

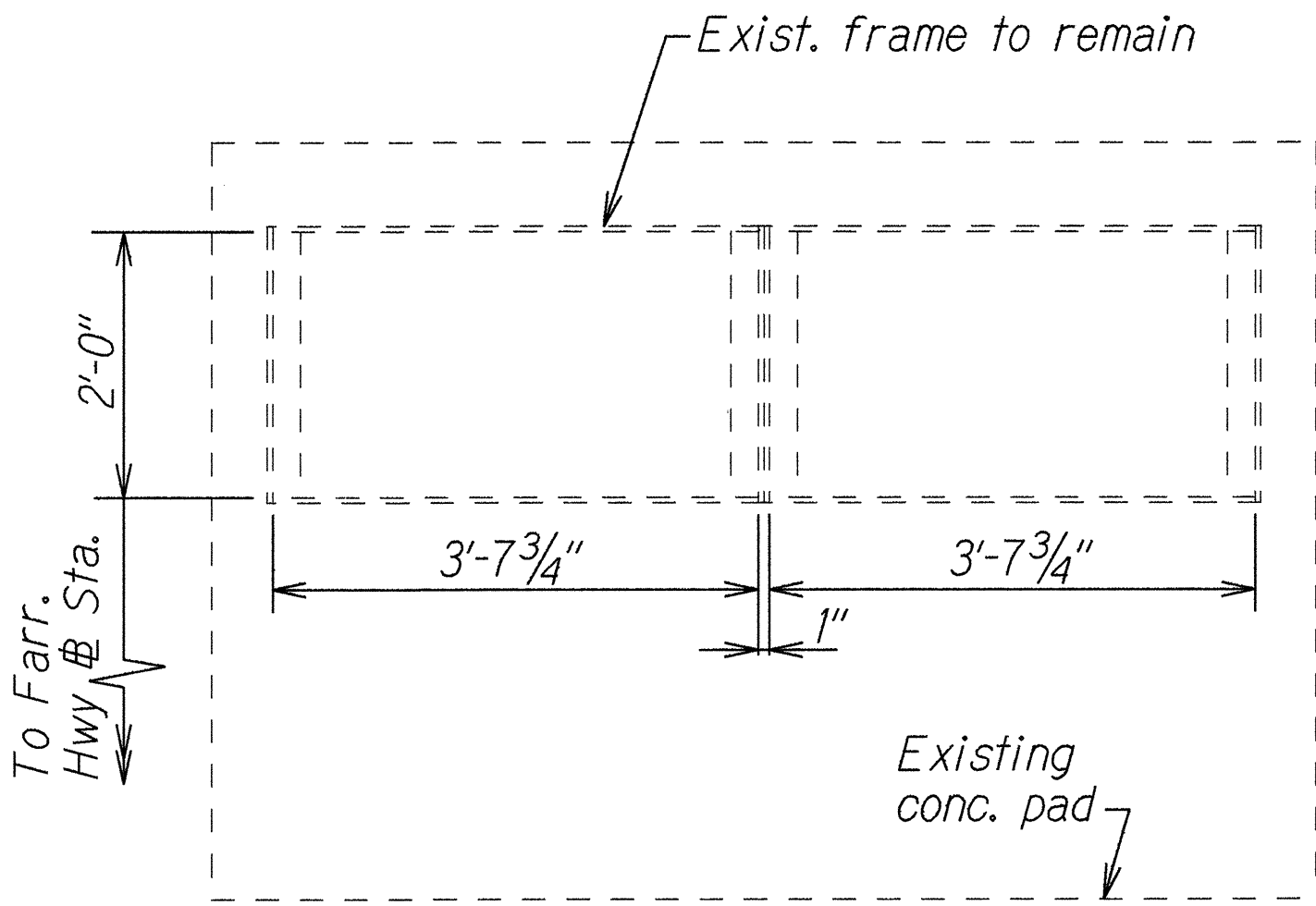
FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	93A-02-98M	1998	13	27

DRAINAGE SUMMARY

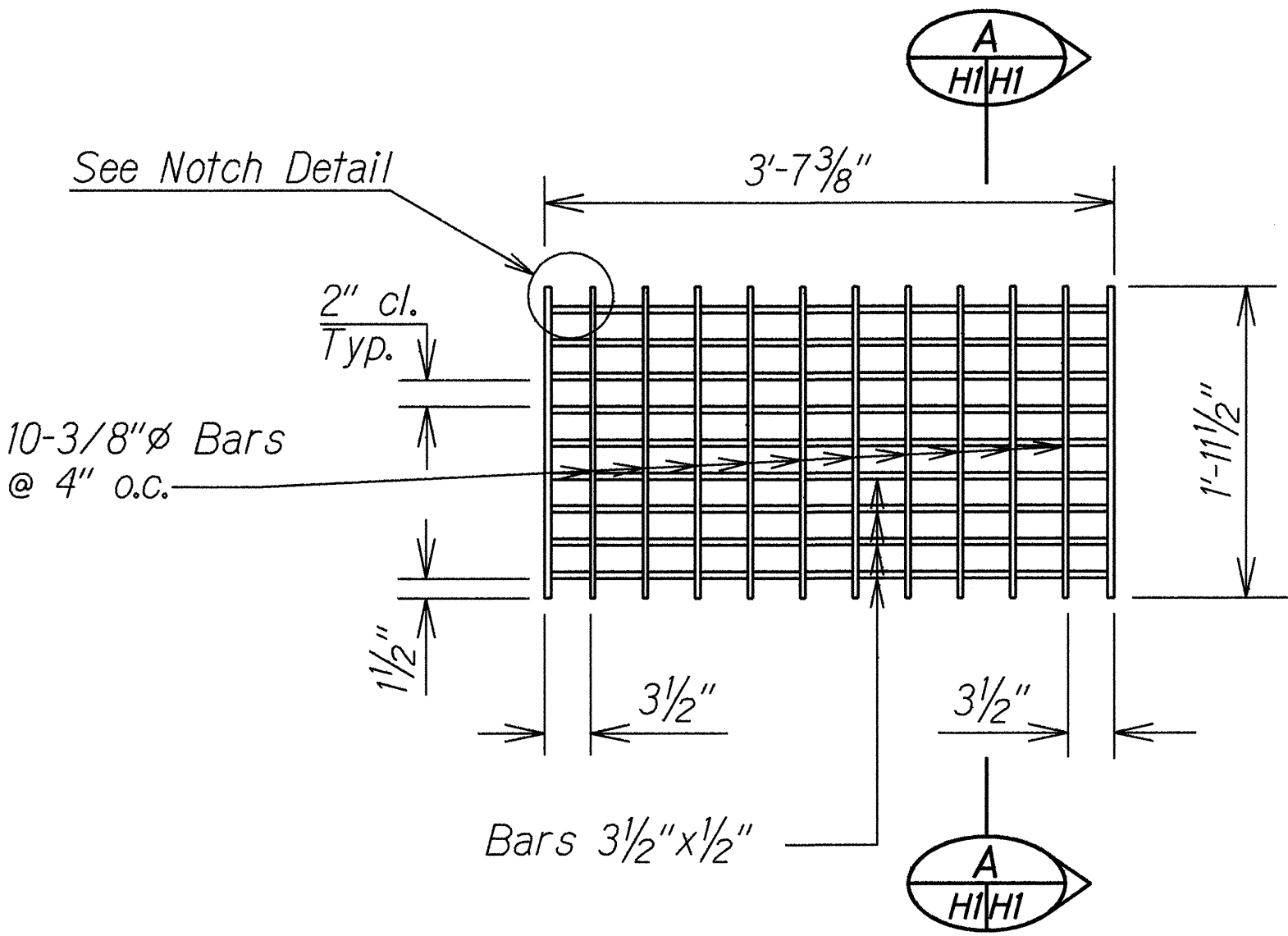
ITEM NO.	604.5110	604.5120	604.5200	604.5210	604.5220
UNIT USED	EA.	EA.	EA.	EA.	EA.
BASELINE STATION					
	Type "A-9P" Grate	Modified Type "A-9P" Grate	Modified Type "A-9P", Grated Drop Inlet, 0.00 ft. to 0.99 ft.	Modified Type "1" Inlet Structure, 1.00 ft. to 1.99 ft.	Modified Type "2" Inlet Structure, 1.00 ft. to 1.99 ft.
Sta. 222+70± o/s 50'± Lt.	2				
Sta. 227+75± o/s 56'± Lt.		2			
Sta. 230+55± o/s 56'± Lt.	2				
Sta. 236+15± o/s 70'± Lt.			1		
Sta. 13+25± o/s 56'± Lt.				1	
Sta. 61+55± o/s 56'± Lt.					1
Total	4	2	1	1	1

DRAINAGE NOTES:

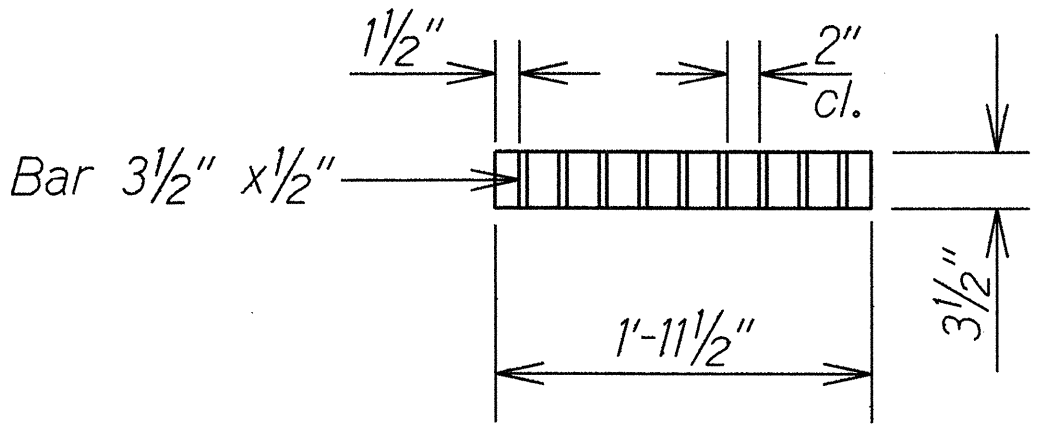
- Existing drainage systems will be functional at all times during construction. The Contractor is to furnish materials, equipment, labor, tools and incidentals necessary to accomplish maintenance of flow. The cost shall be incidental to the various Contract Items.
- The Contractor shall verify the locations 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 $\frac{5}{8}$ ", and voids after installing dowels shall be filled with epoxy fill as directed by the Engineer.
- Demolishing, removing, and disposing portions of existing drainage structures shall not be paid for separately, but shall be considered incidental to the various Contract Items.
- Salvaged C.I. Frames and Grates shall be cleaned, painted, and returned to 787 Kakoi St, Honolulu, Hawaii 96819.
- Concrete shall be Class A unless otherwise noted.
- Chamfer all exposed concrete edges $\frac{3}{4}$ ".
- Existing culvert drainage inlet and spillway systems within the project limits may require removal of silt, sand and debris material. The Engineer will pay for cleaning of existing culverts and spillways on a force account basis under Item No. 603.5001, "Clean Existing Culverts".



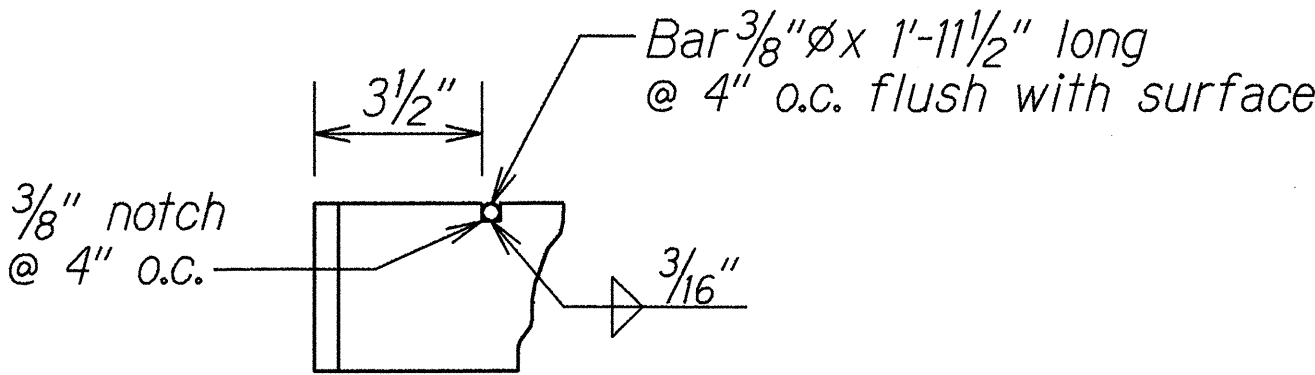
PLAN - EXISTING FRAME
Scale: 3/4"=1'-0"



PLAN
Scale: 1"=1'-0"



SECTION
Scale: 1"=1'-0"



NOTCH DETAIL
Scale: 3"=1'-0"

DETAILS OF MODIFIED TYPE "A-9P" GRATE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
DRAINAGE DETAILS
FARRINGTON HIGHWAY RESURFACING
Piliokoe Bridge To Vicinity of Aliinui Drive
Project No. 93A-02-98M
Scale: As Shown Date: May 1998
SHEET No. 13 OF 4 SHEETS

ORIGINAL PLAN	DATE: 4/20/98
SURVEY PLOTTED BY	
DRAWN BY	
DESIGNED BY	
CHECKED BY	

The drawing consists of three main views: PLAN, SECTION, and TOP SLAB REINFORCING.

PLAN View: Shows the layout of the manhole within a 6'-4" wide existing drainage channel. The manhole is 5'-0" wide and 3'-8" deep. It is located 8" from the left and right channel walls and 8" from the bottom. The manhole is labeled "Type 'A-9P' frame & grate. For Details see Std. Plan H-09." and "Install MH rungs. For Details see Std. Plan H-07." The existing 36" CMP is shown below the manhole. Section lines A-A, B-B, and C-C are indicated.

SECTION View: Shows a cross-section of the manhole. The top of the channel wall is 8" above the invert of the existing drainage channel. The manhole is 5'-0" wide and 3'-8" deep. It is labeled "Type 'A-9P' frame & grate. For Details see Std. Plan H-09." and "Install MH rungs. For Details see Std. Plan H-07." The existing 36" CMP is shown below the manhole. Section line C-C is indicated.

TOP SLAB REINFORCING View: Shows the reinforcement details for the top slab. It includes 12" #4 dowels @ 1'-0" o.c. and #4 bars as shown. The existing ground is shown above the slab. The existing 36" CMP is shown below the slab. Section line C-C is indicated.

Legend: A table with 5 columns: FED. ROAD DIST. NO., STATE, PROJ. NO., FISCAL YEAR, SHEET NO. The table contains the following data:

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.
HAWAII	HAW.	93A-02-98M	1998	14



3-#4 as shown

3-#4 as shown

3-#4 As Shown

#4 dowels

TOP SLAB REINFORCING

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

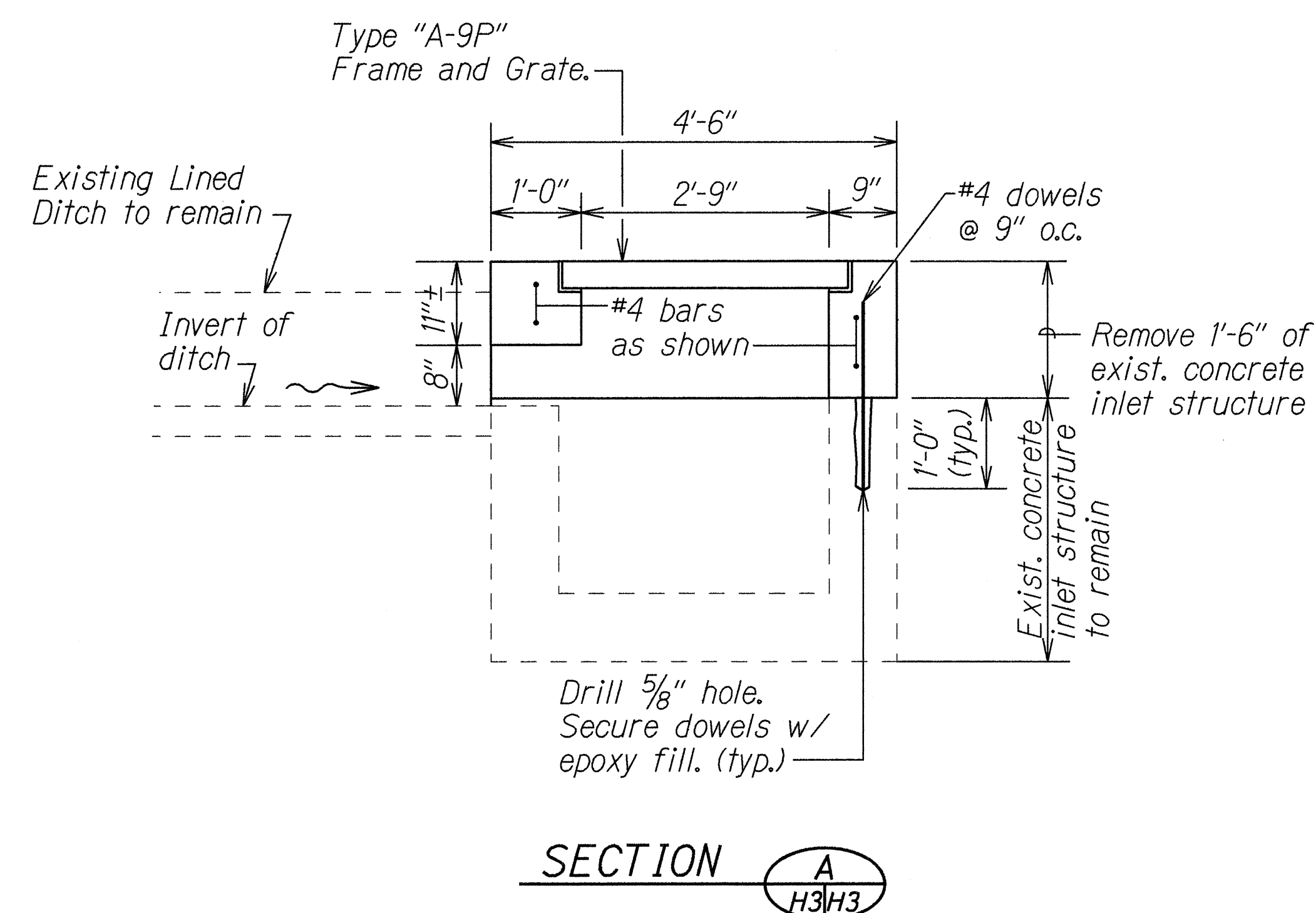
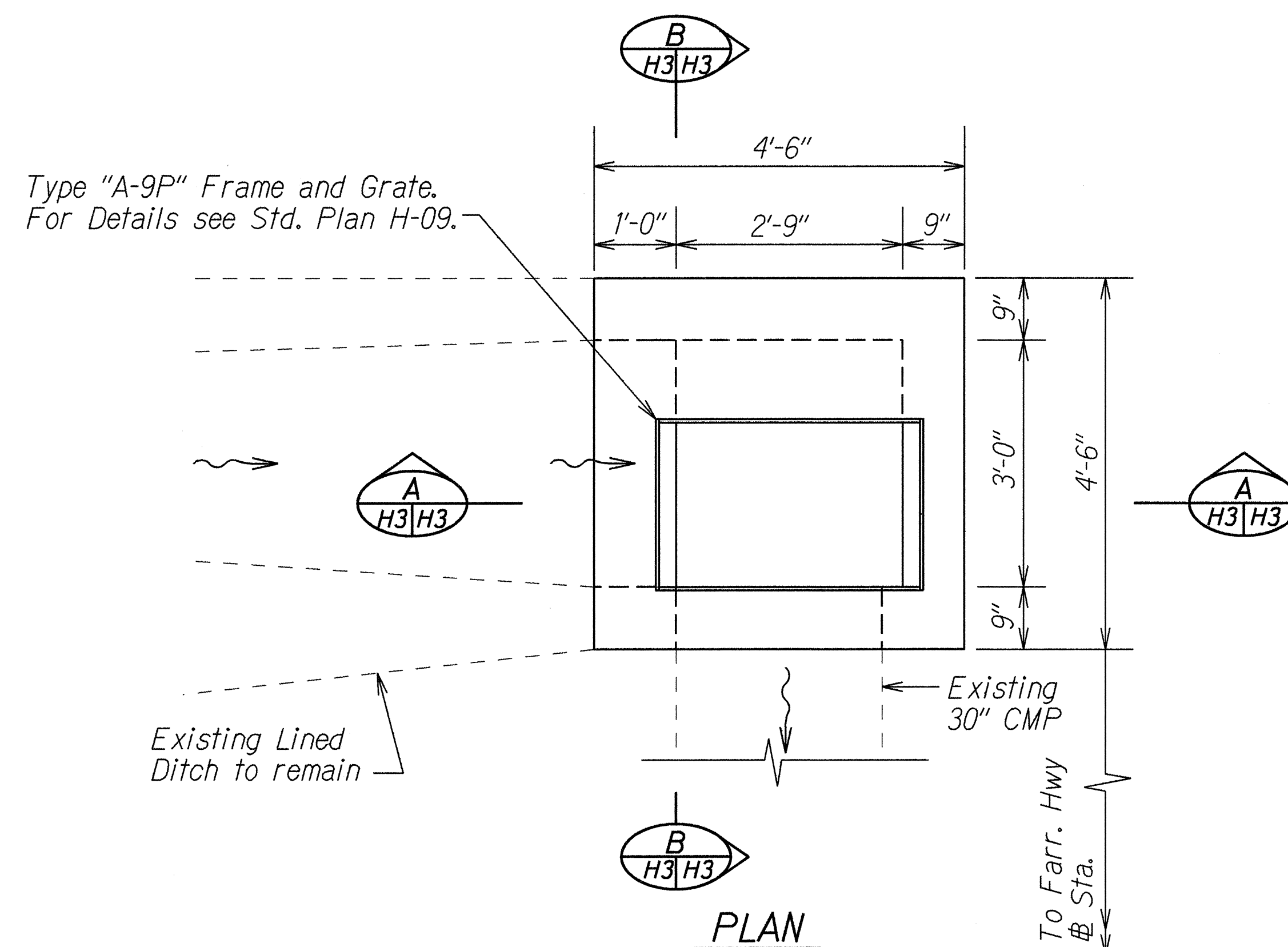
DRAINAGE DETAILS

FARRINGTON HIGHWAY RESURFACING
Piliokoe Bridge To Vicinity of Aliinui Drive
Project No. 93A-02-98M

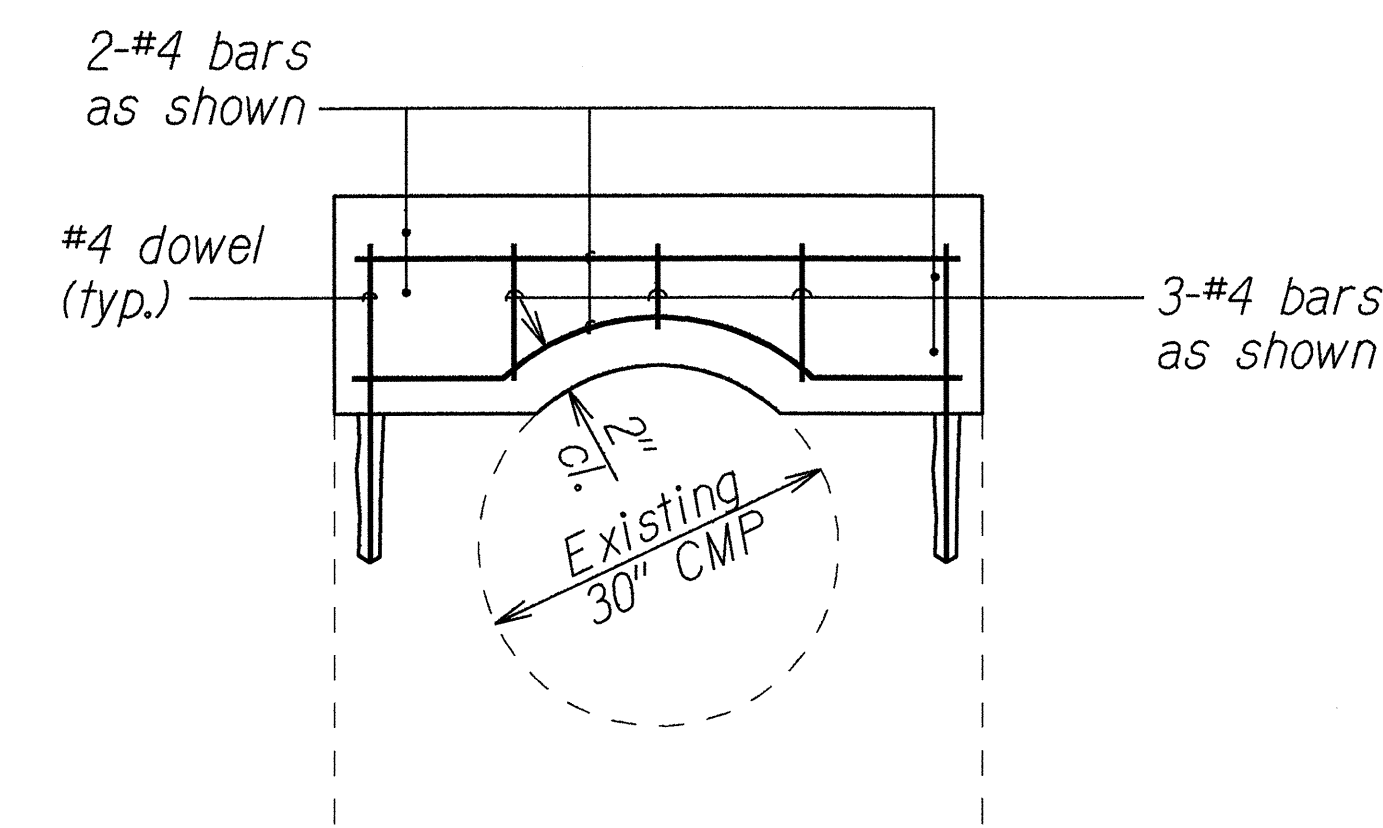
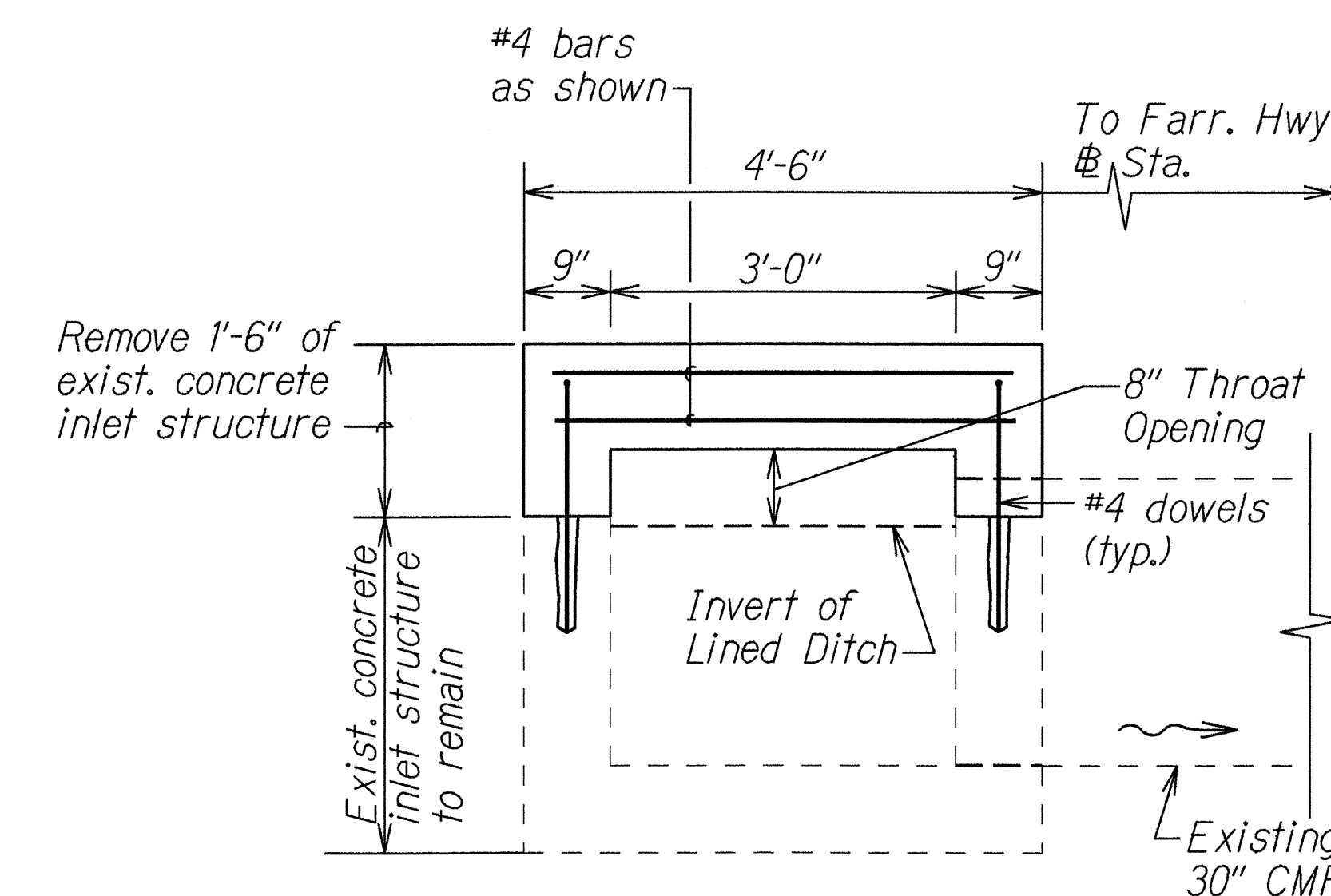
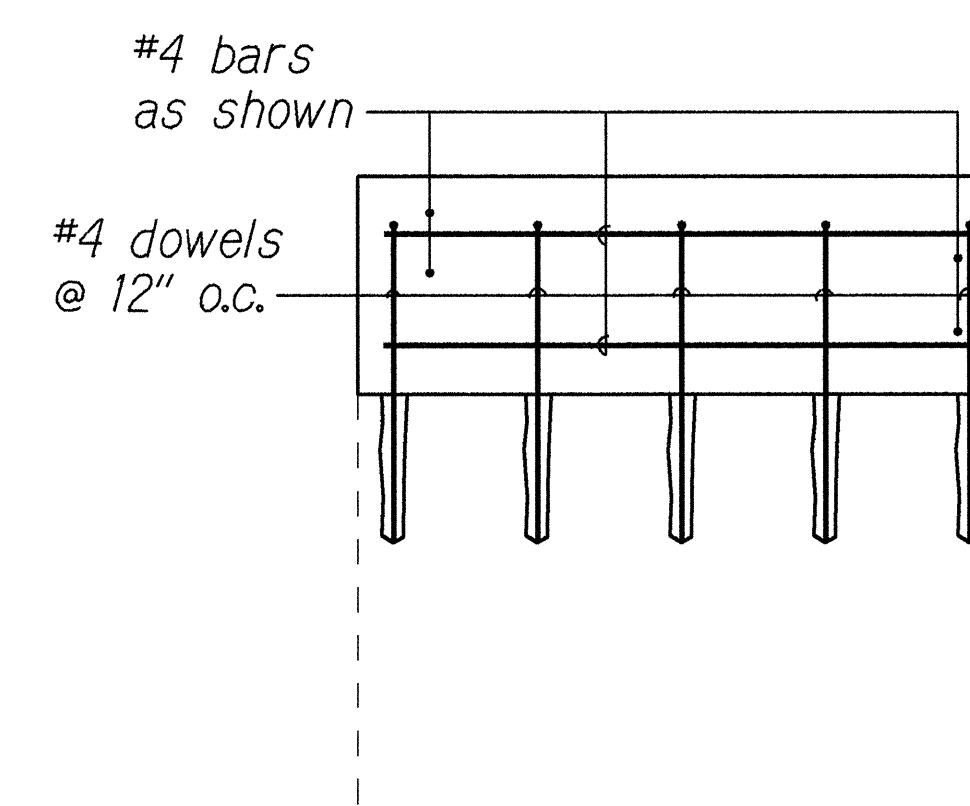
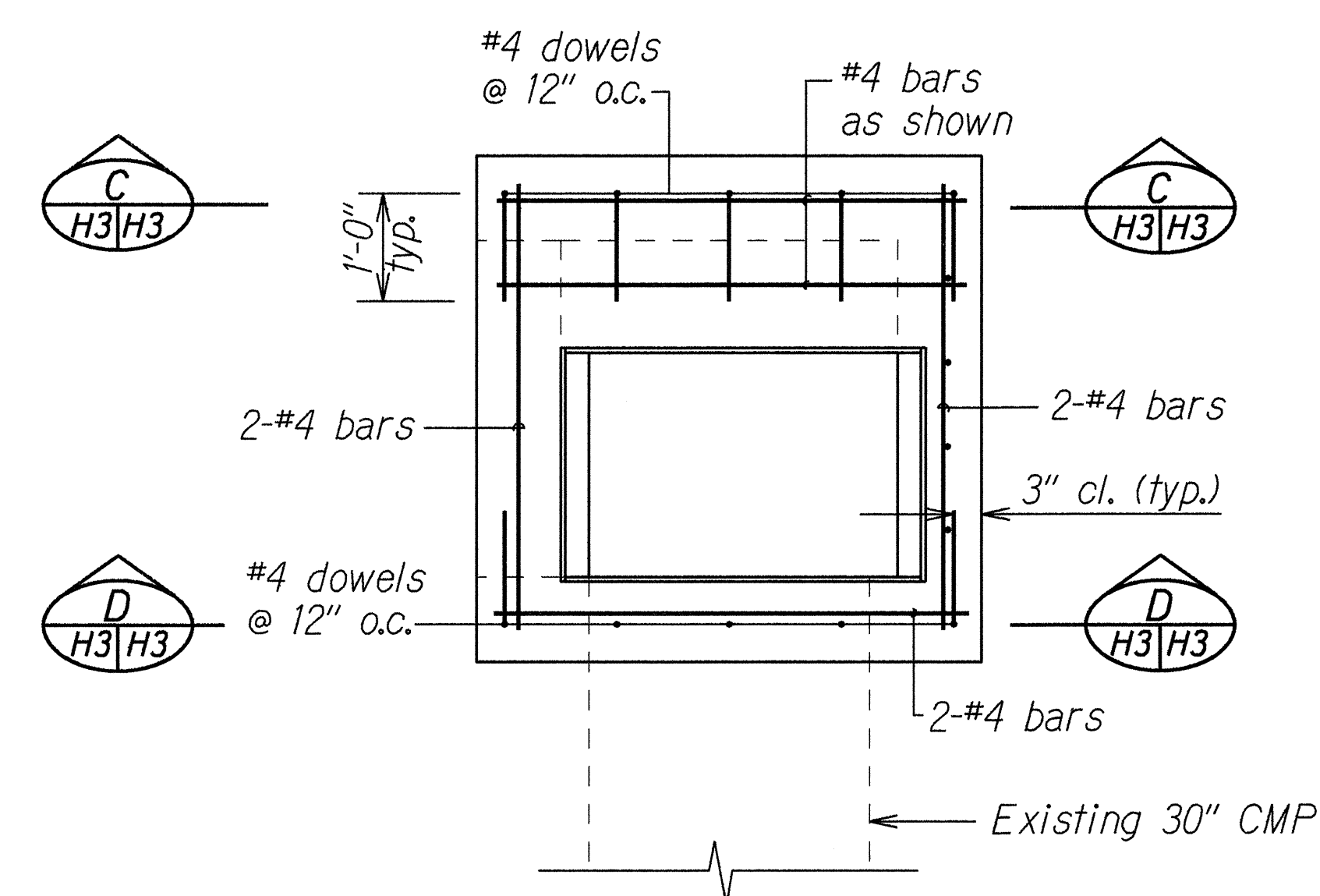
Scale: $\frac{3}{4}" = 1' - 0"$ Date: May 1998

SHEET No. H2 OF 4 SHEETS

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	93A-02-98M	1998	15	27



DETAILS OF MODIFIED TYPE "1" INLET STRUCTURE



ORIGINAL PLAN	DATE	4/20/98
SURVEY PLOTTED BY		
DRAWN BY		
DESIGNED BY		
CHECKED BY		

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

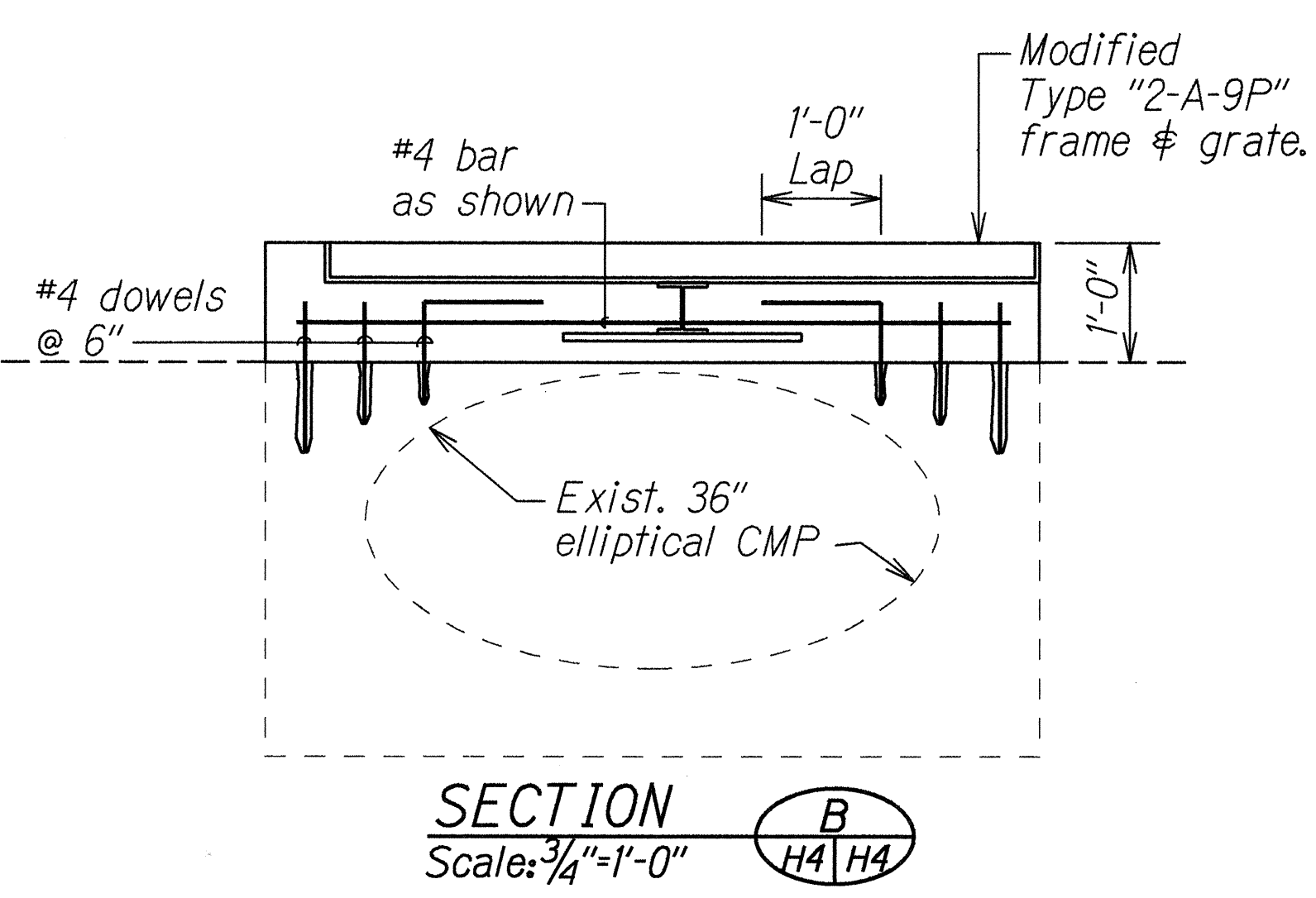
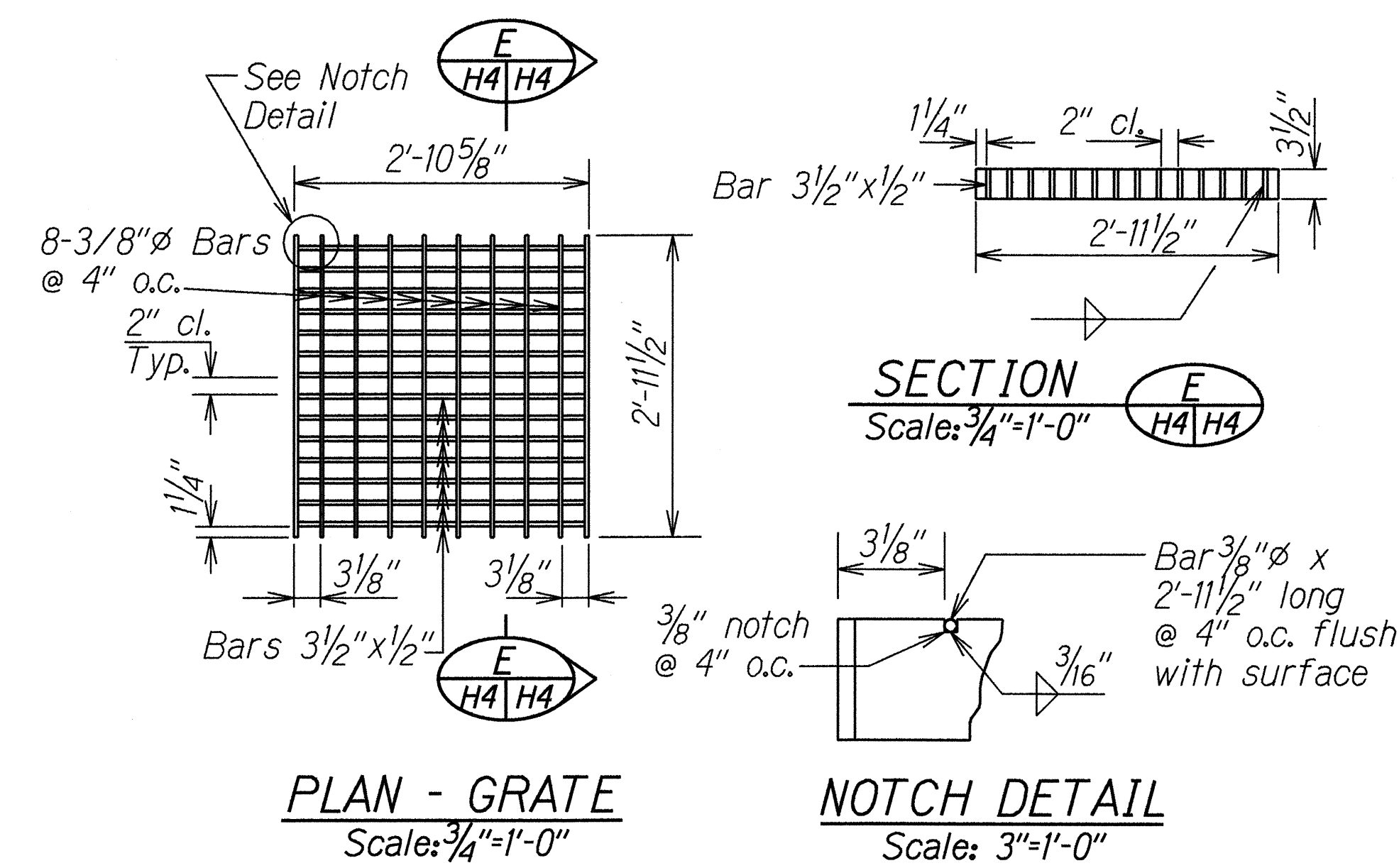
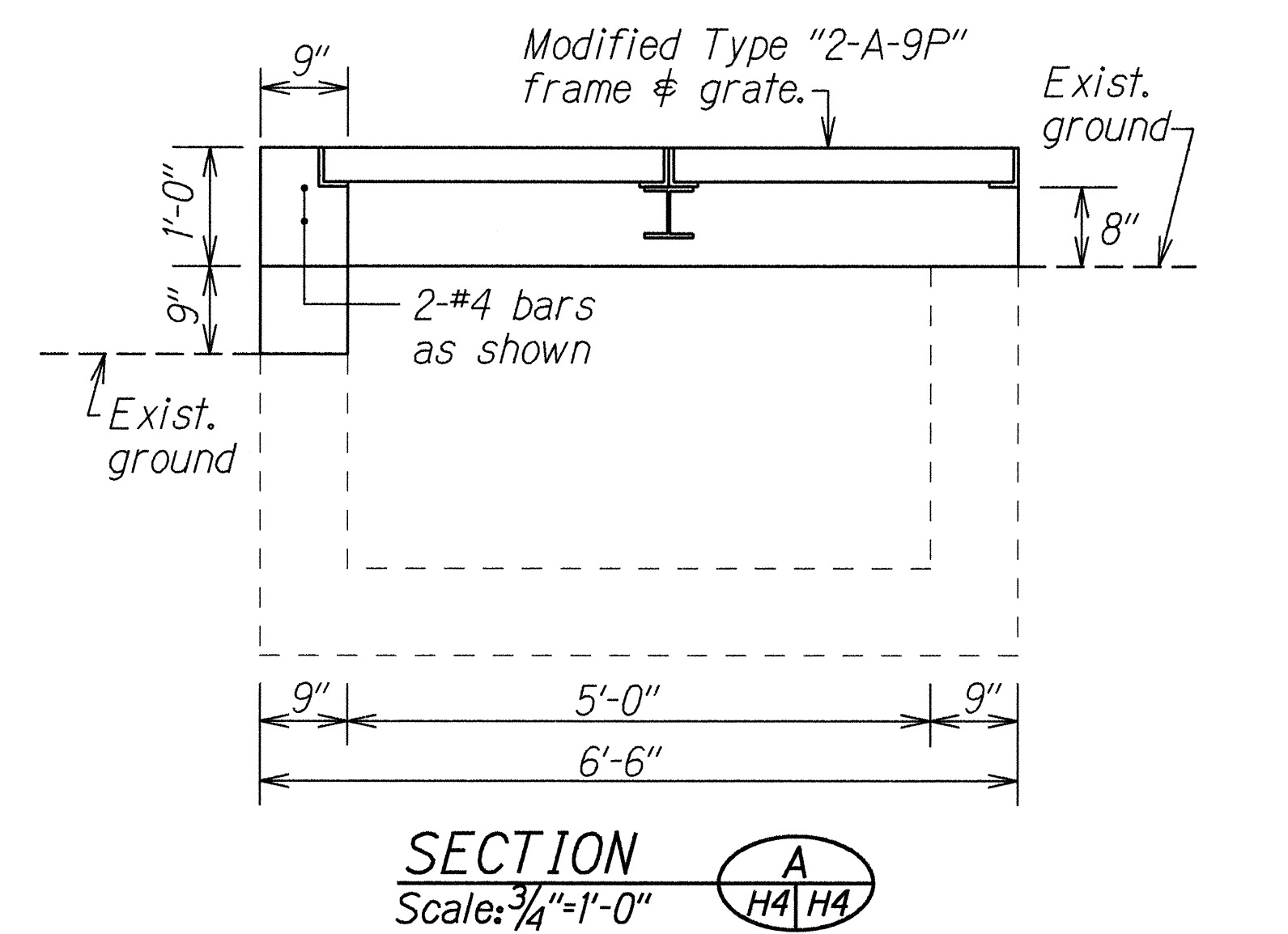
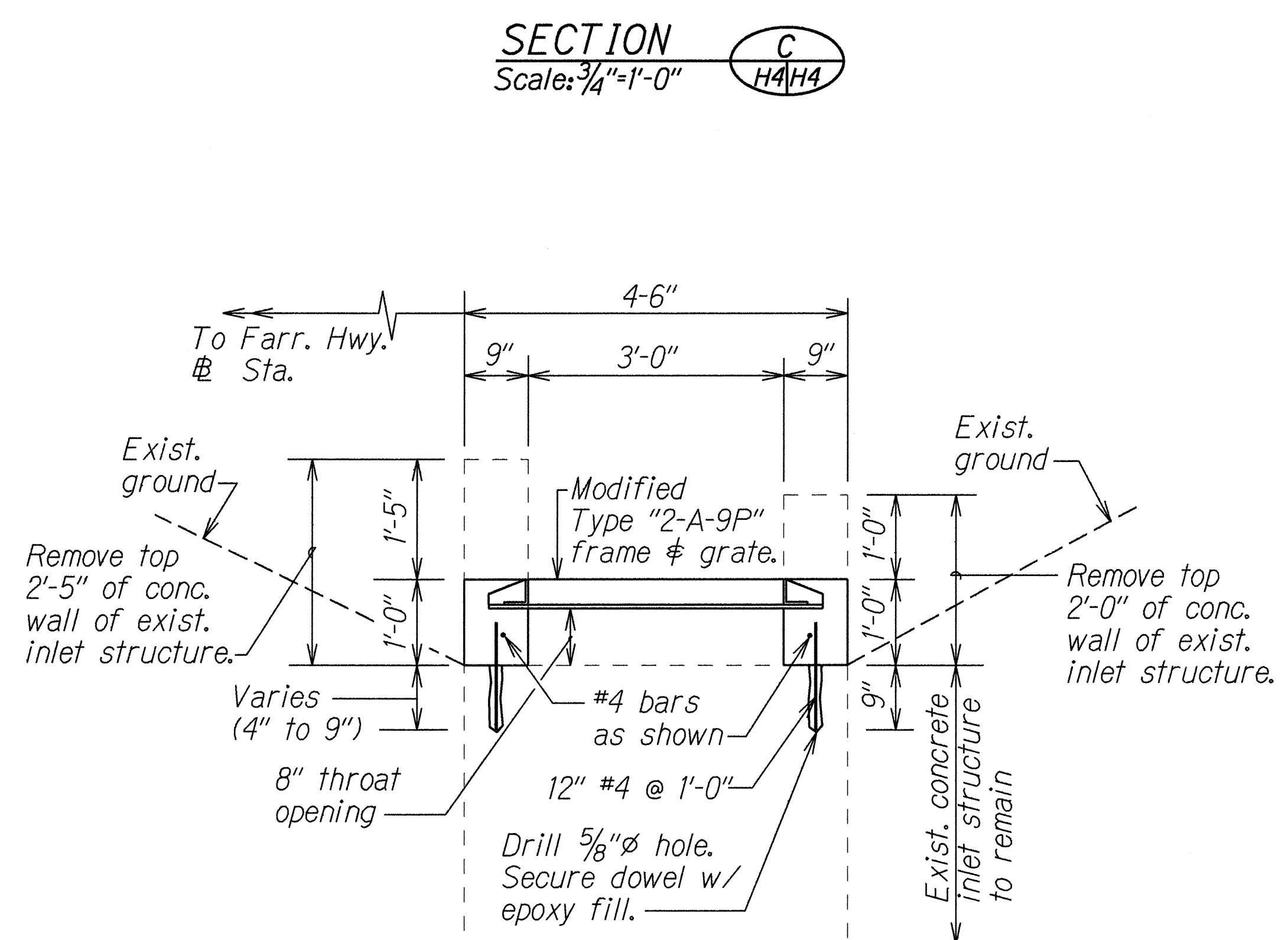
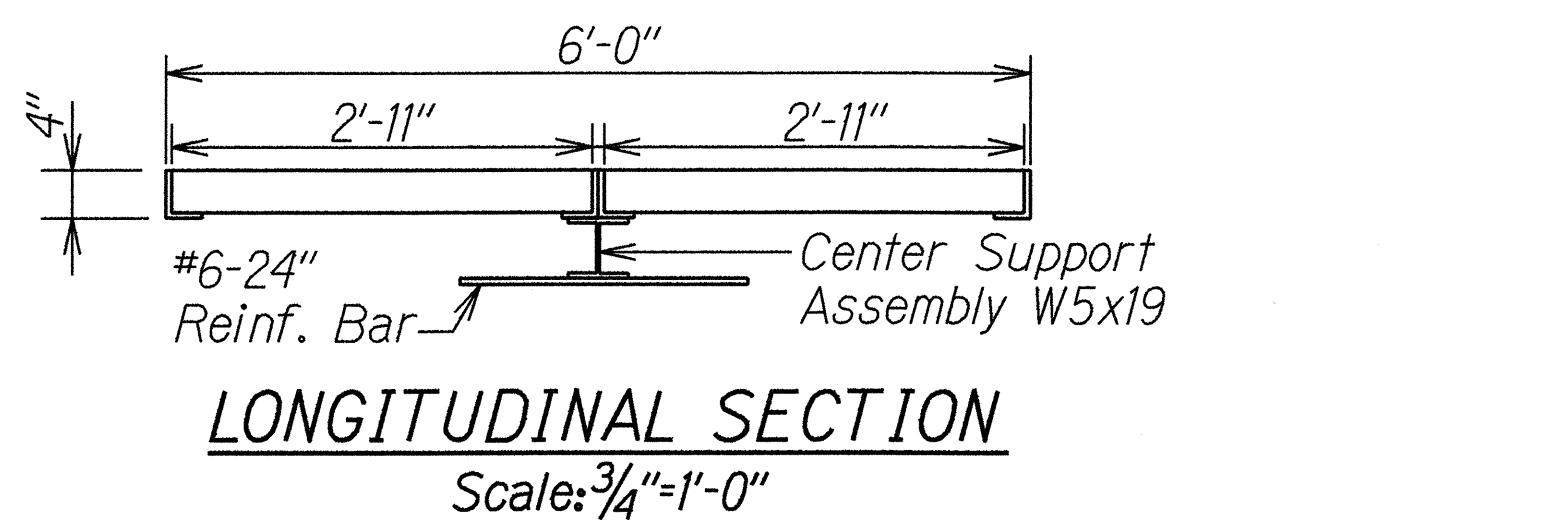
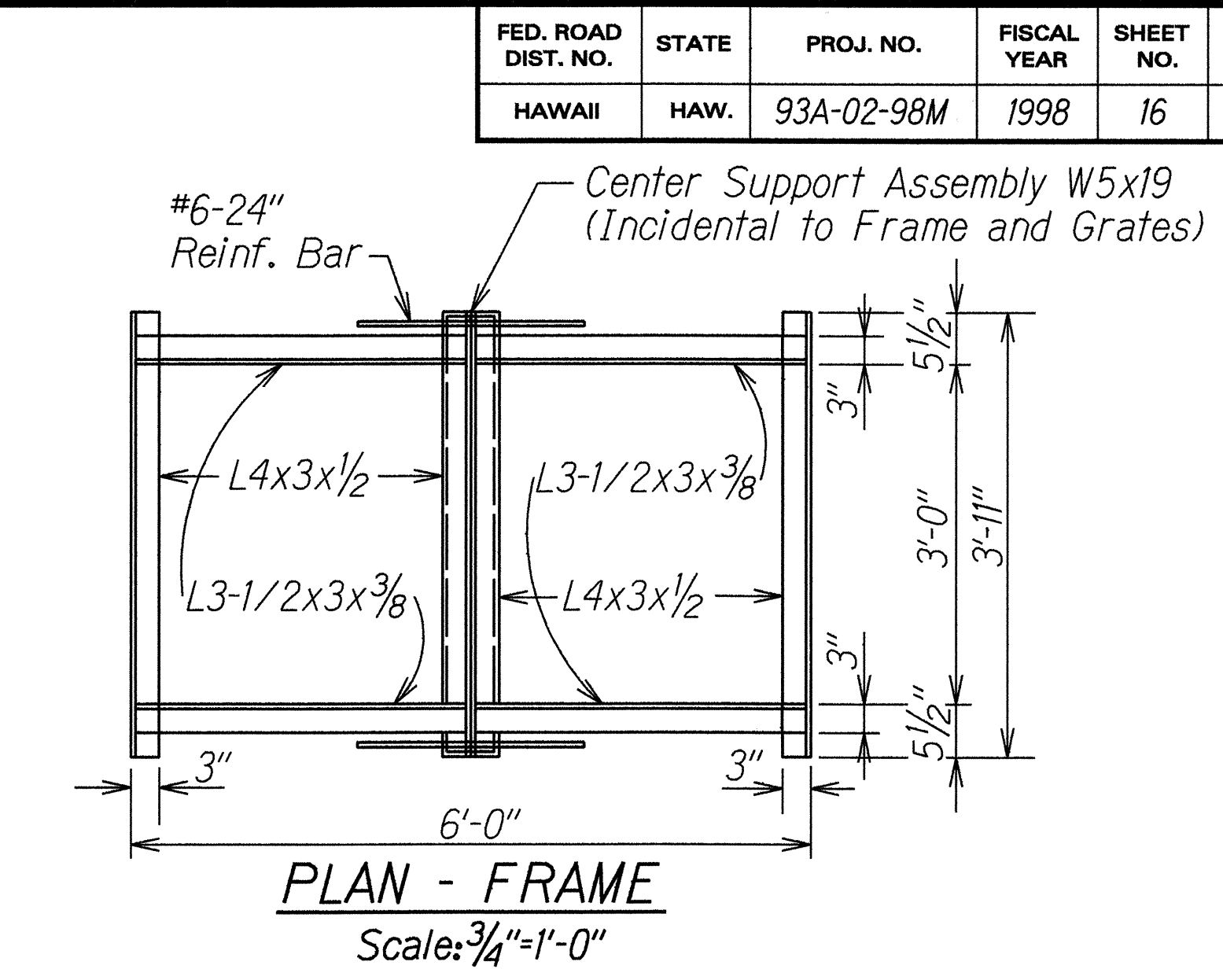
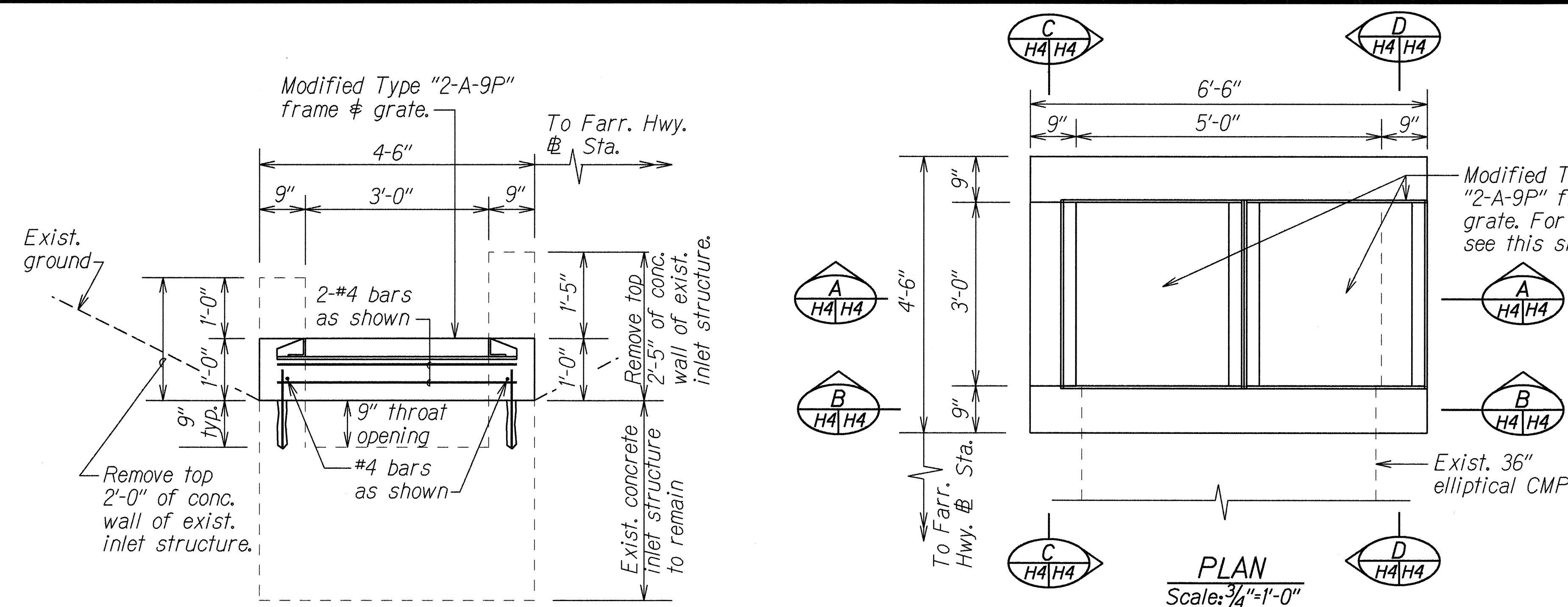
DRAINAGE DETAILS

FARRINGTON HIGHWAY RESURFACING
Piliokoe Bridge To Vicinity of Aliinui Drive
Project No. 93A-02-98M

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

SHEET No. H3 OF 4 SHEETS

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	93A-02-98M	1998	16	27



DETAILS OF MODIFIED TYPE "2" INLET STRUCTURE

DETAILS OF MODIFIED TYPE "2-A-9P" FRAME & GRATE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

DRAINAGE DETAILS

FARRINGTON HIGHWAY RESURFACING
Piliokoe Bridge To Vicinity of Aliinui Drive
Project No. 93A-02-98M

Scale: As Shown Date: May 1998

SHEET No. H4 OF 4 SHEETS

ORIGINAL PLAN	DATE: 4/20/98
DESIGNED BY: B. KAWAHARA	
CHECKED BY: B. KAWAHARA	
APPROVED BY: B. KAWAHARA	