

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	1-H-1(57)-18	1978	78	171

GENERAL NOTES

- Grates and Frames shall be hot dip galvanized after fabrication, see specifications.
- All welds $\frac{3}{8}$ " unless otherwise noted.
- Refer to "Spacing Table" for Types 61614 & 61616 Drop Intake and Frame & Grates dimensions.
- The Frame & Grate materials shall conform to the specifications of ASTM Designation Structural Steel A283, Grade D and the Standard Specifications.
- 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.
- 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.

SPACING TABLE					
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
1	Curb for Top of Fill Gutters	H.L.	6-5-71

APPROVAL RECOMMENDED:

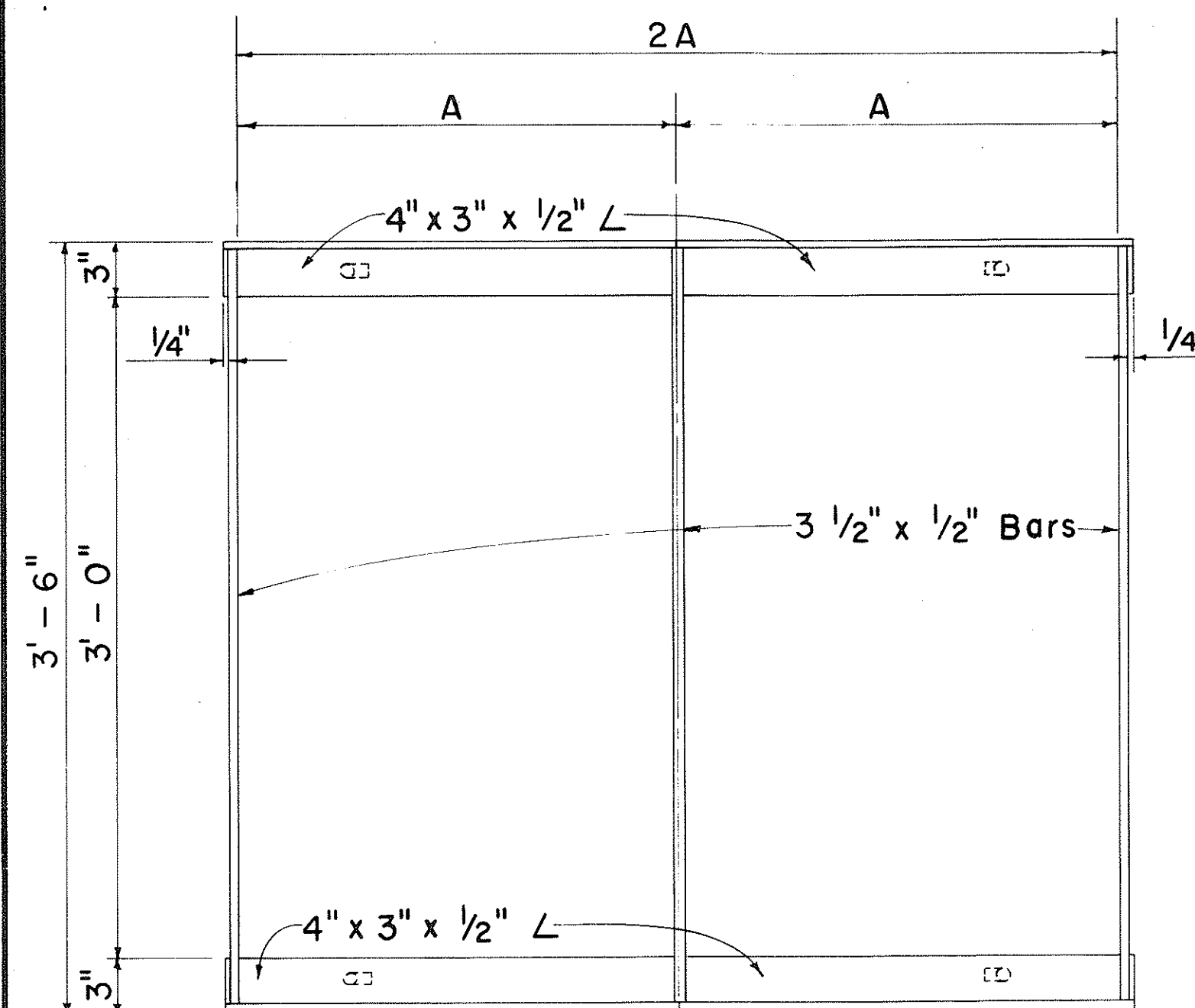
J. Sakano 12-17-69
HYDRAULIC DESIGN ENGINEER DATE

APPROVED: *John J. Sakano* 12-17-69
ASSISTANT CHIEF, ENGINEERING DATE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
STANDARD DETAILS
TYPE 61614 & 61616
GRATED DROP INTAKES

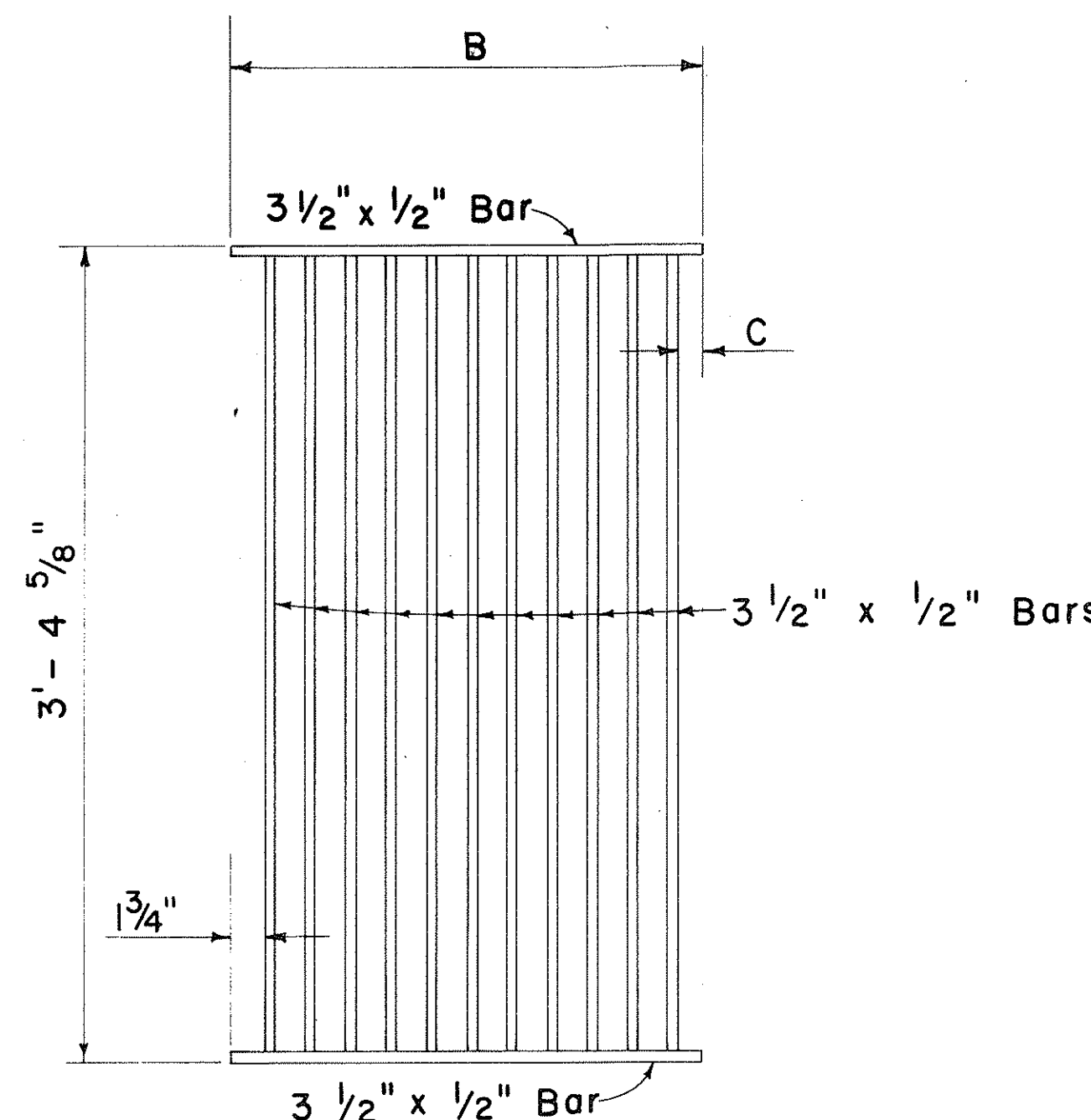
Scales: As Noted Date: Feb. 1969

SHEET No. 35 OF 35 SHEETS DH 8



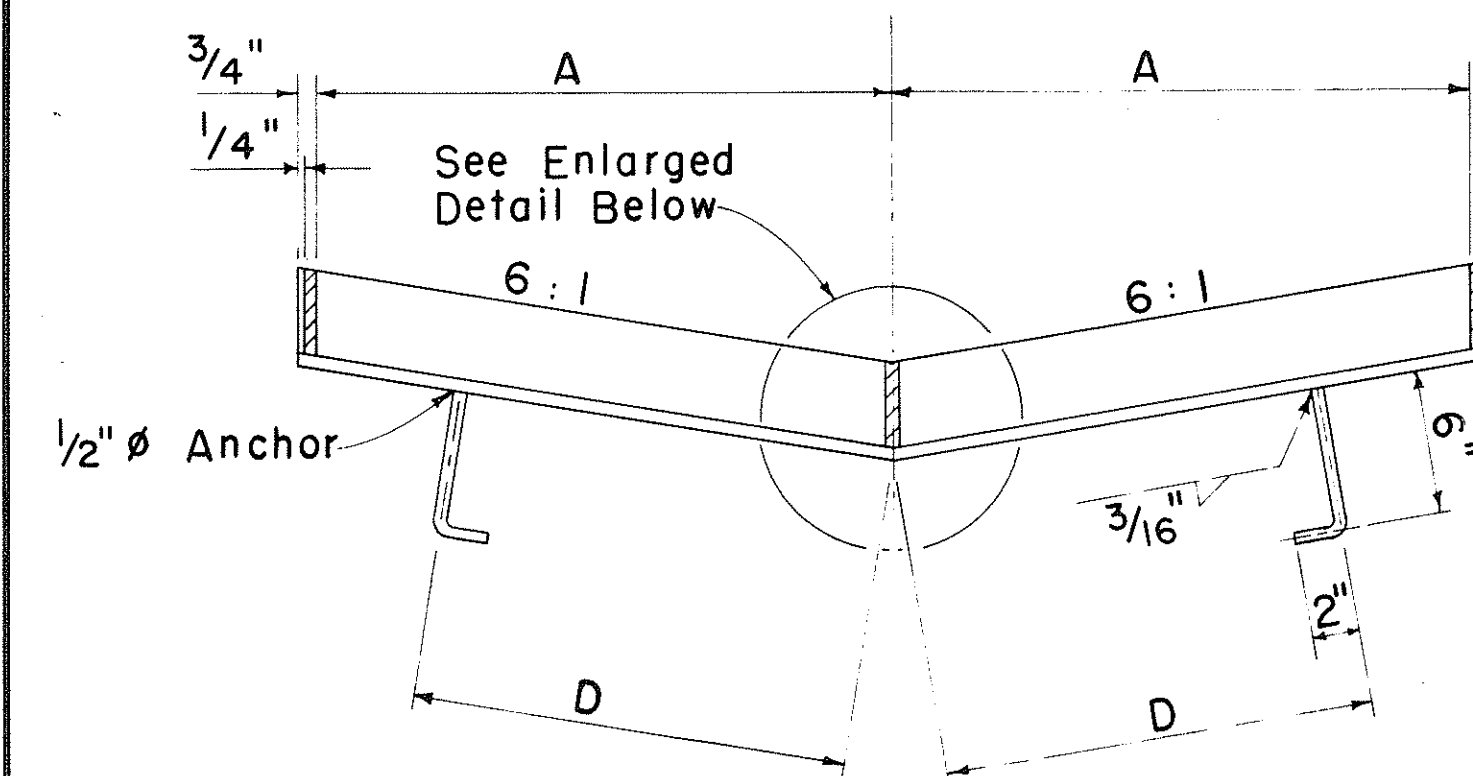
PLAN

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



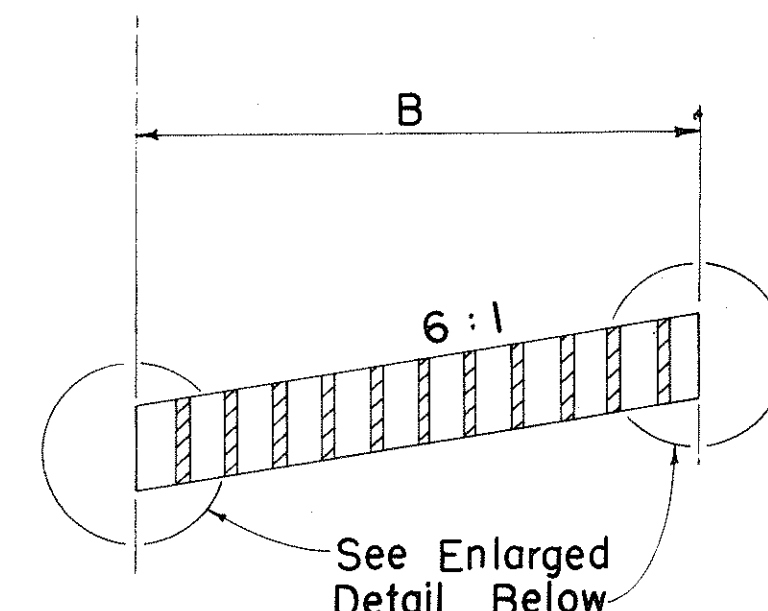
PLAN

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



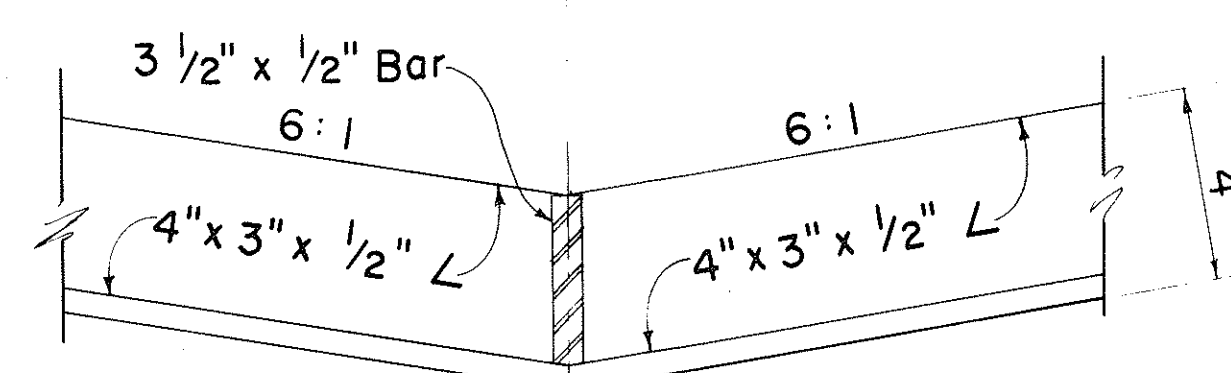
SECTION

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



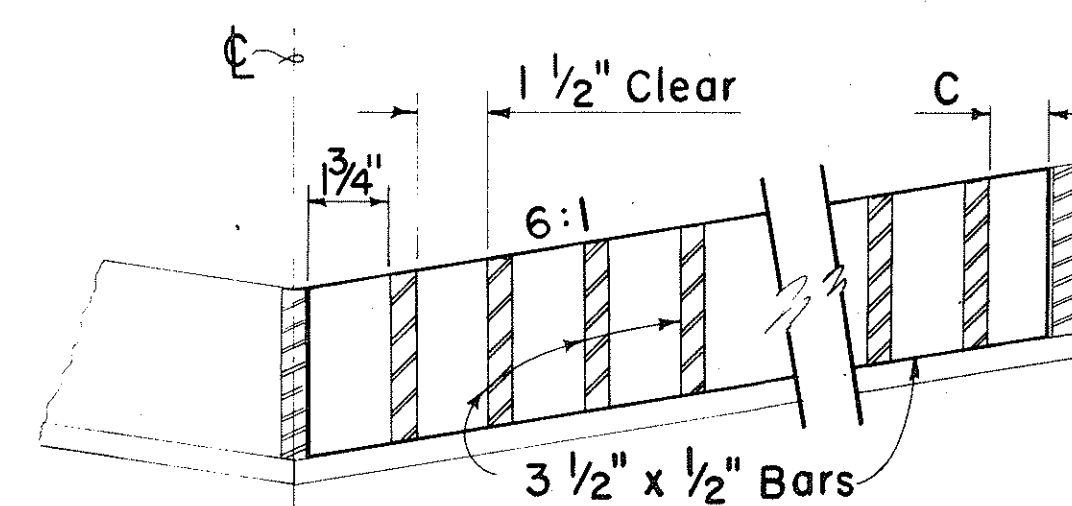
SECTION

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



FRAME

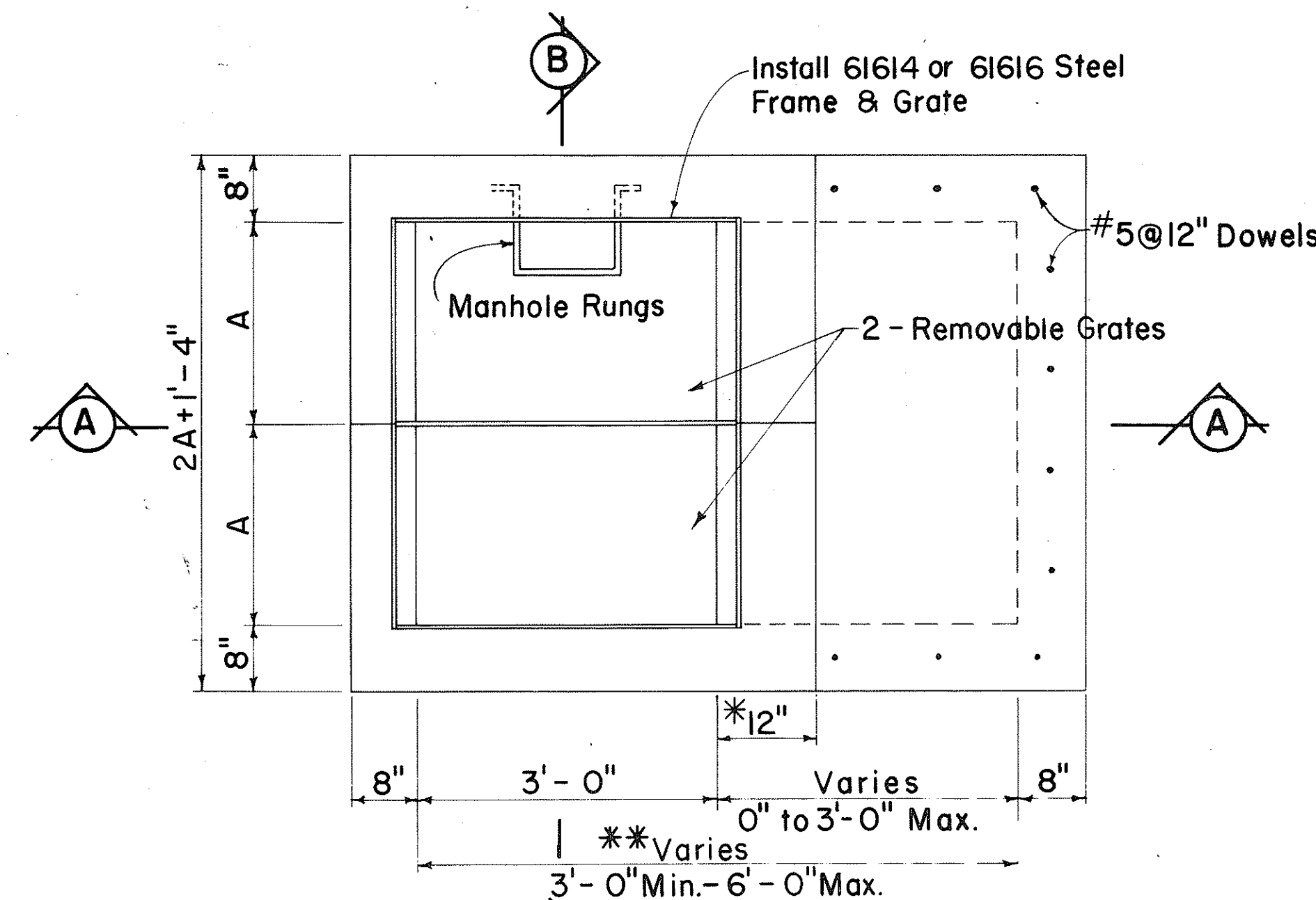
Scale: 3" = 1'-0"



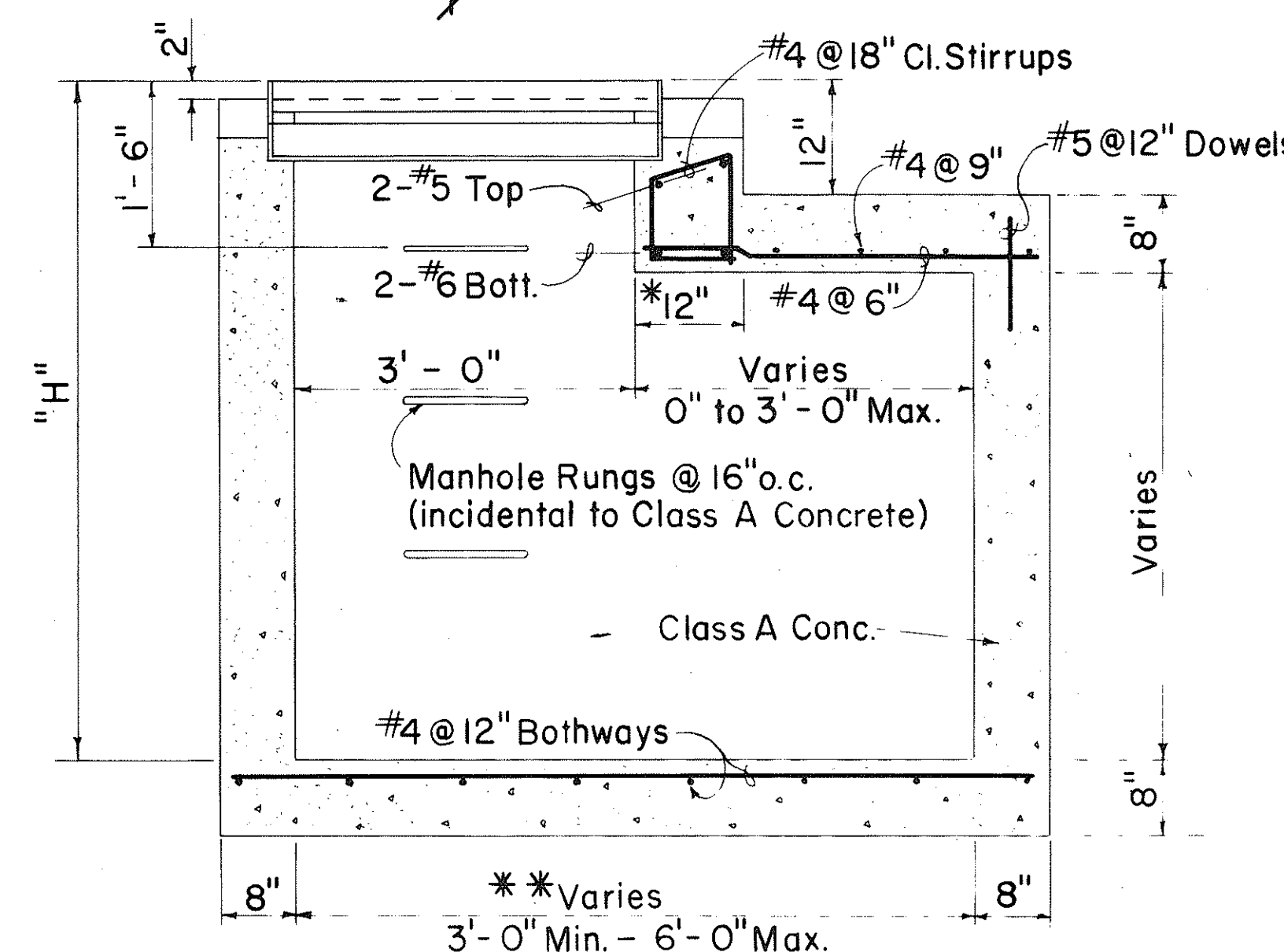
GRATE

Scale: 3" = 1'-0"

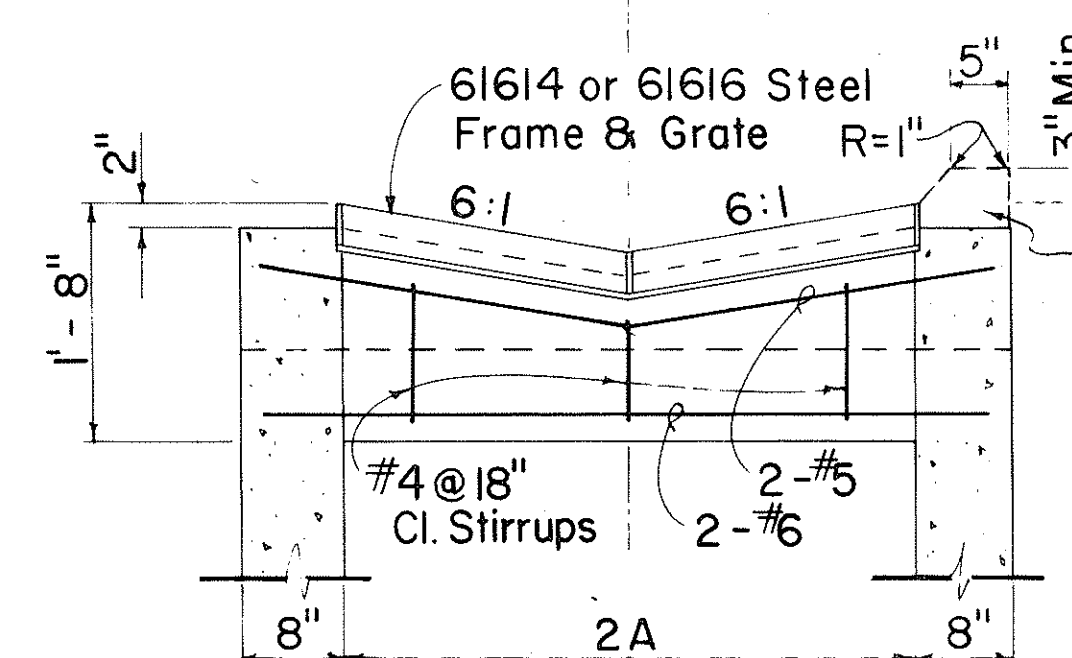
DETAILS OF TYPE 61614 OR 61616 STEEL FRAME AND GRATE



PLAN



SECTION A-A



SECTION B-B

DETAILS OF 61614 OR 61616 DROP INTAKE

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

- *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.

ORIGINAL	DATE
PLAN	
TRACED BY	
DESIGNED BY	
QUANTITIES BY	
CHECKED BY	
NO.	