

LOWER CHURCHIL		SCHEDULE OF PRICE BREAKDOWN										APPENDIX A2.1	
		ISSUED FOR: BID					DATE: 14 - Oct - 2014					BIDDER'S NAME:	
PRICE ITEM	WBS CODE	PRICE ITEM DESCRIPTION											
No	REFERENCE Exhibit 2 - ATT 1	CODE	SUBCODE	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
<b>2 0000 INDIRECT COSTS</b>													
1	2.1	0000.01		LS	1	-	-	120,000.00	-	4,414,898.58	317,442.90	4,852,341.48	4,852,341.48
2	2.2	0000.02		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	0000.03		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	0000.04		LS	1	140,497.00	10,331,475.98	280,104.69	278,474.36	2,594,244.23	943,900.95	14,428,200.20	14,428,200.20
5	2.5	0000.05		LS	1	-	-	-	-	8,950,492.10	626,534.45	9,577,026.55	9,577,026.55
6	2.6	0000.06		LS	1	-	-	-	-	6,884,994.60	481,949.62	7,366,944.22	7,366,944.22
7	2.7	0000.07		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>3 1100 GENERAL</b>													
<b>3.1 1110 DEWATERING OF STRUCTURE AREAS</b>													
8	3.1.1	1110.01		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>3.2 1111 EXCAVATION OF EXISTING COFFERDAMS</b>													
9	3.2.1	1111.01		m <sup>3</sup>	177,000	0.10	7.99	2.96	4.58	-	1.09	16.62	2,941,032.59
10	3.2.2	1111.02		m <sup>3</sup>	20,000	0.14	12.16	3.21	5.14	8.64	2.04	31.18	623,612.40
<b>3.3 1112 PERMANENT ROADS AND PARKING AREA</b>													
11	3.3.1	1112.01		m <sup>2</sup>	8,000	0.08	6.09	2.41	3.82	-	0.86	13.19	105,492.80
12	3.3.2	1112.02		m <sup>3</sup>	44,000	0.24	19.72	8.49	12.28	-	2.83	43.33	1,906,594.99
13	3.3.3	1112.03		m <sup>3</sup>	5,800	0.29	23.53	9.92	14.86	-	3.38	51.69	299,820.39
14	3.3.4	1112.04		m <sup>3</sup>	4,000	0.30	23.90	10.03	15.02	-	3.43	52.38	209,505.53
15	3.3.5	1112.05		m <sup>3</sup>	4,500	0.32	25.81	11.12	16.47	-	3.74	57.14	257,127.13
16	3.3.6	1112.06		m	48	1.59	126.38	378.85	15.77	-	36.47	557.46	26,758.26
17	3.3.7	1112.07		m	400	0.61	47.71	70.07	1.27	-	8.33	127.39	50,956.60
18	3.3.8	1112.08		unit	2	4.36	349.99	364.32	5.09	-	49.94	763.34	1,526.68
<b>3.4 1113 ACCESS ROAD TO LAYDOWN AREA C1</b>													
19	3.4.1	1113.01		m <sup>3</sup>	26,000	0.24	19.72	8.49	12.28	-	2.83	43.33	1,126,624.31
20	3.4.2	1113.02		m <sup>3</sup>	7,500	0.30	23.90	10.03	15.02	-	3.43	52.38	392,822.86
<b>3.5 1114 DITCHES</b>													
21	3.5.1	1114.01		m <sup>3</sup>	2,000	0.08	6.09	2.41	3.82	-	0.86	13.19	26,373.20
22	3.5.2	1114.02		m <sup>2</sup>	2,500	0.23	17.91	5.84	0.19	-	1.68	25.62	64,047.21
23	3.5.3	1114.03		m <sup>3</sup>	1,000	0.35	28.15	6.70	14.38	-	3.45	52.67	52,673.95
<b>3.6 1115 SLOPE PROTECTION</b>													
24	3.6.1	1115.01		m <sup>3</sup>	2,500	0.28	22.51	7.77	18.14	-	3.39	51.81	129,520.18
		1115.01a		TON	1	-	0.07	2.07	5.71	-	0.55	8.40	-
		1115.01b		TON	1	-	0.13	3.12	6.74	-	0.70	10.69	-
25	3.6.2	1115.02		m <sup>2</sup>	4,500	0.23	17.91	7.47	0.19	-	1.79	27.36	123,121.38
<b>3.7 1116 CHAIN LINK FENCES AND GATES</b>													
26	3.7.1	1116.01		m	720	0.97	76.91	99.23	2.03	-	12.47	190.64	137,262.06
<b>3.8 1150 TEMPORARY UPSTREAM BRIDGE OVER SPILLWAY APPROACH CHANNEL</b>													
27	3.8.1	1150.01		LS	1	-	-	-	-	203,520.30	14,246.42	217,766.72	217,766.72
28	3.8.2	1150.02		LS	1	-	-	3,360,000.00	-	-	235,200.00	3,595,200.00	3,595,200.00
29	3.8.3	1150.03		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>	

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>4.2300</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	0.08	6.09	2.41	3.82	-	0.86	13.19	32,966.50	
				<b>Foundation Preparation in dry condition</b>											
31	4.1.2		2341.02	Foundation Cleaning (water/air jets and Vacuum trucks)	m <sup>2</sup>	1,200	0.27	21.11	1.82	0.44	-	1.64	25.01	30,015.67	
32	4.1.3		2341.03	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	
33	4.1.4		2341.04	Dental Concrete	m <sup>3</sup>	800	4.70	363.89	147.56	101.94	-	42.94	656.33	525,064.45	
34	4.1.5		2341.05	Slush Grout	m <sup>2</sup>	1,200	0.66	51.32	80.45	4.74	-	9.56	146.07	175,283.81	
35	4.1.6		2341.06	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>											
36	4.1.7		2341.07	Compacted Till - Zones 1 and 1C Materials	m <sup>3</sup>	19,000	0.17	13.96	5.18	8.35	-	1.92	29.42	558,907.77	
37	4.1.8		2341.08	Dumped Till - Zone 1A Material	m <sup>3</sup>	134,000	0.12	9.43	3.92	6.39	-	1.38	21.13	2,831,904.05	
38	4.1.9		2341.09	Compacted Granular - Zone 2A Material	m <sup>3</sup>	20,700	0.32	25.99	11.12	16.57	-	3.76	57.44	1,188,917.29	
39	4.1.10		2341.10	Compacted Granular - Zone 2C Material	m <sup>3</sup>	8,700	0.31	24.95	10.49	15.83	-	3.59	54.87	477,398.72	
40	4.1.11		2341.11	Dumped Granular - Zone 2E Material	m <sup>3</sup>	26,300	0.35	28.41	13.22	19.80	-	4.30	65.73	1,728,634.11	
41	4.1.12		2341.12	Dumped Rockfill- Zone 3 Material	m <sup>3</sup>	143,000	0.14	11.14	4.30	6.81	-	1.56	23.81	3,405,298.13	
42	4.1.13		2341.13	Dumped Large Blocks (300-1000 mm) - Zone 3 Class 1	m <sup>3</sup>	37,000	0.14	11.86	4.76	7.29	-	1.67	25.58	946,481.17	
43	4.1.14		2341.14	Dumped Large Blocks (≥1000 mm) - Zone 3 Class 2	m <sup>3</sup>	65,000	0.16	12.62	6.26	10.49	-	2.06	31.42	2,042,187.00	
44	4.1.15		2341.15	Dumped Large Blocks (≥1300 mm) - Zone 3 Class 3	m <sup>3</sup>	15,000	0.16	12.62	6.26	10.49	-	2.06	31.42	471,273.92	
45	4.1.16		2341.16	Compacted Crushed Stone - Zone 3A Material	m <sup>3</sup>	10,950	0.28	22.51	7.77	18.14	-	3.39	51.81	567,298.38	
46	4.1.17		2341.17	Compacted Rockfill - Zone 3C Material	m <sup>3</sup>	33,740	0.24	19.36	7.46	15.11	-	2.94	44.87	1,513,899.04	
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/air 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>											

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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	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</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	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>3</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</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	0.08	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>3</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	
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	21.25	-	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>		

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												
4.5		2320		<b>NORTH DAM</b>											
<b>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	10.88	-	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>2</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		Lift 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	-	-	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	1.21	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	-	382.43	
139	4.5.35	2320.35		Increase or decrease in quantity of flyash - Bid Mix (rate only)	Kg	1	-	-	-	-	-	300.89	-	321.96	
140	4.5.36	2320.36		Increase or decrease in quantity of cement - Source B (rate only)	Kg	1	-	-	-	-	-	365.65	-	391.25	
141	4.5.37	2320.37		Increase or decrease in quantity of flyash - Source B (rate only)	Kg	1	-	-	-	-	-	374.92	-	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	
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>			



LOWER CHURCHIL		SCHEDULE OF PRICE BREAKDOWN										APPENDIX A2.1											
		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																				
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	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>									
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)	m3/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	
<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	

SCHEDULE OF PRICE BREAKDOWN

LOWER CHURCHILL PROJECT  
MUSKRAT FALLS  
CH0009 - CONSTRUCTION OF NORTH AND SOUTH DAMS

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>2</b>	<b>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</b>	<b>1100</b>	<b>GENERAL</b>									
		<b>3.1</b>	<b>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</b>	<b>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</b>	<b>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</b>	<b>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</b>	<b>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</b>	<b>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</b>	<b>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</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>									

SCHEDULE OF PRICE BREAKDOWN

LOWER CHURCHILL PROJECT  
MUSKRAT FALLS  
CH0009 - CONSTRUCTION OF NORTH AND  
SOUTH DAMS

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 (\$ CAN) F= (B+C+D+E) \$	TOTAL PRICE (\$ CAN) G= A x F \$
No	REFERENCE Exhibit 2 - ATT 1	CODE	SUBCODE										
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 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	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

SCHEDULE OF PRICE BREAKDOWN

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CH0009 - CONSTRUCTION OF NORTH AND  
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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 (\$ CAN) F= (B+C+D+E) \$	TOTAL PRICE (\$ CAN) G= A x F \$
No	REFERENCE Exhibit 2 - ATT 1	CODE	SUBCODE										
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>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

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No	REFERENCE Exhibit 2 - ATT 1	CODE	SUBCODE									(\$ CAN) F= (B+C+D+E)	(\$ CAN) G= A x F
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</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	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



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No	REFERENCE Exhibit 2 - ATT 1	CODE	SUBCODE										
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>	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	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>85,669,302.64</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

SCHEDULE OF PRICE BREAKDOWN

LOWER CHURCHILL PROJECT  
MUSKRAT FALLS  
CH0009 - CONSTRUCTION OF NORTH AND SOUTH DAMS

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
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>6</b>	<b>1100</b>	<b>Borrow Areas</b>									
		<b>6.1</b>	<b>1117.00</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>314,977,891.22</b>
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	<b>ESIMATE OF TRAVEL ALLOWANCES - TRADES LABOUR, LOCAL STAFF AND U.S. STAFF</b>										\$	<b>7,691,689.00</b>
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**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.

<b>FOR THE LOWER CHURCHILL PROJECT - MUSKRAT FALLS</b>
This Appendix forms part of the Proposal submitted by: <b>Barnard-Pennecon J.V.</b>
Name of Bidder: <b>Barnard-Pennecon J.V.</b>
Request For Proposal, Package No: <b>CH0009</b>
Signature:
Date of Proposal: <b>22-OCT-2014</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							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	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>2 0000</b>				<b>INDIRECT COSTS</b>									
1	2.1	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>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	8,180	\$ 872,408.11	\$ 397,703.19	\$ 279,888.70	\$ -	\$ 1,550,000.00	\$ 1,550,000.00
<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	\$ 5.17	\$ 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>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	\$ 8.13	\$ -	\$ 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>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	\$ 4.83	\$ -	\$ 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>3.5 1114</b>				<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>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	\$ 11.75	\$ -	\$ 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>3.7 1116</b>				<b>CHAIN LINK FENCES AND GATES</b>									
26	3.7.1	1116.01		Chain Link Fence and Gates	m	720	2.90	\$ 323.10	\$ 69.16	\$ 82.73	\$ -	\$ 475.00	\$ 342,000.00
<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	\$ 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>									



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							Rev. B2			
PRICE ITEM	WBS CODE			PRICE ITEM DESCRIPTION	UNIT OF MEASURE	ESTIMATED QUANTITY	MAN HOURS (AT SITE) PER UNIT	MANPOWER COST/UNIT (\$ CAN)	MATERIALS COST/UNIT (\$ CAN)	EQUIPMENT COST/UNIT (\$ CAN)	PROFIT COST/UNIT (\$ CAN)	UNIT PRICE (\$ CAN) F= (B+C+D+E)	TOTAL PRICE (\$ CAN) G= A X F	
No	REFERENCE Exhibit 2 - ATT 1	CODE	SUBCODE			A		B	C	D	E			
<b>DAMS AND COFFERDAMS - GENERAL</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	0.14	\$ 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	
38	4.1.9		2341.09	Compacted Granular - Zone 2A Material	m <sup>3</sup>	20,700	0.28	\$ 29.72	\$ -	\$ 33.28	\$ -	\$ 63.00	\$ 1,304,100.00	
39	4.1.10		2341.10	Compacted Granular - Zone 2C Material	m <sup>3</sup>	8,700	0.28	\$ 29.79	\$ -	\$ 33.21	\$ -	\$ 63.00	\$ 548,100.00	
40	4.1.11		2341.11	Dumped Granular - Zone 2E Material	m <sup>3</sup>	26,300	0.16	\$ 17.42	\$ -	\$ 27.58	\$ -	\$ 45.00	\$ 1,183,500.00	
41	4.1.12		2341.12	Dumped Rockfill- Zone 3 Material	m <sup>3</sup>	143,000	0.06	\$ 6.62	\$ -	\$ 9.38	\$ -	\$ 16.00	\$ 2,288,000.00	
42	4.1.13		2341.13	Dumped Large Blocks (300-1000 mm) - Zone 3 Class 1	m <sup>3</sup>	37,000	0.08	\$ 8.76	\$ -	\$ 14.24	\$ -	\$ 23.00	\$ 851,000.00	
43	4.1.14		2341.14	Dumped Large Blocks (≥1000 mm) - Zone 3 Class 2	m <sup>3</sup>	65,000	0.17	\$ 17.85	\$ -	\$ 30.15	\$ -	\$ 48.00	\$ 3,120,000.00	
44	4.1.15		2341.15	Dumped Large Blocks (≥1300 mm) - Zone 3 Class 3	m <sup>3</sup>	15,000	0.20	\$ 21.46	\$ -	\$ 40.54	\$ -	\$ 62.00	\$ 930,000.00	
45	4.1.16		2341.16	Compacted Crushed Stone - Zone 3A Material	m <sup>3</sup>	10,950	0.32	\$ 36.05	\$ 0.28	\$ 37.68	\$ -	\$ 74.00	\$ 810,300.00	
46	4.1.17		2341.17	Compacted Rockfill - Zone 3C Material	m <sup>3</sup>	33,740	0.10	\$ 11.38	\$ -	\$ 15.62	\$ -	\$ 27.00	\$ 910,980.00	
47	4.1.18		2341.18	Compacted Rockfill - Zone 3D Material	m <sup>3</sup>	33,900	0.10	\$ 11.38	\$ -	\$ 15.62	\$ -	\$ 27.00	\$ 915,300.00	
48	4.1.19		2341.19	Dumped Crushed Stone- Zone 3F Material	m <sup>3</sup>	21,000	0.16	\$ 21.51	\$ 0.27	\$ 28.72	\$ -	\$ 50.50	\$ 1,060,500.00	
<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	0.00	\$ -	\$ -	\$ 138.00	\$ -	\$ 138.00	\$ 19,320.00	
<b>Jet Grouting cut off wall</b>														
52	4.1.23		2341.23	Mobilization and demobilization	LS	1	2,342.00	\$ 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	\$ 71.52	\$ 5.48	\$ 54.00	\$ -	\$ 131.00	\$ 1,257,600.00	
54	4.1.25		2341.25	Jet Grouted Cut-off wall	m <sup>2</sup>	2,800	1.55	\$ 170.85	\$ 502.06	\$ 307.08	\$ -	\$ 980.00	\$ 2,744,000.00	
<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	\$ 3.20	\$ 1.16	\$ 0.64	\$ -	\$ 5.00	\$ 55,000.00	
57	4.1.28		2341.28	Grouting - Successful connections, if required	unit	60	2.50	\$ 270.00	\$ -	\$ 405.00	\$ -	\$ 675.00	\$ 40,500.00	
<b>SUB-TOTAL UPSTREAM COFFERDAM</b>													\$ 27,024,660.00	
<b>DOWNSTREAM COFFERDAM</b>														
<b>CIVIL WORK</b>														
<b>Excavation</b>														
58	4.2.1		2342.01	Overburden excavation	m <sup>3</sup>	500	0.15	\$ 16.36	\$ -	\$ 18.64	\$ -	\$ 35.00	\$ 17,500.00	
<b>Foundation Preparation</b>														
59	4.2.2		2342.02	Foundation cleaning (water/air jets and Vacuum trucks)	m <sup>2</sup>	1,250	0.90	\$ 102.13	\$ -	\$ 17.87	\$ -	\$ 120.00	\$ 150,000.00	
60	4.2.3		2342.03	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	
61	4.2.4		2342.04	Dental Concrete	m <sup>3</sup>	200	1.92	\$ 212.78	\$ 514.02	\$ 23.20	\$ -	\$ 750.00	\$ 150,000.00	
62	4.2.5		2342.05	Slush Grout	m <sup>2</sup>	1,250	0.20	\$ 21.62	\$ 8.64	\$ 1.04	\$ -	\$ 31.30	\$ 39,125.00	
63	4.2.6		2342.06	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>														
64	4.2.7		2342.07	Compacted Till - Zones 1 and 1C	m <sup>3</sup>	2,000	0.25	\$ 26.40	\$ -	\$ 33.60	\$ -	\$ 60.00	\$ 120,000.00	
65	4.2.8		2342.08	Compacted Granular - Zone 2C	m <sup>3</sup>	2,500	0.27	\$ 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	\$ 13.41	\$ -	\$ 16.59	\$ -	\$ 30.00	\$ 138,000.00	
67	4.2.10		2342.10	Compacted Rockfill - Zone 3D	m <sup>3</sup>	2,000	0.12	\$ 13.41	\$ -	\$ 16.59	\$ -	\$ 30.00	\$ 60,000.00	
<b>SUB-TOTAL DOWNSTREAM COFFERDAM</b>													\$ 984,125.00	

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: H.J. O'Connell Construction Limited - Dragados-Canada, Inc. Joint Venture							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	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	0.06	\$ 6.70	\$ -	\$ 9.30	\$ -	\$ 16.00	\$ 140,800.00	
<b>Foundation Preparation</b>														
69	4.3.2		2343.02	Foundation cleaning (water/air jets and Vacuum trucks)	m <sup>2</sup>	1,700	0.90	\$ 102.13	\$ -	\$ 17.87	\$ -	\$ 120.00	\$ 204,000.00	
70	4.3.3		2343.03	Rock excavation including dental excavation and scaling	m <sup>3</sup>	700	0.79	\$ 84.92	\$ 24.65	\$ 100.43	\$ -	\$ 210.00	\$ 147,000.00	
71	4.3.4		2343.04	Dental Concrete	m <sup>3</sup>	250	1.92	\$ 212.78	\$ 514.02	\$ 23.20	\$ -	\$ 750.00	\$ 187,500.00	
72	4.3.5		2343.05	Slush Grout	m <sup>2</sup>	1,700	0.20	\$ 21.62	\$ 8.64	\$ 1.04	\$ -	\$ 31.30	\$ 53,210.00	
73	4.3.6		2343.06	Dry Pack	m <sup>3</sup>	9	50.00	\$ 5,465.96	\$ 1,271.69	\$ 262.36	\$ -	\$ 7,000.00	\$ 63,000.00	
<b>Embankment Materials</b>														
74	4.3.7		2343.07	Compacted Till - Zones 1 and 1C	m <sup>3</sup>	6,300	0.29	\$ 31.41	\$ 2.08	\$ 43.51	\$ -	\$ 77.00	\$ 485,100.00	
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	
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	
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	
<b>SUB-TOTAL INTAKE CHANNEL COFFERDAM</b>				<b>\$ 2,069,710.00</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/air jets and Vacuum trucks)	m <sup>2</sup>	3,400	0.9	\$ 102.13	\$ -	\$ 17.87	\$ -	\$ 120.00	\$ 408,000.00	
80	4.4.3		2330.03	Rock excavation including dental excavation and scaling	m <sup>3</sup>	2,000	0.79	\$ 84.92	\$ 24.65	\$ 100.43	\$ -	\$ 210.00	\$ 420,000.00	
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	
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	
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	
84	4.4.7		2330.07	Drilling Holes for Grouting	m	1,200	0.7	\$ 96.00	\$ -	\$ 24.00	\$ -	\$ 120.00	\$ 144,000.00	
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	
86	4.4.9		2330.09	Cored Drill Check Holes	m	30	1.6	\$ 425.00	\$ -	\$ 75.00	\$ -	\$ 500.00	\$ 15,000.00	
87	4.4.10		2330.10	Percussion Drilling Check holes	m	60	0.80	\$ 96.00	\$ -	\$ 24.00	\$ -	\$ 120.00	\$ 7,200.00	
88	4.4.11		2330.11	Grouting - Successful connections	unit	250	2.93	\$ 376.70	\$ -	\$ 33.30	\$ -	\$ 410.00	\$ 102,500.00	
89	4.4.12		2330.12	Water pressure test (Lugeon - 5 Stages)	hour	8	3	\$ 429.00	\$ -	\$ 221.00	\$ -	\$ 650.00	\$ 5,200.00	
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	\$ 300.00	\$ 216.00	\$ 84.00	\$ -	\$ 600.00	\$ 12,000.00	
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	
<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	
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	
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	
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	
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	
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	
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	
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	
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	68.00	\$ 7,806.00	\$ 9,310.51	\$ 383.50	\$ -	\$ 17,500.00	\$ 35,000.00	
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	
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	
<b>SUB-TOTAL SOUTH DAM</b>				<b>\$ 11,429,660.00</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							Rev. B2			
PRICE ITEM	WBS CODE	PRICE ITEM DESCRIPTION		UNIT OF MEASURE	ESTIMATED QUANTITY	MAN HOURS (AT SITE) PER UNIT	MANPOWER COST/UNIT (\$ CAN)	MATERIALS COST/UNIT (\$ CAN)	EQUIPMENT COST/UNIT (\$ CAN)	PROFIT COST/UNIT (\$ CAN)	UNIT PRICE (\$ CAN) F= (B+C+D+E)	TOTAL PRICE (\$ CAN) G= A X F		
No	REFERENCE EXHIBIT 2 - ATT 1	CODE	SUBCODE		A		B	C	D	E	F	G		
<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	74.6	\$ 21,268.34	\$ -	\$ 28,731.66	\$ 50,000.00	\$ 150,000.00		
				<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		
				<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		
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		
109	4.5.5	2320.05		Dental Concrete	m <sup>3</sup>	4,000	1.92	\$ 212.78	\$ 514.02	\$ 750.00	\$ 3,000,000.00			
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		
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		
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		
113	4.5.9	2320.09		Grouting - Successful Connections	unit	720	0.30	\$ 363.38	\$ -	\$ 41.62	\$ 405.00	\$ 291,600.00		
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		
115	4.5.11	2320.11		Cored Drill Check Holes	m	60	1.80	\$ 251.85	\$ -	\$ 93.15	\$ 345.00	\$ 20,700.00		
116	4.5.12	2320.12		Percussion Drilling Check Holes	m	120	1.40	\$ 198.90	\$ -	\$ 56.10	\$ 255.00	\$ 30,600.00		
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		
118	4.5.14	2320.14		Water Pressure Test - Successful connections	unit	36	1.33	\$ 190.00	\$ -	\$ 60.00	\$ 250.00	\$ 9,000.00		
119	4.5.15	2320.15		Uplift gauges	m	60	1.80	\$ 270.00	\$ 240.00	\$ 90.00	\$ 600.00	\$ 36,000.00		
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		
				<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		
122	4.5.18	2320.18		PVC Caps for Drainage Holes	unit	125	0.00	\$ -	\$ 33.00	\$ -	\$ 33.00	\$ 4,125.00		
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		
				<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		
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	68.00	\$ 7,050.00	\$ 4,700.00	\$ -	\$ 11,750.00	\$ 23,500.00		
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		
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		
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		
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		
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		
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		
				<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		
133a				Roller Compacted Concrete Coarse Aggregate (Rate Only)	tonn			\$ -	\$ -	\$ -	\$ 15.50	\$ -		
133b				Roller Compacted Concrete Fine Aggregate (Rate Only)	tonn			\$ -	\$ -	\$ -	\$ 15.50	\$ -		
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		
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		
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		
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			\$ -	\$ -	\$ -	\$ 0.44	\$ -		
139	4.5.35	2320.35		Increase or decrease in quantity of flyash - Bid Mix (rate only)	kg			\$ -	\$ -	\$ -	\$ 0.41	\$ -		
140	4.5.36	2320.36		Increase or decrease in quantity of cement - Source B (rate only)	kg			\$ -	\$ -	\$ -	\$ 0.50	\$ -		
141	4.5.37	2320.37		Increase or decrease in quantity of flyash - Source B (rate only)	kg			\$ -	\$ -	\$ -	\$ 0.50	\$ -		
142	4.5.38	2320.38		Air-entraining Admixture	litre	315,000	0.00	\$ -	\$ 4.30	\$ -	\$ 4.30	\$ 1,354,500.00		
143	4.5.39	2320.39		Retarder Admixture	litre	336,000	0.00	\$ -	\$ 4.70	\$ -	\$ 4.70	\$ 1,579,200.00		
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		
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		
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		
147	4.5.43	2320.43		Steel Guardrails	kg	5,200	0.30	\$ 34.93	\$ 6.33	\$ 2.24	\$ 43.50	\$ 226,200.00		
148	4.5.44	2320.44		Waterstop	m	1,350	1.5	\$ 168.85	\$ 21.15	\$ -	\$ 190.00	\$ 256,500.00		
<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	8.000	\$ 862.50	\$ 287.50	\$ -	\$ 1,150.00	\$ 23,000.00		
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		
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		
152	4.6.4	2370.04		Embedded Copper Grounding Plates	unit	7	0.300	\$ 35.00	\$ 315.00	\$ -	\$ 350.00	\$ 2,450.00		
				<b>SUB-TOTAL NORTH DAM</b>										
											\$ 132,820,940.00			

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: H.J. O'Connell Construction Limited - Dragados-Canada, Inc. Joint Venture							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	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>									
<b>5.1</b>				<b>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
				<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	\$ 16.48	\$ 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>6 1100</b>				<b>Borrow Areas</b>									
<b>6.1</b>				<b>1117.00 Borrowed Construction Material</b>									
161	6.1.1		3120.01	Overhaul of Borrowed Construction Material (rate only)	m <sup>3</sup> /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>	

**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

**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) 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	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	m³	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	m³	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	m³	8,000	0.08	\$ 8.71	\$ -	\$ 12.29	\$ -	\$ 21.00	\$ 168,000.00	
12	3.3.2		1112.02	Approved Compactable Material	m³	44,000	0.05	\$ 4.95	\$ -	\$ 7.75	\$ -	\$ 12.70	\$ 558,800.00	
13	3.3.3		1112.03	Granular "B" Material	m³	5,800	0.20	\$ 24.14	\$ 0.28	\$ 31.34	\$ -	\$ 55.75	\$ 323,350.00	
14	3.3.4		1112.04	Granular "C" Material	m³	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	m³	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	m³	26,000	0.05	\$ 4.95	\$ -	\$ 7.75	\$ -	\$ 12.70	\$ 330,200.00	
20	3.4.2		1113.02	Granular "C" Material	m³	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	m³	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/m²	m²	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	m³	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	m³	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/m²	m²	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>										

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) E	UNIT PRICE (\$ CAN) F= (B+C+D+E)	TOTAL PRICE (\$ CAN) G= A x F	
No	REFERENCE Exhibit 2 - ATT 1	CODE	SUBCODE											
	4	2300		<b>DAMS AND COFFERDAMS - GENERAL</b>										
	4.1	2340	2341	<b>UPSTREAM COFFERDAM</b>										
				<b>CIVIL WORK</b>										
				Excavation										
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>										
													\$ 27,488,940.00	

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) E	UNIT PRICE (\$ CAN) F= (B+C+D+E)	TOTAL PRICE (\$ CAN) G= A X F	
No	REFERENCE Exhibit 2 - ATT 1	CODE	SUBCODE											
	4.2	2340	2342	<b>DOWNSTREAM COFFERDAM</b>										
				<b>CIVIL WORK</b>										
				<b>Excavation</b>										
58	4.2.1		2342.01	Overburden excavation	m <sup>3</sup>	500	0.15	\$ 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	
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>\$ 975,520.00</b>	
	4.3	2340	2343	<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	0.06	\$ 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>\$ 2,100,480.00</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) 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>4.4</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	
					<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	
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>	



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) E	UNIT PRICE (\$ CAN) F= (B+C+D+E)	TOTAL PRICE (\$ CAN) G= A x F	
No	REFERENCE Exhibit 2 - ATT 1	CODE	SUBCODE											
	4.5		2320	<b>NORTH DAM</b>										
				<b>CIVIL WORK</b>										
				<b>Clearing</b>										
105	4.5.1		2320.01	Clearing of the North Abutment	Ha	3	74.60	\$ 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 (lugenon - 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	
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	

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) E	UNIT PRICE (\$ CAN) F= (B+C+D+E)	TOTAL PRICE (\$ CAN) G= A x F
No	REFERENCE Exhibit 2 - ATT 1	CODE	SUBCODE										
	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>									
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>
	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)	m3/km							\$ 1.50	
<b>ROW A</b>	<b>CALCULATED TOTAL OF LUMP SUM AND UNIT PRICE ITEMS (BASED ON APPROXIMATE QUANTITIES)</b>											<b>\$ 340,365,092.00</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) E	UNIT PRICE   (\$ CAN) F= (B+C+D+E)	TOTAL PRICE (\$ CAN) G= A x F	
No	REFERENCE Exhibit 2 - ATT 1	CODE	SUBCODE											

<p><b>NOTES</b></p> <p><u>Note 1</u> : 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.</p> <p><u>Note 2</u> : This Document is provided to the bidders in Native Excel File format. It is the bidders responsibility to verify cell formats and formulas.</p> <p><u>Note 3</u> : 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.</p>
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<p><b>FOR THE LOWER CHURCHILL PROJECT - MUSKRAT FALLS</b></p> <p>This Appendix forms part of the Proposal submitted by: H.J. O'Connell Construction Limited - Dragados Canada Inc. Joint Venture</p> <p>Name of Bidder: H.J. O'Connell Construction Limited - Dragados Canada Inc. Joint Venture</p> <p>Request For Proposal, Package No: CH0009</p> <p>Signature: Manuel Rivaya - Dragados Canada, Inc.</p> <p>Signature: Leonard Knox - H.J. O'Connell Construction Limited</p> <p>Date of Proposal: 22-OCT-2014</p>
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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	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	LS	1.00	-	-	-	-	-	8,950,492	9,577,027	9,577,027	-	-	-	8,950,492	626,534	-	-	-	-	100%
6	Warranty, per Article 17 of the Agreement	LS	1.00	-	-	-	-	-	6,884,995	7,366,944	7,366,944	-	-	-	6,884,995	481,950	7,366,944	-	-	-	100%
7	Demobilization	LS	1.00	-	-	-	-	-	1,779,411	1,903,969	1,903,969	-	-	-	1,779,411	124,559	1,903,969	-	-	100%	0%
8	Dewatering of Structure Areas	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 Existing Embankment cofferdams 1, 2 and 3, and Existing Ramps	m³	177,000.00	0.10	7.99	2.96	4.58	-	1.09	16.62	2,941,033	1,415,084	523,317	-	192,404	2,941,033	17,685	102,400	80.02	100%	0%
10	Excavation of Downstream section of RCC riverside cofferdam	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	Overburden Excavation	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	Approved Compactable 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 "B" 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	Granular "C" 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	Maintenance Grade 3 material	m³	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	CSP culvert, dia. 900 mm	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	Guide Rails	m	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	Gate Type 1	unit	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	Approved Compactable 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	Granular "C" Material	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	Overburden Excavation	m³	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	Non-woven Geotextile, min 300 g/m2	m2	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, 100 - 250 mm	m³	1,000.00	0.35	28.15	6.70	14.38	-	3.45	52.67	52,674	28,154	6,696	14,381	-	3,446	52,674	351	80.18	100%	0%
24	Rockfill Protection, Zone 3E Material	m³	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	Non-woven Geotextile, min 530 g/m2	m2	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	Chain Link Fence and Gates	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	Engineering of Temporary Upstream Bridge	LS	1.00	-	-	-	-	203,520.30	14,246.42	217,767.72	217,767.72	-	-	-	203,520	14,246	217,767.72	-	-	100%	0%
28	Supply of Temporary Upstream Bridge	LS	1.00	-	-	3,360,000.00	-	-	235,200.00	3,595,200.00	3,595,200.00	-	3,360,000	-	-	235,200	3,595,200.00	-	-	100%	0%
29	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%
30	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%
31	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%
32	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%
33	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%
34	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%
35	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%
36	Compacted Till - Zones 1 and 1C Materials	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%
37	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%
38	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%
39	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%
40	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%
41	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%
42	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%
43	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%
44	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%
45	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%
46	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%
47	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%
48	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%
49	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	100,670	250	78.62	100%	0%
50	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	43,633	140	78.62	100%	0%
51	Core Diamond Drill Rig in Standby	hour	140.00	-	-	-	-	109.32	7.65												

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	
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	7,831.81	-	1,626.93	24,868.81	74,606	30,849	15,381	23,495	-	4,881	74,606	382	80.73	100%	0%	-
106	Overburden Excavation	m3	72,000.00	0.08	6.09	2.41	3.82	-	0.86	13.19	949,435	438,479	173,675	275,168	-	62,113	949,435	5,491	79.86	100%	0%	-
107	Foundation Cleaning (water/air jets and vacuum)	m2	13,500.00	0.27	21.11	1.82	0.44	-	1.64	25.01	337,676	285,033	24,627	5,926	-	22,091	337,676	3,618	78.78	100%	0%	-
108	Rock Excavation including Dental Excavation and Scaling	m3	6,000.00	0.51	41.28	7.31	10.88	-	4.16	63.63	381,773	247,658	43,859	65,280	-	24,976	381,773	3,058	80.98	100%	0%	-
109	Dental Concrete	m3	4,000.00	4.70	363.89	147.56	101.94	-	42.94	656.33	2,625,322	1,455,576	590,225	407,771	-	171,750	2,625,322	18,813	77.37	100%	0%	-
110	Slush Grout	m2	13,500.00	0.66	51.32	80.45	4.74	-	9.56	146.07	1,971,943	692,873	1,086,023	64,042	-	129,006	1,971,943	8,850	78.29	100%	0%	-
111	Dry Pack	m3	70.00	1.79	141.05	804.14	25.95	-	67.98	1,039.13	72,739	9,873	56,290	1,817	-	4,759	72,739	125	78.81	100%	0%	-
112	Drilling Holes in RCC and Bedrock for Grouting	m	4,200.00	3.01	237.33	5.52	38.01	97.53	26.49	404.88	1,700,477	996,789	23,177	159,649	409,616	111,246	1,700,477	12,647	78.82	100%	0%	-
113	Grouting - Successful Connections	unit	720.00	6.17	503.89	6.91	9.71	1,120.04	114.84	1,755.39	1,263,883	362,803	4,978	6,991	806,427	82,684	1,263,883	4,444	81.63	100%	0%	-
114	Dry Cement incorporated in the grout	kg	126,000.00	0.02	1.31	0.36	-	2.56	0.30	4.52	569,780	165,095	45,034	-	322,376	37,275	569,780	2,100	78.62	100%	0%	-
115	Cored Drill Check Holes	m	60.00	0.20	16.33	-	-	328.54	24.14	369.01	22,140	980	-	-	19,712	1,448	22,140	12	81.64	100%	0%	-
116	Percussion Drilling Check Holes	m	120.00	3.01	237.33	5.52	38.01	97.53	26.49	404.88	48,585	28,480	662	4,561	11,703	3,178	48,585	361	78.82	100%	0%	-
117	Water pressure test (ugeon - 5 Stages)	hour	15.00	8.00	653.09	-	-	523.34	82.35	1,258.78	18,882	9,796	-	-	7,850	1,235	18,882	120	81.64	100%	0%	-
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	unit	125.00	0.36	28.66	22.38	0.29	-	3.59	54.92	6,865	3,582	-	36	-	449	6,865	46	78.63	100%	0%	-
123	Drilling Holes Upward for Drainage from Drainage Gallery into RCC, Ø76 mm	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	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	Conventional Vibrated Concrete (North Abutment Crest Surface and Training Wall)	m3	270.00	12.60	946.34	178.30	165.34	-	90.30	1,380.29	372,677	255,513	48,142	44,641	-	24,381	372,677	3,403	75.09	100%	0%	-
138	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
139	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
140	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
141	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
142	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%	-
143	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%	-
144	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%	-
145	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%	-
146	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%	-
147	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%	-
148	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%	-
149	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%	-
150	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%	-
151	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%	-
152	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%	-
153	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%	-

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 Requirements	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	-	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%	
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%	
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%	
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	-	-	-	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%
29	Installation, removal and handover of 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 trucks)	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 Scaling	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 Class 1	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 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%	
44	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%	
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%	
50	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%	
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%	
53	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%	
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%	
55	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%	
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 trucks)	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 scaling	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	-	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	-	42	194,028	44,022	-	150,006	-	194,028	474	92.87	100%	0%	
67	Compacted Rockfill - Zone 3D	m3	2,000	84	4	-	13	-	17	34,000	8,000	-	26,000	-	34,000	84	95.24	100%	0%	
68	Overburden excavation	m3	8,800	235	3	-	6	-	8	71,984	22,000	-	49,984	-	71,984	235	93.62	100%	0%	





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		
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	100%	0%	-	
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	100%	0%	-	
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	0%	100%	-	
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	-	100%	-	
5	Credit, Guarantee and Insurance	LS	1.00	-	-	2,030,650	-	-	2,030,650	2,030,650	-	2,030,650	-	-	2,030,650	-	-	-	100%	-	
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	-	-	-	100%	-	
7	Demobilization	LS	1.00	-	-	-	250,000	-	250,000	250,000	-	-	250,000	-	250,000	-	-	-	100%	-	
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	100%	0%	-	
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	-	2,389,500	8,272	110.64	100%	0%	450	
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	100%	0%	-	
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	100%	0%	-	
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	100%	0%	-	
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	100%	0%	0	
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	100%	0%	0	
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	100%	0%	0	
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	100%	0%	-	
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	100%	0%	-	
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	100%	0%	-	
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	100%	0%	-	
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	100%	0%	-	
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	100%	0%	-	
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	100%	0%	-	
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	100%	0%	-	
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	100%	0%	-	
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	100%	0%	-	
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	100%	0%	-	
27	Engineering of Temporary Upstream Bridge	LS	1.00	-	116,000.00	-	-	-	116,000	116,000	116,000	-	-	-	116,000	-	-	-	100%	0%	-
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	100%	0%	-	
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	100%	0%	-	
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	100%	0%	-	
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	100%	0%	-	
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	100%	0%	-	
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	100%	0%	-	
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	100%	0%	-	
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	100%	0%	0	
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	100%	0%	-	
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	100%	0%	-	
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	100%	0%	-	
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	100%	0%	-	
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	100%	0%	-	
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	100%	0%	-	
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	100%	0%	0	
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	100%	0%	-	
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	100%	0%	-	
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	100%	0%	0	
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	100%	0%	-	
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	100%	0%	-	
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	100%	0%	-	
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	100%	0%	-	
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	100%	0%	-	
51	Core Diamond Drill Rig in Standby	hour	140.00	-	-	-	138.00	-	138	19,320	-	-	19,320	-	19,320	-	-	-	100%	0%	-
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	100%	0%	-	
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	100%	0%	-	
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	100%	0%	-	
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	100%	0%	-	
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	100%	0%	0	
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	100%	0%	-	
58	Overburden excavation	m3	500.00	0.15	16.36	-	18.64	-	35	17,500	8,182	-	9,318	-	17,500	74	110.56	100%	0%	-	
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	100%	0%	-	
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	100%	0%	-	
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	100%	0%	-	
62	Slush Grout	m2	1,250.00	0.20	21.62	8.64	1.04	-	31	39,125	27,022	10,806	1,297	-							



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
95	Compacted Crushed Stone - Zone 3A	m3	12,000.00	0.30	34.84	0.28	37.89	-	73	876,000	418,021	3,319	454,661	-	876,000	3,574	116.96	100%	0%
96	Compacted Crushed Stone - Zone 3B	m3	16,000.00	0.30	35.05	0.28	37.67	-	73	1,168,000	560,848	4,499	602,652	-	1,168,000	4,765	117.70	100%	0%
97	Compacted Rockfill - Zone 3C	m3	21,000.00	0.09	10.45	-	13.55	-	24	504,000	219,424	-	284,576	-	504,000	1,932	113.57	100%	0%
98	Compacted Rockfill - Zone 3D	m3	46,000.00	0.09	10.45	-	13.55	-	24	1,104,000	480,644	-	623,356	-	1,104,000	4,232	113.57	100%	0%
99	Riprap - Zone 4	m3	6,000.00	0.18	21.10	-	33.90	-	55	330,000	126,621	-	203,379	-	330,000	1,104	114.69	100%	0%
100	Compacted Crushed Stone - Zone 5	m3	310.00	0.30	38.47	0.28	43.25	-	82	25,420	11,926	86	13,408	-	25,420	94	126.88	100%	0%
101	Jersey Barrier	m	600.00	0.65	77.40	94.17	28.42	-	200	120,000	46,442	56,504	17,054	-	120,000	392	118.47	100%	0%
102	V-Notch Weirs, excluding Shelters	unit	2.00	68.00	7,806.00	9,310.51	383.50	-	17,500	35,000	15,612	18,621	767	-	35,000	136	114.79	100%	0%
103	Shelters for V-Notch Weirs	unit	2.00	33.50	3,939.41	1,582.22	278.38	-	5,800	11,600	7,879	3,164	557	-	11,600	67	117.59	100%	0%
104	Survey Monuments at South Dam Crest	unit	3.00	5.33	586.65	1,886.11	27.24	-	2,500	7,500	1,760	5,658	82	-	7,500	16	110.00	100%	0%
105	Clearing of the North Abutment	Ha	3.00	74.60	21,268.34	-	28,731.66	-	50,000	150,000	63,805	-	86,195	-	150,000	224	285.10	100%	0%
106	Overburden Excavation	m3	72,000.00	0.08	9.18	-	12.82	-	22	1,584,000	660,926	-	923,074	-	1,584,000	6,112	108.14	100%	0%
107	Foundation Cleaning (water/air jets and vacuum)	m2	13,500.00	1.50	167.27	-	32.73	-	200	2,700,000	2,258,191	-	441,809	-	2,700,000	20,250	111.52	100%	0%
108	Rock Excavation including Dental Excavation and Scaling	m3	6,000.00	1.01	108.64	24.40	116.96	-	250	1,500,000	651,830	146,382	701,788	-	1,500,000	6,032	108.06	100%	0%
109	Dental Concrete	m3	4,000.00	1.92	212.78	514.02	23.20	-	750	3,000,000	851,118	2,056,084	92,799	-	3,000,000	7,675	110.89	100%	0%
110	Slush Grout	m2	13,500.00	0.20	21.62	8.64	1.04	-	31	422,550	291,841	116,701	14,008	-	422,550	2,700	108.09	100%	0%
111	Dry Pack	m3	70.00	50.00	5,465.96	1,271.69	262.36	-	7,000	490,000	382,617	89,018	18,365	-	490,000	3,500	109.32	100%	0%
112	Drilling Holes in RCC and Bedrock for Grouting	m	4,200.00	1.39	210.60	-	49.40	-	260	1,092,000	884,520	-	207,480	-	1,092,000	5,838	151.51	100%	0%
113	Grouting - Successful Connections	unit	720.00	0.30	363.38	-	41.62	-	405	291,600	261,636	-	29,964	-	291,600	216	1,211.28	100%	0%
114	Dry Cement incorporated in the grout	kg	126,000.00	0.01	4.36	1.01	0.93	-	6	793,800	549,346	127,620	116,834	-	793,800	1,260	435.99	100%	0%
115	Cored Drill Check Holes	m	60.00	1.80	251.85	-	93.15	-	345	20,700	15,111	-	5,589	-	20,700	108	139.92	100%	0%
116	Percussion Drilling Check Holes	m	120.00	1.40	198.90	-	56.10	-	255	30,600	23,868	-	6,732	-	30,600	168	142.07	100%	0%
117	Water pressure test (lugon - 5 Stages)	hour	15.00	3.20	456.00	-	144.00	-	600	9,000	6,840	-	2,160	-	9,000	48	142.50	100%	0%
118	Water Pressure Test - Successful connections	unit	36.00	1.33	190.00	-	60.00	-	250	9,000	6,840	-	2,160	-	9,000	48	142.50	100%	0%
119	Uplift gauges	m	60.00	1.80	270.00	240.00	90.00	-	600	36,000	16,200	14,400	5,400	-	36,000	108	150.00	100%	0%
120	Thermistor (measure temperature in grout holes)	unit	1.00	48.00	6,500.00	3,500.00	-	-	10,000	10,000	6,500	3,500	-	-	10,000	48	135.42	100%	0%
121	Drilling Holes for Drainage in Foundation from Drainage Gallery, Ø76 mm	m	3,200.00	1.44	221.40	-	48.60	-	270	864,000	708,480	-	155,520	-	864,000	4,608	153.75	100%	0%
122	PVC Caps for Drainage Holes	unit	125.00	-	-	33.00	-	-	33	4,125	-	4,125	-	-	-	-	-	100%	0%
123	Drilling Holes Upward for Drainage from Drainage Gallery into RCC, Ø76 mm	m	3,200.00	1.74	258.25	3.69	48.06	-	310	992,000	826,412	11,801	153,787	-	992,000	5,568	148.42	100%	0%
124	Drilling Holes for piezometers	m	100.00	1.04	119.56	18.99	16.46	-	155	15,500	11,956	1,899	1,646	-	15,500	104	114.96	100%	0%
125	Vibrating Wire and Standpipe Piezometers TYPE - 1, excluding Cables	unit	8.00	34.00	3,600.00	2,400.00	-	-	6,000	48,000	28,800	19,200	-	-	48,000	272	105.88	100%	0%
126	Vibrating Wire and Standpipe Piezometers TYPE - 2, excluding Cables	unit	2.00	68.00	7,050.00	4,700.00	-	-	11,750	23,500	14,100	9,400	-	-	23,500	136	103.68	100%	0%
127	Instrument Cable including PVC Conduits and Pull Boxes	m	2,700.00	0.15	18.20	33.80	-	-	52	140,400	49,140	91,260	-	-	140,400	405	121.33	100%	0%
128	Thermistors Cable in RCC	unit	8.00	725.00	7,500.00	7,500.00	-	-	15,000	120,000	60,000	60,000	-	-	120,000	5,800	10.34	100%	0%
129	V-notch Weirs	unit	4.00	114.00	12,533.76	8,915.92	1,550.33	-	23,000	92,000	50,135	35,664	6,201	-	92,000	456	109.95	100%	0%
130	Vibrating Wire Weir Monitors	unit	4.00	725.00	7,500.00	22,500.00	-	-	30,000	120,000	30,000	90,000	-	-	120,000	2,900	10.34	100%	0%
131	Data logger, Terminal Box, Barometer Box including Grounding	LS	1.00	225.00	24,000.00	96,000.00	-	-	120,000	120,000	24,000	96,000	-	-	120,000	225	106.67	100%	0%
132	Crest Survey Monuments	unit	4.00	7.00	841.36	2,112.89	45.75	-	3,000	12,000	3,365	8,452	183	-	12,000	28	120.19	100%	0%
133	Roller Compacted Concrete (RCC)	m3	210,000.00	1.58	188.58	107.89	79.53	-	376	78,960,000	39,602,801	22,656,004	16,701,195	-	78,960,000	331,770	119.37	100%	0%
134	Conventional Vibrated Concrete (CVC) (Crest and Flip Bucket)	m3	11,100.00	7.92	865.59	290.57	218.84	-	1,375	15,262,500	9,608,091	3,225,292	2,429,117	-	15,262,500	87,966	109.23	100%	0%
135	Facing Concrete	m3	8,600.00	5.79	623.79	198.30	217.91	-	1,040	8,944,000	5,364,584	1,705,414	1,874,002	-	8,944,000	49,820	107.68	100%	0%
136	GERCC or GEVR - Formed Faces	m3	4,650.00	4.36	476.90	130.47	242.63	-	850	3,952,500	2,217,599	606,685	1,128,216	-	3,952,500	20,256	109.48	100%	0%
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	146.10	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	315,000.00	-	-	4.30	-	-	4	1,354,500	-	1,354,500	-	-	1,354,500	-	-	100%	0%
143	Retarder Admixture	litre	336,000.00	-	-	4.70	-	-	5	1,579,200	-	1,579,200	-	-	1,579,200	-	-	100%	0%
144	Precast Concrete	m3	1,150.00	2.75	292.62	1,691.94	115.45	-	2,100	2,415,000	336,513	1,945,726	132,762	-	2,415,000	3,165	106.32	100%	0%
145	Gallery Floor CVC Concrete	m3	275.00	13.55	1,838.12	366.82	295.06	-	2,500	687,500	505,482	100,875	81,143	-	687,500	3,726	135.66	100%	0%
146	Steel Reinforcement	kg	500,000.00	0.02	4.87	2.73	0.40	-	8	4,000,000	2,433,679	1,366,881	199,440	-	4,000,000	10,200	238.60	100%	0%
147	Steel Guardrails	kg	5,200.00	0.30	34.93	6.33	2.24	-	44	226,200	181,643	32,906	11,651	-	226,200	1,560	116.44	100%	0%
148	Waterstop	m	1,350.00	1.50	168.85	21.15	-	-	190	256,500	227,946	28,554	-	-	256,500	2,025	112.57	100%	0%
149	Exothermic Connections	unit	20.00	8.00	862.50	287.50	-	-	1,150	23,000	17,250	5,750	-	-	23,000	160	107.81	100%	0%
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	100%	0%
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	100%	0%
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	100%	0%
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	-	264,000	955	117.32	100%	0%
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	100%	0%
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	100%	0%
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	100%	0%
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	100%	0%
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	100%	0%
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	100%	0%
1																			

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	
1	Mobilization	LS	1.00	39,486.68	2,941,240	3,367,070	28,091,690	-	34,400,000	34,400,000	2,941,240	3,367,070	28,091,690	-	34,400,000	39,487	74.49	100%	0%	-
2	Site Installation	LS	1.00	60,692.58	6,537,165	2,985,661	13,877,175	-	23,400,000	23,400,000	6,537,165	2,985,661	13,877,175	-	23,400,000	60,693	107.71	100%	0%	-
3	Management, Staff, employees and Consultants	LS	1.00	332,250.00	38,543,133	4,561,891	894,976	-	44,000,000	44,000,000	38,543,133	4,561,891	894,976	-	44,000,000	332,250	116.01	0%	100%	-
4	Health and Safety, Environmental and Quality Requirements	LS	1.00	102,526.48	8,814,063	127,398	58,539	-	9,000,000	9,000,000	8,814,063	127,398	58,539	-	9,000,000	102,526	85.97	-	100%	-
5	Credit, Guarantee and Insurance	LS	1.00	-	-	2,252,200	-	-	2,252,200	2,252,200	-	2,252,200	-	-	2,252,200	-	-	-	100%	-
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	-	-	-	100%	-
7	Demobilization	LS	1.00	-	-	-	1,353,000	-	1,353,000	1,353,000	-	-	1,353,000	-	1,353,000	-	-	100%	0%	-
8	Dewatering of Structure Areas	LS	1.00	8,179.00	892,108	406,684	286,209	-	1,585,000	1,585,000	892,108	406,684	286,209	-	1,585,000	8,179	109.07	100%	0%	-
9	Excavation of Existing Embankment cofferdams 1, 2 and 3, and Existing Ramps	m³	177,000.00	0.05	5.27	0.11	8.38	-	14	2,433,750	932,126	18,609	1,483,014	-	2,433,750	8,272	112.68	100%	0%	-
10	Excavation of Downstream section of RCC riverside cofferdam	m³	20,000.00	0.12	13.71	3.49	16.70	-	34	678,000	274,200	69,800	334,000	-	678,000	2,455	111.69	100%	0%	-
11	Overburden Excavation	m³	8,000.00	0.08	8.71	2.12	12.29	-	21	168,000	69,651	-	98,349	-	168,000	639	109.06	100%	0%	-
12	Approved Compactable Material	m³	44,000.00	0.05	4.95	-	7.75	-	13	558,800	217,683	-	341,117	-	558,800	2,092	104.08	100%	0%	-
13	Granular "B" Material	m³	5,800.00	0.20	24.14	0.28	31.34	-	56	323,350	139,986	1,618	181,746	-	323,350	1,166	120.01	100%	0%	-
14	Granular "C" Material	m³	4,000.00	0.18	22.12	0.28	29.60	-	52	208,000	88,476	1,114	118,411	-	208,000	735	120.35	100%	0%	-
15	Maintenance Grade 3 material	m³	4,500.00	0.22	25.85	0.28	32.87	-	59	265,500	116,325	1,260	147,915	-	265,500	983	118.33	100%	0%	-
16	CSP culvert, dia. 900 mm	m	48.00	4.43	470.58	214.75	189.67	-	875	42,000	22,588	10,308	9,104	-	42,000	213	106.15	100%	0%	-
17	Guide Rails	m	400.00	2.60	266.52	119.02	25.46	-	411	164,400	106,607	47,610	10,184	-	164,400	1,040	102.51	100%	0%	-
18	Gate Type 1	unit	2.00	76.80	8,055.96	3,512.94	1,431.11	-	13,000	26,000	16,112	7,026	2,862	-	26,000	154	104.90	100%	0%	-
19	Approved Compactable Material	m³	26,000.00	0.05	4.95	-	7.75	-	13	330,200	128,677	-	201,523	-	330,200	1,237	104.01	100%	0%	-
20	Granular "C" Material	m³	7,500.00	0.18	22.12	0.28	29.60	-	52	390,000	165,892	2,088	222,020	-	390,000	1,378	120.35	100%	0%	-
21	Overburden Excavation	m³	2,000.00	0.09	8.98	-	12.02	-	21	42,000	17,969	-	24,031	-	42,000	173	103.67	100%	0%	-
22	Non-woven Geotextile, min 300 g/m2	m2	2,500.00	0.16	16.45	5.37	4.18	-	26	65,000	41,137	13,423	10,439	-	65,000	400	102.84	100%	0%	-
23	Rockfill Protection, 100 - 250 mm	m³	1,000.00	0.35	36.60	-	26.40	-	63	63,000	36,603	-	26,397	-	63,000	348	105.18	100%	0%	-
24	Rockfill Protection, Zone 3E Material	m³	2,500.00	0.12	11.93	-	15.07	-	27	67,500	29,824	-	37,676	-	67,500	290	102.84	100%	0%	-
25	Non-woven Geotextile, min 530 g/m2	m2	4,500.00	0.04	4.05	3.68	1.03	-	9	39,375	18,210	16,543	4,621	-	39,375	180	101.17	100%	0%	-
26	Chain Link Fence and Gates	m	720.00	2.90	328.54	70.33	84.13	-	483	347,760	236,549	50,638	60,574	-	347,760	2,088	113.29	100%	0%	-
27	Engineering of Temporary Upstream Bridge	LS	1.00	-	119,000.00	-	-	-	119,000	119,000	119,000	-	-	-	119,000	-	-	100%	0%	-
28	Supply of Temporary Upstream Bridge	LS	1.00	373.10	37,977.07	2,008,755.60	15,267.33	-	2,062,000	2,062,000	37,977	2,008,756	15,267	-	2,062,000	373	101.79	100%	0%	-
29	Installation, removal and handover of Temporary Upstream Bridge	LS	1.00	19,617.33	2,087,752.20	1,196,498.35	1,570,749.45	-	4,855,000	4,855,000	2,087,752	1,196,498	1,570,749	-	4,855,000	19,617	106.42	100%	0%	-
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	100%	0%	-
31	Foundation Cleaning (water/air jets and Vacuum trucks)	m2	1,200.00	0.90	100.43	-	17.57	-	118	141,600	120,518	-	21,082	-	141,600	1,080	111.59	100%	0%	-
32	Rock Excavation including dental excavation and Scaling	m3	500.00	0.79	85.73	24.89	101.38	-	212	106,000	42,864	12,444	50,692	-	106,000	394	108.74	100%	0%	-
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	1,533	111.02	100%	0%	-
34	Slush Grout	m2	1,200.00	0.20	22.10	8.84	1.06	-	32	38,400	26,522	10,605	1,273	-	38,400	240	110.51	100%	0%	-
35	Dry Pack	m3	6.00	50.00	5,559.66	1,293.49	266.86	-	7,120	42,720	33,358	7,761	1,601	-	42,720	300	111.19	100%	0%	-
36	Compacted Till - Zones 1 and 1C Materials	m3	19,000.00	0.25	27.01	-	33.99	-	61	1,159,000	513,267	-	645,733	-	1,159,000	4,689	109.45	100%	0%	-
37	Dumped Till - Zone 1A Material	m3	134,000.00	0.13	13.75	-	24.50	-	38	5,125,500	1,842,500	-	3,283,000	-	5,125,500	16,795	109.71	100%	0%	-
38	Compacted Granular - Zone 2A Material	m3	20,700.00	0.28	30.67	-	34.33	-	65	1,345,500	634,817	-	710,683	-	1,345,500	5,711	111.16	100%	0%	-
39	Compacted Granular - Zone 2C Material	m3	8,700.00	0.28	30.74	-	34.26	-	65	565,500	267,435	-	298,065	-	565,500	2,394	111.69	100%	0%	-
40	Dumped Granular - Zone 2E Material	m3	26,300.00	0.16	17.61	-	27.89	-	46	1,196,650	463,178	-	733,472	-	1,196,650	4,240	109.24	100%	0%	-
41	Dumped Rockfill- Zone 3 Material	m3	143,000.00	0.06	6.72	-	9.53	-	16	2,323,750	960,960	-	1,362,790	-	2,323,750	8,882	108.19	100%	0%	-
42	Dumped Large Blocks (300-1000 mm) - Zone 3 Class 1	m3	37,000.00	0.08	9.14	-	14.86	-	24	888,000	338,180	-	549,820	-	888,000	3,034	111.46	100%	0%	-
43	Dumped Large Blocks (≥1000 mm) - Zone 3 Class 2	m3	65,000.00	0.17	18.22	-	30.78	-	49	3,185,000	1,184,526	-	2,000,474	-	3,185,000	10,779	109.89	100%	0%	-
44	Dumped Large Blocks (≥1300 mm) - Zone 3 Class 3	m3	15,000.00	0.20	21.81	-	41.19	-	63	945,000	327,144	-	617,856	-	945,000	3,025	108.15	100%	0%	-
45	Compacted Crushed Stone - Zone 3A Material	m3	10,950.00	0.32	37.02	0.28	38.70	-	76	832,200	405,377	3,093	423,731	-	832,200	3,480	116.50	100%	0%	-
46	Compacted Rockfill - Zone 3C Material	m3	33,740.00	0.10	11.80	-	16.20	-	28	944,720	398,200	-	546,520	-	944,720	3,509	113.48	100%	0%	-
47	Compacted Rockfill - Zone 3D Material	m3	33,900.00	0.10	11.80	-	16.20	-	28	949,200	400,089	-	549,111	-	949,200	3,526	113.48	100%	0%	-
48	Dumped Crushed Stone- Zone 3F Material	m3	21,000.00	0.18	21.93	0.28	29.29	-	52	1,081,500	460,530	5,880	615,090	-	1,081,500	3,859	119.32	100%	0%	-
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	100%	0%	-
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	100%	0%	-
51	Core Diamond Drill Rig in Standby	hour	140.00	-	-	-	139.00	-	139	19,460	-	-	19,460	-	19,460	-	-	100%	0%	-
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	100%	0%	-
53	Drilling Holes for Jet Grouting in embankment, river sediments and bedrock	m	9,600.00	0.56	71.79	5.50	54.21	-	132	1,262,400	689,186	52,833	520,381	-	1,262,400	5,400	127.63	100%	0%	-
54	Jet Grouted Cut-off wall	m2	2,800.00	1.55	171.20	503.09	307.71	-	982	2,749,600	479,364	1,408,651	861,585	-	2,749,600	4,344	110.35	100%	0%	-
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	100%	0%	-
56	Dry cement incorporated in the grout, if required	kg	11,000.00	0.03	3.13	1.14	0.63	-	5	53,900	34,478	12,543	6,879	-	53,900	345	100.03	100%	0%	-
57	Grouting - Successful connections, if required	unit	60.00	2.50	269.60	-	404.40	-	674	40,440	16,176	-	24,264	-	40,440	150	107.84	100%	0%	-
58	Overburden excavation	m3	500.00	0.15	16.36	-	18.64	-	35	17,500	8,182	-	9,318	-	17,500	74	110.56	100%	0%	-
59	Foundation cleaning (water/ait jets and Vacuum trucks)	m2	1,250.00	0.90	99.63	-	20.37	-	120	150,000	124,543	-	25,457	-	150,000	1,125	110.70	100%	0%	-
60	Rock excavation including dental excavation and scaling	m3	500.00	0.80	86.61	24.66	100.73	-	212	106,000	43,304	12,331	50,366	-	106,000	401	108.02	100%	0%	-
61	Dental Concrete	m3	200.00	1.92	206.57	497.99	45.44	-	750	150,000	41,314	99,598	9,088	-	150,000	383	107.78	100%	0%	-
62	Slush Grout	m2	1,250.00	0.20	22.10	8.84	1.06	-	32	40,000	27,627	11,047	1,326	-	40,0					

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	
89	Water pressure test (Lugeon - 5 Stages)	hour	8.00	3.00	429.66	-	221.34	-	651	5,208	3,437	-	1,771	-	5,208	24	143.22	100%	0%	-
90	Water test - Successful connections	unit	18.00	1.33	191.40	-	98.60	-	290	5,220	3,445	-	1,775	-	5,220	24	143.91	100%	0%	-
91	Uplift gauges	m	20.00	2.40	301.00	216.72	84.28	-	602	12,040	6,020	4,334	1,686	-	12,040	48	125.42	100%	0%	-
92	Thermistors (measure rock temperature in grout holes)	unit	1.00	48.00	-	6,080.00	3,420.00	-	9,500	9,500	-	6,080	3,420	-	9,500	48	-	100%	0%	-
93	Compacted Till - Zones 1 and 1C	m3	26,000.00	0.23	25.97	-	34.03	-	60	1,560,000	675,186	-	884,814	-	1,560,000	6,007	112.40	100%	0%	-
94	Compacted Granular - Zone 2A	m3	28,000.00	0.24	26.43	-	34.07	-	61	1,694,000	740,156	-	953,844	-	1,694,000	6,618	111.84	100%	0%	-
95	Compacted Crushed Stone - Zone 3A	m3	12,000.00	0.30	35.31	0.28	38.41	-	74	888,000	423,741	3,364	460,895	-	888,000	3,573	118.58	100%	0%	-
96	Compacted Crushed Stone - Zone 3B	m3	16,000.00	0.30	35.53	0.29	38.18	-	74	1,184,000	568,523	4,561	610,916	-	1,184,000	4,765	119.32	100%	0%	-
97	Compacted Rockfill - Zone 3C	m3	21,000.00	0.09	10.67	-	13.83	-	25	514,500	223,996	-	290,504	-	514,500	1,932	115.94	100%	0%	-
98	Compacted Rockfill - Zone 3D	m3	46,000.00	0.09	10.67	-	13.83	-	25	1,127,000	490,657	-	636,343	-	1,127,000	4,232	115.94	100%	0%	-
99	Riprap - Zone 4	m3	6,000.00	0.18	21.29	-	34.21	-	56	333,000	127,763	-	205,237	-	333,000	1,104	115.73	100%	0%	-
100	Compacted Crushed Stone - Zone 5	m3	310.00	0.32	38.94	0.28	43.78	-	83	25,730	12,072	87	13,572	-	25,730	100	120.76	100%	0%	-
101	Jersey Barrier	m	600.00	0.65	77.40	94.17	28.42	-	200	120,000	46,442	56,504	17,054	-	120,000	392	118.47	100%	0%	-
102	V-Notch Weirs, excluding Shelters	unit	2.00	67.75	7,627.57	9,097.70	374.74	-	17,100	34,200	15,255	18,195	749	-	34,200	135	112.59	100%	0%	-
103	Shelters for V-Notch Weirs	unit	2.00	33.30	4,007.33	1,609.50	283.18	-	5,900	11,800	8,015	3,219	566	-	11,800	67	120.34	100%	0%	-
104	Survey Monuments at South Dam Crest	unit	3.00	5.33	703.98	2,263.34	32.68	-	3,000	9,000	2,112	6,790	98	-	9,000	16	132.00	100%	0%	-
105	Clearing of the North Abutment	Ha	3.00	74.60	21,055.66	-	28,444.34	-	49,500	148,500	63,167	-	85,333	-	148,500	224	282.26	100%	0%	-
106	Overburden Excavation	m3	72,000.00	0.08	9.60	-	13.40	-	23	1,656,000	690,968	-	965,032	-	1,656,000	6,112	113.06	100%	0%	-
107	Foundation Cleaning (water/air jets and vacuum)	m2	13,500.00	1.50	167.27	-	32.73	-	200	2,700,000	2,258,191	-	441,809	-	2,700,000	20,250	111.52	100%	0%	-
108	Rock Excavation including Dental Excavation and Scaling	m3	6,000.00	1.01	111.25	24.98	119.77	-	256	1,536,000	667,474	149,895	718,631	-	1,536,000	6,032	110.66	100%	0%	-
109	Dental Concrete	m3	4,000.00	1.92	212.78	514.02	23.20	-	750	3,000,000	851,120	2,056,080	92,800	-	3,000,000	7,667	111.02	100%	0%	-
110	Slush Grout	m2	13,500.00	0.20	22.10	8.84	1.06	-	32	432,000	298,350	119,340	14,310	-	432,000	2,700	110.50	100%	0%	-
111	Dry Pack	m3	70.00	50.00	5,559.66	1,293.49	266.86	-	7,120	498,400	389,176	90,544	18,680	-	498,400	3,500	111.19	100%	0%	-
112	Drilling Holes in RCC and Bedrock for Grouting	m	4,200.00	1.39	214.65	-	50.35	-	265	1,113,000	901,530	-	211,470	-	1,113,000	5,838	154.42	100%	0%	-
113	Grouting - Successful Connections	unit	720.00	0.30	98.77	-	20.23	-	119	85,680	71,114	-	14,566	-	85,680	216	329.23	100%	0%	-
114	Dry Cement incorporated in the grout	kg	126,000.00	0.04	4.50	1.05	0.96	-	7	819,000	566,785	131,672	120,543	-	819,000	4,956	110.56	100%	0%	-
115	Cored Drill Check Holes	m	60.00	1.80	256.96	-	95.04	-	352	21,120	15,418	-	5,702	-	21,120	108	142.76	100%	0%	-
116	Percussion Drilling Check Holes	m	120.00	1.40	200.46	-	56.54	-	257	30,840	24,055	-	6,785	-	30,840	168	143.19	100%	0%	-
117	Water pressure test (lugeon - 5 Stages)	hour	15.00	3.20	457.52	-	144.48	-	602	9,036	6,863	-	2,167	-	9,036	48	142.98	100%	0%	-
118	Water Pressure Test - Successful connections	unit	36.00	1.33	190.76	-	60.24	-	251	9,036	6,867	-	2,169	-	9,036	48	143.43	100%	0%	-
119	Uplift gauges	m	60.00	1.80	273.15	242.80	91.05	-	607	36,420	16,389	14,568	5,463	-	36,420	108	151.75	100%	0%	-
120	Thermistor (measure temperature in grout holes)	unit	1.00	48.00	6,240.00	3,360.00	-	-	9,600	9,600	6,240	3,360	-	-	9,600	48	130.00	100%	0%	-
121	Drilling Holes for Drainage in Foundation from Drainage Gallery, Ø76 mm	m	3,200.00	1.44	223.04	-	48.96	-	272	870,400	713,728	-	156,672	-	870,400	4,608	154.89	100%	0%	-
122	PVC Caps for Drainage Holes	unit	125.00	-	-	35.00	-	-	35	4,375	-	4,375	-	-	4,375	-	-	100%	0%	-
123	Drilling Holes Upward for Drainage from Drainage Gallery into RCC, Ø76 mm	m	3,200.00	1.84	261.59	3.74	48.68	-	314	1,004,800	837,076	11,953	155,771	-	1,004,800	5,876	142.46	100%	0%	-
124	Drilling Holes for piezometers	m	100.00	1.02	121.87	19.35	16.78	-	158	15,800	12,187	1,935	1,678	-	15,800	102	119.10	100%	0%	-
125	Vibrating Wire and Standpipe Piezometers TYPE - 1, excluding Cables	unit	8.00	34.00	3,600.00	2,400.00	-	-	6,000	48,000	28,800	19,200	-	-	48,000	272	105.88	100%	0%	-
126	Vibrating Wire and Standpipe Piezometers TYPE - 2, excluding Cables	unit	2.00	68.00	7,140.00	4,760.00	-	-	11,900	23,800	14,280	9,520	-	-	23,800	136	105.00	100%	0%	-
127	Instrument Cable including PVC Conduits and Pull Boxes	m	2,700.00	0.15	18.55	-	34.45	-	53	143,100	50,085	-	93,015	-	143,100	405	123.67	100%	0%	-
128	Thermistors Cable in RCC	unit	8.00	725.00	7,450.00	7,450.00	-	-	14,900	119,200	59,600	59,600	-	-	119,200	5,800	10.28	100%	0%	-
129	V-notch Weirs	unit	4.00	114.01	12,915.22	9,187.27	1,597.51	-	23,700	94,800	51,661	36,749	6,390	-	94,800	456	113.28	100%	0%	-
130	Vibrating Wire Weir Monitors.	unit	4.00	25.00	7,425.00	-	22,275.00	-	29,700	118,800	29,700	-	89,100	-	118,800	100	297.00	100%	0%	-
131	Data logger, Terminal Box, Barometer Box including Grounding	LS	1.00	225.00	23,800.00	95,200.00	-	-	119,000	119,000	23,800	95,200	-	-	119,000	225	105.78	100%	0%	-
132	Crest Survey Monuments	unit	4.00	6.80	841.36	2,112.89	45.75	-	3,000	12,000	3,365	8,452	183	-	12,000	27	123.73	100%	0%	-
133	Roller Compacted Concrete (RCC)	m3	210,000.00	2.04	261.11	109.29	96.60	-	467	98,070,000	54,833,100	22,950,900	20,286,000	-	98,070,000	427,433	128.28	100%	0%	-
134	Conventional Vibrated Concrete (CVC) (Crest and Flip Bucket)	m3	11,100.00	4.44	896.64	305.00	228.35	-	1,430	15,873,000	9,952,758	3,385,538	2,534,704	-	15,873,000	49,328	201.77	100%	0%	-
135	Facing Concrete	m3	8,600.00	7.65	894.85	203.26	276.89	-	1,375	11,825,000	7,695,710	1,748,036	2,381,254	-	11,825,000	65,822	116.92	100%	0%	-
136	GERCC or GEVR - Formed Faces	m3	4,650.00	6.43	767.24	132.37	310.39	-	1,210	5,626,500	3,567,679	615,517	1,443,304	-	5,626,500	29,903	119.31	100%	0%	-
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.	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 500 kcmil	m	815.00	0.85	95.20	23.80	-	-	119	96,985	77,588	19,397	-	-	96,985	693	112.00	100%	0%	-
151	Bare, Stranded, Medium Hard-Drawn Copper Conductor, size 4/0 AWG	m	16.00	0.80	29.75	89.25	-	-	119	1,904	476	1,428	-	-	1,904	13	37.19	100%	0%	-
152	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		

Price Item	Description	Labour Cost			Hours			Labour Rate			Materials Cost			Equipment Cost			Subcontractor Cost			Other Costs			
		Bidder 1	Bidder 2	Bidder 3 Alt	Bidder 1	Bidder 2	Bidder 3 Alt	Bidder 1	Bidder 2	Bidder 3 Alt	Bidder 1	Bidder 2	Bidder 3 Alt	Bidder 1	Bidder 2	Bidder 3 Alt	Bidder 1	Bidder 2	Bidder 3 Alt	Bidder 1	Bidder 2	Bidder 3 Alt	
1	Mobilization	-	8,100,000	2,941,240	-	83,638	39,487	-	96.85	74.49	120,000	31,390,798	3,367,070	-	28,250,000	28,091,690	-	5,500,000	-	-	4,414,899	-	-
2	Site Installation	5,607,319	13,000,000	6,537,165	70,182	151,227	60,693	79.90	85.96	107.71	4,679,449	5,000,000	2,985,661	766,318	26,500,000	13,877,175	-	1,500,000	-	-	11,380,190	-	-
3	Management, Staff, employees and Consultants	74,639,085	41,500,000	38,543,133	905,459	234,434	332,250	82.43	177.02	116.01	5,044,144	2,500,000	4,561,891	1,852,782	1,000,000	894,976	-	150,000	-	-	58,404,144	-	-
4	Health and Safety, Environmental and Quality Requirements	10,331,476	2,400,000	8,814,063	140,497	14,143	102,526	73.54	169.70	85.97	280,105	550,000	127,398	278,474	-	58,539	-	115,000	-	-	2,594,244	-	-
5	Credit, Guarantee and Insurance	-	-	-	-	-	-	-	-	-	-	991,000	2,252,200	-	-	-	-	-	-	-	8,950,492	-	-
6	Warranty, per Article 17 of the Agreement	-	100,000	225,000	-	-	-	-	-	-	-	100,000	-	-	100,000	225,000	-	-	-	-	6,884,995	-	-
7	Demobilization	-	135,124	-	-	1,472	-	-	91.80	-	-	430,000	-	-	350,000	1,353,000	-	-	-	-	1,779,411	-	-
8	Dewatering of Structure Areas	748,087	290,000	892,108	9,243	3,174	8,179	80.93	91.37	109.07	568,248	400,000	406,684	516,246	1,500,000	286,209	-	-	-	-	-	-	-
9	Excavation of Existing Embankment cofferdams 1, 2 and 3, and Existing Ramps	1,415,084	304,440	932,126	17,685	3,343	8,272	80.02	91.07	112.68	523,317	-	18,609	810,228	1,600,080	1,483,014	-	-	-	-	-	-	-
10	Excavation of Downstream section of RCC riverside cofferdam	243,134	86,000	274,200	2,750	933	2,455	88.41	92.18	111.69	64,114	97,800	69,800	102,750	250,000	334,000	-	-	-	-	172,818	-	-
11	Overburden Excavation	48,720	19,040	69,651	610	206	639	79.86	92.43	109.06	19,297	-	-	30,574	52,000	98,349	-	-	-	-	-	-	-
12	Approved Compactable Material	867,863	80,960	217,683	10,625	873	2,092	81.68	92.74	104.08	373,684	-	-	540,317	59,840	341,117	-	-	-	-	-	-	-
13	Granular "B" Material	136,482	38,976	139,986	1,686	418	1,166	80.96	93.24	120.01	57,563	256,708	1,618	86,162	34,974	181,746	-	-	-	-	-	-	-
14	Granular "C" Material	95,601	32,000	88,476	1,180	347	735	80.99	92.22	120.35	40,126	177,040	1,114	60,072	24,000	118,411	-	-	-	-	-	-	-
15	Maintenance Grade 3 material	116,161	30,015	116,325	1,434	326	983	80.98	92.07	118.33	50,018	199,170	1,260	74,126	25,020	147,915	-	-	-	-	-	-	-
16	CSP culvert, dia. 900 mm	6,066	11,000	22,588	76	110	213	79.46	100.00	106.15	18,185	-	10,308	757	15,000	9,104	-	-	-	-	-	-	-
17	Guide Rails	19,083	42,000	106,607	243	458	1,040	78.56	91.70	102.51	28,030	20,016	47,610	510	10,500	10,184	-	-	-	-	-	-	-
18	Gate Type 1	688	10,000	16,112	9	55	154	78.81	181.82	104.90	729	1,700	7,026	10	3,400	2,862	-	-	-	-	-	-	-
19	Approved Compactable Material	512,828	40,040	128,677	6,278	426	1,237	81.68	93.99	104.01	220,813	-	-	319,278	40,040	201,523	-	-	-	-	-	-	-
20	Granular "C" Material	179,253	23,025	165,892	2,213	248	1,378	80.99	92.84	120.35	75,237	331,950	2,088	112,635	35,025	222,020	-	-	-	-	-	-	-
21	Overburden Excavation	12,180	41,000	17,969	153	442	173	79.86	92.76	103.67	4,824	-	-	7,644	40,000	24,031	-	-	-	-	-	-	-
22	Non-woven Geotextile, min 300 g/m2	44,787	7,000	41,137	568	74	400	78.79	94.59	102.84	14,607	7,650	13,423	463	2,200	10,439	-	-	-	-	-	-	-
23	Rockfill Protection, 100 - 250 mm	28,151	11,000	36,603	351	109	348	80.18	100.92	105.18	6,696	42,720	-	14,381	16,000	26,397	-	-	-	-	-	-	-
24	Rockfill Protection, Zone 3E Material	56,282	28,000	29,824	691	307	290	81.50	91.21	102.84	19,416	106,800	-	45,350	80,000	37,676	-	-	-	-	-	-	-
25	Non-woven Geotextile, min 530 g/m2	80,617	16,020	18,210	1,023	166	180	78.79	96.51	101.17	33,617	17,595	16,543	833	3,510	4,621	-	-	-	-	-	-	-
26	Chain Link Fence and Gates	55,373	184,997	236,549	700	1,954	2,088	79.16	94.68	113.29	71,446	-	50,638	1,464	34,999	60,574	-	-	-	-	-	-	-
27	Engineering of Temporary Upstream Bridge	-	-	119,000	-	-	-	-	-	-	-	-	-	-	-	-	-	50,000	-	-	203,520	-	-
28	Supply of Temporary Upstream Bridge	-	-	37,977	-	-	373	-	-	101.79	3,360,000	7,650,000	2,008,756	-	-	15,267	-	-	-	-	-	-	-
29	Installation, removal and handover of Temporary Upstream Bridge	2,716,156	1,425,000	2,087,752	33,516	14,950	19,617	81.04	95.32	106.42	453,421	750,000	1,196,498	602,742	550,000	1,570,749	-	-	-	-	-	-	-
30	Overburden excavation	15,225	6,000	38,471	191	64	346	79.86	93.75	111.19	6,030	-	-	9,554	5,500	49,029	-	-	-	-	-	-	-
31	Foundation Cleaning (water/air jets and Vacuum trucks)	25,336	29,004	120,518	322	313	1,080	78.78	92.66	111.59	2,189	-	-	527	15,996	21,082	-	-	-	-	-	-	-
32	Rock Excavation including dental excavation and Scaling	20,638	22,000	42,864	255	238	394	80.98	92.44	108.74	3,655	11,110	12,444	5,440	48,000	50,692	-	-	-	-	-	-	-
33	Dental Concrete	291,115	156,000	170,224	3,763	1,685	1,533	77.37	92.58	111.02	118,045	425,000	411,217	81,554	-	18,560	-	39,856	-	-	-	-	-
34	Slush Grout	61,589	42,996	26,522	787	462	240	78.29	93.06	110.51	96,535	15,000	10,605	5,693	3,000	1,273	-	-	-	-	-	-	-
35	Dry Pack	846	21,000	33,358	11	217	300	78.81	96.77	111.19	4,825	9,000	7,761	156	3,000	1,601	-	-	-	-	-	-	-
36	Compacted Till - Zones 1 and 1C Materials	265,259	261,060	513,267	3,303	2,877	4,689	80.30	90.74	109.45	98,456	-	-	158,629	520,030	645,733	-	-	-	-	-	-	-
37	Dumped Till - Zone 1A Material	1,264,078	1,070,660	1,842,500	15,885	11,788	16,795	79.57	90.83	109.71	525,928	-	-	856,633	2,788,540	3,283,000	-	-	-	-	-	-	-
38	Compacted Granular - Zone 2A Material	537,984	150,075	634,817	6,641	1,607	5,711	81.01	93.39	111.16	230,092	949,923	-	343,061	350,037	710,683	-	-	-	-	-	-	-
39	Compacted Granular - Zone 2C Material	217,102	66,990	267,435	2,681	711	2,394	80.98	94.22	111.69	91,303	385,062	-	137,762	165,039	298,065	-	-	-	-	-	-	-
40	Dumped Granular - Zone 2E Material	747,110	99,940	463,178	9,249	1,037	4,240	80.77	96.37	109.24	347,702	1,164,038	-	520,734	245,116	733,472	-	-	-	-	-	-	-
41	Dumped Rockfill - Zone 3 Material	1,593,703	264,550	960,960	19,419	2,850	8,882	82.07	92.82	108.19	614,377	-	-	974,441	1,450,020	1,362,790	-	-	-	-	-	-	-
42	Dumped Large Blocks (300-1000 mm) - Zone 3 Class 1	438,938	68,080	338,180	5,337	738	3,034	82.25	92.25	111.46	175,987	-	-	269,637	367,040	549,820	-	-	-	-	-	-	-
43	Dumped Large Blocks (≥1000 mm) - Zone 3 Class 2	820,058	293,150	1,184,526	10,209	3,189	10,779	80.32	91.93	109.89	406,792	-	-	681,736	1,656,850	2,000,474	-	-	-	-	-	-	-
44	Dumped Large Blocks (≥1300 mm) - Zone 3 Class 3	189,244	61,950	327,144	2,356	675	3,025	80.32	91.78	108.15	93,875	-	-	157,324	388,950	617,856	-	-	-	-	-	-	-
45	Compacted Crushed Stone - Zone 3A Material	246,513	84,972	405,377	3,025	914	3,480	81.50	92.97	116.50	85,041	489,465	3,093	198,632	140,051	423,731	-	-	-	-	-	-	-
46	Compacted Rockfill - Zone 3C Material	653,096	315,132	398,200	8,009	3,397	3,509	81.55	92.77	113.48	251,785	-	-	509,978	1,250,067	546,520	-	-	-	-	-	-	-
47	Compacted Rockfill - Zone 3D Material	463,049	130,854	400,089	5,640	1,428	3,526	82.10	91.63	113.48	162,791	-	-	258,166	425,106	549,111	-	-	-	-	-	-	-
48	Dumped Crushed Stone- Zone 3F Material	470,764	77,070	460,530	5,779	828	3,859	81.46	93.08	119.32	180,005	938,700	5,880	436,212	160,020	615,090	-	-	-	-	-	-	-
49	Percussion Drill Holes in embankments, river sediments and bedrock	19,654	22,400	30,520	250	230	250	78.62	97.39	122.08	-	-	-	-	-	78,480	-	104,000	-	-	74,430	-	-
50	Verification Core Drilling in jet grouting cut-off wall and bedrock	11,006	12,336	17,080	140	132	144	78.62	93.45	118.61	-												



Price Item	Description	Labour Cost			Hours			Labour Rate			Materials Cost			Equipment Cost			Subcontractor Cost			Other Costs		
		Bidder 1	Bidder 2	Bidder 3 Alt	Bidder 1	Bidder 2	Bidder 3 Alt	Bidder 1	Bidder 2	Bidder 3 Alt	Bidder 1	Bidder 2	Bidder 3 Alt	Bidder 1	Bidder 2	Bidder 3 Alt	Bidder 1	Bidder 2	Bidder 3 Alt	Bidder 1	Bidder 2	Bidder 3 Alt
87	Percussion Drilling Check holes	893	3,471	5,856	11	44	48	81.63	78.89	122.00	37	-	-	53	-	1,464	-	7,000	-	5,852	-	-
88	Grouting - Successful connections	125,973	11,500	95,553	1,543	121	733	81.63	95.04	130.45	1,728	-	-	2,428	-	8,447	-	27,500	-	280,010	-	-
89	Water pressure test (Lugeon - 5 Stages)	5,225	2,040	3,437	64	22	24	81.64	92.73	143.22	-	-	-	-	-	1,771	-	4,800	-	4,187	-	-
90	Water test - Successful connections	10,286	2,040	3,445	126	22	24	81.64	92.72	143.91	-	-	-	-	-	1,775	-	4,800	-	7,013	-	-
91	Uplift gauges	1,731	3,745	6,020	21	44	48	81.64	85.11	125.42	-	-	4,334	-	-	1,686	-	12,000	-	4,884	-	-
92	Thermistors (measure rock temperature in grout holes)	1,388	3,744	-	17	44	48	81.64	85.09	-	-	-	6,080	-	-	3,420	-	9,000	-	2,384	-	-
93	Compacted Till - Zones 1 and 1C	362,986	333,060	675,186	4,521	3,678	6,007	80.30	90.55	112.40	134,730	-	-	217,071	575,120	884,814	-	-	-	-	-	-
94	Compacted Granular - Zone 2A	714,981	234,920	740,156	8,821	2,527	6,618	81.05	92.96	111.84	304,668	1,251,600	-	453,615	390,040	953,844	-	-	-	-	-	-
95	Compacted Crushed Stone - Zone 3A	290,864	101,040	423,741	3,585	1,083	3,573	81.13	93.30	118.58	106,803	536,400	3,364	234,887	170,040	460,895	-	-	-	-	-	-
96	Compacted Crushed Stone - Zone 3B	309,707	135,040	568,523	3,798	1,444	4,765	81.55	93.52	119.32	119,400	708,160	4,561	241,839	224,960	610,916	-	-	-	-	-	-
97	Compacted Rockfill - Zone 3C	406,808	182,910	223,996	4,989	1,977	1,932	81.55	92.52	115.94	156,773	-	-	318,013	699,930	290,504	-	-	-	-	-	-
98	Compacted Rockfill - Zone 3D	735,746	150,880	490,657	9,025	1,646	4,232	81.52	91.66	115.94	284,866	-	-	458,595	749,800	636,343	-	-	-	-	-	-
99	Riprap - Zone 4	101,286	58,020	127,763	1,235	626	1,104	82.00	92.68	115.73	38,505	256,320	-	60,061	105,000	205,237	-	-	-	-	-	-
100	Compacted Crushed Stone - Zone 5	7,933	6,501	12,072	98	69	100	81.14	94.21	120.76	2,898	13,714	87	6,588	5,999	13,572	-	-	-	-	-	-
101	Jersey Barrier	166,078	4,500	46,442	2,216	46	392	74.94	97.83	118.47	166,614	-	56,504	9,151	4,500	17,054	-	-	-	-	-	-
102	V-Notch Weirs, excluding Shelters	5,097	23,000	15,255	64	247	135	79.07	93.12	112.59	2,151	24,136	18,195	115	22,000	749	-	-	-	2,326	-	-
103	Shelters for V-Notch Weirs	7,646	4,000	8,015	97	37	67	79.07	108.11	120.34	7,977	30,000	3,219	173	-	566	-	-	-	3,489	-	-
104	Survey Monuments at South Dam Crest	887	-	2,112	11	-	16	81.64	-	132.00	4,200	-	6,790	-	-	98	-	6,000	-	2,763	-	-
105	Clearing of the North Abutment	30,849	68,000	63,167	382	-	224	80.73	92.39	282.26	15,381	-	-	23,495	140,000	85,333	-	-	-	-	-	-
106	Overburden Excavation	438,479	200,880	690,968	5,491	2,208	6,112	79.86	90.98	113.06	173,675	-	-	275,168	499,680	965,032	-	-	-	-	-	-
107	Foundation Cleaning (water/air jets and vacuum)	285,033	321,975	2,258,191	3,618	3,519	20,250	78.78	91.50	111.52	24,627	-	-	5,926	179,955	441,809	-	-	-	-	-	-
108	Rock Excavation including Dental Excavation and Scaling	247,658	262,980	667,474	3,058	2,858	6,032	80.98	92.02	110.66	43,859	133,320	149,895	65,280	315,000	718,631	-	-	-	-	-	-
109	Dental Concrete	1,455,576	780,000	851,120	18,813	8,424	7,667	77.37	92.59	111.02	590,225	2,030,920	2,056,080	407,771	-	92,800	-	199,320	-	-	-	-
110	Slush Grout	692,873	475,065	298,350	8,850	5,199	2,700	78.29	91.38	110.50	1,086,023	151,875	119,340	64,042	29,970	14,310	-	-	-	-	-	-
111	Dry Pack	9,873	235,000	389,176	125	2,527	3,500	78.81	93.00	111.19	56,290	61,768	90,544	1,817	12,000	18,680	-	-	-	-	-	-
112	Drilling Holes in RCC and Bedrock for Grouting	996,789	654,528	901,530	12,647	6,578	5,838	78.82	99.50	154.42	23,177	23,058	-	159,649	38,010	211,470	-	549,990	-	409,616	-	-
113	Grouting - Successful Connections	362,803	18,900	71,114	4,444	198	216	81.63	95.45	329.23	4,978	-	-	6,991	-	14,566	-	72,000	-	806,427	-	-
114	Dry Cement incorporated in the grout	165,095	75,600	566,785	2,100	695	4,956	78.62	108.78	114.36	45,034	-	131,672	-	-	120,543	-	264,600	-	322,376	-	-
115	Cored Drill Check Holes	980	9,252	15,418	12	99	108	81.64	93.45	142.76	-	-	-	-	-	5,702	-	17,760	-	19,712	-	-
116	Percussion Drilling Check Holes	28,480	14,455	24,055	361	153	168	78.82	94.48	143.19	662	-	-	4,561	-	6,785	-	25,920	-	11,703	-	-
117	Water pressure test (lugeon - 5 Stages)	9,796	4,080	6,863	120	44	48	81.64	92.73	142.98	-	-	-	-	-	2,167	-	7,590	-	7,850	-	-
118	Water Pressure Test - Successful connections	20,572	4,080	6,867	252	44	48	81.64	92.72	143.43	-	-	-	-	-	2,169	-	7,596	-	14,025	-	-
119	Uplift gauges	5,192	9,252	16,389	64	99	108	81.64	93.45	151.75	-	-	14,568	-	-	5,463	-	30,600	-	14,653	-	-
120	Thermistor (measure temperature in grout holes)	1,388	3,750	6,240	17	44	48	81.64	85.23	130.00	-	-	3,360	-	-	-	-	8,046	-	2,384	-	-
121	Drilling Holes for Drainage in Foundation from Drainage Gallery, Ø76 mm	48,418	426,752	713,728	593	4,239	4,608	81.63	100.67	154.89	2,396	-	-	3,365	-	156,672	-	430,016	-	392,772	-	-
122	PVC Caps for Drainage Holes	3,582	-	-	46	-	-	78.63	-	-	2,797	-	4,375	36	-	-	-	3,500	-	-	-	-
123	Drilling Holes Upward for Drainage from Drainage Gallery into RCC, Ø76 mm	50,839	478,016	837,076	623	5,122	5,876	81.63	93.33	142.46	2,516	-	11,953	3,534	-	155,771	-	430,016	-	412,411	-	-
124	Drilling Holes for piezometers	1,633	-	12,187	20	-	102	81.64	-	119.10	-	-	1,935	-	-	1,678	-	29,600	-	32,854	-	-
125	Vibrating Wire and Standpipe Piezometers TYPE - 1, excluding Cables	20,389	-	28,800	258	-	272	79.07	-	105.88	22,205	-	19,200	462	-	-	-	108,800	-	217,612	-	-
126	Vibrating Wire and Standpipe Piezometers TYPE - 2, excluding Cables	5,097	-	14,280	64	-	136	79.07	-	105.00	5,551	-	9,520	115	-	-	-	6,000	-	54,403	-	-
127	Instrument Cable including PVC Conduits and Pull Boxes	103,218	-	50,085	1,305	-	405	79.07	-	123.67	23,989	-	-	2,337	-	93,015	-	75,600	-	106,427	-	-
128	Thermistors Cable in RCC	271	-	59,600	3	-	5,800	78.62	-	10.28	11,203	-	59,600	2	-	40,000	-	40,000	-	-	-	-
129	V-notch Weirs	5,097	-	51,661	64	-	456	79.07	-	113.28	4,051	32,972	36,749	115	-	6,390	-	24,000	-	6,256	-	-
130	Vibrating Wire Weir Monitors.	5,097	-	29,700	64	-	100	79.07	-	297.00	251	-	-	115	-	89,100	-	64,000	-	6,058	-	-
131	Data logger, Terminal Box, Barometer Box including Grounding	2,549	-	23,800	32	-	225	79.07	-	105.78	7,776	-	95,200	58	-	-	-	150,000	-	5,233	-	-
132	Crest Survey Monuments	591	-	3,365	7	-	27	81.64	-	123.73	2,800	-	8,452	-	-	183	-	8,000	-	1,842	-	-
133	Roller Compacted Concrete (RCC)	30,073,958	15,466,500	54,833,100	386,378	158,485	427,433	77.84	97.59	128.28	20,445,344	33,476,100	22,950,900	14,972,719	705,600	20,286,000	-	411,600	-	-	-	-
133.A	RCC Trial Demonstration Sections	-	-	-	-	300	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
133.B	Leveling Concrete (Rate Only)	-	83	-	-	-	-	-	-	-	-	495	-	65	-	-	-	-	-	-	-	-
134	Conventional Vibrated Concrete (CVC) (Crest and Flip Bucket)	10,730,812	3,684,978	9,952,758	143,021	39,834	49,328	75.03	92.51	201.77	1,971,001	6,500,049	3,385,538	1,759,161	474,969	2,534,704	-	181,485	-	-	-	-
135	Facing Concrete	2,683,759	1,159,968	7,695,710	34,549	12,719	65,822	77.68	91.20	116.92	1,506,877	4,250,034	1,748,036	826,639	189,974	2,381,254	-	266,772	-	-	-	-
136	GERCC or GEVR - Formed Faces (Rate Only)	1,451,102	1	3,567,679	18,680	-	29,903	77.68	-	119.31	814,765	0	615,517	446,962	0	1,443,304	-	-	-	-	-	-
136.1	Facing In Place Of GERCC	-	653,000	-	-	7,139	-	-	91.47	-	-	2,249,996	-	-	-	284,999	-	-	-	-	-	-
137	Conventional Vibrated Concrete (North Abutment Crest Surface and Training																					

Price Item	Description	Profit			Total Price		
		Bidder 1	Bidder 2	Bidder 3 Alt	Bidder 1	Bidder 2	Bidder 3 Alt
1	Mobilization	317,443	-	-	4,852,341	73,240,798	34,400,000
2	Site Installation	1,570,329	-	-	24,003,605	46,000,000	23,400,000
3	Management, Staff, employees and Consultants	9,795,811	-	-	149,735,966	45,150,000	44,000,000
4	Health and Safety, Environmental and Quality Requirements	943,901	-	-	14,428,200	3,065,000	9,000,000
5	Credit, Guarantee and Insurance	626,534	-	-	9,577,027	991,000	2,252,200
6	Warranty, per Article 17 of the Agreement	481,950	-	-	7,366,944	300,000	450,000
7	Demobilization	124,559	-	-	1,903,969	915,124	1,353,000
8	Dewatering of Structure Areas	128,281	-	-	1,960,861	2,190,000	1,585,000
9	Excavation of Existing Embankment cofferdams 1, 2 and 3, and Existing Ramps	192,404	-	-	2,941,033	1,904,520	2,433,750
10	Excavation of Downstream section of RCC riverside cofferdam	40,797	-	-	623,612	433,800	678,000
11	Overburden Excavation	6,901	-	-	105,493	71,040	168,000
12	Approved Compactable Material	124,731	-	-	1,906,595	140,800	558,800
13	Granular "B" Material	19,614	-	-	299,820	330,658	323,350
14	Granular "C" Material	13,706	-	-	209,506	233,040	208,000
15	Maintenance Grade 3 material	16,821	-	-	257,127	254,205	265,500
16	CSP culvert, dia. 900 mm	1,751	-	-	26,758	26,000	42,000
17	Guide Rails	3,334	-	-	50,957	72,516	164,400
18	Gate Type 1	100	-	-	1,527	15,100	26,000
19	Approved Compactable Material	73,704	-	-	1,126,624	80,080	330,200
20	Granular "C" Material	25,699	-	-	392,823	390,000	390,000
21	Overburden Excavation	1,725	-	-	26,373	81,000	42,000
22	Non-woven Geotextile, min 300 g/m2	4,190	-	-	64,047	16,850	65,000
23	Rockfill Protection, 100 - 250 mm	3,446	-	-	52,674	69,720	63,000
24	Rockfill Protection, Zone 3E Material	8,473	-	-	129,520	214,800	67,500
25	Non-woven Geotextile, min 530 g/m2	8,055	-	-	123,121	37,125	39,375
26	Chain Link Fence and Gates	8,980	-	-	137,262	219,996	347,760
27	Engineering of Temporary Upstream Bridge	14,246	-	-	217,767	50,000	119,000
28	Supply of Temporary Upstream Bridge	235,200	-	-	3,595,200	7,650,000	2,062,000
29	Installation, removal and handover of Temporary Upstream Bridge	264,062	-	-	4,036,381	2,725,000	4,855,000
30	Overburden excavation	2,157	-	-	32,967	11,500	87,500
31	Foundation Cleaning (water/air jets and Vacuum trucks)	1,964	-	-	30,016	45,000	141,600
32	Rock Excavation including dental excavation and Scaling	2,081	-	-	31,814	81,110	106,000
33	Dental Concrete	34,350	-	-	525,064	620,856	600,000
34	Slush Grout	11,467	-	-	175,284	60,996	38,400
35	Dry Pack	408	-	-	6,235	33,000	42,720
36	Compacted Till - Zones 1 and 1C Materials	36,564	-	-	558,908	781,090	1,159,000
37	Dumped Till - Zone 1A Material	185,265	-	-	2,831,904	3,859,200	5,125,500
38	Compacted Granular - Zone 2A Material	77,780	-	-	1,188,917	1,450,035	1,345,500
39	Compacted Granular - Zone 2C Material	31,232	-	-	477,399	617,091	565,500
40	Dumped Granular - Zone 2E Material	113,088	-	-	1,728,634	1,509,094	1,196,650
41	Dumped Rockfill- Zone 3 Material	222,777	-	-	3,405,298	1,714,570	2,323,750
42	Dumped Large Blocks (300-1000 mm) - Zone 3 Class 1	61,919	-	-	946,481	435,120	888,000
43	Dumped Large Blocks (≥1000 mm) - Zone 3 Class 2	133,601	-	-	2,042,187	1,950,000	3,185,000
44	Dumped Large Blocks (≥1300 mm) - Zone 3 Class 3	30,831	-	-	471,274	450,900	945,000
45	Compacted Crushed Stone - Zone 3A Material	37,113	-	-	567,298	714,488	832,200
46	Compacted Rockfill - Zone 3C Material	99,040	-	-	1,513,899	1,565,199	944,720
47	Compacted Rockfill - Zone 3D Material	61,880	-	-	945,887	555,960	949,200
48	Dumped Crushed Stone- Zone 3F Material	76,089	-	-	1,163,070	1,175,790	1,081,500
49	Percussion Drill Holes in embankments, river sediments and bedrock	6,586	-	-	100,670	126,400	109,000
50	Verification Core Drilling in jet grouting cut-off wall and bedrock	2,854	-	-	43,633	93,736	85,400
51	Core Diamond Drill Rig in Standby	1,071	-	-	16,376	18,480	19,460
52	Mobilization and demobilization	186,489	-	-	2,850,625	1,112,715	1,585,000
53	Drilling Holes for Jet Grouting in embankment, river sediments and bedrock	97,070	-	-	1,483,778	1,534,368	1,262,400
54	Jet Grouted Cut-off wall	92,986	-	-	1,421,352	2,949,436	2,749,600
55	Drilling Holes for Grouting in embankment, jet grouting cut-off wall and bedrock, if required	16,590	-	-	253,590	29,848	26,000
56	Dry cement incorporated in the grout, if required	3,254	-	-	49,743	11,000	53,900
57	Grouting - Successful connections, if required	6,890	-	-	105,324	50,490	40,440
58	Overburden excavation	431	-	-	6,593	10,700	17,500
59	Foundation cleaning (water/ait jets and Vacuum trucks)	2,045	-	-	31,266	46,500	150,000
60	Rock excavation including dental excavation and scaling	2,081	-	-	31,814	78,110	106,000
61	Dental Concrete	8,588	-	-	131,266	150,526	150,000
62	Slush Grout	11,945	-	-	182,587	61,063	40,000
63	Dry Pack	408	-	-	6,235	33,000	42,720
64	Compacted Till - Zones 1 and 1C	3,849	-	-	58,832	73,000	122,000
65	Compacted Granular - Zone 2C	10,102	-	-	154,415	165,650	162,500
66	Compacted Rockfill - Zone 3C	18,341	-	-	280,356	194,028	128,800
67	Compacted Rockfill - Zone 3D	5,232	-	-	79,973	34,000	56,000
68	Overburden excavation	7,592	-	-	116,042	71,984	145,200
69	Foundation cleaning (water/ait jets and Vacuum trucks)	2,782	-	-	42,522	66,011	204,000
70	Rock excavation including dental excavation and scaling	2,914	-	-	44,540	106,554	148,400
71	Dental Concrete	10,734	-	-	164,083	188,380	187,500
72	Slush Grout	16,245	-	-	248,319	85,119	54,400
73	Dry Pack	612	-	-	9,352	46,000	64,080
74	Compacted Till - Zones 1 and 1C	12,124	-	-	185,322	237,006	491,400
75	Compacted Granular - Zone 2C	17,429	-	-	266,415	320,901	455,700
76	Compacted Rockfill - Zone 3C	19,122	-	-	292,290	199,004	275,600
77	Compacted Rockfill - Zone 3D	3,362	-	-	51,386	25,508	74,200
78	Overburden excavation	81,091	-	-	1,239,540	749,180	1,457,000
79	Foundation cleaning (water/ait jets and Vacuum trucks)	5,564	-	-	85,044	126,990	408,000
80	Rock excavation including dental excavation and scaling	8,325	-	-	127,258	267,440	424,000
81	Dental Concrete	51,525	-	-	787,597	903,024	900,000
82	Slush Grout	32,490	-	-	496,637	170,238	108,800
83	Dry Pack	1,360	-	-	20,783	91,000	142,400
84	Drilling Holes for Grouting	9,568	-	-	146,253	245,004	146,400
85	Dry cement incorporated in the grout	12,425	-	-	189,927	188,160	336,000
86	Cored Drill Check Holes	724	-	-	11,070	10,744	14,910

Price Item	Description	Profit			Total Price		
		Bidder 1	Bidder 2	Bidder 3 Alt	Bidder 1	Bidder 2	Bidder 3 Alt
87	Percussion Drilling Check holes	478	-	-	7,313	10,471	7,320
88	Grouting - Successful connections	28,710	-	-	438,848	39,000	104,000
89	Water pressure test (Lugeon - 5 Stages)	659	-	-	10,070	6,840	5,208
90	Water test - Successful connections	1,211	-	-	18,510	6,840	5,220
91	Uplift gauges	463	-	-	7,078	15,745	12,040
92	Thermistors (measure rock temperature in grout holes)	264	-	-	4,036	12,744	9,500
93	Compacted Till - Zones 1 and 1C	50,035	-	-	764,821	908,180	1,560,000
94	Compacted Granular - Zone 2A	103,128	-	-	1,576,392	1,876,560	1,694,000
95	Compacted Crushed Stone - Zone 3A	44,279	-	-	676,833	807,480	888,000
96	Compacted Crushed Stone - Zone 3B	46,966	-	-	717,913	1,068,160	1,184,000
97	Compacted Rockfill - Zone 3C	61,712	-	-	943,306	882,840	514,500
98	Compacted Rockfill - Zone 3D	103,544	-	-	1,582,751	900,680	1,127,000
99	Riprap - Zone 4	13,990	-	-	213,841	419,340	333,000
100	Compacted Crushed Stone - Zone 5	1,219	-	-	18,637	26,214	25,730
101	Jersey Barrier	23,929	-	-	365,771	9,000	120,000
102	V-Notch Weirs, excluding Shelters	678	-	-	10,368	69,136	34,200
103	Shelters for V-Notch Weirs	1,350	-	-	20,635	34,000	11,800
104	Survey Monuments at South Dam Crest	549	-	-	8,399	6,000	9,000
105	Clearing of the North Abutment	4,881	-	-	74,606	208,000	148,500
106	Overburden Excavation	62,113	-	-	949,435	700,560	1,656,000
107	Foundation Cleaning (water/air jets and vacuum)	22,091	-	-	337,676	501,930	2,700,000
108	Rock Excavation including Dental Excavation and Scaling	24,976	-	-	381,773	711,300	1,536,000
109	Dental Concrete	171,750	-	-	2,625,322	3,010,240	3,000,000
110	Slush Grout	129,006	-	-	1,971,943	656,910	432,000
111	Dry Pack	4,759	-	-	72,739	308,768	498,400
112	Drilling Holes in RCC and Bedrock for Grouting	111,246	-	-	1,700,477	1,265,586	1,113,000
113	Grouting - Successful Connections	82,684	-	-	1,263,883	90,900	85,680
114	Dry Cement incorporated in the grout	37,275	-	-	569,780	340,200	819,000
115	Cored Drill Check Holes	1,448	-	-	22,140	27,012	21,120
116	Percussion Drilling Check Holes	3,178	-	-	48,585	40,375	30,840
117	Water pressure test (lugeon - 5 Stages)	1,235	-	-	18,882	11,670	9,030
118	Water Pressure Test - Successful connections	2,422	-	-	37,020	11,676	9,036
119	Uplift gauges	1,389	-	-	21,235	39,852	36,420
120	Thermistor (measure temperature in grout holes)	264	-	-	4,036	11,796	9,600
121	Drilling Holes for Drainage in Foundation from Drainage Gallery, Ø76 mm	31,287	-	-	478,238	856,768	870,400
122	PVC Caps for Drainage Holes	449	-	-	6,865	3,500	4,375
123	Drilling Holes Upward for Drainage from Drainage Gallery into RCC, Ø76 mm	32,851	-	-	502,150	908,032	1,004,800
124	Drilling Holes for piezometers	2,414	-	-	36,901	29,600	15,800
125	Vibrating Wire and Standpipe Piezometers TYPE - 1, excluding Cables	18,247	-	-	278,914	108,800	48,000
126	Vibrating Wire and Standpipe Piezometers TYPE - 2, excluding Cables	4,562	-	-	69,728	6,000	23,800
127	Instrument Cable including PVC Conduits and Pull Boxes	16,518	-	-	252,489	75,600	143,100
128	Thermistors Cable in RCC	803	-	-	12,280	40,000	119,200
129	V-notch Weirs	1,086	-	-	16,606	56,972	94,800
130	Vibrating Wire Weir Monitors.	807	-	-	12,329	64,000	118,800
131	Data logger, Terminal Box, Barometer Box including Grounding	1,093	-	-	16,708	150,000	119,000
132	Crest Survey Monuments	366	-	-	5,600	8,000	12,000
133	Roller Compacted Concrete (RCC)	4,584,441	-	-	70,076,463	50,059,800	98,070,000
133.A	RCC Trial Demonstration Sections	-	-	-	-	-	-
133.B	Leveling Concrete (Rate Only)	-	-	-	-	643	-
134	Conventional Vibrated Concrete (CVC) (Crest and Flip Bucket)	1,012,268	-	-	15,473,242	10,841,481	15,873,000
135	Facing Concrete	351,209	-	-	5,368,485	5,866,748	11,825,000
136	GERCC or GEVR - Formed Faces (Rate Only)	189,898	-	-	2,902,727	2	5,626,500
136.1	Facing In Place Of GERCC	-	-	-	-	3,187,994	-
137	Conventional Vibrated Concrete (North Abutment Crest Surface and Training Wall)	24,381	-	-	372,677	414,480	371,250
138	Increase or decrease in quantity of cement - Bid Mix (rate only)	25	-	-	382	-	-
139	Increase or decrease in quantity of flyash - Bid Mix (rate only)	21	-	-	322	-	-
140	Increase or decrease in quantity of cement - Source B (rate only)	26	-	-	391	-	-
141	Increase or decrease in quantity of flyash - Source B (rate only)	26	-	-	401	-	-
142	Air-entraining Admixture	71,488	-	-	1,092,750	434,700	1,417,500
143	Retarder Admixture	114,263	-	-	1,746,584	514,080	1,612,800
144	Precast Concrete	206,445	-	-	3,155,658	1,793,500	2,357,500
145	Gallery Floor CVC Concrete	12,837	-	-	196,220	592,001	563,750
146	Steel Reinforcement	181,688	-	-	2,777,237	2,365,000	4,050,000
147	Steel Guardrails	3,006	-	-	45,950	92,664	234,000
148	Waterstop	6,648	-	-	101,627	105,503	264,600
149	Exothermic Connections.	564	-	-	8,623	34,200	24,000
150	Bare, Stranded, Medium Hard-Drawn Copper Conductor, size 500 kcmil	6,289	-	-	96,132	111,655	96,985
151	Bare, Stranded, Medium Hard-Drawn Copper Conductor, size 4/0 AWG	60	-	-	924	1,300	1,904
152	Embedded Copper Grounding Plates	449	-	-	6,857	12,000	2,499
153	Overburden Excavation, excluding excavation of Cofferdam 3 - Dry Conditions	10,352	-	-	158,239	96,960	252,000
154	Tailrace Rock Plug Excavation including access ramp to powerhouse -Dry Conditions	426,348	-	-	6,517,040	4,304,400	6,800,000
155	Tailrace Rock Plug - Underwater Excavation	192,422	-	-	2,941,312	2,120,240	3,638,000
156	Grouted Rock Bolts Type A	1,445	-	-	22,095	35,001	266,000
157	Grouted Rock Bolts Type C	1,061	-	-	16,217	17,900	139,000
158	Chain Link Wire Mesh - Installation	15,154	-	-	231,640	171,000	127,500
159	Chain Link Wire Mesh - Removal	77,891	-	-	1,190,625	73,892	162,400
160	Existing Temporary Safety Fence - Removal	6,529	-	-	99,804	19,500	74,400
<b>Totals</b>		<b>25,800,755</b>	<b>-</b>	<b>-</b>	<b>394,382,966</b>	<b>315,980,385</b>	<b>340,365,092</b>
<b>Indirect</b>		<b>13,860,527</b>	<b>-</b>	<b>-</b>	<b>211,868,052</b>	<b>169,661,922</b>	<b>114,855,200</b>
<b>Direct</b>		<b>11,940,228</b>	<b>-</b>	<b>-</b>	<b>182,514,913</b>	<b>146,318,463</b>	<b>225,509,892</b>



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 Engineers	Operating Engineer - Group 1	85,203.81	20,927.25	43,349.31	99,653.58		249,133.95
	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
	Drywall Taper, Spray Painter,						





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	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, Scaffolder	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%
Electricians	Journeyman	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%

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
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%
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										-	0.0%	0.0%	0.0%
Ironworkers - Structural	Connectors										-	0.0%	0.0%	0.0%
Ironworkers - Structural	Journey person										-	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)	Journey person	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	Journey person Millwright – Welder Machinist										-	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%
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%

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	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%
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%
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, Scaffolder	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%
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%

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 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%
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%

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 - 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	Journeyperson	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)	Journeyperson										-	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%
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	Journeyperson Millwright – Welder Machinist										-	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%

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	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%
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	-	0.0%	0.0%	0.0%
Elevator Constructors	Mechanic										-	0.0%	0.0%	0.0%
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>	<b>1,015,153</b>	<b>57.0%</b>	<b>14.5%</b>	<b>28.5%</b>









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.

