The St. Lawrence Seaway Management Corporation

Corporation de Gestion de la Voie Maritime du Saint-Laurent

A-1

SPECIFICATIONS AND DRAWINGS
FOR
SUPPLY AND INSTALLATION OF
GLENDALE YARD TENSIONED FABRIC STRUCTURE

(2018/19)

WELLAND CANAL, SEAWAY, NIAGARA REGION

Project N7/950-19/210
(Purchase Req. # 10174275)

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SECTION 1 GENERAL

A1-1.01 SCOPE

1.01.1 This contract consists of the design, supply and installation of a new tensioned fabric structure to be located in the Glendale Maintenance Yard of the Welland Canal in St. Catharines, Ontario.

1.01.2 The work shall be according to the specifications and drawings.

1.01.3 All work shall be in accordance with the latest editions of the CSA and OPS Standards unless otherwise stated.

A1-1.02 PRECEDENCE OF DOCUMENTS

1.02.1 The General Conditions and A-2 Specifications (General) documents are part of this Contract and are enclosed with the contractual documents deposited on the Owner's FTP site.

1.02.2 In case of an apparent conflict with respect to a particular item between the requirements of these Specifications and A-2 Specifications, the requirements of Specifications of this Purchase Order shall govern.

1.02.3 In case of an apparent conflict with respect to a particular item between the requirements of these Specifications and the drawings, the Specifications govern. For Drawings, the Drawings drawn with the largest scale govern; and for figured dimensions and scaled dimensions, the figured dimensions govern.

A1-1.03 DESCRIPTION OF WORK

1.03.1 The Contractor shall control all aspects of work to be carried out under this Contract in order to meet Owner's requirements and communicate the details to the staff that is mobilized for this purpose.

1.03.2 The Contractor shall meet the requirements of Section 3, Marine Security (Access) including, but not limited to, the control of access to the Owner's facilities and any associated conditions during the execution of the work under this Contract.

1.03.3 The following work is included in this contract and shall be executed in compliance with the schedule presented in Subsection A1-1.07, Contract Schedule, of these Specifications:

.1 The supply and updating of a detailed contract schedule;

.2 All surveying required for proper layout and installation;

.3 Building pad preparation and grading;

.4 Supply and installation of precast concrete foundation blocks;

.5 Design, supply and installation of a 40ft. x 40ft. tensioned fabric structure;

.6 Supply and installation of an asphaltic concrete building floor;

.7 Supply and installation of all building accessories as noted on the design drawings and specifications;

.8 Removal and disposal of all excavated materials off Owner's property;

.9 Site restoration and final grading with new granular.

.10 Supplying shop drawings and "As-built" drawings

A1-1.04 WORK, MATERIALS AND EQUIPMENT BY THE OWNER

1.04.1 The Owner will carry out the following work:

.1 Identifying all Owner-owned electrical cables and ducts in the work area. Note: the Contractor shall be responsible for all other public utility locates.

A1-1.05 MATERIALS SUPPLIED BY THE CONTRACTOR

1.05.1 The Contractor shall supply all other materials, consumables, professional services and other services which are required to carry out all work needed to complete this Contract, including all tools and equipment.

1.05.2 The Contractor shall supply all the special tools to build and/or use with all systems and equipment required to perform the work under this Contract.

A1-1.06 TENDER REQUIREMENTS

1.06.1 The Owner will hold a **MANDATORY** Pre-Quotation Meeting on the date given on the Pre-Quotation Notice included with the tender documents, prior to the tender closing date at the Owner's office at 508 Glendale Avenue, St. Catharines, Ontario. The **MANDATORY** Pre-Quotation Meeting will conclude with a **MANDATORY** visit to the worksite to enable Tenderers to familiarize themselves with the site conditions. The Owner will disqualify Tenderers who have not attended both the Pre-Quotation Meeting and the subsequent site visit.

A1-1.07 CONTRACT SCHEDULE

1.07.1 The Contractor shall commence all preparatory work, such as ordering and fabricating of materials, within seven (7) days after receiving written notification of award of Contract by the Owner.

1.07.2 The Contractor shall schedule the operations under this Contract according to the following requirements and milestone dates:

.1 The Contractor shall schedule the operations so that all the work under this Contract is completed in all respects by December 14, 2018.

1.07.3 The Contractor shall inform himself of the applicable safety and security rules which may have an impact on the planning and scheduling of the Contractor's work. The Owner will not allow any additional time to the Contractor due to the imposition of safety and security rules or restrictions.

A1-1.08 CONCURRENT OPERATIONS AND CONTRACTS

1.08.1 The Contractor shall note that the Owner's forces may be scheduled to carry out maintenance work in the general vicinity of this contract.

1.08.2 The Contractor shall expect and allow for occasional disruptions to the work during the construction operations caused by the Owner's forces.

1.08.3 The Contractor for this work shall not interfere with the operations of Owner's maintenance forces.

1.08.4 Access roads shall not be blocked and shall remain open at all times, except as noted elsewhere and as directed by the Owner's Representative.

1.08.5 The Contractor shall be fully responsible of all damage caused to a third party directly or indirectly arising from the work of the contract and shall hold harmless and compensate the Owner of all claims which may arise.

1.08.6 The Contractor shall take into account, in their bid price, the occasional disturbances that might result from the construction work executed by the Owner's employees or by other Contractors.

.1 Any claim by the Contractor for changes to work sequences or the working methods caused by these occasional disturbances will be disallowed.

.2 The Owner commits to act diligently in order to reduce the interruptions as much as possible and to notify the Contractor without delay of disturbances that may impact its work.

A1-1.09 CONTRACT LIMITS

1.09.1 The Contractor shall take note that the stated limits of the Contract are nominal, however, ancillary works shall be carried out according to the Specifications and Drawings and as directed by the Engineer.

A1-1.10 FIELD TESTS

1.10.1 The Contractor shall carry out the following field tests at no additional cost to the Owner:

.1 Granular Base determined by Nuclear Density Gauge:

.1 The granular base on which hot mix is placed shall be firm and stable, and shaped to proper contour and grade, compacted to 98% Standard Proctor Maximum Dry Density.

.2 Granular compaction tests will be submitted to the St. Lawrence Seaway Management Corporation (SLSMC) for approval prior to the installation of asphalt.

.2 Hot Mix Asphalt Compaction Determined by Nuclear Density Gauge:

.1 Percent compaction of HL-8(HS) and HL-3 will be determined by comparing the nuclear density in situ Bulk Relative Density (BRD) according to LS-262 to the average plant produced hot mix asphalt Maximum Relative Density (MRD) according to LS-264.

.2 Compaction testing shall be conducted randomly at a minimum frequency of every 150m^2 area.

.3 Pavement Compaction Requirements Based on Maximum Relative Density (MRD):

.1 Acceptable: 92.0% to 96.5%

.2 Borderline: 96.6% to 97.5%

.3 Rejectable: <92% and >97.5%

.4 *Acceptance*: If the average percent compaction for the completed course of hot mix asphalt pavement does not meet the acceptable minimum percent compaction, the Contractor shall take immediate corrective action. If the average percent compaction is rejectable, then the hot mix asphalt pavement shall be removed and replaced at the expense of the Contractor.

.3 After compaction the asphalt surface shall not contain more than 6% voids.

.4 Inspection and compaction tests of base granular and asphalt as well as finished thickness and composition tests of asphalt shall be carried out by an independent testing laboratory. Testing shall be coordinated and paid for by the Contractor.

A1-1.11 GUARANTEE

1.11.1 The Contractor shall guarantee all material and workmanship for a period of two (2) years from the date of Preliminary Acceptance by the SLSMC.

A1-1.12 ADDRESS OF OWNER REPRESENTATIVE

1.12.1 Unless otherwise specified, correspondence, reports, design briefs, drawings and copies of purchase orders, etc. shall be addressed to:

Sam Larosa, P. Eng, Senior Civil Engineer
The St. Lawrence Seaway Management Corporation
508 Glendale Avenue
P.O. Box 370
St. Catharines, Ontario
L2R 6V8
Telephone: (905) 641-1932, ext. 5424
Cell: (289) 213-0549

Email: slarosa@seaway.ca

A1-1.13 CONTRACT ADMINISTRATION

1.13.1 The project and contract will be under the administration of the Vice-President, Operations at the address shown in the above Subsection.

A1-1.14 MEASUREMENT FOR PAYMENT

1.14.1 All payment items are described under each section specifying the work.

1.14.2 The prices tendered for all pay items in the contract shall include all labour, equipment and materials required for the satisfactory completion of the work according to the specifications and drawings.

1.14.3 Item 1 - Mobilization and Demobilization

.1 Mobilization and demobilization will be measured for payment on a lump sum basis.

.2 The price tendered for this item shall include the following:

- .1 Move in and move out;
- .2 All safety and traffic control measures;
- .3 Protection of all existing facilities and utilities in the work area;
- .4 Maintenance, cleanup and restoration of the worksite;
- .5 The maintenance of haul routes and access roads.

.3 The lump sum tendered for this item will be broken down for payment purposes as follows:

- .1 Mobilization - 60% upon full mobilization;
- .2 Demobilization - 40% upon full demobilization.

1.14.4 Item 2 – Tensioned Fabric Structure

.1 The Tensioned Fabric Structure shall be measured for payment on a lump sum basis.

.2 The price tendered for this item shall include the following:

- .1 Design and preparation of shop drawings;
- .2 Supply and erection of the fabric structure;
- .3 Supply and installation of architectural accessories;
- .4 Supply and installation of mechanical accessories;
- .5 Supply of stamped “As-built” drawings.

1.14.5 Item 3 – Civil Work

.1 The Civil Work at the Glendale Yard shall be measured for payment on a lump sum basis.

.2 The price tendered for this item shall include the following:

- .1 Site preparation and building pad construction including supply, placement and compaction of Granular “A”;
- .2 Supply and installation of precast concrete lock block to support the tensioned fabric structure;
- .3 Supply and installation of two (2) concrete filled bollards;
- .4 Supply and installation of asphaltic concrete;
- .5 Final site grading.

1.14.6 The prices tendered for the above items shall include all work specified in Sections 1 to 6, except work measured for payment elsewhere.

SECTION 2 WORKSITE ORGANISATION

A1-2.01 SITE CONDITIONS AND REQUIREMENTS

2.01.1 Prior to submitting tenders, bidders shall thoroughly examine the worksite and access routes.

2.01.2 Tenderers shall take note of all unusual features which may affect the safe and successful conclusion of the work involved.

2.01.3 Tenderers shall investigate all aspects of the work in order to inform themselves of the following:

.1 Existing site conditions;

.2 The character and extent of the work to be done;

.3 The difficulties in gaining access to the work areas;

.4 The difficulties in carrying out the work;

.5 The devices and equipment required for the work;

.6 The utilities, services and equipment such as closed circuit television cameras, traffic lights, lamp posts and electrical equipment etc.

.7 Specific information on the site (could be Confined Space, presence of special hazards, etc.);

.8 Limited laydown area;

.9 Contractual and logistic requirements.

2.01.4 The Contractor shall confirm all relevant dimensions by field inspection and field measurement with the Owner's Representative before proceeding with the work.

2.01.5 Service and vehicle parking areas shall be restricted to an area designated by the Engineer.

2.01.6 The Contractor shall use all means necessary, such as dust collectors and spraying of water, to inhibit and control dust at the worksite at all times.

2.01.7 No fires will be allowed for burning of debris, materials or refuse.

2.01.8 Precautions:

.1 The Contractor shall take precautions not to damage the asphalt, concrete, or other facilities around the work area. Asphalt damaged by fuel spills or other means shall be removed and repaired with HL-3.

.2 The Contractor shall provide protection for any existing equipment. Any damage to the Owner equipment shall be repaired by the Contractor at the Contractor's expense.

.3 The Contractor shall take care not to impose heavy loads on catch basin frames and covers. The Contractor shall replace all such frames and covers damaged by the operations.

2.01.9 The Contractor shall note the provisions of Section A2-4, Permits, Regulations and By-Laws, particularly but not limited to the requirements of the Federal Fisheries Act, which is administered by the Ontario Ministry of Natural Resources. The Act requires that in some situations, mitigating measures must be taken by the Contractor. The Contractor shall be responsible for compliance with the Act at no additional cost to the Owner.

A1-2.02 SAFETY & PRECAUTIONS

2.02.1 In addition to the requirements of A-2 Specifications, Section A2-7, Safety Requirements, the following shall apply:

.1 The Contractor shall furnish all protection and take all steps necessary to ensure the safety of the public, Owner and workers by fences, barricades and traffic control. The Contractor's workforce by fences, barricades and traffic control. The Contractor shall erect security fences to prevent public access to the worksite.

.1 The Contractor shall ensure that the equipment conforms to the provincial and federal safety standards.

.2 The Contractor shall take all the necessary precautions to ensure that no damage is done to public or private property.

.1 The Contractor shall be solely responsible for any claims resulting from the materials being applied (e.g. paint, paint spray or oil, etc.) and inadvertently deposited on adjacent property, passing vehicles or pedestrians.

.3 Vehicular, pedestrian and cyclist traffic shall be protected and kept separately at all times from materials and equipment.

.4 The Contractor shall supply all lighting, supervision, barricades and any other equipment required for the safety of the workers to the satisfaction of the Owner's Representative, at no additional cost to the Owner.

.5 The Contractor shall comply with the requirements of the applicable provincial regulations and to the *Canada Labour Code (Safety)*. The Contractor shall ensure that their processes and equipment conform to the provincial and federal safety standards and SLSMC polices & procedures, where applicable.

.6 The Contractor shall obtain all licences and permits necessary for the Contract.

A1-2.03 ACCIDENT PREVENTION AND WORKSITE SAFETY

2.03.1 In addition to the requirements of A-2 Specifications (General), Subsection A2-7, Safety Requirements, the following shall apply:

.1 The Contractor shall in particular conform to the requirements of the document entitled *Safety Requirements for Contractors* available on the Owner's Internet site at the following address:

http://www.greatlakes-seaway.com/en/pdf/SafetyForContractors.pdf

Contractors shall note that there is a document for each of the Owner's Regions and they shall conform to the document which applies to the Region where the work included in this Contract is executed.

.1 The Contractor shall note that the term "employee" used in the *Safety Requirements for Contractors* document shall apply to any person, employee or not of the SLSMC, who works in the territories and structures of the Owner.

.2 The Contractor shall address safety requirements during the periodic work site meetings, in order to ensure compliance with federal, provincial and municipal regulations.

.3 Before beginning the work, the Contractor shall inform himself of the accident prevention practices applied on the Owner's property, and shall consider them in the development of the Contractor's safety program for the work.

.4 By accepting the Contract, the Contractor shall be deemed as the "Constructor" in the Province of Ontario under the Occupational Health & Safety Act, and other related regulations of the province where the work will be performed, for the designated "Workplace(s)"and act as the work supervisor.

.5 Before beginning the work, Contractor shall ensure that the workers have received the required training and information to safely execute the work and that all the tools and protection equipment are available and conform to the standards, laws and regulations applicable.

2.03.2 The Contractor shall provide the Owner with a copy of all the documents presented to the MOL or CSST, as well as:

.1 The notice to the Ontario Ministry of Labour, WSIB (or the CNESST) before commencing any site work, including, but not limited to, the *Notice(s) of project* and the *Clearance Certificate* from the WSIB.

.2 Report the number and description of any accidents involving loss of time, or safety incidents (including the incident report) that have occurred during the previous week to their employees and to those of any subcontractor on this contract.

2.03.3 Site Specific Safety Program:

.1 Given the fact that the work site presents a high risk for the health and safety of the workers, the Contractor shall prepare the Contractor's Site-Specific Safety Program for the construction site. This program shall be according to the applicable regulations such as the Canada Labour Code and the Code de sécurité pour les travaux de construction (S-2.1, r.6) of the Government of Quebec or the Occupational Health & Safety Act and Regulations of the Province of Ontario.

.1 The purpose of the *Site-Specific Safety Program* is to prevent and eliminate at the source the risks to which are exposed the health, safety and physical integrity of the workers.

.2 The Contractor shall perform the work according to the accepted *Site-Specific Health and Safety Program*.

.3 The Contractor shall become acquainted with the applicable safety regulations that may impact the Contractor’s work planning and schedule.

.4 In order to seek to eliminate crane accidents, hoisting equipment such as cranes shall be sized such that the maximum load lifted shall normally not exceed 75% of the crane's rated capacity. In cases when the 75% limit must be exceeded within the capacity of the load chart of the Crane, the Contractor's Owner’s Representative shall review the layout and subsequently submit details for the information of the Owner. The Contractor shall take extra care when hoisting during heavy winds.

.5 The Contractor will be solely responsible for any delay in the course of the work as well as for any penalty or expense incurred or imposed in case of non-compliance with the applicable health and safety standards.

A1-2.04 ZERO-ENERGY STATE

2.04.1 The Contractor shall consider the energy sources (hydraulic, electric, potential, residual, etc.) that need to be released or controlled on the mechanical and electrical equipment, which could be hazardous for people and for workplaces.

2.04.2 The Contractor shall set all equipment to a zero-energy state (by lockout, blocking, opening circuits, etc.) where the equipment could pose danger to the safety of the individuals during course of the work.

2.04.3 The Contractor shall ensure that the proof of zero-energy is achieved at the end of the lockout procedure.

2.04.4 Where the Contractor is working on or in the vicinity of any operable Owner equipment, the Contractor shall provide and install lock-out devices, locks and tags on the disconnect switches, in order to prevent accidental operation of the equipment.

.1 Tags shall indicate the name of the individual whose lock is installed, the Contractor's name, and the reason for the lock (e.g. "Contractor working near valve").

2.04.5 The Contractor shall check with the Owner’s Representative regarding the appropriate timing for installation and removal of lockout devices.

2.04.6 The Contractor shall sign and provide the Owner a Lockout form before starting the work.

SECTION 2 WORKSITE ORGANIZATION

A1-2.05 HOUSEKEEPING

2.05.1 The Contractor shall comply with any corrective request from the Owner's Representative regarding the housekeeping, in order to keep the work areas safe for every person inside.

2.05.2 The Contractor shall implement the corrective measures diligently and to the satisfaction of the Owner's Representative.

A1-2.06 TRAFFIC CONTROL

2.06.1 When materials are being hauled to and from the site, the Contractor shall provide traffic signs and flag persons as required by the Provincial Regulations.

2.06.2 The Contractor shall place proper barricades to protect the public and the workers.

2.06.3 The Contractor's traffic control and signing measures shall comply with the Ontario Traffic Manual Book 7. The Contractor shall submit their traffic control plan to SLSMC for approval prior to commencement of construction work.

A1-2.07 HAUL ROUTES AND ACCESS ROADS

2.07.1 The Contractor shall construct to the satisfaction of the Engineer, all additional access roads at the work areas and disposal areas, as well as any other access roads, which may be required during the course of this contract.

2.07.2 The following requirements shall apply for the haul routes and access roads:

.1 Cleaning and Maintenance Requirements:

.1 The Contractor shall keep the haul routes and access roads clean of all debris at all times;

.2 During the course of the contract, the Contractor shall maintain the haul routes and access roads well graded and free of potholes. The Contractor shall fill potholes with Granular "A" or cold patch asphalt;

.3 At the completion of the contract work, the Contractor shall restore all access roads, detours, service, storage and work areas to their original condition upon completion of the use of these facilities unless otherwise directed by the Engineer;

.1 The restoration work shall consist of filling all potholes along the haul routes and access roads and carrying out a final grading of the entire route so as to leave the surface with proper slopes for drainage. All windrows of debris from the shoulders and debris in the drainage ditches along the haul routes shall be removed and disposed of at the disposal area.

2.07.3 Where necessary but only as directed by the Engineer, the Contractor shall remove any barricades restricting access to the haul routes and reinstall them at their original locations at the completion of the contract at no additional cost to the Owner.

A1-2.08 ELECTRICAL POWER

2.08.1 In addition to the requirements of A-2 Specifications, Section A2-27, Electrical Power, the following shall apply:

.1 The Contractor shall be responsible for the supply of power required to do the work; no Owner electric power will be available to the Contractor.

A1-2.09 DISPOSAL OF MATERIALS

2.09.1 In addition to the requirements of A-2 Specifications, Section A2-28 - Disposal of Materials, the following shall apply:

.1 All excavated materials such as granular, rock and clay materials resulting from the work shall be disposed of off the Owner's property;

.2 The Contractor shall be responsible for sampling and testing, at no additional cost to the Owner, the waste materials resulting from the work, and shall provide all rest results to the Owner. After the Owner receives the results, the Owner will obtain a Generator Registration Number, if the materials are identified as hazardous or registrable.

.3 The Contractor shall dispose of all asphaltic concrete, concrete, refuse, including garbage and construction materials and debris, off Owner's property at no additional cost to the Owner;

.4 All excavated material shall be removed from the work areas as expeditiously as possible, and transported to the disposal area;

2.09.2 No fires will be allowed for burning of debris, materials or refuse resulting from the Contractor's work.

A1-2.10 PROTECTION OF THE ENVIRONMENT

2.10.1 In addition to the requirements of A-2 Specifications (General), Subsection A2-10, Environmental Protection, the following shall apply:

.1 The Contractor shall comply with all the provincial and federal environmental legislation, in particular, the *Fisheries Act* at the federal level and the Regulations on *Waste Management* at the provincial level.

.2 The Contractor shall take all the necessary mitigation measures to protect the aquatic wildlife and fish breeding activities.

.3 The Contractor shall take all the necessary precautions in order to avoid the release of any substance likely to degrade the quality of the water into or near the aquatic environment.

2.10.2 The Contractor shall also comply with the following environmental mitigation measures:

.1 All the emergency materials (absorbent products, tarps, tools, etc.) shall be available at all times on the site in case of a spill of hazardous products (oil, gas oil, etc.).

.2 Have and know how to use emergency equipment in case of an accidental spill. In the event of a spill of hydrocarbons or any other noxious substances, the SPILL ACTION CENTER (SAC) **Environment Canada alert network (1-866-283-2333)** and ***The Ministry of the Environment and Climate Change, Spills Action Centre (1-800-268-6060)***, shall be notified without delay.

.3 The Contractor's machinery and equipment conform to the following conditions:

.1 Place the cans or receptacles containing hydrocarbons and other hazardous products in a bin or between berms with the capacity to collect 110% of the stored reserves.

.2 Do the cleaning maintenance and refuelling of the job site machinery and the vehicles on a site designated for this purpose. Provide for an on-site supply of absorbent materials and clearly identified leak-proof receptacles, intended to receive petroleum products and waste.

.3 Ship the used oils resulting from use of the machinery and the waste away from the Owner's land and dispose of them at a site provided for this purpose.

.4 Select the machinery and equipment necessary for the performance of the work according to the special conditions and fragility of the environment.

.5 Use machinery in good working order in order to avoid any grease or fuel leak.

SECTION 2 WORKSITE ORGANIZATION

A1-2.11 BRIDGE LOADING AND OTHER LOAD RESTRICTIONS

2.11.1 In addition to the requirements of A-2 Specifications, Section A2-11, Loading Restrictions on Bridges and Other Structures, the following shall apply:

.1 The work area shall be protected from damage by steel tracked vehicles, outriggers or similar loadings by the use of timber planking, mats or other methods authorized by the Engineer.

.2 The Contractor shall not overload any of the existing access covers around the work area. No material shall be stockpiled on top of these access covers.

.1 Temporary timber and steel plate or mat covers shall be provided to cover all openings and pits to ensure safety and protection to the work, all as agreed to with the Engineer.

.2 It is the responsibility of the Contractor to assure himself that all temporary covers are safe for the loads intended to be superimposed on them by the Contractor's equipment.

.3 Temporary covers shall be installed level with the adjacent surface.

.4 Temporary covers shall be removed by the Contractor as agreed to with the Engineer.

A1-2.12 PROTECTION OF NEW AND EXISTING EQUIPMENT

2.12.1 The Contractor shall take all necessary precautions to ensure that the structural and mechanical components are in good working order and kept clean and free from environmental contamination, sand, dust, dirt and other substances arising from the operations under this Contract throughout the course of the work.

2.12.2 The Contractor shall take full responsibility for the damages that may be caused to the Owner’s equipment, and shall promptly clean or repair any damage to any such machinery or parts used during this Contract to the satisfaction of the Owner’s Representative, at no additional cost to the Owner.

A1-2.13 CLEAN-UP

2.13.1 The Contractor shall clean up and tidy the worksite on a daily basis and permit no undue amounts of debris, trash, and/or garbage to accumulate.

2.13.2 At the completion of the work, the Contractor shall remove all surplus materials, tools, plant, rubbish and debris and dispose of them in an approved manner off Owner’s property.

2.13.3 The Contractor shall perform final clean-up with power sweeper and power washer to ensure all work areas are free of rubbish and debris such as nails.

A1-2.14 ADDRESS

NIAGARA REGION
GLENDALE ADMINISTRATION & MAINTENANCE BUILDINGS AND OWNER’S STORES COMPLEX Glendale Administration & Maintenance Buildings - 508 Glendale Avenue St. Catharines, Ontario, L2R 6V8

SECTION 3 MARINE SECURITY (ACCESS)

A1-3.01 GENERAL

3.01.1 For the term of this Contract, the Contractor shall comply with the requirements of Section A2-8, *Security Requirements*, of Specifications A-2 (General), and the specifications set out in this Section.

3.01.2 The Glendale Maintenance Yard (jobsite) is considered a “Restricted and/or Controlled Area” in its security plan, in accordance with the Marine Transportation Security Regulations.

3.01.3 The Contractor shall at all times be in compliance with *Transport Canada Marine Transport Security Regulations (MTSR)*, as applicable. All of the Owner’s lock structures, wharfs, tie-up walls and some other areas are considered “Restricted Areas” in its Security Plan, in accordance with the *Transport Canada Marine Transport Security Regulations (MTSR)*. Depending on the threat to the Owner’s facilities and the vessels that use them, the *MARSEC* (“Marine Security Control”) level of security may vary between three (3) levels of security. Under normal circumstances, the Owner operates at *MARSEC Level 1*.

3.01.4 In this context and in order to comply with the *MTSR*, the Contractor shall meet the following security requirements at all times:

.1 In order to have access to the Owner’s properties, the Contractor’s employees and those of its subcontractors shall possess a valid security pass, issued at no cost by the Owner. In the *Marine Security Awareness Guide – St. Lawrence Seaway Management Corporation,* each type of security pass is detailed according to its access rights and limitations.

.1 The “R1” pass holder with photo shall be able to identify himself to the Owner’s operator by means of a valid piece of photo identification issued by a government agency, and may:

.1 Enter the lock or restricted area in a service vehicle (by the vehicular sally port or SAS) or on foot (by turnstile) and circulate alone.

.2 Have an access card or keys giving access to certain areas of the Owner’s properties.

.3 Escort “T” pass holders.

.1 If the “R1” pass holder who is escorting one or more workers with a “T” pass must leave his team of workers, the Contractor shall immediately assign another person with an “R1” pass to escort the worker or workers with a “T” pass.

.2 The “R1” pass holder shall not be more than six metres (6m) away from “T” pass holders.

.2 The “T” pass may be provided by the Contractor’s representative to a person without an “R1” pass who must access the work site including, without being limited to, the driver of a cement mixer truck, crane or delivery truck, skilled workers and technical representatives.

.1 The pass shall be issued before accessing the locks and the Owner’s other facilities.

.2 The “T” pass holder shall be able to identify himself by means of a valid piece of photo identification issued by a government agency.

.3 “T” pass holders shall be accompanied at all times by an “R1” pass holder while inside restricted areas.

.4 Only Contractor’s representatives trained in the issuance of “T” passes may do so.

3.01.5 Any person without a security pass will not be authorised to enter a restricted area.

.1 It is advisable for the Contractor to obtain more than one "R1" pass for its personnel and for its subcontractors' personnel in order to have greater autonomy.

.2 Each "R1" pass carries a unique number and is not transferable from one person to another.

.3 All security pass holders are required to wear it on their outer clothing above the waist and so the pass information is visible at all times when they enter or remain in a restricted area.

.4 The validity periods of the passes are the following:

.1 "R1": Maximum of one (1) year from the date of issue.

.2 "T": Issued daily by the Contractor's representative, valid for twenty four (24) hours only. All "T" passes shall be stored on site and inventoried daily.

3.01.6 The Contractor shall return all "R1" and "T" passes to the Owner at the completion of the work. The Owner will store valid security passes for reissue for future work, if applicable.

3.01.7 Any non-compliance with the Owner's requirements may result in the expulsion from the Owner's restricted areas of the infringer who shall only re-enter the premises once the situation has been corrected and with the approval of the Owner's Representative.

3.01.8 The specific requirements for marine security shall be covered during work site meetings to ensure compliance with the rules and directives in place at the Owner's properties.

3.01.9 The Owner will not accept any claim for additional costs from the Contractor arising from delays or loss of productivity caused in any way whatsoever by the operation of the locks, bridges and particularly relating to the security instructions mentioned in these Specifications.

.1 The Contractor shall also prepare its schedule taking into account the security instructions mentioned in these Specifications. The Owner will not give the Contractor additional time to perform the work due to time lost in order to comply with the security instructions.

.2 The Contractor shall also take into account in its tender of the waiting time at the access gates of the locks.

.1 The average waiting time per entry is estimated at 25 minutes.

.2 The Owner will not accept any claim for additional costs from the Contractor arising from delays.

.3 The Owner commits to act diligently in order to minimise the waiting time at the access gates in order to reduce the impact on its work. However, the priority of the Owner's personnel at the Operations Control Centre (OCC) is for the transit of ships through the locks. Consequently, the Owner's personnel may not be available at all time to open the gates to the Contractor and its subcontractors.

A1-3.02 ACCESS AND CIRCULATION ON THE LOCKS AND THE OWNER'S OTHER FACILITIES

3.02.1 There are various ways for accessing the locks or restricted areas, depending on the location, the type of security pass and the transportation means. The new facilities at the locks include a vehicular sally port (SAS), as well as a turnstile, located at the main entrance of the locks. For information purposes, a vehicular sally port is a fenced area which is shut by two (2) motorised gates. A gate can only open when the other gate is closed.

.1 Access from the SAS by passing through the two (2) motorised gates in a service vehicle:

.1 Only service vehicles shall be permitted to enter the lock.

.1 See requirements of Clause A1-3.06.

.2 The driver shall comply with the following conditions:

.1 Be alone in a service vehicle.

.2 Hold an “R1” pass.

.3 The drivers of cement mixer trucks, cranes or delivery trucks, skilled workers and technical representatives who hold a “T” pass shall respect the requirements for their access as detailed in Clause A1-3.01.3.2

.3 Upon the arrival at the first motorised gate of the SAS, all passengers shall exit the vehicle and follow the requirements of Clause A1-3.02.1.2. At the Reporting Station, the driver of the vehicle shall:

.1 Identify himself at the intercom and at the camera with his “R1” pass.

.2 Follow the instructions of the Operations Control Centre (OCC) and provide the following information: company name, purpose and duration of his presence on the lock, exact location of his teams and their planned movements on the lock during the day.

.3 Expect a waiting time for the response from the OCC. There may be additional delays, particularly during a ship’s transit.

.4 Once the entrant has been identified, the first gate of the SAS will open. The driver shall then move his vehicle close enough to the second gate to permit the first one to close behind. Otherwise, the detection system will prevent the closure of the first gate.

.5 The Owner will then proceed with a vehicle inspection. The vehicle driver shall then:

.1 Disembark from the vehicle, open the trunk and the doors to enable a visual inspection.

.2 Comply with the directives of the Owner’s employees and cooperate at all times.

.3 Expect a waiting time for the response from the Owner’s employees. There may be additional delays, particularly during a ship’s transit.

.6 When the vehicle inspection is completed the second gate will then open. Once inside the restricted area, the driver may allow the passengers who have crossed the turnstile to get back in the vehicle.

.7 The procedure remains the same for the exit of the lock, that is, only one person may exit in the vehicle, being identified at the intercom of the SAS, etc. All the passengers shall use the turnstile to exit.

.8 The only exception is for the passage of a cement truck, a crane, or another service vehicle from a specialised company whose drivers usually hold a “T” pass.

.1 In that sole and particular case, a Contractor’s representative holding a “R1” pass shall go to the SAS and inform the OCC before the arrival of the vehicle.

.2 The driver of the vehicle shall have received a “T” pass from the Contractor’s representative before his entrance on the lock.

.3 Once in the SAS, the driver shall comply with the directives of Clause A1-3.02.1.1.3. Once on the lock, the driver, holding a “T” pass, shall be accompanied at all times by an “R1” pass holder within six metres (6m) distance.

.2 Access on foot, by a turnstile adjacent to a SAS

.1 The person shall hold an “R1” or “T” pass.

.2 At the Reporting Station located next to the turnstile, the person shall:

.1 Identify himself at the intercom and at the camera with his “R1” or “T” pass.

.1 The “T” pass holders shall also identify themselves by means of a valid piece of photo identification issued by a government agency.

.2 Follow the instructions of the OCC and provide the following information: company name, purpose and duration of his presence on the lock, exact location of his presence and his planned displacements on the lock during the day.

.3 Expect a waiting time for the response from the OCC. There may be additional delays, particularly during a ship’s transit.

.3 The procedure remains the same for the exit of the lock, that is, one person going through the turnstile at a time, being identified at the intercom, etc.

.3 The following phone numbers and extensions may be used when the intercom is not functional. The phone numbers according to the work location are:

.1 Niagara Region:

.1 Lock 1 In St. Catharines: 905-641-1932, ext. 5121.

.2 Lock 2 In St. Catharines: 905-641-1932, ext. 5122.

.3 Lock 3 In St. Catharines: 905-641-1932, ext. 5123.

.4 Lock 4 In Thorold: 905-641-1932, ext. 5124.

.5 Lock 5 In Thorold: 905-641-1932, ext. 5125.

.6 Lock 6 In Thorold: 905-641-1932, ext. 5126.

.7 Lock 7 In Thorold: 905-641-1932, ext. 5127.

.8 Lock 8 In Port Colborne: 905-641-1932, ext. 5625.

3.02.2 The entire lock is protected by a system of cameras and motion sensors. The Contractor is responsible for managing and communicating its movements to the OCC in an efficient way anytime they leave their authorized area of work.

.1 For any change of zone (by vehicle or on foot), the Contractor shall:

.1 Call the OCC to activate access to a new zone.

.1 The call may be made either from an intercom next to a gate or by mobile phone.

.2 The phone numbers and the extensions to be used are mentioned in Clause A1-3.02.1.3.

.2 Inform the OCC of the number of persons who will change area(s).

.3 Follow the instructions from the OCC.

.4 Expect a waiting time for the response from the OCC. There may be additional delays, particularly during a ship’s transit.

.2 If several zones have to be crossed to access the new work area, the Contractor shall indicate to the OCC the path to be used.

.3 The Contractor shall never leave a gate or an access door open or unlocked.

.1 If the Contractor must leave a gate open as part of its work, it shall provide, at its own expense, the services of a guard holding an “R1” pass to control access.

.1 The costs associated with the guard shall be included in its tender.

SECTION 3 MARINE SECURITY (ACCESS)

A1-3.03 WORKERS AND VISITORS LOG FOR THE CONTRACTOR

3.03.1 The person responsible for the Contractor's teams at the work site shall keep a ***Workers and Visitors Log for the Contractor*** with the names of the workers, the "R1" and "T" pass numbers as well as the signatures of all entrants, including Contractor's workers, its subcontractors' workers as well as the visitors at the work site.

.1 The *Workers and Visitors Log* shall be completed and signed by all the persons present at the work site every day.

.2 The *Workers and Visitors Log* shall be managed by the person responsible for the Contractor's teams at the work site and be available in a binder at the work site at all times.

.1 At any time, the Owner's or Transport Canada's Representative may ask the Contractor to provide him with the *Workers and Visitors Log for the Contractor*.

.2 All of the Contractor's personnel are subject to observation and verification and consequently shall have a valid government issued piece of ID with photo available for identity check purposes in addition to their "R1" or "T" pass.

.3 Holders of access cards and keys may also be checked by the Owner's or Transport Canada's Representative(s).

.3 The form to use for the *Workers and Visitors Log for the Contractor* will be given to the Contractor by the Owner's Representative.

.4 Before each payment to the Contractor, a .pdf version of the *Workers and Visitors Log for the Contractor,* duly filled and signed on the date on which the work has been completed for payment shall be returned to the Owner's Representative.

.1 The Owner shall hold any payment due to the Contractor until the *Workers and Visitors Log* is provided.

.5 At the end of the work and before the final payment, the original *Workers and Visitors Log for the Contractor,* duly filled and signed at the end of the work shall be returned to the Owner's Representative.

.1 The Owner shall hold the final payment due to the Contractor until all completed Workers and Visitors Logs are returned.

A1-3.04 ISSUANCE CONDITIONS OF "R1" PASSES, "T" PASSES, KEYS AND ACCESS CARDS

3.04.1 Issuance Conditions for "R1" and "T" passes

.1 Every "R1" pass applicant shall read the ***Marine Security Awareness Guide – Saint Lawrence Seaway Management Corporation*** in order to comply with the Owner's requirements for marine security.

.1 This guide is available on the FTP site with the tender documents.

.2 Every "R1" pass applicant shall fill out and sign (before a witness) the form Commitment to Meet the Requirements of the Marine Security Awareness Guide / Consent for the use of a Personal Identification – St. Lawrence Seaway Management Corporation.

.1 This form is available on the FTP site with the tender documents.

.3 Each "R1" requestor shall submit electronically a passport-style photo, "jpeg" format. Note: Jpeg Photos must be similar to a passport picture, it must be a clear colour photo ranging from the shoulders to the head. (no hardhats, no safety glasses)

.4 Only "R1" pass holders can request "T" passes.

.1 A maximum of 10 "T" passes can be issued to a "R1" pass holder.

.5 The passes carry a unique number and are not transferable from one person to another.

.6 All "R1" and "T" passes shall be returned to the Owner's Representative at the end of the contract.

.7 All "T" passes are valid for a period of twenty four (24) hours only.

3.04.2 Issuance Conditions of Access Cards

.1 The Owner may make access cards available to the Contractor which will allow the Contractor to open certain gates to controlled areas and certain buildings or rooms in which the Contractor will be required to perform work.

.1 The Contractor shall note that access cards will not allow the Contractor to open any gates to restricted areas.

.2 An access card has a unique number and may only be given to an "R1" pass holder. It cannot be used by anyone other than the assignee.

.3 There is no cost to obtain an access card, but the loss or deterioration of an access card shall follow the requirements of Clause A1-3.05.5.2.

.4 The expiration date of the access cards will be the end of the work.

.1 The expiry date of the passes will be updated by the Owner's Representative if the Owner extends the duration of the work beyond the completion date prescribed by the contractual documents.

3.04.3 Issuance of Keys for Access to Padlocked Gates (Non-Motorised) for Niagara Region Structures Using Key Dispensing Machines

.1 The following applies to lock structures where key dispensing machines (also referred to as Traka Boxes) are utilized:

.1 If the Contractor is required to open padlocked gates (non-motorized) to enter worksites located in restricted areas of the lock structures, the Contractor shall first enter the lock through the main access point following the requirements of A1-3.02, including informing the operator of the intent to retrieve a key from the key dispensing machine.

.2 In each lock structure's centre control building, there is a key dispensing machine. The Contractor's worker, being an R1 pass holder and an access card holder whose security profile has been set up to allow access to the required area, shall access the keys in the key dispensing machine using the Contractor's worker's access card. The Contractor may then leave the structure and enter through the padlocked gate. The gate shall be immediately locked again after entry.

.3 All keys shall be returned to the key dispensing machine by the end of the shift following a similar process.

3.04.4 Issuance of Keys for Access to Padlocked Gates (Non-Motorised) for Niagara Region Structures Not Using Key Dispensing Machines

.1 The following applies to lock structures where key dispensing machines are not utilized:

.1 If the Contractor is required to open padlocked gates (non-motorized) to enter worksites located in restricted areas of the lock structures, the Contractor make arrangements with the Owner's Representative for the Contractor to sign out a particular key from the OCC (Operations Control Center).

.2 All keys shall be returned to the OCC by the end of the shift.

A1-3.05 PROCEDURE FOR ISSUANCE AND MANAGEMENT OF PASSES, KEYS AND ACCESS CARDS AND OBLIGATIONS OF THE PERSON RESPONSIBLE FOR THE CONTRACTOR'S TEAMS AT THE WORK SITE

3.05.1 The person responsible for the work on site designated by the Contractor shall fill out the ***Access Request Form*** with the list of its employees and its subcontractors' employees along with all required information, in order to request "R1" and "T" passes, as well as access cards and keys, if required.

.1 The person designate by the Contractor as representative responsible for the work shall hold a "R1" pass or request one.

.2 These forms shall be provided to the Awardee by the Owner's Representative.

3.05.2 **At least 48 hours in advance**, the person responsible for the Contractor's teams at the work site ("R1 pass holder) shall send, **by email** to the Owner's Representative (who will be designated during the pre-award meeting), the following:

.1 Access Request Form, duly filled.

.2 For the each "R1" applicant: picture from the shoulders up in .JPEG format.

.1 The picture shall be similar to those required for passports.

.1 No copy from an identity card will be allowed.

.2 Only one (1) "jpeg" photo per file shall be submitted.

Commitment to Meet the Requirements of the Marine Security Awareness Guide / Consent for the Use of a Personal Identification – St. Lawrence Seaway Management Corporation, duly filled and signed before a witness for each "R1" applicant.

3.05.3 Each "R1" applicant shall then make an appointment with the Owner's Representative (who will be designated during the pre-award meeting) to take possession of the "R1" and "T" passes, as well as the keys and access cards, if required.

.1 The Owner's Representative is located at St. Catharines for Niagara Region and at St-Lambert for Maisonneuve Region. During this appointment, the person responsible for the Contractor's teams at the work site shall:

.1 Show the original of his valid driver's licence.

.2 Sign ***Access Request Form*** previously provided by email, as proof of reception of the access card and key(s), if required.

.2 Once these requirements are met, the Owner's Representative will provide the applicant with the passes, access cards and key(s) requested and approved.

.3 Each individual to be issued with pass, access card or key(s) shall come to the Owner's offices to receive their pass, card or key(s).

3.05.4 Return of the passes, keys and access cards by the Contractor at the end of the work:

.1 At the completion of all deficiencies corrections, the person responsible for the Contractor's teams at the work site shall return to the Owner's Representative (designated during the pre-award meeting and located at the administration office of the Owner) keys and access cards issued for the contract, as well as all the passes issued for the contract, and, if applicable any fees for the loss of a pass, key or access card, prior to the Owner's Representative releasing the holdback of the construction contract or purchase order.

3.05.5 Loss or deterioration of a pass, key or access card

.1 The loss of a pass shall be immediately reported to the Owner's Representative.

.1 The responsibility for the loss or deterioration of a pass will be undertaken by the company whose name appears on the pass (either it is a contractor or subcontractor).

.1 $75 fee will be required for the replacement of a pass.

.2 The holder of the lost pass shall cooperate with the Owner's Representative to fill in a *Security Breach Report*.

.2 The responsibility for the loss or deterioration of an access card will be undertaken by the Contractor.

.1 $50 fee will be required for any lost or deterioration of an access card.

.2 The holder of a lost access card shall cooperate with the Owner's Representative to fill in a *Security Breach Report*.

.3 The responsibility for the loss or deterioration of a key will be undertaken by the Contractor.

.1 $150 fee will be required for deteriorated key. For lost or stolen keys the individual may be charged up to $1,000 to rekey all keys in that series of locks.

.2 The holder of a lost key shall cooperate with the Owner's Representative to fill in a *Security Breach Report*.

A1-3.06 SERVICE VEHICLES ON THE OWNER'S FACILITIES AND PARKING FOR WORKERS

3.06.1 Only service vehicles which comply with the following conditions may be given permission to enter the Owner's facilities:

.1 The vehicle shall bear the Company logo.

.1 The vehicle shall bear a company logo (not less than 300 mm x 300 mm) on its doors, which shall be identifiable by camera.

.2 The vehicle must contain tools or materials to be used on the worksite or must be required for the work to be conducted.

.3 Personal vehicles will not be granted access on the Owner's property.

3.06.2 The Contractor's vehicles, including those of its subcontractors, may be subject to periodic searches if they are located at the Owner's locks.

3.06.3 The Contractor shall be responsible for ensuring that all of its employees' vehicles and those of its subcontractors are parked in the parking area assigned by the Owner's Representative.

SECTION 4 DRAWINGS

A1-4.01 CONSTRUCTION DRAWINGS

4.01.1 The following drawings are issued with and form part of the Contract documents for this work. They are provided in PDF format only and are enclosed with the contractual documents deposited on the Owner's ftp site.

.1 Construction Drawings			
Number	Original Date	Revision # or Date	Title
32171-02	2018/10/16		Niagara Region, Glendale Complex Tensioned Fabric Structure, Location & Details

A1-4.02 ELECTRONIC FORMATS USED BY THE OWNER

4.02.1 The drawings supplied by the Owner are under the following formats:

.1 **PDF Format:** sealed drawings, copies of original drawings "Raster", sketches;

.2 Autocad 2017, DWG Format: used for 2D Geometry;

.3 Autodesk Inventor v. 2017 3D: used for 3D Geometry.

A1-4.03 ELECTRONIC FORMATS FOR THE CONTRACTOR'S DRAWINGS

4.03.1 The drawings supplied by the Contractor shall be under the formats required by the Owner:

.1 **PDF Format:** drawings and sketches sealed by Consigno (Notarius);

.2 Autocad 2012, DWG Format for 2D Geometry;

.3 Autodesk Inventor v. 2012 3D for 3D Geometry.

A1-4.04 CONTRACTOR'S DRAWINGS

4.04.1 The *Contractor's Drawings* shall be computer-assisted drawings (CAD), prepared according to the Owner's CAD standards ("template") which will be provided to the Contractor by the Owner's Representative along with the project's series of numbers.

4.04.2 The Contractor shall, however not limited to, prepare the *Contractor's Drawings* based on the Specifications, exhibited drawings, site conditions and following the directions of the Owner's Representative.

.1 The first or "General" drawing shall a list of all *Contractor's Drawings* and drawing numbers pertaining to this Contract.

.2 The *Contractor's Drawings* shall show complete details of all components including dimensions, types and locations of all materials, welds and other connections and tolerances.

.3 All the shop drawings shall clearly show the shades of the materials, their thermic treatment and aimed properties, as well as the moulding and mounting details, the tolerances and the functional quotes.

.1 This includes the cuts, notches, assemblies, holes, assembly bolts, rock bolts and all welds, even though they are indicated in Contractor's welding procedures.

.4 The Contractor shall incorporate the Owner's Representative's comments in the submitted drawings.

.5 The Contractor shall submit these drawings as many times as necessary, until the Owner's Representative is satisfied that these drawings accurately reflect the condition of the work.

.6 The Contractor shall also submit to the Owner's Representative the description of the work methods and the mounting order of the elements and the materials which he intends to use.

4.04.3 If required by Ontario Regulation 213/91 regarding construction project under the Occupational Health and Safety Act, the drawings shall bear the signatures and stamps of a licensed *Professional Engineers of Ontario* (PEO).

4.04.4 The Contractor shall submit to the Owner's Representative for review all the Contractor's Drawings within four (4) weeks following the contract award notification in writing.

4.04.5 All modifications to these *Contractor's Drawings* shall be previously approved by the Owner's Representative.

4.04.6 The Contractor shall submit one (1) copy of the *Contractor's drawings* for review to the Owner's Representative before the fabrication and in accordance with the Contract Calendar, and shall allow two (2) weeks for the review by the Owner's Representative.

4.04.7 The Contractor shall execute all the required changes noted on the reviewed drawings or diagrams. After doing so, the Contractor shall submit new copies of the revised drawings or diagram for the Owner's Representative to review.

4.04.8 The Contractor shall not execute any fabrication work before receiving the reviewed drawings. No changes to the drawings shall be made through out the review process unless accepted otherwise by the Owner's Representative.

4.04.9 All work started before receiving the Owner's Representative reviewed drawings will be at the Contractor's own risk. The Contractor shall execute all necessary work to comply with the reviewed drawings at its own expense.

4.04.10 The review process by the Owner's Representative does not remove the obligations and responsibilities of the Contractor regarding the present Contract.

4.04.11 Once the review process is complete, the Contractor shall supply to the Owner's Representative a reproducible copy of all the examined drawings, as well as calculation notes and effort diagrams when required.

4.04.12 After the acceptance of the *Contractor's Drawings* from the Owner's Representative, the Contractor shall proceed with the execution of the work.

4.04.13 The Contractor shall also keep available for the Owner's Representative, on site, an up to date copy of all of the construction drawings of the Contract and the specifications.

A1-4.05 DATA SHEETS

4.05.1 The Contractor shall include, in the drawings, the data sheets of all procurement, parts and supplies which are standard equipment installed by itself or under its supervision.

4.05.2 The Consultant shall incorporate the data sheets to the "Maintenance Guide" or to the "Part Index", as the case may be.

4.05.3 When prescribed by the law, all the Safety Data Sheets "SDS" sheets shall be supplied for all workplace chemicals brought to the work site as per WHMIS 2015 regulations.

A1-4.06 "AS BUILT" DRAWINGS

4.06.1 The Contractor shall prepare the "As built" drawings as follows:

.1 All the requirements of the *Contractor's Drawings* shall be met.

.2 Within 30 days after the completion of the site work and its acceptance by the Owner's Representative, the Contractor shall submit the detailed "As built" drawings including the calculation notes and the effort diagrams when required for all the structures and work included in the Contract in which all corrections and changes will be marked in red. (Indicate whether the drawings are 'red-lined' or updated.)

.3 The drawings shall be submitted to the Owner's Representative for review.

.4 The other conditions of this Contract notwithstanding, the Owner shall hold back any payment owed the Contractor until the final "As built" drawings are as mentioned above.

.5 The drawings shall bear the Contractor's logo and signature under the statement to the effect that:

.1 The information on the drawings accurately reflects the condition and dimensions of the work built;

.2 The drawings are signed "without modification".

A1-4.07 INTELLECTUAL OWNERSHIP AND COPYRIGHT

4.07.1 All drawings produced by the Contractor and paid under the present Contact are and remain the property of the Owner or its designee, without restriction.

4.07.2 No clause shall be added to the drawings to invalidate or abate this right, neither to claim the sponsorship or the intellectual ownership.

4.07.3 The Contractor pledges itself to cede its copyright on the whole products supplied and paid under this Contract.

SECTION 5 TENSIONED FABRIC STRUCTURE

A1-5.01 SCOPE

5.01.1 This section specifies the requirements for the design, supply and installation of the tensioned fabric structure included in this contract.

5.01.2 The work shall be according to the specifications and drawings and as directed by the Engineer.

5.01.3 The work includes but is not limited to the following:

.1 Design, supply and installation of a 40'x40' tensioned fabric structure, Including front and rear panels;

.2 Supply and installation of roof vents;

.3 Supply and installation of a 14'x14' industrial overhead door and framing system;

.4 Supply and installation of a 3'x7' steel man door and frame, including door handles and dead bolt lock set;

.5 Supply and installation of a Liftmaster Industrial Duty Hoist Operator.

A1-5.02 CODES AND STANDARDS

5.02.1 All work specified in this section shall be in accordance with the following:

.1 National Building Code of Canada 2010;

.2 CSA S367-12, Air, Cable and Frame Supported Membrane Structures;

.3 CSA S16-09, Design of Steel Structures;

.4 CAN/CSA S136-07, North American Specification for the Design of Cold-Formed Steel Structural Members;

.5 CSA W47.1-09, Certification of Companies for Fusion Welding of Steel;

.6 CSA W59-03 (R2008), Welded Steel Construction (Metal Arc Welding);

.7 CSA A660-10, Certification of Manufacturers of Steel Building Systems.

A1-5.03 SUBMITTALS

5.03.1 The following shall be submitted to the Project Engineer for approval prior to the ordering of building components:

.1 Manufacturer product data, including specifications and installation procedures for each component of the structure;

.2 Design shop drawings shall be submitted in (11"x17") digital (.pdf) format and sealed by a Professional Engineer licensed in the Province of Ontario. Shop drawings to include a plan view, elevations, details, sections, connections, anchorages, design loads and foundation reactions;

.3 Design calculations shall be submitted and sealed by a Professional Engineer licensed in the Province of Ontario;

.4 Fabric samples (12"x12" minimum) and colour palette.

A1-5.04 DESIGN REQUIREMENTS

5.04.1 The structure shall be designed in accordance with A1-1.26, Codes and Standards.

5.04.2 Structural design shall comply with the National Building Code of Canada 2010, Division B, Part 4 Structural Design.

5.04.3 Structural design shall include for all accessories including doors, vents and suspended lighting.

SECTION 5 TENSIONED FABRIC STRUCTURE

A1-5.05 MATERIALS

5.05.1 The fabric membrane shall be Fire Resistant PVC (Polyvinyl Chloride) with a 12oz./sq. yd. minimum weight.

5.05.2 Structural steel framing, cables, fittings, bolts and anchor bolts shall be hot dip galvanized in accordance with CSA C-164.

A1-5.06 ERECTION

5.06.1 Assembly and erection of the tensioned fabric structure shall be in accordance with the manufacturer's shop drawings and installation recommendations.

5.06.2 Erection of the structure shall proceed when existing and forecasted weather conditions permit the work to be performed safely in accordance with the manufacturer's recommendations.

5.06.3 Accessories including overhead door, frames and equipment shall be installed as per the approved shop drawings and anchored to the primary or intermediate structural members.

A1-5.07 WARRANTY

5.07.1 Warrant fabric materials and workmanship against defects for a period of fifteen (15) years, on a full replacement basis for the first ten (10) years and prorated for the remaining warranty period.

SECTION 6 CIVIL WORK

A1-6.01 SCOPE

6.01.1 This section specifies the requirements for the Civil Work included in this Contract.

6.01.2 The work shall be according to the specifications and drawings.

6.01.3 The work includes but is not limited to the following:

.1 Site preparation and building pad construction;

.2 Supply and installation of precast concrete lock block to support the tensioned fabric structure;

.3 Supply and installation of two (2) concrete filled bollards;

.4 Asphaltic concrete paving of building floor;

.5 Final site grading.

A1-6.02 PRECAST CONCRETE LOCK BLOCK

6.02.1 The supply and installation of precast lock block shall include the following:

.1 Minimum compressive strength of 25 MPa at twenty (28) days;

.2 Cold joints shall not be permitted;

.3 Architectural finish on the exterior face to be approved by the Project Engineer;

.4 Flat top block for fabric structure anchorage;

.5 Mechanical fasteners between blocks.

A1-6.03 EXCAVATION AND BACKFILL

6.03.1 The excavation and backfill work shall include but not be limited to the following:

.1 Disposing of excavated materials;

.2 Backfilling of areas with new granular materials;

.3 Compaction as specified on the drawings and specifications.

6.03.2 The Contractor shall provide locates to identify all buried services in the work area.

6.03.3 The Contractor shall provide proper protection for the underground utilities in the work area.

6.03.4 The Contractor shall use hand-held tools for excavation within 1.0m of any utilities in the work area and shall use extreme caution so as not to damage any utilities.

6.03.5 Any damage, direct or indirect, to any utility at the work area resulting from this contract, shall be the responsibility of the Contractor and required at no additional cost to the Owner.

6.03.6 The Contractor shall remove and salvage all signs, post and other miscellaneous items within the work area prior to the start of excavation work.

6.03.7 In-situ fill material shall be inspected and approved by the Owner's Testing Contractor for reuse. Material which does not conform to the requirements of these specifications shall be removed from the site at no cost to the Owner.

6.03.8 Granular "A" backfill material shall be according to the Ontario Provincial Standards Specifications (OPSS).

6.03.9 Granular "A" and in-situ fill materials shall be compacted in horizontal layers to a minimum of 100% of its maximum density according to ASTM Standard D698 Moisture Density Relations of Soils, Method "D" for Granular Materials.

6.03.10 The maximum thickness of lifts of backfill shall be 200 mm loose measure for Granular "A" and in-situ fill materials.

6.03.11 Total compacted thickness of Granular “A” base shall be 600mm.

A1-6.04 ASPHALTIC CONCRETE

6.04.1 Hot-mixed, hot-laid asphaltic concrete shall consist of HL-3 and HL-8 asphaltic concrete as specified and shown on the drawings and shall meet the requirements of OPSS 1150.

6.04.2 Asphalt emulsion to be used for tack coat, joints, bonding, etc., shall be supplied in accordance with OPSS 1103.

6.04.3 Before placing the paving mixture against the contact surface of all transverse and longitudinal joints, these surfaces shall be painted with a thin uniform coating of asphalt emulsion.

6.04.4 Following preparation of the granular base, the entire surface shall be paved with two (2) 40mm layers of HL-8 and HL-3 type hot mixed, hot-laid asphaltic concrete to the lines and grades as shown on the drawings and directed by the Engineer.

6.04.5 The paving mixtures shall be placed and compacted in accordance with OPSS 310.

6.04.6 The final asphaltic concrete surface shall be finished to provide positive drainage.