



All dimensions are in inches.  
 All stem threads are 29° stub acme right hand.  
 Ball bearing lift used on 48" and larger.

SIZE	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	
6	6	8	10	4	3/8	2 3/8	10	24	3	3	3 1/2	2 5/8	7	3 1/2	2	1 3/4	1/2		3/8	3 1/4	2 1/2 x 1/4	2 1/2 x 1/4	NONE	
8	8	10	11 1/4	4 7/8	7/8	2 7/8	10	24	3	3	3 3/4	2 1/2	9	3 3/4	2	1 3/4	1/2		3/8	3 1/2	1 3/4 x 1/4	2 1/2 x 1/4	(5x5) .079	
10	10	12	13 3/4	6	7/8	2 7/8	10	22	3 1/2	3 1/2	3 3/4	2 1/2	11	3 3/4	2	1 3/4	1/2		3/8	3 1/2	1 3/4 x 1/4	2 1/2 x 1/4	(5x5) .079	
12	12	14	15 3/4	7	7/8	2 7/8	10	24	4	4	3 1/2	3	13	4 1/2	2 1/4	2 1/4	1/2		3/8	4	1 3/4 x 1/4	2 1/2 x 1/4	(5x5) .079	
14	14	15 7/8	17 5/8	8	7/8	2 7/8	10	27 1/2	4 3/4	4 3/4	3 3/4	3 1/4	15	4 1/2	2 1/4	2 1/2	1/2		3/8	4 1/4	2 x 1 1/2 x 1/4	2 1/2 x 1/4	(5x5) .079	
15	15	17	18 3/4	9 1/2	7/8	2 7/8	10	30	5	5	4 1/2	3 1/2	16	5	2 1/4	2 3/4	1/2		3/8	4 1/4	2 x 1 1/2 x 1/4	2 1/2 x 1/4	(5x5) .079	
16	16	18 3/4	20 1/2	9 3/4	7/8	2 7/8	10	32	5 1/2	5 1/2	4 1/2	3 1/2	17	5 1/4	2 1/4	3	1/2		3/8	4 1/4	2 x 1 1/2 x 1/4	2 1/2 x 1/4	(6x6) .079	
18	18	21	23	10 1/2	1	3 1/8	12	34	6	6	4 1/2	4 1/4	19	5 3/4	2 1/4	3 3/4	5/8		3/8	4 1/2	2 x 1 1/2 x 1/4	4 x 3 x 1/4	(6x6) .079	
20	20	23 1/4	25	11 3/4	1	3 1/8	12	38	7	7	4 3/4	4	21	5 1/2	2 1/4	3	5/8		3/8	4 1/2	2 x 1 1/2 x 1/4	4 x 3 x 1/4	(6x6) .079	
21	21	24	25	11 3/4	1	3 1/8	12	40	7	7	4 3/4	4	22	5 1/2	2 1/4	3	5/8		3/8	4 1/2	2 x 1 1/2 x 1/4	4 x 3 x 1/4	(6x6) .079	
24	24	27 1/4	29 1/4	13 1/4	1	3 1/8	12	44	8	8	5 3/4	4 3/8	25	5 3/4	2 1/4	3	5/8		3/8	4 1/2	2 x 1 1/2 x 1/4	4 x 3 x 1/4	(6x6) .079	
30	30	33 3/4	36	17 3/8	1 1/8	4	15	54	10	10	6	4 1/2	31	7	2 1/2	3 1/2	3/4		3/4	5	2 1/2 x 2 x 1/4	5 x 3 x 1/4	(10x7) .138	
36	36	39 3/4	42	21	1 1/8	4	15	62	12	12	6 1/4	5 3/8	37	7	2 1/2	3 3/4	3/4		3/4	5	2 1/2 x 2 x 1/4	5 x 3 x 1/4	(10x7) .138	
42	42	45 3/4	47 1/2	23 3/8	1 1/2	5	24	84	14	14	7	6	43	7	2 1/2	4 1/4	3/4		3/4	5 1/4	3 x 2 x 1/4	5 x 3 x 1/4	(12x12) .138	
48	48	51 3/4	53 3/4	26 3/4	1 1/2	6	24	90	16	16	7 3/8	6 1/8	49 3/8	7	2 3/8	4 1/4	3/4		3/4	5 1/4	3 x 2 1/2 x 3/8	5 x 3 x 1/4	(12x12) .138	
54	54	58 1/2	61	30	2	6	30	100	18	18	7 7/8	6 1/2	55 1/2	7 1/2	3	4 1/4	1		1	5 1/2	3 x 2 1/2 x 3/8	5 x 3 x 1/4	(12x12) .138	
60	60	65	68	33 1/2	2	6	30	102	20	20	8 1/2	7 1/8	61 1/8	8	3 1/4	4 1/2	1		1	5 1/2	3 1/2 x 3 x 3/8	5 x 3 x 1/4	(12x12) .138	

**REQUIRED FEATURES:**  
 Flat back or spigot back (see plans).  
 Asphaltic coal tar paint on cast iron parts.  
 Bronze lift nut (ball bearing on 48" and larger).  
 Minimum 1/4" web structural angle.  
 Locking device.  
 Anchor bolts (size to correspond with bolt holes in the frames).  
 Limit nut.  
 Structural steel frames shall be galvanized in accordance with F.A.S.H.Q. M-III.  
 Cast iron seats (machined or ground).  
 Gates up to 48" in diameter shall be capable of a 9' seating head or as indicated on the plans if greater.

**BASIS OF PAYMENT:**  
 Price bid for canal gate shall include all materials and labor for a complete installation.

4-10-74	
REVISIONS	
DATE	CHANGE

**NORTH DAKOTA**  
**STATE HIGHWAY DEPARTMENT**

Submitted: *R. Johnson*  
 Design Engineer

Recommended: *Asst. Chief Engineer*  
 Pre-Construction

Approved: *H. Kennedy*  
 Chief Engineer