

Fiscal Year 2013 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	\$36	\$38				
	15	\$44	\$46				
	18	\$46	\$49				
	21	\$54	\$57				
	24	\$61	\$64				
	30			\$76	\$80		
	36			\$92	\$97		
	42			\$114	\$121		
	48					\$131	\$138
	54					\$146	\$154

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	\$226					
	10	\$270					
	12	\$321	\$339				
	15	\$386	\$408				
	18	\$452	\$477				
	21	\$525	\$554				
	24	\$590	\$623				
	30			\$772	\$816		
	36			\$940	\$993		
	42			\$1,064	\$1,123		
	48					\$1,377	\$1,454

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	\$9	\$10				
	8	\$12	\$12				
	10	\$14	\$15				
	12	\$17	\$18				
	15	\$19	\$20				
	18	\$22	\$23				
	21	\$25	\$27				
	24	\$29	\$31				
	30			\$36	\$38		
	36			\$42	\$45		
	42			\$56	\$59		
	48					\$64	\$67

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	\$92	\$97
	8	\$115	\$122
	10	\$138	\$145
	12	\$164	\$173
	15 <sup>1/2</sup>	\$197	\$208

<sup>1/2</sup> Slotted flanges not used--add corrugated metal (CM) connecting band

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5. Connecting Bands		16 Gauge			14 Gauge		12 Gauge			
		Diameter (inches)	Plain	Aluminum	Plain	Aluminum	Plain	Aluminum		
			Galvanized	Steel					Galvanized	Steel
A. CM connecting bands--soil-tight Dollars per each (Includes connecting band, bolts, and gasket)		6	\$6	\$6						
		8	\$6	\$6						
		10	\$8	\$8						
		12	\$10	\$10						
		15	\$12	\$13						
		18	\$15	\$16						
		21	\$17	\$18						
		24	\$19	\$20						
		30			\$24	\$25				
		36			\$29	\$31				
		42			\$42	\$44				
		48					\$48	\$51		
		B. CM connecting bands--watertight Dollars per each (Includes band, 2 "O" ring gaskets, and connecting bolts)		16 Gauge			14 Gauge		12 Gauge	
				Diameter (inches)	Plain	Aluminum	Plain	Aluminum	Plain	Aluminum
Galvanized	Steel				Galvanized	Steel				
6	\$6			\$7						
8	\$8			\$9						
10	\$10			\$11						
12	\$13			\$14						
15	\$16			\$17						
18	\$20			\$22						
21	\$23			\$24						
24	\$26			\$27						
30					\$33	\$35				
36					\$39	\$42				
42					\$57	\$60				
48					\$65	\$69				

  

6. Metal Anti-Seep Collars		Diameter (inches)		Size (inches)		Two-Piece					
						16 Gauge		14 Gauge		12 Gauge	
						Plain	Aluminum	Plain	Aluminum	Plain	Aluminum
		Galvanized	Steel	Galvanized	Steel	Galvanized	Steel	Galvanized	Steel		
		12	60	\$229	\$242						
		15	63	\$281	\$297						
		18	66	\$341	\$360						
		21	69	\$393	\$415						
		24	72								
		30	78			\$448	\$473				
		36	84			\$552	\$583				
		42	90					\$667	\$704		
		48	96					\$771	\$814		
								\$886	\$935		



23. Plastic Pipe		Pipe Diameter (inches)																
Unit		4	5	6	8	10	12	14	15	16	18	20	21	24	30	36	42	
<b>A. Principal spillway barrel <sup>1/</sup></b>																		
(1) SDR 17	lin. ft.			\$10.86	\$17.67	\$24.01	\$33.78											
(2) Schedule 80	lin. ft.			\$9.80	\$13.56	\$19.45	\$26.86											
(3) SDR 21	lin. ft.	\$3.95		\$7.27	\$10.30	\$14.52	\$20.39											
(4) Schedule 40	lin. ft.	\$4.07		\$6.86	\$9.12	\$11.79	\$16.04											
(5) SDR 26	lin. ft.			\$6.60	\$9.18	\$12.75	\$17.90											
(6) Dimension Ratio (DR) 25	lin. ft.			\$7.03	\$9.91	\$13.71	\$19.31	\$25.10		\$31.30	\$38.26	\$46.41		\$64.99	\$95.35	\$132.37		
(7) DR 18	lin. ft.			\$8.33	\$12.27	\$17.13	\$24.11	\$31.50		\$39.56	\$48.64	\$59.36		\$83.60				
(8) Corrugated PVC, smooth interior, Pipe Stiffness (PS) 46	lin. ft.			\$5.34	\$6.82	\$9.20	\$13.24		\$17.50		\$22.62		\$29.33	\$33.67	\$44.29	\$56.06		
(9) Corrugated PVC, smooth interior, PS 115	lin. ft.				\$6.91	\$9.20												
(10) Dual wall corrugated PE, smooth interior, with watertight couplings	lin. ft.		\$5.49	\$6.49	\$8.88	\$11.96		\$16.41		\$20.38				\$31.21	\$44.36	\$52.91	\$67.76	
<b>B. Underground outlet main conduit <sup>2/</sup></b>																		
<b>(1) Smooth PVC</b>																		
(a) SDR 21	lin. ft.	\$2.95		\$5.07	\$7.78	\$11.89	\$16.57											
(b) SDR 26	lin. ft.	\$2.61		\$4.40	\$6.66	\$10.12	\$14.08											
(c) SDR 32.5	lin. ft.	\$2.39		\$3.89	\$5.73	\$8.71	\$12.09	\$16.96	\$4		\$5		\$6.44	\$7.83	\$9.40	\$11.34		
(d) SDR 35	lin. ft.	\$2.17		\$3.48	\$5.31	\$8.10	\$11.40	\$16.63										
(e) SDR 41	lin. ft.	\$2.15		\$3.37	\$4.86	\$7.34	\$10.18	\$14.38			\$5		\$6.44	\$7.83	\$9.40	\$11.34		
<b>(2) Corrugated PVC, smooth interior</b>																		
(a) PS 46	lin. ft.	\$2.54		\$3.14	\$4.30	\$6.57	\$9.42	\$12.94		\$17		\$22.54	\$25.99	\$35.03	\$45.10			
(b) PS 115	lin. ft.				\$4.39	\$6.57												
(3) Single wall corrugated PE	lin. ft.	\$1.33	\$1.55	\$2.01	\$2.85	\$4.74	\$5.82	\$9.91		\$15			\$24					
(4) Dual wall corrugated PE, smooth interior, with soil-tight couplings	lin. ft.	\$2.03		\$3.08	\$4.11	\$6.22	\$8.31	\$11.97		\$15			\$24.64	\$33.81	\$40.40	\$52.67		
(5) Dual wall corrugated PE, smooth interior, with watertight couplings	lin. ft.	\$2.03		\$3.29	\$3.97	\$6.25	\$8.31	\$11.97		\$16			\$25.04	\$35.10	\$41.95	\$54.74		
<b>C. Underground outlet and connections <sup>3/</sup></b> (Underground outlet riser, tee, and fittings)																		
Size (inches)		Prefabricated or PVC Riser Diameter (inches)																
		5	6	8	10	12	15											
4		\$87	\$98	\$135	\$183	\$570	\$628											
6		\$94	\$98	\$135	\$183	\$570	\$628											
8		\$108	\$117	\$135	\$183	\$570	\$628											
10		\$128	\$137	\$161	\$183	\$570	\$628											
12		\$258	\$267	\$291	\$323	\$570	\$628											
15		\$282	\$291	\$315	\$347	\$610	\$671											
18		\$334	\$343	\$367	\$399	\$662	\$728											
24		\$423	\$432	\$456	\$488	\$750	\$825											
<b>D. Livestock water supply line</b>																		
<b>(1) SDR 21, PVC</b>																		
lin. ft.		\$1.75	\$1.87	\$1.95	\$2.66	\$3.36												
<b>(2) SDR 26, PVC</b>																		
lin. ft.		\$1.73	\$1.82	\$1.87	\$2.48	\$3.02												
<b>E. Water supply line under dam</b>																		
<b>(1) 100 feet, Schedule 40, PVC <sup>4/</sup></b>																		
each			\$274	\$295	\$367	\$486												
<b>(2) Each additional foot of pipe</b>																		
lin. ft.			\$1.55	\$1.71	\$2.38	\$2.97												
<b>(3) 100 feet, SDR 21, PVC <sup>4/</sup></b>																		
each			\$271	\$284	\$344	\$474												
<b>(4) Each additional foot of pipe</b>																		
lin. ft.			\$1.52	\$1.60	\$2.15	\$2.85												
<b>F. Siphon supply line over dam</b>																		
<b>(1) 120 feet, 125 psi, PE pipe <sup>5/</sup></b>																		
each			\$385	\$431	\$475													
<b>(2) Each additional foot of pipe</b>																		
lin. ft.			\$1.80	\$2.01	\$2.21													
<b>(3) 120 feet, SDR 26, PVC pipe <sup>5/</sup></b>																		
each			\$365	\$396	\$422													
<b>(4) Each additional foot of pipe</b>																		
lin. ft.			\$1.63	\$1.72	\$1.77													
<b>G. Slotted flume</b>																		
<b>(1) Fixed cost for 20 feet of flume</b>																		
each						\$222	\$289	\$400	\$558									
<b>(2) Additional cost per foot</b>																		
lin. ft.						\$6.60	\$9.18	\$12.75	\$17.90									

<sup>1/</sup> Does not include manually tamped backfill

<sup>2/</sup> Includes trenching and machine-placed backfill

<sup>3/</sup> When risers are used as "bubble up" structures, add 10 percent if gravel is used as backfill

<sup>4/</sup> Complete with intake, valve, operating rod, valve box and lid, and manually tamped backfill

<sup>5/</sup> Complete with intake, valves, valve box, filler pipe assembly, testing, excavation, and manually tamped backfill

24. Miscellaneous Structural Items					
	Unit	Materials Cost	Installation Cost	Total Installation Cost	
A. Concrete					
(1) Formed	cu. yd.	\$100	\$205	\$305	
(2) Slab on grade	cu.yd.	\$100	\$110	\$210	
B. Steel reinforcement					
	lbs.	\$0.75	\$1.15	\$1.90	
C. Solar Pump Installations					
(1) 1/4 HP Pumps (185 watts) w/controller	ea.	\$1,100.00	\$300.00	\$1,400.00	
(2) 1/2 HP Pumps (370 watts) w/controller	ea.	\$2,200.00	\$400.00	\$2,600.00	
(3) 1 HP Pumps w/controller	ea.	\$2,650.00	\$500.00	\$3,150.00	
(4) Solar Panels w/mounts < 100 watts	watt	\$4.40	\$7.50	\$11.90	
(5) Solar Panels w/mounts 100 - 185 watts	watt	\$3.50	\$2.30	\$5.80	
(6) Solar Panels w/mounts > 185 watts	watt	\$2.20	\$1.50	\$3.70	
D. Wood picket fences					
(1) Pipe entrances	sq. ft.	\$4.65	\$11.25	\$15.90	
(2) Concrete chutes/solid stacks	sq. ft.	\$5.95	\$11.25	\$17.20	
E. Geotextiles					
	sq. yds.	\$1.30	\$2.25	\$3.55	
F. Erosion control blankets <sup>1/</sup>					
	sq. yds.	\$1.30	\$1.15	\$2.45	
G. Turf reinforcement mats <sup>1/</sup>					
(1) North American Green C-350	sq. yds.	\$4.40	\$4.00	\$8.40	
(2) Propex Landlok 450	sq. yds.	\$3.00	\$4.00	\$7.00	
H. High-density polyethylene (HDPE) flexible membranes					
	sq. ft.	\$0.75	\$0.65	\$1.40	
I. Articulating concrete block materials					
	sq. ft.	\$12.50	\$2.50	\$15.00	
J. Cellular confinement systems (geocell or geoweb)					
	sq. ft.	\$1.95	\$0.55	\$2.50	
K. Sediment control installations					
(1) Silt fence	lin. ft.	\$0.20	\$2.75	\$2.95	
(2) Bale barriers	lin. ft.	\$1.00	\$1.70	\$2.70	
(3) Earthen dikes	lin. ft.	\$0.00	\$1.10	\$1.10	
	Unit	Gabion Cost	Rockfill Materials Cost (delivered)	Installation Cost	Total Installation Cost
L. Gabion baskets					
	cu. ft.	\$2.65	\$1.58	\$2.07	\$6.30
M. Reno mattresses					
	cu. ft.	\$3.75	\$1.58	\$2.07	\$7.40
	Unit	Material Cost	Delivery Cost @ \$0.35/ton-mile	Installation Cost	Total Installation Cost
N. Graded rock riprap (50-mile delivery trip)					
	tons	\$15	\$17.50	\$10	\$42.50
O. Shot rock or concrete rubble (15-mile delivery trip)					
	tons	\$2.75	\$5.25	\$10	\$18.00
P. Graded crushed rock (50-mile delivery trip)					
	tons	\$15	\$17.50	\$10	\$42.50
Q. Fill sand (15-mile delivery trip)					
	cu.yd.	\$3.50	\$3.50	\$3.75	\$10.75
R. Drainfill (20-mile delivery trip)					
	cu.yd.	\$10	\$10.50	\$3.75	\$24.25
S. Concrete blocks (20-mile delivery trip)					
(1) 30" x 30" x 60"	each	\$87	\$16.40	\$21	\$124.40
(2) 24" x 24" x 48" or smaller	each	\$45	\$8.40	\$18	\$71.40
(3) 8" x 8" x 16" concrete masonry units (CMUs)	each	\$1.15	\$0.05	\$2.50	\$3.70

<sup>1/</sup> Includes pins for staking