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800 Burrard Street, Room 219
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Vancouver
British Columbia
V6Z 0B9
Bid Fax: (604) 775-9381

SOLICITATION AMENDMENT MODIFICATION DE L'INVITATION

The referenced document is hereby revised; unless otherwise
indicated, all other terms and conditions of the Solicitation
remain the same.

Ce document est par la présente révisé; sauf indication contraire,
les modalités de l'invitation demeurent les mêmes.

Comments - Commentaires

Vendor/Firm Name and Address
Raison sociale et adresse du
fournisseur/de l'entrepreneur

Issuing Office - Bureau de distribution
Public Works and Government Services Canada - Pacific
Region
800 Burrard Street, Room 219
800, rue Burrard, pièce 219
Vancouver
British C
V6Z 0B9

Title - Sujet Upscheek Tashee Trail Construction	
Solicitation No. - N° de l'invitation 5P437-190013/B	Amendment No. - N° modif. 009
Client Reference No. - N° de référence du client 5P437-190013	Date 2019-04-17
GETS Reference No. - N° de référence de SEAG PW-\$PWY-019-8566	
File No. - N° de dossier PWY-8-41204 (019)	CCC No./N° CCC - FMS No./N° VME
Solicitation Closes - L'invitation prend fin at - à 02:00 PM on - le 2019-04-25	Time Zone Fuseau horaire Pacific Daylight Saving Time PDT
F.O.B. - F.A.B. Plant-Usine: <input type="checkbox"/> Destination: <input checked="" type="checkbox"/> Other-Autre: <input type="checkbox"/>	
Address Enquiries to: - Adresser toutes questions à: Ngan, Ken (PWY)	Buyer Id - Id de l'acheteur pwy019
Telephone No. - N° de téléphone (604) 671-0219 ()	FAX No. - N° de FAX (604) 775-6633
Destination - of Goods, Services, and Construction: Destination - des biens, services et construction: Parks Canada (PCA) - Upscheek Tashee Trail - Pacific Rim National Park - Ucluelet, BC	

Instructions: See Herein

Instructions: Voir aux présentes

Delivery Required - Livraison exigée	Delivery Offered - Livraison proposée
Vendor/Firm Name and Address Raison sociale et adresse du fournisseur/de l'entrepreneur	
Telephone No. - N° de téléphone Facsimile No. - N° de télécopieur	
Name and title of person authorized to sign on behalf of Vendor/Firm (type or print) Nom et titre de la personne autorisée à signer au nom du fournisseur/ de l'entrepreneur (taper ou écrire en caractères d'imprimerie)	
Signature	Date

Solicitation No. - N° de l'invitation
5P437-190013/B
Client Ref. No. - N° de réf. du client

Amd. No. - N° de la modif
009
File No. - N° du dossier
PWY-8-41204

Buyer ID - Id de l'acheteur
PWY019
CCC No./N° CCC - FMS No./N° VME

Les documents français seront disponibles sur demande.

This Solicitation Amendment 009 is raised to incorporate Addendum 7, and the associated revised Unit Price Table.

This Addendum 7 Unit Price Table supersedes any previous versions. Failure to complete and submit this revised Unit Price Table, along with the bid submission will rendered the bid submission NON-COMPLIANT and will be given NO further consideration.

All other terms and conditions remain unchanged.

The following changes/clarifications in the tender documents are effective immediately.
This addendum will form part of the contract documents.

1.0 PAY ITEM 107, NEW ITEM: SUPPLY AND INSTALL COLD MIX ASPHALT:

Pay Item 107 is added for the supply and placement of cold mix asphalt for maintenance of existing roads used for hauling material. The Contractor will ensure that haul trucks do not exceed approved gross vehicular weights. A new Unit Price Table is included in this addendum

2.0 PAY ITEM 119, TRAFFIC SIGNS.

Item 119, W-channel is changed to U-channel

3.0 QUESTIONS RECEIVED FROM PROSPECTIVE BIDDERS:

- 1. Question:** Please confirm that we are not permitted to work on the ground, when welding the top plates to the helical piles, or any other aspect of that helical pile and elevated trail work.

Answer: The access to work on the ground will be limited to those activities which do not cause ground disturbance or damage to the sensitive wetlands and are directly below the footprint of the elevated trail. This work shall be at the sole discretion of the DR and OEM. No equipment or materials can be placed on the ground which might cause such damage.

- 2. Question:** We are planning on quoting our Presto Geoweb wall as an equivalent to the specified Envirogrid.

Answer: Presto Geoweb is an acceptable alternative to Envirogrid walls.

- 3. Question:** On the unit price table - item # 131 - Retaining walls over 1.2m Height with Uniaxial grid - please confirm that the uniaxial grid will be included in the unit rate of the wall supply and will be specified by the designer - we ask because you list Miragrid 5XT as one of the approved items in the specifications and have a quantity listed on the unit price table as a separate line item # 137 @ 9500 m2 quantity. We cannot find anywhere in the tender drawings where the 5XT is required to be used.

Answer: The uniaxial grid used behind retaining walls shall be paid as a separate item under pay item #137. The grid used shall be specified by your wall supplier/designer with a minimum requirement that the grid used is equivalent to Miragrid 5XT.

- 4. Question:** The take off quantity listed on line item 137 is close to the requirement for the uniaxial grid used within the Geocell MSE wall sections based on the 1900m2 of facing above 1.2m - We would intend to include the uniaxial grid as part of the Geocell wall system unit rate under item # 131 Please confirm that line item #137 is a duplicate quantity or do you need it quoted in addition to the grid included in item # 131.
-

Answer: Split out the cost of the uniaxial grid behind the walls and place this cost in line item #137. Do not include it in the cost of the wall facing. This will keep all bids similar.

5. Question: Please ask the engineers where on the 40mm x 175mm x 1215mm rounded wood are to be used on the bridge #3 railings?

Answer: There are no 40x175x1215mm rounded wood elements noted on Bridge # 3.

6. Question: With regard to the piledriving Specifications for the the Bridges 3, 19 & 20, 31 62 16 - 1.4.3 states that "...drop hammers shall be weighed..." insinuating that drop hammers (a standard piece of equipment) may be used on site. 31 62 16 - 2.2.1 states that "Drop hammers will not be allowed" Are drop hammers allowed for the works and if not why?

Answer: Pile installation using dropping hammer methodology is not allowed for this project. This project is located in an environment sensitive area, all construction activities that potentially will impact or damage surrounding nature habitat are prohibited. Pile driving using drop hammers methodology is not considered as a preferable construction method in this project.

7. Question: Also, in specification for Steel Pipe Piles it is noted in 1.4.3 that "Gravity Hammers shall weigh at least 1.5 tons but shall not be less than the mass of the pile and cap. A 30" x 3/4 wall 90-foot-long pipe pile will weigh approximately 235 lbs/ft or requiring a #21,000 lbs (gravity) drop hammer. Why is this specified when in 31 62 16 2.2.2 it is stated that impact hammers must be between 32.5 and 45 kNm which is achievable with a #6,000 lb gravity hammer?

Answer: Recommended driving equipment includes diesel hammer, hydraulic hammer or Vibratory hammer. However, the contractor shall submit details of the proposed pile driving equipment to the DR and engineer prior to the commencement of pile installation for review and approval. The information provided shall include the following:

- Hammer Data: hammer type, manufacturer, model number, serial number, maximum rated energy and range in operation energy, stroke at maximum rated energy and range of energy of operation stroke, ram weight;
- Strike plate data: weight, diameter thickness, composition
- Hammer cushion data: manufacturer, area, thickness, number of plates, total thickness, composition,
- Helmet data: weight, composition,
- Pile cushion data: material, area, thickness or plate, number of sheets, total thickness of cushion.

8. Question: How much survey control was planted along the right of way, either on the trail ROW or the adjacent highway? Will there be a digital copy (CAD) vertical profile issued?

Answer: Survey control will be provided at the 3 bridge sites, all wall locations, and at the Highway 4 widening location. For the remaining sections of trail (about 95% of the length) the trail will be approximately centered within the previous clearing and the

surface elevation will typically be raised about 20 cm above the existing ground, though this will vary. The Contractor will be responsible for setting out an alignment and profile within the cleared width which meets the design criteria provided by the Departmental Representative (DR). The DR will review and approve the Contractor's proposed alignment and where needed provide assistance with adjusting the alignment and profile for each segment of the work.

Where survey is needed for quantities a local system shall be established by the contractor. It is expected that the Contractor will have field personnel familiar with surveying and suitable equipment to set out the Contractor's proposed alignment within the cleared width and to maintain an accurate record of earthwork and fill quantities for payment purposes and submit notes to the DR on a regular basis. For as-built information the trail alignment, profile, and culvert locations can be established by GPS. A precise detailed topographic record survey will not be required.

- 9. Question:** With regard to #3 Bridge with the Steel Girders. We can find reference to stripe painting at the bearing locations but no reference to painting the bridge Beams. Are the Steel Bridge Beams in Bridge # 3 Painted? If so, is there a separate specification for these?

Answer: No painting on steel plate girder is required for bridge # 3.

- 10. Question:** Pipe Pile Tests 31 09 16 3.2.2 - "Pile Loading testing..." States that we have to wait 14 days after piledriving to conduct a final PDA test (at each abutment). This would mean that the concrete could not be formed until the final testing is complete at each abutment for each bridge. Is this the intention as it will delay the project by months.

Answer: PDA testing may be conducted at the end of initial driving (EOID), or during piles tested re-strike (RST). Where time dependent changes in the soil condition are anticipated, such as pile setup or relaxation, a sample of pile tested at the EOID may be retested during RST to assess the change in the load bearing capacity of the pile. The re-strikes shall be conducted no sooner than 14 days after initial driving or directed by DR and Geotechnical engineer if the shorter setup time is deemed justifiable.

- 11. Question:** Pipe Pile Tests 31 09 16 3.3.2 - "Carry out additional load tests as instructed by the DR if the pile fails to provide capacity" What are the additional tests that could be required as we will have to allow for these costs.

Answer: No additional fee for additional pile load testing due to failure of pile installation shall be assumed.

- 12. Question:** Pipe Pile Tests 31 62 16 3.2.9.2 - Contractor shall remove any surface and/or shallow depth obstructions..." - Please define "Shallow Depth Obstructions" so that the depth of obstruction that the contractor is responsible for, is clear.

Answer: Based on available site condition information, it is estimated an approximated 300mm to 600mm deep surface obstructions maybe required to be removed and cleaned out.

- 13. Question:** Geotechnical Site assessment 4.4.2.3 Steel pipe piles - “Driven steel piles may need to be driven instead of helical piles”. - Please provide a quantity and a design for this as we have no idea what to allow for and how we would provide pile driving equipment to areas of the elevated trail if required.
- Answer:** Geotechnical investigations indicated that there is only a possibility that a random boulder might prevent the use of helical piles for the elevated trail. If this does occur a change order will be prepared to cover the additional cost and materials. If a pipe pile were required, it will be 200mm to 250mm in diameter.
- 14. Question:** Geotechnical Site assessment Addendum 6 Q14 “Please confirm that the contractor is required to complete additional geotechnical drilling at...” - The piling needs to be installed at these locations for this design. Would it not be more economical to simply supply more pipe if the piles did not achieve the design criteria at the design depth?
- Answer:** Contractor shall retain a geotechnical engineer to obtain necessary additional around information to complete the works. This cost of additional geotechnical engineering will be built in Contractor’s project cost estimate.
- 15. Question:** Is there a detail for the w-channel steel post (line item 119)?
- Answer:** This line item shall be corrected to “U-channel”. These posts shall be perforated, galvanized, and weigh 3kg/metre (2 lb/foot). Additional information is provided in Specification 32 17 25, Traffic Signage, Clause 2.2.
- 16. Question:** Line items 121 and 122 – is there an approximate number of signs that need to be removed and reinstalled, and is there a detail for what kind of posts they are mounted on
- Answer:** Item 121 is for the relocation of one single wood post sign, three single steel post signs, one two wood post (150mm X150mm) sign, and one three wood post (150mmX150mm) sign with 5 300mm aluminum channels.
Item 122 is one sign with seven 300mm aluminum channels mounted on three wood posts, 150mm square. See attached photos.
- 17. Question:** Will there need to be private locates done along the highway or will utility locations be provided? Will the utility locates provided in the drawings be staked on site?
- Answer:** Utilities are shown on sheets U-1 to U-26. Contractor will be required to do these utility locations. Water main was installed with directional drilling, no trench line is visible.
- 18. Question:** In addendum 6 there are 2 box culverts on AC-2 plan. They are not listed in the schedule of quantities or on the D-1 or D-2 schedule that we can see. Can you also confirm the length of these two box culverts?
- Answer:** These 2 box culverts are for amphibians and are 3750 mm long. They will be paid under Pay Item #160 and are included in the estimated quantity of 160.
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- 19. Question:** AC-2 shows four sections of impermeable trail to be built along with a typical cross section showing 600 mm of granular subbase with 20 % clay mixed in. In what item will this material be paid for? Please describe what is meant by “evenly distributed” in reference to the clay? Is this in layers, or mixed in with the subbase materials?
- Answer:** Payment will be made by the cubic metre under pay item # 103. Due to the difficulty to estimate the work to supply and mix clay with the sub-base material, the additional work to mix the clay will be by change order. The clay will be uniformly mixed through the sub-base material.
- 20. Question:** For the pedestrian and bike crossing signs they have two separate codes assigned to them as shown below, with WC-15 corresponding to the image in the Ontario Transportation Manual (OTM). Is there a reason for separate codes? Also, what provinces sign manual are the signs on the drawings coded to as this affects the sign size?
- Answer:** An office located in Ottawa produced the signage drawings. All signs on roads and highways will be to the Manual of Uniform Traffic Control Devices for Canada (MUTCDC). Dimensions of signs are as shown in the MUTCDC.
- 21. Question:** On drawing T-1 at the road crossing it refers to drawing T-53 for the Radar Hill Road Crossing and for Typical Road Crossing, do these pedestrian/bike signs (WB-15) require the WC-32t crossings found on a typical road crossing?
- Answer:** Yes, crossings should be uniform throughout the project.
- 22. Question:** For the 130 Trail signs mounted on curved steel post and precast concrete bases what type of signs are these? I was only able to find 8 signs coded to RB-71 SHARED PATHWAY (OTM) along the trail.
- Answer:** The messaging on these signs shall be provided after the final alignment is agreed in the field. Typical signs will be for curves, hills, and general information. For tender purposes all signs will be of MUTCDC design and messaging, 300mmX300mm, ink screened onto reflective diamond grade facing. Specialty signage is by Change Order.
- 23. Question:** For the (200x400) reflective signs on the parking lot and driveway gates what is displayed on these signs?
- Answer:** These signs are to make the gates visible at night. They shall be blank yellow with reflective diamond grade sheeting.
- 24. Question:** Section 01 52 00 1.7.4 indicates that the contractor is responsible for maintenance and reinstatement of existing roads used during construction. The Tofino airport road is currently a combination of chip seal and pavement. Over 1km of this road is showing visible signs of distress. With the mass haul that is expected to occur over this road during construction it is likely that there will be extensive failures in this road structure. The paved surface cannot simply be graded – temporary patching of some form will be
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required and at project completion some sort of rehabilitation will need to be undertaken. It is not possible to quantify the extent of maintenance repairs or ultimate rehabilitation that will be required to satisfy the users / owner of this road for tender purposes. To provide a level playing field for all bidders please provide a pay item that specifies: - the method of maintenance repair and gives a quantity to base unit pricing on - the method of restoration with a unit and quantity to base pricing on.

Answer: Maintenance will be defined as sweeping and cleaning off construction debris (dirt, dust, wood chips, etc.) from the roadway. Repair of pot holes will be paid as pay item #107.

25. Question: PDA requirements: Are the piles to be PDA's the factored capacity of three times the maximum unfactored design load or the Max ULS5 for each bridge?

Answer: Hammer energy used during PDA testing shall be such that the required ultimate pile capacity can be mobilized in a single blow without additional data interpretation. Pile loads combination ULS5 is indicated for seismic loading condition, not for pile load bearing capacity testing.

26. Question: PDA requirements: is there a minimum time for pile setup before the PDA?

Answer: PDA testing may be conducted at the end of initial driving (EOID), or during piles tested re-strike (RST). Where time dependent changes in the soil condition are anticipated, such as pile setup or relaxation, a sample of pile tested at the EOID may be retested during RST to assess the change in the load bearing capacity of the pile. The re-strikes shall be conducted no sooner than one 14 days after initial driving or directed by DR and Geotechnical Engineer if the shorter time is deemed justifiable.

27. Question: Cutting Shoe: all bridges state a pile shoe (APF 0-14000) is required for all piles. The shoe specified is an outside fit shoe, which is generally not used for a friction pile. Are shoes mandatory? If yes, are you looking for an inside fit shoe that would help with the friction piles?

Answer: Cutting shoes are not mandatory in this project or the Contractor may provide alternative pile installation devices. However, the Contractor shall demonstrate piles installed properly and meet the design requirement specified on the Drawings and specifications.

28. Question: Who completes the drivability analysis of the piles; the contractor or the owner after the driving equipment is specified?

Answer: The Contractor is responsible for completing pile drivability analysis.

29. Question: Swinging leads are generally used in BC. They offer the contractor flexibility for the crane to be further away from the pile and allow the pad to be at different elevations from the pile. The contractor can always install a ground frame that will secure the pile while installing the pile using the swinging leads. Please explain why swinging leads are not permitted on this project?

Answer: This project is located in an environment sensitive area, all construction activities that potentially will impact or damage surrounding nature habitat are prohibited. Pile driving using swing lead methodology is not considered as a preferable construction method in this project.

30. Question: If the piles are driven with a vibro hammer, would a drop hammer and swinging leads be acceptable for the PDA test?

Answer: Recommended driving equipment includes diesel hammer, hydraulic hammer or Vibratory hammer. However, the contractor shall submit details of the proposed pile driving equipment to the DR and engineer prior to the commencement of pile installation for review and approval.

31. Question: The contractor is supposed to complete more specific geotechnical testing at bridges #3 and #20. When the geotechnical information is submitted, will the owner provide a change order if the piles are to be changed?

Answer: The Contractor shall retain a geotechnical engineer to obtain necessary additional ground information to complete the works. This cost of this additional geotechnical investigation will be built in Contractor's project cost estimate.

32. Question: If the contractor brings the stated amount of piles to the site and the piles reach practical refusal before reaching the depth anticipated, how is the contractor reimbursed for the materials brought to site?

Answer: No reimburse shall be made for this change. .

33. Question: 3.7 Obstructions, if the contractor hits an obstruction or other unknown buried feature that causes the pile to stop or deviate from vertical, how does the contractor get reimbursed for this time and the damage caused by the obstruction?

Answer: In an extreme event, the pile installation is stopped by a unexpected ground condition, the Contractor shall inform DR and Engineers immediately, proceed work with DR's instruction.

34. Question: 3.4.1 if the pile heads get damaged from normal pile driving operations, is it possible to fresh head the pile instead of rejecting the pile?

Answer: In an extreme event, the pile installation is stopped by an unexpected ground condition, the Contractor shall inform DR and Engineers immediately, proceed work with DR's instruction. If this occurs often, the remainder might not be enough to satisfy the criteria and contractor would need to use splices. The cost for splicing would be contractors responsibility.

35. Question: Drop hammers are typically used for installing piles in BC. Can you advise why drop hammers are not allowed?

Answer: See response to question 29 and 30. Pile driving using drop hammer methodology is not considered as a preferable construction method in this project.

36. Question: Are spiral weld piles acceptable?

Answer: Spiral welded piles are not acceptable.

37. Question: 3.4 Rejected piles: If the piles are damaged or out of alignment due to obstructions and the pile is rejected, does the contractor get time and compensation granted?

Answer: See the response to question 33.

Ups-cheek Ta-shee
Pacific Rim National Park Reserve, British Columbia
Public Works and Government Services Canada
Project Number: R .081570.001

Unit Price Table
Addendum 7
(All revisions from original Table are shown in red)

Trail, Road, and Bridge Works
South Park Boundary to North Park Boundary

Item	Specification Reference	Class of Labor, Plant or Material	Unit of Measurement	Estimated Quantity	Price per Unit applicable taxes extra (PU)	Extended amount (EQ x PU) applicable taxes extra
Division 1 General Requirements						
1	01 25 20	Mobilization and Demobilization	Lump Sum	1		
2	01 35 00	Special Procedures for Traffic Control	Lump Sum	1		
3	01 45 00	Quality Control	Lump Sum	1		
		Environmental Procedures - Supply, Install, & Remove - above that required for incidental environmental work				
4	01 35 43	Light Duty Silt Fence Barrier (SI&R)	Lin.m	2,000		
5	01 35 43	Heavy Duty Silt Fence Barrier (SI&R)	Lin.m	500		
6	01 35 43	Erosion Control Blanket (SI&R)	sq.m	5,000		
7	01 35 43	Poly or Nylon Sand Bags (SI&R)	Each	1,000		
8	01 35 43	Poly Sheeting (6 mm) (SI&R)	sq.m	1,000		
9	01 35 43	Rock Check Dam (SI&R)	Each	100		
10	01 35 43	1.4 m high orange safety fence (SI&R)	Lin.m	200		
11	01 35 43	2.29 m X 2.29 m Small Wetland Filter Bag (SI&R)	Each	20		
12	01 35 43	4.57 m X 4.57 m Large Wetland Filter Bag (SI&R)	Each	20		
13	01 35 43	50mm trash pump + 61 m discharge hose	Daily	300		
14	01 35 43	75mm trash pump + 61 m discharge hose	Daily	150		
		Environmental Procedures - Standby Equipment and Materials				
15	01 35 43	50mm trash pump + 61 m discharge hose	Lump Sum	2		
16	01 35 43	75mm trash pump + 61 m discharge hose	Lump Sum	2		
17	01 35 43	Standby Materials (Quantities in Table 2 - light and heavy duty silt barrier, stakes, erosion control blanket, sandbags, poly sheeting, crushed rock, pea gravel, safety fencing, filter bags, Sorbent booms)	Lump Sum	1		
18	01 35 43	Large Spill Kits (110% of equipment fluids)	Lump Sum	2		
		Subtotal General Requirements				
Bridge and Elevated Trail Work						
Concrete Reinforced Precast Concrete Components						
19	03 41 00	Bridge 19 girders (30.6 m long)	L.S.	1		
20	03 41 00	Bridge 20 girders (30.6 m long)	L.S.	1		
Concrete Reinforced Cast in Place Concrete Components						
21	03 30 00	Bridge 3 - Abutments, wingwalls, approach slabs	L.S.	1		

Item	Specification Reference	Class of Labor, Plant or Material	Unit of Measurement	Estimated Quantity	Price per Unit applicable taxes extra (PU)	Extended amount (EQ x PU) applicable taxes extra
22	03 30 00	Bridge 19 Abutments, wingwalls, approach slabs, deck, curbs	L.S.	1		
23	03 30 00	Bridge 20 Abutments, wingwalls, approach slabs, deck, curbs	L.S.	1		
		Site Preperation, Delivery, Bearings, Installation, Wood Deck, Miscellaneous				
24	03 41 01	Bridge 3 - 20 m Steel & Timber Bridge	Each Bridge	1		
25	03 41 01	Bridge 19 - 30 m Precast Concrete Girder Bridge	Each Bridge	1		
26	03 41 01	Bridge 20 - 30 m Precast Concrete Girder Bridge	Each Bridge	1		
27	03 41 01	Elevated trail - Install and Finish	Lin.m	370		
		Subtotal Bridge and Elevated Trail Concrete				
Division 05	Metal Work	Structural Steel Bridge Components				
28	05 12 33	Bridge 3 - 20 metre Supply and Fabricate Steel	Lump Sum	1		
		Railings - Metal and Wood				
29	32 31 14	20 metre Span Bridge Steel (50.5m of Wood Railing)	Lump Sum	1		
30	05 51 00	30 metre Span Bridge Steel (82.4 m of Metal Railing)	Lump Sum	2		
31	32 31 14	Elevated trail - Wood Railings	Lin.m	150		
		Subtotal Metal Work				
Division 31	Earthworks (Piling)					
32	31 66 13	Helical Piles - 114mm dia, 6.0m Long 8.6mm WT screw piles for elevated trail sections (Drawing S-2.5 - Type A)	Each	280		
33	31 66 13	Helical Piles - 114mm dia, 9.0m Long 8.6mm WT screw piles for elevated trail sections (Drawing S-2.5 - Type B)	Each	46		
34	31 62 16	Mobilize and demobilize for bridge piling 20 m span Bridge 3	Lump Sum	1		
35	31 62 16	Mobilize and demobilize for bridge piling 30 m span Bridge 19 Sandhill Creek on Wick Road	Lump Sum	1		
36	31 62 16	Mobilize and demobilize for bridge piling 30 m span Bridge 20 Lost Shoe Creek Bridge 20 on Highway 4	Lump Sum	1		
37	31 62 16	Piling -610mm dia 16mm WT driven steel piles for bridge # 3 structure	Lin.m	50.4		
38	31 62 16	Piling -610mm dia 19mm WT driven steel piles for bridge# 19 structure	Lin.m	94		
39	31 62 16	Piling -762mm dia 19mm WT driven steel piles for bridge# 20 structure	Lin.m	147.6		
40	31 62 16	Piling - Concrete fill and reinforcing steel in 610mm dia steel piles for bridge structures	Each	16		
		Subtotal Bridge and Elevated Trail Piling				
At Grade Trail Work						
Division 03	Concrete					
41	03 30 20	Concrete Wall Curb, 300 high (Cast in Place)	Lin.m	150		
42	03 48 00	280 X 150 X 2130 parking curb (Precast)	Each	205		
43	03 48 00	2.13 m high concrete fence (Precast)	Lin.m	166		
		Roadside Precast Concrete Barriers				
44	03 48 00	460 high bull-nose 1.2 m Long (Precast)	Each	17		
45	03 48 00	460 high concrete barrier 3.0 m Long (Precast)	Each	6		
46	03 48 00	690 high concrete barrier 2.5 m Long (Precast)	Each	163		
47	03 48 00	460 to 690 high transition barrier 2.5 m Long (Precast)	Each	29		
48	03 48 00	690 high drainage barrier 2.5 m Long (Precast)	Each	212		
49	03 48 00	Relocate 690 high conc. barrier 2.5 m Long	Each	22		
50	03 48 00	Install 2.5m L 690 conc. barrier Supplied by PCA	Each	95		
		Subtotal Concrete				

Item	Specification Reference	Class of Labor, Plant or Material	Unit of Measurement	Estimated Quantity	Price per Unit applicable taxes extra (PU)	Extended amount (EQ x PU) applicable taxes extra
Division 05	Metal Work					
51	05 51 00	Swing Bike Baffles	Each Pair	37		
52	05 51 00	8 m Wide Parking Lot Gate	Each	2		
53	05 51 00	5 m Wide Access Gate	Each	13		
54	05 51 00	Relocate and repaint existing forestry gate. Complete sets	Each set	2		
55	05 51 00	680 mm X 2400 mm galvanized rails on roadside concrete barriers	Each	440		
56	05 51 00	680 mm X 2400 mm galvanized rails on roadside concrete barriers with sign post	Each	20		
57	05 51 00	680 mm X 1800 mm galvanized rails on W-beam Guardrails	Each	212		
58	05 51 00	100 mm dia. Steel removable bollards	Each	6		
		Subtotal Metal Work				
Division 31	Earthworks					
		Clearing and Grubbing				
59	31 11 00	Tree and brush clearing and removal East side of Esowista Curve (Sta 15+400 to 15+880)	Hectare	0.30		
60	31 11 00	Tree and brush clearing for Trail	Hectare	1.40		
60A	31 11 00	Danger Tree Topping and Falling within 1 1/2 tree heights of trail	Lump Sum	1.00		
61	31 11 00	Grubbing	Hectare	15		
62	31 11 00	Stump Grinding	Cu. m	500		
		Topsoil, Organic Soil, and Wood Chips				
63	31 14 13	Organic soil side casting and respreading for shoulder dressing	Lin. m	47,000		
63A	Add. 6	Remove previously felled trees and brush from the trail alignment	Lump Sum	1		
64	31 14 13	Supply and dress trail shoulders with wood chips on paved trail	Lin.m (Each side)	1,130		
65	31 14 13	Trail off site waste excavation - Organic Material	Cu. m	20,700		
65A	31 14 13	Highway Organic Stripping	Cu. m	1,500		
		Mineral Soils Excavations and Fills				
66	31 24 13	Trail waste excavation - Non-organic material	Cu. m	14,100		
67	31 24 13	Trail embankment (Used on site)	Cu. m	2,800		
68	31 24 13	Highway off site waste excavation	Cu. m	6,000		
69	31 24 13	Highway embankment (Used on site)	Cu. m	1,000		
		Archaeological Site Excavations and Fills				
70	01 35 44	Organic Soils excavation and spreading in Archaeological site	Cu. m	10,400		
71	01 35 44	Organic Soils excavation - storage and recording at Grice Bay Parking Lot	Cu. m	1,900		
72	01 35 44	Mineral Soil excavation and fill in Archaeological Sites	Cu. m	2,600		
73	01 35 44	Mineral Soil excavation in Archaeological Sites - storage and recording at Grice Bay Parking Lot	Cu. m	3,000		
74	01 35 44	Mineral Soil excavation in Archaeological Sites - disposal at Tofino Airport	Cu. m	2,350		
		Geotextiles, Geogrids, Erosion Control Blankets				
75	31 32 19	Geotextiles - Woven high survivability	Sq. m	21,000		
76	31 32 19	Geotextiles - Install only -Woven Mirafi HP570 (71 rolls)	Sq. m	29,700		
77	31 32 19	Geogrid plus nonwoven or composite geotextile	Sq. m	53,400		
78	31 32 19	Erosion Control Blanket (Biodegradable)	Sq. m	62,000		
79	31 32 19	Erosion Control Blanket Install Only NAG C125BN (57 rolls)	Sq. m	4,200		
80	31 32 19	40 mil Root Barrier	Lin. m	40,000		

Item	Specification Reference	Class of Labor, Plant or Material	Unit of Measurement	Estimated Quantity	Price per Unit applicable taxes extra (PU)	Extended amount (EQ x PU) applicable taxes extra
81	31 32 19	Buried Check Dam with LLPDE liner	Each	20		
82	31 37 00	Riprap Class 10 kg (350 mm thick)	Sq. m	3,000		
83	31 37 00	Riprap Class 25 kg (450 mm thick)	Sq. m	750		
84	31 37 00	Riprap Class 500 kg	Cu. m	340		
		Subtotal Earthworks				
Division 32 Road and Site Improvements						
85	32 01 11	Removal of pavement markings on Highway 4 at Esowista Curve	Lump Sum	1		
86	32 01 16.7	200 mm wide - edge cold milling	Lin. m	900		
87	32 01 16.9	200 mm wide - asphalt saw cut and removal	Lin. m	900		
88	32 01 16.9	Asphalt pavement removal	Sq. m	3,050		
		Aggregates for Highways and Roads (Free of invasive species)				
89	32 11 10	Select Granular Sub-grade fill (75 mm minus)	Cu.m.	600		
90	32 11 16	Crushed Granular Sub-base (450 mm thick Esowista Curve)	Sq. m	3,600		
91	32 11 16	Crushed Granular Sub-base (300 mm thick Roadside Barrier Widening)	Sq. m	4,000		
92	32 11 23	Granular Base (150 mm thick)	Sq. m	3,400		
93	32 11 23	Granular Base (100 mm thick)	Sq. m	4,000		
94	32 11 23	Granular base shoulder dressing	Lin. m	1,000		
		Aggregates for Parking Lots (Free of invasive species)				
95	32 11 16	Crushed Granular Sub-base at Incinerator Rock Parking Lot (600 mm thick)	Sq. m	1,000		
96	32 11 23	Granular Base at Incinerator Rock Parking Lot (100 mm thick)	Sq. m	3,050		
97	32 11 23	Granular Base at Radar Hill Road Parking Lot (100 mm thick) and preparation of existing surface	Sq. m	5,600		
98	32 11 23	Gran. base shoulder 0.5 wide at Incinerator Rk P.L.	Lin. m	160		
		Aggregates for Trail (Free of invasive species)				
99	32 11 10	Select Granular Sub-grade fill (75mm minus)	Cu.m.	25,000		
100	32 11 16	Crushed Granular Sub-base (300 mm thick - 75mm minus)	Sq. m	45,800		
101	32 11 16	Open Graded Subbase (600 mm thick - 150 mm or 75mm minus)	Sq.m.	53,500		
102	32 11 16	Open Graded Sub-base (450 mm thick - 75 mm minus open graded crush)	Sq.m.	8,700		
103	32 11 16	Open Graded Subbase (150 mm or 75 mm minus for strengthening areas)	Cu. m	5,000		
104	32 11 23	Granular Base (100 mm thick)	Sq. m	84,500		
		Fill Existing Cisterns				
105	32 11 23	Fill existing cisterns with granular base	Each	4.00		
		Temporary Access				
106	32 11 24	Temporary Access Roads	Lump Sum	1.00		
		Asphalt Pavement				
107	Addendum 7	Supply and place Cold Mix Asphalt for patching roads.	Tonnes	30.00		
108	32 12 13.16	Asphalt tack coat	Sq.m	7,150		
109	32 12 16	Incinerator Rock Parking Lot (50 mm thick)	Sq. m	2,900		
110	32 12 16	Trail Paving (50 mm thick X 3.2 m Wide)	Sq. m	2,950		
		Esowista Curve Paving				
111	32 12 16	Highway widening lower course (75 mm thick)	Sq. m	3,000		
112	32 12 16	Highway widening upper course (50 mm thick)	Sq. m	3,100		
		Painted Pavement Markings				
113	32 17 23	Highway 4 Widening 75+380 to 76+035	Lump Sum	1		
114	32 17 23	Long Beach Parking Lot	Lump Sum	1		
115	32 17 23	Incinerator Rock Parking Lot	Lump Sum	1		

Item	Specification Reference	Class of Labor, Plant or Material	Unit of Measurement	Estimated Quantity	Price per Unit applicable taxes extra (PU)	Extended amount (EQ x PU) applicable taxes extra
		Traffic and Project Signs				
116	32 17 25	Temporary static project signs, 1220 X 2440 on timber posts, supply, install, maintain, and remove	Each	6		
117	32 17 25	Changeable message signs ,supply, install, maintain, and remove	Month	48		
118	32 17 25	Trail signs mounted on curved steel post and precast concrete base	Each	130		
119	32 17 25	Traffic signs mounted on U-channel steel post	Each	65		
120	32 17 25	Traffic signs mounted on concrete roadside barriers (sign face and mounting brackets)	Each	20		
121	32 17 25	Relocate existing signs at Highway 4 Widening 75+380 to 76+035	Lump sum	1		
122	32 17 25	Relocate existing sign at Highway 4 and south Park Boundary	Lump sum	1		
		Install Wood Fencing, Wood Railings, and Amphibian Fencing				
123	32 31 14	Wood safety railings conc. foundation, 1400 mm high (Timber supplied by PCA.)	Lin.m	1,210		
124	32 31 14	Wood safety railings, installed on Lockblock wall, 1400 mm high (Timber supplied by PCA.)	Lin.m	190		
125	32 31 14	Supply and Install Wood Log rails, 600 mm high	Lin.m	1,700		
126	32 31 14	Supply and Install Wood Log rails, 900 mm high	Lin.m	750		
127	32 31 14	Wood Fence - Solid plank, 1.83 mm high (Timber supplied by PCA.)	Lin.m	150		
128	32 31 15	Supply, Install, and remove Amphibian Fencing - Animex & Hilsperger's poly and framework	Lin.m	55		
129	32 31 15	Supply and Install Amphibian Fencing - Animex & Hilsperger's poly with plastic wood framework	Lin.m	350		
		Retaining Walls c/w sub-drains				
130	32 32 34	Envirogrid or equal retaining walls 1.2 Max. Height	Sq. m	400		
131	32 32 34	Envirogrid or equal retaining walls over 1.2 m Height with uniaxle geogrid reinforcement	Sq. m	1,900		
132	32 32 34	Concrete segmental block retaining walls	Sq. m	100		
133	32 32 34	Lock Block Wall - Standard Block	Block	121		
134	32 32 34	Lock Block Wall -Bench Block	Block	121		
135	32 32 34	Aluminum Amphibian Barrier Strip on Lock Blocks	Lin.m	190		
136	32 32 34	Dry stack rock walls	Sq. m	300		
137	31 32 19	Geogrid Uni-axial for MSE walls	Sq. m	9,500		
138	32 32 34	Light weight fill - Styrofoam SP 29	Cu.m.	1,300		
		Invasive Species Control Program				
139	31 93 02	Invasive Species Control Program	Lump Sum	1.00		
		Subtotal Road and Site Improvements				
Division 33	Utilities					
		Pipe Culverts				
140	33 42 13	200 mm dia HDPE	Lin. m	55		
141	33 42 13	250 mm dia HDPE	Lin. m	100		
142	33 42 13	300 mm dia HDPE	Lin. m	8		
143	33 42 13	400 mm dia HDPE	Lin. m	15		
144	33 42 13	450 mm dia HDPE	Lin. m	200		
145	33 42 13	600 mm dia HDPE	Lin. m	320		
146	33 42 13	600 mm dia HDPE 45 degree bend	Each	1		
		Pipe Culverts c/w 300mm Fisheries Gravel or Native Organics				
147	33 42 13	600 mm dia, 8 m long HDPE, complete	Each	87		
148	33 42 13	600 mm dia, 12 m long HDPE, complete	Each	8		
149	33 42 13	750 mm dia, 8 m long HDPE, complete	Each	15		
150	33 42 13	900 mm dia, 8 m long HDPE, complete	Each	7		
151	33 42 13	1200 mm dia, 8 m long HDPE, complete	Each	1		

Item	Specification Reference	Class of Labor, Plant or Material	Unit of Measurement	Estimated Quantity	Price per Unit applicable taxes extra (PU)	Extended amount (EQ x PU) applicable taxes extra
152	33 42 13	600 mm dia HDPE additional length to above	Lin. m	100		
		Temporary Pipe Culverts at Temporary Access Points				
153	33 42 13	450 mm diameter 8 m long	Each	51		
154	33 42 13	600 mm diameter 8 m long	Each	12		
		Concrete Box Culverts For Water Passage				
155	33 42 13	1800mm X 900 mm X 5 m long water passage culvert, complete	Each	3		
156	33 42 13	1800mm X 1200 mm X 5 m long water passage culvert, complete	Each	11		
157	33 42 13	Delete. Item not used				
158	33 42 13	2100mm X 1200 mm X 5 m long water passage culvert, complete	Each	3		
159	33 42 13	2400mm X 1200 mm X 5 m long water passage culvert, complete	Each	4		
		Concrete Box Culverts for Amphibians				
160	33 42 13	1800mm X 900 mm X 3.75 m long Amphibian underpass culvert, complete	Each	60		
161	33 42 13	1800mm X 900 mm X 17.5 m long Amphibian underpass culvert, complete with Pavement rehab	Each	3		
		Extend Existing Pipe Culverts				
162	33 42 13	H20+737 - 800 mm CSP, 1.5 m long extension	Lump Sum	1		
163	33 42 13	H18+221 - 1200 mm CSP, 2 m long extension	Lump Sum	1		
164	33 42 13	H17+929 - 800 mm CSP, 4.5 m long extension	Lump Sum	1		
165	33 42 13	H16+067 - 1200 mm HDPE 3 m long extension	Lump Sum	1		
166	33 42 13	H15+262 2X600 mm HDPE 5 m long extension	Lump Sum	1		
167	33 42 13	H15+097 600 mm CSP 5 m long extension	Lump Sum	1		
168	33 42 13	H9+110 -500 mm CSP 5 m long extension	Lump Sum	1		
169	33 42 13	H7+631 - 1200 mm HDPE, 2 m long extension	Lump Sum	1		
170	33 42 13	H0+119 - 600 mm CSP, 5 m long extension	Lump Sum	1		
171	33 42 13	H0+201 - 600 mm CSP, 5 m long extension	Lump Sum	1		
172	33 42 13	500 mm dia CSP additional length to above	Lin. m	5		
173	33 42 13	600 mm dia CSP additional length to above	Lin. m	5		
174	33 42 13	800 mm dia CSP additional length to above	Lin. m	10		
175	33 42 13	600 mm dia HDPE additional length to above	Lin. m	10		
176	33 42 13	1200 mm dia HDPE additional length to above	Lin. m	5		
177	31 23 33	Over excavation, backfill, and bedding	Cu.m	400		
		Fisheries Work				
178	33 42 15	Fisheries enhancement work detailed on sheet F-2	Lump Sum	1		
179	33 42 15	Fisheries enhancement work detailed on sheet F-3	Lump Sum	1		
180	33 42 15	Fisheries enhancement work detailed on sheet F-4	Lump Sum	1		
181	33 42 15	Fisheries enhancement work detailed on sheet F-5	Lump Sum	1		
182	33 42 15	Fisheries enhancement work detailed on sheet F-6	Lump Sum	1		
183	33 42 15	Fisheries enhancement work detailed on sheet F-7	Lump Sum	1		
184	33 42 15	Fisheries enhancement work detailed on sheet F-9	Lump Sum	1		
185	33 42 15	Fisheries enhancement work detailed on sheet F-10	Lump Sum	1		
186	33 42 15	Fisheries enhancement work detailed on sheet F-12	Lump Sum	1		
187	33 42 15	Fisheries enhancement work detailed on sheet F-13	Lump Sum	1		
188	33 42 15	Fisheries enhancement work detailed on sheet F-14	Lump Sum	1		
189	33 42 15	Fisheries enhancement work detailed on sheet F-15	Lump Sum	1		
		Manholes and Grates				
190	33 44 01	Man Hole Frame & Grates at 3 Amphibian Crossings	Each	6		
191	33 44 01	Adjust Existing Man Holes	Each	3		
192	33 44 01	300mm diam. Lawn basin grate inlet	Each	8		
		Subtotal Utilities				
Division 34	Transportation					
		Traffic Barriers				

Addendum

Item	Specification Reference	Class of Labor, Plant or Material	Unit of Measurement	Estimated Quantity	Price per Unit applicable taxes extra (PU)	Extended amount (EQ x PU) applicable taxes extra
193	34 71 13	Supply and Install Posts and W- beam guard rail	Lin. m	587		
194	34 71 13	Wood plank on guard rail (Timber supplied by PCA.)	Lin. m	587		
195	34 71 13	FLEAT 350 Barrier Terminal (or equal)	Each	6		
		Subtotal Transportation				
					TOTAL =	