

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	7012A-01-98M	1999	15	32

DRAINAGE SUMMARY

PROJECT: WHITMORE AVENUE RESURFACING, Kamehameha Highway to Military Gate
F.A.I. PROJECT NO. : 7012A-01-98M

DRAINAGE NOTES

- Existing drainage system will be functional at all times during construction. The contractor is to furnish materials, equipment, labor, tools, and incidentals necessary to maintain flow. This work shall be considered incidental to the various contract items.
- The Contractor shall verify the locations 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. Where indicated on Plans, the approximate diameter of drilled holes for installation of dowels shall be 3/4", and voids after installing dowels shall be filled with epoxy grout.
- Demolishing, removing, and disposing portions of existing drainage structures shall not be paid for separately, but shall be considered incidental to the various Grated Drop Inlets.
- For details of manhole rungs, see Standard Plan H-08.
- The Contractor shall clean all Grated Drop Inlets. Cleaning shall not be paid for separately but shall be considered incidental to the Grated Drop Inlets.
- 4-Foot Wide Grass Swales shall not be paid for separately but shall be considered incidental to Type 1 and Type 2 Grated Drop Inlets.
- 3-Foot Wide A.C. Swale shall not be paid for separately but shall be considered incidental to Type 3 Grated Drop Inlet.
- 6-Foot Wide Grass Swale shall not be paid for separately but shall be considered incidental to the various Contract Items.

ITEM NO.	207. 1000	604. 5100	604. 5200	604. 5300	604. 5400	604. 5500			
UNIT USED	CY.	EA.	EA.	EA.	EA.	EA.			
BASELINE STATION	Ditch and Channel Excavation	Type 61614P Grates	Type "1" Grated Drop Inlet, 1.00 ft. to 1.99 ft.	Type "2" Grated Drop Inlet, 1.00 ft. to 1.99 ft.	Type "3" Grated Drop Inlet, 1.00 ft. to 1.99 ft.	Type "4" Grated Drop Inlet, 1.00 ft. to 1.99 ft.			
Whitmore Ave. # Sta. 39+03± Lt.			1						
Whitmore Ave. # Sta. 44+68± Lt.				1					
Whitmore Ave. # Sta. 49+17± Lt.					1				
Whitmore Ave. # Sta. 53+26± Lt.	5								
Whitmore Ave. # Sta. 54+74± Lt.	25					1			
Whitmore Ave. # Sta. 55+27± Lt.		2							
Total	30	2	1	1	1	1			

ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
NOTED BY	DRAWN BY	8/26/98
DESIGNED BY	BY	
CHECKED BY	BY	

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

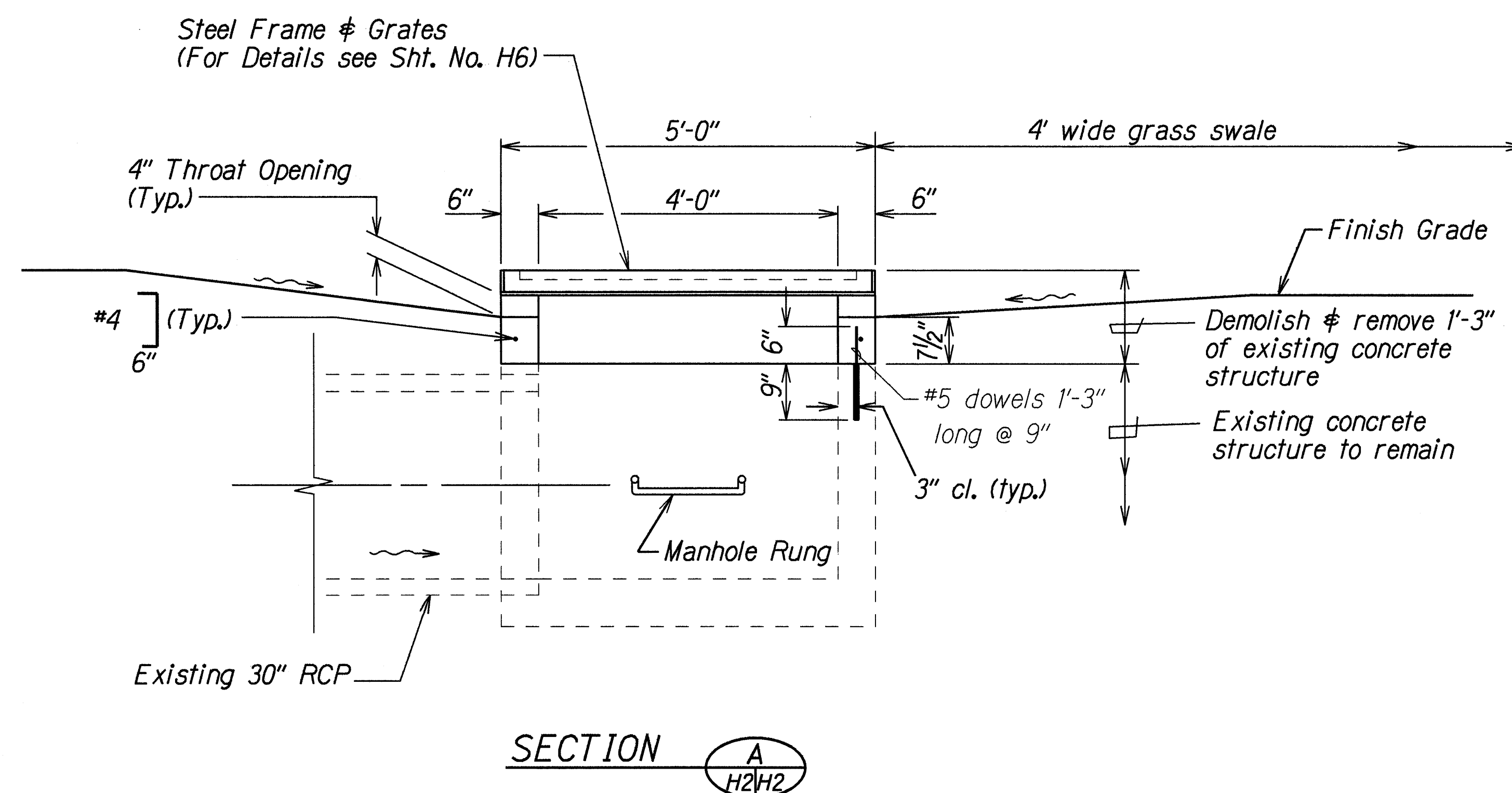
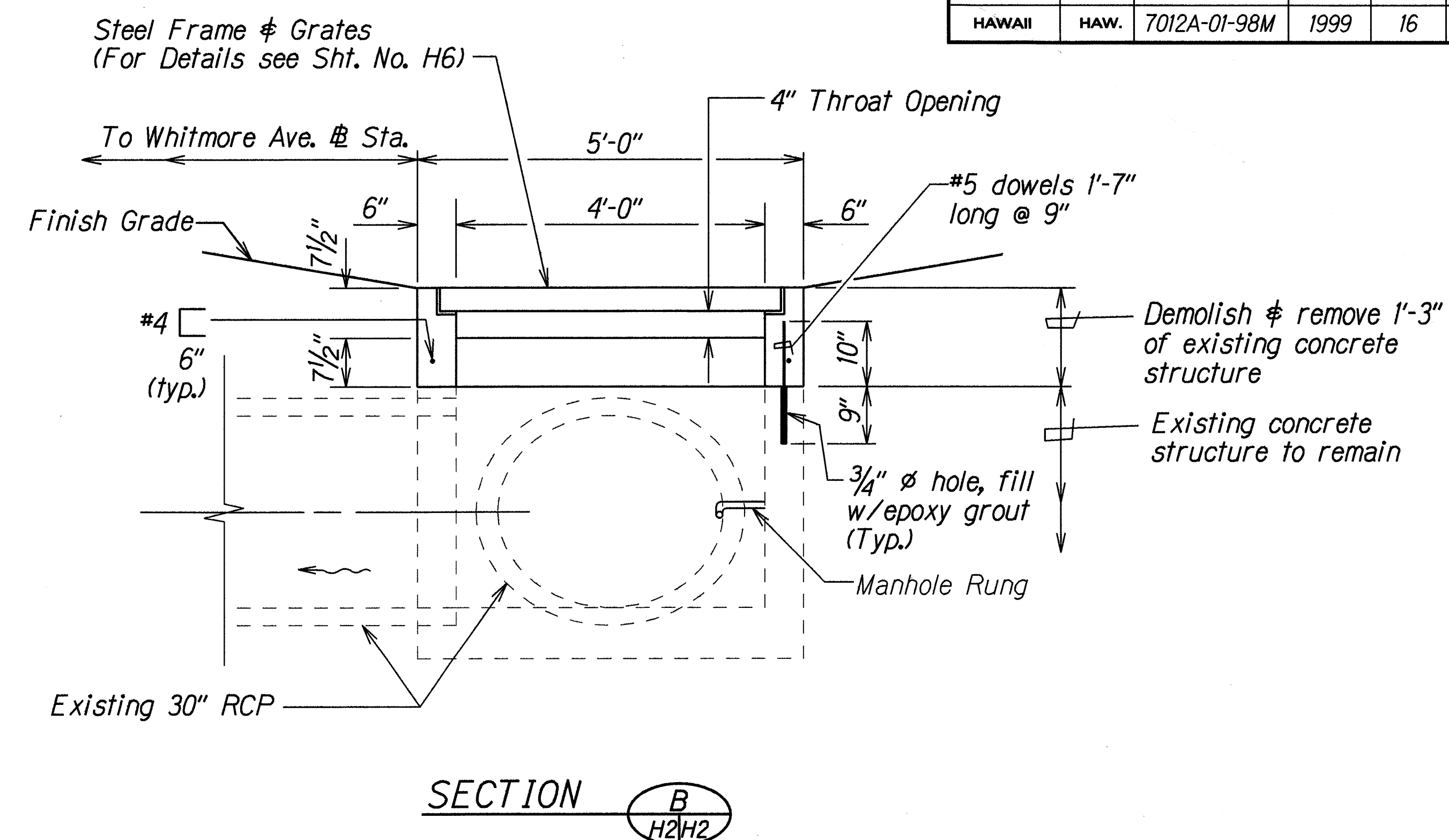
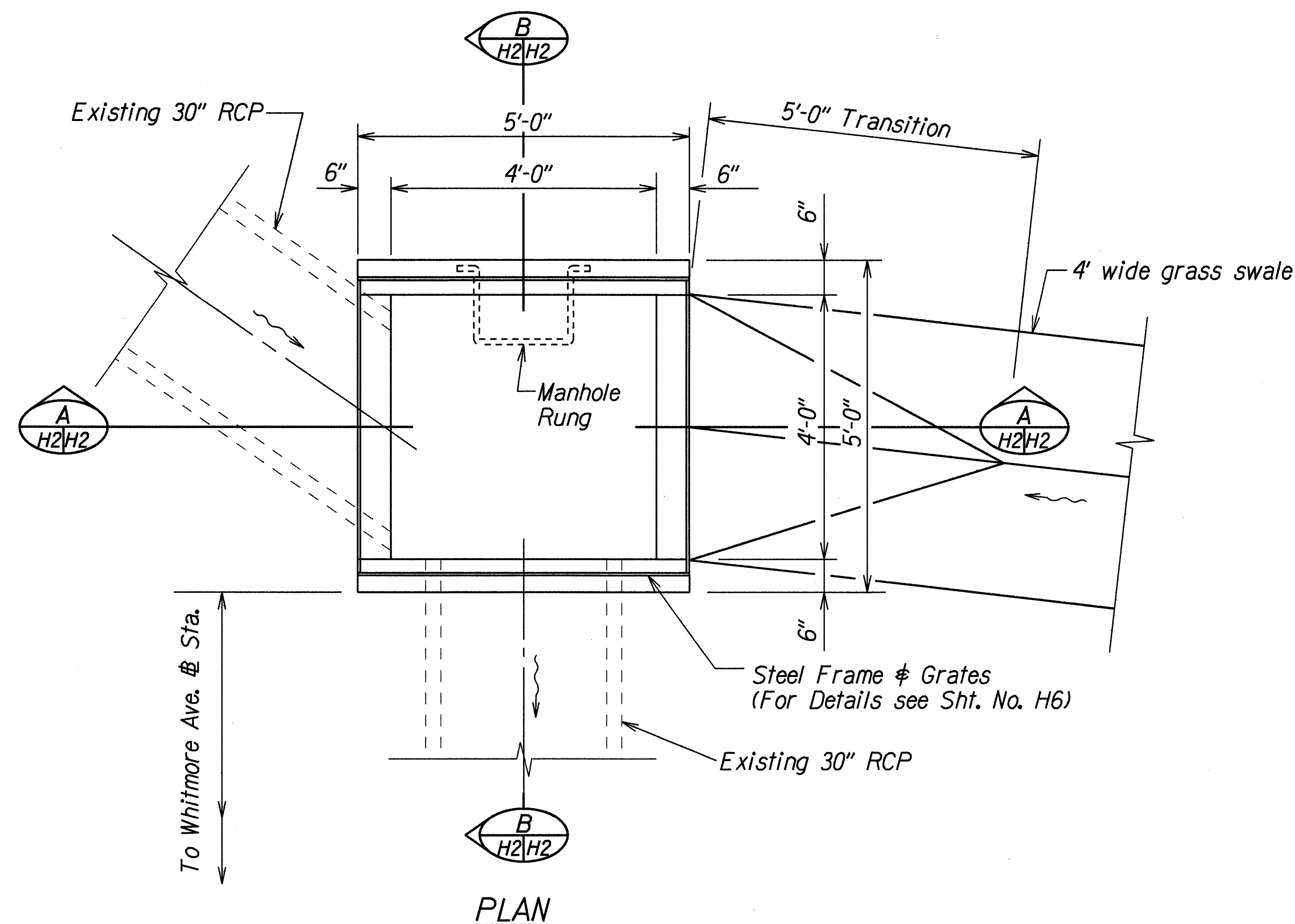
DRAINAGE NOTES & SUMMARY

WHITMORE AVENUE RESURFACING
Kamehameha Highway to Military Gate
Proj. No. 7012A-01-98M

Not to Scale
SHEET No. HI OF 10 SHEETS

Date: April, 1998

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	7012A-01-98M	1999	16	32



DETAILS OF TYPE "I" GRATED DROP INLET AT STA. 39+03± LT.

ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
	DRAWN BY	6/18/99
	DESIGNED BY	
	CHECKED BY	

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

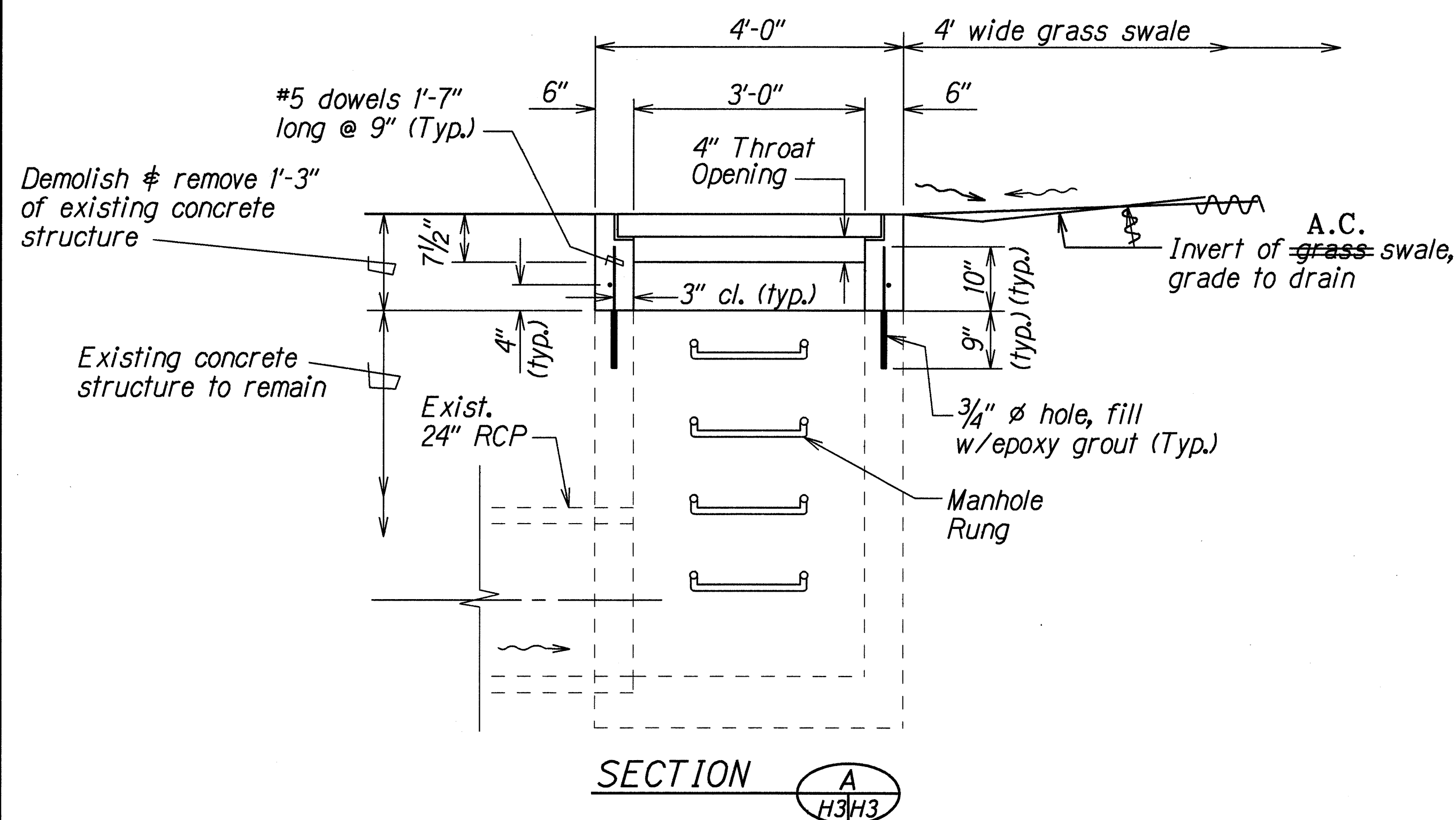
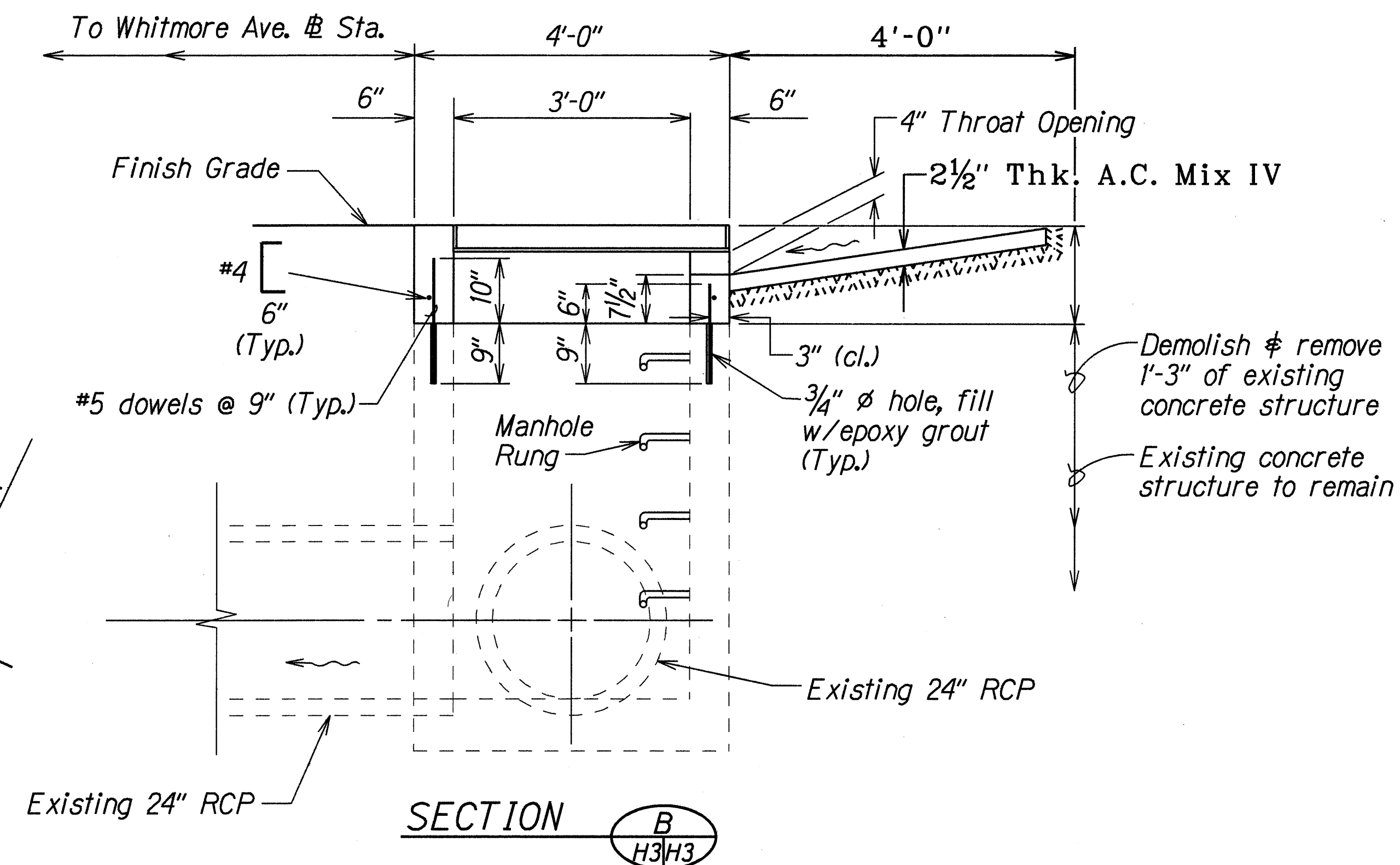
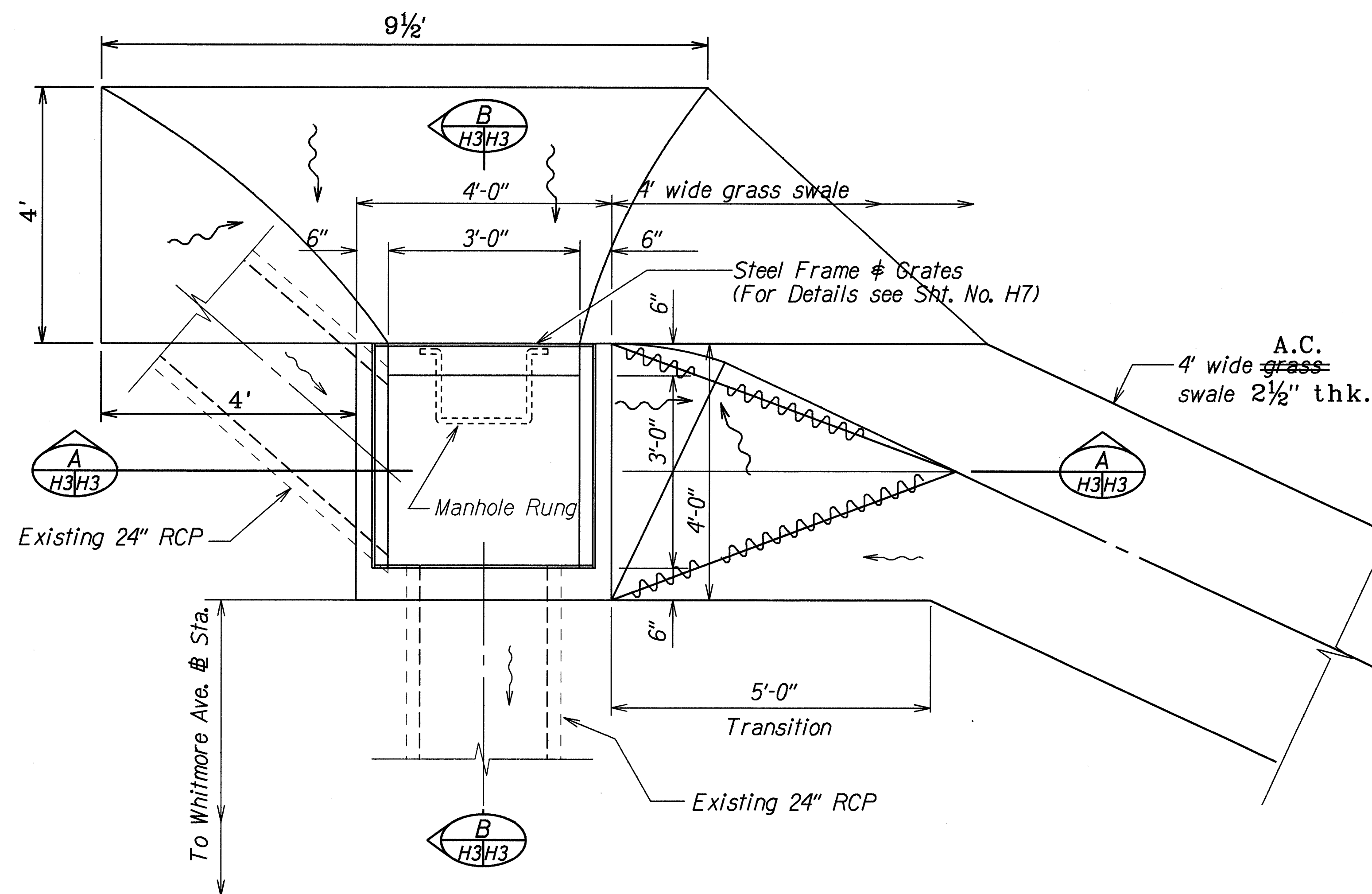
DRAINAGE DETAILS

WHITMORE AVENUE RESURFACING
Kamehameha Highway to Military Gate
Proj. No. 7012A-01-98M

Scale: 3/4"=1'-0" Date: April, 1998

SHEET No. H2 OF 10 SHEETS

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	7012A-01-98M	1999	17	32



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

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

DRAINAGE DETAILS

WHITMORE AVENUE RESURFACING
Kamehameha Highway to Military Gate
Proj. No. 7012A-01-98M

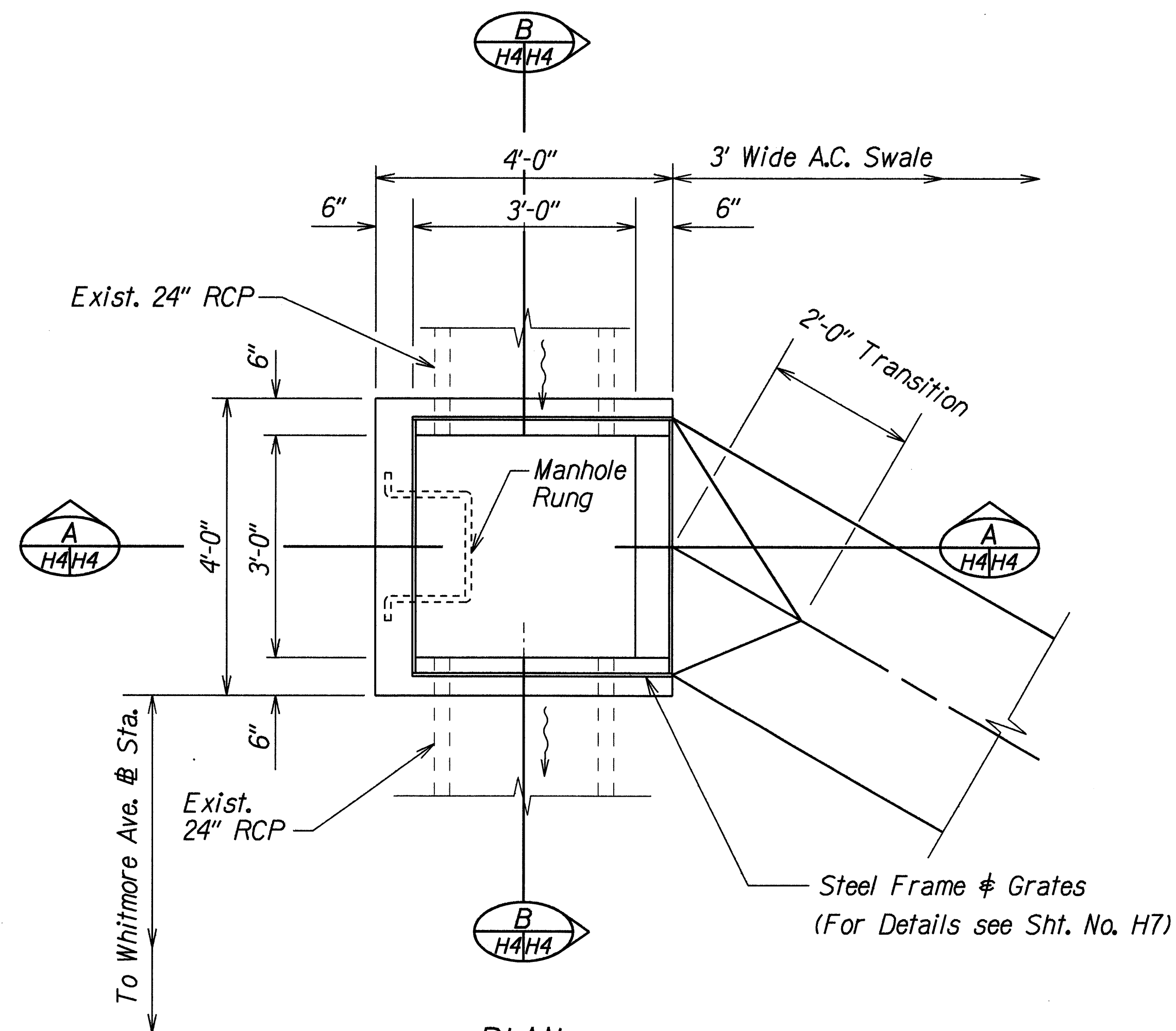
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SHEET No. H3 OF 10 SHEETS

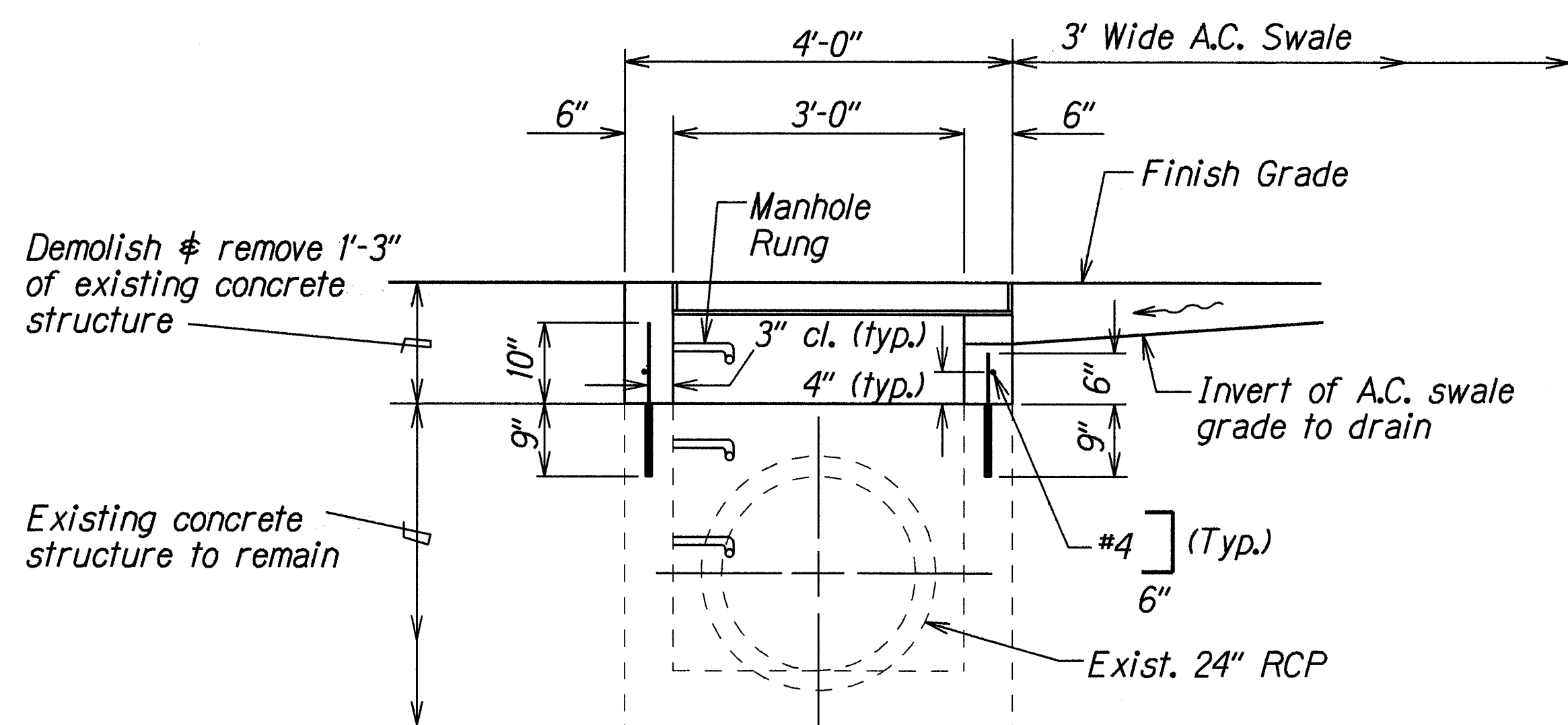
DETAILS OF TYPE "2" GRATED DROP INLET AT STA. 44+68± LT.

"AS-BUILT"

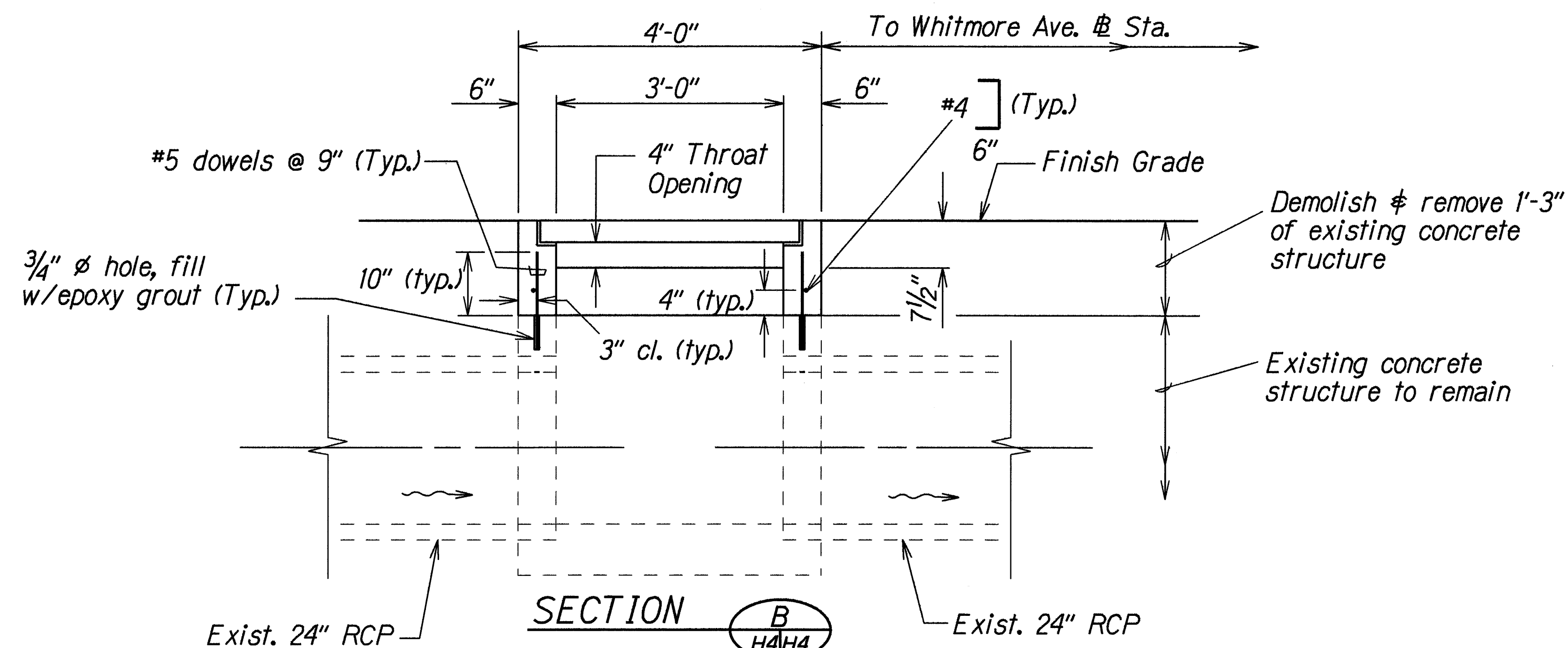
FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	7012A-01-98M	1999	18	32



PLAN



SECTION A-A



SECTION B-B

DETAILS OF TYPE "3" GRATED DROP INLET AT STA. 49+17± LT.

ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
	DRAWN BY	5/18/98
	DESIGNED BY	
	CHECKED BY	

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

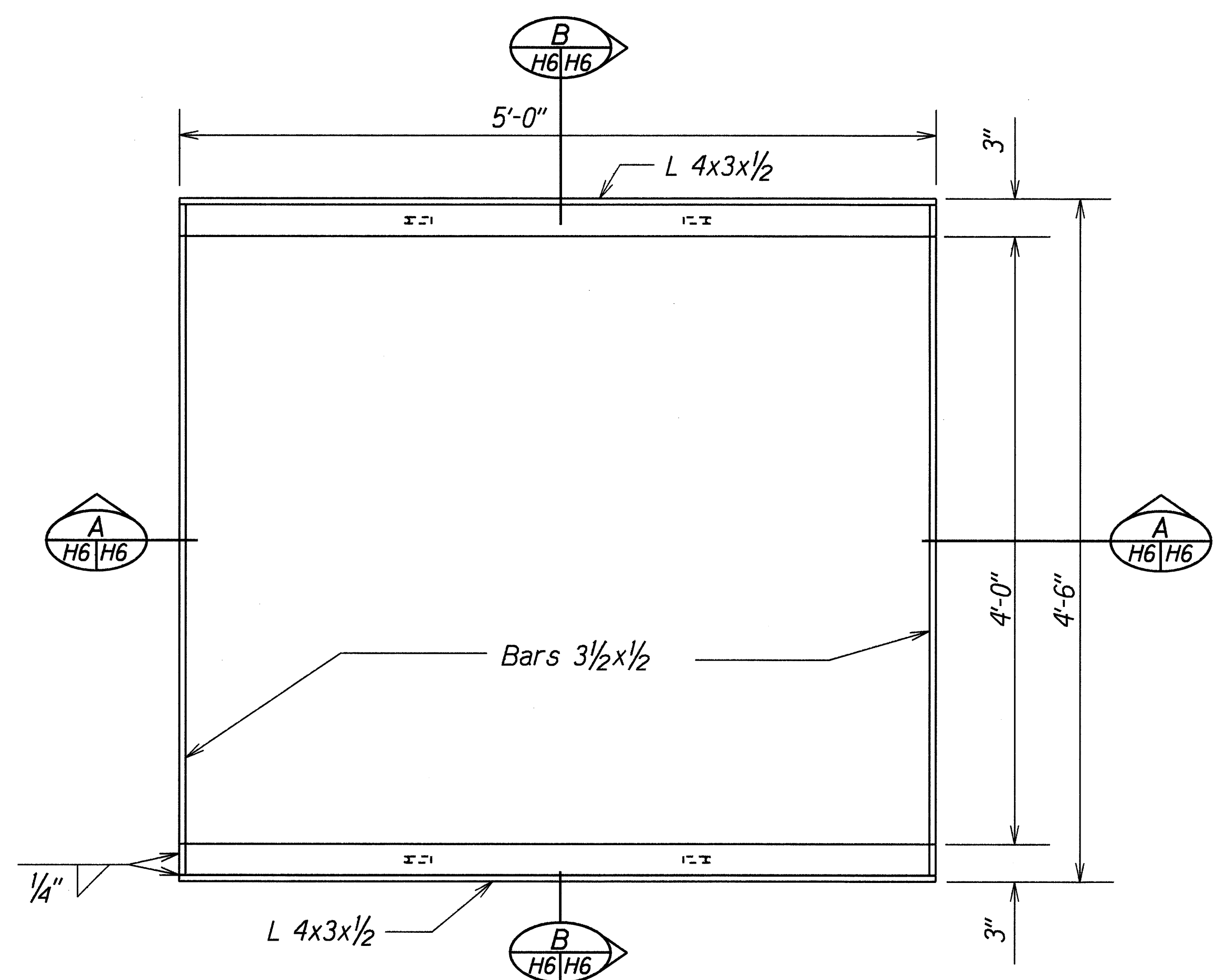
DRAINAGE DETAILS

WHITMORE AVENUE RESURFACING
Kamehameha Highway to Military Gate
Proj. No. 7012A-01-98M

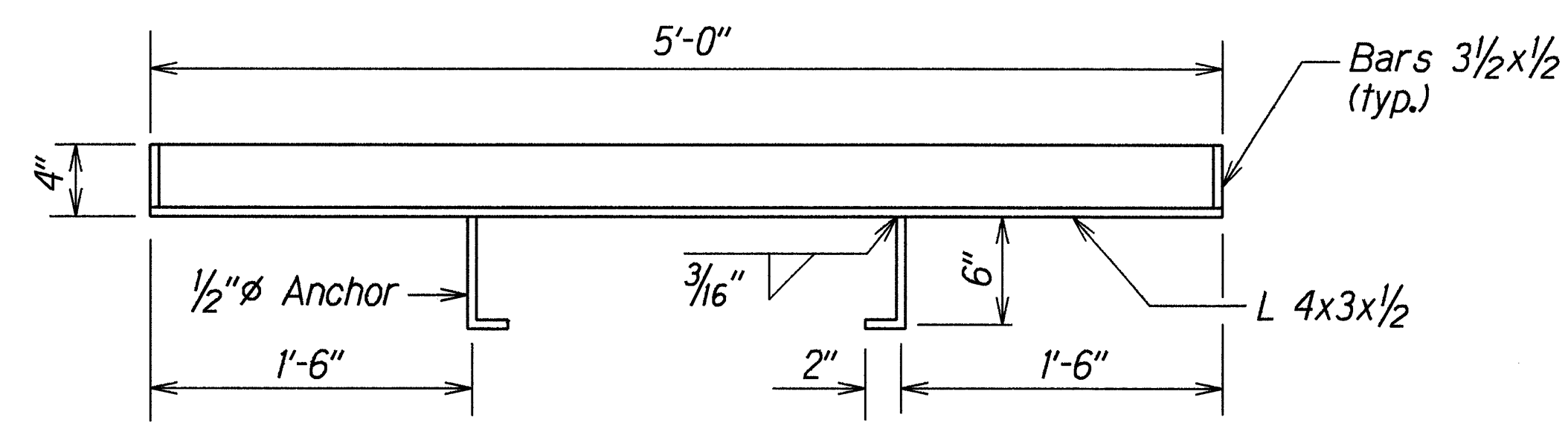
Scale: 3/4"=1'-0" Date: April, 1998

SHEET No. H4 OF 10 SHEETS

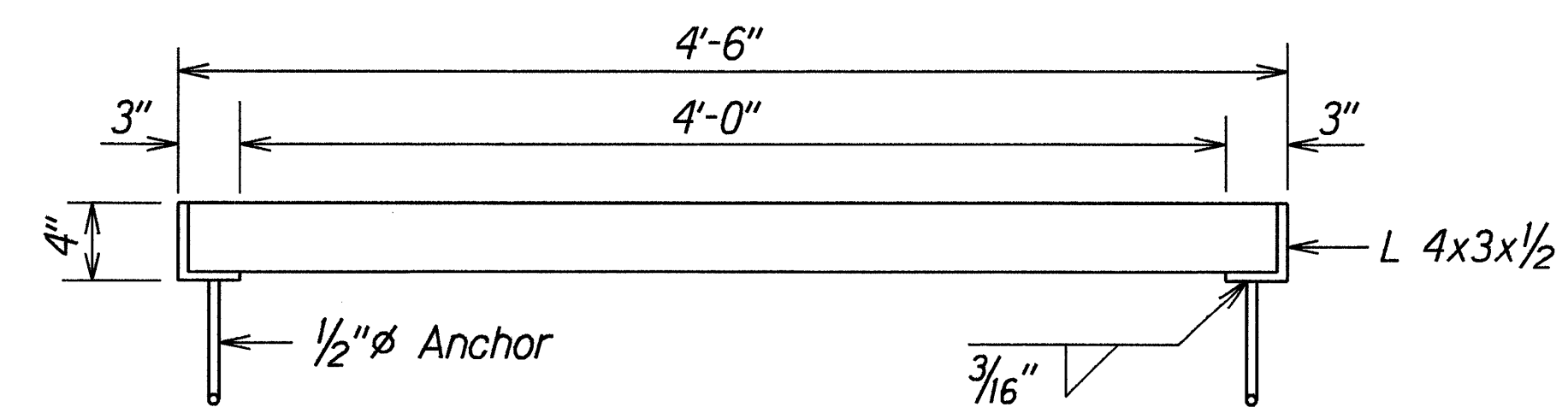
FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	7012A-01-98M	1999	20	32



PLAN

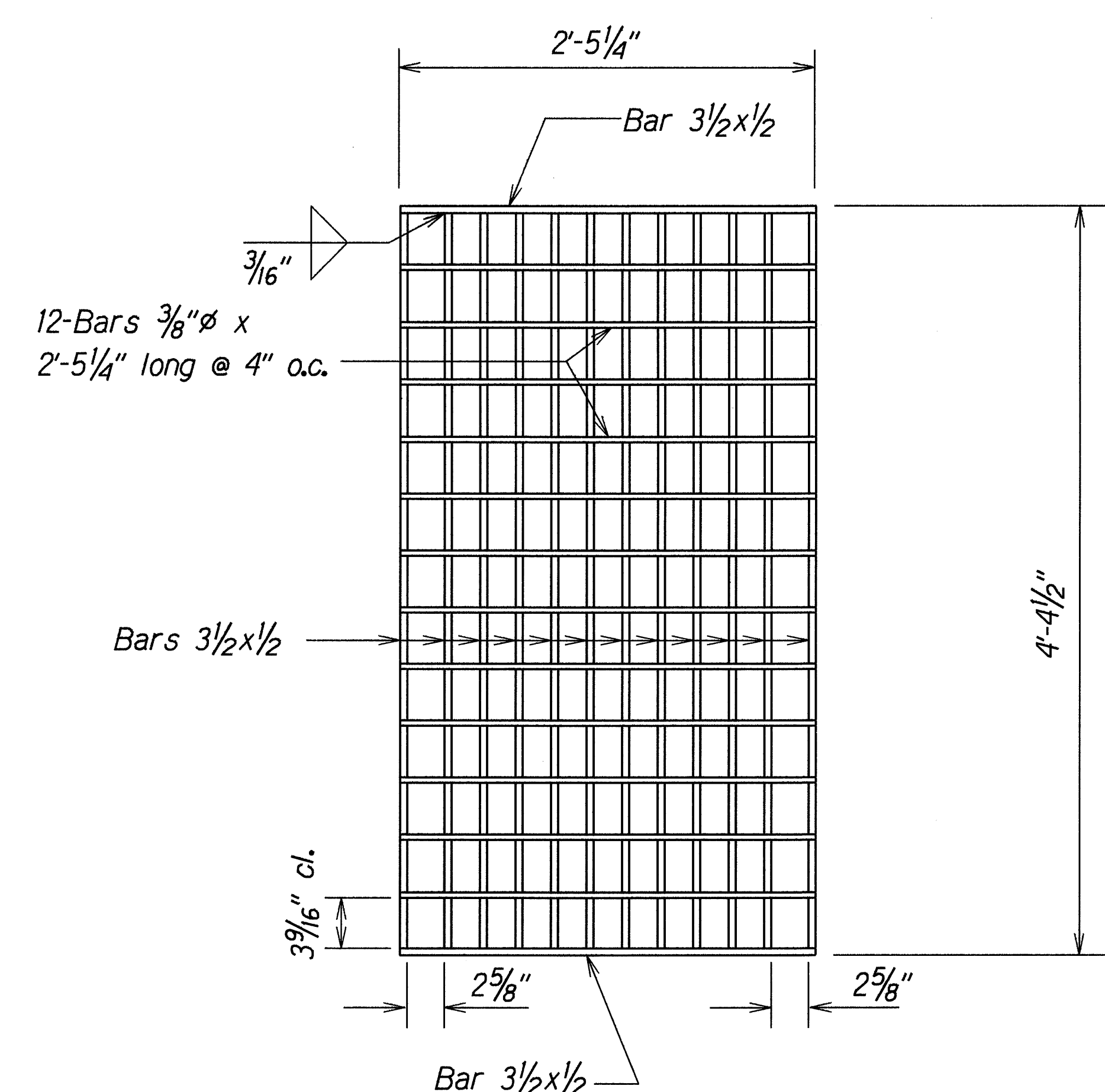


SECTION A-A

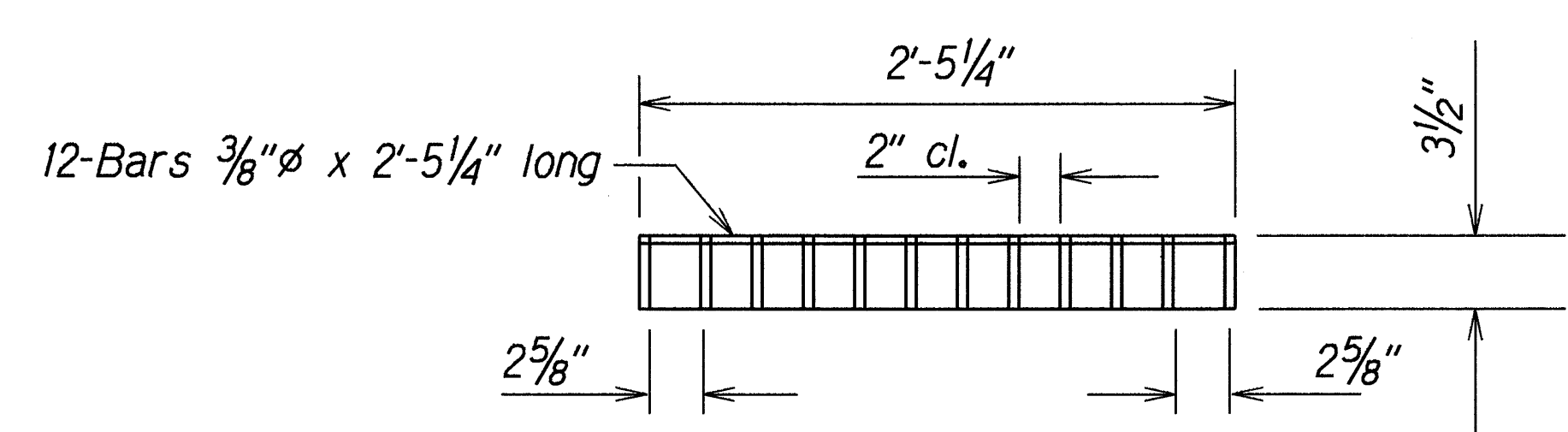


SECTION B-B

FRAME

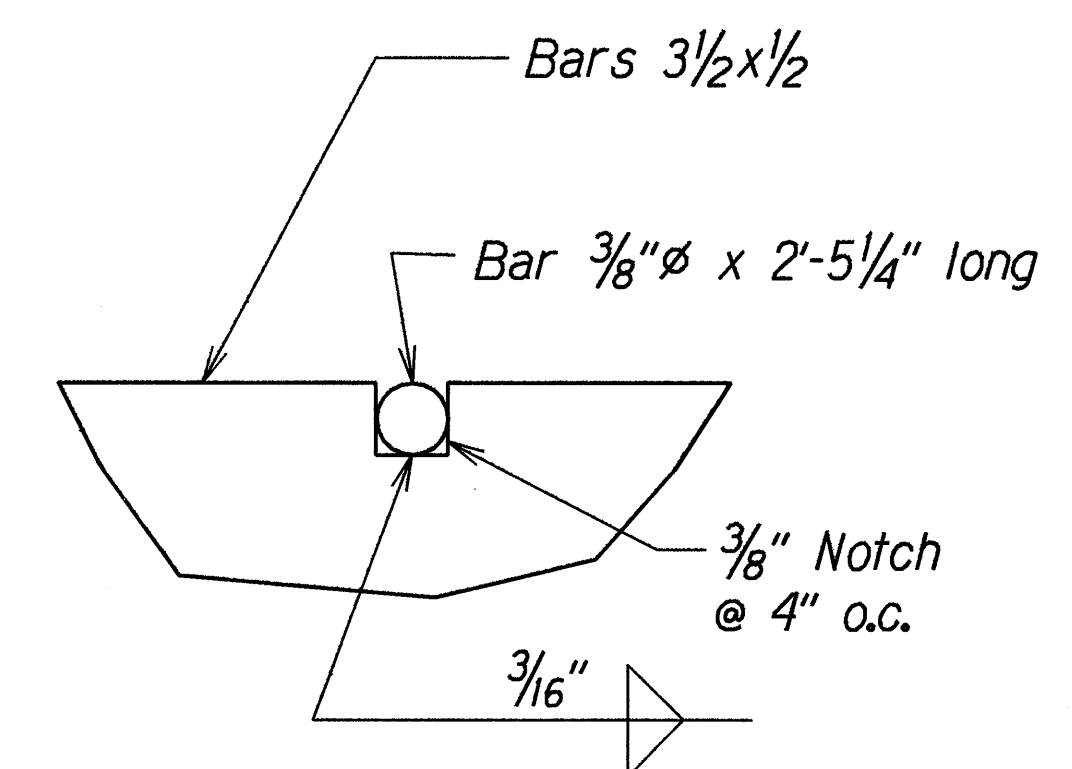


PLAN



SECTION

GRATES



NOTCH DETAIL

Actual Size

NOTE

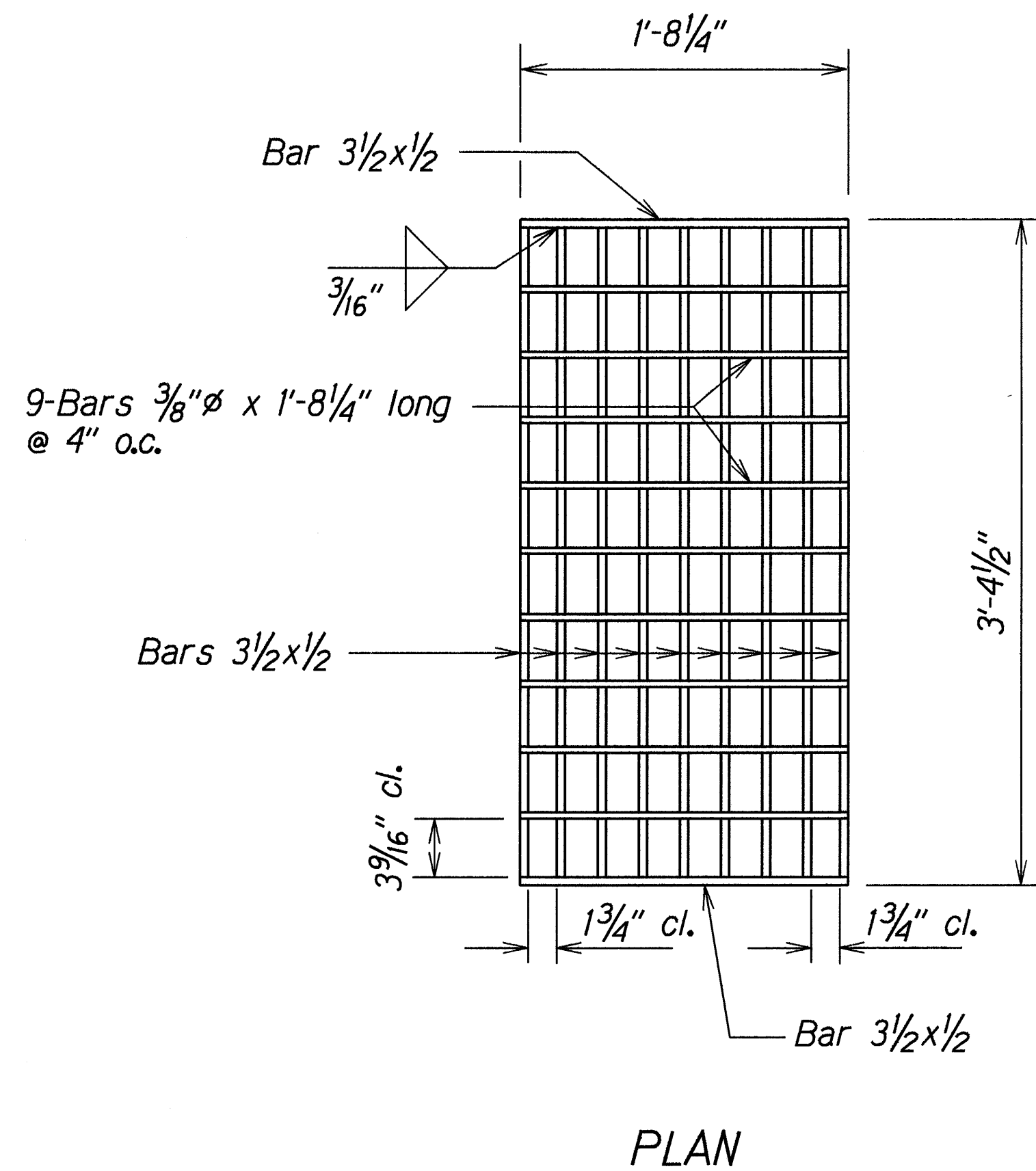
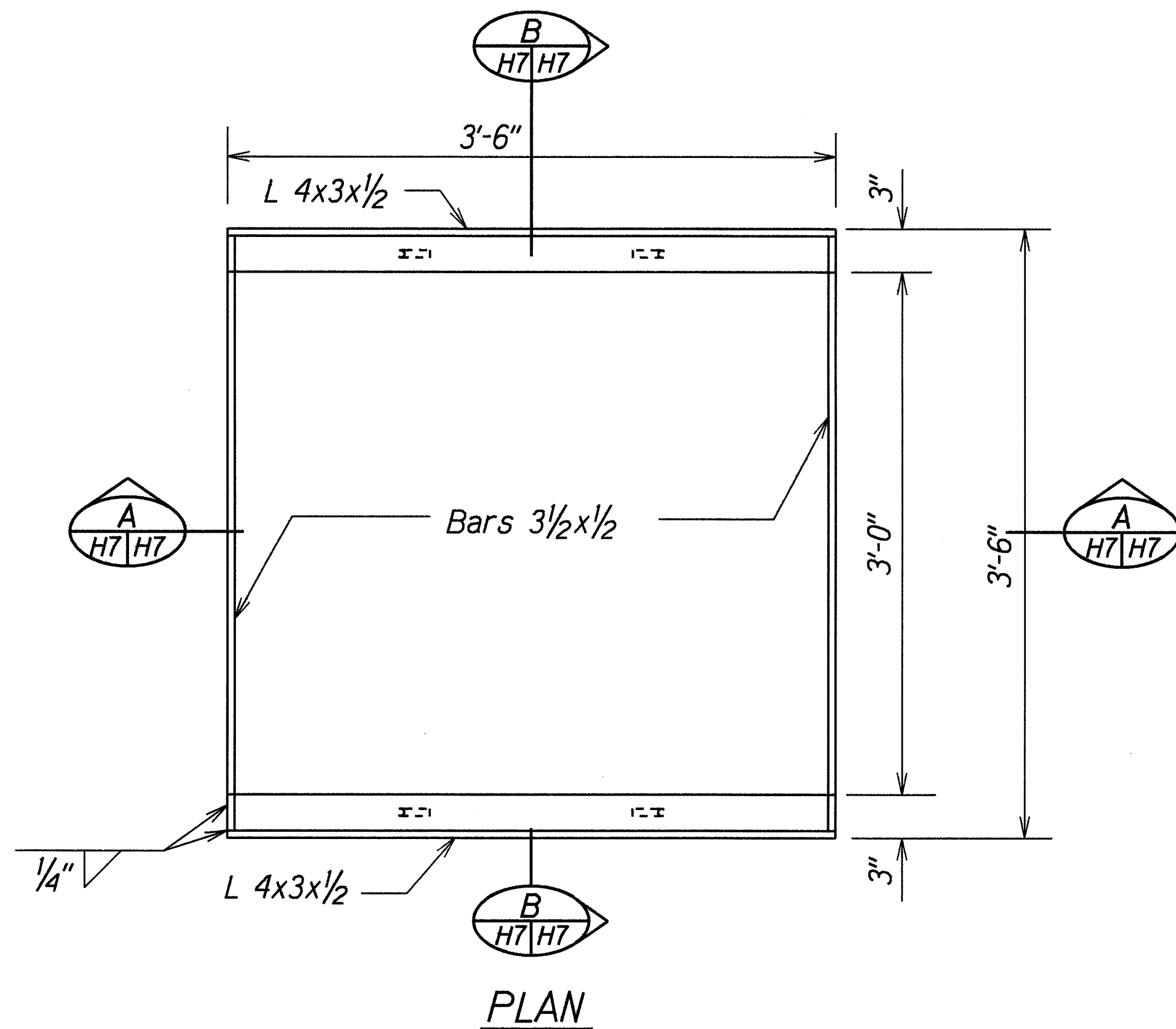
All welds 3/8" unless otherwise noted.

ORIGINAL PLAN	DATE
SURVEY PLATTED BY	6/16/98
DRAWN BY	
DESIGNED BY	
CHECKED BY	

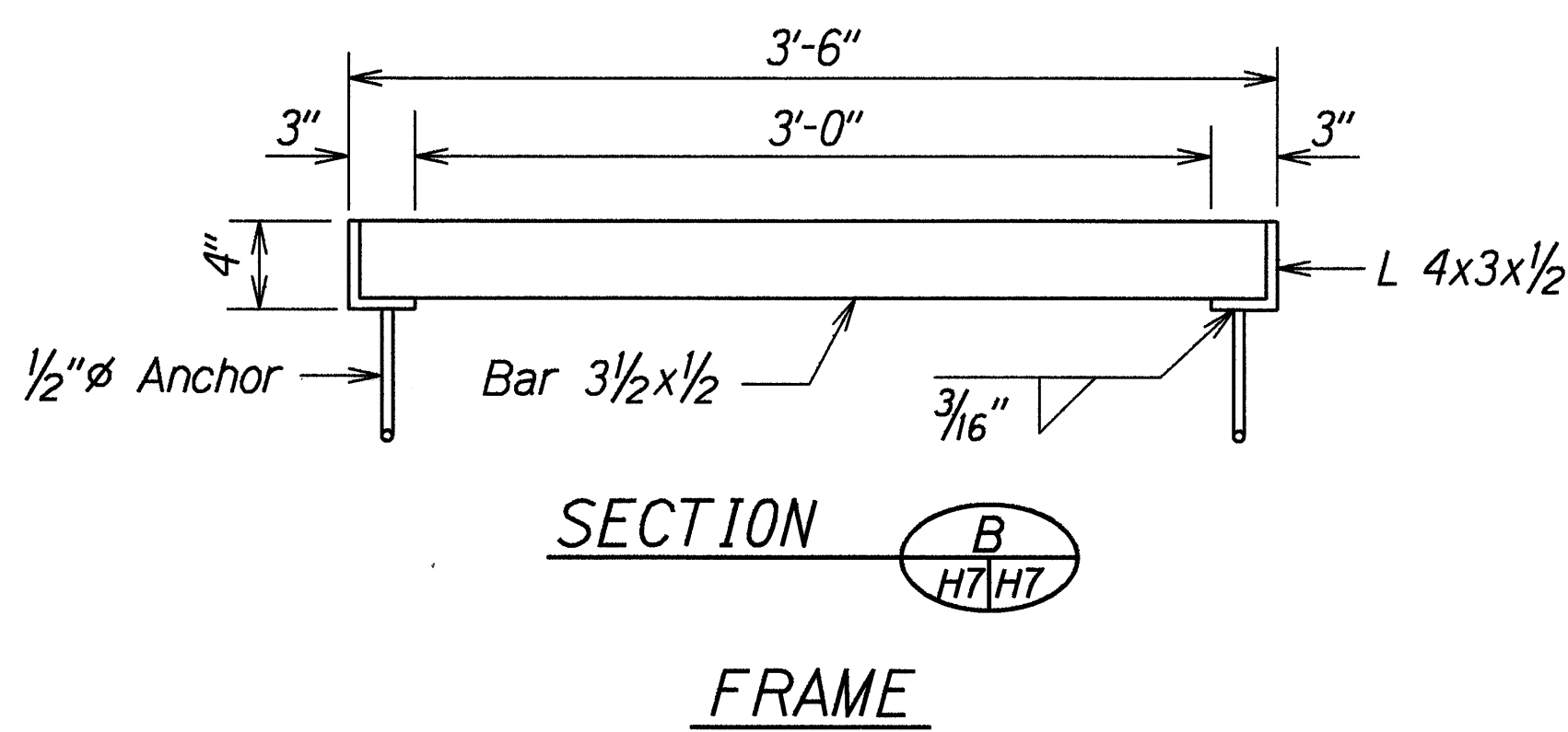
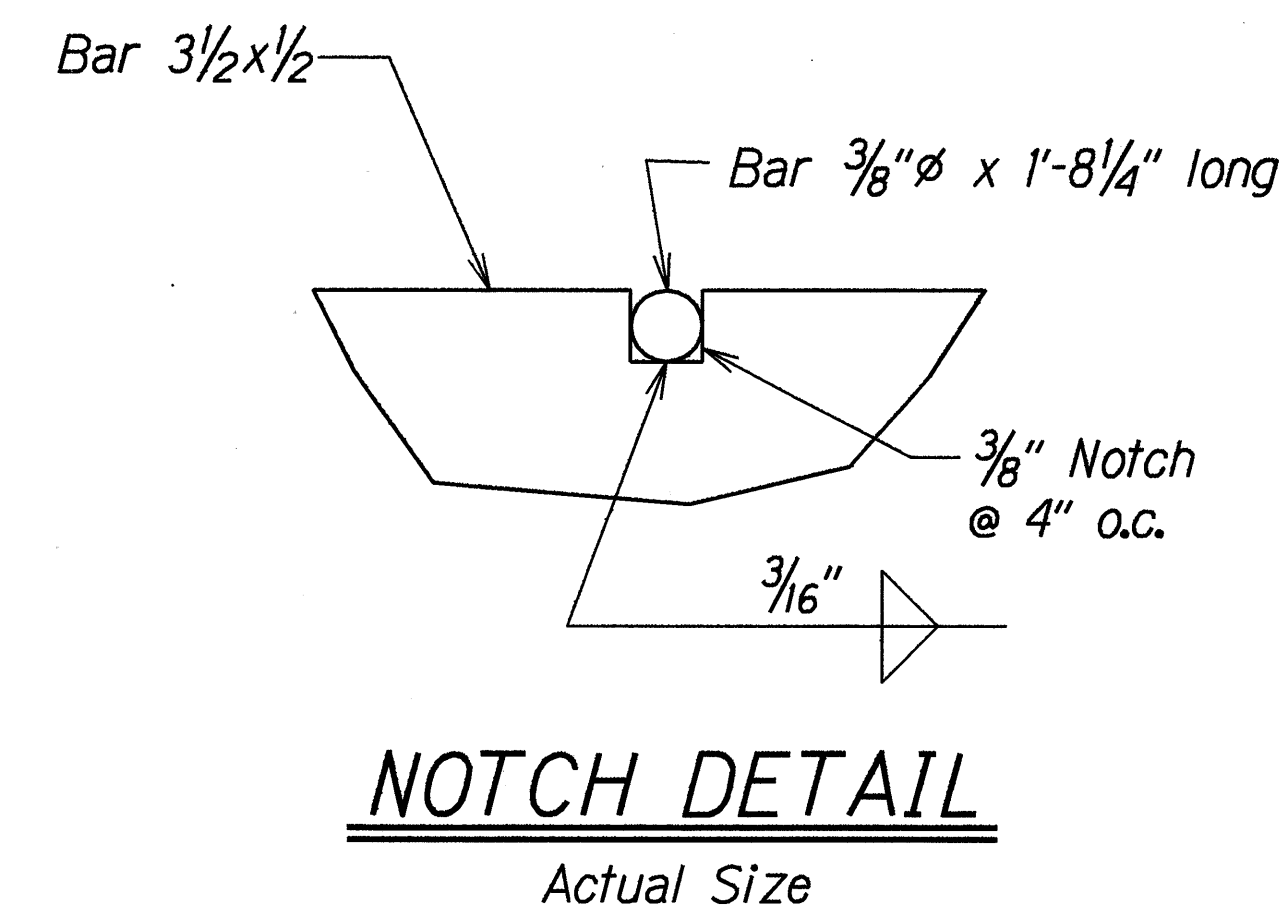
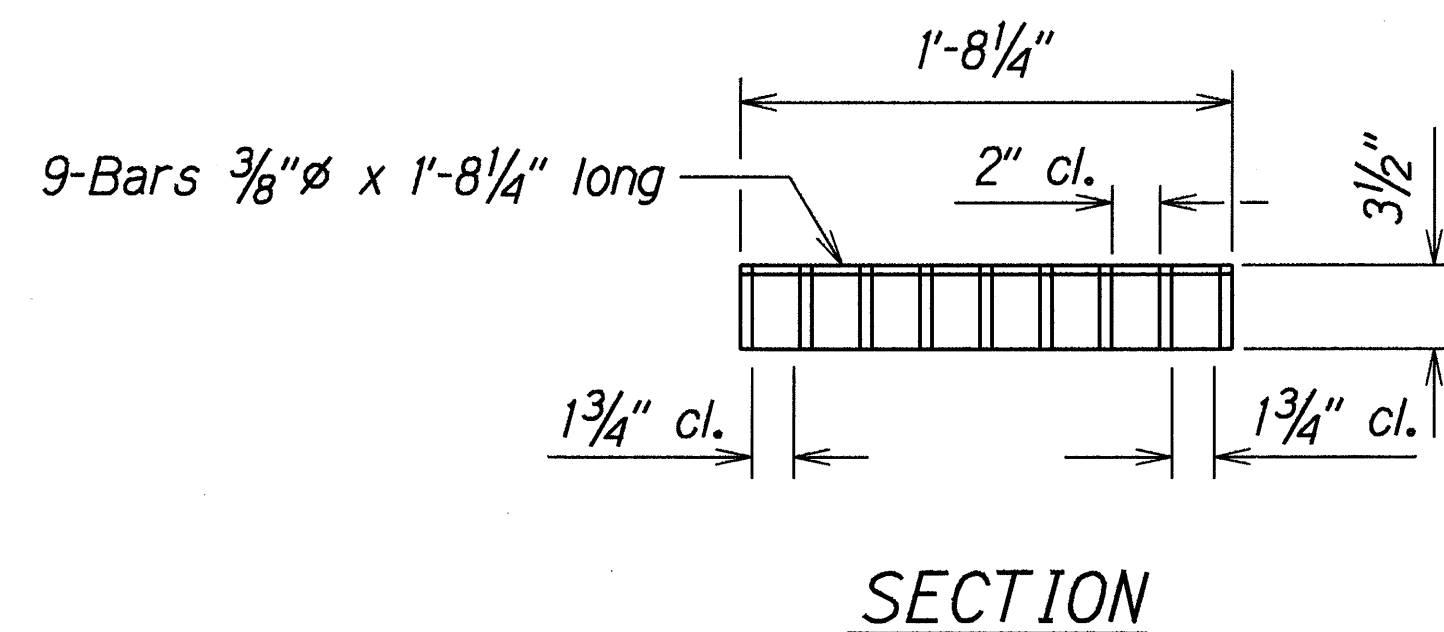
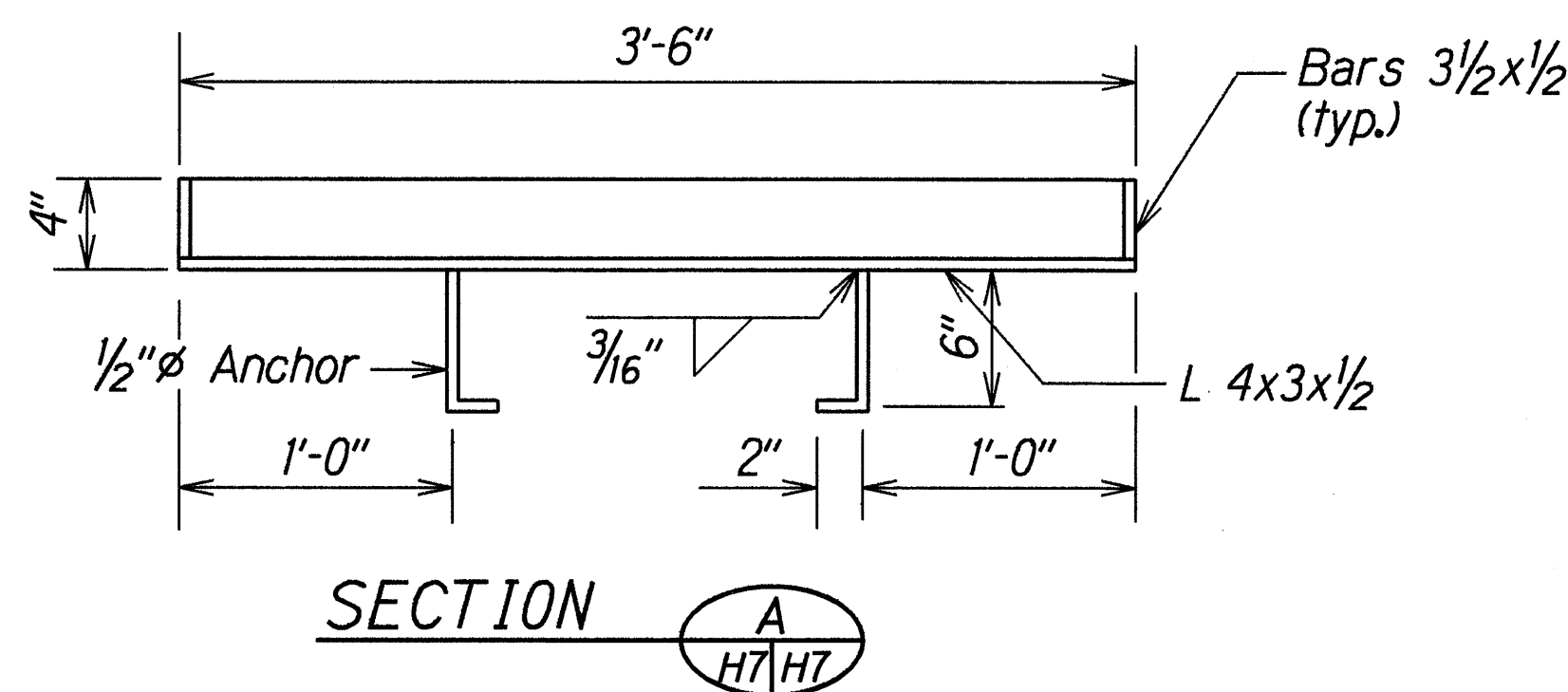
9/24/98	Added Anchors to Frame for Type "I" Grated Drop Inlet
DATE	REVISION
STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION DRAINAGE DETAILS WHITMORE AVENUE RESURFACING Kamehameha Highway to Military Gate Proj. No. 7012A-01-98M Scale: 1 1/2" = 1'-0" Date: April, 1998 SHEET No. H6 OF 10 SHEETS	

DETAILS OF FRAME AND GRATES FOR TYPE "I" GRATED DROP INLET

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	7012A-01-98M	1999	21	32



NOTE
All welds 3/8" unless otherwise noted.



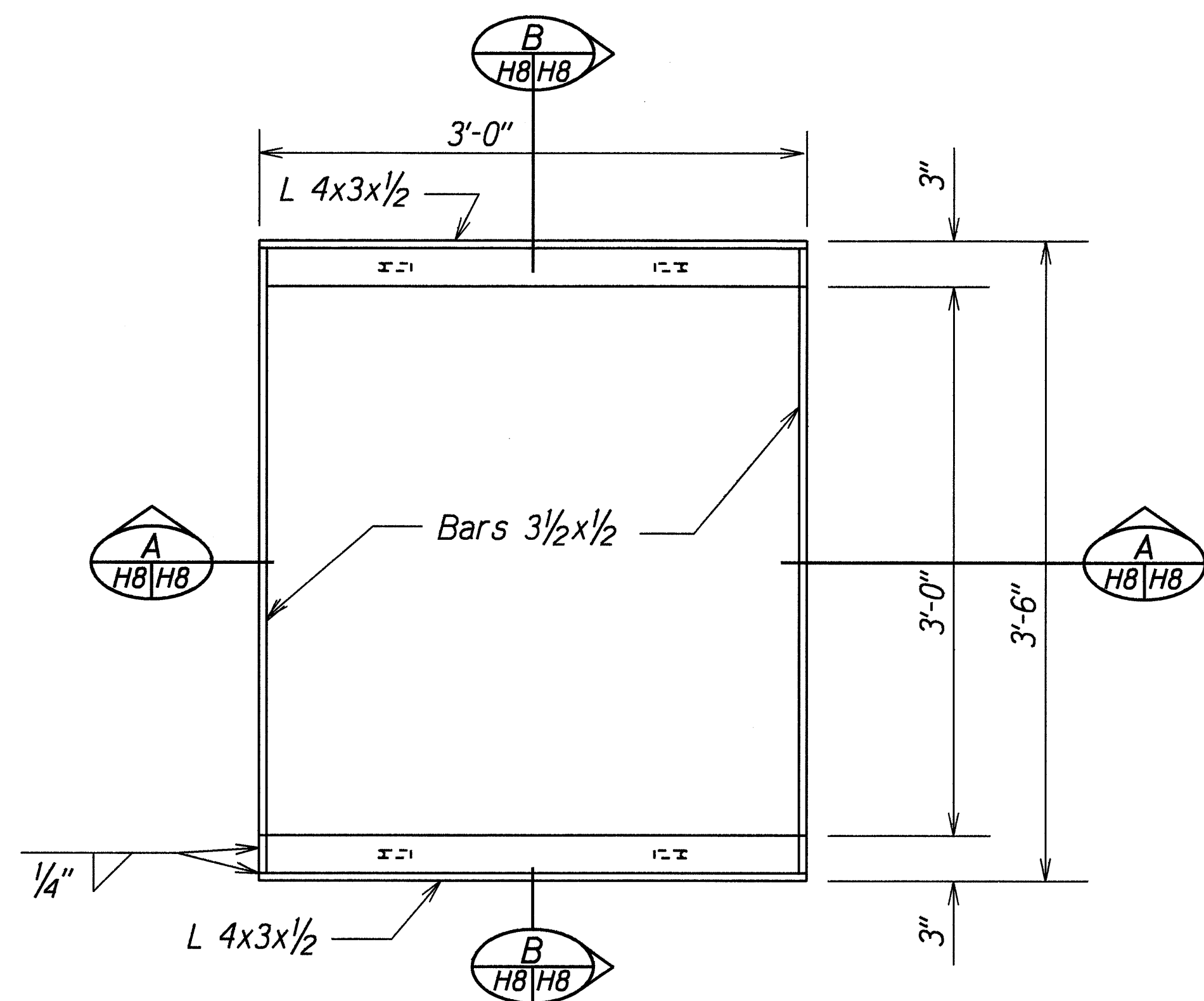
GRATES

DETAILS OF FRAME AND GRATES FOR TYPE "2" AND TYPE "3" GRATED DROP INLET

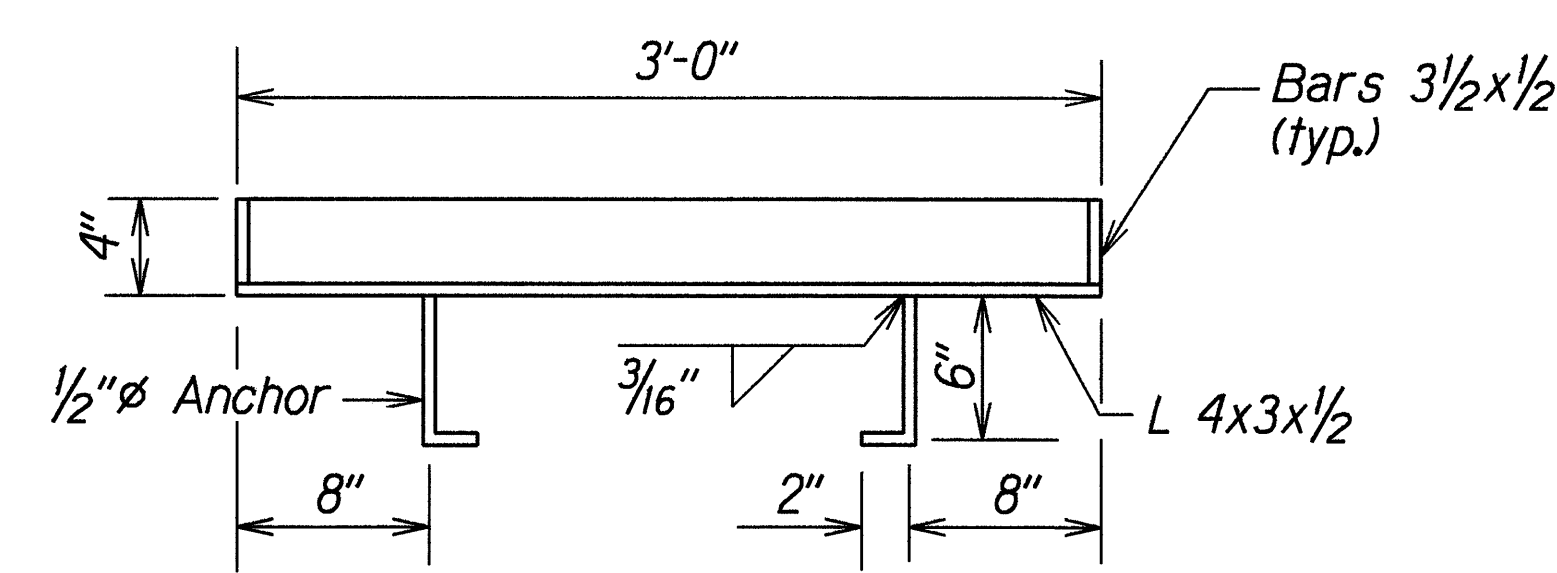
ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
NOTE BOOK	DRAWN BY	6/18/98
DESIGNED BY	CHECKED BY	
APPROVED BY		

9/24/98	Added Anchors to Frame for Type "2" and "3" Grated Drop Inlet
DATE	REVISION
STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION DRAINAGE DETAILS WHITMORE AVENUE RESURFACING Kamehameha Highway to Military Gate Proj. No. 7012A-01-98M Scale: 1 1/2"=1'-0" Date: April, 1998 SHEET No. H7 OF 10 SHEETS	

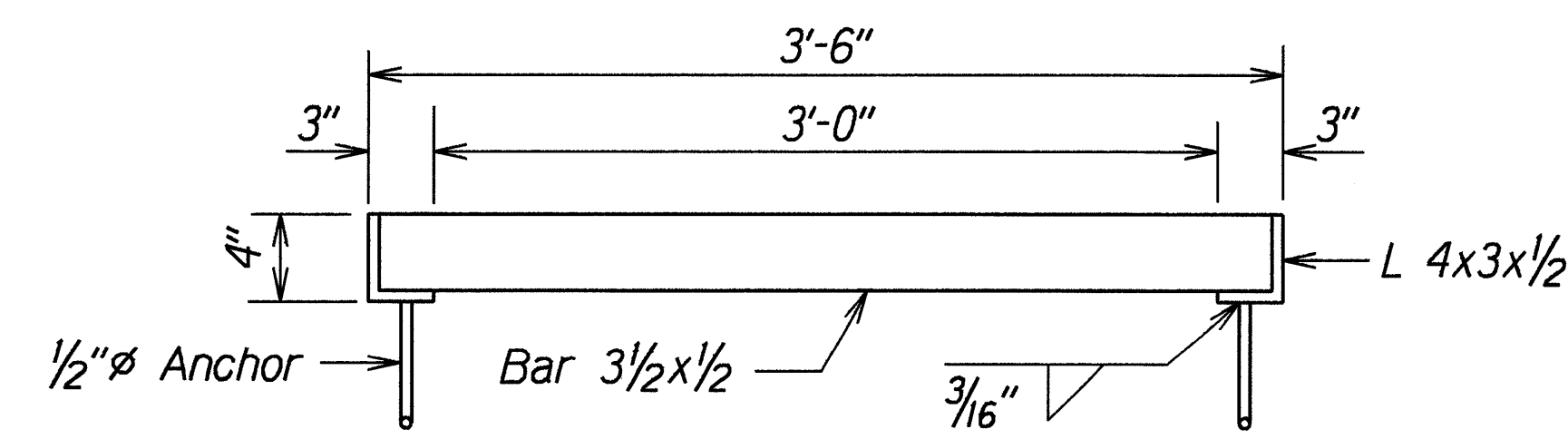
FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	7012A-01-98M	1999	22	32



PLAN

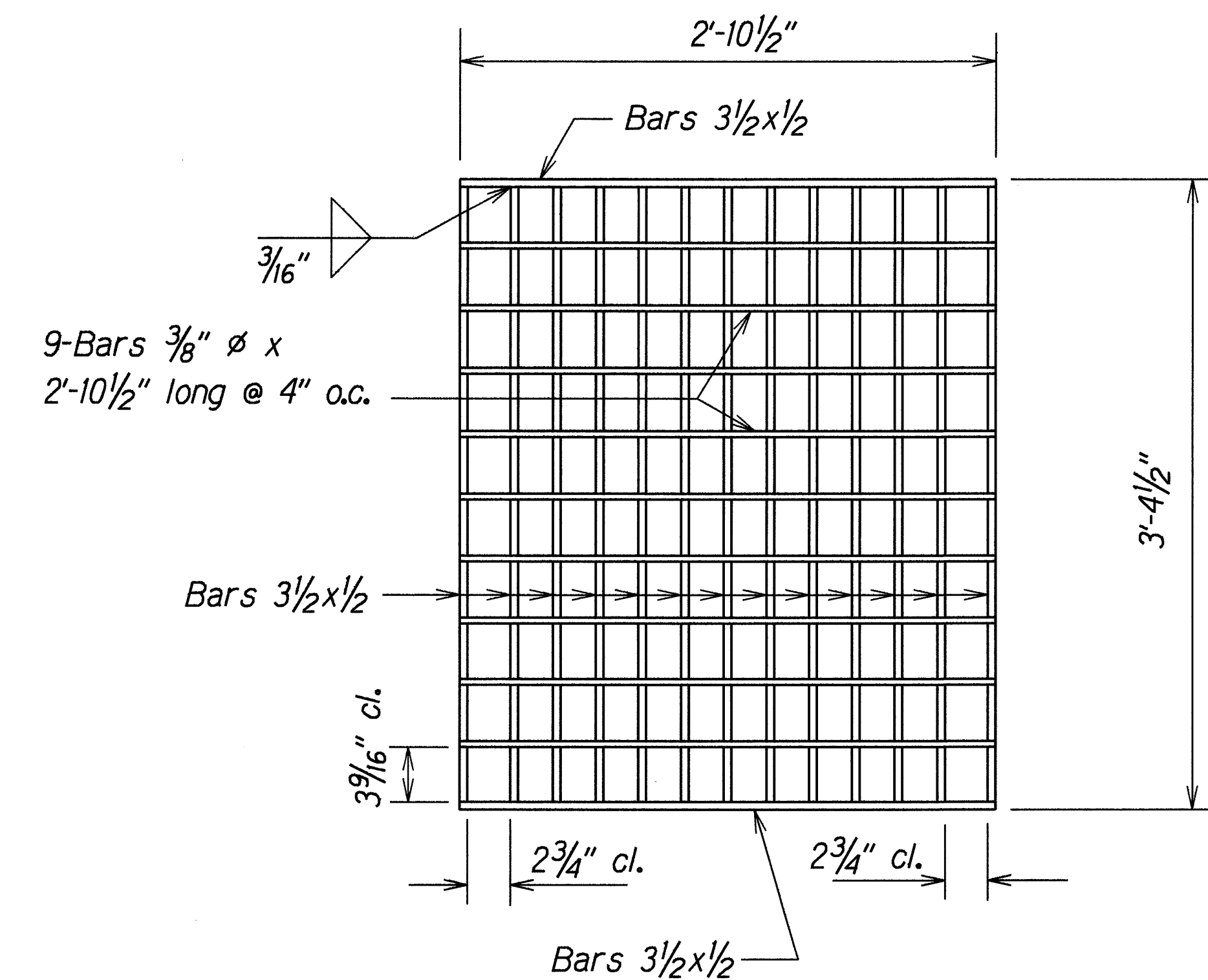


SECTION

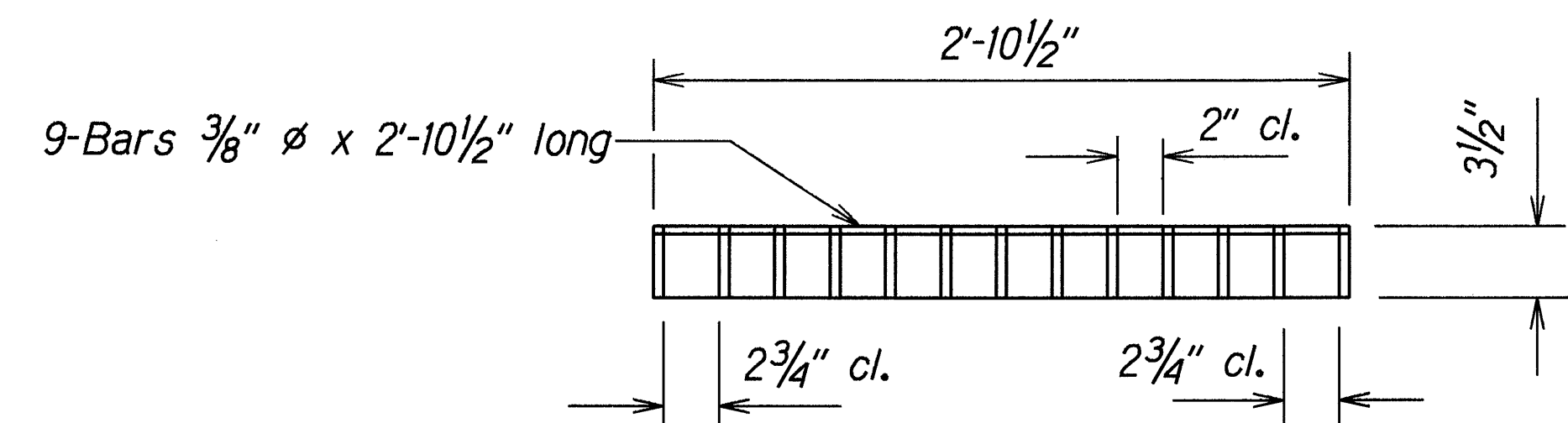


SECTION

FRAME

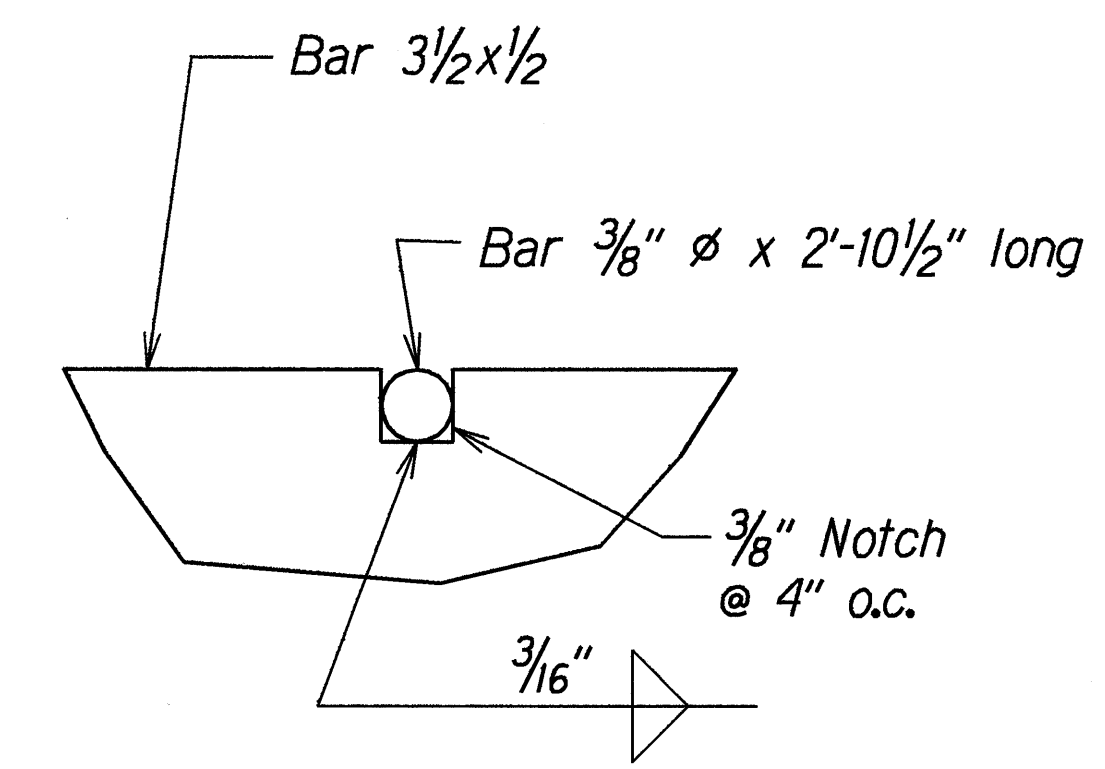


PLAN



SECTION

GRATES



NOTCH DETAIL

Actual Size

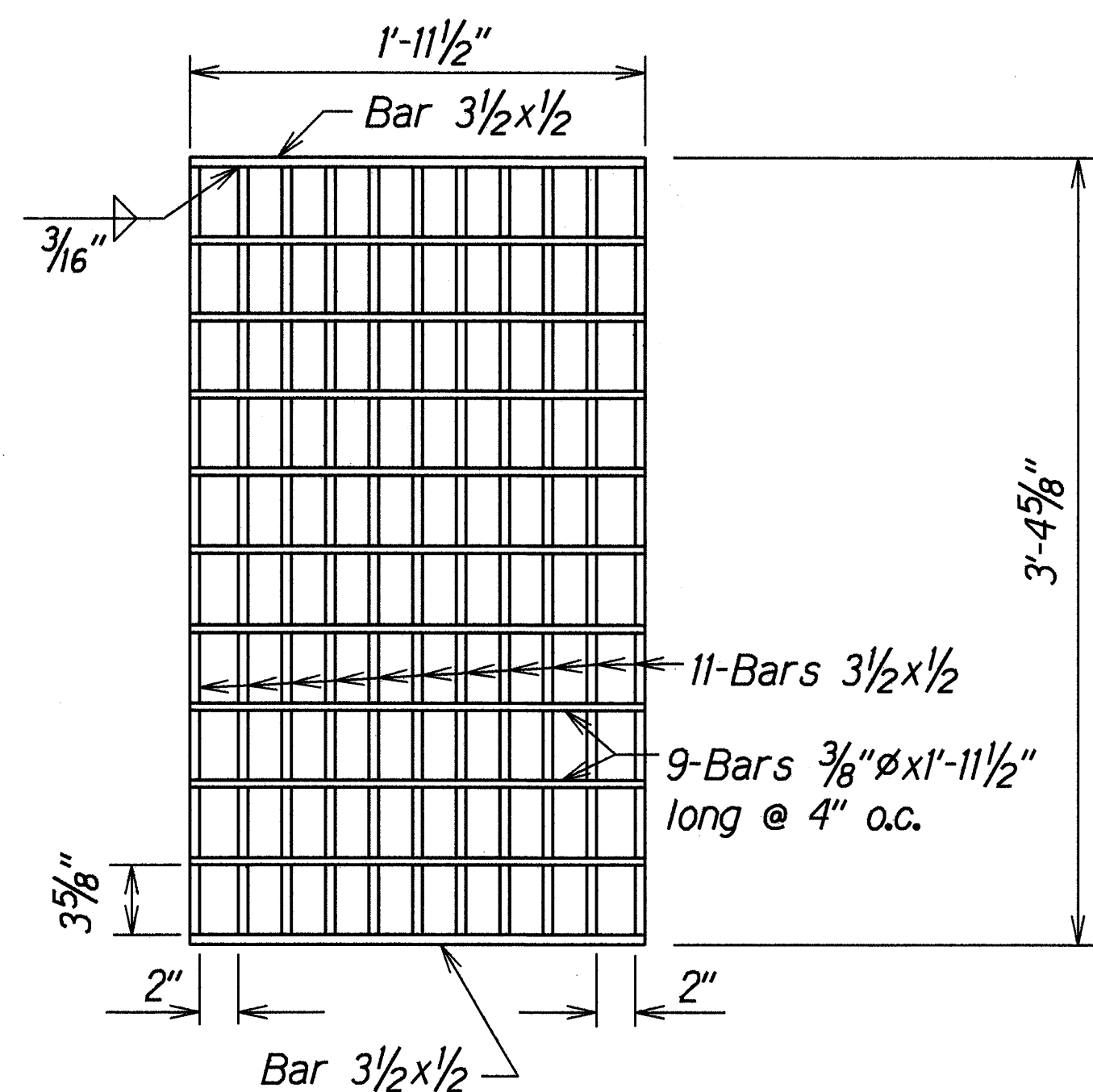
NOTE
All welds 3/8 " unless otherwise noted.

ORIGINAL PLAN	DATE
SURVEY PLOTTED BY	6/18/98
DRAWN BY	
DESIGNED BY	
CHECKED BY	

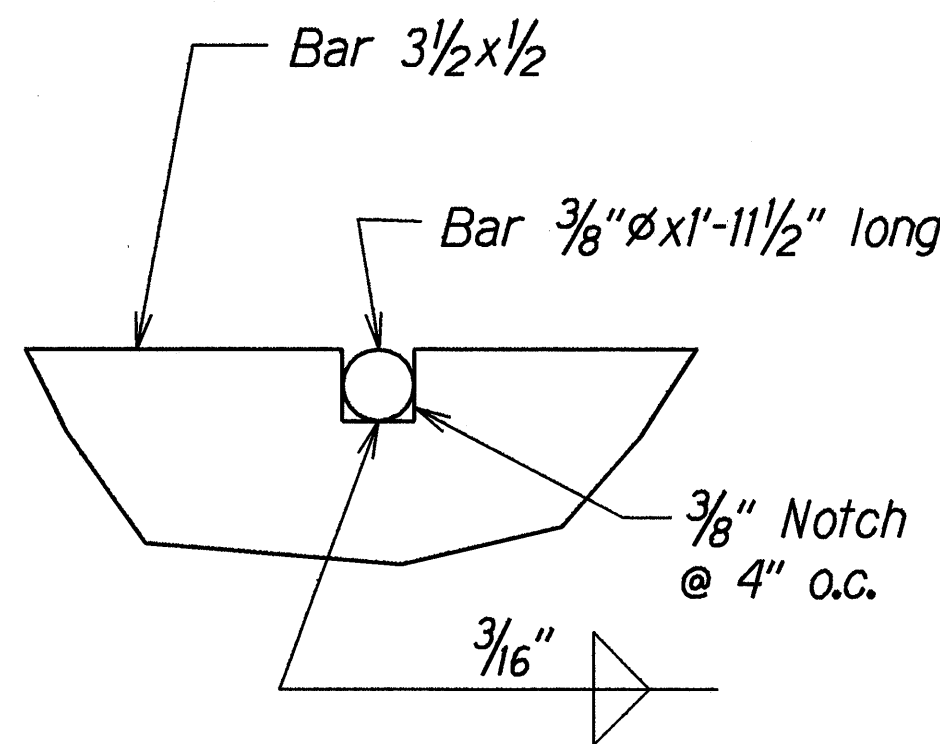
9/24/98	Added Anchors to Frame for Type "4" Grated Drop Inlet
DATE	REVISION
STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION DRAINAGE DETAILS WHITMORE AVENUE RESURFACING Kamehameha Highway to Military Gate Proj. No. 7012A-01-98M Scale: 1 1/2"=1'-0" Date: April, 1998 SHEET No. H8 OF 10 SHEETS	

DETAILS OF FRAME AND GRATES FOR TYPE "4" GRATED DROP INLET

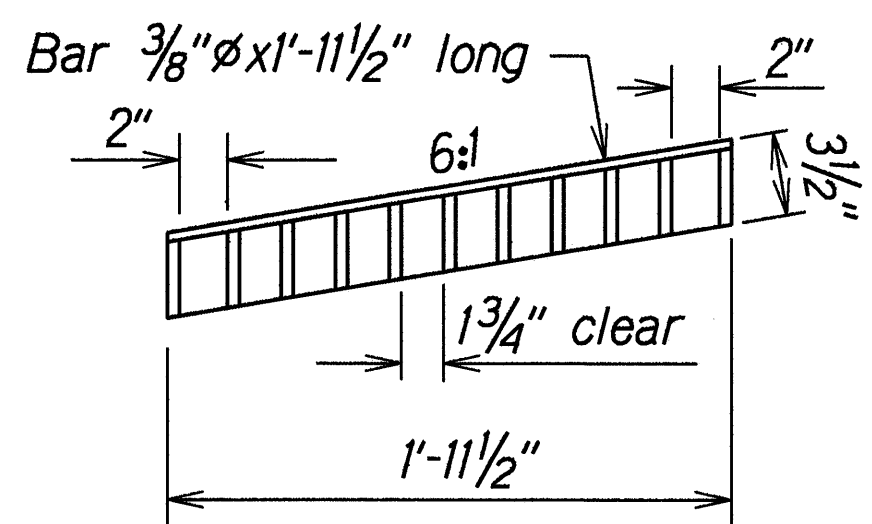
FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	7012A-01-98M	1999	23	32



PLAN



NOTCH DETAIL
Actual Size



SECTION

GRATES
Scale: 1 1/2"=1'

DETAILS OF TYPE 61614P GRATES AT # STA 55+27± LT.

ORIGINAL	SURVEY	DATE
PLAN	PLATTED BY	6/16/98
NOTES	DRAWN BY	
BOOK	DESIGNED BY	
013.00/01/01	CHECKED BY	
013.00/01/01		

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

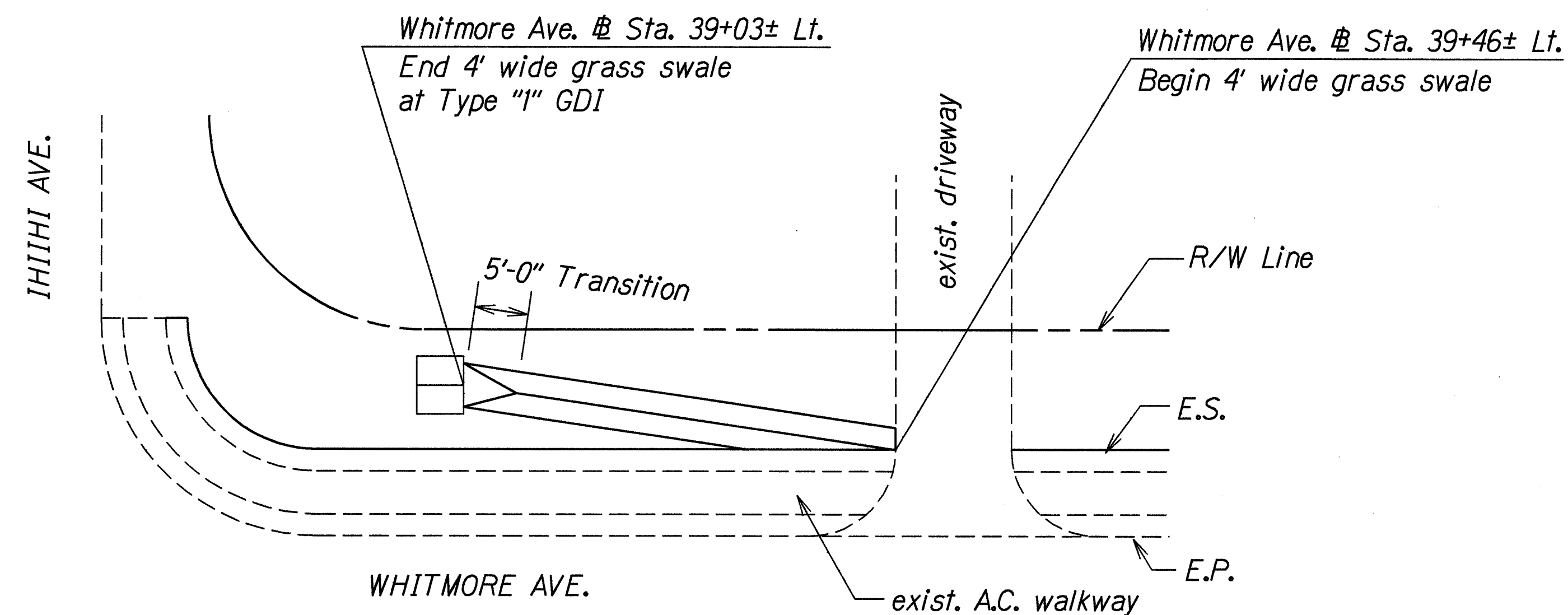
DRAINAGE DETAILS

WHITMORE AVENUE RESURFACING
Kamehameha Highway to Military Gate
Proj. No. 7012A-01-98M

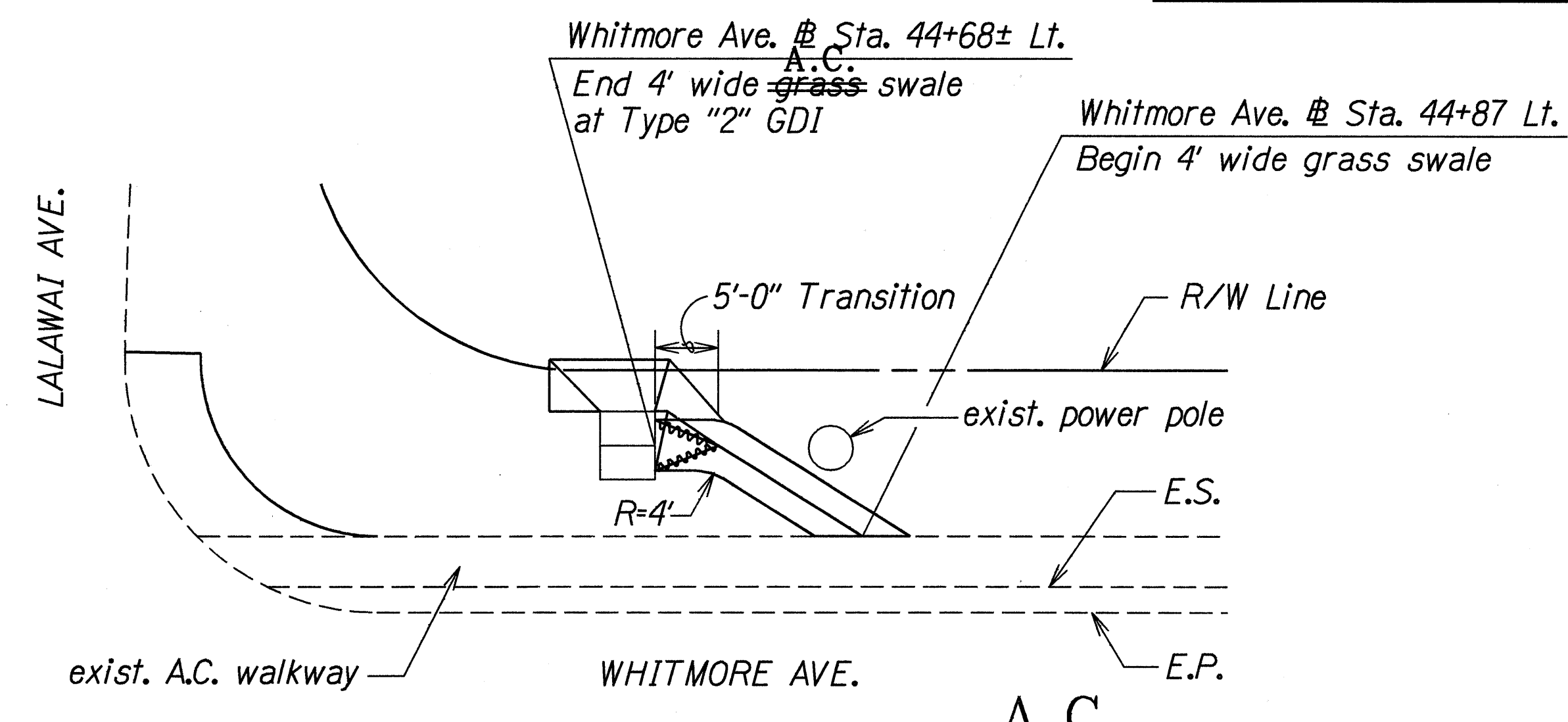
Scale: As Shown Date: April, 1998

SHEET No. H9 OF 10 SHEETS

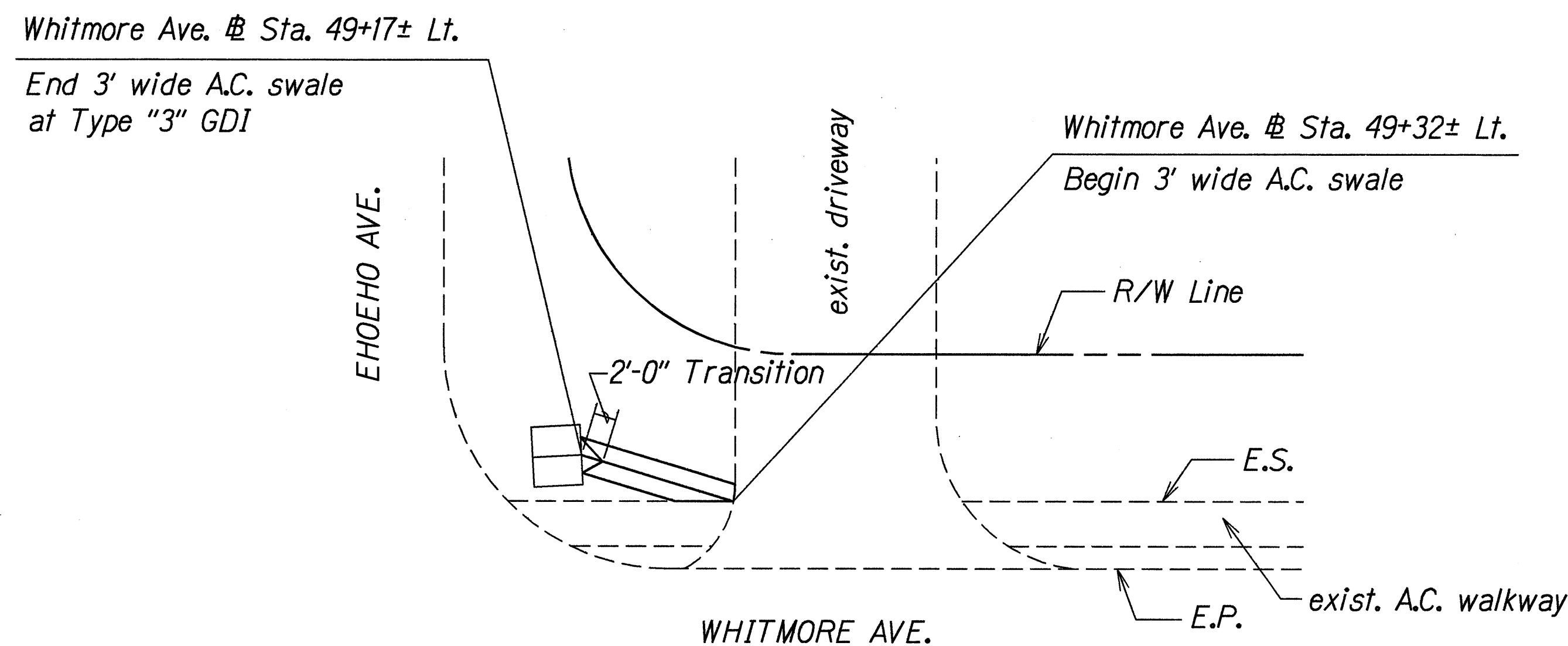
FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	7012A-01-98M	1999	24	32



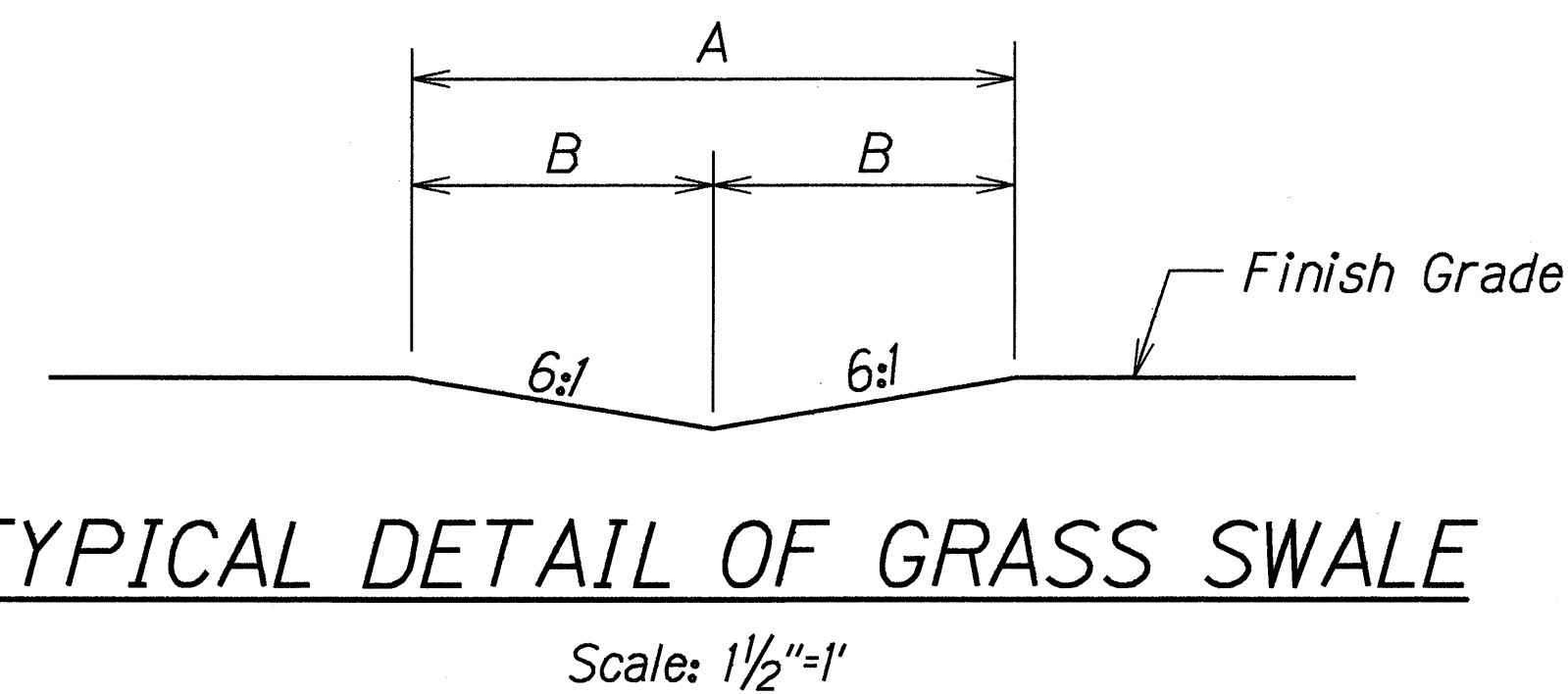
DETAILS OF 4' WIDE GRASS SWALE
FROM # STA. 39+03± LT TO # STA. 39+46± LT
 Scale: 1"=10'



DETAILS OF 4' WIDE GRASS SWALE
FROM # STA. 44+68± LT TO # STA. 44+87 LT
 Scale: 1"=10'

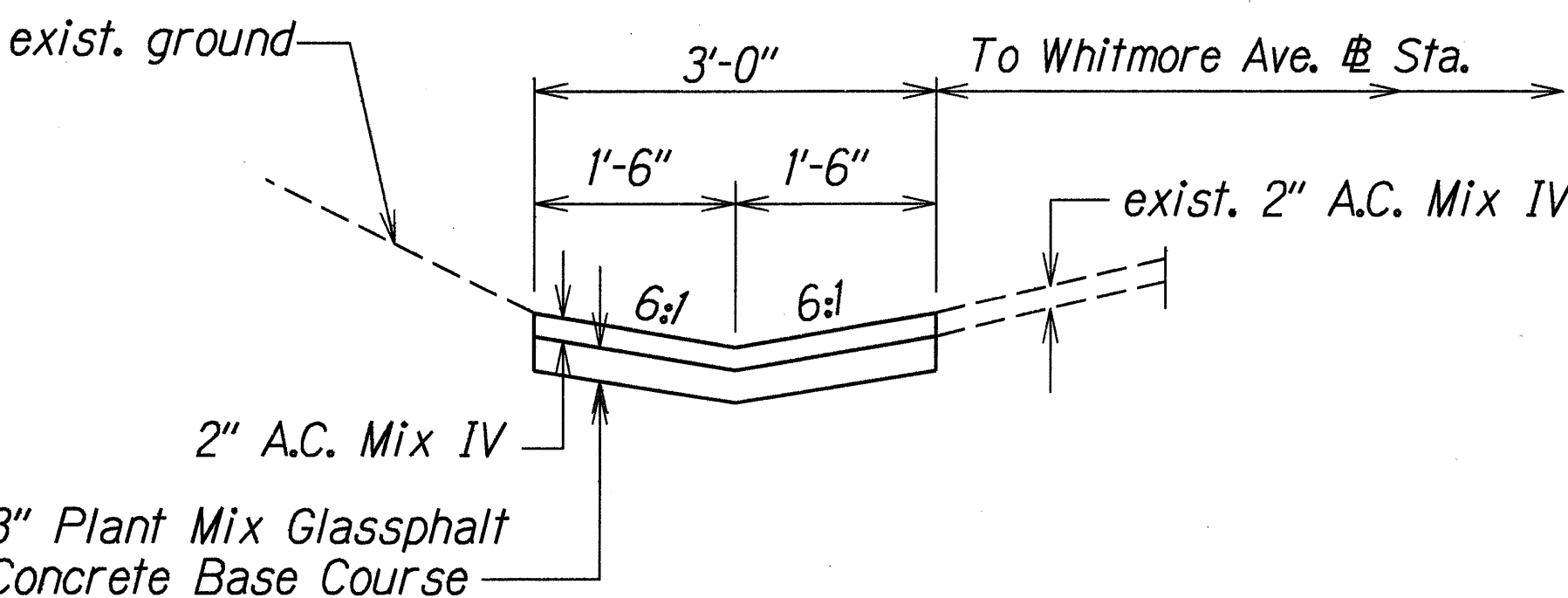


DETAILS OF 3' WIDE GRASS SWALE
FROM # STA. 49+17± LT TO # STA. 49+32± LT
 Scale: 1"=10'



TYPICAL DETAIL OF GRASS SWALE
 Scale: 1 1/2"=1'

	A	B
4' wide grass swale	4'-0"	2'-0"
6' wide grass swale	6'-0"	3'-0"



DETAIL OF 3' WIDE A.C. SWALE
 Scale: 1 1/2"=1'

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

STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION	
DRAINAGE DETAILS	
WHITMORE AVENUE RESURFACING Kamehameha Highway to Military Gate Proj. No. 7012A-01-98M	
Scale: As Shown	Date: April, 1998
SHEET No. 110 OF 10 SHEETS	

ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
NOTE BOOK	DRAWN BY	6/10/98
CH3/9/98	CHECKED BY	
CH3/9/98	QUANTITY BY	
CH3/9/98	CHECKED BY	