



**City Utilities
Design Standard
Manual**

**Exhibit SW6-2
Manhole Sizing**

Created: December 31, 2013

Revised:

PIPE CONNECTIONS LESS THAN 30-INCH DIAMETER

Assumptions: resilient connections meeting ASTM C923

Applicable Pipe Materials and Sizes			Opening Required (in)	Acceptable Angles (deg) for the Following Manhole sizes:		
RCP ASTM C 76	DI AWWA C151	PVC		48 in	60 in	72 in
12" Wall B	14"	15" ASTM 3033/4	18	180-90		
12" Wall C	16"		20	180-90		
15" Wall B	18"	18" ASTM F679	22	180-90		
15" Wall C	20"	21" ASTM F679	24	180-90		
18" Wall B&C			26	180-90		
21" Wall B	24"	24" ASTM F679	28	180-100	99-90	
21" Wall C			30		180-90	
24" Wall B			32		180-90	
24" Wall C			34		180-90	
27" Wall B			36			180-90
27" Wall C			38			180-90

PIPE CONNECTIONS 30-INCH DIAMETER AND LARGER

Assumptions: grouted manhole connections with a seep ring WaterSTOP, WS-30, or approved equal

Applicable Pipe Materials and Sizes RCP ASTM C 76	Opening Required (in)	Acceptable Angles (deg) for the following Manhole sizes:				Larger
		72 in	84 in	96 in	108 in	
30" Wall B	45	180-90				
30" Wall C	46.5	180-100	99-90			
33" Wall B	48.5	180-104	103-90			
33" Wall C	50	180-107	106-90			
36" Wall B	52	180-112	111-90			
36" Wall C	53.5	180-115	114-96	95-90		
42" Wall B	59	180-130	129-106	105-90		
42" Wall C	60.5	180-134	133-109	108-90		
48" Wall B	66	180-152	151-120	119-100	99-90	
48" Wall C	67.5	180-158	157-124	123-104	103-90	
54" Wall B	73		180-137	136-114	113-98	CONTACT MFR
54" Wall C	74.5		180-142	141-116	115-100	
60" Wall B	80		180-161	160-129	127-108	
60" Wall C	81.5		180-169	168-130	129-110	
66" Wall B	87			180-145	144-120	
66" Wall C	88.5			180-140	139-123	

- NOTES: 1 – Pipe angles less than 90 degrees are not recommended for hydraulic reasons.
 2 – Designer to use this exhibit as a guide. Existing conditions may dictate variance.
 3 – The manufacturer shall be contacted for size verification for diameters smaller than indicated.