

CRONOGRAMA DE UTILIZACION DE MANO DE OBRA

DESCRIPCION	UNIDAD	CANTIDAD	PRECIO UNITARIO	TOTAL	Mes1	Mes2	Mes3	Mes4	Mes5	Mes6
Peón EO E2	Hora	47,595.60	4.23	201,329.38	6,397.39	22,986.48	40,002.33	32,166.05	42,267.37	57,509.75
					1,512.39	5,434.16	9,456.82	7,604.27	9,992.29	13,595.69
Chofer: De Tanqueros (Estr. Oc. C1)	Hora	1,541.58	6.22	9,588.65	1,893.92	3,856.78	2,201.80	936.39	678.07	21.69
					304.49	620.06	353.99	150.54	109.01	3.49
Maestro mayor en ejecución de obras civiles EO C1	Hora	7,837.04	4.75	37,225.95	630.99	854.28	3,971.24	5,861.45	10,304.30	15,603.69
					132.84	179.85	836.05	1,233.99	2,169.33	3,284.99
Electricista EO D2	hora	127.91	4.28	547.46	38.50				2.95	506.01
					8.99				0.69	118.23
Carpintero EO D2	Hora	398.60	4.28	1,705.99	423.77	100.37	329.97	454.78	283.12	113.99
					99.01	23.45	77.10	106.26	66.15	26.63
Fierrero EO D2	Hora	2,748.59	4.28	11,763.96		667.99	3,297.35	4,257.83	2,811.92	728.87
						156.07	770.41	994.82	656.99	170.30
Instalador de revestimiento en general EO D2	Hora	241.90	4.28	1,035.33	51.36				295.19	688.78
					12.00				68.97	160.93
Tecnico Electromecanico de Construccion EO D2	Hora	2,052.05	4.28	8,782.78	86.63	121.77	282.03	43.85	2,474.55	5,773.95
					20.24	28.45	65.90	10.25	578.17	1,349.05
Plomero EO D2	Hora	11.20	4.28	47.94		4.54	11.36	6.82	12.61	12.61
						1.06	2.65	1.59	2.95	2.95
Operador de equipo liviano EO D2	Hora	2,913.41	4.28	12,469.39		3,399.78	5,683.47	2,291.11	343.21	751.84
						794.34	1,327.91	535.31	80.19	175.66
Pintor EO D2	Hora	8.58	4.28	36.73					18.37	18.37
									4.29	4.29
Tecnico obras civiles EO C2	Hora	479.61	4.52	2,167.83					650.35	1,517.48
									143.88	335.73
Chofer: De volqueta (Estr. Oc. C1)	Hora	49,025.35	6.22	304,937.66	38,300.60	68,598.66	52,129.16	52,005.01	53,316.59	40,587.64
					6,157.65	11,028.72	8,380.89	8,360.93	8,571.80	6,525.34
Op. Excavadora EO C1	hora	1,238.47	4.75	5,882.72		138.46	228.94	54.70	1,638.18	3,822.43
						29.15	48.20	11.52	344.88	804.72
Op. Compresor EO C2	hora	204.09	4.52	922.50					276.75	645.75
									61.23	142.87
Op. Motoniveladora EO C1	hora	1,038.36	4.75	4,932.20	1,009.54	1,702.25	936.32	677.92	589.60	16.56
					212.53	358.37	197.12	142.72	124.13	3.49
Op. Rodillo autopropulsado EO C2	hora	1,902.13	4.52	8,597.62	983.12	1,657.27	905.96	1,513.95	2,526.87	1,010.43
					217.51	366.65	200.43	334.94	559.04	223.55

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DESCRIPCION	UNIDAD	CANTIDAD	PRECIO UNITARIO	TOTAL	Mes1	Mes2	Mes3	Mes4	Mes5	Mes6
Op. Grua EO C1	hora	188.09	4.75	893.42		218.91	510.80		44.04	119.66
						46.09	107.54		9.27	25.19
Chofer EO C1	hora	48.00	6.22	298.55	149.28					149.28
					24.00					24.00
Maestro electrico/liniero/subestaciones EO C1	hora	164.21	4.75	780.01	76.13				1.67	702.21
					16.03				0.35	147.83
Soldador en construcción EO C3	hora	35.43	4.35	154.13					76.11	78.03
									17.50	17.94
Op. de barredora autopropulsada EO C2	hora	279.70	4.52	1,264.24			21.89	101.09	425.63	715.62
							4.84	22.37	94.17	158.32
Op. de acabadora de pavimento asfaltico EO C2	hora	366.26	4.52	1,655.49				330.75	827.40	497.34
								73.18	183.05	110.03
Op. Distribuidor de asfalto EO C2	hora	190.29	4.52	860.12			21.89	308.45	459.91	69.87
							4.84	68.24	101.75	15.46
Engrasador EO D2	hora	3,102.11	4.28	13,277.02	1,232.08	3,130.91	2,492.98	1,265.39	2,620.94	2,534.73
					287.87	731.52	582.47	295.65	612.37	592.23
Tecnico liniero electrico EO D2	hora	3.43	4.28	14.68						14.68
										3.43
Op. Tractor EO C1	hora	769.34	4.75	3,654.38	1,130.11	1,781.23	727.77			15.28
					237.92	374.99	153.21			3.22
Op. Cargadora frontal EO C1	hora	653.32	4.75	3,103.25	925.51	1,548.00	626.13	3.60		
					194.84	325.90	131.82	0.76		
Chofer De Otros Camiones EO C1	hora	144.94	6.22	901.55	99.69					801.87
					16.03					128.92
Op. Perforadora	hora	26.67	4.75	126.67		38.00	63.34	25.33		
						8.00	13.33	5.33		
Inspector de Obra EO B3	hora	1.49	4.76	7.11		2.13	4.98			
						0.45	1.05			
Op. Fresadora de pavimento asfáltico EO C1	hora	332.85	4.75	1,581.03	158.10	948.62	474.31			
					33.28	199.71	99.85			
Albañil EO D2	hora	2,474.14	4.28	10,589.33	128.43	421.88	1,105.07	1,320.12	2,823.36	4,790.47
					30.01	98.57	258.19	308.44	659.66	1,119.27
TOTAL				651,135.09	53,715.16	112,178.31	116,029.11	103,624.60	125,769.06	139,818.86

CRONOGRAMA DE UTILIZACION DE MAQUINARIA Y EQUIPOS

DESCRIPCION	UNIDAD	CANTIDAD	PRECIO UNITARIO	TOTAL	Mes1	Mes2	Mes3	Mes4	Mes5	Mes6
Herramienta Menor	Hora	14,092.72	1.00	14,092.72	463.80	1,634.97	2,570.50	1,968.38	2,885.58	4,569.47
					463.80	1,634.97	2,570.50	1,968.38	2,885.58	4,569.47
Excavadora 128hp	Hora	1,216.62	70.00	85,163.54		1,428.80	2,456.38	806.16	24,141.66	56,330.53
						20.41	35.09	11.52	344.88	804.72
Rodillo Vibratorio Liso 142HP	hora	281.51	42.00	11,823.25	835.18	1,566.03	2,884.87	4,067.52	2,323.21	146.43
					19.89	37.29	68.69	96.85	55.31	3.49
Finisher	hora	366.26	55.00	20,144.20				4,024.63	10,067.89	6,051.68
								73.18	183.05	110.03
Distribuidor de asfalto 6TN	Hora	190.29	70.00	13,320.38			339.06	4,776.81	7,122.47	1,082.04
							4.84	68.24	101.75	15.46
Vibrador de hormigon 1HP	hora	692.94	4.00	2,771.74		187.61	705.35	980.41	654.27	244.10
						46.90	176.34	245.10	163.57	61.03
Grua de servicio	Hora	136.39	65.00	8,865.63	1,041.75	1,468.69	3,426.94			2,928.25
					16.03	22.60	52.72			45.05
Compactador Pesado Manual 5HP	hora	1,049.38	14.50	15,215.98		124.18	195.64	37.49	4,457.60	10,401.07
						8.56	13.49	2.59	307.42	717.32
Concretera 1 saco (13HP)	hora	513.10	4.50	2,308.96		113.79	387.48	537.52	576.31	693.86
						25.29	86.11	119.45	128.07	154.19
Soldadora	Hora	1,945.59	2.20	4,280.30	35.47				1,273.45	2,971.39
					16.12				578.84	1,350.63
Motosierra 7HP	hora	19.41	1.25	24.26	24.26					
					19.41					
Camioneta	Hora	48.00	7.50	359.99	180.00					180.00
					24.00					24.00
Amoladora	Hora	8.58	1.25	10.73					5.36	5.36
									4.29	4.29
Escalera telescopica	hora	98.87	4.00	395.47						395.47
										98.87
Carro Canasta Aislado 13mts	hora	98.87	25.00	2,471.67						2,471.67
										98.87
Compactador Mediano manual	hora	82.52	3.50	288.80		53.38	122.28	91.22	6.58	15.35
						15.25	34.94	26.06	1.88	4.38
Equipo de barrenado	hora	75.32	45.00	3,389.28		1,016.78	2,372.50			
						22.60	52.72			

CRONOGRAMA DE UTILIZACION DE MAQUINARIA Y EQUIPOS

DESCRIPCION	UNIDAD	CANTIDAD	PRECIO UNITARIO	TOTAL	Mes1	Mes2	Mes3	Mes4	Mes5	Mes6
Equipo de oxicorte	hora	55.23	1.25	69.03		7.32	16.47	12.81	14.02	18.42
						5.85	13.17	10.25	11.22	14.73
Martillo Neumatico	hora	2,625.30	17.50	45,942.67		13,782.80	22,971.33	9,188.53		
						787.59	1,312.65	525.06		
Esmeril	hora	38.06	1.25	47.58		7.32	16.47	12.81	3.30	7.69
						5.85	13.17	10.25	2.64	6.15
Winche	hora	55.23	7.50	414.19		43.91	98.80	76.84	84.14	110.50
						5.85	13.17	10.25	11.22	14.73
Equipo Mezcla Bituminosa (tacha)	hora	229.90	8.00	1,839.20					551.76	1,287.44
									68.97	160.93
Tuberia Tremie	hora	75.32	2.92	219.93		65.98	153.95			
						22.60	52.72			
Tanquero 8TN	hora	647.49	30.00	19,424.68	1,893.32	7,606.89	5,255.07	2,905.37	1,659.43	104.60
					63.11	253.56	175.17	96.85	55.31	3.49
Tractor de oruga 175 HP	Hora	769.34	58.00	44,621.85	13,799.19	21,749.70	8,886.42			186.54
					237.92	374.99	153.21			3.22
Cargador Frontal 170hp	hora	635.54	55.00	34,954.65	10,486.40	17,477.33	6,990.93			
					190.66	317.77	127.11			
Rodillo P.C Vibratorio 150HP	hora	33.13	38.00	1,259.12	377.73	629.56	251.82			
					9.94	16.57	6.63			
Tanquero 10TN	hora	625.60	30.00	18,767.94	5,630.38	9,383.97	3,753.59			
					187.68	312.80	125.12			
Rodillo Tandem 119 HP	Hora	366.26	45.00	16,481.61				3,292.88	8,237.36	4,951.37
								73.18	183.05	110.03
Tanquero 14 TON	hora	268.50	39.00	10,471.34	2,094.27	2,094.27	2,094.27	2,094.27	2,094.27	
					53.70	53.70	53.70	53.70	53.70	
Escoba autopropulsada	hora	279.70	25.00	6,992.47			121.09	559.14	2,354.15	3,958.09
							4.84	22.37	94.17	158.32
Rodillo neumatico 96HP	hora	480.94	48.00	23,085.33				5,714.38	12,089.49	5,281.46
								119.05	251.86	110.03
Cargador Frontal 170hp	hora	17.78	55.00	977.72	230.06	446.90	259.02	41.74		
					4.18	8.13	4.71	0.76		
Soldadora	hora	55.23	2.20	121.50		12.88	28.98	22.54	24.68	32.41
						5.85	13.17	10.25	11.22	14.73

CRONOGRAMA DE UTILIZACION DE MAQUINARIA Y EQUIPOS

DESCRIPCION	UNIDAD	CANTIDAD	PRECIO UNITARIO	TOTAL	Mes1	Mes2	Mes3	Mes4	Mes5	Mes6
Recuperadora de asfalto 460hp	hora	332.85	193.75	64,489.48	6,448.95	38,693.69	19,346.84			
					33.28	199.71	99.85			
Volqueta (12 ton)	hora	49,025.35	30.00	1,470,760.40	184,729.60	330,861.69	251,426.81	250,828.01	257,153.97	195,760.33
					6,157.65	11,028.72	8,380.89	8,360.93	8,571.80	6,525.34
Cortadora - Dobladora	hora	2,568.13	1.75	4,494.23	14.42	183.80	1,140.64	1,723.01	1,145.12	287.25
					8.24	105.03	651.79	984.57	654.35	164.15
Grua 45 ton - Barrenadora	hora	75.32	95.00	7,155.15		2,146.54	5,008.60			
						22.60	52.72			
Excavadora 222 HP	hora	21.85	95.00	2,075.33		830.13	1,245.20			
						8.74	13.11			
Motoniveladora 135 HP	hora	1,038.36	65.00	67,493.24	13,814.77	23,293.99	12,812.84	9,276.82	8,068.21	226.62
					212.53	358.37	197.12	142.72	124.13	3.49
Rodillo P.C Vibratorio 125HP	hora	740.28	38.00	28,130.80	7,131.82	11,886.36	4,754.54	1,743.23	2,614.85	
					187.68	312.80	125.12	45.87	68.81	
Maquina Perforadora	hora	26.67	30.00	800.04		240.01	400.02	160.01		
						8.00	13.33	5.33		
Grua de Orugas (45 ton)	hora	2.99	95.00	283.96		85.19	198.77			
						0.90	2.09			
Martillo Diesel	hora	2.99	40.00	119.56		35.87	83.69			
						0.90	2.09			
Compresor 2.0HP 8gl (para pintar)	hora	8.58	8.00	68.66					34.33	34.33
									4.29	4.29
Grua 20 Ton	hora	18.66	45.00	839.92					406.46	433.47
									9.03	9.63
Elevador Canasta	hora	0.80	50.00	40.00					12.00	28.00
									0.24	0.56
Aplicador Termoplástico	hora	204.09	30.00	6,122.82					1,836.85	4,285.97
									61.23	142.87
			TOTAL	2,063,491.31	249,231.35	489,160.33	362,777.19	304,942.53	351,898.75	305,481.16

CRONOGRAMA DE UTILIZACION DE MATERIALES

DESCRIPCION	UNIDAD	CANTIDAD	PRECIO UNITARIO	TOTAL	Mes1	Mes2	Mes3	Mes4	Mes5	Mes6
Agua	m3	40,931.73	1.24	50,755.34	10,124.70	10,134.12	10,156.72	10,169.05	10,154.19	16.57
					8,165.08	8,172.68	8,190.90	8,200.85	8,188.86	13.37
Acero de Refuerzo Fy=4200 kg/cm2	kg	99,535.60	1.30	129,396.28	48.51	18,237.32	55,172.10	30,545.33	20,300.60	5,092.42
					37.31	14,028.71	42,440.08	23,496.41	15,615.85	3,917.25
Alambre Recocido #18	kg	4,120.29	1.12	4,614.73	2.09	523.34	1,748.86	1,277.47	849.78	213.17
					1.87	467.27	1,561.48	1,140.60	758.74	190.33
Hormigon Premezclado f'c=280 kg/cm2 vaciado directo	m3	186.30	120.05	22,365.50			4,604.95	6,775.57	7,729.04	3,255.94
							38.36	56.44	64.38	27.12
Cemento tipo GU	kg	164,305.03	0.18	29,574.91		2,158.72	7,345.74	10,249.06	6,734.51	3,086.88
						11,992.90	40,809.64	56,939.23	37,413.94	17,149.32
Piedra No. 4	m3	333.69	11.50	3,837.47		280.15	969.53	1,349.63	855.73	382.42
						24.36	84.31	117.36	74.41	33.25
Geotextil (no tejido 1600)	m2	15,808.86	1.16	18,338.28		28.08	66.17	46.14	5,459.37	12,738.53
						24.20	57.04	39.77	4,706.35	10,981.49
Anticorrosivo Cromato 5 (CO.)	Gln	1.22	19.45	23.73	23.73					
					1.22					
Encofrado	u	177.43	50.00	8,871.50			1,826.60	2,687.60	3,065.80	1,291.50
							36.53	53.75	61.32	25.83
Agua	m3	2,378.07	1.24	2,948.81		7.75	17.44	13.56	873.02	2,037.04
						6.25	14.06	10.94	704.05	1,642.77
Platina 1 1/2" x 1/8" (3mm), 0.90 kg/m, 6m	m	72.90	1.54	112.27	112.27					
					72.90					
Pintura Esmalte	gln	0.83	28.45	23.61	23.61					
					0.83					
Pintura termoplastica (blanca-amarilla)	l	8,574.24	8.50	72,881.01					21,864.30	51,016.71
									2,572.27	6,001.97
Señal Luminosa H=0.3 M. A=0.2 M. Inc. Bateria 6V	u	9.00	42.56	383.04	383.04					
					9.00					
Tanque protector Vial-Polietileno H=1.02M. D=0.62M. INC. BASE	u	18.00	78.77	1,417.86	1,417.86					
					18.00					
Pintura Primer Gris	gln	16.32	26.59	433.95					130.18	303.76
									4.90	11.42
Poste de HA 12 mts 500Kg	u	15.00	283.13	4,246.95						4,246.95

CRONOGRAMA DE UTILIZACION DE MATERIALES

DESCRIPCION	UNIDAD	CANTIDAD	PRECIO UNITARIO	TOTAL	Mes1	Mes2	Mes3	Mes4	Mes5	Mes6
										15.00
Hormigon Premezclado f'c=350 kg/cm2	m3	134.60	152.55	20,533.96		6,160.19	14,373.77			
						40.38	94.22			
Diluyente	gln	63.30	6.12	387.38		6.29	14.16	11.01	176.07	179.85
						1.03	2.31	1.80	28.77	29.39
Acero Estructural A-588 o A709-50W	kg	400.72	1.25	500.90					250.45	250.45
									200.36	200.36
Bloque de hormigón para anclaje, con agujero 20 mm, Base d=400mm, h=100mm, Base superior d=150mm	u	3.00	8.05	24.15						24.15
										3.00
Tubo Cuadrado HG (50 x 50 x 2 mm)	m	72.00	3.70	266.40					79.92	186.48
									21.60	50.40
Clavos de 2" a 3 1/2"	kg	0.78	2.23	1.73					1.39	0.35
									0.62	0.16
Wype	lb	126.59	4.12	521.57		8.47	19.06	14.82	237.06	242.15
						2.06	4.63	3.60	57.54	58.77
Inhibidor de Corrosion - Carboxilato de amina - Hormigon Mezcla	lt	134.40	25.50	3,427.20		1,028.16	2,399.04			
						40.32	94.08			
Junta de dilatacion neopreno modulos (432x54x1830)mm	m	20.00	403.37	8,067.40					4,033.70	4,033.70
									10.00	10.00
Piedra #3/8	m3	17.36	13.25	229.96		45.99	114.98	68.99		
						3.47	8.68	5.21		
Varios (agua,camisa metal-boca)	glb	256.00	60.73	15,546.88		4,664.06	10,882.82			
						76.80	179.20			
Cascajo grueso	m3	11,247.29	2.80	31,492.41	9,447.72	15,746.20	6,298.48			
					3,374.19	5,623.64	2,249.46			
Material Didactico	glb	6.00	283.67	1,702.02	851.01					851.01
					3.00					3.00
Placa / Alum. E=2mm	m2	160.34	45.21	7,248.97					2,174.69	5,074.28
									48.10	112.24
Platina Alum. 1.1/2"x1/8"	m	834.00	0.80	667.20					200.16	467.04
									250.20	583.80
PLANCHA 1.22x2.44x3mm	u	2.40	38.00	91.20					27.36	63.84

CRONOGRAMA DE UTILIZACION DE MATERIALES

DESCRIPCION	UNIDAD	CANTIDAD	PRECIO UNITARIO	TOTAL	Mes1	Mes2	Mes3	Mes4	Mes5	Mes6
									0.72	1.68
Perno de Refuerzo 0.25x0.50 - 1/4 x 1/2 con tuerca	u	558.00	3.00	1,674.00	354.00				396.00	924.00
					118.00				132.00	308.00
Remaches	u	5,476.00	0.03	164.28	4.05	1.80	1.80	1.80	47.17	107.66
					135.01	60.01	60.01	60.01	1,572.28	3,588.68
Fondo para Señal	m2	156.80	31.37	4,918.82					1,475.64	3,443.17
									47.04	109.76
Papel Reflec. Grado/Diamante (Leyenda)	m2	68.72	76.23	5,238.53					1,571.56	3,666.97
									20.62	48.10
Pata Tubo HG (2"X2mm)	m	144.00	3.70	532.80					159.84	372.96
									43.20	100.80
Accesorios	glb	218.00	0.67	146.06					43.82	102.24
									65.40	152.60
Soldadura 7018 (1/8") 29 palillos x kg	kg	54.02	3.20	172.85		9.87	22.20	17.27	58.79	64.72
						3.08	6.94	5.40	18.37	20.22
Accesorios (pernos, etc)	u	13.37	0.03	0.40		0.06	0.14	0.11	0.03	0.06
						2.06	4.63	3.60	0.93	2.16
Monitoreo de calidad de agua	u	6.00	555.00	3,330.00	1,110.22		1,109.89			1,109.89
					2.00		2.00			2.00
Cabina Sanitaria Portatil	mes	30.00	220.00	6,600.00	1,320.00	1,320.00	1,320.00	1,320.00	1,320.00	
					6.00	6.00	6.00	6.00	6.00	
Material Cribado	m3	15,332.81	4.24	65,011.13		4,484.14	19,728.43	28,021.43	12,777.13	
						1,057.58	4,652.93	6,608.83	3,013.47	
Diesel	l	4,586.62	0.46	2,109.85			135.24	624.46	919.31	430.83
							294.00	1,357.52	1,998.51	936.59
Asfalto RC 250	l	203,588.33	0.53	107,901.81			6,918.41	31,945.25	47,019.78	22,018.37
							13,053.60	60,274.07	88,716.56	41,544.10
Hormigon asfaltico	m3	9,431.22	95.00	895,965.90				178,965.18	447,754.95	269,245.77
								1,883.84	4,713.21	2,834.17
Pintura reflectiva (sin perlas)	gal	13.74	28.41	390.30					117.09	273.21
									4.12	9.62
Base/Sop Plancha 1.22x2.44x3mm	u	5.91	62.14	367.37	10.06	1.86	1.86	1.86	106.26	245.45
					0.16	0.03	0.03	0.03	1.71	3.95
Pintura Primer Gris	gln	28.63	26.59	761.39	9.57	9.57	9.57	9.57	220.76	502.34

CRONOGRAMA DE UTILIZACION DE MATERIALES

DESCRIPCION	UNIDAD	CANTIDAD	PRECIO UNITARIO	TOTAL	Mes1	Mes2	Mes3	Mes4	Mes5	Mes6
					0.36	0.36	0.36	0.36	8.30	18.89
Soldadura 6011, 1/8" (1kg = 38.0 palillos)	kg	44.00	3.56	156.63	9.97	1.07	1.07	1.07	43.46	99.99
					2.80	0.30	0.30	0.30	12.21	28.09
Pata Tubo HG (2"X2mm)	m	558.00	3.70	2,064.60					619.38	1,445.22
									167.40	390.60
Acero Estructural A36 (inc. Inhibidor de corrosion)	KG	83.41	4.92	410.38	410.38					
					83.41					
Hormigon Simple f'c=210kg/cm2	m3	0.36	95.35	34.33	34.33					
					0.36					
Lona Impresa Full Color (14OZ, respaldo negro, resistencia UV, durabilidad min. 2 años)	m2	13.50	9.01	121.64	121.64					
					13.50					
Cinta peligro	m	3,057.00	0.10	305.70	305.70					
					3,057.00					
Tira Semidura Encofrado 1" x 4m	u	249.96	1.88	469.93	79.52				118.22	272.19
					42.30				62.88	144.78
Perfil tipo "W" 12 1/2 pies (3.81) m	u	178.59	88.58	15,819.86					4,745.96	11,073.90
									53.58	125.02
Cascajo mediano	m3	12,480.88	2.55	31,826.23		1,021.35	1,660.71	419.10	8,617.52	20,107.55
						400.53	651.26	164.35	3,379.42	7,885.32
Microesferas de Vidrio	kg	1,977.39	1.47	2,906.76					872.03	2,034.73
									593.22	1,384.17
Cable Acero Galvanizado SIEMENS MARTI, 7 hilos, d=9mm, 3/8" 3153KG	m	18.00	2.05	36.90						36.90
										18.00
Guardacabo acero galvanizado 9.51mm (3/8")	u	3.00	6.00	18.00						18.00
										3.00
Varilla Anclaje Acero Galvanizada tuerca y arandela (16x1800) mm, (5/8"x71")	u	3.00	8.50	25.50						25.50
										3.00
Pintura Reflectiva (con perlas)	gln	32.40	22.73	736.45	695.54	8.18	8.18	8.18	8.18	8.18
					30.60	0.36	0.36	0.36	0.36	0.36
Toma de muestras con sonometro (muestreo por día)	u	6.00	40.54	243.24	81.10		81.07			81.07

CRONOGRAMA DE UTILIZACION DE MATERIALES

DESCRIPCION	UNIDAD	CANTIDAD	PRECIO UNITARIO	TOTAL	Mes1	Mes2	Mes3	Mes4	Mes5	Mes6
Mordaza, 2 pernos, p/cables-acero d=9mm y d=10mm	u	3.00	2.64	7.92						7.92
										3.00
Guardacabo para cable de acero d=9mm	u	1.00	6.00	6.00						6.00
										1.00
Aislador Retenida, clase ANSI 54-3, RED 22GRDY/13,2KV	u	1.00	1.27	1.27						1.27
										1.00
Varilla de Anclaje d=5/8", 1.80mt de long.	u	1.00	12.35	12.35						12.35
										1.00
Bloque de Anclaje 40x27x10 cmt	u	1.00	22.60	22.60						22.60
										1.00
Ensayos de laboratorio (Inc. Informe Geofísico)	u	40.00	105.00	4,200.00		1,260.00	2,100.00	840.00		
						12.00	20.00	8.00		
Bentonita	Kg	6,400.00	0.90	5,760.00		1,728.00	4,032.00			
						1,920.00	4,480.00			
Ensayos de Integridad, Sensores (deformimetro-acelerometro) con cables. Registro	glb	6.00	2,280.00	13,680.00		4,104.00	9,576.00			
						1.80	4.20			
Prueba de Integridad de Pilotes (PIT)	u	16.00	150.00	2,400.00		720.00	1,680.00			
						4.80	11.20			
Tubo PVC Drenaje Corrugado D=160mm	m	20.00	5.91	118.20		23.64	59.10	35.46		
						4.00	10.00	6.00		
Tubo Desague EC 110mm x 3m	u	12.39	14.08	174.45		26.02	65.05	39.03	22.18	22.18
						1.85	4.62	2.77	1.58	1.58
Viga Pretensada f'c=500 kg/cm2 - H=1.20; L= 25m (inc. transporte y montaje)	u	5.00	12,100.00	60,500.00				30,250.00	30,250.00	
								2.50	2.50	
Adhesivo Epoxico (hormigon fresco a endurecido)	kg	0.97	33.95	32.94					26.35	6.59
									0.78	0.19
Mortero de alta resistencia	kg	24,828.51	0.54	13,407.40					4,035.32	9,372.08
									7,472.81	17,355.70
Tabla semidura (encofrado de 1" x 4m)	u	79.14	4.95	391.72	378.68				10.44	2.61
					76.50				2.11	0.53

CRONOGRAMA DE UTILIZACION DE MATERIALES

DESCRIPCION	UNIDAD	CANTIDAD	PRECIO UNITARIO	TOTAL	Mes1	Mes2	Mes3	Mes4	Mes5	Mes6
Neopreno tipo STUP (40x40x7cm)	cm3	112,000.00	0.03	3,360.00					2,688.00	672.00
									89,600.00	22,400.00
Acero estructural ASTM A572 Gr. 50	kg	765.53	1.65	1,263.12					631.56	631.56
									382.76	382.76
Pernos anclaje 16mm x 350mm	u	160.00	8.38	1,340.80					670.40	670.40
									80.00	80.00
Tub. Desague EC D=160mm-L=3m	u	16.50	33.86	558.69					279.34	279.34
									8.25	8.25
Colgador tipo perla galvanizada D=160mm	u	16.50	3.44	56.76					28.38	28.38
									8.25	8.25
Mat. Granu. (Explot. y Cargada)	m3	63.70	1.67	106.38					53.19	53.19
									31.85	31.85
Luminaria LED solar ALL IN ONE 5700K 80W/18V (FL>11500LM)	u	3.00	880.00	2,640.00					792.00	1,848.00
									0.90	2.10
Poste Conico 9mts base 30x30cm c/4 pernos de anclaje	u	3.00	792.00	2,376.00					712.80	1,663.20
									0.90	2.10
Geomalla Triaxial de polipropileno	m2	15,687.84	2.54	39,847.11					11,954.13	27,892.98
									4,706.35	10,981.49
Placa Policarbonato 5.90x2.10m	u	0.76	130.00	98.28					29.48	68.80
									0.23	0.53
Elementos de Sujecion	glb	8.40	0.23	1.93					0.58	1.35
									2.52	5.88
Perno Cabeza de coco 1/4 x 3	u	48.00	0.83	39.84					11.95	27.89
									14.40	33.60
Hormigon Simple f'c= 180kg/cm2	m3	1.54	66.88	102.73					30.82	71.91
									0.46	1.08
Tubo Cuadrado 2"x2mmx6m (2.93Kg)	u	15.64	33.99	531.60	531.60					
					15.64					
Pintura Esmalte	gln	1.22	28.45	34.71	34.71					
					1.22					
Perno galv. de 5/8" x 4" (incluye 2 anillos)	u	324.00	4.36	1,412.64	1,412.64					
					324.00					
Parante Vial de Polietileno enroscable de H=1.41m D=0.74m (inc. base)	u	46.00	38.01	1,748.46	1,748.46					

CRONOGRAMA DE UTILIZACION DE MATERIALES

DESCRIPCION	UNIDAD	CANTIDAD	PRECIO UNITARIO	TOTAL	Mes1	Mes2	Mes3	Mes4	Mes5	Mes6
					46.00					
Cono c/cinta reflectiva (h=70cm)	u	92.00	15.77	1,450.84	1,450.84					
					92.00					
Malla Plastica de Seguridad (Color)	m2	3,672.00	2.90	10,648.80	10,648.80					
					3,672.00					
Tirraje Plastico	u	7,200.00	0.25	1,800.00	1,800.00					
					7,200.00					
Platina Ref/HG 3/4"x1/8"	m	102.60	0.42	43.09	7.18	7.18	7.18	7.18	7.18	7.18
					17.10	17.10	17.10	17.10	17.09	17.09
Perno de Refuerzo	u	72.00	0.03	2.16	0.36	0.36	0.36	0.36	0.36	0.36
					12.00	12.00	12.00	12.00	12.00	12.00
Bloque de Anclaje HS f'c=210 kg/cm2 (25x25x60)	u	18.00	11.02	198.36	33.07	33.07	33.07	33.07	33.05	33.05
					3.00	3.00	3.00	3.00	3.00	3.00
Tanque metalico c/tapa 55gl	u	9.00	16.00	144.00	144.00					
					9.00					
Calidad de Aire Ambiente - Monitoreo de Monóxido de Carbono CO (8horas), Dióxido de Nitrogeno NO2 (1 hora), Dióxido de Azufre SO2 (24 horas), y Ozono O3 (8 horas).	u	6.00	1,140.00	6,840.00	1,140.23	1,140.23	1,140.23	1,140.23	1,139.54	1,139.54
					1.00	1.00	1.00	1.00	1.00	1.00
Material Particulado PM2.5	u	6.00	180.00	1,080.00	180.04	180.04	180.04	180.04	179.93	179.93
					1.00	1.00	1.00	1.00	1.00	1.00
Material Particulado PM10	u	6.00	180.00	1,080.00	180.04	180.04	180.04	180.04	179.93	179.93
					1.00	1.00	1.00	1.00	1.00	1.00
TOTAL				2,320,554.72	50,073.59	86,953.14	245,683.04	498,819.86	826,768.09	612,257.01