-91M

Scale: As Shown Date: May, 1991

SHEET No. H2 OF 9 SHEETS

Typical Concrete Box Culvert Reinforcing

#4 Closed Stirrups @ 8"

6" Fillets

#4 Closed Stirrups @ 8"

2 1/2" Cl. (Typ.)

2-#6

3-#6

1'-6"

1'-6"

Diagram illustrating a trench cross-section with a 2:1 maximum slope. The trench is 5'-0" high and 3'-0" wide at the top. The bottom width is 1'-0". The slope is labeled "2:1 Max." and the ground surface is labeled "ex 1st. ground".

[illegible]

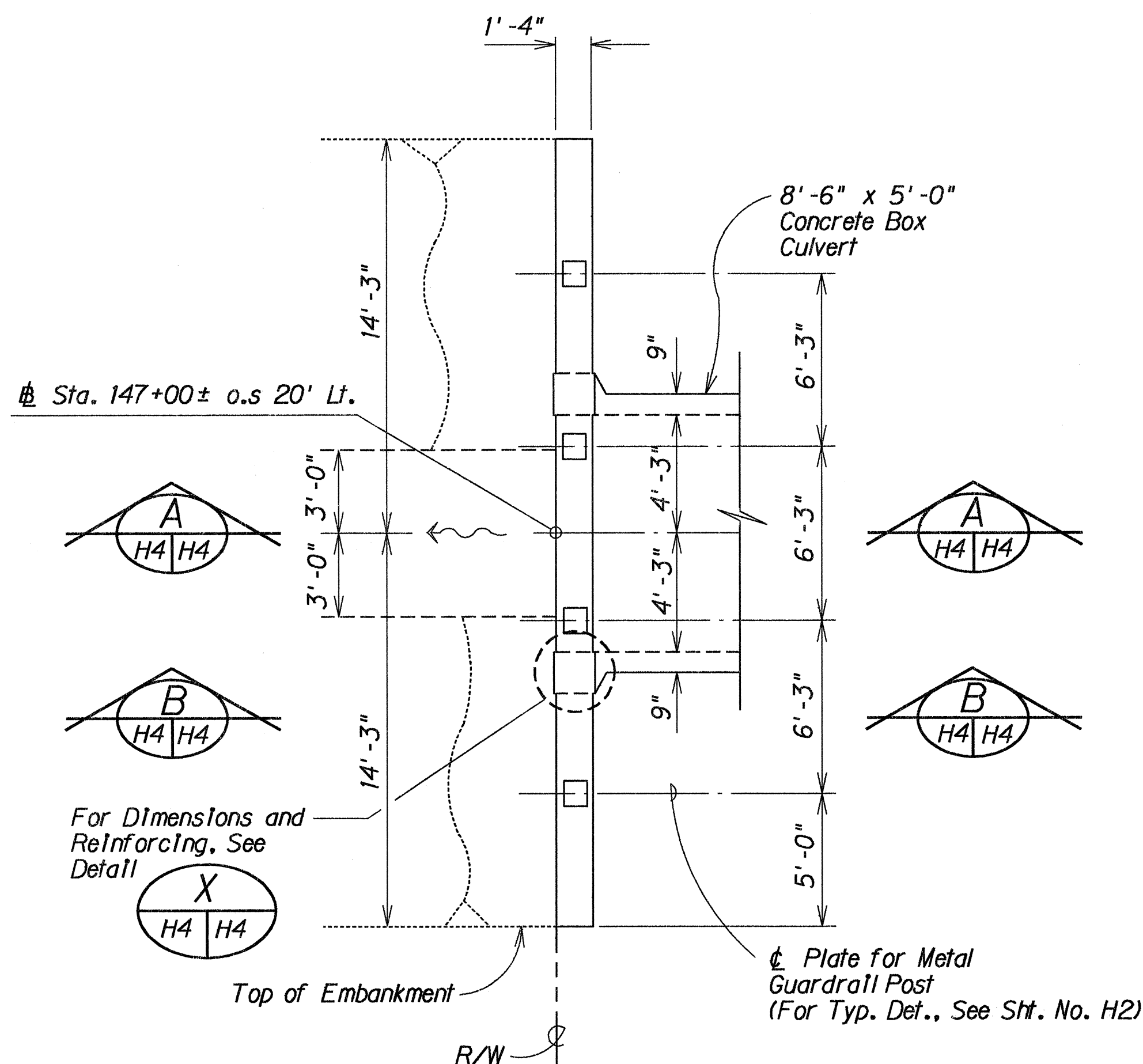
Technical drawing of a concrete box culvert cross-section. The drawing shows a rectangular culvert with a width of 8'-6" and a height of 5'-0". The culvert is reinforced with #4 bars at 12" intervals. The top and bottom slabs are 10 1/2" thick. The side walls are 10 1/2" thick. The culvert is shown in cross-section, with the top and bottom slabs and the side walls. The drawing includes dimensions for the culvert, the reinforcement, and the surrounding structure. The culvert is shown in cross-section, with the top and bottom slabs and the side walls. The drawing includes dimensions for the culvert, the reinforcement, and the surrounding structure. The culvert is shown in cross-section, with the top and bottom slabs and the side walls. The drawing includes dimensions for the culvert, the reinforcement, and the surrounding structure.

DETAILS OF INLET STRUCTURE @ ~~B~~ STA. 147+00±

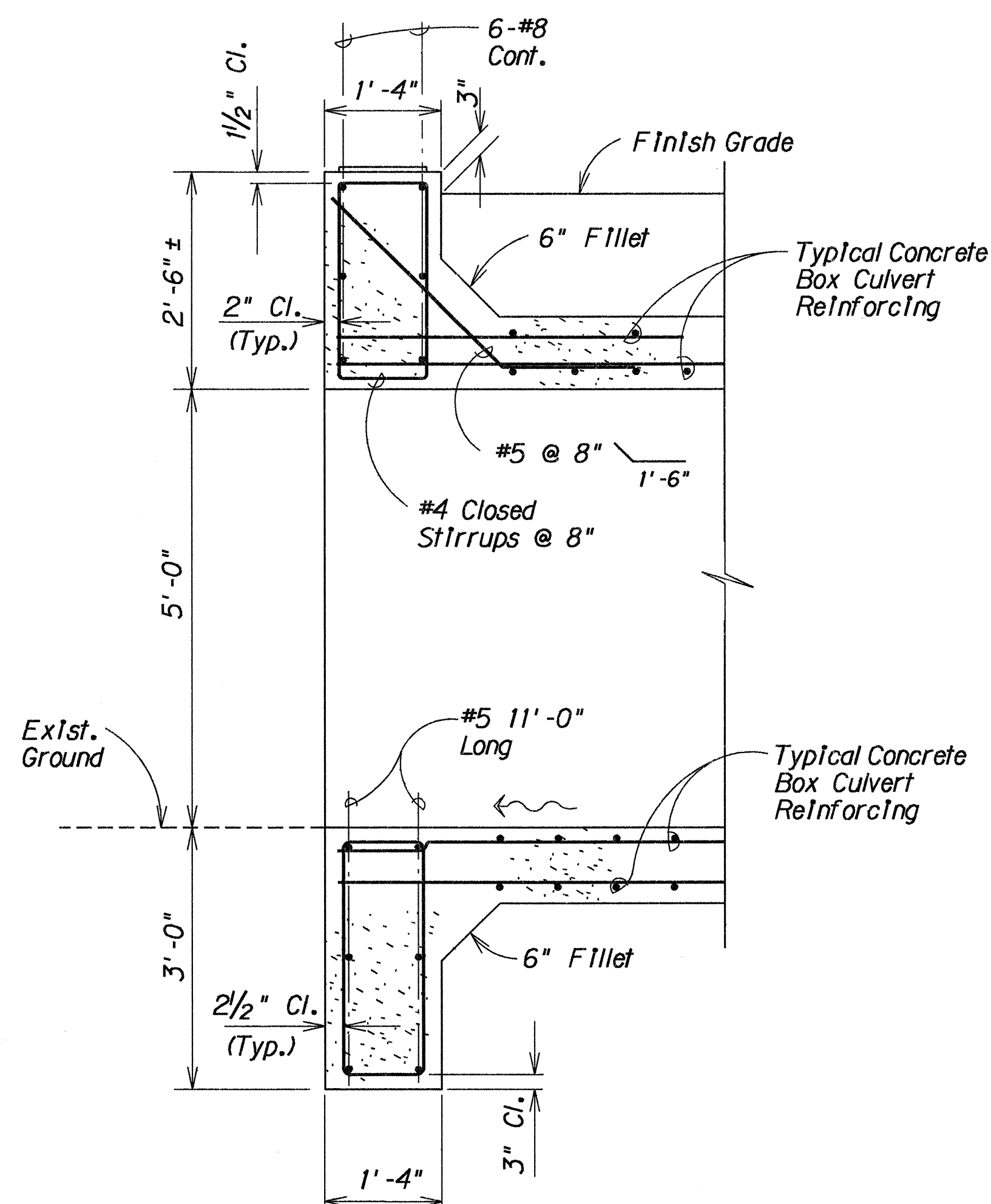
18

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

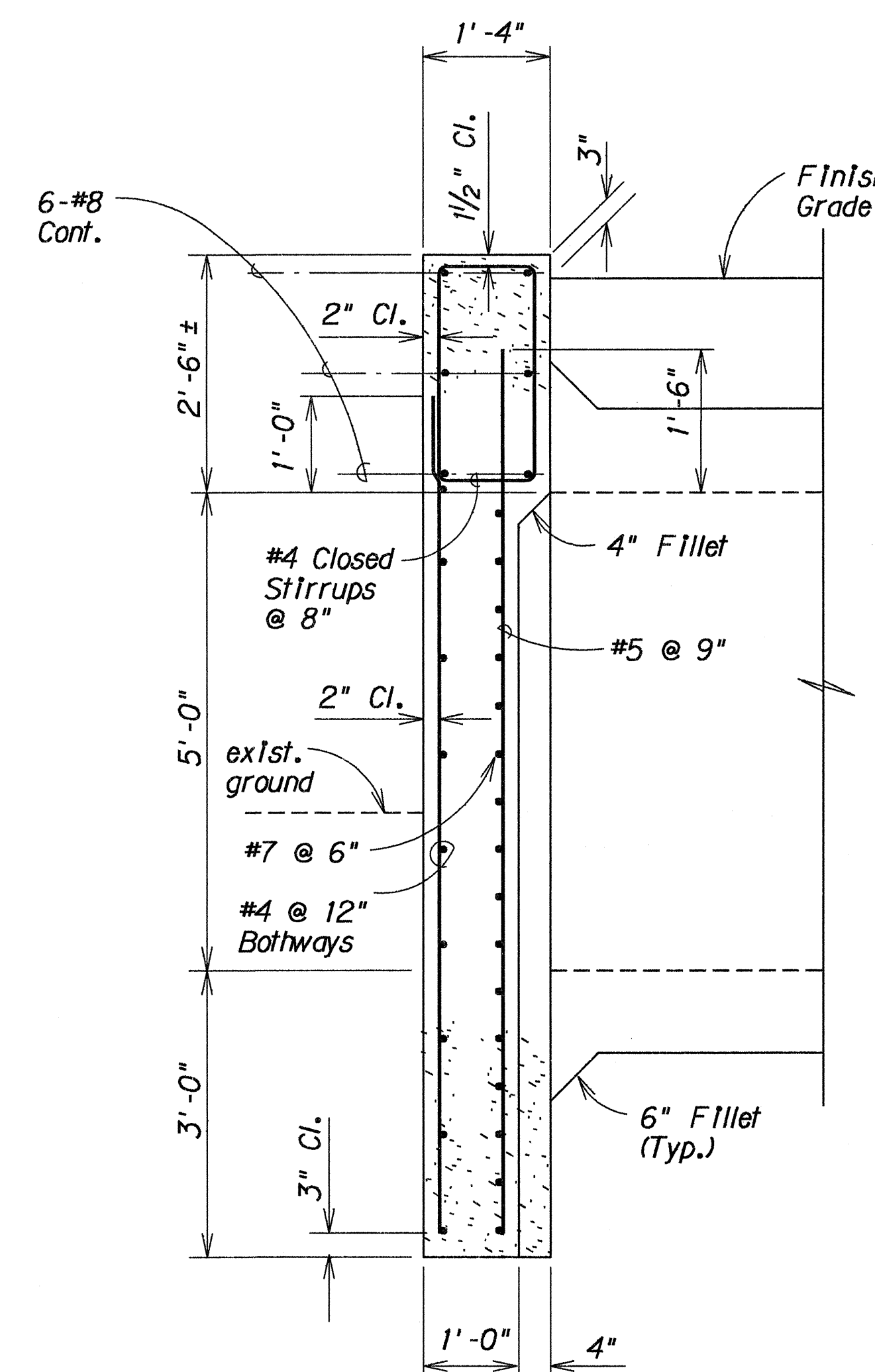
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	30A-01-91M	1991	19	31



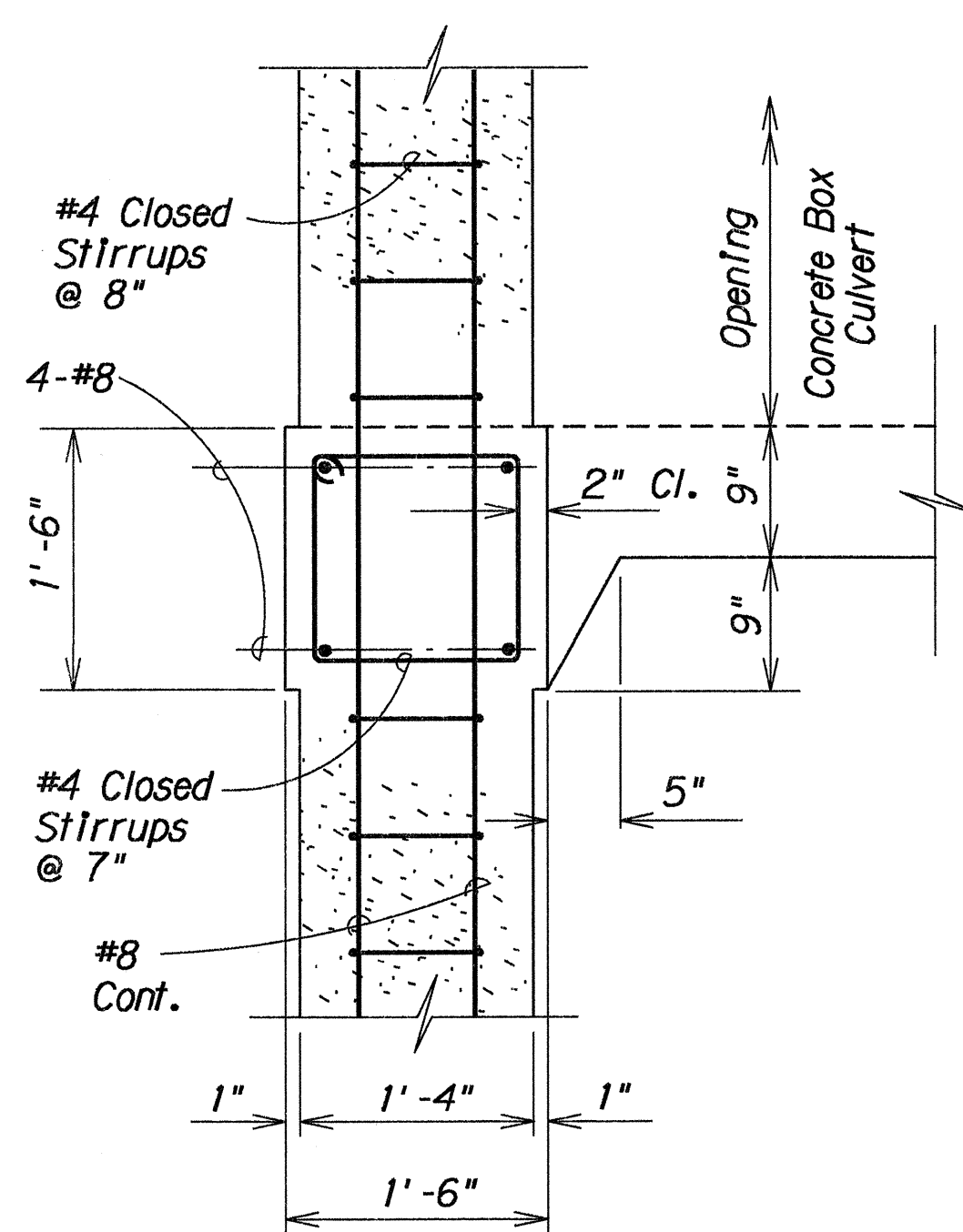
PLAN - CONCRETE HEADWALL
Scale: 1/4" = 1'-0"



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



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



DETAIL X
Scale: 1" = 1'-0"

DETAILS OF CONCRETE HEADWALL AT STA. 147+00 LT.

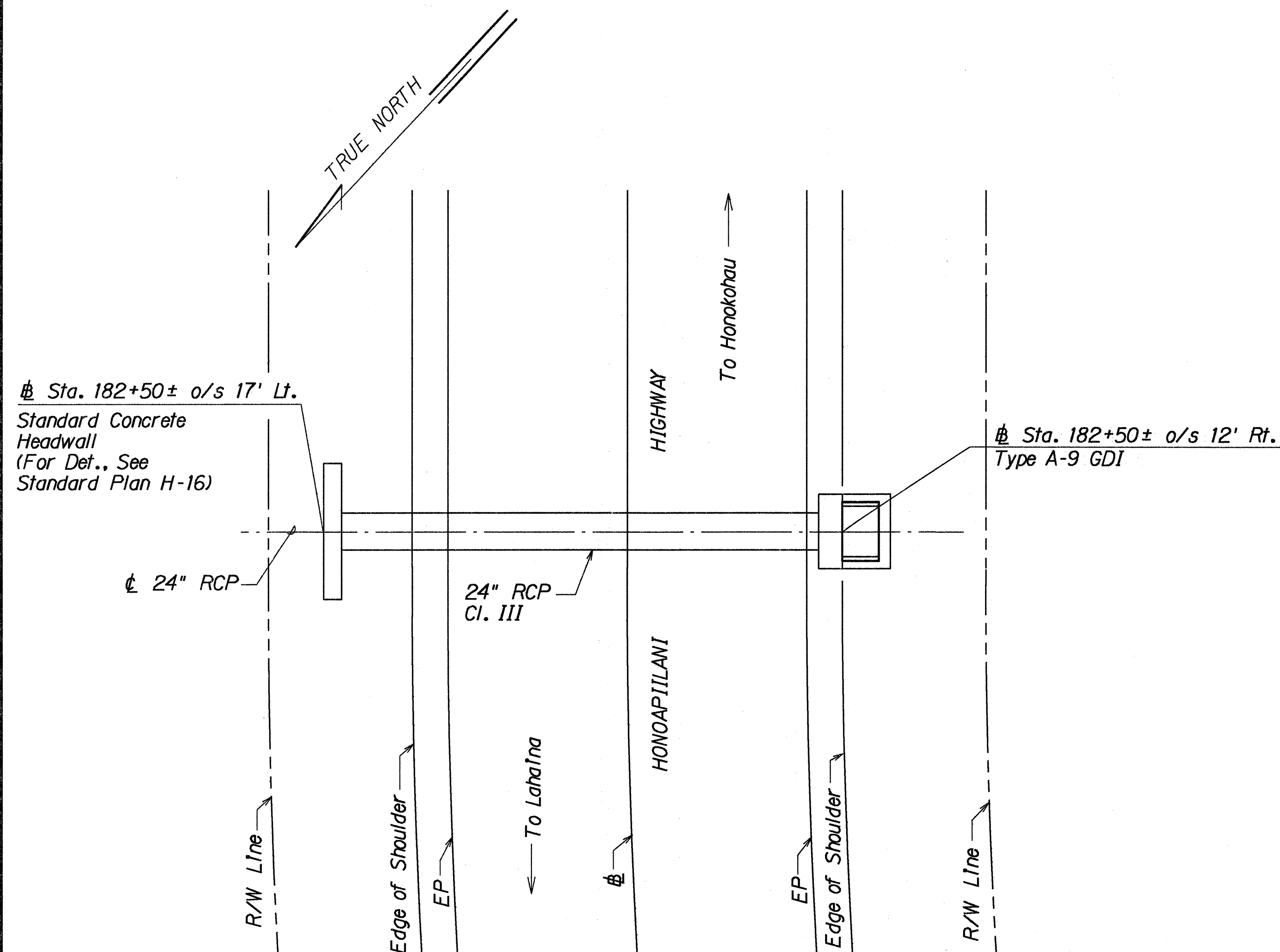
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

DRAINAGE DETAILS
HONOAPIILANI HIGHWAY RESURFACING
Honokahua to Honokohau
PROJECT NO. 30A-01-91M

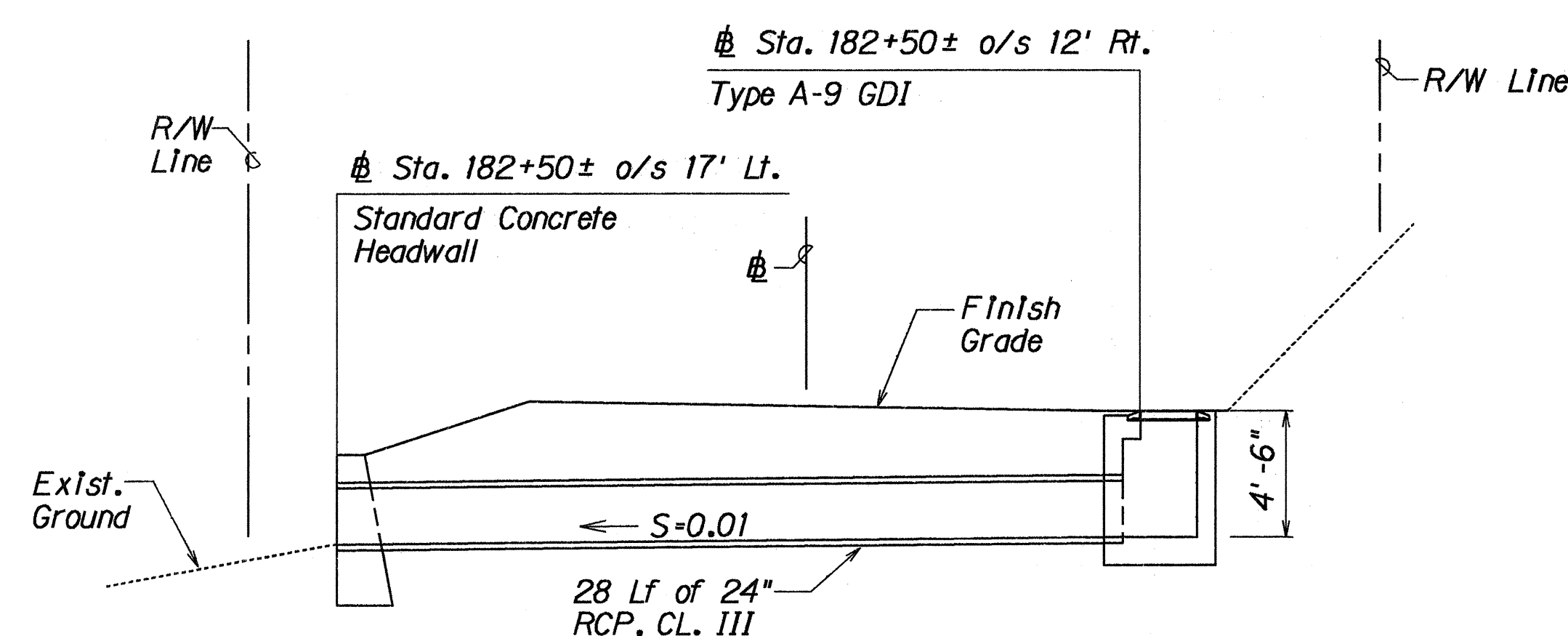
Scale: As Shown
SHEET No. H4 OF 9 SHEETS

Date: May, 1991

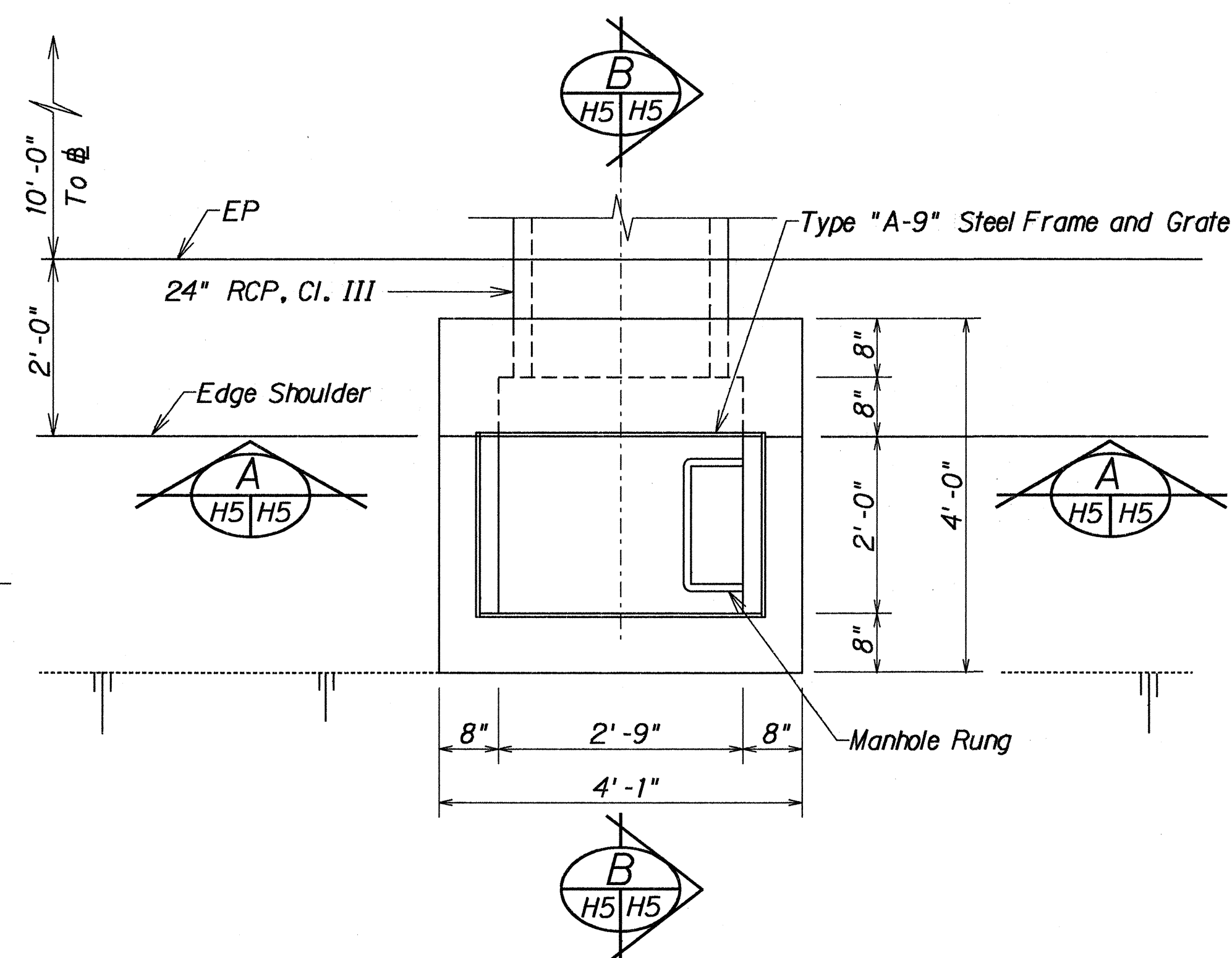
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HAWAII	HAW.	30A-01-91M	1991	20	31



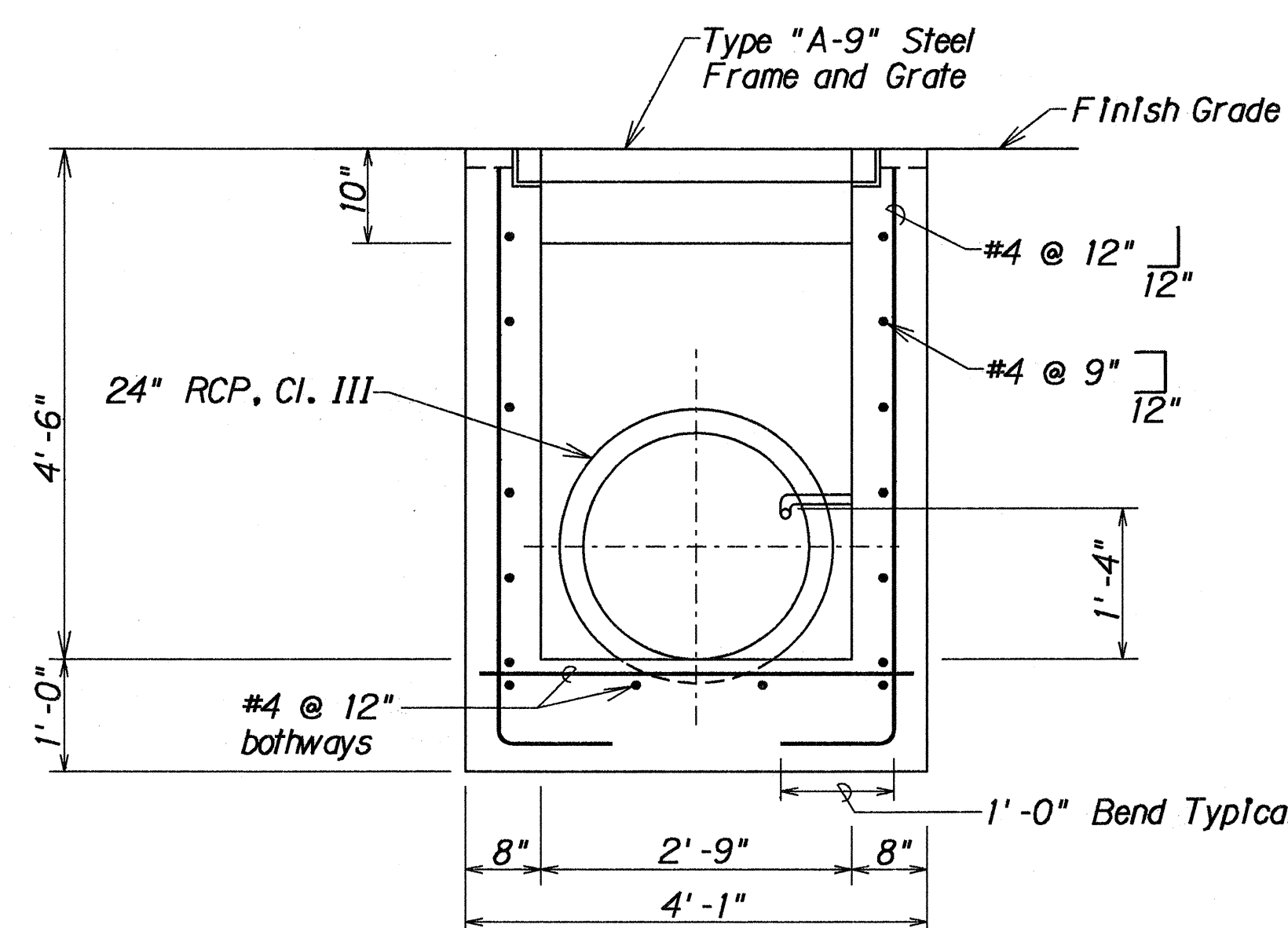
PLAN
Scale: 1" = 5'



PROFILE
Scale: 1" = 5'



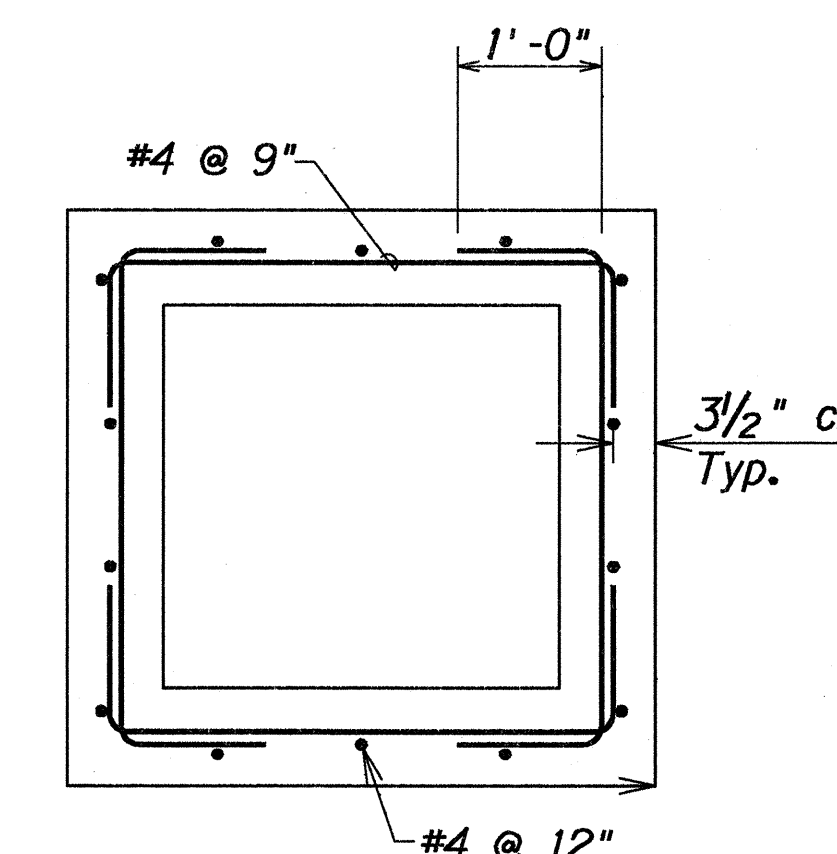
PLAN



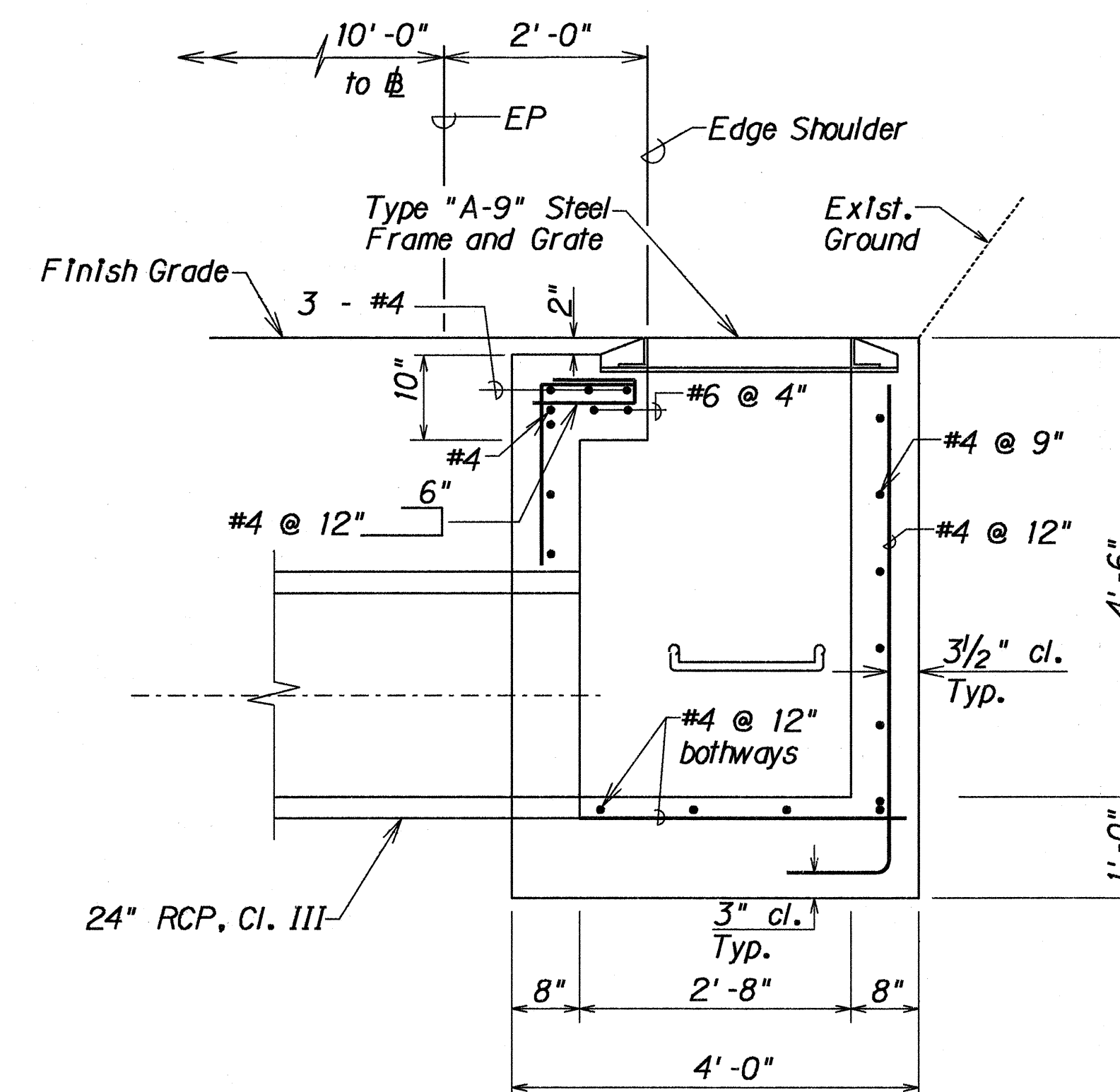
SECTION A
H5 H5

DETAILS OF TYPE A-9 GRATED DROP INLET

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



PLAN VIEW OF WALL SECTION



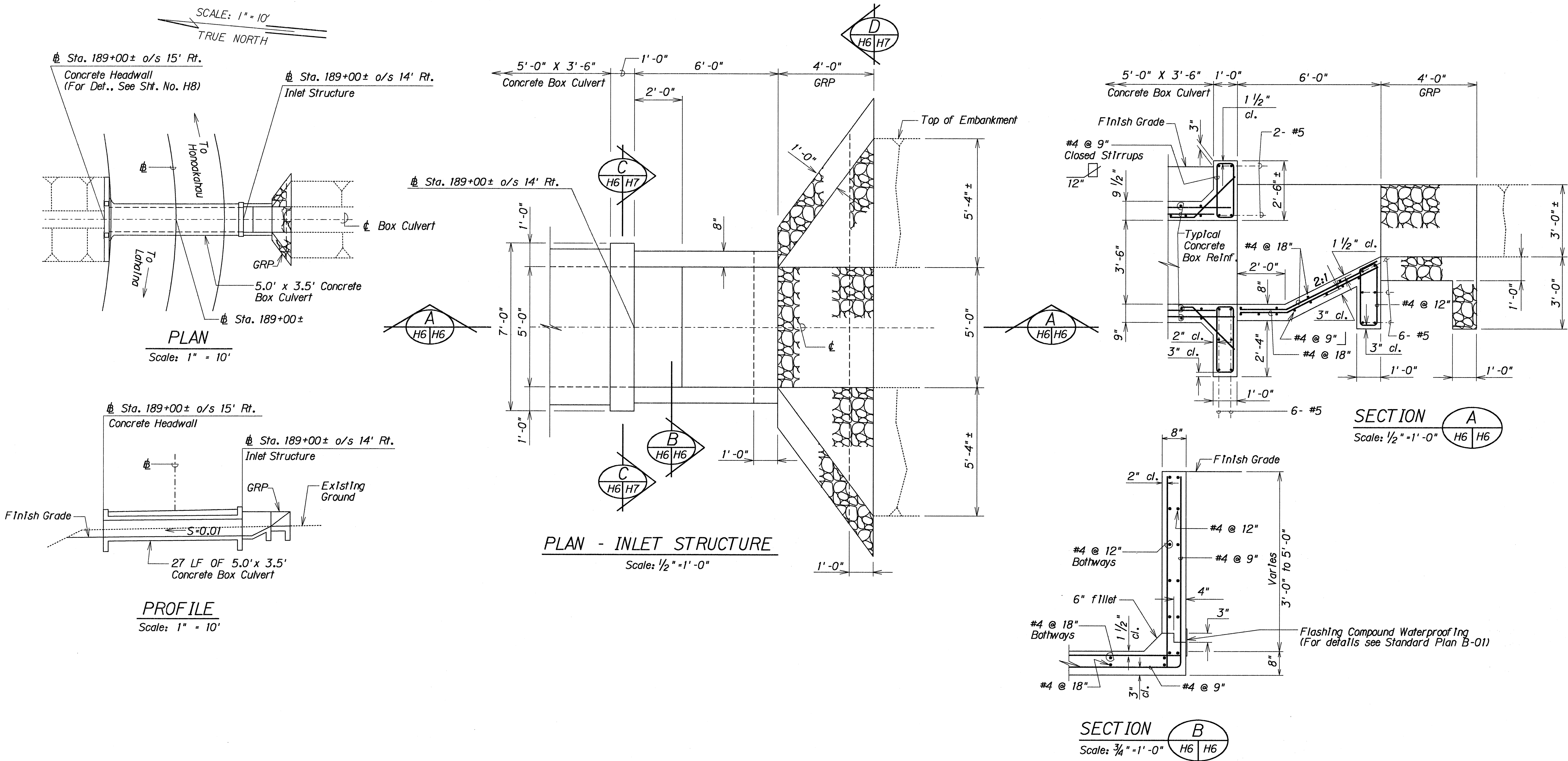
SECTION B
H5 H5

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
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DRAINAGE DETAILS
HONOAPIILANI HIGHWAY RESURFACING
Honokahua to Honokohau
PROJECT NO. 30A-01-91M

Scale: As Shown Date: May, 1991
SHEET No. H5 OF 9 SHEETS

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	30A-01-91M	1991	21	31



DRAINAGE DETAILS AT STA. 189+00±

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

DRAINAGE DETAILS

HONOAPIILANI HIGHWAY RESURFACING

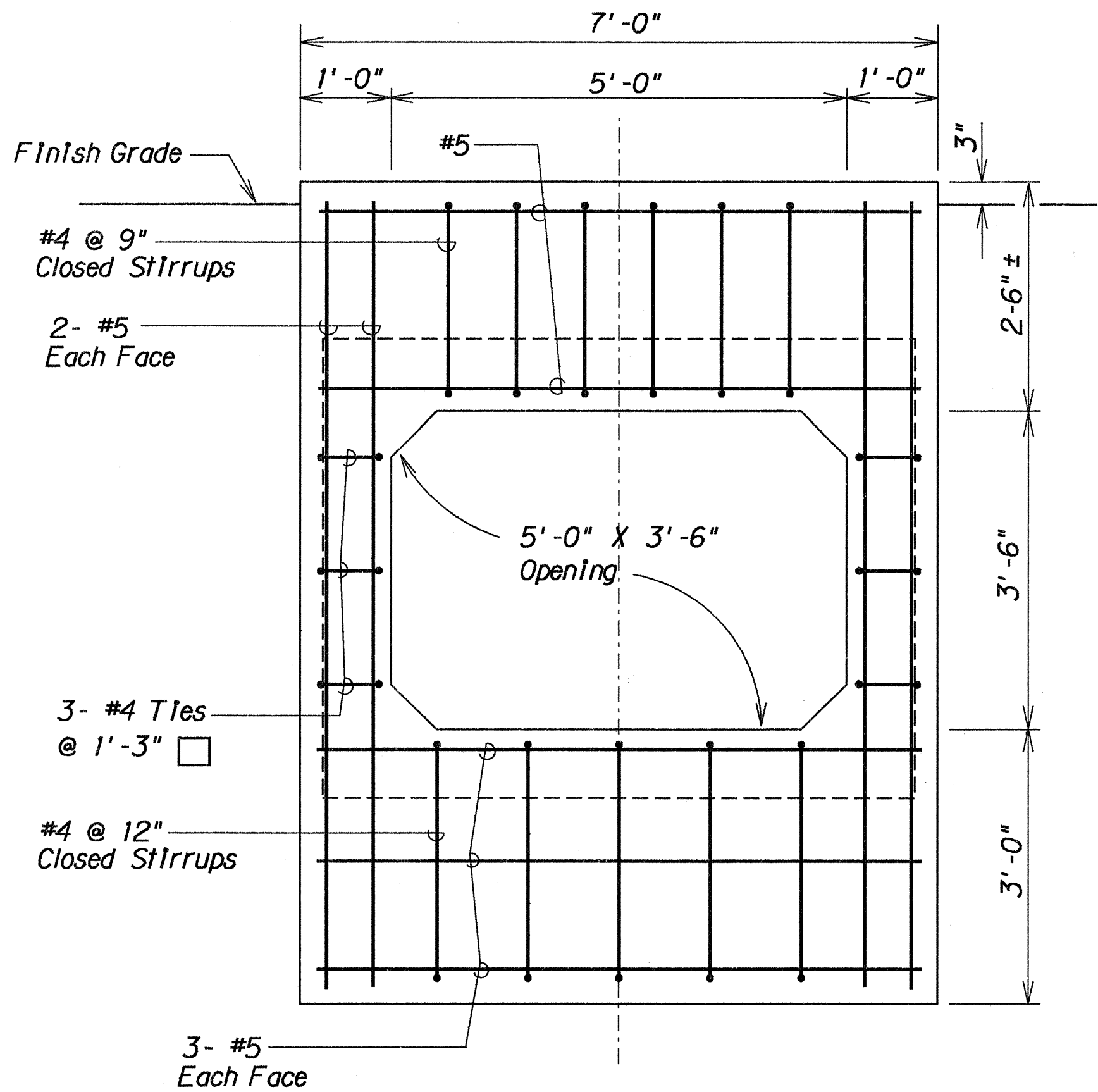
Honokahua to Honokohau

PROJECT NO. 30A-01-91M

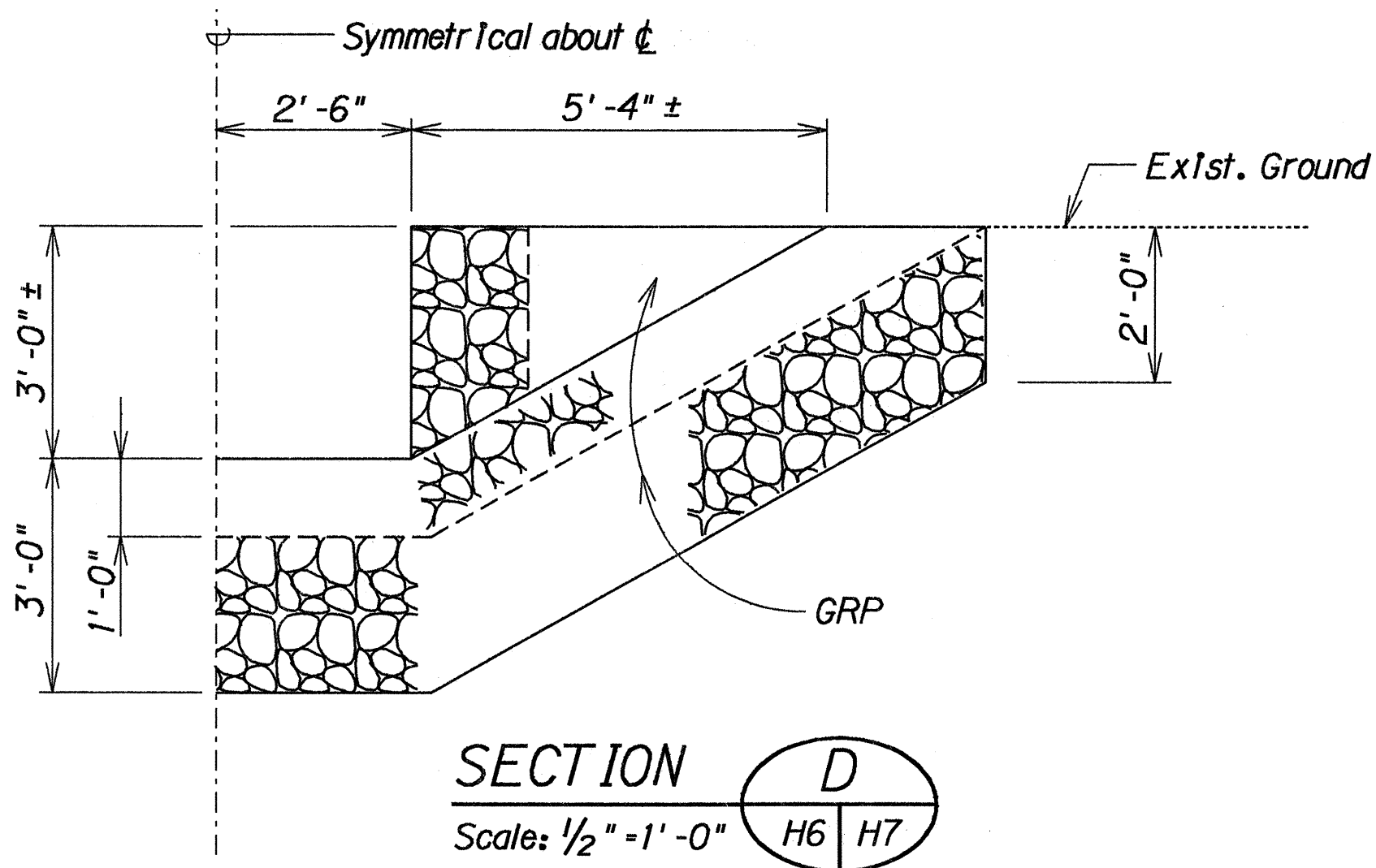
Scale: As Shown
SHEET No. H6 OF 9 SHEETS

Date: May, 1991

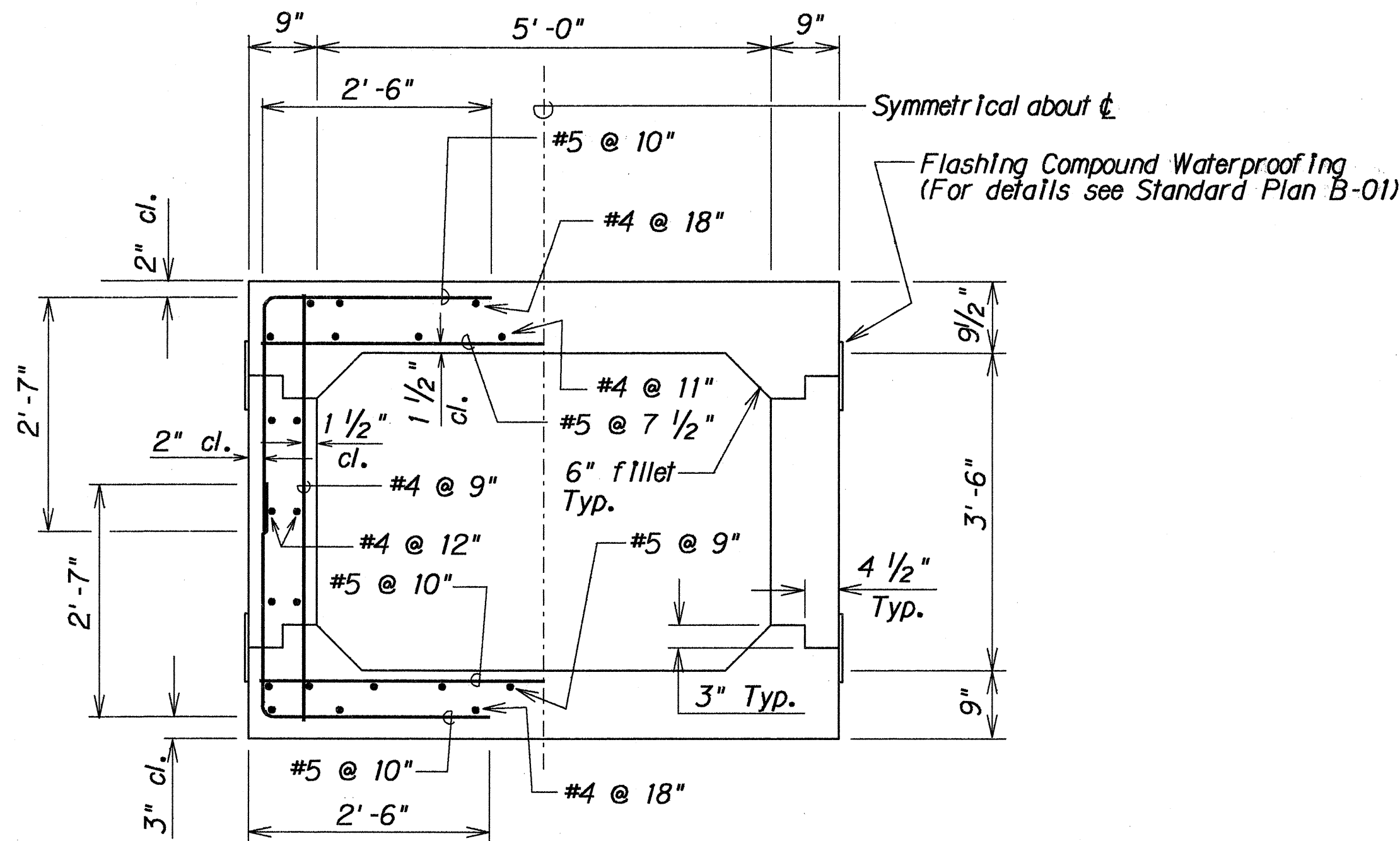
FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	30A-01-91M	1991	22	31



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



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



TYPICAL SECTION OF 5'-0" X 3'-6"
CONCRETE BOX CULVERT
Scale: 3/4" = 1'-0"

DRAINAGE DETAILS AT STA. 189+00±

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

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

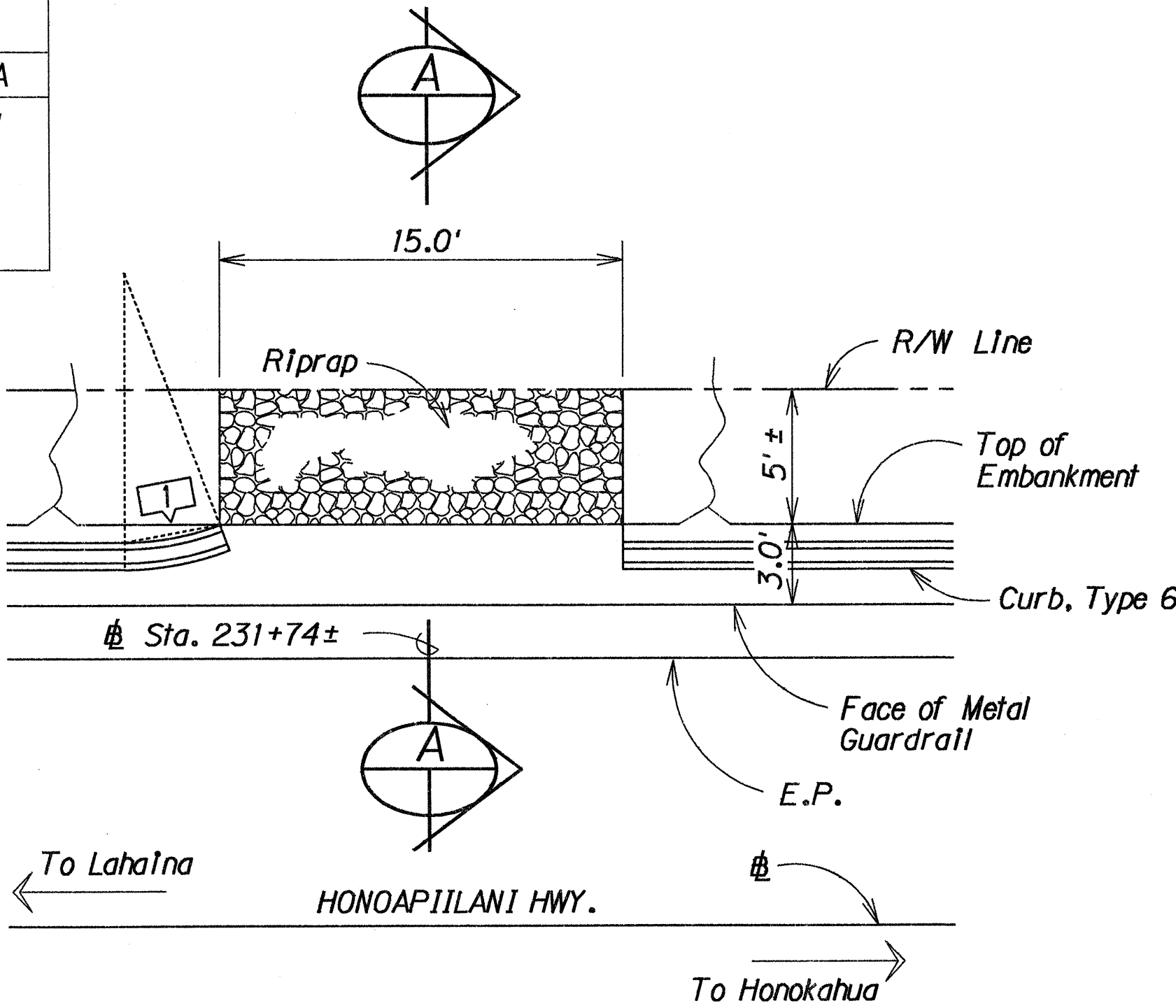
DRAINAGE DETAILS
HONOAPIILANI HIGHWAY RESURFACING
Honokahua to Honokohau
PROJECT NO. 30A-01-91M

Scale: As Shown
SHEET No. H7 OF 9 SHEETS

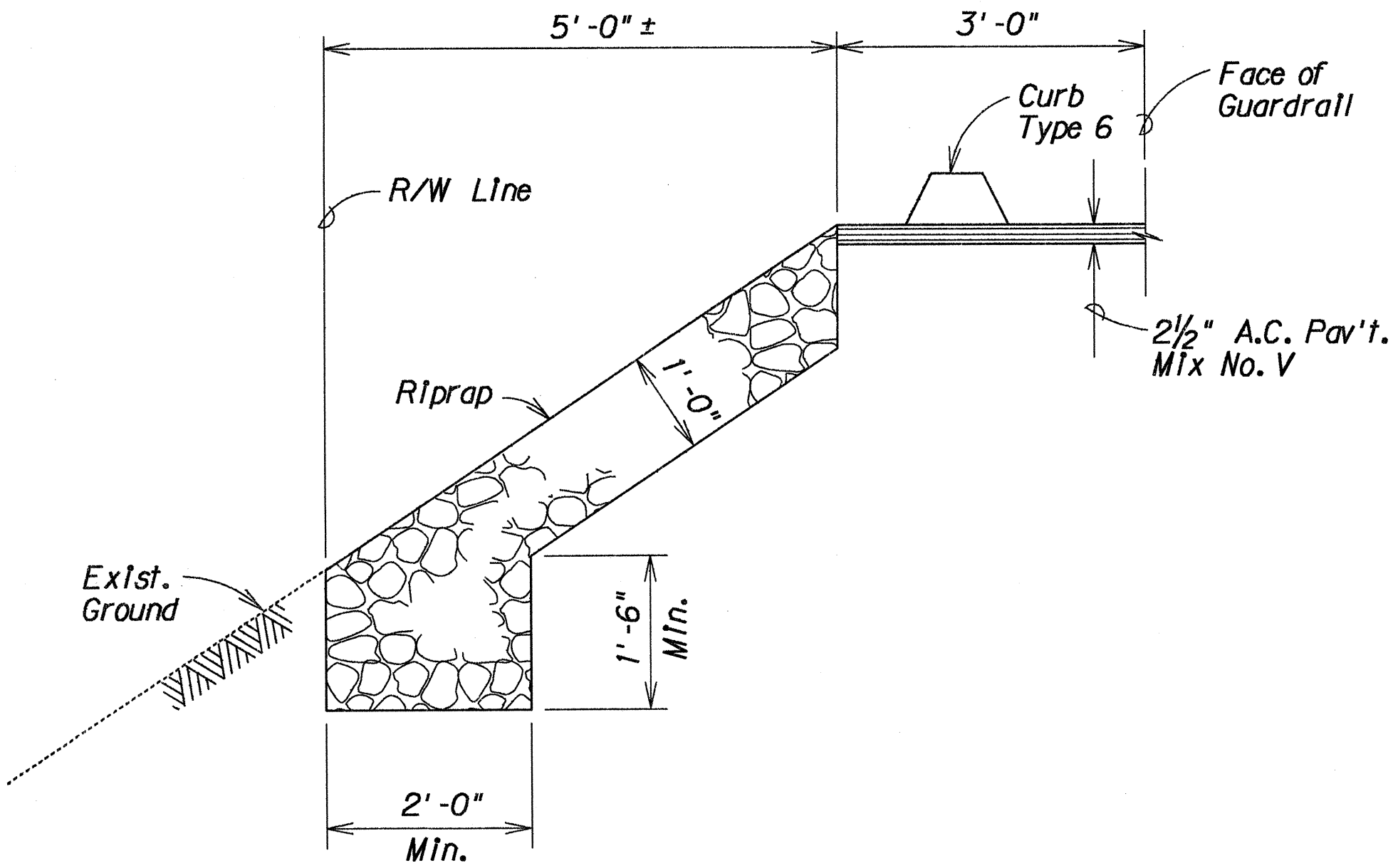
Date: May, 1991

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	30A-01-91M	1992	C.O.24	31

CURVE DATA
$\Delta = 30^{\circ}-00'$
$R = 10.00'$
$T = 2.67'$
$C = 5.18'$
$L = 5.24'$



PLAN
Scale: 1"=5'-0"



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

DETAILS OF RIPRAP STRUCTURE @ Sta. 231+74±

STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION	
DRAINAGE DETAILS	
HONOAPIILANI HIGHWAY RESURFACING	
Honokahua to Honokahau	
PROJECT NO. 30A-01-91M	
Scale: As Shown	Date: Jan, 1992
SHEET No. H9 OF 9 SHEETS	

1/14/92	Replaced Drainage Detail Sheet.
DATE	REVISION