0019

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State of Utah

DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL, GAS AND MINING

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ACT/041/002
SUFCO

June 23, 1992

Mr. Wes Sorensen
Southern Utah Fuel Company
P. O. Box P
Salina, Utah 84654

Dear Mr. Sorensen:

Enclosed are copies of cost estimates for demolition, and cut and fill as you requested. The cost estimates are two years old and need an escalation adjustment.

The cut and fill cost estimates were supplied as a courtesy and the Division's acceptance of those figures for bond estimates should not be assumed. The Division prefers time and motion studies for cut and fill cost estimates. Data for time and motion studies can be found in the Caterpillar Handbook or similar references. Blue Book supplies rental and operating cost estimates for equipment used in the cut and fill operation.

Please call if you have any question.

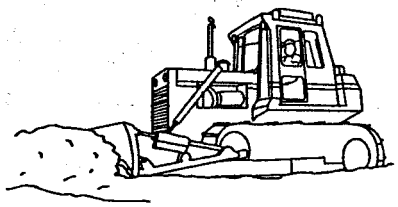
Sincerely,

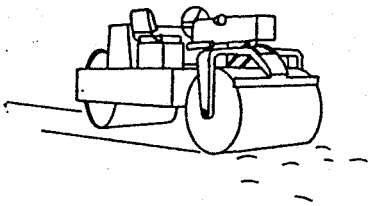
Wayne H. Western

Wayne H. Western
Reclamation Engineer

Enclosures
cc: D. Haddock
SUFCBOND.LET

an equal opportunity employer





The Cut and Fill Common Earth System includes: moving common earth cut from an area above the specified grade to an area below the specified grade utilizing a bulldozer and/or scraper, with the addition of compaction equipment, plus a water wagon to adjust the moisture content of the soil.

The Expanded System Listing shows Cut and Fill operations with hauling distances that vary from 50' to 5000'. Lifts for compaction in the filled area vary from 4" to 8". There is no waste included in the assumptions.

System Components	QUANTITY	UNIT	COST PER C.Y. EQUIP.	LABOR	TOTAL
SYSTEM 12.1-214-1000					
EARTH CUT & FILL, 75 HP DOZER & COMPACTOR, 50' HAUL, 4" LIFT, 2 PASSES					
Excavating, bulk, dozer & compactor, 50' haul, common earth	1.000	C.Y.	.74	.92	1.66
Water wagon, rent per day	.004	Hr.	.24	.11	.35
Backfill dozer, from existing stockpile, 75 H.P., 50' haul	1.000	C.Y.	.30	.38	.68
Compaction, roller, 4" lifts, 2 passes	1.000	C.Y.	.54	1.63	2.17
TOTAL			1.82	3.04	4.86

12.1-214	Cut & Fill Common Earth	COST PER C.Y. EQUIP.	LABOR	TOTAL
1000	Earth cut & fill,75HP dozer & roller compact, 50' haul, 4" lift, 2 passes	1.82	3.04	4.86
1050	4 passes	2.61	4.76	7.37
1100	8" lift, 2 passes	1.44	2.19	3.63
1150	4 passes	1.82	3.04	4.86
1200	150' haul, 4" lift, 2 passes	2.86	4.33	7.19
1250	4 passes	3.65	6.05	9.70
1300	8" lift, 2 passes	2.48	3.48	5.96
1350	4 passes	2.86	4.33	7.19
1400	300' haul, 4" lift, 2 passes	4.62	6.55	11.17
1450	4 passes	5.40	8.30	13.70
1500	8" lift, 2 passes	4.24	5.70	9.94
1550	4 passes	4.62	6.55	11.17
1600	105 H.P. dozer and roller compactor, 50' haul, 4" lift, 2 passes	1.83	2.65	4.48
1650	4 passes	2.62	4.37	6.99
1700	8" lift, 2 passes	1.45	1.80	3.25
1750	4 passes	1.83	2.65	4.48
1800	150' haul, 4" lift, 2 passes	3.08	3.71	6.79
1850	4 passes	3.87	5.45	9.32
1900	8" lift, 2 passes	2.70	2.86	5.56
1950	4 passes	3.08	3.71	6.79
2000	300' haul, 4" lift, 2 passes	5.45	5.65	11.10
2050	4 passes	6.20	7.40	13.60
2100	8" lift, 2 passes	5.05	4.82	9.87
2150	4 passes	5.45	5.65	11.10
2200	200 H.P. dozer & roller compactor, 150' haul, 4" lift, 2 passes	3.11	2.10	5.21
2250	4 passes	3.84	3.13	6.97
2300	8" lift, 2 passes	2.75	1.57	4.32
2350	4 passes	3.11	2.10	5.21

12.1-214	Cut & Fill Common Earth	COST PER C.Y. EQUIP.	LABOR	TOTAL
2600	300' haul, 4" lift, 2 passes	4.96	2.92	7.88
2650	4 passes	5.70	3.95	9.65
2700	8" lift, 2 passes	4.60	2.39	6.99
2750	4 passes	4.96	2.92	7.88
3000	300 H.P. dozer & roller compactor, 150' haul, 4" lifts, 2 passes	2.30	1.71	4.01
3050	4 passes	3.03	2.74	5.77
3100	8" lift, 2 passes	1.94	1.18	3.12
3150	4 passes	2.30	1.71	4.01
3200	300' haul, 4" lifts, 2 passes	3.59	2.22	5.81
3250	4 passes	4.32	3.25	7.57
3300	8" lifts, 2 passes	3.23	1.69	4.92
3350	4 passes	3.59	2.22	5.81
4200	10 C.Y. elevating scraper & roller compact,1500' haul, 4" lifts, 2 passes	2.46	2.24	4.70
4250	4 passes	3.11	3.55	6.66
4300	8" lifts, 2 passes	2.12	1.53	3.65
4350	4 passes	2.46	2.24	4.70
4800	5000' haul, 4" lifts, 2 passes	2.96	2.52	5.48
4850	4 passes	3.61	3.83	7.44
4900	8" lifts, 2 passes	2.62	1.81	4.43
4950	4 passes	2.96	2.52	5.48
5000	15 C.Y. S.P. scraper & roller compact, 1500' haul, 4" lifts, 2 passes	3.21	1.75	4.96
5050	4 passes	3.94	2.78	6.72
5100	8" lifts, 2 passes	2.85	1.22	4.07
5150	4 passes	3.21	1.75	4.96
5400	5000' haul, 4" lifts, 2 passes	4.11	1.98	6.09
5450	4 passes	4.84	3.01	7.85
5500	8" lifts, 2 passes	3.75	1.45	5.20
5550	4 passes	4.11	1.98	6.09
5600	21 C.Y. S.P. scraper & roller compact, 1500' haul, 4" lifts, 2 passes	3.01	1.64	4.65
5650	4 passes	3.74	2.67	6.41
5700	8" lifts, 2 passes	2.65	1.11	3.76
5750	4 passes	3.01	1.64	4.65
6000	5000' haul, 4" lifts, 2 passes	4.12	1.89	6.01
6050	4 passes	4.85	2.92	7.77
6100	8" lifts, 2 passes	3.76	1.36	5.12
6150	4 passes	4.12	1.89	6.01

020 120 | Std Penetration Tests

			CREW	DAILY OUTPUT	MAN-HOURS	UNIT	BARE COSTS MAT.	LABOR	EQUIP.	TOTAL	TOTA INCL O
125	1860	8" diameter core	B-89A	37	.432	Ea.	6.80	8.50	1.25	16.55	22
	1870	Each added inch thick, add	"	147	.109		1.12	2.14	.32	3.58	4
	1880	10" diameter core	A-1	32	.250		9.15	4.29	1.66	15.10	18
	1890	Each added inch thick, add		124	.065		1.12	1.11	.43	2.66	3
	1900	12" diameter core		28	.286		11.10	4.90	1.90	17.90	22
	1910	Each added inch thick, add		107	.075		1.85	1.28	.50	3.63	4
	1950	Minimum charge for above, 3" diameter core	B-89A	7.45	2.150			42	6.25	48.25	7
	2000	4" diameter core		7.15	2.240			44	6.50	50.50	7
	2050	6" diameter core		6.40	2.500			49	7.25	56.25	8
	2100	8" diameter core		5.80	2.760			54	8	62	9
	2150	10" diameter core		5	3.200			63	9.30	72.30	10
	2200	12" diameter core		4.10	3.900			77	11.30	88.30	13
	2250	14" diameter core		3.55	4.510			88	13.05	101.05	15
	2300	18" diameter core		3.30	4.850			95	14.05	109.05	16
	3010	Bits for core drill, diamond, premium, 1" diameter					140			140	15
	3040	4" diameter					305			305	33
	3080	8" diameter					730			730	80
	3120	12" diameter					965			965	1,05
	3180	18" diameter					1,425			1,425	1,57
	3240	24" diameter					2,200			2,200	2,42
128	0010	TEST PITS Hand digging, light soil	1 Clab	4.50	1.780	C.Y.		30		30	4
	0100	Heavy soil	"	2.50	3.200			55		55	8
	0120	Loader-backhoe, light soil	B-11M	28	.571			11.20	10.05	21.25	2
	0130	Heavy soil	"	20	.800			15.70	14.05	29.75	3
	1000	Subsurface exploration, mobilization				Mile					
	1010	Difficult access for rig, add				Hr.					9
	1020	Auger borings, drill rig, incl. samples				L.F.					1
	1030	Hand auger									1
	1050	Drill and sample every 5', split spoon									1
	1060	Extra samples				Ea.					1

020 550 | Site Demolition

554	0010	SITE DEMOLITION No hauling, abandon catch basin or manhole	B-6	7	3.430	Ea.		63	26	89	12
	0020	Remove existing catch basin or manhole		4	6			110	45	155	21
	0030	Catch basin or manhole frames and covers stored		13	1.850			34	13.95	47.95	6
	0040	Remove and reset		7	3.430			63	26	89	12
	0600	Fencing, barbed wire, 3 strand	2 Clab	430	.037	L.F.		.64		.64	
	0650	5 strand		280	.057			.98		.98	
	0700	Chain link, remove only, 8' to 10' high		310	.052			.89		.89	
	0750	Remove and reset		50	.320			5.50		5.50	
	0755	Remove only, 6' high	B-6	520	.046			.85	.35	1.20	
	0756	Remove and reset	"	84	.286			5.30	2.16	7.46	1
	0757	Farm field fence (ASTM A116), remove only	B-1	500	.048			.86		.86	
	0760	Wood to 6' remove only, minimum	2 Clab	500	.032			.55		.55	
	0770	Maximum		250	.064			1.10		1.10	
	0800	Guide rail, remove only		85	.188			3.23		3.23	
	0850	Remove and reset		35	.457			7.85		7.85	
	0900	Hydrants, fire, remove only	2 Plum	4.70	3.400	Ea.		84		84	12
	0950	Remove and reset	"	1.40	11.430	"		280		280	42
	1000	Remove masonry walls, block or tile, solid	B-5	1,800	.036	C.F.		.69	.49	1.18	
	1100	Cavity		2,200	.029			.57	.40	.97	
	1200	Brick, solid		900	.071			1.38	.99	2.37	
	1300	With block		1,130	.057			1.10	.79	1.89	
	1400	Stone, with mortar		900	.071			1.38	.99	2.37	
	1500	Dry set		1,500	.043			.83	.59	1.42	
	1710	Pavement removal, bituminous, 3" thick	B-38	690	.058	S.Y.		1.12	1.56	2.68	
	1750	4" to 6" thick		420	.095			1.84	2.56	4.40	
	1800	Bituminous driveways		680	.059			1.14	1.58	2.72	

020 550 | Site Demolition

			CREW	DAILY OUTPUT	MAN-HOURS	UNIT	BARE COSTS MAT.	LABOR	EQUIP.	TOTAL	TOTAL INCL O&P	
554	1900	Concrete to 6" thick, mesh reinforced	B-38	255	.157	S.Y.		3.03	4.22	7.25	9.20	554
	2000	Rod reinforced		200	.200	"		3.87	5.40	9.27	11.75	
	2100	Concrete 7" to 24" thick, plain		13.10	3.050	C.Y.		59	82	141	180	
	2200	Reinforced		9.50	4.210	"		81	115	196	245	
	2300	With hand held air equipment, bituminous	B-39	1,900	.025	S.F.		.46	.06	.52	.76	
	2320	Concrete to 6" thick, no reinforcing		1,200	.040			.73	.10	.83	1.21	
	2340	Mesh reinforced		830	.058			1.05	.15	1.20	1.75	
	2360	Rod reinforced		765	.063			1.14	.16	1.30	1.90	
	2400	Curbs, concrete, plain	B-6	325	.074	L.F.		1.36	.56	1.92	2.67	
	2500	Reinforced		220	.109			2.01	.82	2.83	3.95	
	2600	Granite curbs		355	.068			1.25	.51	1.76	2.45	
	2700	Bituminous curbs		830	.029			.53	.22	.75	1.05	
	2800	Wood		570	.042			.78	.32	1.10	1.52	
	2900	Pipe removal, concrete, no excavation, 12" diameter		175	.137			2.53	1.04	3.57	4.96	
	2930	15" diameter		150	.160			2.95	1.21	4.16	5.80	
	2960	24" diameter		120	.200			3.69	1.51	5.20	7.25	
	3000	36" diameter		90	.267			4.92	2.02	6.94	9.65	
	3200	Steel, welded connections, 4" diameter		160	.150			2.77	1.13	3.90	5.45	
	3300	10" diameter		80	.300			5.55	2.27	7.82	10.85	
	3500	Railroad track removal, ties and track	B-14	110	.436			7.90	1.65	9.55	13.80	
	3600	Ballast		500	.096	C.Y.		1.74	.36	2.10	3.04	
	3700	Remove and re-install ties & track using new bolts & spikes		50	.960	L.F.		17.40	3.63	21.03	30	
	3800	Turnouts using new bolts and spikes		1	48	Ea.		870	180	1,050	1,525	
	4000	Sidewalk removal, bituminous, 2-½" thick	B-6	325	.074	S.Y.		1.36	.56	1.92	2.67	
	4050	Brick, set in mortar		185	.130			2.40	.98	3.38	4.69	
	4060	Dry set		270	.089			1.64	.67	2.31	3.22	
	4100	Concrete, plain		160	.150			2.77	1.13	3.90	5.45	
	4200	Mesh reinforced		150	.160			2.95	1.21	4.16	5.80	
	5000	Slab on grade removal, plain	B-5	45	1.420	C.Y.		28	19.80	47.80	63	
	5100	Mesh reinforcing		33	1.940			38	27	65	87	
	5200	Rod reinforcing		25	2.560			50	36	86	115	
	5500	For congested sites or small quantities, add up to								200%	200%	
	5550	For disposal on site, add	B-11A	232	.069			1.35	3.29	4.64	5.65	
	5600	To 5 miles, add	B-34D	76	.105			1.91	5.75	7.66	9.15	

020 600 | Building Demolition

604	0010	**BUILDING DEMOLITION** Large urban projects, incl. disposal, steel	B-8	21,500	.003	C.F.		.06	.09	.15	.18	604
	0050	Concrete		15,300	.004			.08	.13	.21	.26	
	0080	Masonry		20,100	.003			.06	.10	.16	.20	
	0100	Mixture of types, average		20,100	.003			.06	.10	.16	.20	
	0500	Small bldgs, or single bldgs, no salvage included, steel	B-3	14,800	.003			.06	.10	.16	.20	
	0600	Concrete		11,300	.004			.08	.13	.21	.26	
	0650	Masonry		14,800	.003			.06	.10	.16	.20	
	0700	Wood		14,800	.003			.06	.10	.16	.20	
	1000	Single family, one story house, wood, minimum				Ea.					1,950	
	1020	Maximum									3,350	
	1200	Two family, two story house, wood, minimum									2,525	
	1220	Maximum									5,025	
	1300	Three family, three story house, wood, minimum									3,250	
	1320	Maximum									6,450	
	1400	Gutting building, see division 020-716										
608	0010	**DISPOSAL ONLY** Urban buildings with salvage value allowed										608
	0020	Including loading and 5 mile haul to dump										
	0200	Steel frame	B-3	430	.112	C.Y.		2.08	3.40	5.48	6.85	
	0300	Concrete frame		365	.132			2.45	4.01	6.46	8.10	
	0400	Masonry construction		445	.108			2.01	3.29	5.30	6.65	
	0500	Wood frame		247	.194			3.62	5.90	9.52	11.95	

020 600 | Building Demolition

			CREW	DAILY OUTPUT	MAN-HOURS	UNIT	BARE COSTS MAT.	LABOR	EQUIP.	TOTAL	TOT INCL
612	0010	**DUMP CHARGES** Typical urban city, fees only									
	0100	Building construction materials				C.Y.					1
	0200	Demolition lumber, trees, brush									
	0300	Rubbish only									
	0500	Reclamation station, usual charge				Ton					
616	0010	**EXPLOSIVE DEMOLITION** Large projects, not including disposal,									
	0020	based on building volume, steel building	C-17	16,900	.005	C.F.		.11		.11	
	0100	Concrete building		16,900	.005			.11		.11	
	0200	Masonry building		16,900	.005			.11		.11	
	0400	Disposal of material, minimum	B-3	445	.108	C.Y.		2.01	3.29	5.30	
	0500	Maximum	"	365	.132	"		2.45	4.01	6.46	
620	0010	**RUBBISH HANDLING** *The following are to be added to the*									
	0020	selective demolition prices									
	0400	Chute, circular, prefabricated steel, 18" diameter	B-1	40	.600	L.F.	9.65	10.70		20.35	
	0440	30" diameter	"	30	.800	"	18.70	14.25		32.95	
	0600	Dumpster, (debris box container), 5 C.Y., rent per week				Ea.					41
	0700	10 C.Y. capacity									2
	0800	30 C.Y. capacity									27
	0840	40 C.Y. capacity									33
	1000	Dust partition, 6 mil polyethylene, 4' x 8' panels, 1" x 3" frame	2 Carp	2,000	.008	S.F.	.17	.17		.34	
	1080	2" x 4" frame	"	2,000	.008	"	.28	.17		.45	
	2000	Load, haul to chute & dumping into chute, 50' haul	2 Clab	24	.667	C.Y.		11.45		11.45	1
	2040	100' haul		16.50	.970			16.65		16.65	2
	2080	Over 100' haul, add per 100 L.F.		35.50	.451			7.75		7.75	
	2120	In elevators, per 10 floors, add		140	.114			1.96		1.96	
	3000	Loading & trucking, including 2 mile haul, chute loaded	B-16	32	1			17.90	10.85	28.75	3
	3040	Hand loaded, 50' haul	2 Clab	21.50	.744			12.75		12.75	1
	3080	Machine loaded	B-6	80	.300			5.55	2.27	7.82	1
	3120	Wheeled 50' and ramp dump loaded	2 Clab	24	.667			11.45		11.45	1
	5000	Haul, per mile, up to 8 C.Y. truck	B-34B	1,165	.007			.12	.30	.42	
	5100	Over 8 C.Y. truck	"	1,550	.005			.09	.22	.31	

020 700 | Selective Demolition

714	0010	**FRAMING DEMOLITION**									
	1020	Concrete, average reinforcing, beams, 8" x 10"	B-9	120	.333	L.F.		5.85	1.01	6.86	1
	1040	10" x 12"		110	.364			6.40	1.10	7.50	1
	1060	12" x 14"		90	.444			7.80	1.35	9.15	1
	1200	Columns, 8" x 8"		120	.333			5.85	1.01	6.86	1
	1240	10" x 10"		120	.333			5.85	1.01	6.86	1
	1280	12" x 12"		110	.364			6.40	1.10	7.50	1
	1320	14" x 14"		100	.400			7	1.21	8.21	1
	1400	Girders, 14" x 16"		55	.727			12.75	2.20	14.95	2
	1440	16" x 18"		40	1			17.55	3.03	20.58	3
	1600	Slabs, elevated, 6" thick		600	.067	S.F.		1.17	.20	1.37	
	1640	8" thick		450	.089			1.56	.27	1.83	
	1680	10" thick		360	.111			1.95	.34	2.29	
	1900	Add for heavy reinforcement								20%	20
	2000	Steel framing, beams, 4" x 6"	B-13	500	.112	L.F.		2.07	.95	3.02	
	2020	4" x 8"		400	.140			2.59	1.19	3.78	
	2080	8" x 12"		250	.224			4.14	1.90	6.04	
	2200	Columns, 6" x 6"		400	.140			2.59	1.19	3.78	
	2240	8" x 8"		350	.160			2.96	1.36	4.32	
	2280	10" x 10"		320	.175			3.24	1.49	4.73	
	2400	Girders, 10" x 12"		225	.249			4.60	2.12	6.72	
	2440	10" x 14"		200	.280			5.20	2.38	7.58	1
	2480	10" x 16"		165	.339			6.30	2.88	9.18	1
	2520	10" x 24"		125	.448			8.30	3.81	12.11	1

020 700 | Selective Demolition

			CREW	DAILY OUTPUT	MAN-HOURS	UNIT	BARE COSTS MAT.	LABOR	EQUIP.	TOTAL	TOTAL INCL O&P	
714	3000	Wood framing, beams, 6" x 8"	B-2	275	.145	L.F.		2.55		2.55	3.88	714
	3040	6" x 10"		220	.182			3.19		3.19	4.85	
	3080	6" x 12"		185	.216			3.79		3.79	5.75	
	3120	8" x 12"		140	.286			5		5	7.60	
	3160	10" x 12"		110	.364			6.40		6.40	9.70	
	9500	See Div. 020-620 for rubbish handling										
716	0010	GUTTING Building interior, including disposal										716
	0500	Residential building										
	0560	Minimum	B-16	400	.080	SF Flr.		1.43	.87	2.30	3.12	
	0580	Maximum		360	.089			1.59	.96	2.55	3.46	
	1000	Commercial building, minimum		350	.091			1.64	.99	2.63	3.56	
	1020	Maximum		250	.128			2.29	1.39	3.68	4.99	
717	0010	HAZARDOUS WASTE CLEANUP/PICKUP/DISPOSAL										717
	0100	For contractor equipment, i.e. dozer,										
	0110	front end loader, dump truck, etc., see div. 016-408										
	1000	Solid pickup										
	1100	55 gal. drums				Ea.					135	
	1120	Bulk material, minimum				Ton					120	
	1130	Maximum				"					270	
	1200	Transportation to disposal site										
	1220	Truckload = 80 drums or 25 C.Y. or 18 tons										
	1260	Minimum				Mile					3	
	1270	Maximum				"					3.95	
	3000	Liquid pickup, vacuum truck, stainless steel tank										
	3100	Minimum charge, 4 hours										
	3110	1 compartment, 2200 gallon				Hr.					88	
	3120	2 compartment, 5000 gallon				"					99	
	3400	Transportation in 6900 gallon bulk truck				Mile					4	
	3410	In teflon lined truck				"					4.62	
	5000	Heavy sludge or dry vacuumable material				Hr.					99	
	6000	Dumpsite disposal charge, minimum				Ton					115	
	6020	Maximum				"					230	
728	0010	SAW CUTTING Asphalt over 1000 L.F., 3" deep	B-89	775	.021	L.F.	.22	.40	.31	.93	1.18	728
	0020	Each additional inch of depth		1,250	.013		.05	.25	.19	.49	.64	
	0400	Concrete slabs, mesh reinforcing, per inch of depth		960	.017		.26	.32	.25	.83	1.05	
	0420	Rod reinforcing, per inch of depth		550	.029		.35	.57	.43	1.35	1.71	
	0800	Concrete walls, plain, per inch of depth	A-1A	100	.080		.24	1.37	1.15	2.76	3.61	
	0820	Rod reinforcing, per inch of depth		60	.133		.35	2.29	1.92	4.56	6	
	1200	Masonry walls, brick, per inch of depth		146	.055		.24	.94	.79	1.97	2.56	
	1220	Block walls, solid, per inch of depth		122	.066		.24	1.12	.95	2.31	3.01	
	2800	Minimum charge						220		220	345	
	3020	Blades for saw, diamond, 12" diameter				Ea.	475			475	525	
	3040	18" diameter					1,050			1,050	1,150	
	3080	24" diameter					1,450			1,450	1,600	
	3120	30" diameter					1,800			1,800	1,975	
	3160	36" diameter					2,475			2,475	2,725	
	3200	42" diameter					4,050			4,050	4,450	
	5000	Wood sheathing to 1" thick, on walls	1 Carp	200	.040	L.F.		.86		.86	1.31	
	5020	On roof	"	250	.032	"		.69		.69	1.05	
	9950	See also Div. 020-125 core drilling										
730	0010	TORCH CUTTING Steel, 1" thick plate	A-1A	95	.084	L.F.		1.44	1.21	2.65	3.53	730
	0040	1" diameter bar	"	210	.038	Ea.		.65	.55	1.20	1.60	
	1000	Oxygen lance cutting, reinforced concrete walls										
	1040	12" to 16" thick walls	A-1A	10	.800	L.F.		13.70	11.55	25.25	34	
	1080	24" thick walls	"	6	1.330	"		23	19.25	42.25	56	

020 750 | Concrete Removal

			CREW	DAILY OUTPUT	MAN-HOURS	UNIT	BARE COSTS MAT.	LABOR	EQUIP.	TOTAL	TOTAL INCL O&P
754	0010	FOOTINGS AND FOUNDATIONS DEMOLITION									
	0200	Floors, concrete slab on grade,									
	0240	4" thick, plain concrete	B-9	500	.080	S.F.		1.40	.24	1.64	2.40
	0280	Reinforced, wire mesh		470	.085			1.49	.26	1.75	2.55
	0300	Rods		400	.100			1.76	.30	2.06	3
	0400	6" thick, plain concrete		375	.107			1.87	.32	2.19	3.20
	0420	Reinforced, wire mesh		340	.118			2.06	.36	2.42	3.53
	0440	Rods		300	.133			2.34	.40	2.74	4
	1000	Footings, concrete, 1' thick, 2' wide	B-5	300	.213	L.F.		4.15	2.97	7.12	9.50
	1080	1'-6" thick, 2' wide		250	.256			4.98	3.56	8.54	11.40
	1120	3' wide		200	.320			6.20	4.45	10.65	14.30
	1140	2' thick, 3' wide		175	.366			7.10	5.10	12.20	16.30
	1200	Average reinforcing, add								10%	10%
	1220	Heavy reinforcing, add								20%	20%
	2000	Walls, block, 4" thick	A-1	200	.040	S.F.		.69	.27	.96	1.33
	2040	6" thick		190	.042			.72	.28	1	1.40
	2080	8" thick		180	.044			.76	.30	1.06	1.48
	2100	12" thick		175	.046			.78	.30	1.08	1.53
	2200	For horizontal reinforcing, add								10%	10%
	2220	For vertical reinforcing, add								20%	20%
	2400	Concrete, plain concrete, 6" thick	B-9	160	.250			4.39	.76	5.15	7.50
	2420	8" thick		140	.286			5	.87	5.87	8.55
	2440	10" thick		120	.333			5.85	1.01	6.86	10
	2500	12" thick		100	.400			7	1.21	8.21	12
	2600	For average reinforcing, add								10%	10%
	2620	For heavy reinforcing, add								20%	20%
	4000	For congested sites or small quantities, add up to								200%	200%
	4200	Add for disposal, on site	B-11A	232	.069	C.Y.		1.35	3.29	4.64	5.65
	4250	To five miles	B-30	220	.109	"		2.12	6.20	8.32	9.95

021 | Site Preparation

021 100 | Site Clearing

			CREW	DAILY OUTPUT	MAN-HOURS	UNIT	BARE COSTS MAT.	LABOR	EQUIP.	TOTAL	TOTAL INCL O&P
104	0010	CLEAR AND GRUB Light, trees to 6" diam., cut & chip	B-7	1	48	Acre		880	1,025	1,905	2,450
	0150	Grub stumps and remove	B-30	2	12			235	680	915	1,100
	0200	Medium, trees to 12" diam., cut & chip	B-7	.70	68.570			1,250	1,450	2,700	3,500
	0250	Grub stumps and remove	B-30	1	24			465	1,350	1,815	2,200
	0300	Heavy, trees to 24" diam., cut & chip	B-7	.30	160			2,925	3,400	6,325	8,175
	0350	Grub stumps and remove	B-30	.50	48			935	2,725	3,660	4,375
	0400	If burning is allowed, reduce cut & chip									40%
	3000	Chipping stumps, to 18" deep, 12" diam.	B-86	20	.400	Ea.		8.85	7.30	16.15	21
	3040	18" diameter		16	.500			11.05	9.10	20.15	27
	3080	24" diameter		14	.571			12.65	10.40	23.05	30
	3100	30" diameter		12	.667			14.75	12.15	26.90	35
	3120	36" diameter		10	.800			17.70	14.60	32.30	42
	3160	48" diameter		8	1			22	18.25	40.25	53
	5000	Tree thinning, feller buncher, conifer	B-93	240	.033	Ea.		.74	1.23	1.97	2.45
	5080	Up to 8" diameter		160	.050			1.11	1.84	2.95	3.67
	5120	12" diameter		240	.033			.74	1.23	1.97	2.45
	5240	Hardwood, up to 4" diameter		180	.044			.98	1.63	2.61	3.26
	5280	8" diameter									