

LOWER CHURCHILL PROJECT MUSKRAT FALLS CH0007 - CONSTRUCTION OF INTAKE AND POWERHOUSE, SPILLWAY AND TRANSITION DAMS					SCHEDULE OF PRICE BREAKDOWN					PART 1 - APPENDIX A2.1 505573-CH0007-51AF-I-2111 Rev. 01				
ISSUED FOR: RFP					DATE: 21 - SEP - 2012					BIDDER'S NAME:				
PRICE ITEM No	REFERENCE	WBS CODE		PRICE ITEM DESCRIPTION	UNIT OF MEASURE	ESTIMATED QUANTITY A	MAN HOURS (AT SITE)	MANPOWER COST B	MATERIALS COST C	EQUIPMENT COST D	UNIT COST E= (A+B+C)	TOTAL COST F= A x E		
		CODE	SUBCODE											
INDIRECT COSTS														
1	2.1	0000	0000.01	Mobilization	LS	1								
2	2.2		0000.02	Site Installation	LS	1								
3	2.3		0000.03	Contractor Equipment for Indirects	LS	1								
4	2.4		0000.04	Temporary Works	LS	1								
5	2.5		0000.05	Winter Protection	LS	1								
6	2.6		0000.06	Management and Staff	LS	1								
7	2.7		0000.07	Attendant labour	LS	1								
8	2.8		0000.08	Services	LS	1								
9	2.9		0000.09	Employee Training	LS	1								
10	2.10		0000.10	Health and Safety Requirements	LS	1								
11	2.11		0000.11	Environmental Requirements	LS	1								
12	2.12		0000.12	Quality Assurance / Quality Control	LS	1								
13	2.13		0000.13	Letters of Credit	LS	1								
14	2.14		0000.14	Parent Guarantee	LS	1								
15	2.15		0000.15	Insurance, per Article 18 of the Agreement	LS	1								
16	2.16		0000.16	Warranty, per Article 17 of the Agreement	LS	1								
17	2.17		0000.17	Site Maintenance	LS	1								
18	2.18		0000.18	Financing, Contingency, Head Office Fees, & Consultant Fees	LS	1								
19	2.19		0000.19	Demobilization	LS	1								
SUB-TOTAL INDIRECT COSTS								\$ -	\$ -	\$ -	\$ -	\$ -		
GENERAL														
ACCESS ROAD TO SPILLWAY														
20	3.1.1	1110	1110.01	Overburden Excavation	m³	6,400								
21	3.1.2		1110.02	Zone 3C Material	m³	3,600								
22	3.1.3		1110.03	Zone 3D Material	m³	7,600								
23	3.1.4		1110.04	Granular "B" Material	m³	1,000								
24	3.1.5		1110.05	Granular "C" Material	m³	1,000								
25	3.1.6		1110.06	Concrete Culvert 600 mm	m	45								
DEWATERING OF STRUCTURE AREAS														
26	3.2.1	1120	1120.01	Structure Areas	LS	1								
TEMPORARY BRIDGE														
27	3.3.1	1150	1150.01	Temporary Downstream Bridge over the Spillway	LS	1								
CONSTRUCTION CRANE														
28	3.4.1	1170	1170.01	Powerhouse - Construction Crane	LS	1								
Temporary Heating, Ventilating and Lighting of Powerhouse														
29	3.5.1	1180	1180.10	Temporary Heating, Ventilating and Lighting of Powerhouse	LS	1								
SUB-TOTAL GENERAL								\$ -	\$ -	\$ -	\$ -	\$ -		
TRANSITION DAMS														
NORTH TRANSITION DAM														
CIVIL WORK														
Excavation														
30	4.1.1	2361	2361.01	Fill Excavation (Sand Layer for Winter Protection)	m³	650								
Foundation Preparation														
31	4.1.2		2361.02	Dental Excavation	m³	30								
32	4.1.3		2361.03	Scaling and Water/Air Jet Cleaning of Bedrock	m²	430								
33	4.1.4		2361.04	Dental Concrete	m³	70								
34	4.1.5		2361.05	Dry Pack	m³	3								
Drilling, Pressure Grouting and Drainage														
35	4.1.6		2361.06	Grouting Holes	m	285								
36	4.1.7		2361.07	Grouting - Successful Connections	each	57								
37	4.1.8		2361.08	Dry Cement for Grouting	kg	10,000								
38	4.1.9		2361.09	Water Pressure Tests (Lugeon)	hour	2								
39	4.1.10		2361.10	Water Pressure Tests - Successful Connections	each	5								
40	4.1.11		2361.11	Uplift Gauge	m	18								
41	4.1.12		2361.12	Cored (Diamond drill) holes	m	25								
42	4.1.13		2361.13	Drainage Holes	m	65								
43	4.1.14		2361.14	PVC Caps for Drainage Holes	each	5								
44	4.1.15		2361.15	Survey Monuments	each	1								
CONCRETE WORK														
45	4.1.16		2361.16	Concrete	m³	9,130								
46	4.1.17		2361.17	PVC Waterstop - TYPE B (225 mm width)	m	330								
47	4.1.18		2361.18	Hydrophilic Waterstop	m	90								
48	4.1.19		2361.19	Bituminous Coating at Contraction Joints	m²	570								
REINFORCEMENT, ANCHORS AND DOWELS														
49	4.1.20		2361.20	Reinforcement including Dowels	kg	44,100								
STRUCTURAL STEEL AND MISCELLANEOUS METAL														
Supply and Installation of Non Embedded Miscellaneous Metal														
50	4.1.21		2361.21	Galvanized Miscellaneous Steel	kg	8,000								
51	4.1.22		2361.22	Galvanized Grating	kg	900								
Embedded Miscellaneous Metals														
52	4.1.23		2361.23	Embedded Miscellaneous Steel (Frames, L Shapes, Sleeves, etc..)	kg	90								
53	4.1.24		2361.24	Anchor Bolts Grade 55 ASTM F1554	kg	535								
ELECTRICAL WORK														
54	4.1.25		2361.25	Exothermic Connections.	each	30								
55	4.1.26		2361.26	Bare, Stranded, Medium Hard-Drawn Copper Conductor, size 500 kcmil	m	200								
56	4.1.27		2361.27	Bare, Stranded, Medium Hard-Drawn Copper Conductor, size 4/0 AWG	m	25								
SUB-TOTAL NORTH TRANSITION DAM								\$ -	\$ -	\$ -	\$ -	\$ -		
CENTRE TRANSITION DAM														
CIVIL WORK														
Excavation														
57	4.2.1	2362	2362.01	Fill Excavation (Sand Layer for Winter Protection)	m³	2,100								
Foundation Preparation														
58	4.2.2		2362.02	Dental Excavation	m³	180								
59	4.2.3		2362.03	Scaling and Water/Air Jet Cleaning of Bedrock	m²	1,430								
60	4.2.4		2362.04	Dental Concrete	m³	215								
61	4.2.5		2362.05	Dry Pack	m³	10								
Drilling, Pressure Grouting and Drainage														
62	4.2.6		2362.06	Grouting Holes	m	500								

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		CODE	SUBCODE									
63	4.2.7		2362.07	Grouting - Successful Connections	each	100						
64	4.2.8		2362.08	Dry Cement for Grouting	kg	17,500						
65	4.2.9		2362.09	Water Pressure Tests (Lugeon)	hour	4						
66	4.2.10		2362.10	Water Pressure Tests - Successful Connections	each	10						
67	4.2.11		2362.11	Uplift Gauges	m	30						
68	4.2.12		2362.12	Thermistors	each	1						
69	4.2.13		2362.13	Rotary/Percussion Drill Check Holes	m	25						
70	4.2.14		2362.14	Cored (Diamond drill) holes	m	25						
71	4.2.15		2362.15	Drainage Holes	m	200						
72	4.2.16		2362.16	PVC Caps for Drainage Holes	each	20						
Geotechnical Instrumentation												
73	4.2.17		2362.17	Survey Monuments	each	5						
74	4.2.18		2362.18	Hydraulic piezometers	each	3						
75	4.2.19		2362.19	V-Notch Weirs	each	1						
CONCRETE WORK												
76	4.2.20		2362.20	Concrete Below El. 42.30 m	m³	30,500						
77	4.2.21		2362.21	Concrete Above El. 42.30 m	m³	2,500						
78	4.2.22		2362.22	Concrete - Slab on Steel Deck	m³	130						
79	4.2.23		2362.23	Grout	m³	17						
80	4.2.24		2362.24	PVC Waterstop - TYPE B (225 mm width)	m	770						
81	4.2.25		2362.25	Bituminous Coating at Contraction Joint	m²	3,060						
REINFORCEMENT, ANCHORS AND DOWELS												
82	4.2.26		2362.26	Reinforcement including Dowels	kg	133,000						
SUPPLY AND INSTALLATION OF STRUCTURAL STEEL												
83	4.2.27		2362.27	Painted Structural Steel	kg	75,500						
STRUCTURAL STEEL AND MISCELLANEOUS METAL												
Supply and Installation of Non Embedded Miscellaneous Metal												
84	4.2.28		2362.28	Galvanized Miscellaneous Steel	kg	36,200						
85	4.2.29		2362.29	Galvanized Grating	kg	460						
Embedded Miscellaneous Metals												
86	4.2.30		2362.30	Embedded Miscellaneous Steel (Frames, L Shapes, Sleeves, etc..)	kg	290						
Metal Decking including Shear Studs (Galvanized)												
87	4.2.31		2362.31	Steel deck type RD 306 (t=0.91 mm)	m²	400						
88	4.2.32		2362.32	Shear Studs	kg	4,200						
Crane Rails including Fastening System and Accessories												
89	4.2.33		2362.33	Rails for Trash Cleaning System	m	140						
90	4.2.34		2362.34	Anchor Bolts Grade 55 ASTM F1554	kg	5,500						
91	4.2.35		2362.35	Elastomeric Bearing Pads	each	21						
ELECTRICAL WORK												
92	4.2.36		2362.36	Exothermic Connections.	each	110						
93	4.2.37		2362.37	Embedded Copper Grounding Plates	each	2						
94	4.2.38		2362.38	Bare, Stranded, Medium Hard-Drawn Copper Conductor, size 500 kcmil	m	450						
95	4.2.39		2362.39	Bare, Stranded, Medium Hard-Drawn Copper Conductor, size 4/0 AWG	m	125						
96	4.2.40		2362.40	Rigid PVC Conduit, size 78mm	m	25						
97	4.2.41		2362.41	Rigid PVC Conduit, size 129mm	m	40						
98	4.2.42		2362.42	Junction Box, size 200 x 200 x 150 mm Complete with Traffic Rated Cover.	each	2						
SUB-TOTAL CENTRE TRANSITION DAM								\$ -	\$ -	\$ -	\$ -	\$ -
4.3 2364 SEPARATION WALL												
CIVIL WORK												
Foundation Preparation												
99	4.3.1		2364.01	Dental Excavation	m³	110						
100	4.3.2		2364.02	Scaling and Water/Air Jet Cleaning of Bedrock	m²	900						
101	4.3.3		2364.03	Dental Concrete	m³	130						
102	4.3.4		2364.04	Dry Pack	m³	6						
CONCRETE WORK												
103	4.3.5		2364.05	Concrete - Separation Wall	m³	11,000						
104	4.3.6		2364.06	Concrete - Abutments	m³	70						
105	4.3.7		2364.07	PVC Waterstop - TYPE B (225 mm width)	m	60						
106	4.3.8		2364.08	Hydrophilic Waterstop	m	15						
107	4.3.9		2364.09	Bituminous Coating at Contraction Joint	m²	810						
REINFORCEMENT, ANCHORS AND DOWELS												
108	4.3.10		2364.10	Reinforcement including Dowels	kg	7,500						
SUB-TOTAL SEPARATION WALL								\$ -	\$ -	\$ -	\$ -	\$ -
5 2400 SPILLWAY												
5.1 2410 SPILLWAY STRUCTURE												
CIVIL WORK												
Excavation and Backfill												
109	5.1.1		2410.01	Fill Excavation (Sand Layer for Winter Protection)	m³	7,600						
110	5.1.2		2410.02	Partial Excavation of Cofferdam 2 for Concrete Lining Construction	m³	16,300						
Embankment - Cofferdam No 2												
111	5.1.3		2410.03	Zone 1 Material	m³	1,200						
112	5.1.4		2410.04	Zone 2C Material	m³	1,300						
113	5.1.5		2410.05	Zone 3C Material	m³	2,800						
114	5.1.6		2410.06	Zone 3D Material	m³	11,000						
Drilling, Pressure Grouting and Drainage												
115	5.1.7		2410.07	Grouting Holes	m	650						
116	5.1.8		2410.08	Grouting - Successful Connections	each	130						
117	5.1.9		2410.09	Dry Cement for Grouting	kg	23,000						
118	5.1.10		2410.10	Water Pressure Tests (Lugeon)	hour	4						
119	5.1.11		2410.11	Water Pressure Tests - Successful Connections	each	10						
120	5.1.12		2410.12	Uplift Gauges	each	1						
121	5.1.13		2410.13	Thermistors	each	1						
122	5.1.14		2410.14	Rotary/Percussion Drill Check Holes	m	25						
123	5.1.15		2410.15	Cored (Diamond drill) holes	m	25						
124	5.1.16		2410.16	Survey Monuments	each	6						
Foundation preparation												
125	5.1.17		2410.17	Scaling and Water/Air Jet Cleaning of rock foundation	m²	5,100						
CONCRETE WORK												
Spillway and Related Structures including Retaining Walls												
126	5.1.18		2410.18	Concrete - Slabs	m³	13,100						
127	5.1.19		2410.19	Concrete - Piers and Walls	m³	32,900						

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		CODE	SUBCODE									
128	5.1.20		2410.20	Concrete - Rollways	m³	19,500						
129	5.1.21		2410.21	Demolition of Slab for Rollway Key	m³	200						
130	5.1.22		2410.22	Overbreak Concrete	m³	3,000						
131	5.1.23		2410.23	Grout	m³	20						
132	5.1.24		2410.24	PVC Waterstop - TYPE A (150 mm width)	m	8,500						
133	5.1.25		2410.25	Hydrophilic Waterstop	m	2,850						
134	5.1.26		2410.26	Bituminous Coating at Contraction Joint	m²	950						
REINFORCEMENT, ANCHORS AND DOWELS												
135	5.1.27		2410.27	Reinforcement including Dowels	kg	3,612,000						
136	5.1.28		2410.28	Drill Holes and Grouting for Rock Dowels	m	8,000						
137	5.1.29		2410.29	Threaded Rebars with Couplers	kg	192,000						
STRUCTURAL STEEL AND MISCELLANEOUS METAL												
Non Embedded Miscellaneous Metal												
138	5.1.30		2410.30	Non Embedded Galvanized Miscellaneous Steel	kg	350						
139	5.1.31		2410.31	Non Embedded Galvanized Grating	kg	250						
Embedded Miscellaneous Metals												
140	5.1.32		2410.32	Embedded Galvanized Miscellaneous Steel (Frames, L Shapes, Sleeves, etc.)	kg	100						
141	5.1.33		2410.33	Expanded Sheet Metal - Rollway Joints	kg	4,000						
Crane Rails including Fastening System and Accessories												
142	5.1.34		2410.34	Rails for Trash Cleaning System	m	150						
143	5.1.35		2410.35	Anchor Bolts Grade 55 ASTM F1554	kg	1,700						
ANCHORS AND EMBEDDED PARTS PROVIDED BY OTHERS												
144	5.1.36		2410.36	Anchors and Templates in Primary Concrete for Gates (5 Sets)	kg	85,900						
145	5.1.37		2410.37	Anchors and Templates in Primary Concrete for Upstream Stoplogs (5 Sets)	kg	70,800						
146	5.1.38		2410.38	Anchors and Templates in Primary Concrete for Permanent Stoplogs (5 Sets)	kg	39,300						
147	5.1.39		2410.39	Anchors and Templates in Primary Concrete for Downstream Stoplogs (5 Sets)	kg	14,200						
148	5.1.40		2410.40	Anchors and Templates in Primary Concrete for Hoist Towers (5 Sets)	kg	430						
149	5.1.41		2410.41	Anchors and Templates in Primary Concrete for Walkways (5 Sets)	kg	200						
150	5.1.42		2410.42	Liner Plates in sides of Piers	each	10						
ELECTRICAL WORK												
151	5.1.43		2410.43	Exothermic Connections.	each	360						
152	5.1.44		2410.44	Bare, Stranded, Medium Hard-Drawn Copper Conductor, size 500 kcmil	m	1,600						
153	5.1.45		2410.45	Bare, Stranded, Medium Hard-Drawn Copper Conductor, size 4/0 AWG	m	550						
154	5.1.46		2410.46	Rigid PVC Conduit, size 53mm	m	120						
155	5.1.47		2410.47	Electrical Equipment and other Components required for the Construction Power	LS	1						
SUB-TOTAL SPILLWAY STRUCTURE								\$ -	\$ -	\$ -	\$ -	\$ -
5.2 2411 SPILLWAY BRIDGES												
CONCRETE WORK												
156	5.2.1		2411.01	Concrete - Slab on Bridge Deck	m³	450						
REINFORCEMENT, ANCHORS AND DOWELS												
157	5.2.2		2411.02	Reinforcement including Dowels	kg	110,000						
STRUCTURAL STEEL AND MISCELLANEOUS METAL												
Structural Steel												
158	5.2.3		2411.03	Structural Steel - Painted/Galvanized Sections	kg	275,000						
Non Embedded Miscellaneous Metal												
159	5.2.4		2411.04	Non Embedded Galvanized Miscellaneous Steel	kg	38,150						
160	5.2.5		2411.05	Non Embedded Galvanized Grating	kg	52,750						
Embedded Miscellaneous Metals												
161	5.2.6		2411.06	Embedded Galvanized Miscellaneous Steel (Frames, L Shapes, Sleeves, etc.)	kg	13,100						
Crane Rails including Fastening System and Accessories												
162	5.2.7		2411.07	Elastomeric Bearing Pads	each	120						
163	5.2.8		2411.08	Bridge Expansion Joints	each	16						
SUB-TOTAL SPILLWAY BRIDGES								\$ -	\$ -	\$ -	\$ -	\$ -
5.3 2430 SPILLWAY DISCHARGE CHANNEL												
CIVIL WORK												
Foundation preparation												
164	5.3.1		2430.01	Scaling and Water/Air Jet Cleaning of rock foundation	m²	5,500						
CONCRETE WORK												
165	5.3.2		2430.02	Concrete - Slabs (CVC)	m³	4,000						
166	5.3.3		2430.03	Concrete - Walls (CVC)	m³	1,000						
167	5.3.4		2430.04	Overbreak Concrete	m³	2,300						
REINFORCEMENT, ANCHORS AND DOWELS												
168	5.3.5		2430.05	Reinforcement including Dowels	kg	343,000						
169	5.3.6		2430.06	Drill Holes and Grouting for Rock Dowels	m	4,600						
SUB-TOTAL SPILLWAY DISCHARGE CHANNEL								\$ -	\$ -	\$ -	\$ -	\$ -
6 3200 INTAKE												
6.1 3220 INTAKE STRUCTURE												
CIVIL WORK												
Drilling, Pressure Grouting and Drainage												
170	6.1.1		3220.01	Grouting Holes	m	2,000						
171	6.1.2		3220.02	Grouting - Successful Connections	each	400						
172	6.1.3		3220.03	Dry Cement for grouting	kg	70,000						
173	6.1.4		3220.04	Water Pressure Tests (Lugeon)	hour	8						
174	6.1.5		3220.05	Water Pressure Tests - Successful Connections	each	20						
175	6.1.6		3220.06	Uplift Gauges	m	40						
176	6.1.7		3220.07	Thermistors	each	1						
177	6.1.8		3220.08	Rotary/Percussion Drill Check Holes	m	50						
178	6.1.9		3220.09	Cored (Diamond drill) holes	m	50						
179	6.1.10		3220.10	Drainage Holes	m	800						
180	6.1.11		3220.11	PVC Caps for Drainage Holes	each	50						
Foundation preparation												
181	6.1.12		3220.12	Scaling and Water/Air Jet Cleaning of rock foundation	m²	4,900						
Geotechnical Instrumentation												
182	6.1.13		3220.13	Survey Monuments	each	4						
183	6.1.14		3220.14	V-Notch Weirs	each	2						
CONCRETE WORK												
CONCRETE INTAKE & GATE HOIST BUILDING												
184	6.1.15		3220.15	Concrete - Substructure below El. 45.5 m	m³	142,750						

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		CODE	SUBCODE										
185	6.1.16		3220.16	Concrete - Gate Hoist Building and Elevator Room above El. 45.5 m	m³	1,600							
186	6.1.17		3220.17	Overbreak Concrete	m³	3,000							
187	6.1.18		3220.18	Grout	m³	30							
188	6.1.19		3220.19	PVC Waterstop - TYPE A (150 mm width)	kg	11,500							
189	6.1.20		3220.20	PVC Waterstop - TYPE B (225 mm width)	m	650							
190	6.1.21		3220.21	Sealing of Joints	m	100							
191	6.1.22		3220.22	Bituminous Coating at Construction Joints	m²	6,020							
REINFORCEMENT, ANCHORS AND DOWELS													
192	6.1.23		3220.23	Reinforcement including Dowels	kg	9,251,000							
INSTALLATION OF ANCHORS AND EMBEDDED PARTS PROVIDED BY OTHERS													
193	6.1.24		3220.24	Anchors and Templates in Primary Concrete for Intake Gates (12 Sets)	kg	171,500							
194	6.1.25		3220.25	Anchors and Templates in Primary Concrete for Intake Trashracks (12 Sets)	kg	82,000							
195	6.1.26		3220.26	Anchors and Templates in Primary Concrete for Intake Stoplogs (12 Sets)	kg	144,800							
INTAKE - ELECTRICAL WORK													
196	6.2.1		3290.01	Exothermic Connections	each	575							
197	6.2.2		3290.02	Embedded Copper Grounding Plates	each	6							
198	6.2.3		3290.03	Bare, Stranded, Medium Hard-Drawn Copper Conductor, size 500 kcmil	m	2,000							
199	6.2.4		3290.04	Bare, Stranded, Medium Hard-Drawn Copper Conductor, size 4/0 AWG	m	1,300							
SUB-TOTAL INTAKE STRUCTURE													
\$ - \$ - \$ - \$ - \$ -													
POWERHOUSE													
SUBSTRUCTURE													
CIVIL WORK													
Drilling, Pressure Grouting and Drainage													
200	7.1.1		3310.01	Grouting Holes	m	800							
201	7.1.2		3310.02	Grouting - Successful Connections	each	160							
202	7.1.3		3310.03	Dry Cement for Grouting	kg	28,000							
203	7.1.4		3310.04	Water Pressure Tests (Lugeon)	hour	4							
204	7.1.5		3310.05	Water Pressure Tests - Successful Connections	each	10							
205	7.1.6		3310.06	Uplift Gauges	each	1							
206	7.1.7		3310.07	Thermistors	each	1							
207	7.1.8		3310.08	Rotary/Rotary/Percussion Drill Check Holes	m	25							
208	7.1.9		3310.09	Cored (Diamond drill) holes	m	25							
Foundation preparation													
209	7.1.10		3310.10	Scaling and Water/Air Jet Cleaning of rock foundation	m²	10,400							
Trench for Interconnection Cables and Pipes													
210	7.1.11		3310.11	Fill Excavation and Backfill	LS	1							
211	7.1.12		3310.12	Ductbank	LS	1							
212	7.1.13		3310.13	Manholes	each	3							
CONCRETE WORK													
213	7.1.14		3310.14	Concrete - Powerhouse Substructure below El. 6.5 m	m³	137,400							
214	7.1.15		3310.15	Concrete - Substructure between lines 6 and 7, including Sump Pit, Shafts for Stair & Elevator up to El. 45.5m	m³	15,200							
215	7.1.16		3310.16	Concrete - Slabs and Walls between El. 6.5 and 15.5, including North and South Service Bays, Slab on grade, Basins and Bases for GSU transformer up to El. 16.8 m	m³	11,100							
216	7.1.17		3310.17	Concrete - Slab on Steel Deck including Mezzanines	m³	585							
217	7.1.18		3310.18	Secondary Concrete of Draft Tube Cone Steel liner	m³	2,420							
218	7.1.19		3310.19	Overbreak Concrete	m³	8,500							
219	7.1.20		3310.20	Grout	m³	15							
220	7.1.21		3310.21	PVC Waterstop - TYPE A (150 mm width)	m	12,600							
221	7.1.22		3310.22	PVC Waterstop - TYPE B (225 mm width)	m	1,300							
222	7.1.23		3310.23	Metallic Waterstop	m	370							
223	7.1.24		3310.24	Sealing of Joints	m	300							
224	7.1.25		3310.25	Polyethylene Foam Rod	m	140							
225	7.1.26		3310.26	Asphalt Impregnated Fibre Board	m²	70							
226	7.1.27		3310.27	Bituminous Coating at Construction Joint	m²	6,300							
Fire Walls at Tailrace Deck (Transformer Deck)													
227	7.1.28		3310.28	Prefabricated Concrete Fire Walls	m³	698							
REINFORCEMENT, ANCHORS AND DOWELS													
228	7.1.29		3310.29	Reinforcement including Dowels	kg	11,760,000							
229	7.1.30		3310.30	Drill Holes and Grouting for Rock Dowels	m	700							
230	7.1.31		3310.31	Drill Holes for Anchors Diam. 25 mm with Epoxy Adhesive HIT-RE-500	m	100							
231	7.1.32		3310.32	Threaded Rebar (Dia. 35 mm) with Couplers	kg	800							
INSTALLATION OF ANCHORS AND EMBEDDED PARTS PROVIDED BY OTHERS													
232	7.1.33		3310.33	Anchors and Templates in Primary Concrete for Draft Tube Stoplogs (8 Sets)	kg	53,200							
233	7.1.34		3310.34	Anchors and Embedded Parts in Primary Concrete for T/G Units	kg	50,000							
SUB-TOTAL POWERHOUSE - SUBSTRUCTURE													
\$ - \$ - \$ - \$ - \$ -													
7.2 3320 SUPERSTRUCTURE (Intake and Powerhouse)													
STRUCTURAL STEEL													
Beams - Rolled Sections, Painted													
234	7.2.1		3320.01	Beams Under 60 kg/m	kg	612,400							
235	7.2.2		3320.02	Beams Between 61 and 150 kg/m	kg	66,970							
236	7.2.3		3320.03	Beams Over 150 kg/m	kg	7,600							
Columns - Rolled Sections, Painted													
237	7.2.4		3320.04	Columns Under 60 kg/m	kg	16,020							
238	7.2.5		3320.05	Columns Between 61 and 150 kg/m	kg	103,250							
239	7.2.6		3320.06	Columns Over 150 kg/m	kg	176,650							
Columns & Girders - Built up Sections, Painted													
240	7.2.7		3320.07	Crane Girders in Welded Plates, 700-800 kg/m	kg	374,650							
241	7.2.8		3320.08	Main Building Columns, in Rolled Shapes & Plates, Welded Continuously	kg	653,000							
Trusses, Painted													
242	7.2.9		3320.09	Trusses and Wind Trusses	kg	285,760							
Bracings, Painted													
243	7.2.10		3320.10	Horizontal Bracing (WT Shapes), 31-60 kg/m	kg	76,970							
244	7.2.11		3320.11	HSS Square Shapes for Vertical Bracing and Struts	kg	188,390							
Nelson Studs, not painted													
245	7.2.12		3320.12	Nelson Studs (Dia. 19 and 13 mm) Welded Mezzanine Beams	kg	3,305							
Stairs, Hot dip Galvanized													
246	7.2.13		3320.13	Stair Stringers in Channels	kg	62,410							
247	7.2.14		3320.14	Stair Treads in Grating (308 mm by 914 mm), hot dip galvanized, Bent Checkered Plate Nosing, type "FLOWFORGE" by FISHER & LUDLOW or equal	each	1,624							

LOWER CHURCHILL PROJECT MUSKRAT FALLS CH0007 - CONSTRUCTION OF INTAKE AND POWERHOUSE, SPILLWAY AND TRANSITION DAMS				SCHEDULE OF PRICE BREAKDOWN							PART 1 - APPENDIX A2.1 505573-CH0007-51AF-I-2111 Rev. 01		
ISSUED FOR: RFP				DATE: 21 - SEP - 2012				BIDDER'S NAME:					
PRICE ITEM No	REFERENCE	WBS CODE		PRICE ITEM DESCRIPTION	UNIT OF MEASURE	ESTIMATED QUANTITY A	MAN HOURS (AT SITE)	MANPOWER COST B	MATERIALS COST C	EQUIPMENT COST D	UNIT COST E= (A+B+C)	TOTAL COST F= A x E	
		CODE	SUBCODE										
Landings and Walkways, Hot dip Galvanized													
248	7.2.15		3320.15	Gratings for Landings at Stairs, type 24-102, Bearing Bars (of approx. 32X4.8) by FISHER and LUDLOW or equal	kg	48,820							
Steel Decking													
249	7.2.16		3320.16	Roof Deck type RD 306 (t=0.91mm) and type HB (t=0.91 mm) by VICWEST, Galvanized Z 275	m²	11,730							
250	7.2.17		3320.17	Roof Deck type RD 938 (t=0.76mm) by VICWEST, Galvanized Z 275	m²	1,640							
Crane Rails Accessories													
251	7.2.18		3320.18	Tie-Back Linkage Assemblies by GANTREX, type TL123GP, includes Plates, Angles, Shims, "O" Rings, Bolts and Permanent Lubrication	each	96							
Anchor Bolts													
252	7.2.19		3320.19	Anchor Bolts Steel Grade 55 ASTM F1554 (Dia. 19 and 25 mm), Nuts A563, hot dip galvanized, by PORTLAND or equal	kg	5,960							
253	7.2.20		3320.20	Anchor Bolts Steel Grade 55 ASTM F1554 (Dia. 38 and 51 mm), Nuts A563, hot dip galvanized, by PORTLAND or equal	kg	22,800							
Guardrails in Pipes, Hot dip Galvanized													
254	7.2.21		3320.21	Guardrails in Pipes for Mezzanine, Stairs and Covers, with Kick Plate, Posts in DN32-XS and Railings in DN32-Std.	kg	40,090							
255	7.2.22		3320.22	Guardrails of Intake Deck (W and HSS shapes)	kg	17,750							
Hilti Bolts													
256	7.2.23		3320.23	Hilti KWIK Bolts 3 (Dia. 25 mm) 304 SS	each	525							
257	7.2.24		3320.24	Hilti KWIK Bolts 3 (Dia. 19 mm) hot dip galvanized	each	630							
258	7.2.25		3320.25	Hilti Adhesive Anchors, HAS rods (Dia. 19 mm) HIT RE-500 , hot dip galvanized	each	200							
Joists													
259	7.2.26		3320.26	Steel Joists, by CANAM or equal	kg	2,100							
Elastomeric pad													
260	7.2.27		3320.27	Elastomeric Pad at Attachment Axis E	each	40							
MISCELLANEOUS STEEL													
Miscellaneous Structural Steel, Hot dip Galvanized													
261	7.2.28		3320.28	Miscellaneous Structural Steel - Embedded	kg	62,950							
262	7.2.29		3320.29	Miscellaneous Structural Steel, L Shapes, Plates etc.	kg	141,940							
263	7.2.30		3320.30	Checkered Plates	kg	54,260							
Miscellaneous Stainless steel													
264	7.2.31		3320.31	Miscellaneous Stainless Steel (drains in hydraulic passages and diamond expanded metal of MK1 and MK2)	kg	6,500							
Crane Rails, rust preventive coating													
265	7.2.32		3320.32	Rail type BETH 175, includes Splices and Aluminothermic Welds, for Crane Girders and for Trash Cleaner	m	720							
266	7.2.33		3320.33	Rail type Beth 104 with Aluminothermic Welds	m	315							
Crane Rails Accessories													
267	7.2.34		3320.34	GANTREX Rail Clip type WELDLOK 43 with Rubber Nosing for Crane Girders and Trash Cleaner	each	2,160							
268	7.2.35		3320.35	GANTREX rail clip type WELDLOK 15 with Rubber Nosing, hot dip galvanized	each	1,060							
Ladders, Hot dip Galvanized													
269	7.2.36		3320.36	Ladders with Cage including the Self-Closing Gates	kg	14,300							
Plates, Painted / Hot dip Galvanized													
270	7.2.37		3320.37	Plates 350 x 20, Under Rails BETH 175, Painted with Primer Plates 300 x 20 Under Rails BETH 175, hot dip galvanized	kg	35,500							
Landings and Walkways, Hot dip Galvanized													
271	7.2.38		3320.38	Grating HD-24-102, Bearing Bars (64X4.8 or 51x4.8) by FISHER and LUDLOW or equal	kg	56,800							
272	7.2.39		3320.39	Grating at EL 45.5 on Intake Deck, Special Order	kg	101,600							
ARCHITECTURE WORKS													
METAL CLADDING & ROOFING													
273	7.2.40		3320.40	Insulated Metal Wall Panels (Sandwiched Panels. VicWest & Kingspan; refer to them as Composite Metal Building Panels)	m²	7,720							
274	7.2.41		3320.41	Preformed Metal Siding (Vertical Metal Siding fastened to Z-bars on insulated Steel Stud Wall)	m²	2,700							
275	7.2.42		3320.42	Modified Bituminous Membrane Roofing System	m²	8,600							
OPENINGS													
276	7.2.43		3320.43	Exterior Metal Insulated Doors - Double	each	4							
277	7.2.44		3320.44	Exterior Metal Insulated Doors - Single	each	16							
278	7.2.45		3320.45	Aluminium Entrance Door (Insulated)	each	1							
279	7.2.46		3320.46	Sectional Metal Insulated Door	each	2							
280	7.2.47		3320.47	Aluminium Windows (32 Windows max)	m²	180							
FIRE & SAFETY ITEMS													
281	7.2.48		3320.48	Roof Anchors & Safety Restraints	each	60							
SPECIAL DOORS													
282	7.2.49		3320.49	Multi-Leaf Vertical Lift Metal Insulated Door	each	1							
SUB-TOTAL POWERHOUSE - SUPERSTRUCTURE									\$ -	\$ -	\$ -	\$ -	
TURBINE GENERATOR AND ANCILLARIES													
ELECTRICAL WORK													
283	8.1.1	3400	3430.01	Exothermic Connections.	each	950							
284	8.1.2		3430.02	Embedded Copper Grounding Plates	each	50							
285	8.1.3		3430.03	Bare, Stranded, Medium Hard-Drawn Copper Conductor, size 500 kcmil	m	4,300							
286	8.1.4		3430.04	Bare, Stranded, Medium Hard-Drawn Copper Conductor, size 4/0 AWG	m	1,150							
287	8.1.5		3430.05	Rigid PVC Conduit, size 78mm	m	150							
SUB-TOTAL POWERHOUSE - ELECTRICAL WORK									\$ -	\$ -	\$ -	\$ -	
MECHANICAL WORK													
288	8.2.1	3440	3351	HVAC System	LS	1							
			3351.01	Pipe and Fittings NPS 16, Piping Specification PA01	m	To be filled by Bidder							
			3351.02	Pipe and Fittings NPS 24, Piping Specification PA01	m	To be filled by Bidder					See Note 1		
289	8.2.2	3440	3353	Wastewater System	LS	1							
			3353.01	Pipe and Fittings NPS 1 1/2, Piping Specification PA01	m	To be filled by Bidder							
			3353.02	Pipe and Fittings NPS 3, Piping Specification PA01	m	To be filled by Bidder							
			3353.03	Pipe and Fittings NPS 4, Piping Specification PA01	m	To be filled by Bidder					See Note 1		

LOWER CHURCHILL PROJECT MUSKRAT FALLS CH0007 - CONSTRUCTION OF INTAKE AND POWERHOUSE, SPILLWAY AND TRANSITION DAMS				SCHEDULE OF PRICE BREAKDOWN							PART 1 - APPENDIX A2.1	
				ISSUED FOR: RFP			DATE: 21 - SEP - 2012				BIDDER'S NAME:	
PRICE ITEM No	REFERENCE	WBS CODE		PRICE ITEM DESCRIPTION	UNIT OF MEASURE	ESTIMATED QUANTITY A	MAN HOURS (AT SITE)	MANPOWER COST B	MATERIALS COST C	EQUIPMENT COST D	UNIT COST E= (A+B+C)	TOTAL COST F= A x E
		CODE	SUBCODE									
	10.1		3610	Hilti Adhesive Anchors								
301	10.1.1		3610.01	Hilti adhesive anchors, HIT RE-500; HAS rods (Dia. 16 mm), hot dip galvanized	each	100						N/A
302	10.1.2		3610.02	Hilti adhesive anchors, HIT RE-500; HAS rods (Dia. 19 mm), hot dip galvanized	each	100						N/A
303	10.1.3		3610.03	Hilti adhesive anchors, HIT RE-500; HAS rods (Dia. 25 mm), hot dip galvanized	each	100						N/A
FOR THE LOWER CHURCHILL PROJECT - MUSKRAT FALLS												
This Appendix forms part of the Proposal submitted by:												
Name of Bidder:												
Request For Proposal no: 505573-CH0007												
Signature:												
Date of Proposal:												
Note 1: The amount and quantities required in this Lump Sum price breakdown are strictly for accounting purpose in order to track progress payment and capitalization of the work that are the object of this contract. Any modification request to the Lump Sum price based on these information will not be considered.												
Note 2: If there has been an error in the calculation to establish the total of Column F (Total Price), then the figures of the Column E (UNIT PRICE) and A (QUANTITY) will prevail.												