

# 31 23 Excavation and Fill

## 31 23 16 – Excavation

31 23 16.42 Excavating, Bulk Bank Measure		Daily Crew	Labor- Output	Hours	Unit	Material	2022 Bare Costs		Total	Total Incl O&P
							Labor	Equipment		
4100	For heavy soil or stiff clay, add				B.C.Y.				60%	60%
4200	For wet excavation with clamshell or dragline, add								100%	100%
4250	All other equipment, add				↓				50%	50%
4400	Clamshell in sheeting or cofferdam, minimum	B-12H	160	.100	B.C.Y.		5.45	7.65	13.10	16.50
4450	Maximum	"	60	.267	"		14.55	20.50	35.05	44
5000	Excavating, bulk bank measure, sandy clay & loam piled									
5020	For loading onto trucks, add								15%	15%
5100	Excavator, hydraulic, crawler mtd., 1 C.Y. cap. = 120 C.Y./hr.	B-12A	960	.017	B.C.Y.		.91	.95	1.86	2.40
5150	1-1/2 C.Y. cap. = 150 C.Y./hr.	B-12B	1200	.013			.73	.82	1.55	1.99
5300	2 C.Y. cap. = 195 C.Y./hr.	B-12C	1560	.010			.56	.62	1.18	1.51
5400	3 C.Y. cap. = 300 C.Y./hr.	B-12D	2400	.007			.36	.94	1.30	1.57
5500	3-1/2 C.Y. cap. = 350 C.Y./hr.	"	2800	.006			.31	.80	1.11	1.34
5610	Wheel mounted, 1/2 C.Y. cap. = 44 C.Y./hr.	B-12E	352	.045			2.48	1.86	4.34	5.75
5660	3/4 C.Y. cap. = 66 C.Y./hr.	B-12F	528	.030	↓		1.65	1.66	3.31	4.28
8000	For hauling excavated material, see Section 31 23 23.20									

## 31 23 16.46 Excavating, Bulk, Dozer

0010	EXCAVATING, BULK, DOZER									
0011	Open site									
2000	80 HP, 50' haul, sand & gravel	B-10L	460	.026	B.C.Y.		1.45	1.16	2.61	3.43
2010	Sandy clay & loam		440	.027			1.51	1.22	2.73	3.59
2020	Common earth		400	.030			1.66	1.34	3	3.95
2040	Clay		250	.048			2.66	2.14	4.80	6.30
2200	150' haul, sand & gravel		230	.052			2.89	2.33	5.22	6.85
2210	Sandy clay & loam		220	.055			3.03	2.43	5.46	7.20
2220	Common earth		200	.060			3.33	2.68	6.01	7.90
2240	Clay		125	.096			5.35	4.29	9.64	12.60
2400	300' haul, sand & gravel		120	.100			5.55	4.46	10.01	13.15
2410	Sandy clay & loam		115	.104			5.80	4.66	10.46	13.70
2420	Common earth		100	.120			6.65	5.35	12	15.80
2440	Clay	↓	65	.185			10.25	8.25	18.50	24.50
3000	105 HP, 50' haul, sand & gravel	B-10W	700	.017			.95	.94	1.89	2.45
3010	Sandy clay & loam		680	.018			.98	.97	1.95	2.53
3020	Common earth		610	.020			1.09	1.08	2.17	2.81
3040	Clay		385	.031			1.73	1.71	3.44	4.46
3200	150' haul, sand & gravel		310	.039			2.15	2.13	4.28	5.55
3210	Sandy clay & loam		300	.040			2.22	2.20	4.42	5.70
3220	Common earth		270	.044			2.47	2.44	4.91	6.35
3240	Clay		170	.071			3.92	3.88	7.80	10.10
3300	300' haul, sand & gravel		140	.086			4.75	4.71	9.46	12.25
3310	Sandy clay & loam		135	.089			4.93	4.89	9.82	12.75
3320	Common earth	↓	120	.100	↓		5.55	5.50	11.05	14.30
3340	Clay	B-10W	100	.120	B.C.Y.		6.65	6.60	13.25	17.15
4000	200 HP, 50' haul, sand & gravel	B-10B	1400	.009			.48	.96	1.44	1.77
4010	Sandy clay & loam		1360	.009			.49	.99	1.48	1.82
4020	Common earth		1230	.010			.54	1.10	1.64	2.02
4040	Clay		770	.016			.86	1.75	2.61	3.22
4200	150' haul, sand & gravel		595	.020			1.12	2.27	3.39	4.15
4210	Sandy clay & loam		580	.021			1.15	2.33	3.48	4.27
4220	Common earth		516	.023			1.29	2.61	3.90	4.79
4240	Clay		325	.037			2.05	4.15	6.20	7.60
4400	300' haul, sand & gravel		310	.039			2.15	4.35	6.50	8
4410	Sandy clay & loam		300	.040			2.22	4.50	6.72	8.25