

LOWER CHURCHILL PROJECT				SCHEDULE OF PRICE BREAKDOWN								APPENDIX A2.1		
				ISSUED FOR: BID				DATE: 14 - Oct - 2014				BIDDER'S NAME:		
												Rev. B2		
PRICE ITEM	WBS CODE	SUBCODE		PRICE ITEM DESCRIPTION	UNIT OF MEASURE	ESTIMATED QUANTITY A	MAN HOURS (AT SITE) PER UNIT	MANPOWER COST/UNIT (\$ CAN) B	MATERIALS COST/UNIT (\$ CAN) C	EQUIPMENT COST/UNIT (\$ CAN) D	OTHERS	PROFIT COST/UNIT (\$ CAN) E	UNIT PRICE (\$ CAN) F=(B+C+D+E)	TOTAL PRICE (\$ CAN) G= A x F
No	REFERENCE Exhibit 2 - ATT 1	CODE												
				<b>INDIRECT COSTS</b>										
1	2.1	0000	0000.01	Mobilization	LS	1	-	-	120,000.00	-	4,414,898.58	317,442.90	4,852,341.48	4,852,341.48
2	2.2	0000	0000.02	Site Installation	LS	1	70,181.85	5,607,318.53	4,679,449.26	766,318.11	11,380,190.01	1,570,329.31	24,003,605.22	24,003,605.22
3	2.3	0000	0000.03	Management, Staff, employees and Consultants	LS	1	905,458.73	74,639,084.68	5,044,144.23	1,852,781.80	58,404,143.97	9,795,810.83	149,735,965.51	149,735,965.51
4	2.4	0000	0000.04	Health and Safety, Environmental and Quality Requirements	LS	1	140,497.00	10,331,475.98	280,104.69	2,594,244.23	943,900.95	14,428,200.20	14,428,200.20	14,428,200.20
5	2.5	0000	0000.05	Credit, Guarantee and Insurance	LS	1	-	-	-	-	8,950,492.10	626,534.45	9,577,026.55	9,577,026.55
6	2.6	0000	0000.06	Warranty, per Article 17 of the Agreement	LS	1	-	-	-	-	6,884,994.60	481,944.22	7,366,944.22	7,366,944.22
7	2.7	0000	0000.07	Demobilization	LS	1	-	-	-	-	1,779,410.57	124,558.74	1,903,969.31	1,903,969.31
				<b>SUB-TOTAL INDIRECT COSTS</b>										
				<b>211,868,052.49</b>										
				<b>GENERAL</b>										
				<b>DEWATERING OF STRUCTURE AREAS</b>										
8	3.1.1	1110	1110.01	Dewatering of Structure Areas	LS	1	9,243.30	748,086.75	568,248.00	516,245.71	-	128,280.63	1,960,861.10	1,960,861.10
				<b>EXCAVATION OF EXISTING COFFERDAMS</b>										
9	3.2.1	1111	1111.01	Excavation of Existing Embankment cofferdams 1, 2 and 3, and Existing Ramps	m³	177,000	0.10	7.99	2.96	4.58	-	1.09	16.62	2,941,032.59
10	3.2.2	1111	1111.02	Excavation of Downstream section of RCC riverside cofferdam	m³	20,000	0.14	12.16	3.21	5.14	8.64	2.04	31.18	623,612.40
				<b>PERMANENT ROADS AND PARKING AREA</b>										
11	3.3.1	1112	1112.01	Overburden Excavation	m³	8,000	0.08	6.09	2.41	3.82	-	0.86	13.19	105,492.80
12	3.3.2	1112	1112.02	Approved Compactable Material	m³	44,000	0.24	19.72	8.49	12.28	-	2.83	43.33	1,906,594.99
13	3.3.3	1112	1112.03	Granular "B" Material	m³	5,800	0.29	23.53	9.92	14.86	-	3.38	51.69	299,820.39
14	3.3.4	1112	1112.04	Granular "C" Material	m³	4,000	0.30	23.90	10.03	15.02	-	3.43	52.38	209,505.53
15	3.3.5	1112	1112.05	Maintenance Grade 3 material	m³	4,500	0.32	25.81	11.12	16.47	-	3.74	57.14	257,127.13
16	3.3.6	1112	1112.06	CSP culvert, dia. 900 mm	m	48	1.59	126.38	378.85	15.77	-	36.47	557.46	26,758.26
17	3.3.7	1112	1112.07	Guide Rails	m	400	0.61	47.71	70.07	1.27	-	8.33	127.39	50,956.60
18	3.3.8	1112	1112.08	Gate Type 1	unit	2	4.36	343.99	364.32	5.09	-	49.94	763.34	1,526.68
				<b>ACCESS ROAD TO LAYDOWN AREA C1</b>										
19	3.4.1	1113	1113.01	Approved Compactable Material	m³	26,000	0.24	19.72	8.49	12.28	-	2.83	43.33	1,126,624.31
20	3.4.2	1113	1113.02	Granular "C" Material	m³	7,500	0.30	23.90	10.03	15.02	-	3.43	52.38	392,822.86
				<b>DITCHES</b>										
21	3.5.1	1114	1114.01	Overburden Excavation	m³	2,000	0.08	6.09	2.41	3.82	-	0.86	13.19	26,373.20
22	3.5.2	1114	1114.02	Non-woven Geotextile, min 300 g/m²	m²	2,500	0.23	17.91	5.84	0.19	-	1.68	25.62	64,047.21
23	3.5.3	1114	1114.03	Rockfill Protection, 100 - 250 mm	m³	1,000	0.35	28.15	6.70	14.38	-	3.45	52.67	52,673.95
				<b>SLOPE PROTECTION</b>										
24	3.6.1	1115	1115.01	Rockfill Protection, Zone 3E Material	m³	2,500	0.28	22.51	7.77	18.14	-	3.39	51.81	129,520.18
			1115.01a	RCC Coarse Aggregate - Produce & Stockpile	TON	1	-	0.07	2.07	5.71	-	0.55	8.40	-
			1115.01b	RCC Fine Aggregate - Produce & Stockpile	TON	1	-	0.13	3.12	6.74	-	0.70	10.69	-
25	3.6.2	1115	1115.02	Non-woven Geotextile, min 530 g/m²	m²	4,500	0.23	17.91	7.47	0.19	-	1.79	27.36	123,121.38
				<b>CHAIN LINK FENCES AND GATES</b>										
26	3.7.1	1116	1116.01	Chain Link Fence and Gates	m	720	0.97	76.91	99.23	2.03	-	12.47	190.64	137,262.06
				<b>TEMPORARY UPSTREAM BRIDGE OVER SPILLWAY APPROACH CHANNEL</b>										
27	3.8.1	1150	1150.01	Engineering of Temporary Upstream Bridge	LS	1	-	-	-	-	203,520.30	14,246.42	217,766.72	217,766.72
28	3.8.2	1150	1150.02	Supply of Temporary Upstream Bridge	LS	1	-	-	3,360,000.00	-	-	235,200.00	3,595,200.00	3,595,200.00
29	3.8.3	1150	1150.03	Installation, removal and handover of Temporary Upstream Bridge	LS	1	33,515.73	2,716,156.10	453,420.69	602,741.59	-	264,062.29	4,036,380.67	4,036,380.67
				<b>SUB-TOTAL GENERAL</b>										
				<b>18,285,081.02</b>										
				<b>DAMS AND COFFERDAMS - GENERAL</b>										
				<b>UPSTREAM COFFERDAM</b>										
				<b>CIVIL WORK</b>										
				<b>Excavation</b>										
30	4.1.1	2340	2341.01	Overburden excavation	m³	2,500	0.08	6.09	2.41	3.82	-	0.86	13.19	32,966.50
				<b>Foundation Preparation in dry condition</b>										
31	4.1.2	2341	2341.02	Foundation Cleaning (water/air jets and Vacuum trucks)	m²	1,200	0.27	21.11	1.82	0.44	-	1.64	25.01	30,015.67
32	4.1.3	2341	2341.03	Rock Excavation including dental excavation and Scaling	m³	500	0.51	41.28	7.31	10.88	-	4.16	63.63	31,814.41
33	4.1.4	2341	2341.04	Dental Concrete	m³	800	4.70	363.89	147.56	101.94	-	42.94	656.33	525,064.45
34	4.1.5	2341	2341.05	Slush Grout	m³	1,200	0.66	51.32	80.45	4.74	-	9.56	146.07	175,283.81
35	4.1.6	2341	2341.06	Dry Pack	m³	6	1.79	141.05	804.14	25.95	-	67.98	1,039.13	6,234.76
				<b>Embankment Materials</b>										
36	4.1.7	2341	2341.07	Compacted Till - Zones 1 and 1C Materials	m³	19,000	0.17	13.96	5.18	8.35	-	1.92	29.42	558,907.77
37	4.1.8	2341	2341.08	Dumped Till - Zone 1A Material	m³	134,000	0.12	9.43	3.92	6.39	-	1.38	21.13	2,831,904.05
38	4.1.9	2341	2341.09	Compacted Granular - Zone 2A Material	m³	20,700	0.32	25.99	11.12	16.57	-	3.76	57.44	1,188,917.29
39	4.1.10	2341	2341.10	Compacted Granular - Zone 2C Material	m³	8,700	0.31	24.95	10.49	15.83	-	3.59	54.87	477,398.72
40	4.1.11	2341	2341.11	Dumped Granular - Zone 2E Material	m³	26,300	0.35	28.41	13.22	19.80	-	4.30	65.73	1,728,634.11
41	4.1.12	2341	2341.12	Dumped Rockfill- Zone 3 Material	m³	143,000	0.14	11.14	4.30	6.81	-	1.56	23.81	3,405,298.13
42	4.1.13	2341	2341.13	Dumped Large Blocks (300-1000 mm) - Zone 3 Class 1	m³	37,000	0.14	11.86	4.76	7.29	-	1.67	25.58	946,481.17
43	4.1.14	2341	2341.14	Dumped Large Blocks (≥1000 mm) - Zone 3 Class 2	m³	65,000	0.16	12.62	6.26	10.49	-	2.06	31.42	2,042,187.00
44	4.1.15	2341	2341.15	Dumped Large Blocks (≥1300 mm) - Zone 3 Class 3	m³	15,000	0.16	12.62	6.26	10.49	-	2.06	31.42	471,273.92
45	4.1.16	2341	2341.16	Compacted Crushed Stone - Zone 3A Material	m³	10,950	0.28	22.51	7.77	18.14	-	3.39	51.81	567,298.38
46	4.1.17	2341	2341.17	Compacted Rockfill - Zone 3C Material	m³	33,740	0.24	19.36	7.46	15.11	-	2.94	44.87	1,513,899.04

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No	REFERENCE Exhibit 2 - ATT 1	CODE												
47	4.1.18		2341.18	Compacted Rockfill - Zone 3D Material	m <sup>3</sup>	33,900	0.17	13.66	4.80	7.62	-	1.83	27.90	945,886.71
48	4.1.19		2341.19	Dumped Crushed Stone- Zone 3F Material	m <sup>3</sup>	21,000	0.28	22.42	8.57	20.77	-	3.62	55.38	1,163,069.98
				<b>Investigation for Jet Grouted Cut-off Wall and Bedrock Grouting</b>										
49	4.1.20		2341.20	Percussion Drill Holes in embankments, river sediments and bedrock	m	1,000	0.25	19.65	-	-	74.43	6.59	100.67	100,670.32
50	4.1.21		2341.21	Verification Core Drilling in jet grouting cut-off wall and bedrock	m	200	0.70	55.03	-	-	148.86	14.27	218.16	43,632.91
51	4.1.22		2341.22	Core Diamond Drill Rig in Standby	hour	140	-	-	-	-	109.32	7.65	116.97	16,376.06
				<b>Jet Grouting cut off wall</b>										
52	4.1.23		2341.23	Mobilization and demobilization	LS	1	8,000.00	628,932.06	-	-	2,035,203.03	186,489.46	2,850,624.54	2,850,624.54
53	4.1.24		2341.24	Drilling Holes for Jet Grouting in embankment, river sediments and bedrock	m	9,600	0.52	40.68	2.82	1.21	99.74	10.11	154.56	1,483,778.39
54	4.1.25		2341.25	Jet Grouted Cut-off wall	m <sup>2</sup>	2,800	0.42	33.18	142.30	1.50	297.45	33.21	507.63	1,421,351.69
				<b>Bedrock Grouting beneath the Jet Grouted Cut-off Wall, if required</b>										
55	4.1.26		2341.26	Drilling Holes for Grouting in embankment , jet grouting cut-off wall and bedrock, if required	m	1,300	0.10	7.86	-	-	174.45	12.76	195.07	253,589.91
56	4.1.27		2341.27	Dry cement incorporated in the grout, if required	kg	11,000	0.02	1.31	0.36	-	2.56	0.30	4.52	49,742.68
57	4.1.28		2341.28	Grouting - Successful connections, if required	unit	60	6.17	503.89	6.91	9.71	1,120.04	114.84	1,755.39	105,323.58
				<b>SUB-TOTAL UPSTREAM COFFERDAM</b>										
				<b>24,967,625.93</b>										
<b>4.2 2340 2342</b>				<b>DOWNSTREAM COFFERDAM</b>										
				<b>CIVIL WORK</b>										
				<b>Excavation</b>										
58	4.2.1		2342.01	Overburden excavation	m <sup>3</sup>	500	0.08	6.09	2.41	3.82	-	0.86	13.19	6,593.30
				<b>Foundation Preparation</b>										
59	4.2.2		2342.02	Foundation cleaning (water/ait jets and Vacuum trucks)	m <sup>2</sup>	1,250	0.27	21.11	1.82	0.44	-	1.64	25.01	31,266.33
60	4.2.3		2342.03	Rock excavation including dental excavation and scaling	m <sup>3</sup>	500	0.51	41.28	7.31	10.88	-	4.16	63.63	31,814.41
61	4.2.4		2342.04	Dental Concrete	m <sup>3</sup>	200	4.70	363.89	147.56	101.94	-	42.94	656.33	131,266.11
62	4.2.5		2342.05	Slush Grout	m <sup>2</sup>	1,250	0.66	51.32	80.45	4.74	-	9.56	146.07	182,587.30
63	4.2.6		2342.06	Dry Pack	m <sup>3</sup>	6	1.79	141.05	804.14	25.95	-	67.98	1,039.13	6,234.76
				<b>Embankment Materials</b>										
64	4.2.7		2342.07	Compacted Till - Zones 1 and 1C	m <sup>3</sup>	2,000	0.17	13.96	5.18	8.35	-	1.92	29.42	58,832.40
65	4.2.8		2342.08	Compacted Granular - Zone 2C	m <sup>3</sup>	2,500	0.34	27.52	11.96	18.25	-	4.04	61.77	154,415.22
66	4.2.9		2342.09	Compacted Rockfill - Zone 3C	m <sup>3</sup>	4,600	0.32	25.75	10.71	20.50	-	3.99	60.95	280,355.78
67	4.2.10		2342.10	Compacted Rockfill - Zone 3D	m <sup>3</sup>	2,000	0.23	18.56	7.20	11.61	-	2.62	39.99	79,972.96
				<b>SUB-TOTAL DOWNSTREAM COFFERDAM</b>										
				<b>963,338.55</b>										
<b>4.3 2340 2343</b>				<b>INTAKE CHANNEL COFFERDAM</b>										
				<b>CIVIL WORK</b>										
				<b>Excavation</b>										
68	4.3.1		2343.01	Overburden excavation	m <sup>3</sup>	8,800	0.08	6.09	2.41	3.82	-	0.86	13.19	116,042.08
				<b>Foundation Preparation</b>										
69	4.3.2		2343.02	Foundation cleaning (water/ait jets and Vacuum trucks)	m <sup>2</sup>	1,700	0.27	21.11	1.82	0.44	-	1.64	25.01	42,522.20
70	4.3.3		2343.03	Rock excavation including dental excavation and scaling	m <sup>3</sup>	700	0.51	41.28	7.31	10.88	-	4.16	63.63	44,540.18
71	4.3.4		2343.04	Dental Concrete	m <sup>3</sup>	250	4.70	363.89	147.56	101.94	-	42.94	656.33	164,082.64
72	4.3.5		2343.05	Slush Grout	m <sup>2</sup>	1,700	0.66	51.32	80.45	4.74	-	9.56	146.07	248,318.72
73	4.3.6		2343.06	Dry Pack	m <sup>3</sup>	9	1.79	141.05	804.14	25.95	-	67.98	1,039.13	9,352.14
				<b>Embankment Materials</b>										
74	4.3.7		2343.07	Compacted Till - Zones 1 and 1C	m <sup>3</sup>	6,300	0.17	13.96	5.18	8.35	-	1.92	29.42	185,322.05
75	4.3.8		2343.08	Compacted Granular - Zone 2C	m <sup>3</sup>	4,900	0.31	24.75	10.39	15.66	-	3.56	54.37	266,415.03
76	4.3.9		2343.09	Compacted Rockfill - Zone 3C	m <sup>3</sup>	5,200	0.30	24.06	9.62	18.86	-	3.68	56.21	292,290.30
77	4.3.10		2343.10	Compacted Rockfill - Zone 3D	m <sup>3</sup>	1,400	0.21	17.34	6.50	10.46	-	2.40	36.70	51,385.96
				<b>SUB-TOTAL INTAKE CHANNEL COFFERDAM</b>										
				<b>1,420,271.29</b>										
<b>4.4 2330</b>				<b>SOUTH DAM</b>										
				<b>CIVIL WORK</b>										
				<b>Excavation</b>										
78	4.4.1		2330.01	Overburden excavation	m <sup>3</sup>	94,000	0.08	6.09	2.41	3.82	-	0.86	13.19	1,239,540.41
				<b>Foundation Preparation</b>										
79	4.4.2		2330.02	Foundation cleaning (water/ait jets and Vacuum trucks)	m <sup>2</sup>	3,400	0.27	21.11	1.82	0.44	-	1.64	25.01	85,044.41
80	4.4.3		2330.03	Rock excavation including dental excavation and scaling	m <sup>3</sup>	2,000	0.51	41.28	7.31	10.88	-	4.16	63.63	127,257.64
81	4.4.4		2330.04	Dental Concrete	m <sup>3</sup>	1,200	4.70	363.89	147.56	101.94	-	42.94	656.33	787,596.67
82	4.4.5		2330.05	Slush Grout	m <sup>2</sup>	3,400	0.66	51.32	80.45	4.74	-	9.56	146.07	496,637.45
83	4.4.6		2330.06	Dry Pack	m <sup>3</sup>	20	1.79	141.05	804.14	25.95	-	67.98	1,039.13	20,782.53
84	4.4.7		2330.07	Drilling Holes for Grouting	m	1,200	0.18	14.88	0.62	0.88	97.53	7.97	121.88	146,253.29
85	4.4.8		2330.08	Dry cement incorporated in the grout	kg	42,000	0.02	1.31	0.36	-	2.56	0.30	4.52	189,926.60
86	4.4.9		2330.09	Cored Drill Check Holes	m	30	0.20	16.33	-	-	328.54	24.14	369.01	11,070.23
87	4.4.10		2330.10	Percussion Drilling Check holes	m	60	0.18	14.88	0.62	0.88	97.53	7.97	121.88	7,312.66
88	4.4.11		2330.11	Grouting - Successful connections	unit	250	6.17	503.89	6.91	9.71	1,120.04	114.84	1,755.39	438,848.25

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No	REFERENCE Exhibit 2 - ATT 1	CODE	SUBCODE												
89	4.4.12	2330.12		Water pressure test (Lugeon - 5 Stages)	hour	8	8.00	653.09	-	-	523.34	82.35	1,258.78	10,070.20	
90	4.4.13	2330.13		Water test - Successful connections	unit	18	7.00	571.45	-	-	389.60	67.27	1,028.32	18,509.77	
91	4.4.14	2330.14		Uplift gauges	m	20	1.06	86.53	-	-	244.22	23.15	353.91	7,078.23	
92	4.4.15	2330.15		Thermistors (measure rock temperature in grout holes)	unit	1	17.00	1,387.81	-	-	2,384.09	264.03	4,035.94	4,035.94	
<b>Embankment Materials</b>															
93	4.4.16	2330.16		Compacted Till - Zones 1 and 1C	m <sup>3</sup>	26,000	0.17	13.96	5.18	8.35	-	1.92	29.42	764,821.15	
94	4.4.17	2330.17		Compacted Granular - Zone 2A	m <sup>3</sup>	28,000	0.32	25.54	10.88	16.20	-	3.68	56.30	1,576,392.47	
95	4.4.18	2330.18		Compacted Crushed Stone - Zone 3A	m <sup>3</sup>	12,000	0.30	24.24	8.90	19.57	-	3.69	56.40	676,833.10	
96	4.4.19	2330.19		Compacted Crushed Stone - Zone 3B	m <sup>3</sup>	16,000	0.24	19.36	7.46	15.11	-	2.94	44.87	717,913.00	
97	4.4.20	2330.20		Compacted Rockfill - Zone 3C	m <sup>3</sup>	21,000	0.24	19.37	7.47	15.14	-	2.94	44.92	943,305.76	
98	4.4.21	2330.21		Compacted Rockfill - Zone 3D	m <sup>3</sup>	46,000	0.20	15.99	6.19	9.97	-	2.25	34.41	1,582,750.88	
99	4.4.22	2330.22		Riprap - Zone 4	m <sup>3</sup>	6,000	0.21	16.88	6.42	10.01	-	2.33	35.64	213,840.53	
100	4.4.23	2330.23		Compacted Crushed Stone - Zone 5	m <sup>3</sup>	310	0.32	25.59	9.35	11.25	-	3.93	60.12	18,637.07	
101	4.4.24	2330.24		Jersey Barrier	m	600	3.69	276.80	277.69	15.25	-	39.88	609.62	365,771.50	
<b>Geotechnical Instrumentation</b>															
102	4.4.25	2330.25		V-Notch Weirs, excluding Shelters	unit	2	32.23	2,548.59	1,075.66	57.70	1,162.97	339.14	5,184.07	10,368.13	
103	4.4.26	2330.26		Shelters for V-Notch Weirs	unit	2	48.35	3,822.89	3,988.49	86.55	1,744.46	674.97	10,317.35	20,634.70	
104	4.4.27	2330.27		Survey Monuments at South Dam Crest	unit	3	3.62	295.52	1,400.00	-	921.07	183.16	2,799.76	8,399.28	
<b>SUB-TOTAL SOUTH DAM</b>														<b>10,489,631.86</b>	
<b>4.5 2320 NORTH DAM CIVIL WORK</b>															
<b>Clearing</b>															
105	4.5.1	2320.01		Clearing of the North Abutment	Ha	3	127.37	10,283.08	5,126.98	7,831.81	-	1,626.93	24,868.81	74,606.42	
<b>Excavation</b>															
106	4.5.2	2320.02		Overburden Excavation	m <sup>3</sup>	72,000	0.08	6.09	2.41	3.82	-	0.86	13.19	949,435.21	
<b>Foundation Preparation</b>															
107	4.5.3	2320.03		Foundation Cleaning (water/air jets and vacuum)	m <sup>2</sup>	13,500	0.27	21.11	1.82	0.44	-	1.64	25.01	337,676.33	
108	4.5.4	2320.04		Rock Excavation including Dental Excavation and Scaling	m <sup>3</sup>	6,000	0.51	41.28	7.31	11.88	-	4.16	63.63	381,772.93	
109	4.5.5	2320.05		Dental Concrete	m <sup>3</sup>	4,000	4.70	363.89	147.56	101.94	-	42.94	656.33	2,625,322.23	
110	4.5.6	2320.06		Slush Grout	m <sup>3</sup>	13,500	0.66	51.32	80.45	4.74	-	9.56	146.07	1,971,942.81	
111	4.5.7	2320.07		Dry Pack	m <sup>3</sup>	70	1.79	141.05	804.14	25.95	-	67.98	1,039.13	72,738.84	
112	4.5.8	2320.08		Drilling Holes in RCC and Bedrock for Grouting	m	4,200	3.01	237.33	5.52	38.01	97.53	26.49	404.88	1,700,477.15	
113	4.5.9	2320.09		Grouting - Successful Connections	unit	720	6.17	503.89	6.91	9.71	1,120.04	114.84	1,755.39	1,263,882.97	
114	4.5.10	2320.10		Dry Cement incorporated in the grout	kg	126,000	0.02	1.31	0.36	-	2.56	0.30	4.52	569,779.80	
115	4.5.11	2320.11		Cored Drill Check Holes	m	60	0.20	16.33	-	-	328.54	24.14	369.01	22,140.47	
116	4.5.12	2320.12		Percussion Drilling Check Holes	m	120	3.01	237.33	5.52	38.01	97.53	26.49	404.88	48,585.06	
117	4.5.13	2320.13		Water pressure test (Lugeon - 5 Stages)	hour	15	8.00	653.09	-	-	523.34	82.35	1,258.78	18,881.63	
118	4.5.14	2320.14		Water Pressure Test - Successful connections	unit	36	7.00	571.45	-	-	389.60	67.27	1,028.32	37,019.55	
119	4.5.15	2320.15		Uplift gauges	m	60	1.06	86.53	-	-	244.22	23.15	353.91	21,234.69	
120	4.5.16	2320.16		Thermistor (measure temperature in grout holes)	unit	1	17.00	1,387.81	-	-	2,384.09	264.03	4,035.94	4,035.94	
<b>Drainage Holes</b>															
121	4.5.17	2320.17		Drilling Holes for Drainage in Foundation from Drainage Gallery, Ø76 mm	m	3,200	0.19	15.13	0.75	1.05	122.74	9.78	149.45	478,237.62	
122	4.5.18	2320.18		PVC Caps for Drainage Holes	unit	125	0.36	28.66	22.38	0.29	-	3.59	54.92	6,864.82	
123	4.5.19	2320.19		Drilling Holes Upward for Drainage from Drainage Gallery into RCC, Ø76 mm	m	3,200	0.19	15.89	0.79	1.10	128.88	10.27	156.92	502,149.50	
<b>Instrumentation</b>															
124	4.5.20	2320.20		Drilling Holes for piezometers	m	100	0.20	16.33	-	-	328.54	24.14	369.01	36,900.78	
125	4.5.21	2320.21		Vibrating Wire and Standpipe Piezometers TYPE - 1, excluding Cables	unit	8	32.23	2,548.59	2,775.66	57.70	27,201.46	2,280.84	34,864.25	278,913.97	
126	4.5.22	2320.22		Vibrating Wire and Standpipe Piezometers TYPE - 2, excluding Cables	unit	2	32.23	2,548.59	2,775.66	57.70	27,201.46	2,280.84	34,864.25	69,728.49	
127	4.5.23	2320.23		Instrument Cable including PVC Conduits and Pull Boxes	m	2,700	0.48	38.23	8.88	0.87	39.42	6.12	93.51	252,489.30	
128	4.5.24	2320.24		Thermistors Cable in RCC	unit	8	0.43	33.90	1,400.38	0.29	-	100.42	1,534.99	12,279.89	
129	4.5.25	2320.25		V-notch Weirs	unit	4	16.12	1,274.30	1,012.83	28.85	1,563.96	271.60	4,151.53	16,606.11	
130	4.5.26	2320.26		Vibrating Wire Weir Monitors.	unit	4	16.12	1,274.30	62.83	28.85	1,514.62	201.64	3,082.24	12,328.95	
131	4.5.27	2320.27		Data logger, Terminal Box, Barometer Box including Grounding	LS	1	32.23	2,548.59	7,775.66	57.70	5,233.38	1,093.07	16,708.40	16,708.40	
132	4.5.28	2320.28		Crest Survey Monuments	unit	4	1.81	147.76	700.00	-	460.54	91.58	1,399.88	5,599.52	
<b>Concrete and RCC operations</b>															
133	4.5.29	2320.29		Roller Compacted Concrete (RCC)	m <sup>3</sup>	210,000	1.84	143.21	97.36	71.30	-	21.83	333.70	70,076,462.62	
134	4.5.30	2320.30		Conventional Vibrated Concrete (CVC) (Crest and Flip Bucket)	m <sup>3</sup>	11,100	12.88	966.74	177.57	158.48	-	91.20	1,393.99	15,473,241.88	
135	4.5.31	2320.31		Facing Concrete	m <sup>3</sup>	8,600	4.02	312.07	175.22	96.12	-	40.84	624.24	5,368,484.81	
136	4.5.32	2320.32		GERCC or GEVR - Formed Faces	m <sup>3</sup>	4,650	4.02	312.07	175.22	96.12	-	40.84	624.24	2,902,727.25	
137	4.5.33	2320.33		Conventional Vibrated Concrete (North Abutment Crest Surface and Training Wall)	m <sup>3</sup>	270	12.60	946.34	178.30	165.34	-	90.30	1,380.29	372,677.08	
138	4.5.34	2320.34		Increase or decrease in quantity of cement - Bid Mix (rate only)	Kg	1	-	-	357.41	-	-	25.02	382.43	-	
139	4.5.35	2320.35		Increase or decrease in quantity of flyash - Bid Mix (rate only)	Kg	1	-	-	300.89	-	-	21.06	321.96	-	
140	4.5.36	2320.36		Increase or decrease in quantity of cement - Source B (rate only)	Kg	1	-	-	365.65	-	-	25.60	391.25	-	
141	4.5.37	2320.37		Increase or decrease in quantity of flyash - Source B (rate only)	Kg	1	-	-	374.92	-	-	26.24	401.16	-	
142	4.5.38	2320.38		Air-entraining Admixture	litre	315,000	-	-	3.24	-	-	0.23	3.47	1,092,749.81	
143	4.5.39	2320.39		Retarder Admixture	litre	336,000	-	-	4.86	-	-	0.34	5.20	1,746,584.11	

LOWER CHURCHILL PROJECT				SCHEDULE OF PRICE BREAKDOWN										APPENDIX A2.1			
				ISSUED FOR: BID						DATE: 14 - Oct - 2014				BIDDER'S NAME:		Rev. B2	
PRICE ITEM	WBS CODE	SUBCODE		PRICE ITEM DESCRIPTION	UNIT OF MEASURE	ESTIMATED QUANTITY A	MAN HOURS (AT SITE) PER UNIT	MANPOWER COST/UNIT (\$ CAN) B	MATERIALS COST/UNIT (\$ CAN) C	EQUIPMENT COST/UNIT (\$ CAN) D	OTHERS	PROFIT COST/UNIT (\$ CAN) E	UNIT PRICE (\$ CAN) F= (B+C+D+E)	TOTAL PRICE (\$ CAN) G= A x F			
No	REFERENCE Exhibit 2 - ATT 1	CODE															
144	4.5.40		2320.40	Precast Concrete	m <sup>3</sup>	1,150	18.09	1,430.74	402.25	731.55	-	179.52	2,744.05	3,155,658.09			
145	4.5.41		2320.41	Gallery Floor CVC Concrete	m <sup>3</sup>	275	5.82	445.84	123.40	97.60	-	46.68	713.53	196,219.59			
146	4.5.42		2320.42	Steel Reinforcement	kg	500,000	0.04	3.11	1.47	0.01	0.60	0.36	5.55	2,777,237.39			
147	4.5.43		2320.43	Steel Guardrails	kg	5,200	0.03	2.51	5.55	0.19	-	0.58	8.84	45,950.44			
148	4.5.44		2320.44	Waterstop	m	1,350	0.29	22.72	47.27	0.36	-	4.92	75.28	101,627.03			
	4.6		2370	<b>NORTH DAM - Auxiliary Services</b>													
<b>ELECTRICAL WORK</b>																	
149	4.6.1		2370.01	Exothermic Connections.	unit	20	2.40	233.15	-	-	169.81	28.21	431.17	8,623.34			
150	4.6.2		2370.02	Bare, Stranded, Medium Hard-Drawn Copper Conductor, size 500 kcmil	m	815	0.41	40.23	-	-	70.01	7.72	117.95	96,131.90			
151	4.6.3		2370.03	Bare, Stranded, Medium Hard-Drawn Copper Conductor, size 4/0 AWG	m	16	0.22	21.78	-	-	32.18	3.78	57.73	923.73			
152	4.6.4		2370.04	Embedded Copper Grounding Plates	unit	7	4.00	388.58	-	-	526.93	64.09	979.60	6,857.20			
<b>SUB-TOTAL NORTH DAM</b>														<b>115,210,495.66</b>			
<b>5 3100 Powerhouse Channels</b>																	
<b>5.1 3120.00 Tailrace</b>																	
<b>CIVIL WORK</b>																	
<b>Tailrace Rock Plug - Overburden Excavation</b>																	
153	5.1.1		3120.01	Overburden Excavation, excluding excavation of Cofferdam 3 - Dry Conditions	m <sup>3</sup>	12,000	0.08	6.09	2.41	3.82	-	0.86	13.19	158,239.20			
<b>Tailrace Rock Plug - Rock Excavation</b>																	
154	5.1.2		3120.02	Tailrace Rock Plug Excavation including access ramp to powerhouse -Dry Conditions	m <sup>3</sup>	170,000	0.14	12.64	3.18	5.11	14.90	2.51	38.34	6,517,040.18			
155	5.1.3		3120.03	Tailrace Rock Plug - Underwater Excavation	m <sup>3</sup>	34,000	0.34	35.26	3.17	5.09	37.33	5.66	86.51	2,941,311.64			
<b>Tailrace Rock Plug - Stabilization and Rock Surface Protection</b>																	
156	5.1.4		3120.04	Grouted Rock Bolts Type A	unit	70	1.10	88.86	188.59	17.54	-	20.65	315.64	22,094.73			
157	5.1.5		3120.05	Grouted Rock Bolts Type C	unit	20	1.62	130.61	602.55	24.64	-	53.05	810.85	16,217.02			
158	5.1.6		3120.06	Chain Link Wire Mesh - Installation	m <sup>2</sup>	2,500	0.67	52.82	33.16	0.62	-	6.06	92.66	231,640.21			
159	5.1.7		3120.07	Chain Link Wire Mesh - Removal	m <sup>2</sup>	20,300	0.67	52.82	1.38	0.62	-	3.84	58.65	1,190,625.13			
160	5.1.8		3120.08	Existing Temporary Safety Fence - Removal	m	1,200	0.95	75.31	1.61	0.80	-	5.44	83.17	99,804.09			
<b>SUB-TOTAL TAILRACE</b>														<b>11,176,972.20</b>			
<b>6 1100 Borrow Areas</b>																	
<b>6.1 1117.00 Borrowed Construction Material</b>																	
161	6.1.1		3120.01	Overhaul of Borrowed Construction Material (rate only)	m <sup>3</sup> /km	1	-	0.49	0.25	0.42	-	0.08	1.23				
<b>ROW A</b>	<b>CALCULATED TOTAL OF LUMP SUM</b>													<b>394,381,469.00</b>			

NOTES

- Note 1:** If there has been an error in the calculation to establish the total of Column G (Total Price) or Column F (UNIT PRICE), then the figures of column A (Estimated Quantity of Units), column B (Man Hours), column C (Manpower), column D (Equipment) and column E (Profits) will prevail.
- Note 2:** This Document is provided to the bidders in Native Excel File format. It is the bidders responsibility to verify cell formats and formulas.
- Note 3:** Bidders shall not include any HST/GST from any source (whether from Bidder, subcontractor, vendors or suppliers) in the unit and lump sum prices in this Schedule of Price Breakdown. Bidders shall claim input tax credits on taxable supplies received from vendors, suppliers and subcontractors and thereof Bidders shall exclude HST/GST payable to the vendors, suppliers and subcontractors from the unit and lump sum prices in the Schedule. Bidders shall exclude HST/GST on the total listed in Row A.

FOR THE LOWER CHURCHILL PROJECT - MUSKRAT FALLS

This Appendix forms part of the Proposal submitted by:

Name of Bidder: ASTALDI CANADA INC.

Request For Proposal, Package No: CH0009

Signature:

Date of Proposal: 20-10-2014

LOWER CHURCHILL PROJECT MUSKRAT FALLS CH0009 - CONSTRUCTION OF NORTH AND SOUTH DAMS				SCHEDULE OF PRICE BREAKDOWN							APPENDIX A2.1			
											Rev. B2			
ISSUED FOR: BID				DATE: 22 - Oct - 2014			BIDDER'S NAME: Barnard-Pennecon J.V.							
PRICE ITEM		WBS CODE		PRICE ITEM DESCRIPTION	UNIT OF MEASURE	ESTIMATED QUANTITY A	MAN HOURS (AT SITE) PER UNIT	MANPOWER COST/UNIT (\$ CAN) B	MATERIALS COST/UNIT (\$ CAN) C	EQUIPMENT COST/UNIT (\$ CAN) D	SUBCONTRACTORS COST/UNIT (\$ CAN) E	UNIT PRICE	TOTAL PRICE	
No	REFERENCE Exhibit 2 - ATT 1	CODE	SUBCODE									F= (B+C+D+E)	G= A x F	
													\$	\$
<b>2 0000</b>				<b>INDIRECT COSTS</b>										
1	2.1		0000.01	Mobilization	LS	1	83638	8,100,000.00	31,390,797.52	28,250,000.00	5,500,000.00	73,240,797.52	73,240,797.52	
2	2.2		0000.02	Site Installation	LS	1	151227	13,000,000.00	5,000,000.00	26,500,000.00	1,500,000.00	46,000,000.00	46,000,000.00	
3	2.3		0000.03	Management, Staff, employees and Consultants	LS	1	234434	41,500,000.00	2,500,000.00	1,000,000.00	150,000.00	45,150,000.00	45,150,000.00	
4	2.4		0000.04	Health and Safety, Environmental and Quality Requirements	LS	1	14143	2,400,000.00	550,000.00		115,000.00	3,065,000.00	3,065,000.00	
5	2.5		0000.05	Credit, Guarantee and Insurance	LS	1			991,000.00			991,000.00	991,000.00	
6	2.6		0000.06	Warranty, per Article 17 of the Agreement	LS	1		100,000.00	100,000.00	100,000.00		300,000.00	300,000.00	
7	2.7		0000.07	Demobilization	LS	1	1472	135,124.00	430,000.00	350,000.00		915,124.00	915,124.00	
<b>2 0000</b>				<b>SUB-TOTAL INDIRECT COSTS</b>										<b>169,661,921.52</b>
<b>3 1100</b>				<b>GENERAL</b>										
<b>3.1 1110</b>				<b>DEWATERING OF STRUCTURE AREAS</b>										
8	3.1.1		1110.01	Dewatering of Structure Areas	LS	1	3,174	290,000.00	400000	1,500,000.00		2190000	2,190,000.00	
<b>3.2 1111</b>				<b>EXCAVATION OF EXISTING COFFERDAMS</b>										
9	3.2.1		1111.01	Excavation of Existing Embankment cofferdams 1, 2 and 3, and Existing Ramps	m <sup>3</sup>	177,000	3,343	1.72		9.04		10.76	1,904,520.00	
10	3.2.2		1111.02	Excavation of Downstream section of RCC riverside cofferdam	m <sup>3</sup>	20,000	933	4.30	4.89	12.50		21.69	433,800.00	
<b>3.3 1112</b>				<b>PERMANENT ROADS AND PARKING AREA</b>										
11	3.3.1		1112.01	Overburden Excavation	m <sup>3</sup>	8,000	206	2.38		6.50		8.88	71,040.00	
12	3.3.2		1112.02	Approved Compactable Material	m <sup>3</sup>	44,000	873	1.84		1.36		3.20	140,800.00	
13	3.3.3		1112.03	Granular "B" Material	m <sup>3</sup>	5,800	418	6.72	44.26	6.03		57.01	330,658.00	
14	3.3.4		1112.04	Granular "C" Material	m <sup>3</sup>	4,000	347	8.00	44.26	6.00		58.26	233,040.00	
15	3.3.5		1112.05	Maintenance Grade 3 material	m <sup>3</sup>	4,500	326	6.67	44.26	5.56		56.49	254,205.00	
16	3.3.6		1112.06	CSP culvert, dia. 900 mm	m	48	110	229.17		312.50		541.67	26,000.16	
17	3.3.7		1112.07	Guide Rails	m	400	458	105.00	50.04	26.25		181.29	72,516.00	
18	3.3.8		1112.08	Gate Type 1	unit	2	55	5,000.00	850.00	1,700.00		7,550.00	15,100.00	
<b>3.4 1113</b>				<b>ACCESS ROAD TO LAYDOWN AREA C1</b>										
19	3.4.1		1113.01	Approved Compactable Material	m <sup>3</sup>	26,000	426	1.54		1.54		3.08	80,080.00	
20	3.4.2		1113.02	Granular "C" Material	m <sup>3</sup>	7,500	248	3.07	44.26	4.67		52.00	390,000.00	
<b>3.5 1114</b>				<b>DITCHES</b>										
21	3.5.1		1114.01	Overburden Excavation	m <sup>3</sup>	2,000	442	20.50		20.00		40.50	81,000.00	
22	3.5.2		1114.02	Non-woven Geotextile, min 300 g/m <sup>2</sup>	m <sup>2</sup>	2,500	74	2.80	3.06	0.88		6.74	16,850.00	
23	3.5.3		1114.03	Rockfill Protection, 100 - 250 mm	m <sup>3</sup>	1,000	109	11.00	42.72	16.00		69.72	69,720.00	
<b>3.6 1115</b>				<b>SLOPE PROTECTION</b>										
24	3.6.1		1115.01	Rockfill Protection, Zone 3E Material	m <sup>3</sup>	2,500	307	11.20	42.72	32.00		85.92	214,800.00	
25	3.6.2		1115.02	Non-woven Geotextile, min 530 g/m <sup>2</sup>	m <sup>2</sup>	4,500	166	3.56	3.91	0.78		8.25	37,125.00	
<b>3.7 1116</b>				<b>CHAIN LINK FENCES AND GATES</b>										
26	3.7.1		1116.01	Chain Link Fence and Gates	m	720	1,954	256.94		48.61		305.55	219,996.00	

LOWER CHURCHILL PROJECT MUSKRAT FALLS CH0009 - CONSTRUCTION OF NORTH AND SOUTH DAMS				SCHEDULE OF PRICE BREAKDOWN							APPENDIX A2.1		
											Rev. B2		
ISSUED FOR: BID				DATE: 22 - Oct - 2014			BIDDER'S NAME: Barnard-Pennecon J.V.						
PRICE ITEM		WBS CODE		PRICE ITEM DESCRIPTION	UNIT OF MEASURE	ESTIMATED QUANTITY A	MAN HOURS (AT SITE) PER UNIT	MANPOWER COST/UNIT (\$ CAN) R	MATERIALS COST/UNIT (\$ CAN) C	EQUIPMENT COST/UNIT (\$ CAN) D	SUBCONTRACTORS COST/UNIT (\$ CAN) F	UNIT PRICE	TOTAL PRICE
No	REFERENCE Exhibit 2 - ATT 1	CODE	SUBCODE									(\$ CAN) F= (B+C+D+E)	(\$ CAN) G= A x F
	<b>3.8</b>		<b>1150</b>	<b>TEMPORARY UPSTREAM BRIDGE OVER SPILLWAY APPROACH CHANNEL</b>									
27	3.8.1		1150.01	Engineering of Temporary Upstream Bridge	LS	1	0	-	-	-	50,000.00	50,000.00	50,000.00
28	3.8.2		1150.02	Supply of Temporary Upstream Bridge	LS	1	0	-	7,650,000.00	-	-	7,650,000.00	7,650,000.00
29	3.8.3		1150.03	Installation, removal and handover of Temporary Upstream Bridge	LS	1	14,950	1,425,000.00	750,000.00	550,000.00	-	2,725,000.00	2,725,000.00
<b>SUB-TOTAL GENERAL</b>													<b>17,206,250.16</b>
	<b>4</b>	<b>2300</b>		<b>DAMS AND COFFERDAMS - GENERAL</b>									
	<b>4.1</b>	<b>2340</b>	<b>2341</b>	<b>UPSTREAM COFFERDAM</b>									
				<b>CIVIL WORK</b>									
				<b>Excavation</b>									
30	4.1.1		2341.01	Overburden excavation	m <sup>3</sup>	2,500	64	2.40	-	2.20	-	4.60	11,500.00
				<b>Foundation Preparation in dry condition</b>									
31	4.1.2		2341.02	Foundation Cleaning (water/air jets and Vacuum trucks)	m <sup>2</sup>	1,200	313	24.17	-	13.33	-	37.50	45,000.00
32	4.1.3		2341.03	Rock Excavation including dental excavation and Scaling	m <sup>3</sup>	500	238	44.00	22.22	96.00	-	162.22	81,110.00
33	4.1.4		2341.04	Dental Concrete	m <sup>3</sup>	800	1,685	195.00	531.25	-	49.82	776.07	620,856.00
34	4.1.5		2341.05	Slush Grout	m <sup>2</sup>	1,200	462	35.83	12.50	2.50	-	50.83	60,996.00
35	4.1.6		2341.06	Dry Pack	m <sup>3</sup>	6	217	3,500.00	1,500.00	500.00	-	5,500.00	33,000.00
				<b>Embankment Materials</b>									
36	4.1.7		2341.07	Compacted Till - Zones 1 and 1C Materials	m <sup>3</sup>	19,000	2,877	13.74	-	27.37	-	41.11	781,090.00
37	4.1.8		2341.08	Dumped Till - Zone 1A Material	m <sup>3</sup>	134,000	11,788	7.99	-	20.81	-	28.80	3,859,200.00
38	4.1.9		2341.09	Compacted Granular - Zone 2A Material	m <sup>3</sup>	20,700	1,607	7.25	45.89	16.91	-	70.05	1,450,035.00
39	4.1.10		2341.10	Compacted Granular - Zone 2C Material	m <sup>3</sup>	8,700	711	7.70	44.26	18.97	-	70.93	617,091.00
40	4.1.11		2341.11	Dumped Granular - Zone 2E Material	m <sup>3</sup>	26,300	1,037	3.80	44.26	9.32	-	57.38	1,509,094.00
41	4.1.12		2341.12	Dumped Rockfill- Zone 3 Material	m <sup>3</sup>	143,000	2,850	1.85	-	10.14	-	11.99	1,714,570.00
42	4.1.13		2341.13	Dumped Large Blocks (300-1000 mm) - Zone 3 Class 1	m <sup>3</sup>	37,000	738	1.84	-	9.92	-	11.76	435,120.00
43	4.1.14		2341.14	Dumped Large Blocks (≥1000 mm) - Zone 3 Class 2	m <sup>3</sup>	65,000	3,189	4.51	-	25.49	-	30.00	1,950,000.00
44	4.1.15		2341.15	Dumped Large Blocks (≥1300 mm) - Zone 3 Class 3	m <sup>3</sup>	15,000	675	4.13	-	25.93	-	30.06	450,900.00
45	4.1.16		2341.16	Compacted Crushed Stone - Zone 3A Material	m <sup>3</sup>	10,950	914	7.76	44.70	12.79	-	65.25	714,487.50
46	4.1.17		2341.17	Compacted Rockfill - Zone 3C Material	m <sup>3</sup>	33,740	3,397	9.34	-	37.05	-	46.39	1,565,198.60
47	4.1.18		2341.18	Compacted Rockfill - Zone 3D Material	m <sup>3</sup>	33,900	1,428	3.86	-	12.54	-	16.40	555,960.00
48	4.1.19		2341.19	Dumped Crushed Stone- Zone 3F Material	m <sup>3</sup>	21,000	828	3.67	44.70	7.62	-	55.99	1,175,790.00
				<b>Investigation for Jet Grouted Cut-off Wall and Bedrock Grouting</b>									
49	4.1.20		2341.20	Percussion Drill Holes in embankments, river sediments and bedrock	m	1,000	230	22.40	-	-	104.00	126.40	126,400.00
50	4.1.21		2341.21	Verification Core Drilling in jet grouting cut-off wall and bedrock	m	200	132	61.68	-	-	407.00	468.68	93,736.00
51	4.1.22		2341.22	Core Diamond Drill Rig in Standby	hour	140	0	-	-	-	132.00	132.00	18,480.00

LOWER CHURCHILL PROJECT MUSKRAT FALLS CH0009 - CONSTRUCTION OF NORTH AND SOUTH DAMS				SCHEDULE OF PRICE BREAKDOWN							APPENDIX A2.1		
											Rev. B2		
ISSUED FOR: BID				DATE: 22 - Oct - 2014			BIDDER'S NAME: Barnard-Pennecon J.V.						
PRICE ITEM		WBS CODE		PRICE ITEM DESCRIPTION	UNIT OF MEASURE	ESTIMATED QUANTITY A	MAN HOURS (AT SITE) PER UNIT	MANPOWER COST/UNIT (\$ CAN) R	MATERIALS COST/UNIT (\$ CAN) C	EQUIPMENT COST/UNIT (\$ CAN) D	SUBCONTRACTORS COST/UNIT (\$ CAN) F	UNIT PRICE	TOTAL PRICE
No	REFERENCE Exhibit 2 - ATT 1	CODE	SUBCODE									(\$ CAN) F= (B+C+D+E)	(\$ CAN) G= A x F
				<b>Jet Grouting cut off wall</b>									
52	4.1.23		2341.23	Mobilization and demobilization	LS	1	2,155	239,568.00			873,147.00	1,112,715.00	1,112,715.00
53	4.1.24		2341.24	Drilling Holes for Jet Grouting in embankment, river sediments and bedrock	m	9,600	4,416	45.83			114.00	159.83	1,534,368.00
54	4.1.25		2341.25	Jet Grouted Cut-off wall	m <sup>2</sup>	2,800	4,376	147.46	46.05	7.86	852.00	1,053.37	2,949,436.00
				<b>Bedrock Grouting beneath the Jet Grouted Cut-off Wall, if required</b>									
55	4.1.26		2341.26	Drilling Holes for Grouting in embankment , jet grouting cut-off wall and bedrock, if required	m	1,300	60	3.96			19.00	22.96	29,848.00
56	4.1.27		2341.27	Dry cement incorporated in the grout, if required	kg	11,000	0	-			1.00	1.00	11,000.00
57	4.1.28		2341.28	Grouting - Successful connections, if required	unit	60	138	199.50			642.00	841.50	50,490.00
<b>SUB-TOTAL UPSTREAM COFFERDAM</b>													<b>23,557,471.10</b>
	<b>4.2</b>	<b>2340</b>	<b>2342</b>	<b>DOWNSTREAM COFFERDAM</b>									
				<b>CIVIL WORK</b>									
				<b>Excavation</b>									
58	4.2.1		2342.01	Overburden excavation	m <sup>3</sup>	500	37	7.00		14.40		21.40	10,700.00
				<b>Foundation Preparation</b>									
59	4.2.2		2342.02	Foundation cleaning (water/ait jets and Vacuum trucks)	m <sup>2</sup>	1,250	326	24.00		13.20		37.20	46,500.00
60	4.2.3		2342.03	Rock excavation including dental excavation and scaling	m <sup>3</sup>	500	238	44.00	22.22	90.00		156.22	78,110.00
61	4.2.4		2342.04	Dental Concrete	m <sup>3</sup>	200	421	195.00	507.80		49.83	752.63	150,526.00
62	4.2.5		2342.05	Slush Grout	m <sup>2</sup>	1,250	481	35.20	11.25	2.40		48.85	61,062.50
63	4.2.6		2342.06	Dry Pack	m <sup>3</sup>	6	217	3,500.00	1,500.00	500.00		5,500.00	33,000.00
				<b>Embankment Materials</b>									
64	4.2.7		2342.07	Compacted Till - Zones 1 and 1C	m <sup>3</sup>	2,000	303	14.00		22.50		36.50	73,000.00
65	4.2.8		2342.08	Compacted Granular - Zone 2C	m <sup>3</sup>	2,500	212	8.00	44.26	14.00		66.26	165,650.00
66	4.2.9		2342.09	Compacted Rockfill - Zone 3C	m <sup>3</sup>	4,600	474	9.57		32.61		42.18	194,028.00
67	4.2.10		2342.10	Compacted Rockfill - Zone 3D	m <sup>3</sup>	2,000	84	4.00		13.00		17.00	34,000.00
<b>SUB-TOTAL DOWNSTREAM COFFERDAM</b>													<b>846,576.50</b>
	<b>4.3</b>	<b>2340</b>	<b>2343</b>	<b>INTAKE CHANNEL COFFERDAM</b>									
				<b>CIVIL WORK</b>									
				<b>Excavation</b>									
68	4.3.1		2343.01	Overburden excavation	m <sup>3</sup>	8,800	235	2.50		5.68		8.18	71,984.00
				<b>Foundation Preparation</b>									
69	4.3.2		2343.02	Foundation cleaning (water/ait jets and Vacuum trucks)	m <sup>2</sup>	1,700	443	24.12		\$14.71		38.83	66,011.00
70	4.3.3		2343.03	Rock excavation including dental excavation and scaling	m <sup>3</sup>	700	333	44.29	22.22	\$85.71		152.22	106,554.00
71	4.3.4		2343.04	Dental Concrete	m <sup>3</sup>	250	526	196.00	507.69		\$49.83	753.52	188,380.00
72	4.3.5		2343.05	Slush Grout	m <sup>2</sup>	1,700	655	35.29	11.25	\$3.53		50.07	85,119.00
73	4.3.6		2343.06	Dry Pack	m <sup>3</sup>	9	325	3,444.44	1333.33	\$333.33		5111.1	45,999.90

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PRICE ITEM		WBS CODE		PRICE ITEM DESCRIPTION	UNIT OF MEASURE	ESTIMATED QUANTITY A	MAN HOURS (AT SITE) PER UNIT	MANPOWER COST/UNIT (\$ CAN) B	MATERIALS COST/UNIT (\$ CAN) C	EQUIPMENT COST/UNIT (\$ CAN) D	SUBCONTRACTORS COST/UNIT (\$ CAN) E	UNIT PRICE	TOTAL PRICE	
No	REFERENCE Exhibit 2 - ATT 1	CODE	SUBCODE									(\$ CAN) F= (B+C+D+E)	(\$ CAN) G= A x F	
<b>Embankment Materials</b>														
74	4.3.7		2343.07	Compacted Till - Zones 1 and 1C	m <sup>3</sup>	6,300	954	13.81		\$23.81		37.62	237,006.00	
75	4.3.8		2343.08	Compacted Granular - Zone 2C	m <sup>3</sup>	4,900	411	7.96	44.26	\$13.27		65.49	320,901.00	
76	4.3.9		2343.09	Compacted Rockfill - Zone 3C	m <sup>3</sup>	5,200	522	9.42		\$28.85		38.27	199,004.00	
77	4.3.10		2343.10	Compacted Rockfill - Zone 3D	m <sup>3</sup>	1,400	59	3.93		\$14.29		18.22	25,508.00	
<b>SUB-TOTAL INTAKE CHANNEL COFFERDAM</b>													<b>1,346,466.90</b>	
<b>4.4</b>				<b>2330</b>	<b>SOUTH DAM</b>									
					<b>CIVIL WORK</b>									
					<b>Excavation</b>									
78	4.4.1		2330.01	Overburden excavation	m <sup>3</sup>	94,000	2,514	2.44		5.53		7.97	749,180.00	
					<b>Foundation Preparation</b>									
79	4.4.2		2330.02	Foundation cleaning (water/ait jets and Vacuum trucks)	m <sup>2</sup>	3,400	886	23.82		13.53		37.35	126,990.00	
80	4.4.3		2330.03	Rock excavation including dental excavation and scaling	m <sup>3</sup>	2,000	953	44.00	22.22	67.50		133.72	267,440.00	
81	4.4.4		2330.04	Dental Concrete	m <sup>3</sup>	1,200	2,527	195.00	507.69		49.83	752.52	903,024.00	
82	4.4.5		2330.05	Slush Grout	m <sup>2</sup>	3,400	1,309	35.29	11.25	3.53		50.07	170,238.00	
83	4.4.6		2330.06	Dry Pack	m <sup>3</sup>	20	722	3,350.00	1,000.00	200.00		4,550.00	91,000.00	
84	4.4.7		2330.07	Drilling Holes for Grouting	m	1,200	1,094	82.86	13.31	5.00		103.00	204.17	245,004.00
85	4.4.8		2330.08	Dry cement incorporated in the grout	kg	42,000	386	1.15				3.33	4.48	188,160.00
86	4.4.9		2330.09	Cored Drill Check Holes	m	30	44	124.80				233.33	358.13	10,743.90
87	4.4.10		2330.10	Percussion Drilling Check holes	m	60	44	57.85				116.67	174.52	10,471.20
88	4.4.11		2330.11	Grouting - Successful connections	unit	250	121	46.00				110.00	156.00	39,000.00
89	4.4.12		2330.12	Water pressure test (Lugeon - 5 Stages)	hour	8	22	255.00				600.00	855.00	6,840.00
90	4.4.13		2330.13	Water test - Successful connections	unit	18	22	113.33				266.67	380.00	6,840.00
91	4.4.14		2330.14	Uplift gauges	m	20	44	187.25				600.00	787.25	15,745.00
92	4.4.15		2330.15	Thermistors (measure rock temperature in grout holes)	unit	1	44	3,744.00				9,000.00	12,744.00	12,744.00
					<b>Embankment Materials</b>									
93	4.4.16		2330.16	Compacted Till - Zones 1 and 1C	m <sup>3</sup>	26,000	3,678	12.81		22.12		34.93	908,180.00	
94	4.4.17		2330.17	Compacted Granular - Zone 2A	m <sup>3</sup>	28,000	2,527	8.39	44.70	13.93		67.02	1,876,560.00	
95	4.4.18		2330.18	Compacted Crushed Stone - Zone 3A	m <sup>3</sup>	12,000	1,083	8.42	44.70	14.17		67.29	807,480.00	
96	4.4.19		2330.19	Compacted Crushed Stone - Zone 3B	m <sup>3</sup>	16,000	1,444	8.44	44.26	14.06		66.76	1,068,160.00	
97	4.4.20		2330.20	Compacted Rockfill - Zone 3C	m <sup>3</sup>	21,000	1,977	8.71		33.33		42.04	882,840.00	
98	4.4.21		2330.21	Compacted Rockfill - Zone 3D	m <sup>3</sup>	46,000	1,646	3.28		16.30		19.58	900,680.00	
99	4.4.22		2330.22	Riprap - Zone 4	m <sup>3</sup>	6,000	626	9.67	42.72	17.50		69.89	419,340.00	
100	4.4.23		2330.23	Compacted Crushed Stone - Zone 5	m <sup>3</sup>	310	69	20.97	44.24	19.35		84.56	26,213.60	
101	4.4.24		2330.24	Jersey Barrier	m	600	46	7.50		7.50		15.00	9,000.00	



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No	REFERENCE Exhibit 2 - ATT 1	CODE	SUBCODE									(\$ CAN) F= (B+C+D+E)	(\$ CAN) G= A x F
				<b>Geotechnical Instrumentation</b>									
102	4.4.25		2330.25	V-Notch Weirs, excluding Shelters	unit	2	247	11,500.00	12,068.00	11,000.00		34,568.00	69,136.00
103	4.4.26		2330.26	Shelters for V-Notch Weirs	unit	2	37	2,000.00	15,000.00			17,000.00	34,000.00
104	4.4.27		2330.27	Survey Monuments at South Dam Crest	unit	3	0	-			2,000.00	2,000.00	6,000.00
				<b>SUB-TOTAL SOUTH DAM</b>									
				<b>9,851,009.70</b>									
				<b>4.5 2320 NORTH DAM</b>									
				<b>CIVIL WORK</b>									
				<b>Clearing</b>									
105	4.5.1		2320.01	Clearing of the North Abutment	Ha	3	736	22,666.67		46666.67		69333.34	208,000.02
				<b>Excavation</b>									
106	4.5.2		2320.02	Overburden Excavation	m <sup>3</sup>	72,000	2,208	2.79		6.94		9.73	700,560.00
				<b>Foundation Preparation</b>									
107	4.5.3		2320.03	Foundation Cleaning (water/air jets and vacuum)	m <sup>2</sup>	13,500	3,519	23.85		13.33		37.18	501,930.00
108	4.5.4		2320.04	Rock Excavation including Dental Excavation and Scaling	m <sup>3</sup>	6,000	2,858	43.83	22.22	52.50		118.55	711,300.00
109	4.5.5		2320.05	Dental Concrete	m <sup>3</sup>	4,000	8,424	195.00	507.73		49.83	752.56	3,010,240.00
110	4.5.6		2320.06	Slush Grout	m <sup>2</sup>	13,500	5,199	35.19	11.25	2.22		48.66	656,910.00
111	4.5.7		2320.07	Dry Pack	m <sup>3</sup>	70	2,527	3,357.14	882.40	171.43		4,410.97	308,767.90
112	4.5.8		2320.08	Drilling Holes in RCC and Bedrock for Grouting	m	4,200	6,578	155.84	5.49	9.05	130.95	301.33	1,265,586.00
113	4.5.9		2320.09	Grouting - Successful Connections	unit	720	198	26.25			100.00	126.25	90,900.00
114	4.5.10		2320.10	Dry Cement incorporated in the grout	kg	126,000	695	0.60			2.10	2.70	340,200.00
115	4.5.11		2320.11	Cored Drill Check Holes	m	60	99	154.20			296.00	450.20	27,012.00
116	4.5.12		2320.12	Percussion Drilling Check Holes	m	120	153	120.46			216.00	336.46	40,375.20
117	4.5.13		2320.13	Water pressure test (Lugeon - 5 Stages)	hour	15	44	272.00			506.00	778.00	11,670.00
118	4.5.14		2320.14	Water Pressure Test - Successful connections	unit	36	44	113.33			211.00	324.33	11,675.88
119	4.5.15		2320.15	Uplift gauges	m	60	99	154.20			510.00	664.20	39,852.00
120	4.5.16		2320.16	Thermistor (measure temperature in grout holes)	unit	1	44	3,750.00			8,046.00	11,796.00	11,796.00
				<b>Drainage Holes</b>									
121	4.5.17		2320.17	Drilling Holes for Drainage in Foundation from Drainage Gallery, Ø76 mm	m	3,200	4,239	133.36			134.38	267.74	856,768.00
122	4.5.18		2320.18	PVC Caps for Drainage Holes	unit	125	0	-			28.00	28.00	3,500.00
123	4.5.19		2320.19	Drilling Holes Upward for Drainage from Drainage Gallery into RCC, Ø76 mm	m	3,200	5,122	149.38			134.38	283.76	908,032.00
				<b>Instrumentation</b>									
124	4.5.20		2320.20	Drilling Holes for piezometers	m	100	0	-			296.00	296.00	29,600.00
125	4.5.21		2320.21	Vibrating Wire and Standpipe Piezometers TYPE - 1, excluding Cables	unit	8	0	-			13,600.00	13,600.00	108,800.00
126	4.5.22		2320.22	Vibrating Wire and Standpipe Piezometers TYPE - 2, excluding Cables	unit	2	0	-			3,000.00	3,000.00	6,000.00
127	4.5.23		2320.23	Instrument Cable including PVC Conduits and Pull Boxes	m	2,700	0	-			28.00	28.00	75,600.00
128	4.5.24		2320.24	Thermistors Cable in RCC	unit	8	0	-			5,000.00	5,000.00	40,000.00
129	4.5.25		2320.25	V-notch Weirs	unit	4	0	-	8,243.00		6,000.00	14,243.00	56,972.00
130	4.5.26		2320.26	Vibrating Wire Weir Monitors.	unit	4	0	-			16,000.00	16,000.00	64,000.00
131	4.5.27		2320.27	Data logger, Terminal Box, Barometer Box including Grounding	LS	1	0	-			150,000.00	150,000.00	150,000.00
132	4.5.28		2320.28	Crest Survey Monuments	unit	4	0	-			2,000.00	2,000.00	8,000.00

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ISSUED FOR: BID				DATE: 22 - Oct - 2014			BIDDER'S NAME: Barnard-Pennecon J.V.						
PRICE ITEM		WBS CODE		PRICE ITEM DESCRIPTION	UNIT OF MEASURE	ESTIMATED QUANTITY A	MAN HOURS (AT SITE) PER UNIT	MANPOWER COST/UNIT (\$ CAN) R	MATERIALS COST/UNIT (\$ CAN) C	EQUIPMENT COST/UNIT (\$ CAN) D	SUBCONTRACTORS COST/UNIT (\$ CAN) F	UNIT PRICE	TOTAL PRICE
No	REFERENCE Exhibit 2 - ATT 1	CODE	SUBCODE									(\$ CAN) F= (B+C+D+E)	(\$ CAN) G= A x F
Concrete and RCC operations													
133	4.5.29		2320.29	Roller Compacted Concrete (RCC)	m <sup>3</sup>	200,738	158,485	73.65	159.41	3.36	1.96	238.38	47,851,924.44
133.A				RCC Trial Demonstration Sections	m <sup>3</sup>	4,612	300	37.94	325.24	75.89		439.07	2,024,990.84
133.B				Leveling Conrete (Rate Only)	m <sup>3</sup>	1		83.00	495.00	65.00		643	643.00
134	4.5.30		2320.30	Conventional Vibrated Concrete (CVC ) (Crest and Flip Bucket)	m <sup>3</sup>	11,100	39,834	331.98	585.59	42.79	16.35	976.71	10,841,481.00
135	4.5.31		2320.31	Facing Concrete	m <sup>3</sup>	8,600	12,719	134.88	494.19	22.09	31.02	682.18	5,866,748.00
136	4.5.32		2320.32	GERCC or GEVR - Formed Faces (Rate Only)	m <sup>3</sup>	1		1.00	\$0.38	\$0.28	0	1.66	1.66
136.1				Facing In Place Of GERCC	m <sup>3</sup>	4650	7139	140.43	483.87		61.29	685.59	3,187,993.50
137	4.5.33		2320.33	Conventional Vibrated Concrete (North Abutment Crest Surface and Training Wall)	m <sup>3</sup>	270	1,603	555.56	925.93		53.62	1,535.11	414,479.70
138	4.5.34		2320.34	Increase or decrease in quantity of cement - Bid Mix (rate only)	Kg		0	-	0.41			0.41	
139	4.5.35		2320.35	Increase or decrease in quantity of flyash - Bid Mix (rate only)	Kg		0	-	0.41			0.41	
140	4.5.36		2320.36	Increase or decrease in quantity of cement - Source B (rate only)	Kg		0	-	0.37			0.37	
141	4.5.37		2320.37	Increase or decrease in quantity of flyash - Source B (rate only)	Kg		0	-	0.37			0.37	
142	4.5.38		2320.38	Air-entraining Admixture	litre	315,000	0	-	1.38			1.38	434,700.00
143	4.5.39		2320.39	Retarder Admixture	litre	336,000	0	-	1.53			1.53	514,080.00
144	4.5.40		2320.40	Precast Concrete	LS	1	478	43,500.00	1,750,000.00			1,793,500.00	1,793,500.00
145	4.5.41		2320.41	Gallery Floor CVC Concrete	m <sup>3</sup>	275	3,437	1,163.64	800.00	60.00	129.09	2,152.73	592,000.75
146	4.5.42		2320.42	Steel Reinforcement	kg	500,000	1,711	0.31	0.08	0.23	4.11	4.73	2,365,000.00
147	4.5.43		2320.43	Steel Guardrails	kg	5,200	161	2.82	15.00			17.82	92,664.00
148	4.5.44		2320.44	Waterstop	m	1,350	815	56.67	21.48			78.15	105,502.50
	4.6		2370	<b>NORTH DAM - Auxiliary Services</b>									
<b>ELECTRICAL WORK</b>													
149	4.6.1		2370.01	Exothermic Connections.	unit	20	0	-			1,710.00	1,710.00	34,200.00
150	4.6.2		2370.02	Bare, Stranded, Medium Hard-Drawn Copper Conductor, size 500 kcmil	m	815	0	-			137.00	137.00	111,655.00
151	4.6.3		2370.03	Bare, Stranded, Medium Hard-Drawn Copper Conductor, size 4/0 AWG	m	16	0	-			81.25	81.25	1,300.00
152	4.6.4		2370.04	Embedded Copper Grounding Plates	unit	7	0	-			1,714.29	1,714.29	12,000.03
<b>SUB-TOTAL NORTH DAM</b>													
	5	3100		<b>Powerhouse Channels</b>									
	5.1		3120.00	<b>Tailrace</b>									
<b>CIVIL WORK</b>													
<b>Tailrace Rock Plug - Overburden Excavation</b>													
153	5.1.1		3120.01	Overburden Excavation, excluding excavation of Cofferdam 3 - Dry Conditions	m <sup>3</sup>	12,000	203	1.58		6.5		8.08	96,960.00
<b>Tailrace Rock Plug - Rock Excavation</b>													
154	5.1.2		3120.02	Tailrace Rock Plug Excavation including access ramp to powerhouse -Dry Conditions	m <sup>3</sup>	170,000	10,964	5.91	7.06	12.35		25.32	4,304,400.00
155	5.1.3		3120.03	Tailrace Rock Plug - Underwater Excavation	m <sup>3</sup>	34,000	5,232	14.12	22.06	26.18		62.36	2,120,240.00

LOWER CHURCHILL PROJECT MUSKRAT FALLS CH0009 - CONSTRUCTION OF NORTH AND SOUTH DAMS				SCHEDULE OF PRICE BREAKDOWN							APPENDIX A2.1		
				ISSUED FOR: BID			DATE: 22 - Oct - 2014		BIDDER'S NAME: Barnard-Pennecon J.V.				
PRICE ITEM		WBS CODE		PRICE ITEM DESCRIPTION	UNIT OF MEASURE	ESTIMATED QUANTITY A	MAN HOURS (AT SITE) PER UNIT	MANPOWER COST/UNIT (\$ CAN) B	MATERIALS COST/UNIT (\$ CAN) C	EQUIPMENT COST/UNIT (\$ CAN) D	SUBCONTRACTORS COST/UNIT (\$ CAN) E	UNIT PRICE	TOTAL PRICE
No	REFERENCE Exhibit 2 - ATT 1	CODE	SUBCODE									(\$ CAN) F= (B+C+D+E)	(\$ CAN) G= A x F
				<b>Tailrace Rock Plug - Stabilization and Rock Surface Protection</b>									
156	5.1.4		3120.04	Grouted Rock Bolts Type A	unit	70	161	214.29	71.43	214.29		500.01	35,000.70
157	5.1.5		3120.05	Grouted Rock Bolts Type C	unit	20	92	425.00	70.00	400.00		895.00	17,900.00
158	5.1.6		3120.06	Chain Link Wire Mesh - Installation	m <sup>2</sup>	2,500	828	30.40	26.00	12.00		68.40	171,000.00
159	5.1.7		3120.07	Chain Link Wire Mesh - Removal	m <sup>2</sup>	20,300	747	3.40		0.24		3.64	73,892.00
160	5.1.8		3120.08	Existing Temporary Safety Fence - Removal	m	1,200	147	12.50		3.75		16.25	19,500.00
				<b>SUB-TOTAL TAILRACE</b>									
				<b>6,838,892.70</b>									
				<b>Borrow Areas</b>									
				<b>Borrowed Construction Material</b>									
161	6.1.1		3120.01	Overhaul of Borrowed Construction Material (rate only)	m3/km								2.00
162	6.1.1		3120.01	RCC Coarse Aggregate - Produce & Stockpile	tonne								20.00
163	6.1.1		3120.01	RCC Fine Aggregate - Produce & Stockpile	tonne								25.00
<b>ROW A</b>				<b>CALCULATED TOTAL OF LUMP SUM AND UNIT PRICE ITEMS (BASED ON APPROXIMATE QUANTITIES)</b>							\$		<b>315,797,500.00</b>
164				<b>ESIMATE OF TRAVEL ALLOWANCES - TRADES LABOUR, LOCAL STAFF AND U.S. STAFF</b>				1		\$		<b>7,691,689.00</b>	
<b>NOTES</b>													
<b>Note 1 :</b> If there has been an error in the calculation to establish the total of Column G (Total Price) or Column F (UNIT PRICE), then the figures of column A (Estimated Quantity of Units), column B (Man Hours), column C (Manpower), column D (Equipment) and column E (Profits) will prevail.													
<b>Note 2 :</b> This Document is provided to the bidders in Native Excel File format. It is the bidders responsibility to verify cell formats and formulas.													
<b>Note 3 :</b> Bidders shall not include any HST/GST from any source (whether from Bidder, subcontractor, vendors or suppliers) in the unit and lump sum prices in this Schedule of Price Breakdown. Bidders shall claim input tax credits on taxable supplies received from vendors, suppliers and subcontractors and thereof Bidders shall exclude HST/GST payable to the vendors, suppliers and subcontractors from the unit and lump sum prices in the Schedule. Bidders shall exclude HST/GST on the total listed in Row A.													

<b>FOR THE LOWER CHURCHILL PROJECT - MUSKRAT FALLS</b>													
This Appendix forms part of the Proposal submitted by: Barnard-Pennecon J.V.													
Name of Bidder: Barnard-Pennecon J.V.													
Request For Proposal, Package No: CH0009													
Signature:													
Date of Proposal: 22-OCT-2014													

LOWER CHURCHILL PROJECT MUSKRAT FALLS CH0009 - CONSTRUCTION OF NORTH AND SOUTH DAMS				SCHEDULE OF PRICE BREAKDOWN								APPENDIX A2.1 Rev. B2	
ISSUED FOR: BID				DATE: 22 - Oct - 2014				BIDDER'S NAME: Barnard-Pennecon J.V.					
PRICE ITEM		WBS CODE		PRICE ITEM DESCRIPTION	UNIT OF MEASURE	ESTIMATED QUANTITY A	MAN HOURS (AT SITE) PER UNIT	MANPOWER COST/UNIT (\$ CAN) B	MATERIALS COST/UNIT (\$ CAN) C	EQUIPMENT COST/UNIT (\$ CAN) D	SUBCONTRACTORS COST/UNIT (\$ CAN) E	UNIT PRICE   (\$ CAN) F= (B+C+D+E)	TOTAL PRICE (\$ CAN) G= A x F
No	REFERENCE Exhibit 2 - ATT 1	CODE	SUBCODE									\$	\$
<b>2 0000</b>				<b>INDIRECT COSTS</b>									
1	2.1		0000.01	Mobilization	LS	1	83638	8,100,000.00	31,390,797.52	28,250,000.00	5,500,000.00	73,240,797.52	73,240,797.52
2	2.2		0000.02	Site Installation	LS	1	151227	13,000,000.00	5,000,000.00	26,500,000.00	1,500,000.00	46,000,000.00	46,000,000.00
3	2.3		0000.03	Management, Staff, employees and Consultants	LS	1	234434	41,500,000.00	2,500,000.00	1,000,000.00	150,000.00	45,150,000.00	45,150,000.00
4	2.4		0000.04	Health and Safety, Environmental and Quality Requirements	LS	1	14143	2,400,000.00	550,000.00		115,000.00	3,065,000.00	3,065,000.00
5	2.5		0000.05	Credit, Guarantee and Insurance	LS	1			991,000.00			991,000.00	991,000.00
6	2.6		0000.06	Warranty, per Article 17 of the Agreement	LS	1		100,000.00	100,000.00	100,000.00		300,000.00	300,000.00
7	2.7		0000.07	Demobilization	LS	1	1472	135,124.00	430,000.00	350,000.00		915,124.00	915,124.00
				<b>SUB-TOTAL INDIRECT COSTS</b>									<b>169,661,921.52</b>
<b>3 1100</b>				<b>GENERAL</b>									
<b>3.1 1110</b>				<b>DEWATERING OF STRUCTURE AREAS</b>									
8	3.1.1		1110.01	Dewatering of Structure Areas	LS	1	3,174	290,000.00	400000	1,500,000.00		2190000	2,190,000.00
<b>3.2 1111</b>				<b>EXCAVATION OF EXISTING COFFERDAMS</b>									
9	3.2.1		1111.01	Excavation of Existing Embankment cofferdams 1, 2 and 3, and Existing Ramps	m <sup>3</sup>	177,000	3,343	1.72		9.04		10.76	1,904,520.00
10	3.2.2		1111.02	Excavation of Downstream section of RCC riverside cofferdam	m <sup>3</sup>	20,000	933	4.30	4.89	12.50		21.69	433,800.00
<b>3.3 1112</b>				<b>PERMANENT ROADS AND PARKING AREA</b>									
11	3.3.1		1112.01	Overburden Excavation	m <sup>3</sup>	8,000	206	2.38		6.50		8.88	71,040.00
12	3.3.2		1112.02	Approved Compactable Material	m <sup>3</sup>	44,000	873	1.84		1.36		3.20	140,800.00
13	3.3.3		1112.03	Granular "B" Material	m <sup>3</sup>	5,800	418	6.72	44.26	6.03		57.01	330,658.00
14	3.3.4		1112.04	Granular "C" Material	m <sup>3</sup>	4,000	347	8.00	44.26	6.00		58.26	233,040.00
15	3.3.5		1112.05	Maintenance Grade 3 material	m <sup>3</sup>	4,500	326	6.67	44.26	5.56		56.49	254,205.00
16	3.3.6		1112.06	CSP culvert, dia. 900 mm	m	48	110	229.17		312.50		541.67	26,000.16
17	3.3.7		1112.07	Guide Rails	m	400	458	105.00	50.04	26.25		181.29	72,516.00
18	3.3.8		1112.08	Gate Type 1	unit	2	55	5,000.00	850.00	1,700.00		7,550.00	15,100.00
<b>3.4 1113</b>				<b>ACCESS ROAD TO LAYDOWN AREA C1</b>									
19	3.4.1		1113.01	Approved Compactable Material	m <sup>3</sup>	26,000	426	1.54		1.54		3.08	80,080.00
20	3.4.2		1113.02	Granular "C" Material	m <sup>3</sup>	7,500	248	3.07	44.26	4.67		52.00	390,000.00
<b>3.5 1114</b>				<b>DITCHES</b>									
21	3.5.1		1114.01	Overburden Excavation	m <sup>3</sup>	2,000	442	20.50		20.00		40.50	81,000.00
22	3.5.2		1114.02	Non-woven Geotextile, min 300 g/m <sup>2</sup>	m <sup>2</sup>	2,500	74	2.80	3.06	0.88		6.74	16,850.00
23	3.5.3		1114.03	Rockfill Protection, 100 - 250 mm	m <sup>3</sup>	1,000	109	11.00	42.72	16.00		69.72	69,720.00
<b>3.6 1115</b>				<b>SLOPE PROTECTION</b>									
24	3.6.1		1115.01	Rockfill Protection, Zone 3E Material	m <sup>3</sup>	2,500	307	11.20	42.72	32.00		85.92	214,800.00
25	3.6.2		1115.02	Non-woven Geotextile, min 530 g/m <sup>2</sup>	m <sup>2</sup>	4,500	166	3.56	3.91	0.78		8.25	37,125.00
<b>3.7 1116</b>				<b>CHAIN LINK FENCES AND GATES</b>									
26	3.7.1		1116.01	Chain Link Fence and Gates	m	720	1,954	256.94		48.61		305.55	219,996.00
<b>3.8 1150</b>				<b>TEMPORARY UPSTREAM BRIDGE OVER SPILLWAY APPROACH CHANNEL</b>									
27	3.8.1		1150.01	Engineering of Temporary Upstream Bridge	LS	1	0	-			50,000.00	50,000.00	50,000.00
28	3.8.2		1150.02	Supply of Temporary Upstream Bridge	LS	1	0	-	7,650,000.00			7,650,000.00	7,650,000.00
29	3.8.3		1150.03	Installation, removal and handover of Temporary Upstream Bridge	LS	1	14,950	1,425,000.00	750,000.00	550,000.00		2,725,000.00	2,725,000.00
				<b>SUB-TOTAL GENERAL</b>									<b>17,206,250.16</b>
<b>4 2300</b>				<b>DAMS AND COFFERDAMS - GENERAL</b>									
<b>4.1 2340</b>				<b>UPSTREAM COFFERDAM</b>									
				<b>CIVIL WORK</b>									
				<b>Excavation</b>									
30	4.1.1		2341.01	Overburden excavation	m <sup>3</sup>	2,500	64	2.40		2.20		4.60	11,500.00
				<b>Foundation Preparation in dry condition</b>									
31	4.1.2		2341.02	Foundation Cleaning (water/air jets and Vacuum trucks)	m <sup>2</sup>	1,200	313	24.17		13.33		37.50	45,000.00
32	4.1.3		2341.03	Rock Excavation including dental excavation and Scaling	m <sup>3</sup>	500	238	44.00	22.22	96.00		162.22	81,110.00
33	4.1.4		2341.04	Dental Concrete	m <sup>3</sup>	800	1,685	195.00	531.25		49.82	776.07	620,856.00
34	4.1.5		2341.05	Slush Grout	m <sup>2</sup>	1,200	462	35.83	12.50	2.50		50.83	60,996.00
35	4.1.6		2341.06	Dry Pack	m <sup>3</sup>	6	217	3,500.00	1,500.00	500.00		5,500.00	33,000.00
				<b>Embankment Materials</b>									
36	4.1.7		2341.07	Compacted Till - Zones 1 and 1C Materials	m <sup>3</sup>	19,000	2,877	13.74		27.37		41.11	781,090.00
37	4.1.8		2341.08	Dumped Till - Zone 1A Material	m <sup>3</sup>	134,000	11,788	7.99		20.81		28.80	3,859,200.00
38	4.1.9		2341.09	Compacted Granular - Zone 2A Material	m <sup>3</sup>	20,700	1,607	7.25	45.89	16.91		70.05	1,450,035.00

39	4.1.10	2341.10	Compacted Granular - Zone 2C Material	m <sup>3</sup>	8,700	711	7.70	44.26	18.97	70.93	617,091.00	
40	4.1.11	2341.11	Dumped Granular - Zone 2E Material	m <sup>3</sup>	26,300	1,037	3.80	44.26	9.32	57.38	1,509,094.00	
41	4.1.12	2341.12	Dumped Rockfill- Zone 3 Material	m <sup>3</sup>	143,000	2,850	1.85		10.14	11.99	1,714,570.00	
42	4.1.13	2341.13	Dumped Large Blocks (300-1000 mm) - Zone 3 Class 1	m <sup>3</sup>	37,000	738	1.84		9.92	11.76	435,120.00	
43	4.1.14	2341.14	Dumped Large Blocks (≥1000 mm) - Zone 3 Class 2	m <sup>3</sup>	65,000	3,189	4.51		25.49	30.00	1,950,000.00	
44	4.1.15	2341.15	Dumped Large Blocks (≥1300 mm) - Zone 3 Class 3	m <sup>3</sup>	15,000	675	4.13		25.93	30.06	450,900.00	
45	4.1.16	2341.16	Compacted Crushed Stone - Zone 3A Material	m <sup>3</sup>	10,950	914	7.76	44.70	12.79	65.25	714,487.50	
46	4.1.17	2341.17	Compacted Rockfill - Zone 3C Material	m <sup>3</sup>	33,740	3,397	9.34		37.05	46.39	1,565,198.60	
47	4.1.18	2341.18	Compacted Rockfill - Zone 3D Material	m <sup>3</sup>	33,900	1,428	3.86		12.54	16.40	555,960.00	
48	4.1.19	2341.19	Dumped Crushed Stone- Zone 3F Material	m <sup>3</sup>	21,000	828	3.67	44.70	7.62	55.99	1,175,790.00	
<b>Investigation for Jet Grouted Cut-off Wall and Bedrock Grouting</b>												
49	4.1.20	2341.20	Percussion Drill Holes in embankments, river sediments and bedrock	m	1,000	230	22.40			104.00	126.40	126,400.00
50	4.1.21	2341.21	Verification Core Drilling in jet grouting cut-off wall and bedrock	m	200	132	61.68			407.00	468.68	93,736.00
51	4.1.22	2341.22	Core Diamond Drill Rig in Standby	hour	140	0	-			132.00	132.00	18,480.00
<b>Jet Grouting cut off wall</b>												
52	4.1.23	2341.23	Mobilization and demobilization	LS	1	2,155	239,568.00			873,147.00	1,112,715.00	1,112,715.00
53	4.1.24	2341.24	Drilling Holes for Jet Grouting in embankment, river sediments and bedrock	m	9,600	4,416	45.83			114.00	159.83	1,534,368.00
54	4.1.25	2341.25	Jet Grouted Cut-off wall	m <sup>2</sup>	2,800	4,376	147.46	46.05	7.86	852.00	1,053.37	2,949,436.00
<b>Bedrock Grouting beneath the Jet Grouted Cut-off Wall, if required</b>												
55	4.1.26	2341.26	Drilling Holes for Grouting in embankment , jet grouting cut-off wall and bedrock, if required	m	1,300	60	3.96			19.00	22.96	29,848.00
56	4.1.27	2341.27	Dry cement incorporated in the grout, if required	kg	11,000	0	-			1.00	1.00	11,000.00
57	4.1.28	2341.28	Grouting - Successful connections, if required	unit	60	138	199.50			642.00	841.50	50,490.00
<b>SUB-TOTAL UPSTREAM COFFERDAM</b>											<b>23,557,471.10</b>	
<b>4.2</b>	<b>2340</b>	<b>2342</b>	<b>DOWNSTREAM COFFERDAM</b>									
<b>CIVIL WORK</b>												
<b>Excavation</b>												
58	4.2.1	2342.01	Overburden excavation	m <sup>3</sup>	500	37	7.00		14.40	21.40	10,700.00	
<b>Foundation Preparation</b>												
59	4.2.2	2342.02	Foundation cleaning (water/ait jets and Vacuum trucks)	m <sup>2</sup>	1,250	326	24.00		13.20	37.20	46,500.00	
60	4.2.3	2342.03	Rock excavation including dental excavation and scaling	m <sup>3</sup>	500	238	44.00	22.22	90.00	156.22	78,110.00	
61	4.2.4	2342.04	Dental Concrete	m <sup>3</sup>	200	421	195.00	507.80	49.83	752.63	150,526.00	
62	4.2.5	2342.05	Slush Grout	m <sup>2</sup>	1,250	481	35.20	11.25	2.40	48.85	61,062.50	
63	4.2.6	2342.06	Dry Pack	m <sup>3</sup>	6	217	3,500.00	1,500.00	500.00	5,500.00	33,000.00	
<b>Embankment Materials</b>												
64	4.2.7	2342.07	Compacted Till - Zones 1 and 1C	m <sup>3</sup>	2,000	303	14.00		22.50	36.50	73,000.00	
65	4.2.8	2342.08	Compacted Granular - Zone 2C	m <sup>3</sup>	2,500	212	8.00	44.26	14.00	66.26	165,650.00	
66	4.2.9	2342.09	Compacted Rockfill - Zone 3C	m <sup>3</sup>	4,600	474	9.57		32.61	42.18	194,028.00	
67	4.2.10	2342.10	Compacted Rockfill - Zone 3D	m <sup>3</sup>	2,000	84	4.00		13.00	17.00	34,000.00	
<b>SUB-TOTAL DOWNSTREAM COFFERDAM</b>											<b>846,576.50</b>	
<b>4.3</b>	<b>2340</b>	<b>2343</b>	<b>INTAKE CHANNEL COFFERDAM</b>									
<b>CIVIL WORK</b>												
<b>Excavation</b>												
68	4.3.1	2343.01	Overburden excavation	m <sup>3</sup>	8,800	235	2.50		5.68	8.18	71,984.00	
<b>Foundation Preparation</b>												
69	4.3.2	2343.02	Foundation cleaning (water/ait jets and Vacuum trucks)	m <sup>2</sup>	1,700	443	24.12		\$14.71	38.83	66,011.00	
70	4.3.3	2343.03	Rock excavation including dental excavation and scaling	m <sup>3</sup>	700	333	44.29	22.22	\$85.71	152.22	106,554.00	
71	4.3.4	2343.04	Dental Concrete	m <sup>3</sup>	250	526	196.00	507.69	\$49.83	753.52	188,380.00	
72	4.3.5	2343.05	Slush Grout	m <sup>2</sup>	1,700	655	35.29	11.25	\$3.53	50.07	85,119.00	
73	4.3.6	2343.06	Dry Pack	m <sup>3</sup>	9	325	3,444.44	1333.33	\$333.33	5111.1	45,999.90	
<b>Embankment Materials</b>												
74	4.3.7	2343.07	Compacted Till - Zones 1 and 1C	m <sup>3</sup>	6,300	954	13.81		\$23.81	37.62	237,006.00	
75	4.3.8	2343.08	Compacted Granular - Zone 2C	m <sup>3</sup>	4,900	411	7.96	44.26	\$13.27	65.49	320,901.00	
76	4.3.9	2343.09	Compacted Rockfill - Zone 3C	m <sup>3</sup>	5,200	522	9.42		\$28.85	38.27	199,004.00	
77	4.3.10	2343.10	Compacted Rockfill - Zone 3D	m <sup>3</sup>	1,400	59	3.93		\$14.29	18.22	25,508.00	
<b>SUB-TOTAL INTAKE CHANNEL COFFERDAM</b>											<b>1,346,466.90</b>	
<b>4.4</b>	<b>2330</b>	<b>2330</b>	<b>SOUTH DAM</b>									
<b>CIVIL WORK</b>												
<b>Excavation</b>												
78	4.4.1	2330.01	Overburden excavation	m <sup>3</sup>	94,000	2,514	2.44		5.53	7.97	749,180.00	
<b>Foundation Preparation</b>												
79	4.4.2	2330.02	Foundation cleaning (water/ait jets and Vacuum trucks)	m <sup>2</sup>	3,400	886	23.82		13.53	37.35	126,990.00	

80	4.4.3	2330.03	Rock excavation including dental excavation and scaling	m <sup>3</sup>	2,000	953	44.00	22.22	67.50		133.72	267,440.00
81	4.4.4	2330.04	Dental Concrete	m <sup>3</sup>	1,200	2,527	195.00	507.69		49.83	752.52	903,024.00
82	4.4.5	2330.05	Slush Grout	m <sup>2</sup>	3,400	1,309	35.29	11.25	3.53		50.07	170,238.00
83	4.4.6	2330.06	Dry Pack	m <sup>3</sup>	20	722	3,350.00	1,000.00	200.00		4,550.00	91,000.00
84	4.4.7	2330.07	Drilling Holes for Grouting	m	1,200	1,094	82.86	13.31	5.00	103.00	204.17	245,004.00
85	4.4.8	2330.08	Dry cement incorporated in the grout	kg	42,000	386	1.15			3.33	4.48	188,160.00
86	4.4.9	2330.09	Cored Drill Check Holes	m	30	44	124.80			233.33	358.13	10,743.90
87	4.4.10	2330.10	Percussion Drilling Check holes	m	60	44	57.85			116.67	174.52	10,471.20
88	4.4.11	2330.11	Grouting - Successful connections	unit	250	121	46.00			110.00	156.00	39,000.00
89	4.4.12	2330.12	Water pressure test (Lugeon - 5 Stages)	hour	8	22	255.00			600.00	855.00	6,840.00
90	4.4.13	2330.13	Water test - Successful connections	unit	18	22	113.33			266.67	380.00	6,840.00
91	4.4.14	2330.14	Uplift gauges	m	20	44	187.25			600.00	787.25	15,745.00
92	4.4.15	2330.15	Thermistors (measure rock temperature in grout holes)	unit	1	44	3,744.00			9,000.00	12,744.00	12,744.00
<b>Embankment Materials</b>												
93	4.4.16	2330.16	Compacted Till - Zones 1 and 1C	m <sup>3</sup>	26,000	3,678	12.81		22.12		34.93	908,180.00
94	4.4.17	2330.17	Compacted Granular - Zone 2A	m <sup>3</sup>	28,000	2,527	8.39	44.70	13.93		67.02	1,876,560.00
95	4.4.18	2330.18	Compacted Crushed Stone - Zone 3A	m <sup>3</sup>	12,000	1,083	8.42	44.70	14.17		67.29	807,480.00
96	4.4.19	2330.19	Compacted Crushed Stone - Zone 3B	m <sup>3</sup>	16,000	1,444	8.44	44.26	14.06		66.76	1,068,160.00
97	4.4.20	2330.20	Compacted Rockfill - Zone 3C	m <sup>3</sup>	21,000	1,977	8.71		33.33		42.04	882,840.00
98	4.4.21	2330.21	Compacted Rockfill - Zone 3D	m <sup>3</sup>	46,000	1,646	3.28		16.30		19.58	900,680.00
99	4.4.22	2330.22	Riprap - Zone 4	m <sup>3</sup>	6,000	626	9.67	42.72	17.50		69.89	419,340.00
100	4.4.23	2330.23	Compacted Crushed Stone - Zone 5	m <sup>3</sup>	310	69	20.97	44.24	19.35		84.56	26,213.60
101	4.4.24	2330.24	Jersey Barrier	m	600	46	7.50		7.50		15.00	9,000.00
<b>Geotechnical Instrumentation</b>												
102	4.4.25	2330.25	V-Notch Weirs, excluding Shelters	unit	2	247	11,500.00	12,068.00	11,000.00		34,568.00	69,136.00
103	4.4.26	2330.26	Shelters for V-Notch Weirs	unit	2	37	2,000.00	15,000.00			17,000.00	34,000.00
104	4.4.27	2330.27	Survey Monuments at South Dam Crest	unit	3	0	-			2,000.00	2,000.00	6,000.00
<b>SUB-TOTAL SOUTH DAM</b>												<b>9,851,009.70</b>
<b>4.5 2320 NORTH DAM</b>												
<b>CIVIL WORK</b>												
<b>Clearing</b>												
105	4.5.1	2320.01	Clearing of the North Abutment	Ha	3	736	22,666.67		46666.67		69333.34	208,000.02
<b>Excavation</b>												
106	4.5.2	2320.02	Overburden Excavation	m <sup>3</sup>	72,000	2,208	2.79		6.94		9.73	700,560.00
<b>Foundation Preparation</b>												
107	4.5.3	2320.03	Foundation Cleaning (water/air jets and vacuum)	m <sup>2</sup>	13,500	3,519	23.85		13.33		37.18	501,930.00
108	4.5.4	2320.04	Rock Excavation including Dental Excavation and Scaling	m <sup>3</sup>	6,000	2,858	43.83	22.22	52.50		118.55	711,300.00
109	4.5.5	2320.05	Dental Concrete	m <sup>3</sup>	4,000	8,424	195.00	507.73	-	49.83	752.56	3,010,240.00
110	4.5.6	2320.06	Slush Grout	m <sup>2</sup>	13,500	5,199	35.19	11.25	2.22		48.66	656,910.00
111	4.5.7	2320.07	Dry Pack	m <sup>3</sup>	70	2,527	3,357.14	882.40	171.43		4,410.97	308,767.90
112	4.5.8	2320.08	Drilling Holes in RCC and Bedrock for Grouting	m	4,200	6,578	155.84	5.49	9.05	130.95	301.33	1,265,586.00
113	4.5.9	2320.09	Grouting - Successful Connections	unit	720	198	26.25			100.00	126.25	90,900.00
114	4.5.10	2320.10	Dry Cement incorporated in the grout	kg	126,000	695	0.60			2.10	2.70	340,200.00
115	4.5.11	2320.11	Cored Drill Check Holes	m	60	99	154.20			296.00	450.20	27,012.00
116	4.5.12	2320.12	Percussion Drilling Check Holes	m	120	153	120.46			216.00	336.46	40,375.20
117	4.5.13	2320.13	Water pressure test (lugeon - 5 Stages)	hour	15	44	272.00			506.00	778.00	11,670.00
118	4.5.14	2320.14	Water Pressure Test - Successful connections	unit	36	44	113.33			211.00	324.33	11,675.88
119	4.5.15	2320.15	Uplift gauges	m	60	99	154.20			510.00	664.20	39,852.00
120	4.5.16	2320.16	Thermistor (measure temperature in grout holes)	unit	1	44	3,750.00			8,046.00	11,796.00	11,796.00
<b>Drainage Holes</b>												
121	4.5.17	2320.17	Drilling Holes for Drainage in Foundation from Drainage Gallery, Φ76 mm	m	3,200	4,239	133.36			134.38	267.74	856,768.00
122	4.5.18	2320.18	PVC Caps for Drainage Holes	unit	125	0	-			28.00	28.00	3,500.00
123	4.5.19	2320.19	Drilling Holes Upward for Drainage from Drainage Gallery into RCC, Φ76 mm	m	3,200	5,122	149.38			134.38	283.76	908,032.00
<b>Instrumentation</b>												
124	4.5.20	2320.20	Drilling Holes for piezometers	m	100	0	-			296.00	296.00	29,600.00
125	4.5.21	2320.21	Vibrating Wire and Standpipe Piezometers TYPE - 1, excluding Cables	unit	8	0	-			13,600.00	13,600.00	108,800.00
126	4.5.22	2320.22	Vibrating Wire and Standpipe Piezometers TYPE - 2, excluding Cables	unit	2	0	-			3,000.00	3,000.00	6,000.00
127	4.5.23	2320.23	Instrument Cable including PVC Conduits and Pull Boxes	m	2,700	0	-			28.00	28.00	75,600.00
128	4.5.24	2320.24	Thermistors Cable in RCC	unit	8	0	-			5,000.00	5,000.00	40,000.00
129	4.5.25	2320.25	V-notch Weirs	unit	4	0	-	8,243.00		6,000.00	14,243.00	56,972.00
130	4.5.26	2320.26	Vibrating Wire Weir Monitors.	unit	4	0	-			16,000.00	16,000.00	64,000.00
131	4.5.27	2320.27	Data logger, Terminal Box, Barometer Box including Grounding	LS	1	0	-			150,000.00	150,000.00	150,000.00
132	4.5.28	2320.28	Crest Survey Monuments	unit	4	0	-			2,000.00	2,000.00	8,000.00
<b>Concrete and RCC operations</b>												
133	4.5.29	2320.29	Roller Compacted Concrete (RCC)	m <sup>3</sup>	210,000	158,485	73.65	159.41	3.36	1.96	238.38	50,059,800.00
133.A			RCC Trial Demonstration Sections	m <sup>3</sup>	0	300	37.94	325.24	75.89		439.07	-

133.B			Leveling Concrete (Rate Only)	m <sup>3</sup>	0		83.00	495.00	65.00		643	0.00
134	4.5.30	2320.30	Conventional Vibrated Concrete (CVC) (Crest and Flip Bucket)	m <sup>3</sup>	11,100	39,834	331.98	585.59	42.79	16.35	976.71	10,841,481.00
135	4.5.31	2320.31	Facing Concrete	m <sup>3</sup>	8,600	12,719	134.88	494.19	22.09	31.02	682.18	5,866,748.00
136	4.5.32	2320.32	GERCC or GEVR - Formed Faces (Rate Only)	m <sup>3</sup>	1		1.00	\$0.38	\$0.28	0	1.66	1.66
136.1			Facing In Place Of GERCC	m <sup>3</sup>	4650	7139					470	2,185,500.00
137	4.5.33	2320.33	Conventional Vibrated Concrete (North Abutment Crest Surface and Training Wall)	m <sup>3</sup>	270	1,603	555.56	925.93		53.62	1,535.11	414,479.70
138	4.5.34	2320.34	Increase or decrease in quantity of cement - Bid Mix (rate only)	Kg		0	-	0.41			0.41	
139	4.5.35	2320.35	Increase or decrease in quantity of flyash - Bid Mix (rate only)	Kg		0	-	0.41			0.41	
140	4.5.36	2320.36	Increase or decrease in quantity of cement - Source B (rate only)	Kg		0	-	0.37			0.37	
141	4.5.37	2320.37	Increase or decrease in quantity of flyash - Source B (rate only)	Kg		0	-	0.37			0.37	
142	4.5.38	2320.38	Air-entraining Admixture	litre	315,000	0	-	1.38			1.38	434,700.00
143	4.5.39	2320.39	Retarder Admixture	litre	336,000	0	-	1.53			1.53	514,080.00
144	4.5.40	2320.40	Precast Concrete	LS	1	478	43,500.00	1,750,000.00			1,793,500.00	1,793,500.00
145	4.5.41	2320.41	Gallery Floor CVC Concrete	m <sup>3</sup>	275	3,437	1,163.64	800.00	60.00	129.09	2,152.73	592,000.75
146	4.5.42	2320.42	Steel Reinforcement	kg	500,000	1,711	0.31	0.08	0.23	4.11	4.73	2,365,000.00
147	4.5.43	2320.43	Steel Guardrails	kg	5,200	161	2.82	15.00			17.82	92,664.00
148	4.5.44	2320.44	Waterstop	m	1,350	815	56.67	21.48			78.15	105,502.50
4.6		2370	<b>NORTH DAM - Auxiliary Services</b>									
<b>ELECTRICAL WORK</b>												
149	4.6.1	2370.01	Exothermic Connections.	unit	20	0	-			1,710.00	1,710.00	34,200.00
150	4.6.2	2370.02	Bare, Stranded, Medium Hard-Drawn Copper Conductor, size 500 kcmil	m	815	0	-			137.00	137.00	111,655.00
151	4.6.3	2370.03	Bare, Stranded, Medium Hard-Drawn Copper Conductor, size 4/0 AWG	m	16	0	-			81.25	81.25	1,300.00
152	4.6.4	2370.04	Embedded Copper Grounding Plates	unit	7	0	-			1,714.29	1,714.29	12,000.03
<b>SUB-TOTAL NORTH DAM</b>												<b>85,668,659.64</b>
5	3100		<b>Powerhouse Channels</b>									
5.1		3120.00	<b>Tailrace</b>									
<b>CIVIL WORK</b>												
<b>Tailrace Rock Plug - Overburden Excavation</b>												
153	5.1.1	3120.01	Overburden Excavation, excluding excavation of Cofferdam 3 - Dry Conditions	m <sup>3</sup>	12,000	203	1.58		6.5		8.08	96,960.00
<b>Tailrace Rock Plug - Rock Excavation</b>												
154	5.1.2	3120.02	Tailrace Rock Plug Excavation including access ramp to powerhouse -Dry Conditions	m <sup>3</sup>	170,000	10,964	5.91	7.06	12.35		25.32	4,304,400.00
155	5.1.3	3120.03	Tailrace Rock Plug - Underwater Excavation	m <sup>3</sup>	34,000	5,232	14.12	22.06	26.18		62.36	2,120,240.00
<b>Tailrace Rock Plug - Stabilization and Rock Surface Protection</b>												
156	5.1.4	3120.04	Grouted Rock Bolts Type A	unit	70	161	214.29	71.43	214.29		500.01	35,000.70
157	5.1.5	3120.05	Grouted Rock Bolts Type C	unit	20	92	425.00	70.00	400.00		895.00	17,900.00
158	5.1.6	3120.06	Chain Link Wire Mesh - Installation	m <sup>2</sup>	2,500	828	30.40	26.00	12.00		68.40	171,000.00
159	5.1.7	3120.07	Chain Link Wire Mesh - Removal	m <sup>2</sup>	20,300	747	3.40		0.24		3.64	73,892.00
160	5.1.8	3120.08	Existing Temporary Safety Fence - Removal	m	1,200	147	12.50		3.75		16.25	19,500.00
<b>SUB-TOTAL TAILRACE</b>												<b>6,838,892.70</b>
6	1100		<b>Borrow Areas</b>									
6.1		1117.00	<b>Borrowed Construction Material</b>									
161	6.1.1	3120.01	Overhaul of Borrowed Construction Material (rate only)	m <sup>3</sup> /km								2.00
162	6.1.1	3120.01	RCC Coarse Aggregate - Produce & Stockpile	tonne								20.00
163	6.1.1	3120.01	RCC Fine Aggregate - Produce & Stockpile	tonne								25.00
<b>ROW A CALCULATED TOTAL OF LUMP SUM AND UNIT PRICE ITEMS (BASED ON APPROXIMATE QUANTITIES)</b>										<b>\$</b>	<b>314,977,248.22</b>	

<b>Original RFP Pricing</b>	<b>Price Delta</b>
\$ 315,797,500.00	\$ (820,251.78)

164	<b>ESIMATE OF TRAVEL ALLOWANCES - TRADES LABOUR, LOCAL STAFF AND U.S. STAFF</b>						1	1					\$ 7,691,689.00
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<b>NOTES</b>												
<b>Note 1:</b> If there has been an error in the calculation to establish the total of Column G (Total Price) or Column F (UNIT PRICE), then the figures of column A (Estimated Quantity of Units), column B (Man Hours), column C (Manpower), column D (Equipment) and column E (Profits) will												
<b>Note 2:</b> This Document is provided to the bidders in Native Excel File format. It is the bidders responsibility to verify cell formats and formulas.												
<b>Note 3:</b> Bidders shall not include any HST/GST from any source (whether from Bidder, subcontractor, vendors or suppliers) in the unit and lump sum prices in this Schedule of Price Breakdown. Bidders shall claim input tax credits on taxable supplies received from vendors, suppliers and subcontractors												

<b>FOR THE LOWER CHURCHILL PROJECT - MUSKRAT FALLS</b>												
This Appendix forms part of the Proposal submitted by: Barnard-Pennecon J.V.												
Name of Bidder: Barnard-Pennecon J.V.												
Request For Proposal, Package No: CH0009												
Signature:												
Date of Proposal: 22-OCT-2014												

LOWER CHURCHILL PROJECT MUSKRAT FALLS CH0009 - CONSTRUCTION OF NORTH AND SOUTH DAMS				SCHEDULE OF PRICE BREAKDOWN							APPENDIX A2.1						
				ISSUED FOR: BID			DATE: 22 - Oct - 2014				BIDDER'S NAME: H.J. O'Connell Construction Limited - Dragados-Canada, Inc. Joint Venture						
PRICE ITEM		WBS CODE		PRICE ITEM DESCRIPTION	UNIT OF MEASURE	ESTIMATED QUANTITY A	MAN HOURS (AT SITE) PER UNIT	MANPOWER COST/UNIT (\$ CAN) B	MATERIALS COST/UNIT (\$ CAN) C	EQUIPMENT COST/UNIT (\$ CAN) D	PROFIT COST/UNIT (\$ CAN) E	UNIT PRICE (\$ CAN) F= (B+C+D+E)	TOTAL PRICE (\$ CAN) G= A x F				
No	REFERENCE Exhibit 2 - ATT 1	CODE	SUBCODE														
				<b>INDIRECT COSTS</b>													
1	2.1	0000	0000.01	Mobilization	LS	1	28,109	\$ 1,976,349.14	\$ 2,912,837.89	\$ 25,110,812.97	\$ -	\$ 30,000,000.00	\$ 30,000,000.00				
2	2.2		0000.02	Site Installation	LS	1	60,693	\$ 6,369,931.53	\$ 2,909,281.80	\$ 13,520,786.68	\$ -	\$ 22,800,000.00	\$ 22,800,000.00				
3	2.3		0000.03	Management, Staff, employees and Consultants	LS	1	332,250	\$ 38,671,075.60	\$ 4,625,085.19	\$ 836,839.21	\$ -	\$ 44,133,000.00	\$ 44,133,000.00				
4	2.4		0000.04	Health and Safety, Environmental and Quality Requirements	LS	1	102,527	\$ 8,694,583.47	\$ 125,671.37	\$ 57,745.16	\$ -	\$ 8,878,000.00	\$ 8,878,000.00				
5	2.5		0000.05	Credit, Guarantee and Insurance	LS	1	-	\$ -	\$ 2,030,650.00	\$ -	\$ -	\$ 2,030,650.00	\$ 2,030,650.00				
6	2.6		0000.06	Warranty, per Article 17 of the Agreement	LS	1	-	\$ 225,000.00	\$ -	\$ 225,000.00	\$ -	\$ 450,000.00	\$ 450,000.00				
7	2.7		0000.07	Demobilization	LS	1	-	\$ -	\$ -	\$ 250,000.00	\$ -	\$ 250,000.00	\$ 250,000.00				
				<b>SUB-TOTAL INDIRECT COSTS</b>													
				<b>\$ 108,541,650.00</b>													
				<b>GENERAL</b>													
				<b>DEWATERING OF STRUCTURE AREAS</b>													
8	3.1.1	1110	1110.01	Dewatering of Structure Areas	LS	1	8,180	\$ 872,408.11	\$ 397,703.19	\$ 279,888.70	\$ -	\$ 1,550,000.00	\$ 1,550,000.00				
				<b>EXCAVATION OF EXISTING COFFERDAMS</b>													
9	3.2.1		1111.01	Excavation of Existing Embankment cofferdams 1, 2 and 3, and Existing Ramps	m <sup>3</sup>	177,000	0.05	\$ 5.17	\$ 0.11	\$ 8.23	\$ -	\$ 13.50	\$ 2,389,500.00				
10	3.2.2		1111.02	Excavation of Downstream section of RCC riverside cofferdam	m <sup>3</sup>	20,000	0.12	\$ 13.40	\$ 3.42	\$ 16.33	\$ -	\$ 33.15	\$ 663,000.00				
				<b>PERMANENT ROADS AND PARKING AREA</b>													
11	3.3.1		1112.01	Overburden Excavation	m <sup>3</sup>	8,000	0.08	\$ 8.13	\$ -	\$ 11.47	\$ -	\$ 19.60	\$ 156,800.00				
12	3.3.2		1112.02	Approved Compactable Material	m <sup>3</sup>	44,000	0.05	\$ 4.83	\$ -	\$ 7.57	\$ -	\$ 12.40	\$ 545,600.00				
13	3.3.3		1112.03	Granular "B" Material	m <sup>3</sup>	5,800	0.20	\$ 23.64	\$ 0.27	\$ 30.69	\$ -	\$ 54.60	\$ 316,680.00				
14	3.3.4		1112.04	Granular "C" Material	m <sup>3</sup>	4,000	0.18	\$ 21.69	\$ 0.27	\$ 29.03	\$ -	\$ 51.00	\$ 204,000.00				
15	3.3.5		1112.05	Maintenance Grade 3 material	m <sup>3</sup>	4,500	0.22	\$ 25.24	\$ 0.27	\$ 32.09	\$ -	\$ 57.60	\$ 259,200.00				
16	3.3.6		1112.06	CSP culvert, dia. 900 mm	m	48	4.44	\$ 462.52	\$ 211.07	\$ 186.42	\$ -	\$ 860.00	\$ 41,280.00				
17	3.3.7		1112.07	Guide Rails	m	400	2.60	\$ 261.33	\$ 116.71	\$ 24.96	\$ -	\$ 403.00	\$ 161,200.00				
18	3.3.8		1112.08	Gate Type 1	unit	2	77.00	\$ 7,932.02	\$ 3,458.89	\$ 1,409.10	\$ -	\$ 12,800.00	\$ 25,600.00				
				<b>ACCESS ROAD TO LAYDOWN AREA C1</b>													
19	3.4.1		1113.01	Approved Compactable Material	m <sup>3</sup>	26,000	0.05	\$ 4.83	\$ -	\$ 7.57	\$ -	\$ 12.40	\$ 322,400.00				
20	3.4.2		1113.02	Granular "C" Material	m <sup>3</sup>	7,500	0.18	\$ 21.69	\$ 0.27	\$ 29.03	\$ -	\$ 51.00	\$ 382,500.00				
				<b>DITCHES</b>													
21	3.5.1		1114.01	Overburden Excavation	m <sup>3</sup>	2,000	0.09	\$ 8.77	\$ -	\$ 11.73	\$ -	\$ 20.50	\$ 41,000.00				
22	3.5.2		1114.02	Non-woven Geotextile, min 300 g/m <sup>2</sup>	m <sup>2</sup>	2,500	0.16	\$ 16.14	\$ 5.27	\$ 4.10	\$ -	\$ 25.50	\$ 63,750.00				
23	3.5.3		1114.03	Rockfill Protection, 100 - 250 mm	m <sup>3</sup>	1,000	0.35	\$ 36.02	\$ -	\$ 25.98	\$ -	\$ 62.00	\$ 62,000.00				
				<b>SLOPE PROTECTION</b>													
24	3.6.1		1115.01	Rockfill Protection, Zone 3E Material	m <sup>3</sup>	2,500	0.12	\$ 11.75	\$ -	\$ 14.85	\$ -	\$ 26.60	\$ 66,500.00				
25	3.6.2		1115.02	Non-woven Geotextile, min 530 g/m <sup>2</sup>	m <sup>2</sup>	4,500	0.04	\$ 3.98	\$ 3.61	\$ 1.01	\$ -	\$ 8.60	\$ 38,700.00				
				<b>CHAIN LINK FENCES AND GATES</b>													
26	3.7.1		1116.01	Chain Link Fence and Gates	m	720	2.90	\$ 323.10	\$ 69.16	\$ 82.73	\$ -	\$ 475.00	\$ 342,000.00				
				<b>TEMPORARY UPSTREAM BRIDGE OVER SPILLWAY APPROACH CHANNEL</b>													
27	3.8.1		1150.01	Engineering of Temporary Upstream Bridge	LS	1	0	\$ 116,000.00	\$ -	\$ -	\$ -	\$ 116,000.00	\$ 116,000.00				
28	3.8.2		1150.02	Supply of Temporary Upstream Bridge	LS	1	375	\$ 37,203.53	\$ 1,967,840.11	\$ 14,956.36	\$ -	\$ 2,020,000.00	\$ 2,020,000.00				
29	3.8.3		1150.03	Installation, removal and handover of Temporary Upstream Bridge	LS	1	18,925	\$ 1,968,523.09	\$ 1,148,044.95	\$ 1,520,431.96	\$ -	\$ 4,637,000.00	\$ 4,637,000.00				
				<b>SUB-TOTAL GENERAL</b>													
				<b>\$ 14,404,710.00</b>													
				<b>DAMS AND COFFERDAMS - GENERAL</b>													
				<b>UPSTREAM COFFERDAM</b>													
				<b>CIVIL WORK</b>													
				<b>Excavation</b>													
30	4.1.1	2340	2341.01	Overburden excavation	m <sup>3</sup>	2,500	0.14	\$ 15.39	\$ -	\$ 19.61	\$ -	\$ 35.00	\$ 87,500.00				
				<b>Foundation Preparation in dry condition</b>													
31	4.1.2		2341.02	Foundation Cleaning (water/air jets and Vacuum trucks)	m <sup>2</sup>	1,200	0.90	\$ 102.13	\$ -	\$ 17.87	\$ -	\$ 120.00	\$ 144,000.00				
32	4.1.3		2341.03	Rock Excavation including dental excavation and Scaling	m <sup>3</sup>	500	0.79	\$ 84.92	\$ 24.65	\$ 100.43	\$ -	\$ 210.00	\$ 105,000.00				
33	4.1.4		2341.04	Dental Concrete	m <sup>3</sup>	800	1.92	\$ 212.78	\$ 514.02	\$ 23.20	\$ -	\$ 750.00	\$ 600,000.00				
34	4.1.5		2341.05	Slush Grout	m <sup>2</sup>	1,200	0.20	\$ 21.62	\$ 8.64	\$ 1.04	\$ -	\$ 31.30	\$ 37,560.00				
35	4.1.6		2341.06	Dry Pack	m <sup>3</sup>	6	50.00	\$ 5,465.96	\$ 1,271.69	\$ 262.36	\$ -	\$ 7,000.00	\$ 42,000.00				
				<b>Embankment Materials</b>													
36	4.1.7		2341.07	Compacted Till - Zones 1 and 1C Materials	m <sup>3</sup>	19,000	0.25	\$ 26.57	\$ -	\$ 33.43	\$ -	\$ 60.00	\$ 1,140,000.00				
37	4.1.8		2341.08	Dumped Till - Zone 1A Material	m <sup>3</sup>	134,000	0.13	\$ 13.48	\$ -	\$ 24.02	\$ -	\$ 37.50	\$ 5,025,000.00				

1 1,976,349  
 2 6,369,932  
 3 38,671,076  
 4 8,694,583  
 5 -  
 6 225,000  
 7 -  
 0 -  
 0 -  
 8 872,408  
 9 915,179  
 10 268,045  
 0 -  
 11 65,008  
 12 212,541  
 13 137,101  
 14 86,776  
 15 113,581  
 16 22,201  
 17 104,532  
 18 15,864  
 0 -  
 19 125,638  
 20 162,705  
 0 -  
 21 17,541  
 22 40,346  
 23 36,022  
 0 -  
 24 29,382  
 25 17,898  
 0 -  
 26 232,633  
 0 -  
 27 116,000  
 28 37,204  
 29 1,968,523  
 0 -  
 0 -  
 0 -  
 0 -  
 30 38,471  
 0 -  
 31 122,561  
 32 42,459  
 33 170,224  
 34 25,941  
 35 32,796  
 0 -  
 36 504,853  
 37 1,806,499





LOWER CHURCHILL PROJECT MUSKRAT FALLS CH0009 - CONSTRUCTION OF NORTH AND SOUTH DAMS				SCHEDULE OF PRICE BREAKDOWN							APPENDIX A2.1						
				ISSUED FOR: BID			DATE: 22 - Oct - 2014				BIDDER'S NAME: H.J. O'Connell Construction Limited - Dragados-Canada, Inc. Joint Venture						
PRICE ITEM		WBS CODE		PRICE ITEM DESCRIPTION	UNIT OF MEASURE	ESTIMATED QUANTITY A	MAN HOURS (AT SITE) PER UNIT	MANPOWER COST/UNIT (\$ CAN) B	MATERIALS COST/UNIT (\$ CAN) C	EQUIPMENT COST/UNIT (\$ CAN) D	PROFIT COST/UNIT (\$ CAN) E	UNIT PRICE (\$ CAN) F= (B+C+D+E)	TOTAL PRICE (\$ CAN) G= A x F				
No	REFERENCE Exhibit 2 - ATT 1	CODE	SUBCODE														
74	4.3.7		2343.07	Compacted Till - Zones 1 and 1C	m <sup>3</sup>	6,300	0.29	\$ 31.41	\$ 2.08	\$ 43.51		\$ 77.00	\$ 485,100.00	74	197,889		
75	4.3.8		2343.08	Compacted Granular - Zone 2C	m <sup>3</sup>	4,900	0.29	\$ 35.84	\$ 1.02	\$ 54.14		\$ 91.00	\$ 445,900.00	75	175,632		
76	4.3.9		2343.09	Compacted Rockfill - Zone 3C	m <sup>3</sup>	5,200	0.19	\$ 21.01	\$ 2.05	\$ 28.93		\$ 52.00	\$ 270,400.00	76	109,273		
77	4.3.10		2343.10	Compacted Rockfill - Zone 3D	m <sup>3</sup>	1,400	0.19	\$ 21.01	\$ 2.05	\$ 28.93		\$ 52.00	\$ 72,800.00	77	29,420		
<b>SUB-TOTAL INTAKE CHANNEL COFFERDAM</b>														<b>\$ 2,069,710.00</b>	0	-	
<b>4.4</b>				<b>2330</b>	<b>SOUTH DAM</b>												
					<b>CIVIL WORK</b>												
					<b>Excavation</b>												
78	4.4.1		2330.01	Overburden excavation	m <sup>3</sup>	94,000	0.06	\$ 6.56	\$ -	\$ 8.94		\$ 15.50	\$ 1,457,000.00	78	616,264		
					<b>Foundation Preparation</b>												
79	4.4.2		2330.02	Foundation cleaning (water/air jets and Vacuum trucks)	m <sup>2</sup>	3,400	0.9	\$ 102.13	\$ -	\$ 17.87		\$ 120.00	\$ 408,000.00	79	347,257		
80	4.4.3		2330.03	Rock excavation including dental excavation and scaling	m <sup>3</sup>	2,000	0.79	\$ 84.92	\$ 24.65	\$ 100.43		\$ 210.00	\$ 420,000.00	80	169,837		
81	4.4.4		2330.04	Dental Concrete	m <sup>3</sup>	1,200	1.92	\$ 212.78	\$ 514.02	\$ 23.20		\$ 750.00	\$ 900,000.00	81	255,335		
82	4.4.5		2330.05	Slush Grout	m <sup>2</sup>	3,400	0.2	\$ 21.62	\$ 8.64	\$ 1.04		\$ 31.30	\$ 106,420.00	82	73,501		
83	4.4.6		2330.06	Dry Pack	m <sup>3</sup>	20	50	\$ 5,465.96	\$ 1,271.69	\$ 262.36		\$ 7,000.00	\$ 140,000.00	83	109,319		
84	4.4.7		2330.07	Drilling Holes for Grouting	m	1,200	0.7	\$ 96.00	\$ -	\$ 24.00		\$ 120.00	\$ 144,000.00	84	115,200		
85	4.4.8		2330.08	Dry cement incorporated in the grout	kg	42,000	0.04	\$ 5.67	\$ 0.91	\$ 1.22		\$ 7.80	\$ 327,600.00	85	238,031		
86	4.4.9		2330.09	Cored Drill Check Holes	m	30	1.6	\$ 425.00	\$ -	\$ 75.00		\$ 500.00	\$ 15,000.00	86	12,750		
87	4.4.10		2330.10	Percussion Drilling Check holes	m	60	0.80	\$ 96.00	\$ -	\$ 24.00		\$ 120.00	\$ 7,200.00	87	5,760		
88	4.4.11		2330.11	Grouting - Successful connections	unit	250	2.93	\$ 376.70	\$ -	\$ 33.30		\$ 410.00	\$ 102,500.00	88	94,175		
89	4.4.12		2330.12	Water pressure test (Lugeon - 5 Stages)	hour	8	3	\$ 429.00	\$ -	\$ 221.00		\$ 650.00	\$ 5,200.00	89	3,432		
90	4.4.13		2330.13	Water test - Successful connections	unit	18	1.33	\$ 191.40	\$ -	\$ 98.60		\$ 290.00	\$ 5,220.00	90	3,445		
91	4.4.14		2330.14	Uplift gauges	m	20	2.4	\$ 300.00	\$ 216.00	\$ 84.00		\$ 600.00	\$ 12,000.00	91	6,000		
92	4.4.15		2330.15	Thermistors (measure rock temperature in grout holes)	unit	1	48	\$ 6,400.00	\$ 3,600.00	\$ -		\$ 10,000.00	\$ 10,000.00	92	6,400		
					<b>Embankment Materials</b>												
93	4.4.16		2330.16	Compacted Till - Zones 1 and 1C	m <sup>3</sup>	26,000	0.23	\$ 25.10	\$ -	\$ 32.90		\$ 58.00	\$ 1,508,000.00	93	652,679		
94	4.4.17		2330.17	Compacted Granular - Zone 2A	m <sup>3</sup>	28,000	0.24	\$ 26.22	\$ -	\$ 33.78		\$ 60.00	\$ 1,680,000.00	94	734,039		
95	4.4.18		2330.18	Compacted Crushed Stone - Zone 3A	m <sup>3</sup>	12,000	0.30	\$ 34.84	\$ 0.28	\$ 37.89		\$ 73.00	\$ 876,000.00	95	418,021		
96	4.4.19		2330.19	Compacted Crushed Stone - Zone 3B	m <sup>3</sup>	16,000	0.30	\$ 35.05	\$ 0.28	\$ 37.67		\$ 73.00	\$ 1,168,000.00	96	560,848		
97	4.4.20		2330.20	Compacted Rockfill - Zone 3C	m <sup>3</sup>	21,000	0.09	\$ 10.45	\$ -	\$ 13.55		\$ 24.00	\$ 504,000.00	97	219,424		
98	4.4.21		2330.21	Compacted Rockfill - Zone 3D	m <sup>3</sup>	46,000	0.09	\$ 10.45	\$ -	\$ 13.55		\$ 24.00	\$ 1,104,000.00	98	480,644		
99	4.4.22		2330.22	Riprap - Zone 4	m <sup>3</sup>	6,000	0.18	\$ 21.10	\$ -	\$ 33.90		\$ 55.00	\$ 330,000.00	99	126,621		
100	4.4.23		2330.23	Compacted Crushed Stone - Zone 5	m <sup>3</sup>	310	0.30	\$ 38.47	\$ 0.28	\$ 43.25		\$ 82.00	\$ 25,420.00	100	11,926		
101	4.4.24		2330.24	Jersey Barrier	m	600	0.65	\$ 77.40	\$ 94.17	\$ 28.42		\$ 200.00	\$ 120,000.00	101	46,442		
					<b>Geotechnical Instrumentation</b>												
102	4.4.25		2330.25	V-Notch Weirs, excluding Shelters	unit	2	68.00	\$ 7,806.00	\$ 9,310.51	\$ 383.50		\$ 17,500.00	\$ 35,000.00	102	15,612		
103	4.4.26		2330.26	Shelters for V-Notch Weirs	unit	2	33.50	\$ 3,939.41	\$ 1,582.22	\$ 278.38		\$ 5,800.00	\$ 11,600.00	103	7,879		
104	4.4.27		2330.27	Survey Monuments at South Dam Crest	unit	3	5.33	\$ 586.65	\$ 1,886.11	\$ 27.24		\$ 2,500.00	\$ 7,500.00	104	1,760		
<b>SUB-TOTAL SOUTH DAM</b>														<b>\$ 11,429,660.00</b>	0	-	
<b>4.5</b>				<b>2320</b>	<b>NORTH DAM</b>												
					<b>CIVIL WORK</b>												
					<b>Clearing</b>												
105	4.5.1		2320.01	Clearing of the North Abutment	Ha	3	74.6	\$ 21,268.34	\$ -	\$ 28,731.66		\$ 50,000.00	\$ 150,000.00	105	63,805		
					<b>Excavation</b>												
106	4.5.2		2320.02	Overburden Excavation	m <sup>3</sup>	72,000	0.08	\$ 9.18	\$ -	\$ 12.82		\$ 22.00	\$ 1,584,000.00	106	660,926		
					<b>Foundation Preparation</b>												
107	4.5.3		2320.03	Foundation Cleaning (water/air jets and vacuum)	m <sup>2</sup>	13,500	1.50	\$ 167.27	\$ -	\$ 32.73		\$ 200.00	\$ 2,700,000.00	107	2,258,191		
108	4.5.4		2320.04	Rock Excavation including Dental Excavation and Scaling	m <sup>3</sup>	6,000	1.01	\$ 108.64	\$ 24.40	\$ 116.96		\$ 250.00	\$ 1,500,000.00	108	651,830		
109	4.5.5		2320.05	Dental Concrete	m <sup>3</sup>	4,000	1.92	\$ 212.78	\$ 514.02	\$ 23.20		\$ 750.00	\$ 3,000,000.00	109	851,118		
110	4.5.6		2320.06	Slush Grout	m <sup>2</sup>	13,500	0.2	\$ 21.62	\$ 8.64	\$ 1.04		\$ 31.30	\$ 422,550.00	110	291,841		
111	4.5.7		2320.07	Dry Pack	m <sup>3</sup>	70	50	\$ 5,465.96	\$ 1,271.69	\$ 262.36		\$ 7,000.00	\$ 490,000.00	111	382,617		
112	4.5.8		2320.08	Drilling Holes in RCC and Bedrock for Grouting	m	4,200	1.39	\$ 210.60	\$ -	\$ 49.40		\$ 260.00	\$ 1,092,000.00	112	884,520		
113	4.5.9		2320.09	Grouting - Successful Connections	unit	720	0.30	\$ 363.38	\$ -	\$ 41.62		\$ 405.00	\$ 291,600.00	113	261,636		

LOWER CHURCHILL PROJECT MUSKRAT FALLS CH0009 - CONSTRUCTION OF NORTH AND SOUTH DAMS				SCHEDULE OF PRICE BREAKDOWN							APPENDIX A2.1						
				ISSUED FOR: BID			DATE: 22 - Oct - 2014				BIDDER'S NAME: H.J. O'Connell Construction Limited - Dragados-Canada, Inc. Joint Venture						
PRICE ITEM		WBS CODE		PRICE ITEM DESCRIPTION	UNIT OF MEASURE	ESTIMATED QUANTITY A	MAN HOURS (AT SITE) PER UNIT	MANPOWER COST/UNIT (\$ CAN) B	MATERIALS COST/UNIT (\$ CAN) C	EQUIPMENT COST/UNIT (\$ CAN) D	PROFIT COST/UNIT (\$ CAN) E	UNIT PRICE (\$ CAN) F= (B+C+D+E)	TOTAL PRICE (\$ CAN) G= A x F				
No	REFERENCE Exhibit 2 - ATT 1	CODE	SUBCODE														
114	4.5.10		2320.10	Dry Cement incorporated in the grout	kg	126,000	0.01	\$ 4.36	\$ 1.01	\$ 0.93		\$ 6.30	\$ 793,800.00	114	549,346		
115	4.5.11		2320.11	Cored Drill Check Holes	m	60	1.80	\$ 251.85	\$ -	\$ 93.15		\$ 345.00	\$ 20,700.00	115	15,111		
116	4.5.12		2320.12	Percussion Drilling Check Holes	m	120	1.40	\$ 198.90	\$ -	\$ 56.10		\$ 255.00	\$ 30,600.00	116	23,868		
117	4.5.13		2320.13	Water pressure test (lugeon - 5 Stages)	hour	15	3.20	\$ 456.00	\$ -	\$ 144.00		\$ 600.00	\$ 9,000.00	117	6,840		
118	4.5.14		2320.14	Water Pressure Test - Successful connections	unit	36	1.33	\$ 190.00	\$ -	\$ 60.00		\$ 250.00	\$ 9,000.00	118	6,840		
119	4.5.15		2320.15	Uplift gauges	m	60	1.80	\$ 270.00	\$ 240.00	\$ 90.00		\$ 600.00	\$ 36,000.00	119	16,200		
120	4.5.16		2320.16	Thermistor (measure temperature in grout holes)	unit	1	48.00	\$ 6,500.00	\$ 3,500.00	\$ -		\$ 10,000.00	\$ 10,000.00	120	6,500		
<b>Drainage Holes</b>																	
121	4.5.17		2320.17	Drilling Holes for Drainage in Foundation from Drainage Gallery, Ø76 mm	m	3,200	1.44	\$ 221.40	\$ -	\$ 48.60		\$ 270.00	\$ 864,000.00	121	708,480		
122	4.5.18		2320.18	PVC Caps for Drainage Holes	unit	125	0.00	\$ -	\$ 33.00	\$ -		\$ 33.00	\$ 4,125.00	122	-		
123	4.5.19		2320.19	Drilling Holes Upward for Drainage from Drainage Gallery into RCC, Ø76 mm	m	3,200	1.74	\$ 258.25	\$ 3.69	\$ 48.06		\$ 310.00	\$ 992,000.00	123	826,412		
<b>Instrumentation</b>																	
124	4.5.20		2320.20	Drilling Holes for piezometers	m	100	1.04	\$ 119.56	\$ 18.99	\$ 16.46		\$ 155.00	\$ 15,500.00	124	11,956		
125	4.5.21		2320.21	Vibrating Wire and Standpipe Piezometers TYPE - 1, excluding Cables	unit	8	34	\$ 3,600.00	\$ 2,400.00	\$ -		\$ 6,000.00	\$ 48,000.00	125	28,800		
126	4.5.22		2320.22	Vibrating Wire and Standpipe Piezometers TYPE - 2, excluding Cables	unit	2	68.00	\$ 7,050.00	\$ 4,700.00	\$ -		\$ 11,750.00	\$ 23,500.00	126	14,100		
127	4.5.23		2320.23	Instrument Cable including PVC Conduits and Pull Boxes	m	2,700	0.15	\$ 18.20	\$ 33.80	\$ -		\$ 52.00	\$ 140,400.00	127	49,140		
128	4.5.24		2320.24	Thermistors Cable in RCC	unit	8	725.00	\$ 7,500.00	\$ 7,500.00	\$ -		\$ 15,000.00	\$ 120,000.00	128	60,000		
129	4.5.25		2320.25	V-notch Weirs	unit	4	114.00	\$ 12,533.76	\$ 8,915.92	\$ 1,550.33		\$ 23,000.00	\$ 92,000.00	129	50,135		
130	4.5.26		2320.26	Vibrating Wire Weir Monitors.	unit	4	725.00	\$ 7,500.00	\$ 22,500.00	\$ -		\$ 30,000.00	\$ 120,000.00	130	30,000		
131	4.5.27		2320.27	Data logger, Terminal Box, Barometer Box including Grounding	LS	1	225.00	\$ 24,000.00	\$ 96,000.00	\$ -		\$ 120,000.00	\$ 120,000.00	131	24,000		
132	4.5.28		2320.28	Crest Survey Monuments	unit	4	7.00	\$ 841.36	\$ 2,112.89	\$ 45.75		\$ 3,000.00	\$ 12,000.00	132	3,365		
<b>Concrete and RCC operations</b>																	
133	4.5.29		2320.29	Roller Compacted Concrete (RCC)	m <sup>3</sup>	210,000	1.58	\$ 188.58	\$ 107.89	\$ 79.53		\$ 376.00	\$ 78,960,000.00	133	39,602,801		
133a				Roller Compacted Concrete Coarse Aggregate (Rate Only)	tonn							\$ 15.50		133a	-		
133b				Roller Compacted Concrete Fine Aggregate (Rate Only)	tonn							\$ 15.50		133b	-		
134	4.5.30		2320.30	Conventional Vibrated Concrete (CVC) (Crest and Flip Bucket)	m <sup>3</sup>	11,100	7.92	\$ 865.59	\$ 290.57	\$ 218.84		\$ 1,375.00	\$ 15,262,500.00	134	9,608,091		
135	4.5.31		2320.31	Facing Concrete	m <sup>3</sup>	8,600	5.79	\$ 623.79	\$ 198.30	\$ 217.91		\$ 1,040.00	\$ 8,944,000.00	135	5,364,584		
136	4.5.32		2320.32	GERCC or GEVR - Formed Faces	m <sup>3</sup>	4,650	4.36	\$ 476.90	\$ 130.47	\$ 242.63		\$ 850.00	\$ 3,952,500.00	136	2,217,599		
137	4.5.33		2320.33	Conventional Vibrated Concrete (North Abutment Crest Surface and Training Wall)	m <sup>3</sup>	270	6.16	\$ 900.41	\$ 310.20	\$ 164.40		\$ 1,375.00	\$ 371,250.00	137	243,110		
138	4.5.34		2320.34	Increase or decrease in quantity of cement - Bid Mix (rate only)	Kg							\$ 0.44	\$ -	138	-		
139	4.5.35		2320.35	Increase or decrease in quantity of flyash - Bid Mix (rate only)	Kg							\$ 0.41	\$ -	139	-		
140	4.5.36		2320.36	Increase or decrease in quantity of cement - Source B (rate only)	Kg							\$ 0.50	\$ -	140	-		
141	4.5.37		2320.37	Increase or decrease in quantity of flyash - Source B (rate only)	Kg							\$ 0.50	\$ -	141	-		
142	4.5.38		2320.38	Air-entraining Admixture	litre	315,000	0.00	\$ -	\$ 4.30	\$ -		\$ 4.30	\$ 1,354,500.00	142	-		
143	4.5.39		2320.39	Retarder Admixture	litre	336,000	0.00	\$ -	\$ 4.70	\$ -		\$ 4.70	\$ 1,579,200.00	143	-		
144	4.5.40		2320.40	Precast Concrete	m <sup>3</sup>	1,150	2.75	\$ 292.62	\$ 1,691.94	\$ 115.45		\$ 2,100.00	\$ 2,415,000.00	144	336,513		
145	4.5.41		2320.41	Gallery Floor CVC Concrete	m <sup>3</sup>	275	13.55	\$ 1,838.12	\$ 366.82	\$ 295.06		\$ 2,500.00	\$ 687,500.00	145	505,482		
146	4.5.42		2320.42	Steel Reinforcement	kg	500,000	0.02	\$ 4.87	\$ 2.73	\$ 0.40		\$ 8.00	\$ 4,000,000.00	146	2,433,679		
147	4.5.43		2320.43	Steel Guardrails	kg	5,200	0.30	\$ 34.93	\$ 6.33	\$ 2.24		\$ 43.50	\$ 226,200.00	147	181,643		
148	4.5.44		2320.44	Waterstop	m	1,350	1.5	\$ 168.85	\$ 21.15	\$ -		\$ 190.00	\$ 256,500.00	148	227,946		
<b>4.6 NORTH DAM - Auxiliary Services</b>																	
<b>ELECTRICAL WORK</b>																	
149	4.6.1		2370.01	Exothermic Connections.	unit	20	8.000	\$ 862.50	\$ 287.50	\$ -		\$ 1,150.00	\$ 23,000.00	149	17,250		
150	4.6.2		2370.02	Bare, Stranded, Medium Hard-Drawn Copper Conductor, size 500 kcmil	m	815	0.850	\$ 92.00	\$ 23.00	\$ -		\$ 115.00	\$ 93,725.00	150	74,980		
151	4.6.3		2370.03	Bare, Stranded, Medium Hard-Drawn Copper Conductor, size 4/0 AWG	m	16	0.800	\$ 86.25	\$ 28.75	\$ -		\$ 115.00	\$ 1,840.00	151	1,380		
152	4.6.4		2370.04	Embedded Copper Grounding Plates	unit	7	0.300	\$ 35.00	\$ 315.00	\$ -		\$ 350.00	\$ 2,450.00	152	245		
<b>SUB-TOTAL NORTH DAM</b>													<b>\$ 132,820,940.00</b>	0	-		
<b>5 3100 Powerhouse Channels</b>																	
<b>5.1 3120.00 Tailrace</b>																	
<b>CIVIL WORK</b>																	
<b>Tailrace Rock Plug - Overburden Excavation</b>																	
153	5.1.1		3120.01	Overburden Excavation, excluding excavation of Cofferdam 3 - Dry Conditions	m <sup>3</sup>	12,000	0.08	\$ 9.34	\$ -	\$ 12.66		\$ 22.00	\$ 264,000.00	153	112,043		
<b>Tailrace Rock Plug - Rock Excavation</b>																	

LOWER CHURCHILL PROJECT MUSKRAT FALLS CH0009 - CONSTRUCTION OF NORTH AND SOUTH DAMS				SCHEDULE OF PRICE BREAKDOWN							APPENDIX A2.1				
				ISSUED FOR: BID			DATE: 22 - Oct - 2014		BIDDER'S NAME: H.J. O'Connell Construction Limited - Dragados-Canada, Inc. Joint Venture						
PRICE ITEM		WBS CODE		PRICE ITEM DESCRIPTION	UNIT OF MEASURE	ESTIMATED QUANTITY A	MAN HOURS (AT SITE) PER UNIT	MANPOWER COST/UNIT (\$ CAN) B	MATERIALS COST/UNIT (\$ CAN) C	EQUIPMENT COST/UNIT (\$ CAN) D	PROFIT COST/UNIT (\$ CAN) E	UNIT PRICE   (\$ CAN) F= (B+C+D+E)	TOTAL PRICE (\$ CAN) G= A x F		
No	REFERENCE Exhibit 2 - ATT 1	CODE	SUBCODE												
154	5.1.2		3120.02	Tailrace Rock Plug Excavation including access ramp to powerhouse -Dry Conditions	m <sup>3</sup>	170,000	0.11	\$ 16.48	\$ 3.71	\$ 19.01		\$ 39.20	\$ 6,664,000.00		
155	5.1.3		3120.03	Tailrace Rock Plug - Underwater Excavation	m <sup>3</sup>	34,000	0.40	\$ 43.26	\$ 21.75	\$ 44.99		\$ 110.00	\$ 3,740,000.00		
<b>Tailrace Rock Plug - Stabilization and Rock Surface Protection</b>															
156	5.1.4		3120.04	Grouted Rock Bolts Type A	unit	70	19.21	\$ 2,142.83	\$ 1,048.03	\$ 509.15		\$ 3,700.00	\$ 259,000.00		
157	5.1.5		3120.05	Grouted Rock Bolts Type C	unit	20	35.20	\$ 3,927.57	\$ 1,941.33	\$ 931.10		\$ 6,800.00	\$ 136,000.00		
158	5.1.6		3120.06	Chain Link Wire Mesh - Installation	m <sup>2</sup>	2,500	0.25	\$ 27.91	\$ 15.28	\$ 6.81		\$ 50.00	\$ 125,000.00		
159	5.1.7		3120.07	Chain Link Wire Mesh - Removal	m <sup>2</sup>	20,300	0.05	\$ 5.77	\$ -	\$ 2.23		\$ 8.00	\$ 162,400.00		
160	5.1.8		3120.08	Existing Temporary Safety Fence - Removal	m	1,200	0.39	\$ 43.96	\$ -	\$ 17.04		\$ 61.00	\$ 73,200.00		
<b>SUB-TOTAL TAILRACE</b>													<b>\$ 11,423,600.00</b>		
<b>Borrow Areas</b>															
<b>Borrowed Construction Material</b>															
161	6.1.1	1100	1117.00	Overhaul of Borrowed Construction Material (rate only)	m3/km	N/A						\$ 1.50			
<b>ROW A CALCULATED TOTAL OF LUMP SUM AND UNIT PRICE ITEMS (BASED ON APPROXIMATE QUANTITIES)</b>										<b>\$ 308,699,055.00</b>					

154 2,800,862  
155 1,470,923  
0 -  
156 149,998  
157 78,551  
158 69,765  
159 117,038  
160 52,754  
0 -

NOTES													
<b>Note 1</b> : If there has been an error in the calculation to establish the total of Column G (Total Price) or Column F (UNIT PRICE), then the figures of column A (Estimated Quantity of Units), column B (Man Hours), column C (Manpower), column D (Equipment) and column E (Profits) will prevail.													
<b>Note 2</b> : This Document is provided to the bidders in Native Excel File format. It is the bidders responsibility to verify cell formats and formulas.													
<b>Note 3</b> : Bidders shall not include any HST/GST from any source (whether from Bidder, subcontractor, vendors or suppliers) in the unit and lump sum prices in this Schedule of Price Breakdown. Bidders shall claim input tax credits on taxable supplies received from vendors, suppliers and subcontractors and thereof Bidders shall													

FOR THE LOWER CHURCHILL PROJECT - MUSKRAT FALLS													
This Appendix forms part of the Proposal submitted by: H.J. O'Connell Construction Limited - Dragados Canada Inc. Joint Venture													
Name of Bidder: H.J. O'Connell Construction Limited - Dragados Canada Inc. Joint Venture													
Request For Proposal, Package No: CH0009													
Signature: Manuel Rivaya - Dragados Canada Inc.													
Signature: Leonard Knox - H.J. O'Connell Construction Limited													
Date of Proposal: 22-OCT-2014													

LOWER CHURCHILL PROJECT MUSKRAT FALLS CH0009 - CONSTRUCTION OF NORTH AND SOUTH DAMS				SCHEDULE OF PRICE BREAKDOWN							APPENDIX A2.1 Rev. B2			
ISSUED FOR: BID				DATE: 14 - Oct - 2014			BIDDER'S NAME: H.J. O'Connell Construction Limited - Dragados Canada Inc. Joint Venture							
PRICE ITEM		WBS CODE		PRICE ITEM DESCRIPTION	UNIT OF MEASURE	ESTIMATED QUANTITY A	MAN HOURS (AT SITE) PER UNIT	MANPOWER COST/UNIT (\$ CAN) B	MATERIALS COST/UNIT (\$ CAN) C	EQUIPMENT COST/UNIT (\$ CAN) D	PROFIT COST/UNIT (\$ CAN) T	UNIT PRICE   (\$ CAN) F= (B+C+D+E)	TOTAL PRICE (\$ CAN) G= A x F	
No	REFERENCE Exhibit 2 - ATT 1	CODE	SUBCODE											
<b>2 0000</b>				<b>INDIRECT COSTS</b>										
1	2.1		0000.01	Mobilization	LS	1	39487	\$ 2,941,239.56	\$ 3,367,070.37	\$ 28,091,690.07	\$ -	\$ 34,400,000.00	\$ 34,400,000.00	
2	2.2		0000.02	Site Installation	LS	1	60693	\$ 6,537,164.63	\$ 2,985,660.68	\$ 13,877,174.70	\$ -	\$ 23,400,000.00	\$ 23,400,000.00	
3	2.3		0000.03	Management, Staff, employees and Consultants	LS	1	332250	\$ 38,543,132.88	\$ 4,561,891.40	\$ 894,975.72	\$ -	\$ 44,000,000.00	\$ 44,000,000.00	
4	2.4		0000.04	Health and Safety, Environmental and Quality Requirements	LS	1	102526	\$ 8,814,062.99	\$ 127,398.32	\$ 58,538.69	\$ -	\$ 9,000,000.00	\$ 9,000,000.00	
5	2.5		0000.05	Credit, Guarantee and Insurance	LS	1	0	\$ -	\$ 2,252,200.00	\$ -	\$ -	\$ 2,252,200.00	\$ 2,252,200.00	
6	2.6		0000.06	Warranty, per Article 17 of the Agreement	LS	1	0	\$ 225,000.00	\$ -	\$ 225,000.00	\$ -	\$ 450,000.00	\$ 450,000.00	
7	2.7		0000.07	Demobilization	LS	1	0	\$ -	\$ -	\$ 1,353,000.00	\$ -	\$ 1,353,000.00	\$ 1,353,000.00	
				<b>SUB-TOTAL INDIRECT COSTS</b>										<b>\$ 114,855,200.00</b>
<b>3 1100</b>				<b>GENERAL</b>										
<b>3.1 1110</b>				<b>DEWATERING OF STRUCTURE AREAS</b>										
8	3.1.1		1110.01	Dewatering of Structure Areas	LS	1	8179	\$ 892,107.65	\$ 406,683.58	\$ 286,208.77	\$ -	\$ 1,585,000.00	\$ 1,585,000.00	
<b>3.2 1111</b>				<b>EXCAVATION OF EXISTING COFFERDAMS</b>										
9	3.2.1		1111.01	Excavation of Existing Embankment cofferdams 1, 2 and 3, and Existing Ramps	m <sup>3</sup>	177,000	0.05	\$ 5.27	\$ 0.11	\$ 8.38	\$ -	\$ 13.75	\$ 2,433,750.00	
10	3.2.2		1111.02	Excavation of Downstream section of RCC riverside cofferdam	m <sup>3</sup>	20,000	0.12	\$ 13.71	\$ 3.49	\$ 16.70	\$ -	\$ 33.90	\$ 678,000.00	
<b>3.3 1112</b>				<b>PERMANENT ROADS AND PARKING AREA</b>										
11	3.3.1		1112.01	Overburden Excavation	m <sup>3</sup>	8,000	0.08	\$ 8.71	\$ -	\$ 12.29	\$ -	\$ 21.00	\$ 168,000.00	
12	3.3.2		1112.02	Approved Compactable Material	m <sup>3</sup>	44,000	0.05	\$ 4.95	\$ -	\$ 7.75	\$ -	\$ 12.70	\$ 558,800.00	
13	3.3.3		1112.03	Granular "B" Material	m <sup>3</sup>	5,800	0.20	\$ 24.14	\$ 0.28	\$ 31.34	\$ -	\$ 55.75	\$ 323,350.00	
14	3.3.4		1112.04	Granular "C" Material	m <sup>3</sup>	4,000	0.18	\$ 22.12	\$ 0.28	\$ 29.60	\$ -	\$ 52.00	\$ 208,000.00	
15	3.3.5		1112.05	Maintenance Grade 3 material	m <sup>3</sup>	4,500	0.22	\$ 25.85	\$ 0.28	\$ 32.87	\$ -	\$ 59.00	\$ 265,500.00	
16	3.3.6		1112.06	CSP culvert, dia. 900 mm	m	48	4.43	\$ 470.58	\$ 214.75	\$ 189.67	\$ -	\$ 875.00	\$ 42,000.00	
17	3.3.7		1112.07	Guide Rails	m	400	2.60	\$ 266.52	\$ 119.02	\$ 25.46	\$ -	\$ 411.00	\$ 164,400.00	
18	3.3.8		1112.08	Gate Type 1	unit	2	76.80	\$ 8,055.96	\$ 3,512.94	\$ 1,431.11	\$ -	\$ 13,000.00	\$ 26,000.00	
<b>3.4 1113</b>				<b>ACCESS ROAD TO LAYDOWN AREA C1</b>										
19	3.4.1		1113.01	Approved Compactable Material	m <sup>3</sup>	26,000	0.05	\$ 4.95	\$ -	\$ 7.75	\$ -	\$ 12.70	\$ 330,200.00	
20	3.4.2		1113.02	Granular "C" Material	m <sup>3</sup>	7,500	0.18	\$ 22.12	\$ 0.28	\$ 29.60	\$ -	\$ 52.00	\$ 390,000.00	
<b>3.5 1114</b>				<b>DITCHES</b>										
21	3.5.1		1114.01	Overburden Excavation	m <sup>3</sup>	2,000	0.09	\$ 8.98	\$ -	\$ 12.02	\$ -	\$ 21.00	\$ 42,000.00	
22	3.5.2		1114.02	Non-woven Geotextile, min 300 g/m <sup>2</sup>	m <sup>2</sup>	2,500	0.16	\$ 16.45	\$ 5.37	\$ 4.18	\$ -	\$ 26.00	\$ 65,000.00	
23	3.5.3		1114.03	Rockfill Protection, 100 - 250 mm	m <sup>3</sup>	1,000	0.35	\$ 36.60	\$ -	\$ 26.40	\$ -	\$ 63.00	\$ 63,000.00	
<b>3.6 1115</b>				<b>SLOPE PROTECTION</b>										
24	3.6.1		1115.01	Rockfill Protection, Zone 3E Material	m <sup>3</sup>	2,500	0.12	\$ 11.93	\$ -	\$ 15.07	\$ -	\$ 27.00	\$ 67,500.00	
25	3.6.2		1115.02	Non-woven Geotextile, min 530 g/m <sup>2</sup>	m <sup>2</sup>	4,500	0.04	\$ 4.05	\$ 3.68	\$ 1.03	\$ -	\$ 8.75	\$ 39,375.00	
<b>3.7 1116</b>				<b>CHAIN LINK FENCES AND GATES</b>										
26	3.7.1		1116.01	Chain Link Fence and Gates	m	720	2.9	\$ 328.54	\$ 70.33	\$ 84.13	\$ -	\$ 483.00	\$ 347,760.00	
<b>3.8 1150</b>				<b>TEMPORARY UPSTREAM BRIDGE OVER SPILLWAY APPROACH CHANNEL</b>										
27	3.8.1		1150.01	Engineering of Temporary Upstream Bridge	LS	1	0	\$ 119,000.00	\$ -	\$ -	\$ -	\$ 119,000.00	\$ 119,000.00	
28	3.8.2		1150.02	Supply of Temporary Upstream Bridge	LS	1	373	\$ 37,977.07	\$ 2,008,755.60	\$ 15,267.33	\$ -	\$ 2,062,000.00	\$ 2,062,000.00	
29	3.8.3		1150.03	Installation, removal and handover of Temporary Upstream Bridge	LS	1	19617	\$ 2,087,752.20	\$ 1,196,498.35	\$ 1,570,749.45	\$ -	\$ 4,855,000.00	\$ 4,855,000.00	
				<b>SUB-TOTAL GENERAL</b>										<b>\$ 14,833,635.00</b>
<b>4 2300</b>				<b>DAMS AND COFFERDAMS - GENERAL</b>										
<b>4.1 2340</b>				<b>UPSTREAM COFFERDAM</b>										
				<b>CIVIL WORK</b>										

LOWER CHURCHILL PROJECT MUSKRAT FALLS CH0009 - CONSTRUCTION OF NORTH AND SOUTH DAMS				SCHEDULE OF PRICE BREAKDOWN							APPENDIX A2.1 Rev. B2		
				ISSUED FOR: BID	DATE: 14 - Oct - 2014	BIDDER'S NAME: H.J. O'Connell Construction Limited - Dragados Canada Inc. Joint Venture							
PRICE ITEM		WBS CODE		PRICE ITEM DESCRIPTION	UNIT OF MEASURE	ESTIMATED QUANTITY A	MAN HOURS (AT SITE) PER UNIT	MANPOWER COST/UNIT (\$ CAN) B	MATERIALS COST/UNIT (\$ CAN) C	EQUIPMENT COST/UNIT (\$ CAN) D	PROFIT COST/UNIT (\$ CAN) T	UNIT PRICE   (\$ CAN) F= (B+C+D+E)	TOTAL PRICE (\$ CAN) G= A x F
No	REFERENCE Exhibit 2 - ATT 1	CODE	SUBCODE										
				<b>Excavation</b>									
30	4.1.1		2341.01	Overburden excavation	m <sup>3</sup>	2,500	0.14	\$ 15.39	\$ -	\$ 19.61	\$ -	\$ 35.00	\$ 87,500.00
				<b>Foundation Preparation in dry condition</b>									
31	4.1.2		2341.02	Foundation Cleaning (water/air jets and Vacuum trucks)	m <sup>2</sup>	1,200	0.9	\$ 100.43	\$ -	\$ 17.57	\$ -	\$ 118.00	\$ 141,600.00
32	4.1.3		2341.03	Rock Excavation including dental excavation and Scaling	m <sup>3</sup>	500	0.79	\$ 85.73	\$ 24.89	\$ 101.38	\$ -	\$ 212.00	\$ 106,000.00
33	4.1.4		2341.04	Dental Concrete	m <sup>3</sup>	800	1.92	\$ 212.78	\$ 514.02	\$ 23.20	\$ -	\$ 750.00	\$ 600,000.00
34	4.1.5		2341.05	Slush Grout	m <sup>2</sup>	1,200	0.2	\$ 22.10	\$ 8.84	\$ 1.06	\$ -	\$ 32.00	\$ 38,400.00
35	4.1.6		2341.06	Dry Pack	m <sup>3</sup>	6	50	\$ 5,559.66	\$ 1,293.49	\$ 266.86	\$ -	\$ 7,120.00	\$ 42,720.00
				<b>Embankment Materials</b>									
36	4.1.7		2341.07	Compacted Till - Zones 1 and 1C Materials	m <sup>3</sup>	19,000	0.25	\$ 27.01	\$ -	\$ 33.99	\$ -	\$ 61.00	\$ 1,159,000.00
37	4.1.8		2341.08	Dumped Till - Zone 1A Material	m <sup>3</sup>	134,000	0.13	\$ 13.75	\$ -	\$ 24.50	\$ -	\$ 38.25	\$ 5,125,500.00
38	4.1.9		2341.09	Compacted Granular - Zone 2A Material	m <sup>3</sup>	20,700	0.28	\$ 30.67	\$ -	\$ 34.33	\$ -	\$ 65.00	\$ 1,345,500.00
39	4.1.10		2341.10	Compacted Granular - Zone 2C Material	m <sup>3</sup>	8,700	0.28	\$ 30.74	\$ -	\$ 34.26	\$ -	\$ 65.00	\$ 565,500.00
40	4.1.11		2341.11	Dumped Granular - Zone 2E Material	m <sup>3</sup>	26,300	0.16	\$ 17.61	\$ -	\$ 27.89	\$ -	\$ 45.50	\$ 1,196,650.00
41	4.1.12		2341.12	Dumped Rockfill- Zone 3 Material	m <sup>3</sup>	143,000	0.06	\$ 6.72	\$ -	\$ 9.53	\$ -	\$ 16.25	\$ 2,323,750.00
42	4.1.13		2341.13	Dumped Large Blocks (300-1000 mm) - Zone 3 Class 1	m <sup>3</sup>	37,000	0.08	\$ 9.14	\$ -	\$ 14.86	\$ -	\$ 24.00	\$ 888,000.00
43	4.1.14		2341.14	Dumped Large Blocks (≥1000 mm) - Zone 3 Class 2	m <sup>3</sup>	65,000	0.17	\$ 18.22	\$ -	\$ 30.78	\$ -	\$ 49.00	\$ 3,185,000.00
44	4.1.15		2341.15	Dumped Large Blocks (≥1300 mm) - Zone 3 Class 3	m <sup>3</sup>	15,000	0.20	\$ 21.81	\$ -	\$ 41.19	\$ -	\$ 63.00	\$ 945,000.00
45	4.1.16		2341.16	Compacted Crushed Stone - Zone 3A Material	m <sup>3</sup>	10,950	0.32	\$ 37.02	\$ 0.28	\$ 38.70	\$ -	\$ 76.00	\$ 832,200.00
46	4.1.17		2341.17	Compacted Rockfill - Zone 3C Material	m <sup>3</sup>	33,740	0.10	\$ 11.80	\$ -	\$ 16.20	\$ -	\$ 28.00	\$ 944,720.00
47	4.1.18		2341.18	Compacted Rockfill - Zone 3D Material	m <sup>3</sup>	33,900	0.10	\$ 11.80	\$ -	\$ 16.20	\$ -	\$ 28.00	\$ 949,200.00
48	4.1.19		2341.19	Dumped Crushed Stone- Zone 3F Material	m <sup>3</sup>	21,000	0.18	\$ 21.93	\$ 0.28	\$ 29.29	\$ -	\$ 51.50	\$ 1,081,500.00
				<b>Investigation for Jet Grouted Cut-off Wall and Bedrock Grouting</b>									
49	4.1.20		2341.20	Percussion Drill Holes in embankments, river sediments and bedrock	m	1,000	0.25	\$ 30.52	\$ -	\$ 78.48	\$ -	\$ 109.00	\$ 109,000.00
50	4.1.21		2341.21	Verification Core Drilling in jet grouting cut-off wall and bedrock	m	200	0.72	\$ 85.40	\$ 12.81	\$ 328.79	\$ -	\$ 427.00	\$ 85,400.00
51	4.1.22		2341.22	Core Diamond Drill Rig in Standby	hour	140	0	\$ -	\$ -	\$ 139.00	\$ -	\$ 139.00	\$ 19,460.00
				<b>Jet Grouting cut off wall</b>									
52	4.1.23		2341.23	Mobilization and demobilization	LS	1	2342	\$ 554,750.00	\$ -	\$ 1,030,250.00	\$ -	\$ 1,585,000.00	\$ 1,585,000.00
53	4.1.24		2341.24	Drilling Holes for Jet Grouting in embankment, river sediments and bedrock	m	9,600	0.56	\$ 71.79	\$ 5.50	\$ 54.21	\$ -	\$ 131.50	\$ 1,262,400.00
54	4.1.25		2341.25	Jet Grouted Cut-off wall	m <sup>2</sup>	2,800	1.55	\$ 171.20	\$ 503.09	\$ 307.71	\$ -	\$ 982.00	\$ 2,749,600.00
				<b>Bedrock Grouting beneath the Jet Grouted Cut-off Wall, if required</b>									
55	4.1.26		2341.26	Drilling Holes for Grouting in embankment , jet grouting cut-off wall and bedrock, if required	m	1,300	0.05	\$ 5.00	\$ -	\$ 15.00	\$ -	\$ 20.00	\$ 26,000.00
56	4.1.27		2341.27	Dry cement incorporated in the grout, if required	kg	11,000	0.03	\$ 3.13	\$ 1.14	\$ 0.63	\$ -	\$ 4.90	\$ 53,900.00
57	4.1.28		2341.28	Grouting - Successful connections, if required	unit	60	2.5	\$ 269.60	\$ -	\$ 404.40	\$ -	\$ 674.00	\$ 40,440.00
				<b>SUB-TOTAL UPSTREAM COFFERDAM</b>									
				<b>4.2 2340 2342 DOWNSTREAM COFFERDAM</b>									
				<b>CIVIL WORK</b>									
				<b>Excavation</b>									
58	4.2.1		2342.01	Overburden excavation	m <sup>3</sup>	500	0.15	\$ 16.36	\$ -	\$ 18.64	\$ -	\$ 35.00	\$ 17,500.00
				<b>Foundation Preparation</b>									
59	4.2.2		2342.02	Foundation cleaning (water/ait jets and Vacuum trucks)	m <sup>2</sup>	1,250	0.9	\$ 99.63	\$ -	\$ 20.37	\$ -	\$ 120.00	\$ 150,000.00

LOWER CHURCHILL PROJECT MUSKRAT FALLS CH0009 - CONSTRUCTION OF NORTH AND SOUTH DAMS				SCHEDULE OF PRICE BREAKDOWN								APPENDIX A2.1 Rev. B2	
				ISSUED FOR: BID	DATE: 14 - Oct - 2014	BIDDER'S NAME: H.J. O'Connell Construction Limited - Dragados Canada Inc. Joint Venture							
PRICE ITEM		WBS CODE		PRICE ITEM DESCRIPTION	UNIT OF MEASURE	ESTIMATED QUANTITY A	MAN HOURS (AT SITE) PER UNIT	MANPOWER COST/UNIT (\$ CAN) B	MATERIALS COST/UNIT (\$ CAN) C	EQUIPMENT COST/UNIT (\$ CAN) D	PROFIT COST/UNIT (\$ CAN) T	UNIT PRICE   (\$ CAN) F= (B+C+D+E)	TOTAL PRICE (\$ CAN) G= A x F
No	REFERENCE Exhibit 2 - ATT 1	CODE	SUBCODE										
60	4.2.3		2342.03	Rock excavation including dental excavation and scaling	m <sup>3</sup>	500	0.80	\$ 86.61	\$ 24.66	\$ 100.73	\$ -	\$ 212.00	\$ 106,000.00
61	4.2.4		2342.04	Dental Concrete	m <sup>3</sup>	200	1.92	\$ 206.57	\$ 497.99	\$ 45.44	\$ -	\$ 750.00	\$ 150,000.00
62	4.2.5		2342.05	Slush Grout	m <sup>2</sup>	1,250	0.2	\$ 22.10	\$ 8.84	\$ 1.06	\$ -	\$ 32.00	\$ 40,000.00
63	4.2.6		2342.06	Dry Pack	m <sup>3</sup>	6	50	\$ 5,559.66	\$ 1,293.49	\$ 266.86	\$ -	\$ 7,120.00	\$ 42,720.00
				<b>Embankment Materials</b>									
64	4.2.7		2342.07	Compacted Till - Zones 1 and 1C	m <sup>3</sup>	2,000	0.24	\$ 26.84	\$ -	\$ 34.16	\$ -	\$ 61.00	\$ 122,000.00
65	4.2.8		2342.08	Compacted Granular - Zone 2C	m <sup>3</sup>	2,500	0.29	\$ 29.36	\$ -	\$ 35.64	\$ -	\$ 65.00	\$ 162,500.00
66	4.2.9		2342.09	Compacted Rockfill - Zone 3C	m <sup>3</sup>	4,600	0.12	\$ 12.51	\$ -	\$ 15.49	\$ -	\$ 28.00	\$ 128,800.00
67	4.2.10		2342.10	Compacted Rockfill - Zone 3D	m <sup>3</sup>	2,000	0.12	\$ 12.51	\$ -	\$ 15.49	\$ -	\$ 28.00	\$ 56,000.00
				<b>SUB-TOTAL DOWNSTREAM COFFERDAM</b>									
				<b>4.3 2340 2343 INTAKE CHANNEL COFFERDAM</b>									
				<b>CIVIL WORK</b>									
				<b>Excavation</b>									
68	4.3.1		2343.01	Overburden excavation	m <sup>3</sup>	8,800	0.06	\$ 6.91	\$ -	\$ 9.59	\$ -	\$ 16.50	\$ 145,200.00
				<b>Foundation Preparation</b>									
69	4.3.2		2343.02	Foundation cleaning (water/ait jets and Vacuum trucks)	m <sup>2</sup>	1,700	0.9	\$ 99.28	\$ -	\$ 20.72	\$ -	\$ 120.00	\$ 204,000.00
70	4.3.3		2343.03	Rock excavation including dental excavation and scaling	m <sup>3</sup>	700	0.78	\$ 85.29	\$ 25.00	\$ 101.71	\$ -	\$ 212.00	\$ 148,400.00
71	4.3.4		2343.04	Dental Concrete	m <sup>3</sup>	250	1.90	\$ 211.77	\$ 516.12	\$ 22.11	\$ -	\$ 750.00	\$ 187,500.00
72	4.3.5		2343.05	Slush Grout	m <sup>2</sup>	1,700	0.2	\$ 22.18	\$ 8.90	\$ 0.93	\$ -	\$ 32.00	\$ 54,400.00
73	4.3.6		2343.06	Dry Pack	m <sup>3</sup>	9	50	\$ 5,583.13	\$ 1,303.11	\$ 233.76	\$ -	\$ 7,120.00	\$ 64,080.00
				<b>Embankment Materials</b>									
74	4.3.7		2343.07	Compacted Till - Zones 1 and 1C	m <sup>3</sup>	6,300	0.29	\$ 31.82	\$ 2.11	\$ 44.08	\$ -	\$ 78.00	\$ 491,400.00
75	4.3.8		2343.08	Compacted Granular - Zone 2C	m <sup>3</sup>	4,900	0.29	\$ 36.63	\$ 1.04	\$ 55.33	\$ -	\$ 93.00	\$ 455,700.00
76	4.3.9		2343.09	Compacted Rockfill - Zone 3C	m <sup>3</sup>	5,200	0.19	\$ 21.42	\$ 2.09	\$ 29.49	\$ -	\$ 53.00	\$ 275,600.00
77	4.3.10		2343.10	Compacted Rockfill - Zone 3D	m <sup>3</sup>	1,400	0.19	\$ 21.42	\$ 2.09	\$ 29.49	\$ -	\$ 53.00	\$ 74,200.00
				<b>SUB-TOTAL INTAKE CHANNEL COFFERDAM</b>									
				<b>4.4 2330 SOUTH DAM</b>									
				<b>CIVIL WORK</b>									
				<b>Excavation</b>									
78	4.4.1		2330.01	Overburden excavation	m <sup>3</sup>	94,000	0.06	\$ 6.56	\$ -	\$ 8.94	\$ -	\$ 15.50	\$ 1,457,000.00
				<b>Foundation Preparation</b>									
79	4.4.2		2330.02	Foundation cleaning (water/ait jets and Vacuum trucks)	m <sup>2</sup>	3,400	0.9	\$ 102.54	\$ -	\$ 17.46	\$ -	\$ 120.00	\$ 408,000.00
80	4.4.3		2330.03	Rock excavation including dental excavation and scaling	m <sup>3</sup>	2,000	0.78	\$ 86.20	\$ 24.82	\$ 100.98	\$ -	\$ 212.00	\$ 424,000.00
81	4.4.4		2330.04	Dental Concrete	m <sup>3</sup>	1,200	1.92	\$ 218.21	\$ 508.83	\$ 22.97	\$ -	\$ 750.00	\$ 900,000.00
82	4.4.5		2330.05	Slush Grout	m <sup>2</sup>	3,400	0.2	\$ 22.42	\$ 8.68	\$ 0.91	\$ -	\$ 32.00	\$ 108,800.00
83	4.4.6		2330.06	Dry Pack	m <sup>3</sup>	20	50	\$ 5,625.38	\$ 1,267.29	\$ 227.33	\$ -	\$ 7,120.00	\$ 142,400.00
84	4.4.7		2330.07	Drilling Holes for Grouting	m	1,200	0.7	\$ 97.60	\$ -	\$ 24.40	\$ -	\$ 122.00	\$ 146,400.00
85	4.4.8		2330.08	Dry cement incorporated in the grout	kg	42,000	0.07	\$ 5.81	\$ 0.94	\$ 1.25	\$ -	\$ 8.00	\$ 336,000.00
86	4.4.9		2330.09	Cored Drill Check Holes	m	30	1.79	\$ 424.78	\$ -	\$ 72.22	\$ -	\$ 497.00	\$ 14,910.00
87	4.4.10		2330.10	Percussion Drilling Check holes	m	60	0.8	\$ 97.60	\$ -	\$ 24.40	\$ -	\$ 122.00	\$ 7,320.00

LOWER CHURCHILL PROJECT MUSKRAT FALLS CH0009 - CONSTRUCTION OF NORTH AND SOUTH DAMS				SCHEDULE OF PRICE BREAKDOWN							APPENDIX A2.1 Rev. B2		
ISSUED FOR: BID				DATE: 14 - Oct - 2014			BIDDER'S NAME: H.J. O'Connell Construction Limited - Dragados Canada Inc. Joint Venture						
PRICE ITEM		WBS CODE		PRICE ITEM DESCRIPTION	UNIT OF MEASURE	ESTIMATED QUANTITY A	MAN HOURS (AT SITE) PER UNIT	MANPOWER COST/UNIT (\$ CAN) B	MATERIALS COST/UNIT (\$ CAN) C	EQUIPMENT COST/UNIT (\$ CAN) D	PROFIT COST/UNIT (\$ CAN) T	UNIT PRICE   (\$ CAN) F= (B+C+D+E)	TOTAL PRICE (\$ CAN) G= A x F
No	REFERENCE Exhibit 2 - ATT 1	CODE	SUBCODE										
88	4.4.11		2330.11	Grouting - Successful connections	unit	250	2.93	\$ 382.21	\$ -	\$ 33.79	\$ -	\$ 416.00	\$ 104,000.00
89	4.4.12		2330.12	Water pressure test (Lugeon - 5 Stages)	hour	8	3	\$ 429.66	\$ -	\$ 221.34	\$ -	\$ 651.00	\$ 5,208.00
90	4.4.13		2330.13	Water test - Successful connections	unit	18	1.33	\$ 191.40	\$ -	\$ 98.60	\$ -	\$ 290.00	\$ 5,220.00
91	4.4.14		2330.14	Uplift gauges	m	20	2.4	\$ 301.00	\$ 216.72	\$ 84.28	\$ -	\$ 602.00	\$ 12,040.00
92	4.4.15		2330.15	Thermistors (measure rock temperature in grout holes)	unit	1	48	\$ -	\$ 6,080.00	\$ 3,420.00	\$ -	\$ 9,500.00	\$ 9,500.00
<b>Embankment Materials</b>													
93	4.4.16		2330.16	Compacted Till - Zones 1 and 1C	m <sup>3</sup>	26,000	0.23	\$ 25.97	\$ -	\$ 34.03	\$ -	\$ 60.00	\$ 1,560,000.00
94	4.4.17		2330.17	Compacted Granular - Zone 2A	m <sup>3</sup>	28,000	0.24	\$ 26.43	\$ -	\$ 34.07	\$ -	\$ 60.50	\$ 1,694,000.00
95	4.4.18		2330.18	Compacted Crushed Stone - Zone 3A	m <sup>3</sup>	12,000	0.30	\$ 35.31	\$ 0.28	\$ 38.41	\$ -	\$ 74.00	\$ 888,000.00
96	4.4.19		2330.19	Compacted Crushed Stone - Zone 3B	m <sup>3</sup>	16,000	0.30	\$ 35.53	\$ 0.29	\$ 38.18	\$ -	\$ 74.00	\$ 1,184,000.00
97	4.4.20		2330.20	Compacted Rockfill - Zone 3C	m <sup>3</sup>	21,000	0.09	\$ 10.67	\$ -	\$ 13.83	\$ -	\$ 24.50	\$ 514,500.00
98	4.4.21		2330.21	Compacted Rockfill - Zone 3D	m <sup>3</sup>	46,000	0.09	\$ 10.67	\$ -	\$ 13.83	\$ -	\$ 24.50	\$ 1,127,000.00
99	4.4.22		2330.22	Riprap - Zone 4	m <sup>3</sup>	6,000	0.18	\$ 21.29	\$ -	\$ 34.21	\$ -	\$ 55.50	\$ 333,000.00
100	4.4.23		2330.23	Compacted Crushed Stone - Zone 5	m <sup>3</sup>	310	0.32	\$ 38.94	\$ 0.28	\$ 43.78	\$ -	\$ 83.00	\$ 25,730.00
101	4.4.24		2330.24	Jersey Barrier	m	600	0.65	\$ 77.40	\$ 94.17	\$ 28.42	\$ -	\$ 200.00	\$ 120,000.00
<b>Geotechnical Instrumentation</b>													
102	4.4.25		2330.25	V-Notch Weirs, excluding Shelters	unit	2	67.75	\$ 7,627.57	\$ 9,097.70	\$ 374.74	\$ -	\$ 17,100.00	\$ 34,200.00
103	4.4.26		2330.26	Shelters for V-Notch Weirs	unit	2	33.30	\$ 4,007.33	\$ 1,609.50	\$ 283.18	\$ -	\$ 5,900.00	\$ 11,800.00
104	4.4.27		2330.27	Survey Monuments at South Dam Crest	unit	3	5.33	\$ 703.98	\$ 2,263.34	\$ 32.68	\$ -	\$ 3,000.00	\$ 9,000.00
<b>SUB-TOTAL SOUTH DAM</b>													<b>\$ 11,582,028.00</b>
<b>4.5 2320 NORTH DAM</b>													
<b>CIVIL WORK</b>													
<b>Clearing</b>													
105	4.5.1		2320.01	Clearing of the North Abutment	Ha	3	74.60	\$ 21,055.66	\$ -	\$ 28,444.34	\$ -	\$ 49,500.00	\$ 148,500.00
<b>Excavation</b>													
106	4.5.2		2320.02	Overburden Excavation	m <sup>3</sup>	72,000	0.085	\$ 9.60	\$ -	\$ 13.40	\$ -	\$ 23.00	\$ 1,656,000.00
<b>Foundation Preparation</b>													
107	4.5.3		2320.03	Foundation Cleaning (water/air jets and vacuum)	m <sup>2</sup>	13,500	1.5	\$ 167.27	\$ -	\$ 32.73	\$ -	\$ 200.00	\$ 2,700,000.00
108	4.5.4		2320.04	Rock Excavation including Dental Excavation and Scaling	m <sup>3</sup>	6,000	1.01	\$ 111.25	\$ 24.98	\$ 119.77	\$ -	\$ 256.00	\$ 1,536,000.00
109	4.5.5		2320.05	Dental Concrete	m <sup>3</sup>	4,000	1.92	\$ 212.78	\$ 514.02	\$ 23.20	\$ -	\$ 750.00	\$ 3,000,000.00
110	4.5.6		2320.06	Slush Grout	m <sup>2</sup>	13,500	0.2	\$ 22.10	\$ 8.84	\$ 1.06	\$ -	\$ 32.00	\$ 432,000.00
111	4.5.7		2320.07	Dry Pack	m <sup>3</sup>	70	50	\$ 5,559.66	\$ 1,293.49	\$ 266.86	\$ -	\$ 7,120.00	\$ 498,400.00
112	4.5.8		2320.08	Drilling Holes in RCC and Bedrock for Grouting	m	4,200	1.39	\$ 214.65	\$ -	\$ 50.35	\$ -	\$ 265.00	\$ 1,113,000.00
113	4.5.9		2320.09	Grouting - Successful Connections	unit	720	0.3	\$ 98.77	\$ -	\$ 20.23	\$ -	\$ 119.00	\$ 85,680.00
114	4.5.10		2320.10	Dry Cement incorporated in the grout	kg	126,000	0.04	\$ 4.50	\$ 1.05	\$ 0.96	\$ -	\$ 6.50	\$ 819,000.00
115	4.5.11		2320.11	Cored Drill Check Holes	m	60	1.8	\$ 256.96	\$ -	\$ 95.04	\$ -	\$ 352.00	\$ 21,120.00
116	4.5.12		2320.12	Percussion Drilling Check Holes	m	120	1.4	\$ 200.46	\$ -	\$ 56.54	\$ -	\$ 257.00	\$ 30,840.00
117	4.5.13		2320.13	Water pressure test (lugeon - 5 Stages)	hour	15	3.2	\$ 457.52	\$ -	\$ 144.48	\$ -	\$ 602.00	\$ 9,030.00
118	4.5.14		2320.14	Water Pressure Test - Successful connections	unit	36	1.33	\$ 190.76	\$ -	\$ 60.24	\$ -	\$ 251.00	\$ 9,036.00
119	4.5.15		2320.15	Uplift gauges	m	60	1.8	\$ 273.15	\$ 242.80	\$ 91.05	\$ -	\$ 607.00	\$ 36,420.00
120	4.5.16		2320.16	Thermistor (measure temperature in grout holes)	unit	1	48	\$ 6,240.00	\$ 3,360.00	\$ -	\$ -	\$ 9,600.00	\$ 9,600.00
<b>Drainage Holes</b>													
121	4.5.17		2320.17	Drilling Holes for Drainage in Foundation from Drainage Gallery, Ø76 mm	m	3,200	1.44	\$ 223.04	\$ -	\$ 48.96	\$ -	\$ 272.00	\$ 870,400.00



LOWER CHURCHILL PROJECT MUSKRAT FALLS CH0009 - CONSTRUCTION OF NORTH AND SOUTH DAMS				SCHEDULE OF PRICE BREAKDOWN								APPENDIX A2.1 Rev. B2	
ISSUED FOR: BID				DATE: 14 - Oct - 2014				BIDDER'S NAME: H.J. O'Connell Construction Limited - Dragados Canada Inc. Joint Venture					
PRICE ITEM		WBS CODE		PRICE ITEM DESCRIPTION	UNIT OF MEASURE	ESTIMATED QUANTITY A	MAN HOURS (AT SITE) PER UNIT	MANPOWER COST/UNIT (\$ CAN) B	MATERIALS COST/UNIT (\$ CAN) C	EQUIPMENT COST/UNIT (\$ CAN) D	PROFIT COST/UNIT (\$ CAN) T	UNIT PRICE   (\$ CAN) F= (B+C+D+E)	TOTAL PRICE (\$ CAN) G= A x F
No	REFERENCE Exhibit 2 - ATT 1	CODE	SUBCODE										
122	4.5.18		2320.18	PVC Caps for Drainage Holes	unit	125	0	\$ -	\$ 35.00	\$ -	\$ -	\$ 35.00	\$ 4,375.00
123	4.5.19		2320.19	Drilling Holes Upward for Drainage from Drainage Gallery into RCC, Ø76 mm	m	3,200	1.84	\$ 261.59	\$ 3.74	\$ 48.68	\$ -	\$ 314.00	\$ 1,004,800.00
<b>Instrumentation</b>													
124	4.5.20		2320.20	Drilling Holes for piezometers	m	100	1.02	\$ 121.87	\$ 19.35	\$ 16.78	\$ -	\$ 158.00	\$ 15,800.00
125	4.5.21		2320.21	Vibrating Wire and Standpipe Piezometers TYPE - 1, excluding Cables	unit	8	34	\$ 3,600.00	\$ 2,400.00	\$ -	\$ -	\$ 6,000.00	\$ 48,000.00
126	4.5.22		2320.22	Vibrating Wire and Standpipe Piezometers TYPE - 2, excluding Cables	unit	2	68	\$ 7,140.00	\$ 4,760.00	\$ -	\$ -	\$ 11,900.00	\$ 23,800.00
127	4.5.23		2320.23	Instrument Cable including PVC Conduits and Pull Boxes	m	2,700	0.15	\$ 18.55	\$ -	\$ 34.45	\$ -	\$ 53.00	\$ 143,100.00
128	4.5.24		2320.24	Thermistors Cable in RCC	unit	8	725	\$ 7,450.00	\$ 7,450.00	\$ -	\$ -	\$ 14,900.00	\$ 119,200.00
129	4.5.25		2320.25	V-notch Weirs	unit	4	114	\$ 12,915.22	\$ 9,187.27	\$ 1,597.51	\$ -	\$ 23,700.00	\$ 94,800.00
130	4.5.26		2320.26	Vibrating Wire Weir Monitors.	unit	4	25	\$ 7,425.00	\$ -	\$ 22,275.00	\$ -	\$ 29,700.00	\$ 118,800.00
131	4.5.27		2320.27	Data logger, Terminal Box, Barometer Box including Grounding	LS	1	225	\$ 23,800.00	\$ 95,200.00	\$ -	\$ -	\$ 119,000.00	\$ 119,000.00
132	4.5.28		2320.28	Crest Survey Monuments	unit	4	6.8	\$ 841.36	\$ 2,112.89	\$ 45.75	\$ -	\$ 3,000.00	\$ 12,000.00
<b>Concrete and RCC operations</b>													
133	4.5.29		2320.29	Roller Compacted Concrete (RCC)	m <sup>3</sup>	210,000	2.04	\$ 261.11	\$ 109.29	\$ 96.60	\$ -	\$ 467.00	\$ 98,070,000.00
133.a				Roller Compacted Concrete Coarse Aggregates (Rate Only)	tonne							\$ -	
133.b				Roller Compacted Concrete Fine Aggregates (Rate Only)	tonne							\$ -	
134	4.5.30		2320.30	Conventional Vibrated Concrete (CVC) (Crest and Flip Bucket)	m <sup>3</sup>	11,100	4.44	\$ 896.64	\$ 305.00	\$ 228.35	\$ -	\$ 1,430.00	\$ 15,873,000.00
135	4.5.31		2320.31	Facing Concrete	m <sup>3</sup>	8,600	7.65	\$ 894.85	\$ 203.26	\$ 276.89	\$ -	\$ 1,375.00	\$ 11,825,000.00
136	4.5.32		2320.32	GERCC or GEVR - Formed Faces	m <sup>3</sup>	4,650	6.43	\$ 767.24	\$ 132.37	\$ 310.39	\$ -	\$ 1,210.00	\$ 5,626,500.00
137	4.5.33		2320.33	Conventional Vibrated Concrete (North Abutment Crest Surface and Training Wall)	m <sup>3</sup>	270	6.16	\$ 900.41	\$ 310.20	\$ 164.40	\$ -	\$ 1,375.00	\$ 371,250.00
138	4.5.34		2320.34	Increase or decrease in quantity of cement - Bid Mix (rate only)	Kg							\$ -	
139	4.5.35		2320.35	Increase or decrease in quantity of flyash - Bid Mix (rate only)	Kg							\$ -	
140	4.5.36		2320.36	Increase or decrease in quantity of cement - Source B (rate only)	Kg							\$ -	
141	4.5.37		2320.37	Increase or decrease in quantity of flyash - Source B (rate only)	Kg							\$ -	
142	4.5.38		2320.38	Air-entraining Admixture	litre	315,000	0.00	\$ -	\$ 4.50	\$ -	\$ -	\$ 4.50	\$ 1,417,500.00
143	4.5.39		2320.39	Retarder Admixture	litre	336,000	0.00	\$ -	\$ 4.80	\$ -	\$ -	\$ 4.80	\$ 1,612,800.00
144	4.5.40		2320.40	Precast Concrete	m <sup>3</sup>	1,150	2.75	\$ 276.45	\$ 1,655.03	\$ 118.52	\$ -	\$ 2,050.00	\$ 2,357,500.00
145	4.5.41		2320.41	Gallery Floor CVC Concrete	m <sup>3</sup>	275	12.03	\$ 1,430.89	\$ 359.55	\$ 259.57	\$ -	\$ 2,050.00	\$ 563,750.00
146	4.5.42		2320.42	Steel Reinforcement	kg	500,000	0.02	\$ 4.93	\$ 2.77	\$ 0.40	\$ -	\$ 8.10	\$ 4,050,000.00
147	4.5.43		2320.43	Steel Guardrails	kg	5,200	0.30	\$ 36.14	\$ 6.55	\$ 2.32	\$ -	\$ 45.00	\$ 234,000.00
148	4.5.44		2320.44	Waterstop	m	1,350	1.50	\$ 174.18	\$ 21.82	\$ -	\$ -	\$ 196.00	\$ 264,600.00
4.6				2370	<b>NORTH DAM - Auxiliary Services</b>								
<b>ELECTRICAL WORK</b>													
149	4.6.1		2370.01	Exothermic Connections.	unit	20	8.00	\$ 900.00	\$ 300.00	\$ -	\$ -	\$ 1,200.00	\$ 24,000.00
150	4.6.2		2370.02	Bare, Stranded, Medium Hard-Drawn Copper Conductor, size 500 kcmil	m	815	0.85	\$ 95.20	\$ 23.80	\$ -	\$ -	\$ 119.00	\$ 96,985.00
151	4.6.3		2370.03	Bare, Stranded, Medium Hard-Drawn Copper Conductor, size 4/0 AWG	m	16	0.80	\$ 29.75	\$ 89.25	\$ -	\$ -	\$ 119.00	\$ 1,904.00
152	4.6.4		2370.04	Embedded Copper Grounding Plates	unit	7	0.30	\$ 35.70	\$ 321.30	\$ -	\$ -	\$ 357.00	\$ 2,499.00
<b>SUB-TOTAL NORTH DAM</b>													<b>\$ 157,069,989.00</b>
5				3100	<b>Powerhouse Channels</b>								
5.1				3120.00	<b>Tailrace</b>								
<b>CIVIL WORK</b>													
<b>Tailrace Rock Plug - Overburden Excavation</b>													

LOWER CHURCHILL PROJECT MUSKRAT FALLS CH0009 - CONSTRUCTION OF NORTH AND SOUTH DAMS				SCHEDULE OF PRICE BREAKDOWN								APPENDIX A2.1 Rev. B2	
				ISSUED FOR: BID	DATE: 14 - Oct - 2014	BIDDER'S NAME: H.J. O'Connell Construction Limited - Dragados Canada Inc. Joint Venture							
PRICE ITEM		WBS CODE		PRICE ITEM DESCRIPTION	UNIT OF MEASURE	ESTIMATED QUANTITY A	MAN HOURS (AT SITE) PER UNIT	MANPOWER COST/UNIT (\$ CAN) B	MATERIALS COST/UNIT (\$ CAN) C	EQUIPMENT COST/UNIT (\$ CAN) D	PROFIT COST/UNI T (\$ CAN)	UNIT PRICE   (\$ CAN) F= (B+C+D+E)	TOTAL PRICE (\$ CAN) G= A x F
No	REFERENCE Exhibit 2 - ATT 1	CODE	SUBCODE										
153	5.1.1		3120.01	Overburden Excavation, excluding excavation of Cofferdam 3 - Dry Conditions	m <sup>3</sup>	12,000	0.08	\$ 8.91	\$ -	\$ 12.09	\$ -	\$ 21.00	\$ 252,000.00
				<b>Tailrace Rock Plug - Rock Excavation</b>									
154	5.1.2		3120.02	Tailrace Rock Plug Excavation including access ramp to powerhouse -Dry Conditions	m <sup>3</sup>	170,000	0.11	\$ 16.81	\$ 3.79	\$ 19.40	\$ -	\$ 40.00	\$ 6,800,000.00
155	5.1.3		3120.03	Tailrace Rock Plug - Underwater Excavation	m <sup>3</sup>	34,000	0.40	\$ 43.90	\$ 17.20	\$ 45.91	\$ -	\$ 107.00	\$ 3,638,000.00
				<b>Tailrace Rock Plug - Stabilization and Rock Surface Protection</b>									
156	5.1.4		3120.04	Grouted Rock Bolts Type A	unit	70	19.20	\$ 2,200.74	\$ 1,076.35	\$ 522.91	\$ -	\$ 3,800.00	\$ 266,000.00
157	5.1.5		3120.05	Grouted Rock Bolts Type C	unit	20	35.20	\$ 4,014.21	\$ 1,984.15	\$ 951.64	\$ -	\$ 6,950.00	\$ 139,000.00
158	5.1.6		3120.06	Chain Link Wire Mesh - Installation	m <sup>2</sup>	2,500	0.25	\$ 28.46	\$ 15.58	\$ 6.95	\$ -	\$ 51.00	\$ 127,500.00
159	5.1.7		3120.07	Chain Link Wire Mesh - Removal	m <sup>2</sup>	20,300	0.05	\$ 5.77	\$ -	\$ 2.23	\$ -	\$ 8.00	\$ 162,400.00
160	5.1.8		3120.08	Existing Temporary Safety Fence - Removal	m	1,200	0.39	\$ 44.68	\$ -	\$ 17.32	\$ -	\$ 62.00	\$ 74,400.00
				<b>SUB-TOTAL TAILRACE</b>									
				<b>\$ 11,459,300.00</b>									
				<b>Borrow Areas</b>									
				<b>Borrowed Construction Material</b>									
161	6.1.1	1100	1117.00	Overhaul of Borrowed Construction Material (rate only)	m3/km							\$ 1.50	
ROW A	<b>CALCULATED TOTAL OF LUMP SUM AND UNIT PRICE ITEMS (BASED ON APPROXIMATE QUANTITIES)</b>										<b>\$ 340,365,092.00</b>		

NOTES													
<b>Note 1 :</b> If there has been an error in the calculation to establish the total of Column G (Total Price) or Column F (UNIT PRICE), then the figures of column A (Estimated Quantity of Units), column B (Man Hours), column C (Manpower), column D (Equipment) and column E (Profits) will prevail.													
<b>Note 2 :</b> This Document is provided to the bidders in Native Excel File format. It is the bidders responsibility to verify cell formats and formulas.													
<b>Note 3 :</b> Bidders shall not include any HST/GST from any source (whether from Bidder, subcontractor, vendors or suppliers) in the unit and lump sum prices in this Schedule of Price Breakdown. Bidders shall claim input tax credits on taxable supplies received from vendors, suppliers and subcontractors and thereof Bidders shall exclude HST/GST payable to the vendors, suppliers and subcontractors from the unit and lump sum prices in the Schedule. Bidders shall exclude HST/GST on the total listed in Row A.													

<b>FOR THE LOWER CHURCHILL PROJECT - MUSKRAT FALLS</b>													
This Appendix forms part of the Proposal submitted by: H.J. O'Connell Construction Limited - Dragados Canada Inc. Joint Venture													
Name of Bidder: H.J. O'Connell Construction Limited - Dragados Canada Inc. Joint Venture													
Request For Proposal, Package No: CH0009													
Signature: Manuel Rivaya - Dragados Canada, Inc.													
Signature: Leonard Knox - H.J. O'Connell Construction Limited													

LOWER CHURCHILL PROJECT MUSKRAT FALLS CH0009 - CONSTRUCTION OF NORTH AND SOUTH DAMS				SCHEDULE OF PRICE BREAKDOWN							APPENDIX A2.1 Rev. B2		
				ISSUED FOR: BID	DATE: 14 - Oct - 2014	BIDDER'S NAME: H.J. O'Connell Construction Limited - Dragados Canada Inc. Joint Venture							
PRICE ITEM		WBS CODE		PRICE ITEM DESCRIPTION	UNIT OF MEASURE	ESTIMATED QUANTITY A	MAN HOURS (AT SITE) PER UNIT	MANPOWER COST/UNIT (\$ CAN) B	MATERIALS COST/UNIT (\$ CAN) C	EQUIPMENT COST/UNIT (\$ CAN) D	PROFIT COST/UNI T (\$ CAN)	UNIT PRICE   (\$ CAN) F= (B+C+D+E)	TOTAL PRICE (\$ CAN) G= A x F
No	REFERENCE Exhibit 2 - ATT 1	CODE	SUBCODE										
Date of Proposal: 22-OCT-2014													

Price Item	Description	Unit of Measure	Qty	Manhours at site (per unit)	Manpower Cost/Unit	Materials Cost/Unit	Equipment Cost/Unit	Others	Profit cost/Unit	Unit Price	Total Price	Labour Cost	Materials Cost	Equipment Cost	Other Cost	Profit	Total Cost	Total Hours	Labour Rate	Union	Non-Union		
1	Mobilization	LS	1.00	-	-	120,000	-	4,414,899	317,443	4,852,341	4,852,341	-	120,000	-	4,414,899	317,443	4,852,341	-	-	100%	0%	-	
2	Site Installation	LS	1.00	70,181.85	5,607,319	4,679,449	766,318	11,380,190	1,570,329	24,003,605	24,003,605	5,607,319	4,679,449	766,318	11,380,190	1,570,329	24,003,605	70,182	79.90	100%	0%	-	
3	Management, Staff, employees and Consultants	LS	1.00	905,458.73	74,639,085	5,044,144	1,852,782	58,404,144	9,795,811	149,735,966	149,735,966	74,639,085	5,044,144	1,852,782	58,404,144	9,795,811	149,735,966	905,459	82.43	17%	83%	-	
4	Health and Safety, Environmental and Quality Requirements	LS	1.00	140,497.00	10,331,476	280,105	278,474	2,594,244	943,901	14,428,200	14,428,200	10,331,476	280,105	278,474	2,594,244	943,901	14,428,200	140,497	73.54		100%	-	
5	Credit, Guarantee and Insurance Warranty, per Article 17 of the Agreement	LS	1.00	-	-	-	-	8,950,492	626,534	9,577,027	9,577,027	-	-	-	8,950,492	626,534	9,577,027	-	-		100%	-	
6	Demobilization	LS	1.00	-	-	-	-	6,884,995	481,950	7,366,944	7,366,944	-	-	-	6,884,995	481,950	7,366,944	-	-		100%	-	
7	Dewatering of Structure Areas	LS	1.00	-	-	-	-	1,779,411	124,559	1,903,969	1,903,969	-	-	-	1,779,411	124,559	1,903,969	-	-		100%	0%	-
8	Excavation of Existing Embankment cofferdams 1, 2 and 3, and Existing Ramps	LS	1.00	9,243.30	748,087	568,248	516,246	-	128,281	1,960,861	1,960,861	748,087	568,248	516,246	-	128,281	1,960,861	9,243	80.93	100%	0%	-	
9	Excavation of Downstream section of RCC riverside cofferdam	m³	177,000.00	0.10	7.99	2.96	4.58	-	1.09	16.62	2,941,033	1,415,084	523,317	810,228	-	192,404	2,941,033	17,685	80.02	100%	0%	-	
10	Overburden Excavation	m³	20,000.00	0.14	12.16	3.21	5.14	8.64	2.04	31.18	623,612	243,134	64,114	102,750	172,818	40,797	623,612	2,750	88.41	100%	0%	-	
11	Approved Compactable Material	m³	8,000.00	0.08	6.09	2.41	3.82	-	0.86	13.19	105,493	48,720	19,297	30,574	-	6,901	105,493	610	79.86	100%	0%	-	
12	Granular "B" Material	m³	44,000.00	0.24	19.72	8.49	12.28	-	2.83	43.33	1,906,595	867,863	373,684	540,317	-	124,731	1,906,595	10,625	81.68	100%	0%	-	
13	Granular "C" Material	m³	5,800.00	0.29	23.53	9.92	14.86	-	3.38	51.69	299,820	136,482	57,563	86,162	-	19,614	299,820	1,686	80.96	100%	0%	-	
14	Maintenance Grade 3 material	m³	4,000.00	0.30	23.90	10.03	15.02	-	3.43	52.38	209,506	95,601	40,126	60,072	-	13,706	209,506	1,180	80.99	100%	0%	-	
15	CSP culvert, dia. 900 mm	m	4,500.00	0.32	25.81	11.12	16.47	-	3.74	57.14	257,127	116,161	50,018	74,126	-	16,821	257,127	1,434	80.98	100%	0%	-	
16	Guide Rails	m	48.00	1.59	126.38	378.85	15.77	-	36.47	557.46	26,758	6,066	18,185	757	-	1,751	26,758	76	79.46	100%	0%	-	
17	Gate Type 1	unit	400.00	0.61	47.71	70.07	1.27	-	8.33	127.39	50,957	19,083	28,030	510	-	3,334	50,957	243	78.56	100%	0%	-	
18	Approved Compactable Material	m³	2.00	4.36	343.99	364.32	5.09	-	49.94	763.34	1,527	688	729	10	-	100	1,527	9	78.81	100%	0%	-	
19	Granular "C" Material	m³	26,000.00	0.24	19.72	8.49	12.28	-	2.83	43.33	1,126,624	512,828	220,813	319,278	-	73,704	1,126,624	6,278	81.68	100%	0%	-	
20	Overburden Excavation	m³	7,500.00	0.30	23.90	10.03	15.02	-	3.43	52.38	392,823	179,253	75,237	112,635	-	25,699	392,823	2,213	80.99	100%	0%	-	
21	Non-woven Geotextile, min 300 g/m2	m²	2,000.00	0.08	6.09	2.41	3.82	-	0.86	13.19	26,373	12,180	4,824	7,644	-	1,725	26,373	153	79.86	100%	0%	-	
22	Rockfill Protection, 100 - 250 mm	m³	2,500.00	0.23	17.91	5.84	0.19	-	1.68	25.62	64,047	44,787	14,607	463	-	4,190	64,047	568	78.79	100%	0%	-	
23	Rockfill Protection, Zone 3E Material	m³	1,000.00	0.35	28.15	6.70	14.38	-	3.45	52.67	52,674	28,151	6,696	14,381	-	3,446	52,674	351	80.18	100%	0%	-	
24	Non-woven Geotextile, min 530 g/m2	m²	2,500.00	0.28	22.51	7.77	18.14	-	3.39	51.81	129,520	56,282	19,416	45,350	-	8,473	129,520	691	81.50	100%	0%	-	
25	Chain Link Fence and Gates	m	4,500.00	0.23	17.91	7.47	0.19	-	1.79	27.36	123,121	80,617	33,617	833	-	8,055	123,121	1,023	78.79	100%	0%	-	
26	Engineering of Temporary Upstream Bridge	m	720.00	0.97	76.91	99.23	2.03	-	12.47	190.64	137,262	55,373	71,446	1,464	-	8,980	137,262	700	79.16	100%	0%	-	
27	Supply of Temporary Upstream Bridge	LS	1.00	-	-	3,360,000.00	-	203,520.30	14,246.42	217,766.72	217,767	-	-	-	203,520	14,246	217,767	-	-	100%	0%	-	
28	Installation, removal and handover of Temporary Upstream Bridge	LS	1.00	33,515.73	2,716,156.10	453,420.69	602,741.59	-	264,062.29	4,036,380.67	4,036,381	2,716,156	453,421	602,742	-	264,062	4,036,381	33,516	81.04	100%	0%	-	
29	Overburden excavation	m³	2,500.00	0.08	6.09	2.41	3.82	-	0.86	13.19	32,967	15,225	6,030	9,554	-	2,157	32,967	191	79.86	100%	0%	-	
30	Foundation Cleaning (water/air jets and Vacuum trucks)	m²	1,200.00	0.27	21.11	1.82	0.44	-	1.64	25.01	30,016	25,336	2,189	527	-	1,964	30,016	322	78.78	100%	0%	-	
31	Rock Excavation including dental excavation and Scaling	m³	500.00	0.51	41.28	7.31	10.88	-	4.16	63.63	31,814	20,638	3,655	5,440	-	2,081	31,814	255	80.98	100%	0%	-	
32	Dental Concrete	m³	800.00	4.70	363.89	147.56	101.94	-	42.94	656.33	525,064	291,115	118,045	81,554	-	34,350	525,064	3,763	77.37	100%	0%	-	
33	Slush Grout	m²	1,200.00	0.66	51.32	80.45	4.74	-	9.56	146.07	175,284	61,589	96,535	5,693	-	11,467	175,284	787	78.29	100%	0%	-	
34	Dry Pack	m³	6.00	1.79	141.05	804.14	25.95	-	67.98	1,039.13	6,235	846	4,825	156	-	408	6,235	11	78.81	100%	0%	-	
35	Compacted Till - Zones 1 and 1C	m³	19,000.00	0.17	13.96	5.18	8.35	-	1.92	29.42	558,908	265,259	98,456	158,629	-	36,564	558,908	3,303	80.30	100%	0%	-	
36	Dumped Till - Zone 1A Material	m³	134,000.00	0.12	9.43	3.92	6.39	-	1.38	21.13	2,831,904	1,264,078	525,928	856,633	-	185,265	2,831,904	15,885	79.57	100%	0%	-	
37	Compacted Granular - Zone 2A Material	m³	20,700.00	0.32	25.99	11.12	16.57	-	3.76	57.44	1,188,917	537,984	230,092	343,061	-	77,780	1,188,917	6,641	81.01	100%	0%	-	
38	Compacted Granular - Zone 2C Material	m³	8,700.00	0.31	24.95	10.49	15.83	-	3.59	54.87	477,399	217,102	91,303	137,762	-	31,232	477,399	2,681	80.98	100%	0%	-	
39	Dumped Granular - Zone 2E Material	m³	26,300.00	0.35	28.41	13.22	19.80	-	4.30	65.73	1,728,634	747,110	347,702	520,734	-	113,088	1,728,634	9,249	80.77	100%	0%	-	
40	Dumped Rockfill- Zone 3 Material	m³	143,000.00	0.14	11.14	4.30	6.81	-	1.56	23.81	3,405,298	1,593,703	614,377	974,441	-	222,777	3,405,298	19,419	82.07	100%	0%	-	
41	Dumped Large Blocks (300-1000 mm) - Zone 3 Class 1	m³	37,000.00	0.14	11.86	4.76	7.29	-	1.67	25.58	946,481	438,938	175,987	269,637	-	61,919	946,481	5,337	82.25	100%	0%	-	
42	Dumped Large Blocks (≥1000 mm) - Zone 3 Class 2	m³	65,000.00	0.16	12.62	6.26	10.49	-	2.06	31.42	2,042,187	820,058	406,792	681,736	-	133,601	2,042,187	10,209	80.32	100%	0%	-	
43	Dumped Large Blocks (≥1300 mm) - Zone 3 Class 3	m³	15,000.00	0.16	12.62	6.26	10.49	-	2.06	31.42	471,274	189,244	93,875	157,324	-	30,831	471,274	2,356	80.32	100%	0%	-	
44	Compacted Crushed Stone - Zone 3A Material	m³	10,950.00	0.28	22.51	7.77	18.14	-	3.39	51.81	567,298	246,513	85,041	198,632	-	37,113	567,298	3,025	81.50	100%	0%	-	
45	Compacted Rockfill - Zone 3C Material	m³	33,740.00	0.24	19.36	7.46	15.11	-	2.94	44.87	1,513,899	653,096	251,785	509,978	-	99,040	1,513,899	8,009	81.55	100%	0%	-	
46	Compacted Rockfill - Zone 3D Material	m³	33,900.00	0.17	13.66	4.80	7.62	-	1.83	27.90	945,887	463,049	162,791	258,166	-	61,880	945,887	5,640	82.10	100%	0%	-	
47	Dumped Crushed Stone- Zone 3F Material	m³	21,000.00	0.28	22.42	8.57	20.77	-	3.62	55.38	1,163,070	470,764	180,005	436,212	-	76,089	1,163,070	5,779	81.46	100%	0%	-	
48	Percussion Drill Holes in embankments, river sediments and bedrock	m	1,000.00	0.25	19.65	-	-	74.43	6.59	100.67	100,670	19,654	-	-	74,430	6,586	100,670	250	78.62	100%	0%	-	
49	Verification Core Drilling in jet grouting cut-off wall and bedrock	m	200.00	0.70	55.03	-	-	148.86	14.27	218.16	43,633	11,006	-	-	29,772	2,854	43,633	1					

Price Item	Description	Unit of Measure	Qty	Manhours at site (per unit)	Manpower Cost/Unit	Materials Cost/Unit	Equipment Cost/Unit	Others	Profit cost/Unit	Unit Price	Total Price	Labour Cost	Materials Cost	Equipment Cost	Other Cost	Profit	Total Cost	Total Hours	Labour Rate	Union	Non-Union	
55	Drilling Holes for Grouting in embankment , jet grouting cut-off wall and bedrock, if required	m	1,300.00	0.10	7.86	-	-	174.45	12.76	195.07	253,590	10,220	-	-	226,780	16,590	253,590	130	78.62	100%	0%	-
56	Dry cement incorporated in the grout, if required	kg	11,000.00	0.02	1.31	0.36	-	2.56	0.30	4.52	49,743	14,413	3,932	-	28,144	3,254	49,743	183	78.62	100%	0%	-
57	Grouting - Successful connections, if required	unit	60.00	6.17	503.89	6.91	9.71	1,120.04	114.84	1,755.39	105,324	30,234	415	583	67,202	6,890	105,324	370	81.63	100%	0%	-
58	Overburden excavation	m3	500.00	0.08	6.09	2.41	3.82	-	0.86	13.19	6,593	3,045	1,206	1,911	-	431	6,593	38	79.86	100%	0%	-
59	Foundation cleaning (water/ait jets and Vacuum trucks)	m2	1,250.00	0.27	21.11	1.82	0.44	-	1.64	25.01	31,266	26,392	2,280	549	-	2,045	31,266	335	78.78	100%	0%	-
60	Rock excavation including dental excavation and scaling	m3	500.00	0.51	41.28	7.31	10.88	-	4.16	63.63	31,814	20,638	3,655	5,440	-	2,081	31,814	255	80.98	100%	0%	-
61	Dental Concrete	m3	200.00	4.70	363.89	147.56	101.94	-	42.94	656.33	131,266	72,779	29,511	20,389	-	8,588	131,266	941	77.37	100%	0%	-
62	Slush Grout	m2	1,250.00	0.66	51.32	80.45	4.74	-	9.56	146.07	182,587	64,155	100,558	5,930	-	11,945	182,587	819	78.29	100%	0%	-
63	Dry Pack	m3	6.00	1.79	141.05	804.14	25.95	-	67.98	1,039.13	6,235	846	4,825	156	-	408	6,235	11	78.81	100%	0%	-
64	Compacted Till - Zones 1 and 1C	m3	2,000.00	0.17	13.96	5.18	8.35	-	1.92	29.42	58,832	27,922	10,364	16,698	-	3,849	58,832	348	80.30	100%	0%	-
65	Compacted Granular - Zone 2C	m3	2,500.00	0.34	27.52	11.96	18.25	-	4.04	61.77	154,415	68,788	29,909	45,616	-	10,102	154,415	850	80.88	100%	0%	-
66	Compacted Rockfill - Zone 3C	m3	4,600.00	0.32	25.75	10.71	20.50	-	3.99	60.95	280,356	118,449	49,255	94,310	-	18,341	280,356	1,461	81.07	100%	0%	-
67	Compacted Rockfill - Zone 3D	m3	2,000.00	0.23	18.56	7.20	11.61	-	2.62	39.99	79,973	37,121	14,401	23,219	-	5,232	79,973	456	81.42	100%	0%	-
68	Overburden excavation	m3	8,800.00	0.08	6.09	2.41	3.82	-	0.86	13.19	116,042	53,592	21,227	33,632	-	7,592	116,042	671	79.86	100%	0%	-
69	Foundation cleaning (water/ait jets and Vacuum trucks)	m2	1,700.00	0.27	21.11	1.82	0.44	-	1.64	25.01	42,522	35,893	3,101	746	-	2,782	42,522	456	78.78	100%	0%	-
70	Rock excavation including dental excavation and scaling	m3	700.00	0.51	41.28	7.31	10.88	-	4.16	63.63	44,540	28,893	5,117	7,616	-	2,914	44,540	357	80.98	100%	0%	-
71	Dental Concrete	m3	250.00	4.70	363.89	147.56	101.94	-	42.94	656.33	164,083	90,974	36,889	25,486	-	10,734	164,083	1,176	77.37	100%	0%	-
72	Slush Grout	m2	1,700.00	0.66	51.32	80.45	4.74	-	9.56	146.07	248,319	87,251	136,758	8,064	-	16,245	248,319	1,114	78.29	100%	0%	-
73	Dry Pack	m3	9.00	1.79	141.05	804.14	25.95	-	67.98	1,039.13	9,352	1,269	7,237	234	-	612	9,352	16	78.81	100%	0%	-
74	Compacted Till - Zones 1 and 1C	m3	6,300.00	0.17	13.96	5.18	8.35	-	1.92	29.42	185,322	87,954	32,646	52,598	-	12,124	185,322	1,095	80.30	100%	0%	-
75	Compacted Granular - Zone 2C	m3	4,900.00	0.31	24.75	10.39	15.66	-	3.56	54.37	266,415	121,299	50,930	76,756	-	17,429	266,415	1,497	81.00	100%	0%	-
76	Compacted Rockfill - Zone 3C	m3	5,200.00	0.30	24.06	9.62	18.86	-	3.68	56.21	292,290	125,087	50,021	98,061	-	19,122	292,290	1,541	81.19	100%	0%	-
77	Compacted Rockfill - Zone 3D	m3	1,400.00	0.21	17.34	6.50	10.46	-	2.40	36.70	51,386	24,278	9,101	14,646	-	3,362	51,386	298	81.53	100%	0%	-
78	Overburden excavation	m3	94,000.00	0.08	6.09	2.41	3.82	-	0.86	13.19	1,239,540	572,459	226,742	359,247	-	81,091	1,239,540	7,168	79.86	100%	0%	-
79	Foundation cleaning (water/ait jets and Vacuum trucks)	m2	3,400.00	0.27	21.11	1.82	0.44	-	1.64	25.01	85,044	71,786	6,202	1,492	-	5,564	85,044	911	78.78	100%	0%	-
80	Rock excavation including dental excavation and scaling	m3	2,000.00	0.51	41.28	7.31	10.88	-	4.16	63.63	127,258	82,553	14,620	21,760	-	8,325	127,258	1,019	80.98	100%	0%	-
81	Dental Concrete	m3	1,200.00	4.70	363.89	147.56	101.94	-	42.94	656.33	787,597	436,673	177,067	122,331	-	51,525	787,597	5,644	77.37	100%	0%	-
82	Slush Grout	m2	3,400.00	0.66	51.32	80.45	4.74	-	9.56	146.07	496,637	174,501	273,517	16,129	-	32,490	496,637	2,229	78.29	100%	0%	-
83	Dry Pack	m3	20.00	1.79	141.05	804.14	25.95	-	67.98	1,039.13	20,783	2,821	16,083	519	-	1,360	20,783	36	78.81	100%	0%	-
84	Drilling Holes for Grouting	m	1,200.00	0.18	14.88	0.62	0.88	97.53	7.97	121.88	146,253	17,852	749	1,052	117,033	9,568	146,253	219	81.63	100%	0%	-
85	Dry cement incorporated in the grout	kg	42,000.00	0.02	1.31	0.36	-	2.56	0.30	4.52	189,927	55,032	15,011	-	107,459	12,425	189,927	700	78.62	100%	0%	-
86	Cored Drill Check Holes	m	30.00	0.20	16.33	-	-	328.54	24.14	369.01	11,070	490	-	-	9,856	724	11,070	6	81.64	100%	0%	-
87	Percussion Drilling Check holes	m	60.00	0.18	14.88	0.62	0.88	97.53	7.97	121.88	7,313	893	37	53	5,852	478	7,313	11	81.63	100%	0%	-
88	Grouting - Successful connections	unit	250.00	6.17	503.89	6.91	9.71	1,120.04	114.84	1,755.39	438,848	125,973	1,728	2,428	280,010	28,710	438,848	1,543	81.63	100%	0%	-
89	Water pressure test (Lugeon - 5 Stages)	hour	8.00	8.00	653.09	-	-	523.34	82.35	1,258.78	10,070	5,225	-	-	4,187	659	10,070	64	81.64	100%	0%	-
90	Water test - Successful connections	unit	18.00	7.00	571.45	-	-	389.60	67.27	1,028.32	18,510	10,286	-	-	7,013	1,211	18,510	126	81.64	100%	0%	-
91	Uplift gauges	m	20.00	1.06	86.53	-	-	244.22	23.15	353.91	7,078	1,731	-	-	4,884	463	7,078	21	81.64	100%	0%	-
92	Thermistors (measure rock temperature in grout holes)	unit	1.00	17.00	1,387.81	-	-	2,384.09	264.03	4,035.94	4,036	1,388	-	-	2,384	264	4,036	17	81.64	100%	0%	-
93	Compacted Till - Zones 1 and 1C	m3	26,000.00	0.17	13.96	5.18	8.35	-	1.92	29.42	764,821	362,986	134,730	217,071	-	50,035	764,821	4,521	80.30	100%	0%	-
94	Compacted Granular - Zone 2A	m3	28,000.00	0.32	25.54	10.88	16.20	-	3.68	56.30	1,576,392	714,981	304,668	453,615	-	103,128	1,576,392	8,821	81.05	100%	0%	-
95	Compacted Crushed Stone - Zone 3A	m3	12,000.00	0.30	24.24	8.90	19.57	-	3.69	56.40	676,833	290,864	106,803	234,887	-	44,279	676,833	3,585	81.13	100%	0%	-
96	Compacted Crushed Stone - Zone 3B	m3	16,000.00	0.24	19.36	7.46	15.11	-	2.94	44.87	717,913	309,707	119,400	241,839	-	46,966	717,913	3,798	81.55	100%	0%	-
97	Compacted Rockfill - Zone 3C	m3	21,000.00	0.24	19.37	7.47	15.14	-	2.94	44.92	943,306	406,808	156,773	318,013	-	61,712	943,306	4,989	81.55	100%	0%	-
98	Compacted Rockfill - Zone 3D	m3	46,000.00	0.20	15.99	6.19	9.97	-	2.25	34.41	1,582,751	735,746	284,866	458,595	-	103,544	1,582,751	9,025	81.52	100%	0%	-
99	Riprap - Zone 4	m3	6,000.00	0.21	16.88	6.42	10.01	-	2.33	35.64	213,841	101,286	38,505	60,061	-	13,990	213,841	1,235	82.00	100%	0%	-
100	Compacted Crushed Stone - Zone 5	m3	310.00	0.32	25.59	9.35	21.25	-	3.93	60.12	18,637	7,933	2,898	6,588	-	1,219	18,637	98	81.14	100%	0%	-
101	Jersey Barrier	m	600.00	3.69	276.80	277.69	15.25	-	39.88	609.62	365,771	166,078	166,614	9,151	-	23,929	365,771	2,216	74.94	100%	0%	-
102	V-Notch Weirs, excluding Shelters	unit	2.00	32.23	2,548.59	1,075.66	57.70	1,162.97	339.14	5,184.07	10,368	5,097	2,151	115	2,326	678	10,368	64	79.07	100%	0%	-
103	Shelters for V-Notch Weirs	unit	2.00	48.35	3,822.89	3,988.49	86.55	1,744.46	674.97	10,317.35	20,635	7,646	7,977	173	3,489	1,350	20,635	97	79.07	100%	0%	-
104	Survey Monuments at South Dam Crest	unit	3.00	3.62	295.52	1,400.00	-	921.07	183.16	2,799.76	8,399	887	4,200	-	2,763	549	8,399	11	81.64	100%	0%	-
105	Clearing of the North Abutment	Ha	3.00	127.37	10,283.08	5,126.98																

Price Item	Description	Unit of Measure	Qty	Manhours at site (per unit)	Manpower Cost/Unit	Materials Cost/Unit	Equipment Cost/Unit	Others	Profit cost/Unit	Unit Price	Total Price	Labour Cost	Materials Cost	Equipment Cost	Other Cost	Profit	Total Cost	Total Hours	Labour Rate	Union	Non-Union	
118	Water Pressure Test - Successful connections	unit	36.00	7.00	571.45	-	-	389.60	67.27	1,028.32	37,020	20,572	-	-	14,025	2,422	37,020	252	81.64	100%	0%	-
119	Uplift gauges	m	60.00	1.06	86.53	-	-	244.22	23.15	353.91	21,235	5,192	-	-	14,653	1,389	21,235	64	81.64	100%	0%	-
120	Thermistor (measure temperature in grout holes)	unit	1.00	17.00	1,387.81	-	-	2,384.09	264.03	4,035.94	4,036	1,388	-	-	2,384	264	4,036	17	81.64	100%	0%	-
121	Drilling Holes for Drainage in Foundation from Drainage Gallery, Ø76 mm	m	3,200.00	0.19	15.13	0.75	1.05	122.74	9.78	149.45	478,238	48,418	2,396	3,365	392,772	31,287	478,238	593	81.63	100%	0%	-
122	PVC Caps for Drainage Holes Drilling Holes Upward for Drainage from Drainage Gallery into RCC, Ø76 mm	unit	125.00	0.36	28.66	22.38	0.29	-	3.59	54.92	6,865	3,582	2,797	36	-	449	6,865	46	78.63	100%	0%	-
123	Drilling Holes for piezometers	m	3,200.00	0.19	15.89	0.79	1.10	128.88	10.27	156.92	502,150	50,839	2,516	3,534	412,411	32,851	502,150	623	81.63	100%	0%	-
124	Drilling Holes for piezometers	m	100.00	0.20	16.33	-	-	328.54	24.14	369.01	36,901	1,633	-	-	32,854	2,414	36,901	20	81.64	100%	0%	-
125	Vibrating Wire and Standpipe Piezometers TYPE - 1, excluding Cables	unit	8.00	32.23	2,548.59	2,775.66	57.70	27,201.46	2,280.84	34,864.25	278,914	20,389	22,205	462	217,612	18,247	278,914	258	79.07	100%	0%	-
126	Vibrating Wire and Standpipe Piezometers TYPE - 2, excluding Cables	unit	2.00	32.23	2,548.59	2,775.66	57.70	27,201.46	2,280.84	34,864.25	69,728	5,097	5,551	115	54,403	4,562	69,728	64	79.07	100%	0%	-
127	Instrument Cable including PVC Conduits and Pull Boxes	m	2,700.00	0.48	38.23	8.88	0.87	39.42	6.12	93.51	252,489	103,218	23,989	2,337	106,427	16,518	252,489	1,305	79.07	100%	0%	-
128	Thermistors Cable in RCC	unit	8.00	0.43	33.90	1,400.38	0.29	-	100.42	1,534.99	12,280	271	11,203	2	-	803	12,280	3	78.62	100%	0%	-
129	V-notch Weirs	unit	4.00	16.12	1,274.30	1,012.83	28.85	1,563.96	271.60	4,151.53	16,606	5,097	4,051	115	6,256	1,086	16,606	64	79.07	100%	0%	-
130	Vibrating Wire Weir Monitors.	unit	4.00	16.12	1,274.30	62.83	28.85	1,514.62	201.64	3,082.24	12,329	5,097	251	115	6,058	807	12,329	64	79.07	100%	0%	-
131	Data logger, Terminal Box, Barometer Box including Grounding	LS	1.00	32.23	2,548.59	7,775.66	57.70	5,233.38	1,093.07	16,708.40	16,708	2,549	7,776	58	5,233	1,093	16,708	32	79.07	100%	0%	-
132	Crest Survey Monuments	unit	4.00	1.81	147.76	700.00	-	460.54	91.58	1,399.88	5,600	591	2,800	-	1,842	366	5,600	7	81.64	100%	0%	-
133	Roller Compacted Concrete (RCC)	m3	210,000.00	1.84	143.21	97.36	71.30	-	21.83	333.70	70,076,463	30,073,958	20,445,344	14,972,719	-	4,584,441	70,076,463	386,378	77.84	100%	0%	-
134	Conventional Vibrated Concrete (CVC) (Crest and Flip Bucket)	m3	11,100.00	12.88	966.74	177.57	158.48	-	91.20	1,393.99	15,473,242	10,730,812	1,971,001	1,759,161	-	1,012,268	15,473,242	143,021	75.03	100%	0%	-
135	Facing Concrete	m3	8,600.00	4.02	312.07	175.22	96.12	-	40.84	624.24	5,368,485	2,683,759	1,506,877	826,639	-	351,209	5,368,485	34,549	77.68	100%	0%	-
136	GERCC or GEVR - Formed Faces Conventional Vibrated Concrete (North Abutment Crest Surface and Training Wall)	m3	4,650.00	4.02	312.07	175.22	96.12	-	40.84	624.24	2,902,727	1,451,102	814,765	446,962	-	189,898	2,902,727	18,680	77.68	100%	0%	-
137	Increase or decrease in quantity of cement - Bid Mix (rate only)	Kg	1.00	-	-	357.41	-	-	25.02	382.43	-	-	357	-	-	25	382	-	-	100%	0%	382
138	Increase or decrease in quantity of flyash - Bid Mix (rate only)	Kg	1.00	-	-	300.89	-	-	21.06	321.96	-	-	301	-	-	21	322	-	-	100%	0%	322
139	Increase or decrease in quantity of cement - Source B (rate only)	Kg	1.00	-	-	365.65	-	-	25.60	391.25	-	-	366	-	-	26	391	-	-	100%	0%	391
140	Increase or decrease in quantity of flyash - Source B (rate only)	Kg	1.00	-	-	374.92	-	-	26.24	401.16	-	-	375	-	-	26	401	-	-	100%	0%	401
141	Air-entraining Admixture	litre	315,000.00	-	-	3.24	-	-	0.23	3.47	1,092,750	-	1,021,262	-	-	71,488	1,092,750	-	-	100%	0%	-
142	Retarder Admixture	litre	336,000.00	-	-	4.86	-	-	0.34	5.20	1,746,584	-	1,632,322	-	-	114,263	1,746,584	-	-	100%	0%	-
143	Precast Concrete	m3	1,150.00	18.09	1,430.74	402.25	731.55	-	179.52	2,744.05	3,155,658	1,645,346	462,585	841,282	-	206,445	3,155,658	20,801	79.10	100%	0%	-
144	Gallery Floor CVC Concrete	m3	275.00	5.82	445.84	123.40	97.60	-	46.68	713.53	196,220	122,606	33,936	26,841	-	12,837	196,220	1,600	76.61	100%	0%	-
145	Steel Reinforcement	kg	500,000.00	0.04	3.11	1.47	0.01	0.60	0.36	5.55	2,777,237	1,556,004	733,074	4,099	302,373	181,688	2,777,237	20,264	76.79	100%	0%	-
146	Steel Guardrails	kg	5,200.00	0.03	2.51	5.55	0.19	-	0.58	8.84	45,950	13,059	28,881	1,004	-	3,006	45,950	166	78.66	100%	0%	-
147	Waterstop	m	1,350.00	0.29	22.72	47.27	0.36	-	4.92	75.28	101,627	30,673	63,818	487	-	6,648	101,627	390	78.63	100%	0%	-
148	Exothermic Connections.	unit	20.00	2.40	233.15	-	-	169.81	28.21	431.17	8,623	4,663	-	-	3,396	564	8,623	48	97.15	100%	0%	-
149	Bare, Stranded, Medium Hard-Drawn Copper Conductor, size 500 kcmil	m	815.00	0.41	40.23	-	-	70.01	7.72	117.95	96,132	32,786	-	-	57,057	6,289	96,132	337	97.15	100%	0%	-
150	Bare, Stranded, Medium Hard-Drawn Copper Conductor, size 4/0 AWG	m	16.00	0.22	21.78	-	-	32.18	3.78	57.73	924	348	-	-	515	60	924	4	97.15	100%	0%	-
151	Embedded Copper Grounding Plates	unit	7.00	4.00	388.58	-	-	526.93	64.09	979.60	6,857	2,720	-	-	3,689	449	6,857	28	97.15	100%	0%	-
152	Overburden Excavation, excluding excavation of Cofferdam 3 - Dry Conditions	m3	12,000.00	0.08	6.09	2.41	3.82	-	0.86	13.19	158,239	73,080	28,946	45,861	-	10,352	158,239	915	79.86	100%	0%	-
153	Tailrace Rock Plug Excavation including access ramp to powerhouse - Dry Conditions	m3	170,000.00	0.14	12.64	3.18	5.11	14.90	2.51	38.34	6,517,040	2,148,525	539,753	868,644	2,533,770	426,348	6,517,040	24,016	89.46	100%	0%	-
154	Tailrace Rock Plug - Underwater Excavation	m3	34,000.00	0.34	35.26	3.17	5.09	37.33	5.66	86.51	2,941,312	1,198,813	107,674	173,133	1,269,269	192,422	2,941,312	11,458	104.62	100%	0%	-
155	Grouted Rock Bolts Type A	unit	70.00	1.10	88.86	188.59	17.54	-	20.65	315.64	22,095	6,220	13,201	1,228	-	1,445	22,095	77	80.69	100%	0%	-
156	Grouted Rock Bolts Type C	unit	20.00	1.62	130.61	602.55	24.64	-	53.05	810.85	16,217	2,612	12,051	493	-	1,061	16,217	32	80.73	100%	0%	-
157	Chain Link Wire Mesh - Installation	m2	2,500.00	0.67	52.82	33.16	0.62	-	6.06	92.66	231,640	132,041	82,889	1,556	-	15,154	231,640	1,664	79.34	100%	0%	-
158	Chain Link Wire Mesh - Removal	m2	20,300.00	0.67	52.82	1.38	0.62	-	3.84	58.65	1,190,625	1,072,173	27,928	12,633	-	77,891	1,190,625	13,514	79.34	100%	0%	-
159	Existing Temporary Safety Fence - Removal	m	1,200.00	0.95	75.31	1.61	0.80	-	5.44	83.17	99,804	90,377	1,935	963	-	6,529	99,804	1,142	79.12	100%	0%	-
160																						
											<b>394,381,469</b>	<b>171,571,712</b>	<b>54,439,913</b>	<b>35,956,728</b>	<b>106,613,858</b>	<b>25,800,755</b>	<b>394,382,966</b>	<b>2,143,061</b>	<b>80.06</b>	<b>1,251,033</b>	<b>892,028</b>	

Price Item	Description	Unit of Measure	Qty	Manhours at site (per unit)	Manpower Cost/Unit	Materials Cost/Unit	Equipment Cost/Unit	Subcontractor Cost/Unit	Unit Price	Total Price	Labour Cost	Materials Cost	Equipment Cost	Subcontractor Cost	Total Cost	Total Hours	Labour Rate	Union	Non-Union
1	Mobilization	LS	1	83,638	8,100,000	31,390,798	28,250,000	5,500,000	73,240,798	73,240,798	8,100,000	31,390,798	28,250,000	5,500,000	73,240,798	83,638	96.85	100%	0%
2	Site Installation	LS	1	151,227	13,000,000	5,000,000	26,500,000	1,500,000	46,000,000	46,000,000	13,000,000	5,000,000	26,500,000	1,500,000	46,000,000	151,227	85.96	100%	0%
3	Management, Staff, employees and Consultants	LS	1	234,434	41,500,000	2,500,000	1,000,000	150,000	45,150,000	45,150,000	41,500,000	2,500,000	1,000,000	150,000	45,150,000	234,434	177.02	7%	93%
4	Health and Safety, Environmental and Quality	LS	1	14,143	2,400,000	550,000	-	115,000	3,065,000	3,065,000	2,400,000	550,000	-	115,000	3,065,000	14,143	169.70	-	100%
5	Credit, Guarantee and Insurance	LS	1	-	-	991,000	-	-	991,000	991,000	-	991,000	-	-	991,000	-	-	-	100%
6	Warranty, per Article 17 of the Agreement	LS	1	-	100,000	100,000	100,000	-	300,000	300,000	100,000	100,000	100,000	-	300,000	-	-	-	100%
7	Demobilization	LS	1	1,472	135,124	430,000	350,000	-	915,124	915,124	135,124	430,000	350,000	-	915,124	1,472	91.80	100%	0%
8	Dewatering of Structure Areas	LS	1	3,174	290,000	400,000	1,500,000	-	2,190,000	2,190,000	290,000	400,000	1,500,000	-	2,190,000	3,174	91.37	100%	0%
	Excavation of Existing Embankment cofferdams																		
9	1, 2 and 3, and Existing Ramps	m³	177,000	3,343	2	-	9	-	11	1,904,520	304,440	-	1,600,080	-	1,904,520	3,343	91.07	100%	0%
10	Excavation of Downstream section of RCC	m³	20,000	933	4	5	13	-	22	433,800	86,000	97,800	250,000	-	433,800	933	92.18	100%	0%
11	Overburden Excavation	m³	8,000	206	2	-	7	-	9	71,040	19,040	-	52,000	-	71,040	206	92.43	100%	0%
12	Approved Compactable Material	m³	44,000	873	2	-	1	-	3	140,800	80,960	-	59,840	-	140,800	873	92.74	100%	0%
13	Granular "B" Material	m³	5,800	418	7	44	6	-	57	330,658	38,976	256,708	34,974	-	330,658	418	93.24	100%	0%
14	Granular "C" Material	m³	4,000	347	8	44	6	-	58	233,040	32,000	177,040	24,000	-	233,040	347	92.22	100%	0%
15	Maintenance Grade 3 material	m³	4,500	326	7	44	6	-	56	254,205	30,015	199,170	25,020	-	254,205	326	92.07	100%	0%
16	CSP culvert, dia. 900 mm	m	48	110	229	-	313	-	542	26,000	11,000	-	15,000	-	26,000	110	100.00	100%	0%
17	Guide Rails	m	400	458	105	50	26	-	181	72,516	42,000	20,016	10,500	-	72,516	458	91.70	100%	0%
18	Gate Type 1	unit	2	55	5,000	850	1,700	-	7,550	15,100	10,000	1,700	3,400	-	15,100	55	181.82	100%	0%
19	Approved Compactable Material	m³	26,000	426	2	-	2	-	3	80,080	40,040	-	40,040	-	80,080	426	93.99	100%	0%
20	Granular "C" Material	m³	7,500	248	3	44	5	-	52	390,000	23,025	331,950	35,025	-	390,000	248	92.84	100%	0%
21	Overburden Excavation	m³	2,000	442	21	-	20	-	41	81,000	41,000	-	40,000	-	81,000	442	92.76	100%	0%
22	Non-woven Geotextile, min 300 g/m2	m2	2,500	74	3	3	1	-	7	16,850	7,000	7,650	2,200	-	16,850	74	94.59	100%	0%
23	Rockfill Protection, 100 - 250 mm	m³	1,000	109	11	43	16	-	70	69,720	11,000	42,720	16,000	-	69,720	109	100.92	100%	0%
24	Rockfill Protection, Zone 3E Material	m³	2,500	307	11	43	32	-	86	214,800	28,000	106,800	80,000	-	214,800	307	91.21	100%	0%
25	Non-woven Geotextile, min 530 g/m2	m2	4,500	166	4	4	1	-	8	37,125	16,020	17,595	3,510	-	37,125	166	96.51	100%	0%
26	Chain Link Fence and Gates	m	720	1,954	257	-	49	-	306	219,996	184,997	-	34,999	-	219,996	1,954	94.68	100%	0%
27	Engineering of Temporary Upstream Bridge	LS	1	-	-	-	-	50,000	50,000	50,000	-	-	-	50,000	50,000	-	-	100%	0%
28	Supply of Temporary Upstream Bridge	LS	1	-	-	7,650,000	-	-	7,650,000	7,650,000	-	7,650,000	-	-	7,650,000	-	-	100%	0%
	Installation, removal and handover of																		
29	Temporary Upstream Bridge	LS	1	14,950	1,425,000	750,000	550,000	-	2,725,000	2,725,000	1,425,000	750,000	550,000	-	2,725,000	14,950	95.32	100%	0%
30	Overburden excavation	m3	2,500	64	2	-	2	-	5	11,500	6,000	-	5,500	-	11,500	64	93.75	100%	0%
31	Foundation Cleaning (water/air jets and Vacuum	m2	1,200	313	24	-	13	-	38	45,000	29,004	-	15,996	-	45,000	313	92.66	100%	0%
32	Rock Excavation including dental excavation and	m3	500	238	44	22	96	-	162	81,110	22,000	11,110	48,000	-	81,110	238	92.44	100%	0%
33	Dental Concrete	m3	800	1,685	195	531	-	50	776	620,856	156,000	425,000	-	39,856	620,856	1,685	92.58	100%	0%
34	Slush Grout	m2	1,200	462	36	13	3	-	51	60,996	42,996	15,000	3,000	-	60,996	462	93.06	100%	0%
35	Dry Pack	m3	6	217	3,500	1,500	500	-	5,500	33,000	21,000	9,000	3,000	-	33,000	217	96.77	100%	0%
36	Compacted Till - Zones 1 and 1C Materials	m3	19,000	2,877	14	-	27	-	41	781,090	261,060	-	520,030	-	781,090	2,877	90.74	100%	0%
37	Dumped Till - Zone 1A Material	m3	134,000	11,788	8	-	21	-	29	3,859,200	1,070,660	-	2,788,540	-	3,859,200	11,788	90.83	100%	0%
38	Compacted Granular - Zone 2A Material	m3	20,700	1,607	7	46	17	-	70	1,450,035	150,075	949,923	350,037	-	1,450,035	1,607	93.39	100%	0%
39	Compacted Granular - Zone 2C Material	m3	8,700	711	8	44	19	-	71	617,091	66,990	385,062	165,039	-	617,091	711	94.22	100%	0%
40	Dumped Granular - Zone 2E Material	m3	26,300	1,037	4	44	9	-	57	1,509,094	99,940	1,164,038	245,116	-	1,509,094	1,037	96.37	100%	0%
41	Dumped Rockfill- Zone 3 Material	m3	143,000	2,850	2	-	10	-	12	1,714,570	264,550	-	1,450,020	-	1,714,570	2,850	92.82	100%	0%
42	Dumped Large Blocks (300-1000 mm) - Zone 3	m3	37,000	738	2	-	10	-	12	435,120	68,080	-	367,040	-	435,120	738	92.25	100%	0%
43	Dumped Large Blocks (≥1000 mm) - Zone 3 Class	m3	65,000	3,189	5	-	25	-	30	1,950,000	293,150	-	1,656,850	-	1,950,000	3,189	91.93	100%	0%
44	Dumped Large Blocks (≥1300 mm) - Zone 3 Class	m3	15,000	675	4	-	26	-	30	450,900	61,950	-	388,950	-	450,900	675	91.78	100%	0%
45	Compacted Crushed Stone - Zone 3A Material	m3	10,950	914	8	45	13	-	65	714,488	84,972	489,465	140,051	-	714,488	914	92.97	100%	0%
46	Compacted Rockfill - Zone 3C Material	m3	33,740	3,397	9	-	37	-	46	1,565,199	315,132	-	1,250,067	-	1,565,199	3,397	92.77	100%	0%
47	Compacted Rockfill - Zone 3D Material	m3	33,900	1,428	4	-	13	-	16	555,960	130,854	-	425,106	-	555,960	1,428	91.63	100%	0%
48	Dumped Crushed Stone- Zone 3F Material	m3	21,000	828	4	45	8	-	56	1,175,790	77,070	938,700	160,020	-	1,175,790	828	93.08	100%	0%
49	Percussion Drill Holes in embankments, river sediments and bedrock	m	1,000	230	22	-	-	104	126	126,400	22,400	-	-	104,000	126,400	230	97.39	100%	0%
	Verification Core Drilling in jet grouting cut-off																		
50	wall and bedrock	m	200	132	62	-	-	407	469	93,736	12,336	-	-	81,400	93,736	132	93.45	100%	0%
51	Core Diamond Drill Rig in Standby	hour	140	-	-	-	-	132	132	18,480	-	-	-	18,480	18,480	-	-	100%	0%
52	Mobilization and demobilization	LS	1	2,155	239,568	-	-	873,147	1,112,715	1,112,715	239,568	-	-	873,147	1,112,715	2,155	111.17	100%	0%
	Drilling Holes for Jet Grouting in embankment,																		
53	river sediments and bedrock	m	9,600	4,416	46	-	-	114	160	1,534,368	439,968	-	-	1,094,400	1,534,368	4,416	99.63	100%	0%
54	Jet Grouted Cut-off wall	m2	2,800	4,376	147	46	8	852	1,053	2,949,436	412,888	128,940	22,008	2,385,600	2,949,436	4,376	94.35	100%	0%
	Drilling Holes for Grouting in embankment , jet																		
55	grouting cut-off wall and bedrock, if required	m	1,300	60	4	-	-	19	23	29,848	5,148	-	-	24,700	29,848	60	85.80	100%	0%
56	Dry cement incorporated in the grout, if required	kg	11,000	-	-	-	-	1	1	11,000	-	-	-	11,000	11,000	-	-	100%	0%
57	Grouting - Successful connections, if required	unit	60	138	200	-	-	642	842	50,490	11,970	-	-	38,520	50,490	138	86.74	100%	0%
58	Overburden excavation	m3	500	37	7	-	14	-	21	10,700	3,500	-	7,200	-	10,700	37	94.59	100%	0%
59	Foundation cleaning (water/ait jets and Vacuum	m2	1,250	326	24	-	13	-	37	46,500	30,000	-	16,500	-	46,500	326	92.02	100%	0%
60	Rock excavation including dental excavation and	m3	500	238	44	22	90	-	156	78,110	22,000	11,110	45,000	-	78,110	238	92.44	100%	0%
61	Dental Concrete	m3	200	421	195	508	-	50	753	150,526	39,000	101,560	-	9,966	150,526	421	92.64	100%	0%
62	Slush Grout	m2	1,250	481	35	11	2	-	49	61,063	44,000	14,063	3,000	-	61,063	481	91.48	100%	0%
63	Dry Pack	m3	6	217	3,500	1,500	500	-	5,500	33,000	21,000	9,000	3,000	-	33,000	217	96.77	100%	0%
64	Compacted Till - Zones 1 and 1C	m3	2,000	303	14	-	23	-	37	73,000	28,000	-	45,000	-	73,000	303	92.41	100%	0%
65	Compacted Granular - Zone 2C	m3	2,500	212	8	44	14	-	66	165,650	20,000	110,650	35,000	-	165,650	212	94.34	100%	0%
66	Compacted Rockfill - Zone 3C	m3	4,600	474	10	-	33												







Price Item	Description	Unit of Measure	Qty	Manhours at site (per unit)	Manpower Cost/Unit	Materials Cost/Unit	Equipment Cost/Unit	Subcontractor Cost/Unit	Unit Price	Total Price	Labour Cost	Materials Cost	Equipment Cost	Subcontractor Cost	Total Cost	Total Hours	Labour Rate	Union	Non-Union	Notes
1	Mobilization	LS	1	83,638	8,100,000	31,390,798	28,250,000	5,500,000	73,240,798	73,240,798	8,100,000	31,390,798	28,250,000	5,500,000	73,240,798	83,638	96.85	100%	0%	73,240,798
2	Site Installation	LS	1	151,227	13,000,000	5,000,000	26,500,000	1,500,000	46,000,000	46,000,000	13,000,000	5,000,000	26,500,000	1,500,000	46,000,000	151,227	85.96	100%	0%	46,000,000
3	Management, Staff, employees and Consultants Health and Safety, Environmental and Quality Requirements	LS	1	234,434	41,500,000	2,500,000	1,000,000	150,000	45,150,000	45,150,000	41,500,000	2,500,000	1,000,000	150,000	45,150,000	234,434	177.02	7%	93%	45,150,000
4	Credit, Guarantee and Insurance	LS	1	14,143	2,400,000	550,000	-	115,000	3,065,000	3,065,000	2,400,000	550,000	-	115,000	3,065,000	14,143	169.70	-	100%	3,065,000
5	Warranty, per Article 17 of the Agreement	LS	1	-	100,000	100,000	100,000	-	300,000	300,000	100,000	100,000	100,000	-	300,000	-	-	-	100%	300,000
6	Demobilization	LS	1	1,472	135,124	430,000	350,000	-	915,124	915,124	135,124	430,000	350,000	-	915,124	1,472	91.80	100%	0%	915,124
7	Dewatering of Structure Areas	LS	1	3,174	290,000	400,000	1,500,000	-	2,190,000	2,190,000	290,000	400,000	1,500,000	-	2,190,000	3,174	91.37	100%	0%	2,190,000
9	Excavation of Existing Embankment cofferdams 1, 2 and 3, and Existing Ramps	m³	177,000	3,343	2	-	9	-	11	1,904,520	304,440	-	1,600,080	-	1,904,520	3,343	91.07	100%	0%	1,904,520
10	Excavation of Downstream section of RCC riverside cofferdam	m³	20,000	933	4	5	13	-	22	433,800	86,000	97,800	250,000	-	433,800	933	92.18	100%	0%	433,800
11	Overburden Excavation	m³	8,000	206	2	-	7	-	9	71,040	19,040	-	52,000	-	71,040	206	92.43	100%	0%	71,040
12	Approved Compactable Material	m³	44,000	873	2	-	1	-	3	140,800	80,960	-	59,840	-	140,800	873	92.74	100%	0%	140,800
13	Granular "B" Material	m³	5,800	418	7	44	6	-	57	330,658	38,976	256,708	34,974	-	330,658	418	93.24	100%	0%	330,658
14	Granular "C" Material	m³	4,000	347	8	44	6	-	58	233,040	32,000	177,040	24,000	-	233,040	347	92.22	100%	0%	233,040
15	Maintenance Grade 3 material	m³	4,500	326	7	44	6	-	56	254,205	30,015	199,170	25,020	-	254,205	326	92.07	100%	0%	254,205
16	CSP culvert, dia. 900 mm	m	48	110	229	-	313	-	542	26,000	11,000	-	15,000	-	26,000	110	100.00	100%	0%	26,000
17	Guide Rails	m	400	458	105	50	26	-	181	72,516	42,000	20,016	10,500	-	72,516	458	91.70	100%	0%	72,516
18	Gate Type 1	unit	2	55	5,000	850	1,700	-	7,550	15,100	10,000	1,700	3,400	-	15,100	55	181.82	100%	0%	15,100
19	Approved Compactable Material	m³	26,000	426	2	-	2	-	3	80,080	40,040	-	40,040	-	80,080	426	93.99	100%	0%	80,080
20	Granular "C" Material	m³	7,500	248	3	44	5	-	52	390,000	23,025	331,950	35,025	-	390,000	248	92.84	100%	0%	390,000
21	Overburden Excavation	m³	2,000	442	21	-	20	-	41	81,000	41,000	-	40,000	-	81,000	442	92.76	100%	0%	81,000
22	Non-woven Geotextile, min 300 g/m2	m2	2,500	74	3	3	1	-	7	16,850	7,000	7,650	2,200	-	16,850	74	94.59	100%	0%	16,850
23	Rockfill Protection, 100 - 250 mm	m³	1,000	109	11	43	16	-	70	69,720	11,000	42,720	16,000	-	69,720	109	100.92	100%	0%	69,720
24	Rockfill Protection, Zone 3E Material	m³	2,500	307	11	43	32	-	86	214,800	28,000	106,800	80,000	-	214,800	307	91.21	100%	0%	214,800
25	Non-woven Geotextile, min 530 g/m2	m2	4,500	166	4	4	1	-	8	37,125	16,020	17,595	3,510	-	37,125	166	96.51	100%	0%	37,125
26	Chain Link Fence and Gates	m	720	1,954	257	-	49	-	306	219,996	184,997	-	34,999	-	219,996	1,954	94.68	100%	0%	219,996
27	Engineering of Temporary Upstream Bridge	LS	1	-	-	-	-	50,000	50,000	50,000	-	-	-	50,000	50,000	-	-	100%	0%	50,000
28	Supply of Temporary Upstream Bridge Installation, removal and handover of Temporary Upstream Bridge	LS	1	-	-	7,650,000	-	-	7,650,000	7,650,000	-	7,650,000	-	-	7,650,000	-	-	100%	0%	7,650,000
29	Foundation Cleaning (water/air jets and Vacuum trucks)	m2	1,200	313	24	-	13	-	38	45,000	29,004	-	15,996	-	45,000	313	92.66	100%	0%	45,000
30	Overburden excavation	m3	2,500	64	2	-	2	-	5	11,500	6,000	-	5,500	-	11,500	64	93.75	100%	0%	11,500
31	Rock Excavation including dental excavation and scaling	m3	500	238	44	22	96	-	162	81,110	22,000	11,110	48,000	-	81,110	238	92.44	100%	0%	81,110
32	Dental Concrete	m3	800	1,685	195	531	-	50	776	620,856	156,000	425,000	-	39,856	620,856	1,685	92.58	100%	0%	620,856
33	Slush Grout	m2	1,200	462	36	13	3	-	51	60,996	42,996	15,000	3,000	-	60,996	462	93.06	100%	0%	60,996
34	Dry Pack	m3	6	217	3,500	1,500	500	-	5,500	33,000	21,000	9,000	3,000	-	33,000	217	96.77	100%	0%	33,000
35	Compacted Till - Zones 1 and 1C Materials	m3	19,000	2,877	14	-	27	-	41	781,090	261,060	-	520,030	-	781,090	2,877	90.74	100%	0%	781,090
36	Dumped Till - Zone 1A Material	m3	134,000	11,788	8	-	21	-	29	3,859,200	1,070,660	-	2,788,540	-	3,859,200	11,788	90.83	100%	0%	3,859,200
37	Compacted Granular - Zone 2A Material	m3	20,700	1,607	7	46	17	-	70	1,450,035	150,075	949,923	350,037	-	1,450,035	1,607	93.39	100%	0%	1,450,035
38	Compacted Granular - Zone 2C Material	m3	8,700	711	8	44	19	-	71	617,091	66,990	385,062	165,039	-	617,091	711	94.22	100%	0%	617,091
39	Dumped Granular - Zone 2E Material	m3	26,300	1,037	4	44	9	-	57	1,509,094	99,940	1,164,038	245,116	-	1,509,094	1,037	96.37	100%	0%	1,509,094
40	Dumped Rockfill - Zone 3 Material	m3	143,000	2,850	2	-	10	-	12	1,714,570	264,550	-	1,450,020	-	1,714,570	2,850	92.82	100%	0%	1,714,570
41	Dumped Large Blocks (300-1000 mm) - Zone 3 Class 1	m3	37,000	738	2	-	10	-	12	435,120	68,080	-	367,040	-	435,120	738	92.25	100%	0%	435,120
42	Dumped Large Blocks (≥1000 mm) - Zone 3 Class 2	m3	65,000	3,189	5	-	25	-	30	1,950,000	293,150	-	1,656,850	-	1,950,000	3,189	91.93	100%	0%	1,950,000
43	Dumped Large Blocks (≥1300 mm) - Zone 3 Class 3	m3	15,000	675	4	-	26	-	30	450,900	61,950	-	388,950	-	450,900	675	91.78	100%	0%	450,900
44	Compacted Crushed Stone - Zone 3A Material	m3	10,950	914	8	45	13	-	65	714,488	84,972	489,465	140,051	-	714,488	914	92.97	100%	0%	714,488
45	Compacted Rockfill - Zone 3C Material	m3	33,740	3,397	9	-	37	-	46	1,565,199	315,132	-	1,250,067	-	1,565,199	3,397	92.77	100%	0%	1,565,199
46	Compacted Rockfill - Zone 3D Material	m3	33,900	1,428	4	-	13	-	16	555,960	130,854	-	425,106	-	555,960	1,428	91.63	100%	0%	555,960
47	Dumped Crushed Stone - Zone 3F Material	m3	21,000	828	4	45	8	-	56	1,175,790	77,070	938,700	160,020	-	1,175,790	828	93.08	100%	0%	1,175,790
48	Percussion Drill Holes in embankments, river sediments and bedrock	m	1,000	230	22	-	-	104	126	126,400	22,400	-	-	104,000	126,400	230	97.39	100%	0%	126,400
49	Verification Core Drilling in jet grouting cut-off wall and bedrock	m	200	132	62	-	-	407	469	93,736	12,336	-	-	81,400	93,736	132	93.45	100%	0%	93,736
50	Core Diamond Drill Rig in Standby	hour	140	-	-	-	-	132	132	18,480	-	-	-	18,480	-	-	-	100%	0%	18,480
51	Mobilization and demobilization	LS	1	2,155	239,568	-	-	873,147	1,112,715	1,112,715	239,568	-	-	873,147	1,112,715	2,155	111.17	100%	0%	1,112,715
52	Drilling Holes for Jet Grouting in embankment, river sediments and bedrock	m	9,600	4,416	46	-	-	114	160	1,534,368	439,968	-	-	1,094,400	1,534,368	4,416	99.63	100%	0%	1,534,368
53	Jet Grouted Cut-off wall	m2	2,800	4,376	147	46	8	852	1,053	2,949,436	412,888	128,940	22,008	2,385,600	2,949,436	4,376	94.35	100%	0%	2,949,436
54	Drilling Holes for Grouting in embankment, jet grouting cut-off wall and bedrock, if required	m	1,300	60	4	-	-	19	23	29,848	5,148	-	-	24,700	29,848	60	85.80	100%	0%	29,848
55	Dry cement incorporated in the grout, if required	kg	11,000	-	-	-	-	1	1	11,000	-	-	-	11,000	11,000	-	-	100%	0%	11,000
56	Grouting - Successful connections, if required	unit	60	138	200	-	-	642	842	50,490	11,970	-	-	38,520	50,490	138	86.74	100%	0%	50,490
57	Overburden excavation	m3	500	37	7	-	14	-	21	10,700	3,500	-	7,200	-	10,700	37	94.59	100%	0%	10,700
58	Foundation cleaning (water/air jets and Vacuum trucks)	m2	1,250																	

Price Item	Description	Unit of Measure	Qty	Manhours at site (per unit)	Manpower Cost/Unit	Materials Cost/Unit	Equipment Cost/Unit	Subcontractor Cost/Unit	Unit Price	Total Price	Labour Cost	Materials Cost	Equipment Cost	Subcontractor Cost	Total Cost	Total Hours	Labour Rate	Union	Non-Union	Notes
68	Overburden excavation	m3	8,800	235	3	-	6	-	8	71,984	22,000	-	49,984	-	71,984	235	93.62	100%	0%	71,984
69	Foundation cleaning (water/ait jets and Vacuum trucks)	m2	1,700	443	24	-	15	-	39	66,011	41,004	-	25,007	-	66,011	443	92.56	100%	0%	66,011
70	Rock excavation including dental excavation and scaling	m3	700	333	44	22	86	-	152	106,554	31,003	15,554	59,997	-	106,554	333	93.10	100%	0%	106,554
71	Dental Concrete	m3	250	526	196	508	-	50	754	188,380	49,000	126,923	-	12,458	188,380	526	93.16	100%	0%	188,380
72	Slush Grout	m2	1,700	655	35	11	4	-	50	85,119	59,993	19,125	6,001	-	85,119	655	91.59	100%	0%	85,119
73	Dry Pack	m3	9	325	3,444	1,333	333	-	5,111	46,000	31,000	12,000	3,000	-	46,000	325	95.38	100%	0%	46,000
74	Compacted Till - Zones 1 and 1C	m3	6,300	954	14	-	24	-	38	237,006	87,003	-	150,003	-	237,006	954	91.20	100%	0%	237,006
75	Compacted Granular - Zone 2C	m3	4,900	411	8	44	13	-	65	320,901	39,004	216,874	65,023	-	320,901	411	94.90	100%	0%	320,901
76	Compacted Rockfill - Zone 3C	m3	5,200	522	9	-	29	-	38	199,004	48,984	-	150,020	-	199,004	522	93.84	100%	0%	199,004
77	Compacted Rockfill - Zone 3D	m3	1,400	59	4	-	14	-	18	25,508	5,502	-	20,006	-	25,508	59	93.25	100%	0%	25,508
78	Overburden excavation	m3	94,000	2,514	2	-	6	-	8	749,180	229,360	-	519,820	-	749,180	2,514	91.23	100%	0%	749,180
79	Foundation cleaning (water/ait jets and Vacuum trucks)	m2	3,400	886	24	-	14	-	37	126,990	80,988	-	46,002	-	126,990	886	91.41	100%	0%	126,990
80	Rock excavation including dental excavation and scaling	m3	2,000	953	44	22	68	-	134	267,440	88,000	44,440	135,000	-	267,440	953	92.34	100%	0%	267,440
81	Dental Concrete	m3	1,200	2,527	195	508	-	50	753	903,024	234,000	609,228	-	59,796	903,024	2,527	92.60	100%	0%	903,024
82	Slush Grout	m2	3,400	1,309	35	11	4	-	50	170,238	119,986	38,250	12,002	-	170,238	1,309	91.66	100%	0%	170,238
83	Dry Pack	m3	20	722	3,350	1,000	200	-	4,550	91,000	67,000	20,000	4,000	-	91,000	722	92.80	100%	0%	91,000
84	Drilling Holes for Grouting	m	1,200	1,094	83	13	5	103	204	245,004	99,432	15,972	6,000	123,600	245,004	1,094	90.89	100%	0%	245,004
85	Dry cement incorporated in the grout	kg	42,000	386	1	-	-	3	4	188,160	48,300	-	-	139,860	188,160	386	125.13	100%	0%	188,160
86	Cored Drill Check Holes	m	30	44	125	-	-	233	358	10,744	3,744	-	-	7,000	10,744	44	85.09	100%	0%	10,744
87	Percussion Drilling Check holes	m	60	44	58	-	-	117	175	10,471	3,471	-	-	7,000	10,471	44	78.89	100%	0%	10,471
88	Grouting - Successful connections	unit	250	121	46	-	-	110	156	39,000	11,500	-	-	27,500	39,000	121	95.04	100%	0%	39,000
89	Water pressure test (Lugeon - 5 Stages)	hour	8	22	255	-	-	600	855	6,840	2,040	-	-	4,800	6,840	22	92.73	100%	0%	6,840
90	Water test - Successful connections	unit	18	22	113	-	-	267	380	6,840	2,040	-	-	4,800	6,840	22	92.72	100%	0%	6,840
91	Uplift gauges	m	20	44	187	-	-	600	787	15,745	3,745	-	-	12,000	15,745	44	85.11	100%	0%	15,745
92	Thermistors (measure rock temperature in grout holes)	unit	1	44	3,744	-	-	9,000	12,744	12,744	3,744	-	-	9,000	12,744	44	85.09	100%	0%	12,744
93	Compacted Till - Zones 1 and 1C	m3	26,000	3,678	13	-	22	-	35	908,180	333,060	-	575,120	-	908,180	3,678	90.55	100%	0%	908,180
94	Compacted Granular - Zone 2A	m3	28,000	2,527	8	45	14	-	67	1,876,560	234,920	1,251,600	390,040	-	1,876,560	2,527	92.96	100%	0%	1,876,560
95	Compacted Crushed Stone - Zone 3A	m3	12,000	1,083	8	45	14	-	67	807,480	101,040	536,400	170,040	-	807,480	1,083	93.30	100%	0%	807,480
96	Compacted Crushed Stone - Zone 3B	m3	16,000	1,444	8	44	14	-	67	1,068,160	135,040	708,160	224,960	-	1,068,160	1,444	93.52	100%	0%	1,068,160
97	Compacted Rockfill - Zone 3C	m3	21,000	1,977	9	-	33	-	42	882,840	182,910	-	699,930	-	882,840	1,977	92.52	100%	0%	882,840
98	Compacted Rockfill - Zone 3D	m3	46,000	1,646	3	-	16	-	20	900,680	150,880	-	749,800	-	900,680	1,646	91.66	100%	0%	900,680
99	Riprap - Zone 4	m3	6,000	626	10	43	18	-	70	419,340	58,020	256,320	105,000	-	419,340	626	92.68	100%	0%	419,340
100	Compacted Crushed Stone - Zone 5	m3	310	69	21	44	19	-	85	26,214	6,501	13,714	5,999	-	26,214	69	94.21	100%	0%	26,214
101	Jersey Barrier	m	600	46	8	-	8	-	15	9,000	4,500	-	4,500	-	9,000	46	97.83	100%	0%	9,000
102	V-Notch Weirs, excluding Shelters	unit	2	247	11,500	12,068	11,000	-	34,568	69,136	23,000	24,136	22,000	-	69,136	247	93.12	100%	0%	69,136
103	Shelters for V-Notch Weirs	unit	2	37	2,000	15,000	-	-	17,000	34,000	4,000	30,000	-	-	34,000	37	108.11	100%	0%	34,000
104	Survey Monuments at South Dam Crest	unit	3	-	-	-	-	2,000	2,000	6,000	-	-	-	6,000	6,000	-	-	100%	0%	6,000
105	Clearing of the North Abutment	Ha	3	736	22,667	-	46,667	-	69,333	208,000	68,000	-	140,000	-	208,000	736	92.39	100%	0%	208,000
106	Overburden Excavation	m3	72,000	2,208	3	-	7	-	10	700,560	200,880	-	499,680	-	700,560	2,208	90.98	100%	0%	700,560
107	Foundation Cleaning (water/air jets and vacuum) Rock Excavation including Dental Excavation and	m2	13,500	3,519	24	-	13	-	37	501,930	321,975	-	179,955	-	501,930	3,519	91.50	100%	0%	501,930
108	Scaling	m3	6,000	2,858	44	22	53	-	119	711,300	262,980	133,320	315,000	-	711,300	2,858	92.02	100%	0%	711,300
109	Dental Concrete	m3	4,000	8,424	195	508	-	50	753	3,010,240	780,000	2,030,920	-	199,320	3,010,240	8,424	92.59	100%	0%	3,010,240
110	Slush Grout	m2	13,500	5,199	35	11	2	-	49	656,910	475,065	151,875	29,970	-	656,910	5,199	91.38	100%	0%	656,910
111	Dry Pack	m3	70	2,527	3,357	882	171	-	4,411	308,768	235,000	61,768	12,000	-	308,768	2,527	93.00	100%	0%	308,768
112	Drilling Holes in RCC and Bedrock for Grouting	m	4,200	6,578	156	5	9	131	301	1,265,586	654,528	23,058	38,010	549,990	1,265,586	6,578	99.50	100%	0%	1,265,586
113	Grouting - Successful Connections	unit	720	198	26	-	-	100	126	90,900	18,900	-	-	72,000	90,900	198	95.45	100%	0%	90,900
114	Dry Cement incorporated in the grout	kg	126,000	695	1	-	-	2	3	340,200	75,600	-	-	264,600	340,200	695	108.78	100%	0%	340,200
115	Cored Drill Check Holes	m	60	99	154	-	-	296	450	27,012	9,252	-	-	17,760	27,012	99	93.45	100%	0%	27,012
116	Percussion Drilling Check Holes	m	120	153	120	-	-	216	336	40,375	14,455	-	-	25,920	40,375	153	94.48	100%	0%	40,375
117	Water pressure test (Lugeon - 5 Stages)	hour	15	44	272	-	-	506	778	11,670	4,080	-	-	7,590	11,670	44	92.73	100%	0%	11,670
118	Water Pressure Test - Successful connections	unit	36	44	113	-	-	211	324	11,676	4,080	-	-	7,596	11,676	44	92.72	100%	0%	11,676
119	Uplift gauges	m	60	99	154	-	-	510	664	39,852	9,252	-	-	30,600	39,852	99	93.45	100%	0%	39,852
120	Thermistor (measure temperature in grout holes)	unit	1	44	3,750	-	-	8,046	11,796	11,796	3,750	-	-	8,046	11,796	44	85.23	100%	0%	11,796
121	Drilling Holes for Drainage in Foundation from Drainage Gallery, Ø76 mm	m	3,200	4,239	133	-	-	134	268	856,768	426,752	-	-	430,016	856,768	4,239	100.67	100%	0%	856,768
122	PVC Caps for Drainage Holes	unit	125	-	-	-	-	28	28	3,500	-	-	-	3,500	3,500	-	-	100%	0%	3,500
123	Drilling Holes Upward for Drainage from Drainage Gallery into RCC, Ø76 mm	m	3,200	5,122	149	-	-	134	284	908,032	478,016	-	-	430,016	908,032	5,122	93.33	100%	0%	908,032
124	Drilling Holes for piezometers	m	100	-	-	-	-	296	296	29,600	-	-	-	29,600	29,600	-	-	100%	0%	29,600
125	Vibrating Wire and Standpipe Piezometers TYPE - 1, excluding Cables	unit	8	-	-	-	-	13,600	13,600	108,800	-	-	-	108,800	108,800	-	-	100%	0%	108,800
126	Vibrating Wire and Standpipe Piezometers TYPE - 2, excluding Cables	unit	2	-	-	-	-	3,000	3,000	6,000	-	-	-	6,0						

Price Item	Description	Unit of Measure	Qty	Manhours at site (per unit)	Manpower Cost/Unit	Materials Cost/Unit	Equipment Cost/Unit	Subcontractor Cost/Unit	Unit Price	Total Price	Labour Cost	Materials Cost	Equipment Cost	Subcontractor Cost	Total Cost	Total Hours	Labour Rate	Union	Non-Union	Notes
134	Conventional Vibrated Concrete (CVC) (Crest and Flip Bucket)	m3	11,100	39,834	332	586	43	16	977	10,841,481	3,684,978	6,500,049	474,969	181,485	10,841,481	39,834	92.51	100%	0%	10,841,481
135	Facing Concrete	m3	8,600	12,719	135	494	22	31	682	5,866,748	1,159,968	4,250,034	189,974	266,772	5,866,748	12,719	91.20	100%	0%	5,866,748
136	GERCC or GEVR - Formed Faces (Rate Only)	m3	1	-	1	0	0	-	2	2	1	0	0	-	2	-	-	100%	0%	2
136.1	Facing In Place Of GERCC	m3	4,650	7,139	-	-	-	-	470	2,185,500	651,077	1,074,096	460,327	-	2,185,500	7,139	91.20	100%	0%	3,187,994
137	Conventional Vibrated Concrete (North Abutment Crest Surface and Training Wall)	m3	270	1,603	556	926	-	54	1,535	414,480	150,001	250,001	-	14,477	414,480	1,603	93.58	100%	0%	414,480
138	Increase or decrease in quantity of cement - Bid Mix (rate only)	Kg	-	-	-	0	-	-	0	-	-	-	-	-	-	-	-	100%	0%	-
139	Increase or decrease in quantity of flyash - Bid Mix (rate only)	Kg	-	-	-	0	-	-	0	-	-	-	-	-	-	-	-	100%	0%	-
140	Increase or decrease in quantity of cement - Source B (rate only)	Kg	-	-	-	0	-	-	0	-	-	-	-	-	-	-	-	100%	0%	-
141	Increase or decrease in quantity of flyash - Source B (rate only)	Kg	-	-	-	0	-	-	0	-	-	-	-	-	-	-	-	100%	0%	-
142	Air-entraining Admixture	litre	315,000	-	-	1	-	-	1	434,700	-	434,700	-	-	434,700	-	-	100%	0%	434,700
143	Retarder Admixture	litre	336,000	-	-	2	-	-	2	514,080	-	514,080	-	-	514,080	-	-	100%	0%	514,080
144	Precast Concrete	LS	1	478	43,500	1,750,000	-	-	1,793,500	1,793,500	43,500	1,750,000	-	-	1,793,500	478	91.00	100%	0%	1,793,500
145	Gallery Floor CVC Concrete	m3	275	3,437	1,164	800	60	129	2,153	592,001	320,001	220,000	16,500	35,500	592,001	3,437	93.10	100%	0%	592,001
146	Steel Reinforcement	kg	500,000	1,711	0	0	0	4	5	2,365,000	155,000	40,000	115,000	2,055,000	2,365,000	1,711	90.59	100%	0%	2,365,000
147	Steel Guardrails	kg	5,200	161	3	15	-	-	18	92,664	14,664	78,000	-	-	92,664	161	91.08	100%	0%	92,664
148	Waterstop	m	1,350	815	57	21	-	-	78	105,503	76,505	28,998	-	-	105,503	815	93.87	100%	0%	105,503
149	Exothermic Connections.	unit	20	-	-	-	-	1,710	1,710	34,200	-	-	-	34,200	34,200	-	-	100%	0%	34,200
150	Bare, Stranded, Medium Hard-Drawn Copper Conductor, size 500 kcmil	m	815	-	-	-	-	137	137	111,655	-	-	-	111,655	111,655	-	-	100%	0%	111,655
151	Bare, Stranded, Medium Hard-Drawn Copper Conductor, size 4/0 AWG	m	16	-	-	-	-	81	81	1,300	-	-	-	1,300	1,300	-	-	100%	0%	1,300
152	Embedded Copper Grounding Plates	unit	7	-	-	-	-	1,714	1,714	12,000	-	-	-	12,000	12,000	-	-	100%	0%	12,000
153	Overburden Excavation, excluding excavation of Cofferdam 3 - Dry Conditions	m3	12,000	203	2	-	7	-	8	96,960	18,960	-	78,000	-	96,960	203	93.40	100%	0%	96,960
154	Tailrace Rock Plug Excavation including access ramp to powerhouse - Dry Conditions	m3	170,000	10,964	6	7	12	-	25	4,304,400	1,004,700	1,200,200	2,099,500	-	4,304,400	10,964	91.64	100%	0%	4,304,400
155	Tailrace Rock Plug - Underwater Excavation	m3	34,000	5,232	14	22	26	-	62	2,120,240	480,080	750,040	890,120	-	2,120,240	5,232	91.76	100%	0%	2,120,240
156	Grouted Rock Bolts Type A	unit	70	161	214	71	214	-	500	35,001	15,000	5,000	15,000	-	35,001	161	93.17	100%	0%	35,001
157	Grouted Rock Bolts Type C	unit	20	92	425	70	400	-	895	17,900	8,500	1,400	8,000	-	17,900	92	92.39	100%	0%	17,900
158	Chain Link Wire Mesh - Installation	m2	2,500	828	30	26	12	-	68	171,000	76,000	65,000	30,000	-	171,000	828	91.79	100%	0%	171,000
159	Chain Link Wire Mesh - Removal	m2	20,300	747	3	-	0	-	4	73,892	69,020	-	4,872	-	73,892	747	92.40	100%	0%	73,892
160	Existing Temporary Safety Fence - Removal	m	1,200	147	13	-	4	-	16	19,500	15,000	-	4,500	-	19,500	147	102.04	100%	0%	19,500
164	Fuel price reduction	\$/L	1	-	-	-	7,691,689	-	-	-	-	-	7,691,689	-	7,691,689	-	-	100%	0%	-
ADJ01	Travel cost removal	LS	1.00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ADJ02	Bussing cost	LS	1.00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ADJ03	Eliminate 1 RCC batch plant	LS	1.00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ADJ04	Spillway bridge (rent vs purchase)	LS	1.00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ADJ05	Winter dewatering and miantenance by Company	LS	1.00	-	-	(600,000)	-	-	-	(600,000)	-	(600,000)	-	-	(600,000)	-	-	-	-	-
ADJ06	Rock plug removal (no requirement for tailrace bridge)	LS	1.00	-	-	(390,800)	-	-	-	(390,800)	-	(390,800)	-	-	(390,800)	-	-	-	-	-
ADJ07	Bubble curtain removal (PH rock plug removal)	LS	1.00	-	-	(130,000)	-	-	-	(130,000)	-	(130,000)	-	-	(130,000)	-	-	-	-	-
ADJ08	Warranty (1 year only)	LS	1.00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ADJ09	Alternate borrow pits	LS	1.00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ADJ10	Option 1 risk sharring on staff and craft labour	LS	1.00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ADJ11	RCC optimization	LS	1.00	-	-	(9,400,000)	-	-	-	(9,400,000)	-	(9,400,000)	-	-	(9,400,000)	-	-	-	-	-
ADJ12	Combining gradations and screening	LS	1.00	-	-	(2,700,000)	-	-	-	(2,700,000)	-	(2,700,000)	-	-	(2,700,000)	-	-	-	-	-
ADJ13	Eliminate jet grouting (Items 49-57)	LS	1.00	-	-	(4,800,000)	-	-	-	(4,800,000)	-	(4,800,000)	-	-	(4,800,000)	-	-	-	-	-
ADJ14	Apprentice time	LS	1.00	-	-	(4,800,000)	-	-	-	(4,800,000)	-	(4,800,000)	-	-	(4,800,000)	-	-	-	-	-
ADJ15	Revised upstream dam	LS	1.00	-	-	(4,000,000)	-	-	-	(4,000,000)	-	(4,000,000)	-	-	(4,000,000)	-	-	-	-	-
ADJ16	Remove Item 133b	LS	1.00	-	(83)	(495)	(65)	-	(643)	-	-	-	-	-	-	-	-	-	-	-
ADJ17		LS	1.00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ADJ18		LS	1.00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ADJ19		LS	1.00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ADJ20																				
ADJ21																				
										288,156,448	102,678,653	85,973,075	89,109,584	18,086,826	295,848,137	879,568	116.74	647,401	232,167	
											86091182									
											9125665				(26,820,800)					
											7145568									

Costs allocated to labour et al using hours total by rate from Item 135; non-labour allocated to make totals match

Price Item	Description	Unit of Measure	Qty	Manhours at site (per unit)	Manpower Cost/Unit	Materials Cost/Unit	Equipment Cost/Unit	Unit Price	Total Price	Labour Cost	Materials Cost	Equipment Cost	Total Cost	Total Hours	Labour Rate
1	Mobilization	LS	1.00	28,109.00	1,976,349	2,912,838	25,110,813	30,000,000	30,000,000	1,976,349	2,912,838	25,110,813	30,000,000	28,109	70.31
2	Site Installation	LS	1.00	60,693.00	6,369,932	2,909,282	13,520,787	22,800,000	22,800,000	6,369,932	2,909,282	13,520,787	22,800,000	60,693	104.95
3	Management, Staff, employees and Consultants	LS	1.00	332,250.00	38,671,076	4,625,085	836,839	44,133,000	44,133,000	38,671,076	4,625,085	836,839	44,133,000	332,250	116.39
4	Health and Safety, Environmental and Quality Requirements	LS	1.00	102,527.00	8,694,583	125,671	57,745	8,878,000	8,878,000	8,694,583	125,671	57,745	8,878,000	102,527	84.80
5	Credit, Guarantee and Insurance	LS	1.00	-	-	2,030,650	-	2,030,650	2,030,650	-	2,030,650	-	2,030,650	-	-
6	Warranty, per Article 17 of the Agreement	LS	1.00	-	225,000	-	225,000	450,000	450,000	225,000	-	225,000	450,000	-	-
7	Demobilization	LS	1.00	-	-	-	250,000	250,000	250,000	-	-	250,000	250,000	-	-
8	Dewatering of Structure Areas	LS	1.00	8,180.00	872,408	397,703	279,889	1,550,000	1,550,000	872,408	397,703	279,889	1,550,000	8,180	106.65
9	Excavation of Existing Embankment cofferdams 1, 2 and 3, and Existing Ramps	m³	177,000.00	0.05	5.17	0.11	8.23	14	2,389,500	915,179	18,721	1,456,051	2,389,950	8,272	110.64
10	Excavation of Downstream section of RCC riverside cofferdam	m³	20,000.00	0.12	13.40	3.42	16.33	33	663,000	268,045	68,340	326,616	663,000	2,455	109.18
11	Overburden Excavation	m³	8,000.00	0.08	8.13	-	11.47	20	156,800	65,008	-	91,792	156,800	640	101.57
12	Approved Compactable Material	m³	44,000.00	0.05	4.83	-	7.57	12	545,600	212,541	-	333,059	545,600	2,092	101.60
13	Granular "B" Material	m³	5,800.00	0.20	23.64	0.27	30.69	55	316,680	137,101	1,585	177,995	316,680	1,166	117.58
14	Granular "C" Material	m³	4,000.00	0.18	21.69	0.27	29.03	51	204,000	86,776	1,092	116,132	204,000	735	118.06
15	Maintenance Grade 3 material	m³	4,500.00	0.22	25.24	0.27	32.09	58	259,200	113,581	1,232	144,387	259,200	983	115.55
16	CSP culvert, dia. 900 mm	m	48.00	4.44	462.52	211.07	186.42	860	41,280	22,201	10,131	8,948	41,280	213	104.23
17	Guide Rails	m	400.00	2.60	261.33	116.71	24.96	403	161,200	104,532	46,683	9,986	161,200	1,040	100.51
18	Gate Type 1	unit	2.00	77.00	7,932.02	3,458.89	1,409.10	12,800	25,600	15,864	6,918	2,818	25,600	154	103.01
19	Approved Compactable Material	m³	26,000.00	0.05	4.83	-	7.57	12	322,400	125,638	-	196,762	322,400	1,238	101.48
20	Granular "C" Material	m³	7,500.00	0.18	21.69	0.27	29.03	51	382,500	162,705	2,048	217,747	382,500	1,379	117.99
21	Overburden Excavation	m³	2,000.00	0.09	8.77	-	11.73	21	41,000	17,541	-	23,459	41,000	174	100.81
22	Non-woven Geotextile, min 300 g/m2	m2	2,500.00	0.16	16.14	5.27	4.10	26	63,750	40,346	13,165	10,239	63,750	400	100.87
23	Rockfill Protection, 100 - 250 mm	m³	1,000.00	0.35	36.02	-	25.98	62	62,000	36,022	-	25,978	62,000	348	103.51
24	Rockfill Protection, Zone 3E Material	m³	2,500.00	0.12	11.75	-	14.85	27	66,500	29,382	-	37,118	66,500	290	101.32
25	Non-woven Geotextile, min 530 g/m2	m2	4,500.00	0.04	3.98	3.61	1.01	9	38,700	17,898	16,260	4,542	38,700	180	99.43
26	Chain Link Fence and Gates	m	720.00	2.90	323.10	69.16	82.73	475	342,000	232,633	49,799	59,568	342,000	2,088	111.41
27	Engineering of Temporary Upstream Bridge	LS	1.00	-	116,000.00	-	-	116,000	116,000	116,000	-	-	116,000	-	-
28	Supply of Temporary Upstream Bridge	LS	1.00	375.00	37,203.53	1,967,840.11	14,956.36	2,020,000	2,020,000	37,204	1,967,840	14,956	2,020,000	375	99.21
29	Installation, removal and handover of Temporary Upstream Bridge	LS	1.00	18,925.00	1,968,523.09	1,148,044.95	1,520,431.96	4,637,000	4,637,000	1,968,523	1,148,045	1,520,432	4,637,000	18,925	104.02
30	Overburden excavation	m3	2,500.00	0.14	15.39	-	19.61	35	87,500	38,471	-	49,029	87,500	346	111.19
31	Foundation Cleaning (water/air jets and Vacuum trucks)	m2	1,200.00	0.90	102.13	-	17.87	120	144,000	122,561	-	21,439	144,000	1,080	113.48
32	Rock Excavation including dental excavation and Scaling	m3	500.00	0.79	84.92	24.65	100.43	210	105,000	42,459	12,327	50,214	105,000	395	107.49
33	Dental Concrete	m3	800.00	1.92	212.78	514.02	23.20	750	600,000	170,224	411,217	18,560	600,000	1,535	110.89
34	Slush Grout	m2	1,200.00	0.20	21.62	8.64	1.04	31	37,560	25,941	10,373	1,245	37,560	240	108.09
35	Dry Pack	m3	6.00	50.00	5,465.96	1,271.69	262.36	7,000	42,000	32,796	7,630	1,574	42,000	300	109.32
36	Compacted Till - Zones 1 and 1C Materials	m3	19,000.00	0.25	26.57	-	33.43	60	1,140,000	504,853	-	635,147	1,140,000	4,690	107.64
37	Dumped Till - Zone 1A Material	m3	134,000.00	0.13	13.48	-	24.02	38	5,025,000	1,806,499	-	3,218,501	5,025,000	16,795	107.56
38	Compacted Granular - Zone 2A Material	m3	20,700.00	0.28	29.72	-	33.28	63	1,304,100	615,284	-	688,816	1,304,100	5,710	107.76
39	Compacted Granular - Zone 2C Material	m3	8,700.00	0.28	29.79	-	33.21	63	548,100	259,206	-	288,894	548,100	2,394	108.26
40	Dumped Granular - Zone 2E Material	m3	26,300.00	0.16	17.42	-	27.58	45	1,183,500	458,088	-	725,412	1,183,500	4,240	108.04
41	Dumped Rockfill- Zone 3 Material	m3	143,000.00	0.06	6.62	-	9.38	16	2,288,000	946,331	-	1,341,669	2,288,000	8,882	106.54
42	Dumped Large Blocks (300-1000 mm) - Zone 3 Class 1	m3	37,000.00	0.08	8.76	-	14.24	23	851,000	324,255	-	526,745	851,000	3,034	106.87
43	Dumped Large Blocks (≥1000 mm) - Zone 3 Class 2	m3	65,000.00	0.17	17.85	-	30.15	48	3,120,000	1,160,352	-	1,959,648	3,120,000	10,780	107.64
44	Dumped Large Blocks (≥1300 mm) - Zone 3 Class 3	m3	15,000.00	0.20	21.46	-	40.54	62	930,000	321,951	-	608,049	930,000	3,025	106.43
45	Compacted Crushed Stone - Zone 3A Material	m3	10,950.00	0.32	36.05	0.28	37.68	74	810,300	394,714	3,011	412,574	810,300	3,479	113.46
46	Compacted Rockfill - Zone 3C Material	m3	33,740.00	0.10	11.38	-	15.62	27	910,980	383,979	-	527,001	910,980	3,510	109.40
47	Compacted Rockfill - Zone 3D Material	m3	33,900.00	0.10	11.38	-	15.62	27	915,300	385,800	-	529,500	915,300	3,525	109.45
48	Dumped Crushed Stone- Zone 3F Material	m3	21,000.00	0.16	21.51	0.27	28.72	51	1,060,500	451,629	5,739	603,132	1,060,500	3,440	131.29
49	Percussion Drill Holes in embankments, river sediments and bedrock	m	1,000.00	0.25	30.52	-	78.48	109	109,000	30,520	-	78,480	109,000	250	122.08
50	Verification Core Drilling in jet grouting cut-off wall and bedrock	m	200.00	0.72	85.40	12.81	328.79	427	85,400	17,080	2,562	65,758	85,400	144	118.61
51	Core Diamond Drill Rig in Standby	hour	140.00	-	-	-	138.00	138	19,320	-	-	19,320	19,320	-	-
52	Mobilization and demobilization	LS	1.00	2,342.00	554,750.00	-	1,030,250.00	1,585,000	1,585,000	554,750	-	1,030,250	1,585,000	2,342	236.87
53	Drilling Holes for Jet Grouting in embankment, river sediments and bedrock	m	9,600.00	0.56	71.52	5.48	54.00	131	1,257,600	686,566	52,632	518,402	1,257,600	5,400	127.14
54	Jet Grouted Cut-off wall	m2	2,800.00	1.55	170.85	502.06	307.08	980	2,744,000	478,388	1,405,782	859,830	2,744,000	4,344	110.13
55	Drilling Holes for Grouting in embankment , jet grouting cut-off wall and bedrock, if required	m	1,300.00	0.05	5.00	-	15.00	20	26,000	6,500	-	19,500	26,000	65	100.00
56	Dry cement incorporated in the grout, if required	kg	11,000.00	0.03	3.20	1.16	0.64	5	55,000	35,181	12,799	7,019	55,000	345	101.97
57	Grouting - Successful connections, if required	unit	60.00	2.50	270.00	-	405.00	675	40,500	16,200	-	24,300	40,500	150	108.00
58	Overburden excavation	m3	500.00	0.15	16.36	-	18.64	35	17,500	8,182	-	9,318	17,500	74	110.56
59	Foundation cleaning (water/air jets and Vacuum trucks)	m2	1,250.00	0.90	102.13	-	17.87	120	150,000	127,668	-	22,332	150,000	1,125	113.48
60	Rock excavation including dental excavation and scaling	m3	500.00	0.79	84.92	24.65	100.43	210	105,000	42,459	12,327	50,214	105,000	395	107.49
61	Dental Concrete	m3	200.00	1.92	212.78	514.02	23.20	750	150,000	42,556	102,804	4,640	150,000	384	110.89
62	Slush Grout	m2	1,250.00	0.20	21.62	8.64	1.04	31	39,125	27,022	10,806	1,297	39,125	250	108.09
63	Dry Pack	m3	6.00	50.00	5,465.96	1,271.69	262.36	7,000	42,000	32,796	7,630	1,574	42,000	300	109.32
64	Compacted Till - Zones 1 and 1C	m3	2,000.00	0.25	26.40	-	33.60	60	120,000	52,804	-	67,196	120,000	490	107.76
65	Compacted Granular - Zone 2C	m3	2,500.00	0.27	29.36	-	35.64	65	162,500	73,408	-	89,092	162,500	675	108.75
66	Compacted Rockfill - Zone 3C	m3	4,600.00	0.12	13.41	-	16.59	30	138,000	61,676	-	76,324	138,000	534	115.50
67	Compacted Rockfill - Zone 3D	m3	2,000.00	0.12	13.41	-	16.59	30	60,000	26,816	-	33,184	60,000	232	115.58
68	Overburden excavation	m3	8,800.00	0.06	6.70	-	9.30	16	140,800	58,963	-	81,837	140,800	540	109.19
69	Foundation cleaning (water/ait jets and Vacuum trucks)	m2	1,700.00	0.90	102.13	-	17.87	120	204,000	173,628	-	30,372	204,000	1,530	113.48
70	Rock excavation including dental excavation and scaling	m3	700.00	0.79	84.92	24.65	100.43	210	147,000	59,443	17,258	70,299	147,000	553	107.49
71	Dental Concrete	m3	250.00	1.92	212.78	514.02	23.20	750	187,500	53,195	128,505	5,800	187,500	480	110.89
72	Slush Grout	m2	1,700.00	0.20	21.62	8.64	1.04	31	53,210	36,750	14,696	1,764	53,210	340	108.09
73	Dry Pack	m3	9.00	50.00	5,465.96	1,271.69	262.36	7,000	63,000	49,194	11,445	2,361	63,000	450	109.32
74	Compacted Till - Zones 1 and 1C	m3	6,300.00	0.29	3										



Price Item	Description	Unit of Measure	Qty	Manhours at site (per unit)	Manpower Cost/Unit	Materials Cost/Unit	Equipment Cost/Unit	Unit Price	Total Price	Labour Cost	Materials Cost	Equipment Cost	Total Cost	Total Hours	Labour Rate
150	Bare, Stranded, Medium Hard-Drawn Copper Conductor, size 500 kcmil	m	815.00	0.85	92.00	23.00	-	115	93,725	74,980	18,745	-	93,725	693	108.24
151	Bare, Stranded, Medium Hard-Drawn Copper Conductor, size 4/0 AWG	m	16.00	0.80	86.25	28.75	-	115	1,840	1,380	460	-	1,840	13	107.81
152	Embedded Copper Grounding Plates	unit	7.00	0.30	35.00	315.00	-	350	2,450	245	2,205	-	2,450	2	116.67
153	Overburden Excavation, excluding excavation of Cofferdam 3 - Dry Conditions	m3	12,000.00	0.08	9.34	-	12.66	22	264,000	112,043	-	151,960	264,003	955	117.32
154	Tailrace Rock Plug Excavation including access ramp to powerhouse -Dry Conditions	m3	170,000.00	0.11	16.48	3.71	19.01	39	6,664,000	2,800,862	631,032	3,232,106	6,664,000	18,600	150.58
155	Tailrace Rock Plug - Underwater Excavation	m3	34,000.00	0.40	43.26	21.75	44.99	110	3,740,000	1,470,923	739,446	1,529,631	3,740,000	13,548	108.57
156	Grouted Rock Bolts Type A	unit	70.00	19.21	2,142.83	1,048.03	509.15	3,700	259,000	149,998	73,362	35,640	259,000	1,345	111.52
157	Grouted Rock Bolts Type C	unit	20.00	35.20	3,927.57	1,941.33	931.10	6,800	136,000	78,551	38,827	18,622	136,000	704	111.58
158	Chain Link Wire Mesh - Installation	m2	2,500.00	0.25	27.91	15.28	6.81	50	125,000	69,765	38,197	17,037	125,000	625	111.62
159	Chain Link Wire Mesh - Removal	m2	20,300.00	0.05	5.77	-	2.23	8	162,400	117,038	-	45,362	162,400	1,015	115.31
160	Existing Temporary Safety Fence - Removal	m	1,200.00	0.39	43.96	-	17.04	61	73,200	52,754	-	20,446	73,200	464	113.69
									<b>308,699,055</b>	<b>152,980,833</b>	<b>58,688,725</b>	<b>97,029,950</b>	<b>308,699,508</b>	<b>1,349,785</b>	<b>113.34</b>







Price Item	Description	Unit of Measure	Qty	Manhours at site (per unit)	Manpower Cost/Unit	Materials Cost/Unit	Equipment Cost/Unit	Profit cost/Unit	Unit Price	Total Price	Labour Cost	Materials Cost	Equipment Cost	Profit	Total Cost	Total Hours	Labour Rate	Union	Non-Union	Adjustments
137	Conventional Vibrated Concrete (North Abutment Crest Surface and Training Wall)	m3	270.00	6.16	900.41	310.20	164.40	-	1,375	371,250	243,110	83,753	44,387	-	371,250	1,664	146.12	100%	0%	-
138	Increase or decrease in quantity of cement - Bid Mix (rate only)	Kg	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	100%	0%	-
139	Increase or decrease in quantity of flyash - Bid Mix (rate only)	Kg	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	100%	0%	-
140	Increase or decrease in quantity of cement - Source B (rate only)	Kg	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	100%	0%	-
141	Increase or decrease in quantity of flyash - Source B (rate only)	Kg	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	100%	0%	-
142	Air-entraining Admixture	litre	315,000.00	-	-	4.50	-	-	5	1,417,500	-	1,417,500	-	-	1,417,500	-	-	100%	0%	-
143	Retarder Admixture	litre	336,000.00	-	-	4.80	-	-	5	1,612,800	-	1,612,800	-	-	1,612,800	-	-	100%	0%	-
144	Precast Concrete	m3	1,150.00	2.75	276.45	1,655.03	118.52	-	2,050	2,357,500	317,918	1,903,285	136,298	-	2,357,500	3,165	100.45	100%	0%	-
145	Gallery Floor CVC Concrete	m3	275.00	12.03	1,430.89	359.55	259.57	-	2,050	563,750	393,494	98,876	71,381	-	563,750	3,308	118.97	100%	0%	-
146	Steel Reinforcement	kg	500,000.00	0.02	4.93	2.77	0.40	-	8	4,050,000	2,465,000	1,385,000	200,000	-	4,050,000	10,200	241.67	100%	0%	-
147	Steel Guardrails	kg	5,200.00	0.30	36.14	6.55	2.32	-	45	234,000	187,907	34,041	12,053	-	234,000	1,560	120.45	100%	0%	-
148	Waterstop	m	1,350.00	1.50	174.18	21.82	-	-	196	264,600	235,144	29,456	-	-	264,600	2,025	116.12	100%	0%	-
149	Exothermic Connections. Bare, Stranded, Medium Hard-Drawn Copper Conductor, size 500 kcmil	unit	20.00	8.00	900.00	300.00	-	-	1,200	24,000	18,000	6,000	-	-	24,000	160	112.50	100%	0%	-
150	Bare, Stranded, Medium Hard-Drawn Copper Conductor, size 4/0 AWG	m	815.00	0.85	95.20	23.80	-	-	119	96,985	77,588	19,397	-	-	96,985	693	112.00	100%	0%	-
151	Embedded Copper Grounding Plates	unit	7.00	0.30	35.70	321.30	-	-	357	2,499	250	2,249	-	-	2,499	2	119.00	100%	0%	-
152	Overburden Excavation, excluding excavation of Cofferdam 3 - Dry Conditions	m3	12,000.00	0.08	8.91	-	12.09	-	21	252,000	106,950	-	145,050	-	252,000	955	112.04	100%	0%	-
153	Tailrace Rock Plug Excavation including access ramp to powerhouse - Dry Conditions	m3	170,000.00	0.11	16.81	3.79	19.40	-	40	6,800,000	2,858,023	643,910	3,298,067	-	6,800,000	18,598	153.67	100%	0%	-
154	Tailrace Rock Plug - Underwater Excavation	m3	34,000.00	0.40	43.90	17.20	45.91	-	107	3,638,000	1,492,449	584,733	1,560,818	-	3,638,000	13,549	110.15	100%	0%	-
155	Grouted Rock Bolts Type A	unit	70.00	19.20	2,200.74	1,076.35	522.91	-	3,800	266,000	154,052	75,345	36,603	-	266,000	1,344	114.62	100%	0%	-
156	Grouted Rock Bolts Type C	unit	20.00	35.20	4,014.21	1,984.15	951.64	-	6,950	139,000	80,284	39,683	19,033	-	139,000	704	114.04	100%	0%	-
157	Chain Link Wire Mesh - Installation	m2	2,500.00	0.25	28.46	15.58	6.95	-	51	127,500	71,161	38,961	17,378	-	127,500	625	113.86	100%	0%	-
158	Chain Link Wire Mesh - Removal	m2	20,300.00	0.05	5.77	-	2.23	-	8	162,400	117,038	-	45,362	-	162,400	1,015	115.31	100%	0%	-
159	Existing Temporary Safety Fence - Removal	m	1,200.00	0.39	44.68	-	17.32	-	62	74,400	53,619	-	20,781	-	74,400	464	115.56	100%	0%	-
ADJ01	Fuel price reduction	\$/L	8,576,000																	
ADJ02	Travel cost removal	LS	1.00																	
ADJ03	Bussing cost	LS	1.00																	
ADJ04	Eliminate 1 RCC batch plant	LS	1.00			(2,300,000)						(2,300,000)			(2,300,000)					
ADJ05	Spillway bridge (rent vs purchase)	LS	1.00																	
ADJ06	Winter dewatering and miantenance by Company	LS	1.00			(600,000)						(600,000)			(600,000)					
ADJ07	Rock plug removal (no requirement for tailrace bridge)	LS	1.00			(390,800)						(390,800)			(390,800)					
ADJ08	Bubble curtain removal (PH rock plug removal)	LS	1.00			(130,000)						(130,000)			(130,000)					
ADJ09	Warranty (1 year only)	LS	1.00			(450,000)						(450,000)			(450,000)					
ADJ10	Alternate borrow pits	LS	1.00																	
ADJ11	Option 1 risk sharring on staff and craft labour																			
ADJ12																				
ADJ13																				
ADJ14																				
ADJ15																				
ADJ16																				
ADJ17																				
										340,365,092	173,741,442	55,885,817	106,867,033	-	336,494,292	1,447,042	120.07	1,012,265	434,776	

Price Item	Description	Unit of Measure	Qty	Manhours at site (per unit)	Manpower Cost/Unit	Materials Cost/Unit	Equipment Cost/Unit	Unit Price	Total Price	Labour Cost	Materials Cost	Equipment Cost	Total Cost	Total Hours	Labour Rate	Union	Non-Union	
1	Mobilization	LS	-	(11,378)	(964,890)	(454,232)	(2,980,877)	(4,400,000)	(4,400,000)	(964,890)	(454,232)	(2,980,877)	(4,400,000)	(11,378)	(4)	100%	0%	-
2	Site Installation	LS	-	0	(167,233)	(76,379)	(356,388)	(600,000)	(600,000)	(167,233)	(76,379)	(356,388)	(600,000)	0	(3)	100%	0%	-
3	Management, Staff, employees and Consultants	LS	-	-	127,943	63,194	(58,137)	133,000	133,000	127,943	63,194	(58,137)	133,000	-	0	0%	100%	-
4	Health and Safety, Environmental and Quality Requirements	LS	-	1	(119,480)	(1,727)	(794)	(122,000)	(122,000)	(119,480)	(1,727)	(794)	(122,000)	1	(1)		100%	-
5	Credit, Guarantee and Insurance	LS	-	-	-	(221,550)	-	(221,550)	(221,550)	-	(221,550)	-	(221,550)	-	-		100%	-
6	Warranty, per Article 17 of the Agreement	LS	-	-	-	-	-	-	-	-	-	-	-	-	-		100%	-
7	Demobilization	LS	-	-	-	-	(1,103,000)	(1,103,000)	(1,103,000)	-	-	(1,103,000)	(1,103,000)	-	-	100%	0%	-
8	Dewatering of Structure Areas	LS	-	1	(19,700)	(8,980)	(6,320)	(35,000)	(35,000)	(19,700)	(8,980)	(6,320)	(35,000)	1	(2)	100%	0%	-
9	Excavation of Existing Embankment cofferdams 1, 2 and 3, and Existing Ramps	m³	-	(0)	(0)	0	(0)	(0)	(44,250)	(16,948)	112	(26,964)	(43,800)	(0)	(2)	100%	0%	450
10	Excavation of Downstream section of RCC riverside cofferdam	m³	-	-	(0)	(0)	(0)	(1)	(15,000)	(6,155)	(1,460)	(7,384)	(15,000)	-	(3)	100%	0%	0
11	Overburden Excavation	m³	-	0	(1)	-	(1)	(1)	(11,200)	(4,643)	-	(6,557)	(11,200)	1	(7)	100%	0%	-
12	Approved Compactable Material	m³	-	0	(0)	-	(0)	(0)	(13,200)	(5,142)	-	(8,058)	(13,200)	0	(2)	100%	0%	0
13	Granular "B" Material	m³	-	(0)	(0)	(0)	(1)	(1)	(6,670)	(2,885)	(33)	(3,752)	(6,670)	(0)	(2)	100%	0%	0
14	Granular "C" Material	m³	-	(0)	(0)	(0)	(1)	(1)	(4,000)	(1,700)	(22)	(2,279)	(4,000)	(0)	(2)	100%	0%	0
15	Maintenance Grade 3 material	m³	-	(0)	(1)	(0)	(1)	(1)	(6,300)	(2,744)	(28)	(3,528)	(6,300)	(0)	(3)	100%	0%	0
16	CSP culvert, dia. 900 mm	m	-	0	(8)	(4)	(3)	(15)	(720)	(387)	(177)	(156)	(720)	0	(2)	100%	0%	-
17	Guide Rails	m	-	-	(5)	(2)	(0)	(8)	(3,200)	(2,075)	(927)	(198)	(3,200)	-	(2)	100%	0%	0
18	Gate Type 1	unit	-	0	(124)	(54)	(22)	(200)	(400)	(248)	(108)	(44)	(400)	0	(2)	100%	0%	-
19	Approved Compactable Material	m³	-	0	(0)	-	(0)	(0)	(7,800)	(3,040)	-	(4,760)	(7,800)	1	(3)	100%	0%	-
20	Granular "C" Material	m³	-	0	(0)	(0)	(1)	(1)	(7,500)	(3,187)	(40)	(4,273)	(7,500)	1	(2)	100%	0%	-
21	Overburden Excavation	m³	-	0	(0)	-	(0)	(1)	(1,000)	(428)	-	(572)	(1,000)	1	(3)	100%	0%	-
22	Non-woven Geotextile, min 300 g/m2	m2	-	-	(0)	(0)	(0)	(1)	(1,250)	(791)	(258)	(201)	(1,250)	-	(2)	100%	0%	0
23	Rockfill Protection, 100 - 250 mm	m³	-	-	(1)	(0)	(0)	(1)	(1,000)	(581)	-	(419)	(1,000)	-	(2)	100%	0%	-
24	Rockfill Protection, Zone 3E Material	m³	-	-	(0)	-	(0)	(0)	(1,000)	(442)	-	(558)	(1,000)	-	(2)	100%	0%	-
25	Non-woven Geotextile, min 530 g/m2	m2	-	-	(0)	(0)	(0)	(0)	(675)	(312)	(284)	(79)	(675)	-	(2)	100%	0%	0
26	Chain Link Fence and Gates	m	-	-	(5)	(1)	(1)	(8)	(5,760)	(3,916)	(839)	(1,005)	(5,760)	-	(2)	100%	0%	-
27	Engineering of Temporary Upstream Bridge	LS	-	-	(3,000)	-	-	(3,000)	(3,000)	(3,000)	-	-	(3,000)	-	-	100%	0%	-
28	Supply of Temporary Upstream Bridge	LS	-	2	(774)	(40,915)	(311)	(42,000)	(42,000)	(774)	(40,915)	(311)	(42,000)	2	(3)	100%	0%	-
29	Installation, removal and handover of Temporary Upstream Bridge	LS	-	(692)	(119,229)	(48,453)	(50,317)	(218,000)	(218,000)	(119,229)	(48,453)	(50,317)	(218,000)	(692)	(2)	100%	0%	-
30	Overburden excavation	m3	-	-	-	-	-	-	-	-	-	-	-	-	-	100%	0%	-
31	Foundation Cleaning (water/air jets and Vacuum trucks)	m2	-	-	2	-	0	2	2,400	2,043	-	357	2,400	-	2	100%	0%	-
32	Rock Excavation including dental excavation and Scaling	m3	-	0	(1)	(0)	(1)	(2)	(1,000)	(404)	(117)	(478)	(1,000)	1	(1)	100%	0%	-
33	Dental Concrete	m3	-	0	-	-	-	-	-	-	-	-	-	2	(0)	100%	0%	-
34	Slush Grout	m2	-	-	(0)	(0)	(0)	(1)	(840)	(580)	(232)	(28)	(840)	-	(2)	100%	0%	-
35	Dry Pack	m3	-	-	(94)	(22)	(4)	(120)	(720)	(562)	(131)	(27)	(720)	-	(2)	100%	0%	0
36	Compacted Till - Zones 1 and 1C Materials	m3	-	0	(0)	-	(1)	(1)	(19,000)	(8,414)	-	(10,586)	(19,000)	1	(2)	100%	0%	-
37	Dumped Till - Zone 1A Material	m3	-	0	(0)	-	(0)	(1)	(100,500)	(36,001)	-	(64,499)	(100,500)	0	(2)	100%	0%	-
38	Compacted Granular - Zone 2A Material	m3	-	(0)	(1)	-	(1)	(2)	(41,400)	(19,533)	-	(21,867)	(41,400)	(1)	(3)	100%	0%	-
39	Compacted Granular - Zone 2C Material	m3	-	-	(1)	-	(1)	(2)	(17,400)	(8,229)	-	(9,171)	(17,400)	-	(3)	100%	0%	-
40	Dumped Granular - Zone 2E Material	m3	-	0	(0)	-	(0)	(1)	(13,150)	(5,090)	-	(8,060)	(13,150)	0	(1)	100%	0%	-
41	Dumped Rockfill- Zone 3 Material	m3	-	(0)	(0)	-	(0)	(0)	(35,750)	(14,629)	-	(21,121)	(35,750)	(0)	(2)	100%	0%	0
42	Dumped Large Blocks (300-1000 mm) - Zone 3 Class 1	m3	-	-	(0)	-	(1)	(1)	(37,000)	(13,925)	-	(23,075)	(37,000)	-	(5)	100%	0%	0
43	Dumped Large Blocks (≥1000 mm) - Zone 3 Class 2	m3	-	0	(0)	-	(1)	(1)	(65,000)	(24,174)	-	(40,826)	(65,000)	1	(2)	100%	0%	-
44	Dumped Large Blocks (≥1300 mm) - Zone 3 Class 3	m3	-	-	(0)	-	(1)	(1)	(15,000)	(5,193)	-	(9,807)	(15,000)	-	(2)	100%	0%	-
45	Compacted Crushed Stone - Zone 3A Material	m3	-	(0)	(1)	(0)	(1)	(2)	(21,900)	(10,662)	(81)	(11,156)	(21,900)	(1)	(3)	100%	0%	0
46	Compacted Rockfill - Zone 3C Material	m3	-	0	(0)	-	(1)	(1)	(33,740)	(14,221)	-	(19,519)	(33,740)	1	(4)	100%	0%	-
47	Compacted Rockfill - Zone 3D Material	m3	-	(0)	(0)	-	(1)	(1)	(33,900)	(14,289)	-	(19,611)	(33,900)	(1)	(4)	100%	0%	-
48	Dumped Crushed Stone- Zone 3F Material	m3	-	(0)	(0)	(0)	(1)	(1)	(21,000)	(8,901)	(141)	(11,958)	(21,000)	(419)	12	100%	0%	-
49	Percussion Drill Holes in embankments, river sediments and bedrock	m	-	-	-	-	-	-	-	-	-	-	-	-	-	100%	0%	-
50	Verification Core Drilling in jet grouting cut-off wall and bedrock	m	-	-	-	-	-	-	-	-	-	-	-	-	-	100%	0%	-
51	Core Diamond Drill Rig in Standby	hour	-	-	-	-	(1)	(1)	(140)	-	-	(140)	(140)	-	-	100%	0%	-
52	Mobilization and demobilization	LS	-	-	-	-	-	-	-	-	-	-	-	-	-	100%	0%	-
53	Drilling Holes for Jet Grouting in embankment, river sediments and bedrock	m	-	-	(0)	(0)	(0)	(1)	(4,800)	(2,620)	(201)	(1,979)	(4,800)	-	(0)	100%	0%	0
54	Jet Grouted Cut-off wall	m2	-	-	(0)	(1)	(1)	(2)	(5,600)	(976)	(2,869)	(1,755)	(5,600)	-	(0)	100%	0%	0
55	Drilling Holes for Grouting in embankment, jet grouting cut-off wall and bedrock, if required	m	-	-	-	-	-	-	-	-	-	-	-	-	-	100%	0%	-
56	Dry cement incorporated in the grout, if required	kg	-	0	0	0	0	0	1,100	704	256	140	1,100	0	2	100%	0%	0
57	Grouting - Successful connections, if required	unit	-	-	0	-	1	1	60	24	-	36	60	-	0	100%	0%	-
58	Overburden excavation	m3	-	-	-	-	-	-	-	-	-	-	-	-	-	100%	0%	-
59	Foundation cleaning (water/air jets and Vacuum trucks)	m2	-	-	3	-	(3)	-	-	3,125	-	(3,125)	-	-	3	100%	0%	-
60	Rock excavation including dental excavation and scaling	m3	-	(0)	(2)	(0)	(0)	(2)	(1,000)	(845)	(4)	(152)	(1,000)	(6)	(1)	100%	0%	-
61	Dental Concrete	m3	-	0	6	16	(22)	-	-	1,242	3,206	(4,448)	-	0	3	100%	0%	-
62	Slush Grout	m2	-	-	(0)	(0)	(0)	(1)	(875)	(604)	(242)	(29)	(875)	-	(2)	100%	0%	-

Price Item	Description	Unit of Measure	Qty	Manhours at site (per unit)	Manpower Cost/Unit	Materials Cost/Unit	Equipment Cost/Unit	Unit Price	Total Price	Labour Cost	Materials Cost	Equipment Cost	Total Cost	Total Hours	Labour Rate	Union	Non-Union	
63	Dry Pack	m3	-	-	(94)	(22)	(4)	(120)	(720)	(562)	(131)	(27)	(720)	-	(2)	100%	0%	0
64	Compacted Till - Zones 1 and 1C	m3	-	0	(0)	-	(1)	(1)	(2,000)	(880)	-	(1,120)	(2,000)	2	(2)	100%	0%	-
65	Compacted Granular - Zone 2C	m3	-	(0)	-	-	-	-	-	-	-	-	-	(49)	7	100%	0%	-
66	Compacted Rockfill - Zone 3C	m3	-	0	1	-	1	2	9,200	4,112	-	5,088	9,200	0	8	100%	0%	-
67	Compacted Rockfill - Zone 3D	m3	-	-	1	-	1	2	4,000	1,788	-	2,212	4,000	-	8	100%	0%	-
68	Overburden excavation	m3	-	0	(0)	-	(0)	(1)	(4,400)	(1,843)	-	(2,557)	(4,400)	0	(3)	100%	0%	-
69	Foundation cleaning (water/ait jets and Vacuum trucks)	m2	-	-	3	-	(3)	-	-	4,848	-	(4,848)	-	-	3	100%	0%	-
70	Rock excavation including dental excavation and scaling	m3	-	0	(0)	(0)	(1)	(2)	(1,400)	(258)	(244)	(898)	(1,400)	6	(2)	100%	0%	-
71	Dental Concrete	m3	-	0	1	(2)	1	-	-	252	(525)	272	-	4	(0)	100%	0%	-
72	Slush Grout	m2	-	-	(1)	(0)	0	(1)	(1,190)	(948)	(427)	186	(1,190)	-	(3)	100%	0%	0
73	Dry Pack	m3	-	-	(117)	(31)	29	(120)	(1,080)	(1,055)	(283)	257	(1,080)	-	(2)	100%	0%	0
74	Compacted Till - Zones 1 and 1C	m3	-	0	(0)	(0)	(1)	(1)	(6,300)	(2,570)	(170)	(3,560)	(6,300)	2	(2)	100%	0%	0
75	Compacted Granular - Zone 2C	m3	-	0	(1)	(0)	(1)	(2)	(9,800)	(3,855)	(101)	(5,844)	(9,800)	1	(3)	100%	0%	0
76	Compacted Rockfill - Zone 3C	m3	-	0	(0)	(0)	(1)	(1)	(5,200)	(2,111)	(201)	(2,887)	(5,200)	5	(3)	100%	0%	0
77	Compacted Rockfill - Zone 3D	m3	-	(0)	(0)	(0)	(1)	(1)	(1,400)	(566)	(55)	(779)	(1,400)	(0)	(2)	100%	0%	0
78	Overburden excavation	m3	-	(0)	-	-	-	-	-	-	-	-	-	(1)	0	100%	0%	-
79	Foundation cleaning (water/ait jets and Vacuum trucks)	m2	-	-	(0)	-	0	-	-	(1,385)	-	1,385	-	-	(0)	100%	0%	-
80	Rock excavation including dental excavation and scaling	m3	-	0	(1)	(0)	(1)	(2)	(4,000)	(2,556)	(338)	(1,106)	(4,000)	26	(3)	100%	0%	-
81	Dental Concrete	m3	-	0	(5)	5	0	-	-	(6,511)	6,230	281	-	3	(3)	100%	0%	-
82	Slush Grout	m2	-	-	(1)	(0)	0	(1)	(2,380)	(2,710)	(118)	448	(2,380)	-	(4)	100%	0%	0
83	Dry Pack	m3	-	-	(159)	4	35	(120)	(2,400)	(3,189)	88	701	(2,400)	-	(3)	100%	0%	0
84	Drilling Holes for Grouting	m	-	-	(2)	-	(0)	(2)	(2,400)	(1,920)	-	(480)	(2,400)	-	(2)	100%	0%	-
85	Dry cement incorporated in the grout	kg	-	(0)	(0)	(0)	(0)	(0)	(8,400)	(5,989)	(1,059)	(1,353)	(8,400)	(1,316)	60	100%	0%	-
86	Cored Drill Check Holes	m	-	(0)	0	-	3	3	90	7	-	83	90	(6)	29	100%	0%	-
87	Percussion Drilling Check holes	m	-	-	(2)	-	(0)	(2)	(120)	(96)	-	(24)	(120)	-	(2)	100%	0%	-
88	Grouting - Successful connections	unit	-	-	(6)	-	(0)	(6)	(1,500)	(1,378)	-	(122)	(1,500)	-	(2)	100%	0%	-
89	Water pressure test (Lugeon - 5 Stages)	hour	-	-	(1)	-	(0)	(1)	(8)	(5)	-	(3)	(8)	-	(0)	100%	0%	-
90	Water test - Successful connections	unit	-	-	-	-	-	-	-	-	-	-	-	-	-	100%	0%	-
91	Uplift gauges	m	-	-	(1)	(1)	(0)	(2)	(40)	(20)	(14)	(6)	(40)	-	(0)	100%	0%	-
92	Thermistors (measure rock temperature in grout holes)	unit	-	-	6,400	(2,480)	(3,420)	500	500	6,400	(2,480)	(3,420)	500	-	133	100%	0%	-
93	Compacted Till - Zones 1 and 1C	m3	-	0	(1)	-	(1)	(2)	(52,000)	(22,506)	-	(29,494)	(52,000)	0	(4)	100%	0%	-
94	Compacted Granular - Zone 2A	m3	-	0	(0)	-	(0)	(1)	(14,000)	(6,117)	-	(7,883)	(14,000)	0	(1)	100%	0%	-
95	Compacted Crushed Stone - Zone 3A	m3	-	0	(0)	(0)	(1)	(1)	(12,000)	(5,720)	(45)	(6,234)	(12,000)	1	(2)	100%	0%	-
96	Compacted Crushed Stone - Zone 3B	m3	-	0	(0)	(0)	(1)	(1)	(16,000)	(7,675)	(62)	(8,264)	(16,000)	0	(2)	100%	0%	-
97	Compacted Rockfill - Zone 3C	m3	-	-	(0)	-	(0)	(1)	(10,500)	(4,571)	-	(5,929)	(10,500)	-	(2)	100%	0%	-
98	Compacted Rockfill - Zone 3D	m3	-	-	(0)	-	(0)	(1)	(23,000)	(10,013)	-	(12,987)	(23,000)	-	(2)	100%	0%	-
99	Riprap - Zone 4	m3	-	-	(0)	-	(0)	(1)	(3,000)	(1,143)	-	(1,857)	(3,000)	-	(1)	100%	0%	-
100	Compacted Crushed Stone - Zone 5	m3	-	(0)	(0)	(0)	(1)	(1)	(310)	(145)	(1)	(164)	(310)	(6)	6	100%	0%	-
101	Jersey Barrier	m	-	-	-	-	-	-	-	-	-	-	-	-	-	100%	0%	-
102	V-Notch Weirs, excluding Shelters	unit	-	0	178	213	9	400	800	357	426	18	800	1	2	100%	0%	-
103	Shelters for V-Notch Weirs	unit	-	0	(68)	(27)	(5)	(100)	(200)	(136)	(55)	(10)	(200)	0	(3)	100%	0%	-
104	Survey Monuments at South Dam Crest	unit	-	-	(117)	(377)	(5)	(500)	(1,500)	(352)	(1,132)	(16)	(1,500)	-	(22)	100%	0%	-
105	Clearing of the North Abutment	Ha	-	0	213	-	287	500	1,500	638	-	862	1,500	0	3	100%	0%	-
106	Overburden Excavation	m3	-	0	(0)	-	(1)	(1)	(72,000)	(30,042)	-	(41,958)	(72,000)	0	(5)	100%	0%	-
107	Foundation Cleaning (water/air jets and vacuum)	m2	-	-	-	-	-	-	-	-	-	-	-	-	-	100%	0%	-
108	Rock Excavation including Dental Excavation and Scaling	m3	-	0	(3)	(1)	(3)	(6)	(36,000)	(15,644)	(3,513)	(16,843)	(36,000)	0	(3)	100%	0%	0
109	Dental Concrete	m3	-	0	(0)	0	(0)	-	-	(2)	4	(1)	-	8	(0)	100%	0%	-
110	Slush Grout	m2	-	-	(0)	(0)	(0)	(1)	(9,450)	(6,509)	(2,639)	(302)	(9,450)	-	(2)	100%	0%	0
111	Dry Pack	m3	-	-	(94)	(22)	(4)	(120)	(8,400)	(6,559)	(1,526)	(315)	(8,400)	-	(2)	100%	0%	0
112	Drilling Holes in RCC and Bedrock for Grouting	m	-	-	(4)	-	(1)	(5)	(21,000)	(17,010)	-	(3,990)	(21,000)	-	(3)	100%	0%	-
113	Grouting - Successful Connections	unit	-	-	265	-	21	286	205,920	190,521	-	15,399	205,920	-	882	100%	0%	-
114	Dry Cement incorporated in the grout	kg	-	(0)	(0)	(0)	(0)	(0)	(25,200)	(17,440)	(4,051)	(3,709)	(25,200)	(3,696)	322	100%	0%	0
115	Cored Drill Check Holes	m	-	-	(5)	-	(2)	(7)	(420)	(307)	-	(113)	(420)	-	(3)	100%	0%	-
116	Percussion Drilling Check Holes	m	-	-	(2)	-	(0)	(2)	(240)	(187)	-	(53)	(240)	-	(1)	100%	0%	-
117	Water pressure test (lugeon - 5 Stages)	hour	-	-	(2)	-	(0)	(2)	(30)	(23)	-	(7)	(30)	-	(0)	100%	0%	-
118	Water Pressure Test - Successful connections	unit	-	-	(1)	-	(0)	(1)	(36)	(27)	-	(9)	(36)	-	(1)	100%	0%	-
119	Uplift gauges	m	-	-	(3)	(3)	(1)	(7)	(420)	(189)	(168)	(63)	(420)	-	(2)	100%	0%	-
120	Thermistor (measure temperature in grout holes)	unit	-	-	260	140	-	400	400	260	140	-	400	-	5	100%	0%	-
121	Drilling Holes for Drainage in Foundation from Drainage Gallery, Ø76 mm	m	-	-	(2)	-	(0)	(2)	(6,400)	(5,248)	-	(1,152)	(6,400)	-	(1)	100%	0%	-
122	PVC Caps for Drainage Holes	unit	-	-	-	(2)	-	(2)	(250)	-	(250)	-	(250)	-	-	100%	0%	-
123	Drilling Holes Upward for Drainage from Drainage Gallery into RCC, Ø76 mm	m	-	(0)	(3)	(0)	(1)	(4)	(12,800)	(10,663)	(152)	(1,984)	(12,800)	(308)	6	100%	0%	-
124	Drilling Holes for piezometers	m	-	0	(2)	(0)	(0)	(3)	(300)	(231)	(36)	(32)	(300)	2	(4)	100%	0%	0
125	Vibrating Wire and Standpipe Piezometers TYPE - 1, excluding Cables	unit	-	-	-	-	-	-	-	-	-	-	-	-	-	100%	0%	-
126	Vibrating Wire and Standpipe Piezometers TYPE - 2, excluding Cables	unit	-	-	(90)	(60)	-	(150)	(300)	(180)	(120)	-	(300)	-	(1)	100%	0%	-
127	Instrument Cable including PVC Conduits and Pull Boxes	m	-	-	(0)	34	(34)	(1)	(2,700)	(945)	91,260	(93,015)	(2,700)	-	(2)	100%	0%	-
128	Thermistors Cable in RCC	unit	-	-	50	50	-	100	800	400	400	-	800	-	0	100%	0%	-

Price Item	Description	Unit of Measure	Qty	Manhours at site (per unit)	Manpower Cost/Unit	Materials Cost/Unit	Equipment Cost/Unit	Unit Price	Total Price	Labour Cost	Materials Cost	Equipment Cost	Total Cost	Total Hours	Labour Rate	Union	Non-Union	
129	V-notch Weirs	unit	-	(0)	(381)	(271)	(47)	(700)	(2,800)	(1,526)	(1,085)	(189)	(2,800)	(0)	(3)	100%	0%	-
130	Vibrating Wire Weir Monitors.	unit	-	700	75	22,500	(22,275)	300	1,200	300	90,000	(89,100)	1,200	2,800	(287)	100%	0%	-
131	Data logger, Terminal Box, Barometer Box including Grounding	LS	-	-	200	800	-	1,000	1,000	200	800	-	1,000	-	1	100%	0%	-
132	Crest Survey Monuments	unit	-	0	-	-	-	-	-	-	-	-	-	1	(4)	100%	0%	-
133	Roller Compacted Concrete (RCC)	m3	-	(0)	(73)	(1)	(17)	(91)	(19,110,000)	(15,230,299)	(294,896)	(3,584,805)	(19,110,000)	(95,663)	(9)	100%	0%	- 0
134	Conventional Vibrated Concrete (CVC) (Crest and Flip Bucket)	m3	-	3	(31)	(14)	(10)	(55)	(610,500)	(344,667)	(160,246)	(105,587)	(610,500)	38,638	(93)	100%	0%	- 0
135	Facing Concrete	m3	-	(2)	(271)	(5)	(59)	(335)	(2,881,000)	(2,331,126)	(42,622)	(507,252)	(2,881,000)	(16,002)	(9)	100%	0%	-
136	GERCC or GEVR - Formed Faces	m3	-	(2)	(290)	(2)	(68)	(360)	(1,674,000)	(1,350,080)	(8,832)	(315,088)	(1,674,000)	(9,647)	(10)	100%	0%	-
137	Conventional Vibrated Concrete (North Abutment Crest Surface and Training Wall)	m3	-	0	-	-	-	-	-	-	-	-	-	0	(0)	100%	0%	-
138	Increase or decrease in quantity of cement - Bid Mix (rate only)	Kg	-	-	-	-	-	0	-	-	-	-	-	-	-	100%	0%	-
139	Increase or decrease in quantity of flyash - Bid Mix (rate only)	Kg	-	-	-	-	-	0	-	-	-	-	-	-	-	100%	0%	-
140	Increase or decrease in quantity of cement - Source B (rate only)	Kg	-	-	-	-	-	1	-	-	-	-	-	-	-	100%	0%	-
141	Increase or decrease in quantity of flyash - Source B (rate only)	Kg	-	-	-	-	-	1	-	-	-	-	-	-	-	100%	0%	-
142	Air-entraining Admixture	litre	-	-	-	(0)	-	(0)	(63,000)	-	(63,000)	-	(63,000)	-	-	100%	0%	-
143	Retarder Admixture	litre	-	-	-	(0)	-	(0)	(33,600)	-	(33,600)	-	(33,600)	-	-	100%	0%	-
144	Precast Concrete	m3	-	0	16	37	(3)	50	57,500	18,595	42,441	(3,536)	57,500	0	6	100%	0%	- 0
145	Gallery Floor CVC Concrete	m3	-	2	407	7	35	450	123,750	111,989	2,000	9,762	123,750	418	17	100%	0%	- 0
146	Steel Reinforcement	kg	-	-	(0)	(0)	(0)	(0)	(50,000)	(31,321)	(18,119)	(560)	(50,000)	-	(3)	100%	0%	- 0
147	Steel Guardrails	kg	-	-	(1)	(0)	(0)	(2)	(7,800)	(6,264)	(1,135)	(402)	(7,800)	-	(4)	100%	0%	- 0
148	Waterstop	m	-	-	(5)	(1)	-	(6)	(8,100)	(7,198)	(902)	-	(8,100)	-	(4)	100%	0%	0
149	Exothermic Connections.	unit	-	-	(38)	(13)	-	(50)	(1,000)	(750)	(250)	-	(1,000)	-	(5)	100%	0%	-
150	Bare, Stranded, Medium Hard-Drawn Copper Conductor, size 500 kcmil	m	-	-	(3)	(1)	-	(4)	(3,260)	(2,608)	(652)	-	(3,260)	-	(4)	100%	0%	-
151	Bare, Stranded, Medium Hard-Drawn Copper Conductor, size 4/0 AWG	m	-	-	57	(61)	-	(4)	(64)	904	(968)	-	(64)	-	71	100%	0%	-
152	Embedded Copper Grounding Plates	unit	-	-	(1)	(6)	-	(7)	(49)	(5)	(44)	-	(49)	-	(2)	100%	0%	-
153	Overburden Excavation, excluding excavation of Cofferdam 3 - Dry Conditions	m3	-	0	0	-	1	1	12,000	5,093	-	6,910	12,003	0	5	100%	0%	3
154	Tailrace Rock Plug Excavation including access ramp to powerhouse -Dry Conditions	m3	-	0	(0)	(0)	(0)	(1)	(136,000)	(57,160)	(12,878)	(65,961)	(136,000)	2	(3)	100%	0%	0
155	Tailrace Rock Plug - Underwater Excavation	m3	-	(0)	(1)	5	(1)	3	102,000	(21,526)	154,713	(31,187)	102,000	(1)	(2)	100%	0%	0
156	Grouted Rock Bolts Type A	unit	-	0	(58)	(28)	(14)	(100)	(7,000)	(4,054)	(1,983)	(963)	(7,000)	1	(3)	100%	0%	- 0
157	Grouted Rock Bolts Type C	unit	-	-	(87)	(43)	(21)	(150)	(3,000)	(1,733)	(856)	(411)	(3,000)	-	(2)	100%	0%	-
158	Chain Link Wire Mesh - Installation	m2	-	-	(1)	(0)	(0)	(1)	(2,500)	(1,395)	(764)	(341)	(2,500)	-	(2)	100%	0%	0
159	Chain Link Wire Mesh - Removal	m2	-	-	-	-	-	-	-	-	-	-	-	-	-	100%	0%	-
160	Existing Temporary Safety Fence - Removal	m	-	-	(1)	-	(0)	(1)	(1,200)	(865)	-	(335)	(1,200)	-	(2)	100%	0%	-
									<b>(31,666,037)</b>	<b>(20,760,609)</b>	<b>(1,067,892)</b>	<b>(9,837,083)</b>	<b>(31,665,584)</b>	<b>(97,257)</b>	<b>213</b>	<b>-</b>	<b>97,258</b>	<b>1</b>
133ADJ	Roller Compacted Concrete (RCC)			(0)	(73)	(1)	(17)	(91)	(19,110,000)	(15,230,299)	(294,896)	(3,584,805)	(19,110,000)	(95,663)				
134ADJ	Conventional Vibrated Concrete (CVC) (Crest and Flip Bucket)			3	(31)	(14)	(10)	(55)	(610,500)	(344,667)	(160,246)	(105,587)	(610,500)	38,638				
135ADJ	Facing Concrete			(2)	(271)	(5)	(59)	(335)	(2,881,000)	(2,331,126)	(42,622)	(507,252)	(2,881,000)	(16,002)				
136ADJ	GERCC or GEVR - Formed Faces			(2)	(290)	(2)	(68)	(360)	(1,674,000)	(1,350,080)	(8,832)	(315,088)	(1,674,000)	(9,647)				
1ADJ	Mobilization			(11,378)	(964,890)	(454,232)	(2,980,877)	(4,400,000)	(4,400,000)	(964,890)	(454,232)	(2,980,877)	(4,400,000)	(11,378)				
2ADJ	Site Installation			0	(167,233)	(76,379)	(356,388)	(600,000)	(600,000)	(167,233)	(76,379)	(356,388)	(600,000)	0				
3ADJ	Management, Staff, employees and Consultants			-	127,943	63,194	(58,137)	133,000	133,000	127,943	63,194	(58,137)	133,000	-				
4ADJ	Health and Safety, Environmental and Quality Requirements			1	(119,480)	(1,727)	(794)	(122,000)	(122,000)	(119,480)	(1,727)	(794)	(122,000)	1				
5ADJ	Credit, Guarantee and Insurance			-	-	(221,550)	-	(221,550)	(221,550)	-	(221,550)	-	(221,550)	-				
6ADJ	Warranty, per Article 17 of the Agreement			-	-	-	-	-	-	-	-	-	-	-				
7ADJ	Demobilization			-	-	-	(1,103,000)	(1,103,000)	(1,103,000)	-	-	(1,103,000)	(1,103,000)	-				
OTHADJ	Other								(1,076,987)	(380,777)	129,399	(825,156)	(1,076,534)	(3,207)				

Target/Range		Revised Labour Profit		Revised Total Labour Cost		Total Labour Cost w/o LMAX			
86,880	81,880	34,601	41,376	121,481	123,256	100,781	98,256	39.8%	50.5%
91,880	86,880	32,701	39,426	124,581	126,306	106,581	104,256	35.6%	45.4%
96,880	91,880	30,901	37,576	127,781	129,456	112,381	110,256	31.9%	40.9%
101,880	96,880	29,201	35,826	131,081	132,706	118,181	116,256	28.7%	37.0%
106,880	101,880	27,601	34,176	134,481	136,056	123,981	122,256	25.8%	33.5%
111,880	106,880	26,101	32,626	137,981	139,506	129,781	128,256	23.3%	30.5%
116,880	111,880	24,701	31,176	141,581	143,056	135,581	134,256	21.1%	27.9%
121,880	116,880	23,401	29,826	145,281	146,706	141,381	140,256	19.2%	25.5%
126,880	121,880	22,201	28,576	149,081	150,456	147,181	146,256	17.5%	23.4%
131,880	126,880	21,101	27,426	152,981	154,306	152,981	152,256	16.0%	21.6%
131,880	131,880	21,101	26,376	152,981	158,256	152,981	158,256	16.0%	20.0%
131,880	136,880	21,101	27,251	152,981	164,131	152,981	164,256	16.0%	19.9%
136,880	141,880	21,851	27,876	158,731	169,756	158,781	170,256	16.0%	19.6%
141,880	146,880	22,351	28,251	164,231	175,131	164,581	176,256	15.8%	19.2%
146,880	151,880	22,601	28,376	169,481	180,256	170,381	182,256	15.4%	18.7%
151,880	156,880	22,601	28,251	174,481	185,131	176,181	188,256	14.9%	18.0%
156,880	161,880	22,351	27,876	179,231	189,756	181,981	194,256	14.2%	17.2%
161,880	166,880	21,851	27,251	183,731	194,131	187,781	200,256	13.5%	16.3%
166,880	171,880	21,101	26,376	187,981	198,256	193,581	206,256	12.6%	15.3%
171,880	176,880	21,101	26,376	192,981	203,256	199,381	212,256	12.3%	14.9%
176,880	181,880	21,101	26,376	197,981	208,256	205,181	218,256	11.9%	14.5%



LOWER CHURCHIL				SCHEDULE OF PRICE BREAKDOWN								APPENDIX A2.1	
				ISSUED FOR: BID								Rev. B2	
				DATE: 14 - Oct - 2014								BIDDER'S NAME:	
PRICE ITEM	WBS CODE	PRICE ITEM DESCRIPTION		UNIT OF MEASURE	ESTIMATED QUANTITY A	MAN HOURS (AT SITE) PER UNIT	MANPOWER COST/UNIT (\$ CAN) B	MATERIALS COST/UNIT (\$ CAN) C	EQUIPMENT COST/UNIT (\$ CAN) D	OTHERS	PROFIT COST/UNIT (\$ CAN) E	UNIT PRICE   (\$ CAN) F= (B+C+D+E)	TOTAL PRICE (\$ CAN) G= A x F
No	REFERENCE Exhibit 2 - ATT 1	CODE	SUBCODE										
<b>INDIRECT COSTS</b>													
1	2.1	0000.01		Mobilization	LS	1	29,411.76	2,500,000.00		110,000.00	2,000,000.00	714,550.00	5,324,550.00
2	2.2	0000.02		Site Installation	LS	1	194,240.00	16,510,400.00	7,805,000.00	5,498,000.00		4,621,077.00	34,434,477.00
3	2.3	0000.03		Management, Staff, employees and Consultants	LS	1	152,847.06	12,992,000.00		2,617,000.00		2,419,395.00	18,028,395.00
4	2.4	0000.04		Health and Safety, Environmental and Quality Requirements	LS	1	34,411.76	2,925,000.00	505,000.00	1,345,000.00	60,000.00	749,425.00	5,584,425.00
5	2.5	0000.05		Credit, Guarantee and Insurance	LS	1	-		2,800,000.00			434,000.00	3,234,000.00
6	2.6	0000.06		Warranty, per Article 17 of the Agreement	LS	1	-					-	-
7	2.7	0000.07		Demobilization	LS	1	2,941.18	250,000.00		65,000.00	1,100,000.00	219,325.00	1,634,325.00
				<b>SUB-TOTAL INDIRECT COSTS</b>									<b>68,240,172.00</b>
<b>GENERAL</b>													
<b>DEWATERING OF STRUCTURE AREAS</b>													
8	3.1.1	1110.01		Dewatering of Structure Areas	LS	1	5,882.35	500,000.00	220,000.00	670,000.00		215,450.00	1,605,450.00
<b>EXCAVATION OF EXISTING COFFERDAMS</b>													
9	3.2.1	1111.01		Excavation of Existing Embankment cofferdams 1, 2 and 3, and Existing Ramps	m <sup>3</sup>	177,000	0.07	5.96		4.91		1.69	12.56
10	3.2.2	1111.02		Excavation of Downstream section of RCC riverside cofferdam	m <sup>3</sup>	20,000	-	-			21.65	3.36	25.01
<b>PERMANENT ROADS AND PARKING AREA</b>													
11	3.3.1	1112.01		Overburden Excavation	m <sup>3</sup>	8,000	0.10	8.31		6.69		2.33	17.33
12	3.3.2	1112.02		Approved Compactable Material	m <sup>3</sup>	44,000	0.07	6.16		4.95		1.72	12.84
13	3.3.3	1112.03		Granular "B" Material	m <sup>3</sup>	5,800	0.06	4.93	29.13	6.27		6.25	46.59
14	3.3.4	1112.04		Granular "C" Material	m <sup>3</sup>	4,000	0.06	4.90	24.00	6.33		5.46	40.69
15	3.3.5	1112.05		Maintenance Grade 3 material	m <sup>3</sup>	4,500	0.06	5.38	32.25	2.59	4.30	6.90	51.42
16	3.3.6	1112.06		CSP culvert, dia. 900 mm	m	48	0.36	30.21	250.00	6.25		44.40	330.86
17	3.3.7	1112.07		Guide Rails	m	400	-	-	60.00		60.00	18.60	138.60
18	3.3.8	1112.08		Gate Type 1	unit	2	-	-			2,500.00	387.50	2,887.50
<b>ACCESS ROAD TO LAYDOWN AREA C1</b>													
19	3.4.1	1113.01		Approved Compactable Material	m <sup>3</sup>	26,000	-	-				-	-
20	3.4.2	1113.02		Granular "C" Material	m <sup>3</sup>	7,500	-	-				-	-
<b>DITCHES</b>													
21	3.5.1	1114.01		Overburden Excavation	m <sup>3</sup>	2,000	0.07	6.00		9.00		2.33	17.33
22	3.5.2	1114.02		Non-woven Geotextile, min 300 g/m <sup>2</sup>	m <sup>2</sup>	2,500	0.04	3.00	4.00			1.09	8.09
23	3.5.3	1114.03		Rockfill Protection, 100 - 250 mm	m <sup>3</sup>	1,000	0.14	12.00		12.50		3.80	28.30
<b>SLOPE PROTECTION</b>													
24	3.6.1	1115.01		Rockfill Protection, Zone 3E Material	m <sup>3</sup>	2,500	0.20	17.20		20.84		5.90	43.94
		1115.01a		RCC Coarse Aggregate - Produce & Stockpile	TON	1	-	-				-	-
		1115.01b		RCC Fine Aggregate - Produce & Stockpile	TON	1	-	-				-	-
25	3.6.2	1115.02		Non-woven Geotextile, min 530 g/m <sup>2</sup>	m <sup>2</sup>	4,500	0.05	4.00	5.00			1.40	10.40
<b>CHAIN LINK FENCES AND GATES</b>													
26	3.7.1	1116.01		Chain Link Fence and Gates	m	720	-	-			175.00	27.13	202.13
<b>TEMPORARY UPSTREAM BRIDGE OVER SPILLWAY APPROACH CHANNEL</b>													
27	3.8.1	1150.01		Engineering of Temporary Upstream Bridge	LS	1	-	-		7,000,000.00		1,085,000.00	8,085,000.00
28	3.8.2	1150.02		Supply of Temporary Upstream Bridge	LS	1	-	-				-	-
29	3.8.3	1150.03		Installation, removal and handover of Temporary Upstream Bridge	LS	1	-	-				-	-
				<b>SUB-TOTAL GENERAL</b>									<b>14,243,218.45</b>

15.5%  
85.00

175,000.00  
70,000.00  
11,500.00



LOWER CHURCHIL				SCHEDULE OF PRICE BREAKDOWN								APPENDIX A2.1			
				ISSUED FOR: BID				DATE: 14 - Oct - 2014				BIDDER'S NAME:			
												Rev. B2			
PRICE ITEM	WBS CODE	SUBCODE		PRICE ITEM DESCRIPTION	UNIT OF MEASURE	ESTIMATED QUANTITY A	MAN HOURS (AT SITE) PER UNIT	MANPOWER COST/UNIT (\$ CAN) B	MATERIALS COST/UNIT (\$ CAN) C	EQUIPMENT COST/UNIT (\$ CAN) D	OTHERS	PROFIT COST/UNIT (\$ CAN) E	UNIT PRICE (\$ CAN) F= (B+C+D+E)	TOTAL PRICE (\$ CAN) G= A x F	
No	REFERENCE Exhibit 2 - ATT 1	CODE													
<b>4 2300</b>				<b>DAMS AND COFFERDAMS - GENERAL</b>											
<b>4.1 2340 2341</b>				<b>UPSTREAM COFFERDAM</b>											
				<b>CIVIL WORK</b>											
				<b>Excavation</b>											
30	4.1.1		2341.01	Overburden excavation	m <sup>3</sup>	2,500	0.07	6.00		12.00		2.79	20.79	51,975.00	1,000.00
				<b>Foundation Preparation in dry condition</b>											
31	4.1.2		2341.02	Foundation Cleaning (water/air jets and Vacuum trucks)	m <sup>2</sup>	1,200	0.82	69.61	0.67	19.25		13.88	103.40	124,081.65	
32	4.1.3		2341.03	Rock Excavation including dental excavation and Scaling	m <sup>3</sup>	500	0.24	20.00	20.00	30.00		10.85	80.85	40,425.00	
33	4.1.4		2341.04	Dental Concrete	m <sup>3</sup>	800	2.02	171.45		84.00	243.00	77.26	575.71	460,567.80	200.00
34	4.1.5		2341.05	Slush Grout	m <sup>2</sup>	1,200	0.04	3.00	25.58	2.43		4.81	35.81	42,972.93	1,000.00
35	4.1.6		2341.06	Dry Pack	m <sup>3</sup>	6	1.96	166.67		50.00	550.00	118.83	885.50	5,313.00	
				<b>Embankment Materials</b>											
36	4.1.7		2341.07	Compacted Till - Zones 1 and 1C Materials	m <sup>3</sup>	19,000	0.06	5.32		13.74		2.96	22.02	418,414.17	19,100.00
37	4.1.8		2341.08	Dumped Till - Zone 1A Material	m <sup>3</sup>	134,000	0.05	4.25		10.96		2.36	17.57	2,354,513.92	133,600.00
38	4.1.9		2341.09	Compacted Granular - Zone 2A Material	m <sup>3</sup>	20,700	0.06	4.90		12.53	15.98	5.18	38.60	798,988.58	
39	4.1.10		2341.10	Compacted Granular - Zone 2C Material	m <sup>3</sup>	8,700	0.06	4.90		12.53	10.00	4.25	31.68	275,588.78	
40	4.1.11		2341.11	Dumped Granular - Zone 2E Material	m <sup>3</sup>	26,300	0.05	3.90		12.15	10.00	4.04	30.09	791,273.18	
41	4.1.12		2341.12	Dumped Rockfill- Zone 3 Material	m <sup>3</sup>	143,000	0.10	8.20		6.92		2.34	17.47	2,497,641.30	
42	4.1.13		2341.13	Dumped Large Blocks (300-1000 mm) - Zone 3 Class 1	m <sup>3</sup>	37,000	0.13	10.75		12.32		3.58	26.64	985,809.83	
43	4.1.14		2341.14	Dumped Large Blocks (≥1000 mm) - Zone 3 Class 2	m <sup>3</sup>	65,000	0.14	11.88		13.61		3.95	29.44	1,913,462.40	64,400.00
44	4.1.15		2341.15	Dumped Large Blocks (≥1300 mm) - Zone 3 Class 3	m <sup>3</sup>	15,000	0.15	12.50		14.32		4.16	30.98	464,656.50	
45	4.1.16		2341.16	Compacted Crushed Stone - Zone 3A Material	m <sup>3</sup>	10,950	0.13	11.19		8.68	20.00	6.18	46.04	504,157.50	
46	4.1.17		2341.17	Compacted Rockfill - Zone 3C Material	m <sup>3</sup>	33,740	0.12	10.25		8.56		2.91	21.72	732,783.98	
47	4.1.18		2341.18	Compacted Rockfill - Zone 3D Material	m <sup>3</sup>	33,900	0.08	6.47		5.35		1.83	13.65	462,825.83	
48	4.1.19		2341.19	Dumped Crushed Stone- Zone 3F Material	m <sup>3</sup>	21,000	0.12	10.21		8.22	20.00	5.96	44.39	932,131.20	
				<b>Investigation for Jet Grouted Cut-off Wall and Bedrock Grouting</b>											
49	4.1.20		2341.20	Percussion Drill Holes in embankments, river sediments and bedrock	m	1,000	0.33	28.00	14.00	22.00		9.92	73.92	73,920.00	
50	4.1.21		2341.21	Verification Core Drilling in jet grouting cut-off wall and bedrock	m	200	-					-	-	-	
51	4.1.22		2341.22	Core Diamond Drill Rig in Standby	hour	140	-				500.00	77.50	577.50	80,850.00	
				<b>Jet Grouting cut off wall</b>											
52	4.1.23		2341.23	Mobilization and demobilization	LS	1	-					-	-	-	
53	4.1.24		2341.24	Drilling Holes for Jet Grouting in embankment, river sediments and bedrock	m	9,600	-				15.00	2.33	17.33	166,320.00	
54	4.1.25		2341.25	Jet Grouted Cut-off wall	m <sup>2</sup>	2,800	-				1,700.00	263.50	1,963.50	5,497,800.00	
				<b>Bedrock Grouting beneath the Jet Grouted Cut-off Wall, if required</b>											
55	4.1.26		2341.26	Drilling Holes for Grouting in embankment , jet grouting cut-off wall and bedrock, if required	m	1,300	0.42	35.45	6.72	24.71		10.37	77.25	100,423.32	1,000.00
56	4.1.27		2341.27	Dry cement incorporated in the grout, if required	kg	11,000	0.01	0.50		1.00		0.23	1.73	19,057.50	50,000.00
57	4.1.28		2341.28	Grouting - Successful connections, if required	unit	60	4.20	357.00	175.00			82.46	614.46	36,867.60	
				<b>SUB-TOTAL UPSTREAM COFFERDAM</b>											
				<b>19,832,820.95</b>											
<b>4.2 2340 2342</b>				<b>DOWNSTREAM COFFERDAM</b>											
				<b>CIVIL WORK</b>											
				<b>Excavation</b>											
58	4.2.1		2342.01	Overburden excavation	m <sup>3</sup>	500	0.11	9.00		7.10		2.50	18.60	9,297.75	
				<b>Foundation Preparation</b>											
59	4.2.2		2342.02	Foundation cleaning (water/ait jets and Vacuum trucks)	m <sup>2</sup>	1,250	0.82	70.08	0.64	19.34		13.96	104.01	130,018.35	
60	4.2.3		2342.03	Rock excavation including dental excavation and scaling	m <sup>3</sup>	500	0.24	20.00	20.00	30.00		10.85	80.85	40,425.00	400.00
61	4.2.4		2342.04	Dental Concrete	m <sup>3</sup>	200	1.93	163.83		71.20	232.20	72.42	539.65	107,930.90	150.00
62	4.2.5		2342.05	Slush Grout	m <sup>2</sup>	1,250	0.03	2.93	25.24	2.27		4.72	35.15	43,941.98	
63	4.2.6		2342.06	Dry Pack	m <sup>3</sup>	6	0.59	50.00		50.00	550.00	100.75	750.75	4,504.50	
				<b>Embankment Materials</b>											
64	4.2.7		2342.07	Compacted Till - Zones 1 and 1C	m <sup>3</sup>	2,000	0.06	5.42		14.01		3.01	22.44	44,883.30	
65	4.2.8		2342.08	Compacted Granular - Zone 2C	m <sup>3</sup>	2,500	0.05	4.40		11.28	14.35	4.65	34.68	86,705.85	2,250.00
66	4.2.9		2342.09	Compacted Rockfill - Zone 3C	m <sup>3</sup>	4,600	0.12	10.26		8.56		2.92	21.74	99,991.83	4,550.00
67	4.2.10		2342.10	Compacted Rockfill - Zone 3D	m <sup>3</sup>	2,000	0.08	6.43		5.32		1.82	13.57	27,133.62	1,950.00
				<b>SUB-TOTAL DOWNSTREAM COFFERDAM</b>											
				<b>594,833.07</b>											

LOWER CHURCHIL				SCHEDULE OF PRICE BREAKDOWN								APPENDIX A2.1		
												Rev. B2		
ISSUED FOR: BID				DATE: 14 - Oct - 2014				BIDDER'S NAME:						
PRICE ITEM	WBS CODE	PRICE ITEM DESCRIPTION		UNIT OF MEASURE	ESTIMATED QUANTITY A	MAN HOURS (AT SITE) PER UNIT	MANPOWER COST/UNIT (\$ CAN) B	MATERIALS COST/UNIT (\$ CAN) C	EQUIPMENT COST/UNIT (\$ CAN) D	OTHERS	PROFIT COST/UNIT (\$ CAN) E	UNIT PRICE   (\$ CAN) F= (B+C+D+E)	TOTAL PRICE (\$ CAN) G= A x F	
No	REFERENCE Exhibit 2 - ATT 1	CODE	SUBCODE											
<b>4.3 2340 2343 INTAKE CHANNEL COFFERDAM</b>														
<b>CIVIL WORK</b>														
<b>Excavation</b>														
68	4.3.1		2343.01	Overburden excavation	m <sup>3</sup>	8,800	0.05	4.64		2.02	1.69	1.29	9.65	84,904.05
<b>Foundation Preparation</b>														
69	4.3.2		2343.02	Foundation cleaning (water/ait jets and Vacuum trucks)	m <sup>2</sup>	1,700	0.82	69.60	0.63	19.23		13.87	103.32	175,652.40
70	4.3.3		2343.03	Rock excavation including dental excavation and scaling	m <sup>3</sup>	700	0.23	19.59	19.75	29.99		10.75	80.08	56,057.93
71	4.3.4		2343.04	Dental Concrete	m <sup>3</sup>	250	1.94	164.60		75.18	233.28	73.32	546.38	136,596.08
72	4.3.5		2343.05	Slush Grout	m <sup>2</sup>	1,700	0.03	2.91	25.07	2.25		4.69	34.92	59,367.00
73	4.3.6		2343.06	Dry Pack	m <sup>3</sup>	9	0.65	55.56		33.33	500.00	91.28	680.17	6,121.50
<b>Embankment Materials</b>														
74	4.3.7		2343.07	Compacted Till - Zones 1 and 1C	m <sup>3</sup>	6,300	0.06	5.38		13.89		2.99	22.25	140,193.90
75	4.3.8		2343.08	Compacted Granular - Zone 2C	m <sup>3</sup>	4,900	0.06	4.99		12.71	16.27	5.26	39.23	192,238.20
76	4.3.9		2343.09	Compacted Rockfill - Zone 3C	m <sup>3</sup>	5,200	0.12	10.20		8.52		2.90	21.62	112,398.83
77	4.3.10		2343.10	Compacted Rockfill - Zone 3D	m <sup>3</sup>	1,400	0.08	6.71		5.55		1.90	14.17	19,831.35
<b>SUB-TOTAL INTAKE CHANNEL COFFERDAM</b>				<b>983,361.23</b>										
<b>4.4 2330 SOUTH DAM</b>														
<b>CIVIL WORK</b>														
<b>Excavation</b>														
78	4.4.1		2330.01	Overburden excavation	m <sup>3</sup>	94,000	0.05	4.60		3.68		1.28	9.57	899,364.12
<b>Foundation Preparation</b>														
79	4.4.2		2330.02	Foundation cleaning (water/ait jets and Vacuum trucks)	m <sup>2</sup>	3,400	0.82	69.60	0.63	19.22		13.86	103.32	351,275.93
80	4.4.3		2330.03	Rock excavation including dental excavation and scaling	m <sup>3</sup>	2,000	0.23	19.59	19.75	29.99		10.74	80.06	160,129.20
81	4.4.4		2330.04	Dental Concrete	m <sup>3</sup>	1,200	1.12	95.25		41.39	135.00	42.10	313.74	376,489.58
82	4.4.5		2330.05	Slush Grout	m <sup>2</sup>	3,400	0.03	2.91	25.07	2.25		4.69	34.92	118,734.00
83	4.4.6		2330.06	Dry Pack	m <sup>3</sup>	20	0.59	50.00		30.00	495.00	89.13	664.13	13,282.50
84	4.4.7		2330.07	Drilling Holes for Grouting	m	1,200	0.22	18.47	3.50	12.87	150.00	28.65	213.49	256,190.55
85	4.4.8		2330.08	Dry cement incorporated in the grout	kg	42,000	0.01	0.50	1.00			0.23	1.73	72,765.00
86	4.4.9		2330.09	Cored Drill Check Holes	m	30	-		400.00			62.00	462.00	13,860.00
87	4.4.10		2330.10	Percussion Drilling Check holes	m	60	-		200.00			31.00	231.00	13,860.00
88	4.4.11		2330.11	Grouting - Successful connections	unit	250	4.03	342.72	22.32	165.82		82.28	613.14	153,285.83
89	4.4.12		2330.12	Water pressure test (Lugeon - 5 Stages)	hour	8	-			500.00		77.50	577.50	4,620.00
90	4.4.13		2330.13	Water test - Successful connections	unit	18	4.02	341.67	5.56	161.11		78.79	587.13	10,568.25
91	4.4.14		2330.14	Uplift gauges	m	20	-			500.00		77.50	577.50	11,560.00
92	4.4.15		2330.15	Thermistors (measure rock temperature in grout holes)	unit	1	-			4000		620.00	4,620.00	4,620.00
<b>Embankment Materials</b>														
93	4.4.16		2330.16	Compacted Till - Zones 1 and 1C	m <sup>3</sup>	26,000	0.06	5.36		13.83		2.97	22.16	576,285.20
94	4.4.17		2330.17	Compacted Granular - Zone 2A	m <sup>3</sup>	28,000	0.06	4.89		12.46	15.94	5.16	38.45	1,076,518.40
95	4.4.18		2330.18	Compacted Crushed Stone - Zone 3A	m <sup>3</sup>	12,000	0.06	4.88		6.25	29.26	6.26	46.64	559,693.20
96	4.4.19		2330.19	Compacted Crushed Stone - Zone 3B	m <sup>3</sup>	16,000	0.07	6.19		4.99	15.42	4.12	30.71	491,414.49
97	4.4.20		2330.20	Compacted Rockfill - Zone 3C	m <sup>3</sup>	21,000	0.12	10.25		8.56		2.91	21.72	456,076.02
98	4.4.21		2330.21	Compacted Rockfill - Zone 3D	m <sup>3</sup>	46,000	0.08	6.43		5.32		1.82	13.58	624,517.51
99	4.4.22		2330.22	Riprap - Zone 4	m <sup>3</sup>	6,000	0.21	17.92		20.07		5.89	43.88	263,273.01
100	4.4.23		2330.23	Compacted Crushed Stone - Zone 5	m <sup>3</sup>	310	0.06	5.05		6.81	25.03	5.72	42.60	13,207.43
101	4.4.24		2330.24	Jersey Barrier	m	600	-			72.17		11.19	83.35	50,011.50
<b>Geotechnical Instrumentation</b>														
102	4.4.25		2330.25	V-Notch Weirs, excluding Shelters	unit	2	-			2,000.00		310.00	2,310.00	4,620.00
103	4.4.26		2330.26	Shelters for V-Notch Weirs	unit	2	-			1,000.00		155.00	1,155.00	2,310.00
104	4.4.27		2330.27	Survey Monuments at South Dam Crest	unit	3	-			500.00		77.50	577.50	1,732.50
<b>SUB-TOTAL SOUTH DAM</b>				<b>6,569,281.70</b>										

15.5%  
85.00

93,400.00

1.00

25,300.00

25,000.00

10,500.00

15,650.00

20,700.00

48,700.00

18500 more in JM

LOWER CHURCHIL				SCHEDULE OF PRICE BREAKDOWN								APPENDIX A2.1			
				ISSUED FOR: BID				DATE: 14 - Oct - 2014				BIDDER'S NAME:			
												Rev. B2			
PRICE ITEM	WBS CODE	PRICE ITEM DESCRIPTION		UNIT OF MEASURE	ESTIMATED QUANTITY A	MAN HOURS (AT SITE) PER UNIT	MANPOWER COST/UNIT (\$ CAN) B	MATERIALS COST/UNIT (\$ CAN) C	EQUIPMENT COST/UNIT (\$ CAN) D	OTHERS	PROFIT COST/UNIT (\$ CAN) E	UNIT PRICE   (\$ CAN) F= (B+C+D+E)	TOTAL PRICE (\$ CAN) G= A x F		
No	REFERENCE Exhibit 2 - ATT 1	CODE	SUBCODE												
<b>4.5</b>				<b>2320 NORTH DAM</b>											
				<b>CIVIL WORK</b>											
				<b>Clearing</b>											
105	4.5.1	2320.01		Clearing of the North Abutment	Ha	3	-			28,666.67	4,443.33	33,110.00	99,330.00		
				<b>Excavation</b>											
106	4.5.2	2320.02		Overburden Excavation	m <sup>3</sup>	72,000	0.07	6.14		4.93	1.72	12.79	920,997.00		
				<b>Foundation Preparation</b>											
107	4.5.3	2320.03		Foundation Cleaning (water/air jets and vacuum)	m <sup>2</sup>	13,500	0.81	69.24	0.63	19.12	13.79	102.78	1,387,593.90		
108	4.5.4	2320.04		Rock Excavation including Dental Excavation and Scaling	m <sup>3</sup>	6,000	0.23	19.59	19.75	30.00	10.75	80.08	480,480.00		
109	4.5.5	2320.05		Dental Concrete	m <sup>3</sup>	4,000	1.92	163.45		71.02	231.66	72.25	2,153,519.45		
110	4.5.6	2320.06		Slush Grout	m <sup>2</sup>	13,500	0.03	2.91	25.07	2.25	4.69	34.92	471,378.60		
111	4.5.7	2320.07		Dry Pack	m <sup>3</sup>	70	0.59	50.00		42.86	495.00	91.12	47,528.25		
112	4.5.8	2320.08		Drilling Holes in RCC and Bedrock for Grouting	m	4,200	0.25	21.11	4.00	14.71	157.14	30.53	955,462.20		
113	4.5.9	2320.09		Grouting - Successful Connections	unit	720	4.03	342.72	22.32	165.83	82.28	613.15	441,469.88		
114	4.5.10	2320.10		Dry Cement incorporated in the grout	kg	126,000	0.01	0.56	1.00		0.24	1.80	226,380.00		
115	4.5.11	2320.11		Cored Drill Check Holes	m	60	-			400.00	62.00	462.00	27,720.00		
116	4.5.12	2320.12		Percussion Drilling Check Holes	m	120	-			200.00	31.00	231.00	27,720.00		
117	4.5.13	2320.13		Water pressure test (lugeon - 5 Stages)	hour	15	-			500.00	77.50	577.50	8,662.50		
118	4.5.14	2320.14		Water Pressure Test - Successful connections	unit	36	4.02	341.67	5.56	161.11	78.79	587.13	21,136.50		
119	4.5.15	2320.15		Uplift gauges	m	60	-			33.33	5.17	38.50	2,310.00		
120	4.5.16	2320.16		Thermistor (measure temperature in grout holes)	unit	1	-			4,000.00	620.00	4,620.00	4,620.00		
				<b>Drainage Holes</b>											
121	4.5.17	2320.17		Drilling Holes for Drainage in Foundation from Drainage Gallery, Ø76 mm	m	3,200	0.65	55.41	10.50	38.61	16.20	120.73	386,324.40		
122	4.5.18	2320.18		PVC Caps for Drainage Holes	unit	125	1.18	100.00	150.00		38.75	288.75	36,093.75		
123	4.5.19	2320.19		Drilling Holes Upward for Drainage from Drainage Gallery into RCC, Ø76 mm	m	3,200	1.30	110.83	21.00	77.23	32.40	241.45	772,648.80		
				<b>Instrumentation</b>											
124	4.5.20	2320.20		Drilling Holes for piezometers	m	100	-				-	-	-		
125	4.5.21	2320.21		Vibrating Wire and Standpipe Piezometers TYPE - 1, excluding Cables	unit	8	5.88	500.00		4,000.00	697.50	5,197.50	41,580.00		
126	4.5.22	2320.22		Vibrating Wire and Standpipe Piezometers TYPE - 2, excluding Cables	unit	2	-				-	-	-		
127	4.5.23	2320.23		Instrument Cable including PVC Conduits and Pull Boxes	m	2,700	-			10.00	1.55	11.55	31,185.00		
128	4.5.24	2320.24		Thermistors Cable in RCC	unit	8	-			5,375.00	833.13	6,208.13	49,665.00		
129	4.5.25	2320.25		V-notch Weirs	unit	4	-	2,000.00			310.00	2,310.00	9,240.00		
130	4.5.26	2320.26		Vibrating Wire Weir Monitors.	unit	4	-	2,000.00			310.00	2,310.00	9,240.00		
131	4.5.27	2320.27		Data logger, Terminal Box, Barometer Box including Grounding	LS	1	-			10,000.00	1,550.00	11,550.00	11,550.00		
132	4.5.28	2320.28		Crest Survey Monuments	unit	4	1.18	100		500.00	93.00	693.00	2,772.00		
				<b>Concrete and RCC operations</b>											
133	4.5.29	2320.29		Roller Compacted Concrete (RCC)	m <sup>3</sup>	210,000	0.28	24.10	112.11	19.27	28.30	210.85	44,279,310.60		
134	4.5.30	2320.30		Conventional Vibrated Concrete (CVC) (Crest and Flip Bucket)	m <sup>3</sup>	11,100	4.40	374.09	415.58	114.08	140.08	1,043.83	11,586,503.62		
135	4.5.31	2320.31		Facing Concrete	m <sup>3</sup>	8,600	4.40	374.09	415.58	114.08	140.08	1,043.83	8,976,930.73		
136	4.5.32	2320.32		GERCC or GEVR - Formed Faces	m <sup>3</sup>	4,650	0.60	51.28	200.00	28.97	43.44	323.70	1,505,187.12		
137	4.5.33	2320.33		Conventional Vibrated Concrete (North Abutment Crest Surface and Training Wall)	m <sup>3</sup>	270	4.40	374.09	415.58	114.08	140.08	1,043.83	281,833.87		
138	4.5.34	2320.34		Increase or decrease in quantity of cement - Bid Mix (rate only)	Kg	1	-				-	-	-		
139	4.5.35	2320.35		Increase or decrease in quantity of flyash - Bid Mix (rate only)	Kg	1	-				-	-	-		
140	4.5.36	2320.36		Increase or decrease in quantity of cement - Source B (rate only)	Kg	1	-				-	-	-		
141	4.5.37	2320.37		Increase or decrease in quantity of flyash - Source B (rate only)	Kg	1	-				-	-	-		
142	4.5.38	2320.38		Air-entraining Admixture	litre	315,000	-			2.22	0.34	2.57	808,500.00		
143	4.5.39	2320.39		Retarder Admixture	litre	336,000	-			1.79	0.28	2.06	693,000.00		
144	4.5.40	2320.40		Precast Concrete	m <sup>3</sup>	1,150	1.18	100.00	50.00	100.00	800.00	162.75	1,394,662.50		
145	4.5.41	2320.41		Gallery Floor CVC Concrete	m <sup>3</sup>	275	4.71	400.00	550.00	171.60	173.85	1,295.45	356,248.20		
146	4.5.42	2320.42		Steel Reinforcement	kg	500,000	-			3.00	0.47	3.47	1,732,500.00		
147	4.5.43	2320.43		Steel Guardrails	kg	5,200	-			148.85	23.07	171.92	893,970.00		
148	4.5.44	2320.44		Waterstop	m	1,350	0.75	63.98	38.78		15.93	118.68	160,220.89		
<b>4.6</b>				<b>2370 NORTH DAM - Auxiliary Services</b>											
				<b>ELECTRICAL WORK</b>											
149	4.6.1	2370.01		Exothermic Connections.	unit	20	-			500.00	77.50	577.50	11,550.00		
150	4.6.2	2370.02		Bare, Stranded, Medium Hard-Drawn Copper Conductor, size 500 kcmil	m	815	-			125.00	19.38	144.38	117,665.63		
151	4.6.3	2370.03		Bare, Stranded, Medium Hard-Drawn Copper Conductor, size 4/0 AWG	m	16	-			100.00	15.50	115.50	1,848.00		
152	4.6.4	2370.04		Embedded Copper Grounding Plates	unit	7	-			1,000.00	155.00	1,155.00	8,085.00		
				<b>SUB-TOTAL NORTH DAM</b>											
														<b>81,434,623.38</b>	

15.5%

85.00

70,000.00

9.00

2,200.00

3.00

206,250.00

12,500.00

10,700.00

3,900.00

230.00

360.00

250.00

5,200.00

980.00

LOWER CHURCHIL				SCHEDULE OF PRICE BREAKDOWN								APPENDIX A2.1		
												Rev. B2		
ISSUED FOR: BID				DATE: 14 - Oct - 2014				BIDDER'S NAME:				15.5%		
												85.00		
PRICE ITEM	WBS CODE	PRICE ITEM DESCRIPTION		UNIT OF MEASURE	ESTIMATED QUANTITY A	MAN HOURS (AT SITE) PER UNIT	MANPOWER COST/UNIT (\$ CAN) B	MATERIALS COST/UNIT (\$ CAN) C	EQUIPMENT COST/UNIT (\$ CAN) D	OTHERS	PROFIT COST/UNIT (\$ CAN) E	UNIT PRICE (\$ CAN) F= (B+C+D+E)	TOTAL PRICE (\$ CAN) G= A x F	
No	REFERENCE Exhibit 2 - ATT 1	CODE	SUBCODE											
<b>5 3100</b>				<b>Powerhouse Channels</b>										
5.1				3120.00 Tailrace										
				<b>CIVIL WORK</b>										
				<b>Tailrace Rock Plug - Overburden Excavation</b>										
153	5.1.1		3120.01	Overburden Excavation, excluding excavation of Cofferdam 3 - Dry Conditions	m <sup>3</sup>	12,000	0.07	6.15		4.94	1.72	12.80	153,574.58	
				<b>Tailrace Rock Plug - Rock Excavation</b>										
154	5.1.2		3120.02	Tailrace Rock Plug Excavation including access ramp to powerhouse -Dry Conditions	m <sup>3</sup>	170,000	0.10	8.60	5.94	8.26	3.53	26.33	4,476,739.58	
155	5.1.3		3120.03	Tailrace Rock Plug - Underwater Excavation	m <sup>3</sup>	34,000	0.34	28.93	22.50	32.15	12.96	96.54	3,282,441.86	
				<b>Tailrace Rock Plug - Stabilization and Rock Surface Protection</b>										
156	5.1.4		3120.04	Grouted Rock Bolts Type A	unit	70	2.44	207.43	342.86	109.71	102.30	762.30	53,361.00	
157	5.1.5		3120.05	Grouted Rock Bolts Type C	unit	20	3.06	260.00	455.00	145.00	133.30	993.30	19,866.00	
158	5.1.6		3120.06	Chain Link Wire Mesh - Installation	m <sup>2</sup>	2,500	0.51	43.01	10.00	17.12	10.87	81.00	202,494.60	
159	5.1.7		3120.07	Chain Link Wire Mesh - Removal	m <sup>2</sup>	20,300	0.48	40.98		16.31	8.88	66.16	1,343,084.14	
160	5.1.8		3120.08	Existing Temporary Safety Fence - Removal	m	1,200	-			14.42	2.23	16.65	19,981.50	
				<b>SUB-TOTAL TAILRACE</b>										
				<b>9,551,543.25</b>										
<b>6 1100</b>				<b>Borrow Areas</b>										
6.1				1117.00 Borrowed Construction Material										
161	6.1.1		3120.01	Overhaul of Borrowed Construction Material (rate only)	m3/km	1	-	0.49	0.25	0.42	-	0.08	1.23	
ROW A	CALCULATED TOTAL OF LUMP SUM												0.00	0.00

NOTES													
<b>Note 1</b> : If there has been an error in the calculation to establish the total of Column G (Total Price) or Column F (UNIT PRICE), then the figures of column A (Estimated Quantity of Units), column B (Man Hours), column C (Manpower), column D (Equipment) and column E (Profits) will prevail.													
<b>Note 2</b> : This Document is provided to the bidders in Native Excel File format. It is the bidders responsibility to verify cell formats and formulas.													
<b>Note 3</b> : Bidders shall not include any HST/GST from any source (whether from Bidder, subcontractor, vendors or suppliers) in the unit and lump sum prices in this Schedule of Price Breakdown. Bidders shall claim input tax credits on taxable supplies received from vendors, suppliers and subcontractors and thereof Bidders shall exclude HST/GST payable to the vendors, suppliers and subcontractors from the unit and lump sum prices in the Schedule. Bidders shall exclude HST/GST on the total listed in Row A.													

FOR THE LOWER CHURCHILL PROJECT - MUSKRAT FALLS													
This Appendix forms part of the Proposal submitted by:													
Name of Bidder: ASTALDI CANADA INC.													
Request For Proposal, Package No: CH0009													
Signature:													
Date of Proposal: 20-10-2014													





Price Item	Description	Unit of Measure	Qty	Manhours at site (per unit)	Manpower Cost/Unit	Materials Cost/Unit	Equipment Cost/Unit	Others	Profit cost/Unit	Unit Price	Total Price	Labour Cost	Materials Cost	Equipment Cost	Other Cost	Profit	Total Cost	Total Hours	Labour Rate	Union	Non-Union	Category	
153	Overburden Excavation, excluding excavation of Cofferdam 3 - Dry Tailrace Rock Plug Excavation	m3	12,000.00	0.07	6.15	-	4.94	-	1.72	12.80	153,575	73,745	-	59,220	-	20,610	153,575	868	85.00	100%	0%	-	TRW
154	including access ramp to	m3	170,000.00	0.10	8.60	5.94	8.26	-	3.53	26.33	4,476,740	1,462,050	1,009,290	1,404,625	-	600,775	4,476,740	17,201	85.00	100%	0%	-	TRW
155	Tailrace Rock Plug - Underwater	m3	34,000.00	0.34	28.93	22.50	32.15	-	12.96	96.54	3,282,442	983,733	765,136	1,093,072	-	440,501	3,282,442	11,573	85.00	100%	0%	-	TRW
156	Grouted Rock Bolts Type A	unit	70.00	2.44	207.43	342.86	109.71	-	102.30	762.30	53,361	14,520	24,000	7,680	-	7,161	53,361	171	85.00	100%	0%	-	TRW
157	Grouted Rock Bolts Type C	unit	20.00	3.06	260.00	455.00	145.00	-	133.30	993.30	19,866	5,200	9,100	2,900	-	2,666	19,866	61	85.00	100%	0%	-	TRW
158	Chain Link Wire Mesh - Installation	m2	2,500.00	0.51	43.01	10.00	17.12	-	10.87	81.00	202,495	107,520	25,000	42,800	-	27,175	202,495	1,265	85.00	100%	0%	-	TRW
159	Chain Link Wire Mesh - Removal	m2	20,300.00	0.48	40.98	-	16.31	-	8.88	66.16	1,343,084	831,805	-	331,039	-	180,241	1,343,084	9,786	85.00	100%	0%	-	TRW
160	Existing Temporary Safety Fence -	m	1,200.00	-	-	-	-	14.42	2.23	16.65	19,982	-	-	-	17,300	2,682	19,982	81	-	100%	0%	-	TRW
											<b>201,449,854</b>	<b>64,237,237</b>	<b>47,811,439</b>	<b>31,200,684</b>	<b>31,175,599</b>	<b>27,035,868</b>	<b>201,460,827</b>	<b>902,441</b>	<b>71.18</b>	<b>740,884</b>	<b>161,557</b>		
	IND		7														68,240,172						
	GEN		310471														6,158,218						
	TB		3														8,085,000						
	USCD		600597														19,832,821						
	DSCD		14806														594,833						
	ICD		30959														983,361						
	SD		303524														6,580,254						
	ND		1644098														81,434,623						
	TRW		240090														9,551,543						











Appendix A2.7  
 Estimated Trade Person-Hour Schedule  
 Package Number: CH0009

**ESTIMATED TRADE PERSON-HOUR SCHEDULE**

Trade Type	Trade Classification	Regular Time Person-Hours	Overtime (1.5x) Person-Hours	Overtime (2.0x) Person-Hours	Second Shift Person-Hours	Third Shift Person-Hours	Total Person-Hours
Carpenters	Working Foreperson	11,172.33	2,744.08	5,684.17	13,067.05		32,667.64
	JourneyPerson, Carpenter, Welder, Scaffolder	38,934.57	9,562.88	19,808.82	45,537.51		113,843.78
	Apprentice - 1st	25,061.72	6,155.51	12,750.70	29,311.95		73,279.88
	Apprentice - 2nd	273.60	67.20	139.20	320.00		800.00
	Apprentice - 3rd	18,888.54	4,639.29	9,609.96	22,091.86		55,229.66
Electricians	General Foreperson	5,484.65	1,347.11	2,790.44	6,414.80		16,037.00
	Working Foreperson	1,233.03	302.85	627.33	1,442.14		3,605.36
	Journeyperson	5,449.14	1,338.39	2,772.37	6,373.26		15,933.16
	Apprentice - 3rd year	3,254.50	799.35	1,655.80	3,806.43		9,516.08
Labourers	Class 1	60,199.16	14,785.76	30,627.64	70,408.38		176,020.94
	Class 2	17,970.97	4,413.92	9,143.12	21,018.68		52,546.69
	Class 3	16,134.61	3,962.89	8,208.84	18,870.89		47,177.22
	Class 11	24,973.35	6,133.81	12,705.74	29,208.60		73,021.50
	Foreperson	543.78	133.56	276.66	636.00		1,590.00
Ironworkers - Structural	Journeyperson	5,027.48	1,234.82	2,557.84	5,880.09		14,700.23
	Apprentice - 1st 1,000 hrs	984.96	241.92	501.12	1,152.00		2,880.00
	Apprentice - 3rd 1,000 hrs	984.96	241.92	501.12	1,152.00		2,880.00
	Foreperson	715.46	175.73	364.01	836.80		2,092.00
Ironworkers - Rodman	Journeyperson	2,845.44	698.88	1,447.68	3,328.00		8,320.00
	Apprentice - 1st 1,000 hrs	1,422.72	349.44	723.84	1,664.00		4,160.00
	Apprentice - 3rd 1,000 hrs	1,422.72	349.44	723.84	1,664.00		4,160.00
	Operating Engineer - Group 1	85,203.81	20,927.25	43,349.31	99,653.58		249,133.95
Operating Engineers	Operating Engineer - Group 2	27,343.24	6,715.88	13,911.47	31,980.40		79,951.00
	Operating Engineer - Group 3	10,525.12	2,585.12	5,354.88	12,310.08		30,775.19
	Operating Engineer - Group 4	27,206.44	6,682.28	13,841.87	31,820.40		79,551.00
	Operating Engineer - Group 5	25,793.64	6,335.28	13,123.08	30,168.00		75,420.00
	Clerical - Group 1	17,935.05	4,405.10	9,124.85	-		31,465.00
	Clerical - Group 2	38,647.14	9,492.28	19,662.58	-		67,802.00
	Clerical - Group 3	30,778.86	7,559.72	15,659.42	-		53,998.00



Appendix A2.7  
 Estimated Trade Person-Hour Schedule  
 Package Number: CH0009

**ESTIMATED TRADE PERSON-HOUR SCHEDULE**

Trade Type	Trade Classification	Regular Time Person-Hours	Overtime (1.5x) Person-Hours	Overtime (2.0x) Person-Hours	Second Shift Person-Hours	Third Shift Person-Hours	Total Person-Hours
Painters and Allied Trades	Drywall Taper, Spray Painter, Sand Blaster, Vinyl Hangers, Fireproofers	-	-	-	-		-
	Apprentice - 2nd year	8,876.83	2,180.27	4,516.28	10,382.26		25,955.64
Teamsters	Group 1 (Single Axle)	59,386.82	14,586.24	30,214.35	69,458.27		173,645.68
	Group 2 (Dual Axle/Tandem Axle)	22,751.90	5,588.19	11,575.53	26,610.41		66,526.03

Trade	Classification	LOA Days	Travel (kms)	RT Hrs	OT1 Hrs	OT2 Hrs	2nd Shift Hrs	3rd Shift Hrs	Travel Time Hrs	Total Hours	Total 1st Shift Hrs	% 1st Shift RT	% 1st Shift Ot1	% 1st Shift Ot2
Boilermakers	General Foreperson	7	8	21	5	11	30	-	-	67	37	56.8%	13.5%	29.7%
Boilermakers	Foreperson	20	23	63	15	32	90	-	-	201	110	57.3%	13.6%	29.1%
Boilermakers	Assistant Foreperson										-	0.0%	0.0%	0.0%
Boilermakers	Journeyman	200	230	627	154	319	900	-	-	2,001	1,100	57.0%	14.0%	29.0%
Boilermakers	Helper										-	0.0%	0.0%	0.0%
Boilermakers	Apprentice - 3rd year										-	0.0%	0.0%	0.0%
Boilermakers	Apprentice - 2nd year										-	0.0%	0.0%	0.0%
Boilermakers	Apprentice - 1st year										-	0.0%	0.0%	0.0%
Bricklayers	Group 1 - General Foreperson	33	38	104	26	53	149	-	-	332	183	56.8%	14.2%	29.0%
Bricklayers	Group 1 - Foreperson	100	115	313	77	159	449	-	-	997	549	57.0%	14.0%	29.0%
Bricklayers	Journeyman - Group 2	997	1,147	3,127	768	1,591	4,488	-	-	9,973	5,486	57.0%	14.0%	29.0%
Bricklayers	Journeyman - Group 3										-	0.0%	0.0%	0.0%
Bricklayers	Journeyman - Group 4										-	0.0%	0.0%	0.0%
Bricklayers	Apprentice - 1st 6 months										-	0.0%	0.0%	0.0%
Bricklayers	Apprentice - 2nd 6 months										-	0.0%	0.0%	0.0%
Bricklayers	Apprentice - 3rd 6 months										-	0.0%	0.0%	0.0%
Bricklayers	Apprentice - 4th 6 months										-	0.0%	0.0%	0.0%
Bricklayers	Apprentice - 5th 6 months										-	0.0%	0.0%	0.0%
Bricklayers	Apprentice - 6th 6 months										-	0.0%	0.0%	0.0%
Bricklayers	Apprentice - 7th 6 months										-	0.0%	0.0%	0.0%
Bricklayers	Apprentice - 8th 6 months										-	0.0%	0.0%	0.0%
Refractory	Group 1 – General Foreperson										-	0.0%	0.0%	0.0%
Refractory	Group 1 – Refractory Foreperson										-	0.0%	0.0%	0.0%
Refractory	Journeyman - Group 5										-	0.0%	0.0%	0.0%
Refractory	Journeyman - Group 6										-	0.0%	0.0%	0.0%
Refractory	Apprentice - 1st 1,200 hours										-	0.0%	0.0%	0.0%
Refractory	Apprentice - 2nd 1,200 hours										-	0.0%	0.0%	0.0%
Refractory	Apprentice - 3rd 1,200 hours										-	0.0%	0.0%	0.0%
Refractory	Apprentice - 4th 1,200 hours										-	0.0%	0.0%	0.0%
Carpenters	General Foreperson	393	452	1,233	303	627	1,769	-	-	3,932	2,163	57.0%	14.0%	29.0%
Carpenters	Non-working Foreperson										-	0.0%	0.0%	0.0%
Carpenters	Working Foreperson	1,180	1,357	3,698	908	1,881	5,308	-	-	11,796	6,487	57.0%	14.0%	29.0%
Carpenters	Journeyman, Carpenter, Welder,	9,429	10,843	29,560	7,260	15,039	42,431	-	-	94,291	51,859	57.0%	14.0%	29.0%
Carpenters	Apprentice – 1st										-	0.0%	0.0%	0.0%
Carpenters	Apprentice – 2nd										-	0.0%	0.0%	0.0%
Carpenters	Apprentice – 3rd										-	0.0%	0.0%	0.0%
Carpenters	Apprentice – 4th										-	0.0%	0.0%	0.0%
Electricians	General Foreperson	33	38	104	25	53	149	-	-	331	182	57.1%	13.7%	29.1%
Electricians	Non-working Foreperson										-	0.0%	0.0%	0.0%
Electricians	Working Foreperson	100	114	312	77	159	448	-	-	995	548	56.9%	14.1%	29.0%
Electricians	Apprentice/Journeyman Electrician Welder/Welder										-	0.0%	0.0%	0.0%

Trade	Classification	LOA Days	Travel (kms)	RT Hrs	OT1 Hrs	OT2 Hrs	2nd Shift Hrs	3rd Shift Hrs	Travel Time Hrs	Total Hours	Total 1st Shift Hrs	% 1st Shift RT	% 1st Shift Ot1	% 1st Shift Ot2
Electricians	Journeyperson	995	1,144	3,119	766	1,587	4,477	-	-	9,948	5,472	57.0%	14.0%	29.0%
Electricians	Apprentice - 1st year										-	0.0%	0.0%	0.0%
Electricians	Apprentice - 2nd year										-	0.0%	0.0%	0.0%
Electricians	Apprentice - 3rd year										-	0.0%	0.0%	0.0%
Electricians	Apprentice - 4th year										-	0.0%	0.0%	0.0%
Labourers	General Foreperson	450	518	1,411	347	718	2,026	-	-	4,502	2,476	57.0%	14.0%	29.0%
Labourers	Foreperson	1,351	1,553	4,234	1,040	2,154	6,078	-	-	13,506	7,428	57.0%	14.0%	29.0%
Labourers	Class 1	2,040	2,346	6,394	1,570	3,253	9,178	-	-	20,396	11,217	57.0%	14.0%	29.0%
Labourers	Class 2										-	0.0%	0.0%	0.0%
Labourers	Class 3										-	0.0%	0.0%	0.0%
Labourers	Class 4	7,807	8,978	24,475	6,011	12,452	35,132	-	-	78,070	42,938	57.0%	14.0%	29.0%
Labourers	Class 5										-	0.0%	0.0%	0.0%
Labourers	Class 6	1,838	2,114	5,762	1,415	2,931	8,271	-	-	18,379	10,108	57.0%	14.0%	29.0%
Labourers	Class 7										-	0.0%	0.0%	0.0%
Labourers	Class 8	1,599	1,838	5,012	1,231	2,550	7,194	-	-	15,986	8,793	57.0%	14.0%	29.0%
Labourers	Class 9										-	0.0%	0.0%	0.0%
Labourers	Class 10	222	256	697	171	355	1,001	-	-	2,224	1,223	57.0%	14.0%	29.0%
Labourers	Class 11										-	0.0%	0.0%	0.0%
Labourers	Class 12										-	0.0%	0.0%	0.0%
Insulators	General Foreperson										-	0.0%	0.0%	0.0%
Insulators	Foreperson										-	0.0%	0.0%	0.0%
Insulators	Working Foreperson										-	0.0%	0.0%	0.0%
Insulators	JourneyPerson Mechanic										-	0.0%	0.0%	0.0%
Insulators	Apprentice - 1st year										-	0.0%	0.0%	0.0%
Insulators	Apprentice - 2nd year										-	0.0%	0.0%	0.0%
Insulators	Apprentice - 3rd year										-	0.0%	0.0%	0.0%
Insulators	Apprentice - 4th year										-	0.0%	0.0%	0.0%
Hotel Employees and Restaurant Employees	Chef (General Foreperson)										-	0.0%	0.0%	0.0%
Hotel Employees and Restaurant Employees	1 <sup>st</sup> Cook (Foreperson)										-	0.0%	0.0%	0.0%
Hotel Employees and Restaurant Employees	Baker, Meat Cutter & Foreperson										-	0.0%	0.0%	0.0%
Hotel Employees and Restaurant Employees	2 <sup>nd</sup> Cook, Inventory Attendant, Service Attendant & Front Desk Attendant										-	0.0%	0.0%	0.0%
Hotel Employees and Restaurant Employees	3 <sup>rd</sup> Cook, Baker's Helper & Bartender										-	0.0%	0.0%	0.0%

Trade	Classification	LOA Days	Travel (kms)	RT Hrs	OT1 Hrs	OT2 Hrs	2nd Shift Hrs	3rd Shift Hrs	Travel Time Hrs	Total Hours	Total 1st Shift Hrs	% 1st Shift RT	% 1st Shift Ot1	% 1st Shift Ot2
Hotel Employees and Restaurant Employees	Salad/Sandwich Person & Commissary										-	0.0%	0.0%	0.0%
Hotel Employees and Restaurant Employees	General Help										-	0.0%	0.0%	0.0%
Hotel Employees and Restaurant Employees	Foreperson										-	0.0%	0.0%	0.0%
Hotel Employees and Restaurant Employees	Camp Attendant Housekeeping										-	0.0%	0.0%	0.0%
Hotel Employees and Restaurant Employees	Security Crew Chief (General Foreperson)										-	0.0%	0.0%	0.0%
Hotel Employees and Restaurant Employees	Security Assistant Crew Chief (Foreperson)										-	0.0%	0.0%	0.0%
Hotel Employees and Restaurant Employees	Security Officer, Communications/Dispatch										-	0.0%	0.0%	0.0%
Hotel Employees and Restaurant Employees	Janitor										-	0.0%	0.0%	0.0%
Electrical Line Workers	General Foreperson										-	0.0%	0.0%	0.0%
Electrical Line Workers	Non-working Foreperson										-	0.0%	0.0%	0.0%
Electrical Line Workers	Lead Lineperson										-	0.0%	0.0%	0.0%
Electrical Line Workers	Utility Worker										-	0.0%	0.0%	0.0%
Electrical Line Workers	Journey (Lineperson and/or Cable Splicer)										-	0.0%	0.0%	0.0%
Electrical Line Workers	Apprentice - 1st year										-	0.0%	0.0%	0.0%
Electrical Line Workers	Apprentice - 2nd year										-	0.0%	0.0%	0.0%
Electrical Line Workers	Apprentice - 3rd year										-	0.0%	0.0%	0.0%
Electrical Line Workers	Apprentice - 4th year										-	0.0%	0.0%	0.0%

Trade	Classification	LOA Days	Travel (kms)	RT Hrs	OT1 Hrs	OT2 Hrs	2nd Shift Hrs	3rd Shift Hrs	Travel Time Hrs	Total Hours	Total 1st Shift Hrs	% 1st Shift RT	% 1st Shift Ot1	% 1st Shift Ot2
Ironworkers - Structural	General Foreperson										-	0.0%	0.0%	0.0%
Ironworkers - Structural	Foreperson										-	0.0%	0.0%	0.0%
Ironworkers - Structural	Connectors										-	0.0%	0.0%	0.0%
Ironworkers - Structural	Journeyman										-	0.0%	0.0%	0.0%
Ironworkers - Structural	Apprentice - 1st 1,000 hrs										-	0.0%	0.0%	0.0%
Ironworkers - Structural	Apprentice - 2nd 1,000 hrs										-	0.0%	0.0%	0.0%
Ironworkers - Structural	Apprentice - 3rd 1,000 hrs										-	0.0%	0.0%	0.0%
Ironworkers - Structural	Apprentice - 4th 1,000 hrs										-	0.0%	0.0%	0.0%
Ironworkers - Rodman (Rebar)	General Foreperson	66	76	208	51	106	299	-	-	664	365	57.0%	14.0%	29.0%
Ironworkers - Rodman (Rebar)	Foreperson	199	229	625	153	318	897	-	-	1,993	1,096	57.0%	14.0%	29.0%
Ironworkers - Rodman (Rebar)	Journeyman	1,993	2,292	6,247	1,534	3,179	8,968	-	-	19,928	10,960	57.0%	14.0%	29.0%
Ironworkers - Rodman (Rebar)	Apprentice - 1st 1,000 hrs										-	0.0%	0.0%	0.0%
Ironworkers - Rodman (Rebar)	Apprentice - 2nd 1,000 hrs										-	0.0%	0.0%	0.0%
Ironworkers - Rodman (Rebar)	Apprentice - 3rd 1,000 hrs										-	0.0%	0.0%	0.0%
Ironworkers - Rodman (Rebar)	Apprentice - 4th 1,000 hrs										-	0.0%	0.0%	0.0%
Millwrights	General Foreperson										-	0.0%	0.0%	0.0%
Millwrights	Non-working Foreperson										-	0.0%	0.0%	0.0%
Millwrights	Working Foreperson										-	0.0%	0.0%	0.0%
Millwrights	Journeyman Millwright – Welder										-	0.0%	0.0%	0.0%
Millwrights	Apprentice 1 <sup>st</sup> Year										-	0.0%	0.0%	0.0%
Millwrights	Apprentice 2 <sup>nd</sup> Year										-	0.0%	0.0%	0.0%
Millwrights	Apprentice 3 <sup>rd</sup> Year										-	0.0%	0.0%	0.0%
Millwrights	Apprentice 4 <sup>th</sup> Year										-	0.0%	0.0%	0.0%
Operating Engineers	General Foreperson	576	662	1,805	443	918	2,590	-	-	5,756	3,166	57.0%	14.0%	29.0%
Operating Engineers	Foreperson	1,727	1,986	5,414	1,330	2,754	7,771	-	-	17,268	9,498	57.0%	14.0%	29.0%



Trade	Classification	LOA Days	Travel (kms)	RT Hrs	OT1 Hrs	OT2 Hrs	2nd Shift Hrs	3rd Shift Hrs	Travel Time Hrs	Total Hours	Total 1st Shift Hrs	% 1st Shift RT	% 1st Shift Ot1	% 1st Shift Ot2
Operating Engineers	Operating Engineer – Group 1	4,293	4,937	13,459	3,306	6,848	19,320	-	-	42,933	23,613	57.0%	14.0%	29.0%
Operating Engineers	Operating Engineer – Group 2	10,942	12,583	34,302	8,425	17,452	49,238	-	-	109,417	60,179	57.0%	14.0%	29.0%
Operating Engineers	Operating Engineer – Group 3										-	0.0%	0.0%	0.0%
Operating Engineers	Operating Engineer – Group 4										-	0.0%	0.0%	0.0%
Operating Engineers	Operating Engineer – Group 5	2,034	2,339	6,376	1,566	3,244	9,152	-	-	20,338	11,186	57.0%	14.0%	29.0%
Operating Engineers	Apprentices	5,549	6,382	17,397	4,273	8,851	24,972	-	-	55,493	30,521	57.0%	14.0%	29.0%
Operating Engineers	Apprentice – 1 <sup>st</sup> Period										-	0.0%	0.0%	0.0%
Operating Engineers	Apprentice – 2 <sup>nd</sup> Period										-	0.0%	0.0%	0.0%
Operating Engineers	Apprentice – 3 <sup>rd</sup> Period										-	0.0%	0.0%	0.0%
Operating Engineers	Apprentice – 4 <sup>th</sup> Period										-	0.0%	0.0%	0.0%
Operating Engineers	Clerical – Group 1										-	0.0%	0.0%	0.0%
Operating Engineers	Clerical – Group 2	1,578	1,814	4,945	1,215	2,516	7,099	-	-	15,775	8,676	57.0%	14.0%	29.0%
Operating Engineers	Clerical – Group 3										-	0.0%	0.0%	0.0%
Painters and Allied Trades	Painter/Glazier										-	0.0%	0.0%	0.0%
Painters and Allied Trades	Drywall Taper, Spray Painter, Sand Blaster, Vinyl Hangers, Fireproofers										-	0.0%	0.0%	0.0%
Painters and Allied Trades	Foreperson										-	0.0%	0.0%	0.0%
Painters and Allied Trades	General Foreperson										-	0.0%	0.0%	0.0%
Painters and Allied Trades	Apprentice - 1st year										-	0.0%	0.0%	0.0%
Painters and Allied Trades	Apprentice - 2nd year										-	0.0%	0.0%	0.0%
Painters and Allied Trades	Apprentice - 3rd year										-	0.0%	0.0%	0.0%
Plumbers and pipefitters	General Foreperson										-	0.0%	0.0%	0.0%

Trade	Classification	LOA Days	Travel (kms)	RT Hrs	OT1 Hrs	OT2 Hrs	2nd Shift Hrs	3rd Shift Hrs	Travel Time Hrs	Total Hours	Total 1st Shift Hrs	% 1st Shift RT	% 1st Shift Ot1	% 1st Shift Ot2
Plumbers and pipefitters	Foreperson										-	0.0%	0.0%	0.0%
Plumbers and pipefitters	Journeyman										-	0.0%	0.0%	0.0%
Plumbers and pipefitters	Welding Inspector										-	0.0%	0.0%	0.0%
Plumbers and pipefitters	Apprentice – 1st year										-	0.0%	0.0%	0.0%
Plumbers and pipefitters	Apprentice - 2nd year										-	0.0%	0.0%	0.0%
Plumbers and pipefitters	Apprentice - 3rd year										-	0.0%	0.0%	0.0%
Plumbers and pipefitters	Apprentice - 4th year										-	0.0%	0.0%	0.0%
Sheet Metal Workers	General Foreperson										-	0.0%	0.0%	0.0%
Sheet Metal Workers	Working Foreperson										-	0.0%	0.0%	0.0%
Sheet Metal Workers	Non-working Foreperson										-	0.0%	0.0%	0.0%
Sheet Metal Workers	Journeyman										-	0.0%	0.0%	0.0%
Sheet Metal Workers	Apprentice - 2nd year										-	0.0%	0.0%	0.0%
Sheet Metal Workers	Apprentice - 3rd year										-	0.0%	0.0%	0.0%
Sheet Metal Workers	Apprentice - 4th year										-	0.0%	0.0%	0.0%
Teamsters	General Foreperson	349	401	1,093	269	556	1,570	-	-	3,488	1,918	57.0%	14.0%	29.0%
Teamsters	Foreperson	1,046	1,203	3,280	806	1,669	4,709	-	-	10,464	5,755	57.0%	14.0%	29.0%
Teamsters	Group 1 (Single Axle)	3,035	3,490	9,515	2,337	4,841	13,658	-	-	30,350	16,693	57.0%	14.0%	29.0%
Teamsters	Group 2 (Dual Axle/Tandem Axle)	5,336	6,137	16,730	4,109	8,512	24,014	-	-	53,364	29,351	57.0%	14.0%	29.0%
Teamsters	Group 3 (Heavy Trucks & Warehouse)										-	0.0%	0.0%	0.0%
Teamsters	Group 4 (Emergency, Medical Technicians & First Mates)										-	0.0%	0.0%	0.0%
Teamsters	Group 5 (Duty Nurse, Fire Prevention Officer, Captains & Engineers)										-	0.0%	0.0%	0.0%
Teamsters	Group 6 (Tandem Axle)										-	0.0%	0.0%	0.0%
Teamsters	Group 6 (Tandem Tandem Axle)										-	0.0%	0.0%	0.0%
Elevator Constructors	Mechanic										-	0.0%	0.0%	0.0%

Trade	Classification	LOA Days	Travel (kms)	RT Hrs	OT1 Hrs	OT2 Hrs	2nd Shift Hrs	3rd Shift Hrs	Travel Time Hrs	Total Hours	Total 1st Shift Hrs	% 1st Shift RT	% 1st Shift Ot1	% 1st Shift Ot2	
Elevator Constructors	Mechanic in-charge (4 or more)										-	0.0%	0.0%	0.0%	
Elevator Constructors	Mechanic in-charge (30 or more)										-	0.0%	0.0%	0.0%	
Elevator Constructors	Probationary Helper I										-	0.0%	0.0%	0.0%	
Elevator Constructors	Probationary Helper II										-	0.0%	0.0%	0.0%	
Elevator Constructors	Helper I										-	0.0%	0.0%	0.0%	
Elevator Constructors	Helper II										-	0.0%	0.0%	0.0%	
Elevator Constructors	Improver Helper										-	0.0%	0.0%	0.0%	
<b>Totals</b>		<b>67,517</b>	<b>77,643</b>	<b>211,662</b>	<b>51,986</b>	<b>107,688</b>	<b>303,825</b>		-	-	<b>675,158</b>	<b>371,336</b>	<b>57.0%</b>	<b>14.0%</b>	<b>29.0%</b>

Union	Trade Classification	LOA Days	Travel KMs	RT Hrs	OT1 Hrs	OT2 Hrs	2nd Shift Hrs	3rd Shift Hrs	Travel Time Hours	Total Hours	Total 1st Shift Hrs	% 1st Shift RT	% 1st Shift Ot1	% 1st Shift Ot2
Boilermakers	General Foreperson										-	0.0%	0.0%	0.0%
Boilermakers	Foreperson										-	0.0%	0.0%	0.0%
Boilermakers	Assistant Foreperson										-	0.0%	0.0%	0.0%
Boilermakers	Journey person										-	0.0%	0.0%	0.0%
Boilermakers	Helper										-	0.0%	0.0%	0.0%
Boilermakers	Apprentice - 3rd year										-	0.0%	0.0%	0.0%
Boilermakers	Apprentice - 2nd year										-	0.0%	0.0%	0.0%
Boilermakers	Apprentice - 1st year										-	0.0%	0.0%	0.0%
Bricklayers	Group 1 - General Foreperson										-	0.0%	0.0%	0.0%
Bricklayers	Group 1 - Foreperson										-	0.0%	0.0%	0.0%
Bricklayers	Journey person - Group 2										-	0.0%	0.0%	0.0%
Bricklayers	Journey person - Group 3										-	0.0%	0.0%	0.0%
Bricklayers	Journey person - Group 4										-	0.0%	0.0%	0.0%
Bricklayers	Apprentice - 1st 6 months										-	0.0%	0.0%	0.0%
Bricklayers	Apprentice - 2nd 6 months										-	0.0%	0.0%	0.0%
Bricklayers	Apprentice - 3rd 6 months										-	0.0%	0.0%	0.0%
Bricklayers	Apprentice - 4th 6 months										-	0.0%	0.0%	0.0%
Bricklayers	Apprentice - 5th 6 months										-	0.0%	0.0%	0.0%
Bricklayers	Apprentice - 6th 6 months										-	0.0%	0.0%	0.0%
Bricklayers	Apprentice - 7th 6 months										-	0.0%	0.0%	0.0%
Bricklayers	Apprentice - 8th 6 months										-	0.0%	0.0%	0.0%
Refractory	Group 1 – General Foreperson										-	0.0%	0.0%	0.0%
Refractory	Group 1 – Refractory Foreperson										-	0.0%	0.0%	0.0%
Refractory	Journey person - Group 5										-	0.0%	0.0%	0.0%
Refractory	Journey person - Group 6										-	0.0%	0.0%	0.0%
Refractory	Apprentice - 1st 1,200 hours										-	0.0%	0.0%	0.0%
Refractory	Apprentice - 2nd 1,200 hours										-	0.0%	0.0%	0.0%
Refractory	Apprentice - 3rd 1,200 hours										-	0.0%	0.0%	0.0%
Refractory	Apprentice - 4th 1,200 hours										-	0.0%	0.0%	0.0%
Carpenters	General Foreperson	760		4,332	1,102	2,166				7,600	7,600	57.0%	14.5%	28.5%
Carpenters	Non-working Foreperson	2,279.40		12,993	3,305	6,496				22,794	22,794	57.0%	14.5%	28.5%
Carpenters	Working Foreperson										-	0.0%	0.0%	0.0%
Carpenters	Journey Person, Carpenter, Welder,	10,514		59,930	15,245	29,965				105,140	105,140	57.0%	14.5%	28.5%
Carpenters	Apprentice – 1st										-	0.0%	0.0%	0.0%
Carpenters	Apprentice – 2nd										-	0.0%	0.0%	0.0%
Carpenters	Apprentice – 3rd										-	0.0%	0.0%	0.0%
Carpenters	Apprentice – 4th	3,504		19,973	5,081	9,986				35,040	35,040	57.0%	14.5%	28.5%
Electricians	General Foreperson										-	0.0%	0.0%	0.0%
Electricians	Non-working Foreperson										-	0.0%	0.0%	0.0%
Electricians	Working Foreperson	76.8		438	111	219				768	768	57.0%	14.5%	28.5%
Electricians	Apprentice/Journey Person Electrician Welder/Welder	345.5		1,969	501	985				3,455	3,455	57.0%	14.5%	28.5%
Electricians	Journey person										-	0.0%	0.0%	0.0%
Electricians	Apprentice - 1st year										-	0.0%	0.0%	0.0%
Electricians	Apprentice - 2nd year										-	0.0%	0.0%	0.0%
Electricians	Apprentice - 3rd year										-	0.0%	0.0%	0.0%
Electricians	Apprentice - 4th year	115		656	167	327				1,150	1,150	57.0%	14.5%	28.4%
Labourers	General Foreperson	796		4,537	1,154	2,269				7,960	7,960	57.0%	14.5%	28.5%
Labourers	Non-working Foreperson	2,654.20		15,129	3,849	7,564				26,542	26,542	57.0%	14.5%	28.5%
Labourers	Working Foreperson	621		3,540	900	1,770				6,210	6,210	57.0%	14.5%	28.5%
Labourers	Class 1	20,525		116,993	29,761	58,496				205,250	205,250	57.0%	14.5%	28.5%
Labourers	Class 2	1,740		9,918	2,523	4,959				17,400	17,400	57.0%	14.5%	28.5%

Union	Trade Classification	LOA Days	Travel KMs	RT Hrs	OT1 Hrs	OT2 Hrs	2nd Shift Hrs	3rd Shift Hrs	Travel Time Hours	Total Hours	Total 1st Shift Hrs	% 1st Shift RT	% 1st Shift Ot1	% 1st Shift Ot2
Labourers	Class 3										-	0.0%	0.0%	0.0%
Labourers	Class 4										-	0.0%	0.0%	0.0%
Labourers	Class 5										-	0.0%	0.0%	0.0%
Labourers	Class 6										-	0.0%	0.0%	0.0%
Labourers	Class 7	12.4		70	18	36				124	124	56.5%	14.5%	29.0%
Labourers	Class 8	98.4		561	143	280				984	984	57.0%	14.5%	28.5%
Labourers	Class 9										-	0.0%	0.0%	0.0%
Labourers	Class 10	1,816.80		10,356	2,634	5,178				18,168	18,168	57.0%	14.5%	28.5%
Labourers	Class 11	3,192		18,194	4,629	9,097				31,920	31,920	57.0%	14.5%	28.5%
Insulators	General Foreperson										-	0.0%	0.0%	0.0%
Insulators	Foreperson										-	0.0%	0.0%	0.0%
Insulators	Working Foreperson										-	0.0%	0.0%	0.0%
Insulators	JourneyPerson Mechanic										-	0.0%	0.0%	0.0%
Insulators	Apprentice - 1st year										-	0.0%	0.0%	0.0%
Insulators	Apprentice - 2nd year										-	0.0%	0.0%	0.0%
Insulators	Apprentice - 3rd year										-	0.0%	0.0%	0.0%
Insulators	Apprentice - 4th year										-	0.0%	0.0%	0.0%
Hotel Employees and Restaurant Employees	Chef (General Foreperson)										-	0.0%	0.0%	0.0%
Hotel Employees and Restaurant Employees	1 <sup>st</sup> Cook (Foreperson)										-	0.0%	0.0%	0.0%
Hotel Employees and Restaurant Employees	Baker, Meat Cutter & Foreperson										-	0.0%	0.0%	0.0%
Hotel Employees and Restaurant Employees	2 <sup>nd</sup> Cook, Inventory Attendant, Service Attendant & Front Desk Attendant										-	0.0%	0.0%	0.0%
Hotel Employees and Restaurant Employees	3 <sup>rd</sup> Cook, Baker's Helper & Bartender										-	0.0%	0.0%	0.0%
Hotel Employees and Restaurant Employees	Salad/Sandwich Person & Commissary										-	0.0%	0.0%	0.0%
Hotel Employees and Restaurant Employees	General Help										-	0.0%	0.0%	0.0%
Hotel Employees and Restaurant Employees	Foreperson										-	0.0%	0.0%	0.0%
Hotel Employees and Restaurant Employees	Camp Attendant Housekeeping										-	0.0%	0.0%	0.0%
Hotel Employees and Restaurant Employees	Security Crew Chief (General Foreperson)										-	0.0%	0.0%	0.0%
Hotel Employees and Restaurant Employees	Security Assistant Crew Chief (Foreperson)										-	0.0%	0.0%	0.0%

Union	Trade Classification	LOA Days	Travel KMs	RT Hrs	OT1 Hrs	OT2 Hrs	2nd Shift Hrs	3rd Shift Hrs	Travel Time Hours	Total Hours	Total 1st Shift Hrs	% 1st Shift RT	% 1st Shift Ot1	% 1st Shift Ot2
Hotel Employees and Restaurant Employees	Security Officer, Communications/Dispatch										-	0.0%	0.0%	0.0%
Hotel Employees and Restaurant Employees	Janitor										-	0.0%	0.0%	0.0%
Electrical Line Workers	General Foreperson										-	0.0%	0.0%	0.0%
Electrical Line Workers	Non-working Foreperson										-	0.0%	0.0%	0.0%
Electrical Line Workers	Lead Lineperson										-	0.0%	0.0%	0.0%
Electrical Line Workers	Utility Worker										-	0.0%	0.0%	0.0%
Electrical Line Workers	Journey (Lineperson and/or Cable Splicer)										-	0.0%	0.0%	0.0%
Electrical Line Workers	Apprentice - 1st year										-	0.0%	0.0%	0.0%
Electrical Line Workers	Apprentice - 2nd year										-	0.0%	0.0%	0.0%
Electrical Line Workers	Apprentice - 3rd year										-	0.0%	0.0%	0.0%
Electrical Line Workers	Apprentice - 4th year										-	0.0%	0.0%	0.0%
Ironworkers - Structural	General Foreperson										-	0.0%	0.0%	0.0%
Ironworkers - Structural	Foreperson	75		428	109	213				750	750	57.1%	14.5%	28.4%
Ironworkers - Structural	Connectors										-	0.0%	0.0%	0.0%
Ironworkers - Structural	Journeyman	600		3,420	870	1,710				6,000	6,000	57.0%	14.5%	28.5%
Ironworkers - Structural	Apprentice - 1st 1,000 hrs										-	0.0%	0.0%	0.0%
Ironworkers - Structural	Apprentice - 2nd 1,000 hrs										-	0.0%	0.0%	0.0%
Ironworkers - Structural	Apprentice - 3rd 1,000 hrs										-	0.0%	0.0%	0.0%
Ironworkers - Structural	Apprentice - 4th 1,000 hrs	200		1,140	290	570				2,000	2,000	57.0%	14.5%	28.5%
Ironworkers - Rodman (Rebar)	General Foreperson										-	0.0%	0.0%	0.0%
Ironworkers - Rodman (Rebar)	Foreperson										-	0.0%	0.0%	0.0%
Ironworkers - Rodman (Rebar)	Journeyman										-	0.0%	0.0%	0.0%
Ironworkers - Rodman (Rebar)	Apprentice - 1st 1,000 hrs										-	0.0%	0.0%	0.0%
Ironworkers - Rodman (Rebar)	Apprentice - 2nd 1,000 hrs										-	0.0%	0.0%	0.0%
Ironworkers - Rodman (Rebar)	Apprentice - 3rd 1,000 hrs										-	0.0%	0.0%	0.0%

Union	Trade Classification	LOA Days	Travel KMs	RT Hrs	OT1 Hrs	OT2 Hrs	2nd Shift Hrs	3rd Shift Hrs	Travel Time Hours	Total Hours	Total 1st Shift Hrs	% 1st Shift RT	% 1st Shift Ot1	% 1st Shift Ot2
Ironworkers - Rodman (Rebar)	Apprentice - 4th 1,000 hrs										-	0.0%	0.0%	0.0%
Millwrights	General Foreperson										-	0.0%	0.0%	0.0%
Millwrights	Non-working Foreperson										-	0.0%	0.0%	0.0%
Millwrights	Working Foreperson	396		2,275	574	1,129				3,960	3,978	57.2%	14.4%	28.4%
Millwrights	Journeyman Millwright – Welder										-	0.0%	0.0%	0.0%
Millwrights	Apprentice 1 <sup>st</sup> Year										-	0.0%	0.0%	0.0%
Millwrights	Apprentice 2 <sup>nd</sup> Year										-	0.0%	0.0%	0.0%
Millwrights	Apprentice 3 <sup>rd</sup> Year										-	0.0%	0.0%	0.0%
Millwrights	Apprentice 4 <sup>th</sup> Year										-	0.0%	0.0%	0.0%
Operating Engineers	General Foreperson	1,694		9,656	2,456	4,828				16,940	16,940	57.0%	14.5%	28.5%
Operating Engineers	Non-working Foreperson	5,970		34,029	8,657	17,014				59,700	59,700	57.0%	14.5%	28.5%
Operating Engineers	Operating Engineer – Group 1	7,915.50		45,118	11,478	22,559				79,155	79,155	57.0%	14.5%	28.5%
Operating Engineers	Operating Engineer – Group 2	9,784.50		55,772	14,187	27,886				97,845	97,845	57.0%	14.5%	28.5%
Operating Engineers	Operating Engineer – Group 3	2,555.50		14,566	3,716	7,283				25,555	25,565	57.0%	14.5%	28.5%
Operating Engineers	Operating Engineer – Group 4										-	0.0%	0.0%	0.0%
Operating Engineers	Operating Engineer – Group 5	1,045		5,657	1,515	2,978				10,450	10,150	55.7%	14.9%	29.3%
Operating Engineers	Apprentice – 1 <sup>st</sup> Period										-	0.0%	0.0%	0.0%
Operating Engineers	Apprentice – 2 <sup>nd</sup> Period										-	0.0%	0.0%	0.0%
Operating Engineers	Apprentice – 3 <sup>rd</sup> Period										-	0.0%	0.0%	0.0%
Operating Engineers	Apprentice – 4 <sup>th</sup> Period										-	0.0%	0.0%	0.0%
Operating Engineers	Apprentice – 5 <sup>th</sup> Period										-	0.0%	0.0%	0.0%
Operating Engineers	Apprentice – 6 <sup>th</sup> Period	8,739		49,812	12,672	24,906				87,390	87,390	57.0%	14.5%	28.5%
Operating Engineers	Clerical – Group 1										-	0.0%	0.0%	0.0%
Operating Engineers	Clerical – Group 2										-	0.0%	0.0%	0.0%
Operating Engineers	Clerical – Group 3										-	0.0%	0.0%	0.0%
Painters and Allied Trades	Painter/Glazier										-	0.0%	0.0%	0.0%
Painters and Allied Trades	Drywall Taper, Spray Painter, Sand Blaster, Vinyl Hangers, Fireproofers										-	0.0%	0.0%	0.0%
Painters and Allied Trades	Foreperson										-	0.0%	0.0%	0.0%
Painters and Allied Trades	General Foreperson										-	0.0%	0.0%	0.0%

Union	Trade Classification	LOA Days	Travel KMs	RT Hrs	OT1 Hrs	OT2 Hrs	2nd Shift Hrs	3rd Shift Hrs	Travel Time Hours	Total Hours	Total 1st Shift Hrs	% 1st Shift RT	% 1st Shift Ot1	% 1st Shift Ot2	
Painters and Allied Trades	Apprentice - 1st year										-	0.0%	0.0%	0.0%	
Painters and Allied Trades	Apprentice - 2nd year										-	0.0%	0.0%	0.0%	
Painters and Allied Trades	Apprentice - 3rd year										-	0.0%	0.0%	0.0%	
Plumbers and pipefitters	General Foreperson										-	0.0%	0.0%	0.0%	
Plumbers and pipefitters	Foreperson										-	0.0%	0.0%	0.0%	
Plumbers and pipefitters	Journeyman										-	0.0%	0.0%	0.0%	
Plumbers and pipefitters	Welding Inspector										-	0.0%	0.0%	0.0%	
Plumbers and pipefitters	Apprentice – 1st year										-	0.0%	0.0%	0.0%	
Plumbers and pipefitters	Apprentice - 2nd year										-	0.0%	0.0%	0.0%	
Plumbers and pipefitters	Apprentice - 3rd year										-	0.0%	0.0%	0.0%	
Plumbers and pipefitters	Apprentice - 4th year										-	0.0%	0.0%	0.0%	
Sheet Metal Workers	General Foreperson										-	0.0%	0.0%	0.0%	
Sheet Metal Workers	Working Foreperson										-	0.0%	0.0%	0.0%	
Sheet Metal Workers	Non-working Foreperson										-	0.0%	0.0%	0.0%	
Sheet Metal Workers	Journeyman										-	0.0%	0.0%	0.0%	
Sheet Metal Workers	Apprentice - 2nd year										-	0.0%	0.0%	0.0%	
Sheet Metal Workers	Apprentice - 3rd year										-	0.0%	0.0%	0.0%	
Sheet Metal Workers	Apprentice - 4th year										-	0.0%	0.0%	0.0%	
Teamsters	Group 1 (Single Axle)										-	0.0%	0.0%	0.0%	
Teamsters	Group 2 (Dual Axle/Tandem Axle)										-	0.0%	0.0%	0.0%	
Teamsters	Group 3 (Heavy Trucks & Warehouse)	13,517.50		77,050	19,600	38,525				135,175	135,175	57.0%	14.5%	28.5%	
Teamsters	Group 4 (Emergency, Medical Technicians & First Mates)										-	0.0%	0.0%	0.0%	
Teamsters	Group 5 (Duty Nurse, Fire Prevention Officer, Captains & Engineers)										-	0.0%	0.0%	0.0%	
Teamsters	Group 6 (Tandem Axle)										-	0.0%	0.0%	0.0%	
Teamsters	Group 6 (Tandem Tandem Axle)	2,295								22,950					Not broken down into RT vs Ot vs second shift
Elevator Constructors	Mechanic										-	0.0%	0.0%	0.0%	



Union	Trade Classification	LOA Days	Travel KMs	RT Hrs	OT1 Hrs	OT2 Hrs	2nd Shift Hrs	3rd Shift Hrs	Travel Time Hours	Total Hours	Total 1st Shift Hrs	% 1st Shift RT	% 1st Shift Ot1	% 1st Shift Ot2
Elevator Constructors	Mechanic in-charge (4 or more)										-	0.0%	0.0%	0.0%
Elevator Constructors	Mechanic in-charge (30 or more)										-	0.0%	0.0%	0.0%
Elevator Constructors	Probationary Helper I										-	0.0%	0.0%	0.0%
Elevator Constructors	Probationary Helper II										-	0.0%	0.0%	0.0%
Elevator Constructors	Helper I										-	0.0%	0.0%	0.0%
Elevator Constructors	Helper II										-	0.0%	0.0%	0.0%
Elevator Constructors	Improver Helper										-	0.0%	0.0%	0.0%
<b>Totals</b>		<b>103,838</b>	-	<b>578,512</b>	<b>147,247</b>	<b>289,394</b>	-	-	-	<b>1,038,375</b>	1,015,153	57.0%	14.5%	28.5%

**TRADESMEN AND SUPERVISORY STAFF**

Appendix A12  
Site Requirements  
Package Number: CH0009

Month and year (Number of persons)

	2015												2016												2017												TOTAL (persons)
	Jan-15	Feb-15	Mar-15	Apr-15	May-15	Jun-15	Jul-15	Aug-15	Sep-15	Oct-15	Nov-15	Dec-15	Jan-16	Feb-16	Mar-16	Apr-16	May-16	Jun-16	Jul-16	Aug-16	Sep-16	Oct-16	Nov-16	Dec-16	Jan-17	Feb-17	Mar-17	Apr-17	May-17	Jun-17	Jul-17	Aug-17	Sep-17	Oct-17	Nov-17		
<b>TRADESMEN</b>	36	30	36	313	184	109	94	76	72	39	36	39	39	35	39	237	218	245	415	579	285	71	49	52	52	46	52	225	441	446	264	110	116	36	33	<b>5149</b>	
Labourers - Class 1	3	2	3	52	24	12	8	5	5	3	3	3	3	2	3	13	9	19	46	60	27	8	7	7	7	6	7	23	43	43	21	6	26	3	3	<b>515</b>	
Carpenters - Apprentice - 1	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	2	4	32	54	24	-	-	-	-	-	-	-	24	48	47	27	5	-	-	-	<b>268</b>	
Ironworkers - Rebar Apprentice - 1st 1,000 hrs	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	1	3	1	-	-	-	-	-	-	-	1	2	2	3	1	-	-	-	<b>16</b>	
Ironworkers - Structural Apprentice - 1st 1,000 hrs	-	-	-	3	5	-	1	3	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<b>14</b>	
Labourers - Class 2	-	-	-	37	12	6	1	1	-	-	-	-	-	-	-	18	11	27	22	5	1	-	-	-	-	-	-	-	2	3	3	3	1	-	-	-	<b>154</b>
Carpenters - Apprentice - 2	-	-	-	3	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<b>4</b>	
Labourers - Class 3	1	1	1	28	13	8	4	1	1	1	1	1	1	1	1	4	2	14	22	15	5	6	6	6	6	5	6	2	4	4	2	1	30	1	1	<b>207</b>	
Carpenters - Apprentice - 3	-	-	-	10	3	-	-	-	-	-	-	-	-	-	-	1	3	23	38	17	-	-	-	-	-	-	-	17	35	33	21	4	-	-	-	<b>205</b>	
Ironworkers - Rebar Apprentice - 3rd 1,000 hrs	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	1	3	1	-	-	-	-	-	-	-	1	2	2	3	1	-	-	-	<b>16</b>	
Ironworkers - Structural Apprentice - 3rd 1,000 hrs	-	-	-	3	5	-	1	3	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<b>14</b>	
Labourers - Class 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<b>47</b>	
Labourers - Class 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	3	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<b>9</b>	
Carpenters - Journeyman carpenter welder scaffolder	-	-	-	3	1	1	-	-	-	-	-	-	-	-	-	3	7	49	82	37	-	-	-	-	-	-	-	37	75	73	45	9	-	-	-	<b>422</b>	
Ironworkers - Rebar Journeyman	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	3	5	3	-	-	-	-	-	-	-	2	5	5	6	2	-	-	-	<b>31</b>	
Ironworkers - Structural Journeyman	-	-	-	6	10	-	3	5	5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<b>29</b>	
Ironworkers - Structural Journeyman	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4	5	1	3	4	4	4	4	4	4	4	4	-	-	-	-	-	-	-	-	<b>36</b>	
Labourers - Class 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	8	8	5	5	5	5	3	-	-	-	-	-	-	-	-	-	-	-	-	-	<b>35</b>	
Teamsters - Group 3 teamster	2	2	2	6	4	3	3	2	2	2	2	2	2	2	2	3	3	5	7	4	3	2	2	2	2	2	2	4	6	6	4	2	4	2	2	<b>106</b>	
Teamsters - Group 1 teamster	-	-	-	29	14	18	11	3	4	-	-	-	-	-	-	81	68	53	26	46	27	6	-	-	-	-	-	7	21	26	21	14	6	-	-	<b>480</b>	
Operating Engineers - Group 3 - JP	-	-	-	-	1	2	1	-	-	-	-	-	-	-	-	-	1	-	5	11	7	1	-	-	-	-	-	3	6	6	2	-	-	-	-	<b>47</b>	
Operating Engineers - Group 1 - JP	3	2	3	40	37	15	18	18	18	3	3	3	3	3	3	46	31	22	36	64	34	6	3	3	3	3	3	21	44	46	19	8	14	3	3	<b>585</b>	
Operating Engineers - Group 5 - JP	-	-	-	-	2	-	-	-	-	-	-	-	-	-	-	8	18	44	53	23	-	-	-	-	-	-	-	22	44	43	19	3	-	-	-	<b>278</b>	
Operating Engineers - Group 4 - JP	-	-	-	15	5	2	2	-	-	-	-	-	-	-	-	7	6	15	22	10	1	-	-	-	-	-	-	8	18	18	7	1	-	-	-	<b>138</b>	
Electricians - Journeyman	-	-	-	11	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<b>14</b>	
Operating Engineers - Group 2 - JP	-	-	-	1	4	3	-	-	1	-	-	-	-	-	-	9	10	6	16	24	12	1	-	-	-	-	-	8	18	18	7	1	-	-	-	<b>139</b>	
Electricians - Journeyman	-	-	-	11	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<b>14</b>	
Labourers - Class 1	2	2	2	11	7	6	5	4	4	3	3	3	3	3	3	13	11	10	14	21	11	3	3	3	3	3	9	17	17	7	4	4	2	2	<b>221</b>		
Operating Engineers - Group 4 - JP	2	2	2	9	6	5	5	4	4	2	2	2	2	2	2	13	10	9	12	17	9	3	2	2	2	2	2	7	13	13	6	3	3	2	2	<b>182</b>	
Electricians - Apprentice - 3rd year	-	-	-	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	3	5	2	1	1	1	1	1	2	4	4	2	1	-	-	-	<b>44</b>		
Operating Engineers - Group 2 - JP	2	2	2	9	6	5	5	4	4	2	2	2	2	2	2	13	10	9	12	17	9	3	2	2	2	2	7	13	13	6	3	3	2	2	<b>182</b>		
Electricians - Journeyman	-	-	-	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	3	5	2	1	1	1	1	1	2	4	4	2	1	-	-	-	<b>44</b>		
Teamsters - Group 1 teamster	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	<b>33</b>	
Labourers - Class 2	3	2	3	3	3	2	3	3	2	3	3	3	3	2	3	2	3	2	2	2	1	3	2	3	3	2	3	2	2	2	2	3	2	3	2	<b>87</b>	
Teamsters - Group 3 teamster	6	5	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	4	4	6	6	6	6	5	6	6	5	5	6	6	6	6	6	<b>198</b>		
Teamsters - Group 1 teamster	8	7	8	7	8	7	8	8	7	8	7	8	8	7	8	7	8	7	5	5	5	8	7	8	8	7	8	7	6	6	6	8	7	8	7	<b>252</b>	
Operating Engineers - Group 3 - JP	3	2	3	2	3	2	3	3	2	3	2	3	3	2	3	2	3	2	2	2	1	3	2	3	2	3	2	2	2	2	2	3	2	3	2	<b>86</b>	
<b>DIRECT SUPERVISION</b>	1	1	1	35	14	9	8	3	3	1	1	1	1	1	1	23	20	19	41	59	28	4	2	2	2	2	2	21	44	44	24	4	7	1	1	<b>431</b>	
Painters - Group 2	-	-	-	13	5	3	2	1	-	-	-	-	-	-	-	10	5	10	12	10	4	2	1	1	1	1	2	5	5	2	1	6	-	-	<b>103</b>		
Carpenters - Working foreperson	-	-	-	4	1	-	-	-	-	-	-	-	-	-	-	1	2	14	23	10	-	-	-	-	-	-	-	10	21	21	12	2	-	-	-	<b>120</b>	
Ironworkers - Rebar foreperson	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	1	-	-	-	-	-	-	1	2	1	2	-	-	-	-	<b>7</b>		
Ironworkers - Structural foreperson	-	-	-	2	2	-	1	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<b>7</b>	
Ironworkers - Structural foreperson	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<b>1</b>	
Operating Engineers - Group 1 - Non-Working foreperson	-	-	-	6	3	4	3	-	1	-	-	-	-	-	-	9	10	4	10	18	9	1	-	-	-	-	5	12	13	5	-	-	-	-	<b>112</b>		
Operating Engineers - Group 1 - Non-Working foreperson	1	1	1	8	3	2	1	1	1	1	1	1	1	1	1	4	4	3	4	6	3	1	1	1	1	1	2	4	4	2	1	1	1	1	<b>72</b>		
Electricians - Non-working foreperson	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	1	1	1	1	1	1	1	1	2	2	1	-	-	-	-	<b>9</b>		
<b>SUB-TOTAL</b>	<b>37</b>	<b>31</b>	<b>37</b>	<b>348</b>	<b>198</b>	<b>118</b>	<b>102</b>	<b>79</b>	<b>75</b>	<b>40</b>	<b>37</b>	<b>40</b>	<b>40</b>	<b>36</b>	<b>40</b>	<b>260</b>	<b>238</b>	<b>264</b>	<b>497</b>	<b>697</b>	<b>341</b>	<b>75</b>	<b>51</b>	<b>54</b>	<b>54</b>	<b>48</b>	<b>54</b>	<b>246</b>	<b>485</b>	<b>490</b>	<b>288</b>	<b>114</b>	<b>123</b>	<b>37</b>	<b>34</b>	<b>5,708</b>	

	2015												2016												2017												TOTAL (persons)
	Jan-15	Feb-15	Mar-15	Apr-15	May-15	Jun-15	Jul-15	Aug-15	Sep-15	Oct-15	Nov-15	Dec-15	Jan-16	Feb-16	Mar-16	Apr-16	May-16	Jun-16	Jul-16	Aug-16	Sep-16	Oct-16	Nov-16	Dec-16	Jan-17	Feb-17	Mar-17	Apr-17	May-17	Jun-17	Jul-17	Aug-17	Sep-17	Oct-17	Nov-17		
<b>MANAGEMENT</b>	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	3					





TRADESMEN AND SUPERVISORY STAFF	Month and Year (Number of persons)																								
	Dec-14	Jan-15	Feb-15	Mar-15	Apr-15	May-15	Jun-15	Jul-15	Aug-15	Sep-15	Oct-15	Nov-15	Dec-15	Jan-16	Feb-16	Mar-16	Apr-16	May-16	Jun-16	Jul-16	Aug-16	Sep-16	Oct-16	Nov-16	Dec-16
Carpenters				2	6	9	9	9	9	9	7	1	1	1	1	24	25	24	25	25	31	31	33	1	1
Ironworkers				2	6	9	9	9	9	9	7	1	1	1	1	12	12	11	12	12	15	15	16	1	1
Laborers				2	8	11	12	12	12	11	9	1	1	1	1	25	26	25	26	26	33	33	34	1	1
Teamsters				3	11	15	16	16	16	15	11	1	1	1	1	10	10	10	10	10	13	13	13	1	1
Operators				5	16	23	23	23	23	23	17	2	2	1	1	15	15	14	15	15	19	19	20	1	1
All Other Trades				2	5	8	8	8	8	8	6	1	1	1	1	12	12	11	12	12	15	15	16	1	1
SUB-TOTAL				15	52	75	77	77	77	75	56	5	5	5	5	98	100	95	100	100	125	125	130	5	5
DIRECT SUPERVISION	24	24	27	29	33	35	38	39	39	39	38	38	20	20	20	39	40	38	40	40	50	50	50	31	27
TOTAL	24	24	27	44	85	110	115	116	116	114	94	43	25	25	25	137	140	133	140	140	175	175	180	36	32

Month and Year (Number of persons)												TOTAL (Persons)
Jan-17	Feb-17	Mar-17	Apr-17	May-17	Jun-17	Jul-17	Aug-17	Sep-17	Oct-17	Nov-17	Dec-17	
2	2	3	12	38	42	41	34	24	23	9	5	520
1	1	2	6	19	21	21	17	12	12	5	2	287
1	1	3	10	31	35	34	28	20	20	8	4	505
1	1	1	5	15	17	16	13	10	9	4	2	287
1	1	1	5	16	18	18	15	10	10	4	2	391
0	0	1	2	6	7	7	6	4	4	2	1	198
5	5	10	40	125	140	137	112	80	78	32	17	2,188
27	27	40	45	50	50	49	40	40	39	21	11	1,307
32	32	50	85	175	190	186	152	120	117	53	28	3,495

\*\*\*\*This table is approximate and subject to the exceptions.

TRADESMEN AND Supervisory Staff	Month and Year (Number of persons)											
	Jan-15	Feb-15	Mar-15	Apr-15	May-15	Jun-15	Jul-15	Aug-15	Sep-15	Oct-15	Nov-15	Dec-15
<b>Tradesmen and Direct Supervision</b>												
OPERATING ENGINEERS L.904	0	0	8	20	30	33	33	36	27	25	25	1
TEAMSTERS LOCAL 855	0	0	0	5	9	12	33	11	8	10	10	1
CARPENTER LOCAL 579	0	0	0	24	18	0	9	9	0	0	3	3
LABOURER LOCAL 1208	0	0	0	20	16	15	9	12	15	10	10	1
IRONWORKERS LOCAL 764	0	0	0	0	0	0	3	3	6	6	12	0
ELECTRICAL WORKERS LOCAL 2330	0	0	0	0	2	2	2	2	1	1	1	0
MANAGERIAL STAFF	0	6	18	36	36	36	36	36	36	30	24	6
DIRECT SUPERVISION	0	0	1	8	9	10	9	10	10	9	9	1
<b>Hrs/Month</b>												
Trades and direct spvr	210											
Mgmt	200											
<b>Total Hours</b>												
OPERATING ENGINEERS L.904	-	-	1,680	4,200	6,300	6,930	6,930	7,560	5,670	5,250	5,250	210
TEAMSTERS LOCAL 855	-	-	-	1,050	1,890	2,520	6,930	2,310	1,680	2,100	2,100	210
CARPENTER LOCAL 579	-	-	-	5,040	3,780	-	1,890	1,890	-	-	630	630
LABOURER LOCAL 1208	-	-	-	4,200	3,360	3,150	1,890	2,520	3,150	2,100	2,100	210
IRONWORKERS LOCAL 764	-	-	-	-	-	-	630	630	1,260	1,260	2,520	-
ELECTRICAL WORKERS LOCAL 2330	-	-	-	-	420	420	420	420	210	210	210	-
MANAGERIAL STAFF	-	1,200	3,600	7,200	7,200	7,200	7,200	7,200	7,200	6,000	4,800	1,200
DIRECT SUPERVISION	-	-	210	1,680	1,890	2,100	1,890	2,100	2,100	1,890	1,890	210
<b>Totals</b>	-	1,200	5,490	23,370	24,840	22,320	27,780	24,630	21,270	18,810	19,500	2,670

<b>TRADESMEN AND</b>												
<b>Supervisory Staff</b>	<b>Jan-16</b>	<b>Feb-16</b>	<b>Mar-16</b>	<b>Apr-16</b>	<b>May-16</b>	<b>Jun-16</b>	<b>Jul-16</b>	<b>Aug-16</b>	<b>Sep-16</b>	<b>Oct-16</b>	<b>Nov-16</b>	<b>Dec-16</b>
<b>Tradesmen and Direct Supervision</b>												
OPERATING ENGINEERS L.904	0	9	9	24	60	51	66	90	72	96	18	0
TEAMSTERS LOCAL 855	0	12	12	18	18	24	69	162	147	138	21	0
CARPENTER LOCAL 579	0	0	0	18	36	0	12	0	36	36	0	0
LABOURER LOCAL 1208	0	15	9	12	72	69	72	123	177	78	12	3
IRONWORKERS LOCAL 764	0	0	0	0	0	0	0	6	6	12	0	0
ELECTRICAL WORKERS LOCAL 2330	0	0	0	0	0	0	0	0	0	0	0	0
MANAGERIAL STAFF	6	42	42	45	54	60	66	75	75	75	68	6
DIRECT SUPERVISION	<b>0</b>	<b>6</b>	<b>6</b>	<b>9</b>	<b>24</b>	<b>27</b>	<b>27</b>	<b>36</b>	<b>42</b>	<b>27</b>	<b>6</b>	<b>1</b>
<b>Hrs/Month</b>												
Trades and direct spvr												
Mgmt												
<b>Total Hours</b>												
OPERATING ENGINEERS L.904	-	1,890	1,890	5,040	12,600	10,710	13,860	18,900	15,120	20,160	3,780	-
TEAMSTERS LOCAL 855	-	2,520	2,520	3,780	3,780	5,040	14,490	34,020	30,870	28,980	4,410	-
CARPENTER LOCAL 579	-	-	-	3,780	7,560	-	2,520	-	7,560	7,560	-	-
LABOURER LOCAL 1208	-	3,150	1,890	2,520	15,120	14,490	15,120	25,830	37,170	16,380	2,520	630
IRONWORKERS LOCAL 764	-	-	-	-	-	-	-	1,260	1,260	2,520	-	-
ELECTRICAL WORKERS LOCAL 2330	-	-	-	-	-	-	-	-	-	-	-	-
MANAGERIAL STAFF	1,200	8,400	8,400	9,000	10,800	12,000	13,200	15,000	15,000	15,000	13,600	1,200
DIRECT SUPERVISION	-	1,260	1,260	1,890	5,040	5,670	5,670	7,560	8,820	5,670	1,260	210
<b>Totals</b>	<b>1,200</b>	<b>17,220</b>	<b>15,960</b>	<b>26,010</b>	<b>54,900</b>	<b>47,910</b>	<b>64,860</b>	<b>102,570</b>	<b>115,800</b>	<b>96,270</b>	<b>25,570</b>	<b>2,040</b>

<b>TRADESMEN AND Supervisory Staff</b>	<b>Jan-17</b>	<b>Feb-17</b>	<b>Mar-17</b>	<b>Apr-17</b>	<b>May-17</b>	<b>Jun-17</b>	<b>Jul-17</b>	<b>Aug-17</b>	<b>Sep-17</b>	<b>Oct-17</b>	<b>Nov-17</b>	<b>Dec-17</b>	
<b>Tradesmen and Direct Supervision</b>													
OPERATING ENGINEERS L.904	0	0	3	3	60	75	111	114	114	45	21	0	
TEAMSTERS LOCAL 855	0	0	0	12	48	45	150	156	156	9	9	0	
CARPENTER LOCAL 579	0	0	0	0	42	48	48	48	48	24	0	0	
LABOURER LOCAL 1208	3	3	6	42	102	108	99	81	81	72	12	0	
IRONWORKERS LOCAL 764	0	0	0	12	24	24	24	24	24	48	24	0	
ELECTRICAL WORKERS LOCAL 2330	0	0	0	0	6	6	6	6	6	6	12	0	
MANAGERIAL STAFF	2	2	18	68	68	68	68	68	68	60	18	12	
DIRECT SUPERVISION	1	1	3	9	27	33	36	36	36	24	9	0	
<b>Hrs/Month</b>													
Trades and direct spvr													
Mgmt													
<b>Total Hours</b>													
OPERATING ENGINEERS L.904	-	-	630	630	12,600	15,750	23,310	23,940	23,940	9,450	4,410	-	268,590
TEAMSTERS LOCAL 855	-	-	-	2,520	10,080	9,450	31,500	32,760	32,760	1,890	1,890	-	274,050
CARPENTER LOCAL 579	-	-	-	-	8,820	10,080	10,080	10,080	10,080	5,040	-	-	97,020
LABOURER LOCAL 1208	630	630	1,260	8,820	21,420	22,680	20,790	17,010	17,010	15,120	2,520	-	285,390
IRONWORKERS LOCAL 764	-	-	-	2,520	5,040	5,040	5,040	5,040	5,040	10,080	5,040	-	54,180
ELECTRICAL WORKERS LOCAL 2330	-	-	-	-	1,260	1,260	1,260	1,260	1,260	1,260	2,520	-	12,390
MANAGERIAL STAFF	400	400	3,600	13,600	13,600	13,600	13,600	13,600	13,600	12,000	3,600	2,400	286,800
DIRECT SUPERVISION	210	210	630	1,890	5,670	6,930	7,560	7,560	7,560	5,040	1,890	-	105,420
<b>Totals</b>	<b>1,240</b>	<b>1,240</b>	<b>6,120</b>	<b>29,980</b>	<b>78,490</b>	<b>84,790</b>	<b>113,140</b>	<b>111,250</b>	<b>111,250</b>	<b>59,880</b>	<b>21,870</b>	<b>2,400</b>	<b>1,383,840</b>



Price Item	Description	Qty	Units	Unit Prices				Costs						
				Bidder 1	Bidder 2	Bidder 3	Estimate	Estimate2	Bidder 1	Bidder 2	Bidder 3	Estimate	Estimate2	
78	Overburden excavation	50,000.00	m3	-	-	-	-	10.85	-	-	-	-	-	542,500
80	Foundation rock excavation	1,400.00	m3	-	-	-	-	42.88	-	-	-	-	-	60,032
79	Foundation cleaning (water/air jets and Vacuum trucks)	3,700.00	m2	-	-	-	-	70.50	-	-	-	-	-	260,850
81	Dental Concrete	600.00	m3	-	-	-	-	503.00	-	-	-	-	-	301,800
82	Slush Grout	30.00	m2	-	-	-	-	343.00	-	-	-	-	-	10,290
83	Dry Pack	20.00	m3	-	-	-	-	665.00	-	-	-	-	-	13,300
84	Drilling Holes for Grouting	700.00	m	-	-	-	-	35.00	-	-	-	-	-	24,500
	Grouting - Successful connections	140.00	unit	-	-	-	-	570.00	-	-	-	-	-	79,800
85	Dry cement incorporated in the grout	27,000.00	kg	-	-	-	-	1.00	-	-	-	-	-	27,000
86	Cored Drill Check Holes	28.00	m	-	-	-	-	200.00	-	-	-	-	-	5,600
87	Non-Cored Drill Check Holes	70.00	m	-	-	-	-	200.00	-	-	-	-	-	14,000
90	Water test - Successful connections	17.00	unit	-	-	-	-	542.00	-	-	-	-	-	9,214
89	Water pressure test (Lugeon - 5 Stages)	7.00	hour	-	-	-	-	600.00	-	-	-	-	-	4,200
92	Thermistors (measure rock temperature in grout holes)	1.00	unit	-	-	-	-	3,000.00	-	-	-	-	-	3,000
133	RCC Supply and place	37,500.00	m3	-	-	-	-	192.70	-	-	-	-	-	7,226,250
	Slush grout interlayer	80.00	m3	560.00	560.00	560.00	560.00	560.00	44,800	44,800	44,800	44,800	44,800	44,800
134	Concrete CVC	1,940.00	m3	-	-	-	-	959.16	-	-	-	-	-	1,860,766
134	Concrete cap	1,100.00	m3	-	-	-	-	959.16	-	-	-	-	-	1,055,074
	Formwork - Drainage gallery	2,880.00	m2	-	-	-	-	-	-	-	-	-	-	-
	Re-steel	1.00	EA	400,000	400,000	400,000	400,000	400,000	400,000	400,000	400,000	400,000	400,000	400,000
	Instrumentation	1.00	Unit	51,000	51,000	51,000	51,000	51,000	51,000	51,000	51,000	51,000	51,000	51,000
	Seismograph	2.00	EA	5,000	5,000	5,000	5,000	5,000	10,000	10,000	10,000	10,000	10,000	10,000
121	Drilling pressure relief valves	600.00	LM	-	-	-	-	100.00	-	-	-	-	-	60,000
122	Head (PVC) for drains	70.00	EA	-	-	-	-	250.00	-	-	-	-	-	17,500
123	Drilling pressure in drainage gallery	600.00	LM	-	-	-	-	100.00	-	-	-	-	-	60,000
124	Head (PVC) upward drains gallery	70.00	EA	-	-	-	-	250.00	-	-	-	-	-	17,500
<b>Totals</b>									<b>505,800</b>	<b>505,800</b>	<b>505,800</b>	<b>505,800</b>	<b>12,158,976</b>	

Price Item	Description	Qty	Units	Unit Prices (with Indirect factor)					Costs (with indirect factor)				
				Bidder 1	Bidder 2	Bidder 3	Estimate	Estimate2	Bidder 1	Bidder 2	Bidder 3	Estimate	Estimate2
78	Overburden excavation	50,000.00	m3	-	-	-	-	16.41	-	-	-	-	820,387
80	Foundation rock excavation	1,400.00	m3	-	-	-	-	64.84	-	-	-	-	90,782
79	Foundation cleaning (water/air jets and Vacuum trucks)	3,700.00	m2	-	-	-	-	106.61	-	-	-	-	394,466
81	Dental Concrete	600.00	m3	-	-	-	-	760.65	-	-	-	-	456,392
82	Slush Grout	30.00	m2	-	-	-	-	518.70	-	-	-	-	15,561
83	Dry Pack	20.00	m3	-	-	-	-	1,005.64	-	-	-	-	20,113
84	Drilling Holes for Grouting	700.00	m	-	-	-	-	52.93	-	-	-	-	37,050
	Grouting - Successful connections	140.00	unit	-	-	-	-	861.97	-	-	-	-	120,676
85	Dry cement incorporated in the grout	27,000.00	kg	-	-	-	-	1.51	-	-	-	-	40,830
86	Cored Drill Check Holes	28.00	m	-	-	-	-	302.45	-	-	-	-	8,469
87	Non-Cored Drill Check Holes	70.00	m	-	-	-	-	302.45	-	-	-	-	21,171
90	Water test - Successful connections	17.00	unit	-	-	-	-	819.63	-	-	-	-	13,934
89	Water pressure test (Lugeon - 5 Stages)	7.00	hour	-	-	-	-	907.34	-	-	-	-	6,351
92	Thermistors (measure rock temperature in grout holes)	1.00	unit	-	-	-	-	4,536.70	-	-	-	-	4,537
133	RCC Supply and place	37,500.00	m3	-	-	-	-	291.41	-	-	-	-	10,927,782
	Slush grout interlayer	80.00	m3	1,210.06	1,340.22	869.67	846.85	846.85	96,805	107,218	69,573	67,748	67,748
134	Concrete CVC	1,940.00	m3	-	-	-	-	1,450.47	-	-	-	-	2,813,914
134	Concrete cap	1,100.00	m3	-	-	-	-	1,450.47	-	-	-	-	1,595,518
	Formwork - Drainage gallery	2,880.00	m2	-	-	-	-	-	-	-	-	-	-
	Re-steel	1.00	EA	864,330	957,302	621,190	604,894	604,894	864,330	957,302	621,190	604,894	604,894
	Instrumentation	1.00	Unit	110,202	122,056	79,202	77,124	77,124	110,202	122,056	79,202	77,124	77,124
	Seismograph	2.00	EA	10,804	11,966	7,765	7,561	7,561	21,608	23,933	15,530	15,122	15,122
121	Drilling pressure relief valves	600.00	LM	-	-	-	-	151.22	-	-	-	-	90,734
122	Head (PVC) for drains	70.00	EA	-	-	-	-	378.06	-	-	-	-	26,464
123	Drilling pressure in drainage gallery	600.00	LM	-	-	-	-	151.22	-	-	-	-	90,734
124	Head (PVC) upward drains gallery	70.00	EA	-	-	-	-	378.06	-	-	-	-	26,464
<b>Totals</b>									<b>1,092,946</b>	<b>1,210,508</b>	<b>785,494</b>	<b>764,888</b>	<b>18,387,219</b>

Indirect Factor

2.16

2.39

1.55

1.51

1.51