



# PRECAST CONCRETE PRODUCTS

mconproducts.com

## Product Catalogue



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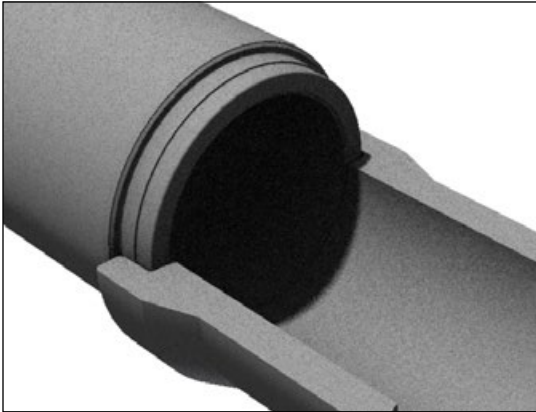


**CONCRETE PIPE**



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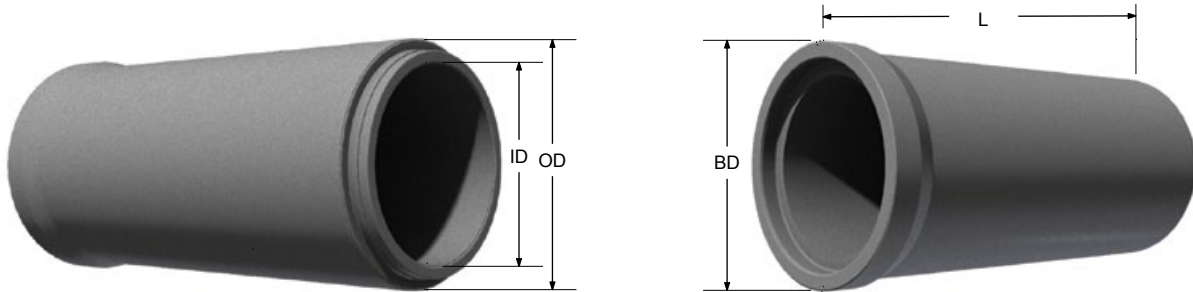
### SECTION 1 CONCRETE PIPE

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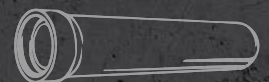


Designated Internal Diameter (Nominal)	Actual Diameter (ID)	Outside Diameter (OD)	Wall Thickness (W)	Bell Diameter (BD)	Lay Length (L)	Waterway Area	Approximate Mass	Truckload Lots
mm	mm	mm	mm	mm	m	m <sup>2</sup>	kg/pc	pcs
300	305	445	70	498	2.286	0.07	486	65
375	381	533	76	587	2.286	0.11	648	50
450	457	622	83	702	2.438	0.16	878	40
525	533	711	89	752	2.286	0.22	1016	34
600	610	800	95	829	2.286	0.29	1232	28
675	686	889	102	905	2.286	0.37	1458	22
750	762	978	108	1003	2.286	0.46	1716	19
825	838	1067	114	-	2.286	0.55	1974	18
900	914	1156	121	-	2.286	0.66	2253	17

## Mass and Dimension 300-900mm Pipe

### Notes

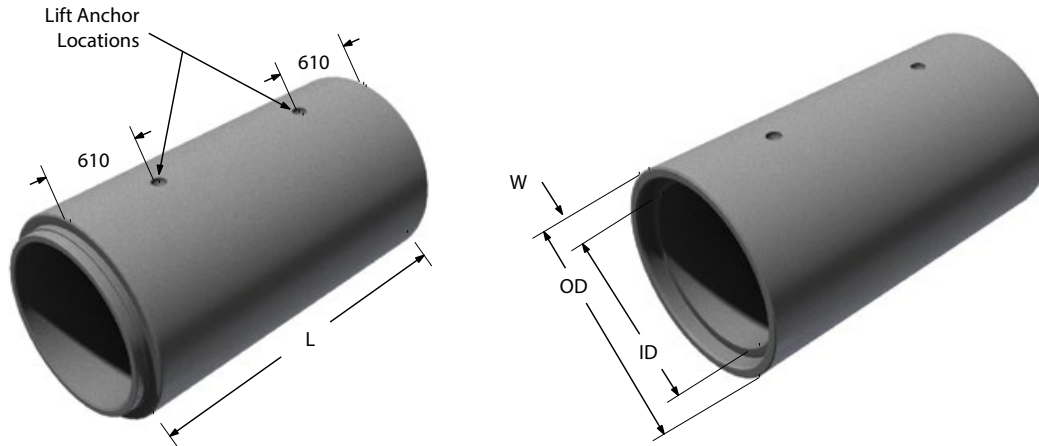
1. Manufactured in accordance with CSA-A257.2.
2. All standard reinforced concrete pipe classes available: 50-D, 65-D, 100-D and 140-D.
3. Contact our engineering department for special design concrete pipe applications.
4. All pipe joints come complete with pre-lubricated rubber gaskets.





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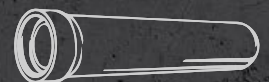


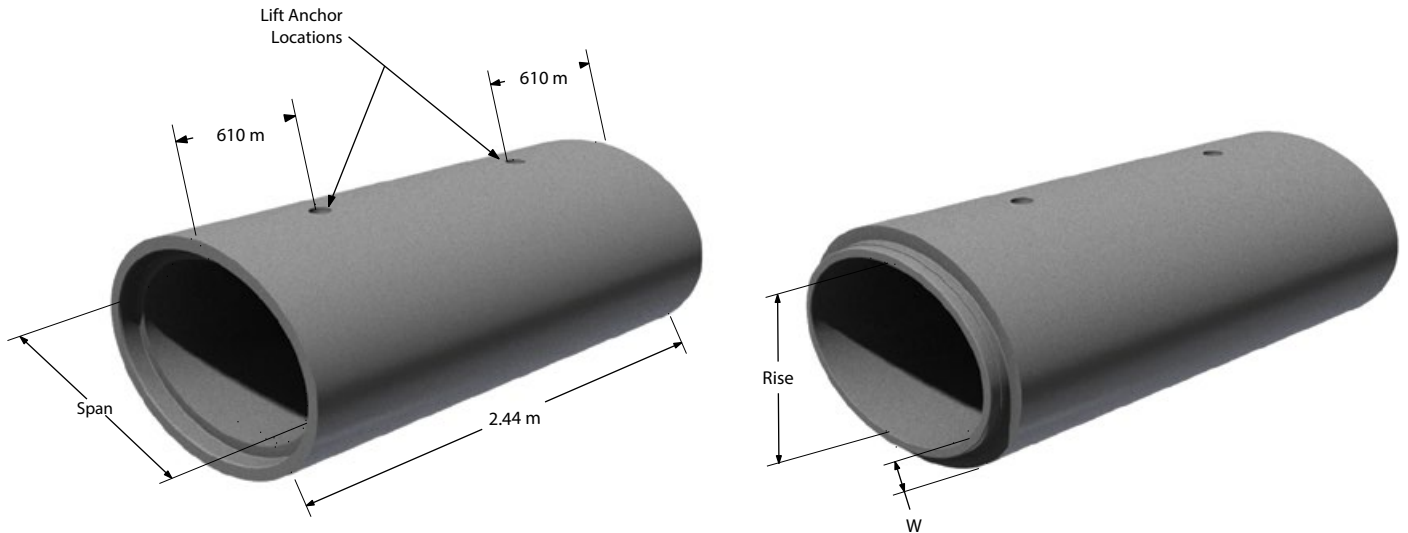
Designated Internal Diameter (Nominal)	Actual Diameter (ID)	Outside Diameter (OD)	Wall Thickness (W)	Lay Length (L)	Waterway Area	Approximate Mass	Lift Anchor Size	Truckload Lots
mm	mm	mm	mm	m	m <sup>2</sup>	kg/pc	ton	pcs
975	991	1245	127	2.286	0.77	2567	4	12
1050	1067	1334	133	2.286	0.89	2919	4	11
1200	1220	1511	146	2.286	1.17	3661	4	9
1350	1372	1689	159	2.286	1.48	4480	4	8
1500	1524	1867	171	2.438	1.82	5734	4	6
1650	1676	2045	184	2.438	2.21	6719	4	5
1800	1829	2223	197	2.438	2.63	7846	8	4
1950	1981	2362	190	2.438	3.08	8390	8	4
2100	2134	2540	203	2.438	3.58	9562	8	4
2250	2286	2717	215	2.438	4.10	10726	8	3
2400	2438	2896	229	2.438	4.67	12214	8	2
2550	2591	3073	241	2.438	5.27	13776	8	2
2700	2743	3251	254	2.438	5.91	15139	8	2
3000	3048	3606	279	2.438	7.30	18786	20	1
3600	3656	4356	349	2.438	10.51	26340	20	1

## Mass and Dimension 975-3600mm Pipe

### Notes

1. Manufactured in accordance with CSA-A257.2.
2. All standard reinforced concrete pipe classes available: 50-D, 65-D, 100-D and 140-D.
3. Contact our engineering department for special design concrete pipe applications.
4. All pipe joints come complete with pre-lubricated rubber gaskets.





Designated Size Rise X Span	Designated Equivalent Circular Pipe Diameter	Actual Size Rise X Span	Wall Thickness (W)	Waterway Area	Approximate Mass	Truckload Lots
mm	mm	mm	mm	m <sup>2</sup>	kg/pc	pcs
480 x 760	600	483 x 762	83	0.29	1252	38
610 x 965	750	610 x 965	95	0.46	1583	20
730 x 1150	900	737 x 1143	114	0.69	2283	11
855 x 1345	1050	864 x 1346	127	0.95	2928	8
975 x 1535	1200	965 x 1524	140	1.20	3665	6
1090 x 1730	1350	1092 x 1727	152	1.54	4518	6
1220 x 1920	1500	1219 x 1930	165	1.91	5421	5
1340 x 2110	1650	1346 x 2108	178	2.30	6401	4
1465 x 2305	1800	1473 x 2311	191	2.74	7464	4
1585 x 2495	1950	1600 x 2489	203	3.22	8622	3
1705 x 2690	2100	1727 x 2692	216	3.73	9845	3
1825 x 2870	2250	1829 x 2870	229	4.12	11151	2
1950 x 3070	2400	1956 x 3073	241	4.87	12535	2
2080 x 3250	2550	2083 x 3251	247	5.31	13518	2
2195 x 3455	2700	2210 x 3454	267	6.17	15597	1

## Mass and Dimension Elliptical Pipe

### Notes

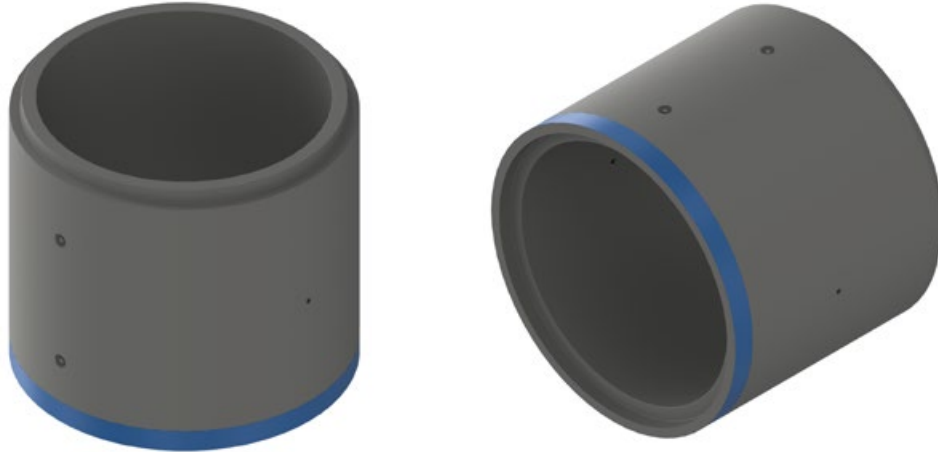
1. Manufactured in accordance with ASTM C 507.
2. Standard reinforced concrete HE pipe classes available: HE-I, HE-II, HE-III, HE-IV.
3. All pipe joints come complete with butyl gasket.





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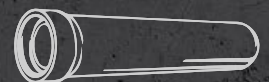


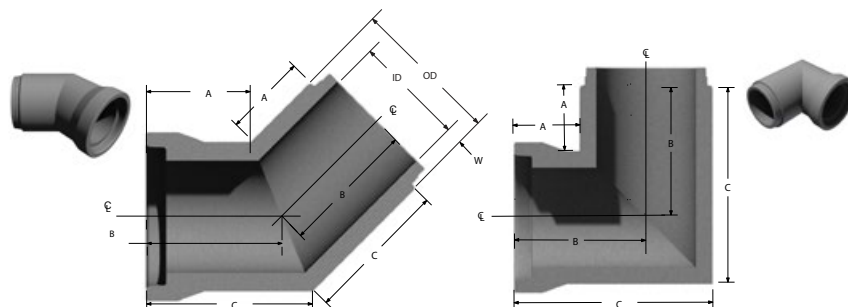
Inside Dimensions	
	mm
	825
	900
	975
	1050
	1200
	1350
	1500
	1650
	1800
	1950
	2100
	2250
	2400
	2550
	2700
	3000

## Jacking Pipe

### Notes

1. Manufactured in accordance with CSA-A257.2.
2. Available in 100-D and 140-D.
3. Contact our engineering department for special design concrete pipe applications.
4. All pipe joints come complete with pre-lubricated rubber gaskets.





ID (Nominal)	Wall	OD	90° Bends			45° Bends		
mm	mm	mm	A	B	C	A	B	C
300	70	445	300	522	745	300	392	484
375	76	533	300	566	833	300	410	521
450	83	622	300	612	923	300	429	558
525	89	711	350	706	1061	350	497	645
600	95	800	350	750	1150	350	516	681
675	102	889	350	795	1240	350	534	719
750	108	978	350	839	1328	350	553	755
825	114	1067	350	883	1416	350	571	792
900	121	1156	350	928	1506	350	589	829
975	127	1245	523	1145	1767	887	1145	1403
1050	133	1334	479	1145	1811	869	1145	1421
1200	146	1511	389	1145	1901	832	1145	1458
1350	159	1689	Use 2- 45° Bends			795	1145	1495
1500	171	1867	Use 2- 45° Bends			834	1220	1606
1650	184	2045	Use 2- 45° Bends			797	1220	1643
1800	197	2223	Use 2- 45° Bends			760	1220	1680
1950	190	2362	Use 2- 45° Bends			731	1220	1709
2100	203	2540	Use 2- 45° Bends			694	1220	1746
2250	215	2717	Use 2- 45° Bends			657	1220	1783
2400	229	2896	Use 2- 45° Bends			620	1220	1820
2550	241	3073	Use 2- 45° Bends			584	1220	1856
2700	254	3251	Use 2- 45° Bends			547	1220	1893
3000	279	3606	Use 2- 45° Bends			473	1220	1967
3600	349	4356	Use 2- 45° Bends			462	1220	1976

## 45° and 90° Bend Dimension

### Notes

1. All Bends are manufactured in accordance with CSA-A257.2.
2. Special angle bends are available upon request.
3. All dimensions are in millimeters unless otherwise shown.



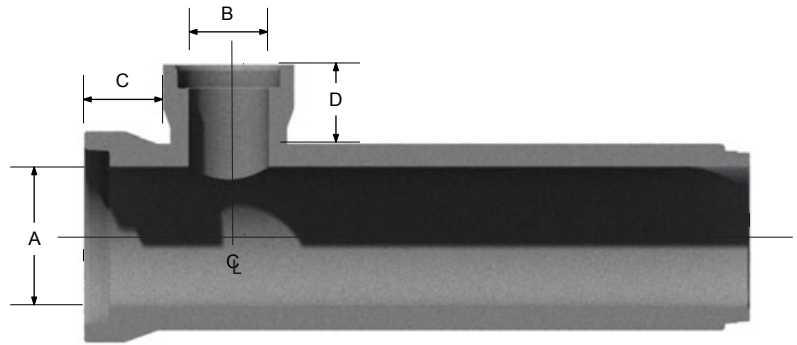


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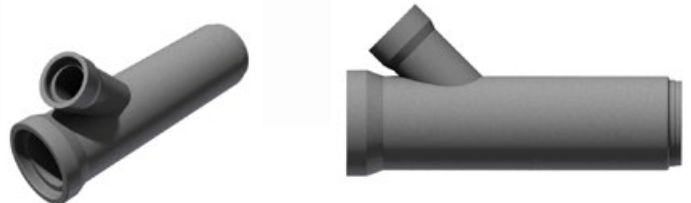
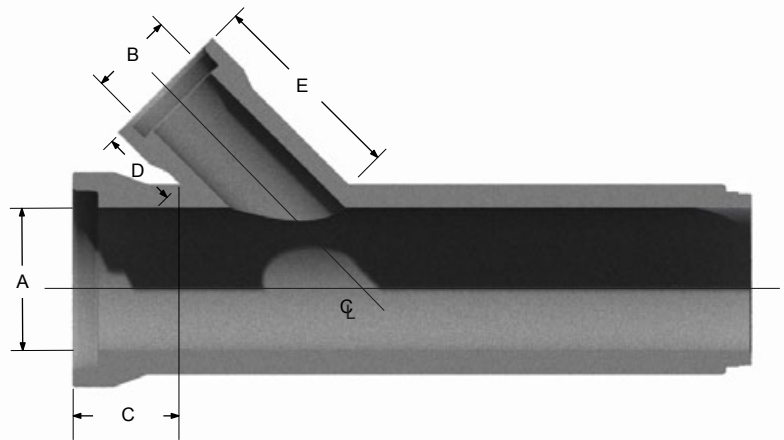
## PIPE TEE

Main Pipe ID A	Branch Pipe ID B	C	D
300 To 3600	300	300	300
375 To 3600	375	300	300
450 To 3600	450	350	300
525 To 3600	525	350	350
600 To 3600	600	350	350
675 To 3600	675	350	350
750 To 3600	750	350	350
825 To 3600	825	350	350
900 To 3600	900	350	350
975 To 3600	975	350	350
1050 To 3600	1050	350	350
1200 To 3600	1200	350	350
1350 To 3600	1350	300	350
1500 To 3600	1500	305	350



## PIPE WYE

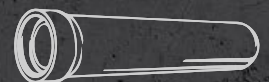
Main Pipe ID A	Branch Pipe ID B	C	D	E
300 To 3600	300	400	300	745
375 To 3600	375	400	300	833
450 To 3600	450	400	300	923
525 To 3600	525	400	350	1061
600 To 3600	600	400	350	1150
675 To 3600	675	400	350	1240
750 To 3600	750	400	350	1328
825 To 3600	825	400	350	1416
900 To 3600	900	400	350	1506



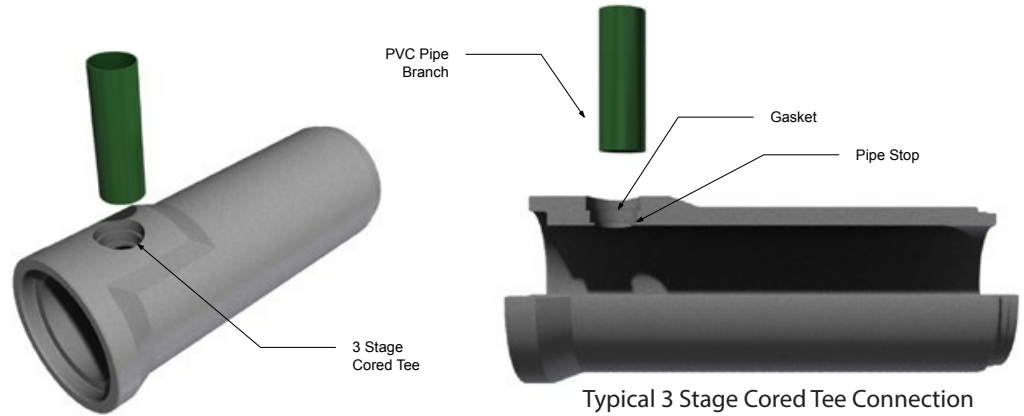
## Tee and Wye Dimensions

### Notes

- All wyes and tees are manufactured in accordance with CSA-A257.2.
- Special design tees and wyes are available upon request.
- All tee and wye combinations listed above are based on using a full length main pipe. 50-D, 65-D, 100-D and 140-D.
- All dimensions are in millimeters unless otherwise shown.

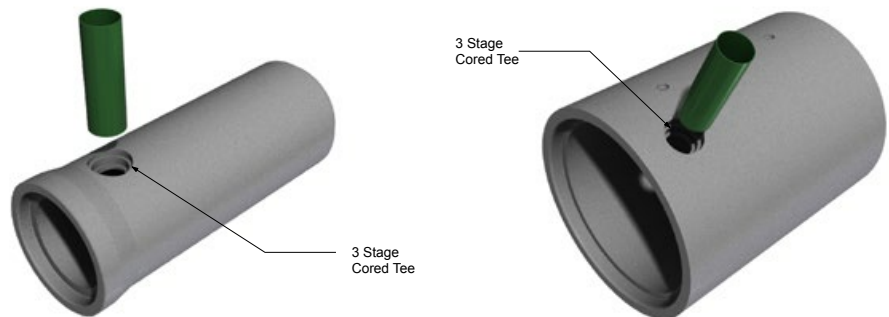


“FILLET” PIPE PRODUCT



Designated Diameter (mm)	PVC Branch Size (mm)					
	100	125	150	200	250	300
300	100	125	150	200		
375	100	125	150	200	250	
450	100	125	150	200	250	300

STANDARD PIPE PRODUCT

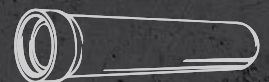


Designated Diameter (mm)	PVC Branch Size (mm)					
	100	125	150	200	250	300
300	100					
375	100	125				
450	100	125	150	200		
525	100	125	150	200	250	
600	100	125	150	200	250	
675-3000	100	125	150	200	250	300

3 Stage Cored Tee (for PVC pipe applications)

Notes

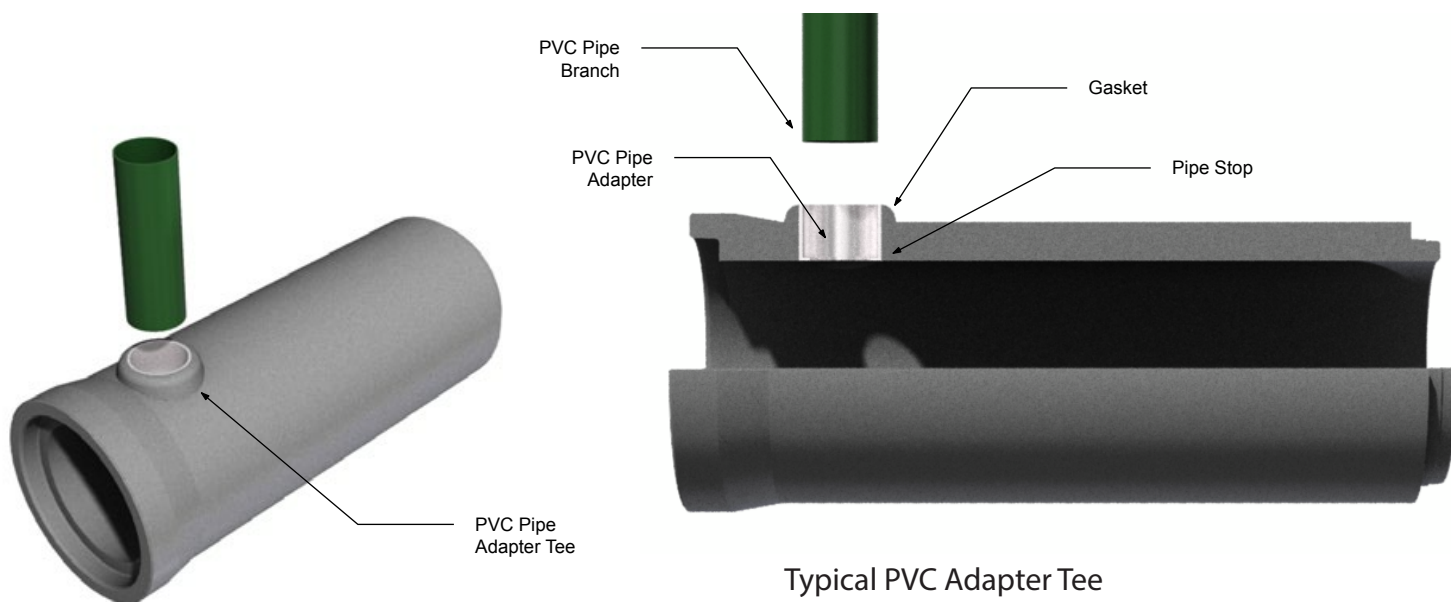
1. Tee connection manufactured in accordance with CSA-A257.2.
2. See page 16 for connection type and sizes not detailed.
3. All dimensions are in millimeters unless otherwise shown.





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Typical PVC Adapter Tee

Nominal Diameter (mm)	PVC Branch Size (mm)				
300	125	150	200	250	300
375		150	200	250	300
450				250	300
525	See page 10 for PVC branch sizes not detailed.				300
600					300

## PVC Adapter Tee 300- 600mm

### Notes

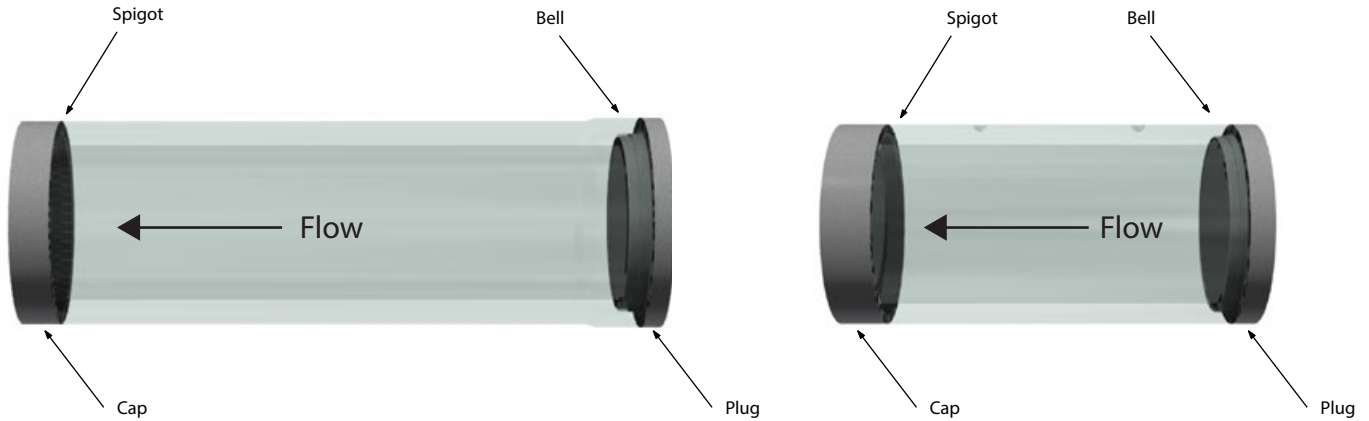
1. Tee connection manufactured in accordance with CSA-A257.2.
2. All dimensions are in millimeters unless otherwise shown.





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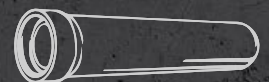
Size	Approximate Mass	
	Plugs	Caps
mm	kg/pc	kg/pc
300	26	122
375	39	167
450	53	242
525	69	270
600	86	325
675	106	384
750	130	472
825	154	527
900	180	618

Size	Approximate Mass	
	Plugs	Caps
mm	kg/pc	kg/pc
975	865	720
1050	989	765
1200	1266	986
1350	1572	1239
1500	1908	1440
1650	2284	1676
1800	2702	1983
1950	3097	2192
2100	3585	2531
2250	4109	2894
2400	4667	3279
2550	5262	3690
2700	5893	4127
3000	7095	5892
3600	10279	8662

## Concrete Pipe Plugs and Caps

### Notes

- 300 to 1050 mm plugs come complete with one lift point.
- 1200 to 3000 plugs and Caps come complete with 2 lift points.
- Alternative precast-in plugs are available upon request. Please contact our engineering department for more detail.





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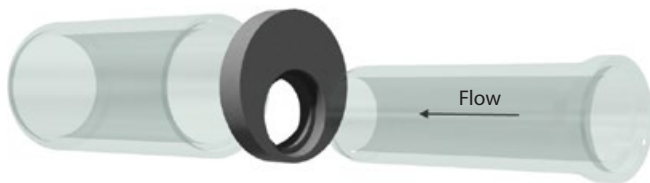
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CONCENTRIC REDUCER



CONCENTRIC INCREASER



ECCENTRIC REDUCER



ECCENTRIC INCREASER

## Concrete Pipe Reducers and Increases

### Notes

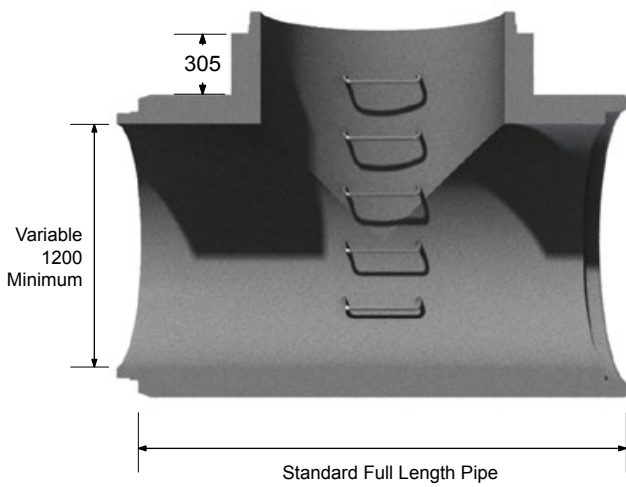
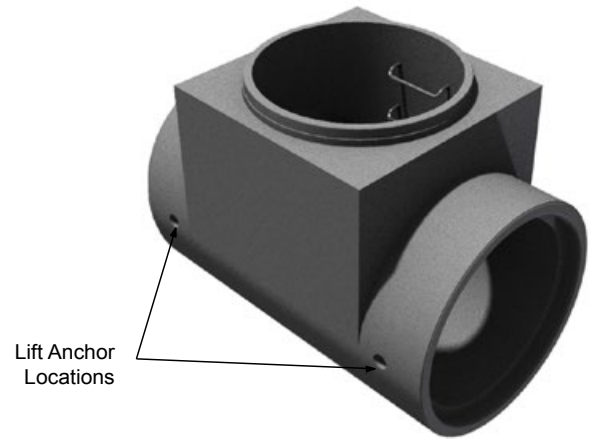
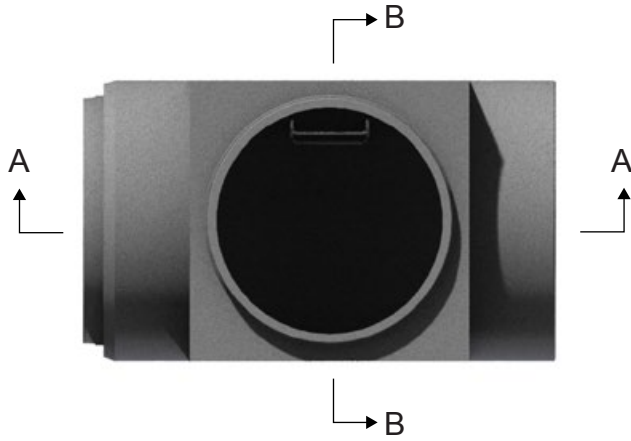
1. All reducers and increasers are manufactured in accordance with CSA A 257.2.
2. Available for all standard pipe diameter applications.



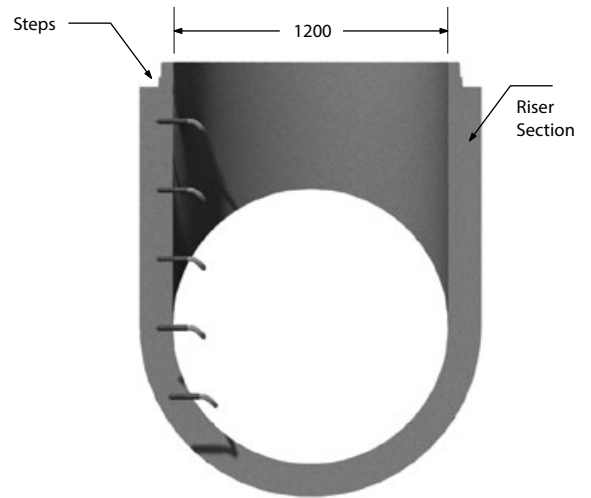


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Section A-A

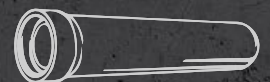


Section B-B

# Pipe Maintenance Hole Tees

Notes

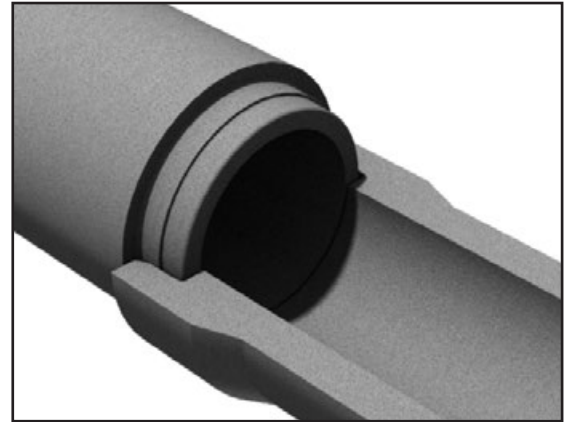
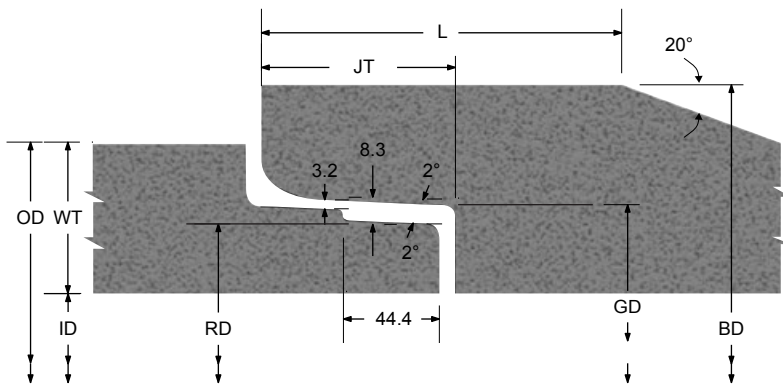
1. Manufactured in accordance with OPSD 707.010.
2. Maintenance hole steps as per OPSD 405.010.
3. Contact the MCON engineering department for special design maintenance tee applications.
4. All dimensions are in millimeters unless otherwise shown.





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ID (Nominal)	ID (Actual)	OD	WT	BD	JT	RD	GD	L
300	305	444.6	69.8	498.5	88.9	374.1	387.5	165.1
375	381	533.4	76.2	587.4	88.9	461.7	475.2	165.1
450	457	622.0	82.5	701.7	95.3	554.9	568.4	165.1
525	533	710.8	88.9	752.5	88.9	614.1	627.6	177.8
600	610	800.4	95.2	828.7	88.9	690.3	703.8	177.8
675	686	889.2	101.6	904.9	88.9	766.5	780.0	177.8
750	762	977.8	107.9	1003.3	88.9	850.1	863.6	177.8

## Pipe Joint Detail 300-750mm

### Notes

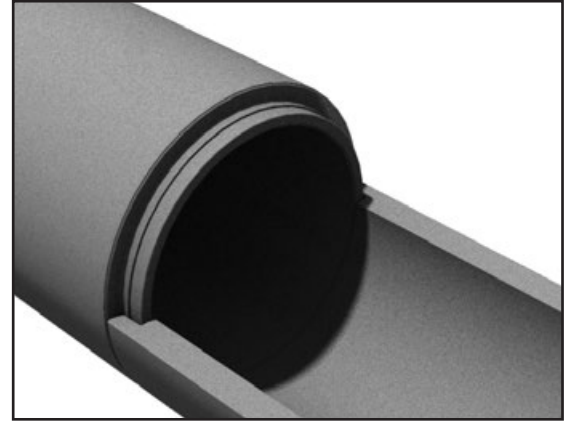
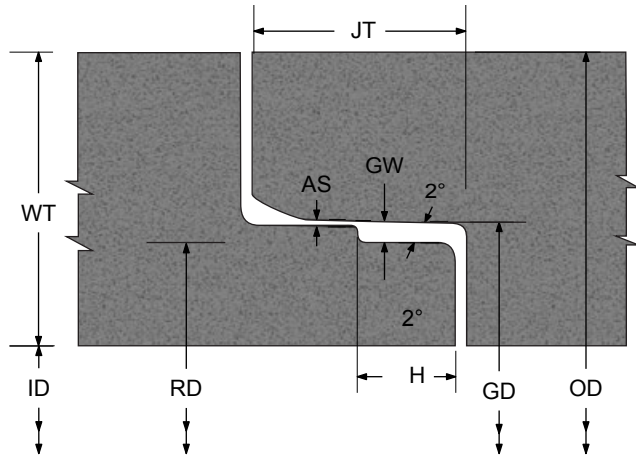
1. Pre-lubricated rubber gaskets to be used with this pipe joint design.
2. See page 18 for pipe jointing procedure.
3. Manufactured in accordance with CSA-A257.2.
4. All dimensions are in millimeters unless otherwise shown.





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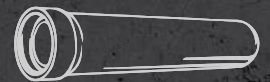


ID (Nominal)	ID (Actual)	OD	WT	JT	RD	GD	AS	GW	H
825	832	1066.6	114.3	88.9	926.3	939.8	3.2	8.3	44.5
900	914	1155.2	120.6	88.9	1002.5	1016.0	3.2	8.3	44.5
975	991	1245.0	127.0	88.9	1078.7	1092.2	3.2	8.3	44.5
1050	1067	1333.7	133.3	107.9	1172.7	1190.9	3.7	11.3	63.5
1200	1220	1512.0	146.0	107.9	1325.1	1343.3	3.7	11.3	63.5
1350	1372	1689.4	158.7	107.9	1470.1	1488.3	3.7	11.3	63.5
1500	1524	1866.8	171.4	120.6	1635.2	1653.4	3.7	11.3	63.5
1650	1676	2044.2	184.1	127.0	1800.3	1818.5	3.7	11.3	63.5
1800	1829	2222.6	196.8	127.0	1959.8	1978.0	3.7	11.3	63.5
1950	1981	2362.0	190.5	127.0	2123.7	2145.5	4.4	13.3	69.8
2100	2134	2540.4	203.2	127.0	2288.8	2310.6	4.4	13.3	69.8
2250	2286	2717.8	215.9	127.0	2453.9	2475.7	4.4	13.3	69.8
2400	2438	2895.6	228.6	127.0	2619.0	2640.8	4.4	13.3	69.8
2550	2591	3073.4	241.3	127.0	2783.8	2805.9	4.4	13.3	69.8
2700	2743	3251.8	254.0	127.0	2949.2	2971.0	4.4	13.3	69.8
3000	3048	3606.8	279.4	152.4	3247.7	3269.5	4.4	13.3	69.8
3600	3658	4356.0	349.0	152.4	3895.4	3917.2	3.7	12.7	50.8

## Pipe Joint Detail 825-3600mm

### Notes

1. Pre-lubricated rubber gaskets to be used with this pipe joint design.
2. See page 18 for pipe jointing procedure.
3. Manufactured in accordance with CSA-A257.2.
4. All dimensions are in millimeters unless otherwise shown.



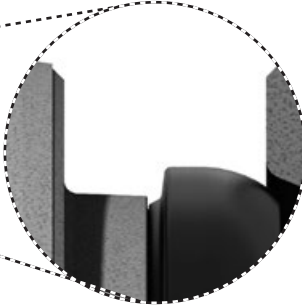
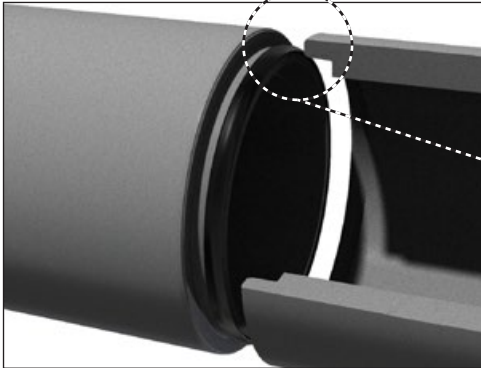


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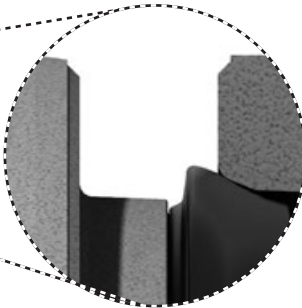
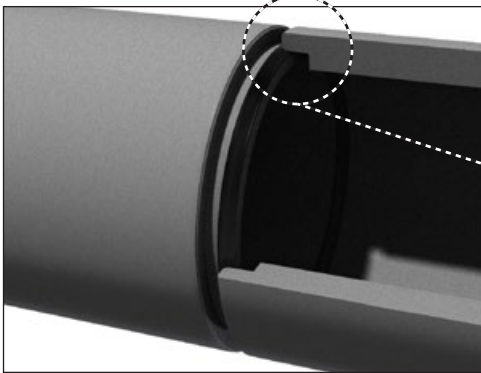
## Step 1

Clean all dirt and foreign objects off the bell and spigot. Ensure both the bell and spigot are free of cracks, chips and defects. Carefully stretch the gasket around the spigot with the nose of gasket resting against the step of the spigot and the gasket tube laying on the spigot



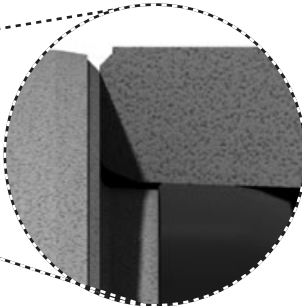
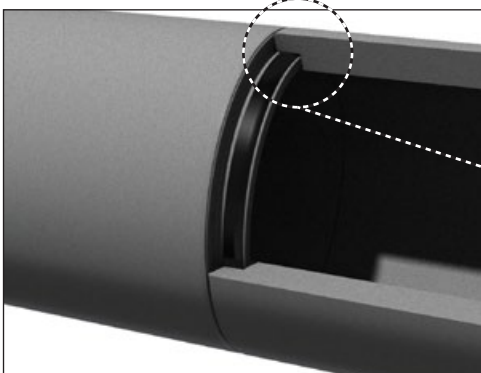
## Step 2

Align the spigot with the bell. Ensure the gasket is in contact with the entire circumference of both the bell taper and the spigot before fully homing the joint.



## Step 3

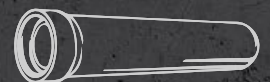
Engage the spigot into the bell to fully install, locking the joint into place. The self lubricating gasket will roll over the step of the spigot and into the joint recess creating the complete seal.



## Joint Procedure – Pre-Lubricated Gaskets

### Notes

1. The following above jointing procedure will ensure full optimization of pipe joint performance.
2. This jointing procedure applies to pipe sizes 300 - 3600mm diameter.



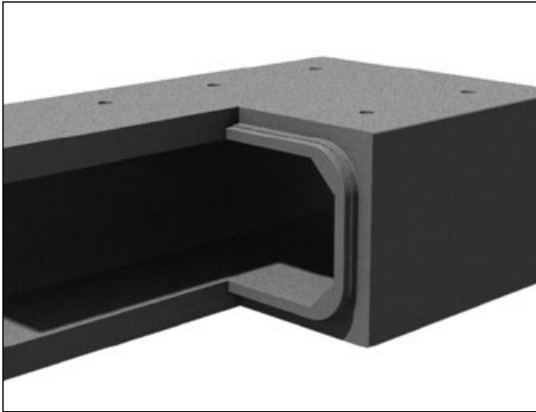


# BOX CULVERTS



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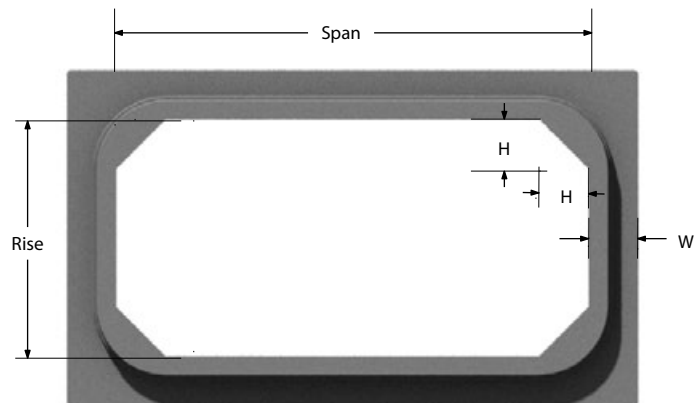
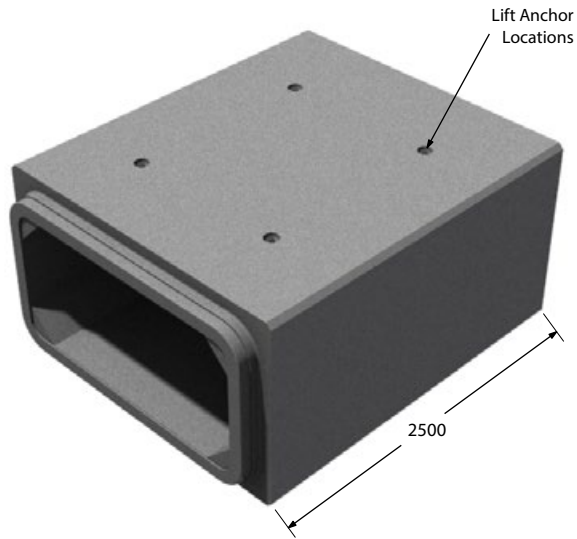
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Designated Size Span X Rise	Wall Thickness (W)	Haunch (H)	Waterway Area	Approximate Mass	Lift Anchor Size	Truckload Lots
mm	mm	mm	m <sup>2</sup>	kg/pc	ton	pieces
1800 x 900	200	200	1.54	8162	4	5
1800 x 1200	200	200	2.08	8916	4	4
2400 x 1200	200	200	2.80	10473	4	3
2400 x 1500	200	200	3.52	11204	4	3
2400 x 1800	200	200	4.24	11966	4	3
3000 x 1500	250	250	4.38	16311	8	2
3000 x 1800	250	250	5.28	17242	8	2
3000 x 2100	250	250	6.18	18171	8	2
3000 x 2400	250	250	7.08	19123	8	2

## Mass and Dimensions OPSS Box Sections

### Notes

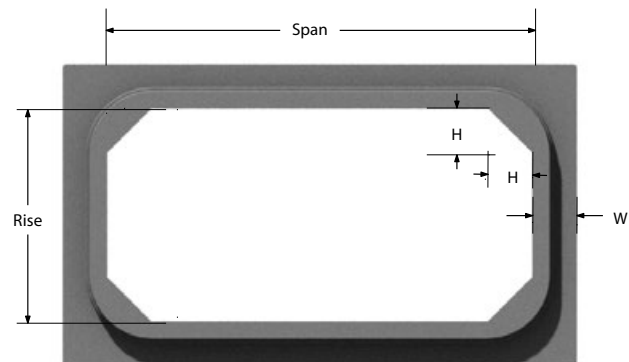
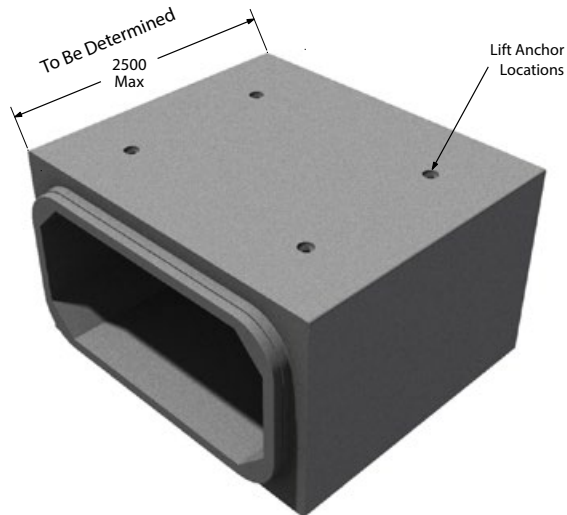
1. Manufactured in accordance with OPSS 1821 and CHBDC.
2. Contact our engineering department for special design concrete box culvert applications.
3. All dimensions are in millimeters unless otherwise shown.





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Span	Rise	Wall Thickness (W)	Haunch (H)
mm	mm	mm	mm
1200	900-1200	200	200
1500	1200-1500	200	200
1800	1500-1800	200	200
2400	900	200	200
2400	1200-2400	250/300/350	250/300/350
2700	1200-2700	250/300/350	250/300/350
3000	1200-3000	250/300/350	250/300/350
3300	1200-3300	250/300/350	250/300/350
3600	1200-3600	250/300/350	250/300/350
3900	1200-3900	300/350	300/350
4200	1200-4200	300/350	300/350
4500	1200-4200	300/350	300/350
4800	1200-4200	300/350	300/350
5100	1200-4200	300/350	300/350
5400	1200-4200	300/350	300/350
5700	1200-4200	300/350	300/350
6000	1200-4200	300/350	300/350

## Mass and Dimension MCON Box Sections

### Notes

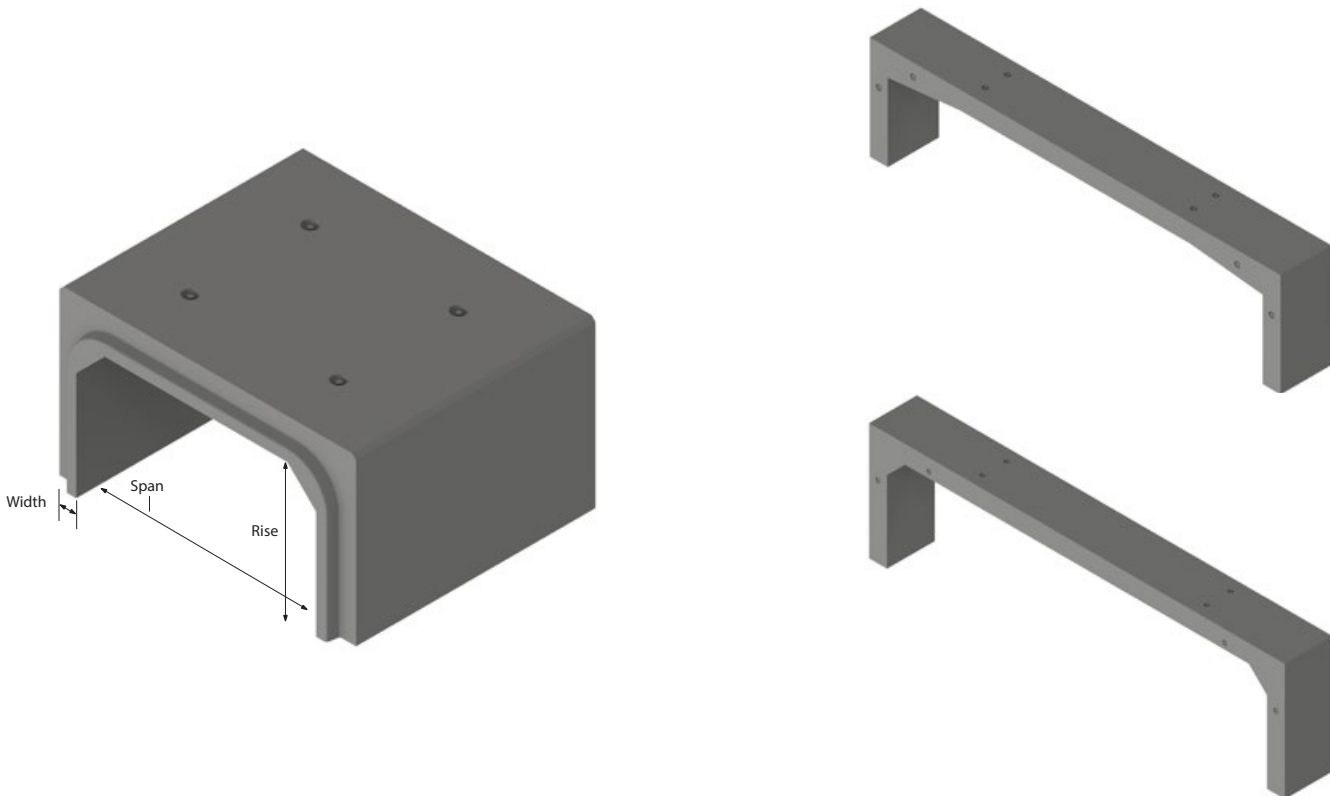
1. Designed and manufactured in accordance with the Canadian Highway Bridge Design Code (CHBDC) CAN/CSA-S6.
2. Rise dimension is variable in 300mm increments.
3. Contact our engineering department for special design concrete box section applications.
4. All dimensions are in millimeters unless otherwise shown.





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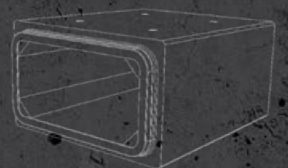


Span	Rise	Wall Thickness (w)	Haunch (x)	Haunch (y)
mm	mm	mm	mm	mm
600 - 9144	600 - 3600	200 - 450	200 - 3000	200 - 450

## Three Sided Culverts

### Notes

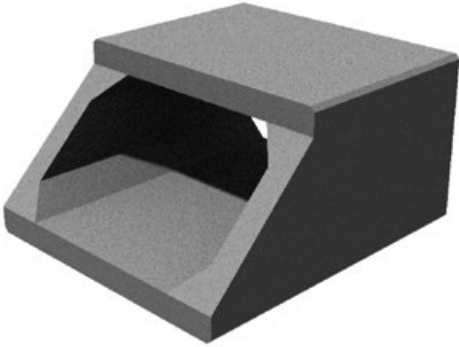
1. Designed and manufactured in accordance with the Canadian Highway Bridge Design Code (CHBDC) CAN/CSA-S6.
2. Span and rise dimensions are variable in 300mm increments.
3. Footing design available upon request.
4. All dimensions are in millimeters unless otherwise shown.
5. Contact our engineering department for custom design or larger three sided culverts.



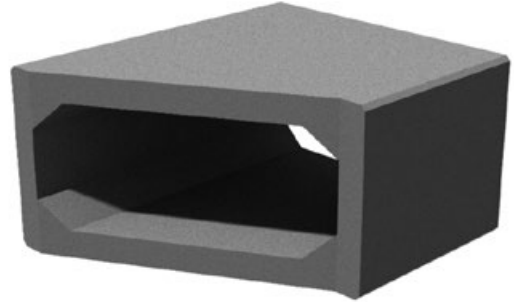


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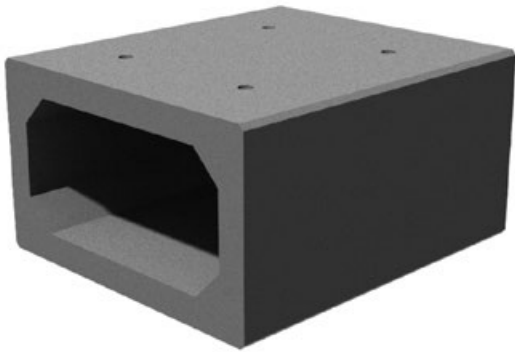
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SLOPED END



BEVELLED END

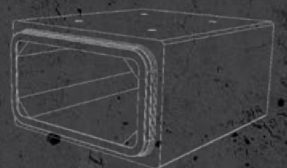


FLUSH END



OPENING FOR PIPE CONNECTION

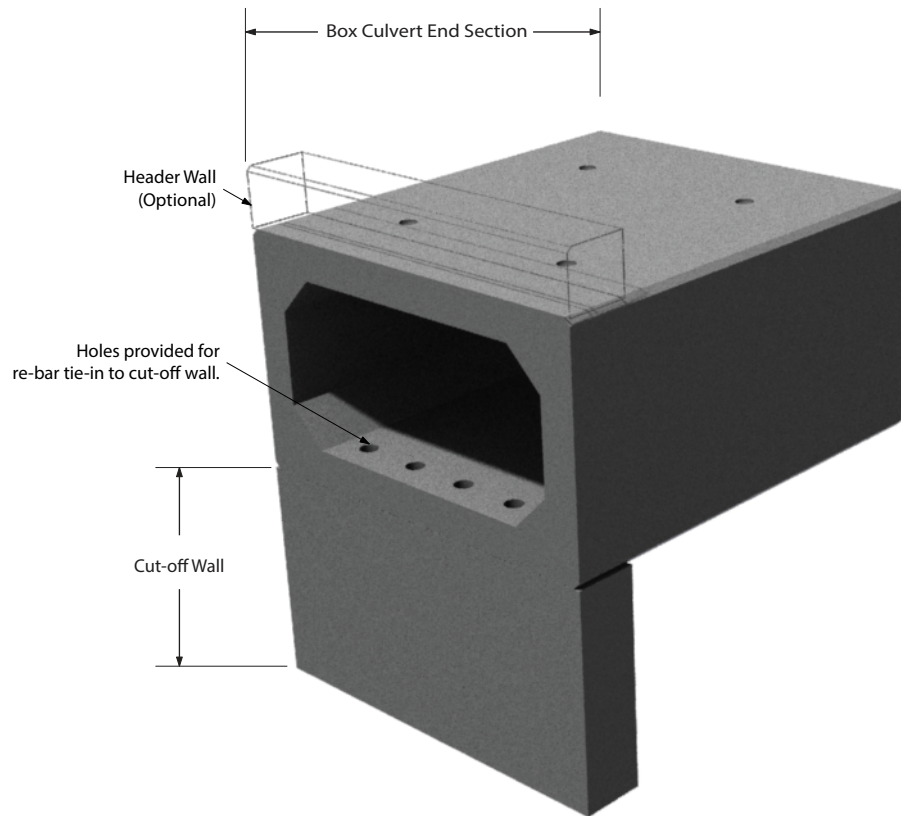
Special Box Sections  
and Fittings





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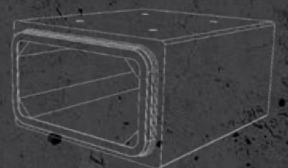


See Note 3

## Special Box Sections (Optional Cut-Off Wall)

### Notes

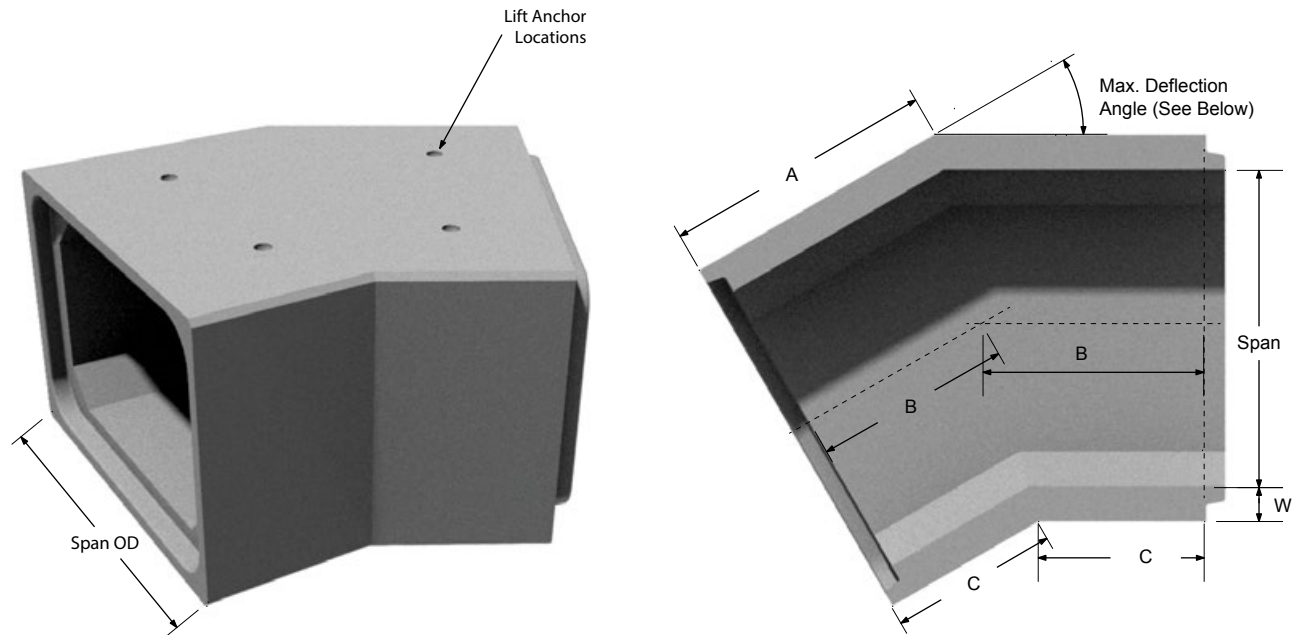
1. Contact our engineering department for special design concrete box culvert applications.
2. All dimensions are in millimeters unless otherwise shown.
3. Precast cut-off wall available for all box section end treatment types.





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Span	Max. Deflection Angle	Wall Thickness (W)	Span (OD)	A (max.)	B (constant)	C (min.)	Lift Anchor size
mm	degrees	mm	mm	mm	mm	mm	tons
1800	75	200	2200	2094	1250	406	4
2400	60	200	2800	2058	1250	442	4
3000	45	250	3500	1975	1250	525	8

## Box Section OPSS Bends

### Notes

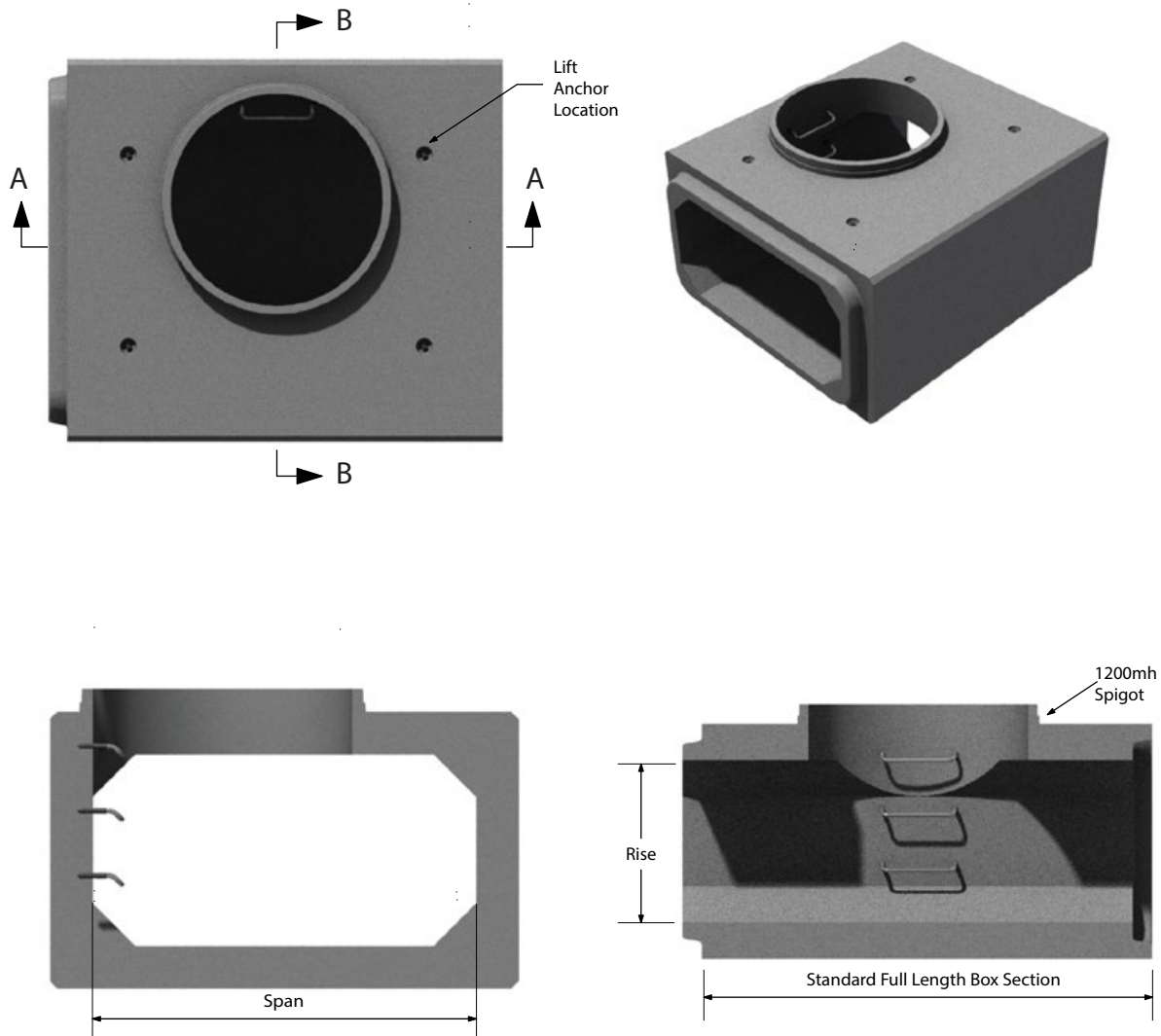
1. Manufactured in accordance with OPSS 1821 and CHBDC.
2. Above dimensions are based on standard center line length of 2.50 m.
3. Contact our engineering department for additional box bend information and angles not detailed.





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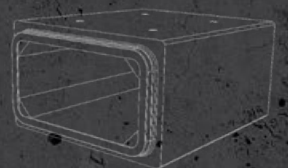
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## Box Section Maintenance Hole Tees

### Notes

1. Manufactured in accordance with OPSS 1821 and CHBDC.
2. Maintenance holes steps as per OPSD 405.010.
3. Above dimensions are in millimeter unless otherwise shown.





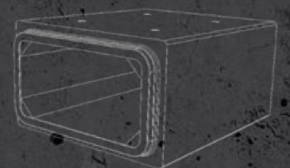
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Designated Size Span X Rise	Approximate Mass	
	Plugs	Caps
mm	kg/pc	kg/pc
1800 x 900	1950	1984
1800 x 1200	2439	2567
2400 x 1200	3112	3050
2400 x 1500	3725	3593
2400 x 1800	4352	4409
3000 x 1500	4781	4847
3000 x 1800	5542	5530
3000 x 2100	6302	6214
3000 x 2400	7063	6897
Custom	Varies	Varies

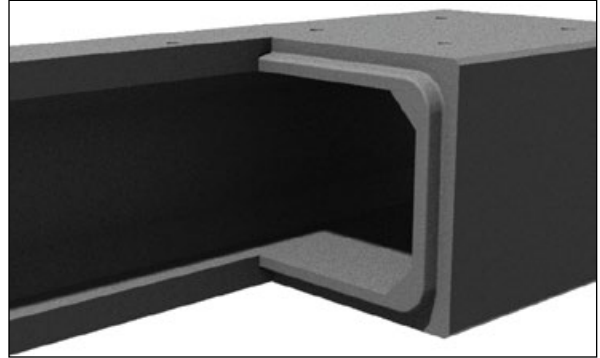
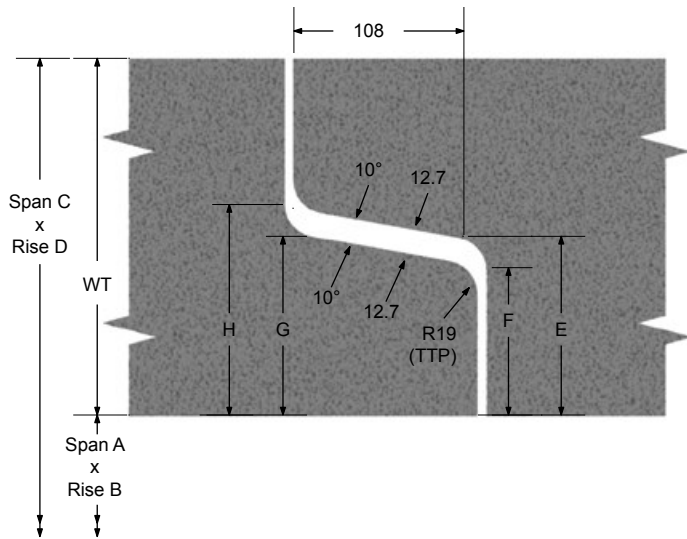
Box Section Plugs  
and Caps





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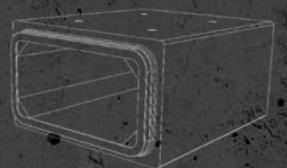


Inside		Outside		E	F	G	H	WT
Span A	Rise B	Span C	Rise D					
1800	1200	2200	1600	96.9	84.0	103.1	116.0	200
2400	1800	2800	2200	96.9	84.0	103.1	116.0	200

## Box Section OPSS Joint Details

### Notes

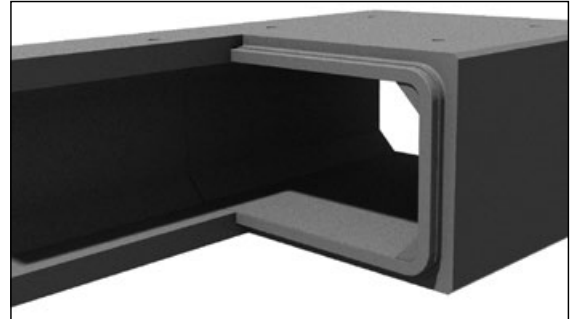
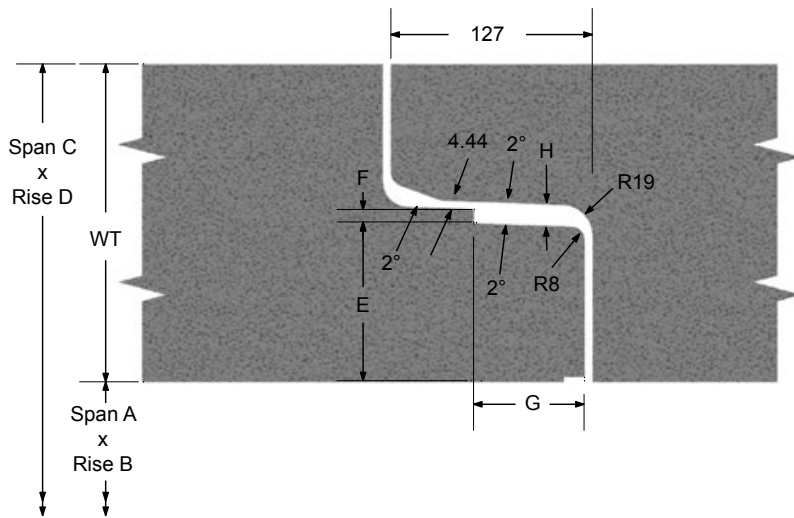
1. Box sizes and dimensions conform to those included in OPSS 1821.
2. Rubber gasket joint treatment available upon request.
3. See page 32 for box joint procedures.
4. All dimensions are in millimeters unless otherwise shown.





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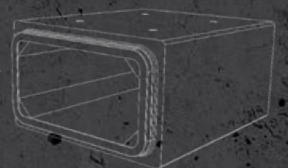


Inside		Outside		E	F	G	H	WT
Span A	Rise B	Span C	Rise D					
1800	900	2200	1300	100.0	8.89	69.85	13.34	200
2400	1200	2800	1600	100.0	8.89	69.85	13.34	200
2400	1500	2800	1900	100.0	8.89	69.85	13.34	200
3000	1500	3500	2000	125.0	8.89	69.85	13.34	250
3000	1800	3500	2300	125.0	8.89	69.85	13.34	250
3000	2100	3500	2600	125.0	8.89	69.85	13.34	250
3000	2400	3500	2900	125.0	8.89	69.85	13.34	250

## Box Section OPSS Joint Details

### Notes

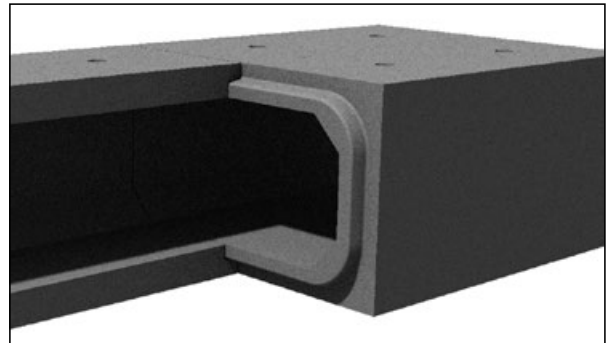
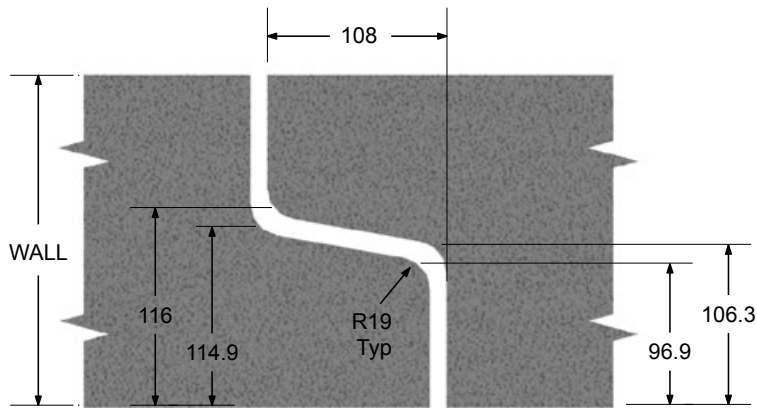
1. Box sizes and dimensions conform to those included in OPSS 1321.
2. Rubber gasket joint treatment available upon request.
3. See page 32 for box joint procedures.
4. All dimensions are in millimeters unless otherwise shown.





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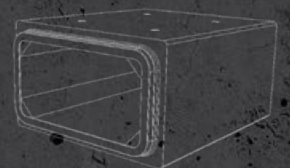


Span	Rise	Wall	Haunch
mm	mm	mm	mm
1200	600 - 1200	200 / 250	200 / 250
1500	600 - 1500	200 / 250	200 / 250
1800	900 - 1800	200 / 250 / 300	200 / 250 / 300
2100	900 - 2100	200 / 250 / 300 / 350	200 / 250 / 300 / 350
2400	900 - 2400	200 / 250 / 300 / 350	200 / 250 / 300 / 350
2700	900 - 2700	200 / 250 / 300 / 350	200 / 250 / 300 / 350
3000	900 - 3000	250 / 300 / 350	250 / 300 / 350
3300	900 - 3300	250 / 300 / 350	250 / 300 / 350
3600	900 - 3600	250 / 300 / 350	250 / 300 / 350
3900	900 - 3600	300 / 350 / 400	300 / 350 / 400
4200	900 - 3600	300 / 350 / 400	300 / 350 / 400
4500	900 - 3600	300 / 350 / 400	300 / 350 / 400
4800	900 - 3600	300 / 350 / 400	300 / 350 / 400
5100+	900 - 3600	300 / 350 / 400	350 / 400 / 450

## Box Section Joint Detail

### Notes

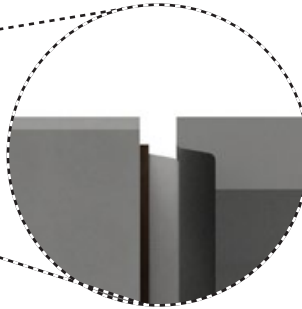
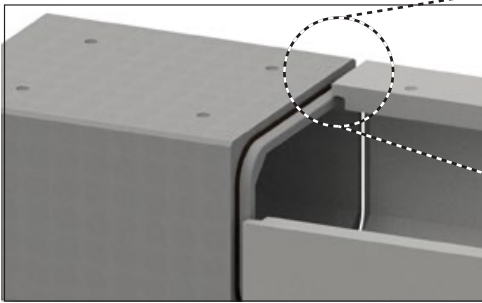
1. Manufactured in accordance with OPSS 1821 and CHBDC.
2. Rise dimension is variable in 300mm increments.
3. Contact our engineering department for special design concrete box culvert applications.
4. See page 32 for box joint procedures.
5. All dimensions are in millimeters unless otherwise shown.





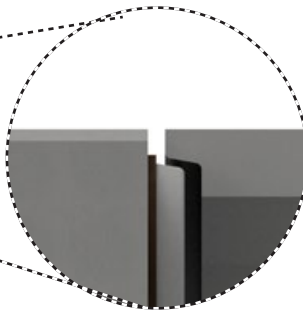
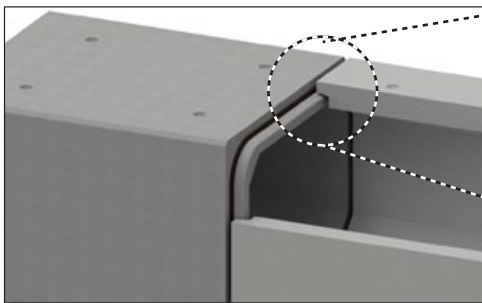
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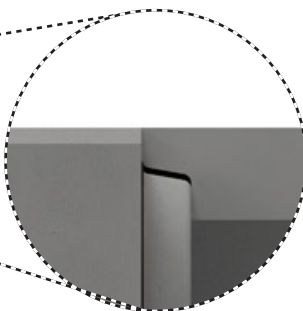
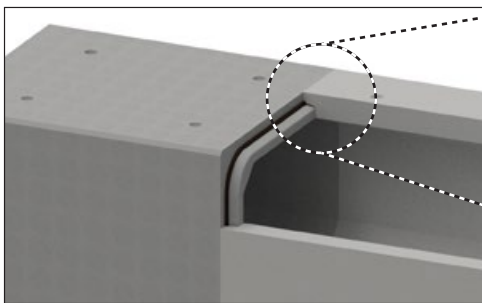
## Step 1

Clean all dirt and foreign objects off the bell and spigot. Ensure both the bell and spigot are free of cracks, chips and defects. Apply butyl tape around the perimeter of the spigot.



## Step 2

Align the spigot with the bell. Ensure the butyl tape is in contact with the entire circumference of both the bell taper and the spigot before fully homing the joint.



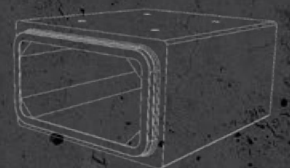
## Step 3

Engage the spigot into the bell to fully install, locking the joint into place. The butyl tape will deform between the bell and spigot creating the complete seal.

## Box Section Joint Procedure – Butyl Tape

### Notes

1. The following above jointing procedure will ensure full optimization of pipe joint performance.
2. This jointing procedure applies to Box Sections available with butyl tape.





**MAINTENANCE HOLES**



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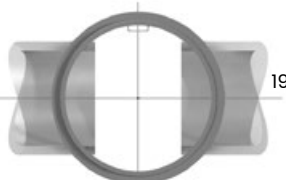
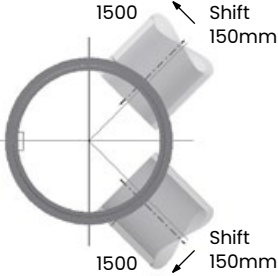
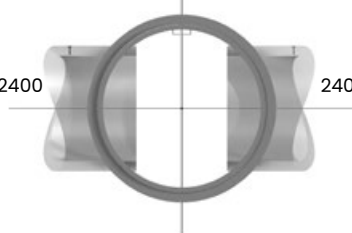
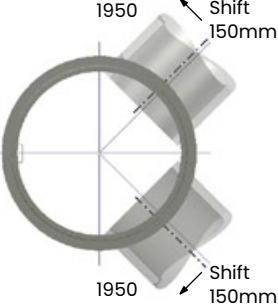
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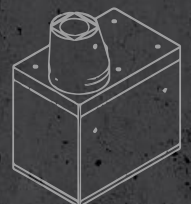
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MH Size (mm)	Max. Pipe Size For Straight Through	Max. Pipe Size For Right Angle
1200	600  600	 450 450
1500	825  825	 600 600
1800	1050  1050	 825 825
2400	1500  1500	 1050 1050
3000	1950  1950	 1500 Shift 150mm 1500 Shift 150mm
3600	2400  2400	 1950 Shift 150mm 1950 Shift 150mm

## Maintenance Hole Circular Max Pipe Sizes

### Notes

- Knockouts for small diameter pipe leads 300mm and smaller can be provided in addition to what is shown.
- All dimensions are in millimeters unless otherwise shown.





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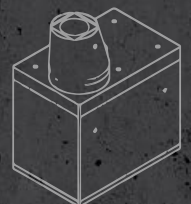
## 60° SEPARATION

Pipe Size	300	375	450	525	600	675	750	825	900	975	1050	1200	1350	1500
300	1500													
375	1500	1800												
450	1800	1800	1800											
525	1800	1800	1800	2400										
600	1800	1800	2400	2400	2400									
675	1800	2400	2400	2400	2400	2400								
750	2400	2400	2400	2400	2400	2400	2400							
825	2400	2400	2400	2400	2400	3000	3000	3000						
900	2400	2400	2400	2400	2400	3000	3000	3000	3000					
975	2400	2400	2400	2400	3000	3000	3000	3000	3000	3000				
1050	2400	2400	2400	3000	3000	3000	3000	3000	3000	3000	3600	3600		
1200	3000	3000	3000	3000	3000	3000	3000	3600	3600	3600	3600	3600	3600	
1350	3000	3000	3000	3000	3000	3600	3600	3600	3600	3600	3600			
1500	3000	3000	3000	3600	3600	3600	3600	3600	3600	3600				
1650	3600	3600	3600	3600	3600	3600	3600	3600						
1800	3600	3600	3600	3600	3600									
1950	3600	3600	3600											

## Maintenance Hole Circular Max Pipe Sizes

### Notes

1. Determine all degrees of separation between each set of pipes.
2. If an angle measured does not correspond to any of the tables then round down the angle to the nearest corresponding table.
3. Take each set of pipes and their corresponding angle of separation then compare them to their appropriate table.
4. The largest size of MH will govern – Table is based on OPSD 701.021 (Nov 2014 Rev #4)





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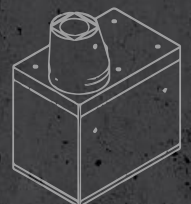
## 75° SEPARATION

Pipe Size	300	375	450	525	600	675	750	825	900	975	1050	1200	1350	1500
300	1200													
375	1200	1200												
450	1500	1500	1500											
525	1500	1500	1500	1800										
600	1500	1500	1800	1800	1800									
675	1500	1800	1800	1800	1800	1800								
750	1800	1800	1800	1800	1800	2400	2400							
825	1800	1800	1800	1800	2400	2400	2400	2400						
900	1800	1800	1800	2400	2400	2400	2400	2400	2400					
975	1800	2400	2400	2400	2400	2400	2400	2400	2400	3000				
1050	2400	2400	2400	2400	2400	2400	2400	2400	3000	3000	3000			
1200	2400	2400	2400	2400	2400	2400	3000	3000	3000	3000	3000	3000		
1350	2400	2400	2400	2400	3000	3000	3000	3000	3000	3000	3000	3600	3600	
1500	2400	3000	3000	3000	3000	3000	3000	3000	3000	3000	3600	3600	3600	3600
1650	3000	3000	3000	3000	3000	3000	3600	3600	3600	3600	3600	3600	3600	
1800	3000	3000	3000	3600	3600	3600	3600	3600	3600	3600	3600	3600		
1950	3600	3600	3600	3600	3600	3600	3600	3600	3600	3600	3600			
2100	3600	3600	3600	3600	3600	3600	3600	3600						
2250	3600	3600	3600	3600	3600									
2400	3600	3600												

## Maintenance Hole Circular Max Pipe Sizes

### Notes

1. Determine all degrees of separation between each set of pipes.
2. If an angle measured does not correspond to any of the tables then round down the angle to the nearest corresponding table.
3. Take each set of pipes and their corresponding angle of separation then compare them to their appropriate table.
4. The largest size of MH will govern – Table is based on OPSD 701.021 (Nov 2014 Rev #4)





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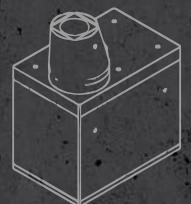
## 90° SEPARATION

Pipe Size	300	375	450	525	600	675	750	825	900	975	1050	1200	1350	1500	1650	1800	1950
300	1200																
375	1200	1200															
450	1200	1200	1200														
525	1200	1200	1500	1500													
600	1200	1500	1500	1500	1500												
675	1500	1500	1500	1500	1800	1800											
750	1500	1500	1500	1500	1800	1800	1800										
825	1500	1500	1800	1800	1800	1800	1800	1800									
900	1800	1800	1800	1800	1800	1800	1800	1800	1800								
975	1800	1800	1800	1800	1800	1800	2400	2400	2400	2400							
1050	1800	1800	1800	1800	1800	2400	2400	2400	2400	2400	2400						
1200	2400	2400	2400	2400	2400	2400	2400	2400	2400	2400	3000	3000					
1350	2400	2400	2400	2400	2400	2400	2400	2400	3000	3000	3000	3000	3000				
1500	2400	2400	2400	2400	2400	2400	3000	3000	3000	3000	3000	3000	3000	3000			
1650	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000	3600	3600	3600		
1800	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000	3600	3600	3600	3600	3600	
1950	3000	3000	3000	3000	3000	3000	3000	3000	3000	3600	3600	3600	3600	3600	3600	3600	3600
2100	3600	3600	3600	3600	3600	3600	3600	3600	3600	3600	3600	3600	3600	3600			
2250	3600	3600	3600	3600	3600	3600	3600	3600	3600	3600	3600	3600	3600				
2400	3600	3600	3600	3600	3600	3600	3600	3600	3600	3600	3600	3600					

## Maintenance Hole Circular Max Pipe Sizes

### Notes

1. Determine all degrees of separation between each set of pipes.
2. If an angle measured does not correspond to any of the tables then round down the angle to the nearest corresponding table.
3. Take each set of pipes and their corresponding angle of separation then compare them to their appropriate table.
4. The largest size of MH will govern - Table is based on OPSD 701.021 (Nov 2014 Rev #4)





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## 105° SEPARATION

Pipe Size	300	375	450	525	600	675	750	825	900	975	1050	1200	1350	1500	1650	1800	1950	2100	2250	2400	
300	1200																				
375	1200	1200																			
450	1200	1200	1200																		
525	1200	1200	1200	1200																	
600	1200	1200	1200	1200	1500																
675	1500	1500	1500	1500	1500	1500															
750	1500	1500	1500	1500	1500	1500	1500														
825	1500	1500	1500	1500	1500	1500	1800	1800													
900	1500	1500	1500	1500	1500	1800	1800	1800	1800												
975	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800											
1050	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	2400	2400									
1200	2400	2400	2400	2400	2400	2400	2400	2400	2400	2400	2400	2400	2400								
1350	2400	2400	2400	2400	2400	2400	2400	2400	2400	2400	2400	2400	2400	3000							
1500	2400	2400	2400	2400	2400	2400	2400	2400	2400	2400	2400	2400	3000	3000	3000						
1650	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000					
1800	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000	3600				
1950	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000	3600	3600	3600			
2100	3600	3600	3600	3600	3600	3600	3600	3600	3600	3600	3600	3600	3600	3600	3600	3600	3600	3600	3600		
2250	3600	3600	3600	3600	3600	3600	3600	3600	3600	3600	3600	3600	3600	3600	3600	3600	3600	3600	3600		
2400	3600	3600	3600	3600	3600	3600	3600	3600	3600	3600	3600	3600	3600	3600	3600	3600	3600	3600	3600		

## Maintenance Hole Circular Max Pipe Sizes

### Notes

1. Determine all degrees of separation between each set of pipes.
2. If an angle measured does not correspond to any of the tables then round down the angle to the nearest corresponding table.
3. Take each set of pipes and their corresponding angle of separation then compare them to their appropriate table.
4. The largest size of MH will govern – Table is based on OPSD 701.021 (Nov 2014 Rev #4)





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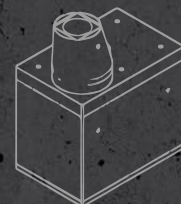
## 135° SEPARATION

Pipe Size	300	375	450	525	600	675	750	825	900	975	1050	1200	1350	1500	1650	1800	1950	2100	2250	2400	
300	1200																				
375	1200	1200																			
450	1200	1200	1200																		
525	1200	1200	1200	1200																	
600	1200	1200	1200	1200	1200																
675	1500	1500	1500	1500	1500	1500															
750	1500	1500	1500	1500	1500	1500	1500														
825	1500	1500	1500	1500	1500	1500	1500	1500													
900	1800	1800	1800	1800	1800	1800	1800	1800	1800												
975	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800											
1050	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800										
1200	2400	2400	2400	2400	2400	2400	2400	2400	2400	2400	2400	2400	2400								
1350	2400	2400	2400	2400	2400	2400	2400	2400	2400	2400	2400	2400	2400	2400							
1500	2400	2400	2400	2400	2400	2400	2400	2400	2400	2400	2400	2400	2400	2400	2400						
1650	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000					
1800	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000				
1950	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000			
2100	3600	3600	3600	3600	3600	3600	3600	3600	3600	3600	3600	3600	3600	3600	3600	3600	3600	3600	3600		
2250	3600	3600	3600	3600	3600	3600	3600	3600	3600	3600	3600	3600	3600	3600	3600	3600	3600	3600	3600	3600	3600
2400	3600	3600	3600	3600	3600	3600	3600	3600	3600	3600	3600	3600	3600	3600	3600	3600	3600	3600	3600	3600	3600

## Maintenance Hole Circular Max Pipe Sizes

### Notes

1. Determine all degrees of separation between each set of pipes.
2. If an angle measured does not correspond to any of the tables then round down the angle to the nearest corresponding table.
3. Take each set of pipes and their corresponding angle of separation then compare them to their appropriate table.
4. The largest size of MH will govern – Table is based on OPSD 701.021 (Nov 2014 Rev #4)





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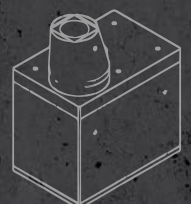
### 150° - 180° SEPARATION

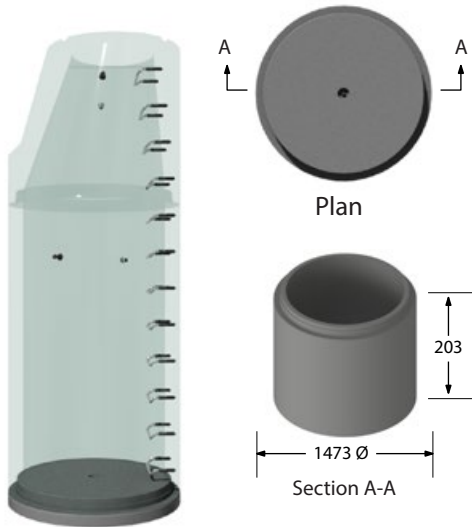
Pipe Size	300	375	450	525	600	675	750	825	900	975	1050	1200	1350	1500	1650	1800	1950	2100	2250	2400	
300	1200																				
375	1200	1200																			
450	1200	1200	1200																		
525	1200	1200	1200	1200																	
600	1200	1200	1200	1200	1200																
675	1500	1500	1500	1500	1500	1500															
750	1500	1500	1500	1500	1500	1500	1500														
825	1500	1500	1500	1500	1500	1500	1500	1500													
900	1500	1500	1500	1500	1500	1500	1500	1500	1500												
975	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800											
1050	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800	1800										
1200	2400	2400	2400	2400	2400	2400	2400	2400	2400	2400	2400	2400									
1350	2400	2400	2400	2400	2400	2400	2400	2400	2400	2400	2400	2400	2400								
1500	2400	2400	2400	2400	2400	2400	2400	2400	2400	2400	2400	2400	2400	2400							
1650	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000						
1800	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000					
1950	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000				
2100	3600	3600	3600	3600	3600	3600	3600	3600	3600	3600	3600	3600	3600	3600	3600	3600	3600	3600			
2250	3600	3600	3600	3600	3600	3600	3600	3600	3600	3600	3600	3600	3600	3600	3600	3600	3600	3600	3600		
2400	3600	3600	3600	3600	3600	3600	3600	3600	3600	3600	3600	3600	3600	3600	3600	3600	3600	3600	3600	3600	3600

## Maintenance Hole Circular Max Pipe Sizes

### Notes

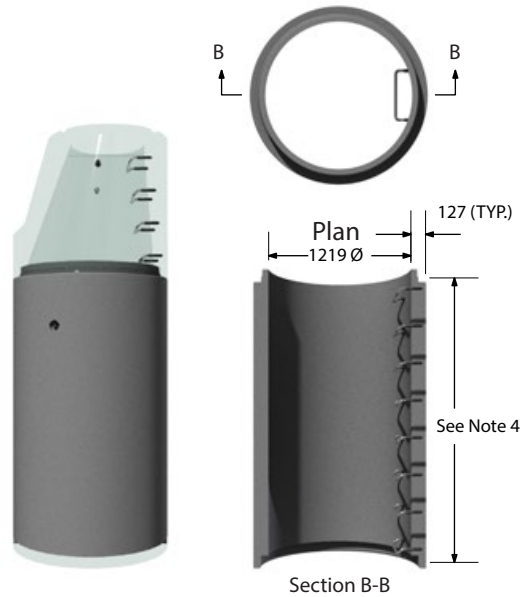
1. Determine all degrees of separation between each set of pipes.
2. If an angle measured does not correspond to any of the tables then round down the angle to the nearest corresponding table.
3. Take each set of pipes and their corresponding angle of separation then compare them to their appropriate table.
4. The largest size of MH will govern – Table is based on OPSD 701.021 (Nov 2014 Rev #4)





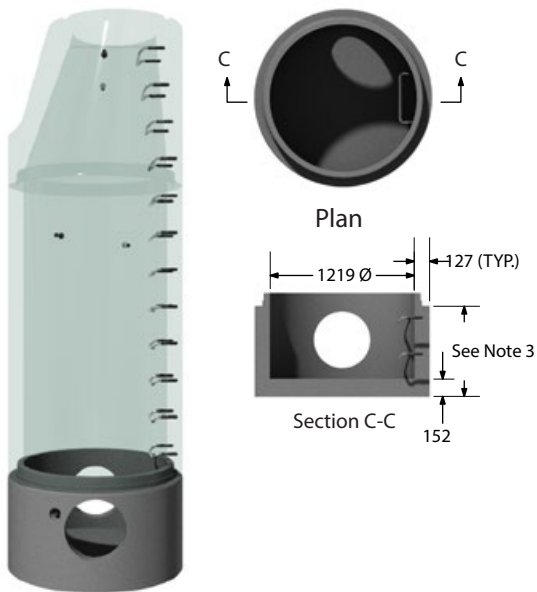
### Base Slab

(mass - 759 kg)



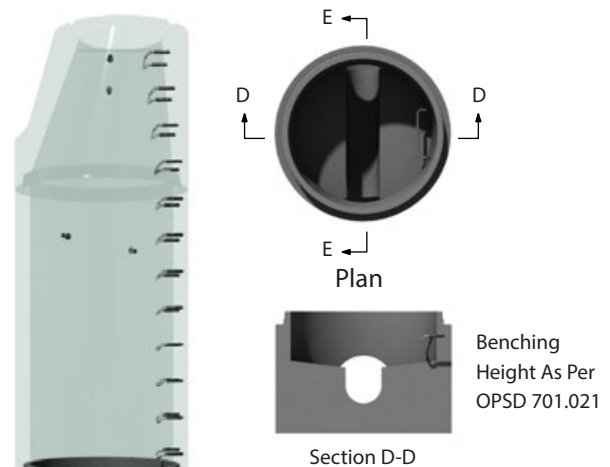
### Riser

(mass - 1340 kg/m)



### Standard Mono Base

(mass - 720 kg + 1340 kg/m)

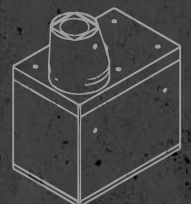


### Benched Mono Base

## Maintenance Hole 1200mm Riser and Base Sections

#### Notes

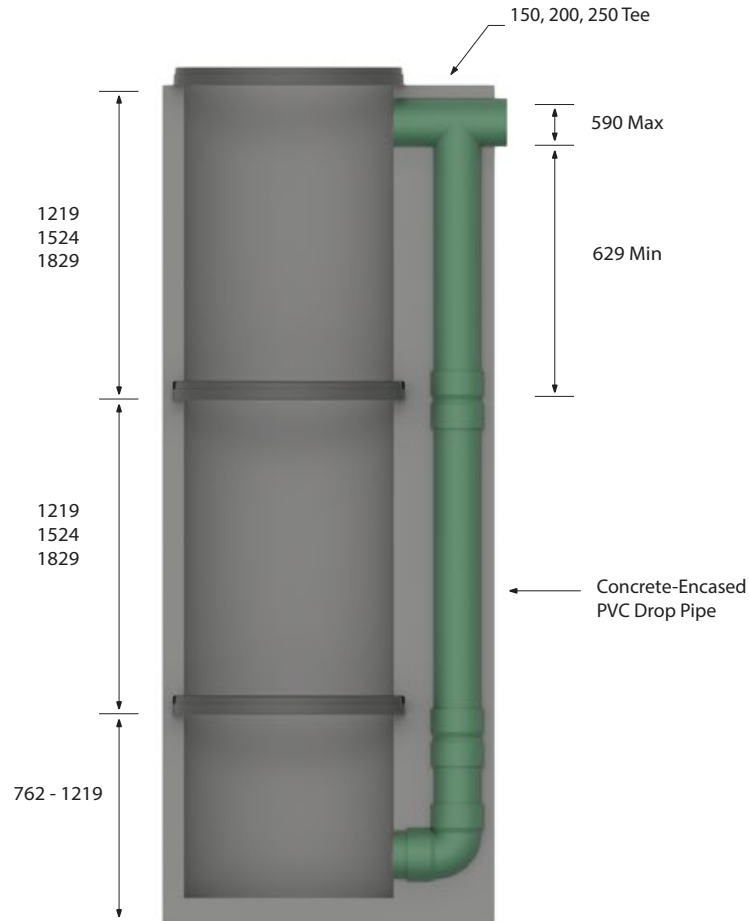
1. Manufactured in accordance with OPSD 701.031 and 701.032.
2. See page 35 for maximum pipe size and alignment angles.
3. Available mono base heights - 610, 762, 914, 1067, 1219, 1372, 1524, 1676 and 1829.
4. Available riser section heights - 305, 610, 914, 1219, 1524 and 1829.
5. Maintenance hole steps (circular hollow aluminum) as per OPSD 405.010.
6. All dimensions are in millimeters unless otherwise shown.
7. 1200 conversion riser requires gasket on both spigot ends.
8. Pre-benching available.





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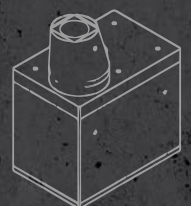


Sewer ID	Drop Pipe ID	Application
200	150-200	Storm and Sanitary
250	150-250	Storm and Sanitary
300	150-300	Storm and Sanitary

## Drop Maintenance Holes

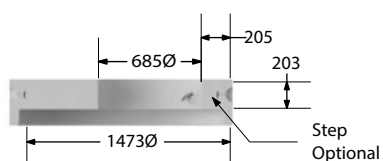
### Notes

- Concrete shall be placed to undisturbed ground and the outside face of the maintenance hole, but there shall be a minimum of 150mm of 15mpa concrete around the drop pipe.
- Manufactured in accordance with OPSD 1003.010.
- Dimensions are in millimetres unless otherwise shown.
- 300 Drop only includes vertical pipe and 90 degree bend, no tee at top.





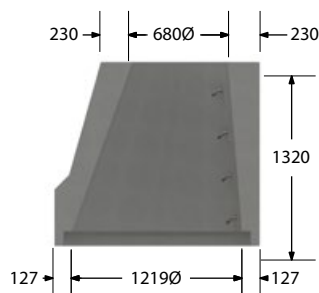
Plan



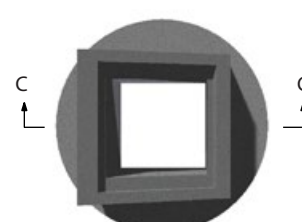
Section A-A



Plan



Section B-B



Plan



Section C-C


**Flap Cap**

(mass - 742 kg)


**Cone**

(mass - 1975 kg)

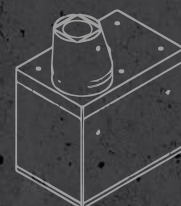

**Ditch Inlet Flat Cap**

(mass - 742 kg + 1133 kg/m)

## Maintenance Hole 1200mm Top Treatments

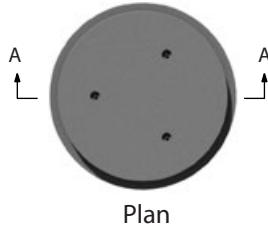
### Notes

1. Manufactured in accordance with OPSD 701.030 and 705.030 (ditch inlet top only. See page 88 for ditch inlet information).
2. Maintenance hole steps (circular hollow aluminum) as per OPSD 405.010.
3. All dimensions are in millimeters unless otherwise shown.

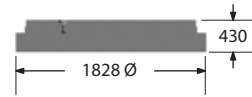




(mass - 1786 kg)

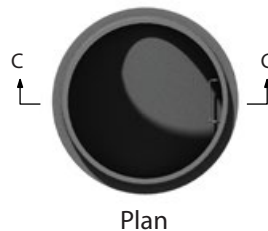


Plan

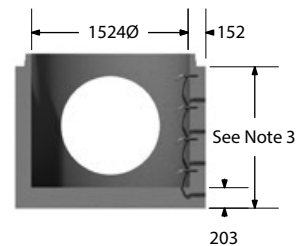


Section A-A

## Base Slab



Plan

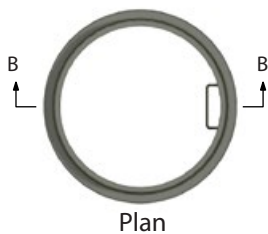


Section C-C

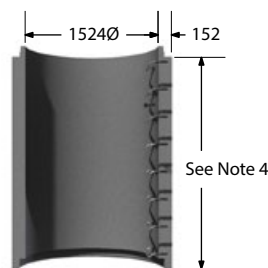
## Standard Mono Base



(mass - 2007 kg/m)



Plan



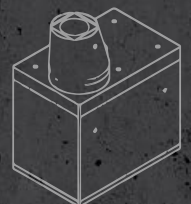
Section B-B

## Riser

# Maintenance Hole 1500mm Riser and Base Sections

### Notes

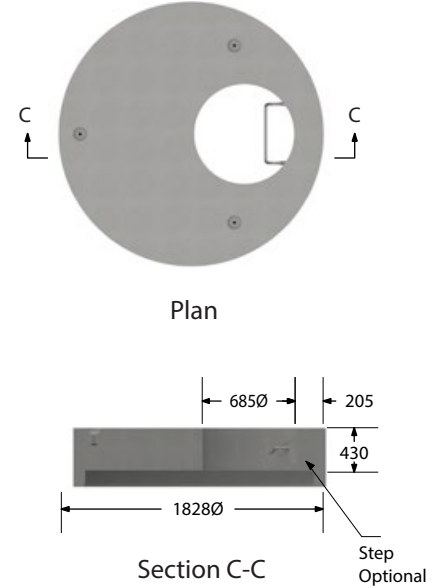
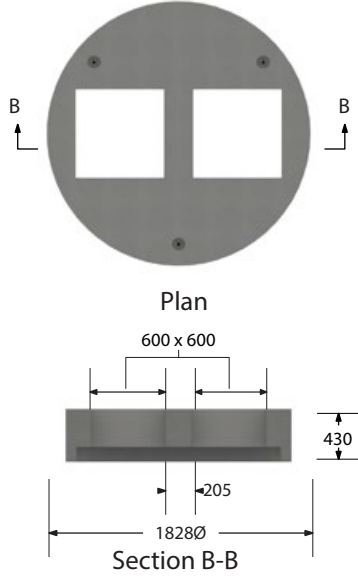
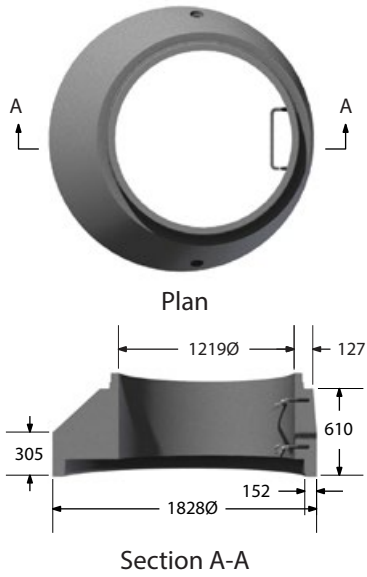
1. Manufactured in accordance with OPSD 701.040 and 701.041.
2. See page 35 for maximum pipe size and alignment angles.
3. Available mono base heights - 610, 914, 1067, 1219, 1372, 1524, 1676, 1829, 1981, 2134, 2286 and 2438.
4. Available riser section heights - 305, 610, 914, 1219, 1524, 1829, 2134 and 2438.
5. Maintenance hole steps (circular hollow aluminum) as per OPSD 405.010.
6. All dimensions are in millimeters unless otherwise shown.
7. Pre-benching available.





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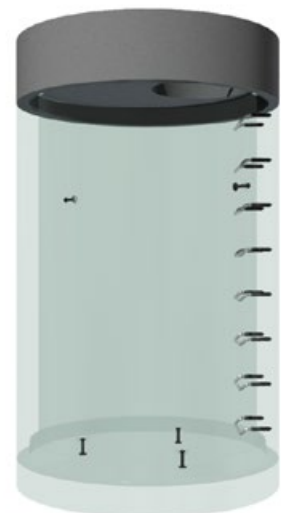
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**Transition**  
(mass - 1633 kg)



**Twin Inlet Flat Cap**  
(mass - 1600 kg)

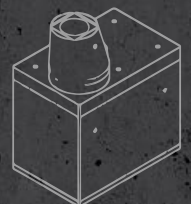


**Flat Cap**  
(mass - 1879 kg)

## Maintenance Hole 1500mm Top Treatments

**Notes**

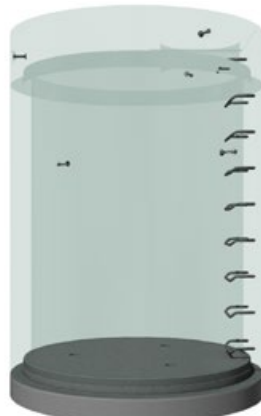
1. Manufactured in accordance with OPSD 701.040 and 703.011 and 703.021.
2. Maintenance hole steps (circular hollow aluminum) as per OPSD 405.010.
3. All dimensions are in millimeters unless otherwise shown.





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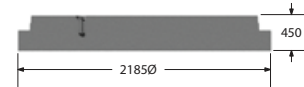
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(mass - 2540 kg)

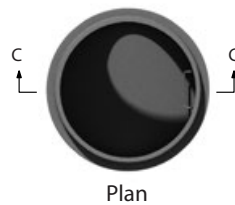


Plan

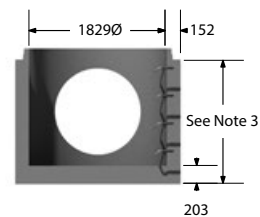


Section A-A

**Base Slab**



Plan

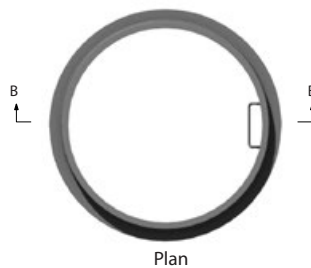


Section C-C

**Standard Mono Base**

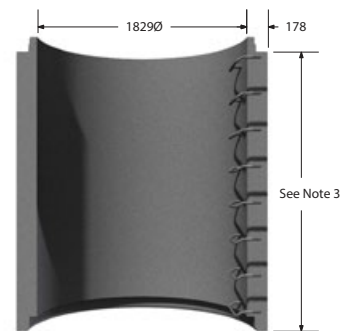


(mass - 2846 ka/m)



Plan

**Riser**

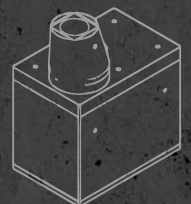


Section B-B

## Maintenance Hole 1800mm Riser and Base Sections

### Notes

1. Manufactured in accordance with OPSD 701.051.
2. See page 35 for maximum pipe size and alignment angles.
3. Available mono base heights - 610, 914, 1067, 1219, 1372, 1524, 1676, 1829, 1981, 2134, 2286 and 2438.
4. Available riser section heights - 305, 610, 914, 1219, 1524, 1829, 2134 and 2438.
5. Maintenance hole steps (circular hollow aluminum) as per OPSD 405.010.
6. All dimensions are in millimeters unless otherwise shown.



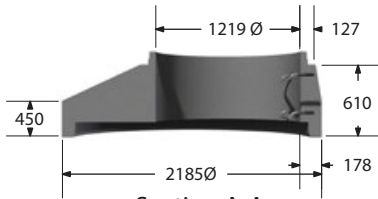


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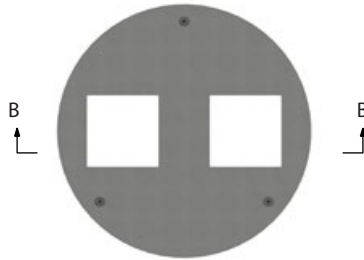
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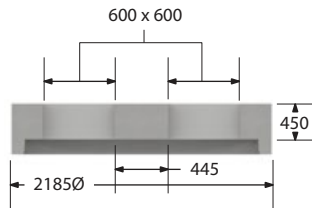
Plan



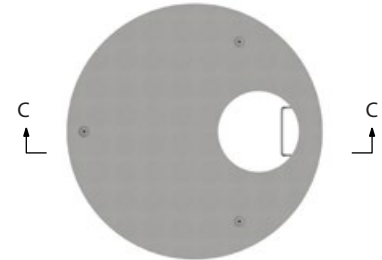
Section A-A



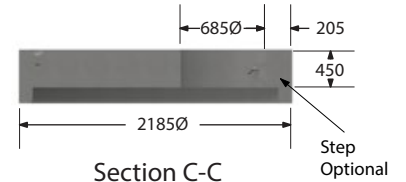
Plan



Section B-B



Plan



Section C-C



**Transition**

(mass - 2570 kg)



**Twin Inlet Flat Cap**

(mass - 2430 kg)



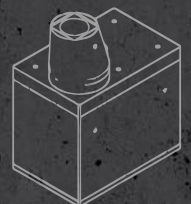
**Flap Cap**

(mass - 2704 kg)

## Maintenance Hole 1800mm Transition and Top Sections

### Notes

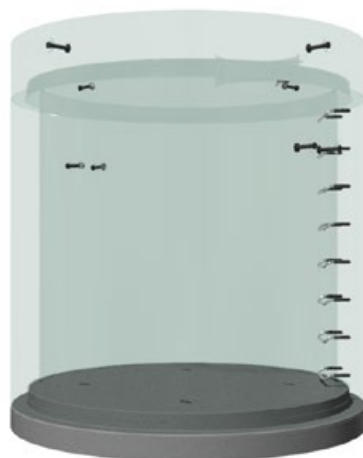
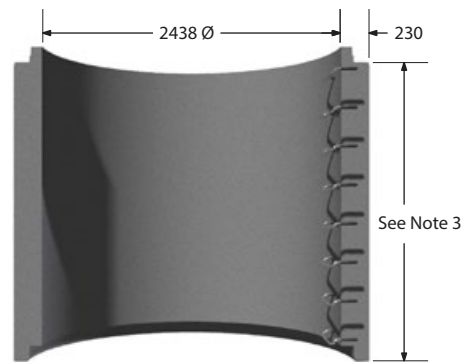
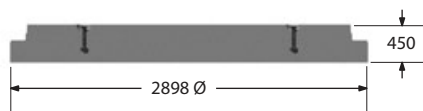
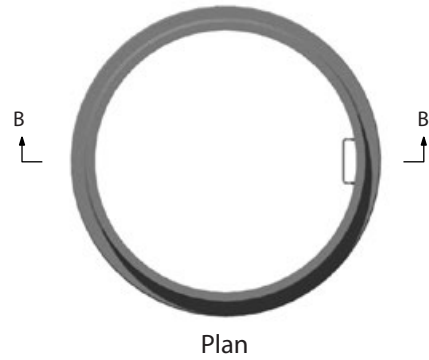
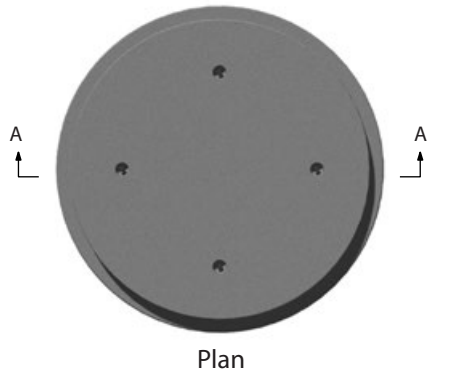
1. Manufactured in accordance with OPSD 701.050, 703.012 and 703.022.
2. Maintenance hole steps (circular hollow aluminum) as per OPSD 405.010.
3. All dimensions are in millimeters unless otherwise shown.





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(mass - 4480 kg)

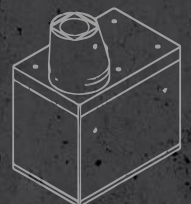


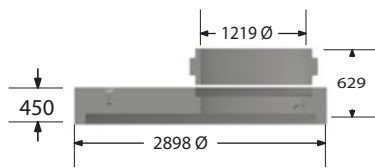
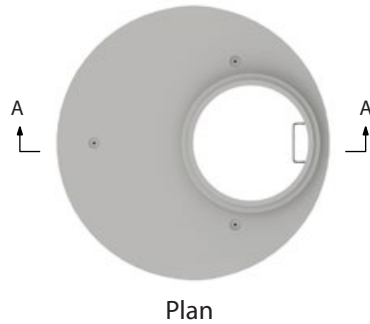
(mass - 4866 kg/m)

## Maintenance Hole 2400mm Riser and Base Slab

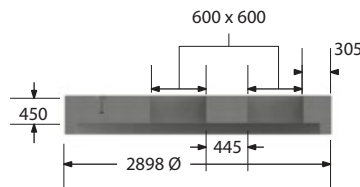
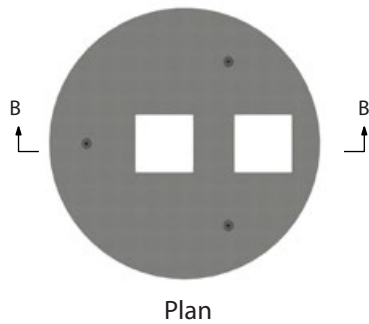
### Notes

1. Manufactured in accordance with OPSD 701.061.
2. See page 35 for maximum pipe size and alignment angles.
3. Available riser section heights - 610, 914, 1219, 1524, 1829, 2134, and 2438.
4. Maintenance hole steps (circular hollow aluminum) as per OPSD 405.010.
5. All dimensions are in millimeters unless otherwise shown.
6. 1200 conversion riser requires gasket on both spigot ends.

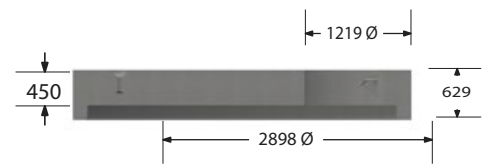
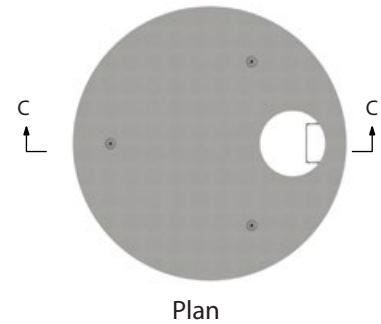




Section A-A



Section B-B



Section C-C



**Transition**

(mass - 4668 kg)



**Twin Inlet Flat Cap**

(mass - 4655 kg)



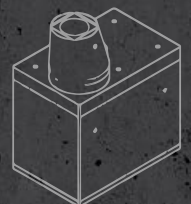
**Flat Cap**

(mass - 4930 kg)

## Maintenance Hole 2400mm Transition and Top Sections

### Notes

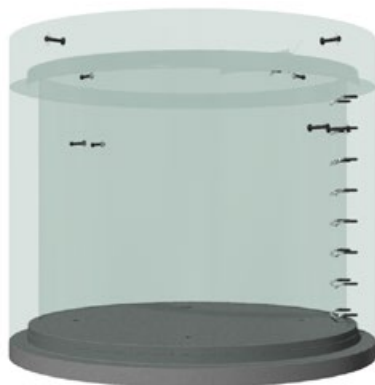
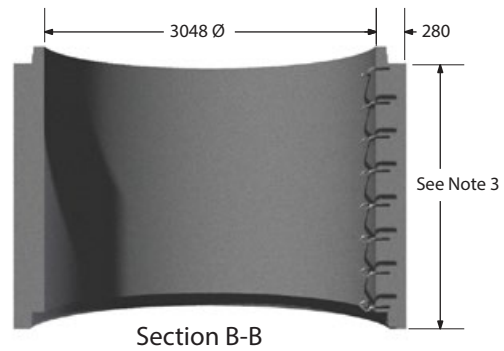
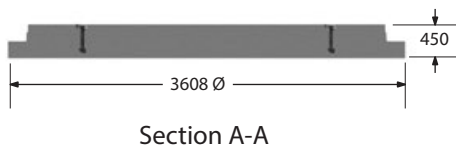
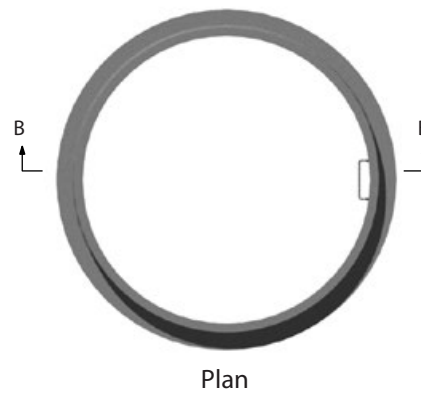
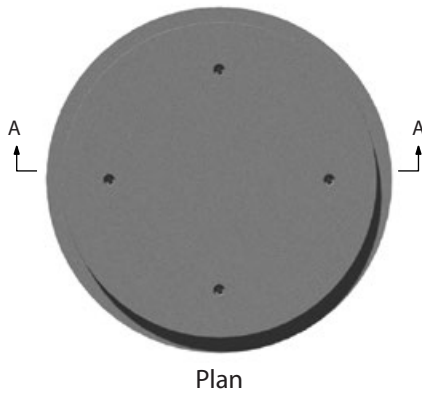
1. Manufactured in accordance with OPSD 701.060 and 703.013, and 703.023.
2. Maintenance hole steps (circular hollow aluminum) as per OPSD 405.010.
3. All dimensions are in millimeters unless otherwise shown.





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**Base Slab**  
(mass - 6944 kg)

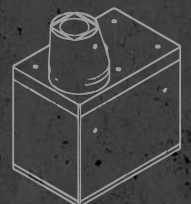


**Riser**  
(mass - 7400 kg/m)

## Maintenance Hole 3000mm Riser and Base Slab

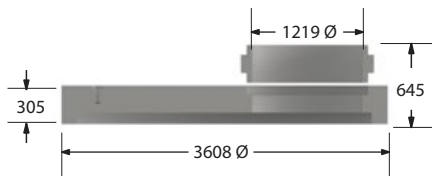
### Notes

1. Manufactured in accordance with OPSD 701.071.
2. See page 35 for maximum pipe size and alignment angles.
3. Available riser section heights - 610, 914, 1219, 1524, 1829, 2134, and 2438.
4. Maintenance hole steps (circular hollow aluminum) as per OPSD 405.010.
5. All dimensions are in millimeters unless otherwise shown.

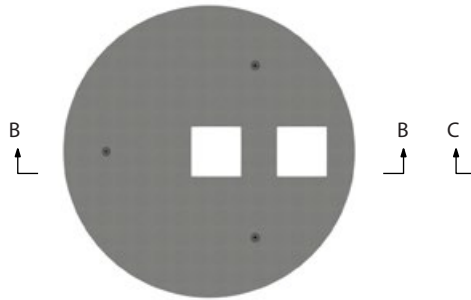




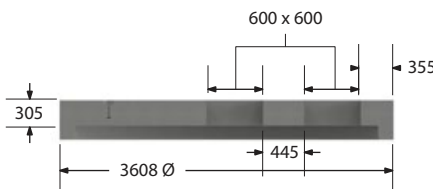
Plan



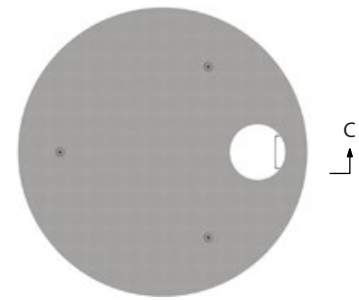
Section A-A



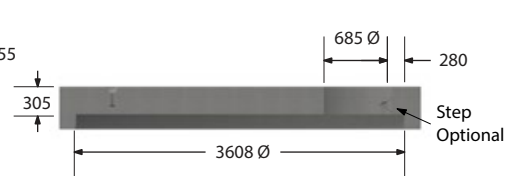
Plan



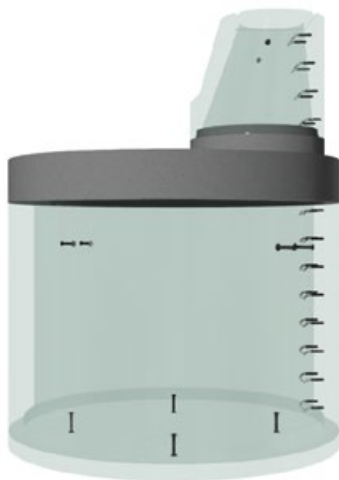
Section B-B



Plan

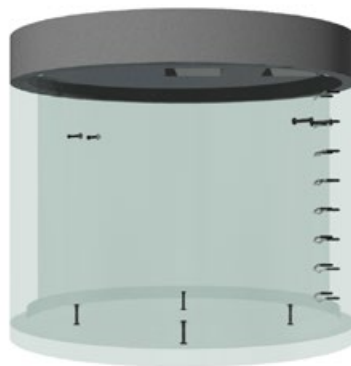


Section C-C



Transition

(mass - 7664 kg)



Twin Inlet Flat Cap

(mass - 7743 kg)



Flat Cap

(mass - 7945 kg)

## Maintenance Hole 3000mm Transition and Top Sections

### Notes

1. Manufactured in accordance with OPSD 701.070 and 703.014, and 703.024.
2. Maintenance hole steps (circular hollow aluminum) as per OPSD 405.010.
3. All dimensions are in millimeters unless otherwise shown.





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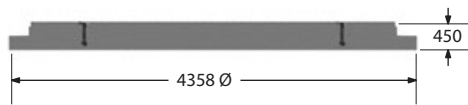
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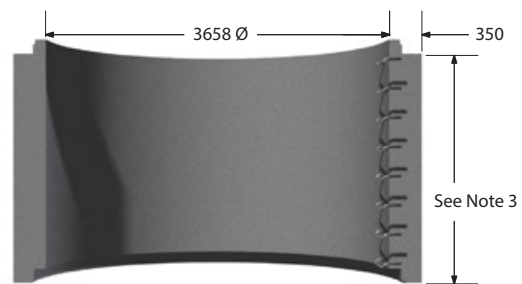
Plan



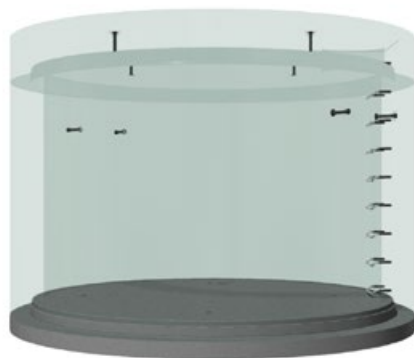
Plan



Section A-A



Section B-B



**Base Slab**

(mass - 10140 kg)



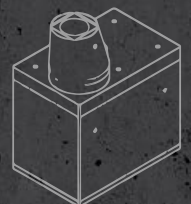
**Riser**

(mass - 10808 kg/m)

## Maintenance Hole 3600mm Riser and Base Slab

### Notes

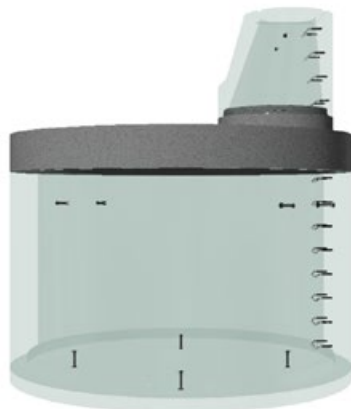
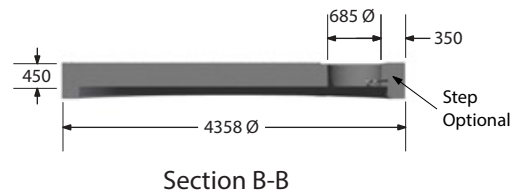
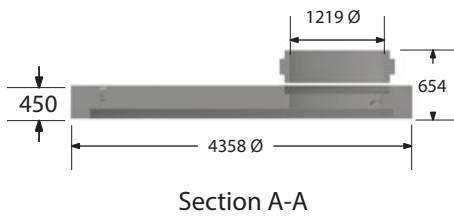
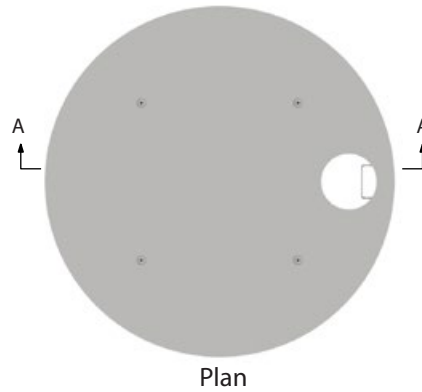
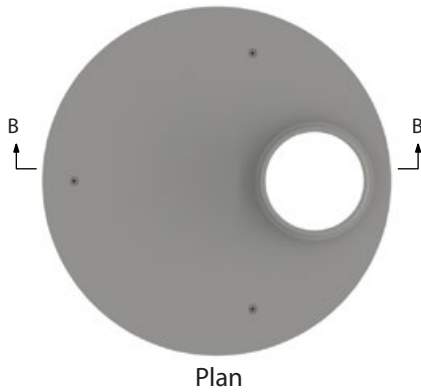
1. Manufactured in accordance with OPSD 701.081.
2. See page 35 for maximum pipe size and alignment angles.
3. Available riser section heights - 610, 914, 1219, 1524, 1829, 2134, and 2438.
4. Maintenance hole steps (circular hollow aluminum) as per OPSD 405.010.
5. All dimensions are in millimeters unless otherwise shown.





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**Transition**  
(mass - 11932 kg)

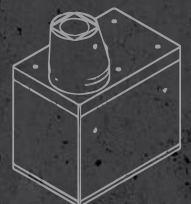


**Flap Cap**  
(mass - 10500 kg)








## Maintenance Hole 3600mm Transition and Flat Cap

### Notes

1. Manufactured in accordance with OPSD 701.080 and 701.015.
2. Maintenance hole steps (circular hollow aluminum) as per OPSD 405.010.
3. All dimensions are in millimeters unless otherwise shown.



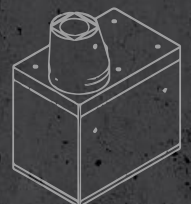
**Max Pipe Size Per Given Wall Size (Perpendicular or 45°)**

<p><b>1219 Wall</b></p>  <p>750 Ø      375 Ø 45°</p>	<p><b>1524 Wall</b></p>  <p>975 Ø      525 Ø 45°</p>	<p><b>1829 Wall</b></p>  <p>1200 Ø      675 Ø 45°</p>
<p><b>2438 Wall</b></p>  <p>1800 Ø      1050 Ø 45°</p>	<p><b>3048 Wall</b></p>  <p>2250 Ø      1350 Ø 45°</p>	<p><b>3810 Wall</b></p>  <p>2700 Ø      1800 Ø 45°</p>
<p><b>4270 Wall</b></p>  <p>3000 Ø      2100 Ø 45°</p>		

## Wetcast Maintenance Hole Box Chambers – Max Pipe Size

**Notes**

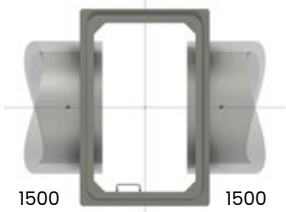
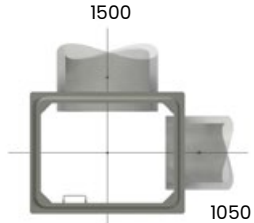
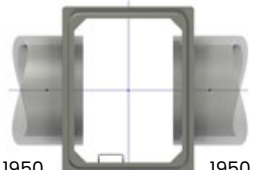
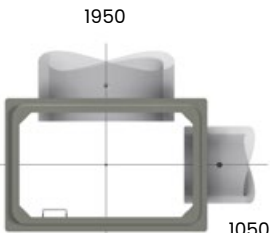
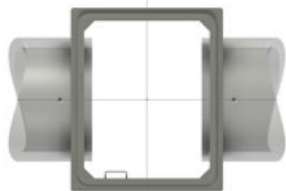
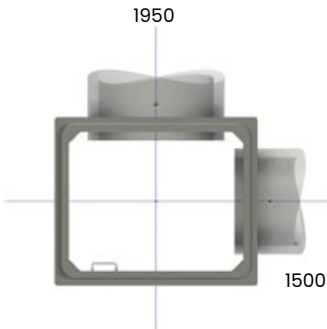
1. Designed in accordance with CSA S6 – CHBDC.
2. Chamber depth and connecting pipe size will determine chamber size and wall thickness.
3. See page 44 for 1200mm tapered top details.
4. Maintenance hole steps are circular hollow aluminum as per OPSD 405.010
5. All dimensions are in millimeters unless otherwise shown.





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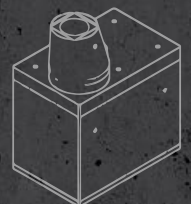
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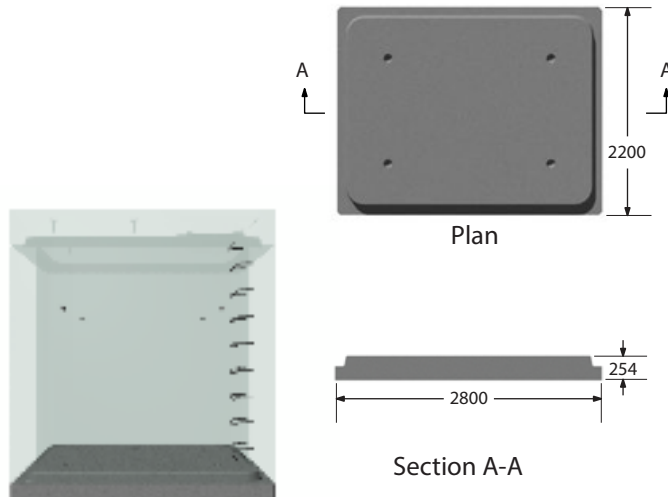
MH Size (mm)	Max. Pipe Size For Straight Through	Max. Pipe Size For Right Angle
2400 x 1800	 <p>1500 1500</p>	 <p>1500 1050</p>
3000 x 1800	 <p>1950 1950</p>	 <p>1950 1050</p>
3000 x 2400	 <p>1950 1950</p>	 <p>1950 1500</p>

## Drycast Box Maintenance Hole Max Pipe Sizes

### Notes

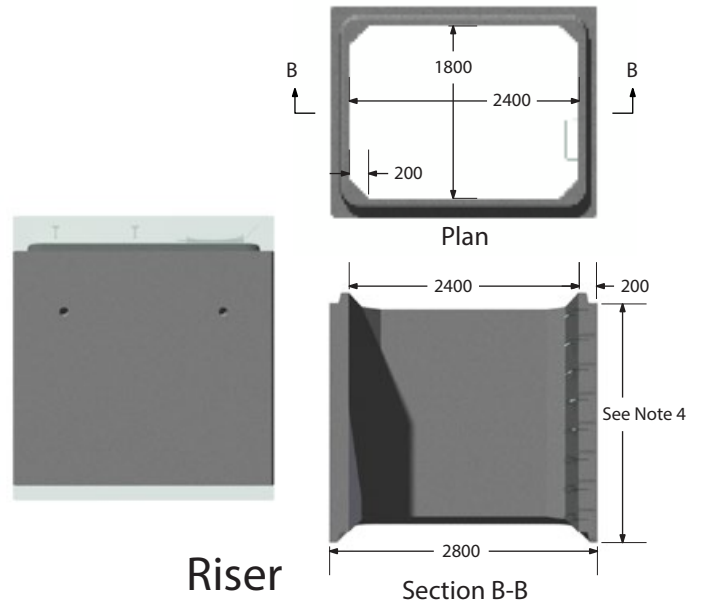
1. Knockouts for small diameter pipe leads 300mm and smaller can be provided in addition to what is shown.
2. All dimensions are in millimeters unless otherwise shown.





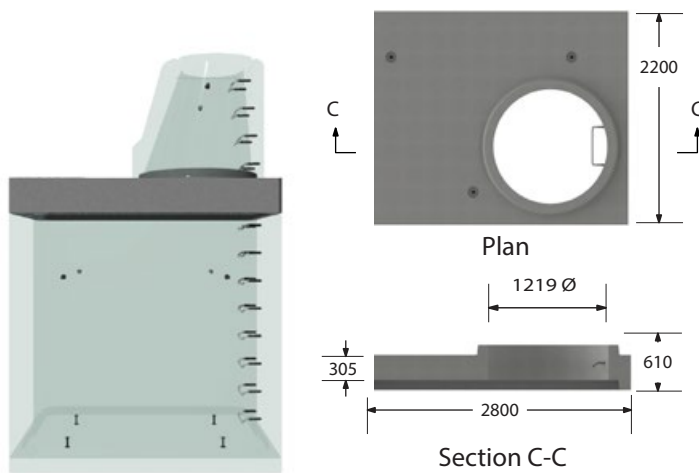
### Base Slab

(mass - 3494 kg)



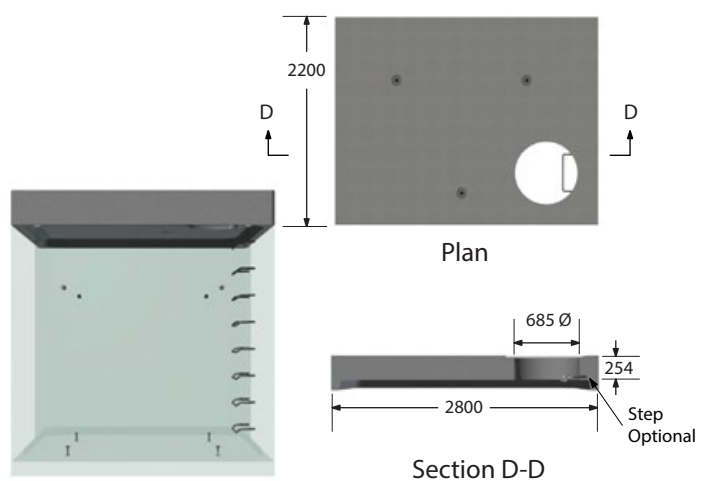
### Riser

(mass - 4741 kg/m)



### Transition

(mass - 4055 kg)



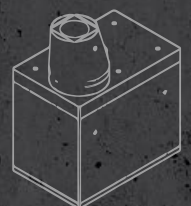
### Flat Cap

(mass - 3871 kg)

## Drycast Maintenance Hole 2400 x 1800mm Box Chambers

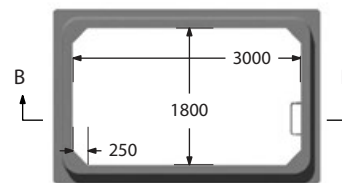
#### Notes

1. Manufactured in accordance with CHBDC.
2. See page 57 for maximum pipe size and alignment angles.
3. Available riser section heights - 305, 610, 914, 1219, 1524, 1829, 2134 and 2500.
4. Maintenance hole steps (circular hollow aluminum) as per OPSD 405.010.
5. All dimensions are in millimeters unless otherwise shown.

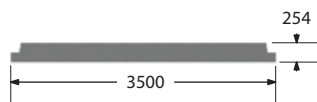




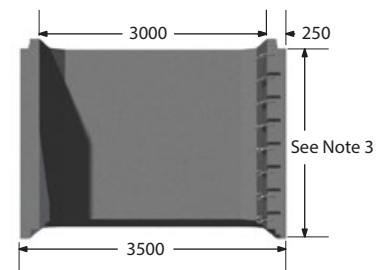
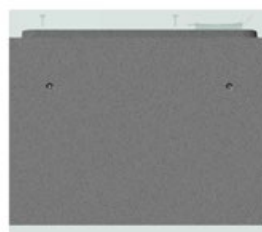
Plan



Plan



Section A-A



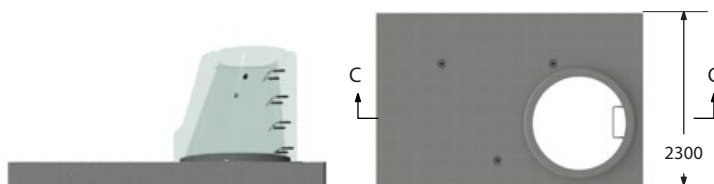
Section B-B

## Base Slab

(mass - 4538 kg)

## Riser

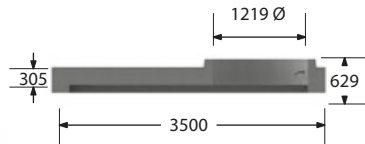
(mass - 6866 kg)



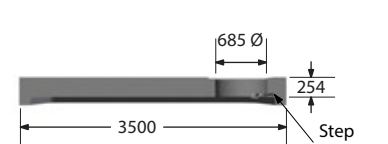
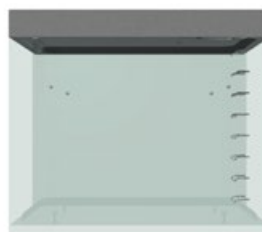
Plan



Plan



Section C-C



Section D-D

## Transition

(mass - 5552 kg)

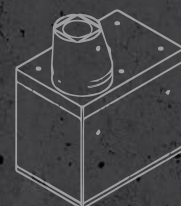
## Flat Cap

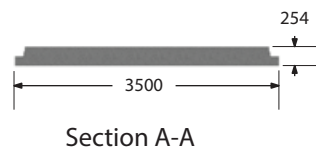
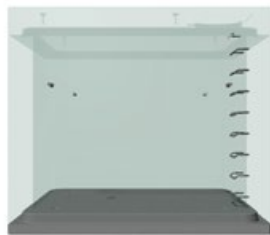
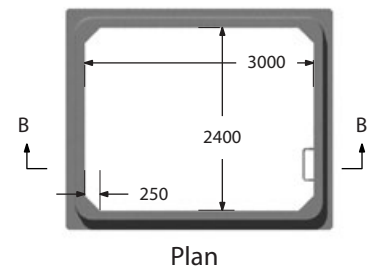
(mass - 5138 kg)

# Drycast Maintenance Hole 3000 x 1800mm Box Chambers

### Notes

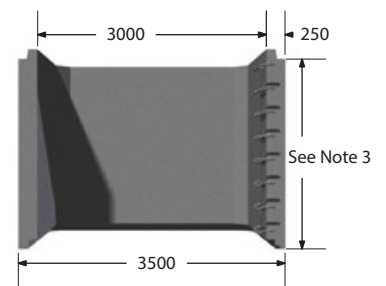
1. Manufactured in accordance with CHBDC.
2. See page 57 for maximum pipe size and alignment angles.
3. Available riser section heights - 305, 610, 914, 1219, 1524, 1829, 2134 and 2500.
4. Maintenance hole steps (circular hollow aluminum) as per OPSD 405.010.
5. All dimensions are in millimeters unless otherwise shown.





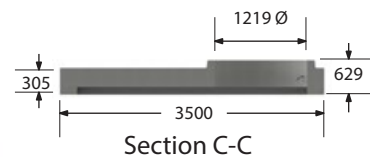
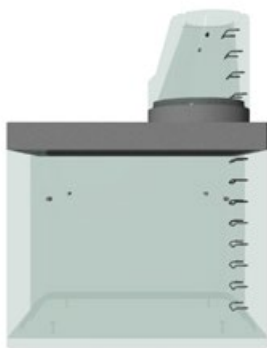
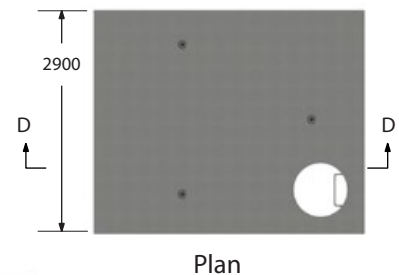
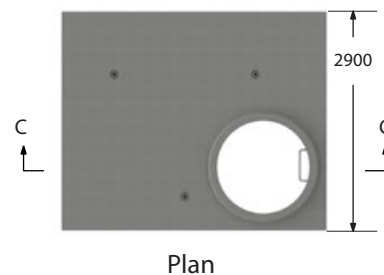
### Base Slab

(mass - 5807 kg)



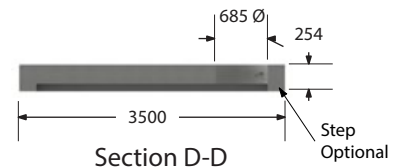
### Riser

(mass - 7546 kg/m)



### Transition

(mass - 7157 kg)



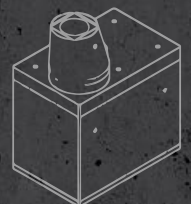
### Flat Cap

(mass - 6255 kg)

## Drycast Maintenance Hole 3000 x 2400mm Box Chambers

#### Notes

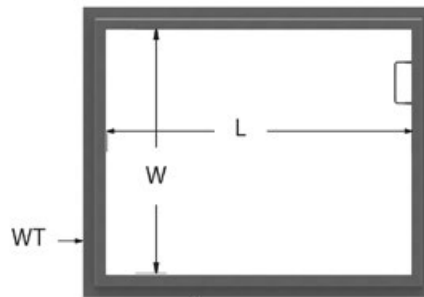
1. Manufactured in accordance with CHBDC.
2. See page 57 for maximum pipe size and alignment angles.
3. Available riser section heights - 305, 610, 914, 1219, 1524, 1829, 2134 and 2500.
4. Maintenance hole steps (circular hollow aluminum) as per OPSD 405.010.
5. All dimensions are in millimeters unless otherwise shown.





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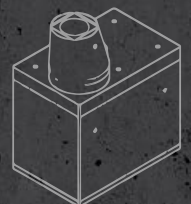


Length (L)	Width (W <sub>3</sub> )	Wall Thickness (WT <sub>2</sub> )
1829	914-1219	229
2438	1219-2438	229
2743	1219-2743	229/305
3048	1219-3048	229/305
3353	1219-3353	229/305
3658	1219-3658	229/305
3962	1219-3962	229/305
4267	1219-4267	229/305
4572	1219-4267	229/305
4877	1219-4267	229/305
5182	1219-4267	229/305
5486	1219-4267	229/305 depending on site conditions
5791	1219-4267	
6096	1219-4267	
6400	1219-4267	
6706	1219-4267	
7010	1219-4267	
7315	1219-4267	
7620	1219-4267	

## Maintenance Hole Box Chambers

### Notes

1. Designed in accordance with CSA S6 - CHBDC.
2. Chamber depth and connecting pipe size will determine chamber size and wall thickness.
3. See page 44 for 1200mm tapered top details.
4. Maintenance hole steps are circular hollow aluminum as per OPSD 405.010.
5. All dimensions are in millimeters unless otherwise shown.





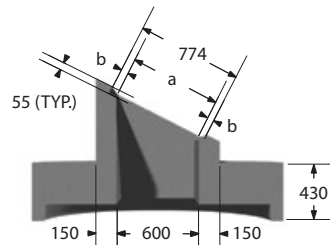
## Ditch Inlet Type A

(mass - 1387 kg + 1590 kg/m)

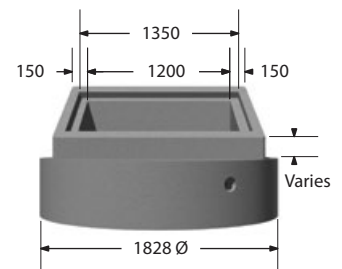


Plan

Opening Dimensions			
Grate		a	b
Type	Slope		
B	2H:1V	670	52
	3H:1V	632	71
	4H:1V	618	78
	Horizontal	600	87



Section A-A

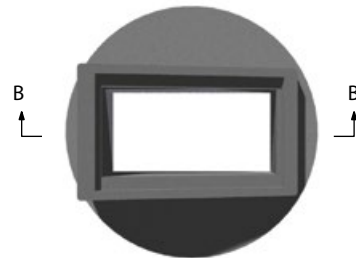


Front View



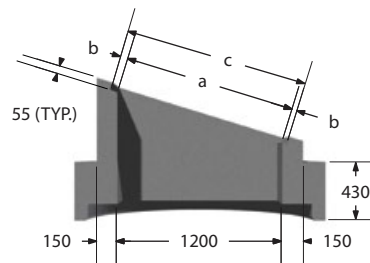
## Ditch Inlet Type B

(mass - 1387 kg + 1590 kg/m)

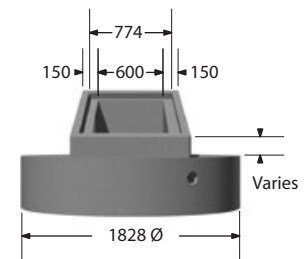


Plan

Opening Dimensions				
Grate		a	b	C
Type	Slope			
C	2H:1V	1341	66	1473
	3H:1V	1265	104	1473
	4H:1V	1237	118	1473
B	6H:1V	1216	65	1346
	Horizontal	1200	73	1346



Section B-B

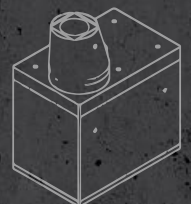


Front View

1500mm Flat Cap  
 with 600 x 1200  
 Ditch Inlet Top

### Notes

1. Designed in accordance with OPSD 706.010 and OPSD 705.040 Type A and Type B.
2. For ditch inlet top information see page 88.
3. All dimensions are in millimeters unless otherwise shown.





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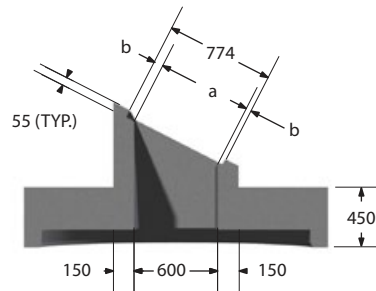
## Ditch Inlet Type A

(mass - 2274 kg + 1590 kg/m)

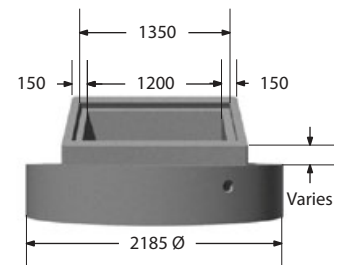


Plan

Opening Dimensions			
Grate		a	b
Type	Slope		
B	2H:1V	670	52
	3H:1V	632	71
	4H:1V	618	78
	Horizontal	600	87



Section A-A



Front View



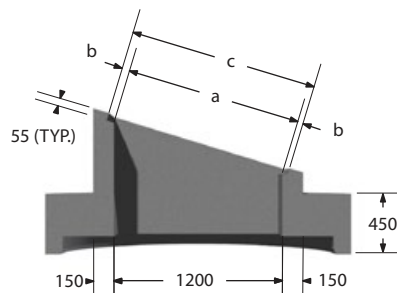
## Ditch Inlet Type B

(mass - 2274 kg + 1590 kg/m)

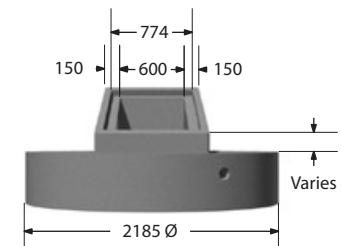


Plan

Opening Dimensions				
Grate		a	b	C
Type	Slope			
C	2H:1V	1341	66	1473
	3H:1V	1265	104	1473
	4H:1V	1237	118	1473
B	6H:1V	1216	65	1346
	Horizontal	1200	73	1346



Section B-B

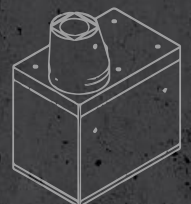


Front View

1800mm Flat Cap  
with 600 x 1200  
Ditch Inlet Top

### Notes

1. Designed in accordance with OPSD 706.020 and OPSD 705.040 Type A and Type B.
2. For ditch inlet top information see page 88.
3. All dimensions are in millimeters unless otherwise shown.





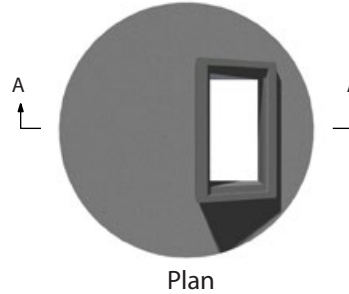
2150 Richardson Side Road,  
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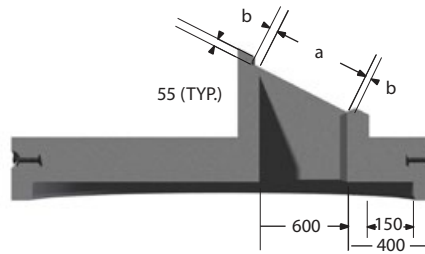
### Ditch Inlet Type A

(mass - 4417 kg + 1590 kg/m)

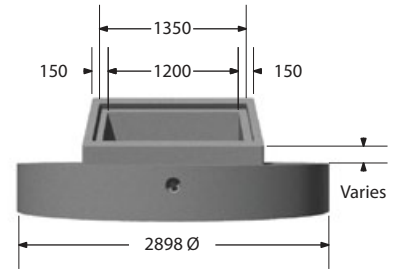


Plan

Opening Dimensions			
Grate		a	b
Type	Slope		
B	2H:1V	670	52
	3H:1V	632	71
	4H:1V	618	78
	Horizontal	600	87



Section B-B

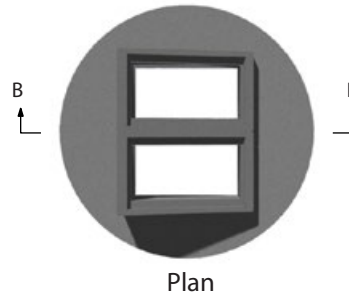


Font View



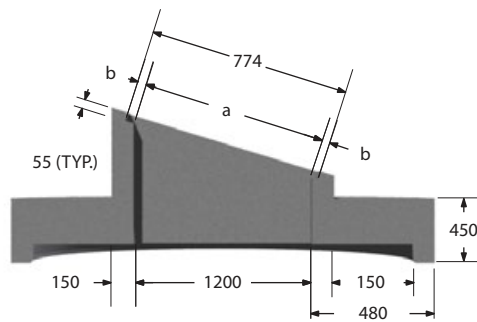
### Ditch Inlet Type B

(mass - 3815 kg + 3180 kg/m)

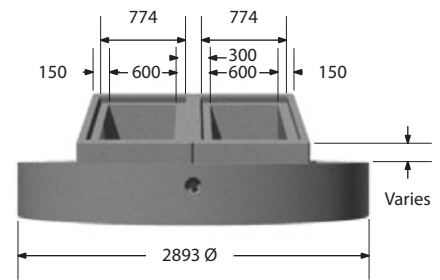


Plan

Opening Dimensions				
Grate		a	b	C
Type	Slope			
C	2H:1V	1341	66	1473
	3H:1V	1265	104	1473
	4H:1V	1237	118	1473
B	6H:1V	1216	65	1346
	Horizontal	1200	73	1346



Section A-A

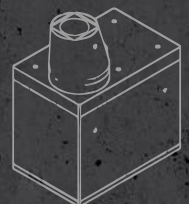


Font View

2400mm Flat Cap  
with 600 x 1200 Ditch  
Inlet Top

Notes

1. Designed in accordance with OPSD 706.030, 706.031 and OPSD 705.040 Type A and Type B.
2. For ditch inlet top information see page 88.
3. All dimensions are in millimeters unless otherwise shown.





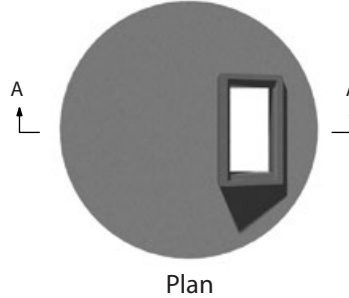
2150 Richardson Side Road,  
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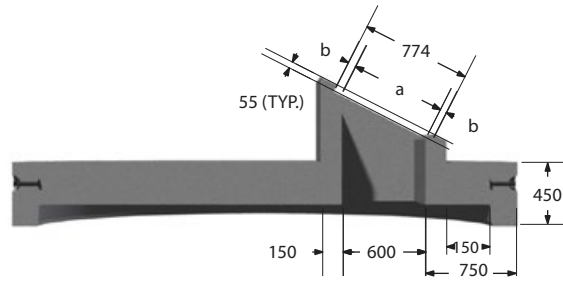
### Ditch Inlet Type A

(mass - 7679 kg - 1590 kg/m)

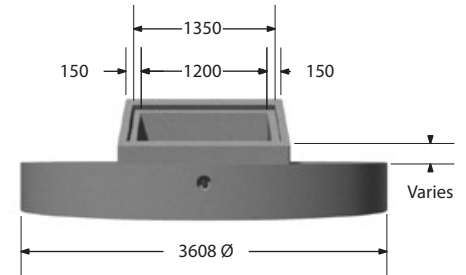


Plan

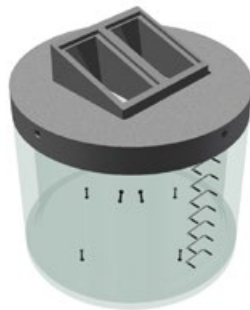
Opening Dimensions			
Grate		a	b
Type	Slope		
B	2H:1V	670	52
	3H:1V	632	71
	4H:1V	618	78
	Horizontal	600	87



Section A-A



Font View



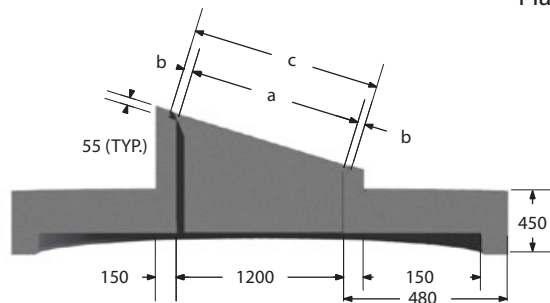
### Ditch Inlet Type B

(mass - 7071 kg - 3180 kg/m)

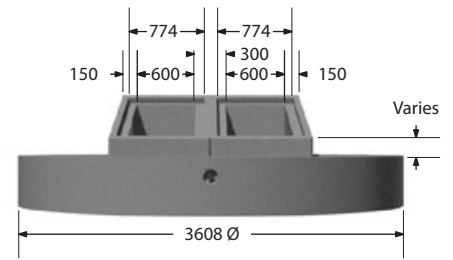


Plan

Opening Dimensions				
Grate		a	b	c
Type	Slope			
C	2H:1V	1341	66	1473
	3H:1V	1265	104	1473
	4H:1V	1237	118	1473
B	6H:1V	1216	65	1346
	Horizontal	1200	73	1346



Section B-B

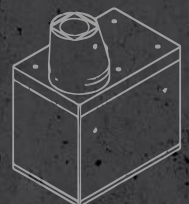


Font View

3000mm Flat Cap  
with 600 x 1200 Ditch  
Inlet Top

Notes

1. Designed in accordance with OPSD 706.040, 706.041 and OPSD 705.040 Type A and Type B.
2. For ditch inlet top information see page 88.
3. All dimensions are in millimeters unless otherwise shown.



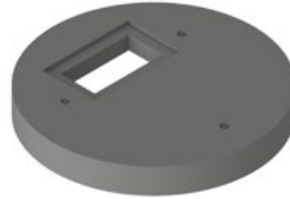


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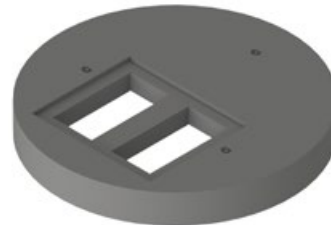
Ditch Inlet Type A



Opening Dimensions			
Grate		a	b
Type	Slape		
B	2H:1V	670	52
	3H:1V	632	71
	4H:1V	618	78
	Horizontal	600	87



Ditch Inlet Type B

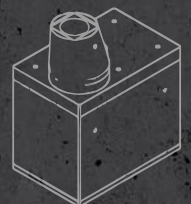


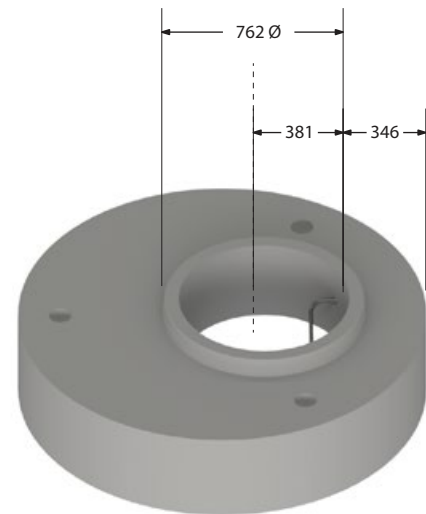
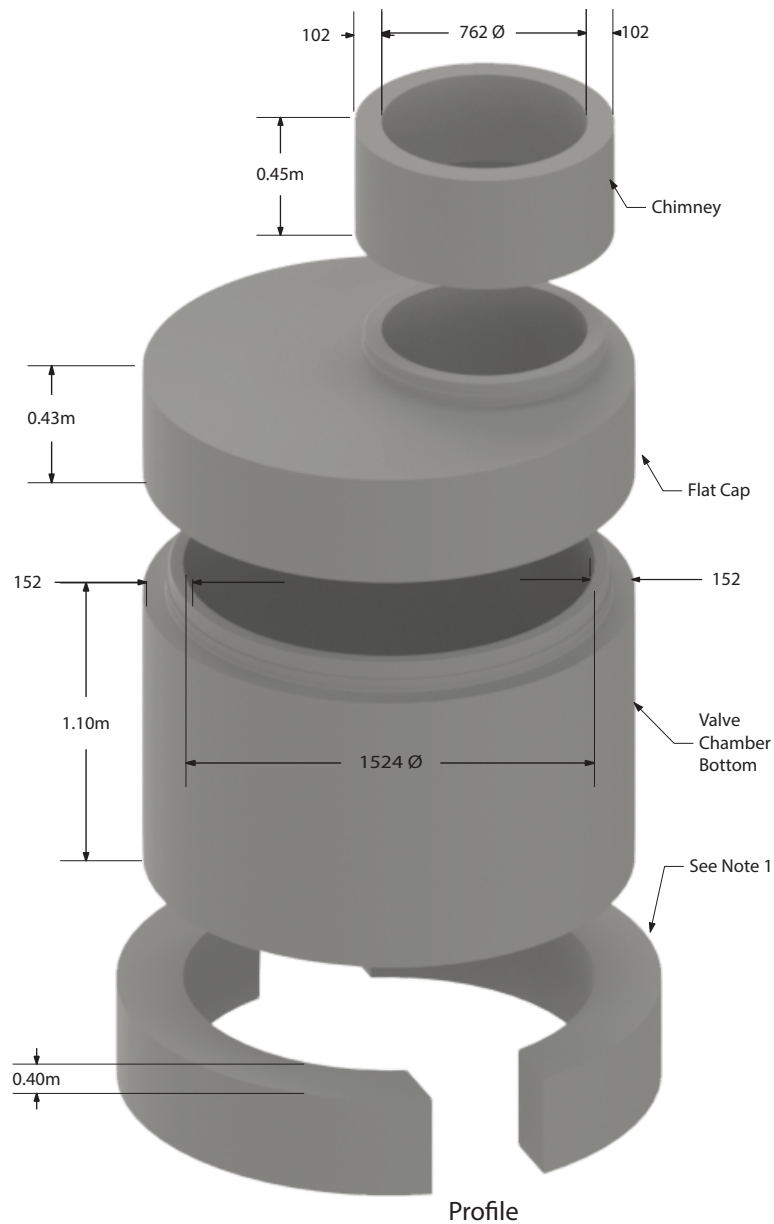
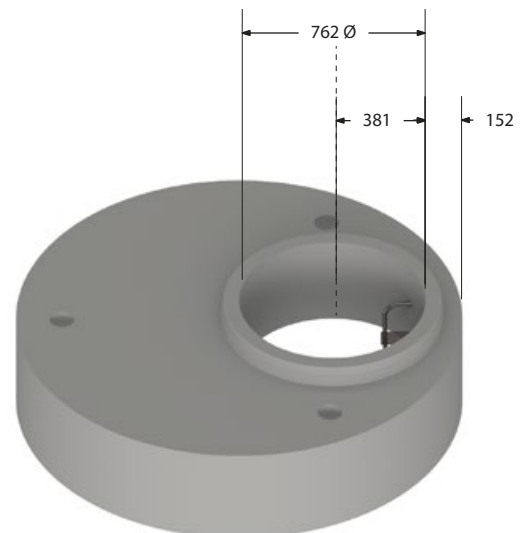
Opening Dimensions				
Grate		a	b	c
Type	Slape			
C	2H:1V	1341	66	1473
	3H:1V	1265	104	1473
	4H:1V	1237	118	1473
B	6H:1V	1216	65	1346
	Horizontal	1200	73	1346

## 3600mm Flat Cap with 600 x 1200 Ditch Inlet Top

### Notes

1. Designed in accordance with OPSD 706.040, 706.041 and OPSD 705.040 Type A and Type B.
2. For ditch inlet top information see page 88.
3. All dimensions are in millimeters unless otherwise shown.

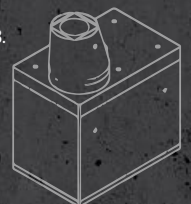



 Flat Cap for  
 Gate Valve Opening

 Flat Cap for  
 Butterfly Opening

## City of Ottawa 1500mm Valve Chamber

### Notes

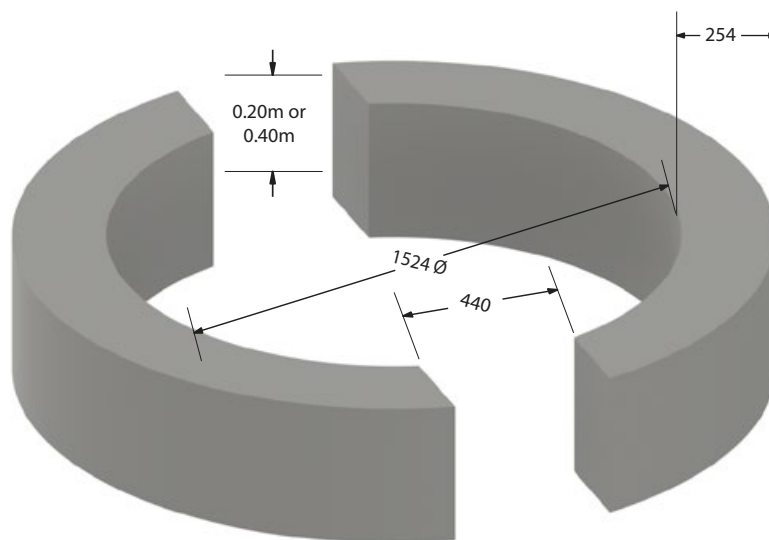
1. Valve Chamber Base Sets as per City of Ottawa Standard W-5 See page 68.
2. Manufactured in accordance with OPSD 701.011 as well as City of Ottawa Standard W-2 (Butterfly VC) & W-3 (Gate VC).
3. 762mmØ chimney manufactured in accordance with City of Ottawa Standard W-9.
4. All Valve Chambers c/w Hollow Aluminum Steps as per OPSD 405.010.
5. For adjusters refer to drawing page 121.





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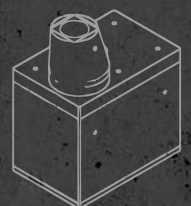
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## City of Ottawa Valve Chamber Base Sets

### Notes

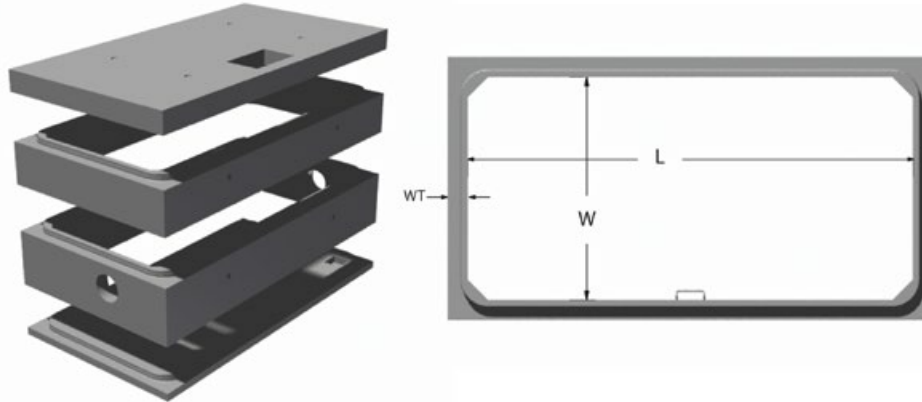
1. Manufactured in accordance with City of Ottawa drawing W-5.
2. All pieces c/w lifting anchors.
3. For 300Ø and 400Ø Watermain, stack base sets two sets high.





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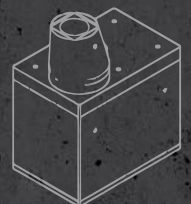


Length (L)	Width (W <sub>3</sub> )	Wall Thickness (WT <sub>2</sub> )
1829	914-1219	229
2438	1219-2438	229
2743	1219-2743	229/305
3048	1219-3048	229/305
3353	1219-3353	229/305
3658	1219-3658	229/305
3962	1219-3962	229/305
4267	1219-4267	229/305
4572	1219-4267	229/305
4877	1219-4267	229/305
5182	1219-4267	229/305
5486	1219-4267	229/305 depending on site conditions
5791	1219-4267	
6096	1219-4267	
6400	1219-4267	
6706	1219-4267	
7010	1219-4267	
7315	1219-4267	
7620	1219-4267	

## Maintenance, Valve & Meter Box Chambers

### Notes

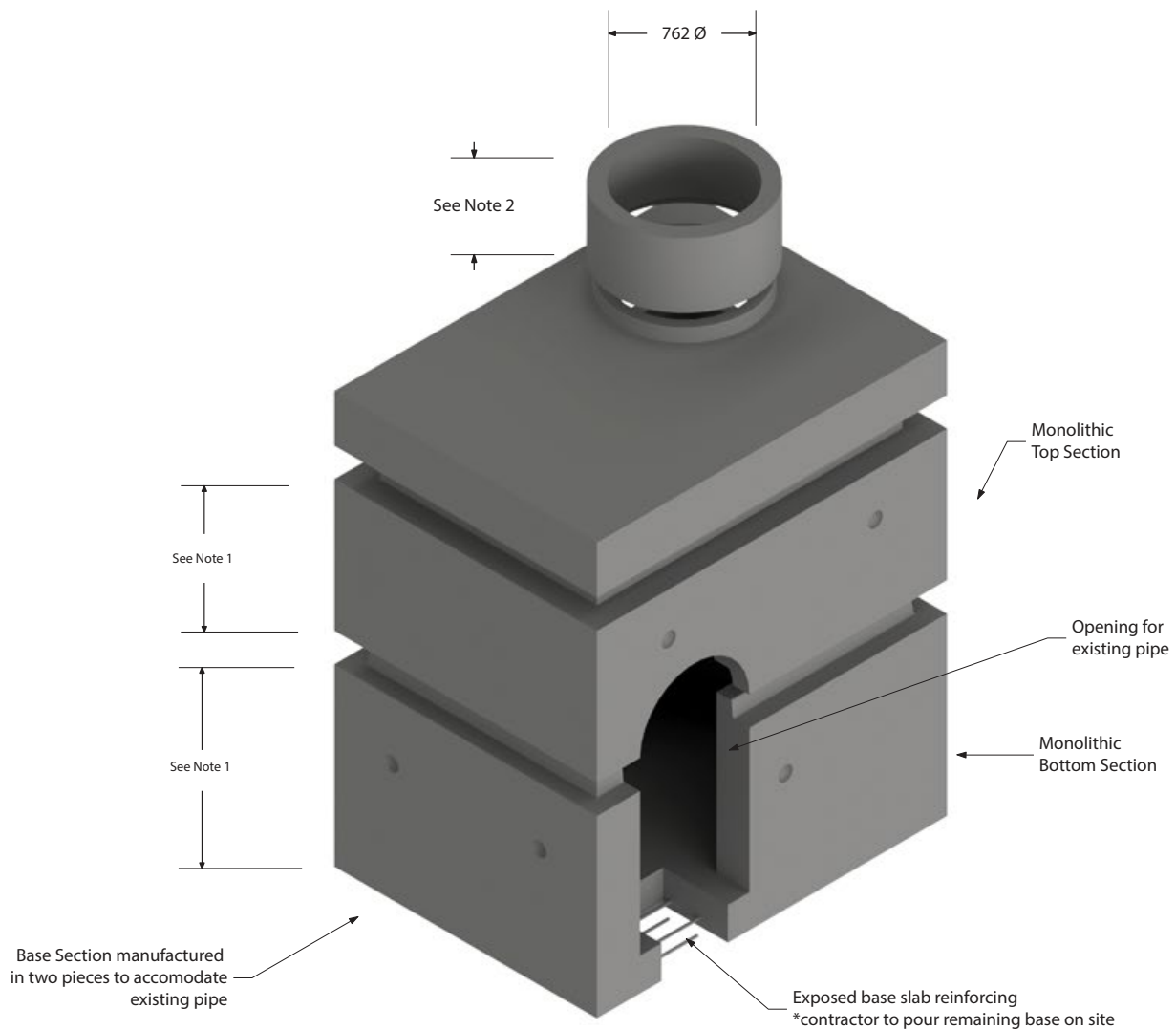
1. Designed in accordance with CSA S6 - CHBDC.
2. Chamber depth and connecting pipe size will determine chamber size and wall thickness.
3. Maintenance hole steps are circular hollow aluminum as per OPSD 405.010.
4. All dimensions are in millimeters unless otherwise shown.





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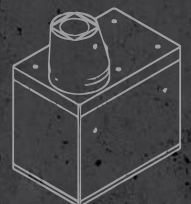
**mconproducts.com**

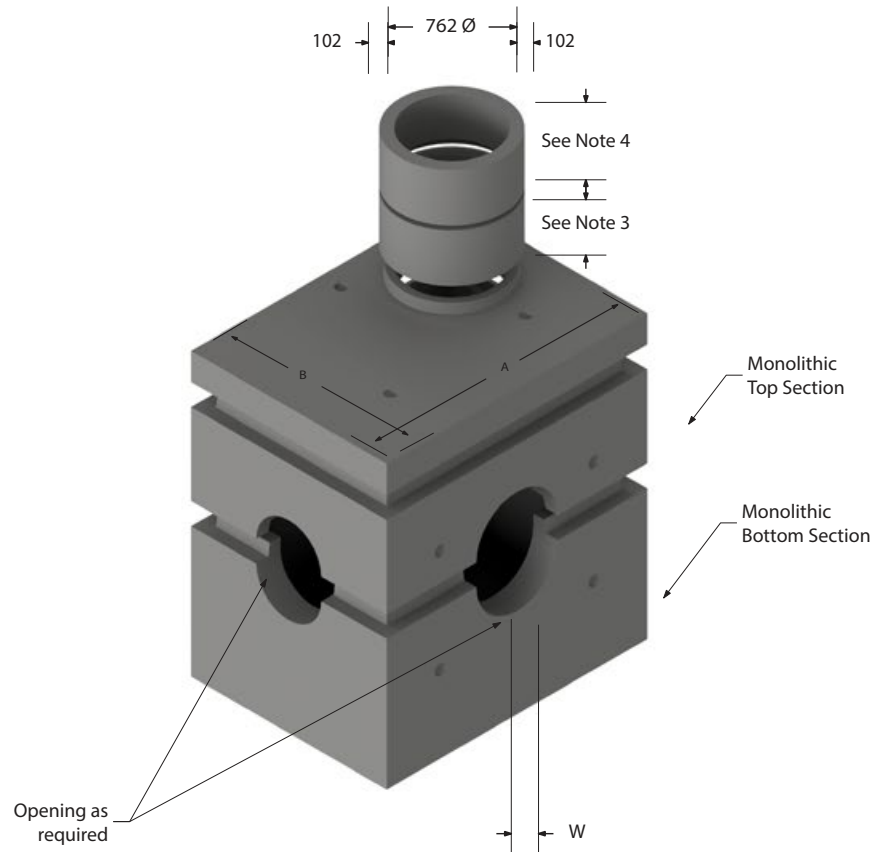


## City of Ottawa T.V.S. Valve Chamber

### Notes

1. Manufactured in accordance with City of Ottawa specification W-11.1.
2. All Valve Chambers c/w Hollow Aluminum Steps as per OPSD 405.010.
3. For adjusters refer to drawing page 121.
4. All heights as per City of Ottawa standards.
5. 762Ø chimney height as required.
6. For available Valve Chamber sizes see pages 67-69.
7. Mono top sections available if required.



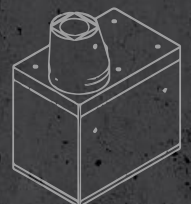


City of Ottawa Specification	Inside Dimensions	Outside Dimensions		Top Slap Thickness	Bott. Slap Thickness	Wall (w) Thickness
		A	B			
W31.1	1524 x 1829	1982	2287	229	229	229
W10 ~ R1	1829 x 2438	2134	2896	229	229	229
W10 ~ R2	1829 x 3048	2134	3506	229	229	229
W11 ~ R3	2438 x 3048	2896	3506	254	254	229
W11 ~ R4	3048 x 3810	3506	4268	254	254	229
W12 ~ R3	2438 x 3048	2896	3506	254	254	229
W12 ~ R4	3048 x 3810	3506	4268	254	254	229
W13 ~ R4	3048 x 3810	3506	4268	254	254	229

## City of Ottawa Box Valve Chamber

### Notes

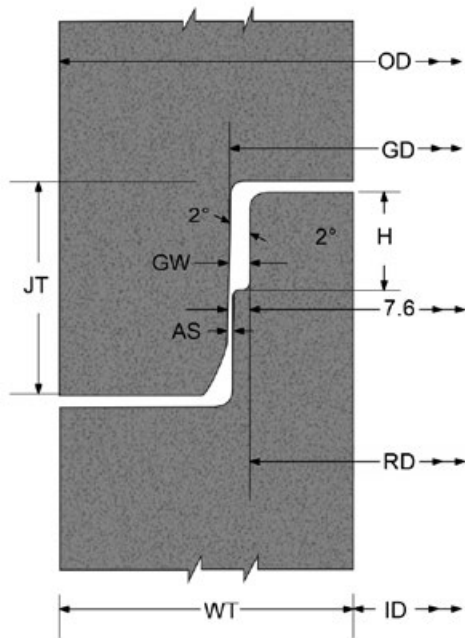
1. Manufactured in accordance with City of Ottawa Standards.
2. All Valve Chambers c/w Hollow Aluminum Steps as per OPSD 405.010.
3. All pieces c/w lifting anchors.
4. Pipe gaskets available upon request.
5. All joints to be sealed with Hydrophilic Waterstop & a Waterproofing membrane.
6. For adjusters refer to drawing page 121.
7. Mono top sections available if required.





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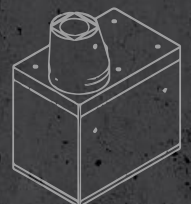


ID (Nominal)	ID (Actual)	OD	WT	JT	RD	GD	AS	GW	H
1200	1220	1474.0	127.0	107.9	1325.1	1343.3	3.7	11.3	63.5
1500	1524	1828.0	152.0	120.6	1635.2	1653.4	3.7	11.3	66.8
1800	1829	2185.0	178.0	127.0	1959.8	1978.0	3.7	11.3	66.8
2400	2438	2895.6	228.6	127.0	2619.0	2640.8	4.4	13.3	69.9
3000	3048	3606.8	279.4	152.4	3247.7	3269.5	4.4	13.3	69.9
3600	3658	4356	350.0	152.4	3895.4	3917.2	3.7	12.7	50.8

## Maintenance Hole Joint Detail 1200-3600mm

### Notes

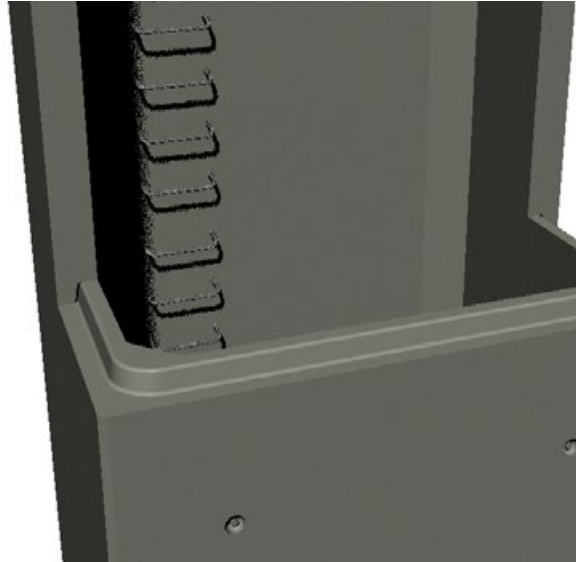
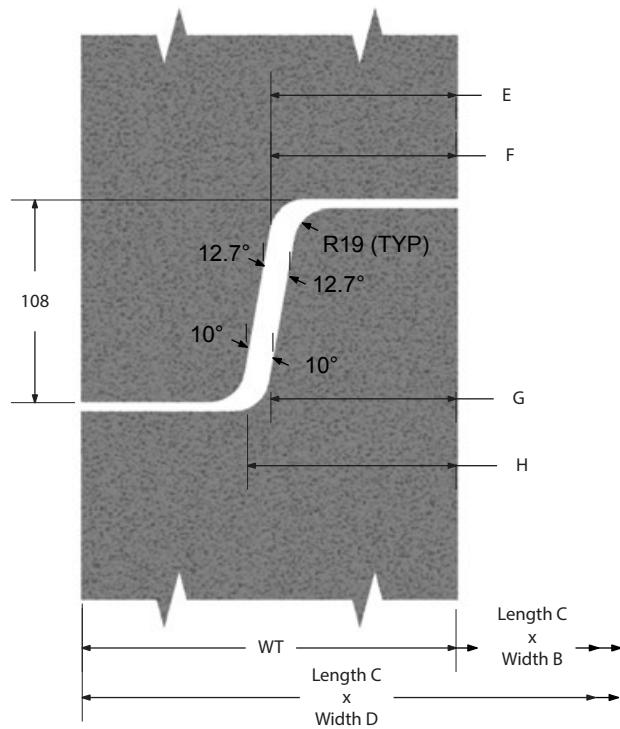
1. Pre-lubricated rubber gaskets to be used with this maintenance hole joint Gaskets design.
2. All dimensions are in millimeters unless otherwise shown.





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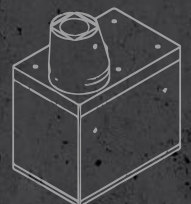


Inside		Outside		E	F	G	H	WT	JT
Length A	Width B	Length C	Width D						
1800	1200	2200	1600	96.9	84	103.1	116	200	108
2400	1800	2800	2200	96.9	84	103.1	116	200	180
3000	1800	3500	1700					250	127
3000	2400	3500	2900					250	127

## Maintenance Hole Box Chambers Standard Wall

### Notes

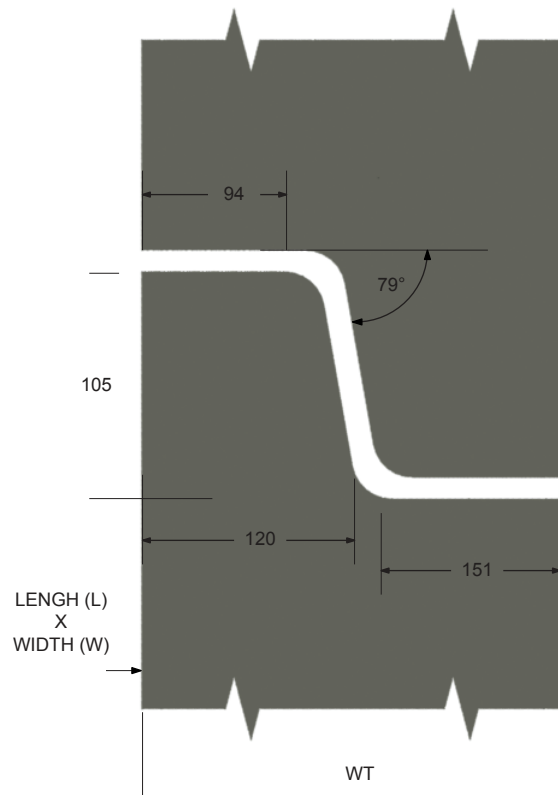
1. Continuous Butyl Gasket to be used with this Maintenance Hole Joint Design.
2. Dimensions are in millimeters unless otherwise shown.





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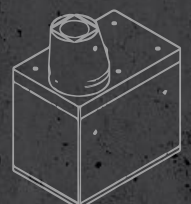


Length (A)	Width (B)
2438	1219-2438
2743	1219-2743
3048	1219-3048
3353	1219-3353
3658	1219-3658
3962	1219-3962
4267	1219-4267
4572	1219-4267
4877	1219-4267
5182	1219-4267
5486	1219-4267
5791	1219-4267
6096	1219-4267
6400	1219-4267
6706	1219-4267
7010	1219-4267
7315	1219-4267
7620	1219-4267

## Maintenance Hole Box Chambers Variable Wall Thickness

### Notes

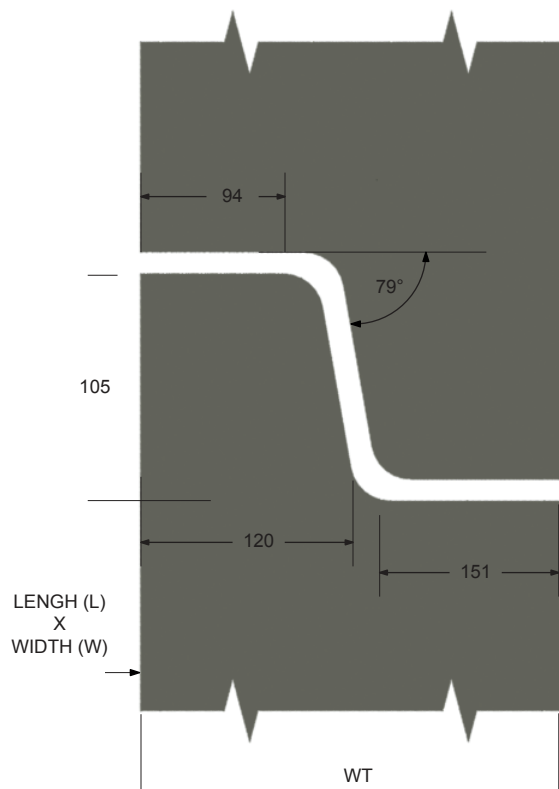
1. Pre-lubricated continuous rubber gasket to be used with this joint design.
2. All dimensions are in millimeters unless otherwise shown.





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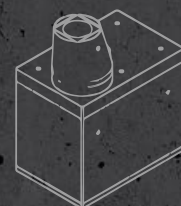
Box Name	Length L	Width W	Wall WT
M-3.3	914	914	152
M-4	1219	1219	229
M-5	1524	1829	229
M-5.5	1829	1829	229
M-6	1676	2438	229
M-6.5	1829	2438	229
M-7	1676	3048	229
M-7.5	1829	3048	229
M-8	2438	2438	229

Box Name	Length L	Width W	Wall WT
M-9	2438	3048	229
M-9.5	3048	3048	229
M-10	2438	3810	229
M-11	3048	3810	229
M-12	3810	3810	229
M-13	2438	4270	229
M-14	3048	4270	229
M-15	3810	4270	229
M-16	4270	4270	229

## Maintenance Hole Ottawa Box Chambers Standard Wall

### Notes

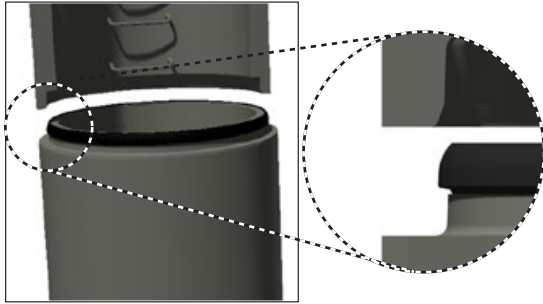
1. Butyl tape gasket to be used with this Maintenance joint design.
2. All dimensions are in millimeters unless otherwise shown.





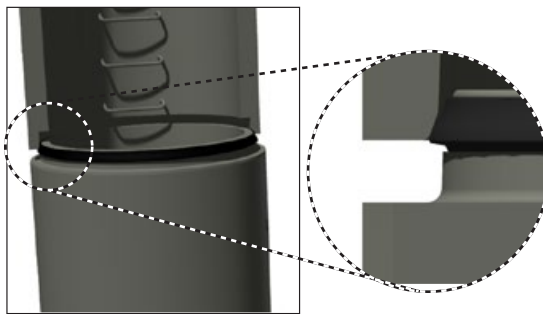
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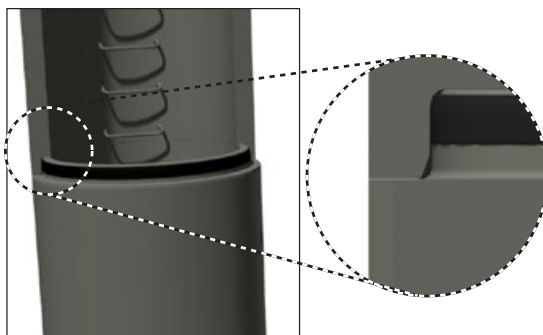
### Step 1

Clean all dirt and foreign objects off the bell and spigot. Ensure both the bell and spigot are free of cracks, chips and defects.



### Step 2

Align the spigot with the bell. Ensure the gasket is in contact with the entire circumference of both the bell taper and the spigot before fully homing the joint.



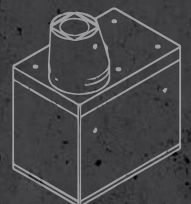
### Step 3

Engage the spigot into the bell to fully install, locking the joint into place. The self lubricating gasket will roll over the step of the spigot and into the joint recess creating the complete seal.

## Circular Maintenance Hole Jointing Procedure

#### Notes

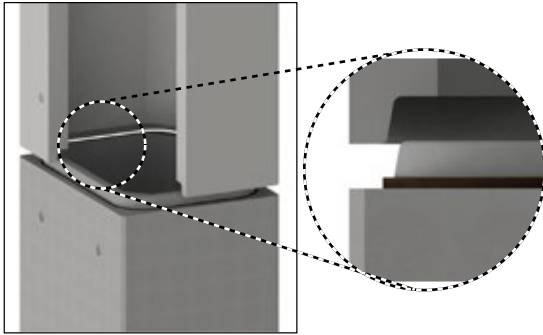
1. The following above jointing procedure will ensure full optimization of pipe joint performance.





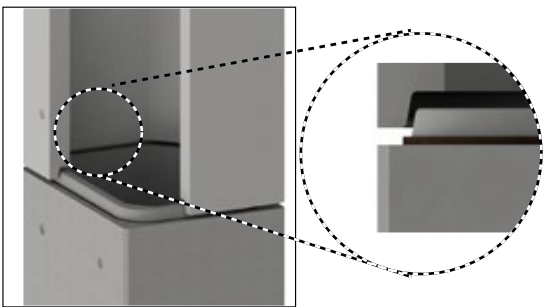
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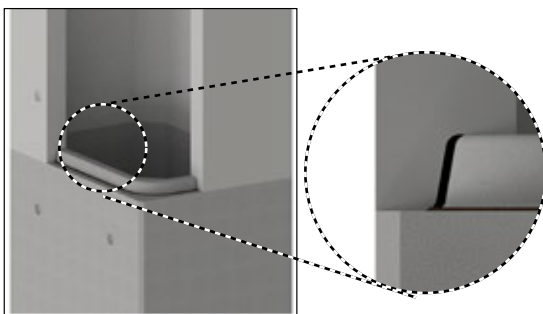
### Step 1

Clean all dirt and foreign objects off the bell and spigot. Ensure both the bell and spigot are free of cracks, chips and defects. Apply butyl tape around the perimeter of the spigot.



### Step 2

Align the spigot with the bell. Ensure the butyl tape is in contact with the entire circumference of both the bell taper and the spigot before fully homing the joint.



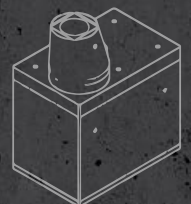
### Step 3

Engage the spigot into the bell to fully install, locking the joint into place. The butyl tape will deform between the bell and spigot creating the complete seal.

## Box Chamber Jointing Procedure

### Notes

1. The following above jointing procedure will ensure full optimization of pipe joint performance.





**STORMWATER  
MANAGEMENT**

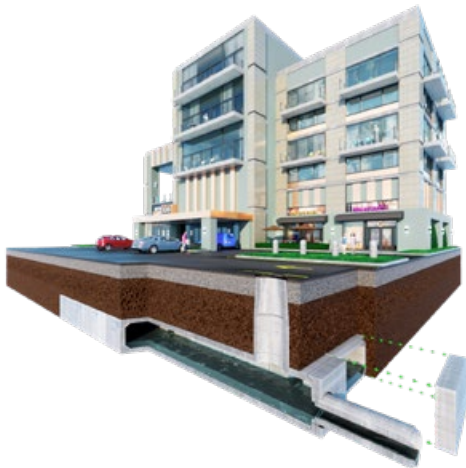


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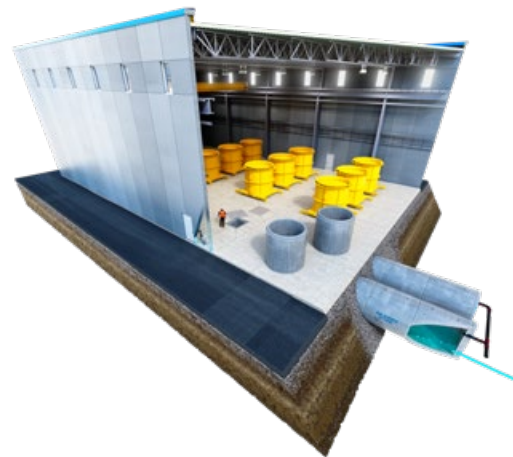
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TRIPLE BOX CULVERT SWRS



TWIN BOX CULVERT SWRS

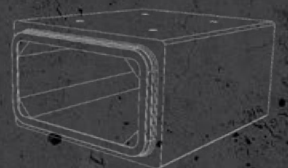


TWIN ROUND SWRS

## Stormwater Retention Systems

### Notes

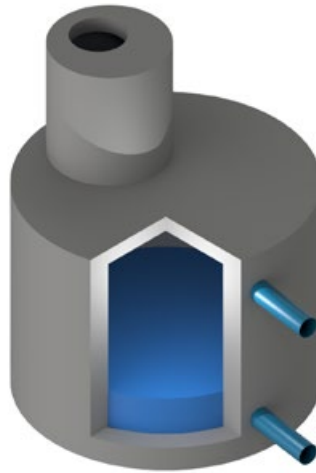
1. Size of tank components and number of cells will be determined by required storage volume and site constraints.



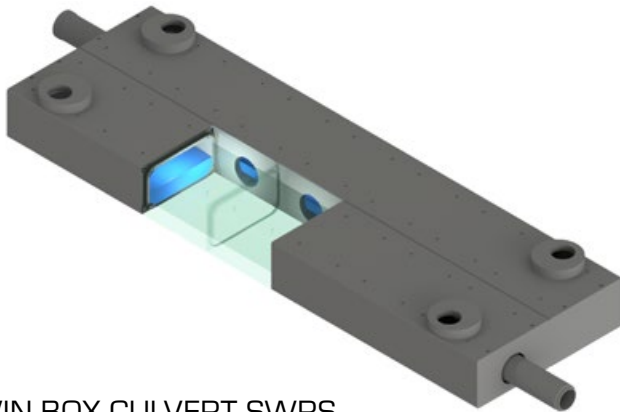


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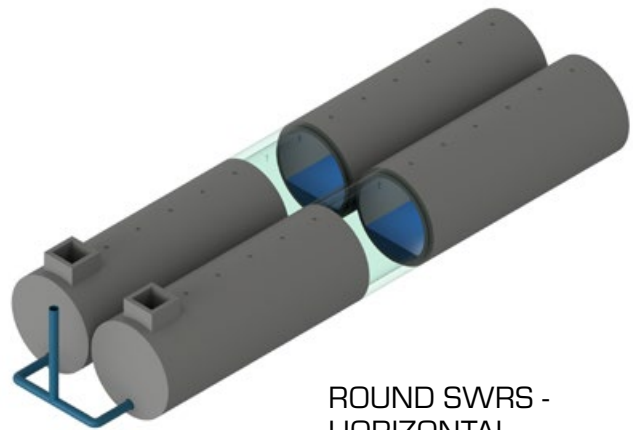
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ROUND SWRS -  
MAINTENANCE HOLES



TWIN BOX CULVERT SWRS

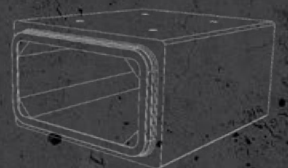


ROUND SWRS -  
HORIZONTAL

## Stormwater Retention Systems

### Notes

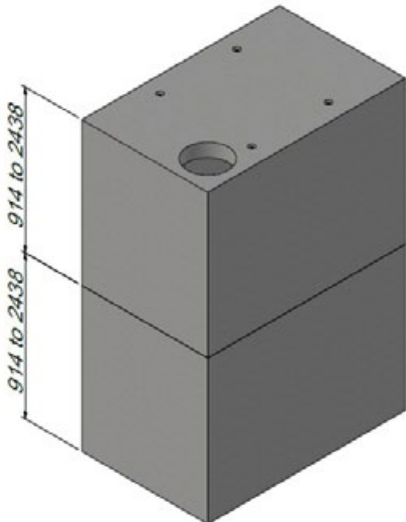
1. Size of tank components and number of cells will be determined by required storage volume and site constraints.



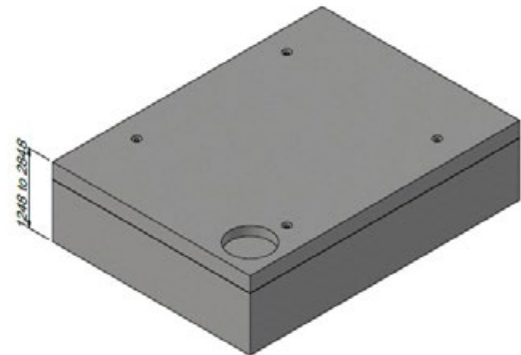


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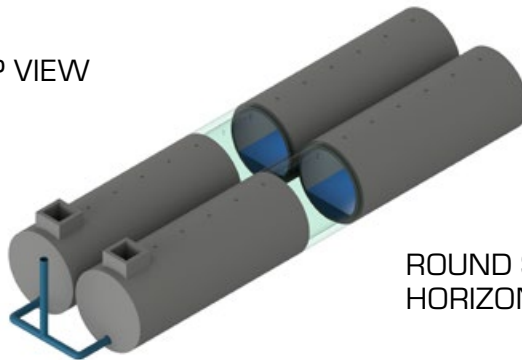
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MONOBASE & MONOTOP VIEW



MONOBASE & CAP VIEW



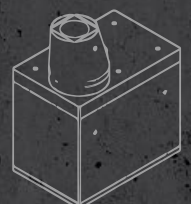
ROUND SWRS -  
HORIZONTAL

Inside Dimensions	Outside Dimensions		Top Slap Thickness	Bott. Slap Thickness	Wall (w) Thickness
	A	B			
1829 x 3048	2287	3506	229	229	152
2438 x 3048	2896	3506	254	254	152
3048 x 3048	3506	3506	254	254	152
3048 x 3810	3506	4268	254	254	152
3048 x 4270	3506	4728	254	254	152

## Cisterns/Holding Tanks/ Fire Water Reservoirs

### Notes

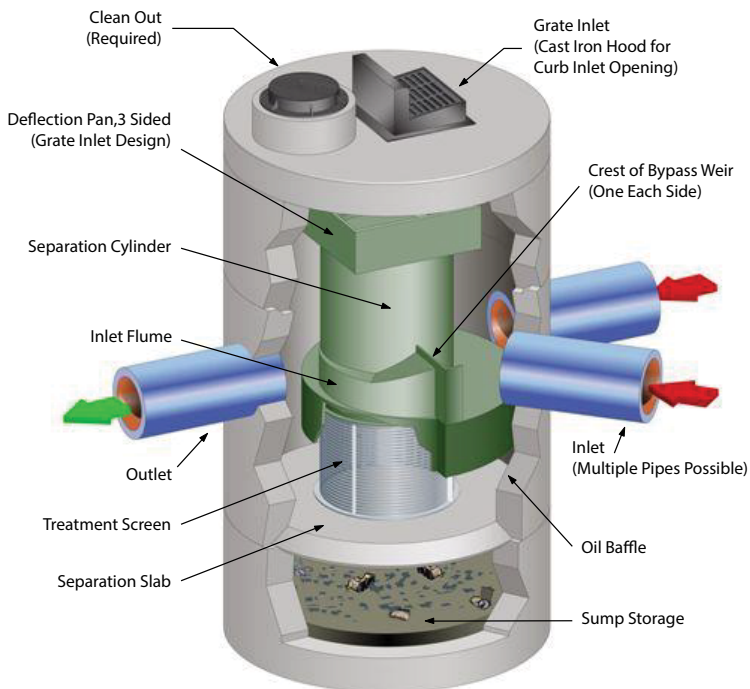
1. Manufactured in accordance with OPSS 1351 and CSA 56-25.
2. Top Section heights @ 152mm increments.  
Bottom section heights at 152mm increments.
3. Maintenance hole steps are circular hollow aluminum as per OPSS 405.010
4. All dimensions are in millimeters unless otherwise shown.
5. Mono top sections available.





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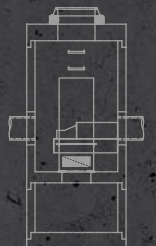


	CDS Model	Typical MH Dia. (ID)	Rated Treatment Flowrate (L/s)
20-Series	CDS2015-4	1200	20
	CDS2015-5	1500	20
	CDS2020-5	1500	31
	CDS2025-5	1500	45
30-Series	CDS3020-6	1800	57
	CDS3025-6	1800	68
	CDS3030-6	1800	85
	CDS3035-6	1800	106
40-Series	CDS4030-8	2400	127
	CDS4040-8	2400	170
	CDS4045-8	2400	212
56-Series	CDS5640-10	3000	255
	CDS5653-10	3000	396
	CDS5668-10	3000	538
	CDS5678-10	3000	708

## Oil Grit Separators (OGS) Continuous Deflector Separation (CDS)

### Notes

1. Can accommodate multiple inlets.
2. For custom sizes and design option, please contact Echelon Environmental at [info@echelonenvironmental.ca](mailto:info@echelonenvironmental.ca).
3. Ontario Provincial Standards (OPS) – Approved for roadway applications.





**CATCH BASINS**



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## TABLE OF CONTENTS

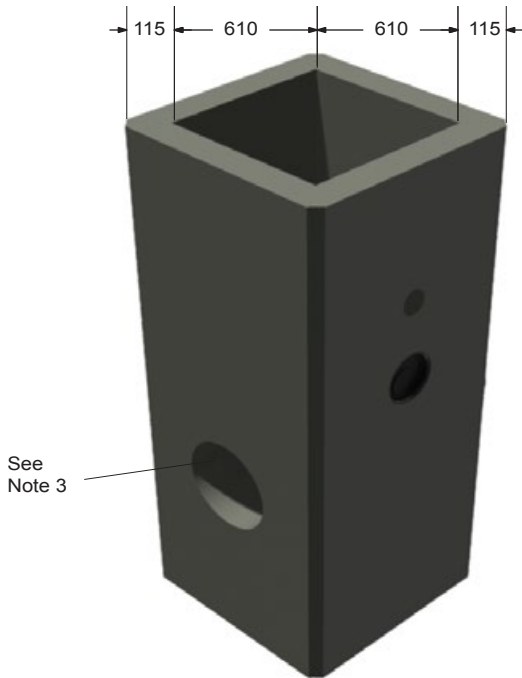
### SECTION 5 CATCH BASINS

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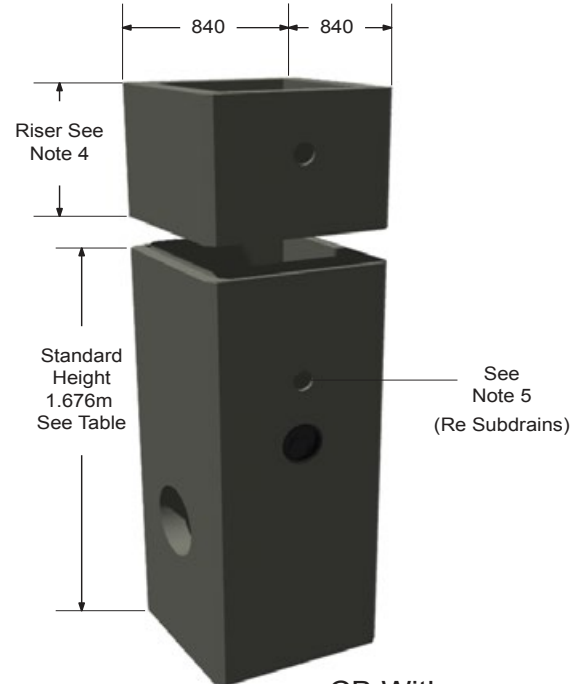


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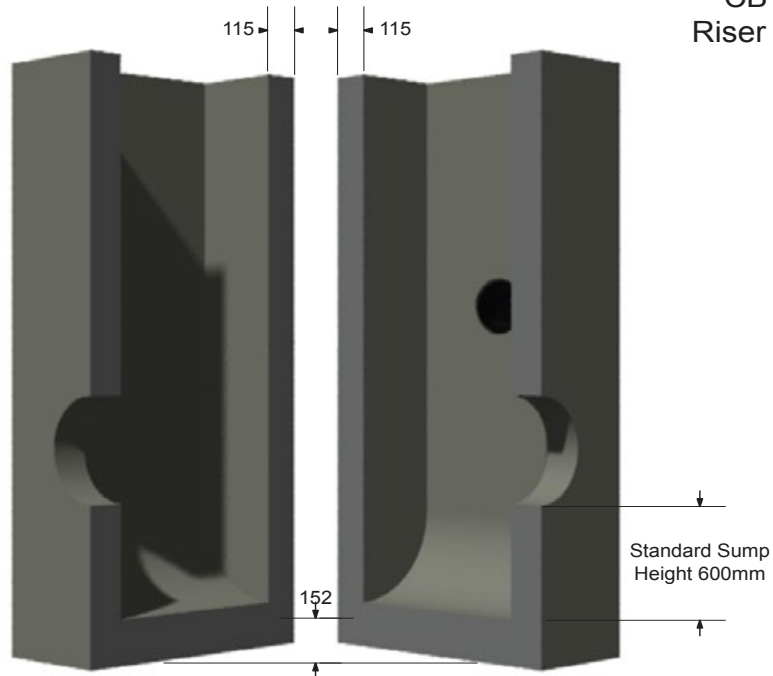


Standard CB



CB With Riser Section

Alternate Standard Heights (mm)	
A	1219
B	1372
C	1524
D	1676
E	1829
F	1981
G	2134



## 600 x 600mm Single Inlet Catch Basin

### Notes

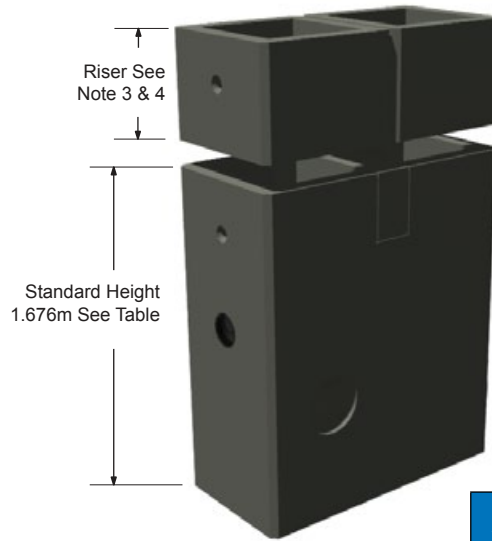
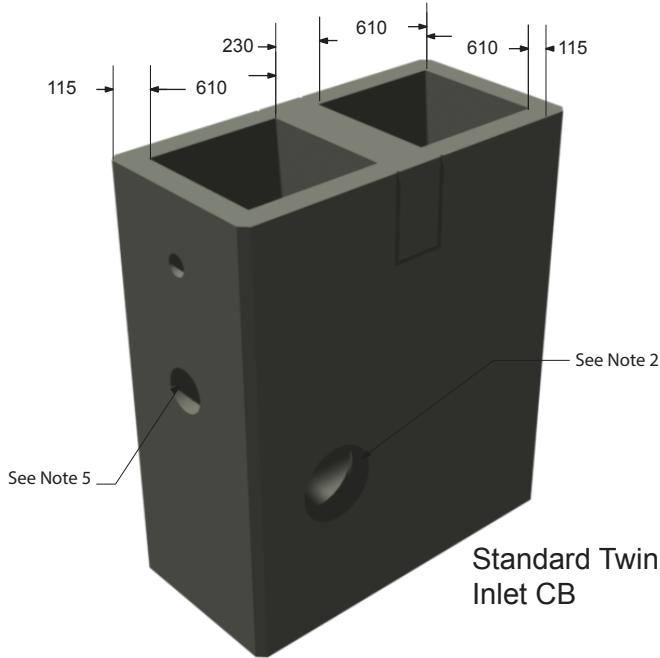
1. Manufactured in accordance with OPSD 705.010.
2. 150mm wall available upon request.
3. Standard opening size - 350mm diameter.
4. Riser sections available - 305, 457, 610, 914, and 1219mm
5. Subdrain connection insert for 100, 125, and 150mm diameter standard on all stock catch basins.
6. GOSS traps available upon request.
7. Flow restrictor plates available; IPEX/Plastech ICD.



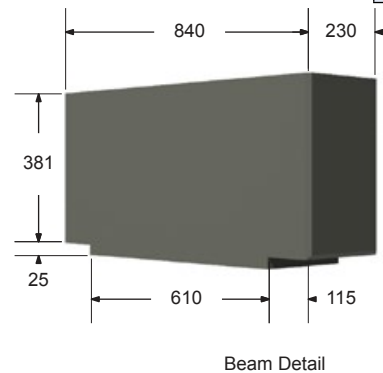
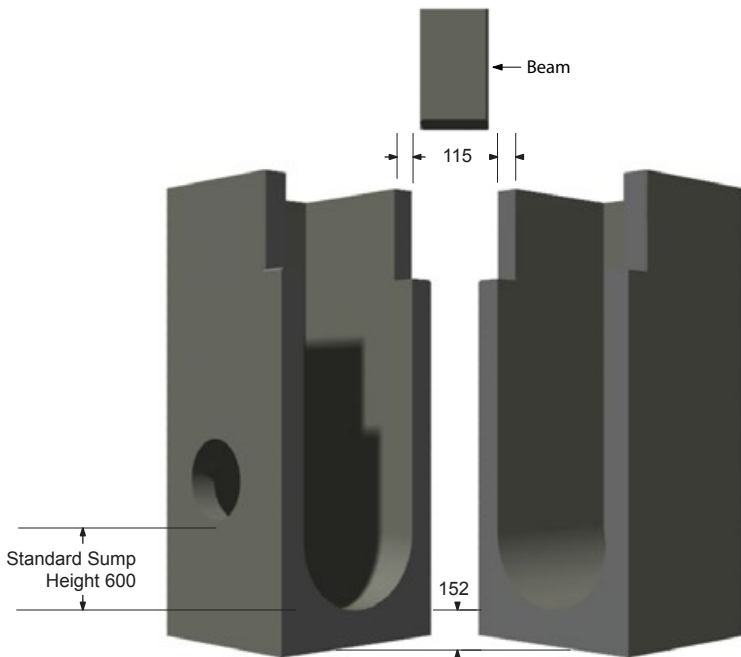


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Alternate Standard Heights (mm)	
A	1219
B	1372
C	1524
D	1676
E	1829
F	1981
G	2134



## 600 x 1450mm Twin Inlet Catch Basin

### Notes

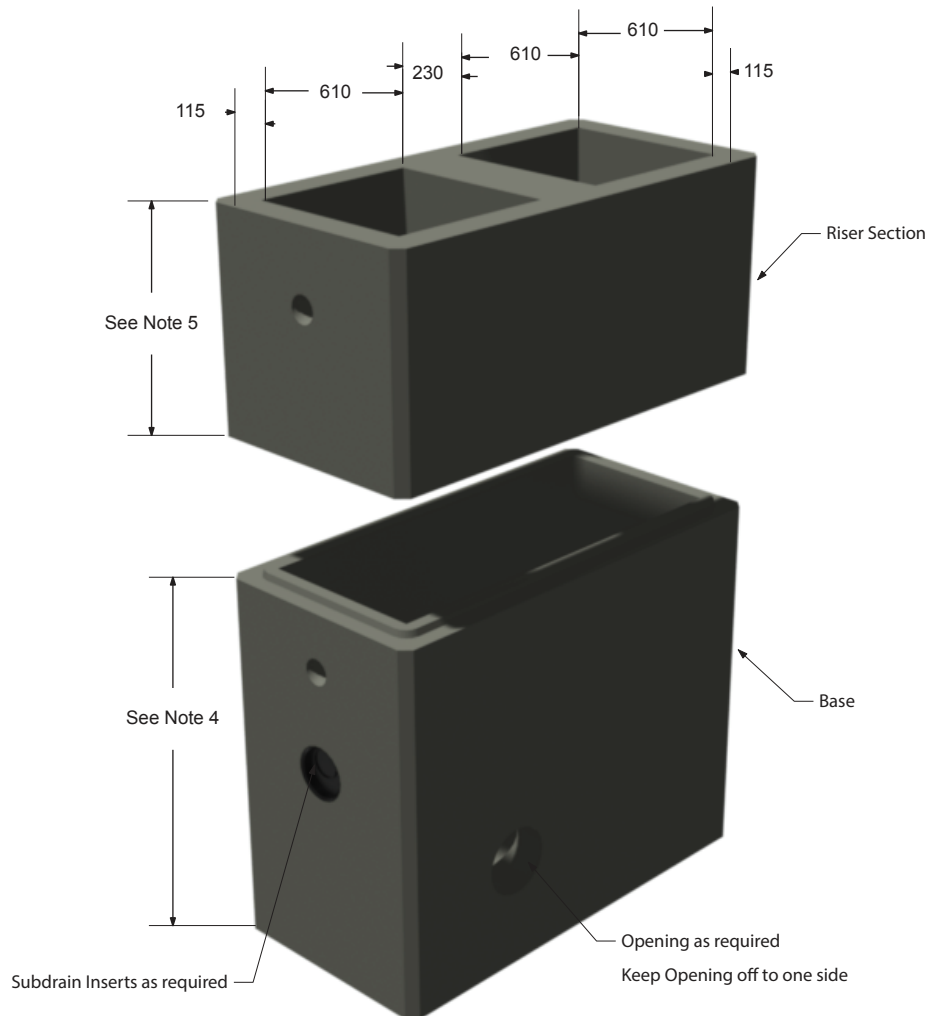
1. Manufactured in accordance with OPSD 705.020.
2. Standard opening size - 400mm diameter.
3. Vertical height may be increased by using two single catch basin riser sections. See page 71 for available riser sections.
4. Riser sections available - 305, 457, 610, 914, and 1219mm.
5. Subdrain connection insert for 100, 125, and 150mm diameter standard on all stock twin inlet catch basins.
6. GOSS traps available upon request.
7. IPEX/Plastech ICD backplates available.





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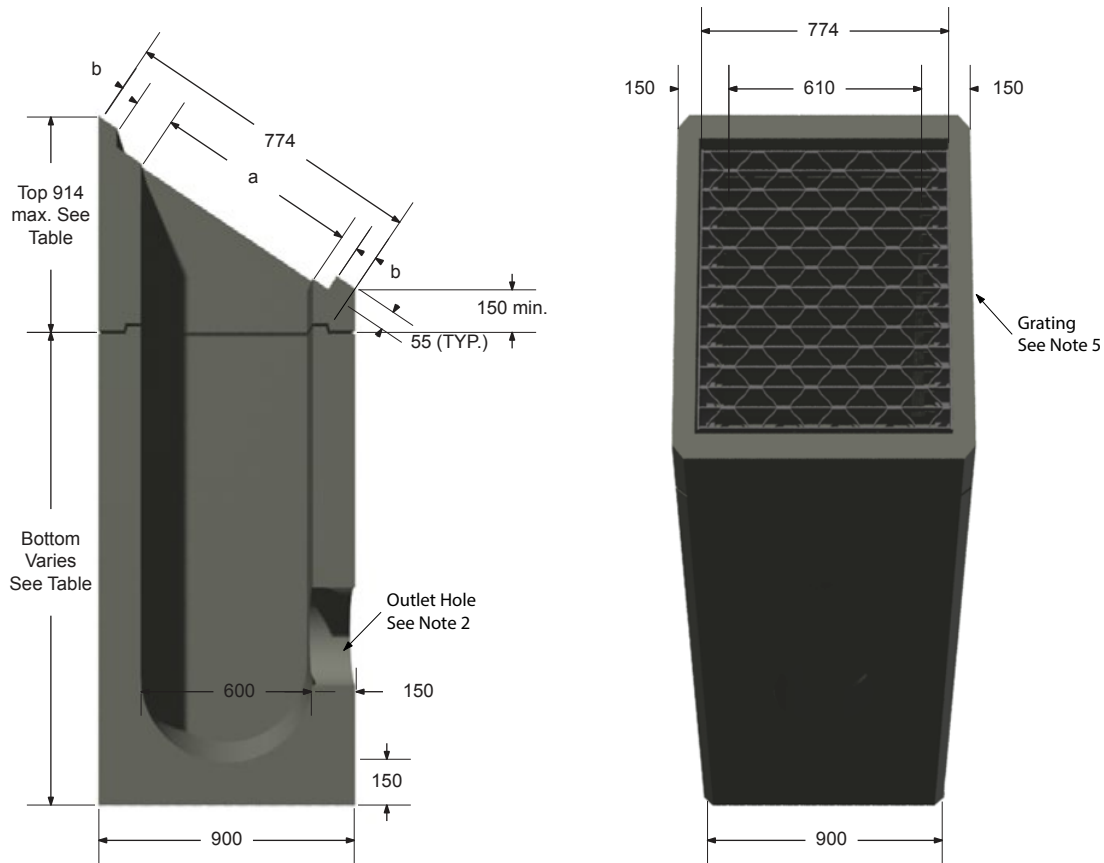


## 600 x 1450mm Twin Inlet Catch Basin

### Notes

1. Manufactured in accordance with OPSD 705.020.
2. Standard sump of 600mm is provided.
3. Pipe gaskets available upon request.
4. Base heights as follows (Structures can be made in 1 piece):  
.61m - 2.13m @ .15m increments.
5. Riser Section heights as follows: .76m - 1.68m @ .15m increment.
6. IPEX/Plastech ICD backplates available.





Opening Dimensions			
Grate		a	b
Type	Slope		
A	2H:IV	670	52
	3H:IV	632	71
	4H:IV	618	78
	6H:IV	608	83
	Horizontal	600	87

Standard Bottom Heights (mm)	
A	1219
B	1372
C	1524
D	1676
E	1829
F	1981
G	2134

Standard Top Heights (mm)	
A	305
B	457
C	610

## 600 x 600mm Ditch Inlet Catch Basin

### Notes

1. Designed in accordance with OPSD 705.030.
2. Standard opening size - 400mm diameter.
3. Riser sections available - 305, 457, 610, 914, and 1219mm.
4. All dimensions are in millimeter unless otherwise shown.
5. Honey comb grating manufactured in accordance with OPSD 403.010 - Type A.
6. Refer to pages 62-66 to see how ditch inlets are incorporated into maintenance holes.
7. IPEX/Plastech ICD backplates available.



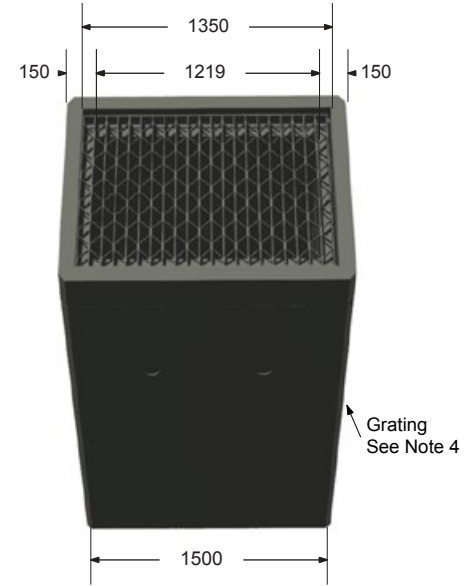
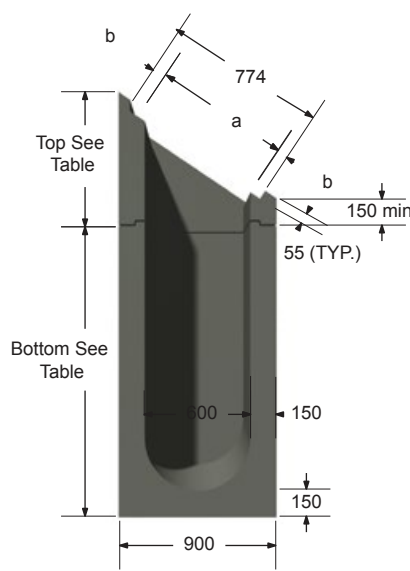


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DITCH INLET TYPE A

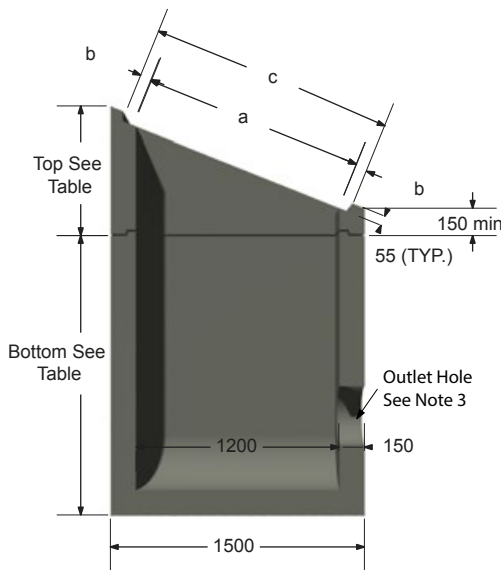
Opening Dimension			
Grate		a	b
Type	Slope		
B	2H:1V	670	52
	3H:1V	632	71
	4H:1V	618	78
	Horizontal	600	87



Ditch Inlet Type A

DITCH INLET TYPE B

Opening Dimension				
Grate		a	b	c
Type	Slope			
C	2H:1V	1341	66	1473
	3H:1V	1265	104	1473
	4H:1V	1237	118	1473
B	6H:1V	1216	65	1346
	Horizontal	1200	73	1346



Ditch Inlet Type B

Standard Bottom Heights (mm)	
A	1219
B	1372
C	1524
D	1676
E	1829
F	1981

Standard Top Heights (mm)	
A	152
B	305
C	762
D	914

Notes

- A- Monolithic Base heights as follows: .61m - 1.53m @ .15m increments
- B- Riser Top Section heights as follows: .76m - 1.22m @ .15m increments
- C- Slopes available as follows: X = 2,3,4,6, & Horizontal

\* Sections also available with variable heights @ .15m increments

600 x 1200mm Ditch Inlet Catch Basin

Notes

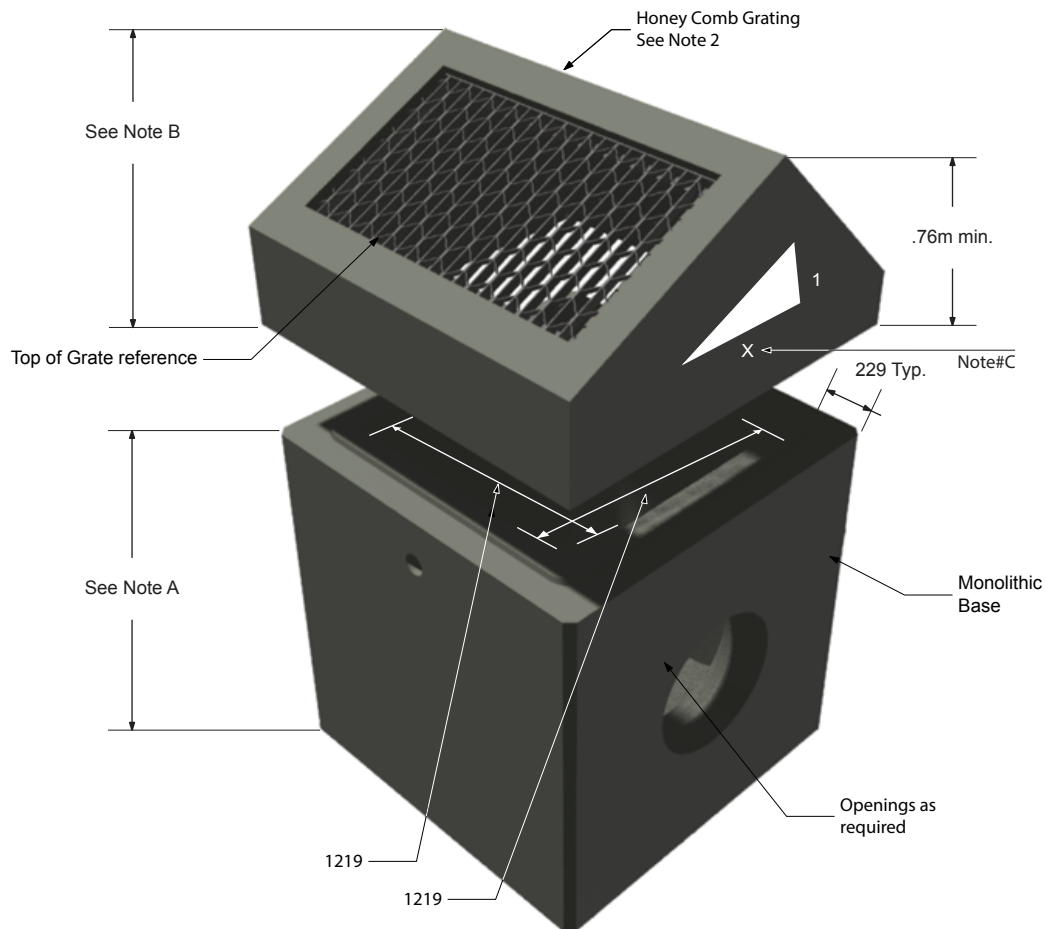
1. Manufactured in accordance with OPSD 705.040.
2. Riser sections are available in heights of .305 to 1.219m in 152 increments.
3. Standard outlet opening is 50mm diameter.
4. Honey comb grating as per OPSD 403.010 - Type B and Type A.
5. All dimensions are in millimeters, unless otherwise shown.
6. Refer to pages 62-66 to see how ditch inlets are incorporated into maintenance holes.
7. IPEX/Plastech ICD backplates available.





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#### Notes

- A- Monolithic Base heights as follows: .61m - 1.53m @ .15m increments  
B- Riser Top Section heights as follows: .76m - 1.22m @ .15m increments  
C- Slopes available as follows: X = 2,3,4,6, & Horizontal

\* Sections also available with variable heights @ .15m increments

## 1200 x 1200mm Ditch Inlet Catch Basin - Type A

#### Notes

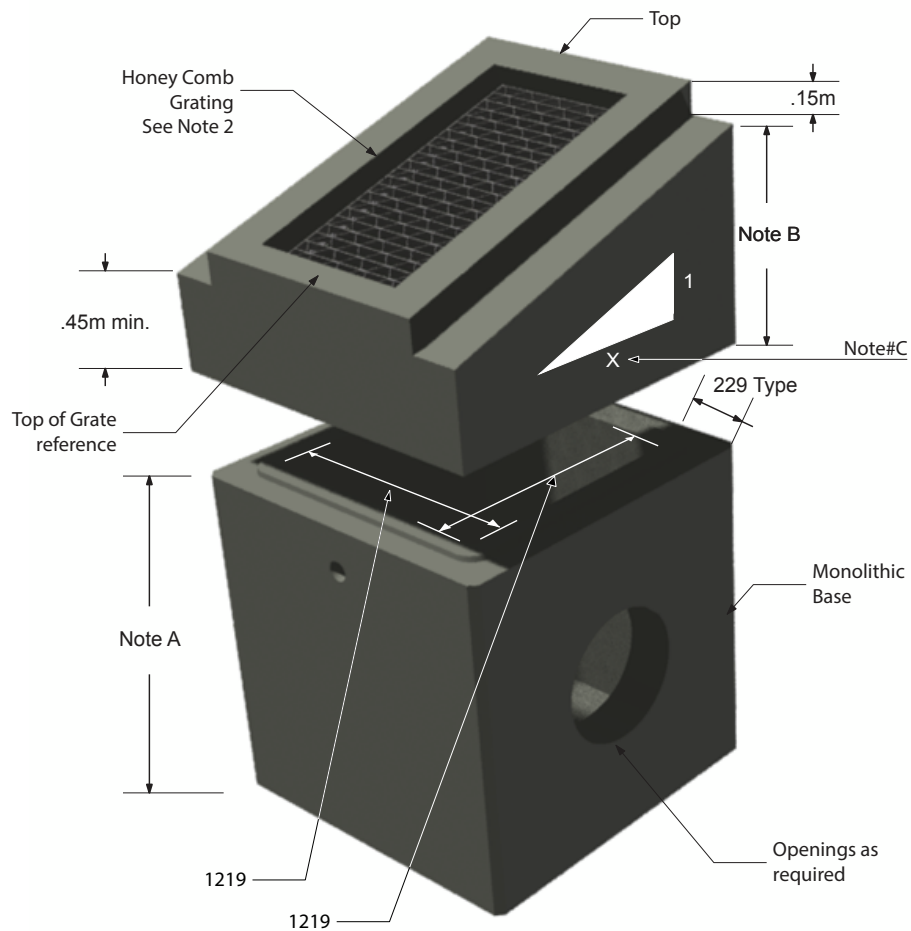
1. Manufactured in accordance with OPSD 702.040.
2. Honey comb grating manufactured in accordance with OPSD 403.010 - Type "B" & Type "C"
3. All maintenance Holes c/w Hollow Aluminum Steps as per OPSD 405.010.
4. Standard sump of 300mm is provided.
5. Pipe gaskets available upon request.
6. Refer to pages 62-66 to see how ditch inlets are incorporated into maintenance holes.





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#### Notes

- A- Monolithic Base heights as follows: .61m - 1.53m @ .15m increments  
B- Riser Top Section heights as follows: .45m - 1.22m @ .15m increments  
C- Slopes available as follows: X = 2,3,4,6, & Horizontal

\* Sections also available with variable heights @ .15m increments

## 1200 x 1200mm Ditch Inlet Catch Basin - Type B

#### Notes

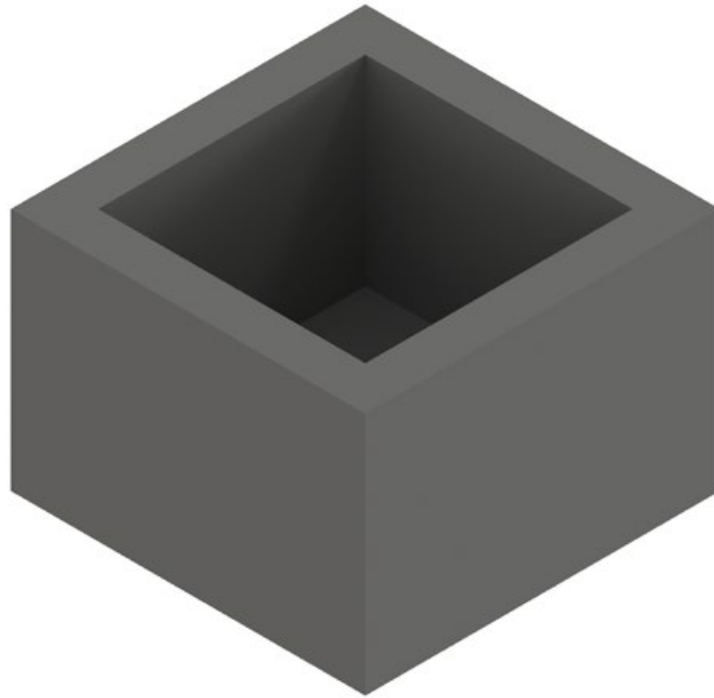
1. Manufactured in accordance with OPSD 702.050.
2. Honey comb grating manufactured in accordance with OPSD 403.010 - Type "B" or Type "C."
3. All maintenance Holes c/w Hollow Aluminum Steps as per OPSD 405.010.
4. Standard sump of 300mm is provided.
5. Pipe gaskets available upon request.
6. Refer to pages 62-66 to see how ditch inlets are incorporated into maintenance holes.





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Box Name	Inside Dimensions	Outside Dimensions		Top Slap Thickness	Bott. Slap Thickness	Wall (W) Thickness
		A	B			
M-3-3	914 x 914	1218	1218	152	152	152
M-4	1219 x 1219	1677	1677	229	229	229

## Sump Pit

### Notes

1. Manufactured in accordance with OPSS 1351.
2. All dimensions are in millimeters unless otherwise shown.
3. Sump pits are manufactured with a flush top or exposed reinforcing from the top.
4. Alternate sizing available.



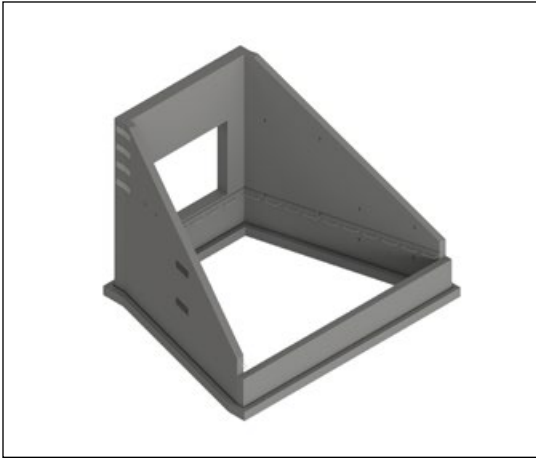


HEADWALLS



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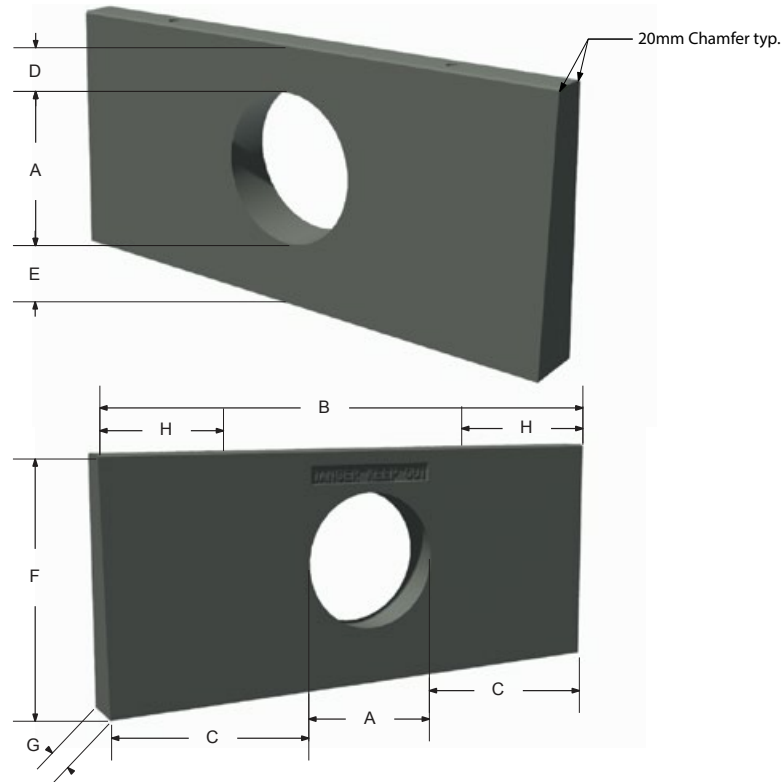
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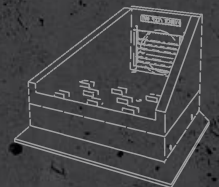


Pipe Size Conc.	Pipe Size Conc.	Opening	Width				Height	Bottom Thickness	Mass	Anchor	Anchor Size
Nom	O.D.	A	B	C	D	E	F	G	Kg	H	pcs
300	445	520	3366	1423	412	740	1672	439	5052	800	2 - 8 Ton
375	533	610	3366	1378	411	651	1672	439	4978	800	2 - 8 Ton
450	622	700	3366	1333	411	561	1672	439	4890	800	2 - 8 Ton
525	711	790	4167	1688.5	411	738	1939	462	7297	1000	2 - 8 Ton
600	800	880	4167	1643.5	410	649	1939	462	7183	1000	2 - 8 Ton
675	889	960	4167	1603.5	415	564	1939	462	7068	1000	2 - 8 Ton
750	978	1050	4968	1959	414	742	2206	484	9998	1000	2 - 8 Ton
825	1067	1140	4968	1914	413	653	2206	484	9841	1000	2 - 8 Ton
900	1156	1230	4968	1869	413	563	2206	484	9669	1000	2 - 8 Ton

## Headwall 300 to 900mm Pipe

### Notes

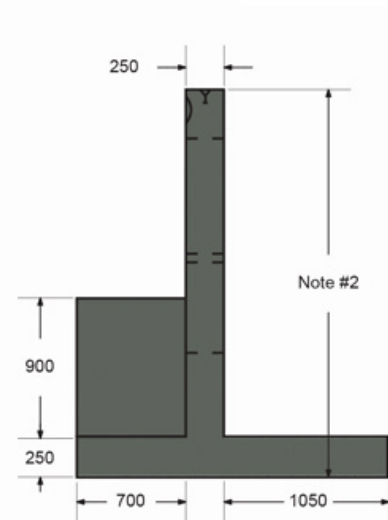
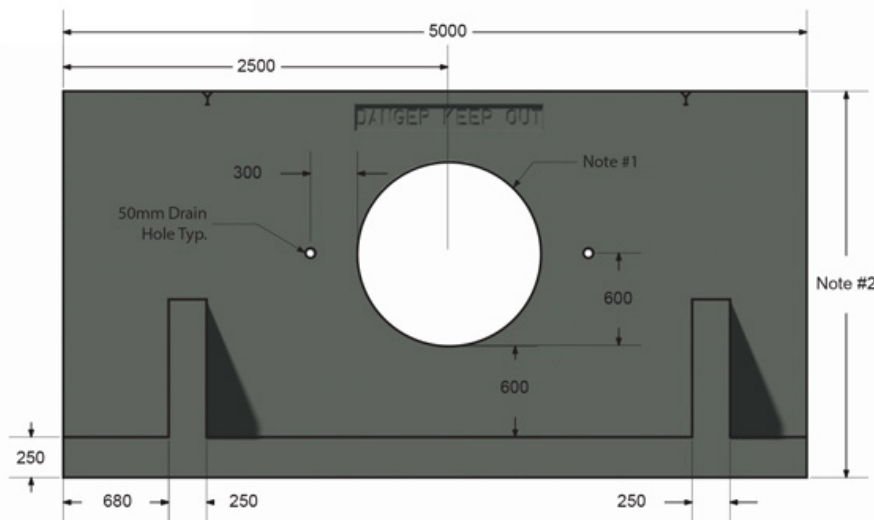
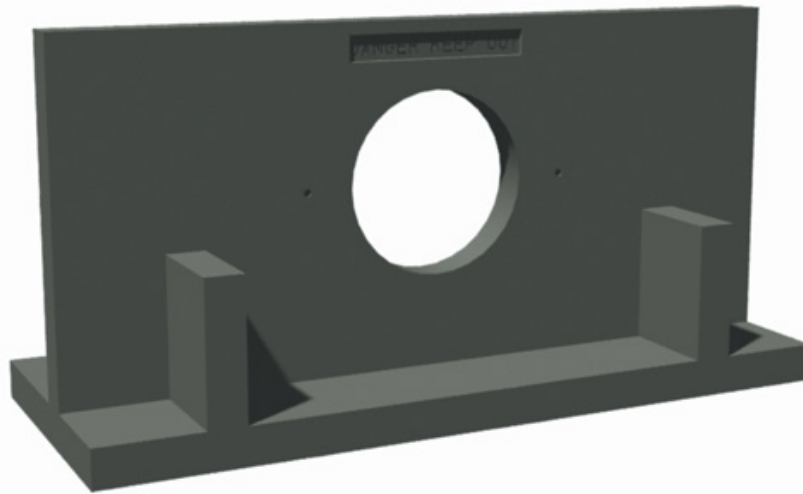
1. Precast alternative to OPSD 804.030.
2. Headwall grates are available upon request.
3. All dimensions are in millimeters unless otherwise shown.
4. Alternate openings are available upon request.





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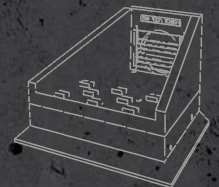
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## Headwall 300 to 1500mm Pipe

### Notes

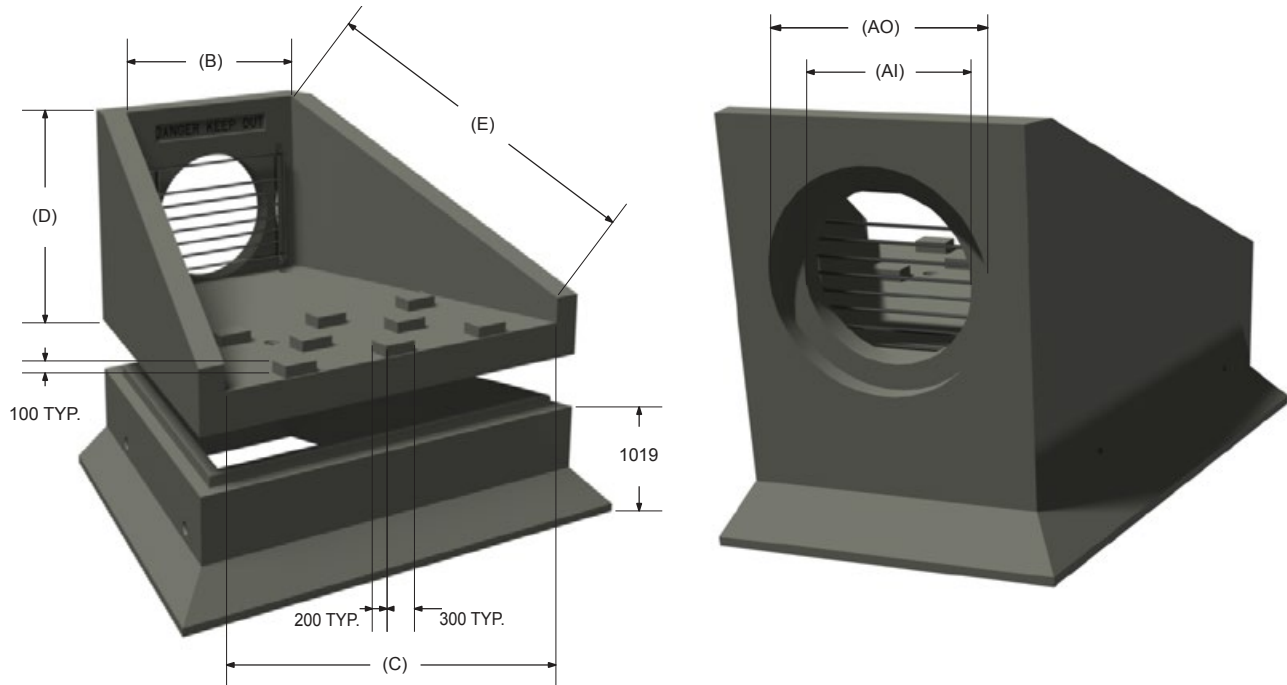
1. Precast alternative to OPSD 804.020.
2. Height of headwall will depend on the size of pipe.
3. Headwall grates as shown are available upon request.
4. Maximum weight = 15,000 kgs.
5. All dimensions are in millimeters unless otherwise shown.
6. Alternate openings are available upon request.





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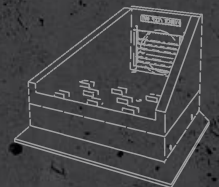


Pipe Size	Opening Front (Pipe I.D.)	Opening Back	Back Wall (Inside)	Width of Open End	PS-2 Height	PS-2 Length	Mass (Top)	Mass (Bottom)
Nom	AI	Ao	B	C	D	E	kg	kg
600	610	880	1219	2532	1623	2750	7,733	7,434
675	686	960	1219	2532	1623	2750	7,654	7,434
750	762	1050	1219	2532	1623	2750	7,554	7,434
825	838	1140	1219	2532	1623	2750	7,452	7,434
900	914	1230	1829	3463	2039	3350	12,652	9,627
975	991	1320	1829	3463	2039	3350	12,526	9,627
1050	1067	1410	1829	3463	2039	3350	12,394	9,627
1200	1219	1590	1829	3463	2039	3350	12,103	9,627
1350	1372	1760	2438	4072	2709	3350	17,106	10,639
1500	1524	1940	2438	4072	2709	3350	16,724	10,639
1650	1676	2120	2438	4072	2709	3350	16,308	10,639
1800	1829	2320	2438	4072	2709	3350	15,832	10,639

## Headwall 600 to 1800mm Pipe

### Notes

1. Precast alternative to OPSD 804.040.
2. Designed in accordance with CSA S6 - CHBDC.
3. Headwall grates as shown are available upon request.
4. All dimensions are in millimeters unless otherwise shown.
5. Alternate openings are available upon request.



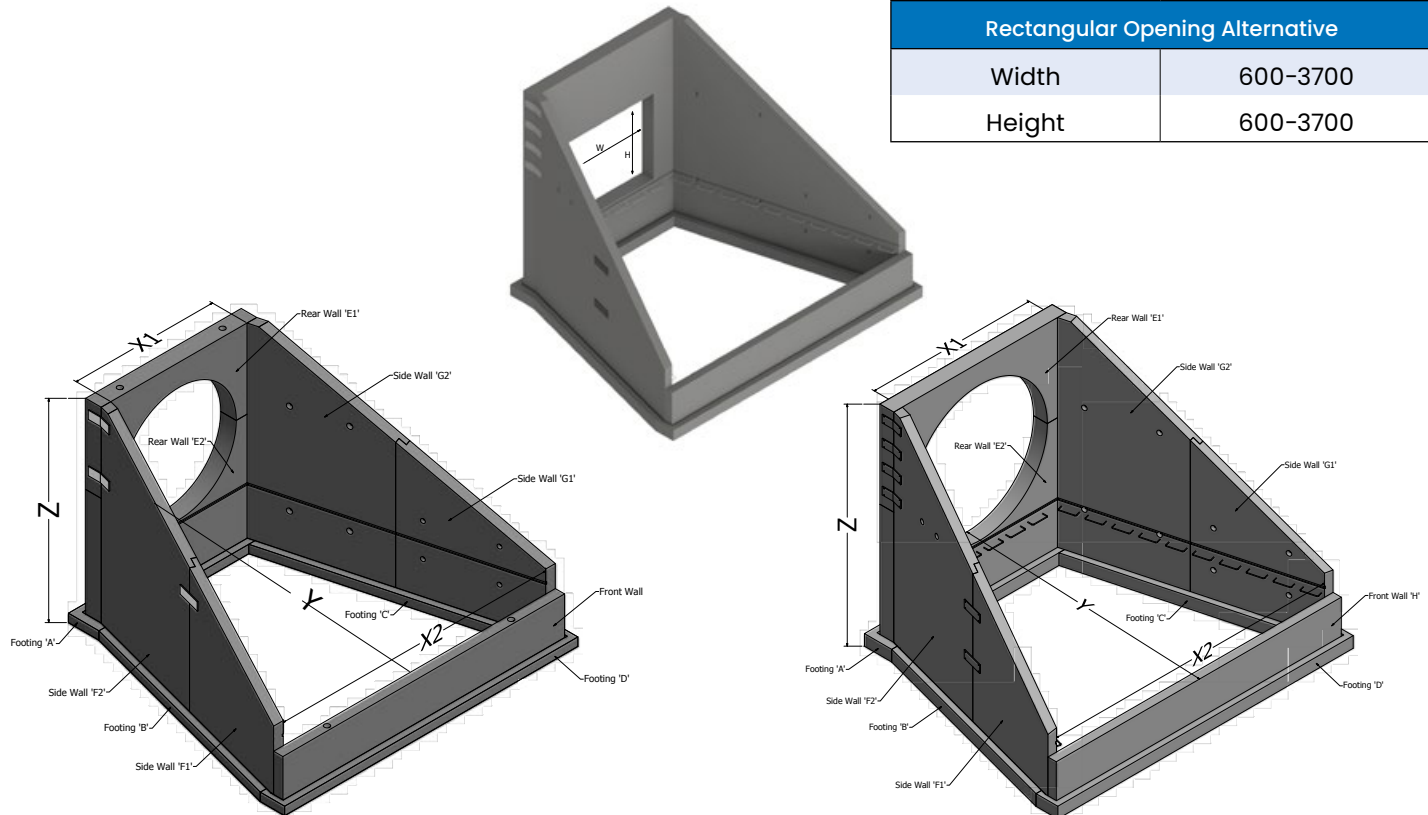


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### Rectangular Opening Alternative

Width	600-3700
Height	600-3700

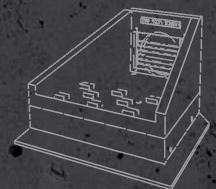


Pipe Size	Hole Diameter	Back Wall Inside	Width of Open End		Depth	Height (including footings)	Mass of Footings (by piece)			Mass of Back Wall (by piece)		Mass of Wing Walls (by piece)		Mass of Front Wall	Total Mass
			X1	X2			A	B, C	D	E1	E2	F1, G1	F2, G2		
1950	2460	3353	6458	6404	4753	2373	2240	2835	5459	6757	3865	6647	3749	46677	
2100	2640	3353	6458	6404	4753	2373	2240	2835	4790	6741	3865	6647	3749	45992	
2250	2820	3353	6458	6404	4753	2373	2240	2835	4096	6702	3865	6647	3749	45259	
2400	2990	4267	7372	6404	5743	2530	2305	3213	8999	9028	4333	7909	4244	57108	
2550	3170	4267	7372	6404	5743	2530	2305	3213	8223	9020	4333	7909	4244	56324	
2700	3360	4267	7372	6404	5743	2530	2305	3213	7332	8985	4333	7909	4244	55398	
3000	3710	4267	7372	6404	5743	2530	2305	3213	5632	8868	4333	7909	4244	53581	

## Segmental Headwalls for 1950 to 3000mm Pipe

### Notes

1. Floor and chute blocks are to be cast-in-place (by others).
2. Precast alternative to OPSD 804.040.
3. Designed in accordance with CSA S6-14 (CHBDC).
4. Headwall grates are available upon request.
5. All dimensions are in millimeters unless otherwise shown.
6. Alternate openings are available upon request.



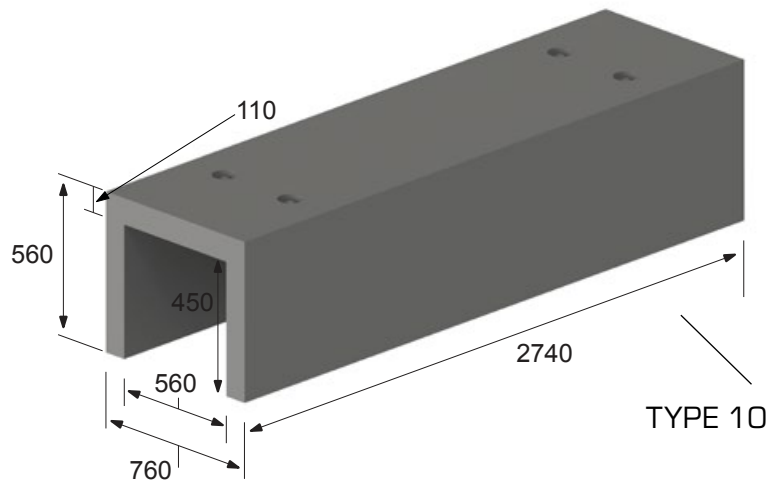
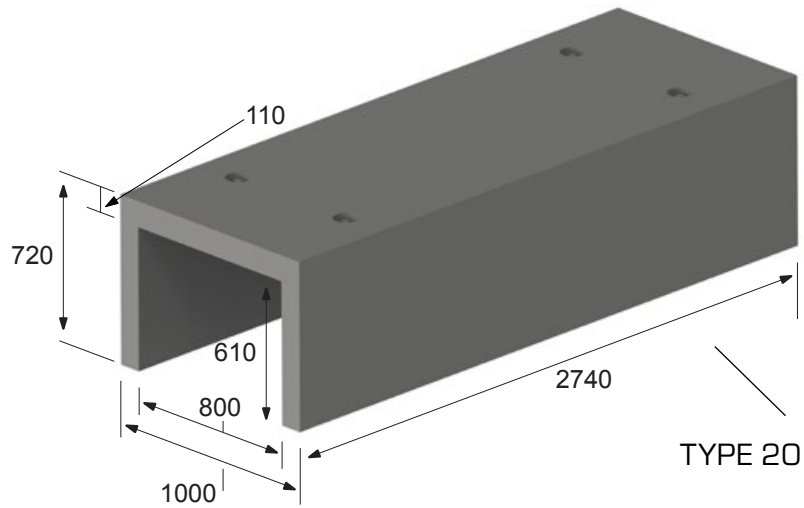


TRENCH COVERS



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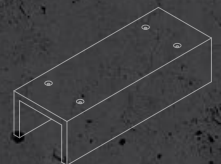
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## Trench Covers

### Notes

1. Designed in accordance with CSA-S6-06.
2. Design Live Load: CL-625-ONT.
3. All dimensions are in millimetres unless otherwise shown.



 **STONE STRONG** SYSTEMS®



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## THE BIG EASY.

We're the first to agree: bigger is better. But we don't stop there. The biggest and most innovative precast block in the industry is also the easiest to work with. Stone Strong Systems' fully and intelligently engineered block technology allows for a lighter, interlocking block that greatly reduces installation time and labor costs — with unmatched safety, durability and aesthetics. It's big. It's easy. It's Stone Strong.



### ROADWAY

Big-time projects demand big-time blocks – Stone Strong Systems' gravity walls are capable of heights in excess of 20 feet. Meanwhile, with proper engineering and reinforcement, Stone Strong MSE walls have topped nearly 50 feet.



### COMMERCIAL

Big-time projects demand big-time blocks – Stone Strong Systems' gravity walls are capable of heights in excess of 20 feet. Meanwhile, with proper engineering and reinforcement, Stone Strong MSE walls have topped nearly 50 feet.



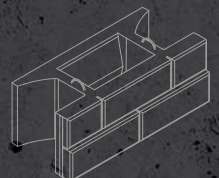
### RESIDENTIAL

Make impossibly hard projects impossibly easy – Stone Strong Systems' tapered block edges provide the versatility needed to contour to any landscape, including straight, convex, concave and circular designs.

Stone Strong System

#### Notes

1. Contact the MCON engineering department for further information.





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## NOT JUST BIGGER. BETTER.

What is it that makes Stone Strong Systems the best block in precast? In a word — everything. Everyone knows we're the biggest block in the industry. But what they may not know is that we're the industry's most efficient retaining wall system as well. Or that our big block system is the first to be fully engineered both structurally and geotechnically. So no matter what you're looking for — size, speed or strength — Stone Strong Systems can meet your project requirements.



### LIGHTER

Our system's unique hollow cavity means less weight per square foot, which translates into reduced transportation costs and a much faster, easier and less costly installation — install up to 1,200 square feet of block a day.



### BIGGER

Huge 24-square-foot block dramatically reduces labor costs and installation time, while its sheer size and weight deliver structural strength without any need for tie-backs or additional mechanics.



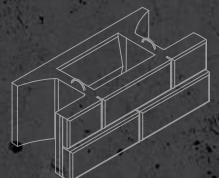
### INTERLOCKING

Lift/alignment loops ensure blocks interlock precisely and align units for consecutive level courses. Stone infill securely locks blocks together without any mechanical assistance.

## Stone Strong System

### Notes

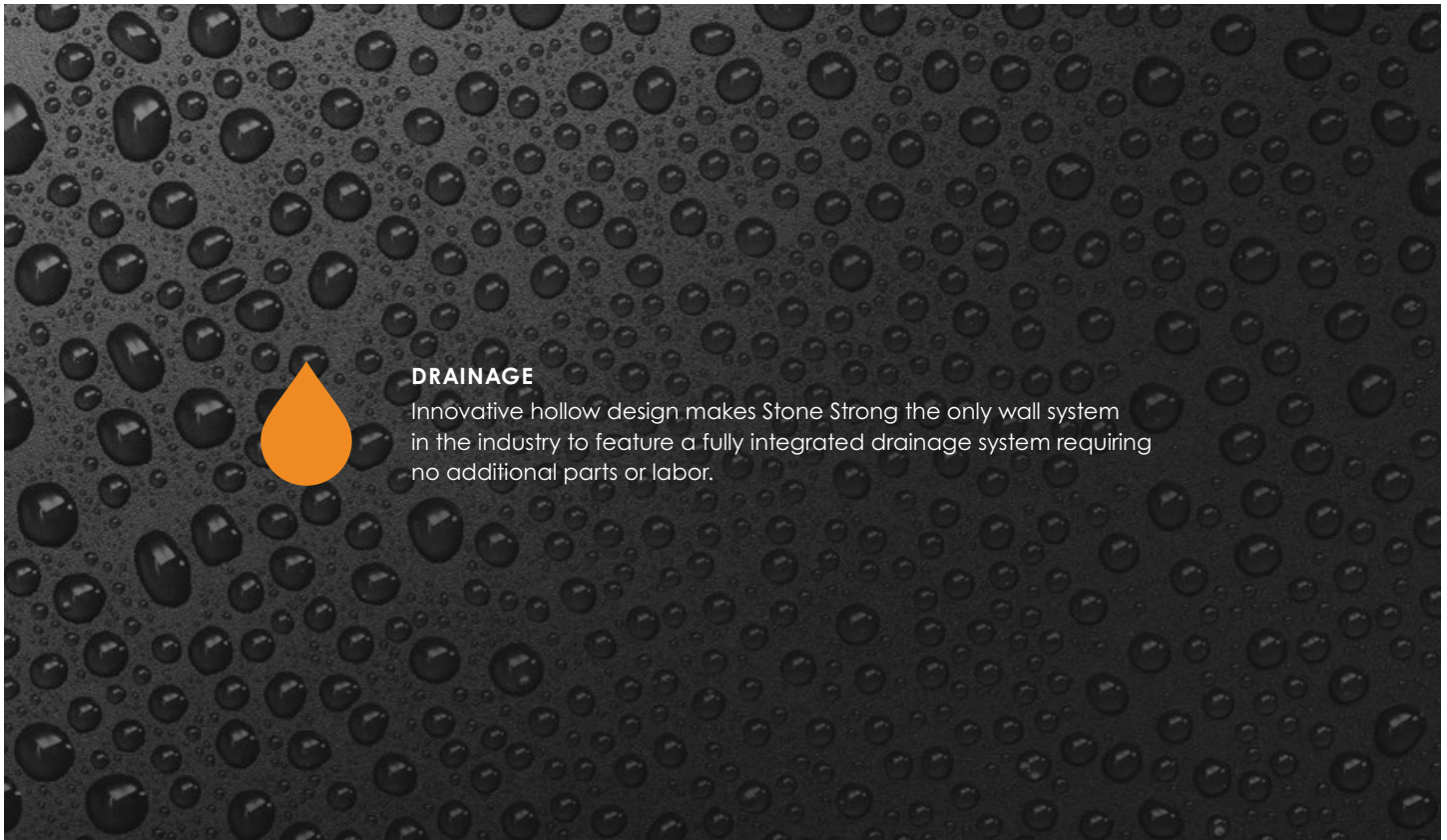
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#### **DRAINAGE**

Innovative hollow design makes Stone Strong the only wall system in the industry to feature a fully integrated drainage system requiring no additional parts or labor.

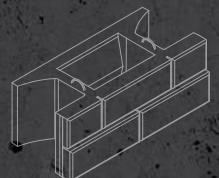
## **THE BUILDING BLOCKS OF INNOVATION.**

Comprised of more than a dozen fully engineered blocks, components and accessories, Stone Strong Systems combines the flexibility to accommodate any retaining wall project — large or small — with unmatched safety, durability and aesthetics. Every block is manufactured to product specifications to assure uniform weight, dimensional tolerance and strength, and unlike other brands, returned concrete is never used for Stone Strong blocks. Not to mention, every block is produced with air-entrained 4,000-psi concrete to protect it through even the most strenuous freeze/thaw cycles.

## Stone Strong System

#### Notes

1. Contact the MCON engineering department for further information.





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## EVERY STONE STRONG BLOCK FEATURES A REALISTIC, CHISELED-STONE FAÇADE HANDCRAFTED BY REAL ARTISANS.



### CHISELED GRANITE (Standard)

Derived from blocks hand-chiseled by artisans, the pattern is intended to match the classic look of natural, chiseled stone.



### FRACTURED LEDGE (Special Order)

Created from actual fractured ledge stone, the highly defined pattern offers the most natural look.



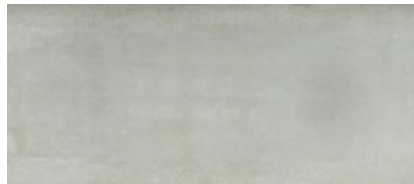
### POTOMAC (Special Order)

Smooth and broken up, this pattern was produced to replicate actual original cobblestone from the East Coast.



### TENNESSEE FOOTHILLS (Special Order)

Sharp and well defined, the pattern was developed by laser-mapping actual retaining walls in the Smoky Mountains.

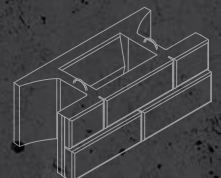


### SMOOTH FACE (Special Order)

## Stone Strong System Patterns

### Notes

1. Contact the MCON engineering department for available patterns and colours.





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**3-28 BLOCK**  
**Face 2' X 18" x 28"**

The 3 SF Block can be used on smaller walls where site depth is a factor. Weight 225 kilograms.



**3-28 TOP BLOCK**  
**Face 2' X 18" x 28"**

The 3 SF Top Block can be used on smaller walls and easy to move around on-site with a skid loader or mini-excavator. Weight 200 kilograms.



**3 SF BLOCK**  
**Face 2' X 18" x 44"**

The 3 SF Block allows the wall to stay on a running bond. This block is also available as a vertical. Weight 364 kilograms.



**3 SF TOP BLOCK**  
**Face 2' X 18" x 44"**

Every Stone Strong block is manufactured to particular specifications to assure uniform weight, dimensional tolerance and strength. Weight 328 kilograms.



**6-28 BLOCK**  
**Face 4' X 18" X 28"**

Stone Strongs tapered block edges provide the versatility needed to contour to any landscape. Weight 430 kilograms.



**6-28 TOP BLOCK**  
**Face 4' X 18" X 28"**

Unlike other brands, returned concrete is never used for Stone Strong blocks. Weight 380 kilograms.



**6 SF BLOCK**  
**Face 4' X 18" X 44"**

The 6 SF Block allows for tighter turning radius. This block is also available as a vertical. Weight 680 kilograms.



**6 SF TOP BLOCK**  
**Face 4' X 18" X 44"**

Blocks interlock securely and precisely without any mechanical assistance. Weight 635 kilograms.



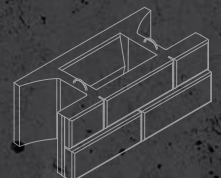
**12 SF BLOCK**  
**Face 8' X 18" X 44"**

The 12 SF Block allows for quicker installation of 1.5 foot high courses. Weight 1360 kilograms.

## Stone Strong System Blocks

### Notes

1. Contact the MCON engineering department for further information.





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**12 SF TOP BLOCK**  
**Face 8' X 18" X 44"**

Stone Strong's sheer mass holds the system together without the need for geogrid or soil reinforcement. Weight 1300 kilograms.



**24 SF BLOCK**  
**Face 8' X 36" X 44"**

This 24 SF Block is the Standard Stone Strong block. This block is also available as a vertical. Weight 2722 kilograms.



**24 SF TOP BLOCK**  
**Face 8' X 36" X 44"**

The Top Block has an 8" recess at the top of the face to allow for multiple finish options. Weight 2449 kilograms.



**24-62 BLOCK**  
**Face 8' X 36" X 62"**

The 24-62 Block builds walls up to 18' with no tie-back. This block is also available as a vertical. Weight 3109 kilograms.



**24-86 BLOCK**  
**Face 8' X 36" X 86"**

The 24-86 Block builds walls up to 22.5' with no tie-back. This block is also available as a vertical. Weight 3489 kilograms.



**D150 BLOCK**  
**Face 8' x 3', Width 86"**

Helps construct gravity walls exceeding 35 feet tall. This block is only available in vertical. Weight 5780 kg.



**24 SF MASS EXTENDER BLOCK**  
**Face 8' X 36" X 56"**

The addition of the extender to the 24 SF block provides for greater gravity wall heights. This block is also available as a vertical. Weight 4526 kilograms.



**45 DEGREE BLOCK**  
**Face 4' x 1.5' x 4'**

The 45° Block provides for inside and outside 45° turns. Weight 910 kilograms.



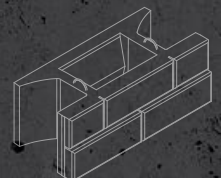
**45 DEGREE INSIDE CORNER TOP**  
**Face 4' x 1.5' x 4'**

The 45° Inside Corner Block provides for corners where the low grading is on the inside of the corner. Weight 757 kilograms.

## Stone Strong System Blocks

### Notes

1. Contact the MCON engineering department for further information.





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#### 45 DEGREE OUTSIDE CORNER TOP

**Face 4' x 1.5' x 4'**

The 45° Outside Corner Block provides for corners where the low grading is on the outside of the corner. Weight 837 kilograms.



#### COLUMN 'T' BLOCK

**Face 4' X 48" X 18"**

90° Block with 1 finished side.  
Weight 1179 kilograms.



#### COLUMN 'T' TOP BLOCK

**Face 4' X 48" X 18"**

90° Top Block with 1 finished side.  
Weight 1179 kilograms.



#### 90 DEGREE BLOCK

**Face 48" X 48" X 18"**

90° Block provides for inside and outside 90° turns. Weight 1179 kilograms.



#### 90 DEGREE CORNER TOP

**Face 48" X 48" X 18"**

90° Corner Top Block can be used for inside and outside 90° turns. Weight 1042 kilograms.



#### COLUMN END BLOCK

**Face 48" X 48" X 48" X 18"**

90° Block with 3 finished sides.  
Weight 1179 kilograms.



#### 4' DUAL BLOCK

**Face 4' X 18" X 28"**

The 4' Dual Face Block provides for above-grade applications. Weight 800 kilograms.



#### 4' DUAL END BLOCK

**Face 8' x 18', 28"**

3-sided finished end block. Used for Dual Face end finishing treatments. Weight 800 kilograms.



#### 8' DUAL BLOCK

**Face 8' X 18" X 28"**

The 8' Dual Face Block provides for above-grade applications. Weight 1597 kilograms.



#### END CORNER BLOCK

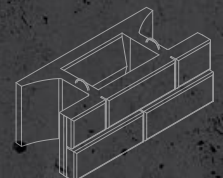
**Face 4' X 18" X 24"**

The End Corner block is used for 90° turns and for end finish treatments. Weight 640 kilograms.

## Stone Strong System Blocks

#### Notes

1. Contact the MCON engineering department for further information.





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**45 DEGREE COLUMN CAP**



**90 DEGREE COLUMN CAP**



**4' END CAP**



**4' STEP CAP**



**8' STEP CAP**



**8' DUAL END CAP**



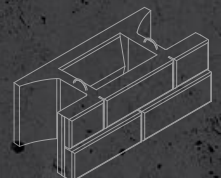
**8' END CAP**

Column Cap Chart					
	End Finishing	Face Length	Height	Depth	Block Weight (kg)
4' End Cap Block	1 Finished End	4'	0.58	2.67'	405
4' Cap/Step Block	2 Flush Ends	4'	0.58	2.67'	405
8' End Cap Block	1 Finished End	8'	0.58	2.67'	726
8' Dual End Cap Block	2 Finished Ends	8'	0.58	2.67'	726
8' Cap/Step Block	2 Flush Ends	8'	0.58	2.67'	726
8' End Cap Block	1 Finished End	8'	0.58	2.67'	726

## Stone Strong System Blocks

### Notes

1. Caps with two flush ends can also be used for stairs and step applications.
2. Clamp required for installation. Clamp rental available through MCON.
3. Contact the MCON engineering department for further information.





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**90 DEGREE INSIDE CORNER UNIT #1**

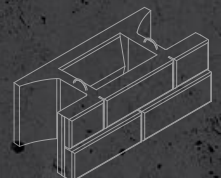
Block Number	Length	A	B	C	Block Weight
1	65 in 1646 mm	25 in 641 mm	25 in 633 mm	19 in 485 mm	2070 lbs 940 kg
2	70 in 1790 mm	31 in 784 mm	31 in 777 mm	23 in 593 mm	2350 lbs 1065 kg
3	76 in 1934 mm	37 in 928 mm	36 in 921 mm	27 in 694 mm	2630 lbs 1195 kg
4	82 in 2077 mm	42 in 1072 mm	42 in 1064 mm	31 in 796 mm	2900 lbs 1315 kg
5	87 in 2221 mm	48 in 1215 mm	48 in 1208 mm	35 in 896 mm	3180 lbs 1445 kg
6	93 in 2365 mm	54 in 1359 mm	53 in 1352 mm	39 in 997 mm	3460 lbs 1570 kg



**90 DEGREE OUTSIDE CORNER UNIT #1**

Block Number	Length	A	B	C	Block Weight
1	65 in 1652 mm	42 in 1054 mm	48 in 1221 mm	44 in 1124 mm	2600 lbs 1180 kg
2	59 in 1508 mm	36 in 910 mm	42 in 1077 mm	40 in 1022 mm	2330 lbs 1055 kg
3	56 in 1415 mm	30 in 767 mm	37 in 933 mm	36 in 920 mm	2050 lbs 930 kg
4	48 in 1221 mm	25 in 623 mm	31 in 790 mm	32 in 819 mm	1770 lbs 805 kg
5	42 in 1077 mm	19 in 479 mm	25 in 646 mm	28 in 717 mm	1500 lbs 680 kg
6	37 in 933 mm	13 in 336 mm	20 in 502 mm	24 in 616 mm	1220 lbs 555 kg

Inside Corner Block  
Outside Corner Block



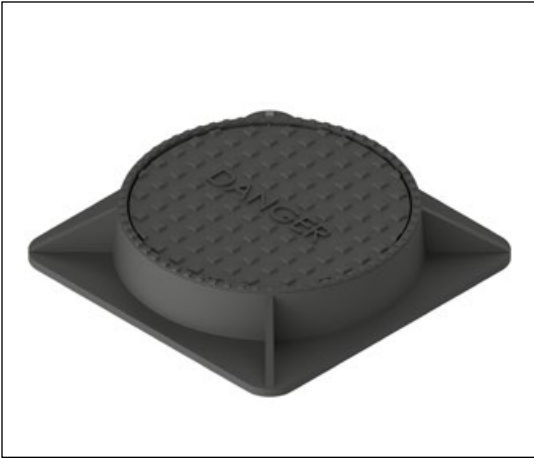


**ACCESSORIES**



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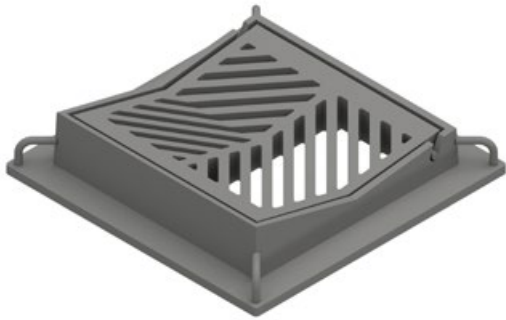
### SECTION 9 ACCESSORIES

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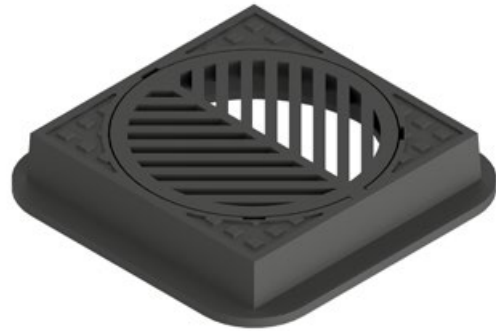


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MAINTENANCE HOLE FRAME & COVER  
OPSD 400.030 - TYPE V.



CATCH BASIN FRAME & COVER  
OPSD 400.07

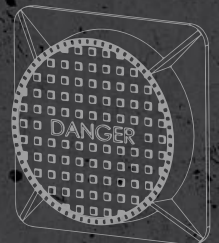


CATCH BASIN FRAME & COVER  
OPSD 400.01 DISHED GRATE



CATCH BASIN FRAME & COVER  
OPSD 400.02 FLAT GRATE

OPSD Catch Basin  
Frame and Covers



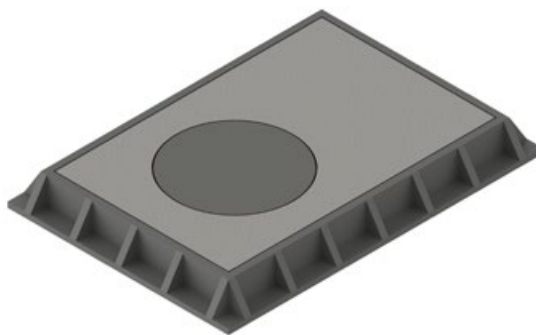


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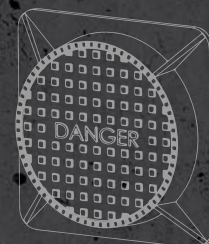


VALVE CHAMBER FRAME AND COVER  
OPSD 402.01



METER/VALVE CHAMBER  
FRAME AND COVER  
OPSD 402.03

OPSD Catch Basin  
Frame and Covers





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MAINTENANCE HOLE FRAME & COVER  
OPSD 401.010 - TYPE A & B

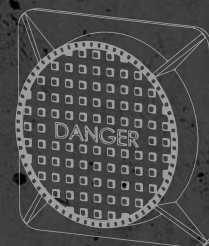


MAINTENANCE HOLE FRAME AND COVER  
OPSD 401.030



MAINTENANCE HOLE FRAME AND COVER  
OPSD 401.020

OPSD Maintenance Hole  
Frame and Covers



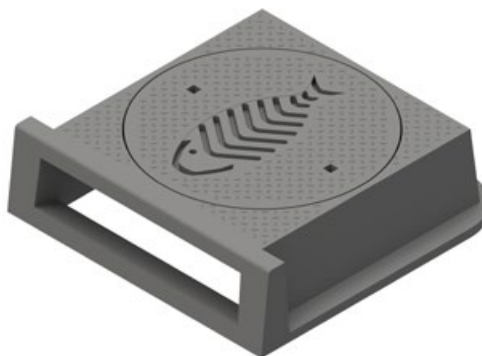


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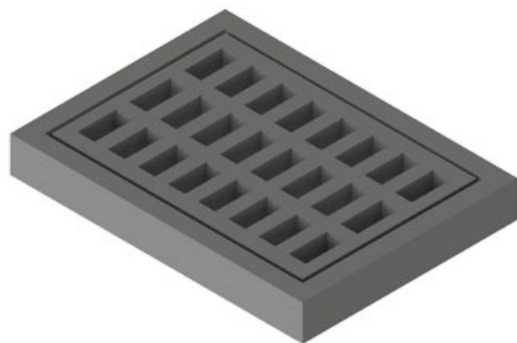
[mconproducts.com](http://mconproducts.com)



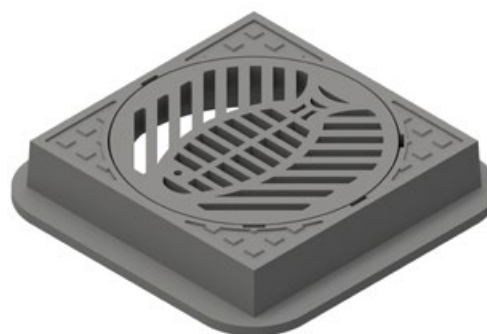
VALVE CHAMBER / MAINTENANCE HOLE  
CITY OF OTTAWA FRAME & COVER -  
W15/W16



CURB INLET CATCH BASIN  
CITY OF OTTAWA FRAME & COVER -  
S22/S23

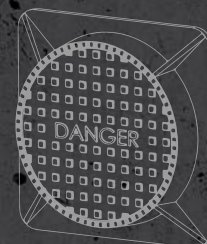


REAR YARD CATCH BASIN  
CITY OF OTTAWA FRAME AND COVER



CATCH BASIN  
CITY OF OTTAWA FRAME  
AND COVER - S19

City of Ottawa Frame  
and Covers





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SANITARY  
CITY OF OTTAWA FRAME & COVER -  
S24/S25

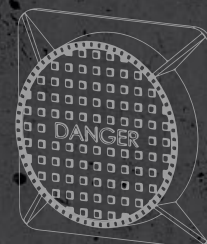


STORM  
CITY OF OTTAWA FRAME & COVER  
S24.1/S25



OPEN GRATE  
CITY OF OTTAWA FRAME & COVER  
S28.1

City of Ottawa Frame  
and Covers OPSD



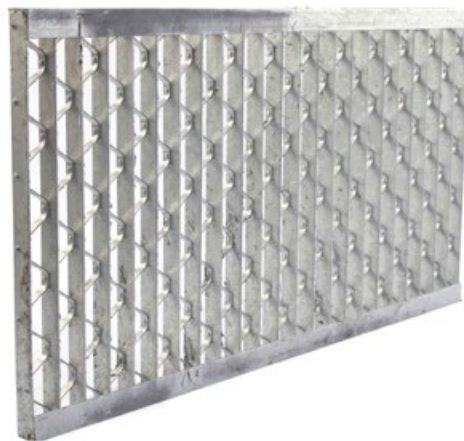


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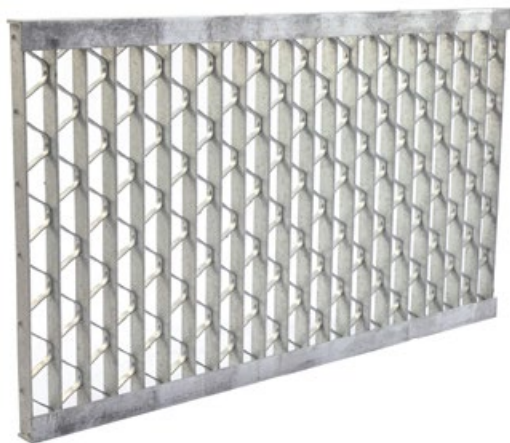
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DITCH INLET GRATE - TYPE A



DITCH INLET GRATE - TYPE B



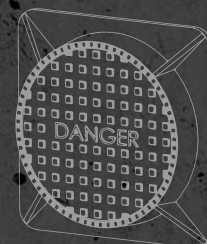
DITCH INLET GRATE - TYPE C

Grating Type	Grating Size	
	Length L	Width W
A	762	768
B	1338	768
C	1465	768

## Ditch Inlet Grate

### Notes

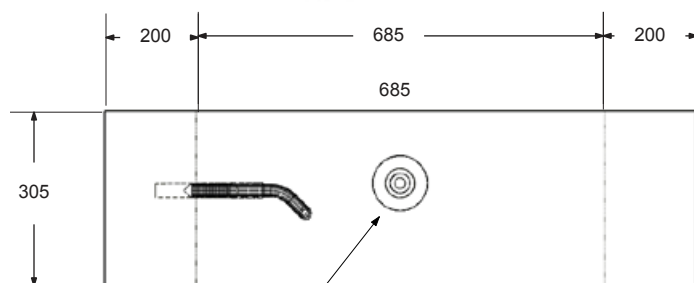
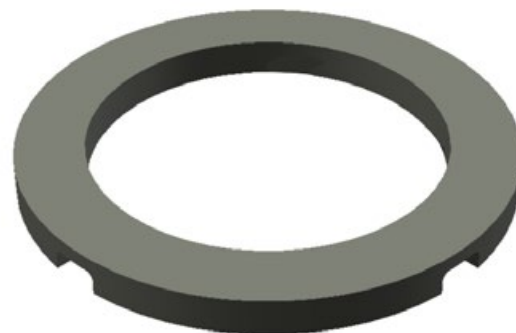
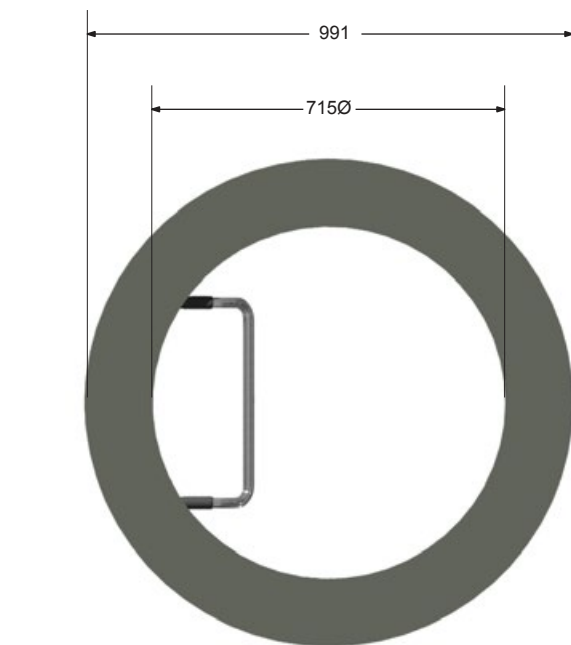
1. Conforms to OPSD 403.010
2. Type "A" grates are used on 600mmx600mm ditch inlets. See page 89.
3. Type "B" grates are used on 600mmx1200mm ditch inlets. See page 90.



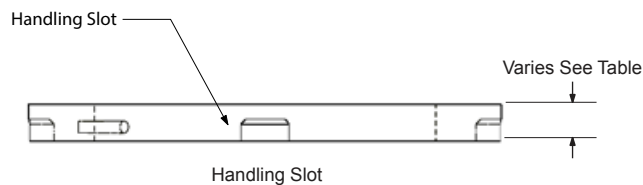


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Lift Anchor

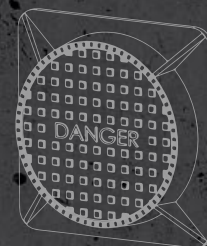


Unit Height	Bundle (PCS)	Mass (KG/EA)	Steps Y/N
50mm	10	55	See Note 3
75mm	8	82	See Note 3
100mm	6	109	See Note 3
150mm	6	164	See Note 3
300mm	1	325	Y

## Maintenance Hole Adjustment Rings

### Notes

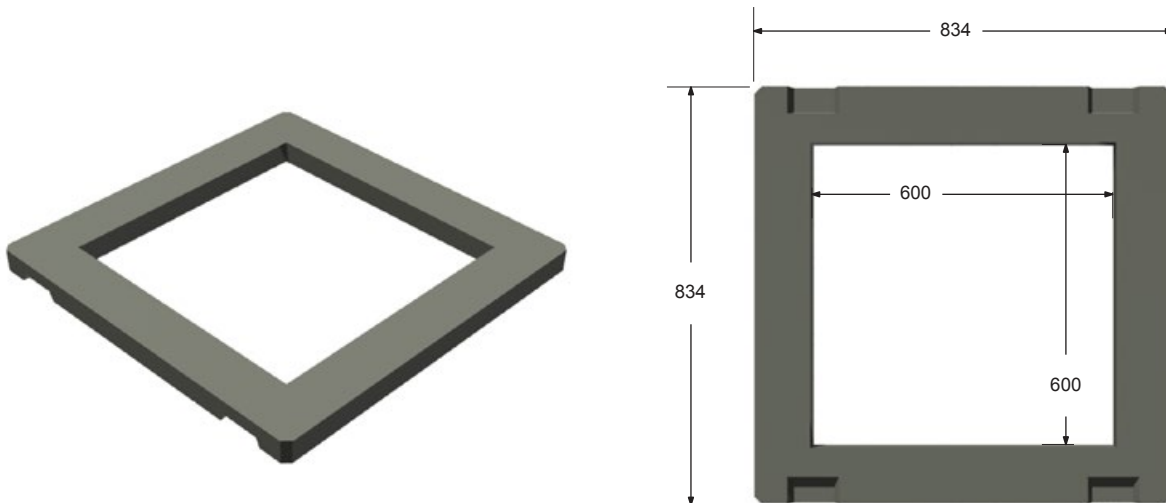
1. Designed in accordance with OPSD 704.010.
2. All dimensions are in millimeters unless otherwise shown.
3. Steps can be pre-installed upon request.





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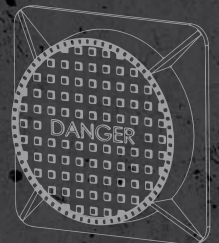


Unit Height	Bundle (PCS)	Mass (KG/EA)	Steps Y/N
50mm	10	40	See Note 3
75mm	8	61	See Note 3
100mm	6	84	See Note 3
150mm	4	121	See Note 3

## Catch Basin Adjustment Units

### Notes

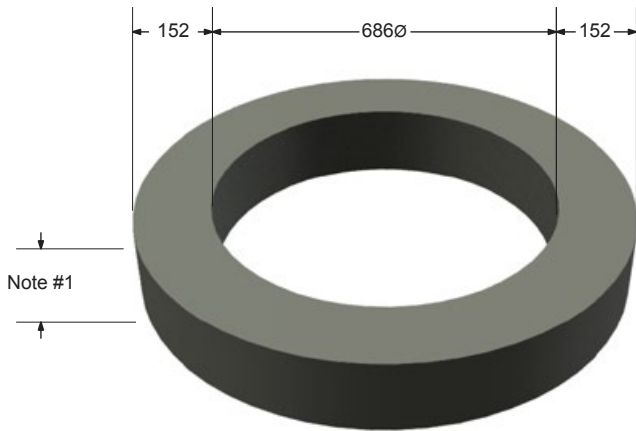
1. Designed in accordance with OPSD 704.010.
2. All dimensions are in millimeters unless otherwise shown.
3. Steps can be pre-installed upon request.



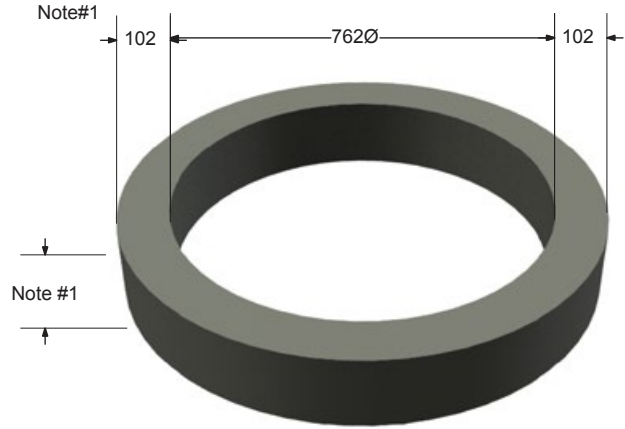


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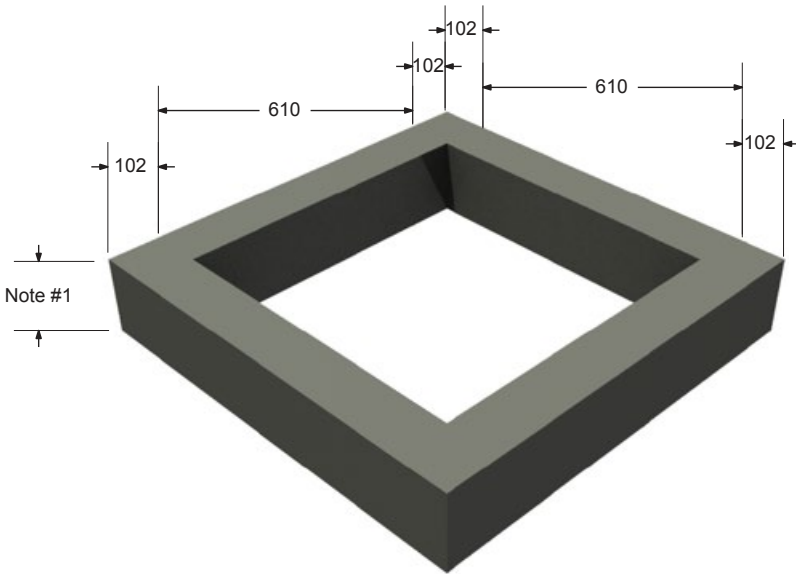
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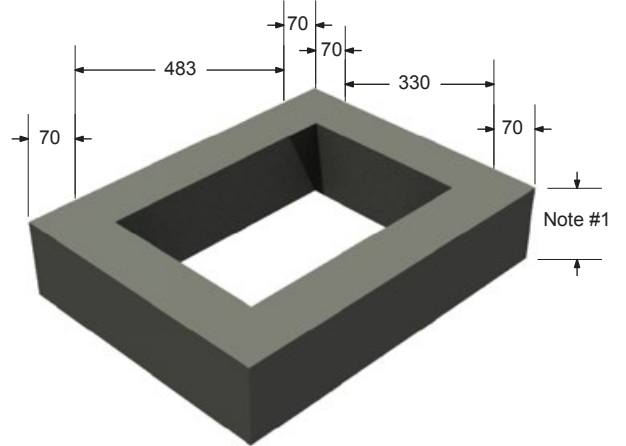
MAINTENANCE HOLE  
ADJUSTER



VALVE CHAMBER  
ADJUSTER



CATCH BASIN  
ADJUSTER

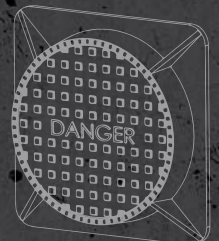


REAR YARD CATCH BASIN  
ADJUSTER

## Adjustment Units

### Notes

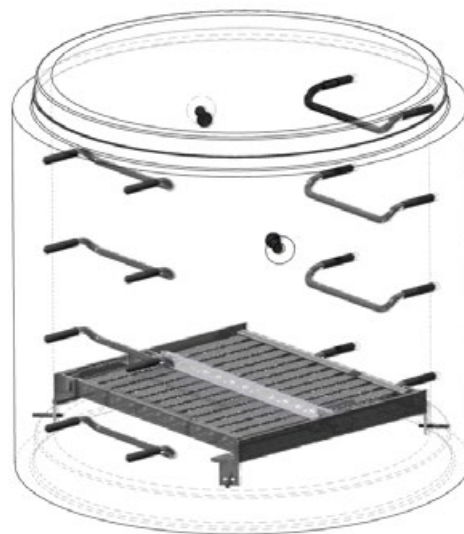
1. Heights as follows: 50mm, 75mm, 100mm, & 150mm.
2. Designed in accordance with OPSD 704.010.
3. All dimensions are in millimeters unless otherwise shown.





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ALUMINUM SAFETY PLATFORM



20MM HOLLOW ALUMINUM

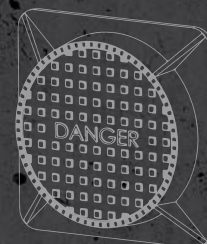


20MM SOLID ALUMINUM

## Maintenance Hole Aluminum Safety Platform and Steps

### Notes

1. Safety platforms designed in accordance with OPSD 404.020.
2. Steps designed as per OPSD 405.010 - Hollow - Standard. Steps as per OPSD 405.020 - Solid - available when specified.
3. All dimensions are in millimeters unless otherwise shown.





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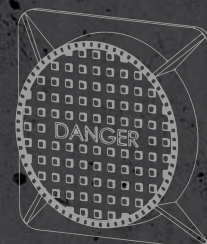
The rubber boot type connector is a common method of connecting both concrete and other pipe materials to maintenance holes, providing both a flexible and watertight connection. The boot connector ranges in sizes to suit the pipe outside diameter and also the maintenance hole diameter that the pipe is to be installed into.

Contact the MCON engineering department for further details on this connector or other connecting systems that are available.

#### PIPE INSTALLATION PROCEDURE:

1. Clean pipe and boot to ensure no dirt or foreign materials are present.
2. Clamping surface on pipe must be clean and smooth.
3. Center pipe in opening and insert pipe until it breaks the inside plane of maintenance hole or, if maintenance hole is benched, to the invert ledge of benching.
4. Attach take-up clamp(s) and stagger screw(s) of clamps around the groove of the gasket so that take-up pressure will be equalized. Make sure each clamp is completely in the correct groove.
5. Using a torque ratchet or torque wrench, gradually tighten screw(s) of clamp(s) in an alternating pattern to 12 ft-lbs (for 8"-14" holes), 20 ft-lbs (for 16"-20" holes), or 60 ft-lbs (for 22" holes and larger).
6. After reaching the recommended torque from Note 5 on the final screw, check all screws again to ensure compression of the clamps.
7. Adjust pipe to line and grade.

Pipe to Maintenance  
Hole Connector



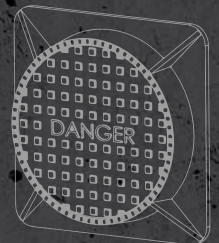


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Pipe Size (and class)	Hole Size	Preferred Boot (all from Press Seal)	Alternative (from Trelborg)	Notes
50 PVC	203mm (8")	8 QRS PSX:DD (Step)	none	
75 PVC	203mm (8")	8 QRS PSX:DD (Step)	none	
100 PVC	203mm (8")	8 QRS PSX:DD (Step)	none	
125 PVC (DR 28-35)	203mm (8")	08-11 PSX:DD	"10-06 PSX:DD from Press Seal"	10-06 alternative needs a 10" hole. NOTE: PSX 08-05:DD are obsolete and not interchangeable with 08-11's.
150 PVC (DR 14-35)	305mm (12")	12-06 PSX:DD	S106-12BWS	
200 PVC (DR 28-35) 200 PVC (DR 14-35)	305mm (12")	12-08 PSX:DD 12M PSX:DD	106-12AWS S106-12WS	
250 PVC (DR 14-35)	356mm (14")	14M PSX:DD	S106-14AWS	
300 PVC (DR 14-25) 300 PVC (DR 28-35)	406mm (16")	16M PSX:DD	S106-16WS	
350 PVC (DR 18-25)	508mm (20")	20Y PSX:DD	S106-20BWS	
375 PVC (DR 28-35)	508mm (20")	20Y PSX:DD	S106-20BWS	
450 PVC (DR 18-25)	610mm (24")	24L PSX:DD	S206-24A	
450 PVC (DR 28-35)	559mm (22")	22M PSX:DD	S206-24A	NOTE: S206-24A alternative needs a 24" hole.
500 PVC (DR 18-25)	660mm (26")	26L PSX-2:DD	S206-24L	NOTE: S206-24L alternative needs a 24" hole.
525 PVC (DR 28-35)	660mm (26")	26L PSX-2:DD	S206-26	
600 PVC (DR 18-25)	762mm (30")	30L PSX-2:DD	S206-30	
600 PVC (DR 28-35)	711mm (28")	28A PSX-2:DD	S206-28	
300 RCP	559mm (22")	22L PSX-2:DD	S206-20L	
375 RCP	610mm (24")	24A PSX-2:DD	S206-24L	
450 RCP	711mm (28")	28A PSX-2:DD	S206-28	
525 RCP	813mm (32")	32L PSX-2:DD	S206-32	Both boots require an 1500mm MH minimum. S306-32 option will work in a 1200mm MH.
600 RCP	914mm (36")	36A PSX-2:DD (needs 1800mm MH)	S206-34L (needs 1500mm MH)	NOTE: S206-34L alternative needs a 34" hole S306-34L option will work in a 1200mm MH.
675 RCP	1016mm (40")	40L PSX-2:DD (needs 1800mm MH)	S206-38L (needs 1800mm MH)	NOTE: S206-38L alternative needs a 38" hole S306-38L option will work in a 1500mm MH.
750 RCP	1067mm (42")	42A PSX-2:DD	S206-42	Both boots require an 1800mm MH minimum.

Boot Gasket





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BUTYL TAPE  
(BOX MANHOLE SEALANT)



HYDROPHILIC WATERSTOP  
(BETONITE WATERSTOP MATERIAL)

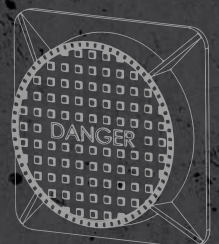


PARASEAL® PARAPRIMER™  
(PARASEAL ACCESSORY PRIMER)



MEL-ROL WATERPROOFING MEMBRANE  
(SELF-ADHERING SHEET WATERPROOFING)

Sealants for Box  
Structures





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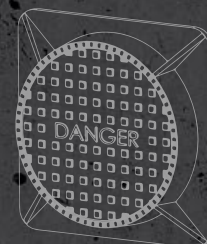


MEL-PRIME PRIMER  
(SOLVENT-BASED VOC ADHESIVE)



KING REDI-PLUG HYDRAULIC CEMENT  
(FOR SEALING ACTIVE WATER LEEKS  
IN CONCRETE)

Sealants for Box  
Structures





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SWIFT LIFT 4T



SWIFT LIFT 8T



SWIFT LIFT 20T



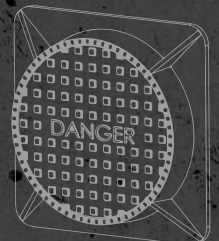
Swift Lift Universal Lifting Eye Dimensions

Rated Load Tons	A	B	C	D	Ex2	F Maximum Width	G Minimum Thickness	H
4	4.6"	2.8"	3.5"	11.0"	3.46"	1.02"	0.31"	2.26"
8	6.3"	3.3"	4.4"	15.6"	4.40"	1.31"	0.47"	2.90"
20	7.3"	4.6"	5.9"	20.4"	5.98"	1.86"	0.71"	4.35"

## Swift Lifts and Boot Gasket

### Notes

- Contact our engineering department for special design applications.





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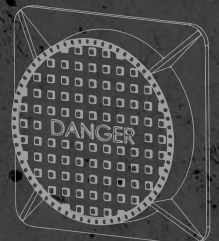
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in	Feet Per Roll	Rolls Per Box	Feet Per Box
<b>Kent Seal #2, Butyl Sealant - Oil Resistant (Nitrile)</b>			
3/4	14'6"	8	116
<b>Kent Seal #2, Butyl Sealant</b>			
1/2	21'9"	12	261
3/4	14'6"	8	116
1	14'6"	6	87
1 1/4	14'6"	4	58

Pipe Size		TSS Style	Cut Length Inches
in	mm		
<b>Tylox SuperSeal Pipe Gaskets</b>			
12	300	135	42-1/8
15	375	135	52
18	450	135	60-1/2
18	450	135	62-3/8
21	525	135	69-1/8
24	600	135	77-5/8
27	675	135	86-1/4
30	750	135	95-5/8
33	825	135	104-1/4
36	900	135	112-3/4
39	975	135	121-3/8
42	1050	185	126-1/8
48	1200	185	142-1/2
54	1350	185	158-5/8
60	1500	185	176
66	1650	185	193-5/8
72	1800	185	210-7/8
78	1950	225	228-3/8
84	2100	225	246-1/8
90	2250	225	264
96	2400	225	281-3/4
102	2550	225	299-1/2
108	2700	225	318 3/4

Pipe Gasket





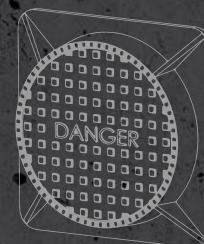
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Pipe Size		TSS Style	Cut Length Inches
in	mm		
<b>Tylox SuperSeal Maintenance Gaskets</b>			
48	1200	166	147-1/2
60	1500	165	181-1/2
72	1800	165	220-1/2
<b>NITRILE Gaskets</b>			
12	300	135	42-1/8
15	375	135	52
18	450	135	60-1/2
18	450	135	62-3/8
21	525	135	69-1/8
24	600	135	77-5/8
27	675	135	86-1/4
30	750	135	95-5/8
33	825	135	104-1/4
36	900	135	112-3/4
39	975	135	121-3/8
42	1050	185	126-1/8
48	1200	185	142-1/2
54	1350	185	158-5/8
60	1500	185	176
66	1650	185	193-5/8
72	1800	185	210-7/8
78	1950	225	228-3/8
84	2100	225	246-1/8
90	2250	225	264
96	2400	225	281-3/4
120	3000	225	349-1/4

Pipe Size		TSS Style	Cut Length Inches
in	mm		
<b>Tylox SuperSeal Maintenance NITRILE Gaskets</b>			
48	1200	165	147-1/2
60	1500	165	181-1/2
72	1800	165	220-1/2
<b>FT-III Connector Series (NITRILE)</b>			
6	150	SDR35	21-1/2
8	200	SDR35	28-1/8
10	250	SDR35	34-3/4
12	300	SDR35	41-1/8
15	375	SDR35	49-7/8
<b>Three Step cored hole gaskets</b>			
4	100	1576	14-1/4
5	125	1576	18-5/8
6	150	1576	20-3/8
8	200	1576	26-3/4
10	250	1576	34-1/8
12	300	1576	40-1/8
<b>FT-III Connector Series</b>			
1" x 3/8" Recess Former Strip, 60 Durometer, Neoprene 1-1/2" x 1/2" Neoprene 60 Durometer 0.656 x 0.25 Nitrile Material (21/32" O.D. x 1/4" I.D.) 0.656 x 0.25 Neoprene Material 45 Durometer (21/32" x 1/4" I.D.)			
6	150	SDR35	21-1/2
8	200	SDR35	28-1/8
10	250	SDR35	34-3/4
12	300	SDR35	41-1/8
15	375	SDR35	49-7/8

Pipe to Maintenance  
Hole Connector





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#### Stormwater Management: Echelon Systems



#### Retaining Wall Blocks: Stone Strong Systems



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[info@centralprecast.com](mailto:info@centralprecast.com)

#### PRODUCT LINE

Landscape/Masonry Products	Distributors of interlocking stones, retaining walls, slabs and curbing
Architectural Precast	Manufacturers of architectural precast for buildings such as big box stores and condo buildings
Masonry Furnishings	Manufacturers of masonry furnishings that include sills, lintels, coping and caps
Site Furnishings	Manufacturers of planters, steps, garbage receptacles, benches, ashtrays, etc.
Fencing	Manufacturers of various precast concrete fencing systems
Columns & Signs	Manufacturers of custom columns and signs to your specifications
Shelters	Manufacturers of a variety of standard shelters



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#### PRODUCT LINE

Concrete Poles	Manufacturers of concrete poles for hydro distribution, street lighting
Utility Structures	Manufacturers of utility vaults, distribution chambers, and other electrical structures
Highway Barriers	Manufacturers of standard OPSD concrete barriers
Specialty Items	Bollards, Aluminum Pole bases