

SPECIFICATIONS FOR TENDER

Canadian Space Agency

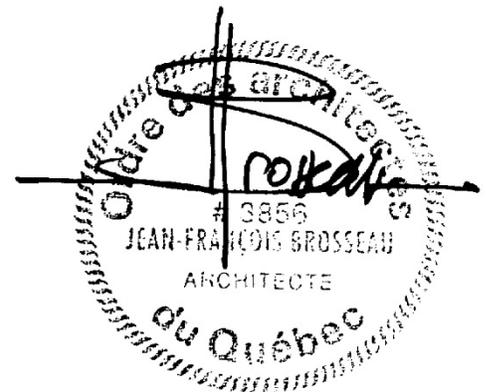
6767, route de l'Aéroport
Saint-Hubert (Québec) J3Y 8Y9

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Acoustical Ceilings Replacement 2S & 2A
John H. Chapman Space Center

CIMaïse



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**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 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.

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| 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. |
| | .2 | Unless stated otherwise, the manufacturer must provide all necessary accessories to complete, on the spot, the installation of the components he fabricated. |
| | .3 | The installation is the responsibility of the Contractor. He will provide materials, workmanship and equipment required to complete the installation of his work. |
| 3.
Openings and repairs | .1 | In principle, unless stated otherwise on the drawings and on Ministerial representative tender, all openings and piercing to be done, being over 150mm in diameter or more than 195 square centimeters, for the needs of different trades in the existing building and in new concrete slabs, will be done by the Contractor, after approval of Ministerial representative. |
| | .2 | The Contractor will do the repairs afterwards, as soon as subcontractor's work is done and that they have the certificates for tests, inspection and approval done by laboratories, inspectors and Ministerial representative. |
| | .3 | It is the responsibility of the Contractor to ensure the cooperation and the coordination of all subcontractors to anticipate, as much as possible before beginning of the work, the openings, location for fastening devices, necessary space for various components, etc. To this effect, refer to the beginning of each division for general clauses, proper to each trade. |
| 4.
Site limits | .1 | The 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 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.
Equipments | .1 | In their tender, the Contractor and subcontractors will take into account the installation costs for existing equipment and equipment provided by the Ministerial representative as stated in architectural, mechanical/electrical tender. |
| 9.
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.

**10.
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 construction spaces where necessary; (according to the requirements of the Ministerial representative).

**11.
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.

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- 12. 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.
- 13. 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.
- 14. 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, to store certain materials in large enough quantity to continue the work and ensure its continuity.
 - .2 Parking spaces for the 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 towed at his own expense and be liable for a fine.
- 15. 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.
- 16. 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.
- 17. 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 Cover with a plywood sheet all finished surfaces that must be protected to allow for work to continue.
 - .4 Protect all equipment that is entrusted to the Contractor.

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- 18. 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.
- 19. 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.
- 20. Temporary source for supplies**
- .1 The 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.
- 21. 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.
- 22. Licenses and authorization**
- .1 It is the responsibility of the 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 this construction.

- 23. Toilets** .1 The Contractor will have the possibility to use toilets and services of the building. Only the identified room may be used. The contractor has the responsibility to clean the room on a daily basis.
- 24. Garbage containers** .1 Cost of transportation and dumpsite will be paid by Contractor.
- 25. 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 Ministerial representative before their shipping, will be automatically rejected.
- 26. Building codes in force** .1 Canadian Building Code and all other codes and regulations in force.
- 27. Supervision and coordination : Responsibility of the Contractor** .1 The Contractor must coordinate himself all the works of different trades.
.2 The Contractor must keep an eye on all subcontractor works and make sure 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 Ministerial representative a requirement for definite approval, the 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.
- 28. Protection of finishing components and other works** The Contractor has the responsibility to protect against all damage, all components that must be used in the building construction, mainly decoration and finishing accessories. Damaged components will be refused and must be replaced.
- 29. Works done by others** .1 In the drawings and tender, the mention "by other divisions" or "by other sections" implies that these works are concerning the Contractor, either for another section or for another division of the tender.

When works are not part of the contract, the mention "apart from contract" appears specifically.

The Contractor must consult in detail all architectural, mechanical and electrical drawings and tender to be able to include, in his contract, all the works designed by the mention "by other divisions", "by the Contractor" or any other similar term.

Some of these works could already have been included in other sections of the tender or other drawings. It is the responsibility of the Contractor to consult all documents so he can itemize the ones being already under someone else's specific section of the tender or again, illustrated on the drawings of other specific trades or field. The ones that are not specifically described or itemized on the drawings or tender of other divisions will be the responsibility of the Contractor.

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

The project involves replacing ceilings, lighting, ventilation system for sectors 2A-107,4B-105 and 2S-201.

In addition of previous interventions, acoustics works and fire protection are involves in meeting room 2S-201.

The area will be completely vacated during the work

- .1 Site preparation;
- .2 Installation of temporary protection and temporary installations;
- .3 Demolition, construction and resurfacing prescribed in plans and specifications;
- .4 All construction required to complete the work without fault;
- .5 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 Scheduling, see **section 01 32 18E** and Ministerial representative's instructions. The work site is inside the occupied building. The area bounded by the site will be fully available to the contractor
- .2 Since the site is still in operation, services will 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 Manufacturing according to documents reviewed and approved.
 - .5 Mobilization on the site according to the approved schedule.
 - .6 Install temporary services.
 - .7 Delivery of products and materials according to the approved schedule.
 - .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 Ministerial representative and / or professional and other competent authorities, within the time required.
- .11 Decommissioning, 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.
- .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 *****

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- 1. Construction period**
- Except if otherwise noticed in general conditions, work needs to be completed according to allowed delays in contract terms. Furthermore, Ministerial representative imposes following milestones:
- Site preparation, protection and temporary installations (mobilization)
 - Demolition
 - Construction
 - Finishes
 - End of work (including correction of deficiencies)..... See contract documents
- 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 Ministerial representative and one copy per consultant.
 - .3 Ministerial representative 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

**5.
Execution schedule**

which could be caused by the proposed 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.
 - .1 Ordering materials and delivery;
 - .2 Site Preparation;
 - .3 Demolition
 - .4 Mechanical and electricity services ;
 - .5 Interior system construction;
 - .6 Interior Finish
- .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 Ministerial representative.
 - 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 Ministerial representative should not increase price of contract. Should it increase the price, please notify to Ministerial representative, 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 him.

6. Unless stated otherwise, submit shop drawings in PDF format by e-mail.
7. Allow ten (10) working days to leave time to the Ministerial representative 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.

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.

***** END *****

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 Work likely to release asbestos dust;
 - .5 Work in confined spaces;
 - .6 Lockout procedures;
 - .7 Safe work procedures at height;
 - .8 Hot work procedures;
 - .9 Wearing and fitting of individual protective gear;

- .10 Forklift truck safe driving practices;
 - .11 Positioning platform;
 - .12 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 only 1 phase, 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. The Ministerial representative will make control inspections of the execution of the work. This in no way limits the Contractor's responsibility to do his own inspections to comply with current standards and codes. 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 Ministerial representative enough advance warning of operations so that he may plan visits for the inspection of specific structures.. When materials must be tested, and on demand of Ministerial representative, send directly the requested amount of representative samples to the testing laboratory. 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 Ministerial representative.

3. Rejected structures

1. Remove defective elements deemed noncompliant with contract documents and rejected by the Ministerial representative, 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. Immediately repair other contractors' structures that have been damaged during replacement work described above. If, in the Ministerial representative'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 Ministerial representative.

4. Workers' competence

1. The Contractor must prove to the Ministerial representative, 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. If the Ministerial representative is not satisfied by the proof, he may require the contractor to replace the workers.

***** END *****

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.
 - .3 Scheduling, see section 01 32 18E and Ministerial representative's directives.
 - .4 The place of work is within an occupied building. The area bounded by the project will be at the disposal of the contractor.
 - .5 Since the site is still in operation, services will remain active at all times and open lanes for local traffic.

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. **Sanitary installation**
 - .1 Sanitary facilities must be provided inside the security perimeter of the site area, see section 01 10 00 E

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, the existing equipments and furniture leaved in place.
 - .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 deep excavations, service ducts and stairwells and not enclosed along the edges of floors and roofs.
 - .2 Supply and install these components in accordance with jurisdictional requirements.

***** END *****

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|------------------------------------|-----|---|
| 1.
Related requirements | .1 | To complement the general conditions, the contractor must comply with the requirements of the present section. |
| 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 interior surfaces before starting finishing work and keep these areas free of dust and other impurities during said work. |
| | .4 | Clean daily occupied areas soiled by work of the Contractor or his subcontractors. Cleaning must be done immediately after work so the good functioning of the building is not hinder by it. |
| | .5 | 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 Ministerial representative requirements. Do not burn scrap materials on site, unless you have an express approval from the Ministerial representative. |
| | .5 | Take the necessary required arrangements to obtain licenses from competent authorities to eliminate debris and scrap materials. |
| | .6 | Sweep all work surfaces prior to site inspection. |
| | .7 | Clean and polish windows, hardware pieces, chromed and enamel surfaces (oven dried), stainless steel, mechanical and electrical equipments. Replace all broken, scratched or damaged windows. |
| | .8 | Remove dust and stains, marks, scratches seen on decorative work, mechanical and electrical appliances, furniture components, walls, floors and ceilings. |
| | .9 | Dust interior surfaces of the building and vacuum, without forgetting to clean behind railings, louvers and registers. |
| | .10 | Wash, soap, wax, seal or treat in any way floor coverings, according to manufacturer indications. |
| | .11 | Examine the finishing, accessories and material to ensure that they all meet |

requirements stated regarding the quality of work and its functioning.

- .12 Clean mechanical ducts in between the ceiling. Eliminate dust residues accumulated on equipment and mechanical ducts during the work.
- .13 Carefully clean material and appliances. Clean or replace filters of mechanical appliances.

***** 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 and for construction 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 garbage: The audit of garbage concerns the quantity of garbage that the works should generate. This verification assumes measurement and evaluation of the quantity, the composition and the origin of garbage produced and operational factors to their production.
- .2 Plan for reducing garbage: Written documents in which reduction, reuse and recycling opportunities are studied. The garbage reduction plan is based on data given by the garbage control sheet.
- .3 Audit of demolition garbage: Is applied to garbage generated by this work.
- .4 Sorting programs of material at the source: Sorting activities, on the site of reusable and recyclable garbage, so they may be classified in appropriate categories
- .5 Coordination for garbage management: A chosen person and working on the site. Other persons must be designated among the personnel of each subcontractor to ensure coordination of the management of garbage with the Coordinator.
- .6 Sorted garbage: Garbage already 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 Ministerial representative.
- 1.4**
Sorting program for demolition materials
- .1 Prepare sorting program for demolition material before beginning works.
- .2 Following approved methods by the Ministerial representative and with his 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

- .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 Ministerial representative immediately.
- .6 Protect superficial water evacuation works and all electrical and mechanical installations to prevent damage or blockage.
- 1.9
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 Recovering material and to be sent to recovering sites

- .1 Sort materials from the general flow of garbage. Pile them in separate piles or in distinct containers, with the approbation of the Ministerial representative and as per pertinent regulations for fire safety. Identify containers and areas for piling. Provide instructions concerning removal practices.
- .2 It is forbidden to sale recovered material on site.
- .3 **Demolition materials**: The following materials must be recovered and brought to recovering sites for crushing or other possible recovering.
Steel (structure and other steel components), **masonry** (brick and stone), **concrete, asphalt and bituminous concrete, furniture, acoustical tile.**
- .4 **Construction materials** : The following residue material must be sorted, place in separate containers and transported to salvage sites for recovery:
Steel (structure and other steel components), **masonry** (brick and stone), **gypsum and wood.**

***** END *****

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|--|---|
| 1.
Content for this section | <ul style="list-style-type: none">.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..5 Material/replacement material, special tools and replacement parts..6 Guarantees and bonds. |
| 2.
Documents to submit | <ul style="list-style-type: none">.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 Ministerial representative (in engineering and other specialties) documents to know the requirements and the content of manuals to be submitted. |
| 3.
Presentation | <ul style="list-style-type: none">.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. Content of each volume of the final project file**
- .1 Table of contents: indicate designation of project:
 - .1 Date for handing over the documents;
 - .2 Name, address and telephone number of the Ministerial representative, 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 The following data specified in individual section of Divisions 02 to 45.
 - .1 List of equipment, including service center.
 - .2 Information written on identification plate like the number of the equipment, commercial brand, dimensions, capacity or power, serial number.
 - .3 List of pieces.
 - .4 Details pertaining to installation of equipment.
 - .5 Instruction pertaining to the operation of the equipment.
 - .6 Instruction pertaining to maintenance of equipment.
 - .7 Instruction pertaining to finish maintenance.
 - .7 Divide binders by specialty: architecture, structure, exterior layout, mechanic, electricity, etc.
 - .8 Refer to contract documents of all disciplines of the Ministerial representative.
 - .9 Administrative information: Include the following information:
 - .1 Certificate of compliance to the law and regulations pertaining to economy of energy;
 - .2 Certificate of compliance given by the Workmen Health and Safety Commission;
 - .3 Certificate of company in order with the Quebec Construction Commission.;
 - .4 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.
 - .5 Receipts from subcontractors and suppliers;
 - .6 Lift and other raising appliance inspection report by the Building Control Board;
 - .7 Guarantee asked for each sections;
 - .8 Acknowledgment of receipt must be given by the ministerial representative for

- all keys, all keys for boxes and other components given directly to the ministerial representative;
- .9 A list of paint products and color used;
- .10 Maintenance instruction for surfaces and requested materials.
- .10 Shop drawings:
 - .1 Separately bind a complete set of definite revised shop drawings and technical data;
- .11 List of special tools provided by the ministerial representative;
- .12 List of spare parts to give to the ministerial representative;
- .13 Inventory of replacement material given to the ministerial representative with acknowledgment of receipt of these products;
- .14 Drawings "as built", on which real site conditions were written, as described in article 7.

**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:
 - .1 Contractual drawings;
 - .2 Tender;
 - .3 addenda;
 - .4 Order of modification and other amendments to the contract;
 - .5 Revised shop drawings, technical data and samples;
 - .6 Records of tests made on the site;
 - .7 Inspection certificates;
 - .8 Certificates given by the manufacturer.
- .2 Store all file project documents and samples used for the project apart from the documents used for the work. Anticipate filing cabinets, shelves and a safe storage area.
- .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.

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

- .1 Write down information on a set of opaque drawings with black lines and also in project file samples given by the Ministerial representative. For the works, the Contractor must provide three (3) sets of all Drawings given for construction, corrected with notes that state real conditions on the site.
- .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.

**7.
Materiel and systems**

- .1 For each piece of material and each system:
 - .1 Give description of appliance or of system for each component piece;
 - .2 Indicate its function, normal operation characteristics and limits;
 - .3 Give characteristic curves with technical data and results of tests;
 - .4 Give complete list and commercial number for pieces that could be replaced.
- .2 Provide lists of supply circuits for distribution panels, with indication of electrical characteristics, command and telecommunication circuits.
- .3 Provide outline of color coded cables for installed material.
- .4 Operation methods: Indicate instructions and sequences for starting, breaking in and normal operation; adjustment, control, stop, out of order and for help; summer and winter operation and for any other particular instruction.
- .5 Maintenance: Provide instructions pertaining to regular maintenance and search of breakdown and instruction related to dismantling, repair and reassembly. Give instruction for alignment, tuning, balancing and how to check some components and some networks.
- .6 Provide maintenance schedule for lubrication and a list of necessary lubricant.
- .7 Provide written instructions from manufacturer concerning operation and

maintenance of components.

- .8 Provide sequential description of prepared operations by various appliance manufacturers and for control/ adjustment devices.
- .9 Provide a list of original manufacturer's pieces, illustrations, drawings and mounting outline necessary for maintenance.
- .10 Provide outlines of controls/adjustments for appliances installed and prepared by different manufacturer.
- .11 Provide coordination drawings from Contractor and color coded outline for installed piping.
- .12 Provide a list of labeling numbers for faucets, with position indication for each appliance. Refer to control and principle outlines.
- .13 Provide a list of spare parts from original manufacturer with indication of current prices and quality recommended to keep in stock.
- .14 Provide test reports for balancing prescribed in Ministerial representative's documents.
- .15 Additional requirements: according to requirements of various technical sections in the 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.

**9.
Replacement parts**

- .1 Provide spare parts according to quantity requirements in various technical sections of the tender.
- .2 Provided spare parts must come from the same manufacturer and be of the same quality as of incorporated components.
- .3 Deliver and store spare parts in selected area.
- .4 Receive and take inventory of every spare part, then submit the inventory list to the Ministerial representative. Insert the approved list in maintenance manual.
- .5 Write the following information:
 - .1 Number of spare parts;
 - .2 Equipment of system for which parts are used;
 - .3 Instruction concerning their installation;
 - .4 Name and address of closest manufacturer.

-
- .6 Keep a receipt for all parts delivered and submit it before final payment.
- 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 Ministerial representative. Insert approved list in operation manual.
- .5 Keep a receipt of all parts delivered and submit if before final payment.
- 11. Special tools**
- .1 Provide special tools according to prescribed quantities in various technical sections of the tender.
- .2 Tool must bear a label stating its function and material where they are met to be used.
- .3 Deliver and store special tools where indicated.
- .4 Receive and take inventory of special tools, then submit inventory list to the Ministerial representative. Insert approved list in maintenance manual.
- 12. Storage handling and protection**
- .1 Store spare parts, material, replacement material and special tools to prevent damage and deterioration.
- .2 Store spare parts, material, replacement material and special tools in their original packaging, kept in good order, bearing the seal and the label of the manufacturer.
- .3 Store all components sensitive to bad weather damage in weatherproof areas.
- .4 Store paint and product sensitive to very cold weather in a well ventilated heated room.
- .5 Get rid of components, damaged and/or deteriorated products. Replace them without additional costs, to the satisfaction of the Ministerial representative.
- 13. Guarantees and bonds**
- .1 Separate each guarantee or bond with tabs index, according to the list given on the table of contents.
- .2 Give list of subcontractors, suppliers and manufacturers with names, addresses and telephone numbers of a chosen representative for each one.
- .3 Obtain double copies of signed guarantees and bonds, by the subcontractors, suppliers and manufacturers, within ten (10) days following the end of the work concerned.
- .4 Except for what concerns the elements put into service with the authorization of the Ministerial representative, do not modify the entry data in force on the guarantee

before the date of the end of the work is established.

- .5 Ensure that all documents are in good order, that they have all necessary information and that they are notarized.
- .6 Countersign the documents to surrender when necessary.
- .7 Retain the guarantees and bonds until it is time to hand them over. Include them in the final project file at the end of the work.

***** END *****

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 installation of materials identical to the existing one.
- 1.2
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.
- 1.3
Site examination**
1. Contractor must visit premises and be familiar with work conditions before presenting his tender. No modifications to the contract will be given for difficulties encountered in doing the works that could have been anticipated following a careful study of the premises.
- 1.4
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.
- 1.5
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 who has to dispose of it as he wishes.
- 1.6
Actual conditions**
1. Contractor will take possession of actual building as is, after being notified that the contract was awarded to him.
- 1.7
Scheduling**
1. **Scheduling, see section 01 32 18E** and directive Ministerial representative.
 2. The place of work is within an occupied building.

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 to allow for restructuration and repair works according to drawings.
Note: Openings in walls, floors and ceiling of a surface equivalent to a 6" diameter or more are the responsibility of the general contractor unless stated otherwise.
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. Contractor will verify all building levels to ensure proper connecting as foreseen and to present a continued smooth surface between existing finish and new ones. Contractor will do all joints or assembly required to allow differential movements without causing fissures.
2. **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.
3. **Contractor must refurbish floors, walls and ceilings where equipments, appliance or mechanical or electrical ducks must be added, 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, If need be, remove existing window or windows or glass and other unsafe 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. Contractor must circulate by route imposed by Ministerial representative. No additional cost will be accepted for material handling. If this operation influences the range of the works, the route could be presented when visited by tenders.
3. Transportation must be done in a safety manner, respecting patrons when circulating inside the building.

***** END *****

PART 1 – GENERAL

- 1.1
Range of works**
1. The contractor shall provide all materials, accessories, scaffolding, equipment, specialized trucks, tools and labour required to complete all the structures described in the current section, including structures indicated in the drawings and those specified hereafter.
 2. Seal assemblies, systems and perforations;
 3. Seal the various components of the systems during assembly;
 4. Ensure the tightness of anchors and fastening components.
- 1.2
Reference standards**
1. CGSB 19-GP-5M, Sealing Compound, One-Component, Acrylic Base, Solvent Curing.
 2. CAN/CGSB-19.6, Caulking Compound, Oil Base.
 3. CAN/CGSB-19.13, Sealing Compound, One-Component, Elastomeric, Chemical Curing (polyurethane).
 4. CGSB 19-GP-17M, Sealing Compound, One-Component, Acrylic Emulsion Base.
 5. CAN/CGSB-19.18, Sealing Compound, One-Component, Silicone Base, Solvent Curing.
 6. CAN/CGSB-19.24-M, Multicomponent, Chemical-Curing Sealing Compound.
- 1.3
Protection**
1. Adjacent surfaces and works in other sections shall be protected from any damages created by the works in this section.
- 1.4
Implementation conditions**
1. The temperature of the sealant and of the support material must be kept above 5°C during application.
 2. If the sealant must be applied at a temperature below 5°C, follow the manufacturer's recommendations.
- 1.5
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 five (5) years from the date of signature of the certificate of provisional acceptance work. Comply with section 01 78 00E.

PART 2 – PRODUCTS

- 2.1
Back-up material**
1. Round rod made of cellular polyethylene, neoprene or soft butyl, continuous with closed cells, such as SOFTMROD by Tremco or approved equivalent, oversized by 30 to 50%.

- 2.2**
Anti-adherent
(if necessary)
1. Pressure bonding plastic tape that does not stick to sealants, specified by the manufacturer based on the type of joint applied.
- 2.3**
Primer
1. Before applying the primer and caulking, cover adjacent surfaces as needed to avoid tarnishing them.
 2. Immediately after applying the caulking, apply the primer to the joint's lateral surfaces, in accordance with the sealant manufacturer's instructions.
- 2.4**
Sealants
1. **Sealing between metal and concrete:**
Products complying with CAN/CGSB-19.24-[M90] standard, Type II, Class B. Acceptable product: Dymeric by Tremco. Colour: Ministerial representative's choice.
 2. **Sealing between two concrete or metal pieces:**
Products complying with CAN/CGSB-19.24-[M90] standard, Type II, Class B. Acceptable product: Dymeric by Tremco. Colour: Ministerial representative's choice
 3. **Sealing between metals and adjacent materials, on the inside:**
Products complying with CAN/CGSB-19.13-[M87] standard, Type II, Class B. Acceptable product: Dymonic by Tremco. Colour: Ministerial representative's choice.
 4. Before applying, have the colour of the sealant approved by the Ministerial representative; the colours must be similar to those of adjacent materials.
- 2.5**
Cleaning products
1. Xylol, MEK (methyl ethyl ketone), toluene or non-corrosive product recommended by the sealant's manufacturer, compatible with the materials forming the joint.
- PART 3 – WORK**
- 3.1**
Preparation
1. With a metal brush or grinder, remove rust, scales and other coatings covering the ferrous metal surfaces.
 2. With xylol or MEK (methyl ethyl ketone), remove all oil stains, grease and other coatings covering non-ferrous metal surfaces.
 3. After injecting the new foam insulation into the cavities between the windows and their frames, remove all excess insulation in order to allow the back-up material to be installed before the new sealants are applied.
- 3.2**
Sealing joint
1. Apply the sealant as per the manufacturer's instructions.
 2. Install appropriate new back-up material to create the prescribed joint depth for the sealants.
 3. Prime the inside of the joints with a compatible primer if the width exceeds 9.5mm (3/8"). Cover adjacent surfaces to avoid staining visible surfaces.

4. Apply the product by making a continuous bead of sealant.
5. Apply the sealant using a gun with a nozzle of appropriate dimensions.
6. Use strong enough supply pressure to fill the cavities and perfectly close off the surface of the joints.
7. Build the joints so as to form a continuous bead of sealant, free of ridges, folds, sagging, air pockets and coated dirt.
8. Shape the joint with an appropriate tool or knife, immediately after application, in order to ensure total contact with the interface of the joint, according to the manufacturer. It is preferable to shape the joint dry. Shaping agents may also be used. Take care not to contaminate the underlying open joints. Shape the visible surfaces in order give them a slightly convex profile.
9. Remove excess sealant as work progresses and when work is over.

3.3 Drying

1. Allow sealants to dry in accordance with the manufacturer's instructions.
2. Do not cover sealants before they are fully dry.

3.4 Cleaning

1. Immediately clean adjacent surfaces and leave the structure clean and in perfect condition.
2. As work progresses, remove excess, dripping sealant with recommended cleaning products.
3. Remove masking tape at the end of the initial joint-setting period.

***** END *****

PART 1 – GENERAL

- 1.1** .1 Supply and installation of gypsum required to work.
Range of works .2 Sealing joints.
- 1.2** .1 Unless stated otherwise, construct as per ACNOR A82.31 – M91 standard.
Reference standards
- 1.3** .1 Submit samples as per requirements of section 01 33 00E – Submittal procedures.
Samples .2 Submit samples for angles reinforcement, out-crop and fluted mouldings.
- 1.4** .1 Submit technical data for each product used.
Technical data
- 1.5** 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 five (5) years from the date of signature of the certificate of provisional acceptance work. Comply with section 01 78 00E.
Guarantee

PART 2 – PRODUCTS

- 2.1** .1 Throughout unless otherwise: Standard panels type X: as per ACNOR A82.27-M91 standard, regular, thickness indicated on drawings.
Gypsum panels .2 Note: No product called "Light" will be approved.
- 2.2** .1 Nails, screws and fasteners: as per ACNOR A82.31-M91 standard.
Fasteners and adhesives .2 Adhesive for wall framing system: as per ONGC 71-GP-25M-77 standard.
.3 Strip adhesive: as per manufacturer recommendation, without asbestos.
.4 Adhesive for lamination of fibre glass panels.
- 2.3** .1 Flushing mouldings, reinforced angles furring type: galvanized steel of commercial quality 0,5 mm thick, bare, with zinc Z275, as per ASTM A525M-86 standard, perforated wings in one piece.
Accessories .2 Acoustical weatherproof mastic: as per CAN/CGSB-19.21-M87 standard.
.1 Acceptable weatherproof products for the present work must be on the list of approved products given by the approval commission for weatherproof products for joints of ONGC.
.3 Insulating strips: rubberized, waterproofed, cellular neoprene, 3mm thick, 12mm large with at least one face coated by a permanent self-adhesive, in appropriate length for panels.
.4 Cement for joints: premixed cement, ready to use, with vinyl base without asbestos, as per ACNOR A82.31-M91 standard.
.5 Kraft paper joint strips especially treated with minute perforations.

- .6 "U" shape galvanized steel strip: to maintain gypsum moulding in partitioning areas where there are some empty spaces.
- .7 Expansion joints: such as CGC no. 093.
- .8 Finishing "L" moulding, galvanized steel, around window's perimeter and all openings.
- .9 Finishing moulding and pre-painted steel fold, as per the plan's details and dimensions.
- .10 Stone wool: AFB by Roxul

PART 3 – WORK

3.1 Installation of gypsum panels

- .1 All partitions go from floor slab to the next upper one when there are no indications on drawings.
- .2 Do not install gypsum panels before other false frame, fasteners, shims, electrical and mechanical installations are approved.
- .3 Install one or two thickness of gypsum panels to the wall frame or to the furring, with screwing fasteners and wall-frame adhesive for the first thickness. Fix screws at 300mm intervals maximum.
- .4 Apply a continuous strip of 12mm in diameter of a waterproof acoustical product, around gypsum panels and structural frame and where partitions join the fixed components of the building. Seal perfectly all cuttings made around electrical boxes, pipes and other perforations in the partitions, where the perimeter has an acoustic sealant and/or fire and smoke dampers.
- .5 Insert properly soundproof wool braids between frames to obtain a continuous acoustical protection and/or fire and smoke dampers. Coordinate installation of soundproof wool with installation of metallic frame for doors and frames and interior windows placed in soundproof partitions. In very thick partition, maintain wool braids with mechanical fasteners, as recommended by manufacturer and approved by Ministerial representative. Fill properly all striations of the steel bridge where soundproof partitions meet.

3.2 Accessories

- .1 Install accessories square, plumb and on level. Adjust them solidly in the chosen area. When possible, use full length pieces. Make well-adjusted joints, aligned and solidly saddles. Miter angles and adjust perfectly, without leaving rough edges. Install components at 150mm interval.
- .2 Install out-crop mouldings around the perimeter of suspended ceilings.
- .3 Install out-crop mouldings at junction points of gypsum panels with surfaces having no cover joint and where indicated. Seal joints with waterproof product.
- .4 Install insulating strips in a continuous matter to sides of gypsum panels and to out-crop mouldings, at their meeting position, with metallic frames of windows and exterior doors, to ensure a break in the thermal conduction.

3.3 Recess joints

- .5 Install a moulding at junction of wall/ceiling according to indications. Reduce the number of joints to a minimum; use angle mouldings and joint.
- .6 Finishing "L" moulding, galvanized steel, around window's perimeter and all openings.
- .1 Make recess joints, around each overture, formed with prefabricated components with two out-crop mouldings installed back to back, drown in gypsum panel, cover and fixed independently on each side of the joint.
- .2 Install a continuous polyethylene strip (making an anti-dust screen) in the back of the recess joint and overlap
- .3 Place recess joints where indicated on the drawings. In addition to indications, place receding joints in areas where there is a change in the nature of the support. Place at every 10 meters maximum, along large corridors and on all walls that are longer than 10 meters. On the ceiling, place receding joints at every 15 linear meter in all directions.
- .4 Make receding joints square and aligned.
- .5 Make receding joints at floor level inside staircases.

3.4 Joint strip and plaster

- .1 Finish joints between panels and in recessing angles with the following products: Joint paste, joint strips and strip coating. Apply these products as recommended by the manufacturer and smooth down by thinning the work so it meets the finish of the panel surface.
- .2 Cover angle mouldings, recess joints and if need be, the trimmings with two (2) coats of joint paste and with one (1) coat of strip coating. Make it smooth and thin so it meets the surface finish of the panel.
- .3 Fill screw head holes with joint paste and strip coating until achieving a smooth uniform surface, flush with adjacent gypsum panel surface, so the holes become invisible once application of coating is finish.
- .4 Lightly sand the sharp edges and other imperfections. Try not to sand adjoining surfaces that have no need.
- .5 Once installation is done, work must be smooth, on level and plumb, with no corrugations and other defects and must be ready to receive the finish coating.

3.5 Soundproof and fireproof integrity

- .1 Fit together structural elements (beams, girders, etc.) and others that are situated on top of partitions to be built up to the bypass to get the same soundproof and fireproof properties and/or fire and smoke dampers that of underlying partition.
- .2 Where partitions will be built up to the bypass, block all openings perfectly tight around wires, ducts, pipes, structural elements and others. Block openings left by striation of bypass with a gypsum panel and cut according to shape of bypass. Seal each side.

3.6
Soundproof exterior walls
integrity

- .1 Interior partitions that are against exterior walls must be prolonged up to the exterior wall mullion or metallic insulated panel. Block space between beam and exterior floor covering.

***** END *****

PART 1 – GENERAL

1.1

Range of works

None limitative list of works for this section:

1. The supply and installation and metal stud framing for walls and ceilings in accordance with manufacturer's instructions and in accordance with Part 4 of the National Building Code of Canada 2010.
2. Coordination of engineering work to fix electromechanical elements in walls and ceilings in accordance with manufacturer's instructions and in accordance with Part 4 of the National Building Code of Canada 2010.

1.4

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 five (5) years from the date of signature of the certificate of provisional acceptance work. Comply with section 01 78 00E.

PART 2 – PRODUCTS

2.1

Materials

1. None supporting framing made of framing sections, "U" shape: as per ASTM C645-83 standards; posts 32 x 92mm (1¼" x 3 5/8") and 32 x 64mm (1 ¼" x 2 ½"), hot immersion laminated and galvanized steel 0.91mm (cal 20, 0.0312") thick; posts must be made so gypsum panel can be screwed. They must have openings for pipe work and be half perforated at an interval of 460 mm (18").
2. Top plate, bottom girts and plate: as per ASTM C645-83 standard, proper width for post dimensions, same caliber as posts with 32 mm (1¼") high flange for bottom plate and 52mm (2") high flange for top plate.
3. Insulating strips: waterproof, self-adhesive on one face of acoustical rubber strip sealer, 3mm thick x 1 mm large.
4. Acoustical insulation: for metallic wall framing made of mineral fiber 75mm thick, such as ROXUL AFB from ROXUL or approved equivalent.
5. Polyefine foam extrusion with non-absorbing envelope, reference: ETAFOAM.
6. Cold rolled steel section for suspended gypsum ceiling; 38 x 19mm, 1.2mm thick, "U" shape, installed at 1200mm C/C maximum.
7. Galvanized and annealed mild steel suspension wire, 2.6mm diameter at 1200mm C/C maximum.
8. Load-bearing and reinforcing elements with heavy-gauge metal studs. See plans and details for description. These elements mainly involve the posts on either side of the openings, as well as the lintels.

PART 3 – WORK

3.1

Partitions mounting

1. Install top and bottom plates on floor and ceiling, align with precision and fix them at a maximum interval of 610mm (24").

2. Install foam strip under upper, lower and lateral plates of partitions adjacent to concrete construction.
3. Install vertical posts at interval of 406mm (16") (some at 300mm c / c, see drawings) and at 52mm (2") at the most from wall intersections and on each side of openings and angles. Fix post so they ensure rigidity of structure as per manufacturer instruction.
4. At mounting stage, maximal admissible gap is of 1:1000.
5. Fasten post to wall plates by crimping.
6. Coordinate installation of posts with installation of pipe works for various services. Install posts so openings are well aligned.
7. Coordinate installation of posts with installation of door and window frames and other supports or anchoring devices planned for required works in other sections.
8. Double up posts (on the whole height of the room) on each side of openings when width is higher than interval for posts. Assemble doubled up posts, while leaving a space of 52mm (2"); to do this, use clips or other approved anchoring device, placed besides attach stubs structure.
9. At openings, install strong, thick single steel posts for jambs.
10. Install wall plates over door and window openings, under window sills and lateral openings to be able to fix intermediate posts. Fix wall plates to each end of posts as per manufacturer instructions. Install post placed over and under openings, spacing being the same as for posts forming wall structure and using same method of fixation.
11. Install furring sections around openings of building and around built-in material, cupboards and access panels. Prolong furring in reveals. Inquire about required space and clearing from material supplier.
12. Install posts or furring sections 38mm (1½") between main posts to allow anchorage of sanitary appliances, suspended to metallic partitions, such as wash basin, washroom accessories and other sanitary appliances, including supporting rod, and towel bars.
13. Leave a space under wall plates and supporting slabs so structure weight is not transmitted to the posts. Install upper winged wall plates 52mm (2"). Make a sliding joint for double wall plates as indicated.
14. Install continuous insulating plates for posts being in contact with surfaces that are not insulated.
15. For all partitions, install acoustical insulation respecting manufacturer conditions to maximize system efficiency.

3.2 Suspended gypsum ceiling mounting

1. Install ceiling's "U" shape trim at 1200mm C/C maximum by using suspension wire at 1200mm maximum, all trims must be leveled. All wire ties are to be three tight turns around itself within 75mm according to ASTM C636. Installation tolerance is 3mm over 3.5m.
2. Install metal furring perpendicularly to "U" shape trim at 400mm C/C maximum.

3.3
Fixing partitions, ceilings and
equipment

3. All openings for access door, lighting devices, diffusers, grids or any other element crossing ceiling must be framed with trims and furring.
1. Place the frame and metal studs for walls and ceilings in accordance with manufacturer's instructions and in accordance with Part 4 of the National Building Code of Canada 2010, especially against earthquakes.
2. Coordinate the work of this section with engineering to determine the electromechanical elements in walls and ceilings in accordance with manufacturer's instructions and in accordance with Part 4 of the National Building Code of Canada 2010, especially against earthquakes.

***** END *****

PART 1 – GENERAL

- 1.1**
Range of works
- None limitative list of works for this section :
1. The supply and installation and metal stud framing for walls and ceilings in accordance with manufacturer's instructions and in accordance with Part 4 of the National Building Code of Canada 2010.
 2. Coordination of engineering work to fix electromechanical elements in walls and ceilings in accordance with manufacturer's instructions and in accordance with Part 4 of the National Building Code of Canada 2010.
- 1.2**
Reference standards
1. ASTM C635-04, Specification for Metal Suspension Systems for Acoustical Tile and Lay-in Panel Ceilings.
 2. ASTM C636-04, Practice for Installation of Metal Ceiling Suspension Systems for Acoustical Tile and Lay-in Panels.
 3. ASTM E 580-06, standard practice for application of ceiling suspension systems for acoustical tile and lay-in panels in areas requiring seismic restraint.
- 1.3**
Calculation criteria
1. Maximum flexion: deflection of 1/360 over span, determined by flexion test prescribed in ASTM C635 standards.
 2. Follow the manufacturer's recommendations with regard to the applicable seismic zone. (Category D of the IBC, for the purposes of submission).
- 1.4**
Technical data sheets and samples
1. Data sheets and samples must be submitted according to section 01 33 00E – Submittal procedures.
 2. Submit representative model of the suspension frame.
 3. Each sample must show mounting and assembling details, wall anchoring, recessed equipment, interlocking method, finishing and soundproofing elements installation.
 4. Each sample must carry product number referenced in current specifications.
- 1.5**
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 five (5) years from the date of signature of the certificate of provisional acceptance work. Comply with section 01 78 00E.

PART 2 – PRODUCTS

- 2.1**
Seismic suspension system, IBC category D
1. Seismic suspension system: **PRÉLUDE XL** by **ARMSTRONG** and seismic suspension system **RX**.

Metal frame suspension superior strength, evaluated by ICC-ES (ESR-1308) according to ASTM C 636 and in accordance with ASTM E580-06 and Part 4 of the National Building Code of Canada 2010, suspended to the building structure and fixed to the walls with fasteners designed for this purpose.

Location and configuration of the ceiling: See drawings

Integrated electromechanical equipment: See engineering drawings

Dimensions and Levels: See drawings. Take and verify all dimensions and levels on site.

Finish: "blizzard white", satin

2. Fabrication materials for framing elements: cold rolled steel commercial grade, galvanized.
3. Exposed suspension grid elements with T shaped tracks, painted in the workshop, matt satin finish; matrixed.
4. Main TEE with double web thickness surmounted by a rectangular pipe and provided, on the face side of a flange.
5. Secondary TEE surmounted by a tube rectangular core completed in tongues, type "Quick-Release" for fixing the foolproof main tee, provided with a support base to tilting mismatch crossings.
6. Shroud: Annealed mild steel and galvanized wires.
7. Anchorages for shroud: As recommended by the manufacturer of the frames.
8. Accessories: sides, attachments, wire retaining clips, clips and molding ceiling wall joints, setback, in addition to the elements of the framework of suspension in accordance with manufacturer's recommendations framing.
9. Ajustable holding claw for fire resistant assemblies.
10. U shape supporting profiles: of 38 x 15 mm, galvanized steel 1.3 mm thick for circumventing bypass of the ventilation elements and others.

2.2
Other accessories exposed tee systems and molding possible

1. **Consult the manufacturer, validate regulatory requirements and provide all components required to complete the work in accordance with:**

Other possible materials: Non-limiting list

1. BERC: Beam end retaining clip joins main (IBC category C)
2. MB: Siesmic joint clip;
3. ESR4: Expansion sleeve;
4. ABSC: Air bar spacer clip;
5. DLCC: Direct load ceiling clip;
6. DW50LT et DW58LT: Transition clip with locking tabs;
7. EHDC50, EHDC58, EHDC75: Exterior hold down clip (drywall);
8. MBAC: Main beam adapter clip (drywall);
9. DW30C, DW45C, DW60C, DW90C: Angle clip (drywall);

10. RC1, RC2: Radius clip (drywall);
11. UPC: Universal partition clip 15/16;
12. 7327CA: Adapter mesh (for change of direction);
13. UTC: up tight clip (to attach to wood joist "C" of 38mm);
14. CBS4, CBS6, CBS8, CBS10, CBS12: Channel beam splice (100 to 305mm);
15. CBS2006, CBS2008: Channel main beam splice with square edge;
16. ES4, ES49: Expansion sleeve for rails 15/16 or 9/16;
17. GCWA: Grip clip wall attachment;
18. C1430: Variable placement hook clip;
19. WS12: Hanger wire splice, gage 12;
20. 7861, 7873: Shadow molding, inside corners;
21. 7862, 7873: Shadow molding, outside corners;
22. 7863, 7865: Outside corner cover;
23. 7864, 7866: Radius bullnose corner cover;
24. 7867: Field cut corner cover;
25. LFC: Light fixture clip;
26. 414 and/or UHDC: Universal hold down clip;
27. DWC: Drywall clip;
28. CHDC: Hold down clip;
29. XTAC: Cross Tee Adapter Clip;
30. MBSC2: Spacing clip for main beam (50mm);
31. 7425, 7445: Stabilizer bar of 610mm and 1220mm lenght;
32. GC3W: accessory grip clip 3-way;
33. SH12: Hanger bar, of knockouts 305mm c/c;
34. Aircraft cable stainless steel dia. appropriate (if visible);
35. Compression posts robust minimum strength of 430 lbs (195 kg) and of appropriate dimensions;
36. 7800 à 7813: Other hemmed angle moldings ("L");
37. 7880 à 7898: Flexible angle molding ("L" for minimum radius of 1830mm);
38. 7841 à 7843: Slip tile molding bonded ("J");
39. 7853, 7856: "F" molding for drywall 13mm or 16mm;
40. 7823, 7871, 7873, 7874, 7875, etc.: Other hemmed shadow moldings;

41. 7814, 7816, 7818: Edge molding 100mm, 150mm or 200mm height;
42. 7830, 7831, 7834, 7835: Profile molding "C";
43. 7857, 7858: Hemmed angle molding "inverse L";
44. 435: Stabilizer clip 19mm and 25mm thick;
45. 7870: Spring border clip;
46. 440: Border clip Vector;
47. 442: Vector clip against earthquakes;
48. And others.

PART 3 – EXECUTION

3.1 Mounting

1. **Build the backbone of the suspended ceiling according to the requirements of ASTM C636 and ASTM E580 and the National Building Code of Canada 2010; according to the strict guidelines of Armstrong on the seismic suspension system prescribed and indicated in this specification. The most restrictive conditions apply.**
2. Do not start ceiling's frame installation before Ministerial representative's verification and approval of hidden installations in ceiling gap.
3. Hangers must be fasten to upper structure of the building by using appropriate robust fixation method approved by Ministerial representative.
4. Hangers must be attached to main beam center. All wire ties are to be at least three tight turns around itself within 75mm according to ASTM C636.
5. Hangers must be installed at 1200mm C/C maximum; hangers must be installed within 200mm of main tees ends.
6. If aluminum suspension system is installed, hangers must be installed at 900mm C/C maximum to withstand average charge according ASTM C635.
7. If fireproof suspension system is installed, hangers must be installed at 75mm maximum on both sides of expansion joint.
8. Install moldings perimeter that delineate the exact height of the ceiling.
9. Attach the "L" molding on the wall at 300mm c / c maximum and screw facing each beam (at each intersection of a T) as required by the standard.
10. Have the framework in the reflected ceiling plan.
11. On the ceiling, draw two perpendicular medial to ensure the symmetry of the system at the periphery of the room.
12. Dispose of the frame so that the width of the edge elements is not less than 50% of the standard width of the elements.

13. **Use fasteners BERC2 at each rail on all the walls. Use LFB lateral force spacers, CT and 436 clips required. Secure compliance with the requirements of the standards and instructions Armstrong.**
14. Effectively coordinate the provision of framing with the location of other elements mounted in the ceiling.
15. Once completed, the framework must be able to withstand any additional charges, such as those lighting fixtures, diffusers, grilles and speakers.
16. Once installed, ceiling grid must withstand all extra weight, e.g. lighting devices, diffusers, grilles and speakers. For each lighting device and diffuser, provide extra hangers to be installed at 152mm maximum from each corner and at 610mm maximum on perimeter.
17. Cross tee must be attached to main beams to get rigid assembly.
18. Install perimeter trim around lighting devices, diffusers and speakers openings, as well as at ceiling level changes.
19. Finished ceiling edges must be set squared along walls and must not admit a gap greater than 1:1000.
20. Dilation joints (when applicable).
 1. All along building's dilation joints, install in parallel, at a distance of 25mm from each other, two main tee beams. Acoustical panels to be install between those trims; width should be 25% less than of space between tees;
 2. Metal Z bars must be installed between main beams on both sides of dilation joint. Bars must be trimmed to allow a 25mm gap, more or less, and ensure joint occlusion. Z bars must be finished so they look the same as adjacent metal trims. Metal plate must be installed behind butt joints.

3.2 Minor jobs and general inspection

1. Review all system connections, all joints of materials, to ensure and provide earthquake resistant construction as required and without blemish.
2. Check that the electromechanical equipment located in the ceilings are fixed to the building structure in accordance with the requirements of the standards and codes.
3. Perform minor adjustments and / or corrections necessary.

3.3 Cleaning

1. Scratched or damages painted surface must be touched up and cleaned.

***** END *****

PART 1 – GENERAL

- 1.1**
Range of work
- Non limitative list:
- .1 Supply and installation of acoustical tiles in the new ceilings in accordance with manufacturer's instructions, standards and in accordance with Part 4 of the National Building Code 2010.
- 1.2**
Reference standards
- .1 CAN/CGSB-92.1, Prefabricated acoustical components.
 - .2 CSA B111, Wire Nails, Spikes and Staples.
 - .3 CAN4-S102, Standard trial methods – Superficial combustion characteristics of building materials and their assembly.
 - .4 ASTM C635-04, Standard Specifications for Manufacture, Performance, and Testing of Metal Suspension Systems for Acoustical Tile and Lay-In Panel Ceilings.
 - .5 ASTM C636-04, Standard Practice for Installation of Metal Ceiling Suspension Systems for Acoustical Tile and Lay-In Panels.
 - .6 ASTM E580-06, Standard practice for application of ceiling suspension systems for acoustical tile and lay-in panels in areas requiring seismic restraint.
- 1.3**
Samples
- .1 Submit two (2) samples, 150mm per 150mm, of each type of acoustical components.
- 1.4**
Conditions for implementation
- .1 Let work, releasing humidity, dry out before beginning the works.
 - .2 Before and during work, maintain, in the room where work is to be done, a constant temperature of at least 15°C and a relative humidity between 20 and 40%.
 - .3 For at least 48 hours before using the material, store them in room where work is to be done.
- 1.5**
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 five (5) years from the date of signature of the certificate of provisional acceptance work. Comply with section 01 78 00E.

PART 2 – PRODUCTS

- 2.1**
Materials
- .1 Acoustic tiles to "build" new ceilings: Model Armstrong **CALLA**, 610 mm x 610 mm x **22mm**, mineral fiber and square edges.
 - .2 Adhesive: recommended type of adhesive by manufacturer of acoustical components.

- .3 Staples, nails and screws: as per ACNOR B111 standard, anticorrosive finishes, as per manufacturer recommendations for acoustical components.
- .4 Polyethylene: as per CAN2-51.33 standard, type 2, 0,15 mm thick.

PART 3 – WORK

3.1 General

- .1 Examine ceilings plans before installation of acoustical tiles.
- .2 It is forbidden to install acoustical panels and tiles before inspection by Ministerial representative for installations that will be hidden in the ceiling.
- .3 Coordinate ceiling mounting work with installer of electrical lighting appliance, distributors, loudspeakers and heads of extinguishers that are to be installed in acoustical ceiling.
- .4 Install fixation staples where indicated on the drawings.
- .5 Make sure that all acoustical tiles are free from defects, scratches, stains, discoloration, etc. and replace, if need be.

3.2 Recovery, adjustment and resettlement (modified existing ceilings)

- .1 Level out existing acoustic ceilings, where required and indicated in the drawings:
 - a. Recover existing tile, store them for work.
 - b. Before reinstalling, sort and remove those tiles stained and damaged that can not be reused.
 - c. Cut retrieved tiles according to the modified frame.
 - d. On recovered tiles, bevel the edges of cut tiles in place as existing. Use the appropriate tools.
 - e. Lay the tiles in the modified frame, such as existing. Adjust.

3.3 Components to be installed on suspension frame (new ceilings)

- .1 Construct new suspended acoustical ceilings in other locations where indicated on drawings:
 - a. Install acoustical panels and tiles on suspension frame in accordance with the manufacturer's instructions, standards and in accordance with Part 4 of the National Building Code 2010.
 - b. Follow the manufacturer's recommendations with regard to the applicable seismic zone. **(Category D of the IBC, for the purpose of submission).**
 - c. Coordinate this work with those of **section 09 22 27E.**

***** End *****

PART 1 – GENERAL

- 1.1**
Range of work
- .1 Non-exhaustive list:
 - .1 Clean existing and new surfaces to be painted and new finishes.
 - .2 Paint walls and partitions (gypsum) as described in plans.
- 1.2**
Reference standards
- .1 Office of general standards of Canada (ONGC).
 - .1 CAN/CGSB-1.28, Interior alkyd resin paints for buildings.
 - .2 CAN/CGSB-1.132 Paint for primer coat, zinc chromate, low sensitivity to humidity.
 - .3 CAN/CGSB-1.Aluminum enamel paint with silicone-alkyd resin, resistant to heat.
 - .4 CAN/CGSB-1.146 Cover with epoxy resins paint, cold hardening, bright.
 - .5 CAN/CGSB-1.153 Cover with epoxy resins paint, high garnishing power, bright.
 - .6 CAN/CGSB-1.165 Paint for primer coating with epoxy resins, cold hardening.
 - .7 CGSB 85-GP-14M Painting of steel surfaces exposed to normal dry atmosphere.
 - .8 CGSB 85-GP-16M, Painting of galvanized steel.
 - .9 CAN/CGSB-85.100, Painting.
 - .2 Steel Structures Painting Council (SSPC).
 - .1 Systems and Specifications Manual, 1989.
 - .3 Architectural Painting Specifications Manual, Master Painters Institute (MPI).
- 1.3**
Condition for beginning work
- .1 Do not apply paint where work emitting dust is being done.
- 1.4**
Maintenance material
- .1 Deliver one galon each of tint and finish used for interior wall surfaces.
 - .2 Use replacement material coming from the same production lot of material used for works.
 - .3 Colors and tints:
 - .1 All colors, intensity of tones and tints will be chosen by Ministerial representative during the course of the work.
 - .2 Where many coats are applied, the next to last coat of paint will of the color chosen and submitted for approval by Ministerial representative that reserve the right to change or modify their choice during the course of the works.
 - .3 Many colors will be used.

- 1.5 Inspection of rooms surfaces to be painted**
- .1 Rooms will be thoroughly swept to remove any dust. Concrete work must have been finished for at least thirty (30) days. Masonry work must be completed and dry enough.
 - .2 Surfaces will be suitably finished, clean, dry, with regular appearance and texture and without of defect.
 - .3 Unless reserves were made beforehand by Ministerial representative and/or the contractor, the beginning of work means implicit approval of conditions and of the state of surfaces on which work is to be done. The Contractor will be held responsible for the quality and the condition of finish, if not of first quality.
- 1.6 Climatic conditions**
- .1 No paint, tint or preservative will be applied when temperature is inferior to 10°C inside and for exterior, when ambient temperature is inferior to 10°C and superior to 32 °C. No exterior finish will be applied during night, snow or after, until surfaces are dry.
- 1.7 General protection**
- .1 Contractor will protect work against humidity or damage by whatever cause. Also protect adjacent works from any damage caused by workers, materials, tools or equipment used to do the work. Assume responsibility for adequate protection of works against any eventual damage caused by the execution of works related to this division or others.
 - .2 Contractor must repair all damage, without cost to the ministerial representative and to the satisfaction of consulting-experts. If, in their opinion, these damages cannot be suitably repaired, damaged work will be replaced at the cost of the Contractor.
- 1.8 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 five (5) years from the date of signature of the certificate of provisional acceptance work. Comply with section 01 78 00E.

PART 2 – PRODUCTS

- 2.1 Materials**
- .1 Approved materials: to do present works, use only paint material from list of approved products given by OGSC (O.N.G.C.).
 - .2 Use paint material as per O.N.G.C. standard, mentioned on the list of paint systems for finish.
 - .3 Material from each paint system must come from one manufacturer only.
 - .4 Choice of:
 - 3 colours for walls;
 - 2 colours for doors, frames and glazed partitions;
 - 2 colours for ceiling;
 - 3 colours for conduits and equipment
 - .5 On surfaces: one (1) primer coating and two (2) finish coatings, unless told otherwise.

PART 3 – WORK

3.1 Surfaces preparation

- .1 Application of paint must not start before surfaces are suitable prepared. All surfaces must be solid, dry, and clean without dirt, dust, grease, rust, mortar projections, salts and foreign matters susceptible of compromising the good appearance of paint coatings.
- .2 Prepare existing doors and frames in the following way:
 - .1 Wash surfaces with a multi-purpose oxygen active cleaner as No 771-136 per Sico.
 - .2 Sand surfaces to attenuate glossiness.
 - .3 Exterior walls must be cleaned with pressurized air. Then, clean foundation walls up to the height of the garage doors with pressurized water. The device must deliver a minimal amount of water so as to not soak the surfaces.
- .3 Prepare plaster and plasterboard surfaces, as per ONGC 85-GP-33M standard. Fill small cracks with smoothing product.

Wash all gypsum surfaces with a multi-purpose oxygen active cleaner as No 771-136 per Sico. Sand all gypsum surfaces apply a primer as No 850-130 or 870-177 per Sico. Sand thereafter and dust between each coat of paint.

3.2 Application

- .1 Sand and dust between applications of each coat of paint to correct defects visible at a distance of 1,5m.
- .2 After adjusting doors, finish edges and door frames according to requirements anticipated for door itself.
- .3 Finish upper part of cupboards and protruding edges, on top and under vision line, according to requirements estimated for adjacent surfaces.
- .4 Finish cupboards and tiny rooms according to requirements estimated for adjacent rooms.
- .5 Coordinate paint work, including methods of applications and periods to do the work.
- .6 Finish non-visible areas from inside but visible from the outside by an opening or through windows.

3.3 Interior finish

- .1 System for gypsum walls:
 - .1 New surfaces: Apply a coat of latex sealing primer as per ONGC 1-GP-1.119 standard such as SICO ECOSOURCE 850-130 product.
 - .2 Existing surfaces: Apply a coat of acrylic primer, 0 VOC, such as RUST-OLEUM Griptec.
 - .3 Apply two (2) coats of latex paint 100% acrylic, platinum finish as per ONGC 1-GP-1.209 standard such as SICO ECOSOURCE product, series 853-620.

***** END *****