

REGIONAL DISTRICT OF OKANAGAN-SIMILKAMEEN REQUEST FOR PROPOSALS DESIGN-BUILD SERVICES FOR APEX FIRE HALL

Issued: December 21, 2023



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REQUEST FOR PROPOSALS APEX FIRE HALL

1. INSTRUCTIONS TO PROPONENTS

1.1. SUBMISSION OF PROPOSALS

Proposals may be submitted by email and/or hardcopy until the Closing Time specified. It is the Proponent's sole responsibility to ensure its Proposal is received at the address or email set out below by the Closing Time. If submitting by hardcopy, please enclose three (3) hard copies and an electronic copy on a memory stick.

The Proposals and their envelopes should be clearly marked with the name and address of the Proponent, the RFP program title, and be addressed to the Project Contact as follows:

Doug Reeve, Projects Coordinator Community Services Regional District of Okanagan-Similkameen 101 Martin Street Penticton, B.C. V2A 5J9

AND/OR

Doug Reeve at dreeve@rdos.bc.ca

Proposals must be received on or before the Closing Time of:

TIME: 10:00 AM local time DATE: January 22, 2024

Proposals will not be opened publicly. The Proponent bears all risk associated with delivering its Proposal by electronic submission, including but not limited to delays in transmission between the Proponent's computer and the Regional District's email system.

Proponents wishing to make changes to their Proposals after submission but prior to the Closing Time may do so by submitting the revisions by email or hard copy as above.

It is also the Proponent's sole responsibility to ensure their revisions were received, at the e-mail or address set out above, prior to the Closing Time.

Proposals received after the Closing Time will not be considered or evaluated.



1.2. INQUIRIES

All inquiries related to this RFP are to be directed, in writing, to the Project Contact. Information obtained from any other source is not official and should not be relied upon. Inquiries and responses will be recorded and may be distributed through an addendum at the Regional District's option.

Any questions regarding this RFP must be submitted at least ten (10) days prior to the Closing Date. (10:00 am January 12, 2024) Any questions submitted after this date may not be answered.

Proponents shall carefully examine the RFP documents and shall fully inform themselves as to the intent, existing conditions, and limitations, which may affect their Proposal submission. No consideration will be given after submission of a Proposal to any claim that there was any misunderstanding with respect to the conditions imposed.

Proponents finding discrepancies or omissions in the RFP or having doubts as to the meaning or intent of any provision, should immediately notify the above listed Project Contact. If there are any changes, additions, or deletions to the RFP scope, conditions, or closing date, Proponents will be advised by means of an Addendum issued by the Regional District. All Addenda is to become part of the Proposal Documents and receipt of Addenda should be acknowledged by the Proponent in the submission.

Verbal discussion between the Regional District directors, trustees or staff and a Proponent shall not become a part of the RFP or modify the RFP unless confirmed by written Addendum. The Regional District shall not be responsible for Proponents adjusting their Proposals based only on oral instructions by any representative of the Regional District.

1.3. OPTIONAL SITE VISIT & INFORMATIONAL MEETING

An optional pre-proposal site visit and informational meeting can be arranged for any interested proponents – please notify Doug Reeve before 10 am, January 11, 2024, if a site visit is requested. Be advised the site is a treed hillside located at 1246 Apex Mountain Road, Apex near Penticton, BC – more than likely there will be a considerable amount of snow, so access will be limited. The meeting will be scheduled and held at the roadside of the property unless no interest is expressed.

2. GENERAL TERMS OF PROPOSAL PROCESS

2.1. DEFINITIONS

"Addenda" means all additional information regarding this RFP including amendments to the RFP.

"Agreement" or "Contract" means a contract that is issued to formalize the Work with the successful Proponent based on the proposal submitted and incorporate by reference the Request for Proposal, any addenda issued, the Proponent's response and acceptance by the Regional District.

"Base Project" means the design and construction of the Fire Hall and associated support spaces as described in section 3.0 of the RFP document and accompanying attachments included for information in Appendix A.

"Design-Builder" means the Proponent and it's team of consultants and sub-contractors retained by the Proponent to deliver services described in this RFP.

"Evaluation Team" means the team, led by the RDOS Project Representative who will evaluate conforming proposals and recommend selection of a preferred proponent.

"Must" or "mandatory" or "shall" means a requirement that must be met for the proposal to receive consideration.

"Phase 1" refers to a workable design solution reached in a previous stage of this project's development. This is the current target for this Design-Build RFP.

"Preferred Proponent" means the Proponent deemed to have the best overall proposal in response to the RFP.

"Prime Consultant" means the lead design firm (Architect) that is partnered with the Design Build Contractor and will serve as the "Coordinating Professional" as defined by the AIBC.

"Proponent" means the responder to this RFP with the legal capacity to contract.

"Proposal" means a written response to the RFP that is submitted by a Proponent.

"Regional District" means the Regional District of Okanagan-Similkameen.

"Request for Proposals" or "RFP" means the solicitation described in this document, including any attached or referenced appendices, schedules or exhibits and as may be modified in writing from time to time by the Regional District.

"Services" means and includes the provision by the successful Proponent of all services, duties and expectations as further described in this RFP.

"Should" or "may" means a requirement having a significant degree of importance to the objectives of the RFP but is not a mandatory requirement.

"Work" means and includes anything and everything required to accomplish the project in accordance with this RFP and Proposal.

2.2. ACCEPTANCE OF TERMS AND CONDITIONS

Submitting a Proposal indicates acceptance of all the terms and conditions set out in the RFP, including those that follow and that are included in all appendices and any Addenda. A person authorized to sign on behalf of the Proponent must sign the Proposal.

2.3. PROPOSAL PREPARATION COSTS

All expenses incurred by the Proponent in preparation and submission of a Proposal are to be borne by the Proponent, with the express understanding that no claims for reimbursements against the Regional District, or any of its member municipalities, will be accepted. The Regional District shall not be responsible for any costs involved in or associated with any meetings, discussion or negotiation following submission that could lead to acceptance of the Proposal and award of a contract.

2.4. RECEIPT OF COMPLETE RFP

It is the Proponent's responsibility to ensure that the Proponent has received a complete RFP as listed in the table of contents. The submission of a Proposal constitutes representation by a proponent that it has verified receipt of a complete RFP document including all Addenda.



2.5. OWNERSHIP OF THE RFP DOCUMENTS

The RFP, the Agreements and all schedules and appendixes belong to the RDOS and are for the sole purpose of use by Proponents for the purpose of preparing Proposals for this project only.

2.6. ADDENDA

Written Addenda shall form the only method and means of changing, amending, or correcting the RFP. The RDOS representative may change, amend, or correct the RFP by issuing an Addendum. No employee or representative of the RDOS other than the Project Coordinator is authorized to change, amend, or correct the RFP or issue any addenda. Information received from any sources other than the RDOS Project Coordinator in writing, is not official, may not be accurate, and must not be relied upon in any way by the Proponent for any purposes associated with this RFP.

2.7. ADDITIONAL INFORMATION SUPPLIED BY RDOS

RDOS has made additional data available within the RFP to provide general information on the project history and objectives. RDOS assumes responsibility for the provision of this information but does not assume responsibility for the sufficiency or Proponent interpretation of that information. No warranty or guarantee as to accuracy, sufficiency or relevance is made by any party for any other information unless expressly stated.

2.8. PROPONENT INVESTIGATION

By submitting a Proposal, the Proponent is deemed to have investigated and satisfied itself of every condition affecting the work including (but not limited to) site conditions, labour supply conditions, its own investigation and interpretation of the RFP Document, and has had opportunity to request additional information from RDOS and has assumed all risks associated with the work and risk allocation matrix provided in this RFP.

2.9. RESPONSIBILITIES OF RDOS

RDOS will manage procurement and delivery of the project. Pursuant to the Agreement, RDOS will monitor the design and construction of the project and may perform quality audits to verify the Contractor's delivery in accordance with the Agreement at any time during the project. RDOS will, during the execution of the work, monitor the progress of the work to verify the Contractor is conforming to the Agreement, accept payment requests, issue payments, and accept Substantial Performance of the project in conformance with the BC Lien Act.

2.10. RESPOSIBILITIES OF THE DESIGN BUILDER (CONTRACTOR)

The Design Build Contractor shall be responsible for design, engineering, construction, environmental protection, quality control, safety (shall be designated as Prime Contractor), commissioning, adherence to local by-laws in accordance with RFP Documents and the Agreement. The Contractor will be responsible to coordinate with and respond to requirements from the Authority Having Jurisdiction. The Contractor will be responsible for preparing submissions for all governmental approvals and permits required to complete the work.



2.11. NO MEETINGS

As this is a qualifications-based RFP with NO requirement for design submissions, RDOS will NOT host confidence meetings with any proponent during the RFP period. Regular Owner/ Proponent meetings will be held with the Preferred Proponent after Project Award.

2.12. PROPOSAL EVALUATION

RDOS will evaluate all complete proposals that are in conformance with RFP requirements in accordance with Evaluation Criteria section.

2.13. PROPOSAL ACCEPTANCE

RDOS intends to advise Proponents of the selection of the Preferred Proponent within seven (7) days of the Closing Time. The Preferred Proponent's Proposal is expected to be accepted within (14) fourteen days of the Closing Time. RDOS may to negotiate changes to the Preferred Proponent's Proposal and the Agreement with the Preferred Proponent prior to acceptance. Upon completion of successful negotiations with the Preferred Proponent, RDOS will provide three copies of the Agreement required for execution.

2.14. RIGHT NOT TO ACCEPT PROPOSALS

RDOS may reject any or all Proposals at its sole and absolute discretion and reserves the right to call for future tenders or proposals for the same or similar work.

2.15. PRIOR TO COMMENCEMENT

The Contractor on completion of negotiations, prior to commencement of any onsite works, shall submit:

- 1. Executed Agreement
- 2. Evidence of Compliance with Insurance Conditions
- 3. Copy of WorkSafeBC registration number
- 4. A Safety Plan in conformance with WorkSafeBC regulations and acceptable to RDOS.

2.16. NO CONTRACT A AND NO CLAIMS

This RFP process is not intended to create binding offers and no contractual obligations whatsoever (including what is commonly referred to as 'Contract A') shall arise between the RDOS and any Respondent upon the submission of a Proposal in response to this RFP. For extra clarity, both the Respondent and the RDOS are free to cancel their participation in this RFP process at any time up until the execution of a written Contract or issuance of a Purchase Order by the Regional District for the Services.

Without limiting the above paragraph, no Respondent shall have any claim whatsoever against the RDOS for any damage or other loss resulting from a Respondent's participation in this RFP, including where the RDOS does not

comply with any aspect of this RFP and including any claim for loss of profits or Proposal preparation costs should the RDOS not execute a Contract with the Respondent for any reason whatsoever.

2.17. FREEDOM OF INFORMATION ACT

All documents or other records pertaining to the Project that are custody of or under the control of RDOS are subject to the Freedom of Information and Protection of Privacy Act. Subject to the limitations of the Freedom of Information and Protection of Privacy Act, all documents and other records submitted in response to this RFP will be considered confidential.

2.18. NO LOBBYING

Proponents are expressly forbidden from lobbying any member of the RDOS staff and/ or elected official regarding this RFP. Failure to comply with this requirement may lead to disqualification without further notice.

2.19. PREFERRED CONTRACT

The preferred form of contract is a CCDC 14 - 2013 Design-Build Stipulated Price Contract and associated owner/ builder responsibility checklists (as a reference document). This contract is not provided with this RFP but will be used as the primary contract document during negotiations with the preferred proponent.

2.20. LIABILITY FOR ERRORS

While the Regional District has expended considerable efforts to ensure an accurate representation of information in this Request for Proposal, the information contained in this Request for Proposal is supplied solely as a guideline for Proponents. The information is not guaranteed or warranted to be accurate by the Regional District, nor is it comprehensive or exhaustive.

Nothing in this Request for Proposals is intended to relieve Proponents from forming their own opinions and conclusions with respect to the maters addressed in the Scope of Work

2.21. CONFLICT OF INTEREST

A Proponent shall disclose in its Proposal any actual or potential conflicts of interest and existing business relationships it may have with the Regional District, its elected or appointed officials or employees, any property ownership direct or indirect in the project area. The Regional District may rely on such disclosure.

2.22. NO COLLUSION

Except as otherwise specified or as arising by reason of the provision of the contract documents, no person whether natural, or body corporate, other than the Proponent has or will have any interest or share in this Proposal or in the proposed contract which may be completed in respect thereof.

There is no collusion or arrangement between the Proponent and any other actual or prospective Proponents in connection with Proposals submitted for this project and the Proponent has no knowledge of the contents of other

Proposals and has made no comparison of figures or agreement or arrangement, express or implied, with any other party in connection with the making of the Proposal.

2.23. NOT AN EMPLOYEE

The successful Proponent will acknowledge and agree that neither the Proponent nor any person employed by or associated with the successful Proponent in the performance of the services or otherwise, is an employee of, or has an employment relationship of any kind with the Regional District or is in any way entitled to terms or conditions of employment or employment benefits of any kind whatsoever from the Regional District under any collective agreement or otherwise including but not limited to private programs or coverages and statutory programs and coverages, whether under the Employment Standards Act of British Columbia (as amended from time to time), the Workers Compensation Act of British Columbia (as amended from time to time), the Employment Insurance Act of Canada (as amended from time to time), health pay contributions or otherwise.

2.24. LITIGATION

Proponents who, either directly or indirectly through another corporation or entity, have been or are in litigation, or who have served notice with intent to proceed with court action against the Regional District in connection with any contract for works or services, may be considered ineligible Proponents. Receipt of Proposals from such Proponents may be disqualified from the evaluation process.

3. PROJECT SCOPE AND DESCRIPTION

This section of the RFP describes the scope of the project that the Design-Builder will be responsible to execute. The scope will include the full design and construction (materials, labour, equipment), and quality / safety control necessary to deliver the Base Project.

While the Regional District has used considerable effort to ensure an accurate representation of information in this RFP, the information contained herein is given solely as a guideline for Proponents. The information is not guaranteed to be accurate, nor is it necessarily comprehensive or exhaustive. If clarifications are required, please issue an RFI and an Addendum will be provided.

The selected Proponent will meet with the Regional District to determine a finalized scope of work and discuss any proposed optional items. This will include a review of responsibilities, expectations, and establishment of timelines for the various stages of the project. The intent of the project is to provide a new and operational Fire Hall to be used by Apex Volunteer Fire Rescue on RDOS leased property.

3.1. PURPOSE

The RDOS seeks to retain, through a qualitative Request for Proposals (RFP) process and evaluation, a Design Build team consisting of Design Build Construction Contractor, Prime Consultant (Architect) and associated sub consultants and sub-contractors to design and deliver a new Fire Hall (described in greater detail in 3.4 Project Scope.) The Proposals will be evaluated for the selection of a Design-Builder with the intent to enter a contract

("the Contract") to provide Design-Build services for the new Fire Hall. This is a Request for Proposals (RFP) and not a contract tender call. No contractual tort or other legal obligations are created or imposed on the RDOS by this RFP or by submission of any Proposal or by consideration of, or failure or refusal to, consider any Proposal by RDOS. Further, the Agreement, when executed, is the sole source of any contractual obligation on RDOS with respect to the Project. All complete Proposals received in response to this RFP will be evaluated and the Proponent judged to be the Preferred Proponent will be selected to enter negotiations with RDOS for the delivery of the Project.

Work will consist of a final design, supply, and construction of a new Apex Fire Hall and related facilities (Base Project) located at 1246 Apex Mountain Road, in the unincorporated community of Apex, British Columbia. In 2020, the Apex Community secured tax-based funding through a long-term loan to execute the project. The RDOS has allocated a preliminary budget of \$2.6 M (excluding GST) for the proposed Base Project, including design development services, construction documents, construction, construction administration and all other related costs. At this RFP stage the Base Project cost proposals will specifically exclude costs for;

1. Sanitary sewer and water servicing design and installation to be provided by others.

2. Clearing and grubbing (Logging and stump removal) of the building site and ROW – work to be provided by others.

- 3. Fire fighting equipment, fittings and fixturing. (SCBA Compressor, turnout gear lockers, racking etc).
- 4. Window treatment, furniture, signage etc.)
- 5. Landscaping (softscape and furnishings)
- 6. Fuel tanks or equipment.
- 7. Waste enclosure or other outbuildings.
- 8. Solar array (rough-in conduits only for future consideration)

Be advised a Contract will not necessarily result from this RFP if all parameters cannot be fulfilled.

3.2. NOT A DESIGN COMPETITION

The intent of this RFP is to select a team as described in Section 3.1 based on overall qualifications and criteria described in Section 4. Proposal Content and Section 5.1 the Evaluation Criteria. This RFP does not request the submission of a proposed design and or written description of a proposed solution and or a proposed fixed design build price.

In early 2023 the RDOS retained the services of an Architectural Consultant (JDa Architecture + Planning Inc.) to work with Apex Volunteer Fire Rescue leadership and RDOS staff to provide planning services in the hope this would lead to a Construction Management form of delivery for the new Fire Hall. Subsequently, Conceptual through to Schematic Design solutions were provided that met basic operational needs of the AVFR and addressed many of the site limitations. However, current project funding and increased construction costing did not align with the Design Development proposed by JDa and therefor this change in direction was made to mitigate risk. The Preliminary Schematic Design drawings that reflect a preferred solution for Phase 1 that was reached are attached as part of this RFP package (see Appendix A). Nothing precludes any Design-Build Team from suggesting

deviations to the attached Schematic Design (particularly if they are addressing potential cost savings initiatives). Planning changes will be permitted if the operational needs of the Fire Department are met, and the Preferred Proponent can demonstrate the advantages for planning changes. Any Design Team is free to work with their choice of Design Professionals but must include, at minimum, a coordinating professional (Architect), Structural Engineer, Mechanical Engineer, Electrical Engineer, and a Civil Engineer. Note that any Design Team can approach members of the original RDOS team retained for the early Schematic Design work – contact Doug Reeve for that information if desired.

3.3. BACKGROUND NFORMATION

Apex is a ski resort community located approximately 33 kilometers west of Penticton and is a significant attraction and employer within the South Okanagan. Primarily a winter resort, Apex and the surrounding area offer recreational activities such as downhill and cross-country skiing, tubing, skating, and snowshoeing during the winter season and mountain biking and hiking opportunities in the warmer months. The village area at the resort includes restaurants, a ski sales and repair shop, a general store, day lodges, equipment rental, childcare facilities, and a range of accommodations, including a hostel, condos, hotels, B&Bs, and private cabins.

The Apex Volunteer Fire Rescue was formed January 2021 and received limited funding, through a tax-based referendum, to provide a Fire Service with a newer Fire Engine and a suitable Fire Station. Substantial cost increases of construction materials and labour have necessitated a change in direction to deliver the new Fire Hall.

3.4. PROJECT SCOPE

The scope of the project includes the following:

1. Proponent's Project Design - Confirmation that the Proponents design will meet all the AVFR leadership's requirements as an operational Fire Hall. The proposal will meet all applicable safety standards with adequate space to accommodate, at a minimum, all Fire Operations requirements (similar planning to) JDa Schematic Design - Floor Plan Phase 1 (Appendix A) including:

• 2 back-in double length apparatus bays that can house 4 pieces of fire-fighting equipment. It has been determined that the bays need to be approximately 28m clear in length to accommodate 2 engines and 2 support vehicles and hose drying capabilities at the rear of the bays.

- 2 decontamination washrooms and room for cleaning of contaminated turn out gear.
- Gear and change room area to accommodate lockers for 25 firefighters.
- Radio / dispatch centre.
- Compressor Room to facilitate SCBA filling, shop compressor for air lines for vehicles.
- Workshop / SCBA filling station.
- Hazmat material Storage (foam)
- Necessary (code) washrooms and Janitor storage.
- All necessary ancillary spaces (Mechanical / Electrical / Communications etc.)
- At a minimum an accessible roadway (useable in all climates) and parking area for at least 8 firefighter

vehicles.

• An apparatus bay apron – sufficient area to park apparatus (2) in front of the Fire Hall.

• Allocate space and planning considerations (structural and servicing requirements, etc.) included as part of Phase 1 for *future* building expansions.

- Phase 2 administration offices, training/ meeting room with kitchenette and an exercise room (as indicated by JDa Schematic Design Floor Plan for Phase 2).
- Phase 3 Additional apparatus bay in the eventuality a ladder apparatus is required in the future (as indicated by JDa Schematic Site and Floor Plans).

• Design and construction of the new facility should implement cost-effective and sustainable solutions where possible that will meet budget requirements and demonstrate the best use of public funds.

c. Budgeting and costing of all associated aspects of the work including contractor fees, overhead and profit, professional design fees for Architect, Structural, Mechanical, Electrical and Civil consultants, permits, testing, earthworks, civil service (electrical), connections to services and all building construction costs.

d. Development of the proposed Schematic Design and submission of Contract Documents suitable for building permits; subcontractor pricing and procurement; issued for construction documents.

f. Construction Delivery Services.

g. Construction Close Out Services including As-Built Plans based on IFC plan set showing any/all changes made during the construction process, sign offs, schedules, all as per CCDC-14 requirements.

2. Proponent's Proposal Cost - Confirmation that the general scope of the project is achievable in 2024 dollars and to confirm which of the scope ladder items noted below (Section 3.5) that are likely to be achieved within the stated budget and those that may require future consideration.

3.5. SCOPE LADDER

In addition to the minimum fire fighting operational needs as per Section 3.4.1 (Phase 1 only) of the RDOS wishes to also work with the selected Design Build team to provide costs to include the following program items. It is a proposal requirement to provide confirmation whether each of the following items *is included* in the Base Proposal *or must be excluded* due to a lack of adequate funding.

Site Development including necessary items outlined on JDa Schematic Site Plan but not limited to:

- a. Apparatus concrete apron directly adjoining apparatus bays.
- b. Additional concrete apron to house emergency genset and re-fueling station (genset should be included in the base proposal to adhere to code requirements).
- c. Asphalt paving for visitors and staff parking area. (compacted gravel would be a minimum requirement of the Proponent's Base Proposal).
- d. Asphalt paving for driveway access to Apex Mountain Road. (compacted gravel would be a minimum requirement of the Proponent's Base Proposal).
- e. Adequate Site lighting covering parking and training areas (lights, control, conduits, and service wiring).

f. A compacted gravel space for onsite training activities (identified as training yard on JDa Site Plan).

3.6. PRELIMINARY SCHEDULING

The schedule for the RFP and subsequent project is anticipated to be:

- a. RFP issued DATE: December 21, 2023
- b. Last day for proponent questions: January 12, 2024
- c. Last date for addendum: January 17, 2024
- d. RFP Closing: January 22 2024
- e. Notice of Award: January 29, 2024
- f. Pre-Construction | Design Development Phase: February 2024
- g. Contract Documents & Costing: March May 2024
- h. Construction Implementation: May 2024
- i. Phased Construction Completion (to be confirmed with the RDOS / Building Inspections):
 - Apparatus Bays and Gear Room operational and ready for Occupancy: Oct 30, 2024
 - Completion of remainder of Project: TBD

The Regional District will endeavor to provide information and responses to Proponent in a timely manner so as not to impact the schedule.

3.7. PRELIMINARY CONCEPTUAL DESIGN WORK / INFORMATION PROVIDED BY RDOS

Supporting documentation below is included in Appendix A.

- RISK ALLOCATION MATRIX
- SURVEYS
- o Crown Lease is in place Steven J Buzikievich
- Row is in place for sewer and water servicing CORE Geomatics Land Surveying (BC) Inc.
- SNT Geotechnical Ltd.
- o Geotechnical Report
- MOTI
- Highways Access Permit is in place.
- ECORA

• For information only a preliminary servicing design for Sanitary Sewer and Water is attached. Main sewer and water services are to be provided under a separate contract. Connections to main services *is part of the scope* of work for the Base Project proposal.

FORTIS BC

Preliminary servicing design for a propose electrical service (2 options have been provided by Fortis BC).
Supply of the Electrical Servicing and connection to that service *is part of the scope* of work for the Base
Project proposal.

- JOHNSTON DAVIDSON ARCHITECTURE + PLANNING INC.
- o Pertinent pieces of their Design Development / Schematic drawings
- WATERSHED ENGINEERING LTD. (Civil)
- o Schematic drawings labelled "Issued for Building Permit."

4. PROPOSAL CONTENT

4.1. SUBMISSION REQUIREMENTS

Proponents shall submit proposals that include information outlined in this section. To facilitate uniformity of evaluation for all proponents, the proposals shall ideally be limited to 30 pages/ 15 double sided (not including resumes and corporate profiles):

a. Letter of Introduction: including statement of understanding of the RFP requirements.

b. Company Profiles: for the Design Build Contractor and Prime Consultant including legal business name, brief company history, and location of offices proposed to service the project.

c. Project Team Member Qualifications: Describe the qualifications and related experience specific to project personnel assigned to the project including the key Design Builder PM and Superintendent, Architect and Structural engineer, Mechanical engineer, Electrical engineer, and Civil engineer.

d. Related Project Experience: Identify comparable projects your proposed team has completed that are relevant to the scope of this RFP.

e. Proposed Project Methodology: Provide a brief description of the methodology you propose to co-ordinate the work within the project schedule.

f. Projected Design and Construction Schedule: describe your anticipated durations for design, costing, tendering, and construction delivery. Note: schedule is subject to refinement based on final determination of scope that will be developed and agreed to after project award and prior to commencement of work however it is imperative that the Apparatus Bays and Gear Room are operational by October 31, 2024.

g. Description of Current Project Commitments: The design build contractor and prime consultant are to describe the current project commitments of staff assigned to this proposal.

h. Quality and Budget Control: Briefly describe your practices and policies concerning quality control, scope changes, budget, safety, project closeout, risk mitigation strategies.

i. References: Provide three (3) for each of the Design Build Contractor, and the Prime Consultant preferably for projects related to the scope of this RFP. Respondents should note that the Regional District may request the Respondent to supply contact details for the references listed and may contact the references. The Regional District may also, in its sole discretion, contact other owners, contractors and stakeholders to gather additional information which may be used to further evaluate the Respondent.

If Subcontractors are to be used in delivering the Service, then the details requested in this form should also be provided for each Subcontractor as an additional form.

j. Assure all items listed under Section 5.1 Evaluation Criteria (parts 1,2 and 3) have been addressed and included in your proposal.

4.2. CONSULTANT SCOPE / FEES, CONTRACTOR FEES

Proponents shall list each consultant they propose to add to their Team and submit each of their fees for each of the Design and Construction phases described briefly below. This submission shall include a fixed fee cost for the Architect and each of the Consultants (including disbursements) for the provision of:

1. The project "pre-construction services" - scoping/budgeting report that will determine the final scope and cost of the Base Project prior to RDOS committing to full design build services. This fee shall include the provision of the following to be provided as soon as possible after award:

a. Interpretation of attached owner supplied site survey and geotechnical report.

b. Completed schematic design (if different than the JDa concept planning) including site plan, building plan, key building section, outline specifications, draft functional program.

c. A Class "C" cost estimate of the base project (the Fire Hall) including itemized cost for Design Fees and Contractors Profit. Provide separate itemized budget prices for any scope ladder items not included in the Class C estimate for the Base Project. These will become the basis for the CCDC 14 Design Build contract to be entered into upon completion of the scoping/budget report.

d. Updated Project Schedule including construction completion date.

- 2. The project Design Development phase. This fee shall include the provision of the following services:
- a. Coordinate 65% and 95% design review meetings with the RDOS / AVFR leadership.

b. Based on the approved schematic design option from the previous stage, prepare for review and approval, documents consisting of drawings and other documents for the Project, such as but not limited to:

- Site plan
- Floor plans
- Elevations
- Sections

• Outline specifications by standard section including the architectural, civil, structural, mechanical, and electrical discipline scopes.

- c. Updated statement of probable construction cost detailing all variances from previous estimates
- d. In preparation of the detailed design drawings, consideration will be given to the following:
- Elements of design are consistent with and support the RDOS / AVFR's standards and requirements.

- Overall functionality and use requirements.
- Safety and security, internally and externally.
- e. Coordinate furniture, fixtures, and equipment (FF&E) requirements.

f. Prepare submissions for required permitting related to a development permit if required and building permits. Assist and support the RDOS's effort to obtain permits. The RDOS will pay the charges for the permits.

g. Obtain approval from the RDOS on the design development and budget for this stage prior to proceeding to the development of Construction documents.

3. The project Construction Documents and Procurement phase. This fee shall include the provision of the following services:

a. Provide specifications, and Project specific information required to prepare the necessary IFT (Construction Tender) documents.

b. These documents will describe, in adequate detail, all aspects of the construction of the Project. Construction Documents issued for Tender should be clear and complete.

c. Review all necessary permitting requirements and assist the RDOS in acquiring all permits and licenses necessary for the Project.

d. Respond to any questions or requests for additional information from bidders during the bid or procurement phase.

e. Prepare for the RDOS's review and approval, Issued for Construction Documents, including specifications and drawings, setting forth in detail the requirements for construction of the Project for all professional disciplines and suitable for construction and submission to authorities for approval. These documents will form part of the Construction Contract and must incorporate all added items discovered through the bidding / clarification stage.

4. The project Field Services, Construction, Warranty & Contract Administration phase. This fee shall include the provision of the following services:

a. The Architect to Participate in a pre-construction meeting.

b. Perform ongoing Architectural / Engineering tasks (request for information, review change order requests, approve contractor payment applications, prepare field reports, etc.) during construction as required to implement the Project.

- c. Manage the construction process including general review and field services including but not limited to:
- The Architect will attend and participate in monthly construction site meetings and prepare meeting notes that will contain at a minimum adequate detail to document progress, action items, decisions, and risk issues.
- All Consultants will perform timely site visits and observe construction to the degree necessary and as required to ensure conformance with the Construction Documents and applicable Codes.
- Consultants will review, advise on validity, and process any change requests.
- Consultants will review (in a timely fashion) all submittals for shop drawings, product data and samples.

- The Architect will complete a review of Project works prior to the expiry of construction warranty and maintenance period.
- Through coordination with the Contractor the Consultants will provide electronic and hard copy of full record drawing set ("as-builts") of the facility.
- The Architect will review an Operations & Maintenance Manual (provided by the Contractor) at Project completion containing all building element sources, subcontractor and manufacturer contact information, manufacturer owner's manuals, warranty information, product and material specifications, vendor lists and other relevant data.
- Consultants will complete all certificates of completion (schedules) and notices of certification of completion in accordance with appropriate legislation.
- The Architect and RDOS /AVFR representative will together be the payment certifier, certifying regular payments, substantial performance and final completion of the Project including lien search requirements. The sub-consultants will verify associated trade progress draws.
- Submit a final Project report with all relevant documentation including commissioning of the building.
- Prepare a full record drawing set based on contractor's submitted as-builts.

5. Contractor Fee. The Proponent shall provide his total fees for Design-Build construction services related to each of the four (4) phases described. Their anticipated Profit based on a percentage of the Total Construction Cost. An estimated cost for General Conditions based on a percentage of the Total Construction Cost.

- "Pre-construction"
- Design Development
- Construction Documents and Procurement
- Construction, Administration, Post-construction
- Profit
- Projected General Conditions

5. EVALUATION

The evaluation of Proposals will be undertaken by an Evaluation Team that will consist of RDOS / AVFR staff. The Evaluation Team may engage with third-party consultants at its discretion if the Evaluation Team feels that additional evaluation is required and is in the best interests of the Project. The Evaluation Team may weigh the evaluation criteria listed below at its discretion and for the sole purpose of selecting a proponent who in the opinion of the Evaluation Team can best deliver the project for the intended use by the RDOS.

5.1. EVALUATION CRITERIA

Proponents will be evaluated on the following:

Mandatory requirements:

PASS or FAIL: An introduction letter signed by the authorized signatory of the Proponent.

PASS or FAIL: Proposal received on time.

Part One:

- a. (10 points) Previous experience in the design and construction of Fire Halls or Community type buildings.
- b. (15 points) Qualifications of the project team leaders including Construction Project Manager,

Site Superintendent, Project Architect, Structural, Mechanical, Electrical, and Civil engineers.

- c. (10 points) Availability of the proposed project team members.
- e. (10 points) Experience in logistics for designing and building in remote alpine environments.
- f. (10 points) Project Proposal Methodology, Quality and Budget Control.
- g. (10 points) Local Knowledge of Site Conditions (and implications thereof).
- h. (15 points) Local Knowledge and working relationships with Contractors and Suppliers
- i. (10 points) Proposed Schedule. (milestones only need to be identified)
- j. (10 points) References

Part One Total = 100 Points

Part Two:

- a. (35 points) Provide written confirmation stating that generally the proponent's proposal is achievable within the budget amount provided. Provide all exclusions or qualifications to this statement.
- b. (35 points) Provide written confirmation stating that the Proponents design proposal generally meets the requirements in Section 3.4.1 Base Project. Provide all exclusions or qualifications to this statement.
- c. (20 points) Provide written confirmation stating that the Design-Build Contractor has expertise in or will work with the RDOS to implement an "in-kind contribution" system as part of their tendering process for goods and services. The RDOS will assist the Preferred Proponent assuring this process is administered ethically and meet the RDOS purchasing Policy requirements. The Regional District is able to issue Tax deductible receipts for eligible in-kind contributions.
- d. (10 points) Provide written confirmation that Scope Ladder items (Section 3.5) are included in the proponent's proposal or are specifically excluded (itemized list required).

Part Two Total = 100 Points

| Par | t Three: | | Scoring based on |
|-----|----------|---------------------------------|------------------|
| a. | Proponer | nt (Contractor) Fee (35 points) | |
| | e. | Pre-Construction (5 points) | Total Fee in \$ |
| | f. | Design Development (3 points) | Total Fee in \$ |
| | g. | Contract Documents (5 points) | Total Fee in \$ |

| | h. | Construction (7 points) | Total Fee in \$ |
|----|-----------|---------------------------------|---|
| | i. | Profit (7.5 points) | Expressed as a % of Overall Construction Cost |
| | j. | General Conditions (7.5 points) | Expressed as a % of Overall Construction Cost |
| b. | Architect | t Fee (25 points) | |
| | • | Pre-Construction (4 points) | Total Fee in \$ |
| | • | Design Development (6 points) | Total Fee in \$ |
| | • | Contract Documents (8 points) | Total Fee in \$ |
| | • | Construction Admin. (7 points) | Total Fee in \$ |
| C. | Structura | al Engineer Fee (15 points) | |
| | • | Pre-Construction (2 points) | Total Fee in \$ |
| | • | Design Development (5 points) | Total Fee in \$ |
| | • | Contract Documents (5 points) | Total Fee in \$ |
| | • | Construction Admin. (3 points) | Total Fee in \$ |
| d. | Mechani | cal Engineer Fee (10 points) | |
| | • | Pre-Construction (1 points) | Total Fee in \$ |
| | • | Design Development (2 points) | Total Fee in \$ |
| | • | Contract Documents (5 points) | Total Fee in \$ |
| | • | Construction Admin. (2 points) | Total Fee in \$ |
| e. | Electrica | I Engineer Fee (10 points) | |
| | • | Pre-Construction (1 point) | Total Fee in \$ |
| | • | Design Development (2 points) | Total Fee in \$ |
| | • | Contract Documents (5 points) | Total Fee in \$ |
| | • | Construction Admin. (2 points) | Total Fee in \$ |
| f. | Civil Eng | gineer Fee (5 points) | |
| | • | Pre-Construction (1 point) | Total Fee in \$ |
| | • | Design Development (1 point) | Total Fee in \$ |
| | • | Contract Documents (2 points) | Total Fee in \$ |
| | • | Construction Admin. (1 point) | Total Fee in \$ |

Part Three Total = 100 Points

5.2 SCORING

Proponents must PASS the mandatory submission requirements to have their proposal considered. Scoring out of 100 will be decided by adding points from Parts 1,2 and 3 together and dividing by 3. The RDOS may negotiate moving forward to the "pre-construction phase" with the Proponent who achieves the highest score out of 100.

| TEAM EVALUATION CHECKLIST / SCORING MATRIX | | | |
|--|-------|-----|-------|
| TEAM # | | | SCORE |
| PASS or FAIL | | P/F | |
| Introduction Letter | | | |
| RFP received on time | | | |
| POINTS | | MAX | |
| Part One | | | |
| Previous experience in the design and construction of Fire Halls or Community type buildings | | 10 | |
| Qualifications of the project team leaders | | 15 | |
| Availability of the proposed project team members | | 10 | |
| Experience in logistics for designing and building in remote alpine environments | | 10 | |
| Project Proposal Methodology, Quality and Budget Control | | 10 | |
| Local Knowledge of Site Conditions (and implications thereof) | | 10 | |
| Local Knowledge and working relationships with Contractors and Suppliers | | 15 | |
| Proposed Schedule. (milestones only need to be identified) | | 10 | |
| References | | 10 | |
| TOTAL | | 100 | |
| Part Two | | | |
| Written Confirmation of Budget / with or without qualifications and exclusions | | 35 | |
| Written Confirmation of Design / with or without qualifications and exclusions | | 35 | |
| Written Confirmation of In-Kind Contributions for contractors and suppliers | | 20 | |
| Written Confirmation of Scope Ladder items / inclusions and exclusions (6 items to confirm) | | 10 | |
| TOTAL | | 100 | |
| Part Three | INPUT | | |
| Contractor Fee | | | |
| Pre-Construction Phase - \$ | | 5 | |
| Design Development - \$ | | 3 | |
| Contract Documents - \$ | | 5 | |
| Construction - \$ | | 7 | |
| Expected Profit - Construction Cost % | | 7.5 | |
| General Conditions - Construction Cost % | | 7.5 | |
| Subtotal | | 35 | |

| Architect | | |
|-----------------------------|-----|--|
| Pre-Construction Phase - \$ | 4 | |
| Design Development - \$ | 6 | |
| Contract Documents - \$ | 8 | |
| Construction - \$ | 7 | |
| Subtotal | 25 | |
| Structural Engineer | | |
| Pre-Construction Phase - \$ | 2 | |
| Design Development - \$ | 5 | |
| Contract Documents - \$ | 5 | |
| Construction - \$ | 3 | |
| Subtotal | 15 | |
| Mechanical Engineer | | |
| Pre-Construction Phase - \$ | 1 | |
| Design Development - \$ | 2 | |
| Contract Documents - \$ | 5 | |
| Construction - \$ | 2 | |
| Subtotal | 10 | |
| Mechanical Engineer | | |
| Pre-Construction Phase - \$ | 1 | |
| Design Development - \$ | 2 | |
| Contract Documents - \$ | 5 | |
| Construction - \$ | 2 | |
| Subtotal | 10 | |
| Civil Engineer | | |
| Pre-Construction Phase - \$ | 1 | |
| Design Development - \$ | 1 | |
| Contract Documents - \$ | 2 | |
| Construction - \$ | 1 | |
| Subtotal | 5 | |
| TOTAL | 100 | |
| | | |
| SUM OF 3 TOTALS | 300 | |
| DIVIDE BY 3 = FINAL SCORE | 100 | |



APPENDIX A – SUPPORTING DOCUMENTATION

| Risk / Ownership | RDOS | Contractor |
|---|------|------------|
| Site and Land | | |
| Availability of Land for Construction | x | |
| Environmental contamination of site - risk prior to construction | х | |
| Site clearing and grubbing | х | |
| Sanitary sewer and water servicing design and construction to site | x | |
| Project Design | | |
| Planning and Development of Site | х | |
| Supplied Data (sufficiency, interpretation by Contractor) | х | х |
| Geotechnical Investigation / Report | х | |
| Schematic Design | х | |
| Detailed Design | | х |
| Design Review and Approval | x | |
| Design Errors | | х |
| Utilities and assorted conflicts | x | x |
| Patent Infringement | | х |
| Project Administration | | |
| Construction Permits - Municipal | x | |
| Construction Permits - Other (Trade Permits etc) | | x |
| Insurance | | x |
| Quality Management / Quality Assurance / Safety | | х |
| Ability to achieve Project Parameters including budget | | х |
| Contractor Insolvency | | х |
| Delays by RDOS | x | |
| Project Acceptance | x | |
| Site / Construction | | |
| Construction Inspections / Quality/ Safety | | x |
| WorkSafe BC Issues / Protocols | | х |
| Commissioning | | х |
| Weather | | x |
| Fire (up to occupancy / turnover) | | x |
| Vandalism (up to occupancy / turnover) | | x |
| Damage to works (up to occupancy / turnover) | | х |
| Damage / Injury to Third Party (up to occupancy) | | х |
| Defective Work and materials | | x |
| Site Maintenance required as a result of construction activity | | x |
| Substantial Completion (BC Lien Act) | | x |
| Final Occupanct (Letters of Assurance / Design and Trade Schedules) | | x |
| Final Occupancy (Permit) | x | x |
| Deficiency List & Remediation | x | х |
| Post Construction | | |
| Provision of One Year Warranty list | x | |
| Remediation / Replacement of defective warranty items | | x |





PLAN EPP130624

SUMMERLAND ACTIVE CONTROL GCM #506204

OIP#1

UTM NAD83(CSRS) 4.0.0.BC.1 COORDINATE N=5,475,462.5 E= 288,910.2 ABSOLUTE ACCURACY IS 0.200m

OIP#2

UTM NAD83(CSRS) 4.0.0.BC.1 COORDINATE N=5,475,526.6 E= 288,757.8 ABSOLUTE ACCURACY IS 0.200m

LEGEND

GRID BEARINGS ARE DERIVED FROM DIFFERENTIAL DUAL FREQUENCY GNSS OBSERVATIONS AND ARE REFERRED TO THE CENTRAL MERIDIAN OF UTM ZONE 11(117° WEST LONGITUDE)

THIS PLAN SHOWS HORIZONTAL GROUND-LEVEL DISTANCES UNLESS OTHERWISE SPECIFIED. TO COMPUTE GRID DISTANCES, MULTIPLY GROUND-LEVEL DISTANCES BY THE AVERAGE COMBINED FACTOR OF 0.9999870. THE AVERAGE COMBINED FACTOR HAS BEEN DETERMINED BASED ON AN ELLIPSOIDAL ELEVATION OF 1790 METRES.

THE UTM COORDINATES AND ESTIMATED ABSOLUTE ACCURACY ACHIEVED ARE DERIVED FROM GNSS DUAL FREQUENCY GNSS OBSERVATIONS TO GCM #506204 (SUMMERLAND ACTIVE CONTROL) AND THE ABSOLUTE HORIZONTAL ACCURACY OF 0.2 METERS. ALL DIMENSIONS ARE IN METRES AND DECIMALS THEREOF UNLESS OTHERWISE NOTED

- CONTROL MONUMENT
- STANDARD IRON POST FOUND
- O STANDARD IRON POST PLACED

THIS PLAN LIES WITHIN THE REGIONAL DISTRICT OF OKANAGAN SIMILKAMEEN

THE FIELD SURVEY REPRESENTED BY THIS PLAN WAS COMPLETED ON THE 23rd DAY OF JUNE, 2023. JEREMY PARK BCLS #886

THE PLAN WAS COMPLETED AND CHECKED, AND THE CHECKLIST FILED UNDER #272875, ON THE 7th DAY OF JULY, 2023.





Suite #4, 385 Baker Street Nelson, BC, V1L 4H6 250 509 1009

GEOTECHNICAL ASSESSMENT FOR THE PROPOSED FIRE HALL AT APEX MOUNTAIN SKI RESORT

July 17, 2023

Report Number: 22.530.07 Distribution: Regional District Okanagan Similkameen – 1 copy SNT Geotechnical Ltd. – 1 copy



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1. Introduction

At the request of Doug Reeve, Project Coordinator II for the Regional District of Okanagan Similkameen (RDOS), SNT Geotechnical Ltd. (SNTG) performed a geotechnical assessment of the foundation soils for the proposed firehall at the Apex Mountain ski hill located west of Penticton, BC.

This report addresses the field investigation undertaken, presents the factual report on subsurface conditions encountered, and provides preliminary foundation design recommendations.

2. Terms of Reference

The following is a summary of the requested geotechnical services for the proposed building.

2.1. Field Work

- Pre-fieldwork review of existing information;
- Review site to gain an understanding of geologic and geomorphologic conditions; and
- Perform geotechnical test pitting on the property for the purposes of characterizing the soil conditions, and to obtain samples for laboratory confirmation of soil composition and character.

2.2. Analyses and Report

- Summarize geologic and geomorphologic conditions;
- Compile field and laboratory information: summarize subsurface conditions;
- Analyze information and develop recommendations for foundation parameters, including:
 - Footings bearing capacity estimate;
 - o Anticipated settlement; and
 - Subsurface drainage;
 - Seismic characteristics;
 - Frost susceptibility and;
- Compile a report outlining the investigation, analysis, and recommendations.

2.3. Analysis and Report Exclusions

Given the limited scope of the requested assessment, it should be understood that the investigation, analysis, and report do not specifically address the following components:

- environmental aspects;
- final site grading, surface runoff, or stormwater management;
- local slope stability; and
- natural hazard and Legislated Landslide Assessment.



3. Site Description and Proposed Development

The proposed fire hall site is located on Apex Mountain Road approximately 600m northwest of the ski hill base at UTM Coordinates: zone 11U, 288,500m E, 5,475,490m N.

The proposed building site is currently undeveloped forested land with an average 6% grade sloping downward from west to east. Access to the location is gained through a panhandle corridor that averages approximately 10% grade, sloping uphill to the site from Apex Mountain Road. The elevation of the site is approximately 1744m above sea level (a.s.l.).

Information regarding the design and layout of the firehall was based on architectural drawings from Johnston Davidson Architecture dated June 9, 2023.



Figure 1. General area of proposed Fire Hall. (RDOS Parcel Viewer, 2022)





4. Desktop Study

4.1. Surficial Geology

The project area is mapped by the British Columbia surficial geology database Map Place 2 as "*Glacial Sediments – Veneer*" (Fulton, 1984). Our experience in the area indicates this typically corresponds with a thin zone of loose surficial soils, overlying a thick zone of glacial till previously observed to be greater than 5m thickness, overlying bedrock.

4.2. Bedrock Geology

The British Columbia Ministry of Energy, Mines, and Petroleum Resources map "Kootenay Area (82E, F, G, J, K, L, M, N, O; 83C, D)" indicates the property is underlain by Middle Jurassic aged granodioritic intrusive rock from the Okanagan Batholith (Hoy, 1994). Two other volcanic rock types are also mapped within 250 m of the property.

4.3. Water Well Database

Reference to the Provincial Well Database (iMapBC) indicates that two water wells are installed on the property. The well logs indicate shallow bedrock is present from a depth of approximately 12 m. The depth to static groundwater was reported on the well logs as 1.8 m. Well data is summarized in Table 1 below.

| Water Well No. | Well Depth | Depth to Bedrock | Static Groundwater Depth |
|----------------|------------|------------------|--------------------------|
| 49228 | 92.0 m | 12.0 m | 1.83 m |
| 49229 | 11.9 m | 11.9 m | Not Reported |

Table 1: Water Well Information

5. Field Review

A field investigation was conducted by Mike Walsh, P.Eng., on July 12, 2022, using a small tracked excavator. Four geotechnical test pits (TP) were advanced to depths ranging from 2.1m to 3.0m in depth. Test pit depths were limited due to refusal on very dense till soil. Representative soil samples were collected from the test pits for further review. The test pit locations are shown in Figure 2.



Apex Mountain Firehall – Geotechnical Assessment



Figure 2: Approximate test pit locations. (RDOS, 2022)

6. Description of Subsurface Conditions

Interpretation of the surficial geology at the proposed building site is based on the test pit data. The subsurface conditions are relatively consistent; comprising of a thin organic layer overlying silty sand with some gravel, overlying a dense till.

Details of the subsurface conditions encountered in the test pits are provided in Table 2; photos of the test pits are included in Appendix A – Photos.



| Table 2: | Summarv | of Encountered Soil | Conditions |
|-----------|---------|---------------------|--------------|
| 1 4010 21 | Sammary | | Contantionio |

| Test Pit # | Depth Range (m) | Soil Conditions | USCS |
|---------------|--------------------|--|-------|
| | 0.0 to 0.2 | moist loose dark brown silty SAND w/ roots + organics, Topsoil | - |
| TP-1 | 0.2 to 2.1 | moist compact brown silty SAND, some gravel | SM |
| | 2.1 to 3.0 | moist dense to very dense grey sandy gravelly SILT, TILL, minor seepage at 2.1m | GM |
| | 0.0 to 0.35 | Moist, loose dark brown silty SAND w/ roots + organics, Topsoil | - |
| TP-2 | 0.35 to 1.9 | moist compact brown silty SAND, some gravel | SM |
| | 1.9 to 2.8 | moist/wet very dense grey sandy gravelly SILT, TILL | GM |
| | 0.0 to 0.3 | moist loose dark brown silty SAND w/ roots + organics, Topsoil | - |
| TP-3 | 0.30 to 1.85 | moist dense brown silty SAND with gravel, abundant cobbles to 350mm dia. | SM-GM |
| | 1.85 to 2.1 | moist/wet very dense grey sandy gravelly SILT, abundant cobbles and boulders to 750mm dia., TILL | GM |
| | 0.0 to 0.3 | moist loose dark brown silty SAND w/ roots + organics, Topsoil | - |
| TP-4 | 0.30 to 2.1 | moist dense brown silty SAND with gravel, abundant cobbles to 350mm dia., heavy seepage at 2.10m | SM-GM |
| | 2.1 to 2.3 | moist/wet very dense grey sandy gravelly SILT, abundant cobbles 300mm dia., TILL | GM |

Groundwater seepage was encountered in Test Pits 1 and 4 at a depth of 2.1m. This groundwater was observed as seepage over the Till layer, which is relatively impermeable in relation to the overlying sand and gravels. Given the relatively impermeable nature of the Till soil, it is speculated that the seepage observed at bottom of the test pits is a consequence of the seasonal infiltration of local snowmelt and not a sustained groundwater level.



7. Design Considerations and Recommendations

The recommendations that follow are intended to provide guidance for the design and construction of the proposed building:

7.1. Dewatering

Groundwater seepage was encountered in TP-1 and TP-4; dewatering may be required to perform and maintain the proposed foundation excavation, dependent on the time of year in relation to snow melt. It is anticipated that typical excavation dewatering techniques would be feasible to manage the groundwater, including excavation of cutoff trenches around the building excavation to convey groundwater away from the building footprint. The exact measures implemented will be dependent on the amount and location of the groundwater seepage; therefore, it is recommended that a review by the geotechnical engineer be performed at the time of the building excavation.

7.2. Site Preparation

Organic topsoil; vegetation; tree stumps; fill; and loose, soft, wet, weathered, and unsuitable soils should be removed from within the footprint of the proposed building foundation. The removal of unsuitable material should extend down to the approved bearing surfaces described in section 7.4. The depth of excavation required to remove the topsoil and deleterious materials varied across the site but was generally observed to be less than 0.35m in thickness.

7.3. Temporary Cut Slopes

The excavations for footings will be generally performed through natural soils.

Excavation slopes exceeding the Work Safe BC requirements provided in section 20.78 - 20.81 of the Occupation Health and Safety Regulation will require the contractor to engage an independent qualified geotechnical professional experienced in excavation stability to provide written instruction for a safe excavation.

7.4. Foundation Subgrade Recommendations

It is understood from the building drawings the foundation of the structure is proposed to comprise a thickened edge slab rather than a conventional spread footing with detached interior slab. Such foundations can be more susceptible to differential cracking due to their combined nature, and as such, increased attention will be required to develop a consistent subgrade.

The in-situ undisturbed till soil (GM) encountered in the test pits will provide a suitable subgrade on which to support typical building loads. Although the sand and gravel soil observed in TP-4 may be suitable as bearing soils , the sands observed in the remaining test pits were too poorly graded and would not be suitable. Moreover, having different foundation subgrade soils (till and sand) may result in differential settlement of the foundation across the soil type transition. Consequently, it is recommended that the footprint of the slab be over-excavated to expose the till and an engineered structural fill be placed to raise the subgrade to the required elevation. Material to be used as structural fill should follow the recommendations presented in Section 7.6.



To provide a consistent foundation subgrade surface throughout the foundation and aid in the transition from the till to structural fill subsoils, it is recommended that a 150mm thick layer of 25mm well-graded base material compacted to 100% Standard Proctor Maximum Dry Density be placed over the structural fill.

Footings founded on the undisturbed till or structural fill overlain by 25 mm well-graded base material can be designed using the soil bearing resistance values in Table 3.

| Table 5. Limit States Design and Working Stress Design | | | |
|--|--|--|--|
| Limit States Design | | Working Stress Design | |
| Factored Ultimate Limit State Bearing Resistance | Serviceability Limit State Bearing Resistance | Allowable Bearing Pressure DL + LL | |
| 210 kPa | 140 kPa | 140 kPa | |

| Table 3: | Limit States | Design and | Working | Stress Design |
|----------|--------------|------------|---------|---------------|
| | | 0 | 0 | 0 |

The above design bearing pressures for soil subgrade assume the following;

- The thickened slab shall have a minimum bearing width of 900mm.
- The base of the thickened slab shall be at least 900mm below the finished exterior grade if insulation is provided for frost protection (see Section 7.8) or 1200mm below the finished exterior grade with no insulation.
- Foundation-bearing surfaces are no higher than 1H:1V from the base or toe of adjacent walls, sumps, or buried structures such as utility lines, etc.
- Footings are placed below a 2H:1V line projected up from any adjacent lower footings.
- Adjacent footings located at the same elevation are to be at least three footing widths apart from each other.

If alternative footing configurations are proposed (such as conventional footings), it is recommended that they be reviewed prior to final building design to ensure sufficient bearing capacity.

Generally, if the foundation recommendations outlined in this report are followed, differential movements across the building are estimated to be less than 25 mm.

7.5. Seismicity & Soil Classification

The interpolated seismicity for the project site was determined using Natural Resource Canada's (NRC's) 2015 National Building Code of Canada online seismic hazard calculator. Using a probability of exceedance of 2% in 50 years, the Peak Ground Acceleration for the site was found to be 0.086g (see Appendix B).

It is understood the proposed building is being designed following the seismic design criteria presented in the 2020 National Building Code of Canada. As such, the seismic site designation is based on the average shear wave velocity of the upper 30 m of the foundation subgrade soil (V_{s30}). The V_{s30} was determined



using a composite of the site subsurface information compiled from the field investigation, the proposed subgrade development for the foundation, and the well logs (for depth to bedrock). Table 4 presents the interpreted profile for the upper 30 m of ground below the foundation and the estimated shear wave velocity.

| Horizon | Thickness | Shear Wave Velocity |
|-------------------|-----------|---------------------|
| Structural Fill | 2.5 m | 300 m/s |
| Till | 9.5 m | 400 m/s |
| Weathered Bedrock | 2.0 m | 800 m/s |
| Solid Bedrock | 13.5 m | 1500 m/s |

The V_{s30} was determined based on the summation of each thickness divided by its wave travel time and was determined to be approximately, $V_{s30} = 700$ m/s.

7.6. Engineered Structural Fill

As an engineered structural fill (ESF) is recommended under the proposed slab, the ESF should comprise of a well-graded pitrun gravel (75mm minus) with less than 5% fines. The ESF should be compacted to 100% Standard Proctor Maximum Dry Density (ASTM D698) and placed in loose lifts not exceeding 200mm thickness. Gradation analysis (ASTM D6913) and Proctor laboratory test data for the ESF material should be reviewed by SNTG prior to placement. In addition, for SNTG to provide sign-off for the ESF, a quality control density testing program overseen by SNTG will be required.

No organic soil, frozen material, or other deleterious material should be placed in any fill used to support the footings. If fill material becomes excessively wet, it should not be used until it is allowed to dry. Depending on the natural moisture content of the material and the applied compaction energy, the addition of water to the fill may be required to achieve the specified compaction. If water is required, it should be applied to the fill during spreading of lifts prior to compaction. Structural fill materials, compaction process, and frequency of and location of compaction testing should be approved by the geotechnical engineer prior to placing.

7.7. Subsurface Drainage

Buildings are required to have foundation drains to ensure that any water that collects on the bearing soils is drained to prevent weakening of the soils. Perimeter drains are to be placed around the outside of all outer foundations below frost depth and are to be directed through positive drainage to an approved outlet. The following guidelines should be followed when placing foundation drains:

- The drains are to consist of rigid perforated PVC pipe (CSA B-182.1) with minimum diameter of 100mm installed with perforations oriented towards the bottom of the excavation.
- Non-woven geotextile filter fabric (Nilex 4552 or an approved equivalent) is to be laid on the base of the excavation, such that the geotextile is below the bottom of the thickened slab. In the event structural fill is used under the footings, the geotextile must be placed at the base of that



material.

- The drainpipe is to be bedded on a thin layer (not greater than 100mm) of drain rock on top of the non-woven geotextile fabric (Nilex 4552 or equiv.).
- The top and sides of the drain pipe should be covered with a minimum 300mm of drain rock.
- The drain rock is to consist of clean coarse granular material with 100% passing the 37.5mm sieve and no material passing the 4.75mm sieve.
- The drain rock and pipe system are to be wrapped with non-woven geotextile (Nilex 4552 or equiv.) on all sides to prevent the migration of fine-grained soils into the drain.
- Adjacent sections of non-woven geotextile shall have a minimum overlap of 0.6 m.
- The geotextile, drain rock, and pipe system is to be overlain with pit run sand and gravel with less than 5% passing the 0.075mm sieve placed to an elevation up to 300mm below the final grade. The pit run material should be nominally compacted to reduce the likelihood of settlement. The final 300mm of material up to final grade should consist of a material with greater than 12% fines to minimize surface water from infiltrating the ground.

The installation of a perimeter drainage system, as described above, is common practice to reduce the potential for groundwater and surface water migration through buried walls and footings and to reduce the potential for saturation of soils above the footing elevation. However, due to inherent variability associated with groundwater and soils, there is no guarantee the drainage system will work as designed over the life of the structure.

The subsurface drainage system described above is intended for low groundwater flow rates. It is noted that based on the groundwater seepage identified in TP-1 and TP-4, there is the potential for the presence of high groundwater inflow rates during Spring freshet. Depending on the groundwater conditions encountered during excavation, a more robust sub-surface drainage system may be required; SNTG can provide a subsurface drainage design if deemed necessary at the completion of the excavation for the proposed building.

7.8. Storm Drainage

The routing and disposal location for storm and/or snow melt drainage from the building roof and the associated hard surfaces has not been determined. However, given the relatively thin permeable silty sand soil overlying the essentially impermeable till soil, there is a high likelihood that significant or sustained surface runoff or groundwater flows will saturate the surficial soil. Consequently, it is recommended that a storm and snowmelt disposal area be investigated during the early stages of construction to assess locations for infiltration or acceptable surface routing and off-site drainage. In the case of locating a potential infiltration area, additional runoff analysis and permeability testing will be required.

7.9. Frost Protection

Based on an estimated air freezing index of 1200 degree-days Celsius developed from historic climate data from Glacier National Park, the closest similar BC interior mountain site with long-term weather data (Meteorological Services of Canada), all exterior footings and slabs for a permanently heated building should be provided a minimum of 1200 mm of soil cover for frost protection purposes.



However, it is understood that the footings are proposed to be placed 900mm below the surface; therefore, insulation will be required to protect the footings from frost impacts. Insulation requirements were determined based on the guidance presented in the "Design and Construction of Frost-Protected Shallow Foundations" (ASCE, 2001), and are presented Table 5 and illustrated in Figures 3 and 4.

| Insulation Zone | R value | Distance |
|-----------------|---------|-------------------|
| Vertical | 6.7 | Thickness of Slab |
| А | 1.7 | 300mm |
| В | 4.9 | 600mm |
| С | 4.9 | 1000mm |

Table 5: Foundation Insulation Requirements



Figure 3: Insulation Placement (ASCE, 2001)





Figure 4: Insulation Layout (Plan). (ASCE, 2001)

It should be noted that the interior slab of the building will have frost suspectable soil within frost depth. Although the interior of the building is intended to be heated when occupied, if the building should remain unheated during construction, it is recommended that supplementary heating be applied to the interior of the building to prevent the potential for frost impact to the slab.

8. Field Reviews

It is recommended that SNTG review any further building plans and specifications to confirm that they incorporate the above geotechnical recommendations. Provisions should be made for geotechnical reviews and approval of the exposed subgrade soils and engineered structural fills.

All foundation design recommendations presented in this report are based on the assumption that an adequate level of construction monitoring by qualified personnel during construction will be provided.

An important purpose of providing an adequate level of review is to check that recommendations based on discrete test pitting locations are relevant to other areas of the site. To provide an adequate level of review, qualified geotechnical personnel should review the following tasks during construction:

- Confirm that materials and methods meet specifications;
- Review foundation subgrades;
- Review placement and compaction of engineered structural fills;
- Review compaction testing records;
- Review installation of sub-surface drainage system;
- Review sieve and proctors for engineered structural fill material; and



• Provide review comments, including any discrepancies found with respect to specifications and the need for any modifications to the design or methods.

SNTG requests two weeks' notice before project commencement and a minimum 72 hours' notice before each required field review to ensure staff availability.

9. Closure – Report Use and Limitations

This report is prepared for the exclusive use of the Regional District Okanagan Similkameen and their designated representatives and may not be used by other parties without the written permission of SNT Geotechnical Ltd.

If the development plans change, or if during construction, soil conditions are noted to be different from those described in this report, SNT Geotechnical should be notified immediately in order that the geotechnical recommendations can be confirmed or modified, if required. Further, this report assumes that field reviews will be completed by SNT Geotechnical during construction.

It should be noted that the recommendations and comments provided in this geotechnical report are based on a limited number of test pits. Subsurface conditions at other locations could vary, and the actual extent of subsidence could be substantially different from anticipated values.

This report should not be included in the specifications without suitable qualifications approved by the geotechnical engineer. The site contractor should make their own assessment of subsurface conditions and select the construction means and methods most appropriate to the site conditions.

The use of this report is subject to the conditions on the Report Interpretation and Limitations sheet, which is included with this report (Appendix C). The reader's attention is drawn specifically to those conditions, as it is considered essential that they be followed for proper use and interpretation of this report.

The geotechnical aspects of the final design drawings and specifications should be reviewed by this office prior to tendering and construction to determine that the intent of this report has been satisfied. During construction, sufficient subgrade inspections should be carried out to review the exposed soil conditions and determine if they are consistent with those encountered in the test boreholes, as well as to monitor conformance to the geotechnical specifications. Adequate field review, observation, and testing during construction are necessary for SNTG to be able to provide letters of assurance in accordance with the requirements of many regulatory authorities. In cases where this recommendation is not followed, SNTG's responsibility is limited to interpreting accurately the information encountered at the borehole locations at the time of their determination or measurement during the preparation of the Report. Where conditions encountered at the site differ significantly from those anticipated in this report, it is a condition of this report that SNTG be notified of any changes and be provided with an opportunity to review and revise the recommendations within this report. The material in this report reflects SNTG's best judgment



and professional opinion in light of the information available to it at the time of preparation. Any use that a third party makes of this report or any reliance on or decision to be made based on it is the responsibility of such third parties. SNTG accepts no responsibility for damages, if any, suffered by any third party as a result of decision made or action based, or lack thereof, on this report. No other warranty is made, either expressed or implied.

Soil and groundwater conditions shown in the factual data and described in this report are the observed conditions at the time of their determination or measurement. Unless otherwise noted, those conditions form the basis of the recommendations in the report. Groundwater conditions may vary between and beyond reported locations and can be affected by annual, seasonal, and meteorological conditions.

The report and assessment have been carried out in a manner consistent with that level of care and skill ordinarily exercised by members of the engineering profession currently practicing under similar conditions in the jurisdiction in which the services are provided, subject to the time limits and physical constraints applicable to this report. The discussion and recommendations presented above are based on limited field investigation, boreholes, and inferences from surficial features. Inherent variability in surface and subsurface conditions may create unforeseen situations.

Prepared by:

Reviewed by:



Mike Walsh, P.Eng. Senior Geotechnical Engineer SNT Geotechnical Ltd. SNTG Permit Number 1001083 Pete Wittstock, P.Eng. Geotechnical Engineer SNT Geotechnical Ltd.



10. References

American Society of Civil Engineers, 2001. "Design and Construction of Frost-Protected Shallow Foundations", SEI/ASCE 32-01.

Canadian Foundation Engineering Manual 4th Edition 2006

Fulton, R.J., 1984. "Kootenay Lake Surficial Geology" Open File 1084, Geological Survey of Canada.

Foundation Engineering Handbook 2005 Day, Robert. ASCE

Hoy, T., Church, B.N., Legun, A., Glover, K., Gibson, G., Grant, B., Wheeler, J.O., Dunne, K.P.E., Cunningham, J. and Desjardins, P.J., 1994. "Kootenay Area (82E, F, G, J, K, L, M, N, O; 83C, D)." British Columbia Ministry of Energy, Mines and Petroleum Resources

iMapBC, 2021. British Columbia Geographical Information Systems mapping website, retrieved from "<u>https://maps.gov.bc.ca/ess/hm/imap4m/</u>" on August 15, 2022.

Meteorological Services of Environment Canada 1981 to 2010 climate normals, retrieved from <u>https://climate-change.canada.ca/climate-data/#/daily-climate-data</u>, on June 29, 2023.

Regional District Okanagan Similkameen Parcel Viewer. https://maps.rdos.bc.ca. Accessed Aug 27, 2022

Appendix A – Test Pit Photos





Appendix B – Site Seismicity

2015 National Building Code Seismic Hazard Calculation

INFORMATION: Eastern Canada English (613) 995-5548 français (613) 995-0600 Facsimile (613) 992-8836 Western Canada English (250) 363-6500 Facsimile (250) 363-6565

Site: 49.396N 119.910W

User File Reference: Apex Mtn Fire Hall

2022-08-30 23:36 UT

| Probability of exceedance per annum | 0.000404 | 0.001 | 0.0021 | 0.01 |
|---------------------------------------|----------|-------|--------|-------|
| Probability of exceedance in 50 years | 2 % | 5 % | 10 % | 40 % |
| Sa (0.05) | 0.100 | 0.063 | 0.041 | 0.015 |
| Sa (0.1) | 0.147 | 0.091 | 0.060 | 0.022 |
| Sa (0.2) | 0.186 | 0.121 | 0.083 | 0.033 |
| Sa (0.3) | 0.182 | 0.123 | 0.087 | 0.037 |
| Sa (0.5) | 0.160 | 0.110 | 0.079 | 0.034 |
| Sa (1.0) | 0.115 | 0.078 | 0.055 | 0.023 |
| Sa (2.0) | 0.079 | 0.050 | 0.034 | 0.014 |
| Sa (5.0) | 0.034 | 0.020 | 0.012 | 0.004 |
| Sa (10.0) | 0.011 | 0.007 | 0.004 | 0.002 |
| PGA (g) | 0.086 | 0.056 | 0.037 | 0.013 |
| PGV (m/s) | 0.147 | 0.092 | 0.061 | 0.023 |

Notes: Spectral (Sa(T), where T is the period in seconds) and peak ground acceleration (PGA) values are given in units of g (9.81 m/s²). Peak ground velocity is given in m/s. Values are for "firm ground" (NBCC2015 Site Class C, average shear wave velocity 450 m/s). NBCC2015 and CSAS6-14 values are highlighted in yellow. Three additional periods are provided - their use is discussed in the NBCC2015 Commentary. Only 2 significant figures are to be used. **These values have been interpolated from a 10-km-spaced grid of points. Depending on the gradient of the nearby points, values at this location calculated directly from the hazard program may vary. More than 95 percent of interpolated values are within 2 percent of the directly calculated values.**

References

National Building Code of Canada 2015 NRCC no. 56190; Appendix C: Table C-3, Seismic Design Data for Selected Locations in Canada

Structural Commentaries (User's Guide - NBC 2015: Part 4 of Division B) Commentary J: Design for Seismic Effects

Geological Survey of Canada Open File 7893 Fifth Generation Seismic Hazard Model for Canada: Grid values of mean hazard to be used with the 2015 National Building Code of Canada

See the websites www.EarthquakesCanada.ca and www.nationalcodes.ca for more information



Natural Resources Ressources naturelles Canada Canada



Appendix C – Report Interpretation and Limitations

REPORT INTERPRETATION AND LIMITATIONS

1. STANDARD OF CARE

SNT Geotechnical Ltd. (SNTG) has prepared this report in a manner consistent with generally accepted engineering consulting practices in this area, subject to the time and physical constraints applicable. No other warranty, expressed or implied, is made.

2. COMPLETENESS OF THIS REPORT

This Report represents a summary of paper, electronic and other documents, records, data, and files and is not intended to stand alone without reference to the instructions given to SNTG by the Client, communications between SNTG and the Client, and/or to any other reports, writings, proposals or documents prepared by SNTG for the Client relating to the specific site described herein.

This report is intended to be used and quoted in its entirety. Any references to this report must include the whole of the report and any appendices or supporting material. SNTG cannot be responsible for use by any party of portions of this report without reference to the entire report.

3. BASIS OF THIS REPORT

This report has been prepared for the specific site, development, design objective, and purpose described to SNTG by the Client or the Client's Representatives or Consultants. The applicability and reliability of any of the factual data, findings, recommendations, or opinions expressed in this document pertain to a specific project at described in this report and are not applicable to any other project or site, and are valid only to the extent that there has been no material alteration to or variation from any of the descriptions provided to SNTG. SNTG cannot be responsible for use of this report, or portions thereof, unless we were specifically

Requested by the Client to review and revise the Report in light of any alterations or variations to the project description provided by the Client.

If the project does not commence within 18 months of the report date, the report may become invalid and further review may be required.

The recommendations of this report should only be used for design. The extent of exploration including number of test pits or test holes necessary to thoroughly investigate the site for conditions that may affect

Construction costs will generally be greater than that required for design purposes. Contractors should rely upon their own explorations and interpretation of the factual data provided for costing purposes, equipment requirements, construction techniques, or to establish project schedule.

The information provided in this report is based on limited exploration, for a specific project scope. SNTG cannot accept responsibility for independent conclusions, interpretations, interpolations or decisions by the Client or others based on information contained in this Report. This restriction of liability includes decisions made to purchase or sell land.

4. USE OF THIS REPORT

The contents of this report, including plans, data, drawings and all other documents including electronic and hard copies remain the copyright property of SNTG. However, we will consider any reasonable request by the Client to approve the use of this report by other parties as "Approved Users."

With regard to the duplication and distribution of this Report or its contents, we authorize only the Client and Approved Users to make copies of the Report only in such quantities as are reasonably necessary for the use of this Report by those parties. The Client and "Approved Users" may not give, lend, sell or otherwise make this Report or any portion thereof available to any other party without express written permission from SNTG. Any use that a third party makes of this Report – in its entirety or portions thereof – is the sole responsibility of such third parties. SNT GEOTECHNICAL LTD. ACCEPTS NO RESPONSIBILITY FOR DAMAGES SUFFERED BY ANY PARTY RESULTING FROM THE UNAUTHORIZED USE OF THIS REPORT.

Electronic media is susceptible to unauthorized modification or unintended alteration, and the Client should not rely on electronic versions of reports or other documents. All documents should be obtained directly from SNTG.

5. INTERPRETATION OF THIS REPORT

Classification and identification of soils and rock and other geological units, including groundwater conditions have been based on exploration(s) performed in accordance with the standards set out in Paragraph 1.

These tasks are judgmental in nature; despite comprehensive sampling and testing programs properly performed by experienced personnel with the appropriate equipment, some conditions may elude detection.

As such, all explorations involve an inherent risk that some conditions will not be detected.

Further, all documents or records summarizing such exploration will be based on assumptions of what exists between the actual points sampled at the time of the site exploration. Actual conditions may vary significantly between the points investigated and all persons making use of such documents or records should be aware of and accept this risk.

The Client and "Approved Users" accept that subsurface conditions may change with time and this report only represents the soil conditions encountered at the time of exploration and/or review. Soil and groundwater conditions may change due to construction activity on the site or on adjacent sites, and also from other causes, including climactic conditions.

The exploration and review provided in this report were for geotechnical purposes only. Environmental aspects of soil and groundwater have not been included in the exploration or review, or addressed in any other way.

The exploration and Report are based on information provided by the Client or the Client's Consultants, and conditions observed at the time of our site reconnaissance or exploration. SNTG has relied in good faith upon all information provided. Accordingly, SNTG cannot accept responsibility for inaccuracies, misstatements, omissions, or deficiencies in this Report resulting from misstatements, omissions, misrepresentations or fraudulent acts of persons or sources providing this information.

6. DESIGN AND CONSTRUCTION REVIEW

This report assumes that SNTG will be retained to work and coordinate design and construction with other Design Professionals and the Contractor. Further, it is assumed that SNTG will be retained to provide field reviews during construction to confirm adherence to building code guidelines and generally accepted engineering practices and the recommendations provided in this report. Field services recommended for the project represent the minimum necessary to confirm that the work is being carried out in general conformance with SNTG's recommendations and generally accepted engineering standards. It is the Client's Contractor's responsibility to provide timely notice to SNTG to carry out site reviews.

The Client acknowledges that unsatisfactory or unsafe conditions may be missed by intermittent site reviews by SNTG. Accordingly, it is the Client's or Client's Contractor's responsibility to inform SNTG of any such conditions.

Work that is covered prior to review by SNTG may have to be re-exposed at considerable cost to the Client. Review of all Geotechnical aspects of the project is required for submittal of unconditional Letters of Assurance to regulatory authorities. The site reviews are not carried out for the benefit of the Contractor(s) and therefore do not in any way affect the Contractor(s) obligations to perform under the terms of his/her Contract.

7. SAMPLE DISPOSAL

SNTG will dispose of all samples 3 months after issuance of this report, or after a longer period of time at the Client's expense if requested by the Client. All contaminated samples remain the property of the Client and it will be the Client's responsibility to dispose of them properly.

8. SUBCONSULTANTS AND CONTRACTORS

Engineering studies frequently require hiring the services of individuals and companies with special expertise and/or services which SNT Geotechnical Ltd. does not provide. These services are arranged as a convenience to our Clients, for the Client's benefit. Accordingly, the Client agrees to hold the Company harmless and to indemnify and defend SNT Geotechnical Ltd. from and against all claims arising through such Sub consultants or Contractors as though the Client had retained those services directly. This includes responsibility for payment of services rendered and the pursuit of damages for errors, omissions or negligence by those parties in carrying out their work. These conditions apply to specialized sub consultants and the use of drilling, excavation, and laboratory testing services, and any other Sub consultant or Contractor.

9. SITE SAFETY

SNT Geotechnical Ltd. assumes responsibility for site safety solely for the activities of our employees on the job site. The Client or any Contractors on the site will be responsible for their own personnel. The Client or his representatives, Contractors, or others retain control of the site. It is the Client's or the Client's Contractors' responsibility to inform SNTG of conditions pertaining to the safety and security of the site – hazardous or otherwise – of which the Client or Contractor is aware.

Exploration or construction activities could uncover previously unknown hazardous conditions, materials, or substances that may result in the necessity to undertake emergency procedures to protect workers, the public, or the environment. Additional work may be required that is outside of any previously established budget(s). The Client agrees to reimburse SNTG for fees and expenses resulting from such discoveries. The Client acknowledges that some discoveries require that certain regulatory bodies be informed. The Client agrees that notification to such bodies by SNTG Geotechnical Ltd. will not be a cause for either action or dispute.



PERMIT TO CONSTRUCT, USE, AND MAINTAIN ACCESS TO A PROVINCIAL PUBLIC HIGHWAY

PURSUANT TO TRANSPORTATION ACT AND/OR THE INDUSTRIAL ROADS ACT AND/OR THE MOTOR VEHICLE ACT AND/OR AS DEFINED IN THE NISGA'A FINAL AGREEMENT AND THE NISGA'A FINAL AGREEMENT ACT.

BETWEEN:

The Minister of Transportation and Infrastructure Penticton Area Office 102 Industrial Place Penticton, BC V2A 7C8

("The Minister")

AND:

Regional District of Okanagan-Similkameen 101 Martin Street Penticton, BC V2A 5J9

("The Permittee")

WHEREAS:

- A. The Minister has the authority to grant permits for the auxiliary use of highway right of way, which authority is pursuant to both the Transportation Act and the Industrial Roads Act, the Motor Vehicle Act, as defined in the Nisga'a Final Agreement and the Nisga'a Final Agreement Act;
- **B.** The Permittee has requested the Minister to issue a permit pursuant to this authority for the following purpose:

The installation, operation, and maintenance of one (1) seven (7) metre wide access on the north side of Apex Mountain Road for a new 2-bay Firehall to be operated by the Apex Volunteer Fire & Rescue, to serve property legally described as Block B, District Lot 4064s, SDYD and Part of the Remainder of District Lot 395s, SDYD, located at 1246 Apex Mountain Road, Penticton, BC, as shown on the attached Watershed Engineering Ltd. drawing #201 dated June 12, 2023.

C. The Minister is prepared to issue a permit on certain terms and conditions;

ACCORDINGLY, the Minister hereby grants to the Permittee a permit for the Use (as hereinafter defined) of highway right of way on the following terms and conditions:

- 1. The Minister shall designate an official ("the Designated Ministry Official") who shall act as the Minister's agent in the administration of this permit in the manner hereinafter set out.
- 2. The Use shall be carried out according to the reasonable satisfaction of the Designated Ministry Official.
- 3. The Permittee shall indemnify and save harmless the Ministry, its agents and employees, from and against all claims, liabilities, demands, losses, damages, costs and expenses, fines, penalties, assessments and levies made against or incurred, suffered or sustained by the Ministry, its agents and employees, or any of them at any time or times, whether before or after the expiration or termination of this permit, where the same or any of them are based upon or arise out of or from anything done or omitted to be done by the Permittee, its employees, agents or Subcontractors, in connection with the permit.
- 4. The Permittee shall make diligent attempts to determine if there are other users of the right of way in the vicinity of the Permittee's location whose use may be affected. It shall be the responsibility of the Permittee to contact any such users before exercising any of the rights granted hereunder and to attempt to reach an accommodation.
- 5. The Minister shall take reasonable care to do as little damage or interference, as possible, to any Use authorized by this permit in the carrying out of the construction, extension, alteration improvement, repair, maintenance or operation of any work adjacent thereto, but the Minister shall not be responsible for any damage regardless.
- 6. The Minister at the absolute discretion of the Minister may, at any time, cancel this permit for any reason upon giving reasonable notice; provided, however, that in the case of default by the Permittee or in the case of an emergency no notice shall be necessary. The Minister shall not be liable for any loss incurred as a result of permit cancellation.

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- 7. Placing of speed arresters on the access or in the Permittee's property without the prior consent in writing of the Designated Ministry Official shall render the permit void.
- 8. The Permittee shall be responsible for replacing any survey monuments that may be disturbed or destroyed by the Use. Replacement must be by a British Columbia land surveyor at the Permittee's expense.
- 9. The Permittee shall remove any mud, soil, debris, or other foreign material tracked onto the highway from the access authorized herein. Such removal shall be at the Permittee's expense and shall be done at any time the material unduly inconveniences traffic and, in any event, daily.
- 10. The Permittee acknowledges that the issuance of this permit by the Minister is not a representation by the Minister that this permit is the only authority needed to carry out the Use. The Permittee shall give deference to any prior permission given for use of the right of way in the vicinity of the permit area, shall obtain any other permission required by law, and shall comply with all applicable laws regardless of their legislative origin.
- 11. At the end of the term of this permit, or when the permit is cancelled or abandoned, the Permittee shall, if so requested by the Minister, remove all installations and shall leave the site as near as reasonably possible in the condition it was in before this permit was issued or such other condition as shall reasonably be required by the Designated Ministry Official. If the Permittee refuses to comply with these obligations, the Minister may perform them as required and the Permittee shall be liable to the Minister for the costs of doing so.
- 12. The rights granted to the Permittee in this permit are not assignable without the consent of the Minister.
- 13. As a condition of this permit, the permittee unconditionally agrees with the Ministry of Transportation and Infrastructure that the permittee is the prime contractor or will appoint a qualified prime contractor, as described in Section 118 of the Workers Compensation Act, for the purposes of the work described by this permit, at the work location described in this permit, and that the permittee or designated prime contractor will observe and perform all of the duties and obligations which fall to be discharged by the prime contractor pursuant to the Workers Compensation Act and the Occupational Health and Safety Regulation.
- 14. The permittee is advised and acknowledges that the following hazards may be present at the work location and need to be considered in coordinating site safety: overhead hazards, particularly electrical or telecommunications lines; buried utilities, particularly electrical, telecommunication, and gas lines; traffic, danger trees, falling rocks, and sharp or infectious litter.
- 15. Any works within the Ministry right-of-way that fall within the scope of "engineering" under the Engineers and Geoscientists Act will be performed by a Professional Engineer and shall comply with this Ministry's "Professional Assurance Guidelines". The Guidelines can be viewed on the Ministry's website at https://www2.gov.bc.ca/assets/gov/driving-and-transportation/transportation-infrastructure/engineering-standards-and-guidelines/technical-circulars/2023/t01-23.pdf
- 16. The permittee is responsible for preventing the introduction and spread of noxious weeds on the highway right-of-way as defined by the British Columbia Weed Control Act and Weed Control Regulation.
- 17. The Use shall be carried out according to the following drawings and specifications, which are attached and shall be considered to be part of this permit:

Watershed Engineering Ltd. drawing #201 dated June 12, 2023 and the W-318 Fire Truck Entrance specification drawings.

- (a) The rights granted under this permit shall not be exercised before the 23rd day of October 2023.
 - (b) The Construction and Installations must be completed on or before the 23rd day of April 2024.

Exceptions:

18.

BRITISH

OLUMBIA

Ministry of

Transportation

A. LOCATION:

19. The layout shown on the attached drawing is a condition of this permit, and any change in layout without the prior consent in writing of the Designated Ministry Official shall render the permit void.

B. CONSTRUCTION AND INSTALLATIONS:

- 20. A stop sign must be erected on the Access at the entrance to Apex Mountain Road.
- 21. Advance warning FIRE TRUCK ENTRANCE SIGNS [W-318(L) & (R)] including a W-318(T) TAB indicating a Fire Truck Entrance, to be erected either side of the access in accordance with the Ministry of Transportation and Infrastructure Manual of Standard Traffic Signs and Pavement Markings. See attached pages from the Manual.
- 22. The access shall be defined to the satisfaction of the Designated Ministry Official by the erection of standard white-painted delineator posts, guard-rail, nonmountable curb, or some other substantial barrier to traffic satisfactory to the Designated Ministry Official.
- 23. The access shall be paved to the satisfaction of the Designated Ministry Official.

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- 24. The access shall be constructed with a 600mm culvert pipe (if and when required) manufactured to CSA or ASTM standards and laid at ditch invert elevation. Maintenance and periodic cleaning of this culvert is the responsibility of the Permittee.
- 25. The profile of the access shall not exceed 2% grade from the ditchline for a distance of at least 10 metres as measured away from the highway along the centerline of the access.
- 26. The finished grade of the access at the ditch-line shall be 15 cm below the highway shoulder elevation.
- 27. The Permittee shall provide off-street parking in the amount of 9 stalls for the fire crew and 7 stalls for visitors.
- 28. Access to be constructed at 90 degrees to the highway for a distance of 10 metres from the highway shoulder.
- 29. This permit does not provide licencing and insurance and/or oversize, overweight authorization for a commercial vehicle to access a provincial highway from an industrial road. Commercial vehicle operators require authority pursuant to Section 8 of the Commercial Transport Act, R.S.B.C. 1996, and should contact the Provincial Permit Centre at 1-800-559-9688 to obtain a Highway Crossing Permit.
- 30. In accordance with Sections 000.03 Non-Ministry Developments on Ministry Land or That are Intended to Become Ministry Assets and 165.20 Archaeological and Paleontological Discoveries of the Design Build Standard Specification for Highway Construction - In the event that any item of archaeological, heritage, historical, cultural or scientific interest is found on the project site, the following Chance Find Procedure shall apply:

Such item(s) shall remain the property of the Province and the Permittee shall, on making or being advised of such a find, immediately cease operations in the affected area, minimize activities which create ground disturbance in and adjacent to the affected area, and notify the District Official and the Archaeology Branch of the British Columbia Ministry of Forests, Lands, Natural Resource Operations and Rural Development [Ministry of Forests]. Work shall not resume within 30 m of the discovery site until an appropriate directive has been received from that agency.

To protect archaeological and paleontological sites that are situated within or adjacent to a project site, the Permittee may be required to use a variety of mitigative measures, including but not limited to drainage or erosion control, slope stabilization measures, or erecting fences or other suitable barriers to protect archaeological or paleontological sites that are situated within or adjacent to a project site. These measures, with any negotiated extensions of time for completion of the Works they require, will be determined and adopted at the discretion of the District Official. The costs associated with such mitigative measures will be borne by the Permittee.

A buffer zone, in which no land alteration or other activity is permitted, may be required to ensure adequate site protection. The width of this buffer zone shall be determined by the District Official in consultation with a representative of the Archaeology Branch of the British Columbia Ministry of Forests, Lands, Natural Resource Operations and Rural Development [Ministry of Forests]. The Permittee shall be responsible for the actions of employees and subcontractors with respect to site vandalism and the unlicensed collection of artifacts from Designated archaeological sites in and around the work location.

The Permittee shall ensure that all workers and Subcontractors are fully aware of these requirements and processes.

C. AUTHORIZED ACTIVITIES:

N/A

BRITISH

OLUMBIA

Ministry of

Transportation

D. OPERATION AND MAINTENANCE:

31. The Permittee will ensure that the works do not, impair, impede or otherwise interfere with;

I. public passage on the Highways;

II. the provision of highway maintenance services by the Province, or by its servants, contractors, agents or authorized representatives of the Province in connection with the Highways; or

III. the operation of the Highways;

32. That where the said works are in the proximity of any bridge, culvert, ditch or other existing work, such work shall be properly maintained and supported in such manner as not to interfere with its proper function, and on the completion of the said works any bridge, culvert, ditch or other existing work interfered with shall be completely restored to its original condition.

The rights granted to the Permittee in this permit are to be exercised only for the purpose as defined in Recital B on page 1.

Dated at <u>Penticton</u>, British Columbia, this <u>23</u> day of <u>October</u>, <u>2023</u>

On Behalf of the Minister of Transportation & Infrastructure



| FILE NUMBER | DRAWING NUMBER | SHEET | REV |
|-------------|----------------|----------|-----|
| 2022.008 | 201 | 04 of 05 | 0 |



SECTION 4.0 | WARNING SIGNS

| 0.081 Aluminum | | | | |
|---------------------|--------------------------|---------------------------|-----------------|------------------------|
| Sign Item Number | Dimensions (W x H) mm | Reflectivity ASTM Type | MoT Approval | Typical Application |
| W-318-L | 750 x 750 | 9 | STOE | Local Road / Low Speed |
| W-318-Lx | 900 x 900 | 9 | STOE | Arterial or Expressway |
| | | | | |
| | | | | |





SECTION 4.0 | WARNING SIGNS

| 0.081 Aluminum | | | | |
|---------------------|--------------------------|---------------------------|-----------------|------------------------|
| Sign Item Number | Dimensions (W x H) mm | Reflectivity ASTM Type | MoT Approval | Typical Application |
| W-318-R | 750 x 750 | 9 | STOE | Local Road / Low Speed |
| W-318-Rx | 900 x 900 | 9 | STOE | Arterial or Expressway |
| | | | | |
| | | | | |





SECTION 4.0 | WARNING SIGNS

| 0.081 Aluminum | FI | RE T NTR/ | RUC Anci | K |
|---------------------|--------------------------|---------------------------|-----------------|------------------------|
| Sign Item Number | Dimensions (W x H) mm | Reflectivity ASTM Type | MoT Approval | Typical Application |
| W-318-T | 600 x 300 | 9 | STOE | Local Road / Low Speed |
| W-318-Tx | 750 x 450 | 9 | STOE | Arterial or Expressway |
| | | | | |





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APEX FIRE HALL "ISSUED FOR TENDER" BLOCK B DL 4064S APEX, BRITISH COLUMBIA



Watershed Engineering Ltd.



LUMBY

APEX FIRE HALL

"ISSUED FOR TENDER"

BLOCK B DL 4064S APEX, BRITISH COLUMBIA



DATUM:

SHEE SHEET SHEE SHEET SHEET SHEET SHEET

EXISTING

PROPERTY LINE DRIVEWAY GRAVEL SHOULDER EDGE OF PAVEMENT FENCE **BUSHES & HEDGES** HEAD WALL BOTTOM OF SLOPE TOP OF BANK CONTOURS MAJOR CONTOURS MINOR CREEK / STREAM CENTER CULVERT UNDERGROUND CONDUIT FIBRE OPTIC **IRON PIN** TELEPHONE POLE POWER / TELEPHONE POLE POWER POLE POWER / TELEPHONE WITH TRANSFORMER POWER POLE WITH TRANSFORMER GUY WIRE GUARD POST TREE CULVERT INLET CULVERT OUTLET SIGN ONE POST

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- REFER TO STEVEN J BUZIKIEVICH LAND SURVEYING INC. DRAWINGS **BENCHMARKS:**
- REFER TO STEVEN J BUZIKIEVICH LAND SURVEYING INC. DRAWINGS

DRAWING INDEX

| Т - 000 | COVER |
|---------|----------------------------|
| T - 001 | KEY PLAN & LEGEND |
| T - 101 | EXISTING SITE PLAN |
| T - 102 | PROPOSED SITE PLAN |
| T - 102 | PROPOSED EARTHWORK VOLUMES |
| T - 201 | PLAN/PROFILE |
| T - 301 | DETAILS |
| | |

LEGEND

PROPOSED

| PROPERTY LINE | |
|----------------------------------|---|
| DRIVEWAY | |
| GRAVEL SHOULDER | |
| EDGE OF PAVEMENT | |
| FENCE | X |
| BUSHES & HEDGES | ~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~ |
| HEAD WALL | |
| BOTTOM OF SLOPE | |
| TOP OF BANK | |
| CONTOURS MAJOR | |
| CONTOURS MINOR | |
| CREEK / STREAM CENTER | |
| CULVERT | |
| UNDERGROUND CONDUIT | —— UT ——— |
| FIBRE OPTIC | —— FO ——— |
| IRON PIN | • |
| TELEPHONE POLE | -0- |
| POWER / TELEPHONE POLE | - • - |
| POWER POLE | |
| POWER / TELEPHONE WITH TRANSFORM | |
| POWER POLE WITH TRANSFORMER | - O - |
| GUY WIRE | \rightarrow |
| GUARD POST | OPost |
| TREE | * |
| CULVERT INLET | |
| CULVERT OUTLET | CO |
| SIGN ONE POST | Þ |
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| STORM PIPES | | | | | | | | | | | |
|-------------|-------|-------|--------|------|----------|----------|------------|------------|-------|-------|---|
| NAME | DIA. | LEN. | GRAD. | MAT. | INV. IN | INV. OUT | MIN. COVER | MAX. COVER | NAME | DIA. | ι |
| CULVERT | 400mm | 9.999 | 1.00% | CSP | 1734.200 | 1734.100 | -0.284 | 0.465 | SAN 1 | 150mm | 6 |
| LEAD 1 | 300mm | 8.945 | 10.00% | PVC | 1740.721 | 1739.827 | 0.500 | 1.176 | SAN 2 | 150mm | 2 |
| LEAD 2 | 300mm | 6.887 | 2.00% | PVC | 1739.959 | 1739.821 | 0.500 | 1.182 | | | |

| | STORM MANHOLES | | | | | | |
|------|----------------|----------------------|-------------|-------------------------------|--|--|--|
| NAME | DIA. | STATION OFFSET | RIM ELEV | COORDINATES | | | |
| CB1 | 600mm | 0+112.040 -17.000 | 1741.540 | N 5475556.866 E 288862.275 | | | |
| DW1 | 1200mm | 0+115.027 -8.568 | 1741.322 | N 5475561.298 E 288870.044 | | | |
| CB2 | 600mm | 0+110.186 -3.670 | 1740.778 | N 5475557.401 E 288875.723 | | | |

| | SAN MANHOLES | | | | | | |
|------|--------------|----------------------|-------------|-------------------------------|--|--|--|
| NAME | DIA. | STATION OFFSET | RIM ELEV | COORDINATES | | | |
| MH1 | 1050mm | 0+131.225 -10.514 | 1741.828 | N 5475576.896 E 288865.261 | | | |
| SM4 | 1050mm | 0+107.587 -10.265 | 1740.640 | N 5475553.676 E 288869.692 | | | |



| FILL | RANGE | CUT |
|------|-------------|-----|
| | > 2.5m | |
| | 2.0m - 2.5m | |
| | 1.5m - 2.0m | |
| | 1.0m - 1.5m | |
| | 0.5m - 1.0m | |
| | 0.0m - 0.5m | |

PERMIT: 1000852

| Cut Factor | Fill Factor | 2d Area | Cut | Fill |
|------------|-------------|-------------|----------------|-------|
| 1.000 | 1.000 | 5314.86sq.m | 3523.28 Cu. M. | 1624. |
| | | 5314.86sq.m | 3523.28 Cu. M. | 1624. |

| SC, | ALE | 2 1:250 12m CAD F | FILENAME | 2022.008.APEX 2023-06-16 | Watershed |
|-----|------------|-------------------|----------|-----------------------------|---|
| REV | DATE | REVISIONS | | NAME | Engineering Ltd. |
| 0 | 2023-06-16 | ISSUED FOR TENDER | | СР | DESIGNED CP_DATE2023-06-16 |
| | | | | | QUALITY CONTROL CP DATE 2023-06-16 QUALITY ASSURANCE DD DATE 2023-06-16 |
| | | | | | DRAWN DD DATE2023-06-16 |



| | PLAN & PROFI | ILE | | | | | |
|------------------------------------|----------------|----------|-----|--|--|--|--|
| APEX FIRE HALL BLOCK B DL 4064S | | | | | | | |
| FILE NUMBER | DRAWING NUMBER | SHEET | REV | | | | |
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| LE N.T.S | CAD FILENAME PLOT DATE | 2022.008.APEX 2023-06-16 | Watershed | | DETAILS | | | |
|------------|---------------------------|-----------------------------|--|------------------------------------|----------------|----------|-----|--|
| DATE | REVISIONS | NAME | Engineering Ltd. | APEX FIRE HALL BLOCK B DL 4064S | | | | |
| 2023-06-16 | ISSUED FOR TENDER | CP | | | | | | |
| | | | DESIGNED <u>CP</u> DATE <u>2023-06-16</u> QUALITY CONTROL <u>CP</u> DATE 2023-06-16 | | | | | |
| | | | QUALITY ASSURANCE <u>DD</u> DATE <u>2023-06-16</u> | FILE NUMBER | DRAWING NUMBER | SHEET | REV | |
| | | | DRAWN DD DATE2023-06-16 | 2022.008 | 301 | 05 of 05 | 0 | |
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