



The Village of
PORT CLEMENTS
"Gateway to the Wilderness"

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Port Clements, BC
V0T1R0
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Invitation to bid in regards to
Wharf Repairs at the Rainbow Wharf
Located at 113 Bayview Drive Port Clements, BC.

Issue Date: April 30, 2016
Closing Date: May 13, 2016

Purpose: The Village of Port Clements is inviting bids from qualified contractors to provide construction services for repairs to the Rainbow Wharf.

Instructions: Sealed bids will be received by the office at #36 Cedar Avenue West Port Clements until 1pm Friday May 13, 2016. Bids received after this time will not be considered. Bids may be faxed, mailed or emailed per information provided in the header.

Conditions: The Contractor shall, at their own expense, provide the Village of Port Clements a comprehensive liability insurance policy in an amount of not less than two million dollars all inclusive. The insurance shall be maintained during the continuance of this agreement and shall insure both the Contractor and the Village.

The Contractor shall indemnify and save harmless the Village of Port Clements from any and all liability whatsoever and against any and all actions, damages, liens, claims and demands of every nature arising out of the performance by the Contractor, his employees, officers or agents of this agreement.

The Contractor shall provide WorkSafeBC coverage for all workers on the payroll. Please include your WorkSafeBC Registration number with your bid.

The Contractor must have the necessary competence, experience and equipment to carry out all aspects of the work of this contract.

The work area shall be maintained in an orderly manner and shall not be encumbered with equipment, materials or debris.

The Village has the option of holding back 10% of the contract price for up to 42 days after initial acceptance of the work.

The price stated in the bid shall include all labour, materials, equipment, travel and lodging, if required, necessary to perform the work of this contract.

This offer is open for acceptance for up to 60 days after the closing date for receipt of bids.

The lowest, or any bid, may not be accepted by the Village. The Village is not responsible for any costs incurred in preparing the bid. The Village, at its sole discretion, reserves the right to:

- reject any or all bids whether complete or not,
- reject any bids it considers not in its best interests,
- waive any minor irregularity or insufficiency in the bid submitted,
- not be liable for misunderstandings or errors in the Request for Bids,
- issue addenda to the Request for Bids,
- contact references provided by the Proponents,
- retain independent persons or contractors for assistance in evaluating Proposals,
- request points of clarification to assist the Village in evaluating Proposals,
- negotiate changes with the successful Proponent,
- withdraw the Request for Bids.

The decision will be based on bids that will give the greatest value based on quality, service, reputation and price.

Scope of Work: The Contractor shall provide all necessary equipment, material, labour and supervision, and all things necessary to complete the work.

The contract is for the provision of:

- Replacement of five piles.
- Installation of shims on seven pile tops.
- Repair/install three concrete footings.
- Install three stringers.
- Replace seven sections of cap

The contractor is to include a signed copy of this two page invitation with their bid, acknowledging that they have read and are bound by the conditions laid out in this document.

Name of Contracting Firm

Authorized Signature for Contracting Firm

Date

Section Number	Section Title	No. of Pages
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DRAWINGS

3823-VPC / Sheet 1 of 2	GENERAL ARRANGEMENT – PILE REPAIRS, FOOTING REPAIRS AND SHIM INSTALLATION
3823-VPC / Sheet 2 of 2	GENERAL ARRANGEMENT – CAP AND STRINGER REPAIRS

END OF SECTION

-Tender Address

Tender Closing Time

TENDER SUBMISSION

Hour: 1:00 pm (Pacific Time)

Date: Monday May 13th, 2016

File No. _____

Description of Works:

Village of Port Clements - Wharf Repairs

Part 1 **Offer**

The undersigned tenderer (hereinafter called the "Contractor") agrees to furnish all necessary materials, labour, tools, services, plant, machinery, and to execute and complete in a careful and workmanlike manner all wharf repairs as described in the General Conditions - Scope of Work dated April 29th, 2016.

Part 2 **General Agreement**

The Contractor agrees:

- .1 to complete the specified work within 16 weeks of award.
- .2 that this tender may not be withdrawn for a period of thirty (30) days following the tender closing time.

Part 3 **The Amount**

The Contractor agrees that the following is the total price based on the unit price sheet exclusive of applicable taxes.

_____ xx dollars (\$)

SCHEDULE OF QUANTITIES AND PRICES

Item	Class of Labour, Plant, or Material	Unit of Measure	QTY	Price/Unit	Total (\$)
1	Mobilization/Demobilization & Clean-up	Lump Sum	-		
2	Labour, Equipment & Materials – Pile Installations	Per Pile	5		
3	Labour, Equipment & Materials – Cap Installation	Lineal Metre	66		
4	Labour, Equipment & Materials – Stringer Installation	Lineal Metre	12		
5	Labour, Equipment & Materials – Shim Installation	Per Pile Top	7		
6	Concrete Footing Repair/Install	Per Footing	3		
7	Additional Work Rate	Per Hour	0		\$0
8	Additional Work Overtime Rate	Per Hour	0		\$0
9	Standby Rate	Per Hour	0		\$0

*The Contractor is responsible for identifying any minimums.

SUBTOTAL

GST

TOTAL

TOTAL AMOUNT IN WORDS (INCLUDING APPLICABLE TAXES)

CONTRACTOR'S SIGNATURE _____ **DATE** _____

CONTRACTOR'S FULL BUSINESS NAME
(Print or Type)

CONTRACTOR'S BUSINESS ADDRESS
(For Contract Purposes)

END OF TENDER AND ACCEPTANCE FORM

1 General

1.1 RELATED REQUIREMENTS

- .1** Section 00 20 60 – DEMOLITION OF STRUCTURES.
- .2** Section 00 51 00 – STEEL HARDWARE.
- .3** Section 00 98 00 – TIMBER PILES.
- .4** Section 00 99 00 – TIMBER REPAIRS.
- .5** Section 01 35 43 – ENVIRONMENTAL PROCEDURES.

1.2 DEFINITIONS

- .1** Throughout contract documents, the words “Owner,” “Contracting Authority,” or “Project Consultant,” shall be defined as follows:
 - .1** Owner and Contracting Authority
Village of Port Clements, PO Box 198, Port Clements, BC. V0T 1R0
 - .2** Project Consultant
An employee of the Owner or Consultant assigned by the Owner as the Consultant for this project.
 - .3** Contractor
The party accepted by the Owner with whom a formal contract is entered to complete the work of this project.

1.3 DRAWINGS

- .1** 3823-VPC / Sheet 1 of 2: GENERAL ARRANGEMENT – PILE REPAIRS
- .2** 3823-VPC / Sheet 2 of 2: GENERAL ARRANGEMENT – CAP & STRINGER REPAIRS

1.4 LOCATION

- .1** Port Clements is located approximately 65 kilometres west of Prince Rupert, British Columbia.

1.5 SCOPE OF WORK

- .1** Except as otherwise specified, the work described in this section shall include all plant, labour and materials necessary for the completion of the project entitled “WHARF REPAIRS, PORT CLEMENTS.” dated April 29th, 2016.
- .2** Scope of Work. The work shall include, but not be limited to, all plant, labour and materials required to:
 - .1** Replace five (5) damaged timber piles in kind under the existing approach and wharfhead.

- .2 Replace seven (7) sections of cap in kind under the existing approach and wharfhead.
- .3 Replace three (3) stringers in kind under the existing approach and wharfhead.
- .4 Shim seven (7) pile tops under the existing approach and wharfhead.
- .5 Repair/Replace three (3) concrete footings under the existing approach.
- .6 Perform additional work if directed by Contracting Authority.
- .7 Contractor to supply all materials including piles, caps and stringers.
- .8 The work shall not be deemed complete until all items are performed to the satisfaction of the Contracting Authority.

.3 Commencement and Completion.

The Contractor to start the work within six weeks of award. All work is to be complete within 16 weeks of award. Time is of the essence.

.4 Compliance with Standard Specifications, Codes and Regulations.

Unless expressly stated to the contrary, all materials, equipment and articles furnished by the Contractor shall comply with the applicable provisions of the standards of the following:

- Canadian Standards Association (CSA)
- Canadian Government Specification Board (CGSB)
- American Society for Testing Materials (ASTM)
- American Water Works Association (AWWA)

.5 Materials.

All materials to be provided by the Contractor.

.6 Inspection of Site.

There will be no scheduled site inspection.

It is the responsibility of each bidder to obtain all necessary information pertaining to local conditions and existing works.

.7 Construction Work Schedule.

The Contractor shall work whatever hours necessary to complete the work (may require working at night and around the tides).

Whenever variation from the schedule in excess of 2 working days occurs or is expected to occur, the Contractor shall notify the Contract Authority immediately.

.8 Setting out of Work.

The Contractor shall not enter on nor occupy with men, tools, equipment or material, any ground outside the property of the Owner without the written consent of the party owning such ground. Other contractors or employees may, for all necessary purposes, enter upon the work and premises used by the Contractor, and the Contractor shall conduct his work so as not to impede unnecessarily any work being done by Others on or adjacent to the site.

.9 Contractor's Personnel.

The Contractor's representative on site shall be completely familiar with the method of work to be employed. Such personnel shall remain on site for the duration of the work as required by the Contract Authority.

.10 Permits, Certificates, Laws and Ordinances.

- The Contractor shall, at his own expense, procure all permits, certificates and licenses required of him by law for the execution of his work under this contract. The Contractor shall comply with all Federal, Provincial or Municipal laws, ordinances or rules and regulations relating to the performance of his work and in force during the duration of this contract.
- The Contractor is required to give all required notices, comply with all local, municipal, provincial, and federal laws, ordinances, codes, by-laws, rules and regulations relating to the work.
- All disposable materials are to be disposed of in an environmentally acceptable manner.

.11 Responsibility To Personnel.

The Contractor shall have full responsibility for the board, lodging and transportation of his personnel and subcontractors. The cost for this shall be incorporated into his unit prices. He shall comply with all labour requirements, Labour Canada regulations, Workers' Compensation Board of B.C. regulations, and general working conditions in the area.

.12 Site Security.

The Contractor is responsible for all materials and equipment. The Contractor is responsible for the repair and replacement of stolen or damaged items.

.13 Codes and Standards.

- Where specific codes and standards are not dated, work shall conform to the latest issue of the specified standards, as revised and amended at the date of receipt of the tender.
- Perform work in accordance with the National Building Code, Workers' Compensation Board of B.C. (WCB), and any other code of provincial or local application provided. In any case of conflict or discrepancy, the most stringent requirement shall apply.
- Meet or exceed requirements of specified standards, codes, WCB requirements, and referenced documents.

.14 Site Work.

- All work shall meet or exceed all requirements set in these plans and specifications.
- Contractor to keep disruption of the harbour to a minimum.

.15 Terms of Payment.

- The quantities stated in the Tender and Acceptance are given for the purpose of providing a basis for a comparison. Payment will be made only on the authorized quantities listed in this Contract or authorized by the Contract Authority. No guarantee is given that actual quantities will conform to the quantities shown. The work may be terminated or extended at the discretion of the Contract Authority.
- Payment under this Contract will be made after final inspection and acceptance of the completed work. Payment will be made based upon the prices as listed in the Tender and Acceptance form.
- At the completion of the work, the Contractor will submit an invoice, on an approved form, for all the work satisfactorily completed and for all materials purchased and it will be reviewed by the Contract Authority prior to processing for payment.
- Lump Sum Payment. Payments will be made on the basis of percentage of lump sum work completed as determined by the Contract Authority.
- Unit Prices. Payments will be made for extra work only if authorized by the Contract Authority.

- Lost Time. No measurement will be made of the time spent in repairing or maintaining equipment or for lost time expended due to the acts, omissions or inadequacies of the Contractor's personnel or equipment.
- Taxes. Pay all Provincial and Municipal taxes levied by law.

.16 Description of Items.

- .1 Mobilization, Demobilization, Clean Up.** This item shall be lump sum and will include all plant and labour to mobilize and demobilize to the site, and clean up the site and dispose of any materials after the work is complete.
- .2 Materials.** This item shall be per pile and per lineal metre of cap or stringer based on the actual length in place in the completed work, and shall include the cost to purchase and supply all materials required to complete the work including hardware, pile top treatment, copper patches and all misc. material it requires to complete the work as specified.
- .3 Pile Driving or Posting.** This item shall be per pile and includes all plant and labour to remove/replace the existing pile and install the new pile or post in kind. Also included is the cost to ensure that the new pile is supporting the cap. Any deck planks, stringers, caps, bracing or footings damaged during the effort of driving piles will be replaced at the Contractor's expense.
- .4 Shim Installation.** This item shall be per pile top and includes all plant and labour to install creosote treated plywood shims at the locations specified to ensure that the pile is supporting the cap. Shims are to be secured in place with nails.
- .5 Concrete Footing Repair/Installation.** This item shall be per concrete footing and includes all plant and labour to repair the scour under two footings and install a new footing around one replacement pile. Included is the cost to ensure that the new footings are fully supported at the ground line.
- .6 Cap Installation.** This item shall be lineal metre of cap and includes all plant and labour to remove the existing cap and install the new cap in kind. Any deck planks, stringers, piles, bracing or footings damaged during the effort of installing caps will be replaced at the Contractor's expense.
- .7 Stringer Installation.** This item shall be per lineal metre of stringer and includes all plant and labour to position the new stringer adjacent to the stringer to be replaced. Removal of the original stringer is not required. Also included is the cost to ensure that the new stringer is supported by the caps located under it and secured to the deck timbers located above it. Any deck

planks, stringers, piles, bracing or caps damaged during the effort of installing the stringers will be replaced at the Contractor's expense.

- .8 Additional Work Rate. This item shall be used if additional repairs are required by the Contract Authority outside the scope of these contract documents.
- .9 Additional Work Overtime Rate. This item shall be used for additional repairs when the total hours worked in a day exceeds 8 hours.
- .10 Standby Rate. This item shall apply for any delays to the project while the Contractor could have been working on site and whereby the delays were caused by the Owner or the Contract Authority.

.17 Co-Operation with Owner.

- The site shall be left in a safe condition at the end of each working day.
- The Contractor shall give the Owner a minimum of fourteen (14) days written notice before any work commences including the exact day that pile driving will commence. Pile driving must continue on consecutive days once starting (Including Saturday and Sunday).

.18 Insurance and WCB Coverage.

- Contractor is to provide proof of insurance before commencing the work.
- All work to be performed within WorksafeBC guidelines.

.19 Storage of Equipment.

- Store equipment and materials for the work in accordance with applicable safety and fire regulations.
- Provide safe storage for all materials and equipment.
- Do not unreasonably encumber site with materials or equipment. Move stored products or equipment that interferes with operation of the Contract Authority or others.

.20 Order of Clauses.

- The order of clauses in these contract documents are for clarity of components and do not represent the actual order in which the work is to be performed unless specified otherwise.

.21 Failure to Comply with Contract Authority, Plans or Specifications.

- The Contract Authority shall be the sole judge as to the quality of the work performed.
- Errors or typos within these contract documents do not relieve the Contractor from completing the work as specified by the correct clauses within these contract documents.
- Failure to comply with these plans and specifications or the Contract Authority may result in only partial payment of the total contract amount to the Contractor as determined by the Contract Authority.

1.6 DOCUMENTS REQUIRED

- .1** Maintain at job site, one copy each document as follows:
- .1** Contract Drawings, Specifications and any Addenda.
 - .2** Change Orders and other Modifications to Contract.
 - .3** Copy of Approved Work Schedule.
 - .4** Health and Safety Plan and Other Safety Related Documents.
 - .5** All regulatory permits required for the work.
 - .6** Associated Best Management Practices documentation.

END OF GENERAL CONDITIONS

Part 1 General

1.1 SCOPE OF WORK

- .1 This section refers to all demolition and removal of existing structural timbers and hardware including timber piling and caps and any other items identified for removal in the course of completing wharf repair work.

1.2 EQUIPMENT

- .1 Furnish all labour, materials, tools, plant and services required incidental to the completion to the full extent of the drawings and specifications for execution of all demolition salvage and protection work specified herein.
- .2 Demonstrate that tools and machinery are being used in manner which allows for salvage of materials in best condition possible or reinstatement of temporarily relocated structures.

1.3 REMOVAL OF DEMOLISHED MATERIAL

- .1 All materials, which are not to be salvaged for the Owner, shall become the Contractor's property and the Contractor must remove it from the site.
- .2 If not specifically identified, the Contract Authority shall decide as to which material shall be salvaged and which materials shall be disposed of.
- .3 Timber piles shall be completely removed. If it is not possible to remove a pile, the new pile shall be driven adjacent to the pile scheduled for replacement.

1.4 SALVAGED MATERIAL

- .1 Material to be salvaged for the Owner shall be stored as directed by the Contract Authority.
- .2 Remove items to be reused, stockpile and re-install as directed by Contract Authority.
- .3 Designate appropriate security resources/measures to prevent vandalism, damage and theft of salvaged items.
- .4 Contractor is responsible for lost, stolen or damaged materials.

1.5 PROTECTION OF STRUCTURES TO REMAIN

- .1 Protect remaining structural elements, services and equipment against damage from demolition works.
- .2 Contractor is liable for any damage caused to structures not specified for removal as a result of completing work.

1.6 SERVICES

- .1 All services that must be removed from existing structures in order to perform work must be removed so as not to damage them.

- .2 All service materials including miscellaneous hangers, fasteners and supplies required to reinstall the services shall be supplied by the Contractor and will be of equivalent quality to the new conditions of such materials being replaced.
- .3 All materials that are not reusable shall be disposed of by the Contractor.
- .4 The Contractor shall be responsible for the handling and storage of services lines, lamps standards and other equipment during construction. All materials damaged by the Contractor shall be replaced at the Contractor's expense.

1.7 CLEANING AND RESTORATION

- .1 Keep site clean and organized throughout demolition procedure.
- .2 Upon completion of project or as appropriate, reinstate floats, walkways, light standards, electrical and water services and other items affected by Work to condition which existed prior to beginning of Work.

END OF SECTION

Part 1 General

1.1 SCOPE OF WORK

- .1 This section refers to the steel fastenings and hardware indicated in the Contract Drawings and related specifications.

1.2 RELATED REQUIREMENTS

- .1 Section 00 98 00 – TIMBER PILES
- .2 Section 00 99 00 – TIMBER REPAIRS

Part 2 Products

2.1 STEEL

- .1 Small fastenings will conform to the standard for Wire Nails, Spikes, and Staples CSA B111.
- .2 Drift bolts, machine bolts, washers and miscellaneous iron will conform to the standard for General Purpose Structural Steel CAN3 G40.21-M81.
- .3 Items manufactured or fabricated from scrap steel of unknown chemical or physical properties will not be accepted for use in the work.

2.2 HARDWARE

- .1 All hardware including bolts, drift bolts, carriage bolts, lag bolts, pipe sleeves, nuts and washers etc. will be hot dipped galvanized in accordance with the ASTM A153. Galvanize to 610g/m² (2oz/ft²).
- .2 All bolts will be of the full dimension specified or shown on the plan.
- .3 Unless otherwise specified, all machine bolts will be provided with round steel plate washers under head and nut.
- .4 All bolts shall be 19mm (3/4") National course thread, unless shown otherwise.
- .5 All 19mm washers shall be 6mm thick and 75mm diameter galvanized steel.
- .6 All 25mm washers shall be a minimum of 8mm thick and 100mm diameter galvanized steel.
- .7 All bolts to have 100mm (4") of thread unless shown otherwise.

Part 3 Execution

3.1 ASSEMBLY

- .1 All bolts shall be tightened to 100 Newton Meters (80 ft/lbs).

- .2 Care shall be taken not to damage the treated wood finish. All treatment damaged by the Contractor shall be repaired at the Contractor's expense as per Section 00 99 00 Timber Repairs.
- .3 Pre-drilling:
 - .1 All ends of timbers not fastened by bolts shall be predrilled prior to installation to prevent splitting.
- .4 Holes for machine bolts will be bored to provide a driving fit.

END OF SECTION

Part 1 General

1.1 RELATED REQUIREMENTS

- .1 Section 00 99 00 – TIMBER REPAIRS
- .2 Section 00 20 60 – DEMOLITION OF STRUCTURES
- .3 Section 00 51 00 – STEEL HARDWARE
- .4 Section 01 35 43 – ENVIRONMENTAL PROCEDURES

1.2 REFERENCE STANDARDS

- .1 Unless specified otherwise, use most current edition of the following standards:
 - CSA B111 Wire Nails, Spikes and Staples
 - CAN/CSA-G164-M Hot Dip Galvanizing of Irregularly Shaped Articles
 - CAN/CSA-056-M Round Wood Piles
 - CAN/CSA-080 Wood Preservation
 - ASTM A 123-89a Specification for Zinc (Hot dipped galvanized) Coatings on Iron and Steel Products
 - ASTM A307 Specification of Carbon Steel Bolts and Studs

1.3 SCOPE OF WORK

- .1 This section refers to all pile driving to complete the contract as specified (Table 1).
- .2 All shim installation on specified piles (Table 2).
- .3 All pile concrete footing (repairs or replacement) (Table 3)
- .4 Complete all work as shown on the Contract Drawings and following tables.
- .5 Confirm pilings suit elevations shown.
- .6 Implement pile driving works following appropriate BMP's.

Table 1. - Pile Replacements

Repair	Bent	Row
Replace	5	B
Replace	10	C
Replace	42	A
Replace	52	C
Replace	68	E

Table 2. – Shim Installation

Repair	Bent	Row
Install Shim	9	A
Install Shim	23	B
Install Shim	30	B
Install Shim	51	B
Install Shim	59	C
Install Shim	61	A
Install Shim	66	D

Table 3. – Concrete Footing Repairs/Installation

Repair	Bent	Row
Replace Pile & Repair Footing	5	B
Repair Footing	6	B
Repair Footing	7	C

Part 2 Products

2.1 MATERIALS

- .1 Round wood piles to CAN3-056, with minimum butt size of 350mm within +/- 20mm.
- .2 Type of peeling: clean peeled.
- .3 Pile species: Coast Douglas Fir.
- .4 Preservative Treatment: to CAN/CSA – 080 full cell creosote treatment to a minimum net retention of 225 kg/cu meter (14 lb/ft3).
- .5 The Contract Authority shall be the sole judge as to quality and dimension of piles. Rejected piles shall be removed from the site of work at the Contractor's expense.

2.2 MISCELLANEOUS MATERIALS

- .1 Wire nails, spikes, staples in accordance with Section 00 51 00 – STEEL HARDWARE.

2.3 HANDLING

- .1 Piling shall be handled and stored so as to avoid over stressing or injury, and any piles bent or damaged, or in any way made defective in the opinion of the Contract Authority, shall be made good to the satisfaction of the Contract Authority or replaced.

2.4 EQUIPMENT

- .1 Prior to commencement of pile installation operation, submit to Contract Authority for review details of equipment for installation of piles.

- .2 Impact hammers: Give manufacturer's name, type, rated energy per blow at normal working rate. Include mass of striking parts of hammer, mass of driving cap and type and elastic properties of hammer and pile cushions.
- .3 Hammer: Hammer size and energy is to be determined by the Contractor. Hammer is to be capable of being adjusted to deliver reduced impact, or appropriate to obtain required resistance without damaging pile during installation.
- .4 Leads: Pile driver leads to provide free movement of hammer. Provide support to pile while being driven to the satisfaction of the Contract Authority.
- .5 Followers: Provide follows of such size, shape, length and mass to permit driving in desired location to required and resistance. Provide followers with socket or hood carefully fitted to top of pile to minimize loss of energy and prevent damage to pile.

2.5 FIELD MEASUREMENTS

- .1 Maintain accurate records of driving for each pile, including:
 - .1 Type and make of hammer, stroke or related energy.
 - .2 Other driving equipment including cap and cushion.
 - .3 Pile size and length, location of pile in pile group, designation of pile group.
 - .4 Number of blows per 300mm (12") for entire length of pile and number of blows per 25mm (1") for last 100mm (4"), or appropriate blow counts at the end of driving when refusal is reached at a rock surface.
 - .5 Final tip and cut off elevation.
 - .6 Other pertinent information such as interruption of continuous driving, pile damage, etc.

2.6 INSTALLATION

Driving

- .1 Hold piles securely and accurately in position indicated on Drawings.
- .2 Deliver hammer blows along axis of pile. Ensure pile is not over stressed.
- .3 Cut off piles neatly at elevations as indicated.
- .4 Provide sufficient length above cut off elevation so that part damaged during driving is cut off and that end can be suitable shaped to fit connection points.
- .5 Piles shall not be cut off at final elevation until the Contracting Authority has reviewed the driving record and approved the pile.
- .6 Timber pile shall be driven to the following depths 4.6m (15') or until refusal.
- .7 Secure to cap (and stringer if necessary) with 25mm diam. rods x enough length to penetrate the pile 0.3m.

Posting

- .1 Remove old pile and re-secure new pile with 0.3m high new footing poured on top of old footing to the same dimensions of length and width around the new pile.
- .2 Secure new footing to old with four steel 13mm diam. rebar pins, drilled 0.1m into old footing and extending 0.2m into new concrete.
- .3 Secure to cap (and stringer if necessary) with 25mm diam. rods x enough length to penetrate the pile 0.3m.

2.7 PREPARATION AND HANDLING

- .1 Protect treated piles to avoid breaking through the treated surface. Cant hooks and rafting dogs may be used only in the end of piles. No spikes shall be driven into piles below high-water level.
- .2 All cuts or breaks in the surfaces of creosote treated piles shall be treated with two separate coats of creosote oil.
- .3 Where bolt holes must be bored through creosote treated piles, the holes shall be filled with creosote oil and the bolts shall be dipped in hot creosote oil before the bolts are placed.
- .4 Other alternative field wood treatment to be approved by the Contract Authority before application.

2.8 DRIVING TOLERANCES

- .1 Drive piles in their intended locations as shown on drawings and specifications.
- .2 Pile heads to be within 75mm (3") of locations as indicated on drawings.
- .3 Piles to be within 2% of specified axial alignment.
- .4 Pile cut of elevations to be within 25mm (1") of elevations shown on drawings.
- .5 Pile driving record to be supplied by the Contractor.

2.9 PILE COMPLETION

- .1 Apply two coats of hot creosote to top of dry pile, allowing as much creosote to soak in as possible. Apply a coat of coal tar pitch or mastic after creosote application.
- .2 Install ships felt soaked with a BMP approved preservative on top of piles.
- .3 Treat all end cut offs and field drilled holes with creosote preservative.
- .4 Treat cuts, breaks or abrasions on surface of treated piles, bolt holes and field cuts in accordance with CAN/CSA-080.
- .5 Alternative wood treatments to be approved by the Contract Authority.

2.10 PILE SHIMMING

- .1 Insert creosote treated plywood shims between the pile top and cap or corbel such that the space is filled.
- .2 Secure the shims with galvanized nails. Nails, spikes and staples to meet requirements of CAN/CSA B111-M.
- .3 Alternative wood treatments to be approved by the Contract Authority.

2.11 PILE FASTENERS

- .1 All bolts, nuts, washers, drift pins, spikes and nails shall be hot dip galvanized in accordance with CAN/CSA G164-M.
- .2 Bolt holes in timber piles shall be bored to provide a driving fit.
- .3 Holes for drift pins shall be 2mm undersize and longer than the drift pins.
- .4 Hole sizes of lag screws to be in accordance with CAN/CSA 086.1-M.
- .5 Unless otherwise specified, connection bolts, lag screws or drift bolts shall be placed through the centre of timber piles and shall not be less than seven (7) times the bolt diameter from the end of the timber pile.
- .6 Nails, spikes and staples to meet requirements of CAN/CSA B111-M.
- .7 At bolt locations, piles to be cut to provide flat surface for plate washers.
- .8 Where timber piles have to be cut for plate washers, the cut surface shall be treated with two coats of hot creosote oil and a further coat of mastic before washers are placed. Alternative wood treatments to be approved by the Contract Authority.

2.12 PILE FOOTINGS

- .1 Undercut footings are to be repaired with new concrete. Loose material from below the footing is to be removed.
- .2 Formwork is to be installed around the existing footing and new concrete installed that fills any voids and extends 0.3m above the top of the existing footing.
- .3 Secure new footing to old with four steel 13mm diam. rebar pins drilled 0.1m onto old footing and extend 0.2m into new concrete.

END OF SECTION

Part 1 **General**

1.1 **RELATED REQUIREMENTS**

- .1 Section 00 98 00 – TIMBER PILES
- .2 Section 00 20 60 – DEMOLITION OF STRUCTURES
- .3 Section 00 51 00 – STEEL HARDWARE
- .4 Section 01 35 43 – ENVIRONMENTAL PROCEDURES

SCOPE OF WORK

- .1 This section refers to the supply, modification and field treatment of all timbers indicated in the Contract Drawings, related specifications and following Tables.

Table 4- Cap Replacements

Repair	Bent	Row to Row
Replace	31	A - C
Replace	50	A - C
Replace	57	C - F
Replace	59	C - F
Replace	64	A - D
Replace	68	A - D
Replace	68	D - F

Table 5 - Stringer Replacements

Repair	Bent to Bent	Row
Replace	65 - 66	B.1
Replace	65 - 66	C.1
Replace	66 - 67	D.5

.2 **Cap Replacement**

The unit rate cost per lineal meter of cap for this item includes all labour, equipment, and material to complete the following:

- .1 Remove existing caps and associated hardware at locations indicated in Table 4 and Drawing 3823-VPC / 2 of 2.
- .2 Supply and install sixty-six metres (66) of new 300mm x 300mm creosote treated cap.
- .3 Secure to piles with 25mm diam. rods x enough length to penetrate the pile 0.3m.
- .4 Temporary removal and reinstallation of any electrical/water service lines as is necessary to complete repair.
- .5 Salvaged caps and hardware to become property of the Contractor.

.3 Stringer Replacement

The unit rate cost per lineal meter of stringer for this item includes all labour, equipment, and material to complete the following:

- .1 Add new stringers and associated hardware at locations indicated in Table 5 and Drawing 3823-VPC / 2 of 2.
- .2 Supply and install new 150mm x 300mm creosote treated stringers with new hardware as per existing, adjacent to the existing stringers. Original stringers do not require removal.
- .3 Contractor responsible for verifying hardware requirements and stringer locations.

Part 2 Products

2.1 GENERAL

- .1 Except as otherwise noted, only new materials will be used in, and remain an integral part of the structures.
- .2 The Contract Authority may inspect materials and products at all stages of manufacture and transportation to the Project Site. Satisfactory inspection at any stage does not preclude future rejection if the materials or products are subsequently found to lack uniformity or fail to conform to the requirements specified.
- .3 Acceptance will not be made until the materials or products are satisfactorily installed in the completed structures specified.
- .4 The Contractor shall be responsible to repair all materials damaged through their handling, storage and/or installation.
- .5 Except as otherwise noted, salvaged materials deemed to be reusable by the Owner shall remain property of the Owner.

2.2 TIMBER

- .1 All timber for the purpose intended shall conform to the requirements of the N.L.G.A. Standard Grading Rules for Canadian Lumber.
- .2 Refer to drawings and specifications for timber dimensions and treatment.
- .3 All timber shall be Coast Douglas Fir. No 1 Structural Grade or better, unless specified otherwise.

2.3 TREATMENT OF MATERIAL

- .1 Creosote treated Materials:
 - .1 All creosote treated timber will be treated in accordance with CSA 080 and will follow the Best Management Practices for Creosote as outlined in “Best Management Practices for the use of Treated Wood in Aquatic Environments”.

- .2 All creosote treated materials will have a minimum retention of 225kg per cubic metre (14lb. Per cubic foot).

2.4 FIELD TREATING

- .1 Creosote treated timber members that have fresh cut surfaces exposed in the structure shall be treated as specified:
 - .1 All cuts or breaks in the surfaces shall be treated with two (2) separate coats of creosote oil.
 - .2 Where bolt holes must be bored through creosote treated piles, the holes shall be filled with creosote oil and the bolts shall be dipped in hot creosote oil before bolts are placed.
 - .3 Alternative field wood treatment to be approved by the Contract Authority before application.
 - .4 Ensure preservatives are properly stored and protected in case of spillage.

Part 3 Execution

3.1 HANDLING OF MATERIALS

- .1 Treated material will not be accepted if damaged in any manner in handling, including damage from strapping or slings.
- .2 The Contractor shall be responsible to repair or replace all materials damaged by handling, storage and/or installation of materials.

3.2 EXISTING STRUCTURES

- .1 Any structures damaged by the Contractor during the works shall be repairs and made good at the Contractor's expense to the satisfaction of the Contract Authority.

3.3 SERVICES

- .1 All services that must be removed from existing structures in order to perform work must be removed so as not to damage them.
- .2 All service materials including miscellaneous hangers, fasteners and supplies required to reinstall the services shall be supplied by the Contractor and will be of equivalent quality to the new conditions of such materials being replaced.
- .3 All materials that are not reusable shall be disposed of by the Contractor.
- .4 The Contractor shall be responsible for the handling and storage of services lines, lamps standards and other equipment during construction. All materials damaged by the Contractor shall be replaced at the Contractor's expense.

END OF SECTION

Part 1 General

1.1 RELATED REQUIREMENTS

- .1 Not used.

1.2 REFERENCES

- .1 Definitions:
 - .1 Environmental Pollution and Damage: presence of chemical, physical, biological elements or agents which adversely affect human health and welfare; unfavourably alter ecological balances of importance to human life; affect other species of importance to humans; or degrade environment aesthetically, culturally and/or historically.
 - .2 Environmental Protection: prevention/control of pollution and habitat or environment disruption during construction.

1.3 IN WATER WORKS

- .1 Construction equipment to be operated on land or from floating barge equipment.
- .2 Waterways to be kept free of excavated fill, waste material and debris.
- .3 Do not skid logs or construction materials across waterways.

1.4 NOTIFICATION

- .1 Contract Authority will notify Contractor in writing of observed noncompliance with Federal, Provincial or Municipal environmental laws or regulations, permits, and other elements of Contractor's Environmental Protection plan.
- .2 Contractor: after receipt of such notice, shall advise the Contract Authority of proposed corrective action and take such action for approval by Contract Authority.
 - .1 Take action only after receipt of written approval by Contract Authority.
- .3 Contract Authority will issue stop order of work until satisfactory corrective action has been taken.
- .4 No time extensions granted or equitable adjustments allowed to Contractor for such suspensions.

Part 2 Products

2.1 NOT USED

- .1 Not Used.

Part 3 Execution

3.1 PILE DRIVING

- .1 Pile driving shall be conducted in accordance with the following Best Management Practices:
 - .1 Machinery is to arrive on site in a clean, washed condition and be free of fluid leaks.
 - .2 Complete works using appropriate timing windows related to species that may be affected by the works and or methods used.
 - .3 Underwater pressure waves not to exceed 30 kPa during driving.
 - .4 A vibratory hammer is to be used if driving conditions permit.
 - .5 Any water-based equipment or machinery moored or used during the Project must not ground on the intertidal foreshore or subtidal river or sea bed. The only exception to this condition is that use may be made of vertical spuds or other anchors to hold the water-based machinery or equipment in place.
 - .6 Wash, refuel and service machinery and store fuel and other materials for the machinery at least 30 metres away from the water in order to prevent any deleterious substance from entering the water.
 - .7 Pile cut-offs, waste or any miscellaneous unused materials must be recovered for either disposal in a designated facility or placed in storage.
 - .8 Report any incidents of habitat damage to the Environmental Monitor or DFO to ensure that appropriate action (restoration) is taken.
 - .9 If fish spawn in the area or on equipment all work should stop and the Environmental Monitor or DFO notified.

3.2 CLEANING

- .1 Leave work area clean at end of each day.
- .2 Ensure public waterways, storm and sanitary sewers remain free of waste and volatile materials disposal.
- .3 Final Cleaning: upon completion remove surplus materials, rubbish, tools and equipment to the approval of the Owner.

END OF SECTION

VPC-3823
April 29, 2016

WHARF REPAIRS PORT CLEMENTS
SCHEDULE A

Page 1

LIST OF SUBCONTRACTORS:

EQUIPMENT MANUFACTURES & SUPPLIERS:

REFERENCES:

Name:

Phone No.:

<hr/>	<hr/>
<hr/>	<hr/>

CONSTRUCTION SCHEDULE:

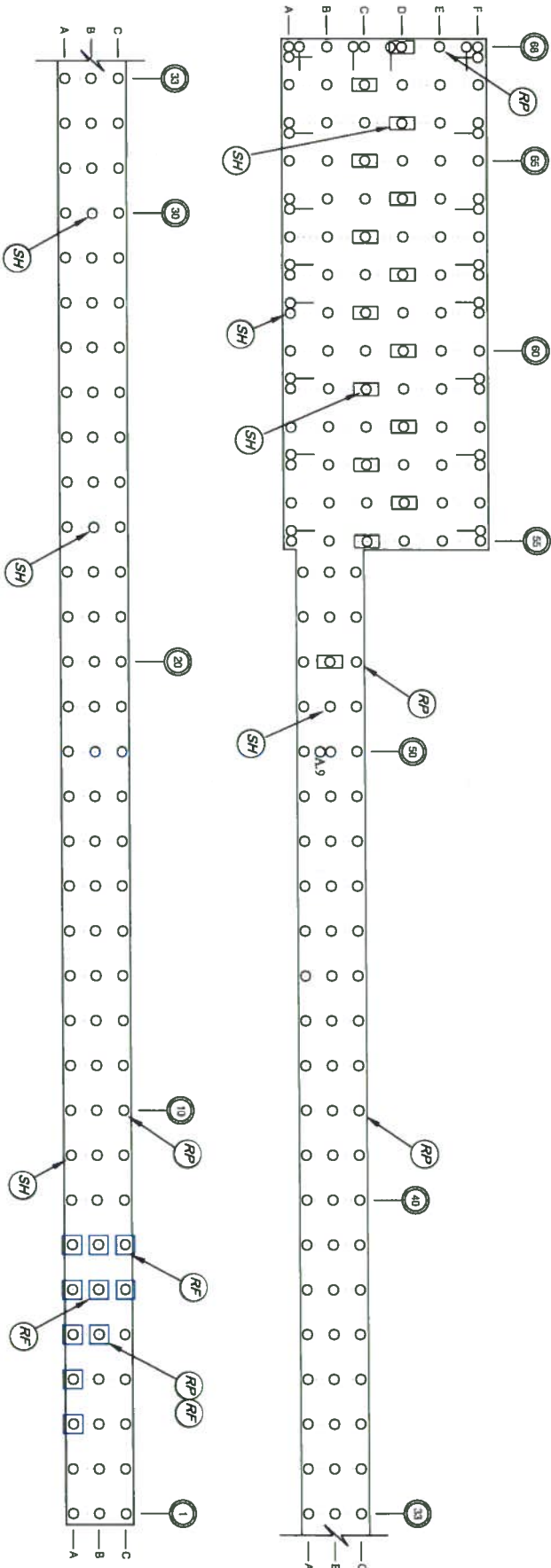
END OF SCHEDULE A

LEGEND

- 15 Bent Number
- D Row Letter
- Bearing Pile
- Batter Pile
- Concrete Footing
- Bent or Cap Alignment
- Corbel Location

REPAIR LEGEND

- SH Shum
- RP Replace Pile
- RF Repair Footing



DRAWING NOTES

- Not an As-Built drawing.
- Fender piles are not shown and were not inspected.
- Component positions are approximated and have been located relative to each other.

Client		Checked by		PROJECT	
		Drawn by		PILE REPAIRS	
		Date		FOR THE MUNICIPAL WHARF,	
		Scale		PORT CLEMENTS,	
		Inspection		BRITISH COLUMBIA	
Ref. No.		Paper		DWG. No.	
SW-2 (Wharftop Plan)		Transport Canada, Port Clements - Dec. 95		3823 / Sheet 1 of 2	
REFERENCE					



Village of Port Clements
36 Cedar Avenue West,
P.O. Box 198,
Port Clements, B.C.
V0T 1R0

LEGEND

- 15 Bent Number
- D Row Letter
- Bearing Pile
- Batter Pile
- Concrete Footing
- Bent or Cap Alignment
- Corbel Location

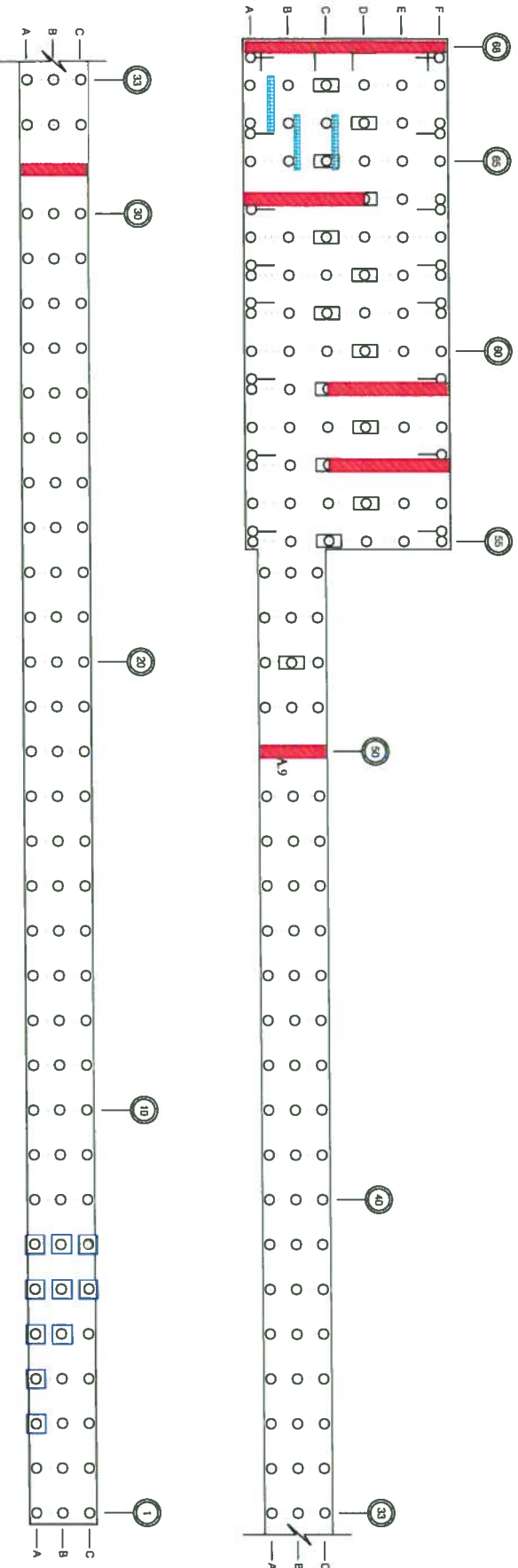
REPAIR LEGEND

- Cap Replacement
- Stringer Replacement



DRAWING NOTES

- Not an As-Built drawing.
- Fender piles are not shown and were not inspected.
- Component positions are approximated and have been located relative to each other.



Client		Village of Port Clements 36 Cedar Avenue West, P.O. Box 198, Port Clements, B.C. V0T 1R0	
Checked by	DG	PROJECT	CAP AND STRINGER REPAIRS FOR THE MUNICIPAL WHARF, PORT CLEMENTS, BRITISH COLUMBIA
Drawn by	WP	Date	Apr. 14, 2016
Scale	As noted	Inspectors	
Paper	11 x 17	DWG. No.	3823 / Sheet 2 of 2
Ref. No.	Transport Canada, Port Clements - Dec. '95	REFERENCE	

