REQUEST FOR PROPOSAL

RFP NO. 2026-PARKS-01 - Marine Pier and Boardwalk Repairs

DATE OF ISSUE: October 19, 2026

TABLE OF CONTENTS

1 INTRODUCTION 1
2 BACKGROUND 1
3 SCOPE OF WORK 4
4 PROPOSED SCHEDULING 6
5 PROPOSAL INQUIRIES 6
6 PROPOSAL REQUIREMENTS 6
7 EVALUATION CRITERIA 7
8 AVAILABLE INFORMATION 7
9 GENERAL INSTRUCTIONS FOR THE PROPONENTS 7
APPENDIX A – CONSULTING SERVICES AGREEMENT 11
APPENDIX B - INSPECTION REPORT PREPARED BY HUGH TUTTLE 35
APPENDIX C – REPORT PREPARED BY MCELHANNEY 64
APPENDIX D – FIELD REVIEW PREPARED BY RYZUK GEOTECHNICAL 68
APPENDIX E – PROPOSAL RESPONSE 78

1 INTRODUCTION

The District of Sooke (District) is inviting qualified engineering consultants to submit proposals to conduct a condition assessment, prepare design drawings, conduct tender process and construction administration and inspection for the District's Rotary Pier and Marine Boardwalk.

The successful bidder (Consultant) will then enter into the Consulting Services Agreement (see Appendix A) with the District.

2 BACKGROUND

The District owns, maintains, and operates the following structures at Ed Macgregor Park, 6765 West Coast Road: accessible walkway, marine boardwalk, Rotary pier and stairs, shown in Figures 1-4.



Figure 1: Ed Macgregor Park accessible walkway, Marine Boardwalk, Rotary Pier and connecting stairs.



Figure 2: Aerial image of Marine Boardwalk, Rotary Pier and stairs to Murray Road.



Figure 3: Aerial image of accessible walkway connection to Ed Macgregor Park paths.



Figure 4: Photos of existing structures.

The Rotary Pier, Marine Boardwalk and accessible walkway at Ed Macgregor Park were constructed in approximately 1999. The stairs connecting the Rotary Pier to Murray Road access were constructed in approximately 2018. There are no record drawings available. The marine structure is surveyed.

In general, the structures are considered to be in fair to good condition and have received routine maintenance by District staff. Provided the identified deficiencies are repaired in the next few years, the structures are anticipated to have a remaining service life greater than 10-15 years.

Condition assessment reports for the pier were prepared by Hugh Tuttle Engineering Ltd. (2023) (Appendix B) and McElhanney (2026) (Appendix C) that identified the following deficiencies and required repairs:

- Replacement of deteriorated timber planks (approx. 50)
- Replacement of timber top rail (approx. 500 linear meters)
- Replacement of timber bracing on pier approach (approx. 70)
- Replacement of (4) pile hoops on the floating docks.
- Repair of stringer splices at the west end.
- Replacement of gangway rollers and guides (2 locations)
- Replacement of floating dock mooring piles (4 locations)
- The inshore boardwalk immediately adjacent to the west approach has significant fungal decay and evidence of displacement.
- There is active corrosion in the steel piles identified throughout the boardwalk in the intertidal / splash zone. The extent of steel section loss to be measured using a steel ultrasonic thickness gauge and if there is sufficient remaining section, then the piles be wrapped with a Denso-Tape or similar product system. Based on the extent and location of the corrosion, sacrificial anodes or repair of the coating system is not considered feasible.
- Review of public safety risks including handrails, pedestrian loading and environmental/seismic load screening and installation of signage and safety ladders.

The onshore walkway and stairs connecting to Murray Road were constructed in approximately 2018 and have not been assessed. A nature trail connection between the stairs and the Rotary Pier requires improvement or extension of a boardwalk structure.

Ryzuk Geotechnical Engineering & Materials Testing conducted a field review of the accessible walkway connection between Ed Macgregor Park and the Marine Boardwalk in 2022 (Appendix D). Measures to address shoreline and trail erosion are included.

3 SCOPE OF WORK

The following structures at Ed Macgregor Park, 6765 West Coast Road are within the scope of work: accessible walkway, marine boardwalk, Rotary pier and stairs to Murray Road.

The project will include the following components:

- detailed condition assessment;
- coordination with District of Sooke archaeology consultant;
- existing drainage, structures, channels, swales etc. need to be reviewed and assessed for capacity and stability meeting climate change expectations;
- detailed design drawings;
- minimum 2 meetings with District for design review at 60% and 90% design;

- permits and approvals;
- construction documentation and tender preparation;
- contract administration and inspection services.

The detailed condition assessment report will include:

- an assessment of the condition of the Assets;
- a recommended approach for conducting repairs based on priority need;
- a preventative maintenance program to increase service life;
- recommendations to address public safety risks;
- permitting and approvals required to complete the recommended repairs.

The Proponent will be responsible for coordinating relevant sub-consultants and obtaining necessary permits and approvals in order to meet all federal, provincial and municipal legislation, regulations and bylaws to carry out the implementation of the project, such as but not limited to:

- Heritage Conservation Act (Stantec is the District's Multi-Assessment Permit holder and lead for Alteration Permit);
- Department of Fisheries and Oceans;
- Navigable Waters Act/Transport Canada;
- Proximity permits for utilities (Fortis, Hydro, etc.);
- Building Permit;
- Development Permit.

Prepare detailed design drawings that will lead to Issued for Tender and Issued for Construction drawings and Class A cost estimates to industry standards.

The Proponent shall be responsible for the preparation of all construction tender documents. This includes preparing drawings, addenda, evaluating proposals and recommending award.

The Proponent shall be the Contract Administrator (CA) for the project and shall undertake the duties of the CA. The CA's responsibilities for this task will include but are not limited to:

- review and monitor construction schedule;
- hold pre-construction meeting;
- conduct field inspections and field reviews;
- notify District of any observed defects or deficiencies;
- advise on and assist with the negotiation of claims
- give District prompt notice of possible budget overruns;
- inspect work in progress, certify work and progress payments, prepare and issue progress and field review reports, certify substantial and total completion and assist in rectifying deficiencies within one (1) year of total completion;
- issue or recommend the issuance of certificates of Substantial Completion or Acceptance;
- provide record drawings of as-built work upon completion of the project.

3.1 SUMMARY OF DELIVERABLES

- Detailed Condition Assessment Report
- Meetings at 60% and 90% design
- Detailed Design Drawings – Issued for Tender
- Detailed Design Drawings – Issued for Construction
- Necessary Permits and Approvals
- Issued Construction Documentation and Tender

- Tender Evaluation and Recommendation of Award
- Contract Administration and Inspection services
- Construction Completion Certificate
- Record Drawings
- Maintenance Plan

4 PROPOSED SCHEDULING

The Proponent shall include a detailed project schedule in their Proposal. Permitting windows for conducting work should be included. Allow the District a minimum of one week review time prior to the 60% and 90% review meetings.

5 PROPOSAL INQUIRIES

All inquiries should be written and directed to:

Emma Taylor, RPP, MCIP
Manager of Parks & Environmental Services
Email: parks@sooke.ca
Telephone: 250-642-1634

Email inquiries must include the reference to RFP 2026-PARKS-01 in the subject line.

Inquiries can be made up to 2:00 p.m. local time on November 2, 2026.

6 PROPOSAL REQUIREMENTS

Proposals must be submitted as a BC Bid Electronic Submission. Only pre-authorized electronic bidders registered on the BC Bid system can make an electronic submission using the BC Bid system.

Proposals must be received by the date and time specified on BC Bid.

The following format, sequence, and instructions should be followed to provide consistency in Proponent responses and ensure each compliant Proposal receives full consideration:

a) The Appendix E Proposal Response Form or a form substantially similar to the Appendix E must be prepared and completed to the extent applicable and must be submitted as the Proponent's Proposal;
b) Number all pages consecutively.

The Appendix E Proposal Response Form provides detailed information on what the District is seeking and what information Proponents should include in their Proposals. It includes "Response Guidelines" which are intended to assist Proponents in the development of their Proposals. The Response Guidelines are not intended to be comprehensive. Proponents should use their own judgement in determining what information to provide to demonstrate that the Proponent meets or, if applicable, exceeds the District's expectations with respect to a particular response guideline.

Proposals should not contain links to information that is not set down directly in the Proponent's Proposal. Should this occur, the District may disregard any referred to source of information that is not contained in the Proposal being evaluated.

7 EVALUATION CRITERIA

The following criteria outlined below will be utilized in the evaluation of the Proposals.

Criterion	Weighting
Fee Proposal*	40%
Understanding and Methodology	25%
Key Staff, Qualifications and Roles	25%
Schedule	5%
References	5%

*For comparison between proposals, the District will assume $100,000 for Construction Administration and Inspection services. Once the tender has been awarded, the District and proponent will negotiate construction administration and inspection, project management costs.

8 AVAILABLE INFORMATION

The following information is available to the Proponent:

- assessment reports
- basemap files in AutoCAD format.

9 GENERAL INSTRUCTIONS FOR THE PROPONENTS

The following instructions, terms and conditions apply to all Proposals related to this Request for Proposal.

9.1 The District of Sooke expressly reserves rights to the following:

9.1.1 To accept any Proposal;

9.1.2 To reject any and/or all irregularities in the Proposal submitted;

9.1.3 To reject any and/or all Proposals;

9.1.4 To accept a Proposal that is not the lowest cost;

9.1.5 To make decisions with due regard to quality of service and experience, compliance with requirements and any other such factors as may be necessary in the circumstances.

9.1.6 To work with any Participant whose Proposal, in the opinion of the Management, is in the best interest of The District;

9.1.7 To cancel or re-issue the RFP.

9.2 A Proposal will not be considered if it is deemed to be incomplete in any fashion or unsigned by the appropriate authority.

9.3 Any Proposal received after the time and date specified will not be considered.

9.4 Emailed, telephoned, mailed or faxed Proposals will not be accepted.

9.5 Any contract that may be entered into as a result of this Proposal will be subject to the laws of the Province of British Columbia.

9.6 It is the responsibility of the Proponent to thoroughly examine these documents and satisfy itself as to the full requirements of this RFP.

9.7 While The District has used considerable effort to ensure an accurate representation of information in this RFP, the information contained herein is supplied solely as a guideline for Proponents. The information is not guaranteed to be accurate, nor is it necessarily comprehensive or exhaustive. The District will assume no responsibility for any oral information or suggestion(s).

9.8 Proponents are solely responsible for their own expenses in preparing a response and for subsequent negotiations, if any. If The District elects to reject all responses, The District will not be liable to any Proponent for any claims, whether for costs or damages incurred by the Proponent in preparing the response, loss of any anticipated profit in connection with any final contract, or any other matter whatsoever.

9.9 All documents, reports, proposal submissions, working papers or other materials submitted to The District shall become the sole and exclusive property of The District and as such, are subject to Freedom of Information Legislation. To request documentation confidentiality, proponents must submit a covering letter, with their proposal, detailing the specifics of their request.

9.10 Except as expressly and specifically permitted in these General Instructions to Proponents, no Proponent shall have any claim for any compensation of any kind whatsoever, as a result of participating in the RFP, and by submitting a proposal each Proponent shall be deemed to have agreed that it has no claim.

9.11 The Proponent warrants that the Proponent is not employed by The District, nor is an immediate relative of such an employee, if the goods or services to be supplied under this Proposal are intended to be supplied to the department in which such employee works.

9.12 If the Proponent is a company, the Proponent warrants that none of its officers, directors, or employees with authority to bind the company is an immediate relative of employees of The District, if the goods or services to be supplied under this proposal are intended to District be supplied to the department in which such employee works.

9.13 In this section “Immediate Relative” means a spouse, parent, child, brother, sister, brother-in-law, or sister-in-law of a municipal employee.

9.14 If any director, officer, employee, agent, or other representative of a Proponent makes any representation or solicitation to any Mayor, Councillor, officer, or employee of The District with respect to the Proposal, whether before or after the submission of the Proposal, The District shall be entitled to reject or not accept the Proposal.

9.15 The key personnel named in the Proponents RFP response, shall remain in these key positions throughout the project. In the event that key personnel leave the firm, or for any unknown reason are unable to continue fulfilling their role, the Proponent must propose a suitable replacement, and obtain written consent from The District. Acceptance of the proposed replacement is at the sole discretion of The District.

9.16 Any and all addendums to this RFP opportunity will be posted to BC Bid. It is the sole responsibility of participants to ensure they have reviewed and acknowledged all addendums prior to RFP closing.

9.17 Proponents responding to this competitive process agree to the terms and conditions of the Proposal opportunity as issued by The District. Submissions shall not contain any

alterations to the posted document other than entering data in the spaces provided or including attachments as necessary. Participants who alter the document as issued may be disqualified from this competition.

9.18 The Proponent shall indemnify and save harmless The District and its officials, officers, employees and agents from any claim, lawsuit, liability, debt, demand, loss, or judgment (including costs, defence expense and interest) whatsoever and howsoever arising either directly or indirectly as a result of the granting of this contract or the use of The District's property or facilities.

9.19 The Proponent shall waive all rights or subrogation or recourse against The District as a result of the granting of this contract or the use of The District's property or facilities.

9.20 The Proponent shall indemnify and pay The District promptly, on demand for any loss or damage to The District's property and facilities arising either directly or indirectly as a result of the use of the property or facilities under the terms of this contract.

9.21 The successful proponent must possess a valid business licence which includes an inter-municipal or non-resident business licence and will be required to provide evidence of same.

9.22 The Proponent must be registered and remain in good standing, throughout the terms of this contract with WorkSafeBC and will be required to provide evidence of same.

9.23 INSURANCE

9.23.1 The Proponent shall, at their own expense, provide and maintain until the completion of the Project the following insurance in a form acceptable to The District with an insurer licensed in British Columbia.

9.23.2 The Proponent shall provide and maintain Comprehensive General Liability Insurance with a minimum limit of $5,000,000 inclusive per occurrence, for bodily injury, death, and property damage.

9.23.3 The Proponent shall provide and maintain Professional Liability Insurance with a minimum limit of $5,000,000.

9.23.4 The District and its officers, employees, officials, agents, representatives, and volunteers shall be named as Additional Insured.

9.23.5 Cross liability and a waiver of subrogation or recourse against The District shall be included.

9.23.6 Thirty (30) days prior written notice of cancellation or reduction in coverage in favour of The District, to be delivered by registered mail to the attention of the Corporate Officer at the address of Municipal Hall.

9.23.7 The Proponent shall be responsible for any deductibles or reimbursement clauses within the policy.

9.23.8 The Proponent shall provide The District with a Certificate of Insurance prior to the commencement of the Proponent programs and within two weeks of the expiry date of the policy to evidence renewal of the policy and continuous coverage.

9.23.9 The District shall be under no obligation to verify that the coverage is adequate for the needs of the Proponent.

9.24 The successful Proponent will enter into a contract in the format as in the attached in Appendix A, including all conditions included in the RFP.

9.25 All Proposals shall be irrevocable to remain open for acceptance for at least (60) sixty days after closing time, whether or not another Proposal has been accepted.

9.26 BEST OFFER

9.26.1 The District will notify the successful Proponent that its Proposal has been selected as the Best Offer.

9.26.2 A contract is formed only when the owner issues a purchase order to the selected Proponent who has submitted the Best Offer.

9.27 WORK SAFE

9.27.1 The Consultant shall apply to WorkSafeBC for coverage for the Consultant and any workers or other persons engaged by the Consultant to perform the Services during the term of this Agreement. The Consultant may, at its own expense, provide additional insurance for its members to augment WorkSafeBC coverage.

9.27.2 The Consultant shall comply with the Workers Compensation Act and its regulations. The Consultant is responsible for all fines, levies, penalties, and assessments imposed under that Act or its regulations in connection with the Services and shall indemnify and save harmless the District of Sooke, its employees, and its agents from any such amounts.

9.28 PRIME CONTRACTOR

9.28.1 The successful Consultant must take on the position of Prime Contractor for carrying out field work, investigation, and design of the proposed works.

CONSULTING SERVICES AGREEMENT

Project Name: Marine Pier and Boardwalk Repairs

THIS AGREEMENT dated for reference this day ** of **, 2026

BETWEEN:

** ***, having an address at ****
("the Consultant")

AND:

DISTRICT OF SOOKE, a municipal corporation incorporated under the *Local Government Act*, having an address at 2205 Otter Point Road,
Sooke, British Columbia, V9Z 1J2

(the "District of Sooke")

GIVEN THAT:

A. The District of Sooke desires to engage the services of the Consultant as an independent contractor to perform [Marine Pier and Boardwalk repair services] as more particularly described below, and

B. The Consultant agrees to provide such services on the terms and subject to the conditions set out in this Agreement,

IN CONSIDERATION OF the sum of ten ($10.00) dollars paid by the District of Sooke to the Consultant, and the mutual agreements and covenants under this Agreement, and as a condition of the District of Sooke retaining the Consultant, the receipt and sufficiency of which consideration is hereby acknowledged, the parties to this Agreement agree as follows:

1) Interpretation

a. In this Agreement, the following terms have the meanings set out after each:

"Agreement" means this agreement, including the recitals and schedules hereto, each as supplemented or amended from time to time.

2) Schedules Incorporated

a. The following are Schedules to, and form an integral part of, this Agreement:

Schedule “A” – the Proposal
Schedule “B” – the Rates
Schedule “C” - Certificates of Insurance
Schedule “D” - Prime Contractor Agreement

b. If there is a conflict between a provision in a schedule to this Agreement and any other provision of this Agreement, then the provision in the schedule is inoperative to the extent of the conflict, unless it states that it operates despite a conflicting provision of this Agreement.

3) Effective Date and Term

a. This Agreement takes effect immediately upon execution by all of the Parties.

b. The term of this Agreement is for that period set out in Schedule A.

4) Authority

a. The Consultant represents and warrants to the District of Sooke that it has the authority to enter into this Agreement and carry out its transactions and all necessary resolutions and procedural formalities have been completed and the persons executing this Agreement on its behalf are duly authorized to do so.

5) Services

a. The District of Sooke hereby retains the Consultant as an independent contractor to provide the services described in Schedule A (“The Services”).

b. The Consultant shall provide the Services strictly in accordance with the terms and conditions set out in this Agreement.

c. The Consultant shall provide the Services during the time period set out in Schedule A, regardless of the date of execution or delivery of this Agreement unless an extension of the time period is agreed to in writing by both parties.

d. The Consultant will perform the Services to a standard of care, skill and diligence maintained by person providing, on a commercial basis, services similar to the Services.

6) Compensation

a. During the term of this Agreement the District of Sooke shall pay the Consultant for the Services at the rates and times described in Schedule B.

b. The Consultant shall submit written statements of account to the District of Sooke according to the schedule set out in Schedule B.

c. The District of Sooke shall reimburse the Consultant for all necessary expenses that the Consultant incurred while performing the Services and shall do so in accordance with the terms set out in Schedule B.

d. The District of Sooke shall not pay the Consultant for any fees or expenses in excess of any limit specified in Schedule A, except where that is agreed to in writing by the parties.

e. Any expense claims provided by the Consultant to the District of Sooke shall be supported by proper receipts.

7) Consultant's Obligations

a. The Consultant shall be responsible for the payment of all income and other taxes attributable to any payments made under this Agreement. The Consultant agrees to indemnify and save harmless the Company from and against any and all manner of actions, claims and demands which may be made against it in respect of any fees, assessments, levies, rates, taxes or other charges made, demanded, assessed or otherwise claimed by any provincial or federal government or other body of competent jurisdiction in respect of any monies paid to the Consultant under this Agreement.

b. The Consultant shall apply for and, immediately on receipt, remit to the District of Sooke any refund or remission of federal or provincial tax or duty available with respect to any items used in connection with this Agreement.

c. The Consultant shall supply and pay for all labour and materials necessary or advisable to provide the Services.

d. The Consultant shall be responsible for all applications, permits or other approvals necessary or advisable to provide the Services.

e. The Consultant shall maintain time records and books of account, invoices, receipts, and vouchers for all expenses incurred, in form and content satisfactory to the District of Sooke.

f. The Consultant shall, upon request, fully inform the District of Sooke of all work done in connection with providing the Services.

g. The Consultant shall comply with the District of Sooke's instructions regarding the performance of the Services, but not as to the manner in which those instructions are carried out, except as specified in this Agreement.

h. The Consultant shall, when necessary, provide and supervise a sufficient number of workers to enable timely and proper performance and completion of the Services, and shall ensure that all such workers are competent, work efficiently and are qualified by education, training and experience to carry out the tasks to which each is assigned.

i. All workers hired by the Consultant to perform the Services shall be the employees of the Consultant and shall not be the employees of the District of Sooke.

j. The Consultant shall refrain from doing anything that would result in workers hired by the Consultant being considered the employees of the District of Sooke.

k. The Consultant shall reassign, replace, or remove a worker who does not meet the requirements described above, or who has behaved or is likely to behave in a manner detrimental to the provision of the Services, or has violated or is likely to violate the confidentiality provisions of this Agreement.

l. ·Where a worker is identified in a schedule to this Agreement as "Key Personnel" and is essential to the performance of the Services, then the Consultant shall not remove or replace them without the District of Sooke's prior written approval.

m. The Consultant shall bear the expense of replacing its workers.

n. Nothing in this Agreement restricts the right of the Consultant to terminate its employee's employment or renders the Consultant liable for an employee's voluntary termination, or for any labour strike or lockout involving the Consultant's employees.

o. Th Consultant is responsible for to ensure the health and safety of all Consultant's staff providing the Services and will promptly notify the District of any issues that may present a risk to those providing the Services.

8) Conflict of Interest

a. The Consultant shall not provide services to any other person or organization where that could reasonably give rise to a conflict of interest.

9) Subcontracting

a. The Consultant shall not assign, transfer, or subcontract any part of the Contract without prior written approval from the District of Sooke.

b. The District of Sooke may, for reasonable cause, object to the use of a proposed subcontractor.

c. No subcontract, whether consented to or not, shall relieve the Consultant of any obligations under this Agreement.

d. The Consultant shall ensure that any subcontractor fully complies with this Agreement when performing the subcontracted Services.

e. Unauthorized subcontracting may result in termination of the Contract.

10) Non-Compliance

a. If the Consultant fails to observe, perform, or comply with any provision of this Agreement, then the District of Sooke may, at its sole discretion:

   i. allow the Consultant to continue to provide the Services with a time limit for compliance, rectification or both; or

   ii. suspend all or part of the Services, including payments in whole or in part, and give the Consultant a time limit for compliance, rectification, or both.

b. If the District of Sooke has set a time limit for compliance, rectification or both and believes that the Consultant has failed to meet the time limit, the District of Sooke may employ whatever means necessary to rectify that non-compliance, including performance of the Consultant's obligations on the Consultant's behalf and/or termination of this Agreement, and the Consultant shall pay an amount equal to all costs reasonably incurred by the District of Sooke in rectifying the non-compliance.

11) Termination

a. The District of Sooke may terminate this Agreement at any time, and without cause, by giving 5 (five) days' written notice of termination to the Consultant and paying the Consultant an amount equal to the minimum fees that would otherwise have been payable for the

Services completed at the time of termination. That payment shall discharge the District of Sooke from all liability to the Consultant under this Agreement.

b. The District of Sooke may terminate this Agreement if the Consultant fails to comply with any of the terms, covenants, and agreements that the Consultant must observe or perform under this Agreement and that failure continues for 5 (five) days after receipt by the Consultant of notice in writing from the District of Sooke specifying the failure.

c. The Consultant may terminate this Agreement by providing 5 (five) days' written notice of termination to the District of Sooke.

12) Information Made Available

a. The District of Sooke shall make available to the Consultant all information in its possession that the District of Sooke considers relevant to the Consultant's performance of the Services.

13) Intellectual Property

a. The Consultant agrees that any documentation or deliverables developed by the Consultant for the purposes of this Agreement is the property of the District of Sooke and any copyrights, ownership rights or any other rights to such documentation or deliverables remain solely with the District of Sooke.

14) Materials and Equipment

a. Any material or equipment that the District of Sooke provides to the Consultant, or to an approved subcontractor, shall remain the exclusive property of the District of Sooke.

b. The Consultant shall deliver to the District of Sooke any material or equipment provided to the Consultant or the Consultant's subcontractor immediately following expiration or termination of this Agreement, or as requested by the District of Sooke, and the material or equipment shall be returned in the same condition that it was supplied to the Consultant, except for loss or damage resulting from reasonable wear and tear associated with the performance of the Services.

15) Insurance

a. The Consultant shall, at its own expense, maintain at all times during the term of this Agreement, general liability insurance coverage in an amount and with deductibles as described in Schedule A, and shall ensure that the District of Sooke is named as an insured.

b. The Consultant shall apply to the Workers' Compensation Board for coverage for the Consultant and any workers or other persons engaged by the Consultant to perform the Services during the term of this Agreement.

c. The Consultant may, at its own expense, provide additional insurance for its members to augment WorkSafe BC coverage.

d. The Consultant shall comply with all conditions of the *Workers Compensation Act* and regulations, and will be responsible for all fines, levies, penalties, and assessments made or imposed under the *Workers Compensation Act* and regulations relating in any way to the Services and shall indemnify and save harmless the District of Sooke, its employees and agents, from and against any such fines, levies, penalties, and assessments.

16) Confidentiality

a. The Consultant acknowledges that in the performance of its responsibilities hereunder, the Consultant may have access to confidential information and records and the Consultant shall maintain strict confidentiality concerning any information, data, reports, instructions, or directions received from or delivered by the District of Sooke in connection with the providing of any Services under this Agreement ("the Confidential Information").

b. Statements or materials related to the Services shall not be released by the Consultant to the public without the prior written approval of the District of Sooke.

c. During and after the term of this Agreement, the Consultant shall not, directly, or indirectly, disclose Confidential Information to any person or use any Confidential Information, except:

   i. as required in the course of performing the Services and then only to staff of the District of Sooke on a need-to-know basis; or

   ii. with the prior written consent of the District of Sooke.

d. All Confidential Information which the Consultant shall prepare or use or come in contact with shall be and remains the District of Sooke sole property and shall not be removed from the District of Sooke premises without its prior written consent, except as required in the normal course of performing the Services under this Agreement.

e. The Consultant agrees to return to the District of Sooke all the Confidential Information provided by the District of Sooke and any copies of such material in its possession forthwith upon demand.

f. The Consultant agrees that it will cause any worker, before commencing his or her duties, to sign a written confidentiality agreement and the Consultant shall be liable to the District of Sooke for any breach of any such agreement by the worker.

g. The Consultant agrees that, upon request of the District of Sooke, or in the event that the Consultant ceases to require use of the Confidential Information, or upon expiration or termination of this Agreement, the Consultant will turn over to the District of Sooke all data, documents, specifications, drawings, reports, software, disks or other computer media, or other material in the possession or control of the Consultant that:

   i. may contain or be derived from ideas, concepts, creations, or trade secrets and other proprietary and Confidential Information; or

   ii. is connected with or derived from the Consultant's Services to the District of Sooke.

h. The Consultant agrees and acknowledges that the Confidential Information is of a proprietary and confidential nature and that any failure to maintain the confidentiality of the Confidential Information in breach of this Agreement cannot be reasonably or adequately compensated for only in money damages and would cause irreparable injury to the District of Sooke. Accordingly, the Consultant agrees that the District of Sooke is entitled to, in addition to all other rights and remedies available to him at law or in equity, an injunction restraining the Consultant and any agents of the Consultant, from directly or indirectly committing or engaging in any act restricted by this Agreement in relation to the Confidential Information.

17) Notices

a. Any notice permitted or required to be given by a party hereunder shall be given in writing,

and may be delivered by hand, sent by facsimile transmission, or forwarded by first-class prepaid registered mail to the addresses and fax numbers set forth below, or to such other addresses as may from time to time be provided by the parties in writing. Any notice delivered by hand or sent by facsimile shall be deemed to be given and received at the time of sending. Any notice that is sent by prepaid or registered mail shall be deemed to have been received by the party to whom it is addressed on the fourth (4^{th}) business day (Saturdays, Sundays and Statutory Holidays excluded) following the date of posting, provided that Canada Post service is not interrupted by strike or lock-out at the time of posting or within four (4) business days thereafter, in which case the notice shall only be effective once it is actually delivered.

b. Notices under this Agreement are to be delivered as follows:

To the District of Sooke:

District of Sooke of Sooke
2205 Otter Point Road
Sooke, BC V9Z 1J2
Attention: Corporate Officer

Fax: (250) 642-0541

To the Consultant:

******
Sooke, BC, V9Z 0M6

18) Dispute Resolution

a. In the case of any dispute arising between the District of Sooke and the Consultant, a party to this Agreement may give the other party notice of the dispute, and if the matter cannot be resolved the parties may submit the dispute to arbitration by a single arbitrator in accordance with the *Commercial Arbitration Act* (British Columbia), as amended.

19) Force Majeure

a. For the purposes of this Agreement, the term “Force Majeure” is defined as an Act of God, an act of a public enemy, war, labour disruptions and other extraordinary causes not reasonably within the control of the Consultant.

b. If the Consultant is rendered unable, wholly or in part, by Force Majeure to provide the Services then the Consultant shall provide to the District of Sooke notice of the Force Majeure as soon as reasonably possible, and to the extent that the Consultant’s performance is impeded by the Force Majeure it shall not be in breach of its obligations under this Agreement.

c. The parties acknowledge and agree that during an event of Force Majeure, the Consultant’s obligations pursuant to this Agreement shall be reduced or suspended as the case may be, but not longer than the continuance of the Force Majeure, except for a reasonable time period after if required by the Consultant to resume its obligations.

20) No Assignment

a. The Company may not assign any of its rights or interests in this Agreement.

21) Binding on Successors

a. This Agreement ensures to the benefit of and is binding upon the parties and their respective successors and permitted assigns, notwithstanding any rule of law or equity to the contrary.

22) Remedies Cumulative

a. No reference to or exercise of any specific right or remedy by the District of Sooke prejudices or precludes the District of Sooke from any other remedy, whether allowed at law or in equity or expressly provided for in this Agreement. No such remedy is exclusive or dependent upon any other such remedy, but the District of Sooke may from time to time exercise any one or more of such remedies independently or in combination. Without limiting the generality of the foregoing, the District of Sooke is entitled to commence and maintain an action against the Consultant to collect any sum not paid when due, without exercising the option to terminate this Agreement.

23) Waiver

a. Waiver by the District of Sooke of any breach of any term, covenant or condition of this Agreement by the Consultant must not be deemed to be a waiver of any subsequent default by the Consultant. Failure by the District of Sooke to take any action in respect of any breach of any term, covenant or condition of this Agreement must not be deemed to be a waiver of such term, covenant, or condition.

24) Indemnity

a. The Consultant shall indemnify, release and save harmless the District of Sooke and its elected and appointed officials, officers, employees, agents, contractors, successors and assigns from any and all liabilities, actions, damages, claims, losses, orders, fines, penalties, costs and expenses, including the full amount of all legal fees and expenses that may be brought against, or suffered or incurred by, the District of Sooke or any of its elected and appointed officials, officers, employees, agents, contractors, successors and assigns, in any way directly or indirectly arising from or in connection with the activities, actions or omissions of the Consultant or any of its employees, subcontractors, agents, licenses, servants, invitees or anyone for whom the Consultant is in law responsible, in relation to the Services or in connection with this Agreement. The indemnities set out in this paragraph do not include indemnifications for negligence or willful or malicious misconduct on the part of the District of Sooke or a person for whom the District of Sooke is responsible at law. This paragraph will survive termination of this Agreement.

25) Release

a. The Consultant releases the District of Sooke from and against all liabilities, claims, demands, damages, costs, expenses, suits, and actions which the Consultant may at any time have against the District of Sooke in respect of the Services, this Agreement and related matters. The obligations of the Consultant under this section survive the expiry or earlier

termination of this Agreement.

26) Prime Contractor

a. The successful Consultant must enter into the Prime Contractor agreement in Schedule D for carrying out field work, investigation, and design of the proposed works.

27) General

a. Time is of the essence of this Agreement.

b. Parties may by written agreement amend this Agreement

c. Every reference to each party is deemed to include the heirs, executors, administrators, corporate successors, servants, employees, agents, contractors, officers, licensees, and invitees of such party, wherever the context so requires or permits.

d. Wherever the singular or masculine or neuter is used in this Agreement, the same shall be construed as meaning the plural, the feminine or body corporate where the context or the parties so require.

e. Unless otherwise specified in this Agreement, all references to currency are in Canadian dollars.

f. The headings included in this Agreement are for convenience only and do not form part of this Agreement and will not be used to interpret, define, or limit the scope or intent of this Agreement.

g. This Agreement shall be construed in accordance with the laws of the Province of British Columbia. Without limitation, the Consultant acknowledges that this Agreement is subject to the *Freedom of Information and Protection of Privacy Act*.

h. If any portion of this Agreement is held invalid by a court of competent jurisdiction, the invalid portion shall be severed and the decision that it is invalid shall not affect the validity of the remainder of the Agreement.

i. The provisions in this Agreement constitute the entire agreement between the parties and supersede all previous communications, representations, warranties, covenants, and agreements whether verbal or written, between the parties with respect to the subject matter of this Agreement.

NOW THEREFORE as evidence of their agreement to be bound by the terms of this Agreement, the parties have executed this Agreement as follows:

DATED the ____ day of _____, 2026

District of Sooke by its authorized signatories:

_____

Mayor:

_____

Chief Administrative Officer:

DATED the ___ day of _____, 2026

***** . by its authorized signatories:

[Name of Consultant] by its
Authorized signatories:

_____
Name:

_____
Name:

SCHEDULE A – Proposal

SCHEDULE B - Rates

SCHEDULE C - Certificates of Insurance

SCHEDULE D – Prime Contractor Agreement

DISTRICT OF Sooke
2205 Otter Point Road, Sooke, British Columbia, Canada V9Z 1J2
Phone: 250-642-1634 Fax: 250-642-0541 Email: info@sooke.ca Website: www.sooke.ca

PRIME CONTRACTOR DESIGNATION FORM Appendix "A" Page 1 of 3

Project Title: [Enter project title]
Project Number: [Enter project number]

DEFINITIONS

Owner (The District of Sooke):	**According to the Workers Compensation Act (Part III).**
Prime Contractor:	Any Contractor designated by the Owner (District) to be the Prime Contractor on a project with respect to occupational health and safety ONLY.

DESIGNATION

By signing this agreement, _____, (the Contractor) agrees to assume the responsibilities of a **Prime Contractor** as outlined in the Workers' Compensation Act and Regulations.

As a Contractor signing this agreement with the District, you are agreeing that your company, management staff, supervisory staff and workers will comply with the WorkSafeBC Occupational Health and Safety Regulations and the Workers' Compensation Act.

If the Prime Contractor wishes to designate another firm as the Prime Contractor, the District shall be advised in writing of your intentions prior to the commencement of the new Prime Contractor designation. The new Prime Contractor must agree through signature to all the terms of this agreement.

PRIME CONTRACTOR RESPONSIBILITIES

Once a **selection process** has been completed and the Prime Contractor has been determined, **prior to commencement of work** the Prime Contractor shall provide the following:

- Proof of registration with WorkSafeBC and notify the District of any change of status during the course of the project.
- Proof of up to date WorkSafeBC assessment payments.
- Proof of optional coverage for self, limited partners, and family members working on the contract, as required.
- Proof of appropriate coverage for the work being done (i.e., ensure correct classification).

PRIME CONTRACTOR DESIGNATION FORM Appendix "A"

- Review, complete and sign Prime Contractor Designation Form. (Appendix A)
- Review, complete and sign with the District Contract Representative, Pre-Contract Hazard Assessment. (Appendix B)
- Review, complete and sign with the District Contract Representative, Confirmation of Responsibilities. (Appendix C)
- Review, complete and sign with the District Contract Representative, Records to be maintained. (Appendix D)
- Submit the Notice of Project to WorkSafeBC, where required on a construction workplace. See WorkSafeBC OHS Regulation 20.2 for the general requirements of a Notice of Project.

Once the **selection process** has been completed and the Prime Contractor has been determined, the Prime Contractor shall:

- Identify and designate a qualified coordinator, who must coordinate health and safety activities on the workplace, if the workplace is a construction workplace with a combined workforce of more than five (5) workers.
- Assume responsibility for the health and safety of the workers on the project.
- Inform all other employers for the project of the designation of Prime Contractor.
- Coordinate all activities of employers, workers and other persons at the workplace relating to occupational health and safety.
- Establish and maintain a system or process that will ensure all employers, workers and other persons at the workplace comply with Part III of the Occupational Health and Safety, Workers Compensation Act, and the WorkSafeBC OHS Regulations.

PRIME CONTRACTOR QUALIFIED COORDINATOR

The responsibilities of the qualified coordinator are listed in WorkSafeBC OHS Regulation 20.3.

The **Prime Contractor's Qualified Coordinator** must:

- Coordinate all health and safety activities for the project.
- Know who all other Contractors' qualified persons are if it is a construction workplace.
- Ensure that all workers at the workplace are informed of extraordinary pre-existing workplace hazards, and of any hazards on the workplace that are created by the work.
- Ensure that all workers are adequately trained in the performance of their job tasks with particular reference to any job or task which may cause a risk to themselves, their coworkers or to any third party.
- Ensure that the hazards are addressed throughout the duration of the work activity.
- Ensure there are written procedures for safe work practices to be followed at the workplace.
- Have a workplace drawing showing where all employers at the workplace are working, where first aid is located, emergency transportation system for injured workers, and evacuation marshalling points. This document must be provided to the District of Sooke prior to the commencement of work activity.
- Ensure that in the event of an accident, where there is loss of life or where there is potential for an accident leading to loss of life, the District of Sooke is advised forthwith of the details and any other information. This will be provided to the District for information purposes only.
- Ensure that workplace safety meetings are held and documented.
- Ensure that there is compliance with any other statutes, regulations or by-laws which are in place to provide worker safety.

CONCLUSION

Any WorkSafeBC or WorkSafeBC Occupational Health and Safety Regulation violation by the Prime Contractor or any other employer, worker or other person on the workplace shall be considered a breach of contract which may result in termination or suspension of the contract and/or any other actions deemed appropriate at the discretion of the District.

Any penalties, sanctions or additional costs levied against the Prime Contractor will be the responsibility of the Prime Contractor.

DISTRICT OF Sooke
2205 Otter Point Road, Sooke, British Columbia, Canada V9Z 1J2
Phone: 250-642-1634 Fax: 250-642-0541 Email: info@sooke.ca Website: www.sooke.ca

I, the undersigned, acknowledge having read and understand the information above. By signing this agreement, I agree as a representative of the firm noted below, to assume the responsibilities of the **Prime Contractor** for this project.

Firm Name:_____

Signature of Prime Contractor:_____ Date:_____

THE DISTRICT OF SOOKE

DISTRICT OF Sooke
2205 Otter Point Road, Sooke, British Columbia, Canada V9Z 1J2
Phone: 250-642-1634 Fax: 250-642-0541 Email: info@sooke.ca Website: www.sooke.ca

CONTRACTOR JOB BRIEFING CHECKLIST Appendix "B"

Project Name:	Enter project name.		
Start Date:	Enter todays date.	Start Date:	Enter project start date.
Project Location	Enter project location (address and/or GPS Coordinates.		
Project Designate:	Enter name person overseeing project.		
Job Title:	Enter job title of person overseeing project.		

SCOPE OF WORK
Enter project details. Include scope of work, equipment being used, etc.

Contractor Job Briefing – Pre-Contract Hazard Assessment			
Contractors on site:		**Briefed?**	
Name/Company	Enter contractor name.	Yes	☐
Name/Company	Enter contractor name.	Yes	☐
Name/Company	Enter contractor name.	Yes	☐

Site Hazards			
Contractors must be made aware of all pre-existing workplace hazards that may affect their workers. (WCA Div. 2, 21)			
Project tasks/hazards	Yes	No	If yes: form, plan or training required:
Confined Space(s) as defined by WorkSafeBC	☐	☐	· Confined Space Hazard Assessment · Confined Space Entry Procedures · Confined Space Rescue Plan · Confined Space Entry Training
Equipment (Forklift, heavy equipment, etc.)	☐	☐	· Any required equipment certifications · Equipment pre-use inspections (forklift, vehicle, etc.)
Excavations/Trenches	☐	☐	· Contractor must have plan that accounts for spoil storage, adjacent structures and access/egress.
· Contaminated soils	☐	☐	· Contaminated Soil ECP · Contaminated Soils Spill Response Plan
· Underground (utilities)	☐	☐	· BC 1 Call
Working at heights	☐	☐	Contractor may require: · Fall Protection Plan · Fall Protection Equipment Inspections · Fall Protection Training
Hazardous Materials	☐	☐	· Asbestos ECP · Silica ECP.
Hazardous Products	☐	☐	· Chemical inventory and SDS
Hot Work, Flammable/Combustible Products	☐	☐	· Hot Work Permit · Fire Prevention Plan
Isolation and/or Lockout	☐	☐	· Written Isolation/Lockout Procedure · Isolation/Lockout Training
Crane Work	☐	☐	· Crane Lift Pre-Inspection

			· Rigging Inspections · Critical Lift Plan · Crane Operator and Signaler certifications.
Pedestrian & vehicular traffic	☐	☐	· Traffic Management Plan · Traffic Control Person training

Utility Locates – Required prior to excavation					
Utility	Excavation Encroaching on Utility		Utililty Located and Marked		Utility details, description or diagram.
	Yes	No	Yes	No	
BC 1 Call Ticket#:					Date Acquired:
Gas Main	☐	☐	☐	☐	
Gas Service	☐	☐	☐	☐	
Phone Conduits	☐	☐	☐	☐	
Fibre Optic Lines	☐	☐	☐	☐	
Hydro Lines	☐	☐	☐	☐	
Hydro Service	☐	☐	☐	☐	
Sanitary Main	☐	☐	☐	☐	
Sanitary Service	☐	☐	☐	☐	
Storm Main	☐	☐	☐	☐	
Storm Service	☐	☐	☐	☐	
Water Main	☐	☐	☐	☐	
Water Service	☐	☐	☐	☐	

Supplemental Documentation			
Ensure the following documentation is in place when required.	Yes	No	N/A
First Aid Assessment	☐	☐	☐
Emergency access, muster stations and first aid locations	☐	☐	☐
Pre-Project Hazard Assessment	☐	☐	☐
Project tools and equipment	☐	☐	☐
Roles and Responsibilities (site supervisor etc.)	☐	☐	☐
Specific work procedures related to the work/project	☐	☐	☐
Traffic Management Plan	☐	☐	☐

Any other known or foreseeable workplace hazards must also be identified.
Providing methods to eliminate or control workplace hazards will include providing the contractor with any District procedures relating to the identified hazards. If the contractor is going to do work that is not covered by the District's safety program then, once the hazards are identified, the contractor must provide written safe work procedures for the work.

Any additional hazards and remediations not listed above:

Names of Workers:			
Name	Company	Signature	Date

Enter name. | | Click or tap to enter a date.
District Representative | Signature | Date

Enter name. | | Click or tap to enter a date.
Contractor Representative | Signature | Date

DISTRICT OF Sooke
2205 Otter Point Road, Sooke, British Columbia, Canada V9Z 1J2
Phone: 250-642-1634 Fax: 250-642-0541 Email: info@sooke.ca Website: www.sooke.ca

CONFIRMATION OF RESPONSIBILITIES Appendix "C"

Project Title: [Enter project title]
Project Number: [Enter project number]

Discussion with Prime Contractor and District Contract Liaison:
Date: _____ Meeting Location: _____
Firm Name (Prime Contractor): _____
Prime Contractor Representative: _____

Description	YES	NO
Acknowledges the appointment of Prime Contractor		
Understands that in any conflict of directions, WorkSafeBC OHS Regulation and/or the Act shall prevail.		
Has been informed of any extraordinary pre-existing workplace hazards		
Will communicate hazards to any persons who may be affected and ensure that appropriate measures are taken to effectively control or eliminate the hazards.		
Accepts that written documentation (e.g., Safety Program, notes, records, inspections, meetings, etc.) on all health and safety issues must be available upon request to the District and/or to a WorkSafeBC Prevention Officer at the workplace.		
Will confirm that all workers are suitably trained and competent to perform the duties for which they have been assigned.		
Safety orientation of all new workers will be conducted.		
Will assess and will Coordinate the first-aid requirements.		
Assumes responsibility for the health and safety of their workers and for ensuring compliance by their workers with the Workers' Compensation Act and WorkSafeBC OHS Regulations.		
Understands any WorkSafeBC violation by the Prime Contractor may be considered a breach of contract resulting in possible termination or suspension of the contract and/or any other actions deemed appropriate at the discretion of the District.		
Understands any penalties, sanctions or additional costs levied against the Prime Contractor will be the responsibility of the Prime Contractor.		

Notes/Follow-up: _____

_____

Signature of Prime Contractor Representative Signature of District Representative

RECORDS TO BE MAINTAINED AND AVAILABLE APPENDIX "D"

Project Title: **[Enter project title]**
Project Number: **[Enter project number]**

The documents required to be maintained and available by the Prime Contractor will include, but will not be limited to:

- The Prime Contractor's Safety Program.
- All notices which the **Prime Contractor** is required to provide to WorkSafeBC by the WorkSafeBC OHS Regulation.
- Any written summary of remedial actions taken to reduce occupational health and safety hazards within the area of responsibility.
- All directives and inspection reports issued by WorkSafeBC.
- Reports on incidents and accidents occurring within the Prime Contractor's area of responsibility for which notification to WorkSafeBC is required.
- Records of all safety meetings held between Contractors and their workers.
- Records of workplace health and safety orientation.
- Written evidence of' inspections within the workplace
- Occupational first aid records.
- Worker training records.

Signature of Prime Contractor Representative Signature of District Representative

APPENDIX B - INSPECTION REPORT PREPARED BY HUGH TUTTLE

Hugh Tuttle Engineering Ltd.
231 Meadow Drive, Saltspring Island, B.C., V8K 1T9
tel/fax: (250) 653-9166; email: hugh_tuttle@hotmail.com

INSPECTION REPORT

Facility: Pier, Boardwalk & Floats, Ed Macgregor Park, Sooke B.C.
Date: November 13, 2023
To: Jeff Carter, Emma Taylor (District of Sooke)
Purpose: Overview and Condition Assessment of: Rotary Pier & Floats, Marine Boardwalk

The following report is intended to provide a condition assessment, maintenance commentary, anticipated service life, and maintenance cost estimates for the marine structures fronting Ed Macgregor Park. These marine structures include: the Rotary Pier, which extends more or less seaward from the foot of Murray Road; the two floats which are attached to the pier; and the Marine Boardwalk which tees off of the west side of the Rotary Pier and parallels the high-water mark about 30m (100') offshore.

I would like to point out that there were no drawings or information provided by the District of Sooke ("DOS") for these facilities. As I understand it, DOS has no formal record drawings on file for any of these structures. No legal plan, no engineered (or even non-engineered) drawings, no archive information at all. I find this difficult to grasp since these structures are relatively new and they were all built after the District of Sooke became a municipality. The Rotary Pier is a bit of an unusual situation, since it was a community-built project. It is possible that the Rotary Club still owns this pier, although it seems more likely to me that the pier was, at some point, sold or 'gifted' to DOS. Either way, the DOS should have these records on file. This should be rectified as soon as possible. The engineered (record) drawings for the Marine Boardwalk were provided to me by the contractor (Heavy Metal Marine), and are attached to this report (Appendix 'B': JSH Engineering drawings, 2007). For the Rotary Pier and floats, I understand that Ruskin Construction installed the piles and the pilecaps in about 2004 (the balance of work was done by volunteers I believe). I contacted Ruskin but unfortunately, they had no archive drawings available for this project. I suggest you contact the local Rotary for record drawings for this structure. This would have been a major undertaking for the Rotary Club at the time, and because of this I am sure they would have kept files on this project.

This report will suffice as a first attempt for you to start to build your archives for these structures. But ... I want to be clear that ***this report is not the same as a structural design, signoff, or approval***. Specifically, I have not been asked to check the as-found structures for compliance with the BC Bridge Code, or the BC Building Code, or Transport Canada Regulations for Piers and Wharves. I can extend my scope to include this if you wish, but keep in mind that I would be performing the same design calculations and checks which the original designers would already have done. In my opinion it is better to rely on the original designer and on the original design drawings. This condition assessment is a check to make sure that the various structural elements are adequately doing their job, and that they appear to have been installed in accordance with the original intent or design drawings. Where I feel it is appropriate or necessary, I have identified where there should be posted signage and what I believe the posted safe working load (SWL) should be.

This report is divided into 4 parts. Part 1 is an overview of the facility as it now stands. Part 2 is a listing of deficiencies, with recommendations for repair or follow-up. Part 3 is a commentary maintenance for these types of structures, including an estimate of the probable short-term (1 to 5 years) maintenance costs. Part 4 is an overall wrap-up and conclusion. Appendix 'A' includes the transposed site notes. Appendix 'B' is a basic set of drawings (plan and sections) which we have generated specifically for this report in order to illustrate the construction details. Appendix 'C' contains the original design drawings for the Marine Walkway portion of these facilities (JSH Engineering, November 2004).

I would like to point out that there were several (minor) differences between the JSH drawings and what we actually noted onsite. These differences include: a) inclined top rail, b) handrail post and rail dimensions slightly different than shown, c) wider saddle plates, d) welded connection from pipe over-cap to pile (only a few of the piles were actually welded), and e) S4S decking rather than full dimension. In other words: just because it is on the JSH record drawing does not necessarily mean it was actually built that way. Field changes happen all the time, and they do not necessarily find their way onto the record drawings. It is fair to state that in this report I am relying

almost 100% on what we were actually able to observe during our time onsite. For hidden connections (e.g., drift pins to secure stringers to caps, or pilecaps to timber piles), I have assumed their existence and composition based on what I consider to be the most likely practice which would have been used by the contractor at the time. In the absence of design drawings for the Rotary Pier, this is essentially all that can be done. Any errors or incorrect assumptions contained within this report are therefore mine, and mine alone. Our intent was to produce generally representationally accurate drawings which could be used for planning and maintenance purposes, and also for analysis (capacity calculations, budget costing, etc.). Actual dimensions and elevations should be confirmed prior to any construction or ordering of materials.

Elevations in this report are reported in meters, referenced to CHS (tide and chart) datum. All other dimensions are generally reported in feet (or inches).

PART 1 - EXISTING FACILITY DETAILS:

Please refer to the HT Engineering drawings (Appendix 'B') for more detailed dimensions and information. Note: unless specifically noted otherwise, the timber materials used in these structures are presumed to be ACZA treated Douglas Fir #1. The basic components can be described as follows:

- ***Overall:*** The marine facilities are located in Ed Macgregor Park (6700 block Sooke Road), in the municipality of Sooke BC. There are two structures as follows: a) the Rotary Pier (on the east end) extends out perpendicular from shore and has two small floats attached, and b) the Marine Boardwalk extends from halfway out the Rotary Pier to the west, and about 30m offshore across the tidal flats, then ties back in to the shore at the west end. These facilities are for casual and recreational use by the general public only (no commercial use intended). There are no vehicles allowed on the marine facilities or piers.
- ***History:*** Prior to about 1848 (the advent of the Hudson's Bay Company arriving in the Victoria area), the only people to use this site would have been members of the T'Sou-ke First Nation. I am not aware of any specific historical uses associated with this site, but there is evidence of past (long past) piled marine structures visible in the intertidal foreshore area between the Marine Boardwalk and the high-water mark. The pile stubs which are visible would likely have been associated with either the logging or the fishing industries operating in the Sooke area, and could be remnants of old piers, or marine railways, or similar. The District of Sooke became a municipality in 1999. Ed Macgregor Park was created in 2002, and the Rotary Pier and Marine Boardwalk were constructed in 2004 and 2007 respectively.
- ***Tides and Currents:*** The normal tide range in this area (from posted CHS data for Station 7020, Sooke BC) is about 3.4m (11'). With storm surge, the tide level could potentially reach +3.93m, which is about 1.47m below the deck elevation (+5.4m) for these structures. The maximum tidal current expected at this location would likely be in the order of 0.13 m/s (0.25 knots) ... so ... not a high-current location.
- ***Exposure:*** The site is primarily exposed to winds and wind-driven swells from the south and southwest. The water is quite shallow offshore (-2.5m to -3.0m at the floats and maximum about -10m in the harbour). The area is well protected by Whiffen Spit. I would expect that there could be a 2' chop at times and during storm conditions there could be a 3' ocean swell originating from Juan de Fuca Strait. I would classify the site as generally well protected from wind and wave, with the notable exception of seismically induced waves (tsunami). Sooke is within the CRD defined "Tsunami Hazard Zone", and it is important to acknowledge that, in a major seismic event offshore, this site could see tsumami waves with amplitudes (wave heights) in the order of 2m, travelling at high velocity. These structures would not likely survive such an event.
- ***Foundation & Subsurface Information:*** No Geotech report available. The site is a mud/sand shallow-sloping beach with a short to moderate bank height above high-water. The foreshore beach sediments appear to be a mix of fine to very fine sands, clays, and silt. There is evidence of a bouldery till in the exposed bank, which has washed out over time, distributing boulders along the beach. It is difficult to walk in these soft sediments, particularly close to the waterline where the sediments are fully saturated. The contractor for the Marine Boardwalk (HMM) reported that the piledriving was soft for the first 6 to 10 feet, then tightened up. The

12.750" diameter pipe piles for the Marine Boardwalk were driven open-ended to 20' to 30' penetration, using a vibratory pile hammer.

- ***Rotary Pier:*** The Rotary Pier is a fixed pile-supported structure extending out perpendicular to the shore, at the east end of the park. In plan view, the pier is roughly cruciform in shape, with a 3.6m x 9.87m (12'x164') approach, a 22.5m x 4.91mm (74'x16') wharfhead, and a 9.29m x 7.89m (30.5'x26') half-rounded promenade at the seaward end. There are two floats which extend each way off the sides of the promenade area. Construction details as follows:



Photo 1312: Rotary Pier from east side foreshore. Note: presence of boulders throughout (washed down from erosion of the low bank materials).

  - Pier: Timber piles with timber pilecaps in rows ('bents'), with each bent spaced at 15' to 20' c/c longitudinally (typically 2 piles per bent for the approach, and 8 piles per bent for the wharfhead). Spaced, treated timber stringers (4"x10") span longitudinally across the caps, and 2"x10" S4S timber decking is laid perpendicular to the stringers. The 12"x12" caps are 'drifted' to the piles (1" x 30" drift pins), the 6"x12" stringers are drifted to the caps (3/4" x 22" drift pins), and the 2"x10" decking is nailed to the stringers (3.5" ardox spikes, 2 per contact). All timber material (likely doug fir #1) is incised and chemically preservative-treated (creosote for the piles, and ACZA for the rest).
  - Bracing: Each bent is X-braced laterally, and every other span is braced longitudinally. All bracing is 4"x8" ACZA treated timber, with 1" bolts, and 8"x8" blocking timbers at the center of each brace pair.
  - Floats: There are two floats, moored end-on to the sides of the promenade area, one leading off each side. Both floats are the same size (10'x40'). The floats are accessed by aluminum gangways (4'x40' aluminum truss-style with rollers and drop-hinges, with ACQ treated hemlock S4S decking ... mix of 2x6 and 2x8). The floats are moored in place by 3-pile lashed timber dolphins located at each end (2 dolphins per float, one at each end of each float), with a steel angle-framed rectangular pile hoop for each dolphin.
  - Handrail: The Rotary Pier is entirely enclosed by a 43" tall wood handrail, except for the openings at the two gangways, and at the Marine Boardwalk. Posts are 6x6 S4S (5.5"x5.5") with 2.5"x9" top rail (inclined 30° inward), and interior mid-rails (2). Vinyl coated chain-link fence has been used to close off the open areas between the mid-rails, to prevent small children and pets from falling through.
  - Safety Equipment: None. Specifically: no fire extinguishers, no lifejackets; no rescue ladders on the floats, no ladders on the pier, no life-ring stanchions. No signage regarding safe working load or safe assembly load.
  - Quantities: The following is a partial listing of the quantities for the key elements which comprise the Rotary Pier:
    - Piles = total of 44 ea, size 14 x 14# creo. Lengths likely vary from 30' to 55' (based on an assumed 13' to 26' penetration into the seabed).
    - Pilecaps = 10/12'; 2/76'; 1/32'; 1/28'
    - Bracing = 32/18'; 36/20'; 4/24' c/w 2.5 ea 1"ϕ bolts per brace & 1 8x8 block per pair of braces)
    - Stringers = 12/12'; 85/16'; 12/18'
    - Deck area = 357.45 m^2 (3,848 sf)
    - Handrail length = 164m (538 lf)
    - Gangways = 2 ea 4' x 40'
    - Floats = 2 ea 12'x40', lite-duty DFO style timber c/w 2 ea 3-pile timber dolphins per float.

- ***Marine Boardwalk:*** The Marine Boardwalk is a fixed pile-supported structure which starts off from the Rotary Pier (west side of the approach, between bents 5 and 6) and extends in a SW direction, with bends in strategic locations to keep it (more or less) about 30m offshore. At the SE extent, the walkway turns the corner and connects straight back into the low-ish bank onshore, at the east end of the park. The walkway is 3.86m wide throughout, with an overall length of 291.6m (12'8" x 957'). Construction details as follows:



Photo 1348: Marine Boardwalk looking towards the SW.

  - Pier: Steel pipe piles (12.750" OD x 0.375" wall, painted over the top 24') with timber pilecaps in rows ('bents'), 2 piles per bent. The bents are spaced at (nom.) 20' center to center longitudinally, with two piles per bent. Spaced, treated 6"x12" timber stringers (7 ea) span longitudinally across the caps, and 2"x10" S4S timber decking is laid perpendicular to the stringers. The 12"x12" caps are bolted to a saddle plate which in turn is welded to a 14" pile hat or 'boot' which is slip-fit on top of the piles (some piles are welded: boot to pile). The 6"x12" stringers are drifted to the pilecaps (3/4" x 22" drift pins), and the 2"x10" decking is nailed to the stringers (5" ardox spikes). All timber material (likely doug fir) is incised and chemically preservative-treated (ACZA). The pipe piles are painted over the exposed length.
  - Bracing: No bracing.
  - Handrail: The Marine Boardwalk is entirely enclosed by a 42.5" tall wood handrail, except for the entrance areas at each end. Posts are 6x6 S4S (5.5"x5.5") with 2"x9.35" top rail and two mid-rails. The top rail is inclined 30° inward. Guarding over the gap between mid-rails is provided by installing a single 3/16" tensioned aircraft cable.
  - Safety Equipment: None. Specifically: no fire extinguishers, no lifejackets, no ladders on the pier, no life-ring stanchions. No signage regarding safe working load or safe assembly load.
  - Quantities: The following is a partial listing of the quantities for the key elements which comprise the Marine Boardwalk. Note: I have made assumptions regarding treatment and material considering what would be normal practice for the time:
    - Piles = total of 52 bents, with 2 piles per bent, 12.750" OD x 0.375" wall pipe, driven open-ended. Lengths likely vary from 40' to 50' (reported 6m to 9m penetration into the seabed).
    - Pilecaps = 52/14'
    - Stringers = 343/22'; 21/14'
    - Deck area = 1126.76 m^2 (12,128 sf)
    - Handrail length = 580m (1902 lf)
- ***Trail Boardwalk (on land):*** This structure was not inspected and is not covered by this report.

Hugh Tuttle Engineering Ltd.
231 Meadow Drive, Saltspring Island, B.C., V8K 1T9
tel/fax: (250) 653-9166; email: hugh_tuttle@hotmail.com

PART 2 - INSPECTION RESULTS:

I would like to preface this section by stating that this inspection was intended to identify the hot-spots (i.e., those areas which most require attention). We made an effort to pick up as much as possible during one tide cycle, but we will certainly not have picked up all specific deficiencies in all areas. In other words, more deficiencies will likely come to light when the contractor is actually onsite doing the work in each of the identified 'hot-spots' below. For that reason, it is always good to allow for 20% to 25% more than you think you will need, so that you have extra material and resources to draw on when the work is being done.

We noted a number of problems and areas of concern during our site visit. The deficiencies and recommendations for repair are listed below, in no particular order of importance. Note: I have made an attempt to identify the scope of the repair and required materials in each case, with "recommended repairs" *identified in red font*. These recommended repairs represent my best guess as to what repairs will be required at this time to bring the element or structure up to a reasonable condition for continued operation.

In addition, for each deficiency I have identified a risk level: ***LOW, MODERATE, or HIGH***. This is not an indication of the importance of the item within the structure, it is more an indication of consequences should the item not be dealt with immediately. As a general rule, I have assessed "low risk" to those elements which will give fair warning before they fail. A "high risk" item would fail suddenly and without warning. For the most part, timber wharf structures like these are designed specifically to be quite tolerant of individual elements which are no longer supporting their full share of the load. This happens because the load simply follows a different path through the structure. For example: a deck board which is weathering badly will show signs of water retention and rot: it will deflect noticeably more under load, it will have extensive checking (cracks through the grain), and the board will actually rock in place as the nails loosen in the rotted timber. When this happens, the deck boards on either side 'step-up' to carry the load, and the load on the failing deck board is consequently less than the full design load. Similarly, pilecaps will: 'smush' down (flatten or compress under load) as they deteriorate from the inside out, they will have vegetation growing from them (grass, ferns, moss, etc), and they will generally exhibit signs of structural distress. My reasoning here in assessing the risk level is to take into account what I consider to be a reasonable level of oversight by the DOS in regularly walking these structures, looking for signs of distress or failing elements (and regular maintenance to deal with the ones that are failing). One last note on this topic: the risk category can change over time. So, a pilecap which is visibly compressed where it bears on the supporting pile(s) can be fine … for years … but eventually it will fail. And since there is only one pilecap per bent, the span on either side will fail when the pilecap fails.

Deficiency #1 - **Decking on Fixed Structures:** There are a few decking-related issues as follows:

a) Weathering. ***Risk Level = LOW.*** The deck boards are generally in fair to good shape. We observed a few weathered boards with checking and associated rot. The decking and handrail take the brunt of the weathering action (repeated wetting and drying), so it is not surprising to see individual deck boards needing to be replaced after 16 to 19 years in service. ***Recommended Repair:*** *Approximately 10 boards could use to be replaced over the next year or so … possibly more. Within 5 to 10 years there will be a lot more. Budget for complete replacement of all decking for both the Rotary Pier and the Marine Boardwalk within about 7 years. Note: follow the recommendations of items 'b' and 'c)' below for the replacement boards.*



Photo 1502: Showing weathered deck board with exposed nail. This board is fine for a year or possibly 1, but should be replaced when the weathering degrades more of the surface area of the board

b) Under-Sized Fasteners. ***Risk Level = LOW.*** The nails which were used in the Rotary Pier appear to be small: likely 3.5" galvanized ardox. Note: I did not pull any of these nails to check, but based on head-size they look under-sized. We noted rocking and movement in some of the boards. ***Recommended Repair:*** *Any new boards which are installed should have 2 ea x 5" long galvanized ardox nails per contact.*

c) Tapered Width Boards. ***Risk Level = LOW.*** Note: this deficiency applies to the Marine Boardwalk only (i.e., not on the Rotary Pier). At the horizontal bends (bent #7, #23, and #40), where the walkway changes direction, the boards have been taper-sawn in an attempt to improve the 'look' of the decking. This is a bad idea, as some of the resulting boards are literally only about 1.5" wide after tapering. This is like using 2x2 (1.5"x1.5") planks for your decking instead of 2x10 (1.5" x 9.25"). The resulting effect may be more aesthetically pleasing, but from a structural perspective is completely inadequate. ***Recommended repair:*** *Install 6x12 blocking between the stringers at the bend locations (on top of the caps, drifted down). Remove the +/- 13 to 14 tapered boards and replace with 6 or 8 full-width decking boards which fully bear on the ends. Make sure the nailing is done properly throughout, with 2 ea x 5" ardox nails per contact.*



Photo 1466: Deck boards sawn to a tapered width in order to transition at the corners. Poor installation detail.

Deficiency #2 - Handrail Guarding: ***Risk Level = MODERATE.*** In the BC Building Code (BCBC), there are a number of stipulated requirements which must be followed for 'guards'. *[HT sidebar #1: Point of clarity here: the BCBC defines 'guard' as what most of the rest of us would classify as a 'handrail'. Specifically, guards are intended as a barrier around all open sides of an elevated platform, installed specifically to prevent people from falling off. According to the BCBC, the 'handrail' is the actual rail which is grasped by the hand when either climbing or descending a set of stairs or an inclined ramp. So 'guards' can have handrails mounted on the inside ... BUT ... handrails can never be 'guards'. Confused yet?!]* Specifically, these BCBC requirements for guards include:

Table 1 - Summary of BCBC 'Guard' Requirements	
Height	1070mm or 42-1/8"
Load Carrying Capacity	• 1kN (225#) horizontally out (top rail and posts) • 0.5 kN (113#) horizontally out (everything else) • 1.5 kN/m (103 plf) vertically down (top rail)
Spacing of pickets	Constructed so that a 100mm sphere cannot pass through
Climbability	Must be non-climbable

Now clearly, we are not inside a residence and we are not in or around a commercial or public building with these marine structures. So ... it is not technically necessary for our handrails to meet the requirements of the BCBC. For the sake of this report however I have mentioned the BCBC so the reader will have a general guideline as to what might be considered 'safe' for guards (handrails) installed in areas where the BC Building Code governs. In the case of our guards, it is obvious that the designers did the best they could to comply with the requirements of the BC Building Code but they have missed the mark on a number of counts: a) because the handrails are easily climbable (mid-rails on the inside), b) because the 3/16" aircraft cable 'barriers' can easily be pushed aside to allow a 100mm sphere to pass through between the mid-rails, c) because there is no mesh guarding the space above and below the mid-rails and there are locations where this gap is 127mm or more, and finally ... d) because there are places that would not likely reliably sustain the required 113# horizontal outward load (e.g. on the gangways, in the area between the aluminum truss framing).



Photo 1240: Typical handrail on Rotary Pier approach), showing and chain-link guarding installed outside the rails.

My apologies here, because I have used a lot of words to state that the handrails do not meet the BCBC safety requirements. The way I look at it, whether the BC Building Code requirements actually apply here or not, is immaterial. The point is that The DOS is obligated to do the best they can to make these structures safe for use by the general public. It is worth noting that these handrails are much safer than the standard 'government dock', examples of which can be seen in every community on the coast of BC. Most of the handrails on these government docks are constructed in a similar manner to the handrails at the Ed Macgregor facilities, except that very few (perhaps less than 5%) have the chain-link fencing installed to prevent kids from climbing though at the midrails. The chain mesh definitely makes things safer, but the opening at deck level is 127mm (larger than BCBC allowable), and the mesh is fixed to the outside of the rails (which are climbable). There is no economical or reasonable method to make these handrails BCBC code compliant. All we can do is do the best we can to reduce the risk ... within reason.



Photo 1232: Siderails installed on outside of gangways trusses. The lower board at the bottom of the gangway in this photo is loose (has been kicked out)

Recommended repair: *This work should be done in stages, as time and funds permit, to improve the safety of the walkway overall: 1) Remove the 3/16" stainless steel aircraft cable which is strung between the mid-rails on the Marine Walkway, and on the observation deck of the Rotary Pier. This cable does nothing to improve safety, and the exposed holes through the posts actually reduce the life of these 5.5"x5.5" handrail posts due to increased exposurel; 2) Replace the cable with chain link mesh installed in the same manner as the mesh on the approach at the Rotary Pier; and 3) Re-fix the mid-rails and install chain-link 'guarding' on the sides of the two gangways. For the gangways: instead of wood screws which bite into the truss lacing and are not appropriate for the loads, use welded 3/8" aluminum plate tabs and self-tapping screws (or thru-bolts) to provide a more reliable means of connection and support for the side rails (or bring the side rails to the inside of the truss).*



Photo 1473: Marine Walkway mid-rails. Showing 3/16" SS cable. Useless detail. Note: gap under bottom rail is 127mm in places.

Deficiency #3 - Pilecap Deterioration: ***Risk Level = LOW.*** We noted 3 pilecaps on the Marine Walkway (bents #7, #40, and #44) which were showing moderate to heavy checking (splits). This kind of checking is a precursor to rot. The splits in the pilecaps will allow water entry into the interior of the timber. Over time, the repeated wetting and drying will cause interior rot, and will eventually lead to a forced replacement of these pilecaps. In addition, at the shore end of the Rotary Pier, the existing 24" cedar sill block is heavily



Photo 1331: Pilecap at bent #7, showing heavy checking. Also note: lack of stringer blocking at edges (see deficiency #5 below).

compromised by rot and should be replaced. There is no particular urgency here. But keep an eye on these 4 caps for sure.
Recommended repair: *Install new pilecaps when needed. The bent '0' sill block should be replaced within a year (before the rot advances far enough to create a tripping hazard). Note: the 3 pilecaps out on the Marine Boardwalk could probably last for up to 10 years before this work is required (but they would need to be inspected periodically to ensure that they are not actually failing).*

Deficiency #4 - **Top Rail Deterioration:** ***Risk Level = LOW.*** The top rail on the Marine Boardwalk is starting to check, with associated rot and deterioration in places. I would like to point out that this rail is 2" thick while the rail on the Rotary Pier is 2.5" thick. It is interesting to note that the extra ½" thickness obviously makes a big difference, because the rails on the Rotary Pier are fine, but the Rails on the Walkway are definitely showing their age. ***Recommended repair:*** *Replace the top rail in probably 3 to 5 years. The replacement rail should be 2.5" x 9.25" (same as the Rotary Pier).*

Deficiency #5 - **Stringer Blocking:** ***Risk Level = LOW (but increasing with time).*** Marine Boardwalk handrail only. For handrail stability, the outside stringers on the Marine Boardwalk should be stabilized with timber blocking. Without blocking, the handrail is still structurally stable, but the edge stringers will not last as long. This is a well-built handrail, with the exception of the lack of blocking. Over time, the connections loosen up, allowing a hinge to develop at the ¾" drift connection. *[HT sidebar #2: The ¾" drifts need to be installed very close to the end of the stringer with this detail (i.e., within about 2" to 3"), in order to keep the drift embedded in the timber for both the cap and the stringer. This makes the stringer vulnerable to splitting out through the end-grain and allowing water into the joint. The way I look at it, there is an over-reliance on the drift connections to keep the handrail posts safe and secure against lateral loading. Basically, this is a poor detail for connecting the handrail posts].* This increased movement will result in reduced life for the edge stringers. ***Recommended repair:*** *Note: this repair applies to the Marine Boardwalk only (the Rotary Pier already has blocking installed). Install 6x12 blocking (and drifts) over the pilecaps on each side of each bent (total of 52 bents x 2 pieces of blocking per bent = 104 locations total). This should be done within the next 2 years.*

Deficiency #6 - **Corrosion in Steel Piles:** Note: this deficiency applies to the Marine Boardwalk only. We noted minor (less than about 5%) cross-section loss (CSL) to basically *all* of the steel piles within the tide zone. This corrosion has happened as a result of scuff damage (logs, mooring lines, other floating debris). The paint has been abraded or damaged from about mid-tide to high-tide over a 3' to 5' range of the exposed pile length. In addition to this, we noted bright-orange mucilaginous deposits on perhaps 10% to 15% of the steel piles at or near the mudline. I have noted this same thing, with increasing frequency over the last 10 to 15 years, on steel piled structures all up and down the BC Coast. I believe what we are looking at here with these orange deposits is "accelerated low water corrosion" (ALWC). This is caused by bacteria which colonize on the exposed steel. The theory is that the bacteria does not actually consume the steel, but it does create a localized micro-environment that results in the steel 'donating' surface materials as a result of the complex biological and chemical processes which happen within the bacterial colony. Basically, the bacteria create a micro-environment which promotes break down of the steel. Some of the compounds occurring within this very localized environment are: Hydrogen sulfide, sulfuric acid, iron sulfides ... all of which can play a part in the accelerated localized corrosion. In my experience this phenomenon is generally isolated to the range from about elevation 0.0m to about +1.0m. It is also worth noting here that both of these types of corrosion are associated with an initial (localized) failure of the coating system (because you can't get corrosion if the paint is intact). *[HT sidebar #3: "Failure" of the coating system does not necessarily mean that the paint was poorly installed. In this case, the paint appears to have been well installed and I saw no evidence of systemic failure which would result from (for example) installing the paint in a shop where the humidity was too high, or where the surface preparation was inadequate. In the marine environment, 'coating failure' can be indirectly caused by*



Photo 1337: Typical example of ALWC on Boardwalk pile.

small marine creatures (barnacles, starfish, mussels … to name just a few) who make the vertical pile surface their new 'home'. These creatures attach themselves to the pile, through various chemical and physical means and then either die and fall off, or get knocked off by wave or log impact or similar. The physical action of tearing or scraping the marine creatures off the piles will inevitably result in damage to the coating substrate, increasing with time]. Corrosion can never be eliminated entirely, but there are 4 possible actions which could be taken to mitigate the corrosion losses as follows:

a) Repair the existing paint system. This option involves preparing the substrate (grinding or scraping, sandblasting, or water-blasting … or all of the above) to remove any loose or blistered or flaking areas of paint and then overcoating with the best industrial marine paint that money can buy. The downside to this is that it is very difficult to get good adhesion and curing on a paint which is applied at low tide and then submerged within 2 to 4 hours. In addition, from an environmental perspective, any removed materials (dust, grindings, paint chips etc.) need to be contained, recovered, and disposed of at an approved facility offsite.

b) Pile Wrap. There are a number of pile-wrap products available. For this application however, I would focus on a product called Denso-Tape (https://www.densona.com/wp-content/uploads/2020/04/Denso-Marine-Piling-Tape.pdf). This product is basically duct tape on steroids and has been used on piles in marine environments for decades. Denso-Tape is relatively tolerant of surface rust and irregularities. This means that surface prep is less import for this type of wrap, than it is for paint. It can even be applied underwater (by divers) if necessary.

c) Anodes. Fixing aluminum-zinc anodes (by bolting or welding) to the piles is the cheapest by far, but in my opinion, would only protect the piles below about the mid-tide mark (since both the anodes and the pile surface must actually be submerged in order to provide protection). So, for long term protection this would be the least effective option.

d) Structural Sleeves. A fourth possibility here is to "do nothing" and then either replace or reinforce the piles when the corrosion losses get to be about 50% (i.e., worst case about 4to 6mm remaining thickness in the steel).

- "Replacement" in this case would involve removing the superstructure (cap, stringers, deck, handrail) and driving a 14" or 16" over-sleeve pile over top of the existing. The over-sleeve would only need to go about 2m to 3m below the groundline and the boot size would need to be increased.
- "Concrete Reinforcement" would be best done using either a one-piece or two-piece fiberglass column form (re-useable) or a 2-piece bolted steel form (permanent). The idea is to 'sleeve' the existing pile over the length of the corrosion-damaged section. These sleeves could be installed without removing the superstructure and would be much more closely directed to the actual zone of corrosion losses (so they would only need to be about 2m to 3m long).



Photo 9311: An example of a 2-piece concrete-filled steel sleeve on a degraded timber pile north of Campbell River.

Recommended repair: *I strongly recommend the pile-wrap (option 'b' above) as the best choice for your site and for your budget. The pile wrap can be directed where it is needed and will arrest the corrosion as long as the wrap is still intact. The pile wrap should be installed before the corrosion losses get to be more than about 15%. Mid to high-tide wraps (3' to 5' length) would need to be done on about 100 piles, and low-tide wraps would be required on another 10 or so (3' length for the ALWC compromised piles).*

Risk Level for the ALWC affected piles = MODERATE. We noted about 10 piles with the typical ALWC orange active 'slime' colonies. The risk level is assed as 'moderate' because the ALWC can eat through an affected pile very quickly. These low tide wraps should be done within one year.

Risk level for all the mid to high water level corrosion spots = LOW. There are about 100 piles which we observed with coating loss at mid to high water. For cost reasons, it may be worth considering scraping and applying a good quality marine repair paint to these locations (in lieu of the denso-wrap).

Deficiency #7 - **Bracing Deterioration:** ***Risk Level = LOW, increasing with time.*** Note: this deficiency applies to the Rotary Pier only. The bracing from bent 1 to bent 4 is good. From bent #5 to bent #11, I counted 11 braces which were showing issues (rot, checking, loosened bolted connection, marine borer attack) and should be replaced within 1 to 2 years. This amounts to 11 out of the 24 braces we inspected, or just under 50%. I was not able to inspect the braces from bent 11 to bent 14 due to access limitations. By extrapolation I think it is reasonable to state that at least 50% of the bracing should be replaced within 2 years. ***Recommended repair:*** *There are 34 sets of braces (68 timbers total). Replace 50% of the bracing within 2 years, and then the rest in about 10 years.*



Photo 1243: Bracing on Rotary Pier approach.

Deficiency #8 - **Misc. Float Maintenance Repairs:** This item identifies some developing issues which were noted with the floats as follows:

a) Dolphin pile wear: ***Risk Level = LOW.*** The 3-pile dolphins are gradually getting abraded down by the pile hoops. This 'squares-off' the pile and removes the creosote protection and significantly reduces the life of these piles. ***Recommended repair:*** *Replace all four 3-pile dolphins within about 5 years. It may also be worth considering going to a single 20" or 24" steel pile at each location (in lieu of the 3-pile timber dolphins).*

b) Dolphin hoops: ***Risk Level = MODERATE (because loss of the hoops will mean loss of the floats and gangway).*** The existing pile hoops are heavily corroded. Just a matter of time before they fail (1 to 5 years). ***Recommended repair:*** *Replace all 4 pile hoops. The replacement design should be 'lipped' so that the hoop overlaps and bears on top of the float deck, and it should include rollers or UHMW guides to reduce the wear on the timber dolphin piles.*



Photo 1266: Typical dolphin pile wear. Photo shows general deterioration of pile hoops also.

c) Gangway Rollers: ***Risk Level = LOW.*** The existing gangway rollers are very light duty. It's ok to leave them for now, but when they need to be replaced, you should install a more robust set of rollers. ***Recommended repair:*** *Replace the 4 rollers with HD rollers with at least a 1" shaft. Preferably 2 rollers per side. Each roller should have a minimum 2000# load rating.*

d) Floatation: ***Risk Level = LOW.*** The floats are sitting a little low where the gangway lands. This will only get worse with time, as marine growth accumulates on the float and the timbers take-up water. ***Recommended repair:*** *Install an extra billet or two underneath to level up the float. There are a couple of companies on Vancouver Island that specialize in this kind of repair, using a ballast tank to sink a new billet underneath the existing float and divers to strap or dowel it in to the underside of the existing float structure.*

Deficiency #9 - **Mid-Rail Splice:** ***Risk Level = LOW.*** In the photo at right, the mid-rail has been mitered by 45° at each end and a pair of 5/8" econo-head bolts were used to fix the ends of the two boards to the 5.5" post. This is not a great detail. For any future handrail work, it would be better to use 4 bolts (2 for each board) and cut the ends of the boards to 90°, as was done for the Rotary Pier. Another option would be to use 2"x2" x 8" clip angles, mounted against the post on the back side. ***Recommended repair:*** *Fix the rail in place using 5" ardox spikes (2 per board). This work should be done for any existing rails which have this kind of scarf-jointed butt-splice. For any future work or rail replacement, use a 4-bolt square-cut butt-splice instead.*



Photo 1473: Typical mid-rail splice on Marine Boardwalk.

Deficiency #10 - **Span 50/51 Issues:** ***Risk Level = MODERATE (depending on density of live load on the deck surface above).*** There is a poorly framed span located at the west end of the boardwalk, where it meets the shore. The 6x10 stringers have been side-lapped and bolted. There are a total of 7 stringers which are not properly supported over the 13' span. There is an over-reliance on the fasteners to take and share the loads for this span (bad framing detail). Basically, this area is inadequate as-framed. ***Recommended repair:*** *Insert 6x10 stringers between the existing stringers, to bear from cap to cap at bent 50 to 51 (7 ea x 16' stringers required). This fix will also pick up the tapered section of deck. This repair should be done within 1 to 2 years.*



Photo 1364: West end abutment area of Marine Boardwalk

Deficiency #11 - **Signage:** ***Risk Level = MODERATE (note: 'moderate' risk here because I see exposure for the DOS which could be eliminated easily and relatively cheaply).*** I did not see any signage regarding public safety or limits to use for these facilities. Specifically, I am thinking of signs with information such as:

a) *"Use at your own risk";*
b) *"Parents responsible for children and pets";*
c) *"Lifejackets recommended when on floats";*
d) *"No open fires or barbecues";*
e) *"Do not climb on handrails";*
f) *"Deck surfaces and gangways can be slippery at times and some surfaces are sloping. Watch your step.";*
g) *"No vehicles allowed"*

Nor did I see any reference to the intended safe working load limits on the deck, or on the gangways. This kind of signage is a way of protecting the District of Sooke against nuisance or incident claims.
Recommended repair: *Post appropriate signage at the entrances, and out on the Rotary Pier. The safe working load limits should be posted on this site, and in particular adjacent to the structures in question. For example: The gangway is likely designed for 50 psf live load. The manufacturer (Blue Water Systems) should be contacted to provide an SWL rating, or failing that, they can provide the drawing which was used for fabrication so an engineer can check and certify what the SWL should be.*

Deficiency #12 - **Safety Equipment:** ***Risk Level = HIGH.*** I did not see any safety or rescue equipment onsite. This includes specifically: no fire extinguishers, no lifejackets; no rescue ladders on the floats, no ladders on the pier, no life-ring stanchions, no area lighting on the piers (solar or otherwise). I understand why these items are not here. But I think you may want to reconsider at least some of them in order to provide better protection and emergency response capabilities. ***Recommended repair:*** *Contact the local Coast Guard Auxiliary (SAR) and have them do a walkthrough with you to see if they have suggestions for incorporating these items into your facility for moving forward. Likewise, it would make sense to have a representative from the local fire department come down and discuss the likely response to a fire on the structures and any mitigation methods which could be employed (e.g., hydrant at the shore end on each side).*

Hugh Tuttle Engineering Ltd.
231 Meadow Drive, Saltspring Island, B.C., V8K 1T9
tel/fax: (250) 653-9166; email: hugh_tuttle@hotmail.com

PART 3 – MAINTENANCE COMMENTARY:

I have taken the list of deficiencies and looked at the likely costs for short-term maintenance to correct (or at least control and arrest) the deterioration. The costs in the tables below are in 2023 dollars (i.e., not indexed for inflation or projected material cost increases). In addition, they do not include gst or contingency. For planning purposes, I recommend that you add at least 25% contingency and 5% gst to the numbers below. This represents what I consider to be the 'best-practices' maintenance plan for these structures over the next 1 to 5 years:

Table 2 - Maintenance Costs 2024 to 2025 (1-2 years)

Deficiency #	Description of Work	Facility	Scope	Estimated Cost
1a	Deteriorated planks	Both, plus floats and gangways	Replace 12 ea selected 2x10 S4S boards	3,900
6	Low-tide pile wraps	Marine Boardwalk	Denso-wrap on 10 piles x 1m high	31,000
7	Timber bracing	Rotary Pier	Replace 50% of 4x8 bracing	66,100
8b	dolphin hoops	Rotary Pier Floats	Replace 4 ea steel dolphin 'hoops' at floats	18,300
9	Mid-rail splice	Marine Boardwalk	Nailing for all 'scarfed' midrail joints at posts	1,000
10	Span 50-51 issues	Marine Boardwalk	Add 7 stringers to span 50-51	19,700
11	Signage	Both, plus floats and gangways	New signs with 'Rules of Use' etc.	15,000
			Total 1 to 2 year maintenance budget =	$ 155,000

Table 3 - Maintenance Costs 2026 to 2029 (3 to 5 years)

Deficiency #	Description of Work	Facility	Scope	Estimated Cost
1a & 1c	Deteriorated planks	Both, plus floats and gangways	Replace corners decking plus other deteriorated boards – total 48 ea 2x10 S4S boards	26,600
2	Chain-link Guarding	Both, plus gangways	Install chain link mesh between midrails	44,200
4	Top Rail	Marine Boardwalk	Replace 1920 lf of top rail	87,000
5	Stringer blocking	Marine Boardwalk	Install outer stringer blocking at 52 bents	73,500
8a	Dolphin piles	Rotary Pier Floats	Mob/demob + remove 12 ea timber piles, replace with 4 ea 20" pipe piles	115,000
8c	Replace gangway rollers	Rotary Pier Floats	2 new rollers plus channel guides on floats	6,800
			Total 3 to 5 year maintenance budget =	$ 353,100

In addition to the actual maintenance costs, I recommend that you implement the following inspection procedures immediately:

- ANNUAL INSPECTION: have DOS staff do a careful walkaround with photos every year. The intention here is to identify areas with developing structural distress which should be dealt with, or brought to the attention of the engineer. If you don't feel that your staff are qualified to do this, then I recommend you bring in a contractor (e.g., HMM or Steve Roux).
- FIVE-YEAR INSPECTION: Bring in an Engineer every 5 years, to do a full inspection on the structures, similar to what is included in this report.

I have not included costs for Deficiency 12 in my estimates above, because the safety response is typically beyond the scope of my report (which is structural). You may feel that these items are not required and if so, you certainly have the right to not provide them. Likewise, I have not assessed replacement cost for these structures, as I felt it was beyond the scope of what you asked me to do. However, I can provide a replacement cost for your structures if you wish.

If we assume that the original designers had in mind a design life of about 35 years, then (in 2023) we are at about the mid-life point for both of these structures. The superstructures are very similar. In fact, the only significant difference is: pipe piles without bracing (for the Marine Boardwalk) and timber piles with bracing (for the Rotary Pier). Logistically, design of these types of structures can be approached from two different viewpoints:

- Version 1 – Build and replace. The idea is to build the original structure and build it well … but don't go overboard. Build it for the intended loads and for a design life of something in the order of 30 to 35 years. During that life-cycle you would expect to replace decking and handrails, bracing, perhaps patch up or reinforce 10% of the piles … that kind of thing. By the time you reach the design life, you are ready to take it out and replace it with a new one.
- Version 2 – Build it Heavy-Duty. In other words: build it extra-strong, and use first-class materials. The idea here is you build the duty-cycle version of the wharf, and design it so the structural elements only ever see (at most) 40% of their design capacity. There is care and attention paid to the joint and connection details, with the focus being to keep water out of where we don't want it to go. For this style of wharf, the designer will choose premium lumber grades and the best preservative treatment. This wharf might last twice as long as version 1, and it might cost 50% or 60% more (initially) to build. The maintenance costs would be higher because the materials will be more expensive and their installation more finicky. Conversely however, this more robust version will be less likely to fail in an extreme storm event. And the repairs will be easier and less frequent because it will have been designed so that the components are replaceable and so there is more redundancy built into the structure. From a purely life-cycle cost point of view therefore, the 'version 2' wharf will (probably) be more expensive initially, but cheaper in the long run

Most people choose version 1 because of the lower up-front cost. This happens because we want to be able to afford stuff other than just the wharf. We also want to pay for public amenities and sewer and water and garbage collection (to name just a few). The marine facilities out at Ed Macgregor Park fall into the 'Version 1' classification: not too heavy, not too light … basically just right. *[HT sidebar #4: Let's call this the 'Goldilocks' version shall we?!]*. In our society we mostly choose the Goldilocks version because this is basically what we can afford at the time. This amounts to a life-cycle and business-case philosophy that drives most of what we do, and most of the decisions we make. We use our Goldilocks-stuff until it fails. Then we discard it, and buy new Goldilocks-stuff to replace it. Both design philosophies have their benefits and their limitations. I would like to express the opinion that with care and attention, I see no reason why the existing marine structures out at Ed Macgregor Park cannot be life-extended out to 50 or even 60 years before they would actually need to be replaced. Obviously, there would be an increased level of maintenance and partial rebuilding in order to achieve this kind of extended life-span. But it is a concept worth exploring particularly for well-built and well-designed structures like these. I have

Hugh Tuttle Engineering Ltd.
231 Meadow Drive, Saltspring Island, B.C., V8K 1T9
tel/fax: (250) 653-9166; email: hugh_tuttle@hotmail.com

done inspections on timber wharves which were well over 80 years old, still operating with vehicle traffic. A well-built and well-maintained timber wharf structure can certainly last for a very long time.

PART 4 - SUMMARY and CONCLUSION:

The marine facilities at Ed Macgregor Park are in moderate to good condition overall. I have made a number of recommendations in this report as follows:

1. Upgrade the data archives and drawings for these structures (request the Rotary Pier drawings, from the Rotary Club, and the gangway drawings from Blue Water Systems). Include recent modifications and upgrades where appropriate (engineered drawings). The intention is to set up an available reference which can be provided to bidders (for repairs) or to provide the appropriate design references for any future inspections or repairs to these facilities.
2. Implement a regular inspection process with record reports (and representative photos filed with the data archives for each structure. These inspections would be conducted annually (DOS representative) and every 5 years (engineer assessment), with reports filed and available for future work requirements.
3. Set aside an operating budget which can accommodate the upcoming maintenance repairs. This budget should essentially look ahead for at least 5 years (estimated costs in part 3 of this report).

I think it would be a good idea to have a sit-down meeting (or a zoom call) to discuss this report and my conclusions. I also think it may be beneficial to have a contractor present as they will be able to add a different perspective and their experience with this site will be invaluable. In addition, they will be able to provide feedback and comments, and a more accurate determination of costs for the various deficiencies.

I hope this report has addressed your requirements with respect to this facility. Please feel free to call if you have any questions.

Regards ....

Hugh Tuttle, P.Eng.

Attachments:

- Appendix 'A' – Transposed site notes, 06Jun2023 ..... 5 pages
- Appendix 'B' – Hugh Tuttle Engineering Drawings, October 2023 ..... 2 pages
- Appendix 'C' – Hoel Engineering, Sooke Boardwalk Phase 1, November 2007..... 4 pages

Hugh Tuttle Engineering Ltd.
231 Meadow Drive, Saltspring Island, B.C., V8K 1T9
tel/fax: (250) 653-9166; email: hugh_tuttle@hotmail.com

Appendix 'A'
Ed Macgregor Park – Marine Structures
Transposed Site Notes - 06Jun2023
(5 pages)

Hugh Tuttle Engineering Ltd.
231 Meadow Drive, Saltspring Island, B.C., V8K 1T9
tel/fax: (250) 653-9166; email: hugh_tuttle@hotmail.com

District of Sooke – Ed Macgregor Park – Marine Structures
Site Inspection Notes:

Date: Tuesday 06Jun2023
Inspected by: Hugh Tuttle, Kristin Tuttle
Notes Transposed by: Kristin Tuttle
Time: 8:00am to 11:15am
Tide: Low tide = 0.0m at 11:03am
Weather: Sunny, warm, light haze

Requested inspection on: Rotary Pier with floats and gangways; Marine Boardwalk.

Site Inspection Details:

- No plans available. In lieu of plans, we measured as we went along, in sufficient detail to produce as-found drawings: selected depth soundings; member sizes and spacing; bent spacing; bracing and connection details; plan location of 0.0m contour.
- The condition survey was intended to identify obvious defects, compromised elements, structural deficiencies, cavities in timbers piles and bracing, details of concern, etc.
- The field inspection therefore included a determination of: composition and critical dimensions, typical and max. spacing for key structural elements.
- Access was from topsides and from land (along the tidal foreshore). No boat was used and no divers.
- Note: tidal flats were primarily sandy silts. Very soft. Used hip waders to access as far out the Rotary Pier as possible. Sunk in up to 0.5m deep in places (leg length), very difficult access. Next time bring a 6' aluminum ladder to use as a bridging assist (like a self-rescue system to deal with quicksand-like conditions).
- Timbers and timber piles were checked by hammer sounding. Steel piles were visually checked only (no metal thickness testing was done).

ROTARY PIER:

- Bents are numbered starting at bent zero on abutment at shore (and pile A = east, Pile B = West, read A, B looking out to sea)
- Deficiencies identified in red font
- Deck:
    - Deck planks are 1.5"x9.25" ACZA Doug Fir, stringers @ 32" o.c. +/-. *[HT check decking for worst-case 38" spacing on stringers]*
    - Decking is spiked down with what appears to be 4" ardox spikes which are too short... should be 5". Deck planks are definitely under nailed: install x2 - 5" long galvanized ardox nails per contact (or screw rated screws are ok too). Consider re-nailing the entire deck. Not necessary now, but at least do this for any future replacement boards.
    - Measured dimensions (see table):
        - Approach = 3.6m (W) x 49.87m (L)
        - Wharfhead = 22.53m (W) x 4.91m (L)
        - Promenade Area = 9.67m (W) x 7.89m (L)

Hugh Tuttle Engineering Ltd.
231 Meadow Drive, Saltspring Island, B.C., V8K 1T9
tel/fax: (250) 653-9166; email: hugh_tuttle@hotmail.com

Chainage for bents: (measured to center of sill and c/c bents)			
Bent #	Chainage (m)	Bent Spacing (m)	Notes
0	0.30		26" cedar log, flattened top & btm; 3.6m wide to bent 11; 300mm shoreward to beginning of pier
1	4.48	4.18 (0-1)	
2	9.14	4.66 (1-2)	
3	13.53	4.39 (2-3)	
4	18.07	4.54 (3-4)	
5	22.62	4.55 (4-5)	
6	27.19	4.57 (5-6)	Reset to 0m chainage
7	4.62	4.62 (6-7)	
8	9.16	4.54 (7-8)	
9	13.70	4.54 (8-9)	
10	18.14	4.44 (9-10)	3.6m wide
11	22.53	4.39 (10-11)	Start of cross pier; Reset to 0m; 152mm back towards shore to deck edge; 22.53m wide
12	4.61	4.61 (11-12)	22.53m wide; End of cross pier; 152mm seaward to deck edge; 8.53m width to seaward
13	9.15	4.54 (12-13)	8.53m wide, tapering width to seaward
14	12.50	3.35 (13-14)	152mm seaward to end of deck; 2.48m at seaward end

- Handrail:
  - No bullrail. Probably ok as no vehicles would drive out here.
  - Plastic coated chain link fence on outside to prevent kids crawling through. Not well fixed but seems to do the job.
  - Top rail slope = 100 down, 180 across (30°)
  - 43" high to top of sloped top rail
  - Top rail + 2 mid-rails, ACZA S4S Doug Fir. All rails are 9"x2.5". Top rail has rounded top edged (2).
  - Posts = 5.5"x5.5" spaced at 2210 c/c typ.
  - Approach has post brackets @ most locations, cross pier has only a few brackets
    - Post bracket = 35.x5"x350mm long formed angle, 1/4" plate, top section of angle plate is 220mm wide with a 1" tall 'shoulder
    - 5/8" lag bolts thru bracket thru deck, into stringer
    - Very solid connection detail
  - Base of handrail is secured with 3 ea 3/4" bolts (top bolt thru bracket where bracket exists)
  - Handrail and mid-rail are secured with x2 5/8" lag bolts per contact
  - 3/16" aircraft cable btwn middle & bottom rails has been replaced with plastic coated 'chain link' fencing in some areas... *neither of these options is code compliant
  - Ground spike on east side of walkway embedded in ground. Small wire connects fencing to rebar ground spike. Likely done for grounding the 'chain link fence' (guarding btwn horizontal rails on inside of handrail). Completely inadequate for lightning or any serious load, but assumed to be to dissipate static? Weird detail.

Hugh Tuttle Engineering Ltd.
231 Meadow Drive, Saltspring Island, B.C., V8K 1T9
tel/fax: (250) 653-9166; email: hugh_tuttle@hotmail.com

- Pilecaps:
  - 12x12 ACZA pile caps (11.5x12"); Asphalt shingles laid on top where stringers bear *good detail
  - Abutment sill block looks like a cedar log (untreated) about 26" dia. completely gone, no piles under. Replace within 2-3 years.
- Stringers:
  - 6x12 stringers ACZA doug fir @ 33.25" c/c typ, some stringer spacings = 36.5"
  - Rolled roofing 8" wide laid on top of all stringers (btwn stringers and decking), *good detail
  - Edge stringers have blocking installed for mid-span handrail posts, so 2 stringers are engaged. Good detail. However, no splice blocks over the pilecap, and no blocking. However there are post brackets installed which more than makes up for the butt-spliced edge stringers. Ok.
- Longitudinal 'X' bracing:
  - Located both sides of pier, at every other bent: 2-3, 4-5, 6-7, 8-9, 10-11
  - 4x8 rough ACZA doug fir, in-out lapped on piles, with 8x8 block at ctr. & 1" bolts through all contacts
  - Braces are 20' long from bent #4-5
  - All longitudinal braces appear to be in good condition.
- Transverse X-bracing:
  - Located on every bent.
  - 4x8 rough ACZA doug fir in-out lapped on piles, with 8x8 block at ctr. & 1" bolts through all contacts

Transverse Bracing	
Bent	Notes
1-4	All good
5	Brace B(l) to A(h) shore side north brace = replace (16' long braces here), south side brace = good
6	Replace both braces
7	Replace both braces; piles feel ok
8	Brace B(l) is starting to 'go' on ends, pile B feels ok, Brace A(l) also starting to 'go'... replace both braces 1-2 years? Pile A = feels good
9	Brace at B(l) = gone replace, brace A(l) is ok for a couple years, replace in 2025, Pile A = good
10	piles are good, bracing = ok for a couple of years, but starting to go... *Note: water at Hugh's waist height (1.1m) @ 10:50am (see photo for measurement)
11-14	Did not inspect (too deep, too soft); *1-3 years for all outer bracing (replace)

- Gangways:
  - 2 gangways, one hinged each way (laterally) from promontory down to floats.
  - Aluminum truss-style, manufactured by Blue Water Systems
  - No load rating
  - Dimensions: 46" c/c on the handrails (3"x3" sq tube, sharp cnrs) x 40'4" ptp. Deck to top of truss is 41.75"
  - Drop hinges = 3"x7.25" c/c, 1/2" plate, 1" bolt = pin (maybe stainless?)
  - 1.5x1.5X3/16" angle kick on bias @ 3.5" above decking
  - 1.5" thick decking w/expanded aluminum mesh on surface.
  - Gangway rollers are undersized, with 1/2" bolts. Replace with a better roller when these wear out.
  - 2x8 mid-rail boards on gangway should be attached on the inside (not outside), and wood screws are not an appropriate means of connection. #10 wood screws used?

- Bottom seaward mid-rail has detached 50% on east gangway. To be re-fixed. Use a better attachment detail. Switch mid-rails to inside of truss (perhaps a welded on aluminum tab with self-tapping screws) and patch the screw holes (on the outside).
- Gangway decking: mix of 2x6 S4S (x2, insides) and 2x8 S4S (x4, outsides), run longitudinally, aluminum deck beams at (nom.) 24" ctrs; ACQ treated #2 hem-fir.
- Decking has moderate rot. 2 to 4 YEARS before replacement

- Floats & dolphins:
  - x2 floats, each secured with x2 3 pile dolphins (one at each end). Total of 6 timber piles per float.
  - Float dimensions: 12x40' w/2x8" rub board around & 3.5"x3.5" tie up rail
  - Looks basically DFO style light-duty
  - Pile hoops are 5x5" angle x 1/2" bare steel, and have 50% CSL (pack rust). Replace within 2 yrs.
  - Dolphins feel ok, 6/10 east float. Did not check dolphin piles on west float.
  - Dolphin piles have been 'squared-off' by abrasion on the pile hoops. Will likely need to be replaced within 2 to 5 years.
  - Some of the decking could use to be re-nailed
  - Could use additional flotation under gangway landing. This is typical where the gangway load has not been considered when locating billets in the float.

MARINE BOARDWALK:

- Bents are numbered starting with #1 located between bents 5/6 at Rotary Pier, increasing to the west.
- Old boat launch or pier remnants visible on foreshore @ bent #14, and btwn bent #18 and #19
- Note: trail erosion conversation (Ryzuk, DOS, Tuttle Eng.) about midway through the inspection. Discussed options for mitigation, slope stabilization, prevention of future bank erosion,. Also discussed repair of existing land-based boardwalk along the HWM as it is gradually sliding seaward (timber and concrete posts on pads or sonotube footings.
- Marine Boardwalk structure has (plan-view) bends at:
  - bent #7 (33° counterclockwise, out),
  - bent #23 (11° clockwise, in)
  - bent #40 (12° clockwise, in)
  - bent #46 (83° clockwise, in) ... heading towards shore
  - bent #51 is the last bent with piles; transitions into shore posts on concrete pads for bent #52 and #53
- Substructure:
  - Deck:
    - Tapered planks to ease at corner transitions ... *bad detail ... fix at corners
    - A few deck planks need to be re-nailed, some others are showing signs of rot, assess decking and replace as required Note: the spikes used in the Rotary Pier are larger ... probably 5". Less nail popping on this walkway than on the Rotary Pier
    - Deck planks are starting to weather, 2-5 years. Check annually & replace as required... replace about x10 this year
  - Handrail:
    - Handrail on walkway = 2"X9.75" x 42.5" tall, 30° inboard slope on top rail, rounded top cnrs
    - Remove 3/16" aircraft cable... *poor detail. Replace with 2x6 or 2x4 timber rail or safety fencing installed on inside face.
    - Poor bolting detail on mid rails (see photos). Toenail or replace the rails.

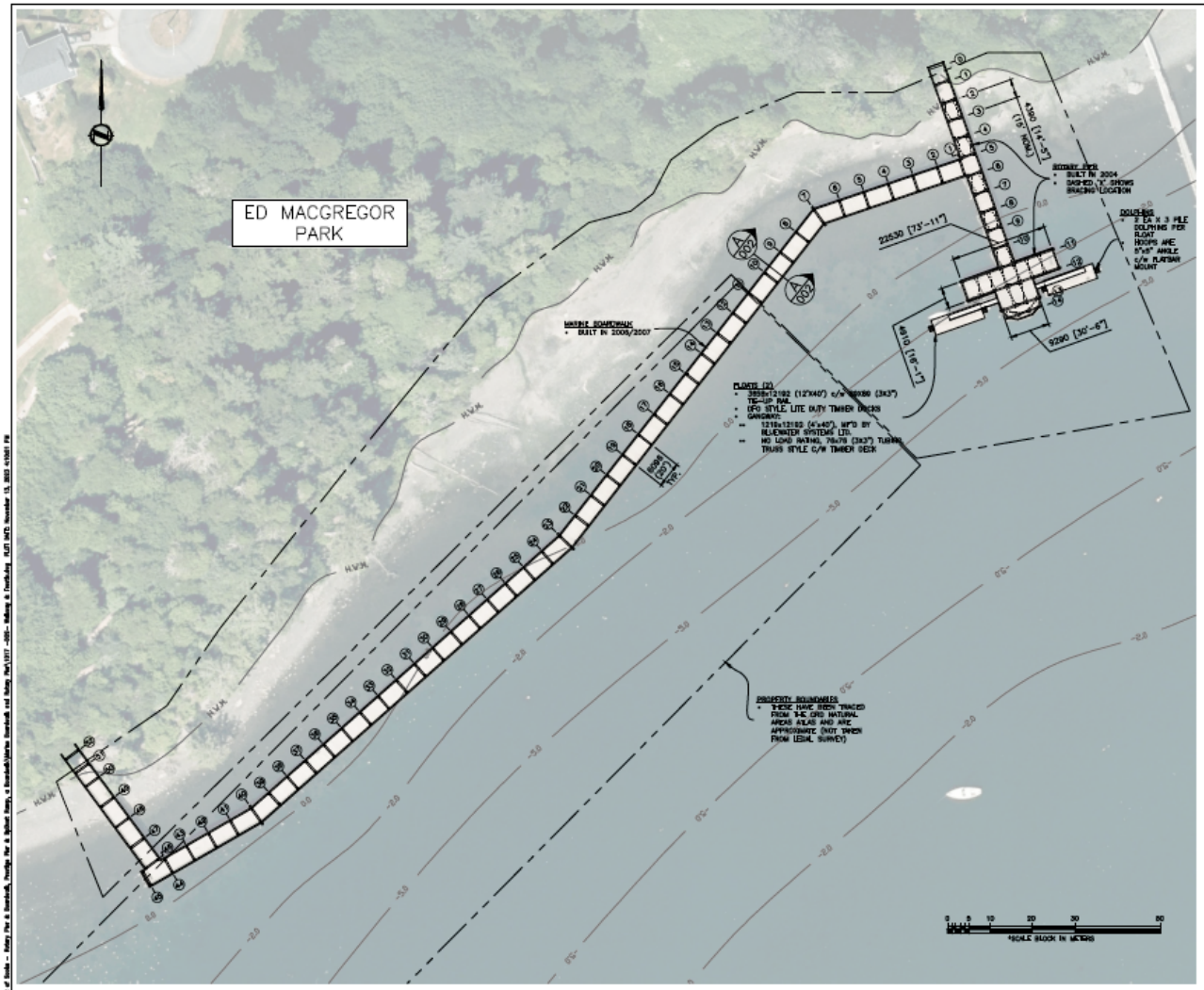
- Top rail maybe 40% rot, heavily weathered. Monitor. Estimated 3-5 years for replacement.
- No saddle brackets or blocking on this handrail so the ¾" drifts through the edge stringers are the only support for this handrail. Poor detail. Consider retrofit with blocking and/or splice blocks.

- Piles:
  - Steel piles, 12 3/4" OD. ; 2 piles per bent, bents at nom. 6.1m (20') ctrs.
  - Measured pile spacing: Bent 1-2 longitudinal = 5.50m and transverse = 2.95m; Bent 2-3 longitudinal = 6070; Bent 38-39 = 6.08m; Bent 39-40 = 5.73m;
  - 14" diameter x 12"(H) boot on top of each pile, with 3/8" sole plate and 3/8" side plate (one side only); 2-3/4" through-bolts. The first few boots were welded, then no welding after that.
  - Piles on shore side @ #14 & #15 appear to have had some kind of cable wrap or something? damage @ 55" below cap
  - Coating failure @ mid to high tide +/- 5' on all piles. Recommend mechanical cleaning & re-painting. Additionally, consider anodes on piles @ mudline.
  - There is water getting under the paint treatment on piles; steel may have had inadequate surface prep (or high humidity when paint applied, or both)
  - Corrosion: nominal, appears to be max 5% CSL. Makes sense as this area is tidal, and since this is a walkway only, there is no nearby source for stray electrical currents (ground fault).
  - Orange deposit on many of the piles (perhaps 10 to 15%), at just above the zero tide mark. This is likely iron bacteria. Poses an increased risk of corrosion losses to these piles in the low tide range (0m to +1m elevation). Consider pile-wrap or localized re-painting.
- Pilecaps:
  - 12"x12" ACZA treated doug fir x 13' to 14' long
  - Checking noted in pilecaps as follows:
    - Bent 7 = heavy checking. *replace pile cap 2-5 years (check this cap annually)*
    - Bent 40 = moderate checking on north and mid span... *5-10 years *monitor*
    - Bent 44 = moderate checking in cap. *Probably good for 10 years. *monitor*
- Stringers:
  - Edge stringers are butt spliced with no blocking or splice blocks. Poor detail.
  - Stringers are 3 3/4" x 11.5" @ nom. 24" o.c. (7 stringers for 3.86m deck width)
  - Unfortunately: no rolled roofing here ... between pilecap and stringer, or btwn stringer and decking (Rotary Pier has this detail but it was not repeated for the Marine Boardwalk).
  - At bent 51 to 52 (50 to 51 is a short span +/- 13'), the deck width tapers in with a poorly conceived detail: short side taper = 4x10 stringers lapped & bolted (x6 compromised stringers) + x1 angled stringer. Bad detail.
    - Option 1 repair (better): x7 20' 6x10 stringers inserted btwn existing to bear from cap to cap at bent 50 to 51. Will pick up the tapered section of deck.
    - Option 2 repair: 24' long 6x10 or 8x10s from bent 51 to bent 52, x6 stringers, with the ends cantilevered shorewards by 5' or so.

Hugh Tuttle Engineering Ltd.
231 Meadow Drive, Saltspring Island, B.C., V8K 1T9
tel/fax: (250) 653-9166; email: hugh_tuttle@hotmail.com

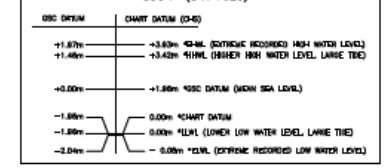
Appendix 'B'
Hugh Tuttle Engineering Drawings

1017-A-001	Overall Plan	Rev. A	31Oct2023
1017-A-002	Sections	Rev. A	31Oct2023



OVERALL PLAN (1:500)
- AERIAL PHOTO DOWNLOADED FROM THE CRD NATURAL AREAS ATLAS
- CONTOURS ARE TRACED FROM I-BOAT CHART AND ARE APPROXIMATE ONLY, (TO BE CONFIRMED). '0' CONTOUR ADJUSTED BASED ON FIELD OBSERVATIONS AT ZERO TIDE.
- DIMENSIONS ON THIS PLAN ARE O.T.O. DECK U.N.O.

VERTICAL REFERENCE ELEVATIONS
SOOKE (STA 7020)



*CD = CANADIAN HYDROGRAPHIC SERVICE DATUM (LWL = 0.0m CHS)
*GSC = GEODETIC SURVEY OF CANADA DATUM (MSL = 0.0m GSC)

GENERAL NOTES:
1. ALL ELEVATIONS IN METERS, TO CHART DATUM U.N.O.
2. ALL DIMENSIONS ARE IN mm UNLESS NOTED OTHERWISE.
3. TIMBER, STEEL, AND FASTENER SIZES IN THESE DRAWINGS ARE REFERRED TO IN "SOFT" METRIC FORM. ACTUAL SIZES TO BE NEAREST IMPERIAL STANDARD.
4. DRAWING REFERENCES:

COMPANY	DATE	DESCRIPTION	FILE NAME
JSH ENGINEERING	MAY2007	SOOKE BOARDWALK PHASE 1	DRG.S1, S2, S3
CRD NATURAL AREAS ATLAS	2019	AERIAL ORTHO PHOTO & TRACED PROP BDRY	Aerial underlay - 2019.jpg
I-BOAT		BOAT CHART, USED TO TRACE ROUGH CONTOURS	Aerial - I-boat contours.jpg

5. DESIGN LOADS: (PRESUMED)

LOAD TYPE	DEFINED LOAD	LOAD DETAILS
LIVE LOAD	2.4 kPa (50psf)	PEDESTRIAN FOOT TRAFFIC
WIND	0.7 kPa (15psf)	65 KNOT GUSTING
VEHICLE	N/A	NO VEHICLES ALLOWED
SNOW	1.6 kPa (34psf)	

6. THESE DRAWINGS ARE PROVIDED FOR REFERENCE ONLY AND ARE BASED ALMOST ENTIRELY ON FIELD MEASUREMENTS TAKEN DURING A 5 HOUR LOW TIDE INSPECTION CONDUCTED ON 06JUN2023. NO ACTUAL SURVEY WORK WAS PERFORMED OR AVAILABLE, AND NO AS-BUILT DRAWINGS WERE PROVIDED. SOME DETAILS OR CONNECTIONS MAY NOT BE EXACTLY AS SHOWN, ALWAYS FIELD MEASURE TO CONFIRM ACTUAL ON SITE DIMENSIONS OR DETAILS.

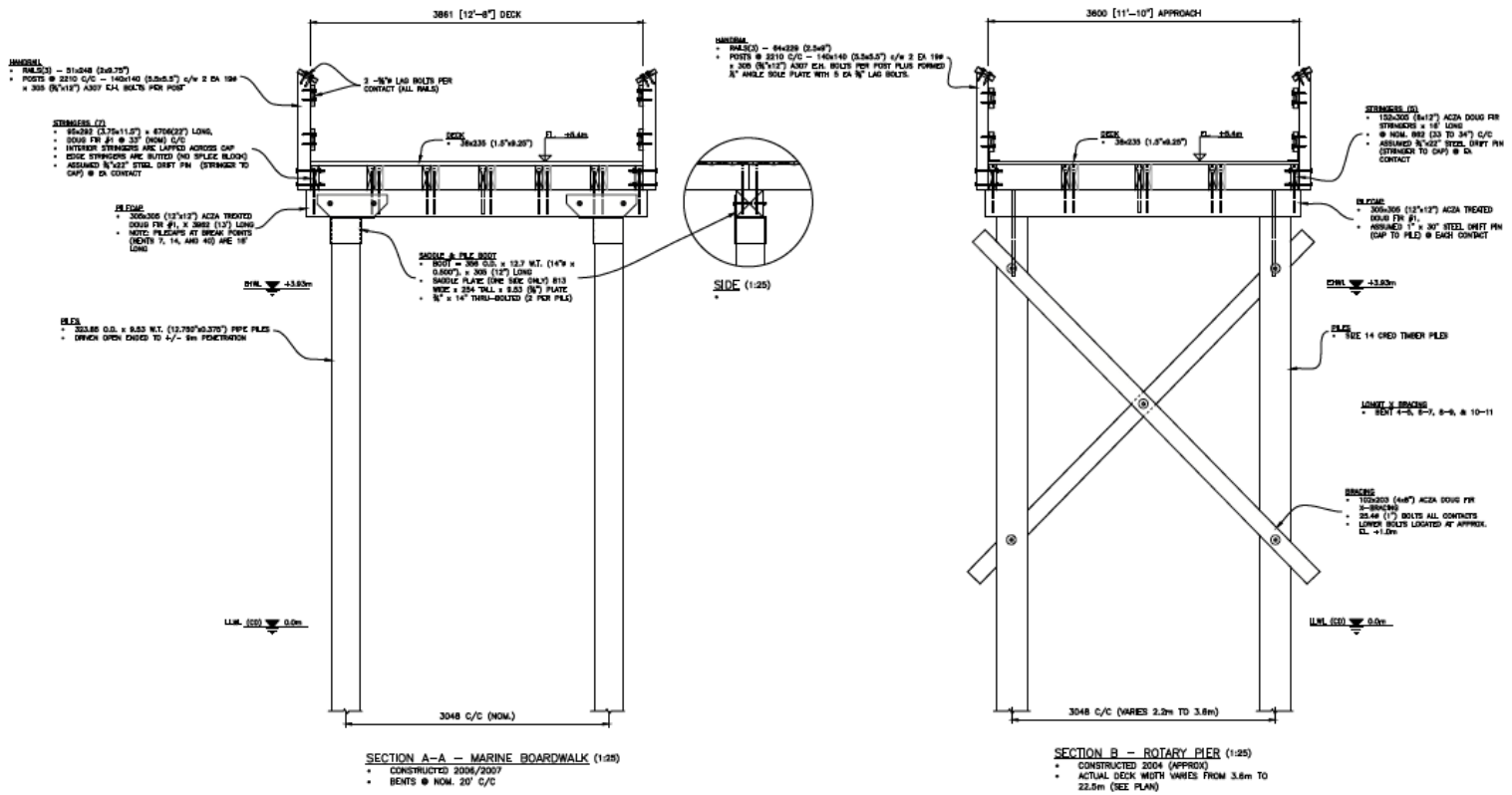
REVISIONS				REVISIONS			
E				J			
D				I			
C				H			
B				G			
A	ISSUED FOR REPORT	24/06/23	KLT	F			

Hugh Tuttle Engineering Ltd.
PERMIT TO PRACTICE 1003109
231 Meadow Drive,
Saltspring Island B.C., V8K 1T9,
Tel/Fax: (250) 653-9166
email: hugh_tuttle@hotmail.com

DRAWN BY: KRISTIN TUTTLE | DESIGN BY: HUGH TUTTLE
DATE: 13-JUNE-2023 | CHECKED BY:
FILE No.: | SCALE: AS SHOWN

District of Sooke

DISTRICT OF SOOKE
ROTARY PIER AND MARINE BOARDWALK
INSPECTION AND REPORT
OVERALL PLAN
DRAWING No.: 1017A-001 A
SHEET PRINTS WORKING UNLESS NOTED



REVISIONS				REVISIONS			
E				J			
D				I			
C				H			
B				G			
A	ISSUED FOR REPORT	31/10/23	KLT	F			

Hugh Tuttle Engineering Ltd.
231 Meadow Drive,
Saltspring Island B.C., V8K 1T9,
Tel/Fax: (250) 653-9166
email: hugh_tuttle@hotmail.com

PERMIT TO PRACTICE 1003109

DRAWN BY: KRISTIN TUTTLE | DESIGN BY: HUGH TUTTLE
DATE: 25–OCT–2023 | CHECKED BY:
FILE No.: | SCALE: AS SHOWN

District of Sooke

DISTRICT OF SOOKE
MARGINAL WHARF AND WALKWAY
INSPECTION AND REPORT
SECTIONS
DRAWING No.: 1017A-002 A

Hugh Tuttle Engineering Ltd.
231 Meadow Drive, Saltspring Island, B.C., V8K 1T9
tel/fax: (250) 653-9166; email: hugh_tuttle@hotmail.com

Appendix 'C'
JSH Engineering Drawings – Sooke Boardwalk – Phase I

S1	Site Plan – Proposed Boardwalk	21May2007
S2	Section 1/S2, 2/S2, and 3/S2	21May 2007
S2	Section 1/S2, 2/S2, and 3/S2	21May 2007 (sealed 01Nov2007)
S3	Section 1/S3	21May2007

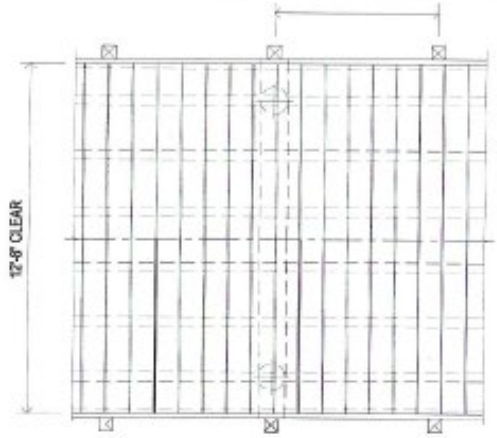


SITE PLAN - PROPOSED BOARDWALK

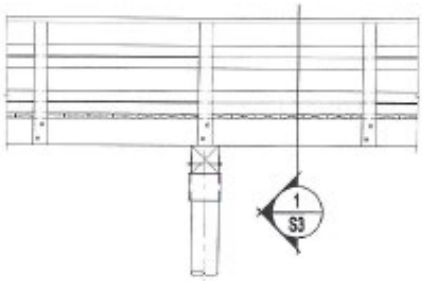
1:200

REV. No.	DATE	REVISION

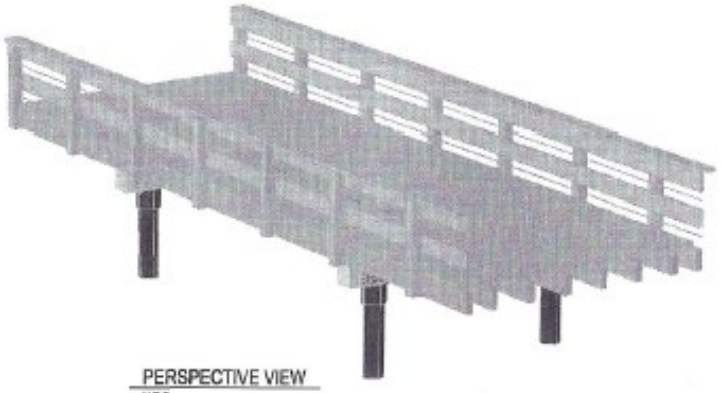
project	PROPOSED MUNICIPAL PROJECT	designed	JSH	scale	1:200	date	2007-05-21
	SOOKE BOARDWALK - PHASE 1	drawn	CORE	reference drawing no.			
	JSH ENGINEERING LTD. 665 Blackfall Rd., Victoria, BC V9B 6G2 T 250-474-2682 F 250-474-0261 jsheng@telus.net	checked		S1			rev
		approved					



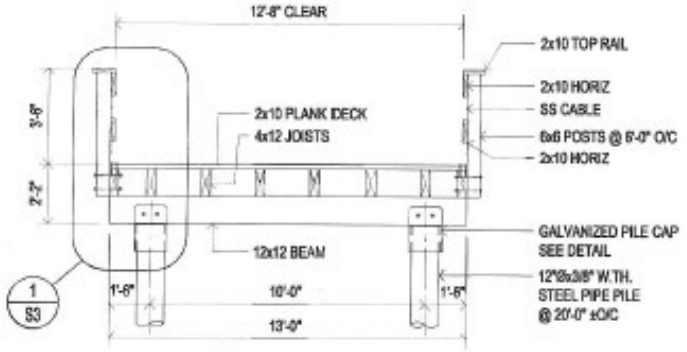
1 / - TYPICAL PLAN
1/4"=1'-0"



2 / - TYPICAL ELEVATION
1/4"=1'-0"



PERSPECTIVE VIEW
N.T.S.



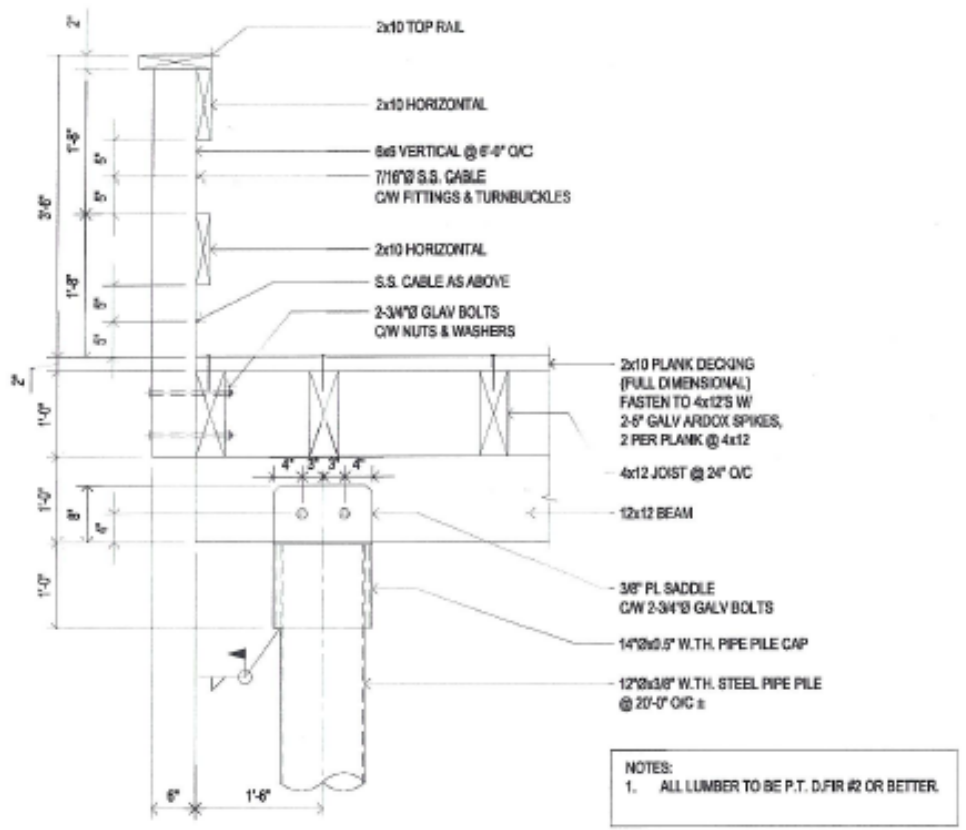
3 / - TYPICAL SECTION
1/4"=1'-0"

REV. No.	DATE	REVISION

project: PROPOSED MUNICIPAL PROJECT
SOOKE BOARDWALK - PHASE 1

JSH ENGINEERING LTD.
666 Blacktail Rd., Victoria, BC V9B 6G2
T 250-474-2662 F 250-474-6951 jshengdelta.net

designed	JSH	scale	1:200	date	2007-05-21
drawn	CORE	reference drawing no.			
checked		S2			rev
approved					



NOTES:
1. ALL LUMBER TO BE P.T. D.FIR #2 OR BETTER.

1/S3 SECTION
3/4"=1'-0"

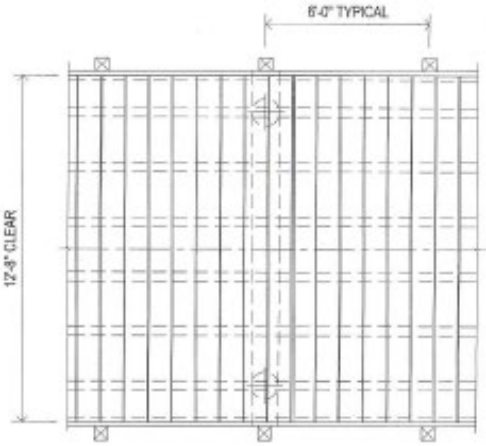
REV. No.	DATE	REVISION

project: PROPOSED MUNICIPAL PROJECT
SOOKE BOARDWALK - PHASE 1

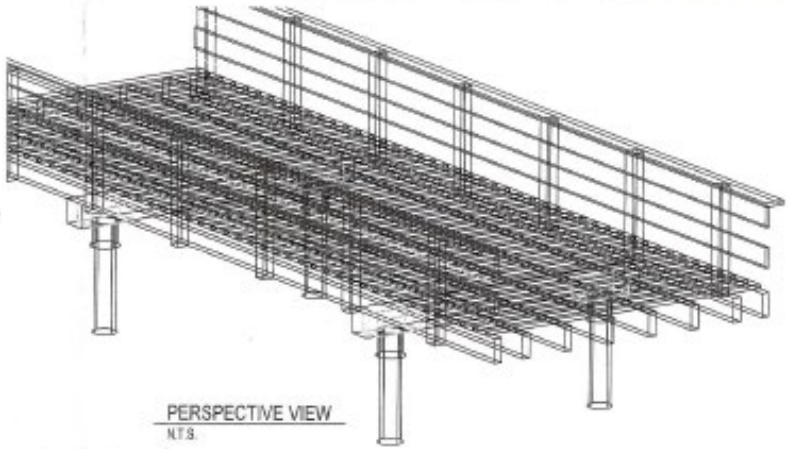
JSH ENGINEERING LTD.
665 Blacktail Rd., Victoria, BC V9B 6G2
T 250-474-3962 F 250-474-6261 jsheng@telus.net

designed	JSH	scale	1:20	date	2007-05-21
drawn	CORE	reference drawing no.			
checked		S3			rev
approved					

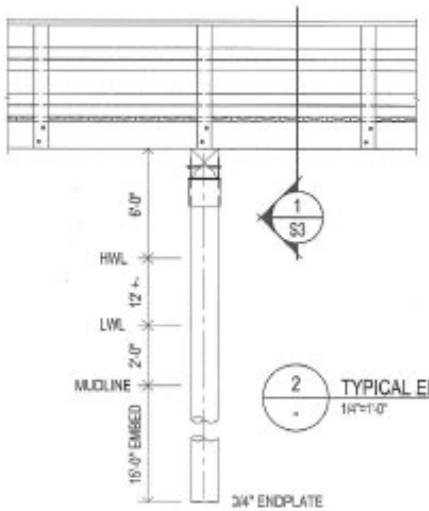
8 6x6



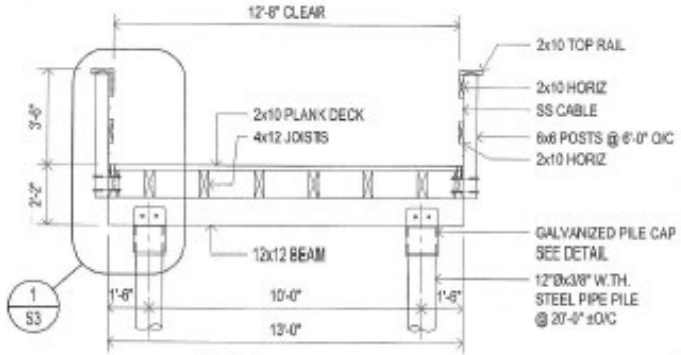
1 / - TYPICAL PLAN
1/4"=1'-0"



PERSPECTIVE VIEW
N.T.S.



2 / - TYPICAL ELEVATION
1/4"=1'-0"



3 / - TYPICAL SECTION
1/4"=1'-0"

PROFESSIONAL ENGINEER
PROVINCE OF BRITISH COLUMBIA
NOV. 09

REV. No.	DATE	REVISION

project: PROPOSED MUNICIPAL PROJECT
SOOKE BOARDWALK - PHASE 1

JSH ENGINEERING LTD.
985 Blackleaf Rd., Victoria, BC V9B 6G2
T 250-474-2682 F 250-474-6291 jshengdelas.net

designed	JSH	scale	1:200	date	2007-05-21
drawn	CORE	tolerance	drawing no.		
checked		S2			rev.
approved					

APPENDIX C – REPORT PREPARED BY MCELHANNEY

McElhanney

June 3, 2026

District of Sooke
Parks & Environmental Services
2205 Otter Point Road, Sooke, BC V9Z 1Z2

Attention: Emma Taylor, RPP, MCIP

Review of the Ed Macgregor Park Pier, Boardwalk, and Floats

McElhanney Ltd. (McElhanney) completed a walkthrough of the Ed Macgregor Park Pier, Boardwalk, and Floats with the District of Sooke (the District) on August 13th, 2025 to review the general condition of the facility and the recommendations which had been previously provided in the Hugh Tuttle Engineering Ltd. report, dated November 13, 2023.



View of Boardwalk



View of Pier and Floats

Summarized below are the findings and recommendations from this walkthrough and review of the previous report:

1. In general, the structure appears to be in fair to good condition. There is evidence of routine maintenance by Parks staff. Provided repairs/rehabilitation can be completed in the next few years, the structures should have a remaining service life greater than 10-15 years.

2. There are a number of timber repair items which were identified in the previous assessment. These items should be addressed as part of a future repair program and are summarized below:

    i. Replacement of deteriorated timber planks (approx. 50)

    ii. Replacement of approximately timber top rail (approx. 500 lineal meters)

McElhanney
1211 Ryan Road, Courtenay BC Canada V9N 3R6
Tel. 250-338-5495 | Fax. 1-855-407-3895 | www.mcelhanney.com

iii. Replacement of timber bracing on the pier approach (approx. 70)

iv. Replacement of (4) pile hoops on the floating docks.

v. Repair of stringer splices at the west end.

vi. Replacement of gangway rollers and guides (2 locations)

vii. Replacement of floating dock mooring piles (4 locations)

viii. Install signage and safety ladders on the floating docks (2 locations)

3. The inshore boardwalk immediately adjacent to the west approach has significant fungal decay and evidence of displacement. It is recommended that this section of the boardwalk be repaired in conjunction with the timber repairs to the pier and boardwalk.

4. There is active corrosion in the steel piles identified throughout the boardwalk in the intertidal / splash zone. We recommend that the extent of steel section loss be measured using a steel ultrasonic thickness gauge and if there is sufficient remaining section, then the piles be wrapped with a Denso-Tape or similar product system. Based on the extent and location of the corrosion, sacrificial anodes or repair of the coating system is not considered feasible.



Active Corrosion in the Intertidal Zone Area of the Steel Piles, Noted at Most Steel Piles Along Boardwalk

5. A detailed condition assessment should be completed in early 2026 including timber coring of main structural members to identify internal fungal decay in timber members (stringers, pile caps, and piles), underwater inspection, and ultrasonic thickness (UT) measurements of the steel piles which have been identified with active corrosion.

6. As the facility is subject to regular public access in the marine environment, McElhanney recommends that a review of public safety risks such as handrail guarding, pedestrian loading, and environmental / seismic load screening be completed. This work should be completed in

conjunction with the detailed condition assessment to identify any remedial items which could be feasibly addressed as part of future maintenance repairs.

To assist the District, McElhanney has prepared a summary list of the recommended action items, along with the recommended timeline and Class "D" estimate.

Timeline	Description of Work	Unit	Unit Price	Qty	Subtotal
2026	Timber bracing replacement	ea	$750	70	$52,500
	Timber top rail replacement	metres	$50	200	$10,000
	Timber deck plank replacement	ea	$250	25	$6,250
	Repair stringer splices at west end of boardwalk	LS	---	1	$10,000
	Install safety ladders and signage on dock	LS	---	2	$7,500
	Engineering assessments	LS		1	$45,000
				Subtotal	$131,250
				Contingency (30%)	$39,375
				Total	**$170,625**
2027	Pile wraps on boardwalk piles	ea	$5,000	90	$450,000
	Timber deck replacement	ea	$250	25	$6,250
				Subtotal	$456,250
				Contingency (30%)	$136,875
				Total	**$593,125**
2028	Replace floating dock mooring hoops	ea	$7,500	4	$30,000
	Replacement gangway rollers and guides	ea	$4	2500	$10,000
	Replace floating dock mooring piles	ea	$40,000	4	$160,000
	Timber top rail replacement	metres	$50	300	$15,000
				Subtotal	$215,000
				Contingency (30%)	$64,500
				Total	**$279,500**

In reviewing the estimate above, please note the following:

- Estimate is considered "Class D" and is accurate to ±50%
- Estimate assumes a competitive processes and rates consider recent quotations from 2024/2025 projects

- Contractor mobilization/demobilization is included in the unit rates
- Engineering design, construction supervision, and regulatory approval costs are included in the unit rates shown.
- A contingency of 30% is recommended to be carried to account for unidentified cost items at this project stage.

We trust this meets your immediate needs. Please do not hesitate to contact the undersigned with any questions or concerns.

Sincerely,
McElhanney Ltd.







Matt Friderichs, PEng
mfriderichs@mcelhanney.com | 250-218-7966

David Brown, PEng
dibrown@mcelhanney.com | 226-919-8270

APPENDIX D – FIELD REVIEW PREPARED BY RYZUK GEOTECHNICAL

RYZUK GEOTECHNICAL
ENGINEERING & MATERIALS TESTING

Ryzuk Geotechnical
#6-40 Cadillac Ave.
Victoria, BC, Canada, V8Z 1T2
☎ 250-475-3131
✉ mail@ryzuk.com

GEOTECHNICAL FIELD REVIEW / SITE INSTRUCTION

Project No: 4472-16
Project: Ed MacGregor Park – Boardwalk Assessment
Project Address: Ed MacGregor Park – Sooke, BC
Date: March 24, 2022

Client: District of Sooke
Contact: Jessica Boquist, Parks and Environmental Services Coordinator
Email: jboquist@sooke.ca

Slope Stability/Erosion Assessment – Boardwalk

As requested, we attended site on February 24, 2022, to assess the global slope stability of the site with a focus on the impact to the existing boardwalk which leads down to the waterfront. Additionally, we were asked to provide commentary relating to mitigating shoreline and pedestrian trail erosion, as well as the condition of the existing northeastern abutment for the ocean boardwalk. Our observations and preliminary recommendations are summarized herein. Please refer to the attached Site Plan for the approximate Station Numbers (STN) along the boardwalk and walkway alignment.

Boardwalk to Ocean Front (STN 0+000 to 0+380 m)

The boardwalk descends from the Ed MacGreggor park area to the ocean front at an average slope of 2 horizontal to 1 vertical (H:V), for a total vertical relief of approximately 30 to 32 metres (m). The boardwalk mainly consists of an elevated timber walkway that has a series of switchbacks to create a gentle descent to the ocean front and then transitions to an elevated walkway suspended on piers over the ocean from STN 0+380 to 0+685 m. We noted that between STN 0+140 to 0+160 m there was a section of the walkway that transitioned from an elevated boardwalk to a concrete slab-on-grade and then back to an elevated boardwalk.

We noted that the slope was well vegetated consisting of mature trees and small shrubs. Several mature trees were observed to have 'pistol-butting' trunks or were somewhat tilted downslope. Typically, pistol-butting trunks are an indication that minor slope movement had occurred during the tree's earlier life while tilting mature trees indicate recent and possibly ongoing slope movement. We expect that the slope movement in both cases is part of the natural erosion process and is typically referred to as 'creep' because the movement is slow and long-term, allowing the vegetation to adapt and survive. Photos 1 to 3, 5 to 6, 8 to 9, an 11 in the attached photo log.

We observed that several of the boardwalk footings, which consisted of a 6" by 6" timber post bearing atop a cast-in-place concrete footing and embedded between approximately 50 and 200 mm, were also tilted and/or had evidence of erosion along the downslope edge. Photos 3 to 7 in the attached photo log.

Additionally, we observed that the noted slab-on-grade portion of the pathway had been undermined significantly on the downslope side of the walkway. Photos 8 and 9 in the attached photo log. While on site, we were told by common visitors to the park that run-off water can be seen collecting on the upslope side of the slab-on-grade path and discharging from the undermined/downslope side in response to rain events. We consider this description to likely be accurate given that we did not observe any run-off water control measures on the upslope side of the pathway, such as a ditch, that would limit any associated erosion. We did observe a relatively short ditch directly upslope of the slab-on-grade path that led to the start of the boardwalk (STN 0+000 m) but noted that this ditch ended once the boardwalk started, creating a concentrated discharge point for overland flow to travel downslope. Photo 10 in the attached photo log.

Based on our experience along the Sooke waterfront, the local soils typically consist of a thin layer of topsoil atop a very stiff native silty clay which is relatively impermeable compared to the overlying topsoil. Therefore, during a rain event, once the topsoil has become saturated, excess water will travel overland downslope and given the site's sloping surface and lack of run-off water control measures, this overland flow could result in significant localized erosion.

Given the above, we consider the overall slope to be stable albeit subject to a degree of natural creep. Furthermore, we consider the boardwalk safe for pedestrian traffic provided that such is monitored regularly for further deterioration and undermining. We recommend that the boardwalk be closed if any pad footing loses contact with the boardwalk and/or cracking is observed for the slab-on-grade portion.

The above does not constitute approval to proceed with the noted work if such is perceived to be an extra to a Contract, or if the work requires approvals/permits from approving authorities.

We expect that the cause of the tilting footings is likely a combination of the footings not being placed atop suitable native subgrade and/or well-compact fill and that the footings were not embedded deep enough originally to avoid being impacted by surficial erosion. Additionally, we expect that the cause of the undermined slab-on-grade portion of the walkway is due to overland stormwater flow infiltrating the soils beneath the pathway and migrating downslope with enough velocity to transport soil particles with it. This problem is likely exacerbated by the fact that the slab-on-grade portion of the pathway appears to have been cast directly atop the native soils rather than a well-compacted free draining subbase that would have transmitted the overland flow more readily without compromising the pathway. Additionally, we expect that the native soil subgrade was also likely disturbed/loosened somewhat during construction which would increase the material's erodibility.

If the above conditions are not addressed, we anticipate that the boardwalk would continue to slowly differentially settle, thus requiring releveling in the future, and the slab-on-grade portion of the walkway will continue to become undermined until the concrete cracks and requires repairs. Therefore, we recommend that tilted posts ones impacted by erosion are corrected by removing the existing concrete footing, excavating a minimum of 0.4 m below ground surface to expose a suitable very stiff silty clay subgrade, and placing the salvaged or new concrete footing at this elevation. To repair the concrete pathway, we recommend excavating a ditch along the upslope edge of the pathway and potentially installing a culvert to transport collected run-off water under the pathway to discharge in a suitable location. The pathway should be further undermined in sections to create a level native clay subgrade, then a culvert should be installed, and finally the undermined void should be infilled with a high slump concrete with enough head pressure to create an intimate connection with the underside of the pathway. Alternatively, the existing pathway could be removed and replaced while also adding the required ditch and culvert. Again, the subgrade should consist of undisturbed very stiff native silty clay and any fill should consist of a select free draining granular product compacted to a minimum of 95% the Standard Proctor Maximum Dry Density Value (SPMDD).

Shoreline and Trail Erosion (STN 0+680 to 0+950 m)

During our assessment, we walked along the shoreline and the elevated boardwalk over the ocean to review the level of erosion caused by tidal action. We observed several examples of tilting trees, exposed root networks, and fallen trees along the entire shoreline, indicating tidal erosion has been impacting the area for some time. Photos 11 and 12 in the attached photo log. We also observed several pathways leading from the main trail down to the beach which appears to have caused erosion due to the foot traffic.

Based on our discussions, we understand that the construction of a seawall is not desirable due to the environmental impact and aesthetic of such a wall. Therefore, we recommend that the shoreline be armoured with locally sourced large boulders or an approved equivalent and that the noted trails to the beach be designated and maintained to prevent uncontrolled access and associated erosion. Alternatively, the tidal erosion could be allowed to continue given that it is a natural process and would not impact the boardwalk provided the footings between STN 0+340 and 0+380 m are lowered sufficiently.

Northeastern Abutment Assessment (STN 0+685 m)

We observed that the relatively new looking boardwalk deck and girders were placed atop a large aging/rotting log which in turn was laying atop the native soil. Additionally, the tidal action had eroded the shoreline such that there was very little to no offset from the crest of 1.2 m tall cutslope to the noted log support. We noted that the cutslope was graded between 0.25H to 1H:1V and the exposed soils consisted of a stiff to very stiff native silty clay with some gravel and cobbles. Photo 14 in the attached photo log.

Given the above, we expect that this abutment support will remain stable in the short- to mid-term but should be monitored for deterioration and likely replaced within the next few years. We recommend that the log be removed and either a concrete or reinforced earth abutment be constructed to support the boardwalk. The new abutment should be embedded deep enough to accommodate future tidal erosion. Alternatively, the log could be replaced with a precast concrete, timber, or steel beam that is supported by two piles on either end and placed outside of the boardwalk footprint to avoid having to full dismantle this portion of the boardwalk.

The above does not constitute approval to proceed with the noted work if such is perceived to be an extra to a Contract, or if the work requires approvals/permits from approving authorities.

Closing

We trust that the above meets your needs at present. Please do not hesitate to contact the undersigned if you have any further questions or comments. We expect that further dialog/recommendations will be required during the detailed design stage of the noted repair works.

Regards,
Ryzuk Geotechnical

Richard T. Moser, P.Eng.
PTPN: 1002996

2022/03/24

PROFESSIONAL ENGINEER
PROVINCE OF BRITISH COLUMBIA
R. T. MOSER

Attachments: - Photo Log
- Site Plan

The above does not constitute approval to proceed with the noted work if such is perceived to be an extra to a Contract, or if the work requires approvals/permits from approving authorities.

Photo Log



Photo 1 – Looking east from STN 0+240 m where evidence of pistol-butting and/or tilting tree growth was noted



Photo 2 – Looking east from STN 0+322 m where further evidence of 'pistol-butting' and tilting trees were observed

The above does not constitute approval to proceed with the noted work if such is perceived to be an extra to a Contract, or if the work requires approvals/permits from approving authorities.



Photo 3 - Footings at roughly STN 0+240 m were tilted - note the tilting trees to the left of the photo (downslope)



Photo 4 - Footings at roughly STN 0+250 m were tilted

The above does not constitute approval to proceed with the noted work if such is perceived to be an extra to a Contract, or if the work requires approvals/permits from approving authorities.



Photo 5 – Erosion noted on the downslope of the footing at roughly STN 0+350 m – note the tilting trees to the right of the photo (downslope)



Photo 6 - Footings at roughly STN 0+365 m were somewhat tilted – note the tilting trees to the right of the photo (downslope)

The above does not constitute approval to proceed with the noted work if such is perceived to be an extra to a Contract, or if the work requires approvals/permits from approving authorities.



Photo 7 – Footings at roughly STN 0+378 m significantly tilted



Photo 8 – Concrete slab-on-grade at roughly STN 0+160 m was significantly undermined – we understand run-off water can be seen discharging from the undermined gap during/after rain events

The above does not constitute approval to proceed with the noted work if such is perceived to be an extra to a Contract, or if the work requires approvals/permits from approving authorities.

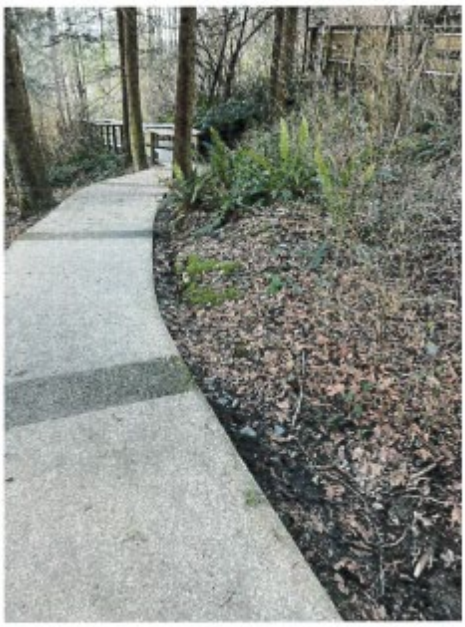


Photo 9 - Concrete slab-on-grade at roughly STN 0+160 m had no evidence of run-off water control (ditch and/or culverts)



Photo 10 – The start of the boardwalk at STN 0+000 m had no evidence of run-off water control beyond the end of the initial ditch which causes a concentration discharge point of overland flow leading to greater erosion potential.

The above does not constitute approval to proceed with the noted work if such is perceived to be an extra to a Contract, or if the work requires approvals/permits from approving authorities.



Photo 11 – Shoreline between STN 0+930 to 0+950 m – evidence of erosion from tilting trees and exposed roots



Photo 12 – Evidence of shoreline erosion by the number of fallen trees at roughly STN 0+880 m though was commonly observed between STN 0+840 m to 0+950

The above does not constitute approval to proceed with the noted work if such is perceived to be an extra to a Contract, or if the work requires approvals/permits from approving authorities.



Photo 13 – Erosion caused by pedestrian traffic at roughly STN 0+685 m



Photo 14 – Abutment at STN 0+685 m which should be replaced in the near future

The above does not constitute approval to proceed with the noted work if such is perceived to be an extra to a Contract, or if the work requires approvals/permits from approving authorities.

APPENDIX E – PROPOSAL RESPONSE FORM

This Appendix E Proposal Response Form, or a form substantially similar, must be prepared and completed to the extent applicable; and must be submitted as the Proponent's Proposal.

This Appendix provides detailed information on what the District is seeking and what information Proponents should include in their Proposals. It includes "Response Guidelines" which are intended to assist Proponents in the development of their Proposals.

The Response Guidelines are not intended to be comprehensive. Proponents should use their own judgement in determining what information to provide to demonstrate that the Proponent meets or, if applicable, exceeds the District's expectations with respect to a particular response guideline.

Proposals should not contain links to information that is not set down directly in the Proponent's Proposal. Should this occur, the District may disregard any referred to source of information that is not contained in the Proposal being evaluated.

Part 1: Proponent Identification	
Proponent's Legal Name, as well as "Doing Business as Name", if applicable	Proponent: Click here to enter text.
Proponent's Primary Office Address (Add all details relating to the street address. Do not use a P.O. Box)	Proponent: Click here to enter text.
Proponent's Website Address	Proponent: Click here to enter text.
Authorized Representative's Name	Proponent: Click here to enter text.
Authorized Representative's Title	Proponent: Click here to enter text.
Authorized Representative's email Address	Proponent: Click here to enter text.
Authorized Representative's Phone Number	Proponent: Click here to enter text.

Part 2: Proponent Contact Information	
If the Proponent would like someone other than the Authorized Representative identified in Part 1 to receive any future communications regarding this Proposal, please identify that person below.	
Proponent Contact's Name	Proponent: Click here to enter text.
Proponent Contact's Title	Proponent: Click here to enter text.
Proponent Contact's email Address	Proponent: Click here to enter text.

Proponent Contact's Phone Number	Proponent: Click here to enter text.
Proponent Contact's Address	Proponent: Click here to enter text.

Part 3: Subcontractor Information	
List any subcontractors included in the Proposal	
Subcontractor Contact's Name	Proponent: Click here to enter text.
Subcontractor Contact's Title	Proponent: Click here to enter text.
Subcontractor Contact's email Address	Proponent: Click here to enter text.
Subcontractor Contact's Phone Number	Proponent: Click here to enter text.
Subcontractor Contact's Address	Proponent: Click here to enter text.

Part 4: Requirements and Response Guidelines
Proponents are reminded to carefully review and comply with the instructions at the beginning of this Proposal Response Form.

Response Guideline 1 – Understanding and Methodology
Instructions for Proponents: This section is specific to how the Proponent would deliver the services if they were to become the Consultant.
1. Provide a proposed approach and methodology for carrying out all Services that includes: - proposed tasks and milestones - sequencing of tasks and project deliverables
Proponent: Click here to enter text. The field will expand to accommodate your text.

Response Guideline 2 – Schedule
Instructions for Proponents: This section is specific to when the Proponent would deliver the services if they were to become the Consultant. Refer to section 4 of RFP.
2. Provide a proposed schedule for all Services that includes: - project timeline to achieve key milestones - permitting and approval windows, if applicable - sequencing of tasks and project deliverables.
Proponent: Click here to enter text. The field will expand to accommodate your text.

Response Guideline 3 – Key Staff Qualifications and Roles

Instructions for Proponents: This section is specific to the experience and capabilities that Proponents and key personnel have as of the Closing Date and Time of this RFP.

3. Name an individual into their proposed project roles. For each person named, provide:
   - i. The formal education as it related to their role;
   - ii. How their experience meets or exceeds the experience expected for the role into which they are being named;
   - iii. A resume that does not exceed three pages.

   NOTE: The District expects that the individual(s) named in response to this section will be remain in their designated role for the duration of the Contract. Any changes to the key personnel during the Contract term will require the District's prior approval. This approval will not be arbitrarily withheld but will be dependent on the replacement person having the same or similar qualification and experience as the individual being replaced.

   NOTE: Proponents may name more than one person into this role. If more than one person is named into the role, the District will evaluate each individual separately.

Proponent: Click here to enter text. The field will expand to accommodate your text.

Response Guideline 4 – References

Instructions for Proponents: This section is specific to the references that Proponents and key personnel have within the past five (5) years as of the Closing Date and Time of this RFP.

4. Provide contact information (i.e. name, title, and email address) for at least five (5) references who can verify the quality of services provided by the Proponent and personnel.

Proponent: Click here to enter text. The field will expand to accommodate your text.

Response Guideline 5 – Price

Instructions for Proponents: The following pricing rules and requirements apply to this RFP:

a) Proponent pricing quoted will be taken to mean and deemed to be:
   - i. in Canadian dollars;
   - ii. inclusive of all duties and delivery charges or other costs or expenses

that may be incurred with respect to the RFP goods and/or services being delivered to the destination(s) specified by the RFP, and until such delivery as specified in the RFP, all risk of loss and title (if any) remains with the Proponent (as Consultant); and

iii. exclusive of any applicable taxes.

b) In addition, the following rules apply to pricing bid by Proponents:

i. Rates should not be expressed as a range. If hourly rates are called for by the RFP, and if any hourly rate is expressed as a range of hourly rates the District will take the lowest numerical value in the range for purposes of evaluation and any resulting Contract.

ii. Discounts should not be expressed as a range. If a discount on some stated pricing item(s) is called for by the RFP, and if any discount is expressed as a numerical range, the District will take the highest numerical value in the range for purposes of evaluation and any resulting Contract.

iii. All pricing bids are required to be unconditional and unqualified. If any pricing bid does not meet this requirement, the Proponent's Proposal may be rejected resulting in the Proponent being eliminated from the RFP competition.

iv. Failure to provide pricing where required by the RFP will result in the Proponent's Proposal being rejected resulting in the Proponent being eliminated from the RFP competition.

v. A fixed fee should not be expressed as a range. If the RFP calls for a fixed fee to bid and the fixed fee is expressed as a range, the District will take the lowest numerical value in the range for purposes of evaluation and any resulting Contract.

vi. The Contract will provide that the Consultant may request an increase in the bid pricing for any extension term of the Contract, limited to any increases, if any, as supported by the Canadian Consumer Price Index or 3% whichever is lower.

5. Provide a fee proposal for the required scope of work that is broken down by deliverable, including rates for the personnel identified, a breakdown of hours, and information on all additional rates such as office charges, administration, disbursements, travel etc.

Proponent: Click here to enter text. The field will expand to accommodate your text.