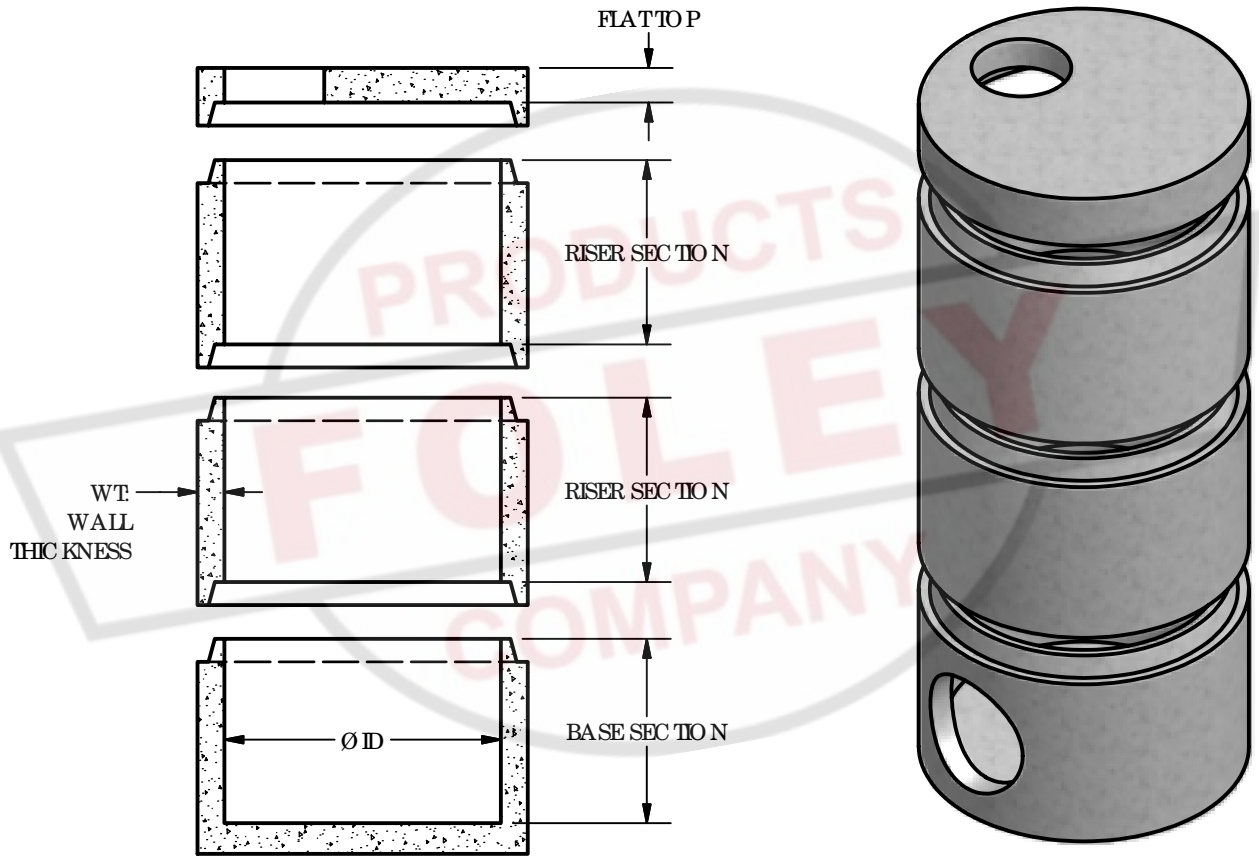


ID	WT	FLAT TOP	TONS	RISER SECTION			BASE SECTION		
				MAX	MIN	VF TONS	MAX	MIN	SLAB TONS
60"	6"	8"	1.41	5'-0"	1'-0"	0.65	5'-6"	2'-0"	1.41
72"	7"	9"	2.27	6'-0"	1'-0"	0.91	6'-6"	3'-0" **	2.02
84"	7"	12"	3.93	8'-0"	2'-0" *	1.04	8'-6"	3'-0" **	1.04
84"	8"	12"	4.09	N/A	N/A	N/A	7'-6"	3'-0" **	2.73
96"	9"	12"	5.32	8'-0"	2'-0" *	1.55	8'-6"	3'-0" **	3.54
120"	10"	12"	8.02	6'-0"	3'-0" **	2.13	5'-0"	2'-0"	10.69
120"	11"	12"	8.25	8'-0"	3'-0" **	2.36	7'-0"	2'-0"	11.00
144"	12"	12"	11.55	6'-0"	3'-0" **	3.06	5'-0"	2'-0"	17.32

1'-0" AVAILABLE UPON REQUEST *
2'-0" AVAILABLE UPON REQUEST **



MATERIALS:
CONCRETE: 4,000 PSI TYPE I/II CEMENT
REINFORCEMENT PER ASIM C-478

NOTES:
FLEXIBLE CONNECTIONS ARE AVAILABLE

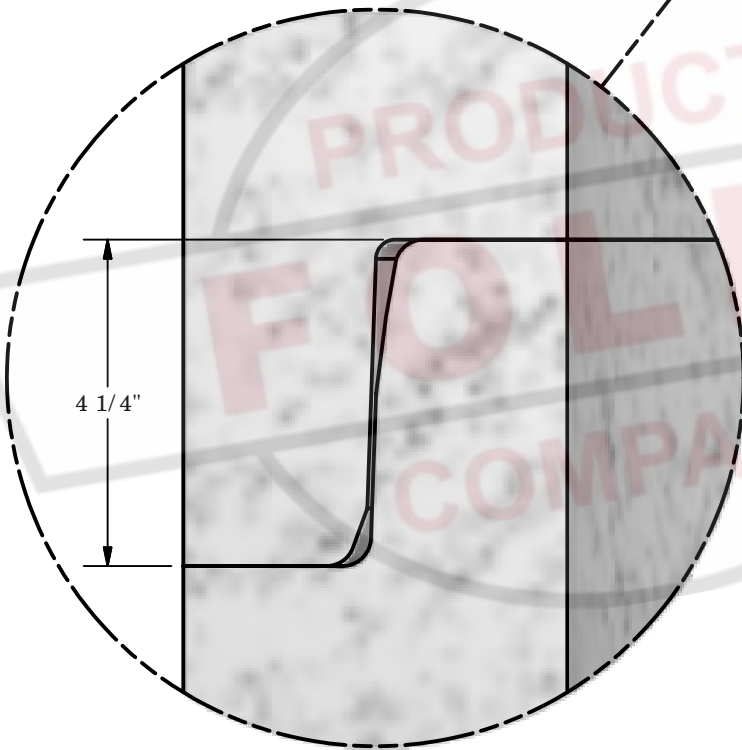
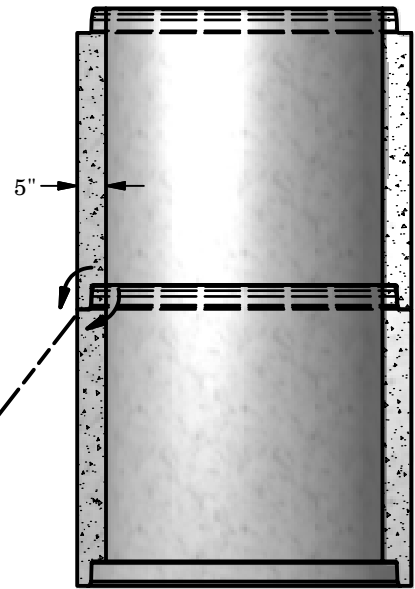
PARTS SHOWN:
Ø 72" (7") FLAT TOP
Ø 72" (7") 4'-0" RISER
Ø 72" (7") 4'-0" RISER
Ø 72" (7") 4'-0" BASE W/ Ø 34" HOLE



ROUND PRECAST

LARGE DIAMETER WETWELL

1.8



MATERIALS:

CONCRETE: 4,000 PSI, TYPE I CEMENT
 REINFORCEMENT PER ASIM C-478

PARIS SHOWN:

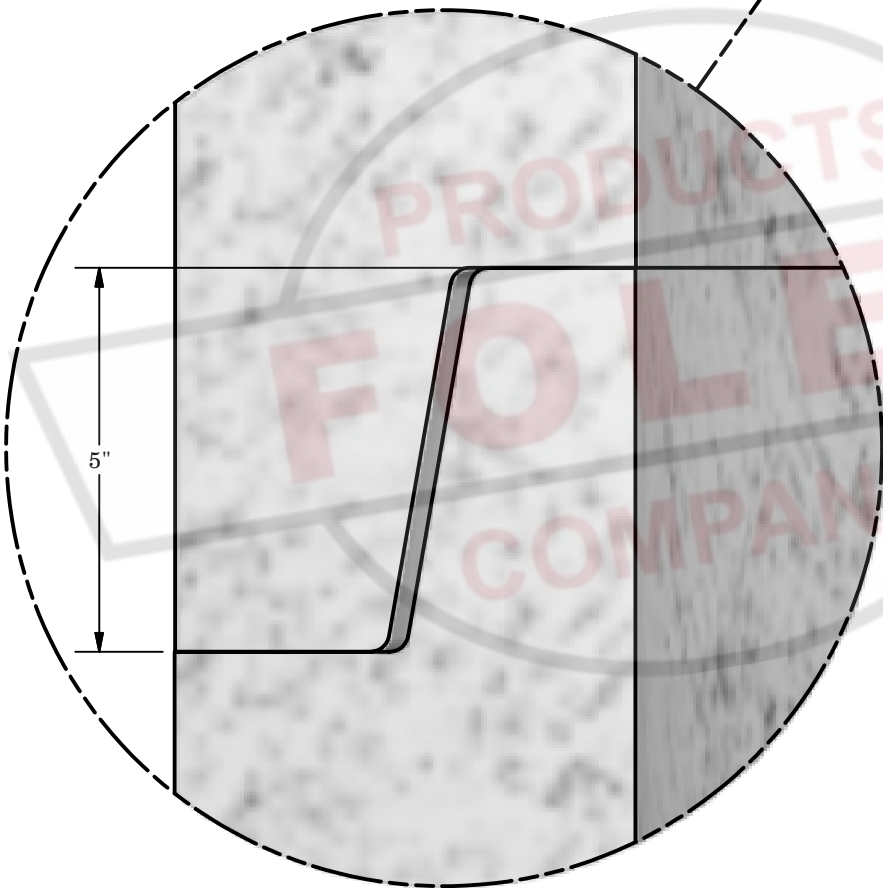
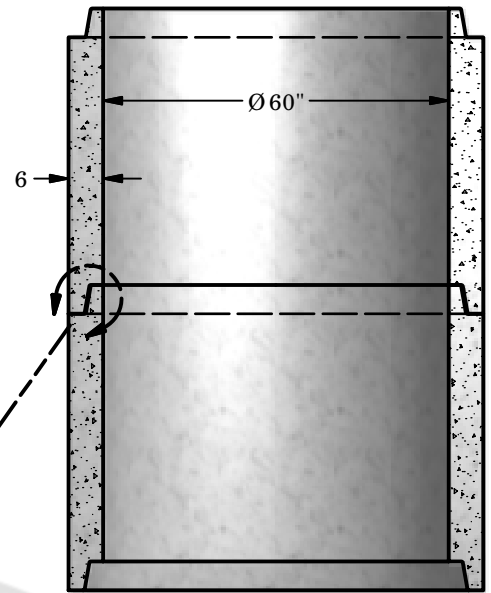
(2) Ø 48" (5") 4'-0" RISERS W/ STANDARD JOINT



ROUND PRECAST

Ø 48" (5") STANDARD JOINT DETAIL

1.17



MATERIALS:

CONCRETE: 4,000 PSI, TYPE I II CEMENT
 REINFORCEMENT PER ASIM C-478

PARTS SHOWN:

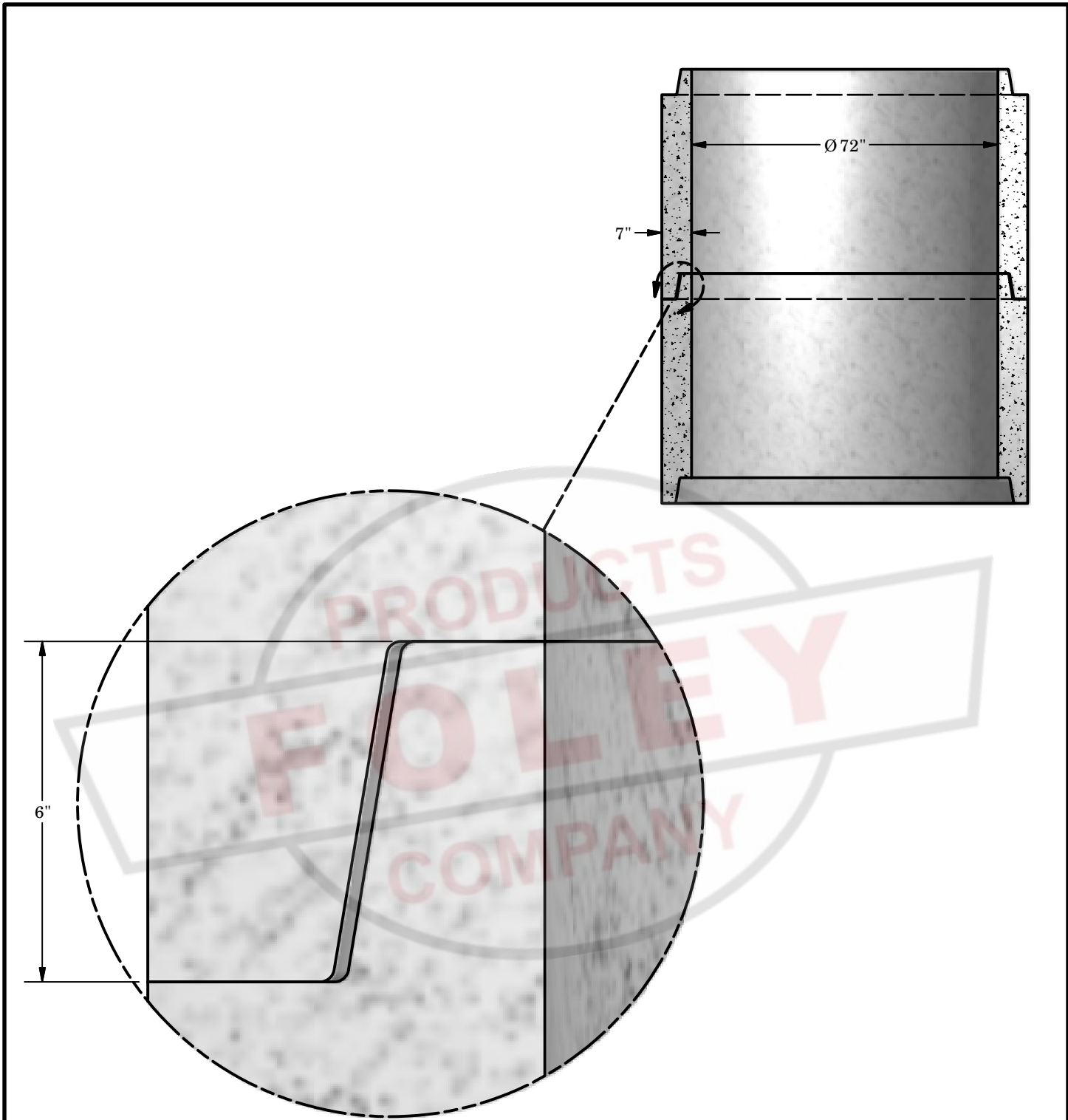
(2) $\text{Ø} 60''$ (6") 4'-0" RISERS W/ STANDARD JOINT



ROUND PRECAST

$\text{Ø} 60''$ (6") STANDARD JOINT DETAIL

1.18



MATERIALS:

CONCRETE: 4,000 PSI, TYPE I CEMENT
 REINFORCEMENT PER ASIM C-478

PARTS SHOWN:

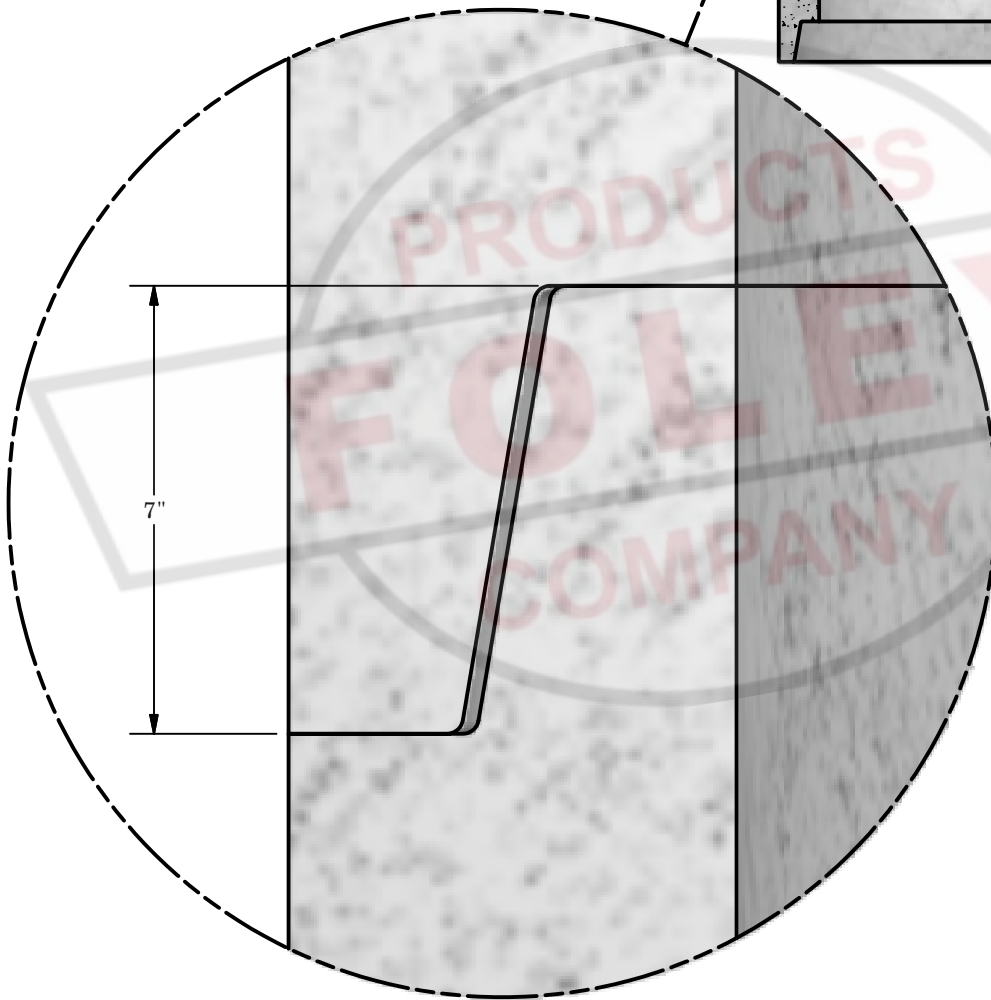
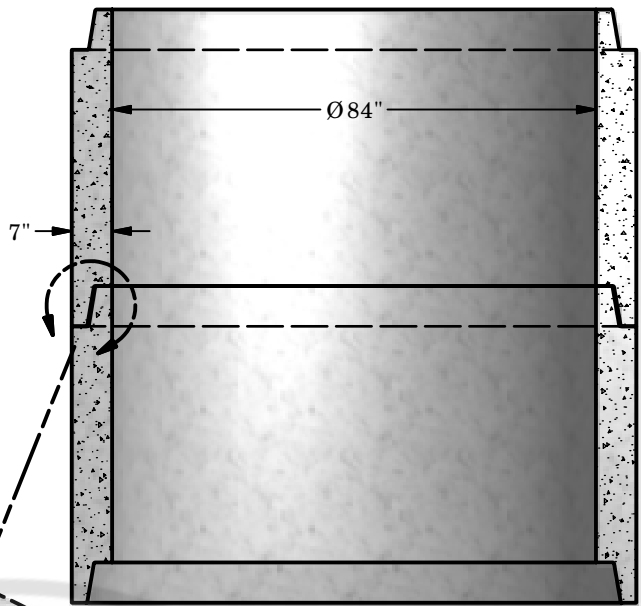
(2) $\text{Ø}72''$ (7") 4'-0" RISERS W/ STANDARD JOINT



ROUND PRECAST

$\text{Ø}72''$ (7") STANDARD JOINT DETAIL

1.19



MATERIALS:

CONCRETE: 4,000 PSI, TYPE I CEMENT
 REINFORCEMENT PER ASTM C-478

PARTS SHOWN:

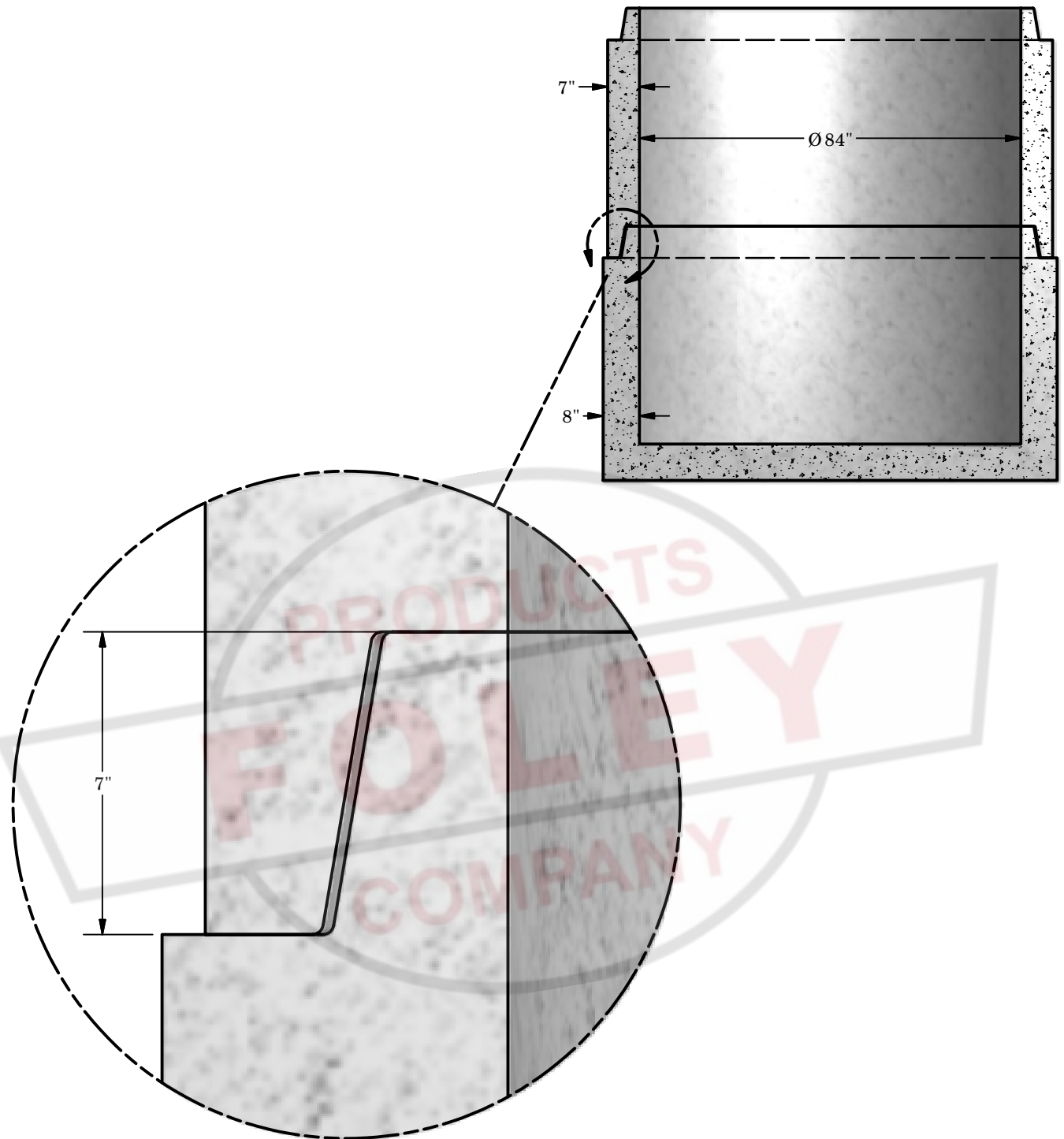
(2) Ø84" (7") 4'-0" RISERS W/ STANDARD JOINT



ROUND PRECAST

Ø84" (7") STANDARD JOINT DETAIL

1.20



MATERIALS:

CONCRETE: 4,000 PSI, TYPE I II CEMENT
 REINFORCEMENT PER ASTM C-478

NOTES:

WE ONLY POUR 84" (8" WALL) BASES. THEY ARE PRIMARILY USED
 FOR SANITARY SEWER STRUCTURES THAT REQUIRE LARGE BOOTS.

PARTS SHOWN:

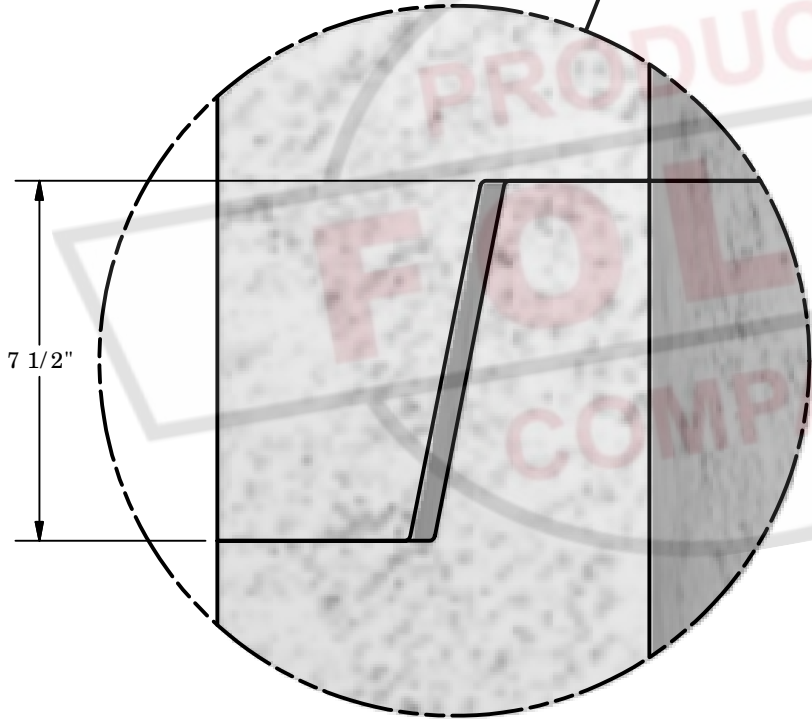
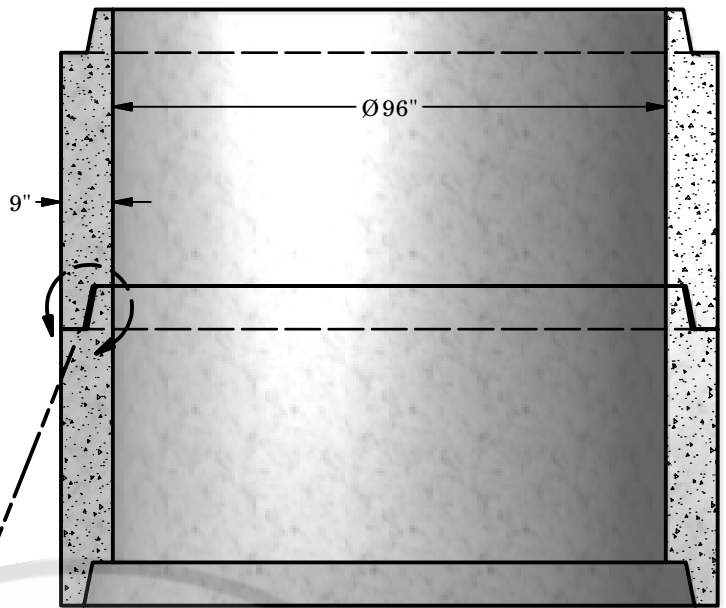
- (1) Ø 84" (7") 4'-0" RISER W/ STANDARD JOINT
- (1) Ø 84" (8") 4'-0" BASE W/ STANDARD JOINT



ROUND PRECAST

Ø 84" (8") STANDARD JOINT DETAIL

1.21



MATERIALS:

CONCRETE: 4,000 PSI, TYPE I CEMENT

REINFORCEMENT PER ASIM C-478

PARTS SHOWN:

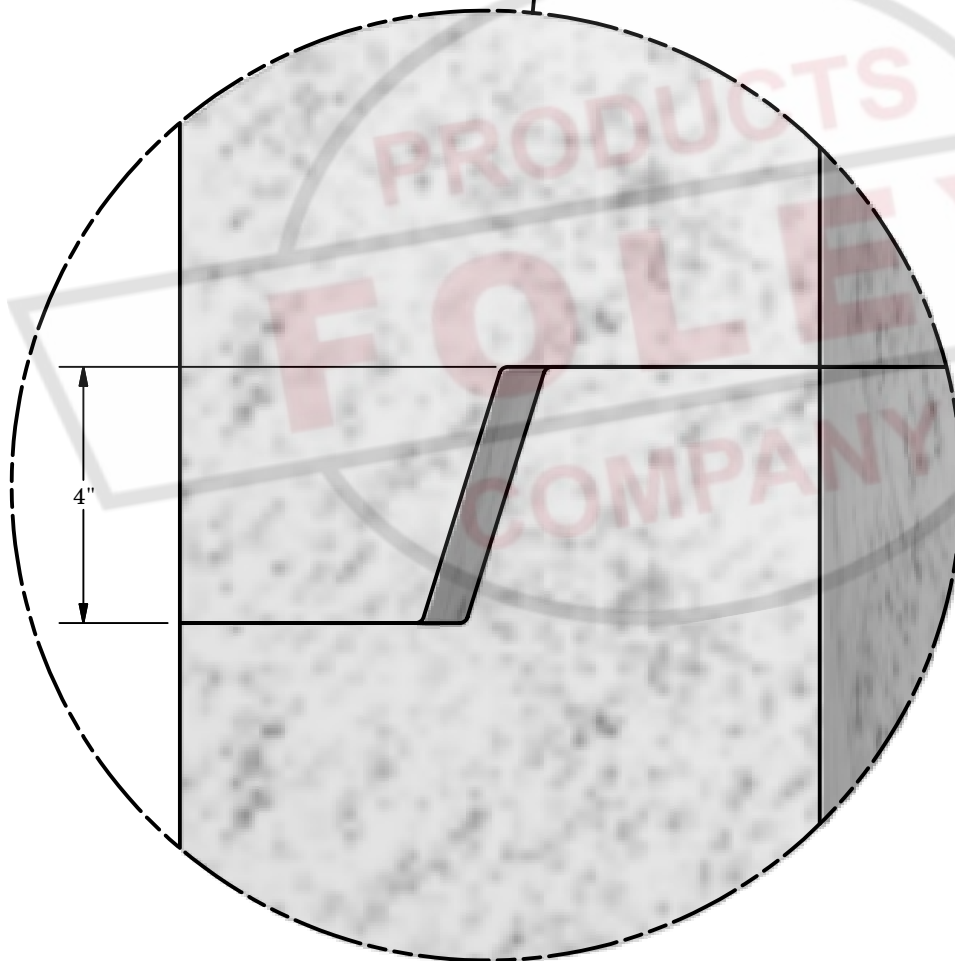
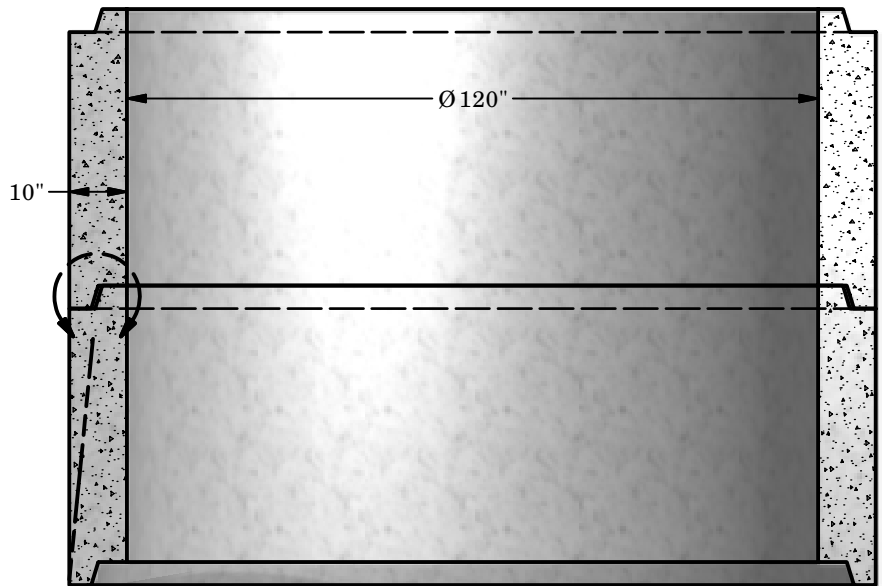
(2) Ø96" (9") 4'-0" RISERS W/ STANDARD JOINT



ROUND PRECAST

Ø96" (9") STANDARD JOINT DETAIL

1.22



MATERIALS:

CONCRETE: 4,000 PSI, TYPE I CEMENT

REINFORCEMENT PER ASIM C-478

PARTS SHOWN:

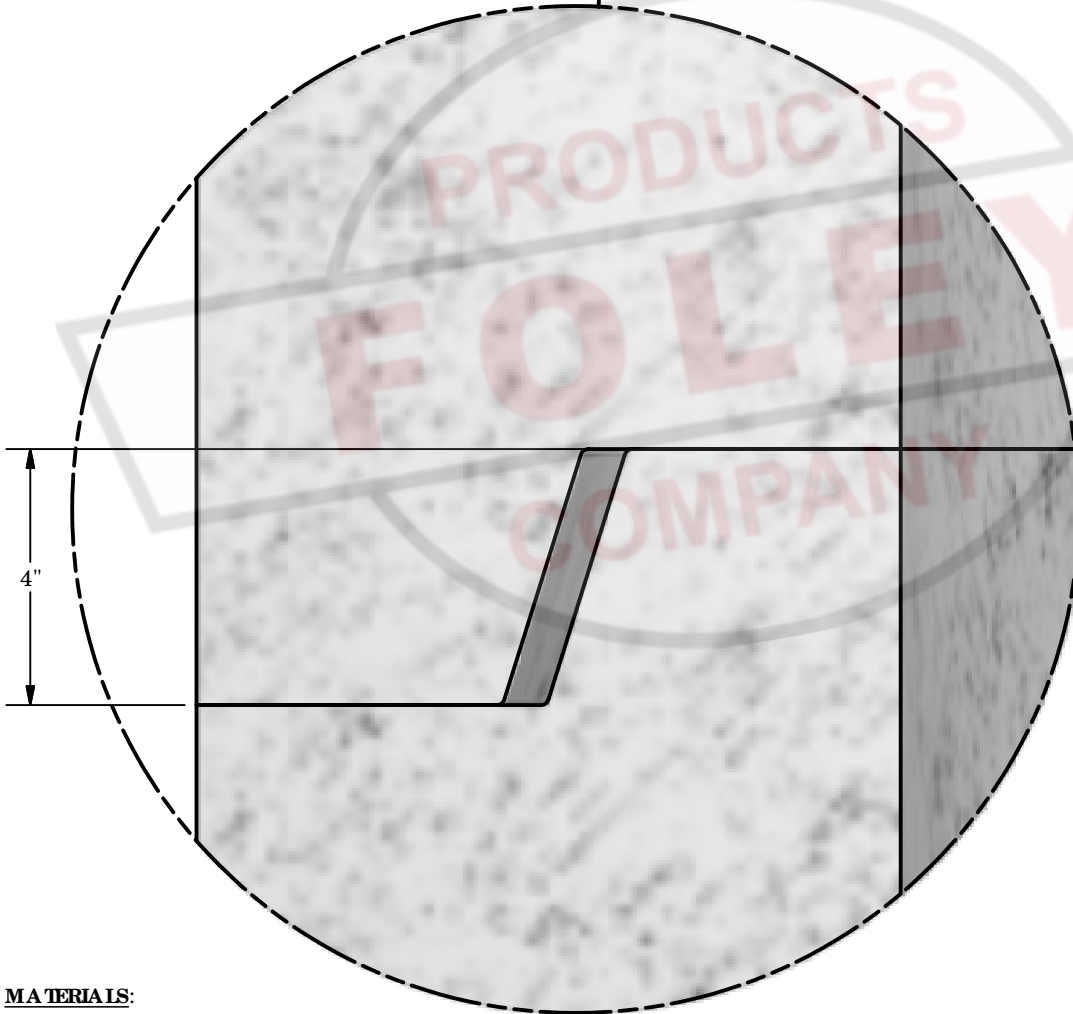
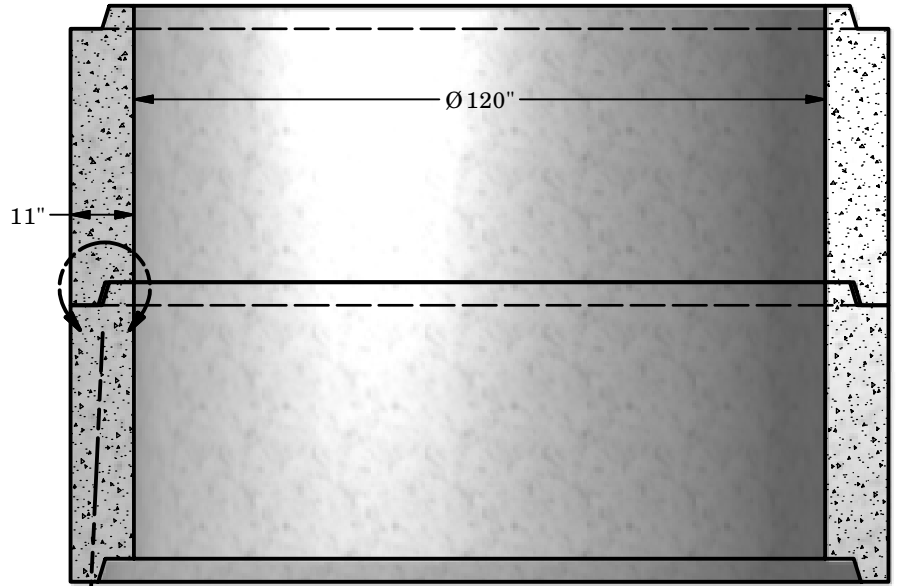
(2) Ø 120" (10") 4'-0" RISERS W/ STANDARD JOINT



ROUND PRECAST

Ø 120" (10") STANDARD JOINT DETAIL

1.23



MATERIALS:

CONCRETE: 4,000 PSI, TYPE I CEMENT

REINFORCEMENT PER ASTM C-478

PARTS SHOWN:

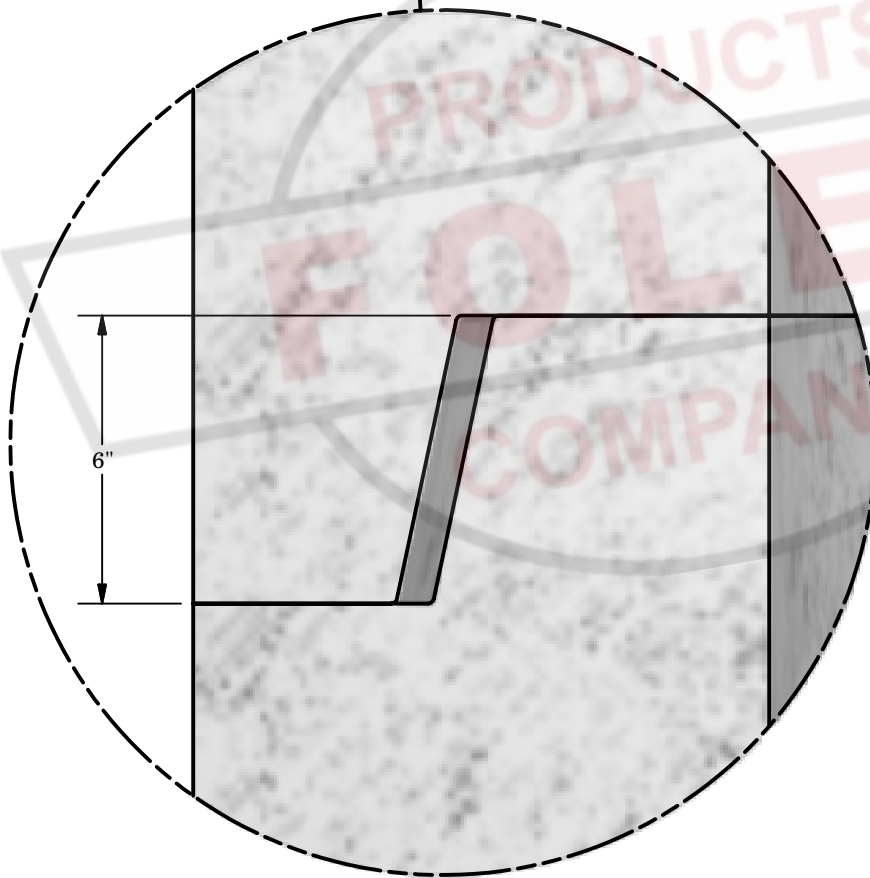
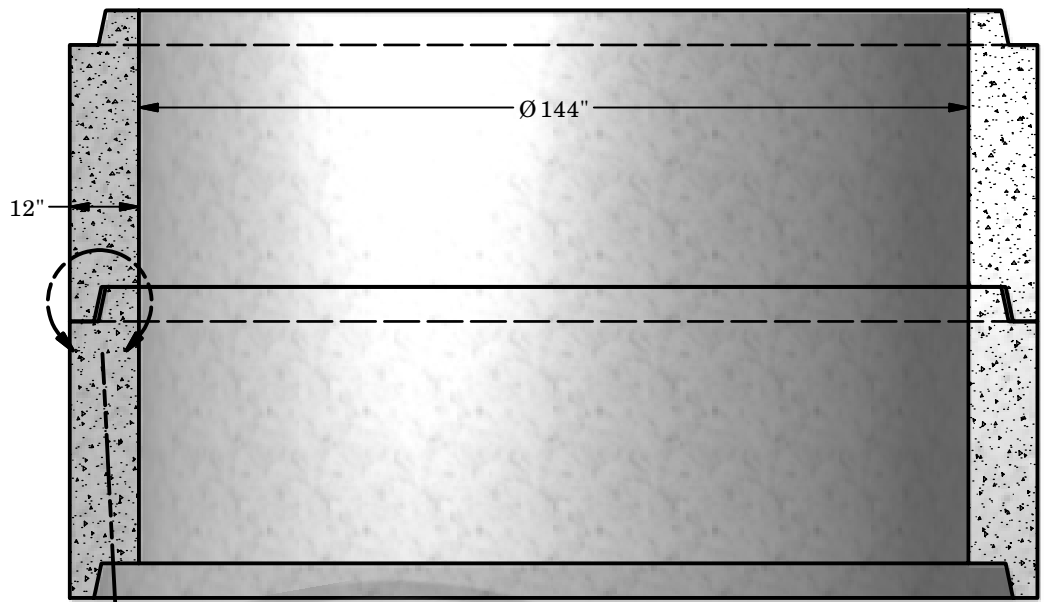
(2) Ø 120" (11') 4'-0" RISERS W/ STANDARD JOINT



ROUND PRECAST

Ø 120" (11") STANDARD JOINT DETAIL

1.24



MATERIALS:

CONCRETE: 4,000 PSI, TYPE I CEMENT

REINFORCEMENT PER ASIM C-478

PARTS SHOWN:

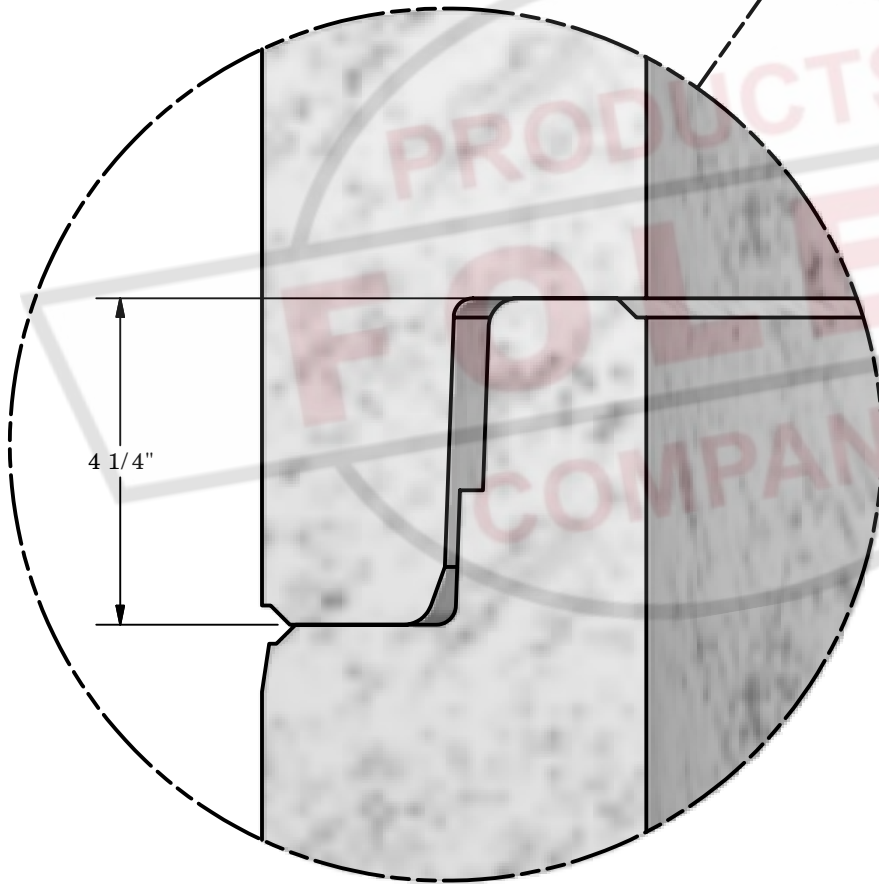
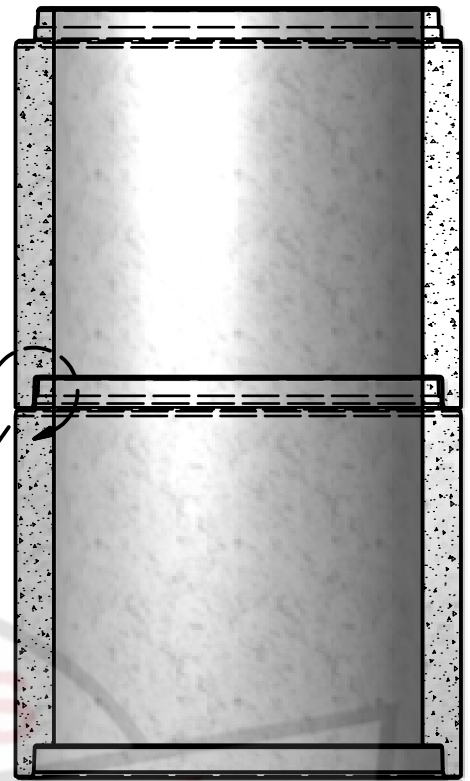
(2) Ø 144" (12') 4'-0" RISERS W/ STANDARD JOINT



ROUND PRECAST

Ø 144" (12") STANDARD JOINT DETAIL

1.25



MATERIALS:

CONCRETE: 4,000 PSI, TYPE I CEMENT

REINFORCEMENT PER ASIM C-478

PARTS SHOWN:

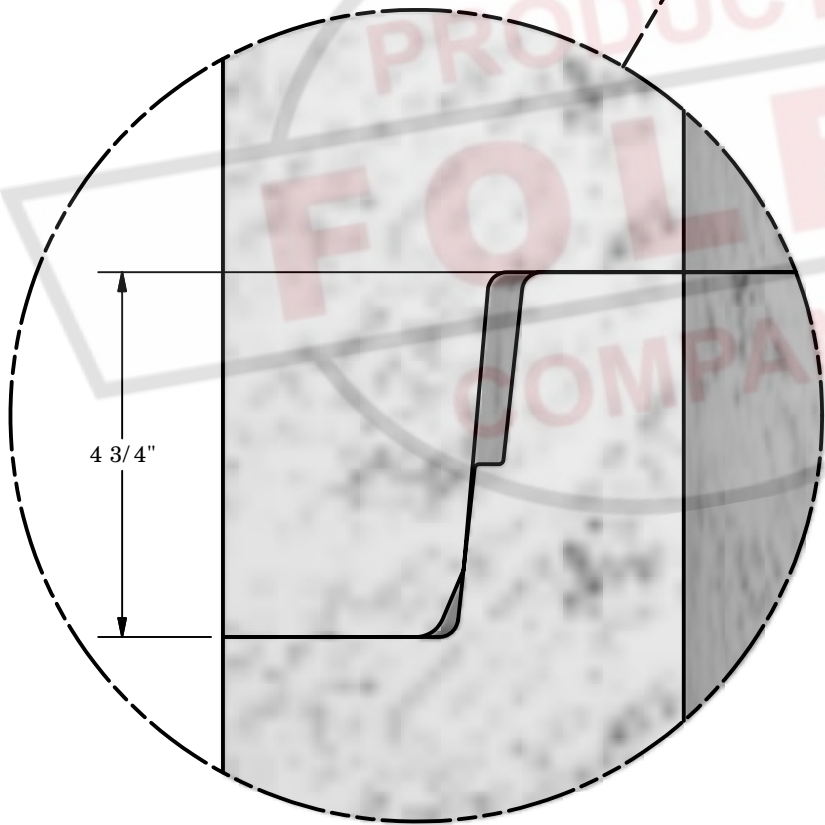
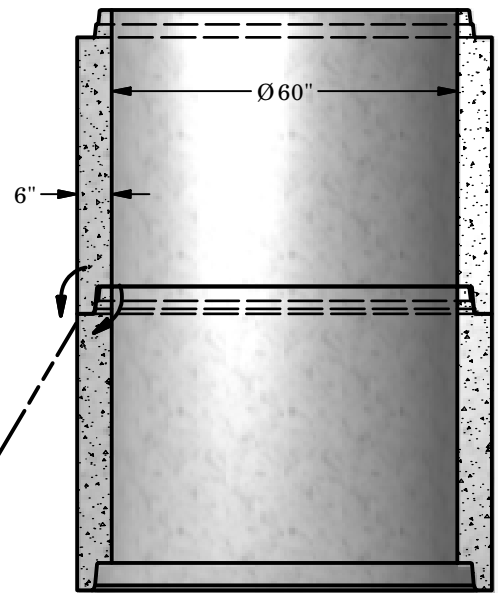
(2) Ø48" (5") 4'-0" RISERS W/ OFFSET JOINT



ROUND PRECAST

Ø48" (5") OFFSET JOINT DETAIL

1.26



MATERIALS:

CONCRETE: 4,000 PSI, TYPE I/II CEMENT

REINFORCEMENT PER ASIM C-478

PARTS SHOWN:

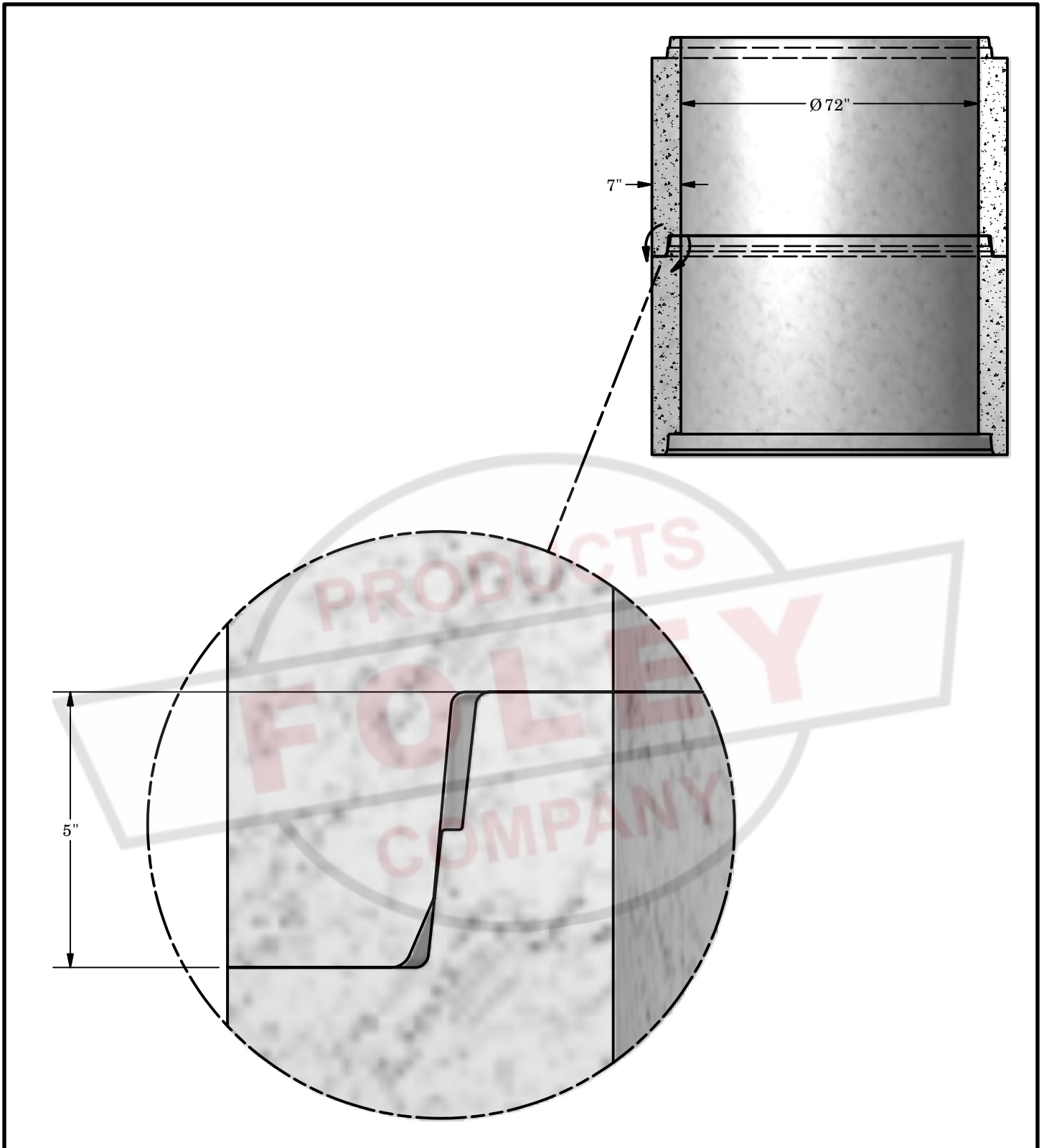
(2) Ø 60" (6") 4'-0" RISERS W/ OFFSET JOINT



ROUND PRECAST

Ø 60" (6") OFFSET JOINT DETAIL

1.27



MATERIALS:

CONCRETE: 4,000 PSI, TYPE I CEMENT

REINFORCEMENT PER ASIM C-478

PARTS SHOWN:

(2) Ø 72" (7') 4'-0" RISERS W/ OFFSET JOINT

	ROUND PRECAST	1.28
	Ø 72" (7") OFFSET JOINT DETAIL	

AGRU Sure Grip®

HDPE and PP-R

Concrete Protective Liner

Innovative Liner Design

- 39 studs per square foot guarantees the best possible anchorage between the concrete and liner
- Back pressure resistance:
 - HDPE 67 ft (29 psi)
 - PPR 167 ft (72 psi)
- 600% elasticity
- Shear resistance per stud: 4,500 lbs
- 112 lbs per stud pullout resistance
- Increases structural strength by 30%

Applications

- Wet wells / Lift stations
- Two manholes immediately upstream of the lift station
- The manhole receiving effluent from a Force Main and the next manhole
- Manholes connecting more than 3 lines
- Manholes with 12" and larger pipes
- Drop manholes
- All manholes in industrial parks and receiving effluent from industry

Benefits

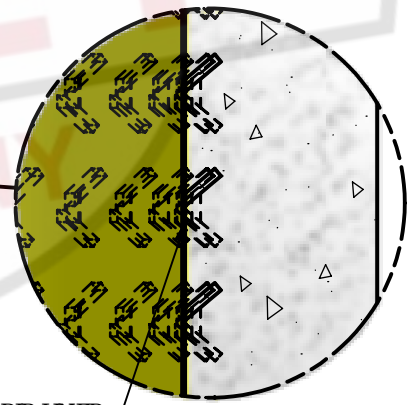
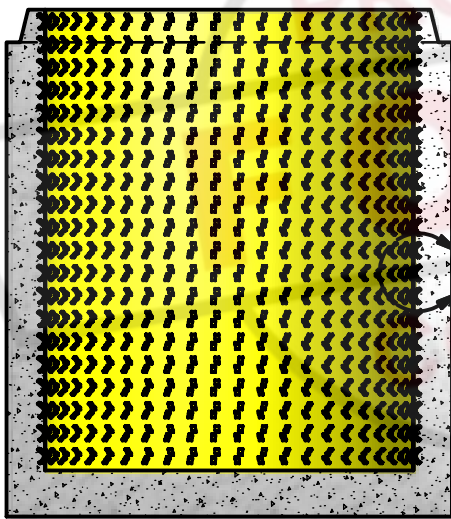
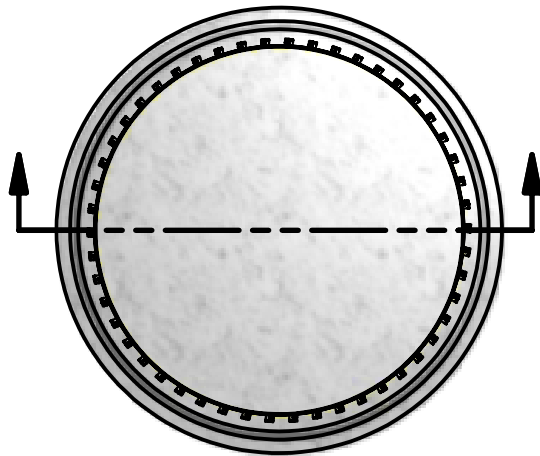
- High resistance to chemical and bacterial attack
- High resistance to abrasion
- Eliminates Infiltration and Exfiltration
- Cost Savings
 - Reduces Maintenance Cost
 - Eliminates future rehabilitation
- Environmentally safe
- Lasting protection



HDPE LINER

AGRU SURE GRIP HDPE AND PP-R
CONCRETE PROTECTIVE LINER

7.1



AGRU SURE GRIP LINER
IS CAST INTO THE CONCRETE

MATERIALS:

CONCRETE: 4,000 PSI, TYPE I CEMENT

REINFORCEMENT PER ASIM C-478

NOTES:

FLEXIBLE CONNECTIONS ARE AVAILABLE

AGRU SURE GRIP LINER IS PROVIDED IN 2mm, 3mm, AND 5mm THICKNESS

PARTS SHOWN:

Ø 48" (5") 5'-0" BASE

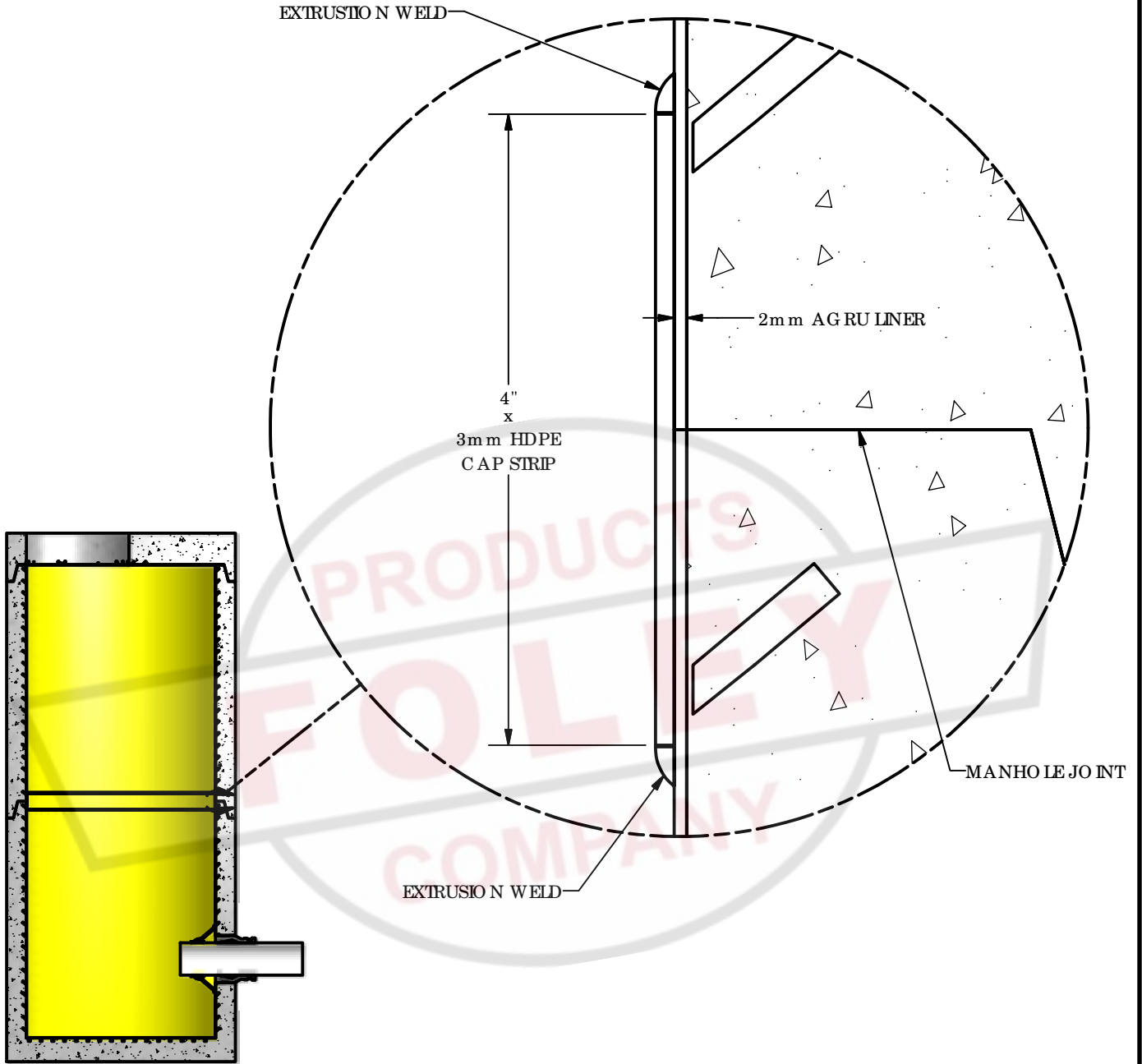
WITH 2mm AGRU LINER ON INSIDE WALLS



HDPE LINER

Ø 48" (5") BASE WITH 2mm AGRU LINER

7.2



MATERIALS:

CONCRETE: 4,000 PSI, TYPE I II CEMENT

REINFORCEMENT PER ASIM C-478

NOTES:

FLEXIBLE CONNECTORS ARE AVAILABLE

AGRU SURE GRIP LINER IS PROVIDED IN 2mm, 3mm, AND 5mm THICKNESS

PARTS SHOWN:

Ø 48" (5") FLAT TOP WITH 2mm AGRU LINER

Ø 48" (5") 5'-0" RISER WITH 2mm AGRU LINER

Ø 48" (5") 5'-0" BASE WITH 2mm AGRU LINER

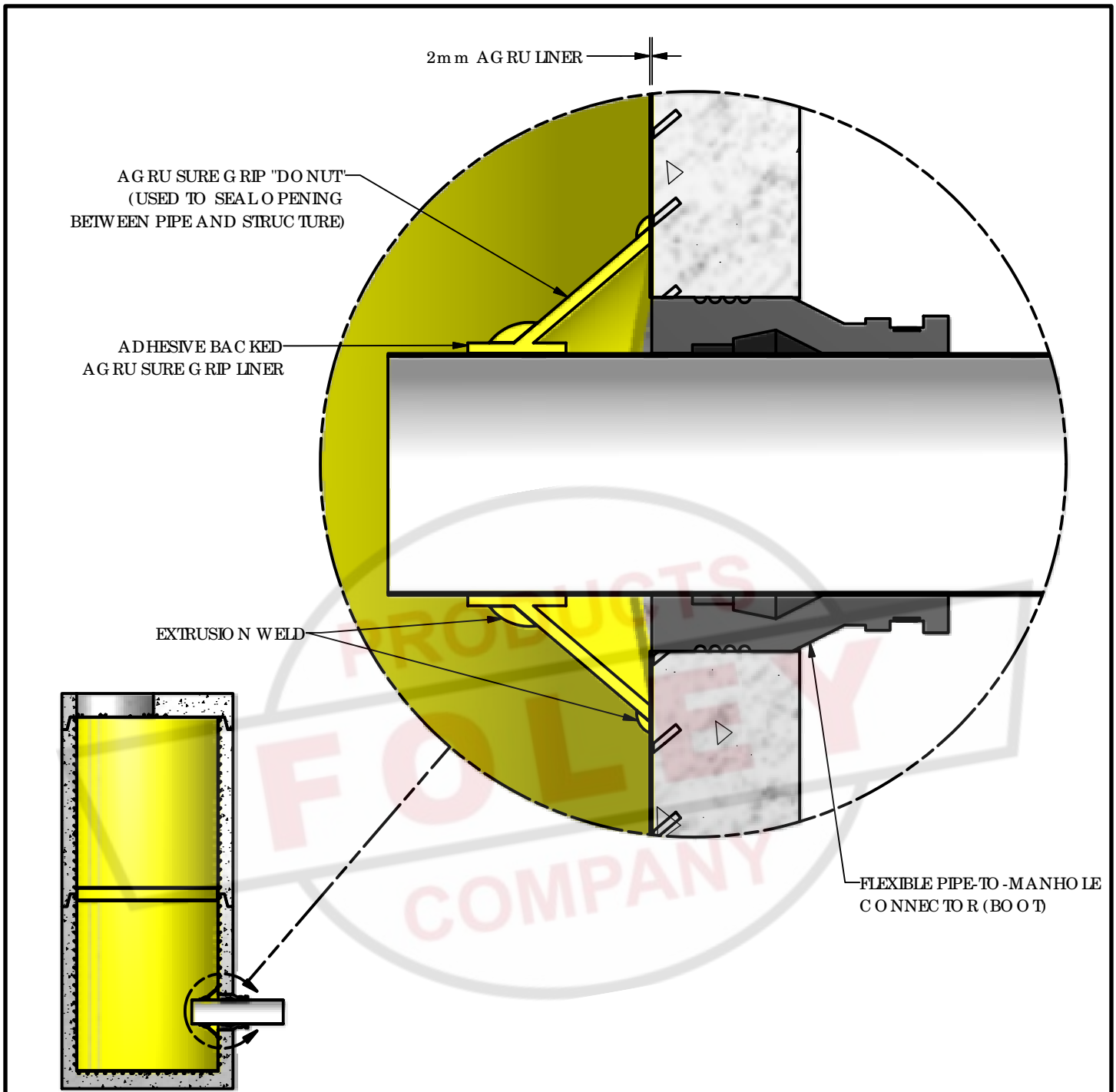
WITH Ø 12" BOOT FOR Ø 8" PVC



HDPE LINER

AGRU LINED STRUCTURE JOINT DETAIL

7.3



MATERIALS:

CONCRETE: 4,000 PSI, TYPE II CEMENT
 REINFORCEMENT PER ASTM C-478

NOTES:

FLEXIBLE CONNECTORS ARE AVAILABLE
 AGRU SURE GRIP LINER IS PROVIDED IN 2m m, 3m m, AND 5m m THICKNESS

PARIS SHOWN:

Ø 48" (5") FLAT TOP WITH 2m m AGRU LINER
 Ø 48" (5") 5'-0" RISER WITH 2m m AGRU LINER
 Ø 48" (5") 5'-0" BASE WITH 2m m AGRU LINER
 WITH Ø 12" BOOT FOR Ø 8" PVC



HDPE LINER

AGRU LINER DETAIL OF BOOT CONNECTION

7.4

PIPE TYPE	ID	Ø48" (5")	Ø60" (6")	Ø72" (7")	Ø84" (7")	Ø84" (8")	Ø96" (9")	Ø120" (10")	Ø120" (11")	Ø144" (12")
CMP	12"	106-16W	106-16W	106-16W	106-16W	106-16W	106-16W	106-16W	106-16W	106-16W
		106-20B	106-20B	106-20B	106-20B	106-20B	106-20B	106-20B	106-20B	106-20B
CMP	15"	106-20W	106-20W	106-20W	106-20W	106-20W	106-20W	106-20W	106-20W	106-20W
CMP	18"	106-24W	106-24W	106-24W	106-24W	106-24W	106-24W	106-24W	106-24W	106-24W
CMP	21"	206-28W	206-28W	206-28W	206-28W	206-28W	206-28W	206-28W	206-28W	206-28W
CMP	24"	206-28L	206-28L	206-28L	206-28L	206-28L	206-28L	206-28L	206-28L	206-28L
		206-28W	206-28W	206-28W	206-28W	206-28W	206-28W	206-28W	206-28W	206-28W
CMP	30"		34.75W	34.75W	34.75W	34.75W	34.75W	34.75W	34.75W	34.75W
CMP	36"		306-42L	206-42W	206-42W	206-42W	206-42W	206-42W	206-42W	206-42W
				306-42L	306-42L	306-42L	306-42L	306-42L	306-42L	306-42L
CMP	42"			306-48Z	306-48Z	206-48W	206-48W	206-48W	206-48W	206-48W
						306-48Z	306-48Z	306-48Z	306-48Z	306-48Z
CMP	48"					306-54L	206-54L	206-54L	206-54L	206-54L
							306-54L	306-54L	306-54L	306-54L
CMP	60"							S206-66	S206-66	S206-66
Duc tile Iron	4"	106-7S	106-7S	106-7S	106-7S	106-7S	106-7S	106-7S	106-7S	106-7S
		106-7W	106-7W	106-7W	106-7W	106-7W	106-7W	106-7W	106-7W	106-7W
Duc tile Iron	6"	406-12C	406-12C	406-12C	406-12C	406-12C	406-12C	406-12C	406-12C	406-12C
Duc tile Iron	8"	106-12E	106-12E	106-12E	106-12E	106-12E	106-12E	106-12E	106-12E	106-12E
		406-12A	406-12A	406-12A	406-12A	406-12A	406-12A	406-12A	406-12A	406-12A
		406-12W	406-12W	406-12W	406-12W	406-12W	406-12W	406-12W	406-12W	406-12W
Duc tile Iron	10"	106-16B	106-16B	106-16B	106-16B	106-16B	106-16B	106-16B	106-16B	106-16B
Duc tile Iron	12"	106-16A	106-16A	106-16A	106-16A	106-16A	106-16A	106-16A	106-16A	106-16A
		106-16W	106-16W	106-16W	106-16W	106-16W	106-16W	106-16W	106-16W	106-16W
Duc tile Iron	14"	106-20B	106-20B	106-20B	106-20B	106-20B	106-20B	106-20B	106-20B	106-20B
Duc tile Iron	15"	106-20W	106-20W	106-20W	106-20W	106-20W	106-20W	106-20W	106-20W	106-20W
Duc tile Iron	16"	106-20W	106-20W	106-20W	106-20W	106-20W	106-20W	106-20W	106-20W	106-20W
Duc tile Iron	18"	206-22L	206-22L	206-22L	206-22L	206-22L	206-22L	206-22L	206-22L	206-22L
Duc tile Iron	20"	206-24L	206-24L	206-24L	206-24L	206-24L	206-24L	206-24L	206-24L	206-24L
Duc tile Iron	24"	206-28L	206-28L	206-28L	206-28L	206-28L	206-28L	206-28L	206-28L	206-28L
		206-28W	206-28W	206-28W	206-28W	206-28W	206-28W	206-28W	206-28W	206-28W
Duc tile Iron	30"		34.75W	34.75W	34.75W	34.75W	34.75W	34.75W	34.75W	34.75W
Duc tile Iron	36"		306-42L	206-42W	206-42W	206-42W	206-42W	206-42W	206-42W	206-42W
				306-42L	306-42L	306-42L	306-42L	306-42L	306-42L	306-42L
Duc tile Iron	42"			306-48Z	306-48Z	206-48W	206-48W	206-48W	206-48W	206-48W
						306-48Z	306-48Z	306-48Z	306-48Z	306-48Z
Duc tile Iron	48"					306-54L	206-54L	206-54L	206-54L	206-54L
							306-54L	306-54L	306-54L	306-54L
Duc tile Iron	54"						306-62A	206-62W	206-62W	206-62W
								306-62A	306-62A	306-62A
Duc tile Iron	60"							S206-66	S206-66	S206-66
Duc tile Iron	64"								206-70L	206-70L



TA BLES

BO O T C HART (C M P & D U C T I L E I R O N)

PIPE TYPE	ID	Ø 48" (5")	Ø 60" (6")	Ø 72" (7")	Ø 84" (7")	Ø 84" (8")	Ø 96" (9")	Ø 120" (10")	Ø 120" (11")	Ø 144" (12")
HDPE	4"	106-7S	106-7S	106-7S	106-7S	106-7S	106-7S	106-7S	106-7S	106-7S
		106-7W	106-7W	106-7W	106-7W	106-7W	106-7W	106-7W	106-7W	106-7W
HDPE	6"	406-12C	406-12C	406-12C	406-12C	406-12C	406-12C	406-12C	406-12C	406-12C
HDPE	8"	406-12W	406-12W	406-12W	406-12W	406-12W	406-12W	406-12W	406-12W	406-12W
HDPE	10"	106-16A	106-16A	106-16A	106-16A	106-16A	106-16A	106-16A	106-16A	106-16A
HDPE	12"	106-20B	106-20B	106-20B	106-20B	106-20B	106-20B	106-20B	106-20B	106-20B
HDPE	15"	106-20W	106-20W	106-20W	106-20W	106-20W	106-20W	106-20W	106-20W	106-20W
		206-24L	206-24L	206-24L	206-24L	206-24L	206-24L	206-24L	206-24L	206-24L
HDPE	18"	106-24W	106-24W	106-24W	106-24W	106-24W	106-24W	106-24W	106-24W	106-24W
		206-24L	206-24L	206-24L	206-24L	206-24L	206-24L	206-24L	206-24L	206-24L
HDPE	24"	206-28L	206-28L	206-28L	206-28L	206-28L	206-28L	206-28L	206-28L	206-28L
HDPE	30"		306-40Z	306-40Z	306-40Z	306-40Z	306-40Z	306-40Z	306-40Z	306-40Z
HDPE	36"		306-42L	306-42L	306-42L	306-42L	306-42L	306-42L	306-42L	306-42L
PVC	4"	106-7S	106-7S	106-7S	106-7S	106-7S	106-7S	106-7S	106-7S	106-7S
		106-7W	106-7W	106-7W	106-7W	106-7W	106-7W	106-7W	106-7W	106-7W
PVC	6"	406-12C	406-12C	406-12C	406-12C	406-12C	406-12C	406-12C	406-12C	406-12C
PVC	8"	106-12E	106-12E	106-12E	106-12E	106-12E	106-12E	106-12E	106-12E	106-12E
		406-12A	406-12A	406-12A	406-12A	406-12A	406-12A	406-12A	406-12A	406-12A
PVC	10"	106-16B	106-16B	106-16B	106-16B	106-16B	106-16B	106-16B	106-16B	106-16B
		406-12W	406-12W	406-12W	406-12W	406-12W	406-12W	406-12W	406-12W	406-12W
PVC	12"	106-16A	106-16A	106-16A	106-16A	106-16A	106-16A	106-16A	106-16A	106-16A
PVC	14"	106-16W	106-16W	106-16W	106-16W	106-16W	106-16W	106-16W	106-16W	106-16W
		106-20B	106-20B	106-20B	106-20B	106-20B	106-20B	106-20B	106-20B	106-20B
PVC	15"	106-20B	106-20B	106-20B	106-20B	106-20B	106-20B	106-20B	106-20B	106-20B
PVC	16"	106-20B	106-20B	106-20B	106-20B	106-20B	106-20B	106-20B	106-20B	106-20B
PVC	18"	106-20W	106-20W	106-20W	106-20W	106-20W	106-20W	106-20W	106-20W	106-20W
		206-22X	206-22X	206-22X	206-22X	206-22X	206-22X	206-22X	206-22X	206-22X
PVC	20"	106-24W	106-24W	106-24W	106-24W	106-24W	106-24W	106-24W	106-24W	106-24W
PVC	21"	106-24W	106-24W	106-24W	106-24W	106-24W	106-24W	106-24W	106-24W	106-24W
		206-24L	206-24L	206-24L	206-24L	206-24L	206-24L	206-24L	206-24L	206-24L
PVC	24"	206-28L	206-28L	206-28L	206-28L	206-28L	206-28L	206-28L	206-28L	206-28L
		206-28W	206-28W	206-28W	206-28W	206-28W	206-28W	206-28W	206-28W	206-28W
RC P-B Wall	12"	106-20B	106-20B	106-20B	106-20B	106-20B	106-20B	106-20B	106-20B	106-20B
RC P-B Wall	15"	206-22L	206-22L	206-22L	206-22L	206-22L	206-22L	206-22L	206-22L	206-22L
RC P-B Wall	18"	206-28W	206-28W	206-28W	206-28W	206-28W	206-28W	206-28W	206-28W	206-28W
RC P-B Wall	24"		206-34W	206-34W	206-34W	206-34W	206-34W	206-34W	206-34W	206-34W
RC P-B Wall	30"		306-40Z	206-40W	206-40W	206-40W	206-40W	206-40W	206-40W	206-40W
			306-42L	206-42W	206-42W	206-42W	206-42W	206-42W	206-42W	206-42W
				306-40Z	306-40Z	306-40Z	306-40Z	306-40Z	306-40Z	306-40Z
				306-42L	306-42L	306-42L	306-42L	306-42L	306-42L	306-42L
RC P-B Wall	36"			306-48Z	306-48Z	206-48W	206-48W	206-48W	206-48W	206-48W
						306-48Z	306-48Z	306-48Z	306-48Z	306-48Z
RC P-B Wall	42"					306-54L	206-54L	206-54L	206-54L	206-54L
							306-54L	306-54L	306-54L	306-54L
RC P-B Wall	48"						306-62A	206-62W	206-62W	206-62W
								306-62A	306-62A	306-62A
RC P-C Wall	54"							206-70L	206-70L	206-70L



TA BLES

BO OTC HART(HDPE, PVC, & RC P)