

31 48 Underpinning

31 48 13 – Underpinning Piers

31 48 13.10 Underpinning Foundations		Crew	Daily Output	Labor-Hours	Unit	Material	2022 Bare Costs		Total	Total Incl O&P
							Labor	Equipment		
0010	UNDERPINNING FOUNDATIONS									
0011	Including excavation,									
0020	forming, reinforcing, concrete and equipment									
0100	5' to 16' below grade, 100 to 500 C.Y.	B-52	2.30	24.348	C.Y.	345	1,275	257	1,877	2,525
0200	Over 500 C.Y.		2.50	22.400		315	1,175	236	1,726	2,325
0400	16' to 25' below grade, 100 to 500 C.Y.		2	28		380	1,450	295	2,125	2,925
0500	Over 500 C.Y.		2.10	26.667		360	1,400	281	2,041	2,775
0700	26' to 40' below grade, 100 to 500 C.Y.		1.60	35		415	1,825	370	2,610	3,575
0800	Over 500 C.Y.		1.80	31.111		380	1,625	330	2,335	3,175
0900	For under 50 C.Y., add					10%	40%			
1000	For 50 C.Y. to 100 C.Y., add					5%	20%			

31 52 Cofferdams

31 52 16 – Timber Cofferdams

31 52 16.10 Cofferdams

0010	COFFERDAMS									
0011	Incl. mobilization and temporary sheeting									
0080	Soldier beams & lagging H-piles with 3" wood sheeting									
0090	horizontal between piles, including removal of wales & braces									
0100	No hydrostatic head, 15' deep, 1 line of braces, minimum	B-50	545	206	S.F.	13.75	11.55	4.96	30.26	38
0200	Maximum		495	226		15.25	12.70	5.45	33.40	42
0400	15' to 22' deep with 2 lines of braces, 10" H, minimum		360	311		16.15	17.50	7.50	41.15	52.50
0500	Maximum		330	339		18.30	19.10	8.20	45.60	58
0700	23' to 35' deep with 3 lines of braces, 12" H, minimum		325	345		21	19.40	8.30	48.70	62
0800	Maximum		295	380		23	21.50	9.15	53.65	67.50
1000	36' to 45' deep with 4 lines of braces, 14" H, minimum		290	386		23.50	21.50	9.35	54.35	69.50
1100	Maximum		265	423		25	24	10.20	59.20	75
1300	No hydrostatic head, left in place, 15' deep, 1 line of braces, min.		635	176		18.30	9.90	4.26	32.46	40
1400	Maximum		575	195		19.65	10.95	4.70	35.30	43.50
1600	15' to 22' deep with 2 lines of braces, minimum		455	246		27.50	13.85	5.95	47.30	57.50
1700	Maximum		415	270		30.50	15.20	6.50	52.20	63.50
1900	23' to 35' deep with 3 lines of braces, minimum		420	267		32.50	15	6.45	53.95	66
2000	Maximum		380	295		36	16.55	7.10	59.65	73.50
2200	36' to 45' deep with 4 lines of braces, minimum		385	291		39.50	16.35	7.05	62.90	76
2300	Maximum		350	320		46	18	7.75	71.75	86.50
2350	Lagging only, 3" thick wood between piles 8' OC, minimum	B-46	400	120		3.05	6.25	.13	9.43	13.05
2370	Maximum		250	192		4.58	10.05	.20	14.83	20.50
2400	Open sheeting no bracing, for trenches to 10' deep, min.		1736	.028		1.37	1.44	.03	2.84	3.74
2450	Maximum		1510	.032		1.53	1.66	.03	3.22	4.25
2500	Tie-back method, add to open sheeting, add, minimum				S.F.				20%	20%
2550	Maximum				"				60%	60%
2700	Tie-backs only, based on tie-backs total length, minimum	B-46	86.80	.553	L.F.	19.65	29	.58	49.23	66
2750	Maximum		38.50	1.247	"	34.50	65	1.31	100.81	138
3500	Tie-backs only, typical average, 25' long		2	24	Ed.	865	1,250	25	2,140	2,875
3600	35' long		1.58	30.380	"	1,150	1,575	32	2,757	3,725
6000	See also Section 31 41 16.10									