A-2 Specifications (General)

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A2-1 INSTRUCTIONS TO BIDDERS

1.1 Unless otherwise instructed by the Engineer, candidates for award shall submit the following :

1.1.1 An outline of the procedures, which they propose to use in carrying out, this work, including a schedule of the tentative dates of completion of the various phases of the work.

1.1.2 A list of the major items of equipment they propose to use on the work, the tentative dates when this equipment will be placed on the work and its present location and ownership.

1.1.3 An outline of the construction force planned, including classifications and tentative numbers of personnel. This shall also include the names of personnel whom the bidder proposes to assign to the supervision of the work to be performed, such as superintendents and supervision personnel, a brief résumé of their experience and qualifications and the scope of their authority.

1.1.4 A list of subcontractors (if any) which the bidder proposes to employ on this work including a brief résumé of their experience and qualifications in related work.

1.1.5 A preliminary schedule showing all major activities and contract milestone dates.

1.2 Bidders may be requested to submit:

1.2.1 Documentary evidence which clearly establishes familiarity and experience with work of a similar nature.

1.2.2 Without in any way limiting the Owner's prerogatives under the General Conditions, when bidders are required to supply proof that they have sufficient experience for the successful completion of the work, the Owner reserves the right to reject tenders received from bidders who do not furnish such proof in a form and from sources satisfactory to the Owner, within 72 hours of the request being made.

1.3 Request for information:

1.3.1 Any party contemplating the submission of a tender, if in doubt as to the true meaning of any part of the drawings, specifications or any other contract documents, may submit to the officer of the Owner requesting tenders, a written request for clarification.

1.3.2 Provided such a request is received at least 3 working days before the closing date for tenders, it will be considered by the Owner and, if interpretation should be considered necessary, the Owner will issue an addendum or addenda to the contract documents for delivery to each party who has taken out contract documents.

1.4 Error, omission or misstatement:

1.4.1 Bidders shall immediately notify the Owner of any error, omission or misstatement in the said specifications and drawings, which they could claim, had influenced them erroneously in determining the tender amount.

1.4.2 If a bidder does not notify the Owner of any error, omission or misstatement, the same shall not invalidate the contract, or release the Contractor from the execution and completion of the whole or any part of the work to the satisfaction of the Engineer and in accordance with the contract documents and for the total amount agreed upon and fixed thereto, or excuse the Contractor from any of the obligations or liabilities set forth in the contract documents, or entitle the Contractor to any damage or compensation other than specified in said contract documents, except for such extra work as may be required for the performance of which written orders must be given by the Engineer.

A2-2 CONTRACTOR'S WORK PROGRAM

2.1 Planning and Scheduling:

2.1.1 Unless specified otherwise in *A-1 Specifications*, the Contractor shall, with the participation and approval of the principal sub-contractors and suppliers, as identified by the Contractor, submit a Construction Progress Schedule to the Engineer for review within 7 working days after receipt of written notification of tender acceptance from the Owner.

2.1.2 The intention of the schedule is to promote good planning well in advance of the site work and to satisfy the Owner that the work is planned in a logical sequence within the time frame.

2.1.3 The Construction Progress Schedule shall be in sufficient detail to identify each activity of the work and to show its start and completion date as well as the interrelationship between activities.

2.1.4 This Construction Progress Schedule shall be consistent with the preliminary schedule submitted unless reasons acceptable to the Engineer are given for deviating therefrom.

2.1.5 Review of the Contractor's Construction Progress Schedule by the Engineer shall not relieve the Contractor of any of his duties and responsibilities under the terms of the contract.

2.1.6 Should the Contractor not provide a Construction Progress Schedule as specified, the Engineer will withhold any or all payments for work performed until such schedule has been submitted and accepted.

2.2 Progress Statements:

2.2.1 Unless otherwise directed by the Engineer, the Contractor shall update the Construction Progress Schedule on a weekly basis by reporting the status of all activities in progress and modifying the schedule to reflect the actual progress and sequence of construction.

2.2.2 The updated schedules shall describe the work procedures and resources for any activities, which are behind the Construction Progress Schedule, indicating how they will be accelerated so that the contract milestone dates and specified requirements, will be met. The descriptions, procedures and the allocation of resources shall constitute an integral part of the schedules.

2.2.3 The updated schedules shall be in the form accepted by the Engineer and shall record the following items:

2.2.3.1 Those activities which have been worked on or completed during the week.

2.2.3.2 Estimated working days required, to complete activities already in progress.

2.2.3.3 Activities to be started or continued the following week.

2.2.3.4 Proposed revisions to activities not yet underway.

2.2.3.5 The number and description of any accidents involving loss of time that have occurred during the previous week to his employees and to those of any subcontractor on this contract.

2.3 Progress Meetings:

2.3.1 Once every week or at such intervals as the Engineer may determine, a site progress meeting shall be held to review progress and to consider matters arising from or having a bearing on the contract. The agenda for each meeting and the minutes arising therefrom will be prepared and issued by the Engineer.

2.3.2 The Contractor's Superintendent or senior site representative shall attend each meeting, together with such members of his staff and such responsible representatives from subcontractors and suppliers as may be considered necessary by the Engineer to properly review all aspects of the work covered under the agenda.

A2-3 SHIFT AND OVERTIME WORK REQUIREMENTS

3.1 The Contractor shall provide, at no additional cost to the Owner, both around-the-clock shift work including overtime work on week days, weekends and holidays as required by the Engineer to maintain the reviewed schedule.

3.2 The Contractor shall also provide any extra workers and equipment deemed necessary by the Engineer whenever any item or phase of this contract falls behind the reviewed scheduled completion date.

3.3 The Engineer will notify the Contractor in writing of any such requirement.

A2-4 PERMITS, REGULATIONS AND BY-LAWS

4.1 The Contractor shall obtain all the necessary permits for carrying out this work.

4.2 The Contractor shall comply with all Provincial, Federal and other laws and by-laws which apply to this work and shall be responsible for any violation of these laws and by-laws.

A2-5 STANDARDS

5.1 Unless otherwise noted, all standards specified shall be the latest published editions at the time of tendering.

A2-6 FIRE PROTECTION

6.1 Without limiting the requirement of the General Conditions, the Contractor shall have, at all times, adequate fire extinguishing equipment, available to extinguish any fire caused by his operations.

6.2 The Contractor shall have on duty at all times personnel trained or experienced in the use of this equipment.

6.3 The Contractor shall, at no additional cost to the Owner, take all necessary measures to prevent all fire hazards and shall vigorously comply with all By-laws, Ordinances, Rules and Regulations presently in force with regards to fire prevention together with all instructions and orders issued during the course of construction by the Owner or its representatives.

A2-7 SAFETY REQUIREMENTS

7.1 Unless otherwise specified, the Contractor shall be deemed as the “Constructor” in the Province of Ontario, or as the “Principal Contractor” in the Province of Quebec, under the Occupational Health & Safety Act and Regulations, of the province where the work will be performed, for the designated “Workplace(s)”.

7.1.1 Before accessing the workplace, the Contractor shall submit the Contractor’s safety program and practices to the Owner for review. This program shall demonstrate the Contractor’s understanding of the particular site hazards, Owner safety practices and lockout procedures.

7.1.2 The Contractor shall supply and install physical barriers or other means for delimiting the designated “Workplace(s)” under his control.

7.2 For work performed at the Welland Ship Canal, the Contractor shall be required to implement the Owner’s “Workplace Log and Workplace Permit” process at the designated “Workplace(s)”.

7.3 For work performed at the Welland Ship Canal, the Contractor shall comply with the Owner’s “*Safety Requirements for Contractors - Niagara Region”.* For work performed in the Montreal to Lake Ontario portion of the St. Lawrence Seaway, the Contractor shall comply with the Owner’s “*Safety Requirements for Contractors - Maisonneuve Region”*.

7.4 Without in any way limiting the requirements of the material manufacturers and of the various codes and acts regulating working conditions, the Contractor shall furnish all the protection and security devices and also take all precautions necessary to ensure the safety of the Contractor's personnel, Owner personnel and the public.

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

7.6 The Contractor shall comply with the provisions of the applicable Provincial and the Canadian Labour (Safety) Codes.

7.7 Safety requirements will be addressed at the weekly Progress Meetings.

7.8 The Contractor shall immediately notify the Engineer of any on-site accidents, and shall subsequently submit a copy of the appropriate report of the Workplace Safety and Insurance Board (WSIB) in the province of Ontario and of the *Commission de la santé et de la sécurité du travail* (CSST) in the province of Quebec.

7.9 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.

A2-8 SECURITY REQUIREMENTS DURING THE NAVIGATION SEASON

8.1 The following security requirements shall apply during the navigation season for all work on the Owner's designated controlled areas:

8.1.1 The Contractor shall supply a list of all personnel to be employed on site.

8.1.2 All Contractor personnel are subject to observation and verification, and shall therefore have a personal photo identification document available for the purpose of identity check.

8.1.3 The Owner will supply Temporary Access Badges for all Contractor personnel.

8.1.4 All Contractor personnel shall wear Temporary Access Badges while on site.

8.1.5 Temporary Access Badges shall be visible at all times.

8.1.6 Temporary Access Badges shall be returned to the Owner at the completion of the work.

8.1.7 The Contractor is responsible for ensuring that:

8.1.7.1 All Contractor personnel are reliable and trustworthy individuals;

8.1.7.2 All personnel wear their Temporary Access Badges at all times while on the Owner's property.

8.1.8 In addition to the above requirements, all Contractor personnel accessing the restricted areas, such as machinery rooms or any area so designated by a Restricted Area Sign or Decal, will be required to wear a Restricted Area Badge.

A2-9 NON-INTERFERENCE WITH NAVIGATION DURING THE NAVIGATION SEASON

9.1 It is a prime consideration of the contract that none of the work carried out as part of this contract shall in any way interfere with, delay, or interrupt navigation.

9.2 The Contractor shall prevent any material and equipment from his operations from encroaching on the navigation channel during the navigation season other than that actually required for work in or over the channel and then only as directed by the Engineer.

9.3 The Contractor shall recover with all possible speed and at no additional cost to the Owner any material and equipment which falls or becomes lost in the channel.

9.4 The Owner will not be responsible for any injury to the Contractor's personnel or for any damage to the Contractor's plant, equipment and material caused by or as a result of shipping operations in the channel.

A2-10 ENVIRONMENTAL PROTECTION

10.1 General Requirements

10.1.1 The Contractor shall conform to all federal and provincial environmental laws and regulations, in particular, but not limited to :

10.1.1.1 The *Canadian Environmental Protection Act* (federal) (CEPA) (1999 ch.33);

10.1.1.2 The *Fisheries Act* (federal) (R.S.C. 1985, c. F-14);

10.1.1.3 The *Storage Tank Systems for Petroleum Products and Allied Petroleum Products Regulations*, SOR/2008-197;

10.1.1.4 In the Province of Quebec :

10.1.1.4.1 The *Règlement sur l'enfouissement and l'incinération of the matières résiduelles* (REIMR) (c. Q-2, r. 6.02);

10.1.1.4.2 The *Loi sur la conservation and la mise en valeur de la faune* (L.R.Q., c. C-61.1);

10.1.1.4.3 The *Loi sur la qualité de l'environnement* (R.S.Q., ch. Q-2).

10.1.1.5 In the Province of Ontario :

10.1.1.5.1 R.R.O. 1990, *Regulation 347 General – Waste Management*, as amended;

10.1.1.5.2 *Dangerous Goods Transportation Act*, R.S.O. 1990, ch D.1;

10.1.1.5.3 *Dangerous Goods Transportation Act General Regulations*, R.S.O. 1990, Reg. 261, as amended.

10.1.1.6 The other regulations adopted under the above Acts;

10.1.1.7 Any Act or regulations which may replace the Act and regulations mentioned above.

10.1.2 The Contractor shall conform to all the conditions that may be included in any Certificate of Authorization (C of A) for execution or construction.

10.2 Air Pollution

10.2.1 The Contractor shall, for the duration of the contract, use the recognised industrial control methods to avoid or stop the production of dust and smoke as well as any air pollution on the work site.

10.2.2 It is forbidden to burn debris, materials or waste.

10.3 Protection of land habitat and fauna

10.3.1 For the duration of the contract, the Contractor, and any person under his jurisdiction, shall take all necessary measures for the protection of the environment, in particular, the Contractor shall observe and ensure that any person under his jurisdiction conforms to the following :

10.3.1.1 The Contractor shall take all necessary measures to prevent machinery from circulating outside of rights of way assigned by the Engineer.

10.3.1.2 The Contractor shall proceed without delay, as the work progresses, with the restoration of the disturbed areas.

10.3.1.3 The Contractor shall refrain from using pesticides, herbicides and insecticides.

10.3.1.4 The construction methods shall be selected so as to minimise the impact on the environment.

10.4 Protection of the aquatic fauna

10.4.1 It is of prime importance that the waters in the St. Lawrence Seaway Canal and River are not polluted as a result of the Contractor's operations.

10.4.2 The Contractor shall co-operate with the Owner and other Federal, Provincial and Municipal authorities in order to ensure that the St. Lawrence Seaway Canal and River are not contaminated in any way.

10.4.3 The Contractor shall take all the necessary mitigation measures to protect the aquatic fauna and the fish reproduction activities.

10.4.4 The Contractor shall, among others, take the dispositions and construct the installations required to prevent equipment or materials from polluting the water streams and bodies or constitute substances or material harmful to the life of the aquatic fauna.

10.4.5 The Contractor shall take all the necessary precautions to prevent any substance susceptible to deteriorate the quality of water from being released into the aquatic environment or in the proximity of it.

10.4.5.1 No introduction of foreign equipment in the water bodies and streams, including cofferdams and jetties is permitted without the prior approval of the Engineer.

10.4.5.2 It is forbidden to allow the fall of demolition and construction waste into the water bodies and streams.

10.4.5.2.1 The Contractor shall take measures to ensure conformance to this requirement if necessary by installing nets or cantilevered submerged platforms or of any other system efficient for that purpose.

10.4.5.2.2 Any debris introduced accidentally into the aquatic environment shall be removed without delay, at no additional cost to the Owner, and to the satisfaction of the Engineer.

10.4.6 The Contractor shall advise the personnel affected to the work of the presence of the canal, of sensitive areas and of mitigation measures planned to protect these areas as well as of the associated rules of conduct.

10.4.7 The Contractor shall also apply the following mitigation measures :

10.4.7.1 Take all the measures required to avoid the contamination of water bodies and streams by materials which are or may be toxic.

10.4.7.2 Limit to strictly as necessary the clearing of vegetation, scouring, stripping, earthworks and the levelling of work areas.

10.4.7.3 No earthwork or excavation work shall be done close to water during periods of heavy rain.

10.4.7.4 Where required, plan the equipment necessary to limit the re-suspension of sediments.

10.4.7.5 Avoid, by taking all necessary precautions, any transport of fine particles beyond the work areas performed directly in the water or involving the baring or perturbation of soils in its proximity (less than 15 metres).

10.4.7.6 When pumping water, the Contractor shall avoid the suction of sediments and shall install at the outlet, a device capable of retaining fine particles and of only releasing clean water (25 mg/l of suspended solids) into a water body or stream.

10.4.7.7 Any temporary sedimentation work shall be removed at the end of the work and the site shall be left in a condition at least equivalent to prior to the commencement of the work.

10.5 Measures to prevent the release of pollutants into the environment.

10.5.1 The requirements applicable to the Contractor’s machinery and equipment shall include, but not be limited to the following :

10.5.1.1 Transport all granular and fine materials in closed trucks or vehicles equipped with covering tarpaulins.

10.5.1.2 Restrain the circulation of vehicles to the circulation areas identified by the Engineer at the work site.

10.5.1.3 Place cans or containers containing hydrocarbons and other hazardous products in a bin or between berms having the capacity to contain 110% of the stored material volume.

10.5.1.4 Perform the cleaning maintenance and the fuelling of the worksite machinery and vehicles at a site designated for that purpose located more than 30 metres from sensitive areas (fish habitat, wetlands) in order to avoid any contamination by organic, chemical, petrochemical, toxic materials, or materials that may become toxic.

10.5.1.5 Plan at the site a provision of well identified absorbent materials and liquid proof recipients for receiving the petroleum products and wastes.

10.5.1.6 Store petroleum products more than 30 m from the shore.

10.5.1.7 All waste oils, used machinery oils, and waste products shall be moved off the Owner's property and shall be disposed of at the site planned for that purpose.

10.5.1.8 Select machinery and materials necessary for the performance of the work taking into account the peculiarities of the site and its fragility.

10.5.1.9 Move machinery away from the shore immediately once the machinery is no longer required for the specific task.

10.5.1.10 Only use machinery which is in good functional condition to avoid any lubricant or fuel leak. The parts of equipment eventually submerged during the work shall be clean and free of leaks.

10.6 Petroleum products storage tanks

10.6.1 Any petroleum products or allied products storage tank of the Contractor shall conform to the requirements of the *Storage Tank Systems for Petroleum Products and Allied Petroleum Products Regulations*, SOR/2008-197.

10.6.2 For the purposes of this contract, a tank is as defined under Regulations DORS/2008-197, namely:
« a closed container with a capacity of more than 230 L that is designed to be installed in a fixed location. »

10.6.3 Any petroleum products or allied products storage tank shall in particular conform to the following requirements :

10.6.3.1 Before being filled with petroleum products on the Owner's property, any tank shall be registered with Environment Canada unless it has a storage capacity of less than 2,500 litres **AND** it is connected to a heating device or to a generator.

10.6.3.1.1 The registration form is available at the following Internet address : http://www.ec.gc.ca/rs-st/19F7B473-C6B7-49CE-9A7D-77415AFA9FBA/FINAL%20-%20Environment%20Canada%20Tank%20Identification%20Form%20-%20English%20-%20January2010.pdf

10.6.3.1.2 The storage tank shall bear the Environment Canada registration number well in evidence as required by the Regulations.

10.6.3.2 The characteristics of any petroleum products or allied products storage tank shall include, but not be limited to the following :

10.6.3.2.1 Double wall or self-contained tank.

10.6.3.2.2 Any double wall tank shall be equipped with a manometer indicating the interstitial vacuum;

10.6.3.2.3 The interstitial vacuum (negative pressure) shall be a minimum of 15 inches of mercury (rounded to 500 hPa or 500 millibars).

10.6.3.2.4 Caption box at the tank point of supply;

10.6.3.2.5 Tank equipped with an atmospheric vent and an emergency vent;

10.6.3.2.6 Overfill protection device. For that purpose, a whistle at the base of the atmospheric vent is acceptable;

10.6.3.2.7 No opening through the tank wall(s) under the level of the stored liquid;

10.6.3.2.8 Tank protected against corrosion;

10.6.3.2.9 Reservoir placed on an impervious surface, concrete slab or other;

10.6.3.2.10 Tank protected against impacts from vehicles and machinery in a manner accepted by the Engineer.

10.7 Environmental emergencies

10.7.1 The Contractor shall permanently have at hand an emergency kit for the recovery of petroleum products.

10.7.2 The emergency kit shall include confinement sausages, absorbent rolls, sphagnum, as well as related containers and material (gloves, etc.) essential to address small scale accidental spills and ensure the recuperation, storage of soiled material and the management oil contaminated soils and materials.

10.7.3 The kit shall sufficient absorbent rolls to allow the confinement of petroleum products inside the perimeter of the machinery involved.

10.7.4 All the emergency material (absorbent products, covers, tools, etc.) shall be easily accessible at all times on the site for rapid intervention in case of a hazardous products spill (lubricant, fuel, etc.).

10.7.5 The Contractor shall be familiar with the use of the emergency equipment in case of accidental spills.

10.7.6 In case of a spill of hydrocarbons or of any other deleterious substance, the Emergency Network of Environment Canada (**1-866-283-2333**) and of Environnement Québec (**1-866-694-5454**) or the Ontario Ministry of the Environment (**1-800-268-6060**) shall be advised without delay.

10.8 Import of soils from outside sources

10.8.1 Any backfill material brought from outside sources to the Owner's lands shall be approved by the Engineer regarding its origin, composition and the absence of contaminants.

10.8.2 The Contractor shall demonstrate to the satisfaction of the Engineer that the soils imported are exempt of contaminants according to the SLSMC Procedure: Acceptance and Management of Backfill Materials a copy of which may be obtained on request.

10.8.3 The Engineer reserves the right to direct that the Contractor demonstrate by sampling and laboratory testing that the imported soils are free of contaminants, at no additional cost to the Owner.

10.8.4 Any soil imported on the properties managed by the Owner shall conform to the most stringent of the following standards:

10.8.4.1 The *Canadian Soil Quality Guidelines* of the Canadian Council of Ministers of the Environment (CCME), last edition;

OR

10.8.4.2 In Ontario, the *Soil, Groundwater and Sediment Standards for use Under Part XV.1 of the Environmental Protection Act*, July 2009;

10.8.4.3 In the province of the Quebec, Appendix 1 of the *Soil Protection and Contaminated Sites Rehabilitation Policy* (juin 1999) for the various uses of the properties, and Appendix 2 of the Policy for the background concentrations of metals. The background concentrations of parameters other than metals shall be those of Appendix 1 applicable to Category A (Agriculture) soils.

AND

10.8.4.4 Unless otherwise specified, to any applicable legislation as amended.

10.9 Disposal of waste materials

10.9.1 The final disposal of the waste materials shall conform to the requirements of Subsection A2-28 *Disposal of Materials* of A-2 Specifications (General) and to the requirements hereunder.

10.9.2 At all times, the Contractor shall dispose of excavation materials out of the work site according to the applicable acts and regulations

10.9.3 Disposal of residues.

10.9.3.1 Any non recoverable materials such as bituminous concrete, culverts, concrete curbs and any other debris are considered residues.

10.9.3.2 The transport and disposal of residues and waste materials shall be done in conformance to the applicable standards of the responsible provincial ministries as follows:

10.9.3.2.1 In the Province of Québec, the Ministère du Développement durable, de l'Environnement et des Parcs (MDDEP). The disposal shall also conform to paragraph 11.4.7.2 of the *Cahier des charges et devis généraux* (CCDG) of the Ministère des Transports du Québec.

10.9.3.2.2 In the Province of Ontario, the Ontario Ministry of the Environment (MOE) and Ontario Regulations 347.

10.9.3.3 The Contractor shall also ensure that all the demolition debris from the work that are non usable and considered as waste shall be disposed of by the Contractor on a site authorised by the Ministère du Développement durable, de l'Environnement et des Parcs (MDDEP) in Québec and by the Ontario Ministry of the Environment (MOE) in Ontario.

10.9.3.4 A copy of the authorisation for the disposal of residues shall be supplied to the Engineer.

10.9.3.5 In case the Contractor stores these residues, for later reuse, he shall do so according to the applicable standards of the Ministère du Développement durable, de l'Environnement et des Parcs (MDDEP) in Québec and of the Ontario Ministry of the Environment (MOE) in Ontario and the Contractor shall indicate his intentions in writing to the Engineer.

10.9.3.6 Moreover, if the residues are delivered, for selling or any other exchange, to a third party, the latter shall commit in writing to complying with the same requirements relative to the transport, storage and use of the these residues.

A2-11 LOADING RESTRICTIONS ON BRIDGES AND OTHER STRUCTURES

11.1 The Contractor shall not overload the existing bridges across the canal beyond their allowable posted capacity.

11.2 Should bidders anticipate loads in excess of the posted capacity, they shall request information from the Engineer as to which bridge they may use and the manner in which the bridge may be crossed.

11.3 The Contractor shall be entirely responsible for any damage incurred as a result of overloading structures or for any delays resulting from not being able to load certain areas of the work, and shall bear all costs incurred therefrom.

A2-12 ACCESS ROADS

12.1 The Contractor shall maintain all access roads constructed for his use or used by his equipment during the progress of the work unless otherwise directed by the Engineer.

12.2 During the progress of the work, the Contractor shall immediately remove any spillage of disposal materials being hauled from his operations, which are deposited on the surface or in the ditches of any Owner roads or any public thoroughfare being used by his equipment.

12.3 The Contractor shall restore all access roads, detours, services, storage and work areas to their original condition upon completion of the use of these facilities unless otherwise directed by the Engineer.

A2-13 FIELD MEASUREMENTS

13.1 The Contractor shall confirm all necessary dimensions by field inspection and field measurement with the Engineer before proceeding with the work.

A2-14 CONTRACTOR'S DRAWINGS

14.1 The following shall apply for the Contractor's Drawings at all times :

14.1.1 The Contractor shall prepare all necessary erection, assembly, working and shop drawings, bills of material and reinforcing steel schedules for all the work included in this contract from the exhibited drawings, specifications and site conditions. These drawings shall be called "**Contractor's Drawings**".

14.1.2 The Contractor's Drawings of temporary structures which will be removed at the end of the work, such as staging and scaffolding, and reinforcing steel schedules, may be done by hand even if computer assisted (CAD) drawings are specified for permanent structures.

14.1.3 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.

14.1.4 All Contractor's Drawings shall be drawn using the Owner's standard drawing frame and shall include the Owner contract number in the title block and, immediately above the title block, a reference bar scale conforming to the Owner's standards.

14.1.5 The first or General Drawing shall contain a list of all Contractor's Drawings and drawing numbers pertaining to this contract.

14.1.6 The Contractor shall submit 6 copies of the Contractor's Drawings, including design briefs and stress sheets, for review by the Engineer before fabrication and according to the Contractor's Construction Progress Schedule, allowing 2 weeks for the Engineer to review them unless otherwise agreed upon by the Engineer.

14.1.6.1 If revisions are required after a drawing has been submitted, the Contractor shall make any changes in such drawings or diagrams that may be required and resubmit to the Engineer 6 additional revised prints.

14.1.6.2 Fabrication shall not commence until drawings have been reviewed by the Engineer and thereafter no change shall be made on any drawings without the prior review of the Engineer.

14.1.6.3 Work carried out prior to drawing review shall be at the Contractor's risk, who shall at his own expense, make any corrections required by the Engineer.

14.1.7 Review by the Engineer of the Contractor's Drawings will not relieve the Contractor of any of his duties or responsibilities under the terms of the contract.

14.1.8 A reproducible of all reviewed drawings, design briefs and stress sheets when required shall be furnished to the Engineer by the Contractor as soon as review has been obtained. If any additional changes are found necessary after review, 6 printed copies shall be issued by the Contractor for additional review, and following acceptance, an additional reproducible shall be furnished to the Engineer.

14.1.9 The Contractor shall keep one copy of all drawings and specifications on the job, in good order, available to the Engineer.

14.1.10 Within 2 months following the completion of the work, the Contractor shall correct all reviewed Contractor's Drawings, design briefs and stress sheets when required so that they show the final installation, and shall provide the Engineer with the following:

14.1.10.1 One set of full-sized photographic reproducibles made on photographic polyester (Mylar) 3-mils thick drafting film.

14.1.10.2 If computer assisted (CAD) drawings are required for permanent structures according to *A-1 Specifications*, a copy of the Contractor's Drawing files on floppy disk.

14.2 If the Contractor's Drawings for permanent structures are prescribed to be computer assisted (CAD) drawings according to *A-1 Specifications*, the following shall apply :

14.2.1 The Contractor's Drawings shall be computer assisted (CAD) drawings prepared according to the Owner's CAD drafting standards which will be provided by the Engineer to the Contractor on request.

14.2.1.1 The Owner's CAD drafting standards consist of a manual describing the standards to be followed, and of a diskette which contains all the files required to prepare drawings using the Owner's standards, frames and fonts.

14.2.1.2 The diskette containing the *Standard Files of The St. Lawrence Seaway Management Corporation* for CAD includes 4 routines, which may be used by the Contractor to adequately install all the Owner's files and CAD environment without altering the adjustments of the Contractor's AutoCAD software.

14.2.1.3 The Owner's CAD environment installed using the above-mentioned diskette provides personalised commands to place the frame, title-block, to define layers, select standard fonts and thus facilitates the application of the Owner's standards described in the manual entitled *Standardised Procedures for The St. Lawrence Seaway Management Corporation for Consultants and Contractors*.

14.2.1.4 Drawings not prepared according to the Owner's standards will be rejected.

A2-15 HANDLING MATERIALS AND EQUIPMENT SUPPLIED BY THE OWNER

15.1 For any materials and equipment supplied by the Owner, the Contractor shall:

15.1.1 Withdraw, load and transport the material and equipment from the Owner stores to the work site.

15.1.2 Protect, re-handle, transport the material and equipment as required and replace any material and equipment lost, damaged or destroyed during the course of the work.

15.1.3 Upon completion of the work, load, transport to, unload and pile as directed at Owner's stores all remaining material and equipment supplied by the Owner and all materials judged reusable by the Engineer.

15.1.4 The Contractor shall also account for all materials and equipment supplied by the Owner and used during the execution of the contract and for all unused materials and equipment returned to Owner stores.

15.1.5 All other material shall be disposed of by the Contractor as directed by the Engineer.

A2-16 SHOP INSPECTION AND TESTING

16.1 Unless stated herein to the contrary, all materials incorporated in the work, and the manufacture and assembly of all parts shall be subject to inspection, prior to acceptance, by inspectors appointed and paid by the Owner.

16.2 The Contractor, at the request of the Engineer, shall at no additional cost to the Owner, prepare and furnish samples of all materials and properly machined or moulded test pieces to permit a thorough inspection thereof.

16.3 The Engineer will, at his option, inspect all materials and equipment to be supplied during fabrication and before shipment and witness the shop tests after final assembly.

16.4 The Contractor shall provide and maintain, at no additional cost to the Owner, all necessary instruments, tools and facilities for the inspection and checking of weights, dimensions and quality of workmanship at the shop where the material is fabricated, and in the field where it is assembled. The Contractor shall also supply all labour and appliances that may be necessary for handling material while undergoing inspection.

16.5 The Contractor shall arrange for full access by Owner inspectors, at all times, to all sections of the work area and sections of shops where parts are being fabricated by the Contractor or by a subcontractor. The Contractor shall also arrange for the same access to shops supplying material and purchased components which are to be incorporated in the work.

16.6 The Contractor shall notify the Engineer one week in advance of the time when any part of the work is to be commenced.

16.7 The Contractor shall not lay out any material nor do any work before the Engineer has been notified and arrangements have been made for any inspections deemed necessary by the Engineer.

16.8 The Contractor shall notify the Engineer 72 hours in advance when shop tests are to take place so that arrangements can be made to have the tests witnessed.

16.8.1 Shop tests shall include all routine, electrical and mechanical tests in accordance with the relevant standards.

16.9 The Contractor shall also notify the Engineer 72 hours in advance of the time when the materials will be complete and ready for final inspection so the Engineer can supervise the inspection.

16.10 After fabrication, the materials and equipment shall be tested by the Contractor in the plant to make sure that all the components function satisfactorily and that the complete assemblies comply with the minimum standards and essential requirements covering the materials and equipment included in this contract.

16.11 Each piece or container of material which has been inspected and accepted will, wherever practicable, be stamped or identified by an Owner's inspector with his private mark. Any piece not so identified may be rejected at any stage of the contract.

16.12 The Contractor shall replace or repair any rejected material or work at no additional cost to the Owner.

16.13 If the Engineer waives his right of inspecting the materials and equipment or witnessing shop tests as herein provided, it shall in no way relieve the Contractor of full liability of the completed work or any part of it, nor shall it prejudice or affect the rights of the Owner as set forth under the contract.

A2-17 INSPECTION BY THE CONTRACTOR

17.1 The Contractor shall ensure through adequate inspection that all component parts are manufactured and assembled in accordance with the shop drawings and with the specifications.

17.2 The Contractor shall submit to the Engineer a report in duplicate covering all discrepancies.

17.3 Neither material nor parts shall be used or processed, and no finished work shall be presented for acceptance or shall leave the place of manufacture until inspected by the Contractor and, wherever practicable, marked with an approval stamp satisfactory to the Engineer.

17.4 The Contractor shall keep proper and adequate inspection records, which shall be open to examination at all times by the Engineer who may make copies thereof and take extracts therefrom.

A2-18 ALTERATIONS AND REPLACEMENT

18.1 Should any part supplied by the Contractor fail when tested, the Contractor shall make alterations or replacement, as may be deemed necessary by the Engineer at no additional cost to the Owner.

18.2 Except as directed by the Engineer, no repairs to defective parts of any assembly will be permitted, and defective parts shall be replaced with new ones only.

A2-19 SURVEY LINES, GRADES AND DATUMS

19.1 The datums to be used for this work shall be that established by the Owner according to the drawings.

19.2 The Engineer will establish and clearly mark one or more reference base lines at the project and will establish reference bench marks from which the Contractor shall establish such other points, lines and elevations as may be required for the proper execution of this work.

A2-20 RESTRICTED WORK AREAS

20.1 The Contractor shall note that the working area is restricted in size and that other Owner’s contractors and Owner's employees may also require access to the work areas during or immediately after the completion of each phase of the work.

A2-21 NIGHT WORK

21.1 The Contractor shall provide all lighting, supervision, barricades and other equipment required for night work that is performed, at no additional cost to the Owner.

21.2 Lighting for night work shall be installed in a manner, which will ensure that visibility is not restricted for vessel operators and vehicular traffic.

21.3 Prior to commencing night work, the Contractor shall give the Engineer sufficient notice in writing to permit arrangements to be made for the necessary inspection staff.

A2-22 ICE AND SNOW REMOVAL

22.1 The Contractor shall promptly remove ice and snow from the work site and the access routes as required to ensure uninterrupted progress of the work.

A2-23 OFFICE, SERVICE AND STORAGE AREAS

23.1 The Contractor shall be entitled to the use of Owner land as required for parking, storage, service and office areas as directed by the Engineer. The exact location will be designated by the Engineer.

23.2 The Contractor's employees and visitors shall not park private automobiles on Owner property other than in the area designated for that purpose by the Engineer.

A2-24 ACCESS FACILITIES, TEMPORARY SHORING & FORMWORK

24.1 The Contractor shall provide access facilities for inspection, of adequate size and strength to safely accommodate the Contractor and Owner personnel.

24.2 The Contractor shall be solely responsible for the design, supply, construction and maintenance of all temporary hanging work platforms, shoring, scaffolding, formwork and falsework required in order to carry out the specified work in a safe and expeditious manner.

24.3 The Contractor shall satisfy the Engineer that all of the requirements have been met according to all applicable federal and provincial legislation.

24.4 The Contractor shall ensure that all hanging work platforms and scaffolds, whether suspended from cranes or from fixed objects, shall meet the safety requirements of, and be approved by, the Ontario Ministry of Labour in the Province of Ontario, and the *Commission de la santé et la sécurité du travail* (CSST) in the Province of Quebec, or any successor to such bodies.

A2-25 PROTECTION OF EXISTING SERVICES

25.1 The Contractor shall contact all utility companies and the Owner prior to the commencement of work and have marked the location of all buried, embedded, aerial and surface services in the work area as defined for the Contractor in *A-1 Specifications* or by the Engineer.

25.2 No work shall start until the Engineer has given permission to commence. Permission of the Engineer will not relieve the Contractor of any responsibilities hereunder.

25.3 The following shall apply for the Owner utilities and services :

25.3.1 The Contractor shall note the presence of existing Owner utilities and services, the location of which will be identified by the Owner on an appropriate form.

25.3.2 The Contractor shall accept, sign and retain on the contract site a copy of the form provided by the Owner; the Contractor shall clearly mark the locations and shall be solely responsible for maintaining the markings on these locations and utilities.

25.3.3 The Contractor shall inform all the Contractor's employees and all subcontractors of the presence of these utilities.

25.4 The Contractor shall submit in writing the procedures that will be used to ascertain that no electrical ducts, conduits or services will be accidentally damaged.

25.5 Some of the Owner and other utilities and services which are present in the work areas cannot be disrupted and shall be protected while the work is being done.

25.6 In all cases, the approval of the appropriate utility companies or of the Owner shall be obtained by the Contractor before any work is carried out adjacent to any utilities.

25.7 All existing works, property and facilities, such as roadways, curbs, fences, structures, gas pipes, water pipes, electrical ducts, power lines, drains, telephone lines, other facilities and equipment, in or adjacent to the work area shall be adequately protected by the Contractor from damage or loss of any kind and interruption of services at all times.

25.8 Any damage to existing works or loss resulting from the Contractor's operations or failure to provide and install adequate protection for these works shall be repaired or replaced by the Owner or the appropriate utility at the Contractor's expense, to the entire satisfaction of the Engineer.

25.8.1 The Owner will replace, in its entirety, any of its utilities or sections of utilities damaged by the Contractor. For example, damaged duct or conduit will be replaced in its entirety; damaged cable will be replaced in its entirety between existing termination points.

A2-26 PROTECTION OF NEW AND EXISTING EQUIPMENT

26.1 The Contractor shall take all necessary precautions to ensure that new and existing machinery, electrical and mechanical equipment, panels, and moving parts, are fully protected and kept clean and free from environmental contamination, sand, dust, dirt, concrete and others from the operations under this contract throughout the course of the work.

26.2 The Contractor shall promptly clean or repair any damage to any such machinery or parts caused by the operations under this contract to the satisfaction of the Engineer at no additional cost to the Owner.

A2-27 ELECTRICAL POWER

27.1 The following shall apply at all times :

27.1.1 If requested by the Engineer, the Contractor shall present to the Owner a plan of the intended set-up for the electrical distribution system.

27.1.2 All connections to power outlets and all materials for such connections shall be supplied, installed and subsequently removed by the Contractor at the completion of the work, all to the satisfaction of the Engineer.

27.1.2.1 All work shall conform to the *Canadian Electrical Code* and be carried out by a licensed electrician.

27.1.2.2 The Contractor shall provide the electrician's license when requested by the Engineer.

27.1.2.3 The Contractor shall protect all 115/220 V circuits by means of ground fault circuit interrupters installed at the receptacle, or on the circuit at the panel.

27.1.2.4 The Contractor shall ensure that all portable generators brought onto Owner property have their 115/220 V circuits protected by ground fault breakers or ground fault receptacles, installed at the portable generator.

27.2 If and when electrical power is supplied by the Owner, according to the specifications, the following shall apply :

27.2.1 Any work not conforming to the *Canadian Electrical Code* could result in the severance of electrical power to the Contractor until such work has been upgraded to the Code requirements.

27.2.2 The Owner will interrupt the power if faults on the Contractor's system interfere with or ground the Owner's power system.

27.2.3 The Owner will from time to time, inspect all Contractor's electrical installations.

27.2.3.1 If said inspections reveal defects the Owner will notify the Contractor, in writing, of the defects and corrective action required.

27.2.3.2 Failure on the part of the Contractor to correct these defects will result in the severance of electrical power supplied by the Owner.

27.2.4 The Owner will provide a lockable fused disconnect switch for the Contractor's use.

27.2.5 The Owner will not be responsible for any interruptions to the supply of electrical power. The Contractor shall therefore make arrangements for alternate additional power supply for supplementing Owner services as and when required, at no additional cost to the Owner.

A2-28 DISPOSAL OF MATERIALS

28.1 In the Province of Ontario, the following shall apply for the disposal of materials :

28.1.1 The Contractor shall abide by the *Environmental Protection Act* and *General Waste Management Regulation No. 347 amended by Regulation No. 558/00* of the Province of Ontario, and any successor laws and regulations, in the disposing off site of all waste materials resulting from the work.

28.1.1.1 The Owner is the GENERATOR of the hazardous and registerable waste material, and is responsible for paying all costs for obtaining, completing, and filing the *Generator Registration Report*.

28.1.1.2 The Contractor is responsible for the hiring of an approved provincial hazardous waste carrier who has a liability insurance policy of a minimum of $1 million coverage per incident to transport the waste materials to a provincially approved hazardous waste transfer site. The waste numbers which will be supplied by the Owner shall be entered on each manifest form for each waste transaction.

28.1.1.3 The Contractor shall file with the Owner copies of all documents, forms and manifests pertaining to the hazardous and registerable waste materials as they are generated.

28.2 In the Province of Quebec, the following shall apply for the disposal of materials:

28.2.1 The Contractor shall abide by the *Environment Quality Act* and the *Hazardous Materials Regulations c. Q-2, r.15.2* of the Province of Quebec, and any successor laws and regulations, in the disposing off site of all waste materials resulting from the work.

28.2.1.1 The Contractor is the GENERATOR/CONSIGNOR of the hazardous waste material and is responsible for paying all costs for obtaining and completing each manifest in conjunction with the carrier and the consignee.

28.2.1.2 The Contractor is responsible for the hiring of a carrier who has a provincial permit to transport hazardous waste and has a liability insurance policy of a minimum of $1 million coverage per incident. The waste material is to be transported to a provincially approved hazardous waste transfer centre.

28.2.1.3 The Contractor shall file with the Owner copies of all documents, forms and manifests pertaining to the hazardous waste material as they are generated.

28.3 The Contractor shall dispose of the existing materials specified as hazardous or registerable in *A-1 Specifications* in accordance with the applicable regulation, as prescribed above in Paragraphs 28.1 for the Province of Ontario, and 28.2 for the Province of Quebec, at no additional cost to the Owner.

28.4 In the event that existing materials to be disposed of are not specified as being hazardous or registerable in *A-1 Specifications*, and are eventually found to be hazardous or registerable, the Contractor shall dispose of these materials in accordance with the applicable regulation, as prescribed above in Paragraphs 28.1 for the Province of Ontario, and 28.2 for the Province of Quebec, and will be compensated for the justified additional disposal costs incurred according to the *General Conditions* of this contract.

28.5 The following shall apply for the disposal of non-hazardous and non-registerable materials in both Provinces of Ontario and Quebec:

28.5.1 Unless otherwise prescribed in *A-1 Specifications*, all waste materials resulting from the work which have been classified as non-hazardous and non-registerable shall be removed by the Contractor from the Owner's property and disposed of at a disposal site set aside for that purpose.

28.5.2 The Contractor shall obtain and file with the Owner written permission from the owner of the property upon which the materials are placed and shall save the Owner harmless and indemnified from all claims that may arise from such disposal.

28.6 The following shall apply for the disposal of all hazardous, registerable and non-hazardous and non-registerable materials in both Provinces of Ontario and Quebec:

28.6.1 The waste materials shall be removed to the disposal site as expeditiously as possible in order to avoid interference with other operations.

28.6.2 As a result of the disposal of waste materials, the Contractor shall protect and indemnify the Owner, its representatives and Her Majesty in Right of Canada against all claims for damage including all costs of any nature whatsoever, including all judicial and extra judicial cost resulting from any legal action having been entered into.

A2-29 PURCHASE ORDERS AND SHIPPING BILLS

29.1 If requested by the Engineer, 2 copies of all purchase orders for equipment, materials, and services which are to be used in carrying out this contract shall be furnished to the Engineer by the Contractor.

29.2 All purchase orders shall specify that equipment, materials or services are subject to the Owner's inspection in accordance with the contract and shall state the Owner's contract number, as well as the applicable drawing and item numbers.

29.3 The Contractor shall note on the purchase orders for raw material, that the supplier shall supply the required copies of all Mill or Foundry Test Certificates, and that all materials and processes are subject to inspection at the plant or manufacture by the Contractor and by the Owner.

29.4 If requested by the Engineer, 2 copies of all material and shipping bills shall be furnished to the Engineer by the Contractor.

A2-30 WEIGH SLIPS

30.1 The Contractor shall supply one copy of each weigh slip to the Engineer at the site as the materials measured for payment by the t (metric tonne) (1000 kg) are delivered and placed.

30.2 A scale approved for the weighing of materials by an inspector of the *Weights and Measures Branch* of the *Federal Department of Industry, Trade and Commerce* shall be used.

30.3 The Contractor shall arrange for the Engineer to have access to the weigh scale as and when required.

30.4 The tare weight of each truck shall be the weight of the truck with the following:

30.4.1 The box empty and clean.

30.4.2 The gas tank half-full.

30.4.3 The spare tire attached.

30.4.4 The driver in the cab.

30.5 The Contractor shall submit prior to starting the work a list identifying each truck planned to be used for this contract and the «maximum legal load» for each truck.

A2-31 EQUIVALENTS

31.1 Trade names specified in the specifications and drawings are intended to show the quality and kind of goods, materials, and equipment required.

31.2 Goods, materials, and equipment at least equivalent thereto may be submitted for review.

31.3 Equipment and materials will be accepted as equivalents when it is proved that they are equivalent by means of trials, analyses, or written reports, as required by the Engineer.

31.4 The decision of the Engineer as to equivalence will be final.

31.5 The Contractor shall credit the Owner with all savings made, as determined by the Engineer, by the substitution and use of lower priced materials or equipment than those specified.

31.6 Only substitutions which have been accepted in writing by the Engineer shall be used.

A2-32 REQUESTING OWNER SERVICES

32.1 During the course of the work, the Contractor may require the services of Owner's personnel.

32.2 Should this necessity arise, the Contractor shall notify the Engineer at least 48 hours in advance of the time when these services are required.

32.3 If, in the opinion of the Engineer, the Owner services would require more than 2 Owner's employees, the Engineer will require at least 5 days advance notice of the time when these services are required.

A2-33 COOPERATION WITH OTHERS

33.1 During the course of this contract, Owner personnel and equipment will be working in the area, and will require access through the work area.

33.2 The Contractor shall share and co-operate with Owner personnel in the use of haulage routes, access roads and work yards.

A2-34 INDEMNIFICATION BY CONTRACTOR

34.1 The text of paragraph GIC 1 of the document titled "I" Insurance Conditions applies to this part.