City of Temiskaming Shores

Request for Proposal

RS-RFP-002-2021

Haileybury Fire Station – Design Build

City of Temiskaming Shores
P.O. Box 2050
325 Farr Drive
Haileybury, Ontario
P0J 1K0

1.0 Purpose and Intent

This Request for Proposal describes the requirements of The Corporation of the City of Temiskaming Shores to receive proposals from qualified companies for the design-build construction of a new Fire Station to be located in the former Town of Haileybury

2.0 Introduction

Located at the head of Lake Temiskaming, Temiskaming Shores is located in Northeastern Ontario, near the Quebec border. Temiskaming Shores covers 163.32 km^2 and has a population of approximately 9,900.

The former Towns of Haileybury, New Liskeard and the Township of Dymond amalgamated in January 2004 to become the City of Temiskaming Shores, which is a single tier municipality.

3.0 Definitions

The Corporation of the City of Temiskaming Shores shall hereinafter be referred to as the "City".

4.0 Submission

Submissions must be in ***.pdf format*** and submitted electronically to:

tenders@temiskamingshores.ca

Subject line: RS-RFP-002-2021 "Haileybury Fire Station – Design Build"

Addressed to: Logan Belanger, Clerk

The closing date for the submission of proposals will be at **2:00 pm local time on Thursday April 8, 2021.**

- Late proposals will not be accepted;
- Proposals by fax will not be accepted;
- Proposals by mail will not be accepted;
- Partial proposals are not accepted;
- The City reserves the right to accept or reject any or all proposals;
- The lowest priced proposal will not necessarily be accepted;
- The City reserves the right to enter into negotiations with a firm and any changes to the proposal that are acceptable to both parties will be binding.
- The proposals shall be valid for 60 (sixty) days from submission date.

5.0 Questions

Any questions or concerns with respect to the RFP document and contents are to be directed to:

Mathew Bahm
Director of Recreation
City of Temiskaming Shores
325 Farr Drive

Temiskaming Shores, ON P0J 1K0
Phone: (705) 672-3363 ext. 4106
mbahm@temiskamingshores.ca

6.0 Background

The City of Temiskaming Shores Fire Department consists of two full-time staff and a compliment of three volunteer brigades. Volunteers are stationed at one of three stations: Dymond Station, New Liskeard Station and Haileybury Station.

Haileybury Station (also known as Station #1) is located at 468 Georgina Ave within downtown Haileybury. The building was constructed in 1923 and has been in continual use as a fire station since its construction.

Station 1 provides primary fire protection coverage to approximately 91 km^2 of the southern node of the City of Temiskaming Shores. In addition, this station provides backup emergency response to Station 2 and Station 3. Station 1 also provides heavy rescue services outside the City's borders, responds to mutual aid activations as part of the mutual aid plan, and houses special wildland firefighting equipment.

7.0 Scope of Work

The successful bidder shall provide all engineering, labor, material and all other associated items for the construction of a new fire hall to be located within the limits of the former municipality of Haileybury. This building must meet Post Disaster building requirements as per the most current version of the Ontario Building Code. Located below is a proposed list of specifications for this design build. The successful bidder shall be responsible for the inclusion of all components of this build as per the Ontario Building Code.

General scope of work shall include:

1. Preparation of Construction Documents for development of the site and construction of a building meeting the requirements of the concept building and site layout.
2. Preparation and Submittal of Site Development Drawings to the City of Temiskaming Shores for review and approval. Addressing any and all comments and/or conditions of approval for said Site Development Drawings.
3. Preparation and Submittal of Building Design Drawings to the City of Temiskaming Shores for review and approval
4. Obtaining all necessary Permits prior to start of construction activities on the site.
5. Providing a cost to complete all necessary Tasks, as listed herein, for completion of the Design-Build Process including construction of the approved Site Improvements and approved Building to house Fire services.

The proposed location for this building is 25 Rorke Avenue, Haileybury Ont. P0J 1K0. Lot size for the proposed location is 164 ft x 393 ft = 64,452 ft^2. Further details on proposed lot location are included on Appendix 2.

A conceptual layout, developed in consultation with volunteer firefighters from Haileybury Fire Station, is included as Appendix 1.

Proposed Specifications	
Space	**Notes / Approximate Sizing**
Apparatus Bays • 3 apparatus bays, 80 ft long • 14' X 14' Overhead Doors (automatic) x3 • Additional rear door (Center) • Interior of bays to be waterproof material for washing of trucks inside during winter weather. • Floor trough in center of bay floor. • Vehicle exhaust system. • Natural Gas in-floor heating **– OPTIONAL** • Deluge Shower/Eye Wash Station • Wall Height approx. 18 ft • Fall arrest anchor points	Based on current fleet requirements. • 1 Pumper/Tanker • 1 Pumper • 1 Heavy Rescue • 1 Forestry Unit.
Firefighter Lockers (25) Firefighter Gear/PPE Storage Lockers W – 24", D – 30", H – 8' including bench.	Lockers required to be included within pricing submitted
SCBA Room SCBA Compressor/Air Fill/Bottle Storage/Air Compressor Room	Large enough to accommodate a Jordair refill station & compressor (Approximately 3'x6'). Include stainless counter / work space. Required to have one outside wall 10 ft. x 15 ft. = 150ft^2
Maintenance/Work Room Work Bench Storage Room & Laundry Facilities	10 ft. x 12 ft. = 120ft^2
Firefighter Washrooms 1 - (1 toilet, 1 urinal, 1 shower, 1 lavatory) 1 - (1 toilet, 1 shower, 1 lavatory)	10 ft. x 10 ft. = 100ft^2 10 ft. x 10 ft. = 100ft^2
Upper Utility Room For general mechanical equipment	10 ft. x 15 ft. = 150ft^2
Upper Storage Room	10 ft. x 10 ft. = 100ft^2
District Chief Office	10 ft. x 14 ft. = 140ft^2
Debriefing Room / Training Office	10 ft. x 18 ft. = 180ft^2
Radio/Communication Room/IT Room	10 ft. x 14 ft. = 140ft^2
Meeting/Training Room	25 ft. x 35 ft. = 875 ft^2
Mechanical/Furnace Room Electrical and plumbing plans/layouts.	10 ft. x 10 ft. = 100ft^2 Space as required to provide adequate room for electrical panels and heating source

Kitchenette / Lounge Cabinets, sink	10 ft. x 18 ft. = 180ft^2
Unisex Accessible Washroom	10 ft. x 10 ft. = 100ft^2
Other Items	
Electrical Supply Electrical lines throughout apparatus bay to fleet.	
Back-up Generator Automatic power back-up generator.	Natural Gas Generator – located outside to power whole facility.
Asphalt Apron – OPTIONAL 40' long apron front of apparatus bays. (min) 6' long apron rear of apparatus bays.	Incorporate with appropriate exits.
Driveway/Parking Driveway and parking lot around the building. Area for volunteer firefighter vehicles, area for customer parking.	Combination of paving and aggregates.
Water Supply Interior hydrant for filling pumper and tanker. Exterior fill point for filling Fire and Public Works vehicles.	Water and Sewer to be hooked up to City services. Main feed will be 6"
Lighting LED lighting throughout facility	Occupancy sensors required where applicable
Fire Pole	Incorporate existing fire pole into design for decorative purposes.
Roof/Cladding Steel roof and siding Mid-span brick cladding on front wall **– OPTIONAL**	
Service Connections Hydro Natural Gas Water and Sewer Telephone/IT Radio Communications	Water and sewer lines will be provided to property line by city at south-east corner of property. Exact location to be determined with winning bidder. City of Temiskaming Shores sewer line locations and grading requires a force main connection from property.
Storm Water Management Plan	Required

All furnishings and equipment within the building will be provided by the City of Temiskaming Shores (unless otherwise noted) including all furniture, desks, chairs, a/v equipment, appliances, firefighting equipment, radio and communications equipment, computers etc.

8.0 Proposal Evaluation Criteria

An evaluation team consisting of key municipal staff will conduct the evaluation of proposals.

The City of Temiskaming Shores reserves the right, in its evaluation of the proposal, to consider all pertinent criteria whether or not such criteria are contained in the Request for Proposals.

CITY PROPOSAL EVALUATION CRITERIA	WEIGHT	POINTS	MAXIMUM TOTAL POINTS
Qualifications, Expertise and Performance on Similar Projects			
Past ability to complete projects within timelines and budgets	10	10	100
Stability and reputation of firm	5	10	50
Qualifications of senior staff / management	5	10	50
20%			
Proposed Supplier Contact / Manager and Support Team			
Past experience in directing / involvement with similar design-builds	10	10	100
Specialized expertise	5	10	50
15%			
Understanding of Project			
Detail of understanding of the project scope and desired deliverables. Provision of a detailed plan of proposed approach, including major tasks and sub-tasks.	15	10	150
Include a proposed quality assurance plan your firm will conduct to ensure the performance of contract deliverables	10	10	100
25%			
Estimated Fees and Disbursements			
Cost estimates are evaluated for completeness and lowest is scored 10 points, next 8 points, etc. If more than 5 proposals, then only 5 lowest Bids are to receive points, and the remaining higher prices will be given 0.25 points. Prices within a small differential will be scored as equal.	40	10	400
40%			

9.0 RFP Schedule

The RFP process will be governed according to the following schedule. Although every attempt will be made to meet all dates, the City reserves the right to modify any or all dates at its sole discretion:

- Release of RFP: February 17, 2021
- RFP Proposal Submission deadline: April 8, 2021
- Final Selection and Notification (Estimated): April 21, 2021

10.0 Project Authority

The Project Authority for issuance of the Request for Proposal is the Director of Recreation for the City of Temiskaming Shores, reporting to the City Manager.

The awarding of the contract may be subject to the approval of City Council.

All inquiries shall be directed in writing via email to the person identified in Part 5.0 - Questions.

12.0 Project Schedule and Fees

Project timelines are important to the City. Accordingly, a detailed project schedule with key milestones should be included in the proposal.

13.0 Commitment to Negotiate

The successful respondent shall execute any documentation, drafted in accordance with the terms of the successful respondent's proposal and any subsequent negotiations, within thirty (30) days of the date of notification of the successful respondent's selection.

Respondents not initially selected as the successful respondent hereby commit themselves, subject to notification by the City to execute documentation as aforesaid up to sixty (60) days following the date of submission of their proposals.

14.0 Preparation of Proposals

All costs and expenses incurred by the respondent relating to its proposal will be borne by the respondent. The City is not liable to pay for such costs and expenses, or to reimburse or to compensate the respondent in any manner whatsoever for such costs and expenses under any circumstances, including the rejection of any or all proposals or the cancellation of this RFP.

All five (5) pages of Form of Quotation are required to be submitted and signed as necessary. In addition, please provide the proposed layout in detail with professional drawings (not stamped at this time) and any other information as necessary.

15.0 Nature of Request for Proposal

This RFP does not constitute an offer of any nature or kind whatsoever by the City to the respondent.

16.0 Amendments

The City may modify, amend or revise any provision of this RFP or issue any addenda at any time. Any modification, amendment, revision or addenda will be in writing and will be provided to all respondents.

Proponents finding discrepancies or omissions in the draft Contract or RFP, or having doubts as to the meaning or intent of any provision, should immediately notify the City. If the City determines that an amendment is required to this RFP, the City will issue an addendum. No oral conversation will affect or modify the terms of this RFP or may be relied upon by any Proponent.

The City reserves the right to vary the scope of work prior to the award of the contract.

17.0 Revisions to Request for Proposal

If it becomes necessary to revise any part of this RFP or, if the respondents require additional data to interpret any of its provisions, the revisions or additional data will be provided to all respondents participating in the RFP process at that stage.

If revisions or additional data are necessary after the closing date for proposals, revisions or additional data will be provided only to those respondents who have submitted responses and met the basic requirements. Such respondents will then have the opportunity to modify their proposal.

18.0 Right to Accept or Reject Submissions

The City does not bind itself to accept any proposal and may proceed as it, in its sole discretion, determines, following receipt of the proposals. The City reserves the right to accept any proposal in whole or in part or to discuss with any respondent different or additional terms to those envisaged in this RFP or in such respondent's proposal.

The City reserves the right to:

i. Accept or reject any or all of the proposals;

ii. If only one proposal is received, elect to reject it; or

iii. Reject as informal any proposal that is received late or is incomplete or otherwise fails to comply with the requirements of the RFP;

iv. Elect not to proceed with the projects as it so determines in its sole and absolute discretion;

v. To waive irregularities and formalities at its sole and absolute discretion.

19.0 Clarifications of Proposal

vi. The City reserves the right to request the clarification of the contents of any proposal.

vii. The City may choose to meet with some or all of the respondents to discuss aspects of their respective proposals.

viii. The City may require respondents to submit supplementary documentation clarifying any matters contained in their proposals and seek the respective respondent's acknowledgment of that interpretation. The supplementary documentation accepted by the City and written interpretations which have been acknowledged by the affected respondent shall be considered to form part of the proposals of that respondent. After the time and date set for receipt of proposals, only the supplementary documentation specifically requested by the City for the purpose of clarification shall be considered as part of a proposal.

ix. The City is not obliged to seek clarification of any aspect of a proposal.

20.0 Finalizing Terms

This RFP will not constitute a binding agreement, but will only form the basis for the finalization of the terms upon which the City and the successful respondent will enter into the contract documentation, and does not mean that the successful respondent's proposal is necessarily totally acceptable in the form submitted. After the selection of the successful respondent's proposal, the City has the right to negotiate with the successful respondent and, as part of that process, to negotiate changes, amendments or modifications to the

successful respondent's proposal without offering the other respondents, the right to amend their proposals.

21.0 Evaluation is Final and binding

By responding to this Request for Proposal the respondents agree that the decision of the Evaluation Team is final and binding.

22.0 Publication of Names of Respondents

i. The City may, at any time, make public the names of all respondents.

ii. Additional information may be released in accordance with *the Freedom of Information and Protection of Privacy Act, R.S.O. 1990, c.F.31*, as amended.

iii. Any proprietary or confidential information contained in the proposal should be clearly identified.

23.0 Conflict Resolution

This Agreement is based upon mutual obligation of good faith and fair dealing between the parties in its performance and enforcement. Accordingly, both parties, with a commitment to honesty and integrity, agree to the following:

i. That each will function within the laws and statutes that apply to its duties and responsibilities; that each will assist in the other's performance; that each will avoid hindering the other's performance; that each will work diligently to fulfil its obligations; and that each will cooperate in the common endeavour of the contract;

ii. Both parties to this Agreement shall attempt to resolve all claims, disputes and other matters in question arising out of or relating to this Agreement or breach thereof first through negotiations between the Engineer or representative and the City or representative by means of discussions built around mutual understanding and respect;

iii. Failing resolution by negotiations, all claims, disputes and other matters in question shall attempt to be resolved through mediation, under the guidance of a qualified mediator;

iv. Failing resolution by mediation, all claims, disputes and other matters in question shall be referred to arbitration;

v. No person shall be appointed to act as mediator or arbitrator who is in any way interested, financially or otherwise, in the conduct of the work on the Project or in the business or other affairs of either the City or the Engineer;

vi. The award of the arbitrator shall be final and binding upon the parties;

vii. The provisions of the Arbitration Act, 1991 S.O. 1991, Chapter 17 shall apply.

24.0 Sub-Contractors

A list of Sub-Contractors that the Contractor proposes to employ in completing the required work outlined in this Proposal must be included in the documents submitted.

The Contractor shall not show “Own Forces” in their list of proposed Subcontractors, except where the Bidder’s intent is to employ the Bidder’s own qualified on-staff personnel to perform such work.

The Contractor shall not indicate “TBD” (To Be Determined) or “TBA” (To Be Announced) or similar wording and shall not indicate multiple choices of Subcontractor names

One Subcontractor name shall be indicated for each Subcontractor category.

No names, either of Subcontractors or “Own Forces” may be changed after submission of the list of proposed Subcontractors unless prior written approval is received from the City

Should the Bidder indicate “N/A” (not applicable), “None”, “Own Forces” or imply by either non completion or omission of this form, that no Sub-Contractor will be used in the execution of this agreement, it is then understood that the City will make no allowance for, nor shall any Sub-Contractors shall be allowed to perform any part of this agreement.

25.0 Insurance

The Contractor shall provide proof of general liability insurance having limits of not less than $5,000,000 inclusive per occurrence for bodily injury, death and damage to property and including the City as an additional insured and containing a cross liability clause.

Form of Quotation

City of Temiskaming Shores
RS-RFP-002-2021
Haileybury Fire Station – Design Build

Each Submission should contain the legal name under which the Proponent carries on business, telephone number and email address, as well the name or names of appropriate contact personnel which the City may consult regarding the Quotation.

We, the undersigned, understand and accept those specifications, conditions, and details as described herein, and, for these rates/prices offer to furnish all documentation, materials and labour as are required to satisfy this Request for Proposal.

Description	Amount
Lump sum price for completion of required work as outlined in RFP (Exclusive of HST)	$ .00

Optional Pricing Items (Exclusive of HST)	
Natural Gas, in-floor heating	$ .00
Asphalt Apron	$ .00
Mid-Span Brick Cladding on Front Wall	$ .00

We/I, _____

(Registered Company Name/Individuals Name)

Of,_____

(Registered Address and Postal Code)

Business:

Phone Number (_____) - _____

Email Address _____

Bidder's Authorized Official: _____

Title: _____

Signature: _____

Date: _____

City of Temiskaming Shores
RS-RFP-002-2021
Haileybury Fire Station – Design Build

List of Proposed Sub-Contractors

Name	Address	Component

I / We verify that the information provided above is accurate and that the individuals are qualified, experienced operators capable of completing the work outlined in this Quotation document.

Signed by Company Official

_____ _____

Printed Signed

City of Temiskaming Shores
RS-RFP-002-2021
Haileybury Fire Station – Design Build

NON-COLLUSION AFFIDAVIT

I/ We _____ the undersigned am fully informed respecting the preparation and contents of the attached quotation and of all pertinent circumstances respecting such bid.

Such bid is genuine and is not a collusive or sham bid.

Neither the bidder nor any of its officers, partners, owners, agents, representatives, employees or parties of interest, including this affiant, has in any way colluded, conspired, connived or agreed directly or indirectly with any other Bidder, firm or person to submit a collective or sham bid in connection with the work for which the attached bid has been submitted nor has it in any manner, directly or indirectly, sought by agreement or collusion or communication or conference with any other bidder, firm or person to fix the price or prices in the attached bid or of any other Bidder, or to fix any overhead, profit or cost element of the bid price or the price of any bidder, or to secure through any collusion, conspiracy, connivance or unlawful agreement any advantage against the City of Temiskaming Shores or any person interested in the proposed bid.

The price or prices quoted in the attached bid are fair and proper and not tainted by any collusion, conspiracy, connivance or unlawful agreement on the part of the Bidder or any of its agents, representatives, owners, employees, or parties in interest, including this affiant.

The bid, quotation or proposal of any person, company, corporation or organization that does attempt to influence the outcome of any City purchasing or disposal process will be disqualified, and the person, company, corporation or organization may be subject to exclusion or suspension.

Signed _____

Company Name _____

Title _____

City of Temiskaming Shores
RS-RFP-002-2021
Haileybury Fire Station – Design Build

Conflict of Interest Declaration

Please check appropriate response:

☐ I/we hereby confirm that there is not nor was there any actual, or perceived conflict of interest in our quotation submission or performing/providing the Goods/Services required by the Agreement.

☐ The following is a list of situations, each of which may be a conflict of interest, or appears as potentially a conflict of interest in our Company's quotation submission or the contractual obligations under the Agreement.

List Situations:

_____

_____

_____

In making this quotation submission, our Company has / has no *(strike out inapplicable portion)* knowledge of or the ability to avail ourselves of confidential information of the City (other than confidential information which may have been disclosed by the City in the normal course of the quotation process) and the confidential information was relevant to the Work/Services, their pricing or quotation evaluation process.

Dated at _____ this _____day of _____, 2021.

FIRM NAME: _____

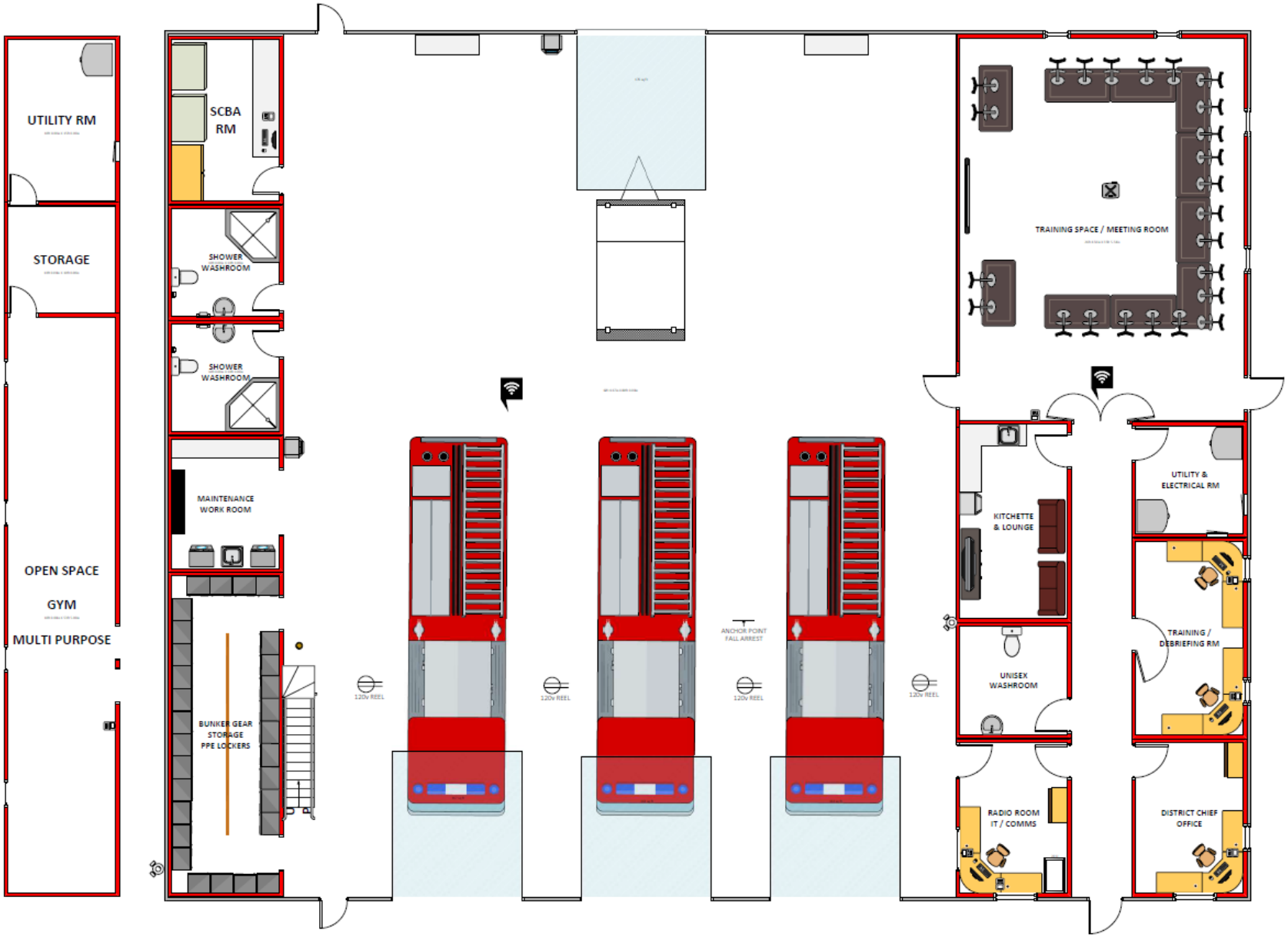
BIDDER'S AUTHORIZED OFFICIAL: _____

TITLE: _____

SIGNATURE: _____

Appendix 1

Conceptual layout for the Haileybury Fire Station.



Appendix 2

Proposed site for the Haileybury Fire Station.

Appendix 3

Site Geo Technical Report

GEOTECHNICAL INVESTIGATION REPORT

Proposed Haileybury Firehall Building

26 Rorke Drive

Temiskaming Shores, Ontario

Prepared for:

Mr. Mitch Lafreniere
City of Timiskaming Shores
Timiskaming Shores, Ontario

Prepared by:

Shaba Testing Services Ltd.
Kirkland Lake, Ontario

November 2019

Our Project Number:

STS 2019-0179

EXECUTIVE SUMMARY

Under the authorization of the City of Temiskaming Shores, Shaba Testing Services Ltd conducted a geotechnical investigation at 26 Rorke Avenue in Haileybury, Ontario. The vacant lot is situated along Hwy 11 B South, between the Haileybury strip mall building and NAPA Auto Parts commercial building. The purpose of the investigation was to assess geotechnical parameters in the areas where the proposed Haileybury Firehall will be located. The building size and foundation types are unknown at the time of this investigation. However, the building will be assumed to be a single story, and by the Code provisions, it will be a post-design design.

The geotechnical investigation took place on November 6, 2019. Three test pits without monitoring wells were advanced to a depth of 3.05 m (10 ft) at the site. This depth is usually adequate for a single storey building such as this one. Static penetrometer and Field Vane Shear tests were undertaken. Soil samples were collected and submitted for laboratory analyses of some or all the following parameters: moisture content, grain-size analysis, hydrometer tests, Atterberg Limits, unconfined compressive shear test, density and chemical analyses.

The stratigraphic profile encountered with increasing depth in the test pits generally consisted of: top soil/organic soil, varve (layered) silty clay and firm silty clay. Bedrock was not encountered at 3.05 m (10 ft) depth in any of the test pits. The firm grey silty clay surface was encountered at depths ranging from 0.20 m to 3 m in all of the test pit locations. Slightly wet conditions were encountered in test pit # 1 and water seepage at a depth of 3.0 m.

Geotechnical design parameters and construction information for foundations and related features are provided herein.

Table of Contents

Appendix A – Site Drawings

Appendix B – Test Pit Log and Explanation Form

Appendix C – Lab Test Summary

Appendix D – Chemical Lab Analysis

1.0 INTRODUCTION

Under the authorization of the City of Temiskaming Shores (the Client), Shaba Testing Services Ltd conducted a geotechnical investigation at a vacant lot on 26 Rorke Avenue in Haileybury, Ontario. The site is intended to be the location of the proposed Firehall building. The size and type of foundation for this building are unknown at the time of this report. The purpose of the investigation was to assess geotechnical parameters and, based on the data obtained, to provide a test pit location plan, stratigraphic profiles, records of test pits, laboratory test results, and a written description of the subsurface conditions in the area where the proposed Firehall building will be located.

The site location and regional topographic features are shown on attached Drawing No. 1. A site plan showing the borehole locations is presented as Drawing No. 2 in appendix A of this report.

1.1 Description of Subject Property

The vacant lot is located on 26 Rorke Avenue, sandwiched between the Haileybury Mall and NAPA Auto Parts Building. There is a swale at the rear of the lot, before the brush line. The lot is also abounded by Hwy 11 B to the east and the ONR track to the west. The terrain has a gentle slope of 1.52 % towards Hwy 11 B and was replete with grass vegetation cover. See photos #1 and #2 below.

Photo #1- The site from Google Earth. Train Track Hwy 11 B

Photo #2- The site -Looking west - the vacant lot along Hwy 11 B- Haileybury, Ontario.

1.2 Proposed Development

We understand that the development is a proposed Firehall building.

2.0 METHODOLOGY

2.1 General

The investigation was conducted in general compliance with the Canadian Foundation Design Manual and as per the Request for Quotation (RFQ) terms of reference as provided by the Client. Investigation was also carried out as per the drawing showing proposed bore locations as provided by the client. Investigation procedures followed generally accepted geotechnical engineering practices.

2.2 Field Activities

Prior to proceeding with the subsurface investigation, utility locates were called for and completed to ensure that all services to other nearby buildings were uninterrupted. A review of the submitted site drawings of the building footprint was carried to locate the best fit for the test

pit layout. This is presented in our drawing #1. Also, a topographical survey of the site including the approximate locations of the test pits and the slope of the terrain.

The field test took place on November 6, 2019. During the investigation, three (3) test pits, without monitoring wells, were advanced to depths of 3.05 m (10 ft). The excavation was carried out by Pedersen Construction with our crew on site to log the soil parameters. See photos #3 and #4.

Photo #3- Site with excavation in progress

The three test pits, 2.4 m x 6.3 m (8 ft. x 20 ft.) were excavated to a depth of 3.05 m (10 ft.) (the maximum that the excavator arm could go) to expose the soil strata. See photo #3. Soil strata were inspected, samples were collected and transported to our laboratory for further analysis. The test pit was subsequently backfilled at completion of the test.

Consistent with the requirements of Ontario Regulation 903 under the Water Resources Act, all test pits were backfilled prior to departing the site.

Photo #4- Test pit locations. TP 1, TP 2, TP 3

2.3 Laboratory Analyses

All soil samples were analyzed for moisture content. Atterberg Limits analysis was conducted on one soil sample to obtain soil plasticity data, and the tube sample was analyzed for unconfined compressive strength and density. Selected soil samples were sent to Chemical Laboratory for analyses.

Summary of the Test Methods and Procedures are shown in Table 2.1 below.

Table 2.1 - Test Methods and Procedures

Test	ASTM Standard	Number of samples/borehole
Natural Moisture Content	ASTM D-2216	3
Grain Size Analysis	ASTM D-422	0
Hydrometer Analysis	ASTM D-422	2
Atterberg' Limits	ASTM D-4318	3
Direct Shear Strength	ASTM D -2166	7
Consolidation Test	ASTM D-2435/D-2435M-11	0
Laboratory Vane Shear Test	ASTM D-2166	0

The minimum number of laboratory tests was set at 25 percent of the samples collected. Low complexity soil tests were completed at our laboratory.

Photo # 5 - Test pit #1- silty clay

3.0 FINDINGS

3.1 Geology

Based on the information provided by the Kirkland Lake's office of the Ministry of Northern Development, Mines and Forestry (MNDF) Ontario Geological Surveys (OGS) Map # 2050 9 Cobalt Silver Area-Timiskaming District, we can confirm the geological formation of the outcrop prominent on this site and the surficial geology as well. The rock formation was from pre-Cambrian sedimentary-Archean Post-Algoma and Archean-Keewatin. Also, from the regional geologic mapping, the Timiskaming area is regarded as the clay belt. Clay of different consistency based on moisture content is common in this area. Varve and blue clay or silty clay are also prominent in this area. Also prominent in some part of New Liskeard, are limestone's deposit. This is found mostly in the Rockley hill area of the town. At this site, 26 Rorke Avenue, Haileybury, Ontario, the soil deposit here will be predominantly wet to stiff clay or silty clay. Bedrock was never encountered at a depth of 3.05 m (10. ft) in any of the test pits.

3.2 Stratigraphy, Groundwater Conditions and Laboratory Test Results

Detailed stratigraphic description, field test results, soil moisture contents, and Atterberg Limits are presented in the borehole logs in Appendix B. The chemical laboratory certificate is in Appendix D

The stratigraphic profile encountered with increasing depth in the boreholes generally consisted of:

A layer of top-soil, compact no-homogeneous fill with boulders and stiff, grayish silty clay. No groundwater was encountered in any of the test pit and boreholes at the completion of drilling and excavation. The lake elevation was measured at 179.09 m. The difference in elevation between the existing grade at this site and the shore-line water saturated sand surface is 3.40 m.

Photo #6 - Varved clay from the site at 2 ft depth

3.2.1 Subsoil Conditions

The organic topsoil/sod was encountered in all the test pits. The range of depth was from 0.30 m to 3.0 m thick. The topsoil thickness may vary between test pit locations, and the limited data is not suitable for estimating topsoil quantities.

The subsurface stratigraphy below the topsoil/sod generally comprised of brown silty clay. The relative density in the range of 1199 Kg/m ^{3} to 1256 Kg/m^3. The moisture content is in the range of 39.4 to 43.6 percent. Laboratory vane shear test average result is 221.2 Kpa. The consistency is in the range firm to stiff. The sample of the silty clay submitted for plasticity testing indicated it was sensitive, i.e., readily weakness when disturbed, which may be the reason why the vane and pocket penetrometer test results indicated the soil was stronger.

Photo #7- The Soil Strata below the topsoil – The Fill with light brown coloration.

The test results of the silty clay are summarized below:

Gravel (greater than 4.75 mm size)	0 %
Sand (0.075 mm to 4.75 mm size)	15 % - 20 %
Silt (0.002 mm to 0.075 mm size)	71 % - 76 %
Clay (less than 0.002 mm size)	8 % - 9 %

Undrained shear strength was determined by the Unconfined Direct Shear Tests, which ranged from 31 to 94 kPa for the lab test, indicating the consistency of the silty clay deposit is firm to

stiff at an average depth of 3 m (10 ft.) from the surface. The sensitivity of the silty clay was in the range of 4-7, indicating sensitive clay according to CFEM.

A summary of Atterberg's limits tests for three samples, from the site, at a 3.0 m (10 ft.) depth from the silty clay deposit yield the following index values:

Sample #1 at Test Pit #1 at 3.05 m (10 ft.) depth

Liquid limit (W_L)	38.0 %
Plastic Limit (W_P)	8.3 %
Plasticity Index (I_P)	29.7 %
Moisture Content	43.6 %

From the USCS Classification Chart, the samples may be classified as CL (Lean Silty Clay with Low Plasticity).

The sensitivity of the silty clay is in the range of 9–extra sensitive clay according to Canadian Foundation Engineering (CFEM) Manual 4th Edition - Section 3.1.3.4 pg 18

Wet conditions, and seepage were encountered at testpit #1 at a depth of 3.0 m.

3.3 Chemical Laboratory Analytical Testing

Test-pit samples #1, 2 and 3 were sent to an independent laboratory for analytical testing comprising pH, sulphate, resistivity and chloride determination and are presented in Appendix D of this report. Samples were taken at a depth of 3.0 m. A summary is indicated below in Table 3.3.

The concentration of water-soluble sulphate within the selected soil samples tested do not exceed the limit of 0.1 %, above which CSA A.23 recommends the use of sulphate resistant cement. Hence, the use of sulphate resistant concrete is not required. The resistivity, pH and chloride content indicated should be thoroughly review by experts in those disciplines.

Table 3.3 - Analytical Results for Borehole and test pit samples

Test Pit #	pH	Sulfide	Electrical Conductivity (2:1)	Chloride Content µ g/g	Sulfate µg/g	Resistivity (2:1)
TP# 01	*	*	*	*	*	*
TP# 02	*	*	*	*	*	*
TP# 03	*	*	*	*	*	*

*** At time of Report – Lab tests not yet completed**

4.0 DISCUSSION

In general, the subsurface conditions encountered at all test pits consisted of: The topsoil and silty clay deposit of varying moisture content. Soil strata were the same in all the three test-pits. Of all the soil types encountered, only the silt clay will provide a reasonable bearing capacity for the foundation.

5.0 DESIGN AND CONSTRUCTION RECOMMENDATIONS

5.1 General Design Parameters

Soil conditions and recommended parameters for general design are summarized in the following table:

Summarized Soil Conditions				Design Parameters		
Description	Depth (m)	Minimum SPT N-Value	TP'S	Cohesion C_u (Kpa)	Friction Angle, (Degrees	Density (Kg/m^3)
Granular Fill	≤ 0.3	8-11	1 and 2	0	28	1900
Compact Fill	≥ 1.0	8-11	1 and 2	0	31	1950
Silty Clay	≥3.0	11 -29	1 and 2	15	0	1750

* The big boulders lodged in the compacted granular fill prevented from reaching the clay for SPT in TP #3. The bit broke off while attempting to reach clay in TP #3. Vane shear test was conducted on the silty clay instead

5.2 Foundations

Soil conditions above the silty clays deposit at 0.20 m depth were organics / topsoil, etc. and are not suitable for the support of foundations or subbase. Since the grade must be significantly raised on this lot, the following construction methodology is recommended for slab on grade construction.

Sub-Base Preparation for slab on grade foundation (if any).

a. Excavate to the depth of 0.60 (2 ft) m from the surface or until the greyish silty, varved deposit is encountered.
b. The exposed surface must be homogeneous and inspected by this office.
c. Proof rolled the surface before placing one layer of geotextile separator (nonwoven, FOS 50 to 100 µm on top of it to prevent migration of fines.
d. Backfill with engineering fill, granular B, sub- base at a lift of not more than 0.60 m till the desired grade. The granular B material must conform to OPSS SP110F13.
e. The granular B material must be compacted to 95 % Standard Proctor Dry Density (SPDD) at a moisture content that can not deviate by 2% from the optimum moisture content (OMC).
f. The top of the granular B must be capped by 150 mm of granular A compacted to 100 % SPDD.

Conventional spread footings bearing on the native soils may be employed to support the foundation loads at this site. The foundation should be at an elevation of 2.0 m or more from the grade to avoid frost penetration. Based on the test pit data, the ULS and SLS values (Limit States Design) for the various foundation sizes, constructed near the 2.0 m, with soil improvement above the silty clay, are shown in Table 5.1 below.

Table 5.1: Limit States Analysis

Footing	Dimensions (mm)	ULS (Kpa)	SLS (kPa) assumes 25 mm settlement	Founding Depth (m)
Strip footing	500 wide	225	100	2.0
Strip Footing	800 wide	225	80	2.0
Slab on Grade	As required by design loads.	100	75	Above grade

The resistance at the SLS will usually allow for 25 mm of compression of the founding medium. And differential settlement will be expected to be less than 75 % of the SLS value above the ground water table (GWT). This are based on criteria in the Canadian Foundation Engineering Manual (4th Edition). In any event, fluctuation of water table will affect the final settlement.

Or in Working Stress Design (WSD) an allowable bearing capacity of 100 kPa will be recommended for the foundation design. The foundation must bear on top of the in-situ /native silty clay or compacted engineering fill or 300 mm of 19 mm clear stones if water table is encountered. The design bearing capacity will be reduced to 100 ULS and 75 kpa SLS. The Working stress design will be about 50 Kpa.

The recommended Modulus of subgrade reaction will be in the range of 10- 30 Mpa/m, (CFEM Table 7.1). However, ks, 20 Mpa/m is a reasonable assumption.

Alternatively, k_s can be derived from **E_s / B (1 – v^2);** E_s = static stress-strain modulus, (50 Mpa will be assumed), poison ratio, v = 0.3, B is the width of the footing.

We can provide a full subgrade design if water table is encountered within the founding elevation. This may include, depending on the consistency of the encountered founding grade, the use of geogrid- usually TBX 1500, geotextile as indicated and 19 mm clear stones entirely wrapped in geotextile or mud slab (lean concrete). But in many cases, 300 mm of 19 mm should be adequate.

5.3 Grade Supported Slabs

Alternatively, grade supported slabs can be used to support the foundation. However, the slab on grade should bear on adequately compacted granular surface as listed above. A 200 to 300 mm layer of 19 mm clear stone should be placed between the prepared subgrade and the floor slab to serve as a moisture barrier. This wills also minimized any capillary action from the subgrade.

5.4 Bedrock

Bedrock was not encountered during this site investigation.

5.5 Lateral Earth Pressures

Any foundation and walls must be designed to resist lateral earth pressure. For initial design, the lateral earth pressures P in Kpa at any depth h of a permanent retaining wall is given by the following expression:

$P = k (Y h + q) + y_w h$

P = lateral earth pressure in Kpa

K = coefficient of earth pressure (active or passive) Rankine or Coulomb

γ = Gamma

= the unit weight of backfill (kN/m^3) = 20.9 kN/m^3 value may be assumed.

Or net gamma, γ_{net}, where water table is encountered= $\gamma_{net} = \gamma - \gamma_w$

γ_w = unit weight of water (9.81 kN/m^3)

h = depth to point of interest, m

q = surcharge load in Kpa acting adjacent to the wall at the ground surface.

Table 5.0 below is the list of various estimated earth pressure.

Soil Type	Angle Of internal Friction, Degrees, Θ	Soil Unit Weight kN/m^3	Earth Pressure Coefficient, k		
			Active k_a	Passive k_p	At rest k_o
Granular A	37	22	0.25	4.0	0.38
Granular B Type I	34	21	0.28	3.7	0.42
Granular B Type II	37	21	0.24	4.2	0.38

5.6 Frost Protection

In Temiskaming Shores area, the freezing index is approximately **1,802** C degree-days. There is the possibility that up to 2.5 m of frost penetration can occur over the cold winter months in open areas, and 2.0 m for heated structures.

All proposed municipal services, subject to frost penetration and founded on approved soil subgrade, must be supplied with earth cover for frost protection to the anticipated depths of frost penetration noted above.

If sufficient cover (horizontal and vertical) cannot be provided for frost protection, equivalent Expanded Extruded Polystyrene or synthetic insulation (Styrofoam HI-40 or equivalent) may be used in conjunction with available soils cover to provide frost protection. Usually two layer of 50 mm thick SM insulation will suffice. The minimum compressive strength of the insulation should be 275 Kpa and an R-Value of 5 for every 25 mm of thickness. Any exposed insulation should be protected against sunlight and physical damage. For every 25 mm of rigid insulation, its equivalent is 450 mm of soil cover. Note that the insulation for unheated structures should extend below the entire structure.

5.7 Adequate Drainage

It is recommended that adequate subdrain system should be installed throughout the perimeter of the foundation if required. However, drains are not required for the proposed building with no basement. Foundation drains should be a minimum of 100 mm diameter perforated pipe surrounded by a geotextile and embedded in filter sand or 19 mm clear crushed stone. Additionally, the grade adjacent to the buildings/structures must be adequately sloped away, to promote surface drainage away from the building/structures.

5.8 Seismic Design

The lean silty clay soil encountered at this site would be considered as cohesive soils. The average Standard Penetration Resistance of the overburden fill would be between 21 and 73. With respect to seismic design and the 2012 Ontario Building Code (O. Reg. 350/06 under the Building Code Act), Table 4.1.8.4.A, which considers average properties in the upper 30 m, it is recommended that the Site Class 'D' (stiff soil) be considered for design.

6.0 GENERAL CONSTRUCTION INFORMATION

6.1 Excavation Slopes

It is anticipated that excavation for the proposed foundations, underground services, etc. will extend through the fill and into the native silty clay, and clayey silt. The excavation within the overburden may be undertaken with a mechanical shovel.

Excavations may be undertaken as "open-cut", if it complies with the requirement of the current Occupational Health and Safety Act (OSHA). Typically, the fill, compact silt and firm to stiff clayey silt are considered Type 3 soil. The very stiff to hard clayey silt/silt is considered to be Type 2 to Type 1. The weakest material in an excavation site will prevail. Based on the encountered conditions at this site, the lean silty-clay/clayey silt would be Type 3 soil under the *Ontario Occupational Health and Safety Act and Regulations for Construction Projects* (O. Reg. 213/91). Beneath the lean silty clay or approaching the water table, or 3 m depth, the soils would generally be Type 4, i.e. soft or loose, and wet.

6.2 Groundwater, Groundwater Seepage

Groundwater was not observed in any test pits.

Groundwater levels may fluctuate subject to seasonal variations, precipitation, runoff, and for this site, in response to changes in the level of the water level of the lake.

6.3 Hydraulic Conductivity

The estimated hydraulic conductivity," **k**", of the clay soils at this site may be estimated as follows in the table #6 below.

Table 6

Material Type	Estimated Hydraulic Conductivity in cm/s
Silty Sand	10^{-4} to 10^{-6}
Silty Clay/Clayed Silt	$< 10^{-6}$
Granular Fill	Variation based on composition

6.4 Excavation Equipment

It is expected that excavations in the overburden can be carried out using regular earthwork equipment.

6.5 Backfill Material

The excavated topsoil and silty clay materials are not considered suitable for re-use as backfill for the building but can be used passed the spring line for the effluent pipe. Thin layer of the gravel and medium to coarse sand fill may be not considered for reuse as fill material.

6.6 Pipe Bedding and Trenching for Pipes (if applicable)

It is understood that the depth of effluent pipe installation would be in order of 2.5 to 3.0 m below the existing grades. The entirety of the trench will be in the moist to saturated, sensitive silty clay soil zone. The silty clay should provide a reasonable structural support for the trench bottom, the bedding, cover and pipe installation. Sheet piles should be considered, at this depth, to shore-up the trench walls during construction. Bedding and pipe installations are to be in accordance with the relevant OPSDs and /or municipal bedding detail specifications and standards in the tender document. In most cases, either Class C or Class B bedding will be adequate. Typically, granular A materials are used for bedding up to the spring-line.

The side slopes of conventional unsupported trench excavations would be dependent on the local soil conditions. In general, it is recommended side slopes be cut back to a minimum 1H:1V from the base of excavation. For deeper excavation, (3.0 m or more) , the use of either sheet piles or trench box should be seriously considered. If seepage zone or saturated silty clay soils are encountered, the flatter side slopes may be required. Alternatively, a steel trench box or a sheet pile could be used to stabilize the slope during construction.

Where super saturated or weaker soils are encountered, the use of sheet pile shoring, as an alternative, may be required to help stabilize the trench. Weaker soils can be modified by using geogrid such as TBX 1500 and/or geotextile such as Terrafix 300 R or equivalent.

For an area or part thereof subjected to rising ground water table, the buoyancy effects must be of interest and design consideration. In this instance, the submerged soil unit weight can be taken as (20 kN/m^3 – 9.81 kN/m^3) = 10 kN/m^3. A plan of action or techniques must be in place for the potential for uncontrolled water that would be likely trapped in the service trenches. Such technique could involve the use of impervious collars or bentonite with cement /sand mixture.

The degree of stability of a steeply cut excavated trench wall decreases with time and, therefore, construction should be directed at minimizing the length of time service trenches are left open. Ground water seepage from the sides of the trenches and from the base of excavation is to be expected. Conventional dewatering of excavated trenches using collection sumps and pumps may be necessary for trenches extending below the depth of the ground water table (GWT, or into sensitive saturated silty clay.

It is expected that native soils will be used at this site as backfill for economic reasons. The native soils will likely consist of a mix of silty clay and fill. For the most part, the native soils are marginally suitable for use as trench backfill above the spring-line, if they can be moisture-conditioned to achieve specified levels of compaction during placement. Soil used as trench backfill should be free of organics, and be placed in thin lifts with a nominal thickness of 200 mm. It should be uniformly compacted to a minimum of 95 per cent of the SPMDD. Generally, settlement of 1 to 2 percent of the fill thickness is expected for soils compacted to 95 percent of SPMDD.

6.7 Recommended Design for parking Lots

All deleterious surficial materials (i.e., fill, organic soil, topsoil, trees, disturbed soil, etc.) should be stripped from below the area of influence of the pavement structure down to about 0.6 m (2 ft) or until the silty clay fill is encountered. Once the site is stripped of deleterious materials down to approved subgrade, engineered fill not exceeding lifts of 200 mm and compacted to at least 98 % SPMDD may be required to the design grade elevation. Provided the subgrade is properly prepared and is uniform, we recommend the following pavement structure.

Pavement Structure	Access Routes	Parking Area
HL 4 Surface Course	50 mm (2")	50 mm (2")
HL 4 Lower Binder	40 mm (1-1/2")	
Base Granular A	150 mm (6")	150 mm (6")
Subbase Granular B-1	450 mm (18")	450 mm (18")

7.0 SUMMARY

Three (3) test pits, without monitoring wells, were advanced to depths of 3.05 m. The three test pits have the same soil strata. They are topsoil/organic layer and the brown silty clay fill. Water seepage was encountered at 3.0 m depth in testpit #1. The test pit exposes the entire three soil strata for testing and analysis. Pocket penetrometer testing, along with visual and tactile field testing were undertaken. Soil samples were collected and submitted for laboratory analyses of some or all the following parameters: moisture content, Atterberg Limits, unconfined compressive strength, and density.

And finally, geotechnical design parameters and construction information for foundations, and related features are provided herein.

8.0 CLOSURE

This report has been prepared in accordance with generally accepted geotechnical engineering practices for the exclusive use of the City of Temiskaming Shores or its consultants. Information collected herein was obtained while conducting an authorized geotechnical investigation at the property designated as 26 Rorke Avenue, Haileybury – Temiskaming Shores. Note that the data were collected at specific locations and subsurface conditions may vary at other locations. In addition, groundwater table seasonal fluctuation may impact the characteristics of the native soil.

The recommendations and comments presented in this report are based on the subsoil conditions encountered during our site visit. The recommendations/comments are intended for the guidance of our client. Although we consider this report to be representative of the subsurface conditions, there may well be a slight differentiation in soil material property that would become obvious during excavation.

Any use and/ or interpretation of the data presented in this report, any decisions made on it by the third party are the responsibility of the third party. Shaba Testing Services responsibilities are limited to the accurate interpretation of the soil conditions prevailing in the locations

investigated and accept no responsibility for the loss of time and damages, if any, suffered by the third party, because of the decisions or actions based on this report.

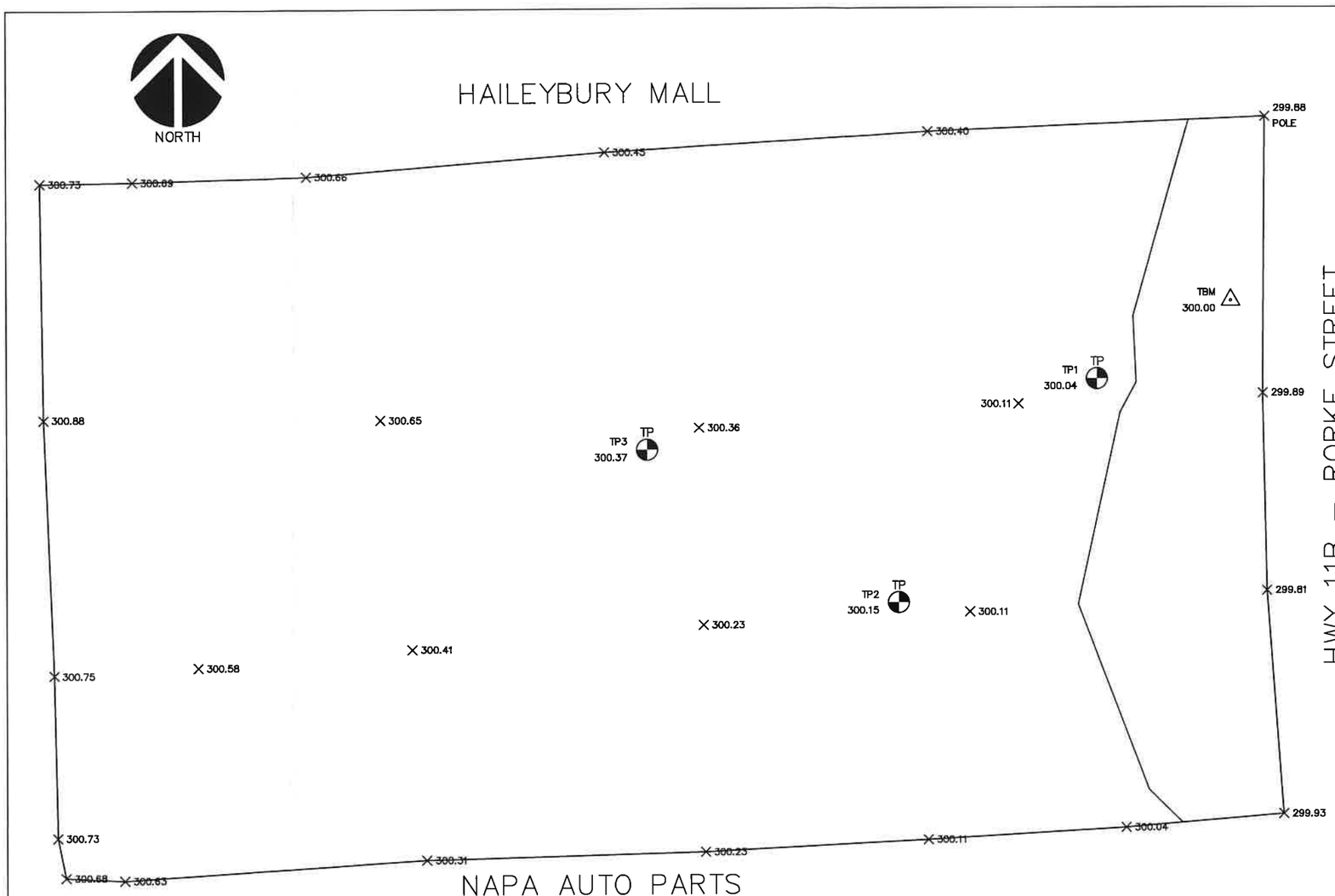
This report and all portions thereof shall be treated as confidential and shall not be used in any manner or for any purpose or be provided to any third party without the express written consent of The City of Temiskaming Shores or its Consultants.

We trust the above report is adequate. Should you require further information, please do not hesitate to contact us.

Respectfully submitted,

Lad Shaba, B.Sc, M.A (Ed) CET, P. Eng.
SHABA TESTING SERVICES LTD
Email: Shabatesting@shabatesting.com
Office: 705.567.4187

Appendix A: Site Drawings



NOTES
THE TOPO SURVEY OF 26 RORKE ST, HAILEYBURY WAS PERFORMED FOR LOCATION OF THE THREE (3) TEST PITS ONLY. THE SURVEY LIMITS WERE THE DITCH ON THE WEST AND SOUTH SIDES OF THE PROPERTY AS IT SITS, THE SITE HAS A GENTLE SLOPE FROM THE WEST TO THE EAST OF 1.52%.

POINTS LEGEND	
×	THIS POINT IS USED TO MARK ORIGINAL GROUND ELEVATION AROUND THE SITE
△	THIS POINT IS USED TO MARK THE LOCATION IN WHICH THE GPS BASE WAS SETUP ON. ALSO THE TBM (TEMPORARY BENCHMARK).
TP	THIS POINT IS USED TO MARK THE THREE TEST PIT LOCATIONS THAT THE SOIL SAMPLES WERE TAKEN FROM ON THE SITE.

STS Ltd.

SHABA TESTING SERVICES LTD.

77 Government Road East,
Kirkland Lake, Ontario P2N 1A4
Phone #: 705-567-4187

PROFESSIONAL SEAL:

CLIENT:

City of
Temiskaming Shores

PROJECT:

Proposed Fire Hall
Site

ISSUED FOR – REVISION:

PROJECT #	STS 2019 - 0179
DATE	Nov 15, 2019
PROJECT LOCATION	26 Rorke, Haileybury
SCALE	Not To Scale
DRAWN BY	G. Church
CHECKED BY	Lad Shaba

DRAWING TITLE:

Test Pit
Locations

SHEET #:	REV. #
S01	0

Appendix B: Test Pit Log and Explanation Form

BOREHOLE LOG EXPLANATION FORM

This explanatory section provides the background to assist in the use of the borehole logs. Each of the headings used on the borehole log is briefly explained.

DEPTH

This column gives the depth of interpreted geologic contacts in metres below ground surface.

STATIGRAPHIC DESCRIPTION

This column gives a description of the soil based on a tactile examination of the samples and/or laboratory test results. Each stratum is described according to the following classification and terminology.

Soil Classification*		Terminology	Proportion
Clay	<0.002 mm		
Silt	0.002 to 0.06 mm	"trace" (e.g. trace sand)	<10%
Sand	0.06 to 2 mm	"some" (e.g. some sand)	10% - 20%
Gravel	2 to 60 mm	adjective (e.g. sandy)	20% - 35%
Cobbles	60 to 200 mm	"and" (e.g. and sand)	35% - 50%
Boulders	>200 mm	noun (e.g. sand)	>50%

*Extension of MIT Classification system unless otherwise noted.

The use of the geologic term "till" implies that both disseminated coarser grained (sand, gravel, cobbles, or boulders) particles and finer grained (silt and clay) particles may occur within the described matrix.

The compactness of cohesionless soils and the consistency of cohesive soils are defined by the following:

COHESIONLESS SOIL		COHESIVE SOIL		
Compactness	Standard Penetration Resistance "N", Blows / 0.3 m	Consistency	Standard Penetration Resistance "N", Blows / 0.3 m	Undrained Shear Strength (cu) (kPa)
Very Loose	0 to 4	Very Soft	0 to 2	0 to 12
Loose	4 to 10	Soft	2 to 4	12 to 25
Compact	10 to 30	Firm	4 to 8	25 to 50
Dense	30 to 50	Stiff	8 to 15	50 to 100
Very Dense	Over 50	Very Stiff	15 to 30	100 to 200
		Hard	Over 30	Over 200

The moisture conditions of cohesionless and cohesive soils are defined as follows:

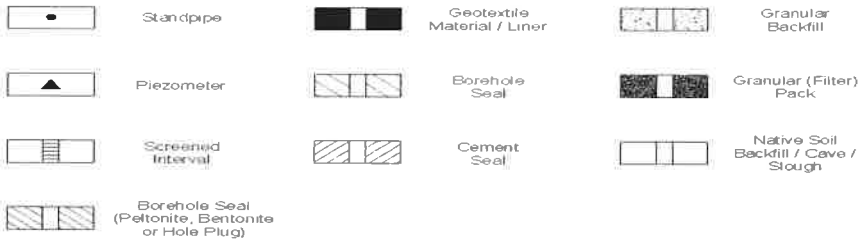
COHESIONLESS SOILS	COHESIVE SOILS		
Dry	DTPL	-	Drier Than Plastic Limit
Moist	APL	-	About Plastic Limit
Wet	WTPL	-	Wetter Than Plastic Limit
Saturated	MWTPL	-	Much Wetter Than Plastic Limit

STRATIGRAPHY

Symbols may be used to pictorially identify the interpreted stratigraphy of the soil and rock strata.

MONITOR DETAILS

This column shows the position and designation of standpipe and/or piezometer ground water monitors installed in the borehole. Also the water level may be shown for the date indicated.



When monitors are placed in separate boreholes, these are shown individually in the "Monitor Details" column. Otherwise, monitors are in the same borehole. For further data regarding seals, screens, etc., the reader is referred to the summary of monitor details table.

SAMPLE

These columns describe the sample type and number, the "N" value, the water content, the percentage recovery, and Rock Quality Designation (RQD) of each sample obtained from the borehole where applicable. The information is recorded at the approximate depth at which the sample was obtained. The legend for sample type is explained below.

SS = Split Spoon
TW = Thin Walled Shelby Tube
AS = Auger Flight Sample
CC = Continuous Core
PH = TW Advanced Hydraulically

GS = Grab Sample
CS = Channel Sample
WS = Wash Sample
RC = Rock Core

$$\% \text{ Recovery} = \frac{\text{Length of Core Recovered Per Run}}{\text{Total Length of Run}} \times 100$$

Where rock drilling was carried out, the term RQD (Rock Quality Designation) is used. The RQD is an indirect measure of the number of fractures and soundness of the rock mass. It is obtained from the rock cores by summing the length of core recovered, counting only those pieces of sound core than are 100 mm or more in length. The RQD value is expressed as a percentage and is the ratio of the summed core lengths to the total length of core run. The classification based on the RQD value is given below.

RQD Classification	RQD (%)
Very poor quality	<25
Poor quality	25 - 50
Fair quality	50 - 75
Good quality	75 - 90
Excellent quality	90 - 100

TEST DATA

The central section of the log provides graphs which are used to plot selected field and laboratory test results at the depth at which they were carried out. The plotting scales are shown at the head of the column.

Dynamic Penetration Resistance – The number of blows required to advance a 51 mm diameter, 60° steel cone fitted to the end of 45 mm OD drill rods, 0.3 m into the subsoil. The cone is driven with a 63.5 kg hammer over a fall of 750 mm.

Standard Penetration Resistance – Standard Penetration Test (SPT) "N" Value – The number of blows required to advance a 51 mm diameter standard split-spoon sampler 300 mm into the subsoil, driven by means of a 63.6 kg hammer falling freely a distance of 750 mm. In cases where the split spoon does not penetrate 300 mm, the number of blows over a distance of actual penetration in millimetres is shown as $\frac{x\text{Blows}}{\text{mm}}$

Water Content – The ratio of the mass of water to the mass of oven-dry solids in the soil expressed as a percentage.

W_P - Plastic Limit of a fine-grained soil expressed as a percentage as determined from the Atterberg Limit Test.

W_L - Liquid Limit of fine-grained soil expressed as a percentage as determined from the Atterberg Limit Test.

REMARKS

The last column describes pertinent drilling details, field observations, and/or provides an indication of other filed or laboratory tests that were performed.

RECORD OF TEST PIT No.1

PROJECT	Fire Hall			ENGINEER	L.S.
CLIENT	City of Temiskaming Shores		BORING METHOD Excavator	LOGGED BY	J.C.
PROJECT NO.	STS 2019-0179	DRILLER Excavation	LOCATION 26 Rorke, Haileybury	COMPILED BY	G.C.
ELEVATION	N/A	COORD. N/A	BORING DATE November 05, 2019	CHECKED BY	L.S.

SAMPLE TYPES

AU Auger
BU Bulk
GS Grab
RC Rock Core
SS Split Spoon
TW Thin Walled Open (Shelby)
WS Wash Sample

ABBREVIATIONS

P.P. Pocket Penetrometer
U.W. Wet Unit Weight
PT Standard Proctor Test
P.L. Point Load Strength Index (f_{50})
RQD Rock Quality Designation
SCR Solid Core Recovery
k Permeability
C Consolidation
DS Direct Shear
GS Grain Size Analysis

Depth (m) / Depth (ft)	DESCRIPTION	STRAT PLOT	NUMBER	TYPE	RECOVERY (%)	SPT "N" VALUES or RQD	WELL / PIEZOMETER INSTALLATION	ELEVATION (m)	DYNAMIC CONE PENETRATION RESISTANCE PLOT (20 40 60 80 100) / UNDRAINED SHEAR STRENGTH (kPa) (20 40 60 80 100)	PLASTIC LIMIT / NATURAL MOISTURE CONTENT / LIQUID LIMIT — WATER CONTENT (%) (20 40 60)	PERMEABILITY (cm/s)	REMARKS & GRAIN SIZE DISTRIBUTION (%) GR SA SI CL
0	Ground Surface											
(0.20 m)	Top Soil (Organic)		1	GS		6		N/A				
(0.67 ft) / (0.61 m)	Layered Clay (Dried)		2	GS					222.6	43.6		0 20 72 8
(2 ft) / (3.048m)	Clay Soft to Firm (Water Seepage)		3	GS								
(10 ft)	End of Test Pit											

RECORD OF TEST PIT No.2

PROJECT	Fire Hall			ENGINEER	L.S.
CLIENT	City of Temiskaming Shores		BORING METHOD Excavator	LOGGED BY	J.C.
PROJECT NO.	STS 2019-0179	DRILLER Excavation	LOCATION 26 Rorke, Haileybury	COMPILED BY	G.C.
ELEVATION	N/A	COORD. N/A	BORING DATE November 05, 2019	CHECKED BY	L.S.

SAMPLE TYPES
AU Auger; BU Bulk; GS Grab; RC Rock Core; SS Split Spoon; TW Thin Walled Open (Shelby); WS Wash Sample

ABBREVIATIONS
P.P. Pocket Penetrometer; U.W. Wet Unit Weight; PT Standard Proctor Test; P.L. Point Load Strength Index (f_{50}); RQD Rock Quality Designation; SCR Solid Core Recovery; k Permeability; C Consolidation; DS Direct Shear; GS Grain Size Analysis

Depth (m) / Depth (ft)	DESCRIPTION	STRAT PLOT	NUMBER	TYPE	RECOVERY (%)	SPT "N" VALUES or RQD	WELL / PIEZOMETER INSTALLATION	ELEVATION (m)	DYNAMIC CONE PENETRATION RESISTANCE PLOT / UNDRAINED SHEAR STRENGTH (kPa)	PLASTIC LIMIT / NATURAL MOISTURE CONTENT / LIQUID LIMIT (WATER CONTENT (%))	PERMEABILITY (cm/s)	REMARKS & GRAIN SIZE DISTRIBUTION (%) GR	SA	SI	CL
0	Ground Surface							N/A							
(0.20 m)	Top Soil (Organic)		1	GS		6									
(0.67 ft) / (0.61 m)	Layered Clay (Dried)		2	GS											
(2 ft) / (3.048m)	Clay Soft to Firm		3	GS					219.3	11.9 / 40.5 / 42.2		0	20	71	9
(10 ft)	End of Test Pit														

RECORD OF TEST PIT No. 3

PAGE: 3 OF 3

PROJECT	Fire Hall			ENGINEER	L.S.
CLIENT	City of Temiskaming Shores		BORING METHOD Excavator	LOGGED BY	J.C.
PROJECT NO.	STS 2019-0179	DRILLER Excavation	LOCATION 26 Rorke, Haileybury	COMPILED BY	G.C.
ELEVATION	N/A	COORD. N/A	BORING DATE November 05, 2019	CHECKED BY	L.S.

SAMPLE TYPES
AU Auger
BU Bulk
GS Grab
RC Rock Core
SS Split Spoon
TW Thin Walled Open (Shelby)
WS Wash Sample

ABBREVIATIONS
P.P. Pocket Penetrometer
U.W. Wet Unit Weight
PT Standard Proctor Test
P.L. Point Load Strength Index (f_{50})
RQD Rock Quality Designation
SCR Solid Core Recovery
k Permeability
C Consolidation
DS Direct Shear
GS Grain Size Analysis

Depth (m) / Depth (ft)	DESCRIPTION	STRAT PLOT	NUMBER	TYPE	RECOVERY (%)	SPT "N" VALUES or RQD	WELL / PIEZOMETER INSTALLATION	ELEVATION (m)	DYNAMIC CONE PENETRATION RESISTANCE PLOT (20 40 60 80 100) / UNDRAINED SHEAR STRENGTH (kPa) ▫ UNCONFINED + FIELD VANE ▪ POCKET PENETR. × LAB VANE (20 40 60 80 100)	PLASTIC LIMIT / NATURAL MOISTURE CONTENT / LIQUID LIMIT (W_P W W_L) WATER CONTENT (%) (20 40 60)	PERMEABILITY (cm/s)	REMARKS & GRAIN SIZE DISTRIBUTION (%) GR SA SI CL
0	Ground Surface							N/A				
(0.20 m)	Top Soil (Organic)		1	GS		6						
(0.67 ft) / (0.61 m)	Layered Clay (Dried)		2	GS								
(2 ft) / (3.048m)	Clay Soft to Firm		3	GS					× 221.9	8.4 — 34 — 39.4		0 15 76 9
(10 ft)	End of Test Pit											

Appendix C: Lab Test Summary

SHABA TESTING SERVICES LTD.
Engineering Services, Materials Testing, Quality Control and Inspections

STS Ltd.

Laboratory Tests - Summary Sheet

Project: Proposed Fire Hall **Project Number:** STS 2019-0179 **Location:** 26 Rorke, Haileybury **Sample Date:** 6-Nov-19

Testpit No.	Sample No.	Depth (ft)	Grain Size Analysis				NMC* (%)	Atterberg Limits			Proctor Density Kg/m^3	USCS	Vane Shear (kPa)	Remarks
			Gravel Size (%)	Sand Size (%)	Silt Size (%)	Clay Size (%)		LL (%)	PL (%)	IP (%)				
1	1	10'	0%	20%	72%	8%	43.6	38.0	8.3	29.7	1256	CL	222.6	Lean silty clay
2	1	10'	0%	20%	71%	9%	42.2	40.5	11.9	28.6	1199	CL	219.3	Lean silty clay
3	1	10'	0%	15%	76%	9%	39.4	34.0	8.4	25.6	1230	CL	221.9	Lean silty clay

* Natural Moisture Content

77 Government Rd. E., Kirkland Lake, Ontario, Canada P2N 1A4
Phone:705 567 4187 Fax:705 567 4171
shabatesting@shabatesting.com www.shabatesting.com

Appendix D: Chemical Laboratory Analysis

Waiting for Lab Analysis to be completed.

Samples Received by Lab on November 13, 2019

Appendix E: Photo Gallery

The site with low vegetation cover

Testpit #2- Soil strata the same as others.

Silty Clay sample – Test #3

Swale at the rear of the lot.

RFP: RS-RFP-002-2021

Addendum No.: 01 – Clarifications to RFP Documents

Date Issued: March 18, 2021

All proponents shall acknowledge receipt and acceptance of this Addendum No. 01 by signing within the space provided and submitting the signed Addendum with the final submission. Submissions without this addendum may be considered incomplete.

Clarifications:

1. **Proposal Validity Timeline**

   The City of Temiskaming Shores, recognizing the volatility of the building material market, will accept submissions with a 30-day pricing guarantee. As such, the following wording within section "4.0 Submission":

   ➢ The proposals shall be valid for 60 (sixty) days from submission date.

   Shall be replaced with the following:

   ➢ *The proposals shall be valid for 30 (thirty) days from submission date.*

2. **Sub-Contractors (wording within Section 24.0)**

   Understanding that changes to sub-contractors may be necessary between proposal submission and construction, the City of Temiskaming Shores is replacing section "24.0 Sub-Contractors" with the following wording:

   24.0 Sub-Contractors

   A list of Sub-Contractors that the Contractor proposes to employ in completing the required work outlined in this Proposal shall be included in the documents submitted.

   The Contractor shall not show "Own Forces" in their list of proposed Subcontractors, except where the Bidder's intent is to employ the Bidder's own qualified on-staff personnel to perform such work.

3. Bid Deposit

Section 26.0 shall be added to RS-RFP-002-2021 with the following wording:

26.0 Bid Deposit

Each Bidder shall include a Bid Deposit in the form of a Bid Bond, Certified Cheque, Money Order or Line of Credit made payable to the City of Temiskaming Shores and drawn on a Canadian Chartered Bank, Trust Company or Credit Union in the amount of: Ten Percent (10%) Of Total Bid Excluding Taxes

i. *Bidders shall scan a copy of the Paper bid bond, certified cheque, money order or letter of credit (pdf format), and provide with the bid submission, in accordance with Section 4.0. If an alternative bid bond is used, Bidders should request either an Ink seal from their Surety or trace over the embossed seal prior to scanning to allow for the seal to be visible to the City. The Bid Deposit must be irrevocable and open for Bid acceptance for at least thirty (30) days from the date of Bid closing.*

ii. *Upon request by the City, the Successful Proponent shall provide the original paper bid bond, certified cheque, money order or letter of credit. The bid deposit shall be forfeited should the Successful Bidder fail to return to the Corporation, within fourteen (14) calendar days of receipt of the acceptance of the award, the General Liability Insurance, and, WSIB certificate of clearance.*

iii. *The City does not pay interest on bid deposits.*

4. Building Permit

Q - We suggest to shorten the overall project timeline, that the municipality confirm that on acceptance of a preliminary floor plan layout and preliminary site plan layout, a “Foundation Permit” will be issued well ahead of the full construction building permit, thus “Fast Tracking” the build so we can start the foundation as soon as possible. That will help avoid the risk of winter heat and hoarding costs, and again reduce the overall cost of the project.

A - The City of Temiskaming Shores will not be issuing “Foundation Permit” ahead of issuing the full construction building permit for this project.

Section 27.0 shall be added with the following wording:

Section 27.0 Building Permit

The successful bidder will be required to complete a modified building permit process with the City. The application fee and security deposits normally

associated with the building permit will be waived for this project, but the successful bidder will be responsible to complete all other aspects and requirements of the permit and its process.

5. Site Plan Control

Section 28.0 shall be added to RS-RFP-002-2021 with the following wording:

28.0 Site Plan Control Agreement

The successful bidder will be required to complete a modified site plan control process with the City. The submission and approval of site plans and drawings, as set out in the Planning Act, the City's Site Plan Control By-law, and the City's Site Plan Control application form will be required. The application fee and security deposits normally associated with Site Plan Control will be waived for this project, but the successful bidder will be responsible for the provision of all plans and any revisions that may be necessary. A survey of the property, completed at the City's expense, will be provided to the successful proponent. Appendix 4 provides the lot sizing, approximate elevation and site grading for use in proposal submission.

6. RFP Submission Deadline

To allow for ample time for bidders to submit proposals, the City will be extending the deadline for submission from **2:00 pm local time on Thursday April 8, 2021** to **2:00 pm local time on Thursday April 15, 2021.**

Wording within section "4.0 Submission" shall be updated to reflect this change.

Section "9.0 RFP Schedule" shall be replaced with the following:

The RFP process will be governed according to the following schedule. Although every attempt will be made to meet all dates, the City reserves the right to modify any or all dates at its sole discretion:

- *Release of RFP: February 17, 2021*
- *RFP Proposal Submission deadline: April 15, 2021*
- *Final Selection and Notification (Estimated): May 5, 2021*

7. **Appendix 4**

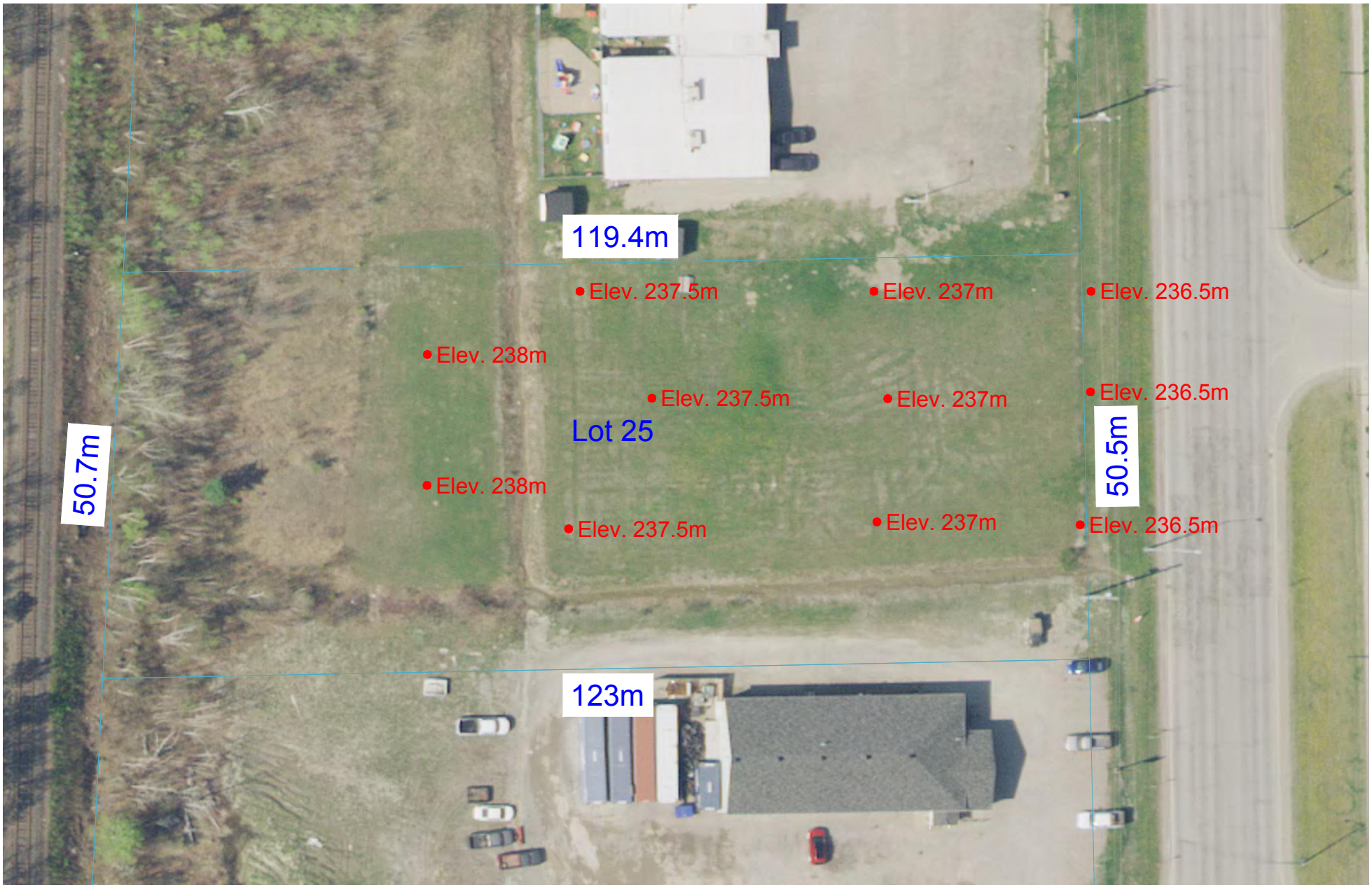
   A layout of the proposed lot with approximate elevation, grading and sizing shall be added to RS-RFP-002-2021 as Appendix 4 and included at the end of this addendum.

End of Addendum 01

Declaration: We hereby acknowledge receipt of the above referenced Addendum and it shall be incorporated into our Request for Proposal submission.
Company:
Signature of Authorized Representative:
Name/Title [print]:

Appendix 4

Lot 25 6130.5m²
Approximate Elevation: 237m
Approximate Grade Change for Entire Property (excluding ditch's): 1m



RFP: RS-RFP-002-2021

Addendum No.: 02 - Questions Regarding RFP

Date Issued: March 29, 2021

All proponents shall acknowledge receipt and acceptance of this Addendum No. 02 by signing within the space provided and submitting the signed Addendum with the final submission. Submissions without this addendum may be considered incomplete.

Clarifications:

1. **Question -**

   With reference to the proposed floor plan shown in Appendix 1 of the RFP, can you elaborate on what the white rectangle in front of the rear overhead door entrance represents? In addition, can you identify all other furniture and fixtures that are shown on the plan, for example the items shown along the rear wall of the apparatus room.

   Answer - The white triangle in-front of the rear overhead door is the current forestry unit used by the Temiskaming Shores Fire Department. The two rectangle fixtures on the rear wall are proposed shelving units and the square fixture on the rear wall next to the overhead door is a proposed hose reel.

   A high-resolution layout has been added on page 3 of this addendum which provides greater clarity for those using it as a guide for their proposals.

2. **Question -**

   Other than what is currently shown on the proposed floor plan provided in Appendix 1, can you provide a list of other equipment and/or other vehicles that is anticipated to be stored within the main apparatus room, complete with dimensions?

   Answer - There are four (4) vehicles which will be stored within the main apparatus room (dimensions provided in feet and inches):

   - Truck 1 Pumper - Length 28’, Width 8’ 10”, Height 9’ 2”
   - Truck 2 Pumper/Tanker - Length 33’ 11”, Width 10’ 2”, Height 10’ 4”
   - Truck 3 Rescue - Length 31’ 4”, Width 9’ 8”, Height 10’ 5”
   - Forestry Trailer - Length 14’, Width 6’ 8”, Height 5’ 6”

There are no other noteworthy pieces of equipment to be stored in the main apparatus room.

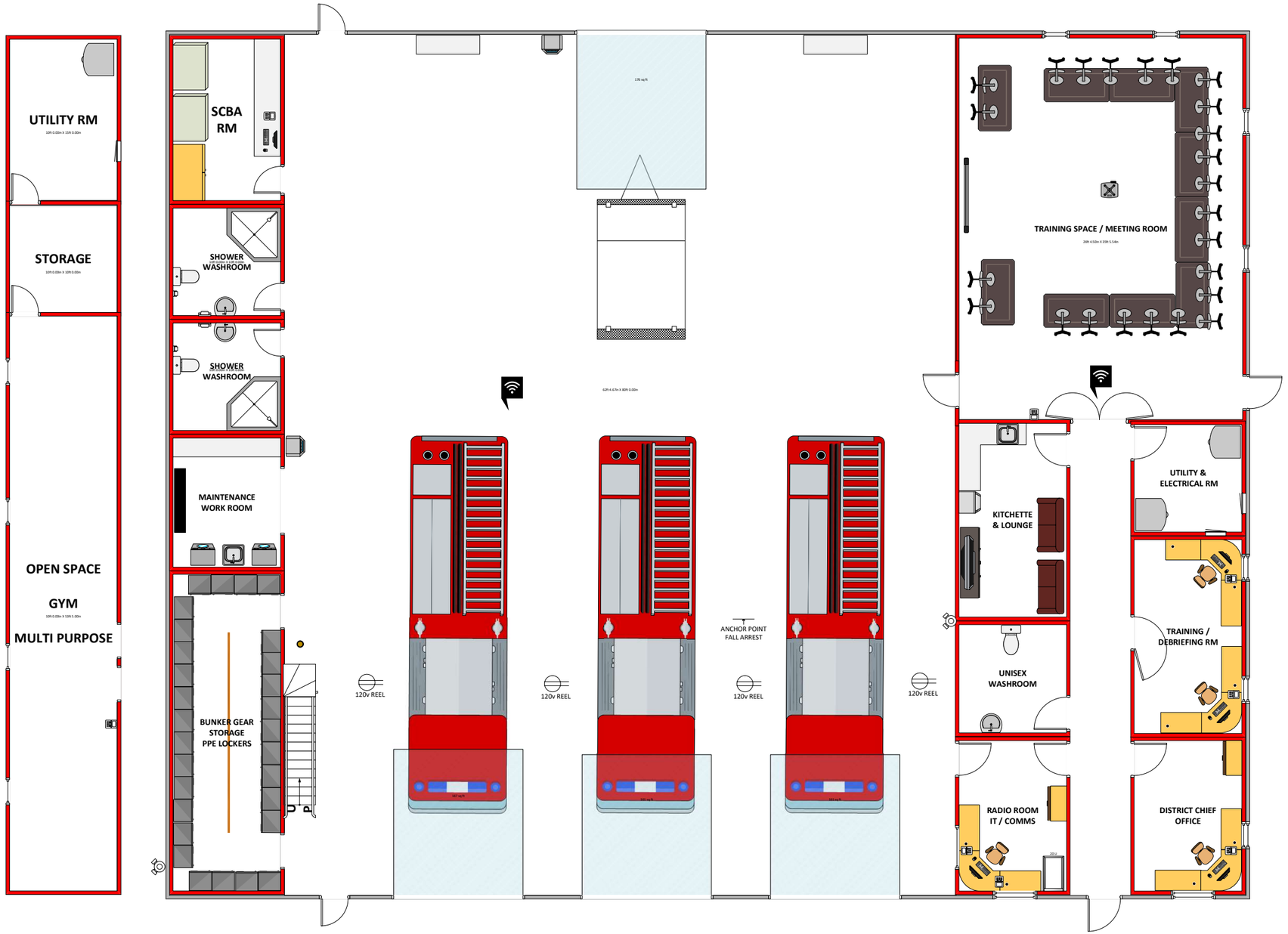
3. **Question -**

   Will the Town provide the successful proponent with a legal survey of the property showing the property line?

   Answer - Yes, the City of Temiskaming Shores will provide the successful proponent with a legal survey of the property showing the property line.

4. **Storm Water Management**

   The City of Temiskaming Shores has received various questions regarding the storm water management plan requirements. The successful proponent will be required to provide a proper plan which takes into account the size of the building being proposed. The property is bisected by a north-south ditch of approximately 1 metre in depth which flows from north to south. Near the southern edge of the property line the ditch turns to flow west to east along the southern edge of the property line. At Rorke Ave. the water enters a 300mm ditch inlet which runs for approximately 3 metres to a catch basin with a 500mm outlet.


UTILITY RM
10ft 0.00in X 15ft 0.00in
STORAGE
10ft 0.00in X 10ft 0.00in
OPEN SPACE
GYM
10ft 0.00in X 13ft 5.00in
MULTI PURPOSE
SCBA RM
SHOWER
WASHROOM
SHOWER
WASHROOM
MAINTENANCE WORK ROOM
BUNKER GEAR STORAGE PPE LOCKERS
UP
175 sq ft
6.2ft 4.67in X 80ft 0.00in
120v REEL
120v REEL
ANCHOR POINT FALL ARREST
120v REEL
120v REEL
TRAINING SPACE / MEETING ROOM
28ft 4.50in X 31ft 5.44in
KITCHETTE & LOUNGE
UNISEX WASHROOM
RADIO ROOM IT / COMMS
UTILITY & ELECTRICAL RM
TRAINING / DEBRIEFING RM
DISTRICT CHIEF OFFICE

End of Addendum 02

Declaration: We hereby acknowledge receipt of the above referenced Addendum and it shall be incorporated into our Request for Proposal submission.
Company:
Signature of Authorized Representative:
Name/Title [print]: