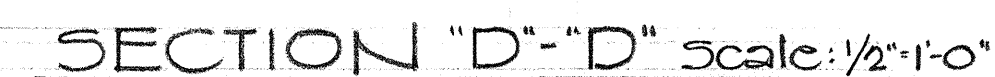


STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

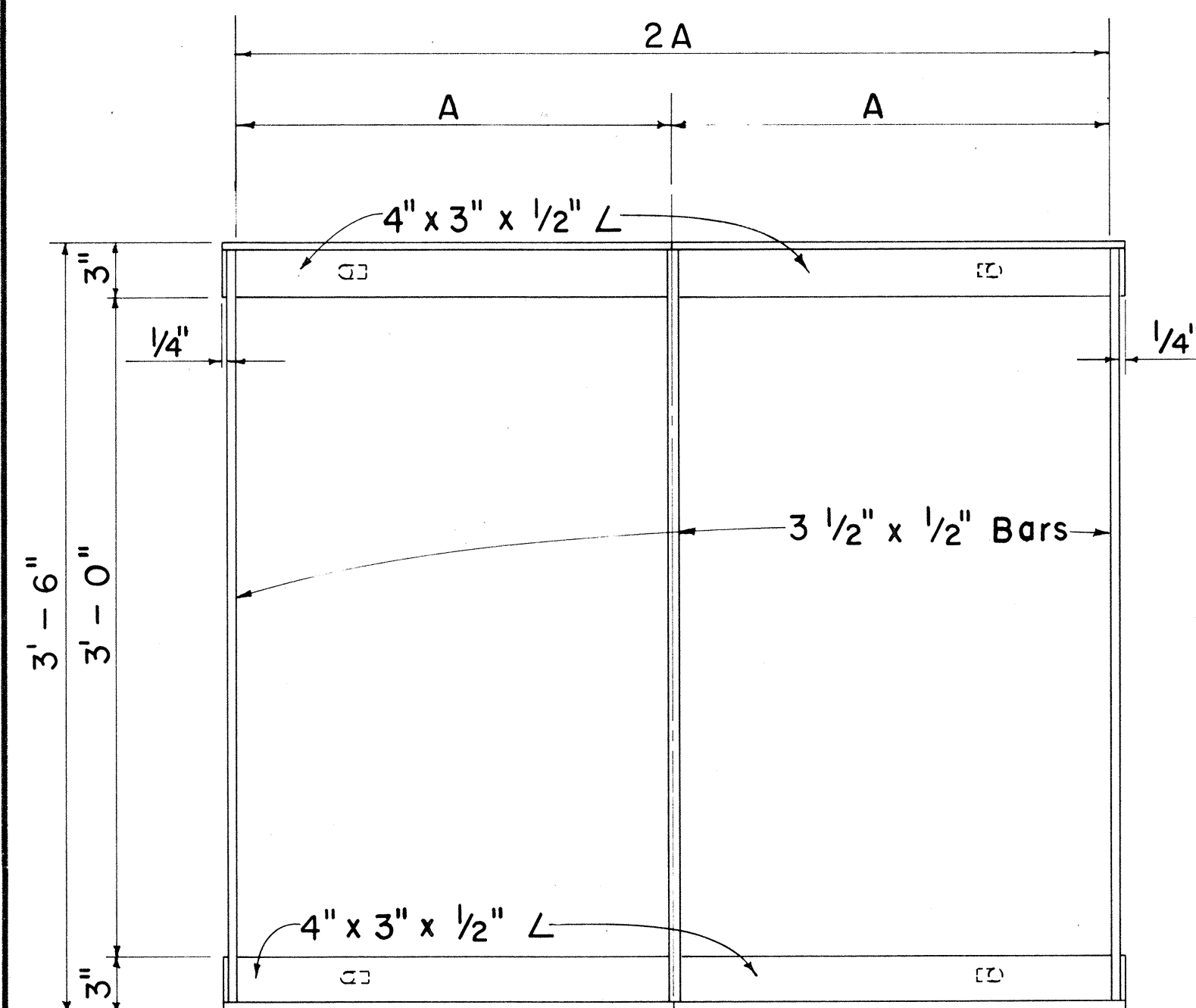
NAWILIWILI ROAD
RECONSTRUCTION
DRAINAGE DETAIL
PROJECT No. 58A-01-71

Scale: As Shown APRIL 1971

SHEET No. 1 OF 2 SHEETS

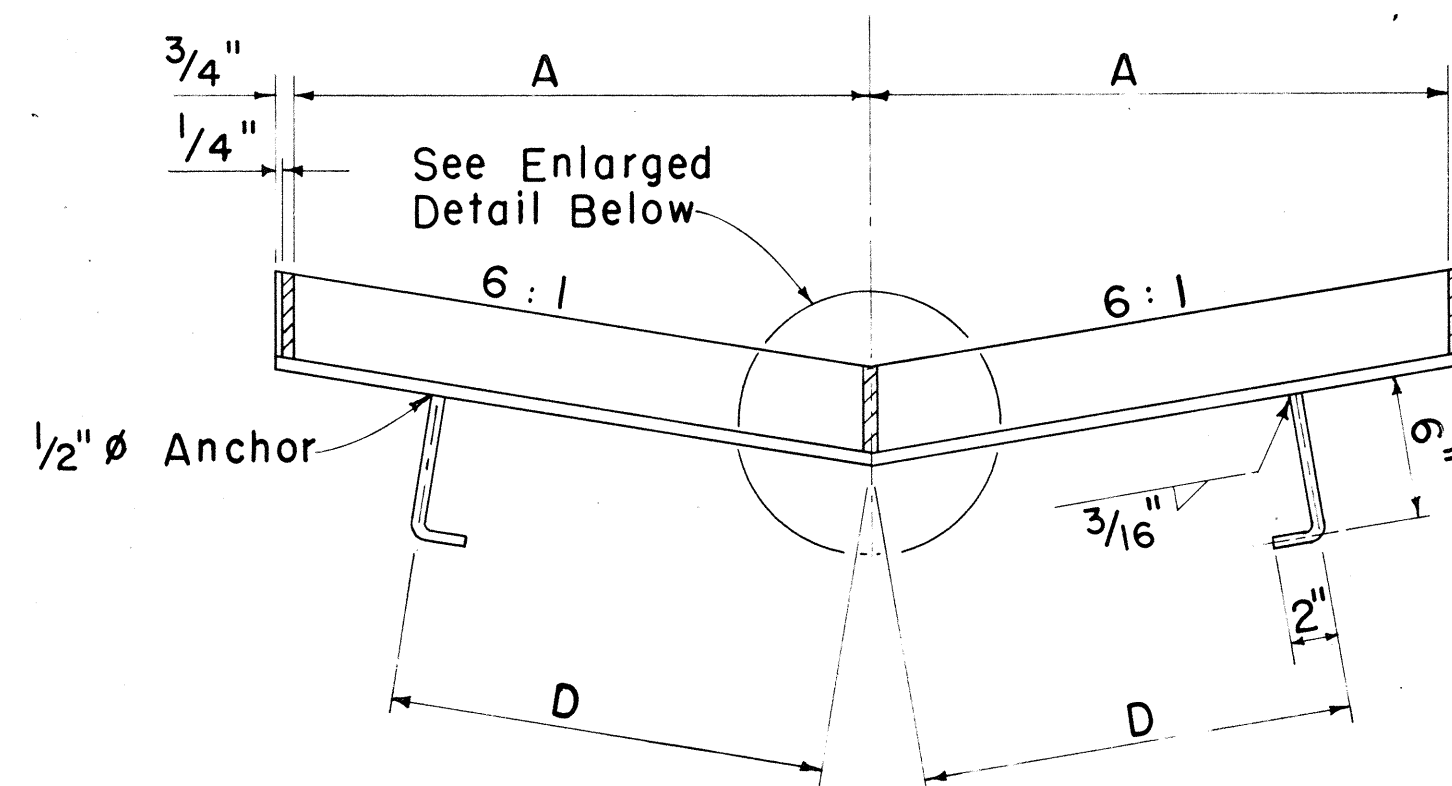


ORIGINAL PLAN	SURVEY PLOTTED BY _____	DATE _____
NOTE BOOK	DRAWN BY _____	BY _____
	TRACED BY _____	BY _____
	DESIGNED BY _____	BY _____
	QUANTITIES BY _____	BY _____
No. _____	CHECKED BY _____	BY _____



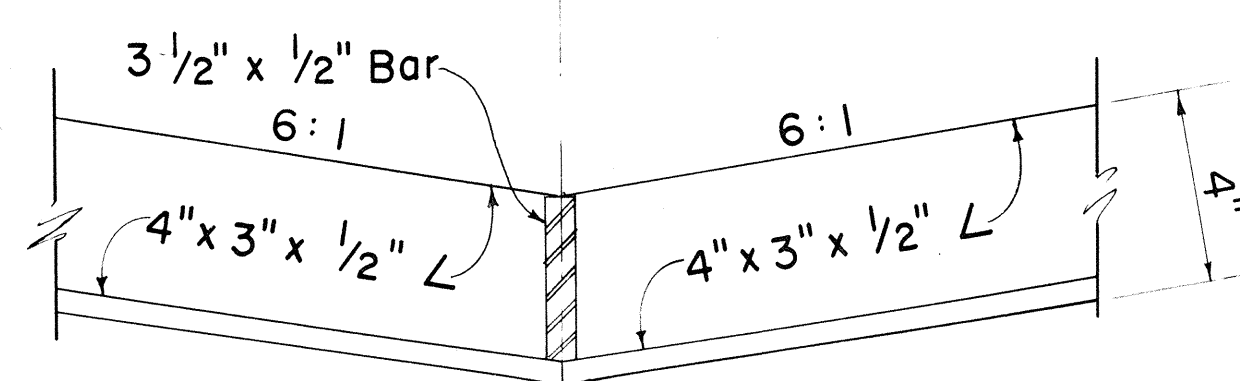
PLAN

Scale: $1\frac{1}{2}'' = 1' - 0''$



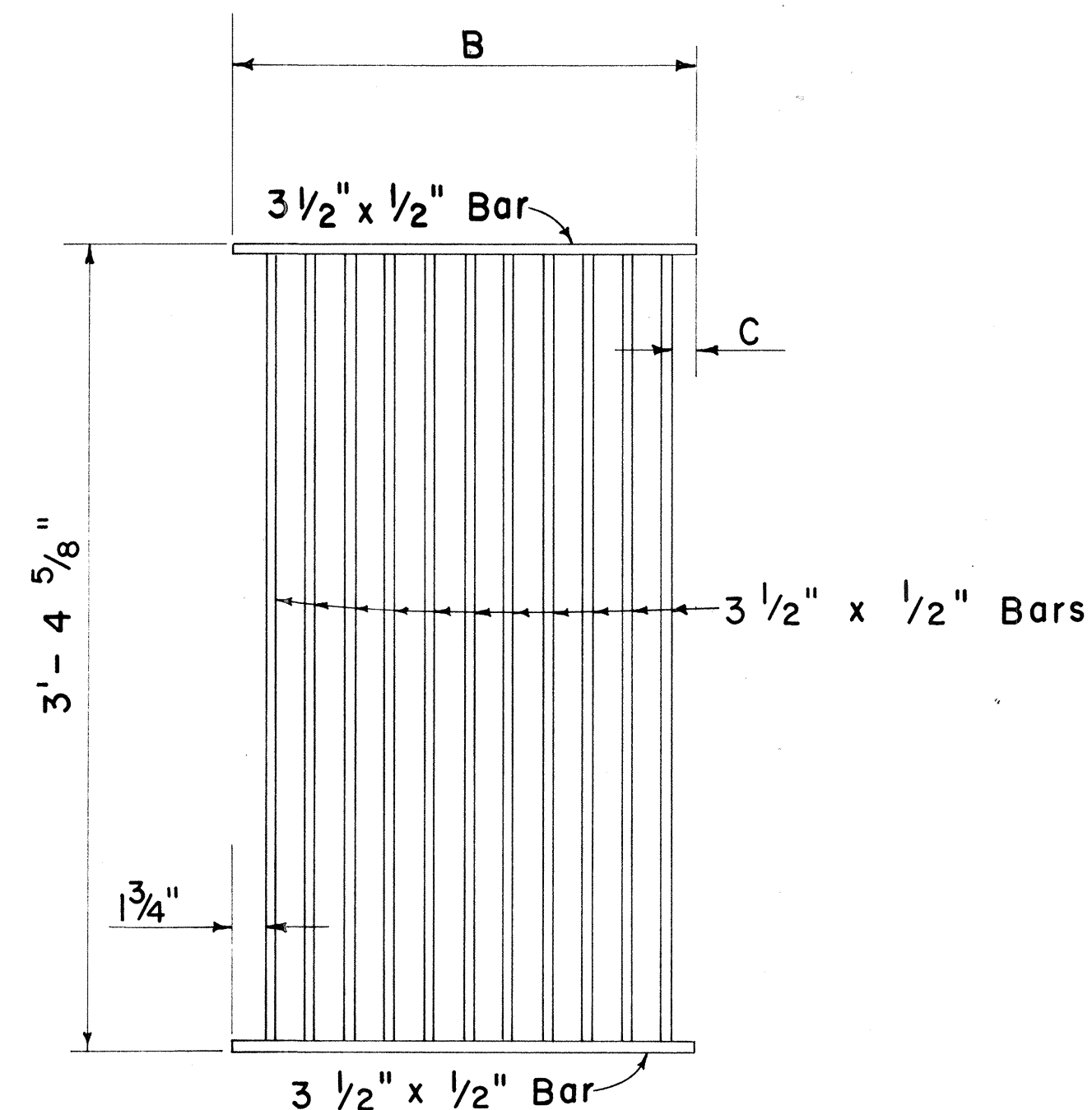
SECTION

Scale: $1\frac{1}{2}" = 1'-0"$



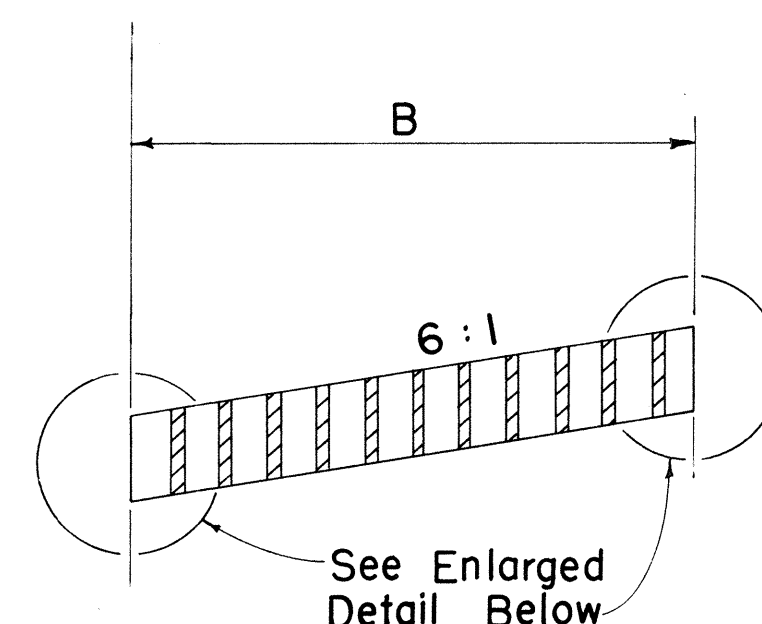
FRAME

Scale: $3'' = 1' - 0''$



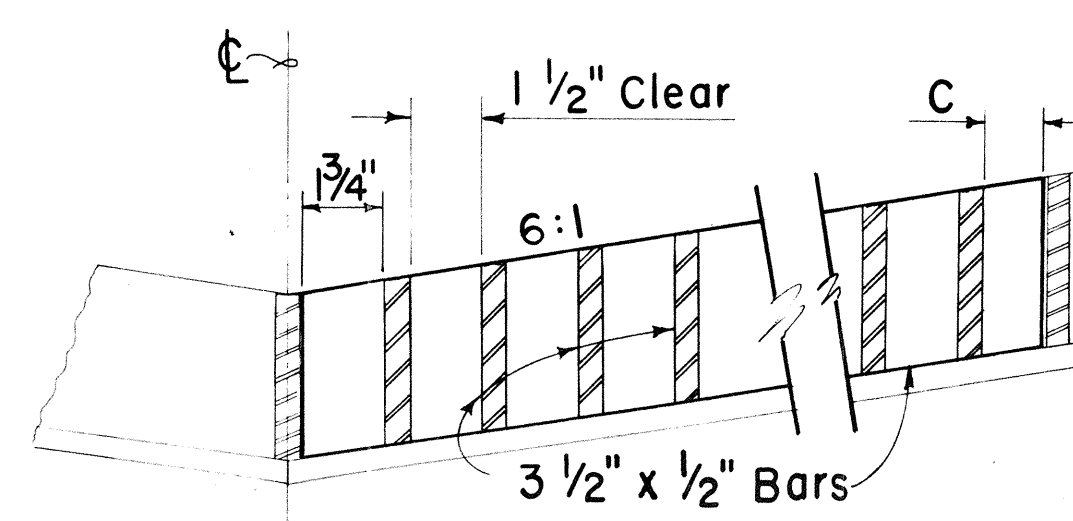
PLAN

Scale: $1\frac{1}{2}'' = 1' - 0''$



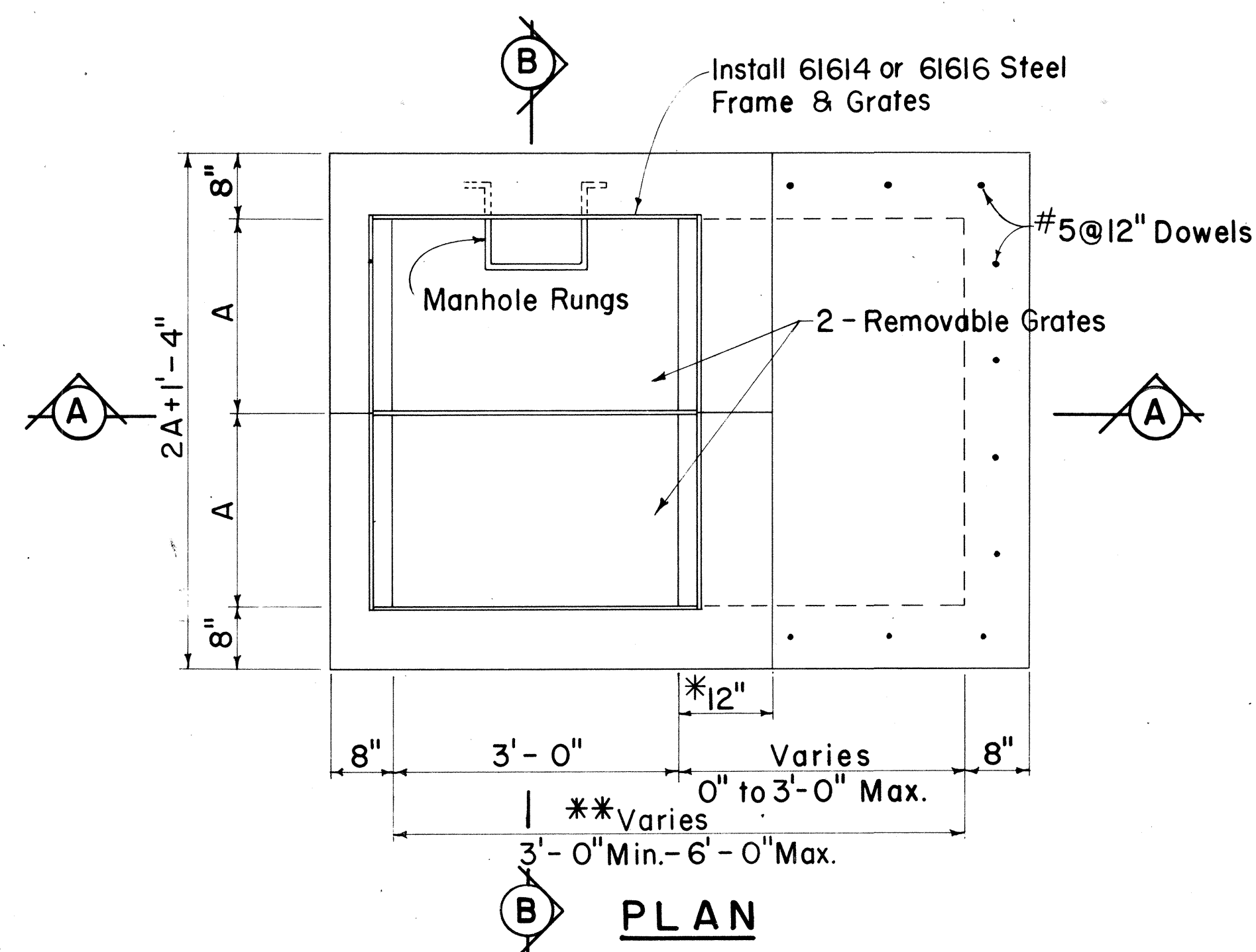
SECTION

Scale: $1\frac{1}{2}" = 1'-0"$

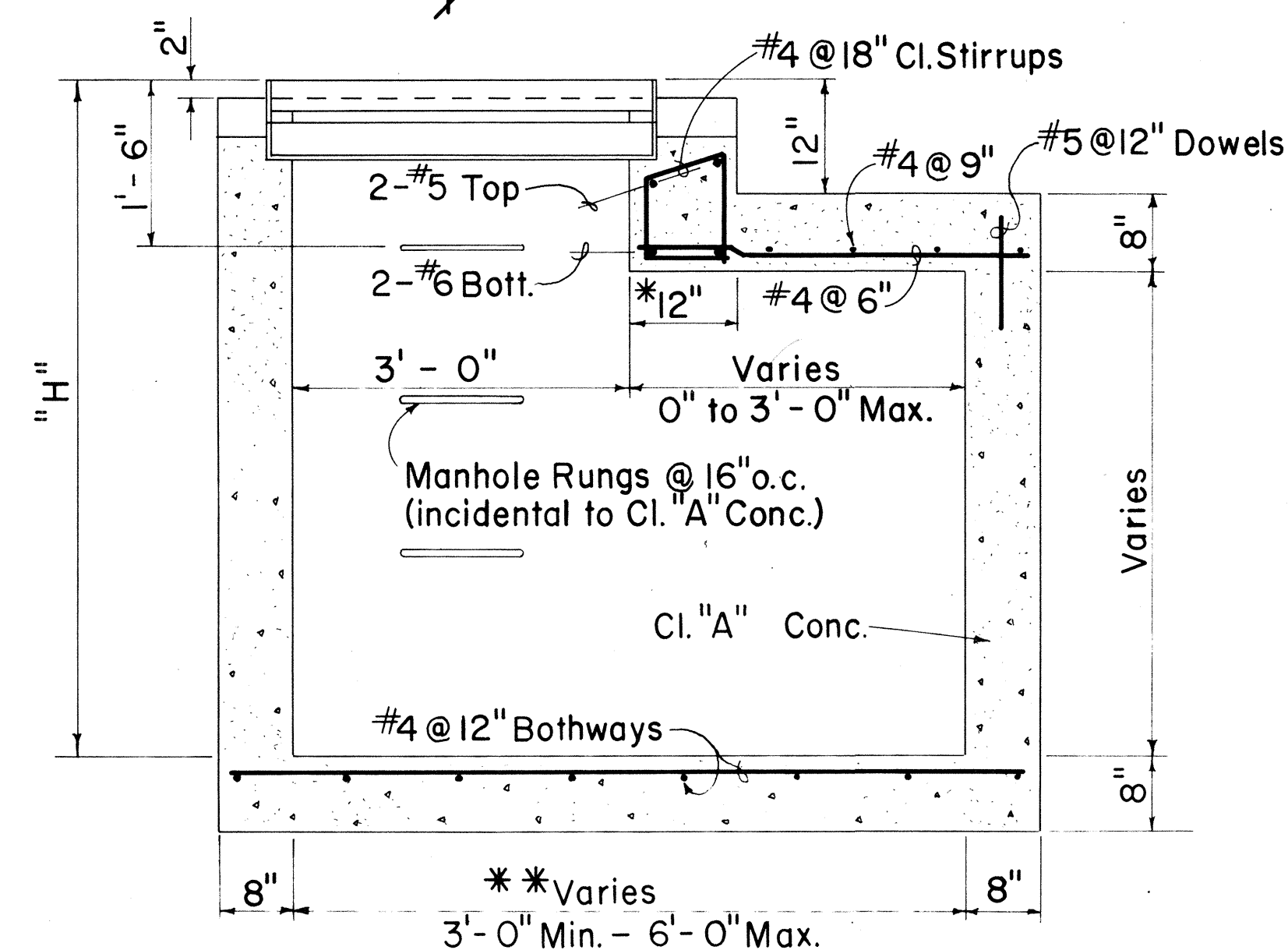


GRATE

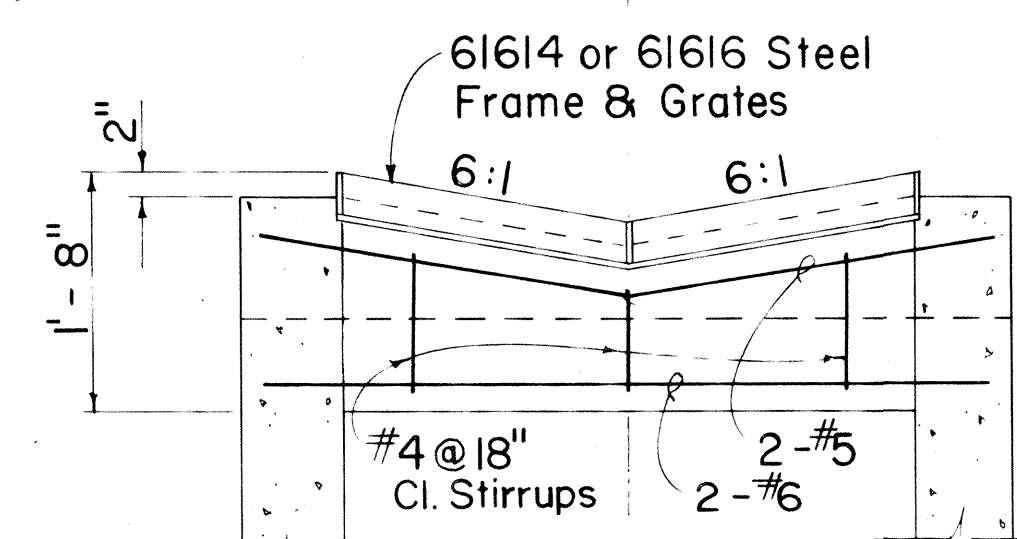
Scale : $3'' = 1' - 0''$



PLAN



SECTION A - A



SECTION B - B

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

DETAILS OF 61614 OR 61616 DROP INTAKE

- *For Minimum size box of 3'-0", use 8" and eliminate reinforcing steel shown in the top portion.
 **For Culverts larger than 30", the minimum dimension shall be D'.

- ### GENERAL NOTES
1. Grates and Frames shall be hot dip galvanized after fabrication, see specifications.
 2. All welds $\frac{3}{8}$ " unless otherwise noted.
 3. Refer to "Spacing Table" for Types 61614 & 61616 Drop Intake and Frame & Grates dimensions.
 4. The Frame & Grate materials shall conform to the specifications of ASTM Designation Structural Steel A283, Grade D and the Standard Specifications.
 5. Culvert shall leave Drop Intake from any position and any direction indicated by plans or ordered by the Engineer. Culverts may both enter and leave Drop Intake so that Drop Intake will act as manhole.
 6. Manhole Rungs (16"o.c.) are required when "H" is greater than 4 feet 6 inches. Only one rung (12 inches from the bottom) is required if "H" is 4 feet 6 inches or less. Manhole Rungs may be placed at any location as ordered by the Engineer.

TYPE	NO. BARS	A	B	C	D
61614	11	2' - 0"	1' - 11 1/2"	1 1/4"	1' - 6"
61616	17	3' - 0"	2' - 11 3/8"	1 1/8"	2' - 0"

NO.	REVISION	APPROVED By	DATE

APPROVAL RECOMMENDED:

HYDRAULIC DESIGN ENGINEER

52-17-69
DATE

APPROVED:

ASSISTANT CHIEF, ENGINEERING

2-17-89
DATE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

STANDARD DETAILS

TYPE 61614 & 61616

TYPE 61614 & 61616
GRATED DROP INTAKES

Scales: As Noted

Date: Feb. 1969

SHEET No. 2 OF 2 SHEETS DH 8