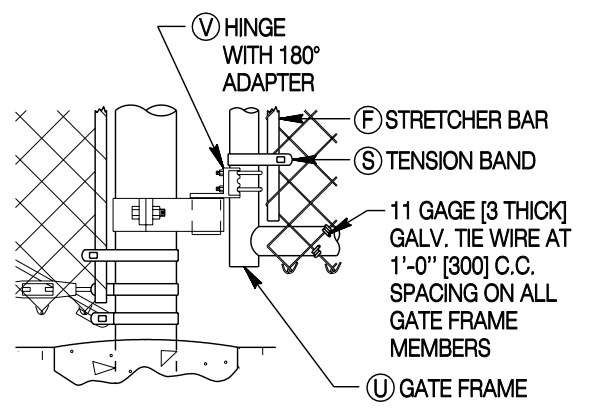
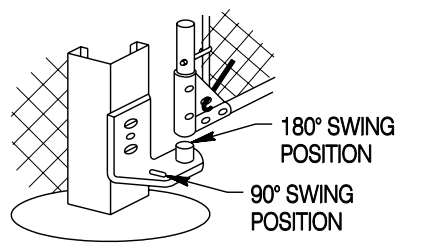


DOUBLE SWING GATE

SINGLE SWING GATE



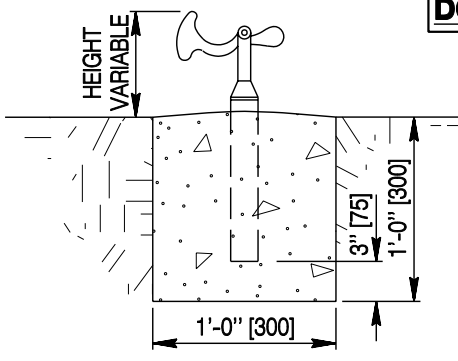
GATE HINGE



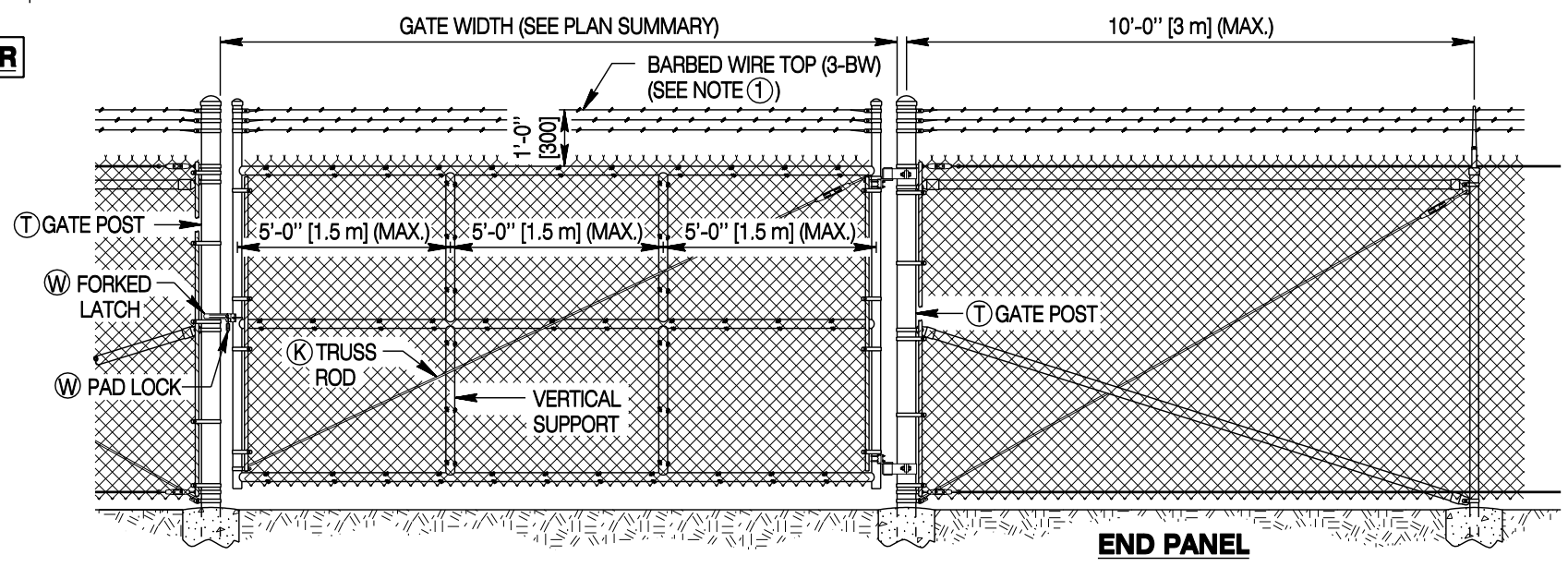
ALTERNATE ROLLED-FORM POST HINGE DETAIL

CONCRETE CYLINDER ANCHOR DIAMETER AND LENGTH

GATE POST DIA. NOMINAL SIZE	DIAMETER		LENGTH	
	IN	mm	FT - IN	mm
1 1/2	40	1 - 0	300	34 860
2	50	1 - 0	300	40 1015
2 1/2	65	1 - 0	300	40 1015
3 1/2	90	1 - 0	300	40 1015
6	150	1 - 6	450	46 1170
8	200	2 - 0	600	46 1170



GATE KEEPER



WIDE SINGLE SWING GATE

GENERAL NOTES FOR INDUSTRIAL GATES

① Provide barbed wire top only when specified. Place barbed wire top for gates vertically.

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 Drawn by: GLD
 Checked by: WBW
 Previous Dep. No. 607-03C

GATE DETAILS

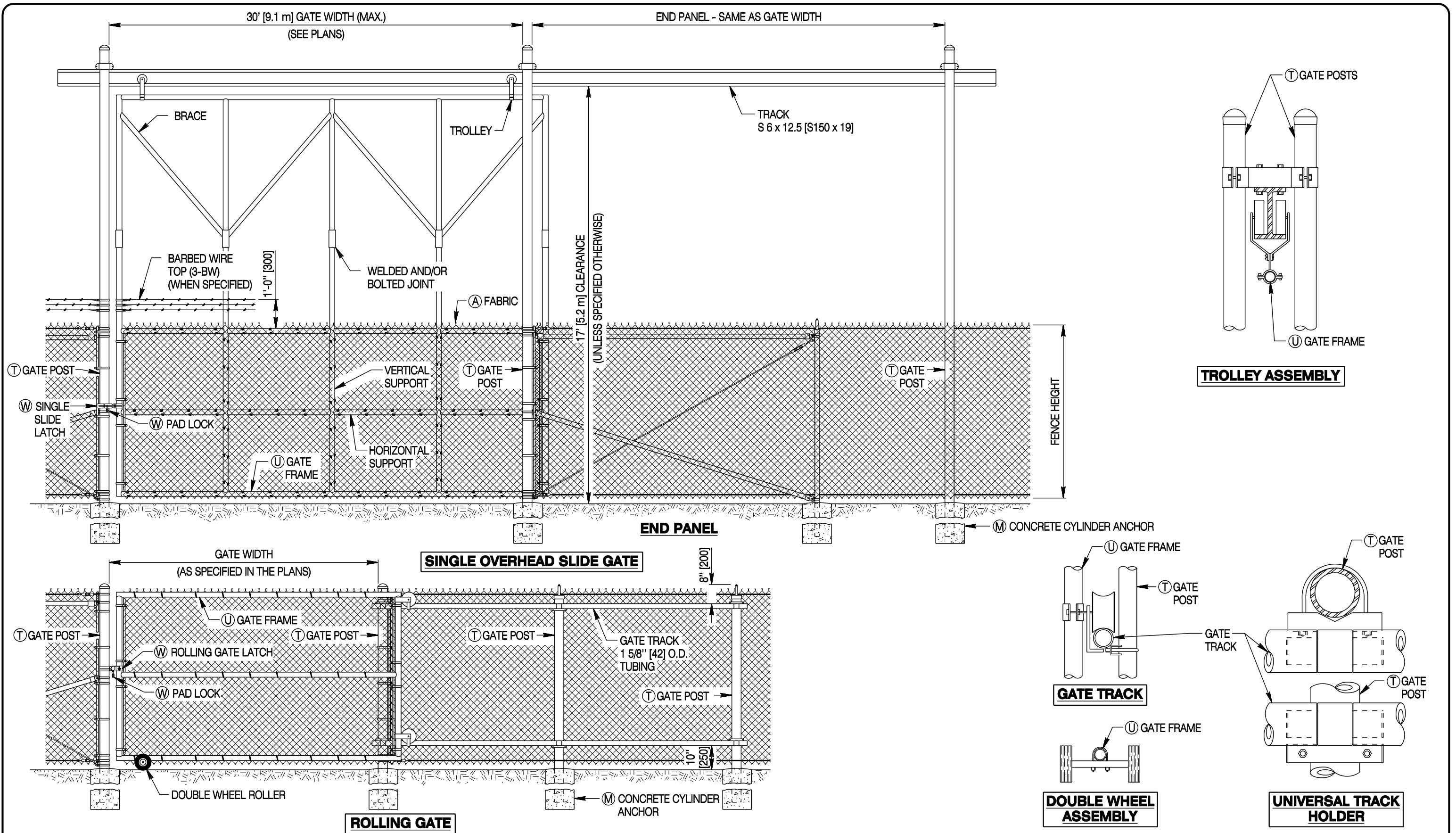
Note: Units shown in brackets [] are metric and are in millimeters (mm) unless other units are shown.



INDUSTRIAL GATES

STANDARD PLAN

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 Issued by: ENGINEERING SERVICES
 Date Issued: NOVEMBER, 2004



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GATE DETAILS (CONTINUED)

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INDUSTRIAL GATES

STANDARD PLAN

STANDARD PLAN NUMBER

607-3

SHEET 2 of 3

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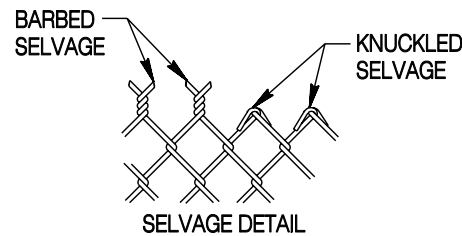
MATERIALS NOTES

Provide fence components meeting AASHTO M181 unless otherwise specified below. **PROVIDE:**

(A) FABRIC - 2 in. [52] by 2 in. [52] mesh meeting the requirements of AASHTO M181 of gauge and selvage shown below:

Fence Height under 5 ft. [1.5 m]: 11 Gage [3 thick] Fabric
 Fence Height 5 ft. [1.5 m] and over: 9 Gage [3.8 thick] Fabric

Fence Height under 6 ft. [1.8 m]: Top & Bottom knuckled selvage
 Fence Height 6 ft. [1.8 m] and over: Top - Barbed selvage, Bottom - Knuckled selvage



(F) STRETCHER BARS - (use for securing the fence fabric)
 3/16 in x 3/4 in [4.7 x 20] galvanized steel.

(K) TRUSS RODS - 3/8 in [10] diameter galvanized steel rod with an industrial truss tightener or turnbuckle tensioning device. Truss rods are only required on gates over 5 ft [1.5 m] in width.

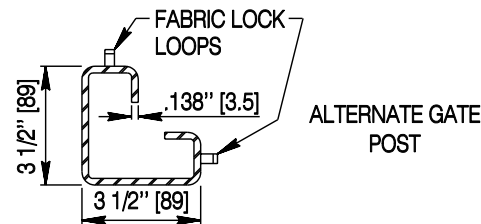


(M) CONCRETE CYLINDER ANCHORS - (for posts) Class B concrete or better.

(S) TENSION BANDS - (use to secure the fabric stretcher bar)
 14 gage x 3/4 in [2 thick x 20] pressed steel with a 5/16 in x 1 1/4 in [8 x 30] carriage bolt. Place tension bands at the top and bottom of the stretcher bar and a 15 in [375] C.C. maximum spacing vertically.



(T) GATE POSTS - either standard pipe meeting AASHTO M181, steel pipe meeting ASTM A569, or roll-formed C-sections. Galvanize roll-formed posts in accordance with ASTM 123. Where roll-formed sections are selected, provide all connection hardware meeting industry standards for roll formed sections and provide equal or greater strength than connection components required for round pipe.



(U) GATE FRAMES - construct with tubular members assembled by use of malleable fittings or welding. Extend one horizontal support the width of the gate at the midpoint of vertical frame members. For gates over 5 ft [1.5 m] in width, provide intermediate vertical supports. Space supports equidistant from each other and/or from gate ends. Provide horizontal and vertical supports of the same diameter pipe as the gate frame. Ensure the complete frame is rigid and has ample strength to be free from sag and twist.

(V) HINGES - heavy duty hinges of adequate strength for gates and with large bearing surfaces for clamping in position. Provide hinges of the proper type to allow for the designated degree of swing as shown in the plans. Use hinges that will not twist or turn under the action of the gate. Ensure gates are capable of being opened and closed easily by one person.

(W) LATCHES, STOPS AND KEEPERS - for all gates. For single gates less than 10 ft [3 m] wide use a forked latch. For double and single gates over 10 ft [3 m] wide, use drop bar latch. Use latches capable of locking. For drop bar latches set the stop in concrete and engage the plunger of the bar latch. Use a mechanical keeper device for securing the free end of the gate when in the full open position.

GATE POST AND GATE FRAME PIPE DIAMETERS

FENCE FABRIC HEIGHTS TO 4 FT [1.2 m] (INCL.)						
WIDTH OF GATE, SINGLE OR ONE LEAF OF DOUBLE GATE	Ⓣ				Ⓤ	
	FT	m	IN	mm	IN	mm
TO 6	1.8		1 1/2	40	1 1/4	30
OVER 6 TO 8	1.8 TO 2.4 (INCL)		2	50	1 1/4	30
OVER 8 TO 13	2.4 TO 4 (INCL)		3 1/2	90	1 1/2	40
OVER 13 TO 18	4 TO 5.5 (INCL)		6	150	1 1/2	40
OVER 18	5.5		8	200	1 1/2	40

FENCE FABRIC HEIGHTS OVER 4 FT [1.2 m] TO 6 FT [1.8 m] (INCL.)						
WIDTH OF GATE, SINGLE OR ONE LEAF OF DOUBLE GATE	Ⓣ				Ⓤ	
	FT	m	IN	mm	IN	mm
TO 7	2.1		2	50	1 1/2	40
OVER 7 TO 8	2.1 TO 2.4 (INCL)		2 1/2	65		
OVER 8 TO 13	2.4 TO 4 (INCL)		3 1/2	90		
OVER 13 TO 18	4 TO 5.5 (INCL)		6	150		
OVER 18	5.5		8	200		

FENCE FABRIC HEIGHTS OVER 6 FT [1.8 m] TO 12 FT [3.6 m] (INCL.)						
WIDTH OF GATE, SINGLE OR ONE LEAF OF DOUBLE GATE	Ⓣ				Ⓤ	
	FT	m	IN	mm	IN	mm
TO 6	1.8		2 1/2	65	1 1/2	40
OVER 6 TO 13	1.8 TO 4 (INCL)		3 1/2	90		
OVER 13 TO 18	4 TO 5.5 (INCL)		6	150		
OVER 18	5.5 (INCL)		8	200		

ALTERNATIVE HIGH STRENGTH PIPE DIMENSIONS (50,000 PSI [345 mPa] - ASTM A569)

NOMINAL PIPE SIZE	OUTSIDE DIA.		WALL THICKNESS		MIN. WEIGHT		
	IN	mm	IN	mm	LBS PER FT	kg/m	
1 1/4	30	1.660	42	0.111	2.8	1.836	2.73
1 1/2	40	1.900	48	0.120	3.1	2.281	3.39
2	50	2.375	60	0.130	3.3	3.117	4.64
2 1/2	65	2.875	73	0.160	4.1	4.640	6.91

STANDARD PIPE DIMENSIONS, WEIGHTS AND MINIMUM TOLERANCES (ASTM A53)

NOMINAL PIPE SIZE	OUTSIDE DIA.		INSIDE DIA.		WALL THICKNESS				WEIGHT						
	NOM.		MIN.		NOM.		MIN.		NOM.		MIN.				
	IN	mm	IN	mm	IN	mm	IN	mm	LBS PER FT	kg/m	LBS PER FT	kg/m			
1 1/4	30	1.660	42	1.629	41	1.380	35	0.140	3.6	0.122	3.1	2.27	3.38	2.16	3.21
1 1/2	40	1.900	48	1.869	47	1.610	41	0.145	3.7	0.127	3.2	2.72	4.05	2.58	3.84
2	50	2.375	60	2.351	60	2.067	53	0.154	3.9	0.135	3.4	3.65	5.43	3.47	5.16
2 1/2	65	2.875	73	2.846	72	2.469	63	0.203	5.2	0.178	4.5	5.79	8.62	5.50	8.18
3 1/2	90	4.000	100	3.960	100	3.548	90	0.226	5.7	0.198	5.0	9.11	13.56	8.65	12.87
6	150	6.625	168	6.559	166	6.065	154	0.280	7.1	0.245	6.2	18.97	28.23	18.02	26.82
8	200	8.625	220	8.539	216	7.981	203	0.322	8.2	0.282	7.2	28.55	42.49	27.12	40.36

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 Checked by: WBW
 Previous Dep. No. 607-03C

INDUSTRIAL GATE COMPONENT REQUIREMENTS

Note: Units shown in brackets [] are metric and are in millimeters (mm) unless other units are shown.



INDUSTRIAL GATES

STANDARD PLAN

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607-3

SHEET 3 of 3

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