

31 23 Excavation and Fill

31 23 16 - Excavation

31 23 16.13 Excavating, Trench

		Crew	Daily Output	Labor-Hours	Unit	Material	2022 Bare Costs		Total	Total Incl O&P
							Labor	Equipment		
1397	semi-stable material, 4' W	2 Clab	2400	.007	SF Wall	.35	.30		.65	.83
1398	Rent hydraulic shoring per day/S.F. wall, stable mat., 4' W					.37			.37	.40
1399	semi-stable material					.48			.48	.53
1400	By hand with pick and shovel 2' to 6' deep, light soil	1 Clab	8	1	B.C.Y.		45.50		45.50	68
1500	Heavy soil	1 Clab	4	2	B.C.Y.		91		91	136
1700	For tamping backfilled trenches, air tamp, add	A-1G	100	.080	E.C.Y.		3.65	.83	4.48	6.35
1900	Vibrating plate, add	B-18	180	.133	"		6.15	.76	6.91	10.05
2100	Trim sides and bottom for concrete pours, common earth		1500	.016	S.F.		.74	.09	.83	1.20
2300	Hardpan		600	.040	"		1.85	.23	2.08	3.01
2400	Pier and spread footing excavation, add to above				B.C.Y.				30%	30%
3000	Backfill trench, F.E. loader, wheel mtd., 1 C.Y. bucket									
3020	Minimal haul	B-10R	400	.030	L.C.Y.		1.66	.81	2.47	3.37
3040	100' haul	"	200	.060			3.33	1.62	4.95	6.75
3080	2-1/4 C.Y. bucket, minimum haul	B-10T	600	.020			1.11	1.07	2.18	2.83
3090	100' haul	"	300	.040			2.22	2.14	4.36	5.65
5020	Loam & sandy clay with no sheeting or dewatering included									
5050	1' to 4' deep, 3/8 C.Y. tractor loader/backhoe	B-11C	162	.099	B.C.Y.		5.25	2.03	7.28	10.05
5060	1/2 C.Y. excavator	B-11M	216	.074			3.93	1.86	5.79	7.90
5080	4' to 6' deep, 1/2 C.Y. excavator	"	216	.074			3.93	1.86	5.79	7.90
5090	5/8 C.Y. excavator	B-12Q	276	.058			3.16	2.64	5.80	7.60
5100	3/4 C.Y. excavator	B-12F	324	.049			2.69	2.70	5.39	7
5130	1/2 C.Y. excavator, truck mounted	B-12J	216	.074			4.04	3.97	8.01	10.35
5140	6' to 10' deep, 3/4 C.Y. excavator	B-12F	243	.066			3.59	3.60	7.19	9.30
5150	1 C.Y. excavator	B-12A	432	.037			2.02	2.11	4.13	5.30
5160	1 C.Y. excavator, truck mounted	B-12K	432	.037			2.02	3.45	5.47	6.80
5170	1-1/2 C.Y. excavator	B-12B	648	.025			1.35	1.53	2.88	3.68
5190	10' to 14' deep, 3/4 C.Y. excavator	B-12F	216	.074			4.04	4.05	8.09	10.45
5200	1 C.Y. excavator	B-12A	389	.041			2.24	2.34	4.58	5.90
5210	1-1/2 C.Y. excavator	B-12B	583	.027			1.50	1.70	3.20	4.10
5250	14' to 20' deep, 1 C.Y. excavator	B-12A	346	.046			2.52	2.64	5.16	6.65
5260	1-1/2 C.Y. excavator	B-12B	518	.031			1.68	1.91	3.59	4.61
5270	2-1/2 C.Y. excavator	B-12S	826	.019			1.06	1.62	2.68	3.36
5300	20' to 24' deep, 1 C.Y. excavator	B-12A	311	.051			2.80	2.93	5.73	7.40
5310	1-1/2 C.Y. excavator	B-12B	467	.034			1.87	2.12	3.99	5.10
5320	2-1/2 C.Y. excavator	B-12S	740	.022			1.18	1.81	2.99	3.74
5352	4' to 6' deep, 1/2 C.Y. excavator w/trench box	B-13H	205	.078			4.25	4.79	9.04	11.60
5354	5/8 C.Y. excavator	"	257	.062			3.39	3.82	7.21	9.25
5356	3/4 C.Y. excavator	B-13G	308	.052			2.83	3.24	6.07	7.75
5362	6' to 10' deep, 3/4 C.Y. excavator w/trench box	"	231	.069			3.77	4.32	8.09	10.35
5364	1 C.Y. excavator	B-13D	410	.039			2.13	2.53	4.66	5.95
5366	1-1/2 C.Y. excavator	B-13E	616	.026	B.C.Y.		1.42	1.81	3.23	4.10
5370	10' to 14' deep, 3/4 C.Y. excavator w/trench box	B-13G	205	.078			4.25	4.87	9.12	11.70
5372	1 C.Y. excavator	B-13D	370	.043			2.36	2.80	5.16	6.60
5374	1-1/2 C.Y. excavator	B-13E	554	.029			1.57	2.01	3.58	4.55
5382	14' to 20' deep, 1 C.Y. excavator w/trench box	B-13D	329	.049			2.65	3.15	5.80	7.40
5384	1-1/2 C.Y. excavator	B-13E	492	.033			1.77	2.26	4.03	5.15
5386	2-1/2 C.Y. excavator	B-13J	780	.021			1.12	1.88	3	3.72
5392	20' to 24' deep, 1 C.Y. excavator w/trench box	B-13D	295	.054			2.96	3.51	6.47	8.25
5394	1-1/2 C.Y. excavator	B-13E	444	.036			1.96	2.50	4.46	5.65
5396	2-1/2 C.Y. excavator	B-13J	695	.023			1.25	2.11	3.36	4.19
6020	Sand & gravel with no sheeting or dewatering included									
6050	1' to 4' deep, 3/8 C.Y. excavator	B-11C	165	.097	B.C.Y.		5.15	1.99	7.14	9.85
6060	1/2 C.Y. excavator	B-11M	220	.073			3.85	1.83	5.68	7.75