Duke, Larry A FLNR:EX

Subject: Entry Type:	2012 Bridge Projects FMP's - email to MTE E-mail Message
Start:	Mon 2012-02-06 9:40 AM
End:	Mon 2012-02-06 10:30 AM
Duration:	50 minutes

Review of projects required. Dug up Moresby Stream assessment doc from 1997 and the arch data from the Eng meeting. Looked up the Caliber inspection report and did a quick summary of works to Leandre for the contract.

From:	Duke, Larry A FLNR:EX
Sent:	Monday, February 6, 2012 10:24 AM
То:	'mtoad@haidagwaii.net'
Subject:	Fishery Mitigation Plans

Hello Leandre,

As discussed on Friday, here are the sites I will need FMP's for. Your input also helps me determine the best replacement structure so feel free to comment on what you think is best for each site.

- 1. Staley Main QC-7003. Located 700m from the Honna Sort posted at 5 t. It's a 2 x 5 WBC right now. We are looking at the possibility of a 7 m cement slab bridge but wonder if the site is too wet for the required amount of sub structure excavation. If it's too wet we will put in a wood stringer bridge.
- 2. QC Main 4.8 km You've already been on site this one is in a holding pattern until we set up the field review with DFO et al.
- 3. Moresby Road QC-7829 Ck 10a. Spruce stringer bridge at 3km just past Shale Creek. The stringers are timing out and we need to replace them or put in a new structure. We may get a portable bridge to sit on the existing sub structure, if not we'll replace the stringers. Goal is to leave the sub structure alone. Would like to do this one outside of the fish window April or May.
- 4. Moresby Road QC-7027 Ck19a. Arm Tech mini span arch at 4.5km. We're pulling the thing out and putting it back in on a spread footing and lock blocks.
 - a. Arches require high site alteration for installation. I've attached some pictures to give you an idea of what we will have to do. The creek will need to be diverted/pumped around the crossing site. A fish window project for sure. I've seen this creek bone dry in the summer.
- 5. Clapp Road: 0+800m an old 1x2.5 WBC that is on its way out. First WBC on the Clapp road after the gate
- 6. Clapp Road: 3+300m a 1x3m WBC hole in the upstream town approach result of scour under the sill. We're considering excavating behind the sill, and replacing the back fill with coarse shot rock.

Access to Clapp is dependent on snow – I'll let you know if the access opens up. The Clapp road will be blocked so it may require a bike ride or a hike – we'll figure something out.

I'll draft up a contract for you to look at in the next day or so.

I've attached your June 1997 stream classification report for the 2 Moresby structures.

WORKS NOT

Call to discuss, Thanks!

Larry Duke, RFT

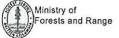
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Engineering & Recreation Officer Haida Gwaii Forest District & Integrated Business Centre email: <u>larry.duke@gov.bc.ca</u> Tel: (250) 559-6223 Fax: (250) 559-8342

"Material and opinions contained herein are solely those of the author and do not necessarily represent in whole or in part the position of the BC Ministry of Forests and Range".

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| CONTRACT./FILE NO:
EN12NAE-816 | THIS AGREEMENT DATED FOR REFERENCE THE 10 th DAY OF FEBRUARY, 2012. |
|-----------------------------------|--|
| PROJECT DESCRIPTION: FISHERIES | S ASSESSMENTS |
| BETWEEN: | |

HER MAJESTY THE QUEEN IN RIGHT OF THE PROVINCE OF BRITISH COLUMBIA, as represented by the MINISTER OF FORESTS AND RANGE and MINISTER RESPONSIBLE FOR THE INTEGRATED LAND MANAGEMENT BUREAU

Haida Gwaii Forest District 1229 Oceanview Drive PO Box 39 Queen Charlotte, BC V0T 1S0

Phone Number: (250) Phone No559-6200 FAX Number: (250) 559-8342 Ministry Representative: Larry Duke – District Engineering Officer E-mail Address: larry.duke@gov.bc.ca

(the "Province", "we", "us", or "our" as applicable)

AND:

Marine Toad Enterprises Inc Hwy 16 PO Box 74 Tiell, Bc V0T 1Y0

Phone Number: (250) 557-4453 FAX Number: (250) 557-4454 E-mail Address: mtoad@haidagwaii.net Contractor Representative: Leandre Vigneault Corporate Business Number: 889435673 WorkSafe BC and/or Personal Optional Protection Number: 559631

(the "Contractor", "you", or "your" as applicable)

The Province wishes to retain the Contractor to provide the Services specified in Schedule A and, in consideration for the remuneration set out in Schedule B, the Contractor has agreed to provide those Services, on the terms and conditions set out in this Agreement.

The Province and the Contractor agree as follows:

ARTICLE 1 DEFINITIONS

- 1.01 In this Agreement, unless the context otherwise requires:
 - "Business Day" means a day, other than a Saturday or Sunday, on which Provincial government offices are open for normal business in British Columbia;
 - (b) "Incorporated Material" means any material in existence prior to the start of the Term or developed independently of this Agreement, and that is incorporated or embedded in the Produced Material by the Contractor or a Subcontractor;
 - (c) "Material" means the Produced Material and the Received Material;
 - (d) "Produced Material" means records, software and other material, whether complete or not, that, as a result of this Agreement, are produced by the Contractor or a Subcontractor and includes the Incorporated Material;
 - (e) "Received Material" means records, software and other material, whether complete or not, that, as a result of this Agreement, are received by the Contractor or a Subcontractor from the Province or any other person;
 - (f) "Record" is the definition of "record" in the Interpretation Act and as incorporated into this Agreement and "records" will bear a corresponding meaning;
 - (g) "Services" means the services described in Schedule A;
 - (h) "Subcontractor" means a person described in Section 16.05;
 - (i) "Term" means the term of the Agreement described in Section 3.01 of this Agreement subject to that term ending earlier in accordance with this Agreement; and
 - (j) "Unit of Measure" has the meaning described in Schedule B.

ARTICLE 2 CONTRACT DOCUMENTS AND MODIFICATIONS

2.01 The attached schedules are applicable to and form a part of this Agreement:

| Schedule | Title | | |
|--------------|------------------------|--|--|
| Schedule 'A' | Services | | |
| Schedule 'B' | Contract Payment | | |
| Schedule 'C' | Safety Conditions | | |
| Schedule 'D' | Insurance Requirements | | |

2.02 No modification of this Agreement is effective unless it is in writing and signed by, or on behalf of, the parties.

ARTICLE 3 TERM OF CONTRACT

- 3.01 The Term of this Agreement is from and including February 10, 2012 to and including March 31, 2012 inclusive.
- 3.02 Regardless of the date of execution or delivery of this Agreement, the Contractor must provide the Services during the Term.
- 3.03 Time is of the essence in this Agreement and, without limitation, will remain of the essence after any modification or extension of this Agreement, whether or not expressly restated in the document effecting the modification or extension.

ARTICLE 4 CONTRACTOR'S OBLIGATIONS

- 4.01 You must provide the Services described in Schedule A (the "Services") in accordance with this Agreement.
- 4.02 Unless the parties otherwise agree in writing, you must supply and pay for all labour, materials, equipment, tools, facilities, and approvals and licences necessary or advisable to perform your obligations under this Agreement, including the license under Section 8.04.
- 4.03 Unless otherwise specified in this Agreement, you must perform the Services to a standard of care, skill, and diligence maintained by persons providing, on a commercial basis, services similar to the Services.
- 4.04 You must provide, instruct, and supervise a sufficient number of qualified personnel to enable timely and proper performance and completion of the Services. All such personnel shall be competent, English literate, efficient and gualified by education, training and experience to carry out the tasks to which each is assigned.
- 4.05 We may from time to time give you reasonable instructions (in writing or otherwise) as to the performance of the Services. You must comply with those instructions but, unless otherwise specified in this Agreement, you may determine the manner in which the instructions are carried out.
- 4.06 If we provide an instruction under Section 4.05 other than in writing, you may request that the instruction be confirmed by us in writing, which request we must comply with as soon as it is reasonably practicable to do so.
- 4.07 Requesting written confirmation of an instruction under Section 4.06 does not relieve you from complying with the instruction at the time the instruction was given.
- 4.08 In the performance of your obligations under this Agreement, you must comply with all applicable laws.

ARTICLE 5 PAYMENT

- 5.01 If you comply with this Agreement, we must pay you for the Services at the rates and times described in Schedule B:
 - (a) the fees described in that Schedule, plus any applicable taxes; and
 - (b) the expenses, if any, in accordance with that Schedule if they are supported, where applicable, by proper receipts and, in our opinion, are necessarily incurred by you in providing the Services.

We are not obliged to pay you more than the maximum amount or dollar limit specified in Schedule B on account of fees and expenses.

- 5.02 In order to obtain payment of any fees or expenses, if any, under this Agreement, you must submit written statements of account to us in a form satisfactory to us, but no sooner than the dates referred to in Schedule B.
- 5.03 Without limiting Section 11.01 we may withhold from any payment due to you an amount sufficient to indemnify, in whole or in part, the Province and its employees and agents against any liens or other third-party claims that have arisen or could arise in connection with the provision of the Services. An amount withheld under this section must be promptly paid by the Province to you upon the basis for withholding the amount having been fully resolved to the satisfaction of the Province.
- 5.04 Our obligation to pay money to you is subject to the *Financial Administration Act*, which makes that obligation subject to an appropriation being available in the fiscal year of the Province during which payment becomes due.
- 5.05 Unless otherwise specified in this Agreement, all references to money are to Canadian dollars.
- 5.06 If you are not a resident in Canada, you acknowledge that we may be required by law to withhold income tax from the fees described in Schedule B and then to remit that tax to the Receiver General of Canada on your behalf.
- 5.07 Without limiting Section 16.11(a), you must not, in relation to performing your obligations under this Agreement, commit or purport to commit us to pay any money except as may be expressly provided for in this Agreement.
- 5.08 You must apply for and, immediately on receipt, remit to us any available refund, rebate, or remission of federal or provincial tax or duty that the Province has paid or reimbursed to you or agreed to pay or reimburse to you under this Agreement.

ARTICLE 6 REPRESENTATIONS AND WARRANTIES

- 6.01 As at the date this Agreement is executed and delivered by, or on behalf of, the parties, you represent and warrant to us as follows:
 - (a) except to the extent you have previously disclosed otherwise in writing to us:
 - all information, statements, documents and reports furnished or submitted by you to us in connection with this Agreement (including as part of any competitive process resulting in this Agreement being entered into) are in all material respects true and correct,
 - (ii) you have sufficient trained staff, facilities, materials, appropriate equipment and approved subcontractual agreements in place and available to enable you to fully perform the Services, and
 - (iii) you hold all permits, licenses, approvals and statutory authorities issued by any government or government agency that are necessary for the performance of your obligations under this Agreement; and
 - (b) if the Contractor is not an individual:
 - (i) you have the power and capacity to enter into this Agreement and to observe, perform and comply with the terms of this Agreement and all necessary corporate or other proceedings have been taken and done to authorize the execution and delivery of this Agreement by, or on behalf of, you, and
 - (ii) this Agreement has been legally and properly executed by, or on behalf of, you and is legally binding upon and enforceable against you in accordance with its terms except as enforcement may be limited by bankruptcy, insolvency or other laws affecting the rights of creditors generally and except that equitable remedies may be granted only in the discretion of a court of competent jurisdiction.

ARTICLE 7 PRIVACY, SECURITY AND CONFIDENTIALITY

- 7.01 You must comply with the Privacy Protection Schedule if attached to this Agreement.
- 7.02 You must make reasonable security arrangements to protect the Material from unauthorized access, collection, use, disclosure, alteration, or disposal and comply with the Security Schedule, if attached.
- 7.03 You must treat as confidential all information in the Material and all other information accessed or obtained by you or a Subcontractor (whether verbally, electronically or otherwise) as a result of this Agreement, and not permit its disclosure or use without our prior written consent except:
 - (a) as required to perform your obligations under this Agreement or to comply with applicable laws;
 - (b) if it is information that is generally known to the public other than as a result of a breach of this Agreement; or
 - (c) if it is information in any Incorporated Material.
- 7.04 Any public announcement relating to this Agreement will be arranged by us and, if such consultation is reasonably practicable, after consultation with you.
- 7.05 You must not, without our prior written approval, refer for promotional purposes to the Province being your customer or the Province having entered into this Agreement.

ARTICLE 8 MATERIAL AND INTELLECTUAL PROPERTY

- 8.01 If you receive a request for access to any of the Material from a person other than us, and this Agreement does not require or authorize you to provide that access, you must promptly advise the person to make the request to us.
- 8.02 We exclusively own all property rights in the Material that are not intellectual property rights. Any equipment property we may provide to you or a subcontractor is our exclusive property. You must deliver any Material or equipment property to us immediately following expiration of this Agreement, or sooner upon our request, in the same condition it was supplied to you, excepting always loss or damage attributable to reasonable wear or tear.
- 8.03 We exclusively own all intellectual property rights, including copyright:
 - (a) in Received Material that you receive from us, and
 - (b) in Produced Material, other than any Incorporated Material.

Upon our request, you must deliver to us documents satisfactory to us that irrevocably waive in our favour any moral rights that you (or your employees) or a Subcontractor (or its employees) may have in the Produced Material and confirm the vesting in the Province of the copyright in the Produced Material, other than any Incorporated Material.

- 8.04 Upon any Incorporated Material being embedded or incorporated in the Produced Material and to the extent that it remains so embedded or incorporated, you grant us:
 - (a) a non-exclusive, perpetual, irrevocable, royally-free, worldwide license to use, reproduce, modify, and distribute that Incorporated Material; and
 - (b) the right to sublicense to third-parties the right to use, reproduce, modify and distribute that Incorporated Material.

ARTICLE 9 RECORDS AND REPORTS

- 9.01 You must, upon our request, fully inform us of all work done by you or a Subcontractor in connection with providing the Services.
- 9.02 If Schedule B provides for you to be paid fees at a Unit of Measure rate or for you to be paid or reimbursed for expenses, you must maintain time records and books of account, invoices, receipts and vouchers of expenses in support of those payments, in form and content satisfactory to us. Unless otherwise specified in this Agreement, the Contractor must retain such documents for a period of not less than seven years after this Agreement ends.

ARTICLE 10 AUDIT

10.01 In addition to any other rights of inspection the Province may have under statute or otherwise, we may at any reasonable time and on reasonable notice to you, enter on your premises to inspect and, at the our discretion, copy any of the Material and you must permit, and provide reasonable assistance to, the exercise by us of our rights under this section.

ARTICLE 11 INDEMNITY AND INSURANCE

- 11.01 You must indemnify and save harmless the Province and its employees and agents from any losses, claims, damages, actions, causes of action, costs and expenses that the Province or any of its employees or agents may sustain, incur, suffer or be put to at any time either before or after this Agreement ends, including any claim of infringement of third-party intellectual property rights, where the same or any of them are based upon, arise out of or occur, directly or indirectly, by reason of any act or omission by you or your agents, employees, officers, directors or Subcontractors in connection with this Agreement (each a "Loss"), excepting always liability arising out of the independent acts or omissions of the Province and its employees and agents.
- 11.02 You must comply with the insurance requirements in Schedule D, if attached, as those terms may be modified from time to time in accordance with our directions.
- 11.03 Without limiting the generality of Section 4.08, you must comply with, and must ensure that any Subcontractors comply with, all applicable occupational health and safety laws in relation to the performance of your obligations under this Agreement, including the *Workers Compensation Act* in British Columbia or similar laws in other jurisdictions.
- 11.04 At your own expense, and where required under *Workers Compensation Act* in British Columbia, you must obtain WorkSafe BC coverage for yourself, all workers and any shareholders, directors, partners or other individuals employed or engaged in the performance of the Services and you shall ensure all approved Subcontractors obtain WorkSafe BC Coverage.
- 11.05 If you are an individual or a partnership of individuals and do not have the benefit of mandatory workers compensation coverage under the *Workers Compensation Act* in British Columbia, you must apply for and maintain Personal Optional Protection under the *Workers Compensation Act*.
- 11.06 You are responsible for all fines, levies, penalties and assessments made or imposed under the Workers Compensation Act and regulations relating in any way to the Services.
- 11.07 Upon our request you must provide us with evidence of your compliance with Sections 11.02, 11.04 and 11.05.

ARTICLE 12 FORCE MAJEURE

- 12.01 An "Event of Force Majeure" means a natural disaster, fire, flood, storm, epidemic or power failure, war (declared and undeclared), insurrection or act of terrorism or piracy, strike (including illegal work stoppage or slowdown) or lockout, or a freight embargo if such event prevents a party from performing its obligations in accordance with this Agreement and is beyond the reasonable control of that party.
- 12.02 An "Affected Party" means a party prevented from performing its obligations in accordance with this Agreement by an Event of Force Majeure.
- 12.03 An Affected Party is not liable to the other party for any failure or delay in the performance of the Affected Party's obligations under this Agreement resulting from an Event of Force Majeure and any time periods for the performance of such obligations are automatically extended for the duration of the Event of Force Majeure provided that the Affected Party complies with the requirements of Section 12.04.
- 12.04 An Affected Party must promptly notify the other party in writing upon the occurrence of the Event of Force Majeure and make all reasonable efforts to prevent, control or limit the effect of the Event of Force Majeure so as to resume compliance with the Affected Party's obligations under this Agreement as soon as possible.

ARTICLE 13 NON-COMPLIANCE WITH AGREEMENT CONDITIONS

- 13.01 An "Event of Default" means any of the following:
 - (a) your failure to perform any of your obligations under this Agreement, or
 - (b) any representation or warranty made by you in this Agreement is untrue or incorrect, or
 - (c) an Insolvency Event, which means any of the following;
 - (i) an order is made, a resolution is passed or a petition is filed, for your liquidation or winding up,
 - you commit an act of bankruptcy, make an assignment for the benefit of your creditors or otherwise acknowledge your insolvency,
 - (iii) a bankruptcy petition is filed or presented against you or a proposal under the *Bankruptcy and Insolvency Act* (Canada) is made by you,
 - (iv) a compromise or arrangement is proposed in respect of you under the *Companies' Creditors* Arrangement Act (Canada),
 - (v) a receiver or receiver-manager is appointed for any of your property, or
 - (vi) you cease, in our reasonable opinion, to carry on business as a going concern.
- 13.02 On the happening of an Event of Default, or at any time thereafter, we may, at our option, elect to do any one or more of the following:
 - (a) by written notice to you, require that the Event of Default be remedied within a time period specified in the notice;
 - (b) pursue any remedy or take any other action available to us at law or in equity; or

- (c) by written notice to you, terminate this Agreement with immediate effect or on a future date specified in the notice, subject to the expiration of any time period specified under Section 13.02(a).
- 13.03 No failure or delay on our part to exercise our rights in relation to an Event of Default will constitute a waiver by us of such rights.
- 13.04 If you become aware that an Event of Default has occurred or anticipates that an Event of Default is likely to occur, you must promptly notify us of the particulars of the Event of Default or anticipated Event of Default. A notice under this section as to the occurrence of an Event of Default must also specify the steps you propose to take to address, or prevent recurrence of, the Event of Default. A notice under this section as to an anticipated Event of Default must specify the steps you propose to take to prevent the occurrence of the anticipated Event of Default must specify the steps you propose to take to prevent the occurrence of the anticipated Event of Default.

ARTICLE 14 TERMINATION

- 14.01 In addition to our right to terminate this Agreement under Section 13.02(c) on the happening of an Event of Default, we may terminate this Agreement for any reason by giving at least 5 days' written notice of termination to you.
- 14.02 Unless Schedule B otherwise provides, if we terminate this Agreement under Section 14.01:
 - (a) we must, within 30 days of such termination, pay you any unpaid portion of the fees and expenses described in Schedule B which corresponds with the portion of the Services that was completed to our satisfaction before termination of this Agreement; and
 - (b) you must, within 30 days of such termination, repay to us any paid portion of the fees and expenses described in Schedule B which corresponds with the portion of the Services that we have notified you in writing was not completed to our satisfaction before termination of this Agreement.
- 14.03 The payment by us of the amount described in Section 14.02(a) discharges us from all liability to make payments to the Contractor under this Agreement.

ARTICLE 15 DISPUTE RESOLUTION

- 15.01 In the event of any dispute between the parties arising out of or in connection with this Agreement, the following dispute resolution process will apply unless the parties otherwise agree in writing:
 - (a) the parties must initially attempt to resolve the dispute through collaborative negotiation;
 - (b) if the dispute is not resolved through collaborative negotiation within 15 Business Days of the dispute arising, the parties must then attempt to resolve the dispute through mediation under the rules of the British Columbia Mediator Roster Society; and
 - (c) if the dispute is not resolved through mediation within 30 Business Days of the commencement of mediation, the dispute must be referred to and finally resolved by arbitration under the *Commercial Arbitration Act*.
- 15.02 Unless the parties otherwise agree in writing, an arbitration or mediation under Section 15.01 will be held in Victoria, British Columbia.
- 15.03 Unless the parties otherwise agree in writing or, in the case of an arbitration, the arbitrator otherwise orders, the parties must share equally the costs of a mediation or arbitration under Section 15.01 other than those costs relating to the production of expert evidence or representation by counsel.
- ARTICLE 16 GENERAL
- 16.01 Any notice or document contemplated by this Agreement, to be effective, must be in writing and delivered as follows:
 - (a) hand delivered to the party or the specified party representative, in which case it will be deemed to be received on the day of its delivery; or
 - (b) by prepaid post to the party's address specified on the first page of this Agreement, in which case if mailed during any period when normal postal services prevail, it will be deemed to be received on the fifth Business Day after its mailing; or
 - (c) delivered by courier service to the party's address specified on the first page of this Agreement, in which case it will be deemed received on the fifth Business Day after collection by the courier service; or
 - (d) by facsimile or electronic transmission to the specified facsimile number or Email address on the first page of this Agreement, in which case it will be deemed to be received on the day of transmittal unless transmitted after the normal business hours of the addressee or on a day that is not a Business Day, in which cases it will be deemed to be received on the next following Business Day.
- 16.02 Either party may from time to time give notice to the other party of a substitute address, Email address, or fax number, which from the date such notice is given will supersede for purposes of Section 16.01 any previous address, Email address, or fax number specified for the party giving the notice.
- 16.03 You must not assign your rights under this Agreement without our prior written consent.
- 16.04 You must not subcontract any of your obligations under this Agreement without our prior written consent, excepting persons listed in Schedule A.
- 16.05 No subcontract, whether consented to or not, relieves you from any obligations under this Agreement. You must ensure that any person retained by you or any person retained by a person retained by you fully complies with this Agreement in performing the subcontracted obligations.
- 16.06 We may, for reasonable cause, object to the use of a proposed Subcontractor and require you to retain another qualified subcontractor.

- 16.07 A waiver of any term or breach of this Agreement is effective only if it is in writing and signed by, or on behalf of, the waiving party and is not a waiver of any other term or breach.
- 16.08 This Agreement and any modification of it constitute the entire Agreement between the parties as to performance of the Services.
- 16.09 Sections 4.08, 5.01 to 5.04, 5.07, 5.08, 7.01 to 7.05, 8.01 to 8.04, 9.01, 9.02, 10.01, 11.01, 11.02, 11.07, 12.01 to 12.04, 13.02, 13.03, 14.02, 14.03, 15.01 to 15.03, 16.01, 16.02, 16.09, and 16.11, any accrued but unpaid payment obligations, and any other sections of this Agreement (including schedules) which, by their terms or nature, are intended to survive the completion of the Services or termination of this Agreement, will continue in force indefinitely, even after this Agreement ends.
- 16.10 The schedules to this Agreement (including any appendices or other documents attached to, or incorporated by reference into, those schedules) are part of this Agreement.
- 16.11 In relation to the performance of your obligations under this Agreement, you are an independent contractor and not our:
 - (a) employee or partner; or
 - (b) agent except as may be expressly provided for in this Agreement.

You must not act or purport to act contrary to this section.

- 16.12 You must not do anything that would result in personnel hired or used by you or a Subcontractor in relation to providing the Services being considered our employees.
- 16.13 If one or more individuals are identified in the schedules as "Key Personnel", you must cause those individuals to perform the Services on your behalf and not remove or replace them, without our prior written approval. Any approved replacement is at your expense.
- 16.14 We must make available to you all information in our possession which we consider pertinent to the performance of the Services.
- 16.15 You must not provide any services to any person in circumstances which, in our reasonable opinion, could give rise to a conflict of interest between your duties to that person and your duties to us under this Agreement.
- 16.16 If there is a conflict among provisions of this Agreement, a provision in the body of this Agreement will prevail over any conflicting provision in, attached to, or incorporated by reference into a schedule, unless that conflicting provision expressly states otherwise and a provision in a schedule will prevail over any conflicting provision in a document attached to or incorporated by reference into a schedule, unless the schedule expressly states otherwise.
- 16.17 This Agreement does not operate as a permit, license, approval or other statutory authority which you may be required to obtain from the Province or any of its agencies in order to provide the Services. Nothing in this Agreement is to be construed as interfering with, or fettering in any manner, the exercise by the Province or its agencies of any statutory, prerogative, executive or legislative power or duty.
- 16.18 If any provision of this Agreement or the application of it to any person or circumstance is invalid or unenforceable to any extent, the remainder of this Agreement and the application of such provision to any other person or circumstance will not be affected or impaired and will be valid and enforceable to the extent permitted by law.
- 16.19 Each party must perform the acts, execute and deliver the writings, and give the assurances as may be reasonably necessary to give full effect to this Agreement.
- 16.20 This Agreement is governed by, and is to be interpreted and construed in accordance with, the laws applicable in British Columbia.

ARTICLE 17 INTERPRETATION

- 17.01 In this Agreement:
 - (a) "we", "us", and "our" refer to the Province alone and never refer to the combination of the Contractor and the Province;
 - (b) the Contractor and the Province are referred to as "the parties" and each of them as a "party";
 - (c) "includes" and "including" are not intended to be limiting;
 - (d) unless the context otherwise requires, references to sections by number are to sections of this Agreement;
 - (e) "attached" means attached to this Agreement when used in relation to a schedule;
 - (f) unless otherwise specified, a reference to a statute by name means the statute of British Columbia by that name, as amended or replaced from time to time;
 - (g) the headings have been inserted for convenience of reference only and are not intended to describe, enlarge or restrict the scope or meaning of this Agreement or any provision of it;
 - (h) "person" includes an individual, partnership, corporation or legal entity of any nature; and
 - (i) unless the context otherwise requires, words expressed in the singular include the plural and vice versa.

ARTICLE 18 EXECUTION AND DELIVERY

18.01 This Agreement may be entered into by a separate copy of this Agreement being executed by, or on behalf of, each party and that executed copy being delivered to the other party by a method provided for in Section 16.01 or any other method agreed to by the parties.

The Parties have executed this Agreement as follows:

| SIGNED AND DELIVERED on behalf of the Province by
an authorized representative of the Province | SIGNED AND DELIVERED by or on behalf of the
Contractor (or by an authorized signatory of the Contractor)
if a corporation) |
|---|--|
| (Authorized Ministry Expense Authority) | (Contractor or Authorized Signatory) |
| Leonard Munt | LEANDER VI GNENDET |
| (PRINTED NAME of Ministry Expense Authority) | (PRINTED NAME of Contractor) |
| Dated this 14 day of Feb , 2012 | Dated this 13 day of THONGY, 2012 |

SCHEDULE A

SERVICES

File: 10005-40/EN12NAE-816

Attachment to the Agreement with Marine Toad Enterprises Inc. for Fisheries Assessments and Fisheries **Mitigation Plans**

THE SERVICES

The Contractor shall provide the following Services:

- 1) Perform fisheries assessments and fisheries mitigation/sediment control plans at the following sites:
 - a) QC-7003 Stanley Forest Service Road station 0+700km 53° 14' 43.6" N 132° 9' 38.5" W SASE
 - b) QC-7041 QC Main Forest Service Road station 4+800km 53° 16' 28.3" N 132° 8' 36.4" W CAP
 - c) QC-7829 (Creek 10a) Moresby Forest Service Road station 3+000km 53° 5' 53.5" N 132° 2' 57.2" W CAP
 - d) QC-7027 (Ck 19a) Moresby Forest Service Road station 4+500km 53° 5' 26.5" N 132° 3' 55.9" W
 - e) Clapp Road 0+800km 53° 19' 55.8" N 132° 24' 55.1" W (approximate location) DHG
 f) Clapp Road 3+300km 53° 18' 41.5" N 132° 24' 50.8" W (approximate location)
 - - Fisheries Mitigation Plans to include, but are not limited to, the following information:
 - (1) Summary of fisheries resource values
 - (2) Summary of proposed activities
 - (3) Mitigation Proposal: measures to minimize impacts to the stream channel, measures to control sedimentation, water quality and fish.
 - (4) Contingency Planning and Emergency Procedures

KEY PERSONNEL

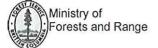
The Services shall be performed by the following "Key Personnel":

- 1. Leandre Vigneault, BSc.
- 2. Lynn Lee, RP Bio

and there shall be no substitution for the person(s) listed above without the prior consent of the Province.

| INITIALS | INITIALS |
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| (CONTRACTOR) | (PROVINCE) |





Schedule B – Contract Payment

File: 10005-40/EN12NAE-816

Attachment to the Agreement with Marine Toad Enterprises Inc for Fisheries Assessments

- 1. FEES
- 1.01 Your fees (exclusive of HST) will be based on a rate of \$65 per hour for a RP Biologist (the "Unit of Measure") during the Term when you are providing the Services, up to a maximum of 30 Units of Measure and a rate of \$55 per hour for a Biologist (the "Unit of Measure") during the Term when you are providing the Services, up to a maximum of 30 Units of Measure
- 1.02 The quantities stated under Clause 1.01 are estimations only. The final quantity measurements may vary from the estimations and contract payment will be based on the <u>actual</u> quantities and the price(s) per Unit of Measure stated above.
- 1.03 Notwithstanding Clause 1.02, the contract is not to exceed the total fees payable to you in accordance with this Schedule in the amount of <u>\$3600.00</u> without the prior written approval of the Ministry Representative.

2. EXPENSES

2.01 We will pay you the following expenses (exclusive of HST) provided they are:

- (a) supported, where applicable, by proper receipts or copies of receipts;
- (b) in our opinion, necessarily incurred by you in providing the Services; and
- (c) payable in accordance with the attached "<u>Contract Rates for Fisheries Assessments Effective</u> <u>01 January 2010</u>", forming an integral part of this Agreement:
 - (i) truck use at a rate of \$0.68 per kilometre;
 - (ii) Ferry expenses;
- 2.02 In no event will expenses payable to you, in accordance with this Schedule, exceed, in total: \$400.00.

3. TOTAL PAYABLE

3.01 In no event will the Total Payable for fees (exclusive of HST) and, where applicable, expenses (exclusive of HST) in accordance with this Schedule exceed in total an estimated <u>\$4000.00</u>.

4. HOLDBACK FROM PAYMENT

4.01 As per the Agreement, the Province does not intend to retain a holdback from contract payments but the Province does retain the right to withhold from any payments due to you under this Agreement an amount sufficient to indemnify us against any third party claims.

5. SUBMISSION OF STATEMENT OF ACCOUNT

- 5.01 In order to obtain payment for any fees (and any applicable HST) and, where applicable, expenses (excluding HST) under the Agreement, you must submit to us a written Statement of Account in a form satisfactory to us on total completion of the Services.
- 5.02 The Statement of Account(s) must show the following:

SCHEDULE B

CONTRACT PAYMENT

- (a) your legal name, address, the date and the period of time which the invoice applies ("Billing Period"), the contract number, and a statement number for identification;
- (b) the calculation of all fees claimed under this Agreement for the Billing Period, with hours, dates, rates, and name(s) of persons providing the Services, including a declaration that the Services have been completed;
- (c) and where expenses are to be paid under this Agreement, a chronological listing, in reasonable detail and with dates, of all expenses claimed by you under this Agreement for the Billing Period with receipts or copies of receipts, where applicable, attached; and
- (d) the calculation of any applicable HST tax payable by the Province in relation to the Services provided under this Agreement and for the Billing Period as a separate line item;
- (e) your HST registration number, and
- (f) any other billing information reasonably requested by us.
- 5.03 Within thirty-one days of our receipt of your invoice, or the date we authorize payment, whichever is the latter, we must pay you fees and, where applicable, expenses for those Services we determined were satisfactorily received during the Billing Period.
- 5.04 Invoices are to be submitted to:

Larry Duke Haida Gwaii Forest District PO Box 39 Queen Charlotte, BC V0T 1S0

| INITIALS | INITIALS |
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| (CONTRACTOR) | (PROVINCE) |

| Category | Details | R | late | Unit |
|------------|---|----|------------|---------|
| Field | RP Biologist | \$ | | hour |
| | Biologist/Diver | \$ | | hour |
| | Fisheries technician/ Standby diver | \$ | | hour |
| | Boat Tender | \$ | | hour |
| Equipment | Truck and Radio | \$ | | km |
| | All Terrain Vehicle | \$ | | day |
| | Electroshocker | \$ | | day |
| | Fish stop nets | \$ | | set/day |
| | Fish sampling gear | \$ | | day |
| | SCUBA gear | \$ | | set/day |
| | 19' Dive skiff* | \$ | N | day |
| | Live-aboard boat (Victoria Rose)*** | \$ | s.2 | day |
| Office | RP Biologist | \$ | s.21, s.22 | hour |
| | Biologist | \$ | 0) | hour |
| | Fisheries technician | \$ | | hour |
| | Map ploting | \$ | | map |
| | Report production, office use & office supplies | \$ | | report |
| Stand-by** | RP Biologist | \$ | | hour |
| | Biologist | \$ | | hour |
| | Fisheries technician/ Standby diver | \$ | | hour |
| | Boat Tender | \$ | | hour |
| | Live-aboard boat (Victoria Rose)*** | \$ | | day |
| | Dive skiff | \$ | | day |
| | SCUBA gear | \$ | | set/day |

Contract rates for fisheries assessments effective 01 January 2010

* Rate does not include fuel which will be billed at cost.

** Stand-by rate applies to downtime in the field due to situation beyond our control such as inclement weather conditions.

*** Live-aboard costs include food for a 2-person crew fuel will be billed at cost.





Schedule C Safety Conditions

File: 10005-40/EN12NAE-816

Attachment to the Agreement with Marine Toad Enterprises Inc for Fisheries Assessments and Fisheries Mitigation Plans

Terms such as "employer", "independent operator", "multiple employer workplace", "owner", "prime contractor", and "worker" have the meanings given those terms by Part 3 of the *Workers' Compensation Act (WC Act)*.

ARTICLE 1 OTHER SAFETY CONSIDERATIONS

- 1.01 In accordance with the *WC Act* and its regulations, the Contractor must submit a notice of project, as applicable, to WorkSafe BC, unless the Contractor is notified in writing that the Province will submit the notice of project. Where the Contractor submits the notice of project, a copy must be provided to the Province. Where the Province submits the notice of project, the Contractor must provide, upon our request, all the information necessary to support the notice of project and the Province will provide the Contractor with a copy of the notice of project.
- 1.02 The Contractor will commence and conduct all operations consistently with the notice of project.
- 1.03 The Contractor must immediately submit written notice to the Province on all matters reported to WorkSafe BC by the Contractor or the Contractor's Subcontractors. The written notice must include all information necessary to allow the Province to adequately collect and address safety or other related incidences, but will be anonymized so as not to include personal information about an identifiable individual including their name, address, telephone number, age, sex, race, religion, sexual orientation, disability, fingerprints, or blood type, health care, educational, financial or employment history and anyone else's opinion about the individual. This scope does not include business contact information (e.g., name, title, address, telephone or fax numbers or email address used for business contact purposes).
- 1.04 Where the Province brings safety concerns to the attention of the Contractor, it shall give full consideration to the issues raised and provide the Province with a considered response, including any information necessary to demonstrate that the Contractor is in compliance with *WC Act* and its regulations.

ARTICLE 2 PRIME CONTRACTOR PROVISIONS

- 2.01 The Contractor acknowledges, agrees, and warrants that:
 - (a) The Contractor will be considered to be the Prime Contractor and shall enter into a Prime Contractor Agreement with the Province and shall carry out the duties described therein, where any of the following conditions exist:
 - the Province gave notice that the Successful Bidder would be the Prime Contractor;
 - (ii) the Province designates the Contractor to be the Prime Contractor at any time during the performance of the Work or Services;
 - (iii) the Contractor creates a multiple employer workplace through subcontracting any of the Work or Service at any time.
- 2.02 Where the Contractor is being considered as the Prime Contractor as per clause 2.01,

the following is applicable:

- (a) upon request, the Contractor must satisfy the Province that the Contractor has the experience and capacity to address Prime Contractor responsibilities in accordance with the Agreement and the WC Act and its regulations; and
- (b) the Province provides written acknowledgement of the Contractor's experience and capacity to function as Prime Contractor; and
- (c) where the Contractor creates a multiple employer workplace, the Contractor will provide or acquire at their own expense all resources necessary to discharge the Prime Contractor responsibilities; or
- (d) the Province may, in its sole discretion, give consideration for compensation related to any additional costs where, after commencement of the work, the Province creates a multiple employer workplace and designates the Contractor to be the Prime Contractor.

| INITIALS | INITIALS |
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(CONTRACTOR) | (PROVINCE) |





Schedule D – Insurance Requirements

File: 10005-40/EN12NAE-816

Attachment to the Agreement with Marine Toad Enterprises Inc. for Fisheries Assessments and Fisheries Mitigation Plans

1. Without restricting the generality of the indemnification provisions contained in the Agreement, the Contractor shall, at its own expense, provide and maintain, during the term of this Agreement, the following insurance coverage as fully specified in Paragraph 9 and any additional insurance which it is required by law to carry or which it considers necessary to cover risks not otherwise covered by insurance specified in this Schedule in its sole discretion.

All such insurance described herein must be primary and not require the sharing of any loss by any insurer of the Province.

| Commercial General Liability | | Not Required | \bowtie | Required |
|-------------------------------|--|---|--|--|
| Automobile Liability | | Not Required | \boxtimes | Required |
| Professional Liability | \bowtie | Not Required | | Required |
| Aviation Liability | \bowtie | Not Required | | Required |
| Watercraft Liability | \bowtie | Not Required | | Required |
| Property Insurance | \boxtimes | Not Required | | Required |
| All-risk Property Insurance | \boxtimes | Not Required | | Required |
| Motor Truck Cargo Liability | \boxtimes | Not Required | | Required |
| Employee Dishonesty Liability | \boxtimes | Not Required | | Required |
| | Automobile Liability
Professional Liability
Aviation Liability
Watercraft Liability
Property Insurance
All-risk Property Insurance
Motor Truck Cargo Liability | Automobile LiabilityIProfessional LiabilityIAviation LiabilityIWatercraft LiabilityIProperty InsuranceIAll-risk Property InsuranceIMotor Truck Cargo LiabilityI | Automobile LiabilityNot RequiredProfessional LiabilityNot RequiredAviation LiabilityNot RequiredWatercraft LiabilityNot RequiredProperty InsuranceNot RequiredAll-risk Property InsuranceNot RequiredMotor Truck Cargo LiabilityNot Required | Automobile LiabilityNot RequiredProfessional LiabilityNot RequiredAviation LiabilityNot RequiredWatercraft LiabilityNot RequiredProperty InsuranceNot RequiredAll-risk Property InsuranceNot RequiredMotor Truck Cargo LiabilityNot Required |

- Insurance shall be placed with Insurers registered in and licensed to underwrite such insurance in Canada. All such insurance shall be at no expense to the Province. If the Province requires additional Insurance Coverage to be obtained by the Contractor, the additional expense of such additional insurance shall be borne by the Province.
- 3. Notwithstanding Paragraph 4, the Contractor shall, prior to the commencement of services and before any payments are made under this Agreement, file with the Ministry Representative evidence of insurance coverage in the form of a completed Province of British Columbia Certificate of Insurance (Form FIN 173). When requested by the Province, the Contractor shall provide certified copies of required insurance policies.
- 4. ICBC's Confirmation of Automobile Insurance Coverage, Form APV 47 shall be used as satisfactory evidence of Automobile Liability Insurance.
- 5. The insurance policies, except for ICBC Automobile Liability Insurance, shall provide that the insurance shall not be cancelled or materially changed so as to affect the coverage provided under the Agreement, without the Insurer giving at least thirty (30) days prior written notice to the Province. Material change with respect to Professional Liability Insurance does not require the Insurer to give thirty (30) days prior written notice to the Province.
- 6. Failure to provide the required insurance documentation shall result in termination of this Agreement.
- 7. If the insurance policies expire prior to the end of the Agreement Term, the Contractor shall provide the ministry evidence of insurance renewal in the form of a completed Province of British Columbia Certificate of Insurance and ICBC's Form APV 47, if applicable, at least ten (10) days prior to the expiry date of the policies listed in this Schedule.

SCHEDULE D - INSURANCE REQUIREMENTS

- 8. The Contractor shall ensure that all its subcontractors performing Services under this Agreement carry insurance in the form and limits specified in Paragraph 9.
- 9. The following forms of insurance and specified minimum limits are required:

a) Commercial General Liability

Commercial General Liability insurance in an amount not less than \$2 million inclusive per occurrence against bodily injury, personal injury, and property damage and including liability assumed under the Agreement.

Such policy(s) of insurance shall include, but not be limited to:

- i) Products and Completed Operations Liability;
- ii) Owner's and Contractor's Protective Liability;
- iii) Contingent Employer's Liability;
- iv) Blanket Written Contractual Liability;
- v) Personal Injury Liability;
- vi) Non-Owned Automobile Liability;
- vii) Cross Liability;
- viii) Employees as Additional Insureds;
- ix) Broad Form Property Damage;

and where such further risk exists:

- x) Forest Fire Fighting Expense Coverage in the amount of:
 - \$1 million (activity taking place during fire season)
 - \$500,000 (activity taking place outside of fire season)
 - Not applicable (activity not taking place in forested areas or where the activity does not include potential of sparks from welders, chainsaws, or hot exhaust, etc.)
- xi) Sudden and Accidental Pollution endorsement on the Commercial General liability insurance policy with a limit of liability not less than the amount indicated below per occurrence insuring against bodily injury, property damage and cleanup expenses arising from new pollution conditions arising from the Contractor's performance of the Agreement, or if such endorsement is unavailable on the Commercial General Liability insurance policy, a Sudden and Accidental Pollution insurance policy insuring against same and with same limits of liability indicated below, and this insurance shall include the Province as an additional insured as stated below:
 - \$250,000
 - \$500,000
 - □ \$1 million
 - Not applicable

The Province is to be added as an "Additional Insured" under this policy, as follows: "Her Majesty the Queen in right of the Province of British Columbia as represented by the Minister of Forests and Range and any of its employees, servants or agents".

b) Automobile Liability

Automobile Liability insurance on all vehicles owned, operated or licensed by the Contractor in an amount not less than \$2 million inclusive per occurrence.

c) Professional Errors and Omissions Liability

Professional Errors and Omissions Liability Insurance protecting the Contractor, and if applicable their insurable subcontractors and their respective servants, agents or employees, against any loss or damage arising out of the professional services rendered by any of them under this Agreement in an adequate amount acceptable to the Province and shall in any event be not less than:

i) Contract valued \$0.00 to \$2.5 million = \$250,000;

SCHEDULE D - INSURANCE REQUIREMENTS

- ii) Contract valued \$2.5 million to \$7.5 million = \$500,000;
- iii) Contract valued \$7.5 million to \$15.0 million = \$1 million; or
- iv) Contract valued over \$15.0 million = as negotiated, but not less than \$1 million.

Structural, mechanical, electrical and civil sub-contractors insurance coverage is to be based on the value of their scope of work. All other specialty consultants are to carry a minimum of \$250,000.00 Errors and Omissions Insurance despite the value of their scope of work.

terms of the approval.

d) Aviation Liability

Aviation Liability Insurance on all aircraft operated or used in the performance of the Services insuring against bodily injury, property damage, and passenger liability, in an amount not less than the limits of liability imposed by any *Canadian Aviation Regulation* and in any event not less than a per occurrence combined single limit of:

- i) \$3,000,000 for aircraft up to 5 passenger seats, or
- ii) \$3,000,000 plus \$1,000,000 for each additional passenger seat for aircraft up to 10 passenger seats, or
- iii) \$10,000,000 for aircraft over 10 passenger seats;

Such insurance shall include a cross liability clause.

Where applicable, such policy will also include coverage for aerial drift or misapplication of fertilizers or herbicide chemicals in an amount not less than \$50,000, per occurrence.

The Province is to be added as an "Additional Insured" under this policy, as follows: "Her Majesty the Queen in right of the Province of British Columbia as represented by the Minister of Forests and Range and any of its employees, servants or agents".

e) Watercraft Liability.

Watercraft liability insurance on all watercraft operated or used in the performance of the Services by the Contractor (including rented watercraft), in an amount not less than the limits of liability imposed by the *Marine Liability Act* and in any event not less than \$ inclusive per occurrence.

Such insurance shall include:

- i) a cross liability clause
- ii) Sudden and Accidental Pollution endorsement on the Watercraft liability insurance policy with a limit of liability not less than the amount indicated below per occurrence insuring against bodily injury, property damage and cleanup expenses arising from new pollution conditions arising from the Contractor's performance of the Agreement, or if such endorsement is unavailable on the Watercraft Liability insurance policy, a Sudden and Accidental Pollution insurance policy insuring against same and with same limits of liability indicated below, and this insurance shall include the Province as an additional insured as stated below:
 - \$250,000
 - \$500,000
 - \$1 million
 - Not Applicable

Where applicable, such policy will also include coverage for marine towing operations.

The Province is to be added as an "Additional Insured" under this policy, as follows: "Her Majesty the Queen in right of the Province of British Columbia as represented by the Minister of Forests and Range and any of its employees, servants or agents".

f) Property Insurance

Property Insurance in an amount not less than the full replacement cost for all property owned by the Province in the care, custody, use, and control of the Contractor including, if applicable, property in transit.

Such insurance shall include:

- i) the Province as a named insured as its interest may appear; and
- ii) include a waiver of subrogation in favour of the Province.

g) All-risk Property Insurance

All-risk Property insurance against physical loss or damage, including the perils of earthquake and flood, covering business contents, including electronic data processing equipment and media to full replacement cost value, extra expense coverage for expenses necessarily incurred by the Contractor to continue normal operations which are interrupted as a result of an insured property loss.

Such insurance shall include a waiver of subrogation in favour of the Province.

h) Motor Truck Cargo Insurance

Motor Truck Cargo Insurance in an amount sufficient to cover the loss or damage at a maximum value of the cargo being hauled at any one time per vehicle transporting property owned or controlled by the Province in the care, custody or control of the Contractor.

The Province is to be a named insured as its interest may appear.

i) Employee Dishonesty Insurance

A Blanket Position Fidelity Bond (Employee Dishonesty insurance) covering any or all persons used or employed by the Contractor for the provision of the Services in an amount not less than \$ per claim arising out of any dishonest or fraudulent act that results in the loss of money, securities, or other property of the Province, and this insurance must protect the Province by way of a "third party endorsement".

| INITIALS | INITIALS |
|---------------------|------------|
| L J
(CONTRACTOR) | (PROVINCE) |



Engineering, Surveying

5-522 South Dogwood Campbell River, BC V9W-6R4 (250) 287-2216

November 29, 2011 Ministry of Forests Lands and Natural Resources Haida Gwaii Forest District

Attn: Larry Duke, RFT

Subject: Clapp Road Structure Inspections

On September 2, 2011 John Brett PEng of Caliber Bridge and Design Ltd. and Larry Duke RFT, of the Ministry of Forests Lands and Natural Resource Operations completed field inspections of 7 log stringer culvert crossings along the Clapp Road. The inspections were completed starting at the junction with the Rennel Hill Hook Up Road and extended through to the camping / boat launch recreational area at the end of the Clapp Road

Attached is an overview of the general condition of each structure as well as maintenance recommendations.

If there are any questions pertaining to the findings below please contact John Brett PEng of Caliber Bridge and Design Ltd. at (250) 287-2216 or john.brett@caliberbridge.ca

Sincerely,



John Brett PEng.

Encl.





Clapp Road 0+800

General:

Structure is an old 1x2.5m wood log culvert constructed with cedar stringers / slabs. Log sills have scoured and are supported by random rocks along their length. Fungus is forming along stringers and a hole has formed in the downstream shoulder of the road.

Recommendations

Do not load structure beyond 2 tonnes, (in its current condition) repair the hole that is forming on downstream side. This could involve backfilling with coarse material or placing a log with delineators along the shoulder of the road to prevent vehicles passing within 2.5 meters of the hole. Increased load rating could be achieved by adding a steel plate sheet as a deck on top of existing road or wooden cross puncheon backfilled with gravel. Monitor the site on a regular basis, this would include an inspection in the spring before opening the road as well as regular inspections twice a month throughout the 2012 summer season. If additional issues are discovered during the spring inspections they will need to be addressed. A load rating sign should be posted at the beginning of the Clapp road that reflects the lowest of all structure load ratings.

Clapp 1+000

General

This structure consists of an old 1x3m Wood Box Culvert with Cedar sills and stringers / slabs. The undersized log culvert encroaches on the creek and as a result, scour is forming along the log sills. The structure is currently capable of handling light loads up to 5tonnes.

Recommendations:

Inspect structure again in spring before opening the road to check for any changes in the structure condition or to the site in general. If reopening the road, fix the hole that is forming on the downstream side or install a berm log and delineators to direct traffic away from the unstable shoulder (min 2.5m from hole)





5-522 South Dogwood Campbell River, BC V9W-6R4 (250) 287-2216

Clapp 1+400

General:

Structure is a 1x4.5m Wood Box Culvert constructed with Cedar sill logs and stringers / slabs. Structure is in fair shape considering the age. The log culvert should be inspected again in spring before reopening the road.. Provided there are no issues in the spring the structure will be fine for light traffic up to 5 tonnes.

Recommendations:

Re-inspect in spring and load rate for light traffic up to 5 tonnes provided no new issues are revealed during spring inspection.

Clapp 2+100

General

Structure is a small 1x2.5m wood box culvert constructed with Cedar sills stringers / slabs and mudsills. The structure encroaches on the creek and as a result there is significant scour on the downstream side of the culvert. A hole is forming on the downstream road shoulder.

Recommendations:

Re-inspect structure in the spring. If road is reopened then the hole in the downstream shoulder requires repair or the installation of a berm log and delineators directing traffic towards the upstream portion of the structure. The berm log should be a minimum of 2.5m from the hole that is forming and incorporate delineators to alert traffic of the roadway narrowing.

Clapp Road 2+500

General:

This is a Cedar wood box culvert that encroaches heavily on the stream channel. As a result the downstream portion of the structure has scoured and settled. At the time of inspection the structure appears to have stabilized. The structure is capable of handling loads up to 5 tonnes. A large void has opened up between the outside stringer and berm log.





Recommendations:

Re-inspect structure in the spring prior to reopening the road. If the road is reopened the large void should be clearly marked to alert traffic of the hazard. A berm log and delineators should also be installed to direct traffic through the site away from the hole in the road shoulder.

Clapp Road 2+900

General:

This is a low clearance 1x2.5m wood box culvert constructed with cedar sill logs and stringers / slabs. Structure is generally undersized for the creek resulting in localized scour around log sills. Loading for this structure should not exceed 5 tonnes.

Recommendations:

Re-inspect structure in spring before opening the road. If road is reopened, loading of this structure should not exceed 5 tonnes.

Clapp Road 3+300

General:

This structure consists of a 1x3m wood box culvert. Structure is undersized for the creek. This has resulted in heavy scour along log sills. Mudsills are currently supporting the main sills at the inlet and outlet of the structure. A hole has opened up behind the Low Chainage side sill log at the road surface. This is a direct result of the scour progressing underneath and behind the sill log towards the road surface.

Recommendations:

Re-inspect structure in the spring to evaluate the extent of scour under the structure. If the road is reopened then the fill leading into the low chainage sill log will need to be excavated and replaced with coarse, scour resistant shot rock. If shot rock is not available, excavated material can be reused as backfill provided non woven geotextile is used to line the backside of the sill log and excavation. The intention of this lining would be to contain the gravels and prevent future erosion.





5-522 South Dogwood Campbell River, BC V9W-6R4 (250) 287-2216

Summary:

In genera, I during the time of inspection the structures were capable of handling light traffic provided completion of some minor maintenance as outlined above. A spring (2012) inspection is recommended before opening the road. This inspection should outline and quantify any changes to the structures between this year and the upcoming season. If the road is reopened then a load rating sign should be posted at the junction of the Clapp Rd. with the Rennel Hill hookup road.

Please contact John Brett, PEng if there are any questions pertaining to the sites contained in this report.



Kagan Bay Properties ltd Haida Gwaii Operations, Rennell Sound, BC Stream Summary for Proposed deactivation plan of the Clapp Basin Road

Clapp Basin, Graham Island, Haida Gwaii

Report submitted by: Leandre Vigneault, BSc Dated: September 30, 2011

Summary

Marine Toad Enterprises Inc. (MTE) was contracted by Dave Younger to provide fisheries advice to the proposal to deactivate 9 stream crossings on private property along the Clapp Basin Road (see Figure 1 appended to this report).

Shields and Rockrun creeks are known to support runs of several species of salmonids the remaining 7 streams have been defaulted to fish bearing status based on the combination of suitable gradient and close proximity to the ocean. Fisheries mitigation plans for each crossing a well as a DFO Project Review Application Form to complete the deactivation work have been included with the report.

Methods

The fieldwork was conducted on June 30th, 2011 with a short follow up visit on September 4th, 2011. All of the streams were inspected by Leandre Vigneault of MTE accompanied by Marty Decock on June 30th and by Leandre Vigneault by himself on September 4th. All of the streams were classed as being either known or potential salmonid habitat in the vicinity of the road crossings based on the gradient and proximity to the ocean. Fry trapping would need to be undertaken if one wanted to confirm fish presence or absence at several of the stream crossing locations. Physical stream channel characteristics were collected during the field visit and are summarized in Table 1. Average channel width measurements were obtained using a standard of 6 measurements separated by the width of the first measurement.

Results

The information collected during the field inspection as well as the proposed deactivation procedure and/or the suggested minimum replacement culvert size is summarized in Table 1. In addition to this report, MTE has completed a fisheries mitigation plan for each of the crossings.

All of the streams inspected show signs of disturbance from past logging and road building activity. Streams 1, 2, 3, as well as Sheilds Creek have experienced debris flows in the past few decades; Streams 1, 1A, 6, 7 and 9 have all been diverted along the road for a portion of their length and most of the stream crossings are encroaching on the stream channels. Although all of the streams have been classified as fish bearing at this time, only Shields and Rock Run Creeks are known to support of runs of anadromous salmonids as well as sculpins. The remaining streams have gradients that would support salmonids in the vicinity of their road crossings; in many cases the disturbance created by the road (i.e. the diversion of the channel down the

Stream summary report for proposed deactivation of the Clapp Basin Road • MTE Inc September 2011 • 1 FNR-2014-00248 Page 25 of 87 ditchline) has created the gradient suitable for fish. If the mitigation plans are adhered to during the deactivation, the deactivation of this road should have minimal impact on fisheries values in the area. The proper deactivation and of the stream crossings will improve fish passage and sediment transport through the road crossings and any instream LWD placements undertaken as part of the deactivation will provide limited habitat improvements at the crossing locations.

Table 1. Summary of the field data collected for the streams inspected along the private land portion of Clapp Basin Road.

| [| Channel | | | | | Current | | Minimum |
|--------|---------|------------|------------|---|-------------------|-------------|---|-------------|
| Stream | Width | | | | Fish Bearing | Crossing | | Replacement |
| Name | (m) | Gradient | Substrate | Stream description | Status | Structure | Deactivation details | Structure |
| | | | | Channel originates from a debris flow channel ~125m upstream, the | | | | |
| | | | | original crossing is blocked and the channel has diverted down camp | | | | |
| | | | | the ditch, may have crossed through 2 other road crossing locations | | | | |
| | | | | in the past but both are now blocked and the stream follows the ditch | | | | |
| | | | | to the current crossing location, the channel is carving into the road | | | | |
| | | | | and has already cut through the road at the current crossing location | | | | |
| | | | | in the recent past. The crossing has been poorly patched up with 3 | Defaulted to fish | | | |
| | | | | CMPs. The downstream side of the culverts are loacted at the high | bearing based | 1x1000mm | | |
| | | 3-5% for | | tide line which make these crossing passable at high tide. A small | on gradient and | CMP, | Pull out culverts, and increase opening to | |
| | | 125m | | channel enters the stream from the upstream woods ditch and has | proximity to the | 2X800mm | minimum 4m wide. Re-contour banks and | |
| 1 | 3.5 | then 18% | Gr, Co, Bo | been called stream 1A | ocean. | CMP | armour woods bank with large rock. | 1X5 WBC |
| | | | | | Defaulted to fish | | | |
| | | 3-5% in | | | bearing based | | | |
| | | ditch then | | Channel enters Creek 1 just at the road crossing. Channel flows in | on gradient and | | | |
| | | 10-12% | | the ditch on the woods bank side of Creek 1 for ~40m before turning | proximity to the | N/A | Net successful to the second | N1/A |
| 1A | 1.5 | u/s | Gr | up hill. | ocean. | IN/A | ···· , · ··· | N/A |
| | | | | | | | Prior to deconstruction of the crossing | |
| | | | | | | | structure, install a filter fabric diaper and | |
| | | | | | | | either by-pass pipes or a temporary wooden
structure to support the fabric and allow water | |
| | | 3-8% for | | | Defaulted to fish | | flow through the crossing during the | |
| | | 100 then | | | bearing based | | deconstruction. The filter fabric can be pulled | |
| | | 18% for | | Channel flowing through old debris flow track, d/s side of the crossing | Ũ | | through from the upstream side of the | |
| | | 70m then | | is located at the high tide line. Crossing sills undermined and the | proximity to the | Failing 1x2 | crossing. Remove both sills, re-contour the | |
| 2 | | | | structure is starting to fail. Marginal fish habitat. | ocean. | WBC | banks and armour with rip-rap. | 1X3 WBC |
| | 1.0 2 | 0070 070 | 01, 00 | | | | Prior to deconstruction of the crossing | |
| | | | | | | | structure, install a filter fabric diaper and | |
| | | 3-5% | | | Defaulted to fish | 1 | either by-pass pipes or a temporary wooden | |
| | | increasin | | | bearing based | 1 | structure to support the fabric and allow water | |
| | | g to 5- | | | on gradient and | 1 | flow through the crossing during the | |
| | | 10% 50m | | Channel with past debris flow, devoid of LWD. The woods bank sill is | proximity to the | | deconstruction. Remove the woods bank sill, | |
| 3 | 4-6 | u/s | Gr, Co, Sd | partly undermined. | ocean. | 1X4 WBC | re-contour the bank and armoured with rip-rap. | 1X7 WBC |

Stream summary report for proposed deactivation of the Clapp Basin Road • MTE Inc September 2011 • 3

| | Channel | | | | | Current | | Minimum |
|---------|---------|----------|------------|---|-------------------|-----------|---|-----------------|
| Stream | Width | | | | Fish Bearing | Crossing | | Replacement |
| Name | (m) | Gradient | Substrate | Stream description | Status | Structure | Deactivation details | Structure |
| | | | | | | | Prior to the deconstruction of the crossing | |
| | | | | | Sheilds Creek | | structure, install a filter fabric diaper and a | |
| | | | | | (watershed code | | minimum 600mm culvert by-pass pipe allow | |
| | | | | | 940-318700) is a | | water flow through the crossing once the fabric | |
| | | | | | gazetted stream | | is weighed down by road material. If possible, | |
| | | | | | known to | | the woods bank sill should be removed and | |
| | | | | | support runs of | | the bank re-contoured and armoured with rip- | |
| | | | | | coho, pink and | | rap. The camp bank sill should be left in | |
| | | | | | chum salmon, | | place. If agreed to by all parties and with an | |
| | | | | | Dolly Varden | | approved design, the wooden stringers | |
| | | | | | char and | | removed from the crossing could be used | |
| | | | | | rainbow trout | | construct one or more instream LWD | |
| Shields | | | | Large fish bearing stream that has been impacted by past logging | and coast range | | structures downstream of the crossing to | |
| Creek | 7 | <5% | Gr, Co, Bo | and is decient in LWD. Evidence of past debris flow down channel. | | 1X5.5 | improve fish habitat complexity. | 8 to 10m bridge |
| | | | | | Defaulted to fish | | | |
| | | | | | bearing based | | | |
| | | | | | on gradient and | | | |
| | | | | Step pool channel over cobbles, marginal fish habitat, 40m from road | . , | 1000mm | Remove culvert recontour the banks and armor | |
| 4 | <2 | 15% | Co, Gr | crossing to high tide mark | ocean. | CMP | with rip-rap | 1000mm CMP |
| | | | | | | | There is no room to get filter fabric inside the | |
| | | | | | | | crossing so the deactivation will require careful | • |
| | | | | | | | excavation down to the sill logs, a hand labor | 1x2 WBC, could |
| | | | | | | | crew to then shovel as much dirt as possible | look into |
| | | | | | | | off the stingers prior to their removal with the | installing an |
| | | | | | Defaulted to fish | | 5 | imbedded |
| | | | | U/s side of the crossing almost completely blocked with sediment, | bearing based | | LWD that has fallen from the crossing out of | 1200mm CMP |
| | | <5% for | | | on gradient and | | · · · · · · · · · · · · · · · · · · · | as the crossing |
| | | 50m then | | channel d/s of the road to high tide line, Channel likely backs up to | proximity to the | | remove the camp bank sill and re-contour and | |
| 5 | 1.7-2 | 7-10% | Gr, Sd | the crossing at high tides. | ocean. | | amour the camp bank with rip-rap. | at high tide. |

| | Channel | | | | | Current | | Minimum |
|-------------|---------|----------|------------|---|--|-----------|---|---|
| Stream | Width | | | | Fish Bearing | Crossing | | Replacement |
| Name | (m) | Gradient | Substrate | Stream description | Status | Structure | Deactivation details | Structure |
| 6 | <1.0 | 5% | | A collection of very small (less than 0.5m wide) channels depositing
into the woods bank ditch joining a 0.5m channel flowing from
upslope to the road crossing. Very limited possible fish habitat
upstream of the road crossing in the ditch. The downstream side of
the crossing is located at the high tide line. | Defaulted to fish
bearing based
on gradient and
proximity to the
ocean. | 1x0.5 WBC | There is no room to get filter fabric inside the
crossing so the deactivation will require careful
excavation down to the sill logs, a hand labor
crew to then shovel as much dirt as possible
off the stingers prior to their removal with the
excavator. Hand clean any road material and
LWD that has fallen from the crossing out of
the channel. Leave the woods sill in place but
remove the camp bank sill and re-contour and
amour the camp bank with rip-rap. | 1x2 WBC, could
look into
installing an
imbedded
1200mm CMP
as the crossing |
| Rock
Run | | | | Large fish bearing stream that has been severely restricted by road | Rock Run Creek
(watershed code
940-318000) is a
gazetted stream
known to
support runs of
coho, pink and
chum salmon.
It is anticipated
that it also
supports runs of
Dolly Varden
char and | | Prior to the deconstuction of the crossing
structure, install a filter fabric diaper and a
minimum 600mm culvert by-pass pipe to allow
water flow through the crossing once the fabric
diaper is weighed down by road material. Dig
up the woods bank side of the crossing re-
contour the bank and armour it with with rip-
rap with an excavator sitting on the bridge.
Once the woods bank has been stabilized, the
excavator can move to the camp bank and
complete the excavation and removal of the
bridge. The camp bank sill can be left in
place or removed at the enviromental monitor's
discretion once the remainder of the stucture
has been removed. If the camp bank sill is
removed, the bank will need to be armoured
with rip-rap. If agreed to by all parties and
with an aproved design, the wooden stringers
removed from the crossing could be used
construct one or more instream LWD
structures downstream of the crossing to | |
| | 10.12 | 1 20/ | | | | | 5 | |
| Creek | 10-12 | 1-3% | Gr, Co, Bo | crossing. | rainbow trout. | 1X4 WBC | improve fish habitat complexity. | bridge |

| Stream | Channel
Width | One l'ant | Orthoption | Olympic description | Fish Bearing | Current
Crossing | Departmenting state its | Minimum
Replacement |
|--------|------------------|-----------|------------|---|-------------------|---------------------|---|------------------------|
| Name | (m) | Gradient | Substrate | Stream description | Status | Structure | Deactivation details | Structure |
| | | | | Channel that enters the ditch ~150m on the woods side of Rock Run
Creek and flows down along the road to enter Rock Run at the | Defaulted to fish | | | |
| | | | | upstream side of the road crossing. The gradient along the road is 5- | bearing in the | | | |
| | | | | 7% with a 4m long cascade of 30-40% ~50m from Rock Run creek | absence of fry | | | |
| | | 5-7% in | | the gradient increases to 30% as the channel turns upslope away | trapping based | Channel | | |
| | | ditch, | | from the road. A small tributary (Creek 7A) enters the ditch porton of | | flowing in | | |
| | | 30% | | the channel just downstream of the cascade. Creek 7A has a 1.5m | Ũ | ditch but not | | |
| | | upstream | | vertical drop over LWD at the junction with Creek 7, above the | - | crossed by | | |
| 7 | 1-2 | | Gr, Co | junction the gradient is 5%. | | · · · | Stream not crossed by the road | N/A |
| | | | | | | | | |
| | | | | | Gradients too | | | |
| | | | | | steep to support | | | |
| | | | | | fish u/s of the | | | |
| | | | | | road crossing, | | | |
| | | | | | the section of | | | |
| | | | | | the stream d/s | | Prior to deconstruction of the crossing | |
| | | | | | of the road has | | structure, install a filter fabric diaper and | |
| | | | | Step pool channel over cobbles upstream of the road crossing, | been defaulted | | either by-pass pipes or a temporary wooden | |
| | | 30-40% | | downstream of the road approximately 50m of straight channel likely | to fish bearing | 1X2.5 WBC | structure to support the fabric and allow water | |
| | | | | a legacy of an old debris flow, downstream of this point the channel | | | flow through the crossing during the | |
| | | crossing, | | meanders through a boggy old growth forest area inspection stopped | | Ŭ Ŭ | deconstruction. The sills of the existing | |
| 8 | 1 | 1-5% d/s | d/s | at this point. | trapping. | fail) | crossing can remain in place | 1X3 WBC |

| | Channel | | | | | Current | | Minimum |
|--------|---------|----------|-----------|---|---|-----------|--|-------------|
| Stream | Width | | | | Fish Bearing | Crossing | | Replacement |
| Name | (m) | Gradient | Substrate | Stream description | Status | Structure | Deactivation details | Structure |
| | | | | short section of channel downstream of the crossing could support | Defaulted to fish
bearing based
on gradient and
proximity to the | | Prior to deconstruction of the crossing
structure, install a filter fabric diaper and
either by-pass pipes or a temporary wooden
structure to support the fabric and allow water
flow through the crossing during the
deconstruction. Remove both sills, re-contour | |
| 9 | 6 | 10-13% | Co,Gr | salmonids. The current culvert is failing. | ocean. | 1X2 WBC | the banks and armour with rip-rap. | 1X8 WBC |

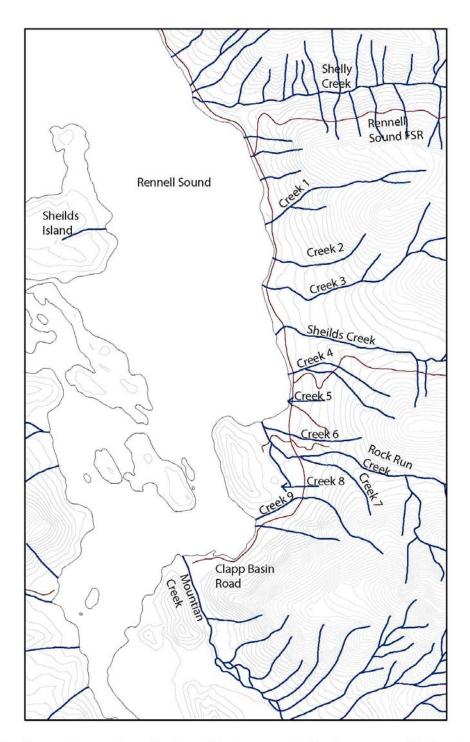


Figure 1. Map showing the approximate location of the stream crossing locations proposed for deactivation along the Clapp Basin road. Map line work is based on TRIM data and has not been feild corrected.



Creek 1- View looking upstream from the road crossing.



Creek 1- View looking upstream at the channel flowing in the ditch.



Creek 1- View looking downstream at the road crossing.



Creek 1 View looking upstream at the outlet of the crossing.



Creek 2 View looking upstream from the road crossing.



Creek 2 View looking downstream at the road crossing.



Creek 2- View looking upstream at the stream crossing.



Creek 3- View looking upstream from the road crossing.



Creek 3- View looking downstream at the stream crossing.



Creek 3- View looking downstream from the road crossing.



Shields Creek- View looking upstream from the road crossing.



Shields Creek- View looking downstream at the road crossing.



Shields Creek- View looking upstream at the road crossing



Creek 4- View looking upstream from the road crossing.

Stream summary report for proposed deactivation of the Clapp Basin Road • MTE Inc September 2011 • 15



Creek 4- View looking downstream at the road crossing.



Creek 4- View looking downstream from the road crossing.



Creek 5- View looking upstream from the road crossing.



Creek 5- View looking downstream at the stream crossing.



Creek 5- View looking upstream at the road crossing.



Creek 5- View looking downstream from the road crossing.



Creek 6- View looking upstream at small barrier in upstream ditchline.



Creek 6- View looking downstream at road crossing.



Creek 6- Looking at failing crossing.



Creek 6- View looking upstream at the road crossing.



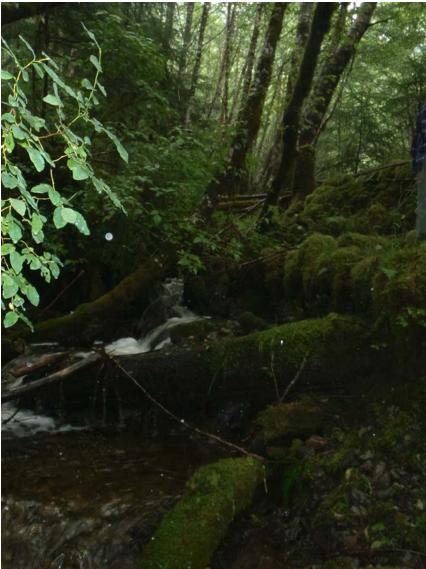
Rock Run Creek- View looking upstream from the road crossing, Stream 7 visible entering from the LHB.



Rock Run Creek- View looking downstream at the road crossing.



Rock Run Creek- View looking downstream from the road crossing.



Creek 7- View looking upstream at possible fish passage barrier in ditch channel.



Creek 8- View looking upstream from the road crossing.



Creek 8- View looking downstream at the road crossing.

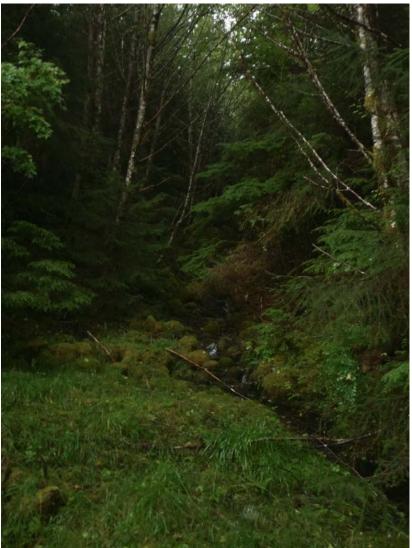


Creek 8- View looking downstream from the road crossing.

Creek 9- View looking upstream at the channel flowing in the woods bank ditch.



Creek 9 View looking upstream at the channel flowing in the camp bank ditch.



Creek 9- View looking upstream at the original channel.



Creek 9- View looking downstream at the road crossing.



Creek 9- View looking upstream at the road crossing.

Fisheries Mitigation Plan – Creek 1 Clapp Basin Road

Fisheries Resource Values

The stream identified as Creek 1 is the first stream crossed after entering private land while driving east from the Rennell Sound FSR along the Clapp Basin Road is not listed in the MOE FISS database. Creek 1 flows into the ocean in Clapp basin immediately downstream of the current road crossing. During the field inspections on June 30th and September 4th, 2011, MTE Inc crew observed that the gradient of the channel upstream of the crossing and the close proximity to the ocean made it likely that the stream can provide freshwater habitat for salmonids, consequently the stream has been defaulted to fish bearing status.

Creek 1 has been diverted from its original channel and now flows ~ 125m in the upstream camp ditchline before crossing the road through a combination of two 800mm CMPs and a 1000mm CMP. All of the pipes are poorly placed and upstream access is likely only possible at high tide when the culverts would be back watered. Upstream of the road location, the stream is has been eroding the side of the road after being diverted into the ditchline by at least two different blocked culverts. Upstream of the point where the channel is diverted down the road the gradient increased to 15% and there is limited fish habitat potential. A second smaller stream (Creek 1A) joins Creek 1 from the left hand bank immediately upstream of the road crossing. The riparian vegetation is a young spruce dominated forest upstream of the road crossing. The channel substrate consists of small gravel, cobble and small boulders.

The average channel width just upstream of the road crossing is 3.5 metres.

Proposed Activities

This project proposes to remove the culverts, excavate a 4m wide channel and armour the excavated banks with rip-rap prevent further erosion at the crossing location. It is anticipated that the deactivation will be completed by one excavator working from the camp bank. Recommendations are made to complete this project during dry weather at a time of low flow in order to facilitate sediment control.

The in-stream work window for this area is June 15th to August 15th. If the project is completed outside the in-stream work window, an environmental monitor must be retained to direct the culvert replacement and ensure minimal to no negative impacts to fish habitat during stream crossing replacement.

Impacts to Fisheries Resources

The project will impact the stream habitat in the immediate vicinity of the road crossing in the following ways:

- A few sapling alders will be removed along the riparian adjacent to the road in order to install the culvert; and
- Mineral soil exposed during the crossing replacement may be introduced into the stream.

Fisheries Mitigation Plan – Creek 1 Deactivation of a stream crossing on the Clapp Basin Road

Mitigation Proposal

To minimize impacts to the physical stream channel:

- Retain all possible riparian vegetation within the riparian management zone; and
- Hand clean any introduced woody debris from the channel and active floodplain, and store it in a location that ensures it will not be reintroduced to the stream channel.

In order to reduce the chance of introducing silt, hydrocarbons and other substances detrimental to the aquatic ecosystem:

- Remove excess mud/dirt from excavators and other machines;
- Ensure all machines are free of hydraulic, cooling, fuel and engine lubrication system leaks;
- Fuel any power equipment or machines outside of the riparian management area;
- Use vegetable based chain oil in chainsaws used within the floodplain and stream channel;
- Store fuel, lubricants and any other toxic materials in a contained area outside of the riparian management area;
- Keep spill kits and absorbent pads readily on site and ensure that operators have a spill containment/cleanup plan; and
- Delay construction activities during periods of heavy rain to avoid sediment run off.

Leandre Vigneault, B.Sc. MTE Inc. September 30, 2011

Fisheries Mitigation Plan – Creek 2 Clapp Basin Road

Fisheries Resource Values

The stream identified as Creek 2 is the second stream crossed after entering private land while driving east from the Rennell Sound FSR along the Clapp Basin Road is not listed in the MOE FISS database. Creek 2 flows into the ocean in Clapp basin downstream of the current road crossing. During the field inspections on June 30th and September 4th, 2011, MTE Inc crew observed that the gradient of the channel upstream of the crossing and the close proximity to the ocean made it possible that the stream can provide freshwater habitat for salmonids and consequently the stream has been defaulted to fish bearing status.

Creek 2 flows in a steep channel which shows signs of having experienced a debris flow in the past few decades. The riparian vegetation is consists of a band of alder along the banks and the debris flow track backed by a young spruce dominated forest. The channel substrate consists of gravel and cobble.

The average channel width just upstream of the road crossing is 1.9 metres.

Proposed Activities

This project proposes to remove the failing existing 1x2m WBC including the two sill logs, excavate a 2.5m wide channel and armour the expose soil with rip-rap to prevent further erosion at the crossing location. It is anticipated that the deactivation will be completed by one excavator working from the camp bank. Recommendations are made to complete the work during dry weather at a time of low flow in order to facilitate sediment control. The following recommendations should be followed during the replacement:

- Install a filter fabric "diaper" under the bridge prior to starting any excavation to capture any road sediment and woody debris that will be dislodged during the excavation of the road cap and stringers;
- Install a drain pipe under the filter fabric of sufficient size to take all of the flow of the creek should the fabric diaper be weighed down by road sediment during the culvert removal;
- Carefully excavate existing road material down to the bridge stingers using a "clean up" bucket. Temporarily store excavated material that will be reused outside of floodplain of the stream, haul any material that will not be reused away from the riparian area of the creek and dispose of it appropriately;
- If possible, hand excavate the majority of the remaining road material from between the wood stringers prior to removing them;
- Carefully remove the filter fabric diaper and drain pipe trying not to introduce any of the road sediment into the stream channel;
- Remove the woods and camp bank sill logs and re-contour banks to the angle of repose;
- Armour the exposed soils to prevent erosion and sediment introduction in future taking care to ensure that the final channel width is between 2 and 2.5m;

Fisheries Mitigation Plan – Creek 2 Deactivation of a stream crossing on the Clapp Basin Road

• Hand clean any road material and debris that falls into the stream channel.

The in-stream work window for this area is June 15th to August 15th. If the project is completed outside the in-stream work window, an environmental monitor must be retained to direct the culvert replacement and ensure minimal to no negative impacts to fish habitat during stream crossing replacement.

Impacts to Fisheries Resources

The project will impact the stream habitat in the immediate vicinity of the road crossing in the following ways:

- A few sapling alders will be removed along the riparian adjacent to the road in order to install the culvert; and
- Mineral soil exposed during the crossing replacement may be introduced into the stream.

Mitigation Proposal

To minimize impacts to the physical stream channel:

- Retain all possible riparian vegetation within the riparian management zone; and
- Hand clean any introduced woody debris from the channel and active floodplain, and store it in a location that ensures it will not be reintroduced to the stream channel.

In order to reduce the chance of introducing silt, hydrocarbons and other substances detrimental to the aquatic ecosystem:

- Remove excess mud/dirt from excavators and other machines;
- Ensure all machines are free of hydraulic, cooling, fuel and engine lubrication system leaks;
- Fuel any power equipment or machines outside of the riparian management area;
- Use vegetable based chain oil in chainsaws used within the floodplain and stream channel;
- Store fuel, lubricants and any other toxic materials in a contained area outside of the riparian management area;
- Keep spill kits and absorbent pads readily on site and ensure that operators have a spill containment/cleanup plan; and
- Delay construction activities during periods of heavy rain to avoid sediment run off.

Leandre Vigneault, B.Sc. MTE Inc. September 30, 2011

Fisheries Mitigation Plan – Creek 9 Clapp Basin Road

Fisheries Resource Values

The stream identified as Creek 9 is the tenth stream crossed after entering private land while driving east from the Rennell Sound FSR along the Clapp Basin Road and it is not listed in the MOE FISS database. Creek 9 flows into the ocean in Clapp basin approximately 50 metres downstream of the current road crossing. During the field inspections on June 30th and September 4th, 2011, MTE Inc crew observed that the gradient of the channel downstream of the crossing and the close proximity to the ocean made it possible that the stream can provide limited freshwater habitat for salmonids, consequently the stream has been defaulted to fish bearing status.

Creek 9 has been diverted from its original channel and now flows ~ 100m in the upstream camp ditchline before crossing the road through a failing 1x2m WBC. Upstream of the point where the channel is diverted down the road the gradient increased to 18% and there is limited fish habitat potential. Two other smaller streams join Creek 9 from the left hand bank immediately upstream of the road crossing. The riparian vegetation is a young conifer dominated forest upstream of the road crossing. The channel substrate consists of cobble, gravel and boulder.

The channel width just upstream of the road crossing is 3.5 metres.

Proposed Activities

This project proposes to remove the culvert, removing the sill logs, re-contour the banks and armouring the excavated banks with rip-rap prevent further erosion at the crossing location. It is anticipated that the deactivation will be completed by one excavator working from the camp bank. Recommendations are made to complete this project during dry weather at a time of low flow in order to facilitate sediment control. The following recommendations should be followed during the replacement:

- Install a filter fabric "diaper" under the bridge prior to starting any excavation to capture any road sediment and woody debris that will be dislodged during the excavation of the road cap and stringers;
- Install a drain pipe under the filter fabric of sufficient size to take all of the flow of the creek should the fabric diaper be weighed down by road sediment during the culvert removal;
- Carefully excavate existing road material down to the bridge stingers using a "clean up" bucket. Temporarily store excavated material that will be reused outside of floodplain of the stream, haul any material that will not be reused away from the riparian area of the creek and dispose of it appropriately;
- If possible, hand excavate the majority of the remaining road material from between the wood stringers prior to removing them;
- Carefully remove the filter fabric diaper and drain pipe trying not to introduce any of the road sediment into the stream channel;
- Re-contour banks above the sill logs to the angle of repose;

Fisheries Mitigation Plan – Creek 9 Deactivation of a stream crossing on the Clapp Basin Road

- Armour the exposed soils to prevent erosion and sediment introduction in future;
- Hand clean any road material and debris that falls into the stream channel.

The in-stream work window for this area is June 15th to August 15th. If the project is completed outside the in-stream work window, an environmental monitor must be retained to direct the culvert replacement and ensure minimal to no negative impacts to fish habitat during stream crossing replacement.

Impacts to Fisheries Resources

The project will impact the stream habitat in the immediate vicinity of the road crossing in the following ways:

- A few sapling alders will be removed along the riparian adjacent to the road in order to install the culvert; and
- Mineral soil exposed during the crossing replacement may be introduced into the stream.

Mitigation Proposal

To minimize impacts to the physical stream channel:

- Retain all possible riparian vegetation within the riparian management zone; and
- Hand clean any introduced woody debris from the channel and active floodplain, and store it in a location that ensures it will not be reintroduced to the stream channel.

In order to reduce the chance of introducing silt, hydrocarbons and other substances detrimental to the aquatic ecosystem:

- Remove excess mud/dirt from excavators and other machines;
- Ensure all machines are free of hydraulic, cooling, fuel and engine lubrication system leaks;
- Fuel any power equipment or machines outside of the riparian management area;
- Use vegetable based chain oil in chainsaws used within the floodplain and stream channel;
- Store fuel, lubricants and any other toxic materials in a contained area outside of the riparian management area;
- Keep spill kits and absorbent pads readily on site and ensure that operators have a spill containment/cleanup plan; and
- Delay construction activities during periods of heavy rain to avoid sediment run off.

Leandre Vigneault, B.Sc. MTE Inc. September 30, 2011

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| Client | Ministry of Forests Lands Natural Resource | s Invoice # | CBAD322 |
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| | | Period | Sep 1-Sep 30, 2011 |
| Address: | 2100 Labieux Road
Nanaimo, BC, V9T-6E9 | Invoice Date | 5-Mar-12 |
| Contra | act #: CNRHEN47212-204 | Due Date | 5-Mar-12 |
| Attn | Richard Mills, PEng | | an a |
| | | Signature | John Brett |
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Confirmation

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Receive Items: Confirmation Details

Receipt Information Receipt Date 19-Mar-2012 11:51:21

Received Item Details

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FNR-2014-00248 Page 61 of 87



5-522 South Dogwood Street Campbell River, BC V9W-6R4

| Address | Client MFLNRO Coast Forest Region | | | Invoice # MFLNRO 2-185R1 | | | | | |
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| | 2100 Labieux F | Rd, Nanaimo | BC | Period <u>Sept. 1 - Nov. 30, 2011</u>
Invoice Date <u>Dec. 11, 2011</u> | | | | | |
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| | | | | Due Date | Dec. 11, 2 | 011 | | ~ | |
| Contract # | Contract # CNRHEN47212-204 | | | Signature | John | Bro | ett | _ | |
| Attn | Richard Mills I | Peng | | | John Bret | | | - | |
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File: 10005-40/CNRHEN47212-204

September 07, 2011

Callber Bridge and Design Ltd. 304 – 1100 Island Highway Campbell River, British Columbia V9W 8C6

Dear John Brett:

Enclosed for your records is a fully executed copy of Consulting and General Services Contract CNRHEN47212-204 for bridge condition inspection services (2011) – Haida Gwaii Forest District.

If you have any questions, please do not hesitate to contact Richard Mills at 250-751-7108.

Yours truly,

FILE BRY

Vinka MacQueen Finance and Administration West Coast Region

Enclosure

Location: 2100 Labieux Road Nanaimo BC Mailing Address: 2100 Labieux Road Nanaimo BC V9T 6E9

Tel: (250) 751-7001 Fax: (250) 751-7190 FNR-2014-00248 Page 65 of 87



Ministry of Forests, Lands and Natural Resource Operations

Consulting and General Services Contract

| CONTRACT./FILE NO:
10005-40/CNRHEN47212-204 | | THIS AGREEMENT DATED FOR REFERENCE THE
10th DAY OF AUGUST, 2011. |
|--|------------------|---|
| PROJECT DESCRIPTION:
DISTRICT | BRIDGE CONDITION | INSPECTION SERVICES (2011) – HAIDA GWAII FOREST |

BETWEEN:

HER MAJESTY THE QUEEN IN RIGHT OF THE PROVINCE OF BRITISH COLUMBIA, as represented by the MINISTER OF FORESTS, LANDS AND NATURAL RESOURCE OPERATIONS

Coast Forest Region 2100 Labieux Road, Nanaimo B.C. V9T 6E9

Phone Number: (250) 751-7170..... FAX Number: (250) 751-7190 Ministry Representative: Richard Mills E-mail Address: Richard.Mills@gov.bc.ca

(the "Province", "we", "us", or "our" as applicable)

AND:

Caliber Bridge and Design Ltd. 5-522 South Dogwood Street Campbell River BC V9W 6R4

Phone Number: (250) 287-2216...... FAX Number: (250) 287-2216 E-mail Address: john.brett@caliberbridge.ca Contractor Representative: John Brett Corporate Business Number: Contractor's Business Number for taxation purposes WorkSafe BC and/or Personal Optional Protection Number: WCB / POP No.

(the "Contractor", "you", or "your" as applicable)

The Province wishes to retain the Contractor to provide the Services specified in Schedule A and, in consideration for the remuneration set out in Schedule B, the Contractor has agreed to provide those Services, on the terms and conditions set out in this Agreement.

The Province and the Contractor agree as follows:

ARTICLE 1 DEFINITIONS

1.01 In this Agreement, unless the context otherwise requires:

- (a) "Business Day" means a day, other than a Saturday or Sunday, on which Provincial government offices are open for normal business in British Columbia;
- (b) "Incorporated Material" means any material in existence prior to the start of the Term or developed independently of this Agreement, and that is incorporated or embedded in the Produced Material by the Contractor or a Subcontractor;
- (c) "Material" means the Produced Material and the Received Material;

- (d) **"Produced Material**" means records, software and other material, whether complete or not, that, as a result of this Agreement, are produced by the Contractor or a Subcontractor and includes the Incorporated Material;
- (e) "Received Material" means records, software and other material, whether complete or not, that, as a result of this Agreement, are received by the Contractor or a Subcontractor from the Province or any other person;
- (f) **"Record"** is the definition of "record" in the *Interpretation Act* and as incorporated into this Agreement and "records" will bear a corresponding meaning;
- (g) "Services" means the services described in Schedule A;
- (h) "Subcontractor" means a person described in Section 16.05;
- (i) **"Term"** means the term of the Agreement described in Section 3.01 of this Agreement subject to that term ending earlier in accordance with this Agreement; and
- (j) "Unit of Measure" has the meaning described in Schedule B.

ARTICLE 2 CONTRACT DOCUMENTS AND MODIFICATIONS

2.01 The attached schedules are applicable to and form a part of this Agreement:

| Schedule | Title | | |
|--------------|---------------------------|--|--|
| Schedule 'A' | Services | | |
| Schedule 'B' | Payment | | |
| Schedule 'C' | Contract specifications | | |
| Schedule 'D' | Insurance Requirements | | |
| Schedule 'E' | Structures Inventory List | | |

2.02 No modification of this Agreement is effective unless it is in writing and signed by, or on behalf of, the parties.

ARTICLE 3 TERM OF CONTRACT

- 3.01 The Term of this Agreement is from and including August 10, 2011 to and including March 31, 2012 inclusive.
- 3.02 Regardless of the date of execution or delivery of this Agreement, the Contractor must provide the Services during the Term.
- 3.03 Time is of the essence in this Agreement and, without limitation, will remain of the essence after any modification or extension of this Agreement, whether or not expressly restated in the document effecting the modification or extension.

ARTICLE 4 CONTRACTOR'SOBLIGATIONS

- 4.01 You must provide the Services described in Schedule A (the "Services") in accordance with this Agreement.
- 4.02 Unless the parties otherwise agree in writing, you must supply and pay for all labour, materials, equipment, tools, facilities, and approvals and licences necessary or advisable to perform your obligations under this Agreement, including the license under Section 8.04.
- 4.03 Unless otherwise specified in this Agreement, you must perform the Services to a standard of care, skill, and diligence maintained by persons providing, on a commercial basis, services similar to the Services.
- 4.04 You must provide, instruct, and supervise a sufficient number of qualified personnel to enable timely and proper performance and completion of the Services. All such personnel shall be competent, English literate, efficient and qualified by education, training and experience to carry out the tasks to which each is assigned.
- 4.05 We may from time to time give you reasonable instructions (in writing or otherwise) as to the performance of the Services. You must comply with those instructions but, unless otherwise specified in this Agreement, you may determine the manner in which the instructions are carried out.
- 4.06 If we provide an instruction under Section 4.05 other than in writing, you may request that the instruction be confirmed by us in writing, which request we must comply with as soon as it is reasonably practicable to do so.
- 4.07 Requesting written confirmation of an instruction under Section 4.06 does not relieve you from complying with the instruction at the time the instruction was given.
- 4.08 In the performance of your obligations under this Agreement, you must comply with all applicable laws.

ARTICLE 5 PAYMENT

- 5.01 If you comply with this Agreement, we must pay you for the Services at the rates and times described in Schedule B:
 - (a) the fees described in that Schedule, plus any applicable taxes; and
 - (b) the expenses, if any, in accordance with that Schedule if they are supported, where applicable, by proper receipts and, in our opinion, are necessarily incurred by you in providing the Services.

We are not obliged to pay you more than the maximum amount or dollar limit specified in Schedule B on account of fees and expenses.

- 5.02 In order to obtain payment of any fees or expenses, if any, under this Agreement, you must submit written statements of account to us in a form satisfactory to us, but no sooner than the dates referred to in Schedule B.
- 5.03 Without limiting Section 11.01 we may withhold from any payment due to you an amount sufficient to indemnify, in whole or in part, the Province and its employees and agents against any liens or other third-party claims that have arisen or could arise in connection with the provision of the Services. An amount withheld under this section must be promptly paid by the Province to you upon the basis for withholding the amount having been fully resolved to the satisfaction of the Province.
- 5.04 Our obligation to pay money to you is subject to the *Financial Administration Act*, which makes that obligation subject to an appropriation being available in the fiscal year of the Province during which payment becomes due.
- 5.05 Unless otherwise specified in this Agreement, all references to money are to Canadian dollars.
- 5.06 If you are not a resident in Canada, you acknowledge that we may be required by law to withhold income tax from the fees described in Schedule B and then to remit that tax to the Receiver General of Canada on your behalf.
- 5.07 Without limiting Section 16.11(a), you must not, in relation to performing your obligations under this Agreement, commit or purport to commit us to pay any money except as may be expressly provided for in this Agreement.
- 5.08 You must apply for and, immediately on receipt, remit to us any available refund, rebate, or remission of federal or provincial tax or duty that the Province has paid or reimbursed to you or agreed to pay or reimburse to you under this Agreement.

ARTICLE 6 REPRESENTATIONS AND WARRANTIES

- 6.01 As at the date this Agreement is executed and delivered by, or on behalf of, the parties, you represent and warrant to us as follows:
 - (a) except to the extent you have previously disclosed otherwise in writing to us:
 - (i) all information, statements, documents and reports furnished or submitted by you to us in connection with this Agreement (including as part of any competitive process resulting in this Agreement being entered into) are in all material respects true and correct,
 - (ii) you have sufficient trained staff, facilities, materials, appropriate equipment and approved subcontractual agreements in place and available to enable you to fully perform the Services, and
 - (iii) you hold all permits, licenses, approvals and statutory authorities issued by any government or government agency that are necessary for the performance of your obligations under this Agreement; and
 - (b) if the Contractor is not an individual:
 - (i) you have the power and capacity to enter into this Agreement and to observe, perform and comply with the terms of this Agreement and all necessary corporate or other proceedings have been taken and done to authorize the execution and delivery of this Agreement by, or on behalf of, you, and
 - (ii) this Agreement has been legally and properly executed by, or on behalf of, you and is legally binding upon and enforceable against you in accordance with its terms except as enforcement may be limited by bankruptcy, insolvency or other laws affecting the rights of creditors generally and except that equitable remedies may be granted only in the discretion of a court of competent jurisdiction.

ARTICLE 7 PRIVACY, SECURITY AND CONFIDENTIALITY

- 7.01 You must comply with the Privacy Protection Schedule if attached to this Agreement.
- 7.02 You must make reasonable security arrangements to protect the Material from unauthorized access, collection, use, disclosure, alteration, or disposal and comply with the Security Schedule, if attached.

- 7.03 You must treat as confidential all information in the Material and all other information accessed or obtained by you or a Subcontractor (whether verbally, electronically or otherwise) as a result of this Agreement, and not permit its disclosure or use without our prior written consent except:
 - (a) as required to perform your obligations under this Agreement or to comply with applicable laws;
 - (b) if it is information that is generally known to the public other than as a result of a breach of this Agreement; or
 - (c) if it is information in any Incorporated Material.
- 7.04 Any public announcement relating to this Agreement will be arranged by us and, if such consultation is reasonably practicable, after consultation with you.
- 7.05 You must not, without our prior written approval, refer for promotional purposes to the Province being your customer or the Province having entered into this Agreement.

ARTICLE 8 MATERIAL AND INTELLECTUAL PROPERTY

- 8.01 If you receive a request for access to any of the Material from a person other than us, and this Agreement does not require or authorize you to provide that access, you must promptly advise the person to make the request to us.
- 8.02 We exclusively own all property rights in the Material that are not intellectual property rights. Any equipment property we may provide to you or a subcontractor is our exclusive property. You must deliver any Material or equipment property to us immediately following expiration of this Agreement, or sooner upon our request, in the same condition it was supplied to you, excepting always loss or damage attributable to reasonable wear or tear.
- 8.03 We exclusively own all intellectual property rights, including copyright:
 - (a) in Received Material that you receive from us, and
 - (b) in Produced Material, other than any Incorporated Material.

Upon our request, you must deliver to us documents satisfactory to us that irrevocably waive in our favour any moral rights that you (or your employees) or a Subcontractor (or its employees) may have in the Produced Material and confirm the vesting in the Province of the copyright in the Produced Material, other than any Incorporated Material.

- 8.04 Upon any Incorporated Material being embedded or incorporated in the Produced Material and to the extent that it remains so embedded or incorporated, you grant us:
 - (a) a non-exclusive, perpetual, irrevocable, royalty-free, worldwide license to use, reproduce, modify, and distribute that Incorporated Material; and
 - (b) the right to sublicense to third-parties the right to use, reproduce, modify and distribute that Incorporated Material.

ARTICLE 9 RECORDS AND REPORTS

- 9.01 You must, upon our request, fully inform us of all work done by you or a Subcontractor in connection with providing the Services.
- 9.02 If Schedule B provides for you to be paid fees at a Unit of Measure rate or for you to be paid or reimbursed for expenses, you must maintain time records and books of account, invoices, receipts and vouchers of expenses in support of those payments, in form and content satisfactory to us. Unless otherwise specified in this Agreement, the Contractor must retain such documents for a period of not less than seven years after this Agreement ends.

ARTICLE 10 AUDIT

10.01 In addition to any other rights of inspection the Province may have under statute or otherwise, we may at any reasonable time and on reasonable notice to you, enter on your premises to inspect and, at our discretion, copy any of the Material and you must permit, and provide reasonable assistance to, the exercise by us of our rights under this section.

ARTICLE 11 INDEMNITY AND INSURANCE

11.01 You must indemnify and save harmless the Province and its employees and agents from any losses, claims, damages, actions, causes of action, costs and expenses that the Province or any of its employees or agents may sustain, incur, suffer or be put to at any time either before or after this Agreement ends, including any claim of infringement of third-party intellectual property rights, where the same or any of them are based upon, arise out of or occur, directly or indirectly, by reason of any act or omission by you or your agents, employees, officers,

directors or Subcontractors in connection with this Agreement (each a uses"), excepting always liability arising out of the independent acts or omissions of the Province and its employees and agents.

- 11.02 You must comply with the insurance requirements in Schedule D, if attached, as those terms may be modified from time to time in accordance with our directions.
- 11.03 Without limiting the generality of Section 4.08, you must comply with, and must ensure that any Subcontractors comply with, all applicable occupational health and safety laws in relation to the performance of your obligations under this Agreement, including the *Workers Compensation Act* in British Columbia or similar laws in other jurisdictions.
- 11.04 At your own expense, and where required under *Workers Compensation Act* in British Columbia, you must obtain WorkSafe BC coverage for yourself, all workers and any shareholders, directors, partners or other individuals employed or engaged in the performance of the Services and you shall ensure all approved Subcontractors obtain WorkSafe BC Coverage.
- 11.05 If you are an individual or a partnership of individuals and do not have the benefit of mandatory workers compensation coverage under the *Workers Compensation Act* in British Columbia, you must apply for and maintain Personal Optional Protection under the *Workers Compensation Act*.
- 11.06 You are responsible for all fines, levies, penalties and assessments made or imposed under the *Workers Compensation Act* and regulations relating in any way to the Services.
- 11.07 Upon our request you must provide us with evidence of your compliance with Sections 11.02, 11.04 and 11.05.

ARTICLE 12 FORCE MAJEURE

- 12.01 An "Event of Force Majeure" means a natural disaster, fire, flood, storm, epidemic or power failure, war (declared and undeclared), insurrection or act of terrorism or piracy, strike (including illegal work stoppage or slowdown) or lockout, or a freight embargo if such event prevents a party from performing its obligations in accordance with this Agreement and is beyond the reasonable control of that party.
- 12.02 An "Affected Party" means a party prevented from performing its obligations in accordance with this Agreement by an Event of Force Majeure.
- 12.03 An Affected Party is not liable to the other party for any failure or delay in the performance of the Affected Party's obligations under this Agreement resulting from an Event of Force Majeure and any time periods for the performance of such obligations are automatically extended for the duration of the Event of Force Majeure provided that the Affected Party complies with the requirements of Section 12.04.
- 12.04 An Affected Party must promptly notify the other party in writing upon the occurrence of the Event of Force Majeure and make all reasonable efforts to prevent, control or limit the effect of the Event of Force Majeure so as to resume compliance with the Affected Party's obligations under this Agreement as soon as possible.

ARTICLE 13 NON-COMPLIANCE WITH AGREEMENT CONDITIONS

- 13.01 An "Event of Default" means any of the following:
 - (a) your failure to perform any of your obligations under this Agreement, or
 - (b) any representation or warranty made by you in this Agreement is untrue or incorrect, or
 - (c) an Insolvency Event, which means any of the following;
 - (i) an order is made, a resolution is passed or a petition is filed, for your liquidation or winding up,
 - (ii) you commit an act of bankruptcy, make an assignment for the benefit of your creditors or otherwise acknowledge your insolvency,
 - (iii) a bankruptcy petition is filed or presented against you or a proposal under the *Bankruptcy and Insolvency Act* (Canada) is made by you,
 - (iv) a compromise or arrangement is proposed in respect of you under the *Companies' Creditors Arrangement Act* (Canada),
 - (v) a receiver or receiver-manager is appointed for any of your property, or
 - (vi) you cease, in our reasonable opinion, to carry on business as a going concern.
- 13.02 On the happening of an Event of Default, or at any time thereafter, we may, at our option, elect to do any one or more of the following:

- (a) by written notice to you, require that the Event of Default be remedied within a time period specified in the notice;
- (b) pursue any remedy or take any other action available to us at law or in equity; or
- (c) by written notice to you, terminate this Agreement with immediate effect or on a future date specified in the notice, subject to the expiration of any time period specified under Section 13.02(a).
- 13.03 No failure or delay on our part to exercise our rights in relation to an Event of Default will constitute a waiver by us of such rights.
- 13.04 If you become aware that an Event of Default has occurred or anticipates that an Event of Default is likely to occur, you must promptly notify us of the particulars of the Event of Default or anticipated Event of Default. A notice under this section as to the occurrence of an Event of Default must also specify the steps you propose to take to address, or prevent recurrence of, the Event of Default. A notice under this section as to an anticipated Event of Default must specify the steps you propose to take to prevent the occurrence of the anticipated Event of Default must specify the steps you propose to take to prevent the occurrence of the anticipated Event of Default.

ARTICLE 14 TERMINATION

- 14.01 In addition to our right to terminate this Agreement under Section 13.02(c) on the happening of an Event of Default, we may terminate this Agreement for any reason by giving at least 5 days' written notice of termination to you.
- 14.02 Unless Schedule B otherwise provides, if we terminate this Agreement under Section 14.01:
 - (a) we must, within 30 days of such termination, pay you any unpaid portion of the fees and expenses described in Schedule B which corresponds with the portion of the Services that was completed to our satisfaction before termination of this Agreement; and
 - (b) you must, within 30 days of such termination, repay to us any paid portion of the fees and expenses described in Schedule B which corresponds with the portion of the Services that we have notified you in writing was not completed to our satisfaction before termination of this Agreement.
- 14.03 The payment by us of the amount described in Section 14.02(a) discharges us from all liability to make payments to the Contractor under this Agreement.

ARTICLE 15 DISPUTE RESOLUTION

- 15.01 In the event of any dispute between the parties arising out of or in connection with this Agreement, the following dispute resolution process will apply unless the parties otherwise agree in writing:
 - (a) the parties must initially attempt to resolve the dispute through collaborative negotiation;
 - (b) if the dispute is not resolved through collaborative negotiation within 15 Business Days of the dispute arising, the parties must then attempt to resolve the dispute through mediation under the rules of the British Columbia Mediator Roster Society; and
 - (c) if the dispute is not resolved through mediation within 30 Business Days of the commencement of mediation, the dispute must be referred to and finally resolved by arbitration under the *Commercial Arbitration Act*.
- 15.02 Unless the parties otherwise agree in writing, an arbitration or mediation under Section 15.01 will be held in Victoria, British Columbia.
- 15.03 Unless the parties otherwise agree in writing or, in the case of an arbitration, the arbitrator otherwise orders, the parties must share equally the costs of a mediation or arbitration under Section 15.01 other than those costs relating to the production of expert evidence or representation by counsel.

ARTICLE 16 GENERAL

- 16.01 Any notice or document contemplated by this Agreement, to be effective, must be in writing and delivered as follows:
 - (a) hand delivered to the party or the specified party representative, in which case it will be deemed to be received on the day of its delivery; or
 - (b) by prepaid post to the party's address specified on the first page of this Agreement, in which case if mailed during any period when normal postal services prevail, it will be deemed to be received on the fifth Business Day after its mailing; or

- (c) delivered by courier service to the party's address specified on the mist page of this Agreement, in which case it will be deemed received on the fifth Business Day after collection by the courier service; or
- (d) by facsimile or electronic transmission to the specified facsimile number or Email address on the first page of this Agreement, in which case it will be deemed to be received on the day of transmittal unless transmitted after the normal business hours of the addressee or on a day that is not a Business Day, in which cases it will be deemed to be received on the next following Business Day.
- 16.02 Either party may from time to time give notice to the other party of a substitute address, Email address, or fax number, which from the date such notice is given will supersede for purposes of Section 16.01 any previous address, Email address, or fax number specified for the party giving the notice.
- 16.03 You must not assign your rights under this Agreement without our prior written consent.
- 16.04 You must not subcontract any of your obligations under this Agreement without our prior written consent, excepting persons listed in Schedule A.
- 16.05 No subcontract, whether consented to or not, relieves you from any obligations under this Agreement. You must comply with the Subcontracting Schedule if attached to this Agreement. You must ensure that any person retained by you or any person retained by a person retained by you fully complies with this Agreement in performing the subcontracted obligations.
- 16.06 We may, for reasonable cause, object to the use of a proposed Subcontractor and require you to retain another qualified subcontractor.
- 16.07 A waiver of any term or breach of this Agreement is effective only if it is in writing and signed by, or on behalf of, the waiving party and is not a waiver of any other term or breach.
- 16.08 This Agreement and any modification of it constitute the entire Agreement between the parties as to performance of the Services.
- 16.09 Sections 4.08, 5.01 to 5.04, 5.07, 5.08, 7.01 to 7.05, 8.01 to 8.04, 9.01, 9.02, 10.01, 11.01, 11.02, 11.07, 12.01 to 12.04, 13.02, 13.03, 14.02, 14.03, 15.01 to 15.03, 16.01, 16.02, 16.09, and 16.11, any accrued but unpaid payment obligations, and any other sections of this Agreement (including schedules) which, by their terms or nature, are intended to survive the completion of the Services or termination of this Agreement, will continue in force indefinitely, even after this Agreement ends.
- 16.10 The schedules to this Agreement (including any appendices or other documents attached to, or incorporated by reference into, those schedules) are part of this Agreement.
- 16.11 In relation to the performance of your obligations under this Agreement, you are an independent contractor and not our:
 - (a) employee or partner; or
 - (b) agent except as may be expressly provided for in this Agreement.

You must not act or purport to act contrary to this section.

- 16.12 You must not do anything that would result in personnel hired or used by you or a Subcontractor in relation to providing the Services being considered our employees.
- 16.13 If one or more individuals are identified in the schedules as "Key Personnel", you must cause those individuals to perform the Services on your behalf and not remove or replace them, without our prior written approval. Any approved replacement is at your expense.
- 16.14 We must make available to you all information in our possession which we consider pertinent to the performance of the Services.
- 16.15 You must not provide any services to any person in circumstances which, in our reasonable opinion, could give rise to a conflict of interest between your duties to that person and your duties to us under this Agreement.
- 16.16 If there is a conflict among provisions of this Agreement, a provision in the body of this Agreement will prevail over any conflicting provision in, attached to, or incorporated by reference into a schedule, unless that conflicting provision expressly states otherwise and a provision in a schedule will prevail over any conflicting provision in a document attached to or incorporated by reference into a schedule, unless the schedule expressly states otherwise.
- 16.17 This Agreement does not operate as a permit, license, approval or other statutory authority which you may be required to obtain from the Province or any of its agencies in order to provide the Services. Nothing in this

Agreement is to be construed as interfering with, or fettering in any manner, the exercise by the Province or its agencies of any statutory, prerogative, executive or legislative power or duty.

- 16.18 If any provision of this Agreement or the application of it to any person or circumstance is invalid or unenforceable to any extent, the remainder of this Agreement and the application of such provision to any other person or circumstance will not be affected or impaired and will be valid and enforceable to the extent permitted by law.
- 16.19 Each party must perform the acts, execute and deliver the writings, and give the assurances as may be reasonably necessary to give full effect to this Agreement.
- 16.20 This Agreement is governed by, and is to be interpreted and construed in accordance with, the laws applicable in British Columbia.

ARTICLE 17 INTERPRETATION

- 17.01 In this Agreement:
 - (a) "we", "us", and "our" refer to the Province alone and never refer to the combination of the Contractor and the Province;
 - (b) the Contractor and the Province are referred to as "the parties" and each of them as a "party";
 - (c) "includes" and "including" are not intended to be limiting;
 - (d) unless the context otherwise requires, references to sections by number are to sections of this Agreement;
 - (e) "attached" means attached to this Agreement when used in relation to a schedule;
 - (f) unless otherwise specified, a reference to a statute by name means the statute of British Columbia by that name, as amended or replaced from time to time;
 - (g) the headings have been inserted for convenience of reference only and are not intended to describe, enlarge or restrict the scope or meaning of this Agreement or any provision of it;
 - (h) "person" includes an individual, partnership, corporation or legal entity of any nature; and
 - (i) unless the context otherwise requires, words expressed in the singular include the plural and vice versa.

ARTICLE 18 EXECUTION AND DELIVERY

18.01 This Agreement may be entered into by a separate copy of this Agreement being executed by, or on behalf of, each party and that executed copy being delivered to the other party by a method provided for in Section 16.01 or any other method agreed to by the parties.

The Parties have executed this Agreement as follows:

| SIGNED AND DELIVERED on behalf of the Province by | SIGNED AND DELIVERED by or on behalf of the |
|---|---|
| an authorized representative of the Province | Contractor (or by an authorized signatory of the Contractor |
| | if a corporation) |
| (Authorized Ministry Expense Authority) | (Contractor or Authorized Signatory) |
| Peter Wyatt | John Brett |
| (PRINTED NAME of Ministry Expense Authority) | (PRINTED NAME of Contractor) |
| Dated this day of, 20, | Dated this 22 day of August , 20 11 |

Haida Gwaii



Ministry of Forests, Lands and Natural Resource Operations

File: 10005-40/CNRHEN47212-205

Attachment to the Agreement with Caliber Bridge and Design Ltd. for Bridge inspection Services for the Haida Gwaii Forest District.

THE SERVICES

The Contractor shall provide the following Services:

Provide Bridge Inspection Services as described in Schedule C – Contract Specifications

KEY PERSONNEL

The Services shall be performed by the following "Key Personnel":

- 1. John Brett
- 2. Chuck Brown

and there shall be no substitution for the person(s) listed above without the prior consent of the Province.

SUBCONTRACTORS

Only the following are approved by the Province to be Subcontractors under this Agreement:

N/A

Schedi..e B – Payment



1. Fees

Bidders are required to fill out all items in Table 1: Schedule of Prices. The Ministry may add or delete up to 20% of the total number of structures at any time during the contract, without any claim of compensation for losses or damages that may have been incurred by the consultant for works not yet undertaken. For additions are deletions of structures greater than 20% of the total number of structures, unit rates shall be re-negotiated or completed at the force account rate provided in the Schedule of Prices, with the method of payment selected at the sole discretion of the Ministry.

Provisional items in the Schedule of Prices are provided to the Ministry to establish unit rates for works that may or may not be required. Written Ministry authorization is required prior to proceeding with any provisional work. There shall be no claim for compensation or damages for provisional works not authorized by the Ministry.

The term "All-Found" in the Schedule of Prices shall mean expenses such as overhead, documentation and final report and preparation of all other deliverables; professional, technical and other labour expenses; travel including truck, ATV, ferries, commercial plane flights; accommodation and meals necessary to complete the contract are all included in the bidder's unit prices.

Identify any administration and overhead and profit costs that would be charged to the contract for invoicing and issuing payment related to Helicopter and/or applicable float plane transportation costs in the Prime Sum Overhead and Profit line item.

Helicopter and/or float plane transportation will be provided by the consultant using the Ministry of Forests, Land and Natural Resource Operations (MFLNRO) pre-approved flight sub-contractors. Current MFLNRO flight rates shall apply.

A prime sum has been included in Schedule A – Table 1: Schedule of Prices to cover applicable helicopter and/or float plane transportation expenses for the project. This prime sum is provisional and shall be used for actual helicopter transportation and/or applicable float plane transportation expenses only. The line item for Prime Sum Overhead and Profit shall be paid out in proportion to the actual prime sum expenditure. The successful proponent shall obtain written authorization from the MFLNRO representative prior to any helicopter and/or float plane transportation expenditor.

As per the Agreement, the Province will hold-back 10% of the calculated payment amount from each invoice. The holdback will be retained for 40 calendar days after completion, or earlier termination, of all Services in accordance with the Province's Builder Lien Act.

| tem
No. | Item or Description of Work | Unit of
Measure
ment | A
Estimated
Quantity | B
Price Per
Unit
Excluding
HST | C
Extended \$\$.¢¢
Amount
Excluding HST
(C = A x B) |
|------------|---|---|----------------------------|--|---|
| 1 | TYPE 1 Routine Condition Inspections
accessible by truck , within the Haida
Gwaii Forest District | Per
Structure
(All-Found) | I I | | \$11,484.00 |
| | Crew and truck field services
(provisional) | Hourly Rate
(All-Found) | s.21 | | \$1,000.00 |
| 3 | Provide bridge data entry services
using the Ministry computer bridge
registry systems via internet
connection accessed from the
consultant's office. (provisional) | Daily rate
(based on
7.5 hours
per day)
(All-Found) | | | \$900.00 |
| I | | Part A: To | otal Estimat | ted Bid Price: | \$13,384.00 |

2. Expenses

We will pay you the following expenses at cost (HST excluded) provided they are supported, where applicable, by proper receipts or copies of receipts:

a. **Helicopter and boat travel** expenses to access remote bridges shall be paid for by the MFLNRO. This type of transportation shall be arranged through the Ministry Representative. BC Ferry costs are NOT included as Ministry paid expense.

4. Submission of invoice

- 4.01 In order to obtain payment for any fees and, where applicable, expenses under this Agreement (**HST excluded**), you must submit an invoice, to be submitted monthly after commencing work, (with the exception that invoices for helicopter expense may be submitted upon receipt of the invoice from helicopter subcontractor), showing the following:
 - (a) your legal name, address, the date and the period of time which the invoice applies ("Billing Period"), and the contract number;
 - (b) the calculation of all fees claimed under this Agreement for the Billing Period, with hours, dates, rates, and name(s) of persons providing the Services, including a declaration that the Services have been completed;
 - (c) a chronological listing, in reasonable detail and with dates, all expenses claimed by you under this Agreement for the Billing Period with receipts or copies of receipts, where applicable, attached; and
 - (d) any other billing information reasonably requested by us.
- 4.02 Within thirty-one days of our receipt of your invoice, or the date we authorize payment, whichever is the latter, we must pay you fees and, where applicable, expenses for those Services we determined were satisfactorily received during the Billing Period.
- 4.03 Invoices are to be submitted to: Ministry Representative
 Richard Mills, P. Eng., Bridge Engineer (250) 751-7170
 Ministry of Forests, Land and Natural Resource Operations Coast Forest Region
 2100 Labieux Road, Nanaimo, BC V9T 6E9
- 4.04 The **Expenses Claim Form** is the recommended format for claiming expenses on your invoice. You can access the Expenses Claim Form from:

Excel Spreadsheet format: <u>http://www.for.gov.bc.ca/isb/forms/lib/FS1-B1.xlsx</u>

PDF file format: http://www.for.gov.bc.ca/isb/forms/lib/FS1-B1.pdf



Schedule C – Contract Specifications

1.0 Background

The Ministry of Forests, Land and Natural Resource Operations (MFLNRO) carries out inspections of its bridges and culverts on variable cycle. The inspections consist of routine inspections as defined in the most recent version of the Engineering Manual. In summary these are described as;

1.1 Types of Inspections

Routine Inspections (Type 1) are visual inspections of each structure and all components that are "readily accessible" which means all areas that are accessible using an eight foot step ladder. It does not include areas that require climbing, extension ladders, or other special access. The inspection is to; (a) ensure continued safety of users by detecting and monitoring problems, (b) identify and recommend repairs, (c) identify defects or conditions that warrant a close proximity inspection.

Log stringer bridges that are identified for a routine inspection shall be fully inspected to the extent described in Section 8.3.

Close Proximity Inspections (Type 2)

Close proximity inspections are generally carried out to review complex, larger structures requiring as-built measurements and sketches of primary structural components. All close proximity inspections must be carried out by a professional engineer or under a professional engineer's direct supervision.

Professionals providing this service have the mandatory knowledge and skills requirements listed under service category P06 (Professional Condition Inspection and Evaluation of Forest Road Bridges and Major Culverts) of the ministry's Engineering Equipment and Services (EES) directory (link: http://www.for.gov.bc.ca/hth/engineering/EES-Consultants.htm)

The services covered in this agreement include:

| Type 1 | Routine Inspections and close proximity inspection of log bridges |
|-------------|---|
| inspections | and culverts with soffit height accessible using 8' step ladder |
| Туре 2 | Close proximity inspection includes providing as-built sketches of |
| inspections | primary structural components for factory fabricated bridges. |
| Note: | Mandatory 1 day orientation at region or district office with all key |
| | personnel who will be doing inspections as determined by the |

Page 1 of 9



Ministry of Forests, Lands and Natural Resource Operations Schedule C – Contract Specifications

ministry.

Structures to be inspected are listed in the SCHEDULE E – STRUCTURES INVENTORY LIST. For unit prices and other financial administrative information refer to SCHEDULE B – PAYMENT.

2.0 Qualifications

The inspection crew shall consist of at least one Key Person named in this Contract.

The consultant shall submit proof and references for key personnel that demonstrate they meet the knowledge and experience requirements with their proposal. The Ministry shall be the sole and final judge of the sufficiency of the proof provided.

Mandatory Knowledge Requirements

To be considered a qualified inspector for this contract, the inspector must have a minimum of the following experience and/or training in either of clause I or II below:

I. A solid understanding of the fundamentals of load rating and inspection of structures. Upon request of the Ministry, the Proponent must provide a written statement of business organization and workforce availability, satisfactory to the Ministry. If, in the opinion of the Ministry, the statement fails to demonstrate that the Proponent is able to successfully complete the Contract, the Ministry has the right to disqualify the Proponent and award the Contract to another bidder.

Experience conducting bridge inspections and relevant education to the extent described as follows:

- (a) has carried out routine and/or close proximity inspection on forestry bridges over 3 or more successive years under direction of a professional engineer.
- (b) has completed routine and/or close proximity inspection on a minimum of 300 forestry type bridges including log, steel, concrete and glulam bridges,
- (c) registered member in good standing in either the Association of Professional Engineers and Geoscientists of BC, the Association of BC

Forest Professionals, or the Applied Science Technologists and Technicians of BC.

II. Professional engineering load rating and inspecting of bridges and structures experience that is acceptable to the Regional Engineering Officer.

3.0 Tools & Equipment

The inspection crew shall be equipped with appropriate tools such as the following:

- (a) Digital camera with flash suitable for high quality photos (minimum 4 Mega Pixel photos to be provided),
- (b) 4WD vehicle with two way radios frequency to communicate with logging traffic, and 2 Traffic Warning signs (MOT signing manual type C-004 750x750mm or equivalent).
- (c) GPS unit for recording location within 10 meters as: Latitude and Longitude in degrees, minutes, seconds
- (d) 8 foot step ladder (for routine) and/or 26 foot extension ladder (for close proximity)
- (e) hip waders,
- (f) increment borer or 6-9 mm diameter drill (450 mm or longer) with treated plugs
- (g) measuring devices (including diameter tape, callipers, 30m tape, 3m pocket tape),
- (h) flathead screwdriver for scraping or probing.
- (i) axe
- (j) satellite phone
- (k) hand compass and clinometer
- (I) wisk broom, wire brush, shovel
- (m) binoculars and flashlight
- (n) rock hammer, 5' chain, plumb bob and carpenters level
- (o) inspection forms and clipboard, field books, lumber crayon
- (p) ropes and safety harness, warning signs, "c" clamps, first aid kit, personal floatation device

4.0 Equipment and Materials supplied by the Ministry:

- (a) copy of most recent inspection report
- (b) delineators and materials for minor maintenance

Any equipment supplied by the Ministry to the Consultant shall be returned prior to final billing.

5.0 Safety

Contractors shall ensure Occupational Health and Safety Regulations safe practices and are followed for carrying out the work. This includes but is not limited to; Working Alone or in Isolation (General), Fall Protection, Ladders Scaffolding and Temporary Work Platforms, Traffic Control and Designated Safe Work Area (Forestry Operations), Confined Spaces, Personal and Protective Clothing and Equipment, Buoyancy Equipment.

The bridge deck and 15m on either side shall be considered a Designated Safe Work Area for the period of the inspection and Traffic Control measures (Forestry Operations 26.14.3) shall be provided by the consultant. Traffic Control appropriate to the hazard is required, and is dependent on site conditions (level of traffic, site distances, and the nature of the inspection). It may include one or more of the following:

- (a) radio notification for short duration closures on radio controlled roads
- (b) providing warning signs on bridge approaches
- (c) temporary blocking the bridge to traffic using a motor vehicle or barricades,
- (d) use of flag persons.

The contractor shall provide a minimum of 2 working days notice to the District contact if bridge closure are required for inspections for periods greater than 15 minutes.

6.0 Schedule and Liaison with Forest Districts

Before commencing work the contractor shall provide an estimated schedule of work, and shall update this periodically with the Ministry Representative. The contractor shall also contact the designated Forest District contact and advise them of commencement of work. Pre-work meetings with designated forest district and BCTS engineering contacts are required to take place before commencement of inspections. The contractor shall provide a minimum of 2 business days notice prior to pre-work meeting.

| District | Contact Name | Phone and e-mail |
|-----------------|-------------------------|------------------|
| | (Engineering Officer) | |
| South Island | Ed Kleywegt | 250 731-3021 |
| Chilliwack | Jeff Ladd & Jim Neuman | 604 702-5772 |
| Squamish | Malcolm Schulz | 604 898-2139 |
| Sunshine Coast | Trent Meyer | 604 485-0771 |
| Queen Charlotte | Larry Duke | 250 559-6223 |
| Islands | | |
| Campbell River | Chris Peterson | 250 286-9315 |
| North Island | Chris Walker | 250 956-5055 |
| Central Coast | | |
| | | |
| BCTS | Mike McCulley | 250 956-5080 |
| Seaward/Tlasta | | |
| Chinook BCTS | Kelvin Mui (Chilliwack) | 604 702-5741 |
| Business Area | Tom Johnson (Queen | 250 559-6231 |
| | Charlotte) | |

The District Contacts are:

If requested, the Consultant shall comply with District check in/check out procedures.

7.0 Access and Missed Inspections

Detailed maps are not available at this time. Upon award of the contract it will be the responsibility of the Contractor to ascertain exact locations of the structures.

Upon request, Contractors will be provided with recent inspection reports for structures, in order to help locate and identify structures.

If a road system is found to be impassable by 4wd, the remainder of the structures on the road system beyond the impassable point shall be deleted from the contract and the fees shall be adjusted accordingly, or the Ministry shall provide alternate access (air or other methods).

Structures that are deleted from the contract due to blocked access shall be compensated for the labour and expense incurred in attempting to access the structures.

Where the road system is found to be impassable, the Ministry Contract Coordinator must be advised as soon as possible to allow for adequate time to make new arrangements.

The contractor shall be responsible for locating the correct structure. Incorrect crossings inspected by the contractor shall not be paid for unless the information MFLNRO provides is found to be in error.

The contractor shall contact the MFLNRO District contact person to verify FSR locations and query extent of access along the road, and coordinate with the MFLNRO District. In addition, the contractor should schedule work to ensure areas with the risk of early snow are completed before access may become an issue.

8. Scope of Work

This contract includes completion of inspections as specified in Schedule E inventory list and as described below.

8.1 Office Review

Review the most recent inspection reports and items that require monitoring from previous inspection, with applicable District prior to inspections.

8.2 Field

- 1. Install Traffic Control as required
- 2. Review the most recent inspection report and update (or note) site data including but not limited to: verify GPS location (NAD 83 LAT/LONG format), site and structure descriptors.
- 3. Review items that required monitoring (from previous inspection) and note conditions.
- 4. Perform the inspection in accordance with a format consistent with CBR, noting deficiencies and levels of deterioration using the rating values⁽¹⁾.
- 5. Photograph (minimum 4 mega pixel photos) defects and items that require monitoring. For all bridges provide at least one photograph showing the bridge and approaches, and one showing the structure in elevation view, and one of each abutment, and at least one photograph of the underside of the bridge. Photograph visible fabrication stamps containing structure identification, load rating, and inventory information.
- 6. Collect sufficient information including ⁽²⁾notes and sketches required to perform a calculation for a reduced load rating if warranted; such that the Ministry would be able do so without delay and without having to return to the structure for further data collection.
- 7. For each recommended repair, provide an estimated quantity of materials required, and explanatory ⁽²⁾ notes and sketches to describe the work, and rank⁽³⁾ each defect in terms of priority.
- 8. Identify specific access needs for future inspection (if required)
- 9. Identify any component(s) or conditions that require inspection by a professional engineer.
- 10. Identify any structure that was not inspected along with reasons why not.

⁽¹⁾ Rating Values

The rating of bridge and culvert elements as listed on the inspection forms shall be completed using the appropriate grading as defined below:

| Excellent | Elements are new and properly installed |
|-------------------------|---|
| Good | Elements are structurally sound, in good repair and have minimal wear |
| Fair | Elements are structurally sound but show moderate wear or preliminary indications of rot, rust or corrosion |
| Poor | Elements may be structurally unsound, major items in need of repair or replacement or the load rating reduced |
| Not Applicable
(N/A) | Elements are not present on structure being inspected |

⁽²⁾ Notes and Sketches

 As applicable to a given structure, observations shall include comments on the following components to describe the repair, or to provide information for load rating. They should be clearly identified as to location in bridge (e.g., abutment #1;pier #2 — pile #2; span #2 — stringer #4), complete with a sketch detailing the problem (e.g. length, width and depth of a crack).

⁽³⁾ Ranking defects in terms of priority and risk

| Priority | Description | |
|------------|--|--|
| H - High | Defects which should be addressed immediately that may endanger
users or are compromising the structure (e.g extensive rot, scour,
damage, washouts, etc) | |
| M - Medium | Defects that affect the strength, durability or life span of the structure in the short term (may be required before next inspection and/or is subject to level of use, e.g. scour, culvert separation or loss of shape) | |
| L - Low | Defects that affect long term strength, durability or life span of the structure and could be monitored or replaced subject to level of use. | |

8.2 Urgent Notification: If during the course of an inspection the inspector finds a structural defect that requires immediate attention, the inspector shall within 48 hours of their findings report to the Regional Bridge Engineer and District Contact of any deficiency that may cause the bridge to be unsafe to users. This report is to be followed with an e-mail with attached pictures.

8.3 Log stringers, log cribs, untreated timbers and treated timbers shall be inspected for rot during routine inspections using the methods and guidelines provided below. Where the stringers, untreated timbers and treated timbers cannot be satisfactorily accessed using an 8 foot step ladder (routine inspections), the contractor shall notify the Ministry Representative immediately and may be required to complete the inspection as a close proximity inspection using an extension ladder or snooper truck.

If rot is found in wood components, the Inspector shall assess the significance of the rot (e.g. location and extent), and record dimensions of the members and span of bridge, shall estimate section loss a mid-span and bearings, and record depth of gravel deck (if applicable). The Inspector shall determine whether structural deficiencies require evaluation by a professional engineer, or can be rectified with suitable minor repairs, or recommend increased inspection frequency and monitoring.

Log Bridge Inspection Requirements

For all log bridges, the following must be inspected and recorded where accessible:

- species, diameter, rot depth for all stringers, needle beams and guardrails.;
- span, diameter, crib information
- Drill stringers at bearing and where defects are noted in log. Drill or probe for surface rot. Drill to log center when stringers are of concern due to surface rot, significant defects and age (see table above for when drilling should be done to center).
- Look for cracks, splits, insect damage.

- Look at bearing for stringer or sill/crib crushing.
- Tightness of lashing, size of cable, configuration and location of lashing.

Visual indicators of log defects.

- Conk, indicates significant surface/internal rot within usually 3m of either side of an individual conk. Consider log invalid for load rating.
- Stress cracks indicate logs have been over loaded. Will usually see these within 0.5-1.5 meter of bearing points and at center span.
- Large knots/spiral grain logs will concentrate stress and fail sooner as a result of defect.
- Internal rot (heart rot) will build up from the ends as they are exposed to constant change of air/moisture content and exposed to gravel. Drill for heart rot at this location.
- Cat face or butt logs will also have internal rot especially in Cedar.
- Drill resistance and condition of fibre chips will be indicators of wood quality.
- Monitor for excessive moisture which will result in a higher unit weight for the logs.

8.4 Inventory/Inspection Forms: the contractor shall collect sufficient information to complete Site and Structure Inventory Forms. As part of this inventory, the contractor shall carry out a routine visual inspection using the forms FS 1337A, 1337B, 1337C (for inspection of log stringer bridges, steel/concrete bridges, and culverts).

Inventory shall be in the format of forms FS 1342, 1343, 1344 (for site inventory data, culvert inventory data, bridge inventory data) and shall provide sufficient information and detail for a bridge engineer to complete a load rating.

These forms are available at the Forest Service website: www.for.gov.bc.ca/hth/engineering/bridges_forms_templates.htm

9.0 Deliverables

The Consultant shall provide a copy of the field inspection forms *signed by the key person*, as-built information, sketches with relevant field notes, measurements, and photographs depicting pertinent structure information and conditions from observations.

Submission of Inspection Reports and supporting documents

1. Inspections are to be recorded on hand forms. Field inspection data shall be as per the data required on the inspection forms. Poor condition components will require a description statement. Photos form a part of the inspection data and shall be digital in a JPG format correctly and labelled.

- 2. Prepare CD of inspection photos in JPG format. Photos for each bridge shall be placed in a single folder named by Bridge Site Number. Each CD shall be labels "Bridge Inspection Photos", District(s) name, Date (year).
- 3. Submit signed copies of inspection and inventory forms
- 4. Submit completed hand-written inventory and inspection forms, notes and/or sketches for inventory updates and as built inspection data, scanned into PDF files.
- 5. In addition to submission of a CD of inspection photos as specified in point 1 above, hard copies of photographs must be submitted, printed on 8.5" x 11" paper, formatted to display four color photographs of a single structure per page, labelled with each structure number, and inserted following each inspection report.
- **10.0 Quality Assurance:** the MFLNRO will request to review a sample of the completed inspections for quality assurance during the term of contract (including data entry if electronic forms are required). The contractor shall provide all materials including photos, notes and sketches, and completed inspection and inventory forms upon request.

If in the view of the Ministry Representative the inspections are substandard, the contractor may be required to stop work and submit additional inspections for review (including electronic data entry (if specified)). At its sole discretion the Ministry may then direct the contractor to re-inspect those bridges or culverts, or may terminate the contract with no additional payments.