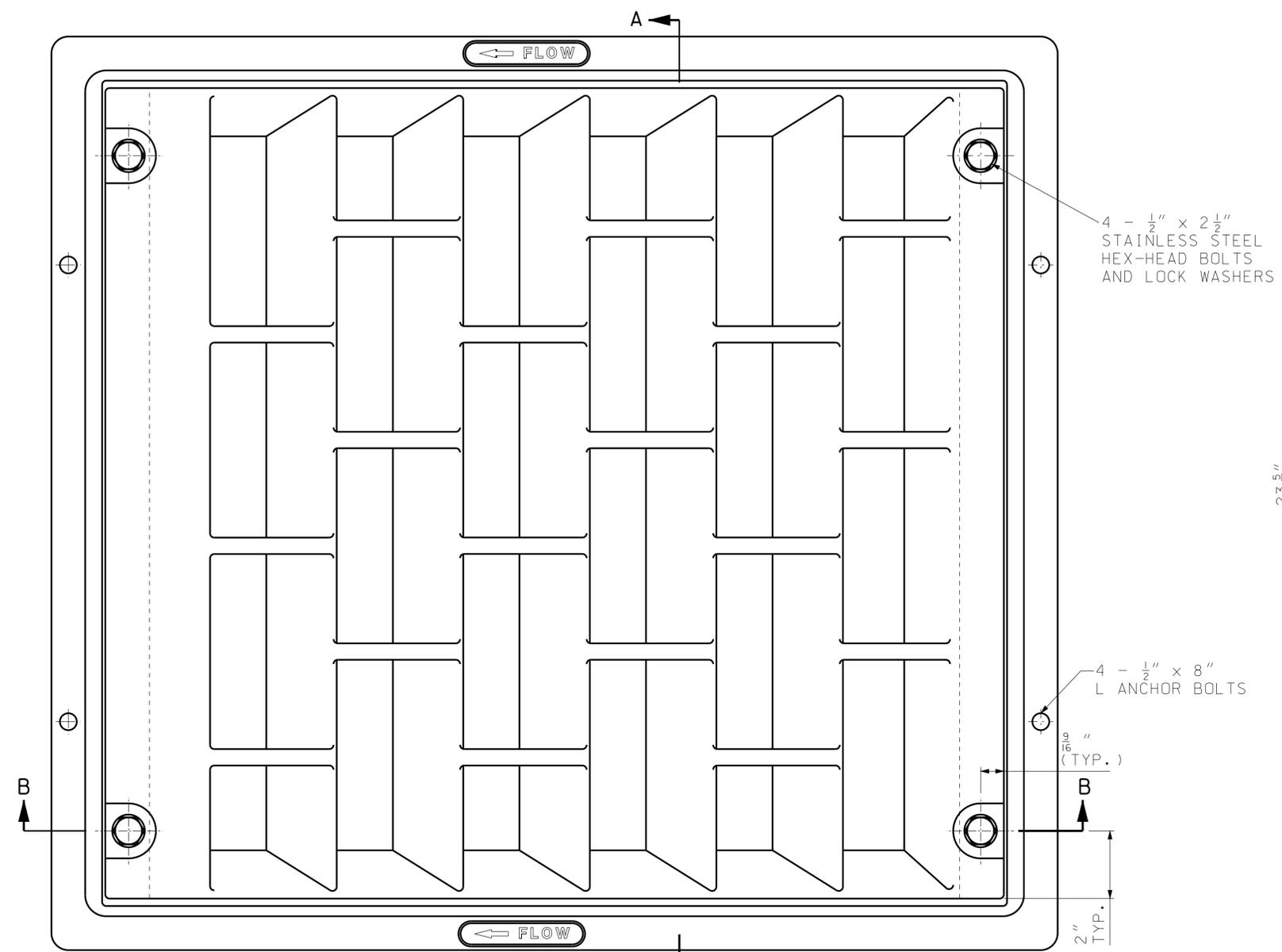


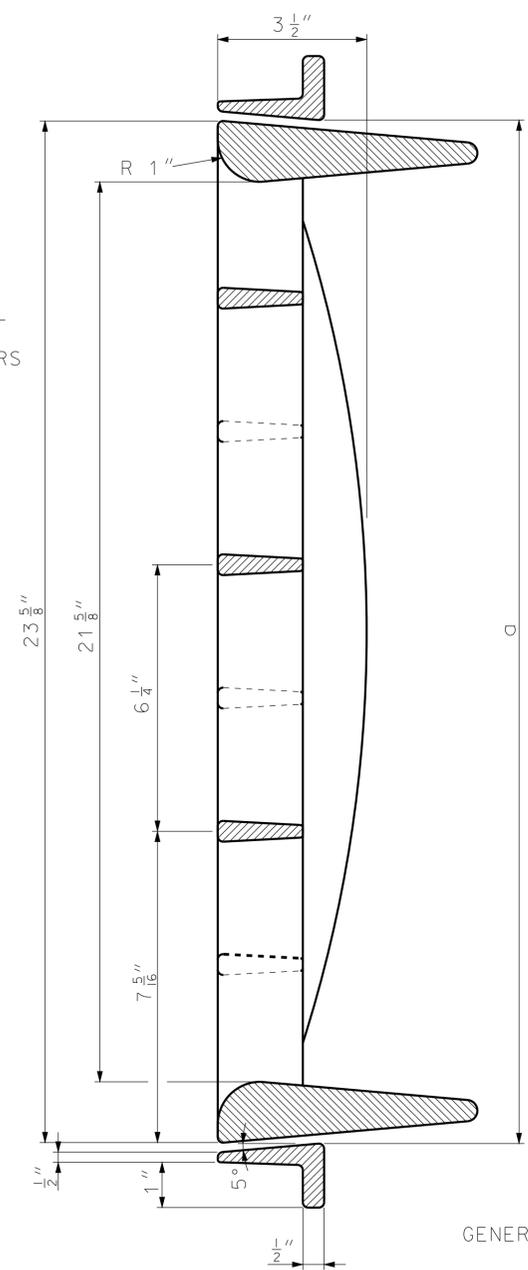
IF A SEAL IS PRESENT ON THIS SHEET IT HAS BEEN ELECTRONICALLY SEALED AND DATED.



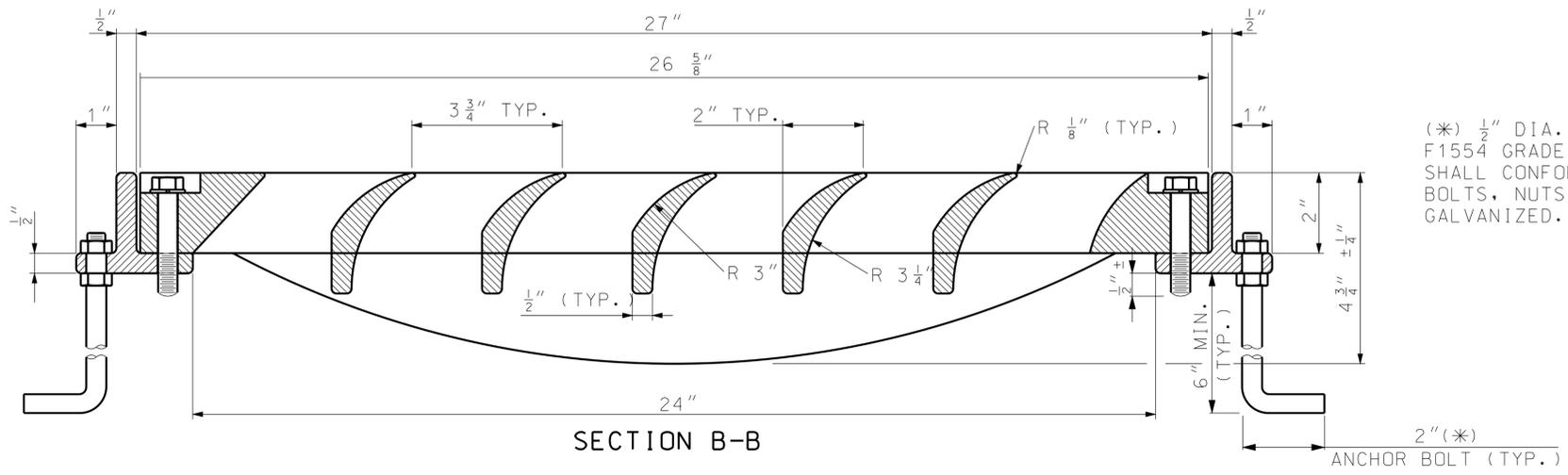
PLAN

4 - 1/2" x 2 1/2"
STAINLESS STEEL
HEX-HEAD BOLTS
AND LOCK WASHERS

4 - 1/2" x 8"
L ANCHOR BOLTS
9/16" (TYP.)



SECTION A-A



SECTION B-B

(*) 1/2" DIA. ANCHOR BOLT SHALL BE ASTM F1554 GRADE 55. NUTS FOR ANCHOR BOLT SHALL CONFORM TO ASTM A563. ANCHOR BOLTS, NUTS AND WASHERS SHALL BE GALVANIZED.

NOMINAL DIMENSIONS AND WEIGHTS					
OPENING		a	WEIGHT (LB.)	NUMBER OF	
WIDTH	LENGTH			ANCHOR BOLTS	STAINLESS STEEL BOLTS
2'-0"	2'-0"	24"	200	4	4
4'-0"	2'-0"	48"	348	8	8

NOTE: TWO 2' X 2' GRATES MAY BE USED IN LIEU OF SINGLE 4' X 2' GRATES.

INSTALLATION INSTRUCTIONS:

DRILL AND TAP FRAME.

INSTALL 1/2" DIA. BOLTS WITHOUT WASHERS BEFORE CONCRETE POUR TO FORM 1/2" ± BOLT EXTENSION INTO CONCRETE BELOW FRAME. LUBRICATE EXPOSED THREADS.

AFTER CONCRETE HARDENS SUFFICIENTLY, FINAL INSTALLATION SHALL REMOVE AND REINSTALL 1/2" DIA. BOLTS AND LOCK WASHERS THROUGH GRATE AND FRAME. TORQUE 1/2" DIA. BOLTS TO 35-40 FT. LB. APPLY THREAD ADHESIVE TO ALL 1/2" DIA. STAINLESS STEEL BOLTS.

GENERAL NOTES:

GRATES TO BE CONSTRUCTED OF CAST GRAY IRON AND MEET REQUIREMENTS OF AASHTO M 306. MINOR VARIATIONS IN VANE SHAPE TO MEET MANUFACTURER'S STANDARD PRACTICE ARE PERMITTED.

MINIMUM CLEAR OPEN AREA: 2.10 SQUARE FEET.

MoDOT MISSOURI HIGHWAYS AND TRANSPORTATION COMMISSION
 105 WEST CAPITOL JEFFERSON CITY, MO 65102
 1-888-ASK-MODOT (1-888-275-6636)

THIS MEDIA SHOULD NOT BE CONSIDERED A CERTIFIED DOCUMENT.

CURVED VANE GRATE AND FRAME