

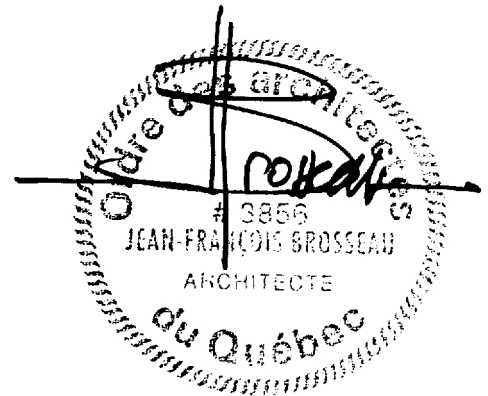
SPECIFICATIONS FOR TENDER
Canadian Space Agency

6767, route de l'Aéroport
Saint-Hubert (Québec) J3Y 8Y9

V/Ref : 2013-32
N/Ref : 09350-69
October 17th 2013

Block 9 demolition
John H. Chapman Space Center

CIMaïse



DIVISION	0		Number of pages
00 01 10E	Index		01

DIVISION 1 GENERAL REQUIREMENTS

01 10 00E	Complementary general conditions	06
01 11 00E	Summary of work	02
01 32 18E	Project schedule - Barres diagram (GANTT)	02
01 33 00E	Submittal procedures	02
01 35 30E	Safety measures	06
01 45 00E	Quality control	01
01 56 00E	Site planning and temporary installations	01
01 74 13E	Cleaning	01
01 74 19E	Management and removal of garbage	07
01 78 00E	Project file and documents/elements to hand over at the end of the contract	04

DIVISION 2 EXISTING CONDITIONS

02 41 16E	Demolition and construction	07
02 41 17E	Demolition and refurbishing	02
02 42 13E	Carpet Recycling	03

DIVISION 9 FINISHES

09 91 59E	High-Performance Glazed Coating Systems	06
-----------	---	----

***** END *****

TABLE OF CONTENT

1. Description
2. Cooperation and coordination with other trades
3. Openings and repairs
4. Site limits
5. Existing network
6. Other drawings
7. Site meetings
8. Site preparation
9. Condition of site
10. Public, workers and occupants protection
11. Access to work site
12. Obstruction of traffic
13. Storage and parking areas
14. Site offices
15. Protection of materials
16. Protection of site and work already done
17. Protection of existing structures
18. Removal of temporary work
19. Temporary sources for supplies (water, electricity)
20. General repairs
21. Licenses and authorization
22. Toilets
23. Garbage containers
24. Approval of shop drawings
25. Building code
26. Supervision and coordination : responsibility of General contractor

1. Description

- .1 The goal for this division is to complete all clauses and general conditions of this contract.
- .2 Unless stated otherwise and being a particular case written on the drawings, drawings or other documents being part of the contract, these conditions and these complementary requirements are applicable without condition and according to the case, to the general contractor and sub-contractors of all trades, concerning the specified divisions in the present specification or for the whole architectural, structural, mechanical and electrical works, that must be done to complete the construction.
- .3 For interpretation or contradiction of document, French documents take precedence on English documents.

-
- | | | |
|--|----|---|
| 2.
Cooperation and coordination
with other trades | .1 | Ensure the entire cooperation of all trades, without exception, pertaining to these works, for the furniture and the installation of all components necessary for the execution of this work. |
| | | |
| 3.
Openings and repairs | .1 | The Contractor will do the repairs as soon as existing mechanical and electrical conduits are removed. |
| | | |
| 4.
Site limits | .1 | The general contractor will respect the site limits established while respecting the required conditions stated on the drawings, in the tender and by other requirements by Ministerial Representative. |
| | | |
| 5.
Existing services | .1 | When connecting or disconnecting work has to be done to existing networks, the work has to be performed at times fixed by responsible authority, not to bother the activities of users. |
| | | |
| 6.
Other drawings | .1 | The Ministerial Representative can, for clarification purposes only, give to the contractor extra drawings to ensure the good execution of the works. These drawings will have the same signification and the same range as if they were part of the contract documents. |
| | | |
| 7.
Site meetings | .1 | The Ministerial Representative will organize some project meetings when necessary. He will state the time and write a progress report then distribute it. |
| | | |
| 8.
Site preparation | .1 | At the beginning and during work, prepare premises in advance and in relation with the work to be done. |
| | .2 | Anticipate the arrival of materials and equipment so as not to block or even reduce access ways during heavy traffic. Release and transport out of the site any residue resulting from construction work and demolition. As much as possible, deliver materials immediately before needed or for before installation, therefore not cluttering unnecessarily access to the buildings. |
| | .3 | In entrances and other places, remove all clutter to allow easy access where work must be done. Free entrances and build the required protections to allow users to pass in security, at all times. |
| | .4 | Plan, coordinate and prepare the work for each operations so there is no loss of time or delays due to the lack of foresight, of rules and regulations, of harmful overlapping of certain works, of useless clutter and hard access, basic work and incomplete preparation, or defective electricity, water and other inadequate supply services and of all other unfavorable similar causes or conditions. |
| | .5 | Before starting any work, coordinate and determine, with each subcontractor, the |

spaces required for doing the work.

**9.
Site conditions**

- .1 Work must be planned and done to minimize all inconvenient such as interferences, troubles, noise, dust, gas for combustible motors and other nuisances. Work areas must be zoned and when required by the Ministerial Representative, adequate temporary protections must be installed to confine demolition spaces where necessary; (according to the requirements of the ministerial representative).

**10.
Public, workers and occupants protection.**

- .1 According to the regulation of Health and Work Security Board, the contractor is the project manager.
- .2 Build and maintain in good order, fences, partitions, wire netting, covered bridges and any other means for temporary protection appropriate for surrounding the building, around openings and scaffoldings and also in other dangerous areas around the building and on the ground.
- .3 Provide, install and maintain in operation, during darkness periods, fires or guard lights in areas where there are ramps, clutter, open passages, dangerous objects or equipment and in any other area of this nature around the building and on the ground.
- .4 Protective gears must be as per Workmen Health and Safety Code.
- .5 The Ministerial Representative will have the right, without prior formal demand, to provide, at the expense of the contractor, safety measures that the contractor has omitted to take, either for the maintenance of communications or for the protection of public or company's workers.
- .6 It is the responsibility of the contractor to build and maintain in place signs, barricades and required fences to ensure safety of occupants having to circulate on the site. However this work has to be coordinated with the security service of the ministerial representative and municipal authorities.
- .7 The prevention program of the contractor, proper to the site, must be coordinated to the prevention program of the ministerial representative.

**11.
Access to work on site**

- .1 The contractor is responsible for any damage caused on the site or out of the site area where work is being done with heavy machinery and demolition of construction materials. The route taken by vehicles must be approved by competent authorities.
- .2 Access must be made to ensure safety of public and of workers in areas where work is being done, as much for municipal, ambulance, police and firemen services.

**12.
Traffic blocking**

- .1 The contractor has to comply with the prescribed measures and precautions stated by the Ministerial Representative concerning tools, installations and work on the site and must not hinder traffic and not be the cause for accident.
- .2 Actual services to buildings for taxis, suppliers, fire and security services, resupplying for cafeterias, postal services, and garbage removal must stay in operation at all times; the Contractor will coordinate his work and deliveries to the site so as not to hinder or affect normal functioning of services stated above.

-
- 13. Storage areas and parking**
- .1 In principle, no massive storage will be authorized on the site, except for limited spaces well defined by the Ministerial Representative and the ministerial representative, to store certain materials in large enough quantity to continue the work and ensure its continuity.
 - .2 Parking spaces for the general contractor and his subcontractors will be allowed only inside the limited area selected by the ministerial representative. The contractor must take into consideration that there are very few parking areas available on the site.
 - .3 Parking on the premise, elsewhere of inside prescribed limits is forbidden and any vehicle found will be toed at his own expense and be liable for a fine.
- 14. Site offices**
- .1 The contractor will not have any room outside of work area.
 - .2 Site meetings will be held in an office supplied by ministerial representative.
- 15. Protection of materials**
- .1 During storage period, protect against damage all materials and manufactured products delivered to the site.
 - .2 Protect materials and manufactured products according to printed instruction from manufacturer.
- 16. Protection of work in place and of the site.**
- .1 With a tarp, protect plywood or other types of appropriated material, all existing walls and other works located nearby and near ramps, ladders and other temporary means of transport and circulation.
 - .2 During bad weather, protect work being done or finished against any deterioration by means of temporary shelter and other appropriate means. Also protect against humidity and water all work susceptible to be damaged by the weather.
 - .3 Protect all equipment that is entrusted to the contractor.
- 17. Protection of existing structures**
- .1 The contractor must, at his own expense, protect, support, hold, re-route and re-establish to good order, all water ducts, building gas conducts, energy, telephone or other structures met, disturbed or damaged in the course of the work, and all this, to the satisfaction of interested parties.
 - .2 Before beginning demolition work, the contractor must communicate with authorities of concerned services to locate existing ducts. Otherwise, the contractor will be held responsible for damages caused to ducts, structures and other components like finishing, etc.
- 18. Removal of temporary works**
- .1 As work progresses, remove scaffoldings, ramps, footbridges, ladders and other temporary work of same nature that are no longer required.
 - .2 At the end of the work, remove equipments, accessories, materials, networks etc, coming from temporary works. Leave grounds free of all residue material or surplus.

-
- .19**
Temporary source for supplies
- .1 The general contractor will be able to use existing services for water, electricity, heating and any other source of energy necessary for the duration of the construction of expansion work, for his operation purpose and the ones for the subcontractors.
 - .2 Note that existing services are located near the main building. The Contractor must provide the necessary facilities near the site and protect the path traveled from the point of connection.
 - .3 Any damage done to the work due to inadequate functioning of temporary mechanical and electrical services must be repaired without additional cost to the ministerial representative.
 - .4 Temporary services must comply with the laws and regulations pertaining to accident prevention of the Quebec Workmen Health and Safety Code.
 - .5 Temporary services must be maintained in operation until provisory acceptance of permanent designed areas.
- 20.**
General repairs
- .1 Repair or replace all material or other accessories that could have been damaged by any situation out of control of the manufacturer or concerned trade.
 - .2 Before each final acceptance by the ministerial representative, the contractor must proceed to repair all surfaces that could have been damaged by contractor or his subcontractors while doing their work.
- 21.**
Licenses and authorization
- .1 It is the responsibility of the general contractor to obtain from municipal and government authorities, all pertinent information concerning laws and regulations in force concerning construction work in the province and the town where work will be done. He must also inquire about the execution contingencies specific to the areas.
 - .2 No building permit is required for these works.
- 22.**
Toilets
- .1 The Contractor shall erect temporary sanitary services near the project area. The positioning of facilities must be approved by the Departmental Representative.
- 23.**
Garbage containers
- .1 Cost of transportation and dumpsite will be paid by Contractor.
- 24.**
Approval of shop drawings
- .1 All shop drawings must be checked by Ministerial Representative before making a product, equipment, etc.
 - .2 All products, equipment etc., stated in the shop drawings and that were not approved by consulting-experts before their shipping, will be automatically rejected.
- 25.**
Building codes in force
- .1 Canadian Building Code and all other codes and regulations in force.
- 26.**
**Supervision and coordination :
Responsibility of the**
- .1 The general contractor must coordinate himself all the works of different trades.
 - .2 The general contractor must keep an eye on all subcontractor works and make sure

general contractor

that the work is done according to specifications. The presence of a superintendent or responsible for the coordination is required during the construction period.

- .3 Before sending consulting-experts a requirement for definite approval, the general contractor must check all the lists of deficiencies given by the Ministerial Representative after their inspection. He must verify himself that each items listed has been corrected.

***** END *****

PART 1 – GENERAL

1.1

Document priority

For all conflicting conditions or requirements between PWGSC's general conditions and complementary general conditions, general conditions prevail. Furthermore, sections from **Division 01** prevail on technical sections from other divisions in project specifications.

1.2

Work covered by contract documents

This project consists of the demolition of block 9 of the Canadian Space Agency. This is a combustible wooden structure building, approximately 32 meters by 9.2 meters wide. The building is about 4.2 meter high. The scope of work also includes disconnection of the services, between the existing main building and block 9, and patching and repair openings and some specified finishes.

Existing concrete slab must be partially cut and removed next to main building. Additional finish must be applied on the concrete slab that remains in place to protect it from weather conditions.

Few interventions such as new landing at access door and glazing panel replacement on the main building are specified on drawings only. The absence of technical sections for these works does not release the contractor from its obligations to complete these works.

Non-limitative list of work:

- .1 Site preparation;
- .2 Disconnection services and minor modifications of existing buildings;
- .3 Demolition of the building;
- .4 Construction of a new landing and access ramp;
- .5 Remaining concrete slab finishing;
- .6 Site repair and finishing (leveling, sodding and paving, as required)
- .7 Coordinate logistics jobs based on scheduling.

* Refer to plans and specifications to determine the full scope of work.

1.3

Work scheduling

Unless otherwise indicated,

- .1 The work site is outside the main building. The area bounded by the site will be fully available to the contractor
- .2 Since the site is still in operation, main building services must remain active at all times and free lanes for local traffic.
- .3 Steps to foresee (list not exhaustive):
 1. Overall coordination and detailed.
 2. Submission of detailed work schedule for approval.
 3. Delivery schedule for submission of shop drawings, data sheets and

samples for approval.

4. Mobilization on the site according to the approved schedule.
5. Install temporary services.
6. Services disconnection and dismantling of systems and equipment to be kept for reuse/reemploy.
7. Systems and material deconstruction in order to avoid any damage to main building.
8. Demolition / construction on the site according to the approved schedule.
9. Detailed inspection work by the Contractor and correction of all defects apparent even before notify in writing the designated professionals of completion.
10. Correction of defects identified by the Building owner and / or professional and other competent authorities, within the time required.
11. Compliance certificates and documents management.

.4 Work will be performed in accordance with the requirements listed in other sections and to comply with the deadline imposed.

.5 Always maintain access for the fight against fire; also maintain the means to fight against fire.

**1.4
Site use by contractor**

- .1 **Except if otherwise noticed**, use of site by contractor is restricted to work, storage and access area. Work area needs to be surrounded by metal site fences.
- .2 Site use must be coordinated with ministerial representative's instructions.
- .3 Find extra work or storage area required for completion of work included in contract. Contractor must pay all cost related to these areas.

**1.5
Site occupancy by ministerial
representative**

- .1 Not applicable.

PART 2 – PRODUCTS

**2.1
Not applicable**

- .1 Not applicable.

PART 3 – EXECUTION

**3.1
Not applicable**

- .1 Not applicable.

***** FIN *****

**1.
Construction period**

Except if otherwise noticed in general conditions, work needs to be completed according to allowed delays in contract terms.

Working hours: Unless indicated otherwise, work needs to be done in day time, between 6am and 6pm, Monday to Friday, or on weekends. Follow Ministerial Representative's instructions.

Material must be ordered in time and all necessary labour must be planned to comply with above contractual schedule.

**2.
Required schedules**

- .1 Schedules to be submitted:
 - .1 Execution schedule
 - .2 Workshop drawing and technical data sheet submission schedule
 - .3 Samples submission schedule
 - .4 Product order and delivery schedule

**3.
Presentation**

- .1 Schedules must be presented in one horizontal bar diagram.
- .2 One separate bar must be assigned for each operation or trade.
- .3 Time must be represented as an horizontal linear scale indicating first business day of each working week.
- .4 Lists presentation: as per specification's table of content
- .5 Lists content designation: as per subjects of each specification sections.

**4.
Submission schedule**

- .1 If need be, submit first schedules within **10 days** following contract attribution.
- .2 Submit one copy for owner and one copy per consultant.
- .3 Consultants must verify proposed schedule et hand back one revised copy within 5 days after its reception.
- .4 Schedule's final version must be submitted with no delay after reception of the revised copy.
- .5 Each payment request must be accompanied of a revised version of the execution schedule.
- .6 One copy of the revised execution schedule must be sent to:
 - .1 Site office;
 - .2 Subcontractors;
 - .3 Other interested parties.
- .7 Ask addressees to inform Contractor, within a delay of **10 days**, of every issue which could be caused by the proposed execution schedule.

**5.
Execution schedule**

- .1 Present construction activities' complete schedule.
- .2 Give dates of beginning and end of each of the major activities including

those listed below. The critical path shall be identified clearly from the development of the first schedule.

- Documents and elements to be submitted;
 - Systems and equipment to deconstruct and move;
 - Services disconnection;
 - Demolition work;
 - Construction and finishing;
 - End of work (including deficiency correction)
- .3 Planned progression's percentages on first day of each week must be given for each activity.
- .4 Progression's percentage of each activity must be given on schedule submission date.
- .5 Changes that occurred since last schedule submission must be indicated.
- .1 Main changes to come
 - .2 Modified activities since last schedule
 - .3 Progression rhythm and work completion date revised forecast.
 - .4 Other predictable changes
- .6 Detailed report on following subjects must be done :
- .1 Issues, predictable delay and their impact over schedule.
 - .2 Proposed corrective measures and intended results.
 - .3 Modifications' probable effect on other contractor's schedule.

***** END *****

- 1. Requirements**
 1. Shop drawings and product descriptions
 2. Samples
 3. Operation and maintenance manuals
 4. Drawings to be inserted in file project
 5. Certificates and copies

- 2. Administrative tasks**
 1. Submit to Ministerial Representative for verification purposes all required documents and samples in a reasonable delay and following appropriate order so works are not delayed. Lateness does not constitute a valid reason for asking for a prolongation of the contractual period. No requirements to this effect will be accepted.
 2. Works stated in documents or samples to be submitted must not be started before all of them are confirmed.
 3. Check all dimensions taken on site and make sure that works pertaining to adjacent works, being subjected to approval, are coordinated.
 4. On site, keep an approved copy of documents and samples to be submitted.

- 3. Shop drawings**
 1. The expression "shop drawings" indicate drawings, diagrams, illustrations, productivity or performance graphic charts, brochures and other documentation that the contractor must provide to show in detail part of the work targeted.
 2. Shop drawings must indicate materials to be used and construction methods. Also they must show fixation or anchorages to be used. They must have mounting diagrams, explanatory notes and any other pertinent information needed to do the work. When some components or adjacent works are prescribed related to work to be done, make sure they are well coordinated in tender, no matter which section of adjacent works are provided or installed.
 3. Description. Shop drawings must:
 - 3.1 Indicate the date, the name of subcontractor and details, number of pages and their numbering.
 - 3.2 When asked for, as per certain standards, please indicate.
 - 3.3 Describe all abbreviations or symbols.
 - 3.4 Leave a free space of 60mm x 100mm for stamping and remarks by consultant.
 - 3.5 Must be very readable: fax will be refused.
 - 3.6 Must contain only information pertinent to the project.
 4. Modification to the shop drawings by the consulting-expert should not increase price of contract. Should it increase the price, please notify to the consulting-expert, in writing before starting works.
 5. Make changes to shop drawings requested by the Ministerial Representative, as per requirements of contractual documents. When re-submitting, notify the Ministerial Representative in writing of all changes made other than the ones required by the architect.

6. Unless stated otherwise, submit shop drawings in PDF format by e-mail.
 7. Allow ten (10) working days to leave time to the professionals to check submitted documents.
 8. When shop drawings are verified by the Ministerial Representative and no errors or omission have been found or that there are only minors corrections to be made, the copies will be returned and manufacturing and installation can start. If shop drawings are rejected, the annotated copies will be returned and new corrected shop drawings should be submitted as per mentioned indications, before manufacturing or installation can start.
 9. Technical data sheet must be submitted for all material, described in specifications and drawings, required to complete work,
- 4. Identification sheets**
1. Contractor must keep one (1) copy on the site and three (3) other copies will be inserted in operation and maintenance manuals.
- 5. Samples**
1. Submit samples for verification purposes as per requirements of various sections of tender. Label samples, stating their origin and proposed use in performing the works.
 2. Notify the Ministerial Representative in writing, of all differences in samples in regard to requirements in contractual documents.
 3. Modifications made to samples by the Ministerial Representative should not increase price of contract. Should it happened, please notify the Ministerial Representative, in writing, before starting works.
 4. Make changes to samples that could be requisite by Ministerial Representative as per requirements of contractual documents.
 5. When required, build work samples in an area approved by the Ministerial Representative. For these works, coordinate with the Ministerial Representative in order to approve the samples on site.
- 6. Drawings to be inserted in file project**
1. After contract is awarded, in lieu of drawings to be inserted in the project file, note with care and precision all disparities in regard to contractual documents that are cause by state of premises and changes to be done.
 2. Mark placement of concealed components in mechanical and electrical installations.
 3. Identify drawings as being "drawing as built, copies for project file", maintain them as new and make sure they are available on site, so the Ministerial Representative can validate them.
 4. Once works are done and before final inspection, submit to the Ministerial Representative all documents inserted in project file.
- 7. Certificates and copies**
1. Immediately after contract is awarded, submit required certificates to responsible organism for Workmen's Health and Security Welfare, proper construction licenses and copies of insurance policies. All documents must be submitted in three (3) copies to the Ministerial Representative.

Part 1 General

1.1 SECTION INCLUDES

- .1 Contractor shall manage his operations so that health and safety of the public and of site workers always take precedence over cost and scheduling considerations.

1.2 REFERENCES

- .1 Canada Labour Code - Part II, Canadian Occupational Safety and Health Regulations.
- .2 Canadian Standards Association (CSA)
- .3 Workplace Hazardous Materials Information System (WHMIS)
- .4 Act Respecting Occupational Health and Safety, R.S.Q. Chapter S-2.1.
- .5 Construction Safety Code, S-2.1, r.6.

1.3 SUBMITTALS

- .1 Submit to Departmental Representative, the site-specific safety program, as outlined in 1.8 at least 10 days prior to start of work. The Contractor must review his program during the course of the project if any change occurs in work methods or site conditions. The Departmental Representative may, after receiving the program or at any time during the project, ask the Contractor to update or modify the program in order to better reflect the reality of the construction site and activities. The Contractor must make the required changes before work begins.
- .2 Submit to Departmental Representative the site inspection sheet, duly completed, at the intervals indicated in 1.13.1.
- .3 Submit to Departmental Representative within 24 hours a copy of any inspection report, correction notice or recommendation issued by federal or provincial inspectors.
- .4 Submit to Departmental Representative within 24 hours an investigation report for any accident involving injury and any incident exposing a potential hazard.
- .5 Submit to Departmental Representative all safety data sheets for hazardous material to be used at the site at least three days before they are to be used.
- .6 Submit to Departmental Representative copies of all training certificates required for application of the safety program, in particular:
 - .1 General construction site safety and health courses;
 - .2 Safety officer attestations, if applicable;
 - .3 First aid in the workplace and cardiopulmonary resuscitation;
 - .4 Refrigeration mechanic professional certificate
 - .5 Each refrigeration mechanic, working on this project, must provide his accreditation certificate for the environmental awareness course (HRAI).
 - .6 Work in confined spaces;
 - .7 Lockout procedures;
 - .8 Safe work procedures at height;

- .9 Hot work procedures;
 - .10 Wearing and fitting of individual protective gear;
 - .11 Forklift truck safe driving practices;
 - .12 Positioning platform;
 - .13 Any other requirement of Regulations or the safety program.
- .7 Medical examinations : Wherever legislation, regulations, directives, specification or a safety program require medical examinations, Contractor must:
- .1 Prior to start-up, submit to Departmental Representative certificates of medical examination for all concerned supervisory staff and employees who will be on duty when the site opens.
 - .2 Thereafter, submit without delay certificates of medical examination for any newly hired concerned personnel as and when they start work at the site.
- .8 Emergency plan : The emergency plan, as defined in 1.8.3, shall be submitted to Departmental Representative at the same time as the site-specific safety program.
- .9 Notice of site opening : Notice of site opening shall be submitted to the *Commission de la santé et de la sécurité du travail* before work begins . A copy of such notice shall be submitted to Departmental Representative at the same time and another posted in full view at the site. During demobilization, a notice of site closing shall be submitted to the CSST, with copy to Departmental Representative.
- .10 Plans and certificates of compliance : Submit to the CSST and to Departmental Representative a copy signed and sealed by engineer of all plans and certificates of compliance required pursuant to the Construction Safety Code (S-2.1, r. 6), or by any other legislation or regulation or by any other clause in the specifications or in this contract. Copies of these documents must be on hand at the site at all times.
- .11 Certificate of compliance delivered by the CSST: The certificate of compliance is a document delivered by the CSST confirming that the contractor is in rule with the CSST, i.e. that he had pay out all the benefits concerning this contract. This document must be delivered to Departmental Representative at the end of the work.

1.4 HAZARDS ASSESSMENT

- .1 The contractor must identify all hazards inherent in each task to be carried out at the site.
- .2 The contractor must plan and organize work so as to eliminate hazards at source or promote mutual protection so that reliance on individual protective gear can be kept to a minimum. Where individual protection against falling is required, workers shall use safety harness that meets standard Can-CSA-Z-259.10-M90. Safety belts shall not be used as protection against falling.
- .3 Equipment, tools and protective gear which cannot be installed, fitted or used without compromising the health or safety of workers or the public shall be deemed inadequate for the work to be executed.
- .4 All mechanical equipment shall be inspected before delivery to the site. Before using any mechanical equipment, submit to Departmental Representative a certificate of compliance signed by a qualified mechanic. Whenever he suspects a defect or accident risk, Departmental

Representative may at any time order the immediate shut-down of equipment and require a new inspection by a specialist of his own choosing.

1.5 MEETINGS

- .1 Contractor decisional representative must attend any meetings at which site safety and health issues are to be discussed
- .2 Set up a site safety committee, and convene meetings every in accordance with the Construction Safety Code (S-2.1, r.6).

1.6 LEGAL AND REGULATORY REQUIREMENTS

- .1 Comply with all legislation, regulations and standards applicable to the site and its related activities.
- .2 Comply with specified standards and regulations to ensure safe operations at site containing hazardous or toxic materials.
- .3 Regardless of the publication date shown in the construction safety code, always use the most recent version.

1.7 SITE-SPECIFIC CONDITIONS

- .1 At the site, the contractor must take account of the following specific conditions:
 - .1 Works in a building occupied in operation.
 - .2 Works realized in 2 successive phases, to see the section 01 32 18F- Project schedule - Bar diagram (GANTT)
- .2 The entrepreneur has to follow the instructions of the ministerial Representative in what concerned the internal and outside temporary installations and concerning the accesses to the site of the works.

1.8 SAFETY AND HEALTH MANAGEMENT

- .1 Acknowledge and assume all the tasks and obligations which customarily devolve upon a principal Contractor under the terms of the Act Respecting Occupational Health and Safety (R.S.Q., chapter S-2.1) and the Construction Safety Code (S-2.1, r.6).
- .2 Develop a site-specific safety program based on the hazards identified and apply it from the start of project work until close-out is completed. The safety program must take account of all information appearing in 1.7 and must be submitted to all parties concerned, in accordance with the provisions set forth in 1.3. At a minimum, the site-specific safety program must include :
 - .1 Company safety and health policy.
 - .2 A description of the work, total costs, schedule and projected workforce curve.
 - .3 Flow chart of safety and health responsibility.
 - .4 The physical and material layout of the site.
 - .5 First-aid and first-line treatment standards.
 - .6 Identification of site-specific hazards.
 - .7 Risk assessment for the tasks to be carried out, including preventive measures and the procedures for applying them.

- .8 Training requirements.
 - .9 Procedures in case of accident/injury
 - .10 Written commitment from all parties to comply with the prevention program.
 - .11 A site inspection schedule based on the preventive measures.
- .3 The contractor must draw up an effective emergency plan based on the characteristics and constraints of the site and its surroundings. Submit the emergency plan to all parties concerned, pursuant to the provisions of 1.3. The emergency plan must include:
- .1 Evacuation procedure;
 - .2 Identification of resources (police, firefighters, ambulance services, etc.);
 - .3 Identification of persons in charge at the site;
 - .4 Identification of those with first-aid training;
 - .5 Training required for those responsible for applying the plan;
 - .6 Any other information needed, in the light of the site characteristics.

1.9 RESPONSIBILITIES

- .1 No matter the size of the construction site or how many workers are present at the workplace, designate a competent person to supervise and take responsibility for health and safety. Take all necessary measures to ensure the health and safety of persons and property at or in the immediate vicinity of the site and likely to be affected by any of the work.
- .2 Take all necessary measures to ensure application of and compliance with the safety and health requirements of the contract documents, applicable federal and provincial regulations and standards as well as the site-specific safety program, complying without delay with any order or correction notice issued by the Commission de la santé et de la sécurité du travail.
- .3 Take all necessary measures to keep the site clean and in good order throughout the course of the work

1.10 COMMUNICATIONS AND POSTING

- .1 Make all necessary arrangements to ensure effective communication of safety and health information at the site. As they arrive on site, all workers must be informed of their rights and obligations pertaining to the site specific safety program. The Contractor must insist on their right to refuse to perform work which they feel may threaten their own health, safety or physical integrity or that of other persons at the site. The Contractor must keep and update a written record of all information transmitted with signatures of all affected workers.
- .2 The following information and documents must be posted in a location readily accessible to all workers:
 - .1 Notice of site opening;
 - .2 Identification of principal Contractor;
 - .3 Company OSH policy;
 - .4 Site-specific safety program;
 - .5 Emergency plan;

- .6 Data sheets for all hazardous material used at the site;
- .7 Minutes of site committee meetings;
- .8 Names of site committee representatives;
- .9 Names of those with first-aid training;
- .10 Action reports and correction notices issued by the CSST.

1.11 UNFORESEEN CIRCUMSTANCES

- .1 Whenever a source of danger not defined in the specifications or identified in the preliminary site inspection arises as a result of or in the course of the work, immediately suspend work, take appropriate temporary measures to protect the workers and the public and notify Departmental Representative, both verbally and in writing. Then the Contractor must modify or update the site specific safety program in order to resume work in safe conditions.

1.12 HEALTH/SAFETY/HYGIENE/ENVIRONMENTAL SPECIALISTS

- .1 As soon as work starts, hire one or several safety officer(s), pursuant to the provisions of sections 2.5.3 and 2.5.4 of the Construction Safety Code (S-2.1, r. 6) and give him/her/them the necessary authority to carry out the duties of this position, including authority to stop work on safety and health grounds.
- .2 As of [enter time], hire a qualified person whose duties will be to ensure compliance with and application of all legislation, regulations and standards and all contractual requirements pertaining to [specify area of expertise].
- .3 Provide this person with the authority, resources and tools needed for performance of his/her duties.
- .4 The person selected shall meet the following requirements:
 - .1 Possessed a minimum of five (5) years of experience in the domain.
- .5 The person selected shall:
 - .1 have in-depth knowledge of legislation and regulations applicable to the site pertaining to (specify area of expertise).
 - .2 develop and disseminate a safety orientation program for all site workers.
 - .3 ensure that no worker is admitted to the site without having taken the safety orientation program and met all the training requirements of the applicable legislation and the site-specific safety program.
 - .4 inspect the work and ensure compliance with all regulatory requirements and those of the contract documents or the site-specific safety program.
 - .5 keep a daily log of actions taken and submitting a copy to Departmental Representative each week.

1.13 INSPECTION OF SITE AND CORRECTION OF HAZARDOUS SITUATIONS

- .1 Inspect the work site and complete the site inspection sheet at least once a month if the work length exceeds 30 non working days. If the work length is less than 30 non working days, the frequency is at least once during the work length.

- .2 Immediately take all necessary measures to correct any lapses from legislative or regulatory requirements and any hazards identified by a government inspector, by the Departmental Representative, by the site safety and health coordinator or during routine inspections.
- .3 Submit to Departmental Representative written confirmation of all measures taken to correct lapses and hazardous situations.
- .4 Give the safety officer or, where there is no safety officer, the person assigned to safety and health responsibilities, full authority to order interruption and resuming of work as and when deemed necessary or desirable in the interests of safety and health. This person should always act so that the safety and health of the public and site workers and environmental protection take precedence over cost and scheduling considerations.
- .5 Without limiting the scope of sections 1.8 and 1.9, Departmental Representative may order cessation of work if, in his/her view, there is any hazard or threat to the safety or health of site personnel or the public or to the environment.

1.14 POWDER ACTUATED DEVICES

- .1 Use of power hammers and other explosive-actuated devices must be authorized by Departmental Representative.
- .2 Any person using a power hammer shall hold a training certificate and meet all requirements of Section 7 of the Construction Safety Code (S-2.1, r. 6).
- .3 Any other explosive-actuated device shall be used in accordance with the manufacturer's directions and applicable standards and regulations

***** END *****

- 1. Related requirements**
 1. The specific requirements relating to inspection and to tests that must be performed by laboratories are indicated in various sections.
 2. The consultants will assist the ministerial representative in overseeing the execution of the work. This in no way limits the contractor's responsibility to comply with current standards and codes.
 3. The ministerial representative may also hire testing laboratories to perform tests on the structure or on the tightness of the various systems, damaged or not, in order to identify noncompliance or omissions.

- 2. Contractor's responsibilities**
 1. Provide the workforce and facilities needed to:
 - 1.1 allow access to the structures to be inspected and tested;
 - 1.2 facilitate inspections and tests;
 - 1.3 restore structures that are disturbed during inspections and tests.
 2. Give consultants enough advance warning of operations so that they may plan visits for the inspection of specific structures or make appointments with laboratory staff and establish a testing schedule.
 3. When materials must be tested, send the requested amount of representative samples to the testing laboratory.
 4. Assume the cost of work carried out to uncover and restore structures that were covered before the required inspection or tests were performed and approved by the architect or the consultants.

- 3. Rejected structures**
 1. Remove defective elements deemed noncompliant with contract documents and rejected by the consultant, either because they were not built according to good engineering practices, they were made with defective materials or products, or they were damaged, even if they are already part of the finished structure. Replace or rebuild the elements in question according to the requirements in the contract documents.
 2. Immediately repair other contractors' structures that have been damaged during replacement work described above.
 3. If, in the consultant's opinion, it is not feasible to repair the structures deemed defective or noncompliant with contract documents, the ministerial representative may deduct from the contract price the difference in value between the structure that was built and the one prescribed in the contract documents, with the amount of this difference being determined by the consultants.

- 4. Workers' competence**
 1. The contractor must prove to the consultants, upon demand, that the workers possess the skills to carry out the work they have been assigned. Certification complying with current laws and regulations may be necessary.
 2. If the consultant is not satisfied by the proof, he may require the contractor to replace the workers.

- 1. Material installation and removal**
 - .1 Provide, set-up or lay out necessary installation on site to allow for work to be done within the shortest time possible.
 - .2 As work progresses, dismantle material not needed and remove of the site.

- 2. On-site storage – Admissible charges**
 - .1 Ensure that work is done within the time limits stated in the contract. Do not clutter site unnecessarily with equipment and materials.
 - .2 Do not overload or allow overloading on any part of the work so as to not compromise its integrity.
 - .3 Provide and install weatherproof containers to store materials, tools and equipment sensitive to damage.
 - .4 Container's space must be determined by the ministerial representative.

- 3. Sanitary installation**
 - .1 Sanitary facilities must be provided inside the security perimeter of the site area. Contractor won't have access to facilities inside the main building.

- 4. Signposting**
 - .1 Install, in pertinent areas, sign panels to indicate site limits, the direction of temporary relocated exits or other pertinent information.

- 5. Removal of temporary installation**
 - .1 Remove from site all temporary installation when the Ministerial Representative will judge it appropriate.

- 6. Protection of finished building surfaces**
 - .1 During all the work period, protect all finished or partially finished surfaces of the existing building.
 - .2 Foresee screens, tarps and necessary fences.
 - .3 Three (3) days prior to installation of protective components, confirm with the Ministerial Representative where each protection will go. Confirm schedule for installation.
 - .4 Take all the responsibility for damage caused to works because of lack of protection or unsuitable protection.

- 7. Guardrails and barriers**
 - .1 Provide guardrails and rigid barriers and security and set them around work site area. The defined area must surround the building to be demolished, the equipment and the wastes containers.
 - .2 Supply and install these components in accordance with jurisdictional requirements.

***** END *****

- 1. Related requirements**
 - .1 To complement the general conditions, the contractor must comply with the requirements of the present section.
 - .2 Section 07 74 19E – Management and removal of garbage

- 2. Cleanness of site**
 - .1 Ensure cleanliness of site and get rid of all piling up of rubbish and material for garbage.
 - .2 Remove from site debris and garbage materials and place them in garbage containers at the end of each work shift.
 - .3 Clean daily occupied areas soiled by work of the general contractor or his subcontractors. Cleaning must be done immediately after work so the good functioning of the building is not hinder by it.
 - .4 General contractor have to existing and new construction to minimize contamination of clean room. Coordinate all protection measures with decontamination experts.

- 3. Final cleaning**
 - .1 When work is almost entirely done remove surplus material, tools and equipment. Remove construction material that is not necessary to the unfinished work.
 - .2 Remove debris and scrap material other than the ones generated by the ministerial representative, other contractors or their employees and leave premises clean and ready to use.
 - .3 At the end of the work, remove surplus material, tools and equipment and also all construction material. Remove debris and scrap materials other than those generated by the ministerial representative or other contractors.
 - .4 Scrap materials must be removed from site at pre-established fixed intervals, or eliminate them according to the counseling-expert requirements. Do not burn scrap materials on site, unless you have an express approval from the consulting-expert.
 - .5 Take the necessary required arrangements to obtain licenses from competent authorities to eliminate debris and scrap materials according to section 01 74 19E – Management and removal of garbage.
 - .6 Sweep all work surfaces prior to site inspection.

***** END *****

PART 1 – GENERAL

- 1.1**
Content and objective of this section
- .1 The present section states the requirements concerning the management and removal of garbage for the present project. It concerns in part demolition and construction works. It must include at the source sorting programs for certain demolition garbage.
2. Building, refurbishing and demolishing generate a good quantity of residues that are generally buried. The present section is for contributing to the good management of our environment. The goal of the present is to reduce the volume of garbage to be buried and to recuperate some materials that could be reused elsewhere.
- 1.2**
Definitions
1. Audit of demolition garbage: Is applied to garbage generated by this work.
2. **Garbage management coordinator:** Designated person exercising these functions on site. All Ministerial Representatives must designate on person in their staff, to coordinate garbage management with the coordinator.
3. **Recyclability:** The ability of a product or material to be recovered or otherwise diverted from the solid waste stream for the purpose of recycling.
4. **To recycle:** Garbage and used material collect or transformation process, in order to reintroduce those materials in a consumption cycle as new products.
5. **Recycling:** A series of activities including collection, separation and processing by which products or materials are recovered from the solid waste stream for use in the form of raw materials in the manufacture of new products other than fuel for producing heat or power by combustion.
6. **Reuse / reemploy:** Repeated use of a product or a material in its original form, in order to use them in a different way if reused or in a similar way if reemployed. Reuse / reemploy includes the following:
- a. Reusable product and material recovery, which are generated by modernization work of a structure, before their demolition, in order to resale, reuse, reemploy within the same project or stored for further use.
- b. Return to suppliers, products and materials that can be reused / reemployed; skid and unused product for example.
7. **Recovery:** Removal of load-bearing and non-load-bearing construction components and material in the process of dismantling industrial, commercial or institutional structures, in order to be reused or recycled.
8. **Sorted garbage:** Garbage classified by type.
- 1.3**
Use of premises and installations
- .1 Do the work without preventing normal use of premises.
- .2 Put in place provisory safety measures, approved by the counseling-expert.
- 1.4**
Sorting program for demolition
- .1 Prepare sorting program for demolition material before beginning works.
- .2 Following approved methods by the Ministerial Representative and with his

materials

authorization, begin the sorting program of material to be recuperated for recycling.

- .3 On the site, anticipate necessary installations to collect, handle and transport projected quantities of recyclable garbage.
- .4 Material must be collected, handled and evacuated either at the sorting stage or to be sorted at an independent site. Recuperated materials must be transported towards approved installation and authorized for recycling.
- .5 Hold information and awareness meeting for workers that will be working on the site and give them written information on the procedure to be followed for recuperation.

**1.6
Internet links on garbage
treatment**

- .1 <http://www.mddep.gouv.qc.ca/matieres/valorisation.htm#debris>
Available documentations:
 - Information sheet : « *Construction residue, renovation and demolition* »
 - *Information guide on recycling of dry materials.*
- .2 <http://www.3rmcdq.qc.ca/>
- .3 <http://www.usqbc.org/>
- .4 <http://www.recyc-quebec.gouv.qc.ca>
- .5 <http://www.cca-acc.com>

**1.7
Removal of garbage**

- .1 It is forbidden to burry debris and garbage on the site.
- .2 It is forbidden to throw garbage, mineral essences, oil, paint thinner in water ways, sanitary and rain sewers.

**1.8
Halocarbon**

- 1. The person who performs works that might release halocarbons must be certified.
- 2. Before start of work, Contractor must submit to Ministerial Representative one copy of the professional accreditation certificate (refrigeration mechanic) and one copy of the accreditation certificate for the environmental awareness course, for each involved technician.
- 3. Prior to air conditioning system disabling, halocarbon must be recovered in a container which in conceived and made for reuse and to contain the halocarbon.
- 4. When disabled, a notice must be applied on system and one copy must be handed to Ministerial Representative.
- 5. When dismantling, the Contractor must proceed with system components removal before its final disposal, such as dangerous maters, oils, insulation and others, or recyclable material.
- 6. Must comply with federal regulation on halocarbon incorporated in Canadian Environmental Protection act.

- 1.9
Demolition Waste Audit (DWA)**
1. Prepare DWA, ten (10) days prior to work start.
 2. Fill DWA, (annex a)
 3. Provide quantity inventory for recovered waste material intended to be reuse / reemployed, recycled or eliminated.
- 1.10
Stoking, Handling and protection of materials**
- .1 Stock, in designated areas on the site, material intended to be reused, recycled or recuperated.
 - .2 If not stated otherwise, materials that must be disposed of, become the property of the contractor.
 - .3 Protect, pile up, stock and list all components to be recuperated.
 - .4 Separate non recoverable components from recoverable ones. Transport and deliver non recoverable components to authorized elimination installation.
 - .5 Support all work affected by the works. Should the safety of the building become compromised, stop work and inform the consulting-expert immediately.
 - .6 Protect superficial water evacuation works and all electrical and mechanical installations to prevent damage or blockage.
- 1.11
Work schedule**
- .1 Coordinate management of garbage with other activities to ensure the good order of the works.
- PART 2 – PRODUCTS**
- 2.1
Without object**
- .1 Without object
- PART 3 – WORK**
- 3.1
General**
- .1 Do work as per garbage sorting program.
 - .2 Handle as per pertinent codes and regulations for garbage that are not reusable, recoverable and or recyclable.
- 3.2
Cleaning**
- .1 Once work is done, remove all tools and garbage. Leave premises clean and in good order.
 - .2 Clean work areas as work progresses.
 - .3 Sort, at the source, all material that must be reused/recycled and place them in designated areas.
- 3.3
Waste value
REUSE / REEMPLOY**
1. Value good shape material and systems with the objective to reuse them in their actual shape and form or following their modernization.
 2. These items become property of the contractor at contract signature; however they are constrained to the requirements of this section.
 3. On site selling for the purpose of reuse / reemploy or recovery for the purpose of

recycling is forbidden.

4. Fill table A in order to document reel percentage of reused material and equipment.

TABLE A – REUSE / REEMPLOY			
Material / system	Description	Value - Minimal Percentage	Value - reel Percentage
Office furniture	Fabric office partition	75 %	
Office furniture	Office desk, filing cabinet and high cabinet	90 %	
Office furniture	Filing cabinet and metal locker	100 %	
Glazed partition	Aluminum frame, wood door and galzing	75 %	
Other	<i>Specify</i>		
Other	<i>Specify</i>		
Other	<i>Specify</i>		

**3.4
Waste value
RECYCLING**

1. Based on the following list, sort waste material from general waste on an independent site as required by the current section.
 - 1.1. Identify containers or area for piling.
 - 1.2. Instructions for elimination method must be provided.
2. On site selling for the purpose of reuse / reemploy or recovery for the purpose of recycling is forbidden.
3. Fill table B in order to document reel percentage of recycled material and equipment.
4. Refer to section 02 42 13E – Carpet Recycling for requirements in regard to carpet to disposal.

TABLEAU B - RECYCLING

Material / system	Description	Value - Minimal Percentage	Value - reel Percentage
Concrete	Concrete slab, pavement, etc	100 %	
Metal	Window frame, sun shade, flashing, etc.	100 %	
Wood	Wood structure, doors and frames, etc.	75 %	
Insultation	Fiberglass insulation, rigid insulation panel, etc.	75 %	
Gypsum	Interior gypsum	75 %	
Carpet	Carpet tile	100 %	
Equipment	Mechanical equipment, electrical plugs, conduits, etc.	75 %	
Other	<i>Specify</i>		
Other	<i>Specify</i>		
Other	<i>Specify</i>		

**3.5
Waste audit**

1. Prepare DWA prior to work start.
2. Fill DWA, (annex A)
3. Provide quantity inventory for recovered waste material intended to be reuse / reemployed, recycled or eliminated.

Annex A – Demolition Waste Audit

TABLE C – DEMOLITION WASTE AUDIT

CIMAISE
 V/Réf. : 2013-32
 N/Réf : 09350-69

Management and removal of garbage

Section 01 74 19E
 Page 7 of 7
 October 2013

Material / system	Quantity	Units	Total	Total Volume	Weight	Notes and observations
Concrete						
Metal						
Wood						
Insulation						
Gypsum						
Carpet						
Equipment						

***** END *****

- 1.**
Content for this section
 - .1 Project file, samples and tender.
 - .2 Materials and appliances.
 - .3 Technical data, materials, material and finishing products and related information.
 - .4 Data and operation and maintenance manuals.

- 2.**
Documents to submit
 - .1 Information must be prepared by competent persons, having the required knowledge pertaining to functioning and maintenance for the described products.
 - .2 Submit a sample of operation and maintenance manual in their final form, before final reception of work.
 - .3 Submitted samples will be returned with comments from the Ministerial Representative.
 - .4 If need be, review content of documents before to re-submitting.
 - .5 Once manuals are ready and approved, hand over one (1) definite copy of maintenance and operation manuals to the ministerial representative in addition to a digital version of those documents. Files must be in PDF format and organized according to the folders' structure provided by ministerial representative.
 - .6 In addition to information written in this present section, refer to engineering consulting-experts documents to know the requirements and the content of manuals to be submitted.

- 3.**
Presentation
 - .1 Present data in the form of an instruction manual.
 - .2 Use three D shape ring rigid vinyl binders with loose leaves, 219mm x 279mm.
 - .3 The digital version will be handed on a DVD disc.
 - .4 When multiple binders are needed, regroup data according to a logic order. Clearly indicate content of each binder on the spine.
 - .5 On the covering page of each binder you must indicate the name of the document, – Project file, typed or written in square letters, name of the project and table of contents.
 - .6 Organize the contents per section numbers of the tender and the order as they appear on the table of content.
 - .7 Anticipate, for each product and each system a tab index on which is typed the description of the product and the list of main equipment pieces.
 - .8 The text must be printed or be typed data from the manufacturer.
 - .9 Fit the drawings with a reinforced perforated tab. Insert in the binder and fold large drawings according to format of the text pages.

- 4.**
 - .1 Table of contents: indicate designation of project:

**Content of each volume of the
final project file**

- .1 Date for handing over the documents;
- .2 Name, address and telephone number of the counseling-expert, of the Contractor and the names of their authorized representatives;
- .3 A list of products and systems, indexed, according to the contents of the binder;
- .4 A list of subcontractors and pertinent information.
- .2 For each product or system indicate the following:
 - .1 Name, address and telephone number of subcontractors and suppliers;
 - .2 Name of persons responsible for the project;
 - .3 Name of local distributors for spare parts.
- .3 Technical data: Mark each sheet to clearly indicate products and specific parts. Give proper directives pertaining to installation. Delete all none pertinent information.
- .4 Drawings: Drawings are used to supplement the charts and to illustrate the relation between various elements of material and systems; they include diagrams of order and principle.
- .5 Typed text: according to need, to complete technical data. Give instructions in a logic sequence for each intervention, incorporating information from manufacturer.
- .6 Divide binders by specialty: architecture, structure, exterior layout, mechanic, electricity, etc.
- .7 Refer to contractual documents.
- .8 Administrative information: Include the following information:
 - .1 Certificate of compliance given by the Workmen Health and Safety Commission;
 - .2 Certificate of company in order with the Quebec Construction Commission.;
 - .3 Contractor must make a statutory declaration. It must accompany his request to free the deduction, security deposit or both when a substantial part of the work is done or finished.
 - .4 Receipts from subcontractors and suppliers;
 - .5 Guarantee asked for each sections;
 - .6 A list of paint products and color used;
 - .7 Maintenance instruction for surfaces and requested materials.
- .9 Shop drawings:
 - .1 Separately bind a complete set of definite revised shop drawings and technical data;
5. **Documents and samples to add to the project file**
 - .1 In addition to requirements mentioned in the general conditions, store on the site, for the ministerial representative a sample or set of the following documents:
 - .2 Contractual drawings;
 - .3 Tender;
 - .4 addenda;
 - .5 Order of modification and other amendments to the contract;

**6.
Consignment of conditions
of site (building and site)**

- .6 Revised shop drawings, technical data and samples;
 - .7 Records of tests made on the site;
 - .8 Inspection certificates;
 - .9 Certificates given by the manufacturer;
 - .10 Environmental prevention plan.
- .2 Store all file project documents and samples used for the project apart from the documents used for the work.
 - .3 Label documents and file according to list of section numbers stated in the table of contents of the file project. Clearly write FILE PROJECT in square letters on a label for each document.
 - .4 Keep project file documents clean, dry and readable. Do not use as execution documents for the work.
 - .5 The Ministerial Representative must have access to documents and samples of the project file for inspection.
- .1 Write down information on a set of opaque drawings with black lines and also in project file samples given by the Ministerial Representative.
 - .2 Write down information with fine line black felt markers, anticipating a color for each different important system.
 - .3 Write down information as work progresses. Do not conceal works before required information is registered.
 - .4 Contractual drawings and shop drawings : Clearly indicate each data, to show work as is, including what follows :
 - .1 Depth measured of foundation elements in comparison with the level of the finished first floor.
 - .2 The position measured horizontally and vertically on the plans for utility ducts and underground accessories in comparison with permanent layout on the surface.
 - .3 Position of utility ducts and interior accessories, measured in comparison with visible and accessible construction elements.
 - .4 Modifications done on the spot to dimensions and details of works.
 - .5 Changes done following order for modification and site instructions.
 - .6 Details not shown on original contractual documents.
 - .7 Reference to shop drawings and related modifications.
 - .5 Tender: clearly write each facts to describe works as they are, including what follows :
 - .1 Name of manufacturer, commercial brand and catalogue number for each product installed, especially optional and replacement elements.
 - .2 Changes being part of the addenda or order for modification.

- .6 Other documents: keep manufacturer's certificates, inspection certificates, records of tests done on site prescribed for each of the technical sections of this tender.
- 8. Materials and finishing products**
- .1 Construction material, finishing products and other products to be applied: provide all technical data and indicate catalogue number, dimensions, composition, designation of colors and textures of products and materials. Give necessary requirements to order special products.
- .2 Provide instruction concerning cleaning products and methods, recommended cleaning and maintenance schedule. Indicate precautions to be taken against detrimental methods and toxic products.
- .3 Additional requirements: according to requirements of various technical sections of the tender.
- 10. Replacement Materials/Material**
- .1 Provide material and replacement materials according to indicated quantities requested in various technical section of the tender.
- .2 Material and replacement materials must come from the same manufacturer and must be of same quality as of materials already incorporated in the work.
- .3 Deliver and store material/ replacement materials where indicated.
- .4 Receive and take inventory of material and replacement materials, then submit inventory list to the consulting-expert. Insert approved list in operation manual.
- .5 Keep a receipt of all parts delivered and submit if before final payment.

***** END *****

PART 1 – GENERAL

- 1.1 Section content**
- .1 Structure total demolition method and procedures
 - .2 Included work of this section includes total demolition of above ground structures linked to building.
 - .3 More specifically, demolish and get rid of the following structures:
 1. Block A, John H. Chapman Space Center
 2. Supply and services up to connecting point.
- 1.2 References**
- Non-limitative list of reference standards, last in effect version :
- .1 Canadian Standard Association (CSA)/CSA International
 - .1 CSA S350-M1980, Code of Practice for Safety in Demolition of Structures.
 - .2 Department of Justice (JUS)
 1. Canadian Environmental Assessment Act (CEPA), ch. 37.
 2. Canadian Environmental Protection Act (CEPA), ch. 33.
- 1.3 Definitions**
- .1 Hazardous materials : Dangerous substances, goods and products that may contain, but not limited to, poisons, corrosive agents, flammable content, ammunitions, explosives, radioactive substances and any other materials that, if not properly used, might have harmful consequences on health and wellbeing, or environment,
 - .2 Refer to section 01 74 19E for definitions regarding waste management.
- 1.4 Documents / samples to submit**
- .1 Contractor must make sure that all requirements regarding required documents, samples and reports' transmissions are fulfilled.
 - .2 Before starting works, submit a detailed waste reduction plan as per section 01 74 19E – Management and removal of garbage. The plan must indicate:
 1. Nature and quantity for all the material that needs to be recovered, reused / reemployed, recycled and landfilled;
 2. Selective demolition plan;
 3. Number en location of recovery bins;
 4. Name and address of the waste management centers.
 - .3 For all materials shipped outside the worksite, provide weighing slip or certified voucher issued by authorized landfill, reuse / reemploy and recycle centers.

-
- | | | | |
|------------|--------------------------------------|----|---|
| | | 1. | Written authorization must be obtain from the Ministerial Representative before shipping materials elsewhere then waste management centers indicated in waste reduction plan. |
| | | .4 | If competent authority requires it, submit for approbation, drawings, sketches or details indicating demolition, shoring and sub-excavation work order as well as elements needed to do so. |
| | | .5 | Drawings must be stamped and signed by a competent engineer recognized or authorized to practice in Canada, in the province of Quebec. |
| 1.5 | Quality assurance | .1 | Regulatory requirements: Ensure that works are realised according to Canadian Environmental Protection Act (CEPA) as well as relevant provincial and municipal regulation. |
| 1.6 | Waste management and disposal | .1 | Waste must be sort for reuse / reemploy and recycling as per section 01 74 19E – Management and removal of garbage. |
| | | .2 | Ship exceeding materials to a site that is approved by the Ministerial Representative. |
| 1.7 | Environment protection | .1 | Ensure that demolition works has no harmful effects on surrounding wildlife, groundwater and adjacent watercourse, and are not generating excessive acoustical and atmospheric pollution. |
| | | .2 | It is forbidden to burn waste and materials on site. |
| | | .3 | Do not spill waste or volatile materials, such as mineral fuels, oils, petroleum based lubricant or toxic cleaning substances, in watercourse or sanitary and storm sewers. |
| | | 1. | Ensure that the proper methods are used to dispose of such products for the duration of the work. |
| | | .4 | Do not discharge water containing suspended solids in watercourse, sanitary and storm sewers or adjacent lands, using a pump or any other methods. |
| | | .5 | Ensure water evacuation and containment of runoff that contains suspended solids or any other harmful substances. |
| | | .6 | Protect vegetation (trees, plants, bushes and their leaves) on site and adjacent properties. |
| | | .7 | Dry materials and waste must be covered or proceed with wet felling to avoid dust and debris to lift. Apply dust suppressant on all temporary access way. |

- .8 Provide environmental protection plan, aiming to reduce work impacts on users and vegetation, site and existing building. Must include the following:
 - .1 Name of person in charge of the protection plan.
 - .2 Name and skills of the person in charge of exit manifest for dangerous materials site evacuation.
 - .3 Name and skills of the person in charge of onsite staff formation.
 - .4 Program description for staff in charge of environmental protection.
 - .5 Drawings showing temporary excavation location or backfilled site track, materials, constructions, sanitary installations, over materials or stained materials storage, drawing illustrating methods used to control runoff waters and for site materials confinement.
 - .6 Circulation regulation plans, including erosion reduction measures, especially for rainy days.
 - .7 These plans must include reduction measures for material transportation on public roads by vehicles and runoff waters.
 - .8 This plan must include measures for usable area limits marking and protection methods for elements that must be preserved and located inside authorized working area, such as trees.
 - .9 Emergency plan in case of spill must include procedures to apply, precautions to observe and reports to produce in case of unpredictable regulated substances spill.
 - .10 Elimination plan for solid non-dangerous waste, including methods and elimination sites for these solid garbage and waste coming from clearing works.
 - .11 Prevention plan for air pollution, indicating measures to retain dust, debris, materials and waste inside work site.
 - .12 If need be, contamination prevention plan, indicating potential dangerous substances that might be used on site, safety measures to avoid these substances to transfer in the air or introduced in the ground, as well as detailed measures applied to make sure that storage and handling is made in accordance with federal, provincial and municipal laws and regulations.
 - .13 Management plan for waste water, indicating methods and procedures to apply for site activities' waste water management and evacuation, per example water used for concrete cure,

cleaning water, groundwater diversion and pipes disinfection and rinsing water.

.14 Biological resources designation and protection plan.

- 1.8 Existing conditions** .1 Existing conditions reflects structure to be demolished general shape as it is when site inspection is done, before tender deposit.
- .2 Refer to each disciplines' plans to learn about building and systems to be demolished or modified.
- 1.9 Existing conditions – Material to hand back to owner** .1 N/A
- 1.10 Licences and autorisations** .1 Contractor must obtain all specific licences and authorisations from competent authority prior to work start.
- .2 Refer to general conditions for additional clauses in regard to licences.

PART 2 – PRODUCTS

- 2.1 Material and equipment** .1 Material and heavy machinery
- .1 On-road vehicles must be in accordance with the On-Road vehicle and engine emission regulations emission requirements, DORS/2003-2, under CEPA.
- .2 All-terrain vehicle must comply with EPA CFR 86.098-10 and EPA CFR 86.098-11 standards in regards to emission requirement.
- .2 Stop machinery as soon as use is over, except if extreme conditions requires non-stop running.

PART 3 – EXECUTION

- 3.1 Protection measure** .1 All necessary measures must be taken to avoid structure, utility piping or trees movements or drop and prevent any damages.
- .1 Provide and install necessary bracings and shoring.
- .2 If need be, repair any damaged caused by demolition work according to Ministerial Representative instructions.
- .3 Aimed structure and work must be adequately shored. If demolition work seems to be dangerous for adjacent structures and work or utility piping, adequate protection measure must be taken, work

stopped and Ministerial Representative notified.

- .2 Make sure that demolition work does not obstruct surface water draining system.

3.2 Preparation work

- .1 Work must be executed according to effective Health and safety standards.
- .2 Proceed with site preparation and temporary protection according to section 01 56 10E.
- .3 Validate with onsite organisms to identify underground piping systems and any other services in order to avoid breakage and allow fast intervention in case of sinister. Complete connection before mobilisation and work starts.
- .4 Contact concerned company and organisms to set electrical supply and communication system disconnection work.
- .5 Disconnect electrical and phone connection piping from work and structure to be demolished.
 - .1 Warning plates must be installed on electrical material and piping which needs to be kept powered in order to feed other work while demolition occurs.
- .6 If need be, unplug, cap and remove natural gas supply pipe as per gas company requirements.
- .7 Septic Tank
 - .1 N/A.
- .8 Do not interrupt powered or in operation utility pipes that crosses the site or that must not be moved.
- .9 Exterminate rodents and vermin as per competent authority requirements.

3.3 Security

- .1 Demolition work must be done according to section 01 56 10E – Site planning and temporary installations.
- .2 It is forbidden to use blasting for demolition work.

3.4 Demolition

- .1 Demolish the whole structure in place. *Concrete slab on grade will remain in place for further use by the owner.*
- .2 Execute necessary demolition to allow site preparation and removal of any existing infrastructure.
- .3 Wet dry materials and cover waste to avoid wind to lift dust and spread debris. Remove dust from temporary path.

- .4 Do not fill floor drains if water evacuation pipes are still connected.
 - .5 Remove material, piping and any other elements that hinder rehabilitation or reparation of existing surfaces, and put back in place as work progresses.
 - .6 At the end of each labor day, make sure that work is safe and stable.
 - .7 Demolition work must be done in order to lift as less dust as possible. Keep material wet as per Ministerial Representative requirements, with the proper humidifying equipment that avoids to waste water.
 - .8 Demolish structure.
 - .9 Confine fiber materials (ex : insulation) in order to reduce as much as possible fiber rejection in the air while carried inside the installations.
 - .10 It is forbidden to eliminate prescribed materials otherwise then according to ecological methods or by using them for their original purpose.
 - .1 Regarding waste value, Ministerial Representative may suggest other elimination methods for demolition waste.
 - .11 It is forbidden to ship those materials to landfill or to incorporate those to the waste flow which is landfilled.
 - .12 Unless otherwise indicated, remove and evacuate demolition materials from work site according to competent authority requirements.
 - .13 As often as possible, work must be done in daylight.
 - .1 At the end of each working day, shut off all lighting sources other than security lighting.
- 3.5 Materials evacuation**
- .1 If they hinder work progression, evacuate all stored materials according to Ministerial Representative instructions.
 - .2 Evacuate stored material of similar nature and using the same ecological elimination methods, once these materials are all collected.
 - .3 If not intended to be ecologically eliminated, proceed with material and product elimination and transportation according to relevant regulation.
 - 1. Use approved landfill, indicated in waste reduction plan.
 - 2. Written authorisation must be obtained from Ministerial Representative if products and materials are intended to be shipped to any landfill other than the one indicated in the waste reduction plan.
- 3.6 Cleaning**
- .1 Work site must be maintained clean and orderly for the demolition work duration.
 - .2 When work are completed, get the work site rid of debris, repair surfaces

and clean work area. Walk through the site to make sure that no demolition debris are scattered.

- .3 As much as possible, contain materials on the concrete slab. At the end of work, clean using a mechanical broom to make sure that no pieces that might cause injuries or lesions (insulation, glass, steel, etc.) are left behind.

3.7 Additional work

- .1 Contractor must make sure that work are completed in a way to get the concrete slab accessible for disabled persons.
 - .1 Concrete landing and ramp must be built to link together the footbridge corridor and the exterior slab.
 - .2 All existing concrete surfaces must be finished according to section 09 91 59E – Concrete protection and coating systems.
- .2 In order to assure site security and complete cleaning work, Contractor must take all necessary measures for users and public safety.
 - .1 Site must be free of any demolition or deconstruction waste.
 - .2 Level all surfaces contained in site area that were altered by equipment, containers, heavy vehicles or other.

*****FIN*****

PART 1 – GENERAL

- 1.1
Included works**
1. Demolition: Provision of products and equipment and manpower to carry out the demolition work prescribed for openings, product recovery and cleaning of the work area required;
 2. Debris removal;
 3. Resurfacing (patching): Preparation and repair of surfaces, such as existing;
 4. Supply and install materials identical to the existing one.
- 1.3
Regulations**
1. All demolition works will be done according authority instructions having jurisdiction and after having paid and obtain all licenses pertaining to the works.
- 1.5
Safety measures**
1. Take all necessary precautions to prevent any displacement or sagging of existing building or parts of the building. Provide and install all necessary pieces for reinforcement or propping-up. Repair damaged work and assume responsibility for injuries that result from demolition work.
- 1.6
Property**
1. All materials coming from demolition work, that are not indicated as reusable or that the Ministerial representative did not reserve before demolition, become the property of the Contractor..
- 1.7
Actual conditions**
1. Contractor will take possession of actual building as is, after being notified that the contract was awarded to him.
- 1.9
Guarantee**
1. Provide a certificate of guarantee, signed and issued on behalf of the Ministerial representative, stating that all the works in this section are warranted against defects for a period of one year from the date of signature of the certificate of provisional acceptance work. Comply with section 01 78 00E.

PART 2 – PRODUCTS

- 2.1
Products**
1. Provide all products, equipment and labor necessary for demolition, the openings, the product recovery and cleaning of surfaces to optimize installation of new materials.
 2. Provide all the products and equipment and labor necessary to remove debris.
 3. Provide all the products, equipment and labor for resurfacing work (patching). Products must be new and free from defects. Use materials identical to existing.

PART 3 – WORK

**3.1
Demolition**

1. Demolish part of existing building in a way to allow demolition of construction without any alteration to existing building components or finishes to be kept..
2. Remove and take out of site all demolition garbage and residues and, if need be, make repairs of all damage done to the property, caused by the works, and that goes for all trade people related to this project.
3. Contractor must anticipate waterproof, dustproof and noise proof closings for parts of the building occupied during demolition work.

**3.2
Refurbishing**

1. **Surface refurbishing will be done with same materials as existing ones, same textures and same colors or something equivalent in case materials are no longer available or discontinued.** Touch-ups will be done up to closest angles to make touch-up coating or paint disappear.

Contractor must refurbish floors, walls and ceilings where equipments, appliance or mechanical or electrical ducks must be removed or relocated. This includes removal of equipments by Ministerial representative before starting of the works.

**3.3
Material handling**

1. Contractor will be responsible for technique and circuit chosen for handling of framing, concrete and other material components. Protect adequately all components in place, such as floors, walls and ceilings. Repair if altered in any way because of the works. If need be, make protective surfaces, temporary partitions to protect from shocks. Restrain access and protect from noise and dust all parts of the building being redone. Return with care components to their position and replace if damaged because of the works.
2. No transportation or handling will be authorized in the building except for the area in which interventions occur, which is block 9.

***** END *****

PART 1 - GENERAL

- 1.1** .1 Removal and recovery, for recycling purposes, of the existing carpet to demolish.
Included works
- 1.2** .1 Section 02 41 17E – Demolition and refurbishing
Related sections .2 Section 09 68 00E – Carpet
- 1.3** .1 When work is to be done for the Federal government, sections of Division 1 have
Priority priority on all other technical section of other Division of the tender.
- 1.4** .1 Carpet and Rug Institute (CRI)
References .1 CRI 104-[1996], Standard for Installation of Commercial Carpet.
- 1.5** .1 Closed circuit recycling: transformation process of a product after used in a similar
Definitions product.
.2 Open circuits recycling: transformation process of a used product into a different
product.
.3 Nylon 6: fiber used to make carpet-rugs with a basic component; caprolactam.
.4 Nylon 6,6: fiber used to make carpet-rugs, with two (2) basic components: hexanedioic
acid (adipic acid) and hexamethylene.
- 1.6** .1 Submit report stating proposed method to prevent dust.
Documents/samples to be .2 Submit a list of carpet-rug, on which the designation of pieces will be the same as the
submitted one used on the drawings.
.3 Submit a list of recovery/recycling activities of carpet-rugs, stating or containing what
follows:
.1 Removal sequence of carpet-rugs;
.2 Inventory of coverings or covering components to be removed, salvaged or
recycled;
.3 type of fiber;
.4 Characteristics related to recycling procedure.
- 1.7** .1 Submit a list of recovery activities of carpet-rugs.
Documents/components .1 Submitted list must have or indicate what follows:
to be given at end of .1 Partially occupied space areas;
works .2 Inventory of carpet-rugs to be removed and salvaged;

- .3 Proposed methods of conditioning and transportation.
 - .2 Submit documents provided by salvage company, confirming reception and elimination of salvaged carpet-rugs.
 - .3 Submit document provided by salvage company certifying that old carpets-rugs were removed, salvaged and recycled as per salvage program established by carpet-rug manufacturer.
 - .1 Recycling process type:
 - .1 Closed and/or open circuit.
 - .4 Record data pertaining to removal of old carpet-rugs out of the site and garbage from salvaged carpet-rugs. Give the following information:
 - .1 Date and time of removal;
 - .2 Type of fibers;
 - .3 Weight and quantity of materials salvaged;
 - .4 Final destinations of salvaged materials.
 - 1.8 Management and elimination of garbage**
 - .1 Sort and recycle garbage.
 - .2 Remove out of the site all wrapping materials and send them to appropriate recycling installations.
 - .3 Salvage and sort paper, plastic, polystyrene, nodule cardboard wrapping and dispose of them as per management agreement for garbage.
 - 1.9 Documents to submit pertaining to quality insurance**
 - .1 Certificates: submit documents sent by company in charge of removing salvaged old carpet-rugs, certifying that they have been removed, recovered and recycled as per salvage program for carpet-rugs. It is forbidden to recuperate energy generated by incineration process.
 - 1.10 Guarantee**
 - .1 Not applicable
- PART 2 – PRODUCTS**
- 2.1 Recycling Company for carpet-rugs.**
 - .1 Contractor must provide the name of the company who will be recycling the carpet-rugs and their recycling program.
 - 2.2**
 - .1 Solvents used to remove glue on carpet-rugs: as per CRI-104 standard.

Material/Materials

- .2 Old carpet-rugs:
 - .1 Keep old carpet-rugs. Remove them immediately from work areas and place them in a container or trailer.
- .3 Underlay:
 - .1 Ensure recovery and recycling of underlay when recovery/recycling program exist in designated regions by carpet-rug salvage company.
- .4 Recovery containers:
 - .1 There is no available storage place on premises for removed carpet. Contractor must take away carpet rubbish as they are removed and store them temporarily until rug manufacturer will pick them up.

PART 3 - WORK

- 3.1 Assessment of premises**
 - .1 Check state of the works and make sure existing conditions are favorable to the performance of the work. Identify any problem susceptible of slowing beginning and completion of the works. Inform Ministerial representative.
 - .1 Do not begin works before problems are resolved and before receiving approval of the Ministerial representative.
- 3.2 Staging works**
 - .1 Vacuum old carpet-rugs before removal. Do it vigorously to minimize dust particles when pulling it out.
- 3.3 Removal of carpet-rugs**
 - .1 Remove old carpet-rugs by strips, big strips according to recommendation of manufacturer/recycler.
 - .1 Roll tightly and carefully place in container or recovery trailer. Also recover cuttings and waste of newly installed carpet-rugs.
 - .2 Pile or place in cardboard boxes slabs of removed rug-carpets, and then place them in recycling bin or on recycling pallet.
 - .2 Slab rug-carpet put into container or recycling bin must be dry and clean, that is, without demolition debris, asbestos garbage, rubbish materials and staple strips.
 - .3 Remove glue as per CRI-104 standard.
- 3.4 Disposal**
 - .1 Contractor must take out of the site carpet to be recycled and store temporarily, and that, until picked up by the recycling company or manufacture's transportation.

PARTIE 1 – GENERAL

1.1 References

1. All references are to the standards set out in the indicated editions of the specifications issued by various organizations, or if no edition is specified, to the latest revised edition at the contract date.
 1. ACI Committee No. 503/pp. 1139-41
 - Adhesive force: > 2.8 MPa (400 lb./in.²) (fracture of concrete at 100%)
 2. ASTM C-307
 - Tensile strength: 13.8 MPa (2000 lb./in.²)
 - Test Method for Tensile Strength of Chemical-Resistant Mortars, Grouts and Monolithic Surfacing
 3. ASTM C-413
 - Water absorption: 0.1%
 - Test Method for Absorption of Chemical-Resistant Mortars, Grouts and Monolithic Surfacing
 4. ASTM C-579
 - Compressive strength: 69 MPa (10,000 lb./in.²)
 - Test Method for Compressive Strength of Chemical-Resistant Mortars, Grouts and Monolithic Surfacing
 5. ASTM C-580
 - Flexural strength: 29.65 MPa (4,300 lb./in.²)
 - Test Method for Flexural Strength and Modulus of Elasticity of Chemical-Resistant Mortars, Grouts and Monolithic Surfacing
 6. ASTM D-635
 - Flammability: Self-extinguishing, max flame spread 6.4 mm (0.25 in.)
 - Test Method for Rate of Burning and/or Extent and Time of Burning of Self-Supporting Plastics in a Horizontal Position
 7. ASTM D-790
 - Flexural modulus of elasticity: 13.8 x 10³ MPa (2.0 x 10⁶ lb./in.²)
 - Test Method for Flexural Properties of Unreinforced and Reinforced Plastics and Electrical Insulating Materials
 8. ASTM D-2047
 - Skidding coefficient: 0.8–1.0
 - Test Method for Static Coefficient of Friction of Polish-Coated Floor Surfaces as Measured by the James Machine

9. ASTM D-2240/Shore D Durometer.
 - Hardness index: 85–90
 - Test Method for Rubber Property – Durometer Hardness
10. ASTM D-4060, Taber abraser, CS-17 abrasant, 1,000 g (2.2 lb) load, 1,000 cycles
 - Abrasion resistance: 0.1 g (0.0035 oz.) maximum reduction in weight
 - Test method for Abrasion Resistance of Organic Coatings by the Taber Abrader
11. ASTM E-831
 - Linear expansion coefficient: 3.5×10^{-5} m/m°C
 - Test Method for Linear Thermal Expansion of Solid Materials by Thermochemical Analysis
12. Hardening time (at 25°C/77°F)
 - 6 hours – pedestrian traffic
 - 18 hours – low traffic
 - 24 hours – normal traffic
13. Thermoresistance limit
 - 60°C/140°F – continuous exposure
 - 93°C/200°F – discontinuous exposure
14. MIL – D -3134F
 - Imprint: none

1.2

Documents and samples to be submitted

1. Product information: Submit data sheets, installation instructions and the manufacturer's general instructions for each type of epoxy floor coating to be applied.
2. Samples: Submit a sample measuring 300 mm x 300 mm (12 in. x 12 in.) on a rigid panel that is representative of the colour and finish of each composition for the Ministerial representative.

1.3

Quality assurance

1. Sole responsibility: Obtain primary materials for epoxy floor coating, including primers, resins, hardening agents, finishing and protective coats, from a single manufacturer.
2. Provide only secondary materials whose type and source are recommended by the manufacturer of the primary materials.
3. Each phase of work must be completed and approved by the Ministerial representative before proceeding to the next phase.

**1.4
Delivery, storage and handling**

1. Deliver materials to the building site. Before beginning work, the floor-coating contractor must verify that all the materials have been delivered to the site and that they have not been damaged in transit.
2. All the components must be measured and packaged in shop in mixing units that are easy to manage so as to eliminate any risk of batching errors while mixing products on-site. In no case will batching by component weight or volume be permitted on-site.
3. Store materials in a dry, closed room, protected from moisture. The temperature of the storage area shall be maintained between 16°C and 32°C (60°F and 90°F).
4. Materials shall be stored by the contractor. No product shall be left on-site before it is applied.

**1.5
Implementation conditions**

1. All concrete repairs shall be carried out using quick-curing concrete in order to respect the work schedule. Setting must be completed within four (4) hours.
2. From seven days before the beginning of work to 48 hours after work is completed, the ambient air temperature must not dip below 18°C and that of the support, below 16°C. During this same period, relative humidity must not exceed 40%.
3. Moisture: Ensure that the moisture content of the surface to be covered falls within the limits prescribed by the coating manufacturer.
4. Safety: Comply with Workplace Hazardous Materials Information System (WHMIS) prescriptions regarding the use, handling, storage and elimination of hazardous materials.
5. Prohibit access to the area where coating is applied to workers representing any other trades while coating is applied and for 24 hours thereafter. The general contractor shall be responsible for protecting the finished floor from damage caused by other workers.
6. The manufacturer's representative must be present on-site when the workers begin the application.

**1.6
Guarantee**

1. Provide a single guarantee certificate for all materials and labour. The guarantee shall remain in effect for a period of two (2) years starting from the date of provisional receipt of the work.

PART 2 – PRODUCTS

**2.1
Pre-mixed concrete**

1. Quick-setting concrete in compliance with ASTM C-191 and ASTM C-109 standards.
2. The product must reach a minimum compressive strength of 30 MPa after 4 hours of curing. Reference product: SIKAQUICK 2500 by SIKA.

2.2 Seamless floors coating system

3. The surface must first be primed with a compatible epoxy product from the same manufacturer.
1. SIKA:
 - a) One component, early strength gaining, cementitious patching material SikaRepair 223
 - b) Acrylic latex bonding agent and admixture for Portland-cement mortar and concrete: Sika Latex R
 - c) Water repelling low VOC clear silane sealer for concrete structure: Sikagard SN40 Lo-VOC
 - d) Contraction joint: 100% solid epoxy sealant

2.3 Colour

1. All colours will be chosen by the architect.

PART 3 – WORK

3.1 Preparation

1. Have a sample of each finish approved before beginning work.
2. Support: Using a shot-blasting machine (Blastrac) or other mechanical equipment, remove all contaminants from the concrete slab and create a surface that will bond with the coating. Beside shaping the slab so as to obtain a CSP-5 profile, shot blasting must be done so all the existing self-leveling mortar is removed. The equipment used must limit ambient dust.
3. Rid the surface of materials that hinder adhesion, such as hardening agents, sealant, laitance, grease, oil or any other substance with the same effect.
4. Saw cut layout in concrete slab to create contraction joints for concrete cracking.
 - i. One saw cut lengthwise (larger dimension) so the slab is divided in two equal parts.
 - ii. Saw cut must be placed at 6m from each other widthwise (smaller dimension).

3.2 Application

1. Prepare surfaces to ensure they are smooth and uniform. Follow the manufacturers' recommendations regarding material drying and curing. Surfaces must be inspected and approved jointly by the Ministerial representative and the manufacturer's representative.
2. Repair damaged concrete surfaces using pre-mixed concrete to ensure surfaces are uniform. Follow the manufacturer's recommendations regarding batching and application of the product on the pre-cleaned surface.
3. Clean existing contraction joints mechanically and clean them out to a depth of at least 50 mm. Cracks and narrow joints, some of which are identified in the plan, should be widened with a new continuous and linear saw cut joining up with the closest contraction joint.

4. Using the product designed for contraction joints, insert a bead of compressible foam and fill the space with the epoxy sealant.
5. Correct the top surface with cementitious patching material so as to remove any remaining defects and ensure coating is uniformly applied. Add acrylic latex bonding agent to cementitious patching material recipe as per manufacturer's instructions.
6. General: Apply each layer of floor coating as per the manufacturer's instructions so as to obtain a seamless and resistant surface of the indicated thickness, without cuts except in locations where divider strips, sawn joints or any other types of joints are indicated or prescribed.
7. Correct imperfections by lightly grinding the hardened base and then vacuuming it. An inspection by the Ministerial Representative is necessary at this step. The consultant must be notified 48 hours in advance.
8. Finishing coating: To be applied with a roll, a brush or sprayed. When sprayed, roll the paint to remove bubbles if necessary. Apply two layers.
9. At every point where the floor is not bordered by a vertical surface, cut a chamfer 13 to 19 mm wide and 6 mm deep.
10. Caulking: Fill caulking joints with epoxy or urethane produced by the manufacturer so as to match the coating finish.

3.3 On-site quality control

1. The right is reserved at any time and as often as desired during the installation of the coating system to require application of the following procedures for testing materials.
2. Sampling of materials used on-site will be performed by the testing laboratory specified by the ministerial representative. These samples will be taken, identified, sealed and certified in the presence of the contractor.
3. The testing laboratory will perform tests in order to evaluate any specified characteristic using the appropriate methods of analysis indicated in this tender or, if no methods are prescribed, using one of the methods indicated in the manufacturer's data sheet.
4. If the test results show that the materials used do not comply with the instructions of the tender, the ministerial representative may ask the contractor to cease work, to remove non-conforming materials, to pay for the tests and to reinstall the coating system after having adequately prepared the surfaces that were covered with non-compliant materials.

3.4 Hardening, protection and cleaning

1. Harden the floor coating as per the manufacturer's instructions, taking care to prevent any contamination during the various stages of the application prior to the total hardening of the finished coating. Prohibit access to the area where the coating has been applied for at least 24 hours. If applicable, provide the necessary

protection so as not to damage the structure.

2. Protect the floor coating from any damage or wear and tear. If temporary protection proves necessary, follow the manufacturer's recommendations regarding the choice of protective materials and their application method. The general contractor is responsible for protecting and cleaning the surfaces after the final coats are applied.
3. Cleaning: Remove the temporary protective device and clean the floor coating before the final inspection. Use cleaners and methods recommended by the manufacturer of the coating.

***** END *****