

Fiscal Year 2008 Kansas State Cost Estimate
for Practice Components

1. Corrugated Metal Pipe (CMP) Riser Dollars per linear foot (Does not include riser base, tees for principal spillway barrel or drawdown pipe, trash rack, or backfill)	Diameter (inches)	16 Gauge		14 Gauge		12 Gauge	
		Plain	Aluminum	Plain	Aluminum	Plain	Aluminum
		Galvanized	Steel	Galvanized	Steel	Galvanized	Steel
	12	\$18	\$22				
	15	\$20	\$24				
	18	\$23	\$27				
	21	\$24	\$29				
	24	\$27	\$33				
	30			\$42	\$51		
	36			\$53	\$64		
	42			\$63	\$75		
	48					\$93	\$112
	54					\$115	\$127

2. Principal Spillway Tee Dollars per each (Includes 4 feet of pipe and fabrication--add these costs to the CMP riser to determine total riser cost)	Diameter (inches)	16 Gauge		14 Gauge		12 Gauge	
		Plain	Aluminum	Plain	Aluminum	Plain	Aluminum
		Galvanized	Steel	Galvanized	Steel	Galvanized	Steel
	8	\$152					
	10	\$163					
	12	\$198	\$213				
	15	\$229	\$245				
	18	\$265	\$283				
	21	\$297	\$316				
	24	\$309	\$331				
	30			\$370	\$404		
	36			\$413	\$456		
	42			\$450	\$500		
	48					\$573	\$648

3. CMP Principal Spillway Barrel, Drawdown Pipe, or Underground Outlet Dollars per linear foot (Includes pipe and cost of laying--does not include 4 feet of pipe in principal spillway tee, 2 feet of pipe in drawdown pipe tee, or vertical pipe under floor of fish pond outlet structure)	Diameter (inches)	16 Gauge		14 Gauge		12 Gauge	
		Plain	Aluminum	Plain	Aluminum	Plain	Aluminum
		Galvanized	Steel	Galvanized	Steel	Galvanized	Steel
	6	\$10	\$12				
	8	\$13	\$16				
	10	\$16	\$19				
	12	\$18	\$22				
	15	\$20	\$24				
	18	\$23	\$27				
	21	\$24	\$29				
	24	\$27	\$33				
	30			\$42	\$51		
	36			\$53	\$64		
	42			\$63	\$75		
	48					\$93	\$112

4. Drawdown Pipe Tee Dollars per each (Includes 2 feet of pipe, cover plate and flange, one slotted flange attached, and fabrication--add these costs to the CMP riser to determine total riser cost)	Diameter (inches)	16 Gauge	
		Plain	Aluminum
		Galvanized	Steel
	6	\$240	\$271
	8	\$282	\$318
	10	\$321	\$363
	12	\$366	\$414
	15 1/2	\$402	\$455

^{1/} Slotted flanges not used--add corrugated metal (CM) connecting band

	Unit	Pipe Diameter (inches)																	
		4	5	6	8	10	12	14	15	16	18	20	21	24	30	36	42	48	
7. Steel Base for CMP Riser	each								\$59		\$78		\$122		\$149	\$174	\$332	\$508	
8. Slotted Flanges for CMP ^{1/}	pair			\$62	\$80	\$91	\$101												
9. Trash Rack for CMP Riser	each				\$156	\$217	\$348			\$475		\$570		\$660	\$1,102	\$1,535	\$1,977		
10. Trash Rack for Canopy Inlet	each			\$109	\$124	\$139	\$263	\$285	\$297	\$380	\$456	\$515	\$550	\$610					
11. Guard Rail for CMP Riser	each																\$1,678	\$1,678	\$2,034
12. CMP Pipe Support																			
A. 6 feet of length below pipe	each			\$174	\$203	\$231	\$253			\$317		\$380		\$443	\$510				
B. Each additional foot	lin. ft.			\$10	\$13	\$16	\$18			\$20		\$23		\$24	\$27				
13. Timber Pipe Support																			
A. 5 feet of length below pipe	each			\$143	\$143	\$143	\$143			\$203		\$203		\$203	\$251	\$251			
B. Each additional foot	lin. ft.			\$13	\$13	\$13	\$13			\$16		\$16		\$16	\$20	\$20			
14. Fabrication of CMP Elbow																			
A. Plain galvanized	each			\$53	\$66	\$79	\$93			\$113		\$133		\$153	\$174	\$226	\$269	\$313	\$405
B. Aluminized steel	each			\$59	\$74	\$90	\$106			\$128		\$151		\$173	\$196	\$255	\$304	\$353	\$457
15. Fabrication of Canopy Inlet																			
A. Polyvinyl Chloride (PVC) or plain galvanized	each			\$24	\$49	\$56	\$64	\$70	\$74	\$78	\$85	\$92	\$95	\$104	\$147	\$185			
B. Aluminized steel	each			\$29	\$59	\$67	\$77		\$88		\$103		\$114	\$125	\$177	\$222			
16. Manually Tamped Backfill																			
A. Riser for drop inlet spillways	lin. ft.							\$3		\$3		\$4		\$4	\$4	\$5	\$6	\$7	\$9
B. CMP and plastic pipe barrels	lin. ft.			\$2	\$2	\$2	\$3	\$3	\$3	\$3	\$4	\$4	\$4	\$5	\$6	\$8	\$9	\$11	
C. Inlet, outlet, and culvert under embankment	lin. ft.	\$0.50	\$0.60	\$0.60	\$0.70	\$0.80	\$0.90	\$1.00	\$1.10	\$1.10	\$1.20	\$1.30	\$1.40	\$1.60	\$2.10	\$2.60	\$3.20	\$3.80	
17. Metal End Section (Flared End)	each			\$88	\$88	\$94	\$94		\$99		\$127		\$154	\$187	\$341	\$550	\$836	\$968	

	Unit	Pipe Diameter (inches)																		
		1½	2	4	6	8	10	12	14	15	18	21	24							
18. Butyl Rubber Anti-Seep Collars																				
A. 36" x 36"	each	\$77	\$77	\$77	\$77															
B. 48" x 48"	each	\$87	\$87	\$87	\$87	\$87	\$87													
C. 60" x 60"	each	\$145	\$145	\$145	\$145	\$145	\$145	\$145	\$145	\$145	\$145									
D. 72" x 72"	each	\$167	\$167	\$167	\$167	\$167	\$167	\$167	\$167	\$167	\$167	\$167	\$167	\$167	\$167	\$167	\$167	\$167	\$167	\$167
19. Polyethylene (PE) Anti-Seep Collars																				
A. 30" x 30"	each	\$90	\$90																	
B. 48" x 48"	each			\$120	\$120	\$126	\$129	\$135		\$141	\$147		\$152							
C. 60" x 60"	each			\$183	\$183	\$188	\$191	\$200		\$206	\$213		\$222							
D. 72" x 72"	each			\$228	\$228	\$233	\$236	\$243		\$249	\$258		\$267							
20. Rodent Guard for Terrace Outlet	each			\$28	\$30	\$32	\$40	\$53		\$82	\$115									

	Pipe Diameter (inches)	Height (feet)								Add for Back Flap
		2	3	4	5	6	8	10	12	
A. Inline water level control structure (To be placed in the embankment)	4	\$521	\$581	\$641	\$700	\$761	\$881	\$1,001	\$1,106	\$50
	6	\$537	\$601	\$586	\$729	\$792	\$920	\$1,048	\$1,152	\$50
	8	\$571	\$656	\$656	\$827	\$913	\$1,084	\$1,256	\$1,396	\$50
	10	\$606	\$710	\$724	\$920	\$1,024	\$1,233	\$1,443	\$1,614	\$50
	12	\$709	\$832	\$864	\$1,076	\$1,198	\$1,443	\$1,687	\$1,886	\$65
	15	\$762	\$926	\$994	\$1,254	\$1,419	\$1,746	\$2,074	\$2,344	\$65
	18	\$978	\$1,173	\$1,284	\$1,561	\$1,756	\$2,145	\$2,534	\$2,854	\$65
	24		\$1,456	\$1,632	\$1,979	\$2,240	\$2,763	\$3,284		\$100
B. Check valve										
		\$68	\$76	\$129	\$175	\$225	\$289	\$498	\$576	
C. Bar guard or heavy duty bar guard										
		\$58	\$67	\$79	\$91	\$103	\$138	\$156	\$216	\$281

	Unit	Pipe Diameter (inches)			
		6	8	10	12
22. Gated Irrigation Pipe					
For surface irrigation and wastewater treatment strip					
A. PVC ^{2/}	lin. ft.	\$2.50	\$3.30	\$4.20	\$5.00
B. Aluminum ^{2/}	lin. ft.	\$3.70	\$5.00	\$6.30	\$7.50

^{1/} Includes a pair of flanges welded to the pipe, gasket, or mastic and cost of bolting together

^{2/} 30-foot lengths, 30-inch gate spacing (includes tee and end plugs)

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23. Plastic Pipe		Pipe Diameter (inches)														
Unit	4	5	6	8	10	12	14	15	16	18	20	21	24	30	36	
A. Principal spillway barrel ^{1/}																
(1) Standard Dimension Ratio (SDR) 17	lin. ft.		\$11.40	\$15.10	\$20.60	\$27.30										
(2) Schedule 80	lin. ft.		\$23.10	\$29.50	\$41.90	\$56.10										
(3) SDR 21	lin. ft.		\$10.40	\$13.60	\$18.10	\$23.40										
(4) Schedule 40	lin. ft.		\$17.50	\$21.60	\$28.90	\$37.10										
(5) SDR 26	lin. ft.		\$9.60	\$12.10	\$15.80	\$20.80										
(6) Dimension Ratio (DR) 25	lin. ft.		\$9.80	\$12.50	\$16.20	\$21.30	\$28.80		\$35.90	\$43.90	\$53.10		\$72.90	\$106.70	\$148.80	
(7) DR 18	lin. ft.		\$10.70	\$14.60	\$19.70	\$26.30	\$36.00		\$45.40	\$55.70	\$67.90		\$94.10			
(8) Corrugated PVC, smooth interior, Pipe Stiffness (PS) 46	lin. ft.		\$8.10	\$10.60	\$14.00	\$18.50		\$25.20		\$33.40		\$44.30	\$54.50	\$86.30	\$111.90	
(9) Corrugated PVC, smooth interior, PS 115	lin. ft.				\$12.50	\$17.20	\$23.00		\$31.90							
(10) Dual wall corrugated PE, smooth interior, with water tight couplings	lin. ft.		\$7.80	\$9.80	\$11.60	\$14.10		\$17.00		\$23.80			\$32.90	\$45.80	\$57.00	
B. Underground outlet main conduit ^{2/}																
Unit	4	5	6	8	10	12	15	18	20	21	24	30	36	42	48	
(1) Smooth PVC																
(a) SDR 21	lin. ft.	\$4.40		\$7.20	\$10.50	\$15.00	\$20.10									
(b) SDR 26	lin. ft.	\$4.00		\$6.40	\$9.10	\$12.80	\$17.50									
(c) SDR 32.5	lin. ft.	\$3.80		\$5.80	\$8.10	\$11.40	\$15.30	\$20.30	\$26.90	\$39.30		\$54.50	\$81.50	\$114.50	\$149.90	\$192.10
(d) SDR 35	lin. ft.	\$3.40		\$5.20	\$7.20	\$10.10	\$13.60	\$19.10								
(e) SDR 41	lin. ft.	\$3.50		\$5.20	\$7.10	\$9.80	\$13.10	\$17.40		\$32.90		\$45.40	\$67.80	\$94.50	\$123.10	\$157.00
(2) Corrugated PVC, smooth interior																
(a) PS 46	lin. ft.	\$3.90		\$5.30	\$7.80	\$11.10	\$15.20	\$21.40	\$29.00		\$39.20	\$49.10	\$81.50	\$106.20		
(b) PS 115	lin. ft.				\$9.70	\$14.20	\$19.70	\$28.20								
(3) Single wall corrugated PE	lin. ft.	\$2.90	\$3.20	\$4.10	\$5.10	\$7.30	\$9.30	\$11.90	\$16.50			\$22.30				
(4) Dual wall corrugated PE, smooth interior, with soil tight couplings	lin. ft.	\$3.60		\$4.90	\$6.60	\$8.00	\$9.80	\$12.80	\$17.80			\$25.60	\$37.10	\$46.70	\$63.40	\$71.60
C. Underground outlet connections ^{3/} (Underground outlet riser, tee, and fittings)																
Size (inches)	Prefabricated or PVC Riser Diameter (inches)															
	5	6	8	10	12	15										
4	\$75	\$81	\$106	\$142	\$444	\$489										
6	\$85	\$81	\$106	\$142	\$444	\$489										
8	\$97	\$100	\$106	\$142	\$444	\$489										
10	\$111	\$114	\$128	\$142	\$444	\$489										
12	\$217	\$219	\$234	\$258	\$444	\$489										
15	\$259	\$262	\$276	\$300	\$502	\$552										
18	\$299	\$302	\$316	\$340	\$542	\$596										
24	\$379	\$382	\$396	\$420	\$622	\$684										
D. Livestock water supply line																
(1) SDR 21, PVC	lin. ft.		\$1.85	\$1.91	\$1.93	\$2.50	\$3.23									
(2) SDR 26, PVC	lin. ft.		\$1.67	\$1.73	\$1.79	\$2.29	\$2.90									
E. Water supply line under dam																
(1) 100 feet, Schedule 40, PVC ^{4/}	each			\$481	\$541		\$820									
(2) Each additional foot of pipe	lin. ft.			\$3.07	\$3.62		\$5.81									
(3) 100 feet, SDR 21, PVC ^{4/}	each			\$380	\$387		\$504									
(4) Each additional foot of pipe	lin. ft.			\$2.06	\$2.08		\$2.65									
F. Siphon supply line over dam																
(1) 120 feet, 125 psi, PE pipe ^{5/}	each		\$531	\$596	\$721											
(2) Each additional foot of pipe	lin. ft.		\$1.89	\$2.27	\$3.14											
(3) 120 feet, SDR 26, PVC pipe ^{5/}	each		\$492	\$520	\$547											
(4) Each additional foot of pipe	lin. ft.		\$1.57	\$1.63	\$1.69											
G. Slotted flume																
(1) Fixed cost for 20 feet of flume	each						\$264	\$328	\$436	\$584						
(2) Additional cost per foot	lin. ft.						\$9.60	\$12.10	\$15.80	\$20.80						

^{1/} Does not include manually tamped backfill

^{2/} Includes trenching and machine-placed backfill

^{3/} When risers are used as "bubble up" structures, add 10 percent if gravel is used as backfill

^{4/} Complete with intake, valve, operating rod, valve box and lid, and manually tamped backfill

^{5/} Complete with intake, valves, valve box, filler pipe assembly, testing, excavation, and manually tamped backfill