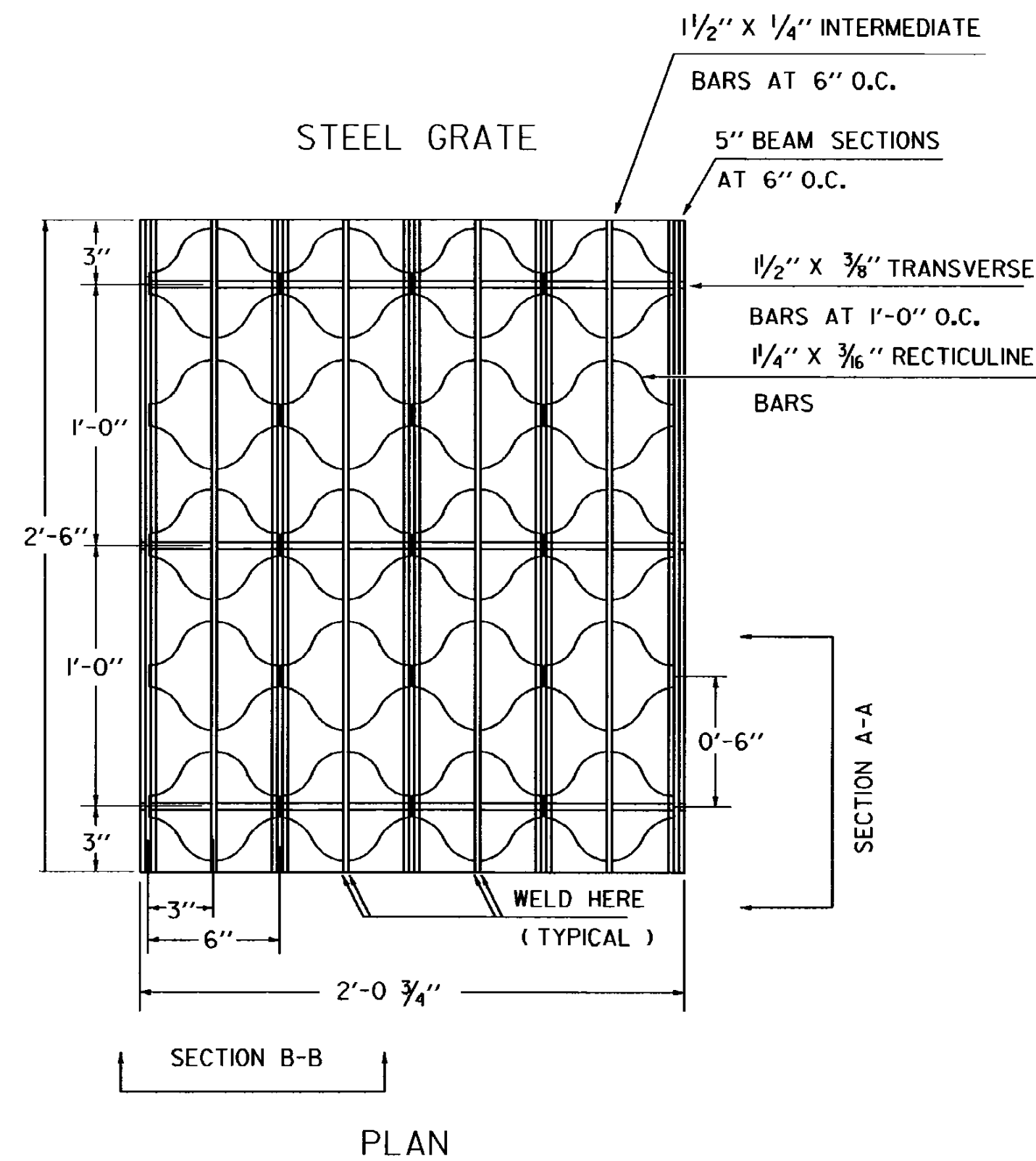
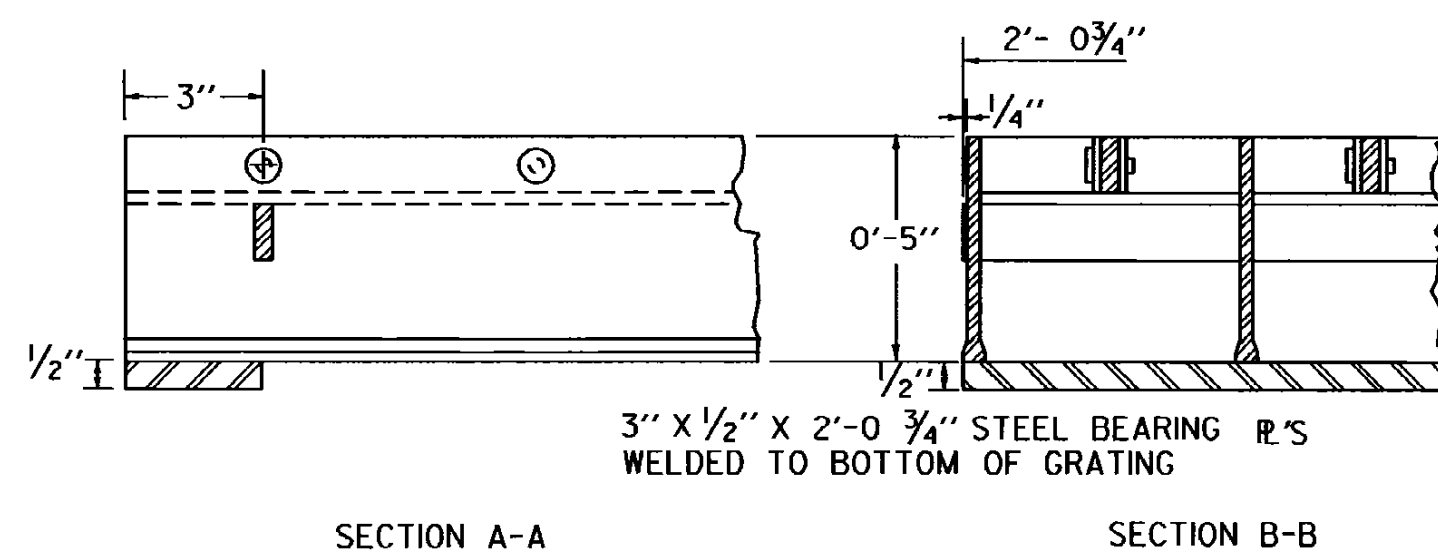




GRATE SIZE SINGLE 24 3/4" X 30"
DOUBLE 24 3/4" X 54"

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

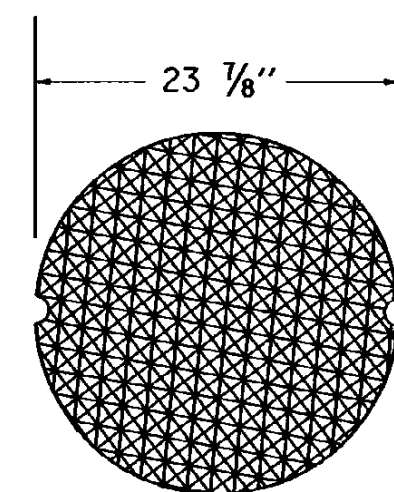
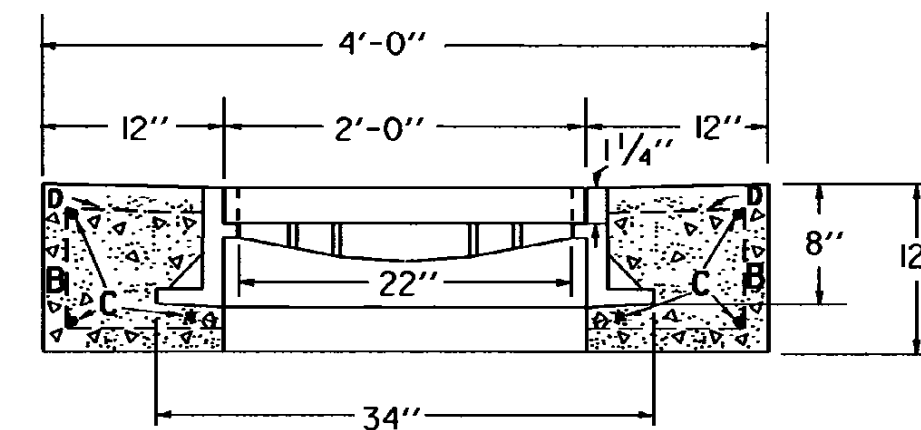
UNIT STRESSES (LBS PER SQ. IN.)	18,000	20,000
MAIN BAR PARALLEL TO TRAFFIC	H-20 49"	53"
MAIN BAR PERPENDICULAR TO TRAFFIC	H-20 39"	42"



CAST IRON COVER WITH FRAME

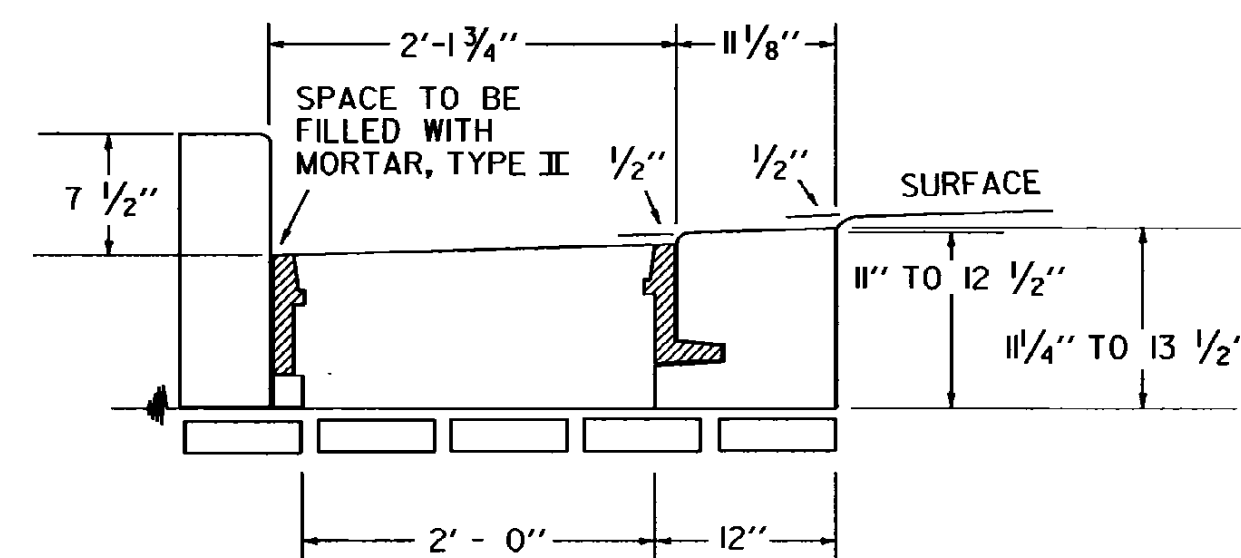
BAR	NO.	LENGTH	
B	4	8"	3'-8" 8"
C	6	3'-8"	STRAIGHT
D	4	3'-8"	STRAIGHT

ALL REINFORCING STEEL TO BE No. 5 DEFORMED BARS



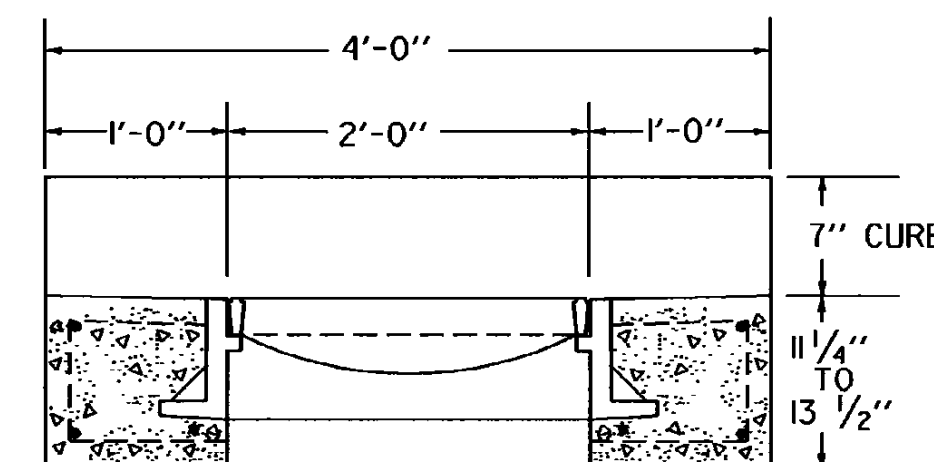
GENERAL NOTES:
WEIGHT OF FRAME AND COVER = 425 LBS.

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

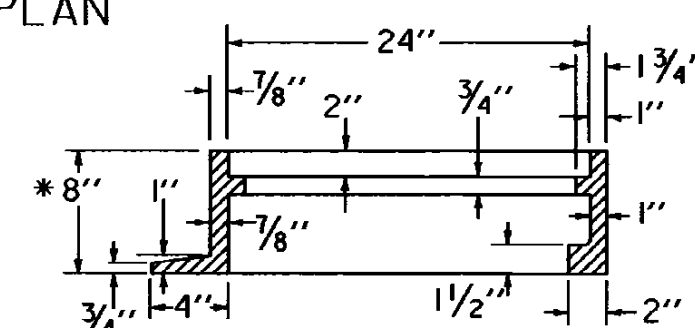
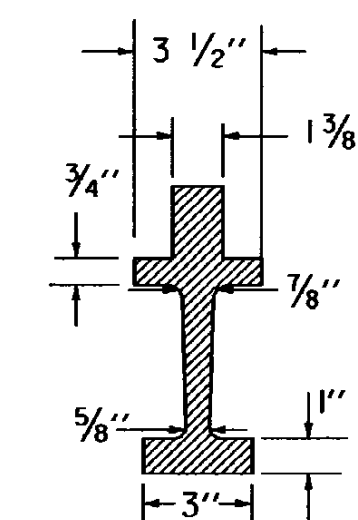
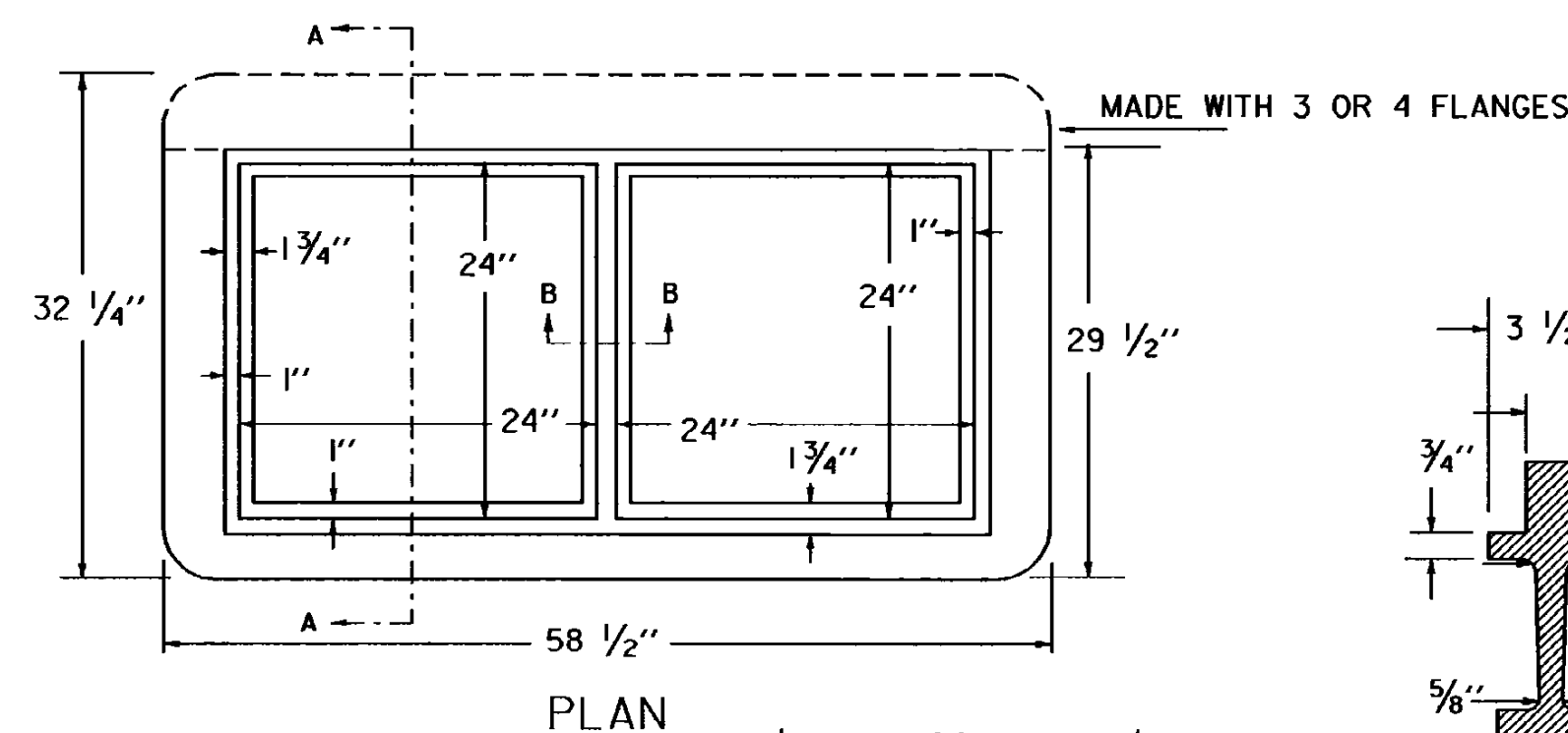
SEE STANDARD D-9 FOR CONCRETE VOLUME, REINFORCING STEEL SCHEDULE, AND CURB JOINT DETAIL.



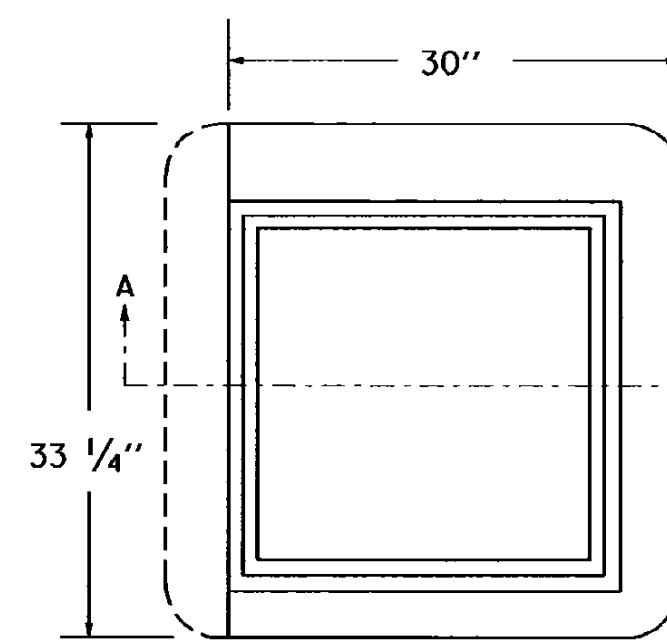
ELEVATION

WEIGHT OF 3 FLANGED FRAME AND GRATE

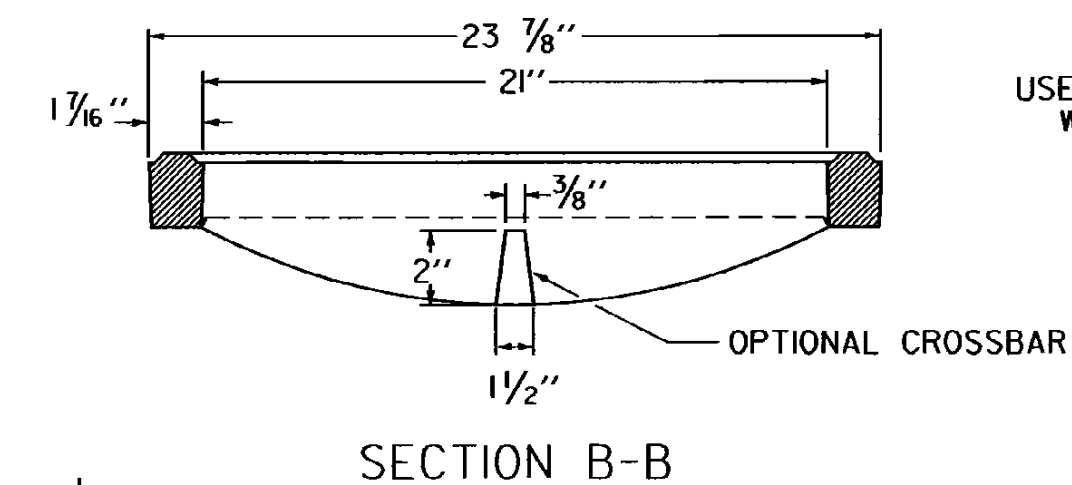
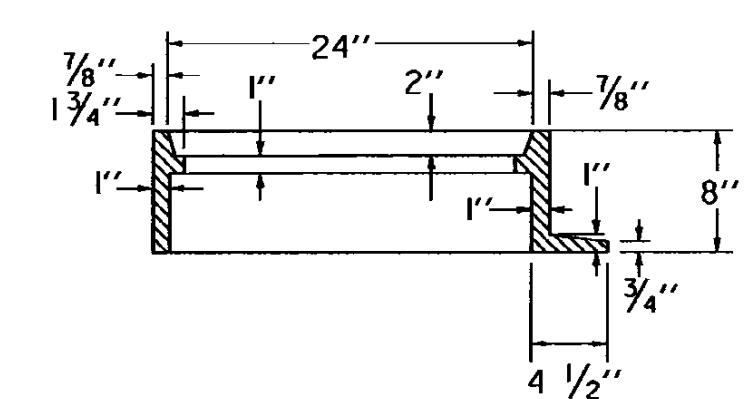
GRATE	220 LBS
FRAME	260 LBS
TOTAL	480 LBS



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



SQUARE CAST IRON FRAME FOR CAST IRON GRATE TYPE A



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

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.

Stephen B. MacArthur, P.E.
DIRECTOR OF ENGINEERING
Robert M. Murphy, PE
DESIGN ENGINEER

STEEL GRATE CAST IRON GRATE TYPE A CAST IRON COVER



STANDARD D-11