

SOIL PROFILE LABORATORY ANALYSIS SHEET

MASTER PIT NO.: _____

4

SOIL SERIES: _____

LOCATION: _____

Date Samples Submitted: _____

Date Tests Completed: _____

(PHYSICAL CHARACTERISTICS)

Lab. No.	Depth (cm.)	Particle Size Distribution			(%) Gravel	Class	Textural	Percent Moisture Retention	Readily Available Moisture (%)
		(%) Sand	(%) Silt	(%) Clay			of Metric Tension in Bars of		
4-1	0-18	32	35	33	-	CL	29.84	12.75	
2	18-37	34	29	37	-	CL	31.33	15.19	
3	37-150	43	32	25	-	L	26.64	8.45	
							1/3	15	

(CHEMICAL CHARACTERISTICS)

Lab. No.	pH	Exchangeability	Acidity (meq./100g.)	Avail. Phosphorus (ppm)	Organic Matter (%)	Exchangeable Cations (meq./100 g.)	Base Saturation (%)	Exchangeable Sodium Capacity (meq./100g.)	Percent Sodium
		(BaCl ₂ -TEA)	(BaCl ₂ -TEA)	(ppm)	(%)	K ⁺ Na ⁺ Ca ⁺⁺ Mg ⁺⁺	(meq./100g.)	(meq./100g.)	Percentage
4-1	5.2	11.05	9.5	3.31	3.31	0.42 0.13 5.40 3.33	20.33	20.33	45.65
2	5.2	10.05	8.3	2.25	2.25	0.08 0.27 6.01 3.72	20.13	20.13	50.07
3	5.5	8.54	7.5	1.14	1.14	0.05 0.27 13.28 5.76	27.90	27.90	69.39

SOIL PROFILE LABORATORY ANALYSIS SHEET

MASTER PIT NO.: 5
 SOIL SERIES: _____
 LOCATION: _____

Date Samples Submitted: _____
 Date Tests Completed: _____

(PHYSICAL CHARACTERISTICS)

Lab. No.	Depth (cm.)	Particle Size Distribution	Gravel (%)	Class	Textural	Percent Moisture Retention of Metric Tension in Bars of:	Readily Available Moisture (%)
		Sand (%)	Silt (%)	Clay (%)		1/3	15
5-1	0-10	18	55	27	SiCL, SL	50.57	13.25
2	10-58	12	41	47	SiC	47.02	19.54
3	68-150	9	45	46	SiC	48.59	20.35

(CHEMICAL CHARACTERISTICS)

Lab. No.	pH	Exchange. Acidity (meq./100g.)	Avail. Phosphorus (ppm)	Organic Matter (%)	Exchangeable Cations (meq./100 g.)	Cation Base	Exchange Capacity (meq./100 g.)	Saturation Percentage	Sodium Percent- age (%)
		(BaCl ₂ -TEA)	(ppm)	(%)	K ⁺	Na ⁺	Ca ⁺⁺	Mg ⁺⁺	:(%)
5-1	4.9	7.53	10.5	3.20	0.16	0.08	1.60	1.31	10.68
2	4.9	7.03	10.5	1.16	0.05	0.13	1.35	0.31	8.87
3	5.0	6.53	7.5	0.90	0.03	0.13	0.94	0.20	7.83

SOIL PROFILE LABORATORY ANALYSIS SHEET

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MASTER PIT NO.: _____
 SOIL SERIES: _____
 LOCATION: _____

Date Samples Submitted: _____
 Date Tests Completed: _____

(PHYSICAL CHARACTERISTICS)

Lab. No.	Depth (cm.)	Particle Size Distribution	(%) Sand	(%) Silt	(%) Clay	(%) Gravel	Class	Textural	Percent Moisture Retention	Readily Available Moisture (%)
6-1	0-10	44	38	18	-	-	T ₁		21.54	9.05
2	10-45	36	36	28	-	-	CL		25.37	12.02
3	45-150	28	53	19	-	-	SL		18.94	7.83
									1/3	15

(CHEMICAL CHARACTERISTICS)

Lab. No.	pH	Exchange. Acidity (meq./100g.)	Avail. Phosphorus (ppm)	Organic Matter (%)	Exchangeable Cations (meq./100 g.)	K ⁺	Na ⁺	Ca ⁺⁺	Mg ⁺⁺	Cation Exchange Capacity (meq./100g.)	Base Saturation (%)	Exchangeable Sodium Percentage (%)
6-1	5.3	7.03	10.5	2.70	0.10	0.21	0.21	4.59	2.49	14.42	51.25	
2	5.4	5.52	8.1	1.16	0.05	0.13	0.13	8.61	4.83	19.14	71.16	
3	5.7	4.02	7.0	0.52	0.03	0.13	0.13	6.09	3.86	14.13	71.55	

SOIL PROFILE LABORATORY ANALYSIS SHEET

MASTER PIT NO.: 7
 SOIL SERIES: _____
 LOCATION: _____
 Date Samples Submitted: _____
 Date Tests Completed: _____

(PHYSICAL CHARACTERISTICS)

Lab. No.	Depth (cm.)	Particle Size Distribution	(%) Sand	(%) Silt	(%) Clay	(%) Gravel	Class	Textural Class	Percent Moisture Retention of Metric Tension in Bars of	Readily Available Moisture (%)
7-1	0-22	53	29	18	-	-	SL	20.53	8.38	12.15
2	22-58	48	27	25	-	-	SCL	27.50	9.62	17.88
3	58-135	52	26	22	-	-	SCL	28.36	13.20	15.16

(CHEMICAL CHARACTERISTICS)

Lab. No.	pH	Exchangeability	Acidity (meq./100g.)	Exchangeable Cations (meq./100 g.)	Organic Matter (%)	Phosphorus (ppm)	Avail. Phosphorus	Exchangeable Cations (meq./100 g.)	Ca	Mg	Na	K	Exchangeable Cations (meq./100 g.)	Base Saturation (%)	Exchangeable Sodium Percentage	Age
7-1	5.4	10.05	11.7	2.51	0.11	0.21	10.63	4.29	25.29	60.26						
2	5.4	10.05	9.4	1.35	0.08	0.49	17.64	8.07	36.33	72.34						
3	5.4	9.04	9.4	0.92	0.05	0.62	21.19	8.26	39.16	76.92						

SOIL PROFILE LABORATORY ANALYSIS SHEET

MASTER PIT NO.: 8
 SOIL SERIES:
 LOCATION:

Date Samples Submitted:
 Date Tests Completed:

(PHYSICAL CHARACTERISTICS)

Lab. No.	Depth (cm.)	Particle Size Distribution (%)	Gravel (%)	Class	Textural Class	Percent Moisture Retention of Metric Tension in Bars of:	Readily Available Moisture (%)
		Sand (%)	Silt (%)	Clay (%)		1/3	15
8-1	0-20	28	38	34	CL	31.52	14.34
2	20-86	16	18	66	C	47.05	24.59
3	86-160	12	16	72	C	53.11	28.24

(CHEMICAL CHARACTERISTICS)

Lab. No.	pH	Exchange. Acidity (meq./100g.)	Avail. Phosphorus (ppm)	Organic Matter (%)	Exchangeable Cations (meq./100 g.)	Base Saturation (%)	Exchangeable Sodium Percentage (%)
		(BaCl ₂ -TEA)			Ca ++, Mg ++, Na +, K +	Cap. (meq./100 g.)	age (%)
8-1	4.6	12.06	8.2	3.31	0.08, 0.08, 0.13, 0.08	0.92, 1.07, 14.26	15.43
2	5.1	9.54	7.0	1.59	0.03, 0.08, 0.08	1.74, 0.29, 11.68	18.32
3	5.3	7.53	6.5	0.92	0.03, 0.08, 0.08	0.68, 0.34, 8.66	13.05

SOIL PROFILE LABORATORY ANALYSIS SHEET

MASTER PIT NO.: _____ 9 _____
 SOIL SERIES: _____
 LOCATION: _____

Date Samples Submitted: _____
 Date Tests Completed: _____

(PHYSICAL CHARACTERISTICS)

Lab. No.	Depth (cm.)	Particle Size Distribution			Gravel (%)	Class	Textural	Percent Moisture	Retention	Readily Available
		Sand (%)	Silt (%)	Clay (%)			in Bars of		Moisture	
9-1	0-22	26	48	26	-	L	27.57	12.02	15.55	
2	22-73	15	33	52	-	C	42.05	19.85	22.20	
3	73-165	14	32	54	-	C	41.91	21.42	20.49	

(CHEMICAL CHARACTERISTICS)

Lab. No.	pH	Exchange. Acidity (meq./100g.)	Avail. Phosphorus (ppm)	Organic Matter (%)	Exchangeable Cations (meq./100 g.)	Cation Exchange Capacity (meq./100g.)	Base Saturation (%)	Exchangeable Sodium
		(BaCl ₂ -TEA)	(ppm)	(%)	K ⁺	Ca ⁺⁺	Mg ⁺⁺	Percent age (%)
9-1	4.6	9.04	6.5	3.10	0.03	0.54	0.46	10.15
2	5.0	7.03	6.1	1.47	0.05	0.39	0.25	7.80
3	5.3	8.04	6.0	1.04	0.03	0.82	1.13	10.10

SOIL PROFILE LABORATORY ANALYSIS SHEET

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MASTER PIT NO.:

SOIL SERIES:

LOCATION:

Date Samples Submitted:

Date Tests Completed:

(PHYSICAL CHARACTERISTICS)

Lab. No.	Depth (cm.)	Particle Size Distribution	(%) Sand	(%) Silt	(%) Clay	(%) Gravel	Class	Textural	Percent Moisture	Retention	Readily Available
									of Metric Tension in Bars of		Moisture (%)
10-1	0-12	26	40	34	-	-	CL		35.54	18.72	16.82
2	12-27	15	19	66	-	-	C		43.20	20.81	22.39
3	27-69	16	12	72	-	-	C		43.85	22.37	21.48
4	69-160	22	14	64	-	-	C		45.40	21.02	24.38

(CHEMICAL CHARACTERISTICS)

Lab. No.	pH	Exchange. H ₂ O (meq./100g.)	Avail. Phosphorus (ppm)	Organic Matter (%)	Exchangeable Cations (meq./100 g.)	K ⁺	Na ⁺	Ca ⁺⁺	Mg ⁺⁺	Cation (meq./100g.)	Base Saturation (%)	Exchangeable Sodium Percentage
10-1	4.6	12.06	7.5	4.12	0.09	0.13	1.35	1.06	1.06	14.69	17.90	10.19
2	5.0	10.05	7.5	1.70	0.03	0.08	0.56	0.47	0.47	11.19	10.19	20.74
3	5.2	10.05	6.0	1.70	0.03	0.08	1.11	1.41	1.41	12.68	20.74	13.59
4	5.2	10.05	4.9	1.25	0.03	0.13	0.81	0.61	0.61	11.63	13.59	

SOIL PROFILE LABORATORY ANALYSIS SHEET

11

MASTER PIT NO.:

SOIL SERIES:

LOCATION:

Date Samples Submitted:

Date Tests Completed:

(PHYSICAL CHARACTERISTICS)

Lab. No.	Depth (cm.)	Particle Size Distribution	(%) Sand	(%) Silt	(%) Clay	(%) Gravel	Class	Textural	Percent Moisture	Retention of Metric Tension in Bars of	Readily Available Moisture (%)
11-1	0-22	43	39	18	-	-	L		23.84	1/3	15
2	22-68	46	32	22	-	-	L		22.35		17.55
3	68-125	56	27	17	-	-	SL		19.51		16.46
											9.76
											9.75

(CHEMICAL CHARACTERISTICS)

Lab. No.	pH	Exchange. Acidity (meq./100g.)	Avail. Phosphorus (ppm)	Organic Matter (%)	Exchangeable Cations (meq./100 g.)	K ⁺	Na ⁺	Ca ⁺⁺	Mg ⁺⁺	Cation Exchange Capacity (meq./100g.)	Base Saturation (%)	Sodium Percentage (%)	Percent-Exchangeable Sodium
11-1	5.2	8.54	16.0	3.86	0.31	0.03	0.13	0.41	5.12	14.51	41.14	43.44	40.53
2	5.3	7.03	11.3	1.85	0.03	0.03	0.20	3.70	1.47	12.43	43.44	40.53	40.53
3	5.5	6.03	8.0	1.16	0.03	0.03	0.20	2.37	1.51	10.14	40.53	40.53	40.53

SOIL PROFILE LABORATORY ANALYSIS SHEET

12

MASTER PIT NO.:

SOIL SERIES:

LOCATION:

Date Samples Submitted:

Date Tests Completed:

(PHYSICAL CHARACTERISTICS)

Lab. No.	Depth (cm.)	Particle Size Distribution	(%) Sand	(%) Silt	(%) Clay	(%) Gravel	Class	Textural	Percent Moisture Retention	of Metric Tension in Bars of	1/3	15	Readily Available Moisture (%)
12-1	0-19	38	38	24	-	-	L	23.14	14.72	8.42			
2	19-50	33	29	38	-	-	CL	29.64	11.57	18.07			
3	50-150	32	22	46	-	-	C	36.39	16.02	20.37			

(CHEMICAL CHARACTERISTICS)

Lab. No.	pH	Exchange. Acidity (meq./100g.)	Avail. Phosphorus (ppm)	Organic Matter (%)	Exchangeable Cations (meq./100 g.)	K ⁺	Na ⁺	Ca ⁺⁺	Mg ⁺⁺	Cation Exchange Capacity (meq./100g.)	Base Saturation (%)	Sodium Percentage (%)	Exchangeable Sodium Percentage (%)
12-1	5.0	6.53	11.3	2.86	0.03	0.08	0.08	1.85	1.30	9.79	33.30		
2	5.4	5.52	9.5	2.01	0.09	0.47	0.47	2.12	1.16	9.36	41.03		
3	5.5	5.52	9.5	1.28	0.03	0.13	0.13	2.30	1.54	9.52	42.02		

NUTRIENT REQUIREMENT

Lab. No.	Variety	NUTRIENT REQUIREMENT, Kg/ha					
		UPLAND RICE			MAIZE		
		N	P	K	N	P	K
FS-1	a) local	45	30	45	45	30	45
	b) improved				60		
2	a)	40	30	45	40	30	45
	b)				50		
3	a)	40	30	-	-do-	30	0
	b)						
4	a)	40	30	60	-do-	30	60
	b)						
5	a)	40	30	45	-do-	30	45
	b)						
6	a)	40	30	60	-do-	30	60
	b)						
7	a)	40	30	-	-do-	30	0
	b)						
8	a)	40	20	30	-do-	30	30
	b)						
9	a)	40	40	45	-do-	40	45
	b)						
10	a)	40	40	60	-do-	40	60
	b)						

Lab. No.	Age	NUTRIENT REQUIREMENT, Kg/tree											
		MANGO				CASHEW				FOREST TREES 2)			
		N	P	K	N	P	K	N	P	K	N	P	K
FS-1	a) new	0.01	0.008	0.009	0.01	0.01	0.015	0.012	0.003	0.015	0.012	0.003	0.015
	b) 1-3 yrs.	0.10	0.03	0.09	0.10	0.03	0.15	0.025	0.004	0.021	0.025	0.004	0.021
	c) 4-6 yrs.	0.15	0.05	0.15	0.20	0.08	0.30	0.040	0.005	0.027	0.040	0.005	0.027
	d) 7 yrs. up	0.30	0.10	0.30	0.30	0.15	0.45	0.050	0.007	0.039	0.050	0.007	0.039
2	a)	0.01			0.01			0.012			0.012		
	b)	0.05	-do-	-do-	0.05	-do-	-do-	0.018	-do-	-do-	0.018	-do-	-do-
	c)	0.10			0.10			0.025			0.025		
	d)	0.15			0.20			0.040			0.040		
3	a)												
	b)	-do-	-do-	0	-do-	-do-	0	-do-	-do-	0	-do-	-do-	0
	c)												
	d)												
4	a)			0.015			0.015			0.015			0.015
	b)	-do-	-do-	0.15	-do-	-do-	0.30	-do-	-do-	0.30	-do-	-do-	0.27
	c)			0.30			0.45			0.45			0.39
	d)			0.45			0.60			0.60			0.48
5	a)			0.009			0.015			0.015			0.015
	b)	-do-	-do-	0.09	-do-	-do-	0.15	-do-	-do-	0.15	-do-	-do-	0.21
	c)			0.15			0.30			0.30			0.27
	d)			0.30			0.45			0.45			0.39
6	a)			0.015			0.015			0.015			0.015
	b)	-do-	-do-	0.15	-do-	-do-	0.30	-do-	-do-	0.30	-do-	-do-	0.29
	c)			0.30			0.45			0.45			0.48
	d)			0.45			0.60			0.60			0.48
7	a)			0			0			0			0
	b)	-do-	-do-	0	-do-	-do-	0	-do-	-do-	0	-do-	-do-	0
	c)			0			0			0			0
	d)			0			0			0			0
8	a)		0.005	0.003			0.015			0.015			0.009
	b)	-do-	0.02	0.006	-do-	-do-	0.05	-do-	-do-	0.05	-do-	-do-	0.015
	c)		0.03	0.09			0.15			0.15			0.021
	d)		0.05	0.15			0.30			0.30			0.027
9	a)		0.01	0.009			0.015			0.015			0.015
	b)	-do-	0.05	0.09	-do-	-do-	0.15	-do-	-do-	0.15	-do-	-do-	0.021
	c)		0.10	0.15			0.30			0.30			0.027
	d)		0.20	0.30			0.45			0.45			0.039
10	a)			0.015			0.015			0.015			0.015
	b)	-do-	-do-	0.15	-do-	-do-	0.30	-do-	-do-	0.30	-do-	-do-	0.027
	c)			0.30			0.45			0.45			0.039
	d)			0.45			0.60			0.60			0.048

Notes: 1) Age of Trees

	MANGO	CASHEW	FOREST TREES
a)	New	New	Fine tree (new)
b)	1-3 yrs.	1-3 yrs.	1-3 yrs.
c)	4-6 yrs.	4-6 yrs.	4-6 yrs.
d)	7-10 yrs.	7 yrs. up	over 6 yrs.

2) For leguminous tree, use half of the N recommended.
 3) By Mr. Mario M. Sagum, Head, Soil & Water Lab. Services.

NUTRIENT REQUIREMENT

Lab. No.	Variety	NUTRIENT REQUIREMENT, Kg/ha					
		UPLAND RICE			MAIZE		
		N	P	K	N	P	K
FS-11	a) local	40	40	45	40	40	45
	b) improved	40	40	45	50	40	45
12	a) - do -	40	40	45	- do -	40	45
13	a) - do -	40	40	60	- do -	40	60
14	a) - do -	40	40	60	- do -	40	60
	b) - do -	40	40	45	- do -	40	45
16	a) - do -	40	40	60	- do -	40	60
	b) - do -	45	40	60	45	40	60
17	a) - do -	45	40	60	45	40	60

Lab. No.	Age	NUTRIENT REQUIREMENT, kg/tree											
		MANGO				CASHEW				FOREST TREES 2)			
		N	P	K	N	P	K	N	P	K	N	P	K
FS-11	a) new	0.01	0.01	0.009	0.01	0.01	0.015	0.012	0.004	0.015	0.012	0.004	0.015
	b) 1-3 yrs.	0.05	0.05	0.09	0.05	0.05	0.15	0.018	0.005	0.15	0.018	0.005	0.021
	c) 4-6 yrs.	0.10	0.10	0.15	0.10	0.10	0.30	0.025	0.007	0.30	0.025	0.007	0.027
	d) 7 yrs. up	0.15	0.20	0.30	0.20	0.20	0.45	0.040	0.010	0.45	0.040	0.010	0.039
12	a) - do -	- do -	- do -	- do -	- do -	- do -	0.015	- do -	- do -	0.15	- do -	- do -	- do -
13	a) - do -	- do -	- do -	0.015	- do -	- do -	0.015	- do -	- do -	0.30	- do -	- do -	0.015
14	a) - do -	- do -	- do -	0.15	- do -	- do -	0.15	- do -	- do -	0.30	- do -	- do -	0.027
	b) - do -	- do -	- do -	0.30	- do -	- do -	0.30	- do -	- do -	0.45	- do -	- do -	0.039
	c) - do -	- do -	- do -	0.45	- do -	- do -	0.45	- do -	- do -	0.60	- do -	- do -	0.048
	d) - do -	- do -	- do -	- do -	- do -	- do -	- do -	- do -	- do -	- do -	- do -	- do -	- do -
15	a) - do -	- do -	- do -	0.009	- do -	- do -	0.009	- do -	- do -	0.015	- do -	- do -	0.015
	b) - do -	- do -	- do -	0.09	- do -	- do -	0.09	- do -	- do -	0.15	- do -	- do -	0.021
	c) - do -	- do -	- do -	0.15	- do -	- do -	0.15	- do -	- do -	0.30	- do -	- do -	0.027
	d) - do -	- do -	- do -	0.30	- do -	- do -	0.30	- do -	- do -	0.45	- do -	- do -	0.039
16	a) - do -	- do -	- do -	0.015	- do -	- do -	0.015	- do -	- do -	0.015	- do -	- do -	0.015
	b) - do -	- do -	- do -	0.15	- do -	- do -	0.15	- do -	- do -	0.30	- do -	- do -	0.027
	c) - do -	- do -	- do -	0.30	- do -	- do -	0.30	- do -	- do -	0.45	- do -	- do -	0.039
	d) - do -	- do -	- do -	0.45	- do -	- do -	0.45	- do -	- do -	0.60	- do -	- do -	0.048
17	a) - do -	0.01	- do -	- do -	0.01	- do -	0.01	0.012	0.004	0.012	0.012	0.004	0.015
	b) - do -	0.10	- do -	- do -	0.10	- do -	0.10	0.025	0.005	0.025	0.025	0.005	0.021
	c) - do -	0.15	- do -	- do -	0.20	- do -	0.20	0.040	0.010	0.040	0.040	0.010	0.027
	d) - do -	0.30	- do -	- do -	0.30	- do -	0.30	0.050	0.050	0.050	0.050	0.050	0.039

COST ESTIMATE

Class A concrete (psi 3,000)

Items	P.	Per Unit	Cement		Steel bars		Lumber		Hardware		Sand		Gravel		Construction	
			1.0	2.81	1.0	65.0	1.0	50.0	1.0	5.0	1.0	0.6	1.0	1.0		
Laborer	54.40	hr	0.014	0.1385	0.00017	0.011	0.0016	0.02	0.00017	0.0005	0.1794	0.0076	0.1623	0.1423	2.90	3.376
Skilled Laborer	70.95															
Foreman	83.78														0.40	0.40
Carpenter	67.46										0.02	0.012			1.10	1.12
Head Carpenter	79.05															
Mason	64.29														0.25	0.25
Mason Foreman	67.46														0.25	0.25
Steelman	67.46														1.20	1.20
Head Steelman	74.79															
Welder	67.46															
C.E. Aide	67.46														0.05	0.05
Driver (1)	70.95		0.0015	0.0132	0.00018	0.017	0.0004	0.023	0.0018	0.006	0.025	0.015	0.021	0.025		0.168
(2)	67.46										0.0103	0.0063	0.007	0.007		0.0109
(3)	74.79															
(4)	86.82															
(5)	83.78										0.0103	0.0063	0.007	0.007		0.0109
Electrical Worker	67.46															
Head Mechanical	83.78															
Driller	74.79															
Blaster	161.73												0.0134	0.0134		0.0234
Watchman	61.42															
Janitor	54.40															
Mechanic	67.46															
Over operation	67.46														0.05	0.05
Cement	45.0	bag	1.0	9.61												9.61
Steelbar	10.0	kg			1.0	65.0										65.0
Lumber	8.4	board ft					1.0	50.0			0.06	0.026				50.036
Hardware	20.0	kg							1.0	3.0	0.003	0.008				3.0018
Screen Wire	140.0	m									0.01	0.006				0.006
Dynamite	35.0	kg											0.845	0.845		0.845
Fuel	7.34	lit	0.215	0.207	0.0232	1.508	0.0635	0.8175	0.0232	0.0676	2.574	1.576	5.143	5.143	2.562	15.724
Dozer	302.0	hr									0.0286	0.0172				0.0172
Truck Trailer	183.0		0.016	0.1560	0.0027	0.0176			0.0027	0.0081						0.1724
Stake Truck	100.0		0.019	0.1824			0.0019	0.095								0.2774
	78.0				0.0018	0.032			0.0018	0.0034						0.0070
F.E. Loader	136.0										0.0376	0.0224	0.0376	0.0376		0.0598
Dump Truck	96.0										0.20	0.12	0.716	0.716		0.8416
Drilling Machine	80.0												0.180	0.180		0.380
Conc. Mixer	24.0														0.8	0.80
Conc. Vibrator	26.0														0.8	0.80
Water Pump	15.65														0.8	0.80

Excavation Work (Indurated)

Items	#	Per Unit	(by Equipment)		(by manual)								Total
			1.0	0.8	1.0	0.8							
Laborer	54.40												0.2465
Skilled Laborer	70.95												
Foreman	83.78				0.11765	0.0233							0.0233
Carpenter	67.46												
Head Carpenter	79.05												
Mason	64.29												
Mason Foreman	67.46												
Steelman	67.46												
Head Steelman	74.79												
Welder	67.46												
C.E. Aide	67.46												
Driver (1)	70.95												
(2)	67.46		0.0079	0.00635									0.00635
(3)	74.79		0.0079	0.00635									0.00635
(4)	86.82												
(5)	83.78												
Electrical Worker	67.46												
Head Mechanical	83.78												
Driller	74.79												
Blaster	161.73												
Watchman	61.42												
Janitor	54.40												
Mechanic	67.46												
Cement	45.0	bag											
Steelbar	10.0	kg											
Lumber	8.4	m ³ /ft											
Hardware	20.0	kg											
Screen Wire	140.0	m											
Dynamite	35.0	kg											
Fuel	7.34	lit	1.0075	0.8076									0.8076
0-70022- attached Hyds. Ripper	975.0	hr	0.0633	0.0507									0.0507
Dozer	302.0	hr											
Truck Trailer	183.0												
Stake Truck	100.0												
	78.0												
F.E. Loader	136.0												
Dump Truck	96.0												
Drilling Machine	80.0												
Conc. Mixer	24.0												
Conc. Vibrator	26.0												
Water Pump	15.65												

Excavation Work (Common)

Items	p	Per Unit	(by Equipment)		(by Manual)										Total	
			L.O	a.d	L.O	a.2										
Lborer	54.40															
Skilled Lborer	70.95		0.001	0.008	0.03676	0.00715										0.00715
Foreman	83.78				0.00168	0.00278										0.00278
Carpenter	67.46															
Head Carpenter	79.05															
Mason	64.29															
Mason Foreman	67.46															
Steelman	67.46															
Head Steelman	74.79															
Welder	67.46															
C.E. Aide	67.46															
Driver (1)	70.95															
(2)	67.46		0.005	0.008												0.008
(3)	74.79		0.005	0.008												0.008
(4)	86.82															
(5)	83.78															
Electrical Worker	67.46															
Head Mechanical	83.78															
Driller	74.79															
Blaster	161.73															
Watchman	61.42															
Janitor	54.40															
Mechanic	67.46															
Cement	45.0	kg														
Steelbar	10.0	kg														
Lumber	8.4	0.4/1														
Hardware	20.0	kg														
Screen Wire	140.0	m														
Dynamite	35.0	kg														
Fuel	7.34	lit	0.6376	0.510												0.510
D-7 Dozer	432.0		0.025	0.02												0.02
Dozer	302.0	hr														
Truck	183.0															
Trailer	100.0															
Stake Truck	78.0															
F. E. Loader	136.0															
Pump Truck	96.0															
Drilling Machine	80.0															
Conc. Mixer	24.0															
Conc. Vibrator	26.0															
Water Pump	15.65															

Compacted fill only

Items	P	Per Unit	(by Human)		(Mechanical Sp.)		(Mechanical Ops)		Total
			L.S.	R.S.	L.S.	R.S.	L.S.	R.S.	
Lborer	54.40	day	0.0222	0.0177	0.0025	0.0018			0.1195
Skilled Lborer	70.95								
Foreman	83.78		0.0372	0.0118					0.0490
Carpenter	67.46								
Head Carpenter	79.05								
Mason	64.29								
Mason Foreman	67.46								
Steelman	67.46								
Head Steelman	74.79								
Welder	67.46								
C.E. Aide	67.46								
Driver (1)	70.95								
(2)	67.46				0.0025	0.0018			0.0043
(3)	74.79				0.0025	0.0018	0.0061	0.0082	0.0163
(4)	86.82								
(5)	83.78								
Electrical Worker	67.46								
Head Mechanical	83.78								
Driller	74.79								
Blaster	161.73								
Watchman	61.42								
Janitor	54.40								
Mechanic	67.46								
Cement	45.0	bag							
Steelbar	10.0	kg							
Lumber	8.4	bd ft							
Hardware	20.0	kg							
Screen Wire	140.0	m							
Dynamite	35.0	kg							
Fuel	7.34	lit			0.0088	0.0022	0.0063	0.0036	0.0189
70hp Dozer	191.0				0.02	0.018			0.038
Dozer	302.0	hr							
Truck Trailer	183.0								
Stake Truck	100.0								
	78.0								
F.E. Loader	136.0								
Pump Truck	96.0								
Drilling Machine	80.0								
Conc. Mixer	24.0								
Conc. Vibrator	26.0								
Water Pump	15.65								
Vibratory Roller	183.0						0.0085	0.0030	0.0115

Compacted Fill w/ over-hauling
(2km)

Items	P	Unit	Compacted fill		Hauling		Load		Discharge		Total
			L.O	L.O	L.O	L.O	L.O	L.O	L.O	L.O	
Laborer	54.40	per day	0.1178	0.1178	0.01176	0.01176	0.00067	0.00067	0.00037	0.00037	0.1397
Skilled Laborer	70.95										
Foreman	83.78		0.0118	0.0118							0.0118
Carpenter	67.46										
Head Carpenter	79.05										
Mason	64.29										
Mason Foreman	67.46										
Steelman	67.46										
Head Steelman	74.79										
Welder	67.46										
C.E. Aide	67.46										
Driver (1)	70.95				0.01176	0.01176					0.0118
(2)	67.46		0.0008	0.0008			0.00067	0.00067	0.00037	0.00037	0.0102
(3)	74.79		0.0006	0.0006			0.00067	0.00067	0.00037	0.00037	0.0106
(4)	86.82										
(5)	83.78										
Electrical Worker	67.46										
Head Mechanical	83.78										
Driller	74.79										
Blaster	161.73										
Watchman	61.42										
Janitor	54.40										
Mechanic	67.46										
Cement	45.0	kg									
Steelbar	10.0	kg									
Lumber	8.4	m ³ /4									
Hardware	20.0	kg									
Screen Wire	140.0	m									
Dynamite	35.0	kg									
Fuel	7.34	lit	0.2766	0.2766	0.3311	0.3311	0.3328	0.3328			1.5232
90 HP Dozer	191.0		0.014	0.014							0.014
Dozer, D-7	432.0	hr					0.0276	0.0276			0.0276
Truck Trailer	183.0										
Stake Truck	100.0										
	78.0										
F.E. Loader	136.0						0.0378	0.0378			0.0378
Dump Truck	96.0				0.0281	0.0281					0.0281
Drilling Machine	80.0										
Conc. Mixer	24.0										
Conc. Vibrator	26.0										
Water Pump	15.65										
Vibratory Roller	183.0		0.0360	0.0360							0.036

Gravel Riprap

Items	P	Unit	Welder		Sand		Cement		Construction	Total
			10	10	10	10	10	10		
Laborer	54.40		0.1283	0.1774	0.1774	0.1774	0.078	0.078	0.780	1.222
Skilled Laborer	70.95								0.264	0.264
Foreman	83.78		0.0078	0.0110					0.081	0.0762
Carpenter	67.46				0.02	0.006				0.0060
Head Carpenter	79.05									
Mason	64.29								0.0625	0.0625
Mason Foreman	67.46								0.0625	0.0625
Steelman	67.46									
Head Steelman	74.79									
Welder	67.46									
C.E. Aide	67.46									
Driver (1)	70.95		0.05	0.08	0.05	0.0075	0.0075	0.0075	0.0075	0.0075
(2)	67.46		0.0267	0.0357	0.0357	0.0031				
(3)	74.79		0.0078	0.0110						
(4)	86.82				0.0108	0.0031				
(5)	83.78		0.0173	0.0227						
Electrical Worker	67.46									
Head Mechanical	83.78									
Driller	74.79									
Blaster	161.73									
Watchman	61.42									
Janitor	54.40									
Mechanic	67.46									
Mixer operator	67.46								0.0625	0.0625
Cement	45.0	bag					1.0	2.0		
Steelbar	10.0	kg								
Lumber	8.4	1/4"			0.06	0.08				
Hardware	20.0	kg			0.002	0.009				
Screen Wire	140.0	m			0.01	0.003				
Dynamite	35.0	kg								
Fuel	7.34	lit	3.561	5.678	2.6574	0.7778	0.315	0.6615	0.7679	8.172
Dozer	302.0	hr	0.0783	0.1120	0.0226	0.0026				0.1306
Truck	183.0						0.0097	0.0186		0.0186
Trailer	100.0						0.017	0.0377		0.0377
Stake Truck	78.0									
F. E. Loader	136.0		0.1270	0.2064	0.0778	0.0112				0.1776
Dump Truck	96.0		0.40	0.680	0.20	0.060				0.70
Drilling Machine	80.0									
Conc. Mixer	24.0								0.25	0.250
Conc. Vibrator	26.0									
Water Pump	15.65									

R.C. pipes (42" φ)

Items	P	Per Unit	Cement		Steel Bars		Hardware		Lumber		Sand		Gravel		Construction	
			1.0	4.97	1.0	30.0	1.0	1.37	1.0	10.50	1.0	0.216	1.0	1.527		
Laborer	54.40															
Skilled Laborer	70.95		0.014	0.0696	0.00017	0.0051	0.00017	0.0023	0.0016	0.0163	0.1774	0.0563	0.1423	0.0750	2.1817	2.2084
Foreman	83.78														0.125	0.1250
Carpenter	67.46									0.02	0.0063				0.1773	0.2026
Head Carpenter	79.05															
Mason	64.29														0.125	0.1250
Mason Foreman	67.46															
Steelman	67.46														0.1773	0.1773
Head Steelman	74.79															
Welder	67.46															
C.E. Aide	67.46															
Driver (1)	70.95		0.0045	0.0022	0.00008	0.0054	0.00008	0.0005	0.0009	0.0062	0.025	0.0077	0.0715	0.0373	0.0373	0.0368
(2)	67.46										0.0038	0.0126	0.0067	0.0025		0.0351
(3)	74.79															
(4)	86.82										0.0038	0.0126	0.0067	0.0015		0.0351
(5)	83.78															
Electrical Worker	67.46															
Head Mechanical	83.78															
Driller	74.79															
Blaster	161.73												0.0234	0.0123		0.0123
Watchman	61.42															
Janitor	54.40															
Mechanic	67.46															
Cement	45.0	bag	1.0	4.97												4.97
Steelbar	10.0	kg			1.0	30.0										30.0
Lumber	8.4	00%							1.0	10.50	0.06	0.0188				10.5539
Hardware	20.0	kg					1.0	1.37			0.003	0.0009				1.3709
Screen Wire	140.0	m									0.01	0.001				0.0031
Dynamite	35.0	kg											0.885	0.0663		0.8653
Fuel	7.34	lit	0.215		0.0232		0.0232		0.0635		2.6594		5.143		1.2575	7.2568
Dozer	302.0	hr									0.0286	0.0070				0.0070
Truck Trailer	183.0		0.016	0.0773	0.0027	0.0081	0.0027	0.0003								0.0880
Stake Truck	100.0		0.0059	0.0273					0.0019	0.0020						0.0673
	78.0				0.0008	0.0384	0.0028	0.0073							0.03	0.03402
F.E. Loader	136.0										0.0574	0.0117	0.0174	0.0177		0.0214
Dump Truck	96.0										0.2	0.0628	0.7216	0.3803		0.8431
Drilling Machine	80.0												0.380	0.1003		0.2003
Conc. Mixer	24.0														0.1513	0.1513
Conc. Vibrator	26.0															
Water Pump	15.65															

R.C. pipes (36" φ)

Items	p	Par Unit	Cement		Steel Bars		Hardware		Lumber		Sand		Gravel		Construction	
			1.0	2.0	1.0	25.0	1.0	1.17	1.0	7.0	1.0	0.27	1.0	0.25		
Lborer	54.40															
Skilled Lborer	70.95		0.014	0.056	0.0017	0.048	0.0017	0.0007	0.0016	0.014	0.1774	0.0884	0.1423	0.0666	2.7312	2.9191
Foreman	83.78														0.2368	0.2368
Carpenter	67.46										0.02	0.0064			0.2173	0.2047
Head Carpenter	79.05															
Mason	64.29														0.2368	0.2368
Mason Foreman	67.46															
Steelman	67.46														0.1476	0.1476
Head Steelman	74.79															
Welder	67.46															
C.E. Aide	67.46															
Driver (1)	70.95		0.0045	0.018	0.0008	0.004	0.0008	0.0002	0.0007	0.0036	0.025	0.0068	0.0715	0.0318	0.0312	0.0922
(2)	67.46										0.0038	0.0028	0.0067	0.0021		0.0067
(3)	74.79															
(4)	86.82										0.0638	0.0028	0.0047	0.0021		0.0067
(5)	83.78															
Electrical Worker	67.46															
Head Mechanical	83.78															
Driller	74.79															
Blaster	161.73											0.0234	0.0106			0.0106
Watchman	61.42															
Janitor	54.40															
Mechanic	67.46															
Cement	45.0	bag	1.0	4.0												4.0
Steelbar	10.0	kg			1.0	25.0										25.0
Lumber	8.4	m ³							1.0	7.0	0.06	0.0162				7.0162
Hardware	20.0	kg					1.0	1.17			0.003	0.0008				1.1708
Screen Wire	140.0	m									0.01	0.0027				0.0027
Dynamite	35.0	kg										0.885				0.8856
Fuel	7.34	lit	0.315		0.0232		0.0232		0.0635		2.6574	5.143			1.2287	6.2814
Dozer	302.0	hr									0.0286	0.0077				0.0077
Truck	183.0		0.016	0.064	0.0017	0.008	0.0017	0.0003								0.0711
Trailer	100.0		0.0057	0.0236					0.0017	0.0171						0.0407
Stake Truck	78.0				0.0018	0.032	0.0018	0.0015							0.25	0.2835
F.E. Loader	136.0										0.0574	0.010	0.0174	0.017		0.0270
Dump Truck	96.0										0.2	0.054	0.2216	0.3276		0.3816
Drilling Machine	80.0											0.380	0.1725			0.1725
Conc. Mixer	24.0														0.1513	0.1513
Conc. Vibrator	26.0															
Water Pump	15.65															

R.C. pipes (30" φ)

Items	QTY	UNIT	CEMENT	Steel Bars	Hand	Number	Unit	Quantity	Construction		
			1.0 1.86	1.0 17.0	1.0 1.55	1.0 7.00	1.0 0.212	1.0 0.238			
Laborer	54.40								2.1622	2.2975	
Skilled Laborer	70.95										
Foreman	83.78								0.1	0.10	
Carpenter	67.46						0.02	0.0042	0.168	0.1722	
Head Carpenter	79.05										
Mason	64.29								0.1	0.10	
Mason Foreman	67.46										
Steelman	67.46								0.0114	0.0114	
Head Steelman	74.79										
Welder	67.46										
C.E. Aide	67.46										
Driver (1)	70.95		0.0025	0.0016	0.0008	0.0024	0.0028	0.0025	0.0053	0.0115	0.0253
(2)	67.46							0.0018	0.0022	0.0047	0.0060
(3)	74.79										
(4)	86.82							0.0638	0.0022	0.0067	0.0060
(5)	83.78										
Electrical Worker	67.46										
Head Mechanical	83.78										
Driller	74.79										
Blaster	161.73							0.0214	0.0020		0.0020
Watchman	61.42										
Janitor	54.40										
Mechanic	67.46										
Cement	45.0	bag	1.0	1.86							3.86
Steelbar	10.0	kg		1.0 17.0							17.0
Lumber	8.4	m ³				1.0 7.0	0.06	0.0117			7.0117
Hardware	20.0	kg			1.0 1.55		0.003	0.0066			1.5566
Screen wire	140.0	m					0.01	0.0021			
Dynamite	35.0	kg						0.005	0.0023		0.0023
Fuel	7.34	lit	0.215		0.0222	0.0222	0.0635	2.6574	5.143		0.9970 8.9778
Dozer	302.0	hr						0.0286	0.0061		0.0061
Truck Trailer	183.0		0.016	0.0554	0.0027	0.0051	0.0027	0.0005			0.0605
Stake Truck	100.0		0.0057	0.0204			0.0017	0.0133			0.0237
	78.0			0.0020	0.0291	0.0028	0.0070			0.0114	0.2393
F.E. Loader	136.0						0.0374	0.0079	0.0374	0.0127	0.0206
Dump Truck	96.0						0.2	0.044	0.7216	0.3453	0.2877
Drilling Machine	80.0							0.380	0.1272		0.1272
Conc. Mixer	24.0									0.1133	0.1133
Conc. Vibrator	26.0										
Water Pump	15.65										

R.C. pipes (24" φ)

Items	P	Per Unit	Cement		Steel Bar		Hardware		Lumber		Shovel		Gravel		Construction	
			1.0	3.5t	1.0	18.0	1.0	0.10	1.0	5.0	1.0	0.17	1.0	0.563		
Laborer	54.40															
Skilled Laborer	70.95		0.014	0.017	0.0017	0.0024	0.0017	0.0004	0.0016	0.008	0.1774	0.03	0.1423	0.0174	0.0166	0.5702
Foreman	83.78														0.0833	0.0833
Carpenter	67.46										0.02	0.0033			0.1803	0.1836
Head Carpenter	79.05															
Mason	64.29														0.0833	0.0833
Mason Foreman	67.46															
Steelman	67.46															
Head Steelman	74.79															
Welder	67.46															
C.E. Aide	67.46															
Driver (1)	70.95		0.005	0.015	0.0008	0.0025	0.0018	0.0009	0.0004	0.0020	0.025	0.0042	0.0745	0.0176	0.0214	0.0633
(2)	67.46										0.0038	0.0017	0.0067	0.0014		0.0027
(3)	74.79															
(4)	86.82										0.0618	0.0017	0.0047	0.0014		0.0027
(5)	83.78															
Electrical Worker	67.46															
Head Mechanical	83.78															
Driller	74.79															
Blaster	161.73												0.0214	0.0062		0.0062
Watchman	61.42															
Janitor	54.40															
Mechanic	67.46															
Cement	45.0	bag	1.0	2.5t												2.5t
Steelbar	10.0	kg			1.0	18.0										18.0
Lumber	8.4	cu ft							1.0	5.0	0.06	0.01				5.01
Hardware	20.0	kg					1.0	0.50			0.003	0.0005				0.5005
Screen Wire	140.0	m									0.01	0.0017				0.0017
Dynamite	35.0	kg											0.365	0.2222		0.2222
Fuel	7.34	lit	0.015		0.0232		0.0232		0.0635		2.6374		5.743		0.8147	3.8243
Dozer	302.0	hr									0.0286	0.0078				0.0078
Truck	183.0		0.016	0.0408	0.0027	0.0038	0.0027	0.0004								0.0047
Trailer	100.0		0.0057	0.015					0.0019	0.0075						0.0075
Stake Truck	78.0				0.0008	0.0119	0.0008	0.0004							0.0119	0.0298
F.E. Loader	136.0										0.0374	0.0011	0.0374	0.0098		0.016
Dump Truck	96.0										0.2	0.0314	0.7216	0.1877		0.233
Drilling Machine	80.0												0.380	0.010		0.010
Conc. Mixer	24.0														0.0821	0.0821
Conc. Vibrator	26.0															
Water Pump	15.65															

R.C. pipes (18" ϕ)

Items	P	No. Unit	Cement		Steel Bars		Hardware		Lumber		Sand		Gravel		Contribution		
			10	169	10	8.35	10	0.5	10	2.00	10	0.103	10	0.17			
Lborer	54.40															0.786	0.8587
Skilled Lborer	70.95																
Foreman	83.78															0.066	0.066
Carpenter	67.46										0.02	0.0021				0.262	0.2641
Head Capentor	79.05																
Mason	64.29															0.066	0.066
Mason Foreman	67.46																
Steelman	67.46															0.06	0.06
Head Steelman	74.79																
Welder	67.46																
C.E. Aide	67.46																
Driver (1)	70.95		0.005	0.0076	0.0008	0.005	0.0008	0.0006	0.0004	0.0016	0.025	0.0028	0.0115	0.0127			0.0260
(2)	67.46										0.0038	0.0017	0.0067	0.0008		0.024	0.02587
(3)	74.79																
(4)	86.82										0.0138	0.0067	0.0047	0.0008			0.00187
(5)	83.78																
Electrical Worker	67.46																
Head Mechanical	83.78																
Driller	74.79																
Elaster	161.73											0.0218	0.0040				0.0012
Watchman	61.42																
Janitor	54.40																
Mechanic	67.46																
Cement	45.0	bag	1.0	169													1.69
Steelbar	10.0	kg			1.0	8.35											8.35
Lumber	8.4	bag							1.0	2.0	0.06	0.0062					0.0062
Hardware	20.0	kg					1.0	0.5			0.003	0.0003					0.3503
Screen Wire	140.0	m									0.01	0.001					0.001
Dynamite	35.0	kg											0.855	0.1437			0.1437
Fuel	7.34	lit	0.315	0.5129	0.0232	0.1737	0.0232	0.0081	0.0635	0.0064	2.4574	0.1737	0.143	0.9773		0.2262	2.670
Dozer	302.0	hr									0.0186	0.0027					0.0029
Truck Trailer	183.0		0.016	0.027	0.0007	0.0015	0.0007	0.00007									0.02934
Stake Truck	100.0		0.0057	0.010					0.0017	0.0076							0.0176
	78.0				0.0028	0.0017	0.0028	0.0005								0.15	0.1612
F.E. Loader	136.0										0.0576	0.0037	0.0376	0.0064			0.010
Dump Truck	96.0										0.2	0.0208	0.2216	0.1227			0.1433
Drilling Machine	80.0												0.380	0.0646			0.0646
Conc. Mixer	24.0															0.064	0.0605
Conc. Vibrator	26.0																
Water Pump	15.65																

Rubble Masonry

Items	q.	Per Unit	Cement		Hardware		Lumber		Sill		Boulder		Construction	Total
			1.0	4.27	1.0	1.0	1.0	20.0	1.0	0.5	1.0	1.2		
Laborer	54.40	per day	0.014	0.0178	0.00017		0.0016	0.032	0.1294	0.0077	0.1283	0.1492	1.5070	1.8377
Skilled Laborer	70.95												0.2614	0.2614
Foreman	83.78										0.0075	0.0114	0.051	0.0724
Carpenter	67.46							0.02	0.01					0.01
Head Carpenter	79.05													
Mason	64.29												0.0625	0.0625
Mason Foreman	67.46												0.0125	0.0125
Steelman	67.46													
Head Steelman	74.79													
Welder	67.46													
C.E. Aide	67.46													
Driver (1)	70.95		0.0045	0.0172	0.00018		0.0004	0.008	0.015	0.0125	0.05	0.06		0.0777
(2)	67.46								0.0108	0.0061	0.0267	0.0320		0.0372
(3)	74.79										0.0075	0.0114		
(4)	86.82								0.01038	0.0061				0.0052
(5)	83.78										0.0173	0.0208		0.0208
Electrical Worker	67.46													
Head Mechanical	83.78													
Driller	74.79													
Blaster	161.73													
Watchman	61.42													
Janitor	54.40													
Mechanic	67.46													
Mixer operator	67.46												0.0125	0.0125
Cement	45.0	bag	1.0	4.27										4.27
Steelbar	10.0	kg												
Lumber	8.4	board ft					1.0	20.0	0.06	0.03				20.03
Hardware	20.0	kg			1.0				0.003	0.001				1.004
Screen Wire	140.0	m							0.01	0.001				0.001
Dynamite	35.0	kg												
Fuel	7.34	lit	0.315	1.3851	0.0232		0.01635	0.327	2.1578	1.3277	3.161	4.2732	1.2814	8.5816
Dozer	302.0	hr							0.0286	0.0163	0.0763	0.0916		0.1057
Truck Trailer	183.0		0.016	0.0686	0.0027									0.0689
Stake Truck	100.0		0.017	0.025			0.0017	0.037						0.064
	78.0				0.0028									0.0028
F.E. Loader	136.0								0.0376	0.0187	0.1270	0.1568		0.1725
Dump Truck	96.0								0.2	0.1	0.4	0.48		0.58
Drilling Machine	80.0													
Conc. Mixer	24.0												0.25	0.25
Conc. Vibrator	26.0													
Water Pump	15.65													

Concrete Lining

Items	P.	Unit	Cement		Sand		Gravel		Construction	Total
			kg	kg	kg	kg	kg	kg		
Laborer	54.40	day	0.014	0.1365	0.1774	0.1984	0.1423	0.1423	0.0875	0.7577
Skilled Laborer	70.95									
Foreman	83.78								0.0555	0.0555
Carpenter	67.46				0.02	0.022				0.022
Head Carpenter	79.05									
Mason	64.29								0.011	0.011
Mason Foreman	67.46									
Steelman	67.46									
Head Steelman	74.79									
Welder	67.46									
C.E. Aide	67.46								0.0555	0.0555
Driver (1)	70.95		0.0085	0.0632	0.025	0.0285	0.0145	0.0285		0.1320
(2)	67.46				0.0108	0.0063	0.0087	0.0087		0.0011
(3)	74.79									
(4)	86.82				0.0018	0.0063	0.0087	0.0087		0.0011
(5)	83.78									
Electrical Worker	67.46									
Head Mechanical	83.78									
Driller	74.79									
Blaster	161.73						0.0234	0.0234		0.0234
Watchman	61.42									
Janitor	54.40									
Mechanic	67.46									
Mixer Operator	67.46								0.0555	0.0555
Cement	45.0	kg	1.0	9.61						9.61
Steelbar	10.0	kg								
Lumber	8.4	m ³			0.06	0.0366				0.0366
Hardware	20.0	kg			0.003	0.0018				0.0018
Screen Wire	140.0	m			0.01	0.0061				0.0061
Dynamite	35.0	kg					0.845	0.845		0.845
Fuel	7.34	lit	0.05	3.027	2.6194	1.622	5.143	5.143	1.7787	11.7881
Dozer	302.0	hr			0.0276	0.0174				0.0174
Truck	183.0		0.0087	0.0855						0.0855
Trailer	100.0		0.019	0.1828						0.1828
Stake Truck	78.0									
F.E. Loader	136.0				0.0374	0.0228	0.0374	0.0374		0.0602
Dump Truck	96.0				0.20	0.1220	0.7216	0.7216		0.8436
Drilling Machine	80.0						0.180	0.180		0.380
Conc. Mixer	24.0								0.0444	0.0444
Conc. Vibrator	26.0									
Water Pump	15.65									

Mass Concrete

Items	#	Unit	Cement		Hardware		Lumber		Sand		Gravel		Construction	Total
			10	6.73	1.0	2.0	1.0	2.0	1.0	0.85	1.0	0.71		
Laborer	54.40													
Skilled Laborer	70.95	day	0.014	0.0762	0.0001	0.0003	0.0016	0.032	0.1794	0.0807	0.1423	0.1275	1.4031	1.7378
Foreman	83.78												0.0688	0.0688
Carpenter	67.46								0.02	0.009				0.0090
Head Carpenter	79.05													
Mason	64.29												0.1376	0.1376
Mason Foreman	67.46													
Steelman	67.46													
Head Steelman	74.79													
Welder	67.46													
C.E. Aide	67.46												0.0688	0.0688
Driver (1)	70.95		0.0055	0.0302	0.0008	0.0011	0.0004	0.008	0.025	0.0113	0.0745	0.0678		0.1178
(2)	67.46								0.01038	0.0057	0.0067	0.0063		0.0090
(3)	74.79													
(4)	86.82								0.01038	0.0057	0.0067	0.0063		0.0090
(5)	83.78													
Electrical Worker	67.46													
Head Mechanical	83.78													
Driller	74.79													
Blaster	161.73										0.0234	0.0213		0.0213
Watchman	61.42													
Janitor	54.40													
Mechanic	67.46													
Mixer Operator	67.46												0.0688	0.0688
Cement	45.0	bag	1.0	6.73										6.73
Steelbar	10.0	kg												
Lumber	8.4	0.04					1.0	2.0	0.06	0.0270				20.0270
Hardware	20.0	kg			1.0	2.0			0.003	0.0014				2.0014
Screen Wire	140.0	m							0.01	0.0055				0.0055
Dynamite	35.0	kg									0.845	0.7670		0.7670
Fuel	7.34	lit	0.315	2.120	0.0232	0.0669	0.0635	0.327	26594	1.1767	5.143	6.680	1.9989	10.351
Dozer	302.0	hr							0.0286	0.0127				0.0217
Truck Trailer	183.0		0.0089	0.0599	0.0027	0.0055								0.0104
Stake Truck	100.0		0.019	0.1279			0.0019	0.038						0.1659
	78.0				0.0018	0.0016								0.0026
F.E. Loader	136.0								0.0374	0.0168	0.0374	0.0360		0.0588
Dump Truck	96.0								0.20	0.090	0.216	0.1667		0.2667
Drilling Machine	80.0										0.380	0.3438		0.3438
Conc. Mixer	24.0												0.0444	0.0444
Conc. Vibrator	26.0													
Water Pump	15.65													

Concrete Demolition

Items	P	Per Unit																		Total
Laborer	54.40																			
Skilled Laborer	70.95																			0.1753
Foreman	83.78																			
Carpenter	67.46																			
Head Carpenter	79.05																			
Mason	64.29																			
Mason Foreman	67.46																			
Steelman	67.46																			
Head Steelman	74.79																			
Welder	67.46																			0.0777
C.E. Aide	67.46																			
Driver (1)	70.95																			0.3706
(2)	67.46																			
(3)	74.79																			
(4)	86.82																			
(5)	83.78																			
Electrical Worker	67.46																			
Head Mechanical	83.78																			
Driller	74.79																			
Blaster	161.73																			
Watchman	61.42																			
Janitor	54.40																			
Mechanic	67.46																			
Cement	45.0	kg																		
Steelbar	10.0	kg																		
Lumber	8.4	cu ft																		
Hardware	20.0	kg																		
Screen Wire	140.0	m																		
Dynamite	35.0	kg																		
Fuel	7.34	lit																		10.0257
Air Compressor	60.0	hr																		0.7813
Dozer	302.0	hr																		
Truck	183.0																			
Trailer	183.0																			
Stake Truck	100.0																			
	78.0																			
F.E. Loader	136.0																			
Dump Truck	96.0																			
Drilling Machine	80.0																			
Conc. Mixer	24.0																			
Conc. Vibrator	26.0																			
Water Pump	15.65																			
Jack Hammer	34.0																			0.7813

On-Farm Facilities

Items	P	Per Unit	H.F.D		W.F.D		F.D							
Laborer	54.40		0.2267	0.2267	0.2277	0.2277	0.1027	0.1027						
Skilled Laborer	70.95													
Foreman	83.78		0.0287	0.0287	0.0230	0.0230	0.0103	0.0103						
Carpenter	67.46													
Head Carpenter	79.05													
Mason	64.29													
Mason Foreman	67.46													
Steelman	67.46													
Head Steelman	74.79													
Welder	67.46													
C.E. Aide	67.46													
Driver (1)	70.95													
(2)	67.46													
(3)	74.79													
(4)	86.82													
(5)	83.78													
Electrical Worker	67.46													
Head Mechanical	83.78													
Driller	74.79													
Blaster	161.73													
Watchman	61.42													
Janitor	54.40													
Mechanic	67.46													
Cement	45.0	bag												
Steelbar	10.0	kg												
Lumber	8.4	bag												
Hardware	20.0	kg												
Screen Wire	140.0	m												
Dynamite	35.0	kg												
Fuel	7.34	lit												
Dozer	302.0	hr												
Truck	183.0													
Trailer	100.0													
Stake	78.0													
Truck	96.0													
F.E. Loader	136.0													
Pump	80.0													
Truck	24.0													
Drilling Machine	26.0													
Conc. Mixer	15.65													
Conc. Vibrator														
Water Pump														

Clearing and Grubbing

Items	#	Unit																	
Laborer	54.40																		
Skilled Laborer	70.95																		
Foreman	83.78																		
Carpenter	67.46																		
Head Carpenter	79.05																		
Mason	64.29																		
Mason Foreman	67.46																		
Steelman	67.46																		
Head Steelman	74.79																		
Welder	67.46																		
C.E. Aide	67.46																		
Driver (1)	70.95																		
(2)	67.46																		
(3)	74.79																		
(4)	86.82																		
(5)	83.78																		
Electrical Worker	67.46																		
Head Mechanical	83.78																		
Driller	74.79																		
Blaster	161.73																		
Watchman	61.42																		
Janitor	54.40																		
Mechanic	67.46																		
Cement	45.0	bag																	
Steelbar	10.0	kg																	
Lumber	8.4	m ³																	
Hardware	20.0	kg																	
Screen Wire	140.0	m																	
Dynamite	35.0	kg																	
Fuel	7.34	lit	0.1560	0.1560															0.1560
Dozer	302.0	hr	0.00602	0.00602															0.00602
Truck Trailer	183.0																		
Stake Truck	100.0																		
	78.0																		
F.E. Loader	136.0																		
Dump Truck	96.0																		
Drilling Machine	80.0																		
Conc. Mixer	24.0																		
Conc. Vibrator	26.0																		
Water Pump	15.65																		

Others

Items	p	Unit	Qty	Rate	Total															
Lborer	54.40																			
Skilled Lborer	70.95		0.08	0.08																
Foreman	83.78																			
Carpenter	67.46																			
Head Carpenter	79.05																			
Mason	64.29																			
Mason Foreman	67.46																			
Steelman	67.46																			
Head Steelman	74.79																			
Welder	67.46																			
C.E. Aide	67.46																			
Driver (1)	70.95																			
(2)	67.46																			
(3)	74.79																			
(4)	86.82																			
(5)	83.78																			
Electrical Worker	67.46																			
Head Mechanical	83.78																			
Driller	74.79																			
Blaster	161.73																			
Watchman	61.42																			
Janitor	54.40																			
Mechanic	67.46																			
Cement	45.0	kg																		
Steelbar	10.0	kg																		
Lumber	8.4	kg																		
Hardware	20.0	kg																		
Screen Wire	140.0	m																		
Dynamaiite	35.0	kg																		
Fuel	7.34	lit																		
Dozer	302.0	hr																		
Truck	183.0																			
Trailar	100.0																			
Stake	78.0																			
Truck	78.0																			
F.E. Loader	136.0																			
Dump Truck	96.0																			
Drilling Machine	80.0																			
Conc. Mixer	24.0																			
Conc. Vibrator	26.0																			
Water Pump	15.65																			

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