Public Works and Government Services Canada

Requisition No: EZ899___201137/B

DRAWINGS & SPECIFICATIONS
for

QUATSINO DEBRIS CLEAN UP
at

QUATSINO, VANCOUVER ISLAND, BC

Project No.: R.104594.001

APPROVED BY:

Regional Manager, ___ — Date: 2019-08-08

Construction Safety Coordinator — Date: 2019.08.02

TENDER:

Project Manager — Date: 2019-08-08

Real Property Services Branch, Professional and Technical Services, Pacific Region
Room 219 - 800 Burrard Street, Vancouver, B.C., V6Z 0B9

SPECIFICATIONS

Division 1

Division 35

APPENDICES – BOUND WITH SPECIFICATIONS

DRAWINGS – BOUND SEPARATELY

END OF INDEX

PART 1 - GENERAL

1.1 Section Includes

.1 Location of site.
.2 Site conditions.
.3 Work covered by contract documents.
.4 Time of completion.
.5 Use of site.

1.2 Precedence

.1 Division 1 Sections take precedence over technical specification sections in other Divisions of these Project Specifications.

1.3 Related Sections

.1 Section 35 05 51 - Marine General Site Work.

1.4 Site Conditions

.1 Visit site before submitting tender. Make inquiries or investigations necessary to become thoroughly acquainted with site, soil, climatic and tidal conditions along with the nature and extent of the work.

.2 Submission of a tender will be deemed confirmation that the Contractor is familiar with the site and is conversant with all relevant conditions.

.3 All known discrepancies are to be brought to the attention of the Departmental Representative and are to be accounted for in the Contractor's Bid Price.

1.5 Location of Site

.1 The work is located at Transport Canada Harbours and Ports – Port Facility, Quatsino, Vancouver Island BC. The approximate coordinates of the site are 50.5354° N, 127.6545° W.

.2 The work site includes the area within the water lot boundary up to the natural boundary as shown on the drawings. The upland area is to be undisturbed and shall not be entered for any reason. The approach structure may be utilized to access the road upland of the facility.

.3 For the purposes of this contract, "the waterlot" includes all of and only DL 2077, Map Reserve Extension No. 74280, and the Proposed Lot Expansion Areas (108m^2 and 143m^2) as shown on the updated waterlot survey.

1.6 Work Covered by Contract Documents

.1 The work generally includes removal and disposal of loose debris within the facility water lot.
- .1 Removal, transportation and disposal of surface exposed debris throughout the water lot. The work is based on previously conducted debris dive survey with approximate location references and weight estimates included on the contract drawings.
- .2 For the purposes of bidding, the total quantity of debris identified in the contract documents is to be included in the work. The total quantity includes all debris previously identified and an allowance for additional debris of similar nature which past experience identifies will be found as removal proceeds. This is to include any debris of a similar nature found within the updated waterlot boundary.

1.7 References

.1 National Research Council of Canada (NRC):
- .1 National Building Code of Canada (NBC) 2015.

.2 See Section 01 35 33 for additional references.

1.8 Codes and Standards

.1 Perform work in accordance with the National Building Code, the Workers' Compensation Board of B.C., and any other code of provincial or local application provided that, in any case of conflict or discrepancy, the most stringent requirements shall apply.

.2 Meet or exceed requirements of specified standards, codes and referenced documents.

1.9 Documents Required

.1 Maintain at job site one copy of the following:
- .1 Contract drawings and approved shop drawings
- .2 Specifications
- .3 Addenda
- .4 Change orders
- .5 Other modifications to contract
- .6 Copy of approved work schedule
- .7 Manufacturer's installation and application instructions
- .8 Health and Safety Plan and Fire Safety plan
- .9 Environmental Emergency Response Plan (including Spill Response Plan)

.2 Departmental Representative may furnish additional drawings to assist proper execution of work. These documents will be issued for clarification only. Such documents will have the same meaning and intent as if they were included in the plans referred to in the Contract

documents.

1.10 Geotechnical Data

.1 Geotechnical data was not prepared for this project.

1.11 Time of Completion

.1 Complete work within 8 weeks of Contract award.

1.12 Work Schedule

.1 Within 7 days of Contract award, provide a schedule of work. Observe the following requirements:

.1 Whenever a variation from the schedule in excess of 5 working days occurs or is expected to occur, notify Departmental Representative of the change.

.2 Least risk periods for work are specified as during the fisheries windows of July 1 to August 15, and November 15 to February 15 (inclusive).

.3 Should work be carried out outside the least risk windows an Environmental Monitor is to be engaged by Transport Canada, and is to be on-site of all in-water work.

.4 Notify Canadian Coast Guard, Regional Marine Information Centre no less than 5 days before start and completion of proposed activities at the site in order that they may issue Notices to Shipping.
Contact information is:
Website: http://www.ccg-gcc.gc.ca/eng/CCG/Home
Mailing Address:
Vancouver MCTS Centre
Canadian Coast Guard
Suite 2380, PO Box 12107
555 West Hastings Street
Vancouver, BC V6B 4N6
Telephone Numbers:
604-666-6011 RMIC
604-666-1004 Officer-in-Charge
604-775-8919 Watch Supervisor
Telex Number: 043-52586 CGTC VAS VCR
Facsimile: 1-604-666-8453
Email: mctsvancouver@pac.dfo-mpo.gc.ca
RMIC Email: rmic-pacific@pac.dfo-mpo.gc.ca

1.13 Use of Site

.1 Hours of work.

.1 Perform work between normal hours of 07:00 to 18:00, Monday to Friday, except holidays and in accordance with local noise bylaws.

.2 Work may be performed after working hours, on weekends and holidays as approved by Departmental Representative.

.2 Navigational safety shall be maintained during the deconstruction work to avoid interactions between construction vessels and other potential users of the area which may include: scheduled and unscheduled water taxi, ferry, freight companies, and/or seaplane traffic.

.1 Marker buoys with appropriate signage shall be used to warn vessels as appropriate.

.2 Any materials or equipment used shall be marked in accordance with the Collision Regulations of *The Canada Shipping Act* if located in or on the waterway.

.3 All work must comply with T*he Navigable Waters Protection Act*.

1.14 Project Meetings

.1 The Departmental Representative will arrange project meetings and assume responsibility for setting times

.2 The Contractor will be responsible for recording and distributing meeting minutes.

.3 Meeting minutes are to be distributed within five (5) business days of the meeting taking place.

1.15 Construction Equipment

.1 On request, prove to the satisfaction of the Departmental Representative that the construction equipment is adequate to manufacture, transport, place and finish work to the quality and production rates specified. If inadequate, replace or provide additional equipment or plant as directed.

.2 Maintain construction equipment in good operating order.

1.16 Interpretation

.1 In interpreting the Contract, in the event of discrepancies or conflicts between anything in the Plans and Specifications and the General Conditions, the General Conditions govern.

.2 In interpreting the Plans and Specifications, in the event of discrepancies or conflicts between:

.1 The Plans and Specifications, the Specifications govern;

.2 The Plans, the Plans drawn with the largest scale govern; and

.3 The Plans and Specifications govern over the

appendices.

.4 Figured dimensions and scaled dimensions, the figured dimensions govern.

1.17 Permits

.1 Contractor is responsible for all required permits.

1.18 Shop Drawings, Product Data and Samples, and other Submittals

.1 Submit upon request to the Departmental Representative, for review, shop drawings, and product data, and samples specified.

.2 Shop Drawings:

.1 Drawings to be originals prepared by Contractor, Subcontractor, Supplier or Distributor, which illustrate appropriate portion of work; showing fabrication, layout. Setting or erection details as specified in appropriate sections.

.3 Product Data:

.1 Certain specification Sections specify that manufacturer's stand schematic drawings, catalogue sheets, diagrams, schedules, performance charts, illustrations and other standard descriptive data will be accepted in lieu of shop drawings, provided that the product concerned is clearly identified. Submit in sets, not as individual submissions.

.4 Samples:

.1 Submit samples in sizes and quantities specified.

.2 Where colour is the criterion, submit full range of colours.

.3 Submit all samples as soon as possible after the contract is awarded, to facilitate production of complete colour scheme.

.5 Submission Requirements:

.1 Schedule submission at least 14 days before dates reviewed submissions will be needed.

.2 Submit number of copies of product data, shop drawings which Contractor requires for distribution plus designated two (2) copies which will be retained by the Departmental Representative.

.3 Accompany submissions with transmittal letter in duplicate.

.4 All submissions to be in PDF format, except pictures which may be in PDF or JPEG formation. Submit no single file larger than 2MB.

.6 Coordination of Submissions:

.1 Review shop drawings, product data and samples

prior to submission.

.2 Field construction criteria.

.3 Catalogue numbers and similar data.

.4 Coordinate each submittal with requirements of the work of all trades and contract documents.

.5 Responsibility for errors and omission in submittals is not relieved by the Departmental Representative's review of submittals.

.6 Responsibility for deviations in submittals from requirements of Contract documents is not relieved by Departmental Representative's review of submittals, unless the Departmental Representative give written acceptance of specified deviations.

.7 Notify Departmental Representative, in writing at time of submission, or deviations in submittals from requirements of the Contract documents.

.8 After Departmental Representative's review, distribute copies.

.7 Shop Drawing Review

.1 The review of ship drawings by Public Works and Government Services Canada is for the sole purpose of ascertaining conformance with the general concept.

.2 This review shall not mean that Public Works and Government Services Canada approves the detailed design inherent in the shop drawings, responsibility for which shall remain with the Contractor submitting same, and such review shall not relieve the contractor of responsibility for errors or omissions in the shop drawings or of responsibility for meeting all requirements of the construction and contract documents.

.3 Without restricting the generality of the foregoing, the Contractor is responsible for dimensions to be confirmed and correlated at the job site, for information that pertains solely to fabrication processes or to techniques of construction and installation and for co-ordination of the work of all sub-trades.

PART 2 – PRODUCTS

Not applicable

PART 3 - EXECUTION

Not applicable

END OF SECTION

PWGSC Update on Asbestos Use

Effective April 1, 2016, all Public Service and Procurement Canada (PSPC) contracts for new construction and major rehabilitation will prohibit the use of asbestos-containing materials. Further information can be found at:

http://www.tpsgc-pwgsc.gc.ca/comm/vedette-features/2016-04-19-00-eng.html

PART 1 GENERAL

1.1 References

.1 Government of Canada
- .1 Canada Labour Code, Part II
- .2 Canada Occupational Health and Safety Regulations.

.2 National Building Code of Canada 2015 (NBC 2015):
- .1 Part 8, Safety Measures at Construction and Demolition Sites.

.3 Canadian Standards Association (CSA):
- .1 CSA S269, Falsework for Construction Purposes.
- .2 CSA Z797-2009 Code of Practice for Access Scaffold.
- .3 CSA-S350, Code of Practice for Safety in Demolition of Structures.

.4 National Fire Code of Canada (as amended):
- .1 Part 5 – Hazardous Processes and Operations and Division B as applicable and required.

.5 American National Standards Institute (ANSI):
- .1 ANSI A10.3, Operations – Safety Requirements for Powder-Actuated Fastening Systems.

.6 Province of British Columbia:
- .1 Workers Compensation Act. Part 3 Occupational Health and Safety.
- .2 Occupational Health and Safety Regulation.

1. 2 Related Sections

.1 Section 01 11 55 Marine General Requirements.

1.3 Workers' Compensation Board Coverage

.1 Comply fully with the Workers' Compensation Act, regulations and orders made pursuant thereto, and any amendments up to the completion of the work.

.2 Maintain Workers' Compensation Board coverage through WorkSafe BC during the term of the Contract, until and including the date that the Certificate of Final Completion is issued.

1.4 Compliance with

Regulations

.1 PSPC may terminate the Contract without liability to PSPC where the Contractor, in the opinion of PSPC, refuses to comply with a requirement of the Workers' Compensation Act or the Occupational Health and Safety Regulations.

.2 It is the Contractor's responsibility to ensure that all workers are qualified, competent and certified to perform the work as required by the Workers' Compensation Act or the Occupational Health and Safety Regulations.

1.5 Submittals

.1 Submit to Departmental Representative submittals listed for review in accordance with Section 01 11 55 Marine General Requirements.

.2 Work affected by submittals is not to proceed until review is complete.

.3 Submit the following prior to start of work (unless noted otherwise):

- .1 Health and Safety Plan.
- .2 Copies of reports or directions issued by Federal and Provincial Health and Safety inspectors.
- .3 Copies of incident and accident reports.
- .4 Complete set of Material Safety Data Sheets (MSDS), and all other documentation required by Workplace Hazardous Materials Information System (WHMIS) requirements.
- .5 Emergency procedures.

.4 The Departmental Representative will review the Contractor's site-specific project Health and Safety Plan and emergency procedures, and provide comments to the Contractor within 2 working days after receipt of the plan. Revise the plan as appropriate and resubmit to Departmental Representative for review.

.5 Submission of the Health and Safety Plan, and any revised version, to the Departmental Representative is for information and reference purposes only. It shall not:

- .1 Be construed to imply approval by the Departmental Representative.
- .2 Be interpreted as a warranty of being complete, accurate and legislatively compliant.
- .3 Relieve the Contractor of his legal obligations for the provision of health and safety on the project.

.6 Medical surveillance: where prescribed by legislation, regulation or safety program, submit certification of medical surveillance for site personnel prior to commencement of work, and submit additional certifications for any new site personnel to Departmental Representative.

1.6 Responsibility

.1 Assume responsibility as the Prime Contractor under this contract.

.2 Be responsible for health and safety of persons on site, safety of property on site and for protection of persons adjacent to site and environment to extent that they may be affected by conduct of Work.

.3 Comply with and enforce compliance by employees with safety requirements of Contract documents, applicable Federal, Provincial, Territorial and local statutes, regulations, and ordinances, and with site-specific Health and Safety Plan.

1.7 General Conditions

.1 Health and Safety plan is to indicate how the contractor proposes to isolate the site of this work from the activities of other employers and the public on the property. Separation may be achieved by physical barriers or by time. Include as appropriate a plan of the site showing the outline of the work site including storage and work areas which the contractor proposes to use.

.2 Provide safety barricades and lights around work site as required to provide a safe working environment for workers and protection for pedestrian, vehicular, vessel, and seaplane traffic.

.3 Ensure that non-authorized persons are not allowed to circulate in designated construction areas of the work site.

.1 Provide appropriate means by use of barricades, fences, warning signs, traffic control personnel and temporary lighting as required.

.2 Secure site at night time or provide security guard as deemed necessary to protect site against entry.

1.8 Project/Site Conditions

.1 The majority of work at this location is anticipated to be completed by divers, assisted by a surface vessel with the exception of preparatory work and/or gathering of small debris items for removal which may be located within the intertidal zone and accessible during suitable low tides. The work within the water lot at the site will involve:

.1 Locate and removal of underwater debris at high and low tides.

.2 Slippery and unstable surfaces.

.3 Preservative treated wood.

.4 Use of the rest of the facility by the public.

1.9 Regulatory Requirements

.1 Comply with specified codes, acts, bylaws, standards and regulations to ensure safe operations at site.

.2 In event of conflict between any provisions of the above authorities, the most stringent provision will apply. Should a dispute arise in determining the most stringent requirement, the

Departmental Representative will advise on the course of action to be followed.

1.10 Filing of Notice

.1 The Prime Contractor is to complete and submit a Notice of Project to WorkSafe BC.

.2 Provide one copy of all notices to the Departmental Representative within two (2) days of submitting to WorkSafe BC.

1.11 Health and Safety Plan

.1 Conduct a site-specific hazard assessment based on review of Contract documents, required work, and project site. Identify any known and potential health risks and safety hazards.

.2 Prepare and comply with a site-specific project Health and Safety Plan based on hazard assessment, including, but not limited to, the following:

.1 Primary requirements:

.1 Contractor's safety policy.

.2 Identification of applicable compliance obligations.

.3 Definition of responsibilities for project safety/organization chart for project.

.4 General safety rules for project.

.5 Job-specific safe work procedures.

.6 Inspection policy and procedures.

.7 Incident reporting and investigation policy and procedures.

.8 Occupational Health and Safety Committee/Representative procedures.

.9 Occupational Health and Safety meetings.

.10 Occupational Health and Safety communications and record keeping procedures.

.2 Summary of health risks and safety hazards resulting from analysis of hazard assessment, with respect to site tasks and operations which must be performed as part of the work.

.3 List of hazardous materials to be brought on site as required by work.

.4 Indicate engineering and administrative control measures to be implemented at the site for managing identified risks and hazards.

.5 Identify personal protective equipment (PPE) to be used by workers.

.6 Identify personnel and alternates responsible for site safety and health.

.7 Identify personnel training requirements and training plan, including site orientation for new workers and visitors.

.3 Develop the plan in collaboration with all subcontractors. Ensure that work/activities of subcontractors are included in the hazard assessment and are reflected in the plan.

.4 Revise and update Health and Safety Plan as required, and re-submit to the Departmental Representative.

.5 Departmental Representative's review of Health and Safety Plan shall not relieve the Contractor of responsibility for errors or omissions in final Health and Safety Plan or of responsibility for meeting all requirements of construction and Contract documents.

1.12 Emergency Procedures

.1 List standard operating procedures and measures to be taken in emergency situations. Include an evacuation plan and emergency contacts (i.e. names/telephone numbers) of:

- .1 Designated personnel from own company.
- .2 Regulatory agencies applicable to work and as per legislated regulations.
- .3 Local emergency resources.
- .4 Departmental Representative.

.2 Include the following provisions in the emergency procedures:

- .1 Notify workers and the first-aid attendant, of the nature and location of the emergency.
- .2 Evacuate all workers safely.
- .3 Check and confirm the safe evacuation of all workers.
- .4 Notify the fire department or other emergency responders.
- .5 Notify adjacent workplaces or residences which may be affected if the risk extends beyond the workplace.
- .6 Notify Departmental Representative.

.3 Provide written rescue/evacuation procedures as required for, but not limited to:

- .1 Work with hazardous substances.
- .2 Work on, over, under and adjacent to water.

.4 Revise and update emergency procedures as required, and re-submit to the Departmental Representative.

1.13 Hazardous Products

.1 Comply with requirements of Workplace Hazardous Materials Information System (WHMIS) regarding use, handling, storage and disposal of hazardous materials, and regarding labelling and provision of Material Safety Data Sheets (MSDS) acceptable to the Departmental Representative and in accordance with the Canada Labour Code.

.2 Where use of hazardous and toxic products cannot be avoided:

- .1 Advise Departmental Representative beforehand of the product(s) intended for use. Submit applicable MSDS and WHMIS documents as per Section 01 11 05.

.3 In conjunction with Departmental Representative, schedule to carry out work during “off hours” when workers of other

employers and public have left the site.

1.14 Electrical Safety Requirements

.1 Comply with authorities and ensure that, when installing new facilities or modifying existing facilities, all electrical personnel are completely familiar with existing and new electrical circuits.

.1 Before undertaking any work, coordinate required energizing and de-energizing of new and existing circuits with Departmental Representative.

.2 Maintain electrical safety procedures and take necessary precautions to ensure safety of all personnel working under this Contract, as well as safety of other personnel on site.

1.15 Overloading

.1 Ensure no part of work is subjected to a load which will endanger its safety or will cause permanent deformation.

1.16 Powder-Actuated Devices

.1 Use powder-actuated devices in accordance with ANSI A10.3 only after receipt of written permission from the Departmental Representative.

1.17 Fire Safety and Hot Work

.1 Obtain Departmental Representative's authorization before any welding, cutting or any other hot work operations can be carried out on site.

.2 Hot work includes cutting/melting with use of torch, flame heating roofing kettles, other open flame devices, and grinding with equipment which produces sparks.

1.18 Fire Safety Requirements

.1 Store oily/paint-soaked rags, waste products, empty containers and materials subject to spontaneous combustion in ULC approved, sealed containers and remove from site on a daily basis.

.2 Handle, store, use and dispose of flammable and combustible materials in accordance with the National Fire Code of Canada.

1.19 Unforeseen Hazards

.1 Should any unforeseen or peculiar safety-related factor, hazard or condition become evident during performance of the work, immediately stop work and advise the Departmental Representative verbally and in writing.

1.20 Posted Documents

.1 Post legible versions of the following documents on site:

.1 Health and Safety Plan.

.2 Emergency procedures.

.3 Notice of Project.

.4 Site drawing showing project layout, locations of the first-aid station, evacuation route and marshalling station, and the emergency transportation provisions.

.5 Notice as to where a copy of the Workers' Compensation Act and Regulations are available on the work site for review by employees and workers.

.6 Workplace Hazardous Materials Information System (WHMIS) documents.

.6 Material Safety Data Sheets (MSDS).

.2 Post all Material Safety Data Sheets (MSDS) on site, in a common area, protected from inclement weather, visible to all workers and in locations accessible to users of the facility when work of this Contract includes construction activities adjacent to occupied areas.

1.21 Meetings

.1 Attend health and safety pre-construction meeting and all subsequent meetings called by the Departmental Representative.

1.22 Correction of Non-Compliance

.1 Immediately address health and safety non-compliance issues identified by the Departmental Representative.

.2 Provide Departmental Representative with written report of action taken to correct non-compliance with health and safety issues identified.

.3 The Departmental Representative may issue a "stop work order" if non-compliance of health and safety regulations is not corrected immediately or within posted time. The Prime Contractor will be responsible for any costs arising from such a "stop work order".

PART 2 – PRODUCTS

Not applicable

PART 3 - EXECUTION

Not applicable

END OF SECTION

PART 1 - GENERAL

1.1 References

.1 Environment Canada
- .1 "General Water Quality Guidelines for Construction Work in and around Water"
- .2 "Pacific and Yukon Interim Guidance for Addressing Water Quality for work in and around Water" (February 2007)

1.2 Environmental Monitoring

.1 An environmental monitor (EM) will be present, supplied by the owner, during decommissioning to provide guidance and have the authority to stop activities that, in the opinion of the EM, would likely result in significant negative effects to the environment.

.2 The contractor is not to carry out any in-water work during periods which are outside the least risk work windows unless the Environmental Monitor is present.

1.3 Environmental Factors

.1 Ensure that operations meet all applicable environmental regulations and standards.

.2 Comply with mitigation requirements as noted in the plans and specification, including all appendices.

1.4 Vessels

.1 Vessels and floating equipment must not come to rest on the intertidal or subtidal zones unless specified otherwise.

1.5 Fires

.1 Fires and burning of rubbish on site not permitted.

1.6 Disposal of Wastes

.1 Do not bury rubbish and waste materials on site.

.2 Do not dispose of waste or volatile materials, such as mineral spirits, oil or paint thinner into waterways, storm or sanitary sewers.

1.7 Site Clearing

.1 No vegetation stripping is permitted for work at this site.

1.8 Work Adjacent to Waterways

.1 Do not operate land based construction equipment within waterways.

.2 Do not use waterway beds for borrow material.

.3 Do not dump excavated fill, waste material or debris in waterways.

.4 Design and construct temporary crossings to minimize erosion to waterways.

.5 Do not skid logs or construction materials across waterways.

.6 Avoid indicated spawning beds when constructing temporary crossings of waterways.

.7 Undertake major shoreline work in the dry as much as possible, working around the tidal cycle.

1.9 Pollution Control

.1 Maintain temporary erosion and pollution control features installed

under this contract.

.2 Control emissions from equipment and plant to local authorities' emission requirements.

.3 Prevent sandblasting and other extraneous materials from contaminating air beyond application area, by providing temporary enclosures.

.4 Cover or wet down dry materials and rubbish to prevent blowing dust and debris.

.5 Spill kits and containment are to be maintained on site and ready for deployment in case of spills.

.1 Spill kits are to contain sufficient quantities of absorbent material on site in close proximity to working machinery.

.2 During the work there are to be trained and qualified personnel on site that are ready to deploy spill kits when necessary.

1.10 Protection of Wildlife

.1 Make every effort to minimize disturbance to the benthic and upland wildlife communities.

.2 Any large invertebrates adhering to the portion of the wharf or jetty under construction must be removed and replaced in the nearby marine environment.

.3 Do not disturb eel grass or kelp beds.

1.11 Storage of Waste Materials

.1 Recovered debris must be stored and contained such that no obvious contamination such as oil sheen and/or discoloured fluids occurs during the site work.

.1 The Contractor is required to take all necessary action to prevent, to clean up, and to report any contamination which may occur.

.2 At no point during deconstruction shall material be stockpiled on the shoreline or in the tidal area.

1.12 Archaeological Monitoring

.1 Protect any archaeological or heritage objects discovered and report the discovery to the Departmental Representative. Protection of archaeological or heritage objects may require rescheduling of work activities or relocation of resources.

PART 2 - PRODUCTS

Not Applicable

PART 3 - EXECUTION

Not Applicable

END OF SECTION

PART 1 - GENERAL

1.1 Mobilization and Demobilization

.1 Mobilization and demobilization will include all work required to supply the material, plant and labour to the various sites of the work, unless specified otherwise.

1.2 Method of Measurement

.1 The method of measurement for the classes of labour, plant or material constituting the work will be as follows:

.1 Item No. 1, Mobilization and Demobilization

.1 Unit: a single lump sum for all mobilization and demobilization work. Miscellaneous minor items not noted elsewhere are to be included in this item.

.2 Item No. 2, Recovery and Removal of Loose Debris within the Water Lot

.1 Unit: each metric tonne, as measured in air and on certified weigh scales, of debris recovered and removed from the waterlot.

.2 This item is to include all debris noted on the contract drawings, as well as any additional debris uncovered as a result of the work and/or identified within the new waterlot boundary.

.3 This item excludes all embedded timber piles but includes all other wood debris.

.4 Payment for this item is to be based on the certified weight scale slips.

.3 Item No. 3, Removal of Embedded Treated Timber Piles

.1 Unit: each metric tonne of timber pile cut at the mudline, recovered and removed from the waterlot.

.2 Payment for this item is to be based on the certified weight scale slips.

.4 Item No. 4, Transportation and Disposal of Loose Debris recovered from the Water Lot

.1 Unit: each metric tonne of recovered loose debris, transported and disposed of at an approved facility per the contract.

.5 Item No. 5, Transportation and Disposal of Treated Wood

.1 Unit: each metric tonne of treated wood transported and disposed of at an approved facility as per the contract.

.2 This includes wood from the embedded treated timber piles.

PART 2 - PRODUCTS

Not applicable.

PART 3 - EXECUTION

3.1 Existing Conditions

.1 Investigate existing site conditions and substrates for problems related to extraction of the piles. Report to Departmental Representative unsatisfactory or unfavourable conditions before proceeding with work.

3.2 Silt Curtains

.1 Silt curtains are to be deployed if turbidity is more than 8 NTUs above background.

.2 Silt curtains are to enclose the area where turbidity is being generated, and extend from the bottom to water surface.

.3 Silt curtains are to remain in place until turbidity is less than 8 NTUs.

3.3 Material Removal

.1 Contractor is to ensure that the diver location is known during execution of the work. Additionally, debris locations are to be accurately reported per Section 3.5. The following methodology is recommended:

.1 The use of taut stringlines along the bottom outlining the waterlot with perpendicular stringlines at maximum 5 m spacing.

.2 Ensure all distances are accurately marked on the stringline.

.3 If the contractor proposes other methods, they are to be submitted for review to the Departmental Representative within 2 weeks of contract award.

.2 All debris is to be freed from the seabed utilizing grapples, tongs, levers pushed under the debris, or similar equipment.

.1 As work progresses, any debris which is unlikely to be recoverable using the identified methods is to be bypassed temporarily and the Contractor is to notify the Departmental Representative within one (1) business day.

.2 The contractor is to search the entire waterlot as they carry out the work. All debris found, whether not

previously listed or already included on the drawings and debris lists, are to be removed unless they are not similar to the types of debris identified at the time of tender and unless the total debris to be removed exceeds the quantities tendered.

.3 This operation will not involve dredging nor excavation, unless otherwise specified.

.3 The contractor is to maintain lists of all debris found and update the debris lists as new debris is found.

.1 The contractor is to advise the Departmental Representative within 8 business hours if the updated quantity of debris is greater than 75% of the bid quantity.

.2 The contractor is to stop debris removal and seek direction from the Departmental Representative when the total of debris removed reaches 100% of the total quantity in the contract.

.4 All debris must be lifted from the bottom taking care to minimize, as much as is practical, disruption to the seabed and the suspension of sediments in the water column.

.5 Debris waste is not to be towed up onto the beach or through the wetlands or other sensitive aquatic habitats prior to disposal.

.6 All debris is to be winched up on floating vessels, docks, etc. or floated and towed away.

.7 Upon recovery, all organisms which may survive removal (e.g. crabs, starfish, etc.) must be removed from the debris and returned to the immediate marine waters as soon as possible.

.8 Extra care must be taken when recovering items which may contain deleterious substances (i.e. engine blocks, batteries, oil tanks, etc.) in order to prevent the liberation of contaminants into the marine waters.

.9 Care must be taken to ensure that fish and/or fish habitats are not damaged during the process of accessing and carrying out the work. Care must be taken when spudding down or anchoring floating vessels such that fish habitats are not harmfully altered, disrupted or destroyed.

.10 Floating vessels, platforms or other operating vessels are to avoid eelgrass, kelp beds, shellfish beds and other areas of shallow water. Increased turbidity as a result of prop wash must be avoided.

.11 No land-based machinery is to be operated within the inter-tidal area.

.12 Vessels and floating equipment must not come to rest on

the intertidal or subtidal zones unless specified otherwise.

.13 If a silt curtain is not being utilized, work should be temporarily stopped if a sea mammal or a school of fish has been sighted in the immediate work area. This physical area for such observations should be defined by the extent of any sediment plume created during the removal of debris and/or the extent to which equipment will be moving around within the waterlot.

3.4 Material Disposal

1 General:

.1 Debris, timber, steel and all other recovered materials specified to be removed and disposed of becomes the property of the Contractor.

.1 Disposal of the debris shall be performed in an environmentally sensitive manner at upland site(s) approved by the Ministry of Water, Land and Air Protection under the B.C. Waste Management Act, and by other agencies having jurisdiction, including municipal authorities.

.2 All disposal and recycling sites must be operating with up-to-date permits and licences.

.3 The Contractor shall submit proof of approval(s), copies of current permits and licences to the Departmental Representative 10 days before the initial disposal of debris.

.2 Certificates of Disposal:

.1 Provide the Departmental Representative with certificates of disposal from the disposal and/or recycling site, noting the dates, quantities, weights and general description of the debris received and proof of payment of all disposal fees.

.2 Provide certificates within 5 days of disposal.

.3 The Contract work will not be accepted until all certificates have been received by the Departmental Representative.

.4 Certificates provided by disposal sites accepting creosote treated wood and wood treated with other preservative treatments are to confirm that they are authorized to receive such material.

.3 Weight Scale:

.1 Weight Scale is to be certified. Submit copy of certification at least two (2) working days before disposal.

.2 Provide separate weight scale slips for the following

different classes of materials being disposed of. Do not include material from different classes in the weight slips for each class.

.4 Disposal of lead acid batteries:

.1 Any transport of lead acid batteries over 5 kg requires a Transportation of Dangerous Goods shipment document.

.1 The Contractor is to submit documentation of Transportation of Dangerous Goods to the Departmental Representative two (2) working days prior to transport.

.2 Lead acid batteries shall be disposed of or recycled at an approved facility.

3.5 Documentation

.1 The Contractor is to provide a report identifying and certifying that the work has been carried out in accordance with the contract. The report is to include:

.1 The identification is to include before and after representative photos of areas originally having debris, representative photos of the removed debris as it is being held for removal from the site.

.2 Documentation obtained from the approved facility/landfill upon disposal. The documentation must include:

.1 Name of the landfill

.2 Location of landfill

.3 Evidence of it being an approved facility,

.4 Date the debris was disposed of

.5 All weight slips

.6 A general description of the debris disposed.

.3 This is applicable to all debris, including hazardous wastes.

.2 The report is to include a section documenting the following items:

.1 Dates work was executed.

.2 Photographic documentation of Best Management Practices implemented to reduce impacts on water quality outside of the immediate work area.

.3 Photographic documentation of a spill kit on site.

.4 Date and time of any sea mammals and/or schools of fish observed in the area and the species, if identifiable.

.5 Duration of activities and percentage of time in which a sediment plume was present during the

removal of material from the seabed. This shall be documented with a description and photographs.

.6 Details of any incidents and follow-up actions taken, if applicable.

.3 The report is to be submitted within 2 weeks of completion of work on site.

.4 Any payment otherwise due under the contract will be subject to a 50% deficiency holdback until this report is satisfactorily completed.

END OF SECTION

Best Management Practices for Pile Driving and Related Operations – BC Marine and Pile Driving Contractors Association - November, 2003

The BC Marine and Pile Driving Contractors Association and Fisheries and Oceans Canada (DFO) have developed a Best Management Practices Policy for pile driving operations and related activities when working on the water within the province of British Columbia.

The Pile Driving Industry utilizes many different construction methods, equipment and materials in order to complete the contractual obligations for its client. Hammers; including drop, diesel, air, vibratory and hydraulic, vibroflot, and rotary, air and churn drills are the primary instruments in a pile driving operation. These hammers and drills are supported by a wide variety of heavy equipment, including a range of conventional cranes (truck mounted, crawler and pedestal mounted), spud scows, support barges and other water borne equipment. The piling types include treated timber (primarily creosote), concrete and steel (pipe, h-beam and sheet). Construction projects have the potential to utilize a number of different combinations of equipment and materials. It is the purpose of this document to examine the characteristics of each potential combination and develop a Best Management Practices Policy that will meet the following criteria:

-Maximize environmental protection
-Avoid contravention of the Fisheries Act
-Provide construction services economically

1)- Basic Rules of Operation

When in an aquatic environment, contractors will employ the following BASIC Best Management Practices:

- All equipment will be maintained in good proper running order to prevent leaking or spilling of potentially hazardous or toxic products. This includes hydraulic fluid, diesel, gasoline and other petroleum products.
- Storage of fuels and petroleum products will comply with safe operating procedures, including containment facilities in case of a spill.
- Pile cut-offs, waste or any miscellaneous unused materials will be recovered for either disposal in a designated facility or placed in storage. Under no circumstances will materials be deliberately thrown overboard.
- Contractors will have emergency spill equipment available whenever working near or on the water.
- Contractors, where possible, will position their water borne equipment in a manner that will prevent damage to identified fish habitat (i.e. eelgrass). Where possible, alternative methods will be employed (i.e.: use of anchors instead of spuds). In the event that, despite precautions, the contractor is aware that fish habitat has been

inadvertently damaged, the incident must be reported and discussed with DFO to ensure that appropriate action (restoration) is taken.

- Prior to the commencement of any work, the contractor will complete and forward the attached "Notice of Project" to the Department of Fisheries and Oceans. Letters of advice or Habitat Authorizations may be required, depending on the scope of work proposed.
- If contractors are working and a herring (or other fish) spawning occurs, the work will be temporarily suspended and the appropriate DFO contact notified.
- There will be no restriction of work during closure periods (the only exception being when spawning is present, all work must cease and the local DFO habitat biologist must be contacted for further instructions), provided the contractors employ an exclusion device (protective netting or geotextile material suspended in the water column around pile driving area) around the work area to prevent fish access or when required, an effective method of mitigating shock waves (bubble curtain).
- Whenever shock wave monitoring (hydrophone) is performed at a marine construction site and the findings are available to the contractor, the data will be forwarded to the BC Marine and Pile Driving Contractors Association and Svein Vagle at the Institute of Ocean Sciences in Sidney, BC. It is hoped that a database can be built that will more precisely define work procedures and reflect the safest and most economical approach to protecting the fish and their habitat.

2)-Timber Piling (creosote):

When driving timber piling, the following Best Management Practices will be employed to prevent impact to marine fish and their habitat:

- Where possible, new timber piles will comply with the best Management Practices for the use of treated wood in aquatic environments as developed by the Canadian Institute of Treated Wood and the Western Wood Preservers Institute and the DFO document "Guidelines to Protect Fish and Fish Habitat from Treated Wood Used in Aquatic Environments in the Pacific Region".
- Where the above is not possible, creosote piling will stand (weather) for a minimum of 45 days prior to installation.
- These requirements are for new piling only. Reused piling will not normally be subject to any additional treatments (timberfume is a provincially licensed preservative that is available for treatment of used piles), however, pilings with excessive creosote should be avoided. Reuse of suitable piling should be encouraged. In the case of mooring piles, exposed to significant wear, the contractor should encourage the owner to protect the piling with rub strips as per the "Guidelines for use of Treated Wood.
- Timber piling is normally driven using a drop hammer, a diesel/air impact hammer or a small vibratory hammer. Because of the relative small diameter of the timber pile, and its excellent energy absorbing quality, there is little threat of sound pressure impacts to fish and their habitat when driving timber piles.

- Environmental monitoring of sound pressure impacts is not required.
- An attempt should be made to determine whether least impact means full extraction of the piling or if leaving a stub that would not interfere with navigation is acceptable. If complete demolition is required on timber pile structures, the contractor will remove the piling by mechanical means and avoid breaking the piling at the mud line or below. It may be appropriate to cut off the piling flush with the mud line. All demolition operations should be monitored in order to control and contain the construction debris and to determine whether there are any effects on fish or fish habitat.

3)-Concrete Piles

When driving concrete piles, regardless of which hammer is being used, the following Best Management Practices will be employed to minimize/prevent impacts to fish habitat:

Concrete Piles 24 inch diameter and less

- The physical design of 24 inch concrete pile dictates that: 1/ the energy required must be controlled in order to prevent the pile from breaking and 2/ the concrete construction of the pile will absorb the energy. These two factors are expected to result in low level shock wave emission (less than 30 kPa.) and minimal or no effects to fish and their habitat should result.
- Environmental monitoring of sound pressure levels is generally not required.

Piles Greater than 24 inch diameter

- When driving concrete piles with a diameter greater than 24 inches using an impact or hydraulic hammer, the following Best Management Practice will be employed to minimize the impact on fish habitat:
- Visual and hydrophone monitoring of the impact on fish by the sound waves emitted will be required. If sound pressures over 30 kPa are measured or a fish kill occurs, the contractor will introduce effective means of reducing the level of the shock waves. Appropriate mitigating measures would be the deployment of a bubble curtain over the full length of the wetted pile. This should reduce the shock waves to an acceptable level.
- If, despite the introduction of preventative measures, further visual/hydrophone monitoring reveals unacceptable conditions (fish kill or sound pressure over 30 kPa), the work will stop immediately, DFO will be contacted, and the methods will be reviewed and corrected

4)-Steel Pipe Piles

Piles less than 18 inch diameter

When driving steel piles 24 inches in diameter and less, regardless of the type of hammer being used, the following Best Management Practices will be employed to prevent impacts to fish habitat:

- Because of the small diameter of the pile it is assumed that the energy required to drive the pile to the final point of installation will not result in shock waves in excess of 30 kPa, therefore, protective measures to reduce shock waves are not expected to be required.
- If, however, ground conditions during pile installation cause a fish kill, work will cease and contractors will be responsible for introducing effective means of reducing the level of shock waves or will introduce measures that will prevent fish from entering the potentially harmful shock wave area. Appropriate mitigating measures would include the deployment a bubble curtain over the full length of the wetted pile. This technique should reduce the shock waves to an acceptable level.
- If, despite the introduction of preventive measures, further visual/hydrophone monitoring reveals unacceptable conditions (fish kill or sound pressure over 30 kPa), then the work will stop immediately and the methods will be reviewed and corrected (with consultation with DFO).

Piles Greater than 24 inches in diameter

When driving steel pipe piles with a diameter greater than 24 inches using impact or hydraulic hammers, the following Best Management Practices will be employed to prevent impacts to fish habitat:

- Hydrophone and visual monitoring of the effects of the shock waves on fish will be required. If a fish kill occurs, the contractor will introduce effective means of reducing the level of the shockwave. Appropriate mitigating measures would be the deployment of a bubble curtain over the full length of the wetted pile.
- If, despite the introduction of preventive measures, further visual/hydrophone monitoring reveals unacceptable conditions (fish kill or sound pressure over 30 kPa), then the work will stop immediately and the methods will be reviewed and corrected (with consultation with DFO).

5)-Steel Sheet Piles and H-piles

When driving steel sheet piles and H-piles with a drop hammer, an impact hammer or a vibratory hammer, the following Best Management Practices will be employed to minimize the impact on fish habitat:

- It is anticipated that the driving of these types of piles will not generate shock waves in excess of 30kPa, therefore, mitigating measures are not expected to be required.
-
-

- If, however, ground conditions during pile installation cause a fish kill, work will cease and contractors will be responsible for introducing effective means of reducing the level of shock waves or will introduce measures that will prevent fish from entering the potentially harmful shock wave area. Appropriate mitigating measures would include the deployment a bubble curtain over the full length of the wetted pile. This technique should reduce the shock waves to an acceptable level.
- If, despite the introduction of preventive measures, further visual/hydrophone monitoring reveals unacceptable conditions (fish kill or sound pressure over 30 kPa), then the work will stop immediately and the methods will be reviewed and corrected (in consultation with DFO).

6)-Stone Column Construction

When installing stone column using a vibroflot, the following Best Management Practices will be employed to prevent impacts to fish habitat:

- The vibrating action and air flush associated with the operation of the probe results in a high degree of turbidity. When this level exceeds the criteria as outlined in the British Columbia Approved Water Quality Guidelines, the contractor will introduce containment methods that are designed to isolate the contaminated area and to prevent fish from entering the contaminated area. Silt curtains and netting are two methods that can provide the necessary protection.
- When supplying the aggregate to the probe, the contractor will ensure that spillage is prevented, thereby providing additional protection to fish habitat.
- An independent environmental consultant will be used to monitor turbidity levels.

7)-Underwater Drilling and Blasting

When performing underwater drilling and blasting the following Best Management Practices will be employed to prevent impacts to fish habitat:

<u>Underwater Drilling</u>

- Generally, drilling underwater is a process that has very little impact on fish or fish habitat. The procedure does not generate shock waves.
- Contractors will ensure that all attachments (hydraulic connections and couplings) are in good operating order and inspected prior to the start of every day. Spill kits and containment booms must be maintained on-site in case of spills.
- Depending on soil conditions and the potential for turbidity, drill cuttings will be deposited adjacent to the operation, contained on the sea bed or pumped to the surface for deposit into containment skiffs or scows for land disposal when it is determined that the drill cuttings are unsuitable for return to the environment.

<u>Underwater Blasting</u>

Contractors required to perform blasting underwater will provide the following protection to prevent impacts to fish habitat:

- Because of the potential for harmful shock waves resulting from a blast, a protection shield will surround the immediate blast area. This would be in the form of an air-induced bubble curtain, which has the primary purpose of absorbing the shock wave and a secondary purpose of preventing fish from entering the blast area.
- In order to protect against flying rock, mats (rubber) will be placed over the blasting area. The placement of the mats may also provide protection for any fish swimming in the immediate area.
- Monitoring of fish movement and concentrations will be conducted using a sounder to determine if fish herding or scaring techniques (seal bombs) can be utilized to reduce the presence of fish in the blast area.If fish scaring techniques are deemed necessary, the DFO habitat biologist or technician responsible for the project must be consulted to determine the risk to fish.

8)-Cleaning out Pipe Piles:

When cleaning out pipe piles (i.e.: air lifting) the following Best Management Practices will be employed to prevent impacts to fish habitat:

- Generally, sediment contained in the pipe is will be pumped to the surface and processed through an approved containment system and disposed of at an approved landfill site.
- If the contractor knows that the sediment is toxic, the sediment must not be redistributed in the area. If the sediment is non-toxic, and if fish are not present in the area, and adjacent fish habitats are not a concern (contact DFO) it may be acceptable to:

1. Pump the sediment through a discharge tube and allow it to settle in the immediate area with or without a silt curtain to contain the sediment.
2. Pump the sediment through a discharge tube and additional flex hosing and redirect it back to the base of the pile.

9) Containment of Concrete Residue and Water Run Off

When placing concrete in form work over or in water, the following Best Management Practices will be employed to prevent the impacts to fish habitat:

<u>Pouring concrete</u>

- Spills: When pouring concrete all spills of fresh concrete must be prevented. Concrete is toxic to fish due its high pH. If concrete is discharged from the transit mixer directly to the formwork or placed by wheelbarrow, proper sealed chutes must be constructed to avoid spillage. If the concrete is being

- placed with a concrete pump, all hose and pipe connections must be sealed and locked properly to ensure the lines will not leak or uncouple. Crews will ensure that concrete forms are not filled to overflowing.
- Sealing forms: All concrete forms will be constructed in a manner which will prevent fresh concrete or cement-laden water from leaking into the surrounding water.

Curing concrete

- When fresh water is used to cure concrete, the run off must be monitored for acceptable pH levels. If the pH levels are outside the allowable limits then the run off water must be contained and neutralized.

Grinding concrete

- When grinding cured concrete, the dust and fines entering the water must not exceed the allowable limits for suspended solids. When grinding green or incompletely cured concrete and the dust or fines are entering the water, pH monitoring will be conducted to ensure allowable ranges are maintained. In the event that the levels are outside the acceptable ranges, preventative measures will be introduced. This may include introducing silt curtains to contain the solids and prevent fish from entering a contaminated area or constructing catch basins to recover the run off and neutralizing it prior to disposal.

Patching concrete

- Spills: When patching concrete, all spills must be contained and prevented from entering the water.

Washing hand tools, pumps and transit mixer

- All tools, pumps, pipes, hoses and trucks used for finishing, placing or transporting fresh concrete must be washed off in such a way as to prevent the wash water and excess concrete from entering the marine environment. The wash water will be contained and disposed of upland in an environmentally acceptable manner.

Whenever there is the possibility of contaminants entering water, the contractor will monitor pH levels to ensure acceptable levels.

APPENDIX

Fisheries and Oceans Canada

Contact List

Name	Telephone No.	Fax. No.

NOTICE OF PROJECT

Project Location:

To: Fisheries and Oceans Canada Attention:

Telephone/Fax/email:_____

From: "Contractor"

Telephone/Fax/email:_____

Representative:

Please be advised of the following marine/pile driving project:

Project Name:

Project Location:

Project Manager/Superintendent:

Project Telephone/Fax/email:_____

Project commencement date:

Project Information:

Type: Bearing Fender Mooring

Number of Piles:

Pile Diameter (if steel)

Type of Driving: Vibro Drop Hammer _____

Special Conditions at the Bottom (use of pins, sockets, epoxy, concrete, other)

_____

General Equipment On-Site (barge, truck, crane, etc.) _____

Signature of Contractor: _____

Date: _____

Fisheries and Oceans | Pêches et Océans

Pacific Region

Best Management Practices (BMPs) for Constructing Docks and Floats in the South Coast Area (Vancouver Island - Sunshine Coast)

- These BMPs apply to docks, floats and gangways proposed for the marineand freshwater shoreline. They do not, however, apply to congested waterways or foreshores where there are presently numerous docks and floats in a restricted area.
- Adherence to the BMPs should allow a property owner to construct a dock or float that will not adversely affect fish habitat.
- If you are able to meet the criteria set forth in these BMPs, you do not require further advice from Fisheries & Oceans Canada (DFO) Habitat Management staff. Completion of the notification page of this document and provision of the notification to the local DFO office is all that is necessary (See notification form attached).
- It is your responsibility to ensure that you have met the requirements of other agencies with jurisdication over land and water development in your area (Land and Water BC; local government, Regional Districts, etc).

The focus of these BMPs is to protect fish habitat from the impacts of shading, fill placement and low tide grounding of both structures and vessels.

1. Access ramps or walkways should be a minimum of 1.0 metre above the highest high water mark (HHW) of the tide, lake or stream.
2. Walkways should be a maximum width of 1.5 metres.
3. The bottom of floats should be a minimum of 1.0 m above the bed of the sea, lake or stream during the lowest water level or tide. Float height above lowest water level will need to be increased if deep draft vessels are to be moored at the dock or float.
4. Grating incorporated into ramps, walkways or floats will increase light and reduce shading of the sea/lake/stream bed. If grating is impractical, deck planks should be no wider than 15cm (6in) and planks should be spaced at least 2.5cm (1in) apart to allow light penetration.
5. North/South dock alignments will further improve light penetration.
6. Floats must not to be installed over marine or freshwater vegetation (eelgrass, kelp, saltmarsh, lake weeds, etc.).
7. Concrete, steel, BMP-treated or recycled timber piles are acceptable. For detailed information on treated wood options, refer to the *Guideline to Protect Fish and Fish Habitat from Treated Wood Used in the Aquatic Environment in the Pacific Region*, available on-line at *http://www.dfo-mpo.gc.ca/Library/245973.pdf*.

8. The dock/float structure and the vessel to be moored at the structure are not to come to rest on intertidal seabed, lakebed or streambed areas during the lowest tide or lowest water period of the year.
9. Construction must not to include use of native beach materials (boulders, cobble, gravel, sand, drift logs etc.).
10. Access to the beach for construction purposes is to be from the adjacent upland property wherever possible. If heavy equipment is required to work on the beach or access is required along the beach, you should seek the advice of a professional biologist to ensure that fish habitat, including riparian, intertidal saltmarch or in-water vegetation, is not adversely affected during construction.
11. Filling, dredging or blasting below the High Water Mark is not permitted.
12. Works at the upland/water interface are to be conducted when the site is not wetted by the tide or when the water levels in lakes and streams have receded, if practical.
13. Works are to be conducted in a manner that does not result in the deposit of toxic or deleterious substances (e.g. sediment, uncured concrete, sediment, fuel, lubricants, paints, stains, etc.) into waters frequented by fish.
14. Refueling of machinery and washing of buckets and hand tools must take place a minimum of 10m away from waters frequented by fish.
15. Marine foreshore construction should take place between June 1 and February 15 of any calendar year. Freshwater construction should occur during the period July 1 to September 15 in any calendar year.
16. Terrestrial riparian vegetation and intertidal saltmarsh or in-water vegetation must not be harmfully affected by access or construction. You are advised to seek the advice of a professional biologist if vegetation will be affected in any way by your proposed works

Please be advised that works in and around fish habitat (riparian habitats adjacent to fish bearing waters, tidal foreshores, lakeshores and streams) can negatively affect fish habitat. Section 35(1) of the Fisheries Act prohibits the harmful alteration, disruption or destruction of fish habitat (HADD). The Fisheries Act may be enforced if a HADD occurs during access, construction or maintenance of the erosion control structure.

For additional information, please visit our DFO website at www.pac.dfo-mpo.gc.ca

Revised by: DFO-Habitat Management, South Coast Area, March, 2004

NOTIFICATION TO DFO – CONSTRUCTION OF FLOATS AND DOCKS

You signature below indicates that you have read and understood these guidelines and will abide by them.

Name: _____
Address:_____

_____

Telephone #/cell#:_____
Worksite Address (if different from above):_____

_____

Detailed Description of Works(dimensions; materials-attach a drawing if desired):

_____

_____

_____

Start Date for Works:_____End Date for Works:_____

I acknowledge thatI will adhere to the conditions described for construction of floats and docks as outlined above. I will not place fill below the HHW mark, use native beach materials for construction or harmfully affect riparian or in-water vegetation or other fish habitats

Signature:_____ Date Signed: _____

Fax or Mail this form to your local DFO office AT LEAST **5** BUSINESS DAYS PRIOR to the planned construction start date. A Fisheries Officer may inspect your construction site to ensure compliance with the Fisheries Act.

Fax Numbers:
DFO- Comox: (250) 339-4612
DFO- Duncan: (250) 746-8397
DFO- Nanaimo: (250) 754-0309
DFO- Pender Harbour: (250) 883-2152
DFO- Powell River: (250) 485-7439
DFO- Port Alberni: (250) 724-2555
DFO- Powell River: (250) 485-7439
DFO- Victoria: (250) 363-0191

PRELIMINARY HAZARD ASSESSMENT FORM

Project Number:	**R.104594.001**
Location:	**Quatsino, Vancouver Island, BC**
Date:	
Name of Departmental Representative:	Neda Naderi
Name of Client:	Transport Canada – Harbours and Ports
Name of Client Project Co-ordinator	Nancy Brooks PH: ()--

Site Specific Orientation Provided at Project Location **Yes** ☐ **No** ☒

Notice of Project Required **Yes** ☒ **No** ☐

NOTE:
PWGSC requires "**A Notice of Project"** for all construction work related activities.

NOTE:
OHS law is made up of many municipal, provincial, and federal acts, regulations, bylaws and codes. There are also many other pieces of legislation in British Columbia that impose OHS obligations.

Important Notice: This hazard assessment has been prepared by PWGSC for its own project planning process, and to inform the service provider of actual and potential hazards that may be encountered in performance of the work. PWGSC does not warrant the completeness or adequacy of this hazard assessment for the project and the paramount responsibility for project hazard assessment rests with the service provider.

TYPES OF HAZARDS TO CONSIDER	Potential Risk for:				COMMENTS
Examples: Chemical, Biological, Natural, Physical, and Ergonomic Listed below are common construction related hazards. Your project may include pre-existing hazards that are not listed. Contact the Regional Construction Safety Coordinator for assistance should this issue arise.	**PWGSC, OGD's, or tenants**		**General Public or other contractors**		Note: When thinking about this pre-construction hazard assessment, remember a **hazard** is anything that may cause harm, such as chemicals, electricity, working from heights, etc; the **risk** is the chance, high or low, that somebody could be harmed by these and other hazards, together with an indication of how serious the harm could be.
	Yes	**No**	**Yes**	**No**	
Typical Construction Hazards					
Concealed/Buried Services (electrical, gas, water, sewer etc)		X	X		Unknown if there are services within the waterlot.
Slip Hazards or Unsound Footing	X		X		
Working at Heights		X		X	
Working Over or Around Water	X		X		
Heavy overhead lifting operations, mobile cranes etc.	X		X		

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Revision #: 1
Approval Date: May 05, 2015

Marine and/or Vehicular Traffic (site vehicles, public vehicles, etc.	X		X		
Fire and Explosion Hazards	X		X		
High Noise Levels	X		X		
Excavations		X		X	
Blasting		X		X	
Construction Equipment	X		X		
Pedestrian Traffic (site personnel, tenants, visitors, public)	X		X		
Multiple Employer Worksite	X		X		Example : Contractor working in a occupied Federal Employee space.

Electrical Hazards					**Comments**
Contact With Overhead Wires		X		X	
Live Electrical Systems or Equipment		X	X		
Other:					
Physical Hazards					
Equipment Slippage Due To Slopes/Ground Conditions		X		X	
Earthquake	X		X		
Tsunami	X		X		
Avalanche		X		X	
Forest Fires	X		X		
Fire and Explosion Hazards		X		X	
Working in Isolation		X		X	
Working Alone	X		X		Sometimes PSPC sends a representative to site alone.
Violence in the Workplace	X		X		
High Noise Levels	X		X		
Inclement weather	X		X		
High Pressure Systems		X		X	
Other:					
Hazardous Work Environments					
Confined Spaces / Restricted Spaces		X		X	Review and provide confined space assessment(s) from PWGSC or client confined space inventories. Refer to PWGSC Standard on Entry into Confined Spaces. Contact the Regional Construction Safety Coordinator.
Suspended / Mobile Work Platforms		X		X	
Other:					
Biological Hazards					
Mould Proliferations		X		X	

Accumulation of Bird or Bat Guano		X		X	
Bacteria / Legionella in Cooling Towers / Process Water		X		X	
Rodent / Insect Infestation		X		X	
Poisonous Plants		X		X	
Sharp or Potentially Infectious Objects in Wastes		X	X		
Wildlife	X		X		
Chemical Hazards					
Asbestos Materials on Site		X		X	If "yes" a pre-project asbestos survey report is required. Provide Contractor with DP – 057 ELF Form 16 "Contractor Notification and Acknowledgement"
Designated Substance Present		X		X	If "yes" a pre-project designated substance survey report is required.
Chemicals Used in work		X		X	
Lead in paint		X		X	If "yes" a pre-project lead survey report is required.
Mercury in Thermostats or Switches		X		X	If "yes" a pre-project mercury survey report is required.
Application of Chemicals or Pesticides		X		X	
PCB Liquids in Electrical Equipment		X		X	
Radioactive Materials in Equipment		X		X	
Other:					
Contaminated Sites Hazards					
Hazardous Waste		X		X	
Hydrocarbons		X	X		There may be fuel in the tank of the submerged boat motor.
Metals		X	X		
Other:					

Security Hazards					**Comments**
Risk of Assault	X		X		
Other:					
Other Hazards					

Other Compliance and Permit Requirements[1]	**YES**	**NO**	**Notes / Comments[2]**
Is a Building Permit required?		X	
Is a Electrical permit required?		X	
Is a Plumbing Permit required?		X	

Is a Sewage Permit required?		X	
Is a Dumping Permit required?		X	
Is a Hot Work Permit required?		X	
Is a Permit to Work required?	X		Mandatory for ALL AFD managed work sites.
Is a Confined Space Entry Permit required?		X	Mandatory
Is a Confined Space Entry Log required?		X	Mandatory for all Confined Spaces
Discharge Approval for treated water required?		X	

Notes:

(1) Does not relieve Service Provider from complying with all applicable federal, provincial, and municipal laws and regulations.

(2) TBD means To Be Determined by Service Provider.

Service Provider Acknowledgement: We confirm receipt and review of this Pre-Project Hazard Assessment and acknowledge our responsibility for conducting our own assessment of project hazards, and taking all necessary protective measures (which may exceed those cited herein) for performance of the work.			
Service Provider Name			
Signatory for Service Provider		**Date Signed**	
RETURN EXECUTED DOCUMENT TO PWGSC DEPARTMENTAL REPRESENTATIVE PRIOR TO ANY WORK COMMENCING			

Quatsino Ocean Floor Debris Clean Up
Environmental Review – Transport Canada Harbours and Ports

Under section 30(b) of the *Public Port and Public Port Facility Regulations* (PPPPFRs), you are tasked with ensuring the environmental protection of the Quatsino Public Port Facility for activities set out in column 1 of Schedule 4. As a part of this responsibility you cannot permit this activity to occur if the proposed activity will adversely affect sediment, soil, air or water quality as per section 14 (h) of the (PPPPFRs).

Environmental Services has reviewed the following document to determine the potential environmental impacts of the proposed activity:

- Herold Engineering. December 2018. *Marine Engineering Services – Debris Survey Quatsino, Port Facility*. Prepared for Public Services and Procurement Canada

Environmental Services is satisfied, based on the review of the above mentioned document, that sufficient environmental protection measures can be utilized to reduce the potential environmental impacts associated with this type of activity, within the proposed work location. Please see below for the environmental protection measures that need to be included within the scope of works. Particular attention should be paid to the timing windows of least risk for fish and fish habitat and to the Waste Management section regarding what is and is not acceptable for removal.

Fish and Fish Habitat and Water Quality

The project will include in water works which, without appropriate environmental controls, has the potential to impact fish and fish habitat.

- The timing window to conduct low risk activity of least risk to fish and fish habitat for this particular area, is as follows
    - ***June 15 – August 15 and November 15 – February 15***
    - If works is to occur outside of the timing window of least risk, the contractor is expected to provide adequate environmental monitoring for the duration of the activity. This monitoring is referred to below in the environmental monitoring section.
        - Transport Canada, Environmental Services, must be notified at least 20 calendar days prior to the start of work
        - If a sediment curtain is not utilized, the contractor is responsible for reporting what mitigation was implemented to contain sediment and procedures implemented during the presence of fish and sea mammals.
- Transport Canada is aware that Section 36(3) of the federal *Fisheries Act*, administered by Environment Canada, prohibits the discharge of deleterious substances to waters frequented by fish, or to a place where those substances might enter such waters. The Contractor and Public Works and Government Services Canada must ensure on behalf of Transport Canada that, at all times during the project, deleterious substances are prevented from entering into fish-bearing waters. Due diligence is required at all times to prevent such discharges.
- This operation will not involve dredging. All debris must be lifted off of the bottom taking care to minimize as much as practical, disruption to the sea bed and the suspension of sediments in the water column.
- Upon recovery, all organisms which may survive removal (e.g. crabs, starfish) must be removed from the debris and returned to the immediate marine waters as soon as possible.
- Extra care must be taken when recovering items which may contain deleterious substances (i.e. engine blocks, batteries or oil tanks) in order to prevent the liberation of these substances.
- Care must be taken to ensure that nearshore habitats and riparian vegetation are not altered, disrupted or destroyed in the process of removing debris. For example:
    - debris waste should not be towed up onto the beach or through wetlands or other sensitive aquatic habitats prior to disposal; they should be winched up on barges, docks, etc. or floated and towed away.

    - Precautions must be taken to ensure that any works being conducted from a barge do not result in the grounding of the barge
- Care must be taken to ensure that fish or fish habitats are not damaged during the process of accessing and carrying out the work. Care must be taken when spudding down or anchoring the barge that fish habitats are not harmfully altered, disrupted or destroyed.
- Barges and other operating vessels are to avoid eelgrass, kelp beds, shellfish beds and other areas of shallow water. Increased turbidity as a result of prop wash must be avoided.
- No machinery is to be operated within the inter-tidal area.
- If a silt curtain is not being utilized, work should be temporarily stopped if a sea mammal or a school of fish has been sighted in the immediate work area. This physical area for such observations should be defined by the extent of any sediment plume created during the removal of debris and/or the extent to which equipment will be moving around within the waterlot.

Waste Management

- The list of observed debris (Herold Engineering 2018) has been reviewed and an attempt should be made to ***remove all debris with the exception of concrete blocks and natural timbers.*** Other debris that requires some special consideration:
    - Creosote timbers should be removed unless they are laying horizontally on the sea bed and removing them would require any form of excavation. Any creosote timbers lying horizontally and are surficially buried with sediment, should be removed.
    - All tires, and any other debris that has marine life attached to it, should be removed and any marine life contained within them should be returned to marine environment immediately.
    - Exposed and surficially buried mooring chain should be removed. The chain should be cut once it is observed that the chain is significantly buried within the sediment. The contractor will be required to make that determination at the time of removal.
    - Debris buried below the sediments and is not exposed should not be removed. This removal activity should not involve any excavation of sediments to obtain debris.
- All refuse that is removed must be disposed of at an approved landfill site (approval may be from the Province of BC, or the designated regional authority under the Waste Management Act or by Department of Indian and Northern Affairs under the Indian Reserve Waste Disposal Regulations). Documentation must be obtained from the approved facility/landfill upon disposal. The documentation must include the name of the landfill, location of landfill, evidence of it being an approved facility, the date the debris was disposed of, and a general description of the debris disposed. This mitigation is applicable to all debris, including hazardous wastes.

Environmental Emergencies

An appropriate spill prevention, containment, and clean up contingency plan for deleterious substances (eg., fuel, oil, hydraulic fluid, concrete and concrete leachate etc.), will be required prior to work commencing.

A spill kit must be on site for the duration of the work and be appropriately equipped to deal with potential spills identified in the planning noted above. The Contractor will be required to also have personnel trained to use the spill equipment.

Environmental Monitoring

Transport Canada is planning to undertake the removal of debris that has accumulated on the seabed within the waterlot of the Quatsino Public Port Facility.
The debris, in its current condition, may be a point source of sediment contamination. It is Transport Canada's opinion that the debris removal will lead to an overall improvement in the quality of the sediments at this site.
The work is being contracted and managed by PSPC on behalf of Transport Canada.
Transport Canada will request the Contractor to provide a short report (1-2 pages) once completed, outlining the following:

- If an Environmental Monitor was used and if so, name and credentials. If not, the name of the site supervisor responsible for stopping and assessing a situation if an emergency were to occur, (e.g. spill)
- Dates work was carried out
- Picture of Best Management Practices implemented to reduce impacts on water quality outside of the immediate work area
- Picture of Spill kit on site
- Date and time of the presence of any sea mammals and/or schools of fish observed in the area and what species, if identifiable. Action taken during mammal movement must be documented.
- Duration of activity and percentage of time in which a sediment plume was present during the removal of material from the seabed. This should include a description and pictures
- Details of any incidents and follow-up actions taken, if applicable

If works is to occur outside of the timing window of least risk, the contractor is expected to provide adequate environmental monitoring for the duration of the activity. Monitoring must include components listed above and:

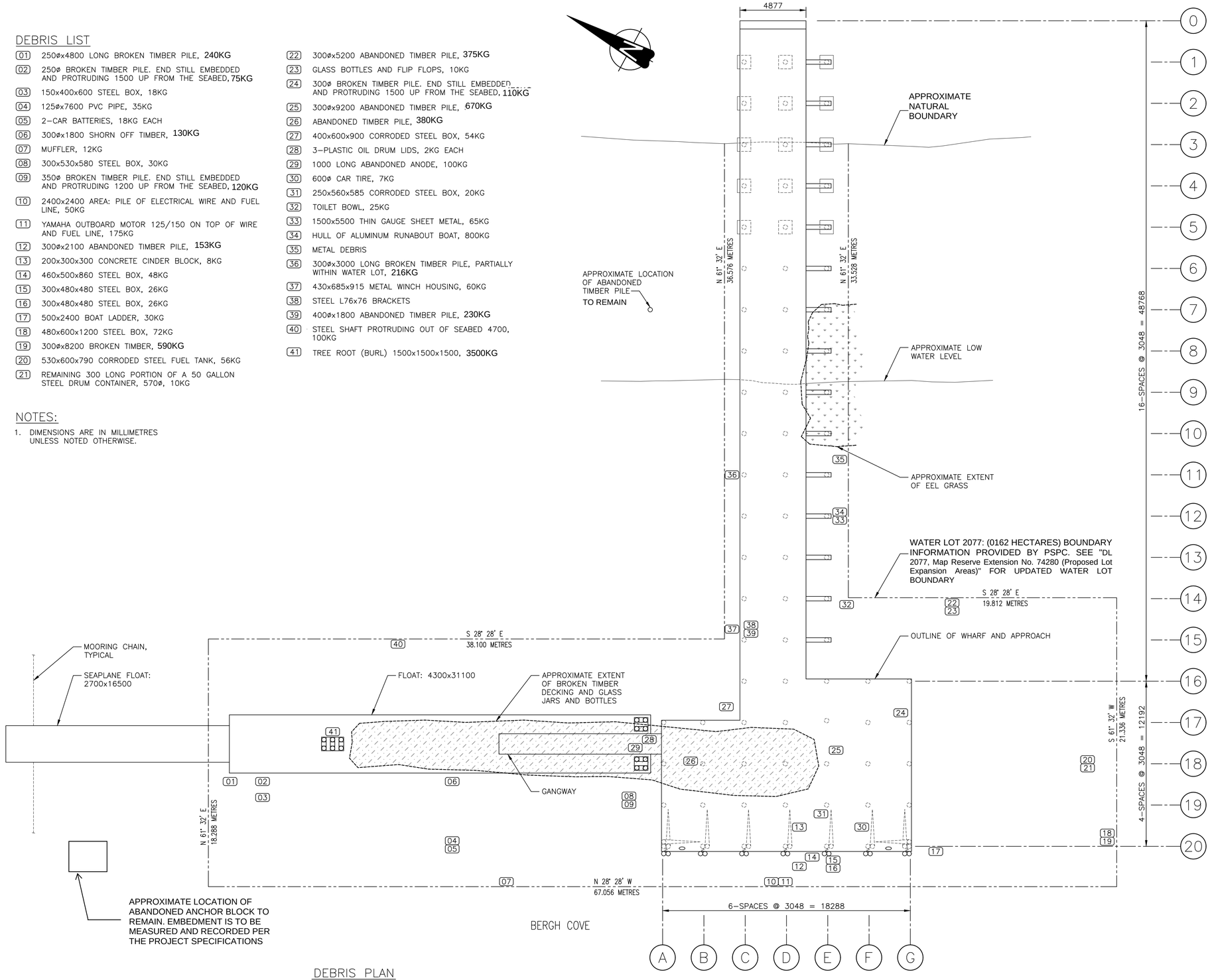
- It is expected that an environmental monitor will be on site for the duration of the activity. Information regarding this individual(s) must be included and a description of their role and responsibilities
- The contractor is responsible for reporting what mitigation was implemented to contain sediment during the removal of debris from the sea floor and what procedures were implemented during the presence of fish and sea mammals.
- Date and time of any noted fish presence and what species, if identifiable. Action taken during fish movement must be documented.
- Date and time of the presence of any sea mammals in the area and what species, if identifiable. Action taken during mammal movement must be documented.
- Pictures of sediment curtain in use. If sediment curtain is not used, pictures of other mitigation implemented, if applicable.

DEBRIS LIST

01 250ø x 4800 LONG BROKEN TIMBER PILE, 240KG
02 250ø BROKEN TIMBER PILE. END STILL EMBEDDED AND PROTRUDING 1500 UP FROM THE SEABED, 75KG
03 150x400x600 STEEL BOX, 18KG
04 125ø x 7600 PVC PIPE, 35KG
05 2–CAR BATTERIES, 18KG EACH
06 300ø x 1800 SHORN OFF TIMBER, 130KG
07 MUFFLER, 12KG
08 300x530x580 STEEL BOX, 30KG
09 350ø BROKEN TIMBER PILE. END STILL EMBEDDED AND PROTRUDING 1200 UP FROM THE SEABED, 120KG
10 2400x2400 AREA: PILE OF ELECTRICAL WIRE AND FUEL LINE, 50KG
11 YAMAHA OUTBOARD MOTOR 125/150 ON TOP OF WIRE AND FUEL LINE, 175KG
12 300ø x 2100 ABANDONED TIMBER PILE, 153KG
13 200x300x300 CONCRETE CINDER BLOCK, 8KG
14 460x500x860 STEEL BOX, 48KG
15 300x480x480 STEEL BOX, 26KG
16 300x480x480 STEEL BOX, 26KG
17 500x2400 BOAT LADDER, 30KG
18 480x600x1200 STEEL BOX, 72KG
19 300ø x 8200 BROKEN TIMBER, 590KG
20 530x600x790 CORRODED STEEL FUEL TANK, 56KG
21 REMAINING 300 LONG PORTION OF A 50 GALLON STEEL DRUM CONTAINER, 570ø, 10KG
22 300ø x 5200 ABANDONED TIMBER PILE, 375KG
23 GLASS BOTTLES AND FLIP FLOPS, 10KG
24 300ø BROKEN TIMBER PILE. END STILL EMBEDDED AND PROTRUDING 1500 UP FROM THE SEABED, 110KG
25 300ø x 9200 ABANDONED TIMBER PILE, 670KG
26 ABANDONED TIMBER PILE, 380KG
27 400x600x900 CORRODED STEEL BOX, 54KG
28 3–PLASTIC OIL DRUM LIDS, 2KG EACH
29 1000 LONG ABANDONED ANODE, 100KG
30 600ø CAR TIRE, 7KG
31 250x560x585 CORRODED STEEL BOX, 20KG
32 TOILET BOWL, 25KG
33 1500x5500 THIN GAUGE SHEET METAL, 65KG
34 HULL OF ALUMINUM RUNABOUT BOAT, 800KG
35 METAL DEBRIS
36 300ø x 3000 LONG BROKEN TIMBER PILE, PARTIALLY WITHIN WATER LOT, 216KG
37 430x685x915 METAL WINCH HOUSING, 60KG
38 STEEL L76x76 BRACKETS
39 400ø x 1800 ABANDONED TIMBER PILE, 230KG
40 STEEL SHAFT PROTRUDING OUT OF SEABED 4700, 100KG
41 TREE ROOT (BURL) 1500x1500x1500, 3500KG

NOTES:

1. DIMENSIONS ARE IN MILLIMETRES UNLESS NOTED OTHERWISE.



DEBRIS PLAN

1:150

NOTE: LOCATIONS AND DIMENSIONS ARE APPROXIMATE DUE TO NATURE OF SITE AND ACCESSIBILITY. DRAWING SHALL NOT BE SCALED. SCALE AND SCALE BAR ARE PROVIDED FOR CONVENIENCE ONLY.

0m 5m 10m 15m 20m

LOCATIONS AND WEIGHTS OF DEBRIS ARE APPROXIMATE AND INCLUDED FOR TENDERING OF PROJECT.

PWGSC – A1 – 841X594

0 10 20 30 40 50 60 70 80 90 100mm

Public Works and Government Services Canada
Travaux publics et Services gouvernementaux Canada

REAL PROPERTY SERVICES
Pacific Region
SERVICES IMMOBILIERS
Région de Pacifique

HEROLD ENGINEERING

HEL PROJECT # 2428-093

Revision/ Revision	Description/Description	Date/Date
3		
2		
1		
0	ISSUED FOR REPORT	2018 / 12 / 03

Client/client

TRANSPORT CANADA HARBOURS AND PORTS

Project title/Titre du projet

MARINE ENGINEERING SERVICES PORT FACILITY DEBRIS SURVEY QUATSINO, B.C.

Consultant Signature Only

Designed by/Concept par
SPS

Drawn by/Dessine par
JJMC

PWGSC Project Manager/Administrateur de Projets TPSGC
MARK BURGER

Regional Manager, Architectural and Engineering Services
Gestionnaire régionale, Services d'architectural et de génie, TPSGC

Drawing title/Titre du dessin

SITE PLAN AND DEBRIS LIST

Project No./No. du projet	Sheet/ Feuille	Revision no./ La Révision no.
R.100590.001	01 OF 1	0

DM5XXXXXX

FOR INFORMATION ONLY

Proposed Lot Expansion Area=108m²

Proposed Lot Expansion Area=143m²

BERGH COVE

Quatsino Road

Lot 3
Plan 12408

Lot 4
Plan 12408

Limit if Fill

Natural Boundary According to Plan 10TR5-Rupert

Road

NF

Map Reserve Extension No.74280

CABLE

Float

Piles

Order in Council #759 Privy Council 1955-25/191

Gangway

Approach

Shed

4937

DL 2077
Plan 10RTR5-Rupert

Ship Wreck

18.288 m 62° 07' 39"

16.764 m 152° 07' 39"

8.579 m 38°

6.437 m 62°

38.100 m 152° 07' 39"

36.576 m 62° 07' 39"

33.528 m 62° 07' 39"

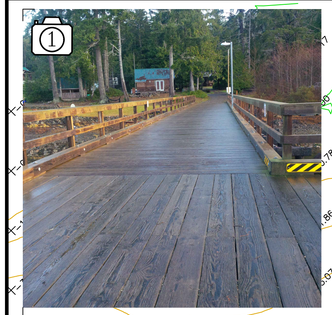
67.056 m 152° 07' 39"

19.812 m 152° 07' 39"

21.336 m 62° 07' 39"

6.45 m 62°

550



Public Works and Government Services Canada
Geomatics Services

219-800 Burrard St.
Vancouver, B.C. V6Z 0B9
604-775-7079

Travaux Publics et Services gouvernementaux Canada

Location Map BCGS 92L.052

drawing

Site Plan of Quatsino Wharf Transport Canada

dessin

The intended plot size of this plan is 864mm in width by 560mm in height (D size) when plotted at a scale of 1:250.

Distances are in metres and decimals thereof.

Scale 1:250

5 0 5 10 15

REV.1 2018-06-27

drawn date	S. M. KAVANAGH 2018-06-07	dessin
appoved date	I. R. ROBERTSON 2018-06-07	dessin
project no.	**R.097383.001**	*no. du project*
survey file no.	**SF #3455.01**	
drawing no.	**SK #5525.01**	*no. du dessin*
GCDocs no.	**79436105**	

Date of Survey: December 15, 2015 & May 16, 2018
FB#042 Pg:36-41

Legend:

- DENOTES ROCK POST FOUND
- DENOTES TRAVERSE NAIL
- DENOTES CONCRETE BLOCK
- DENOTES BUILDING
- DENOTES WOOD WHARF & FLOAT
- DENOTES LAMP STANDARD
- DENOTES BOLLARD
- DENOTES MAJOR CONTOUR 5.0m
- DENOTES MINOR CONTOUR 1.0m

All soundings show are reduced to chart datum.

HYDROGRAPHIC DATA COLLECTIONS:
Vessel: PWGSC "Pacific Echo"
Sounder: Reson 7125 Multibeam
Positioning/Roll Pitch Corr.: Applanix POS MV
Sound Velocity: Seacast MINOS X

UPLAND DATA COLLECTION:
TRIMBLE R8 GNSS
Lieca Total Station 705

This plan lies within the Mount Waddington Regional District.

Certified Correct this 7th day of June, 2018.

Ian R. Robertson, BCLS 749

Revision: August 27, 2018 - Add Bearings and Distances