COST OF CONCRETE SEWERS.

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COST OF CONCRETE PER CUBIC YARD, LABOR ONLY.

Diam. of Sewer	Location	Quantity of Concrete, Cu. Yds.	Cement, Sand, Stone to Mixer. Hrs.	$	Cement, Sand, Stone to Mixing Board. Hrs.	$	Machine Mixing. Hrs.	$	Hard Mixing. Hrs.	$	Delivery of Concrete. Hrs.	$	Tamping. Hrs.	$	Plastering. Hrs.	$	Forms. Hrs.	$	Runways. Hrs.	$	Total for Machine Mixing. Hrs.	$	Total for Hand Mixing. Hrs.	$	Rate of Wages. $	Thickness of Wall. Cu. Yd. per Lin. Ft.
48″	Bl. Fce. Sewer, Ind. St. Co.	324	2.9	.65	...	...	1.8	.43	...	...	1.5	.34	.8	.17	...	...	1.2	.34	.5	.11	8.7	2.04	...	...	.24	8″ .36
57″	C. U. T. Ry., Clearing, Ill.	1,300	2.9	.58	2.9	.60	.9	.25	2.3	.59	1.5	.37	.2	.07	...	...	.6	.18	..	...	7.3	1.90	8.7	2.26	.26	8″ .48
60″	Open Hrth. Sew., Ill. St. Co.	263	...	...	3.7	.70	...	...	2.2	.46	1.8	.33	1.0	.25	...	...	1.5	.33	.4	.07	...	...	10.3	2.15	.21	10″ .57
60″	Open Hrth. Sew., Ill. St. Co.	237	3.5	.73	...	...	1.8	.42	...	...	.8	.18	.8	.18	1.2	.46	2.2	.67	..	...	9.1	2.19	...	...	.24	10″ .57
63″	C.U.T.Ry., Sew., Clring, Ill.	1,424	2.3	.48	3.7	.74	.9	.17	2.5	.59	1.5	.34	.4	.10	1.0	.39	.9	.23	..	...	6.5	1.68	10.0	2.38	.25	9″ .53
66″	C.U.T.Ry., Sew., Clring, Ill.	1,380	2.1	.45	3.71	.73	.8	.17	2.5	.59	1.5	.34	.4	.10	1.0	.39	.9	.23	..	...	6.5	1.68	10.0	2.38	.25	9″ .68
72″	Mill Sewer, Ind. St. Co.	1,592	2.3	.57	...	...	1.0	.30	...	...	1.0	.25	.7	.19	...	...	.6	.18	.4	.08	6.0	1.56	...	...	.26	12″ .82
72″	Mill Sewer, Ind. St. Co.	461	...	...	1.8	.35	...	...	1.5	.33	2.5	.55-Included			...	...	.9	.22	..	...	...	...	6.7	1.45	.22	12″ .82
72″	Mch. Mill Sew., Ind. St. Co.	1,438	2.4	.46	...	...	1.3	.32	...	...	2.5	.56-Included			...	...	.6	.18	..	...	5.8	1.52	...	...	.22	12″ .82
72″	Bl. Furn., Mill Sew., "	220	...	...	1.7	.34	...	...	1.3	.29	2.2	.52-Included			Av. of 10		1.8	.44	..	...	...	...	6.0	1.59	.25	12″ .82
	Total or Average	8,639	2.5	.54	2.9	.58	1.2	.28	2.0	.48	1.4	.32	.6	.15	.3	.13	1.1	.29	.4	.09	7.5	1.80	8.7	2.04	...	.. ..

COST OF CONCRETE SEWERS PER LINEAL FOOT.

Diameter	Location	Length. Ft.	Depth. Ft.	Excavation. Hrs.	$	Sheeting and Bracing. Hrs.	$	Backfilling. Hrs.	$	Pumping. Hrs.	$	Total Trenching Hrs.	$	Concrete. Hrs.	$	Superintendence and General Labor Hrs.	$	Total Labor. Hrs.	$	Materials $	Total Cost. $
48″	Bl. Fcs., Ind. Steel Co.	894	0.0 to 14.6	.3	.89	.2	.085	.6	.15	None		3.8	1.125	3.2	.74	.7	.355	7.7	2.22	....	....
57″	C.U.T.Ry., Clearing, Ill.	2,695	12.2	1.0	.37	1.0	.26	.5	.18	None		2.4	.81	3.9	1.00	.4	.15	6.7	1.97	....	....
60″	Open Hearth Sewer, Indiana Steel Co., Gary, Ind.	415	16.7	12.0	2.79	2.9	.60	1.9	.46	2.3	.51	19.6	4.36	5.3	1.23	3.4	1.43	28.0	7.02	....	....
60″	Open Hearth Sewer, Indiana Steel Co., Gary, Ind.	461.5	19.3	9.2	2.18	3.4	.77	1.8	.53	2.0	.41	16.4	3.89	5.7	1.22	2.0	.70	24.1	5.81	....	....
63″	C.U.T.Ry., Clearing, Ill.	2,666	13.7	1.3	.55	1.2	.34	.5	.19	.2	.05	3.2	1.13	4.4	1.06	.2	.16	7.8	2.35	2.06	4.41
66″	C.U.T.Ry., Clearing, Ill.	1,882	16.7	1.6	.71	1.4	.38	.9	.26	None		3.9	1.35	5.7	1.39	.8	.27	10.4	3.01	2.19	5.20
72″	Mill Sewer, Indiana Steel Co., Gary, Ind.	576.5	12.8	4.5	1.53	2.1	.52	.1	.03	.5	.13	7.5	2.21	5.3	1.15	1.3	.56	14.1	3.92	...	...
72″	Bl. Fces., Indiana Steel Co., Gary, Ind.	275.5	15.2	7.9	2.14	2.8	.80	.3	.17	1.4	.45	12.4	3.56	5.6	1.28	2.4	1.03	20.4	5.87	...	...
72″	Mill Sewer, Indiana Steel Co., Gary, Ind.	1,910	16.0	5.4	1.62	2.6	.79	.8	.24	.5	.12	9.3	2.77	5.3	1.36	.9	.50	15.5	4.63	...	...
72″	Merchant Mill, Indiana Steel Co., Gary, Ind.	1,213	19.7	10.8	3.04	4.7	.76	1.0	.71	.7	.16	17.2	4.67	5.7	1.29	.9	.54	23.8	6.50	...	...

DETAIL COST OF 6-FOOT CONCRETE "MILL" SEWER FOR INDIANA STEEL CO., GARY, IND.

Character of work	Total length of sewer: Costs Hours	Costs Cost $	Work done 1910′-0″ trench	Cost per Unit of work Hour $	Unit of work $	Lin. foot sewer $	River extension and under 1st R. R. track. Costs Hour	Cost $	Per lin. ft. of sewer $	Under 2d R. R. track. Costs Hours	Cost $	Per lin. ft. of sewer $	Beyond R. R. tracks—free from obstructions. Costs Hours	Cost $	Per lin. ft. of sewer $
Excavation by Machine—															
Dismantling, loading, unloading, re-erecting	1,940	676.10					272	94.50		98	33.80		1,570	547.80	
Operation	2,993½	1,003.65	16,050 cu yds.				372½	145.60		177	48.25		2,444	809.80	
Dismantling and loading onto cars	383	133.35					54	18.70		19	6.65		310	108.00	
Total	5,316½	1,813.10	16,050 cu. yds.	.342	0.113	.93	698½	258.80	3.44	294	88.70	2.07	4.324	1,465.60	.80
Excavation by Hand—															
Sheeting and bracing placed	3,846	1,220.50	111,780′ BM				597½	173.55		80	32.85				
Sheeting removed	1,219½	278.30	102,460′ BM		2.71		Sheeting left in			7	2.90				
Steam pumping	428	109.85	1,700 cu. yds.				120	30.20		40	13.00				
Excavation	4,957½	1,281.25	1,700 cu. yds				614½	183.60		31	8.35				
Total	10,451	2,889.90	17,750 cu. yds.	.277	0.163	1.49	1,332	387.35	5.16	158	57.10	1.33	8,961	2,445.45	1.34
Backfilling by															
Machine	1,205½	375.65	14,900 cu yds.				90	28.75		41	13.10				
Hand and scrapers	355	99.35	350 cu. yds.										355	99.35	
Total	1,560½	475.00	15,250 cu. yds.	.305	0.31	.25	90	28.75	.40	41	13.10	.30	1,429½	433.15	.24
Trenching total	17,328	5,178.00	17,750 cu. yds.	.30	0.292	2.67	2,120½	674.90	9.00	493	158.90	3.70	14,714½	4,344.20	2.38
Concrete—															
Stone and sand from cars into concrete mixer	3,162½	810.15	1,592 cu. yds. of concrete in 1907′-0″ sewer and 9 manholes equal to 34-0 of sewer. Total equivalent sewer 1941′-0″	2.0	.51										
Cement from cars into concrete mixer	436½	96.45		.3	.06										
Mixer men	1,655	481.75		1.0	.30										
Wheeling concrete	1,660	401.90		1.0	.25										
Spreading and tamping	1,075½	296.55		.7	.19										
Forms	1,000	286.65		.6	.18										
Runways	535½	126.45		.3	.08										
Steam pumping	429	109.75		.3	.07		20	6.50		89	25.75				
Backfilling	433	114.50		.3	.07										
Masonry total	10,387	2,724.15	1941′-0″	6.5	1.71	1.40	798	227.60	3.04	376	118.65	2.75	9,213	2,377.90	1.30
General Expense—															
Cleaning up	118	52.30								24	6.85	.16	94	45.45	
Watchmen	716	160.60					73	17.15		74	15.40	.40	569	128.05	
Superintendence	932	738.10					192	173.20		48½	37.75		691½	527.50	
General expense total	1,766	951.00	"	.54	.60	.49	265	190.35	2.54	146½	60.00	1.40	1,354½	700.65	.39
Total labor	29,481	8,853.15	"	0.30	5.57	4.56	3,183½	1,092.85	14.58	1,015½	337.55	7.85	25,282	7,422.75	.4.07

Total Length....1,941.0 ft.
Cement, 1,292 bbls $1,744.88
Cement, per cu. yd of concrete.....0.81 bbl. $1.094
Cement, per lin. ft. of sewer.....0.67 bbl. 0.905

River Extension....75.0 ft.
Excav'n, 800 cu. yds. per cu. yd. $0.843
Concrete, 62 cu. yd., per cu. yd. 3.67
Cement, 104¼ bbls, $140.74.
Cement, per cu. yd..1.7 bbl. 2.40
Cement, per lin. ft...1.4 bbl. 1.83

Under 2d Track....4.30 ft.
550 cu. yds., per cu. yd.....$0.291
36 cu. yds. concrete..... 3.30
Cement, 40¼ bbls., $54.34.
Cement, per cu. yd..1.12 bbls. 1.51
Cement, per lin. ft..0.94 bbl. 1.27

Beyond Tracks....1,823.0 ft.
16,400 cu yds., per cu yd....$0.265
1,494 cu. yds. concrete..... 1.59
1,148 bbls., $1,549.80.
Per cu. yd.....0.77 bbl. 1.04
Per lin. ft.....0.63 bbl. 0.85