

# 31 23 Excavation and Fill

## 31 23 23 – Fill

31 23 23.14 Backfill, Structural		Crew	Daily Output	Labor-Hours	Unit	Material	2022 Bare Costs		Total	Total Incl O&P
							Labor	Equipment		
5000	300 HP, 50' haul, sand & gravel	B-10M	3170	.004	L.C.Y.		.21	.51	.72	.88
5010	Sandy clay & loam		3110	.004			.21	.52	.73	.90
5020	Common earth		2900	.004			.23	.56	.79	.96
5040	Clay		2700	.004			.25	.60	.85	1.03
5400	300' haul, sand & gravel		1500	.008			.44	1.09	1.53	1.86
5410	Sandy clay & loam		1470	.008			.45	1.11	1.56	1.89
5420	Common earth		1350	.009			.49	1.21	1.70	2.06
5440	Clay		1225	.010			.54	1.33	1.87	2.27
6010	For trench backfill, see Sections 31 23 16.13 and 31 23 16.14									
6100	For compaction, see Section 31 23 23.24									

## 31 23 23.16 Fill By Borrow and Utility Bedding

0010 FILL BY BORROW AND UTILITY BEDDING										
0015	Fill by borrow, load, 1 mile haul, spread with dozer									
0020	for embankments	B-15	1200	.023	L.C.Y.	12.55	1.26	2.40	16.21	18.30
0035	Select fill for shoulders & embankments	"	1200	.023	"	16.25	1.26	2.40	19.91	22.50
0040	Fill, for hauling over 1 mile, add to above per C.Y., see Section 31 23 23.20				Mile				1.41	1.73
0049	Utility bedding, for pipe & conduit, not incl. compaction									
0050	Crushed or screened bank run gravel	B-6	150	.160	L.C.Y.	31	7.90	2.19	41.09	48
0100	Crushed stone 3/4" to 1/2"		150	.160		20.50	7.90	2.19	30.59	36.50
0200	Sand, dead or bank		150	.160		13.70	7.90	2.19	23.79	29.50
0500	Compacting bedding in trench	A-1D	90	.089	E.C.Y.		4.05	1.25	5.30	7.45
0600	If material source exceeds 2 miles, add for extra mileage.									
0610	See Section 31 23 23.20 for hauling mileage add.									

## 31 23 23.17 General Fill

0010 GENERAL FILL										
0011	Spread dumped material, no compaction									
0020	By dozer	B-10B	1000	.012	L.C.Y.		.67	1.35	2.02	2.47
0100	By hand	1 Clab	12	.667	"		30.50		30.50	45.50
0500	Gravel fill, compacted, under floor slabs, 4" deep	B-37	10000	.005	S.F.	.33	.23	.03	.59	.73
0600	6" deep		8600	.006		.49	.27	.03	.79	.97
0700	9" deep		7200	.007		.81	.32	.04	1.17	1.40
0800	12" deep		6000	.008		1.14	.38	.04	1.56	1.87
1000	Alternate pricing method, 4" deep		120	.400	E.C.Y.	24.50	19.15	2.20	45.85	58
1100	6" deep		160	.300		24.50	14.35	1.65	40.50	50.50
1200	9" deep		200	.240		24.50	11.50	1.32	37.32	45.50
1300	12" deep		220	.218		24.50	10.45	1.20	36.15	44
1500	For fill under exterior paving, see Section 32 11 23.23									

## 31 23 23.20 Hauling

0010 HAULING										
0011	Excavated or borrow, loose cubic yards									
0012	no loading equipment, including hauling, waiting, loading/dumping									
0013	time per cycle (wait, load, travel, unload or dump & return)									
0014	8 C.Y. truck, 15 MPH avg., cycle 0.5 miles, 10 min. wait/l.d./uld.	B-34A	320	.025	L.C.Y.		1.33	1.23	2.56	3.33
0016	cycle 1 mile		272	.029			1.56	1.44	3	3.92
0018	cycle 2 miles		208	.038			2.04	1.88	3.92	5.10
0020	cycle 4 miles		144	.056			2.95	2.72	5.67	7.40
0022	cycle 6 miles		112	.071			3.79	3.50	7.29	9.50
0024	cycle 8 miles		88	.091			4.82	4.45	9.27	12.10
0026	20 MPH avg., cycle 0.5 mile		336	.024			1.26	1.17	2.43	3.17
0028	cycle 1 mile		296	.027			1.43	1.32	2.75	3.60
0030	cycle 2 miles	B-34A	240	.033	L.C.Y.		1.77	1.63	3.40	4.44
0032	cycle 4 miles		176	.045			2.41	2.23	4.64	6.05