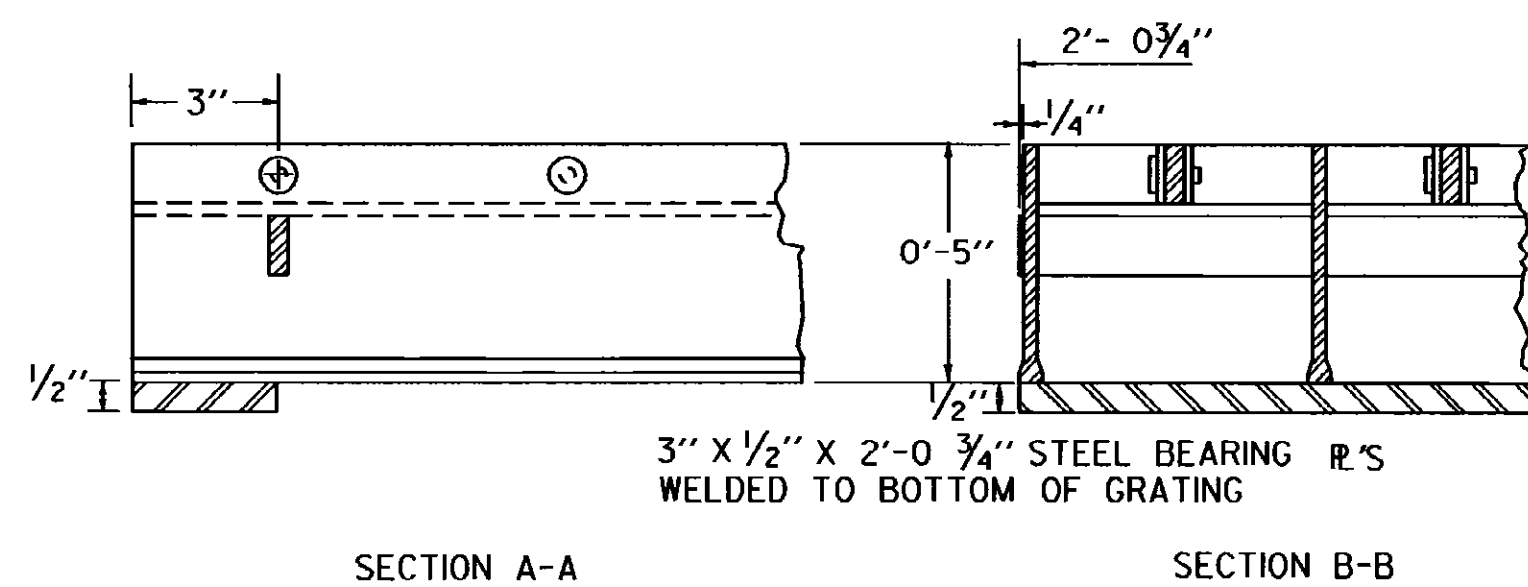


GRATE SIZE SINGLE 24 3/4" X 30"  
DOUBLE 24 3/4" X 54"

WEIGHT 95 LBS OR MORE  
GRATES SHALL BE CAPABLE OF SUPPORTING H-20 (32,000 LB. AXLE LOAD) INCLUDING 30% IMPACT.

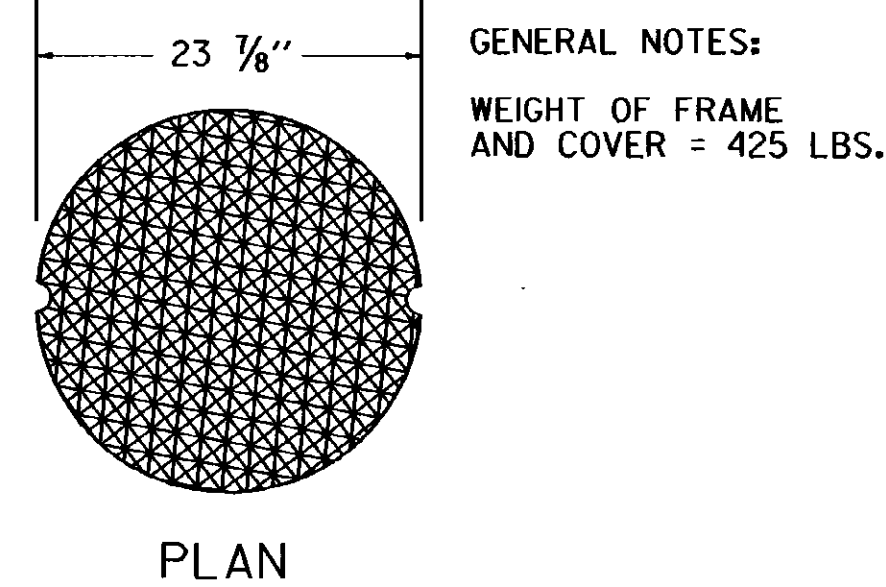
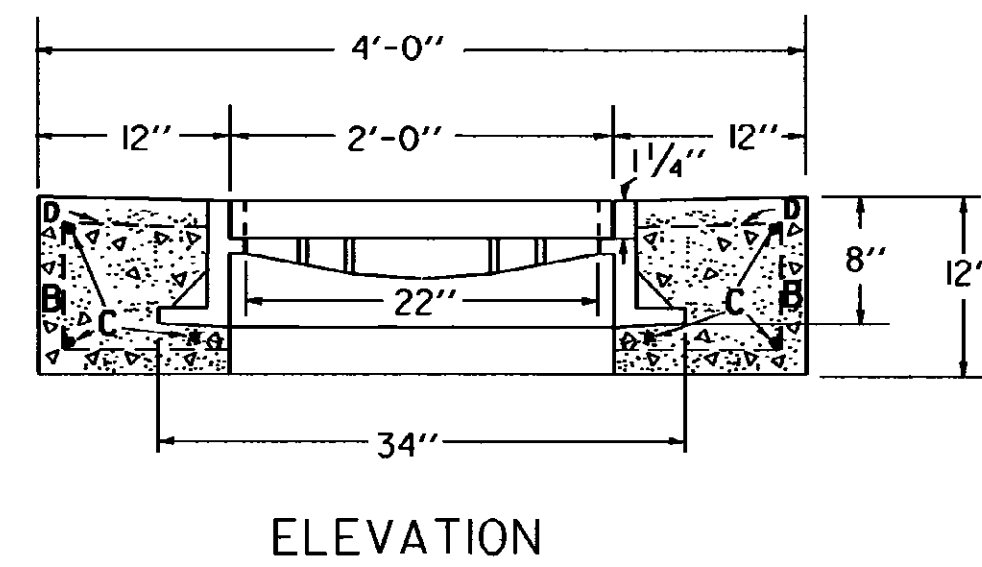
UNIT STRESSES (LBS PER SQ. IN.)	18,000	20,000
MAIN BAR PARALLEL TO TRAFFIC	H-20 49"	53"
MAIN BAR PERPENDICULAR TO TRAFFIC	H-20 39"	42"



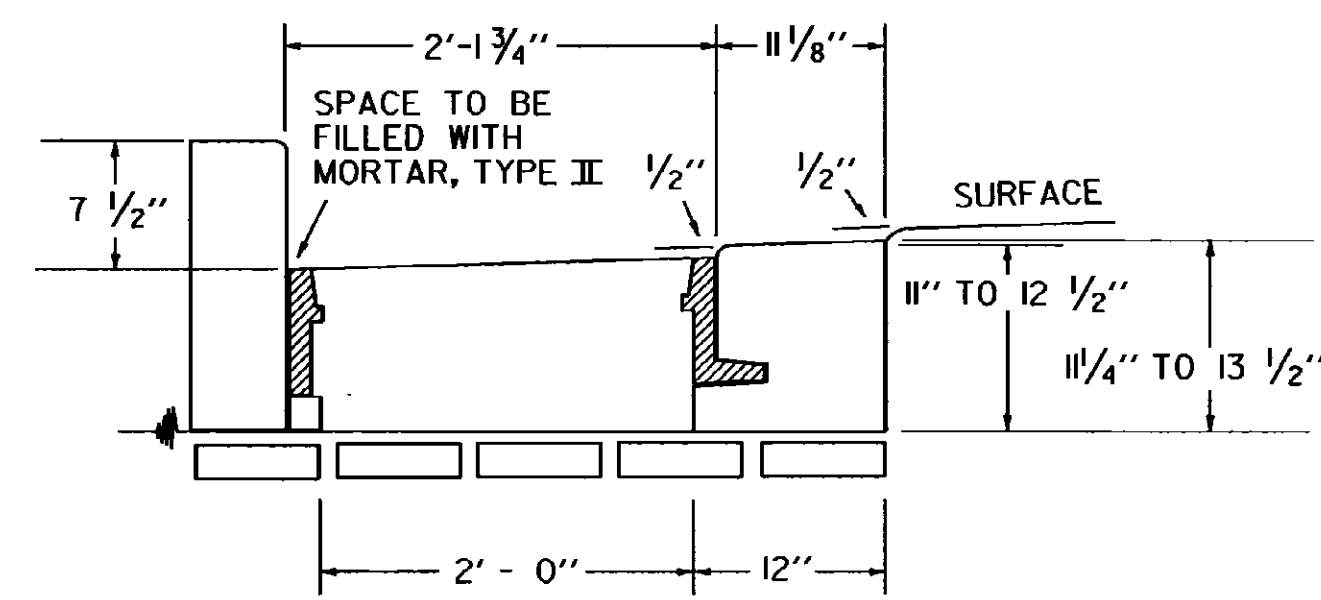
CAST IRON COVER WITH FRAME

BAR	NO.	LENGTH	
B	4	8"	3'-8" 8"
C	6	3'-8"	STRAIGHT
D	4	3'-8"	STRAIGHT

ALL REINFORCING STEEL TO BE No. 5 DEFORMED BARS

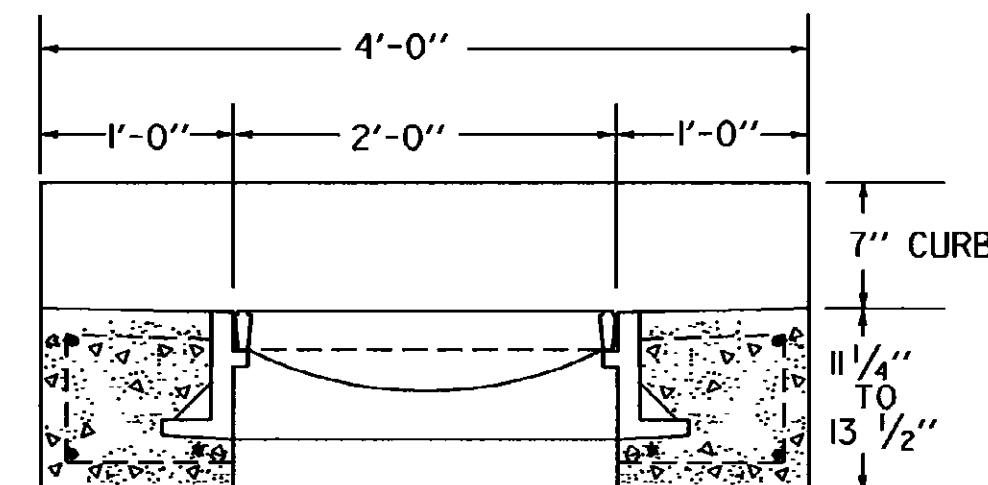


CAST IRON GRATE WITH FRAME



ELEVATION OF REINFORCED CONCRETE DROP INLET WITH VERTICAL GRANITE CURB AND 3 FLANGE CAST IRON FRAME FOR CAST IRON GRATE

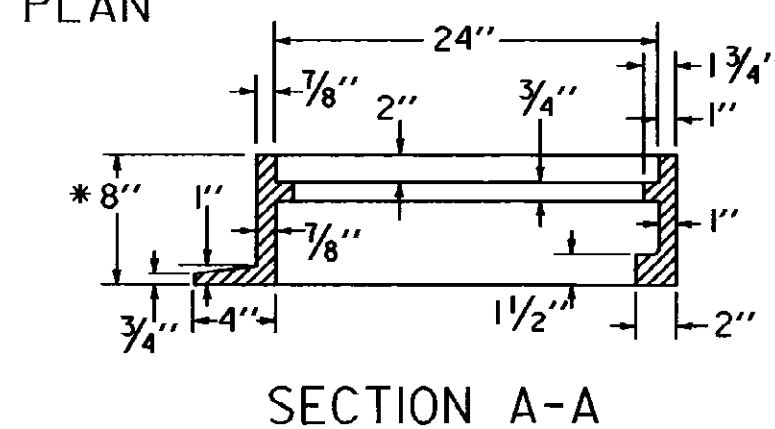
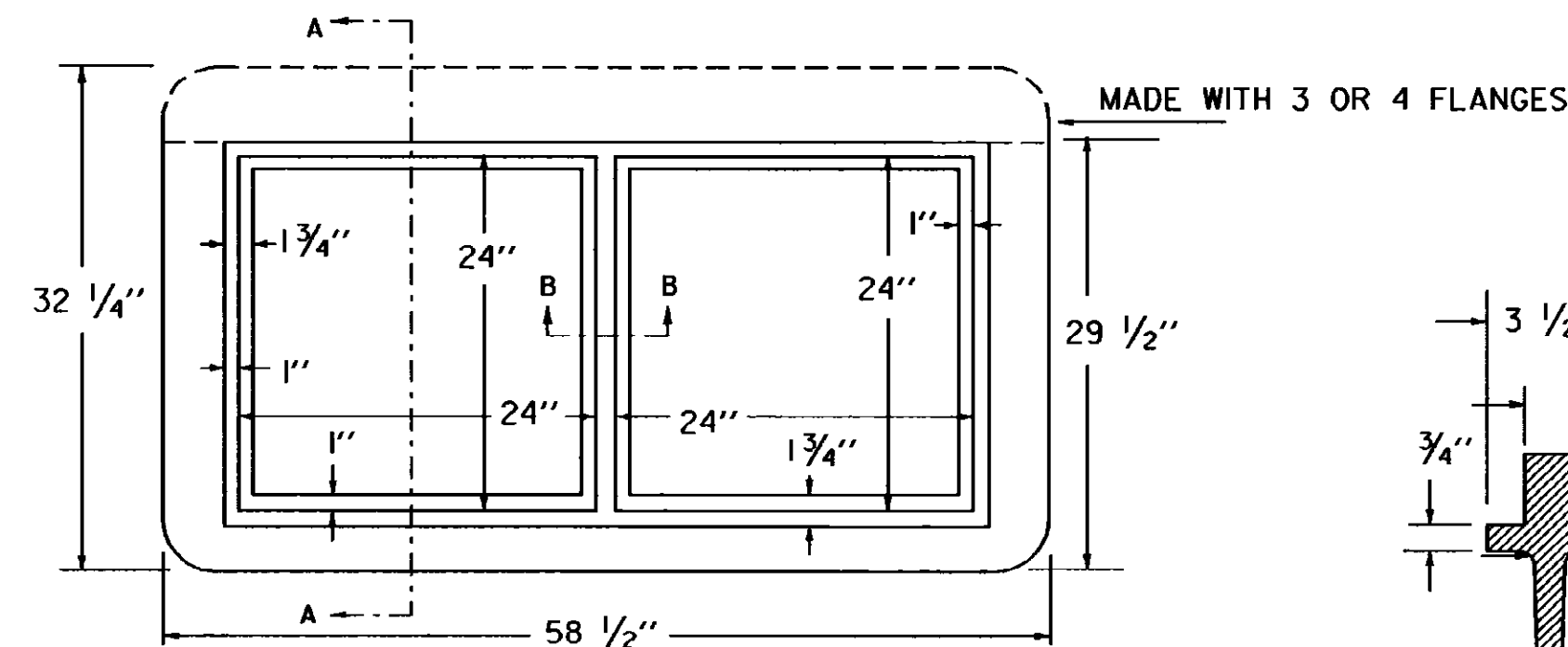
SEE STANDARD D-9 FOR CONCRETE VOLUME, REINFORCING STEEL SCHEDULE, AND CURB JOINT DETAIL.



ELEVATION

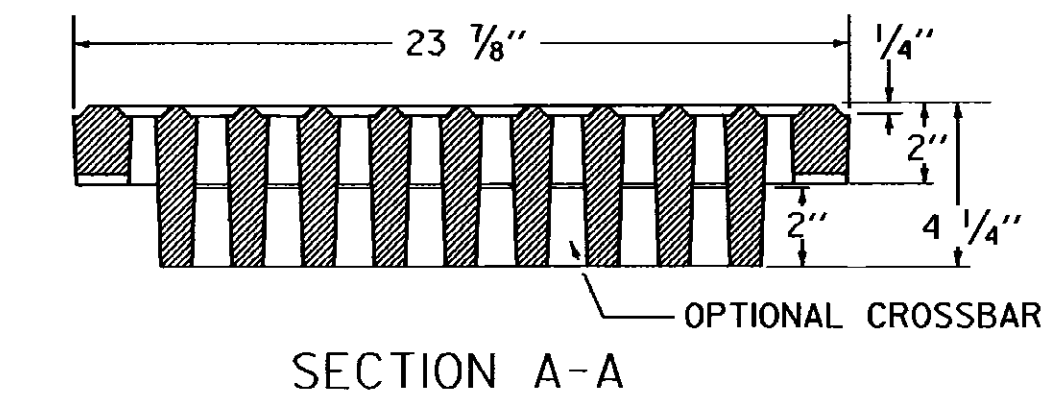
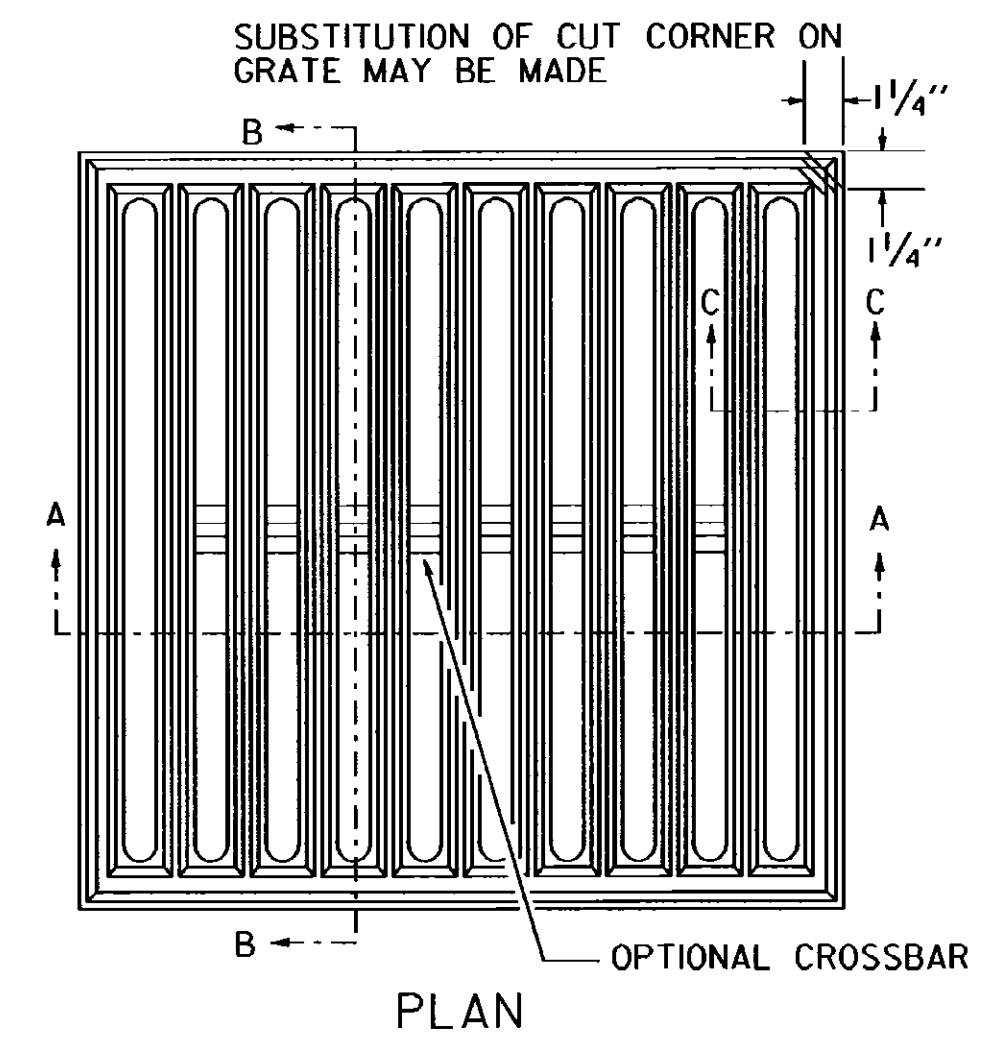
WEIGHT OF 3 FLANGED FRAME AND GRATE

GRATE	220 LBS
FRAME	260 LBS
TOTAL	480 LBS

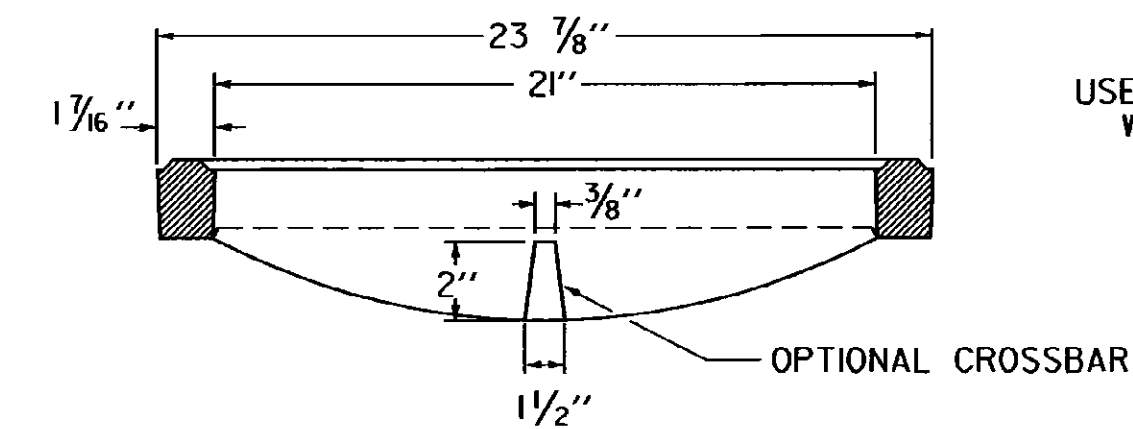


RECTANGULAR CAST IRON FRAME FOR TWO 24" SQUARE CAST IRON GRATES

CAST IRON GRATE, TYPE A

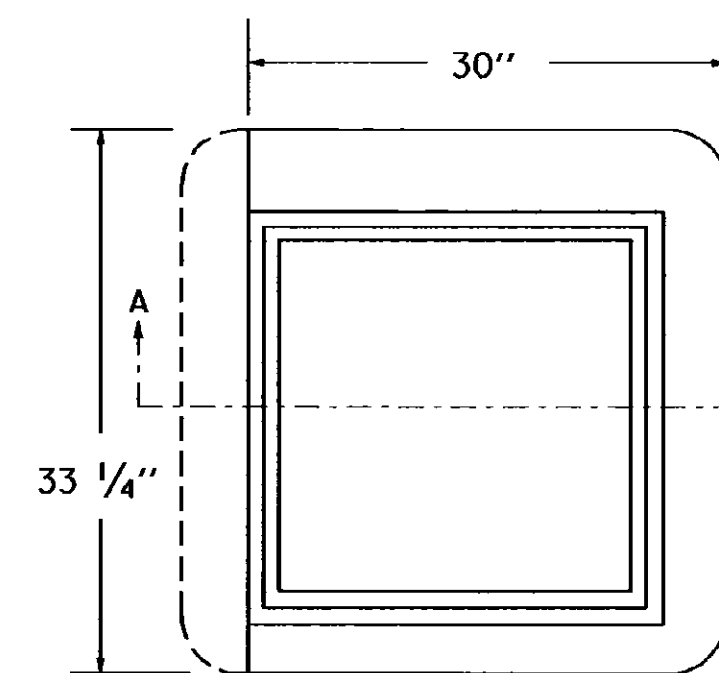


SECTION A-A

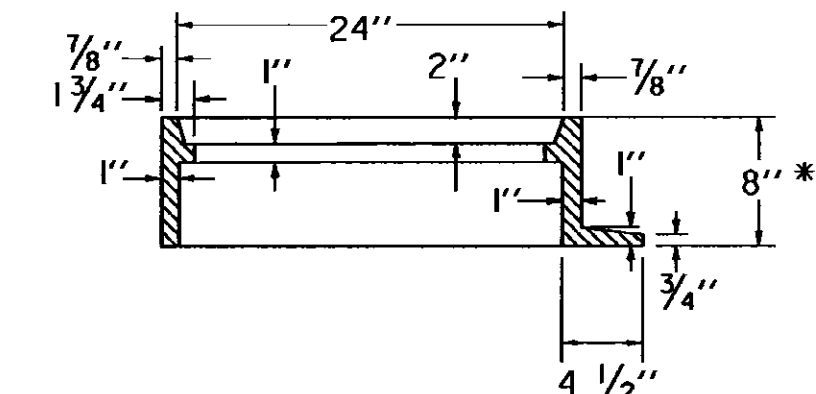


SECTION B-B

USE OF THE TYPE A GRATE IS PROHIBITED WHERE BICYCLE TRAFFIC IS EXPECTED



SQUARE CAST IRON FRAME FOR CAST IRON GRATE TYPE A



SECTION A-A

\* NOTE: FRAME DEPTH TO BE "6" WHEN USED IN CONJUNCTION WITH DROP INLET DETAILED ON STANDARD D-6.

THIS FRAME TO BE PLACED IN DROP INLET TOP BEFORE CONCRETE IS POURED.  
4 FLANGES UNLESS OTHERWISE INDICATED. FRAMES TO BE FURNISHED WITH 3 FLANGES WHEN USED IN CONJUNCTION WITH CURB OR AS DIRECTED BY THE ENGINEER.

REVISIONS AND CORRECTIONS

DEC. 6, 1971 - ORIGINAL APPROVAL  
APR. 25, 1972 - CAST IRON COVER CHANGED FROM SQUARE TO CIRCULAR  
SEPT. 4, 1980 - OPTIONAL CROSSBAR ADDED TO A GRATE; NOTE ADDED TO A GRATE FRAME DETAIL  
AUG. 25, 1981 - NOTE ADDED RESTRICTING USE OF TYPE A GRATE  
JUNE 1, 1994 - REISSUED, WITHOUT CHANGE, UNDER NEW SIGNATURES.

APPROVED

APPROVED FOR THIS PROJECT AND/OR DESIGN IMPLEMENTATION FHWA FINAL APPROVAL PENDING.

*Richard R. MacArthur, P.E.*  
DIRECTOR OF ENGINEERING  
*Robert M. Mungler, PE*  
DESIGN ENGINEER

STEEL GRATE  
CAST IRON GRATE TYPE A  
CAST IRON COVER



STANDARD  
D-11