

**ROOF REPLACEMENT
BUILDING M1**

LA MACAZA INSTITUTION

BTA FILE: 13118
CSC FILE: 550-2-352-3223

JUNE 2014

ISSUED FOR BIDDING



**Bergeron Thouin
Associés
Architectes Inc.**

SPECIFICATIONS

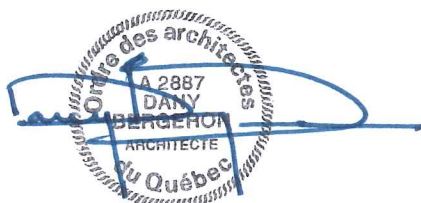
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PROJECT

ROOF REPLACEMENT BUILDING M1
LA MACAZA INSTITUTION

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SECTION

DESCRIPTION

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01005	General Instructions
01100	Supplementary General Conditions
01300	Documents and Samples
01500	Temporary Installations and Controls
01545 (013513)	Project Procedures for CSC Security Requirements
01705	Health and Safety
02060	Demolition
05500	Metal work
06100	Rough Carpentry and general work
07560	SBS Modified bitumen membrane roofing

PART 1 - GENERAL

1.1 PRECEDENCE

- .1 For projects undertaken for the federal government, the sections of Division 01 take precedence over the technical specifications in the other sections of the specifications.
- .2 In the event of a contradiction or a discrepancy between the information provided in English and in French on the plans and in the specifications for this contract, the French text shall take precedence.

1.2 REFERENCES

- .1 Quebec Construction Code - Chapter I, Building, and the National Building Code of Canada (NBC), 2005 edition, including all of the modifications made up to the closing date for the bidding.

1.3 DESCRIPTION OF THE WORK

- .1 The project includes the following work. The list below is not necessarily complete and does not in any way lessen the liability of the Contractor to perform the entire project in accordance with good trade practices, the general intentions and principles, as described below in these specifications and on the plans.
 1. Remove existing roof system and components down to the structural deck.
 - .2 Dispose of all associated debris.
 - .3 Reconstruct wood blocking for curbs, parapets and walls, as indicated on drawings.
 - .4 Install new roof assembly and related metal flashing.
 - .5 Perform interior modifications for new roof access.
 - .6 Return the site to its original state prior to construction.

1.4 COMPULSORY SITE VISIT

- .1 For security considerations, the site visit inside the prison will take place at a predetermined time, which will be indicated in the bid documents. The meeting point will be the front entrance of the institution in question. **The site visit is compulsory.**
- .2 Examine the site and the specific conditions which may affect the work. The submission of a bid shall constitute an acknowledgment on the part of the bidder that he accepts the conditions.

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1.5 **SECURITY CHECK**

- .1 All of the workers will be required to undergo a security check in order to be accredited to the security level required by Correctional Services Canada and Public Works and Government Services Canada.
- .2 Section 01545 (013513) describes the detailed procedures for the security check.
- .3 At the commencement of the work, a special site meeting will be held in the presence of representatives of the institution for the purpose of communicating the instructions that apply to security and to construction work in a prison setting.

1.6 **CODES**

- .1 Perform the work in accordance with the National Building Code of Canada (NBC 2005) and all other applicable provincial and local codes. In the event of a discrepancy or contradiction, the strictest requirement shall apply.
- .2 Perform the work to satisfy all of the requirements of:
 - .1 the contract documents;
 - .2 the specified standards and codes as well as the other documents cited as references.

1.7 **REQUIRED DOCUMENTS**

- .1 Keep on the site a copy of each of the following documents:
 - .1 the contract plans;
 - .2 the specifications;
 - .3 the addenda;
 - .4 the revised shop drawings;
 - .5 the change orders;
 - .6 the other modifications to the contracts;
 - .7 the reports of on-site testing;
 - .8 the approved work schedule;
 - .9 the instructions governing installation and workmanship supplied by the manufacturers.

1.8 **WORK SCHEDULE**

- .1 Commence the work immediately after receiving the notice of acceptance of your bid. The work which is the object of this document, including the correction of construction defects, shall be completed within the deadline specified in this document. In the event of the failure to respect the schedule, measures will be taken in accordance with the standard purchase clauses and conditions of Public Works and Government Services Canada (PWGSC). Following the awarding of the contract, the commencement of the work shall be determined in consultation with the Owner.
- .2 Within ten (10) working days of the awarding of the contract, submit the work schedule indicating the timing of the various steps phases of the project and the date of the completion of the work.
- .3 The Contractor shall direct and assist his subcontractors and suppliers in the planning and coordination of the detailed schedules prior to and during the construction for each major step of the project and they shall also receive directions from the Engineer. The detailed schedules shall be based on the milestone dates provided in this contract. These detailed schedules shall be approved and accepted by the subcontractors and suppliers who will be responsible for performing the work.
- .4 The sequence of the work shall be as follows:
 - .1 the start-up meeting and submission of the schedule, the shop drawings, the technical data sheets, the samples and the security check forms for approval;
 - .2 the approval of the submitted documents;
 - .3 the commencement of the work;
 - .4 the work;
 - .5 the submittal of the operating and maintenance manuals for approval;
 - .6 the provisional acceptance;
 - .7 the training of the maintenance staff;
 - .8 the correction of defects;
 - .9 the final acceptance.
- .5 Within ten (10) working days of the awarding of the contract, the Contractor shall supply, in a form acceptable to the CSC Representative, a work schedule showing:
 - .1 the submittal dates for the shop drawings, the lists of materials and the samples;
 - .2 the dates for the commencement and the completion of the work described in each section of the specifications;

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1.8 **WORK SCHEDULE (continued)**

- .3 the final date of completion of the work in relation to the completion delay stipulated in the contract documents..
- .6 Provisional revisions to the state of advancement of the work, as per the submitted work schedule, shall be made by the CSC Representative as he deems appropriate. The schedule shall be updated by the Contractor with the cooperation and approval of the CSC Representative.
- .7 For the purposes of planning the work, the Contractor shall take into account the hours of access to the prison which are shown in Section 01545 (013513).
- .8 The Contractor shall take all of the precautions required to ensure that the work is completed within the described delays and, to this end, he shall provide in his contract for the possible need to provide one or more additional work shifts if needed to perform the work.
- .9 The Contractor is responsible for the coordination of his work with the work of the other subcontractors and suppliers in order to ensure the complete performance of the work within the time limits indicated in this section.
- .10 All of the delays indicated in the preceding paragraphs represent upper limits and they shall begin to be counted from the date of the official notification of the awarding of the contract.

1.9 **COORDINATION OF THE WORK**

- .1 The Contractor is responsible for planning his work schedule and for performing his work in a manner which will not disturb or interrupt the daily operation of the prison. This Contractor shall be prepared to change his schedule if so requested by the CSC Representative in order to ensure the continuity of the construction work and the security of the institution.
- .2 The Contractor shall plan his schedule in such a manner as to ensure that the mechanical and electrical systems and all other systems remain in operation at all times during the construction. Before he initiates any interruption in the mechanical and electrical systems or in any other system, he shall notify the representatives of the institution belonging to Correctional Services Canada (CSC).

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1.10 **ACCEPTANCE OF EQUIVALENTS**

- .1 In a case where particular materials are specified by a name, a trademark or the name of a manufacturer or supplier, the bid must be based on the use of the designated materials. During the bidding period, replacement materials may be considered on condition that the contracting authority receive, in writing, complete technical information at least ten (10) days prior to the date set for the closing of the bidding. If the replacement materials are approved for the purposes of the bidding, an addendum to the contract documents will be issued.
- .2 It is the responsibility of the Contractor to provide proof of equivalence. The request for equivalence shall be clearly presented and shall include all of the details required for a proper analysis.
- .3 The principal criteria for the acceptance of equivalence are: construction, performance, capacity, dimensions, arrangement of the fittings, availability of replacement parts, ease of maintenance, delivery times, and the proven use of similar components over a certain period of time.
- .4 If the use of a component which has been accepted as an equivalent results in changes to the installations shown on the plans or in the specifications, these changes shall be the responsibility of the General Contractor, who shall also assume the cost of the modifications which are required in the work of the specialized contractors as a consequence of these changes.

1.11 **COST BREAKDOWN**

- .1 At the moment of the awarding of the contract, the Contractor shall submit a detailed breakdown of the costs associated with this contract, indicating also the total price of the contract **on the supplied bid schedule**. Once approved, the cost breakdown shall serve as the basis for the purposes of calculating the progress payments.

1.12 **PAYMENTS**

- .1 Payment will take place monthly, on a pro rata basis in accordance with the degree of advancement of the work. Before sending an invoice, the Contractor shall submit for approval an itemized request for payment, as per the bid schedule, indicating the percentage of completion for each item. A holdback of 5% shall be applied to the total amount, before taxes, of the request for payment. The holdback shall be payable at the time of the final acceptance of the work.

1.13 MESUREMENT FOR PURPOSES OF PAYMENT

- .1 Provide adequate notice to the CSC Representative prior to the commencement of the work to permit him to perform the required measurements for purposes of payment.

1.14 USE OF THE PREMISES BY THE CONTRACTOR

- .1 During the construction, the institution shall be maintained in full operation; for this purpose, the CSC Representative or the person responsible for the security of the institution may ask the Contractor to stop, immediately and temporarily, the performance of work in order to avoid any adverse effect on the activities of the institution.
- .2 Use of the premises: access is provided only to the work area. Any work which needs to be performed outside of the work area shall be performed by a team which is accompanied by an escort supplied by CSC.
- .3 Perform the work in such as way as to disturb the occupants as little as possible. Consult with the CSC Representative to determine how best to facilitate the performance of the work.
- .4 Allow the existing services in the buildings to remain in operation.
- .5 No vehicle or mobile construction equipment shall remain on institution premises outside of working hours. All construction vehicles must be parked in the lot in front of the postern (main entrance). Refer to section 01545 (013513).

1.15 AMBIENT NOISE AND CELLULAR TELEPHONES

- .1 No radio or boom boxes shall be permitted on the work site.
- .2 The use or carrying of a cellular telephone is prohibited within the limits of the institution.

1.16 PARKING ON THE WORK SITE

- .1 The Contractor shall use only the parking areas which are authorized by the Warden of the institution.

1.17 **SITE MEETINGS**

- .1 Site meetings shall be held at the times and in the locations approved by the CSC Representative.
- .2 All of the participants shall be notified of the holding of a site meeting.
- .3 The CSC Representative shall organize site meetings, determine the date and time, and assume the responsibility for the preparation and distribution of the minutes.

1.18 **LOCATION OF THE VARIOUS APPLIANCES AND EQUIPMENT**

- .1 The locations of the various appliances and equipment and the electrical outlets, as indicated on the plans or in the specifications, shall be considered to be approximate.
- .2 Install the appliances and equipment and the components of the distribution services so as to minimize inconveniences and to preserve the greatest possible usable surface area, all in accordance with the recommendations of each manufacturer with respect to safety, access and maintenance.
- .3 Inform the CSC Representative of the approaching installation date and request his approval with respect to the intended location.
- .4 When requested by the CSC Representative, submit location plans showing the relative position of the various equipment and services.

1.19 **EXISTING SERVICES**

- .1 When the work to be performed requires connection to existing services, perform this work at the times determined by the authorities having jurisdiction, taking care to hinder as little as possible the circulation of pedestrian and vehicular traffic.
- .2 Submit the work schedule to the CSC Representative and obtain his approval at least 48 hours in advance of any cessation or interruption of the existing services. Undertake the cessations in accordance with an approved schedule and provide the persons affected with advance notice.
- .3 If unidentified installations are discovered during the work, notify the CSC Representative immediately and submit a written report of your findings to him.

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1.20 **DRILLING AND SEALING**

- .1 The CSC Representative approval shall be obtained before cutting or drilling in bearing members or inserting sleeves.
- .2 Drilling and sealing shall be performed so as to ensure that connections are exact and with no play.
- .3 Holes and openings must be clean, straight, and smooth.
- .4 When the addition of a new structure requires modifications to an existing one, all required drilling, sealing, and other repairs shall be carried out to restore the existing structure to its condition prior to the work.

1.21 **MODIFICATIONS, ADDITIONS OR RENOVATIONS TO EXISTING BUILDINGS**

- .1 Perform the work so as to disrupt the occupants and the public as little as possible and to ensure, to the extent possible, the normal use of the rooms. Consult with the CSC Representative to determine how best to facilitate the performance of the work.
- .2 Do not reduce the safety measures at any time because of the work that is the object of this contract, and take the necessary steps to provide the required level of safety.
- .3 When work is to be carried out in occupied spaces, the Contractor shall provide and install whatever is required to protect the furnishings, equipment, and finish work; install dust barriers, partitions, and temporary notices, and clean the area at the end of each work day.

1.22 **ADDITIONAL PLANS**

- .1 The CSC Representative may provide the Contractor with additional plans for purposes of clarification. These additional plans shall have the same significance and the same importance as if they formed part of the contract documents.

1.23 **RESTRICTIONS WITH RESPECT TO THE USE OF TOBACCO**

- .1 Conform to the restrictions that apply to the use of tobacco.

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1.24 **OPERATING MANUAL**

- .1 See Section 01100.

1.25 **ASBESTOS**

- .1 Removing sprayed or troweled-on asbestos can be a health risk. If, during the course of the work, the Contractor encounters materials that appear to be sprayed or troweled-on asbestos, he shall halt work and immediately inform the CSC Representative work shall not be resumed unless so authorized in writing by the CSC Representative.

- END -

1. **CONTRACT DOCUMENTS**

- .1 All of the contractual clauses, and the requirements of all of the conditions of the division that are applicable, shall govern all of the sections and shall form an integral part of it.
- .2 The Contractor shall keep himself informed concerning notices and addenda and, where applicable, and he shall comply with them.
- .3 For purposes of convenience and proper understanding, the specifications are divided into different sections. These sections shall not be understood to be defining the scope of the work of the various construction trades. It is the responsibility of the General Contractor to assign and/or distribute the work among the different construction trades.

2. **SCOPE OF WORK**

- .1 This section is a supplement to the general conditions.
- .2 Certain work described in other sections of these specifications consists of related work which affect or may affect the work described in a section. The Contractor must therefore familiarize himself with these related sections.
- .3 This section shall not be read alone, but shall always be considered as an integral part of each section to which it refers.
- .4 The description of work in a section is not limited to this section, but shall be considered to form part of a whole.
- .5 Any mention in this document and any representation on the plans of components, materials, operations or work methods, signifies that the Contractor is bound to supply each item mentioned or represented and, that each of these items shall be of the quality described and is subject to the specified qualifications.
- .6 The Contractor is therefore bound to perform each prescribed operation in accordance with the specified conditions and to supply, to this end, all of the required labour, equipment and accessories.
- .7 The work which is the object of this contract consists principally of:
 - .1 The total performance of all of the **work required for the replacement of the roof membrane, the reconstruction of the curbs and parapets and the installation of a new roof access at the building M1 at the La Macaza Institution** as shown on the plans and described in the specifications of the CSC Representatives.

3. PRELIMINARY EXAMINATION

- .1 Inspect the condition of the work previously performed and the surfaces and conditions that will receive the work described herein. No work described in this section shall be performed unless the adjacent or previous work and the state of the premises are in satisfactory condition.
- .2 The decision to commence the work partially or fully implies that the Contractor considers the existing conditions to be satisfactory. Work performed on defective surfaces or under faulty conditions shall be redone at his expense.
- .3 Imperfections, errors and/or omissions which occur in the work of a construction trade shall not serve as an excuse or justification for imperfections, errors or omission in the work of another construction trade.
- .4 Verify all measurements and templates before undertaking any work.

4. SUPERVISION AND TESTING

- .1 The CSC Representative reserves the right to require laboratory analyses, tests, examinations, specialized studies or specific studies on the materials to be used or already incorporated into the project.
- .2 Facilitate access to the site for every Inspector, and cooperate with him in the operations required for his testing work. This testing work shall be required only in cases where the Contractor cannot demonstrate, by other means, the correctness of the materials used and, in such cases, he shall pay the costs of this testing work.
- .3 If the tests demonstrate that the materials are as specified, the CSC Representative shall only reimburse the Contractor for the cost of the tests.
- .4 The CSC Representative also reserves the right to visit, or to have an Inspector visit, workshops, storerooms and warehouses to ensure that the work is performed in accordance with the plans and with these specifications.

4. **SUPERVISION AND TESTING (continued)**

- .5 Supply everything that is required in order to facilitate the supervision and verification both at the factory and on the work site. This includes all of the labour and equipment required to sample and handle the materials subject to testing.

5. **SHOP DRAWINGS**

- .1 See Section 01300.

6. **SAMPLES**

- .1 The Contractor shall provide the CSC Representative with samples of the materials or fabricated work which he intends to use and he shall indicate the manner in which he plans to finish them. Once accepted, these samples shall be identified and shall serve as a model for the work to be performed in accordance with the contract.
- .2 See Section 01300.

7. **HANDLING AND STORAGE**

- .1 Store the materials in areas which are able to provide the best possible protection. Follow the recommendations of the manufacturers with respect to the storage of the various products.
- .2 Materials which are normally supplied in containers shall be delivered in their original undamaged containers. The labels and seals shall be intact.
- .3 Use the greatest possible care during the handling and storage of all of the materials, and protect them from all damage.
- .4 Store the materials so as to prevent any bodily injury, any obstruction to the progress of the work, and any damage to work already performed.

8. **LABOUR AND EQUIPMENT**

- .1 Only experienced workers shall be used for each type of work.
- .2 All of the work shall be performed in accordance with the instructions of professionals, and only the most suitable equipment for each type of work shall be used.

8. **LABOUR AND EQUIPMENT (continued)**

- .3 Certain work shall be performed in accordance with the recommendations of manufacturers recognized and approved by the CSC Representative.
- .4 A copy of the instruction manual from each manufacturer supplying materials for this contract shall be kept on the work site for use by the CSC Representative.

9. **ENCLOSED WORK**

- .1 Do not enclose or bury work which is intended to be enclosed by others or buried without first obtaining permission from the CSC Representative on the site.

10. **CUTTING AND REPAIRING**

- .1 Perform the perforating, adjusting and sealing work required so that work which must be connected or abutted to other work will be done in a precise manner and without any gaps.
- .2 Where new work is to be connected to existing work and where the latter has been modified, perform the perforating, sealing and restoration work required to adapt it to the work already in place.
- .3 Obtain the approval of the CSC Representative before perforating, cutting or modifying a loadbearing component or inserting a sleeve into it.
- .4 Make perforations so that the edges are clean and smooth, and provide sealant joints that are as imperceptible as possible.
- .5 Provide airtight joints between the work and the piping, sleeves, channels and conduits.
- .6 Provide all of the adjustments and furring required to conceal the exposed piping and conduits in all rooms except for mechanical and electrical rooms.

11. **PROTECTION**

- .1 Protect adjacent surfaces and the work of other sections from any damage that might result from the work of this section.

12. WARRANTY

- .1 Provide a “written descriptive” warranty against all defects for a period of one (1) year, except where indicated otherwise in the sections of these specifications, to take effect on the date of issue of the certificate of provisional acceptance of the work by the CSC Representative.
- .2 This warranty shall be signed by the manufacturers, the subcontractors and the Contractor.
- .3 This warranty shall bind the signatories jointly and severally for this period.
- .4 Any repair or replacement work, as well as any damage caused to the work of other construction trades by defective work for this section within the warranty period, shall be redone at the expense of the signatories to this warranty.
- .5 The warranty shall be issued to the CSC Representative within fifteen (15) days of the date of issue of the certificate of provisional acceptance of the work by the CSC Representative.
- .6 In addition, the Contractor shall indemnify the CSC Representative for any damages resulting from negligence in the work covered by this warranty.
- .7 None of the following - the supervision of the work, the approval of samples or materials or a portion of the work, the final acceptance of the work, and the payment of the work by the CSC Representative – shall relieve the Contractor of his responsibility associated with defective workmanship and materials.
- .8 The warranty required for each section shall not alter in any way the civil liability established by the applicable articles of the Quebec Civil Code and shall not diminish, in any way, the warranties which exceed this liability and which are normally provided by certain manufacturers.

13. HEALTH AND SAFETY ON THE WORK SITE

- .1 The CSC Representative hereby delegates to the Contractor the responsibility of “principal contractor” for the purposes of the application of the Act respecting Occupational health and safety (R.S.Q. c. S-2.1) for the performance of all of the work on the work site. Nevertheless, the CSC Representative reserves the following prerogatives:
 - .1 All authority over the design of the work and the preparation of the plans and specifications;

13. **HEALTH AND SAFETY ON THE WORK SITE (continued)**

- .2 All authority over the supervision and approval of the work for the purposes of determining the characteristics of the work to be undertaken and of ensuring its conformity with the plans and specifications.
- .2 In addition, notwithstanding any incompatible provision, the Contractor and his heirs and assigns consent to protecting and indemnifying the CSC Representative, its officers and employee, for all penalties, expenses, claims or proceedings of any kind whatsoever, by anyone whomsoever, which result directly, indirectly or incidentally from the operations or work performed or to be performed by the Contractor, its officers, agents, employees and any other person or company acting in accordance with this contract, whether these penalties, expenses, claims or proceedings are the fault of the Contractor or the subcontractors or their respective officers, agents, employees or whether they are jointly the fault of these or singly the fault of one of them.
- .3 The Contractor also consents, at his own costs, to assume the defence of the CSC Representative, his officers, agents and employees in any proceeding taken against all or one of them and to pay the damages, costs and expenses, including the costs and fees of the lawyers, that may result from them.

14. **NOT IN CONTRACT**

- .1 All of the work which is indicated, on the plans or in the specifications, as “not in contract”, “N.I.C.”, or “by the CSC Representative”, while being excluded from the contract, may have an impact on the layout, dimensions and cutting for certain work; the fabricators of the various work should determine what equipment is to be acquired by the CSC Representative before undertaking any fabrication work which may be affected by these acquisitions.

15. **CORRECTION OF DEFICIENCIES**

- .1 The delay prescribed for the correction of the deficiencies described in the deficiency list(s) issued by the Professionals is thirty (30) working days from the date of their receipt.

15. CORRECTION OF DEFICIENCIES (continued)

- .2 The Contractor is required to keep his site superintendent on the work site until both the work and the corrections in the deficiency lists prepared by the Professionals have been fully completed. The site superintendent shall ensure the proper progress, within the prescribed delays, of the work to be completed and of the deficiencies to be corrected.
- .3 Before requesting that the Professionals perform their inspection work, the Contractor shall first ensure, by conducting his own on-site inspection, that the work to be corrected or completed, as indicated on the lists, has actually been performed. For this purpose, the Contractor shall provide them with the lists, duly initialled.

16. DOCUMENTS PROVIDED TO THE CONTRACTOR

- .1 The CSC Representative shall provide to the Contractor, without any cost to the latter, a maximum of five (5) copies required for the performance of the work, in the form of plans and/or specifications according to his needs and as a function of the corresponding costs. Any additional copies shall be charged to the Contractor at the cost established during the bid call.

17. SUBSTANTIAL COMPLETION OF THE WORK

- .1 The work shall not be deemed to have been completed and delivered until the certification of the substantial completion of the work by the CSC Representative and its formal acceptance by the CSC Representative. The Contractor may not put the CSC Representative and the CSC Representative on formal notice to accept the work before he has submitted to the CSC Representative all of the customary documents and certificates of approval required by provincial and municipal law and by local municipal regulations, among them the following:
 - .2 The certificates from the C.S.S.T and the C.C.Q.
 - .3 Any other certificate or warranty which is required in accordance with provincial or municipal laws or municipal regulations and other special warranties indicated in the specifications.
 - .4 A copy of the “as-built” plans.
 - .5 The copies of the approved shop drawings.

17. SUBSTANTIAL COMPLETION OF THE WORK (continued)

- .6 The documents, catalogues, data sheets, manufacturers' instructions, maintenance data, etc., as are required in the contract documents.
- .7 All of the warranties required from the Contractors and suppliers in accordance with the provisions of the construction contract.
- .8 A sworn declaration from the General Contractor to the effect that the salaries and wages of the workers have been paid, in all cases in strict conformity with the scale of minimum salaries of the Collective Work Agreement of the Construction Industry which has territorial jurisdiction in the region where the work is being performed.
- .9 A sworn declaration from the General Contractor to the effect that the materials incorporated into the building have been paid for.
- .10 A sworn declaration to the effect that the subcontractors have been fully paid or have been paid up to the amount of the 10% holdback on the amount of their contract.
- .11 The CSC Representative shall issue a certificate of substantial completion of the work accompanied, where required, by a list of the work which remains to be completed or corrected.
- .12 The date entered on the certificate of substantial completion of the work shall be interpreted as:
 - .1 the date on which the general warranty for one year and the other contractual warranties take effect;

18. DOCUMENTS FOR FINAL ACCEPTANCE

- .1 At the final acceptance of the work, submit to the Professionals two (2) copies of the operating and maintenance data, in French, prepared as follows:
 - .1 enter the data on loose-leaf sheets, 215 mm x 280 mm, bound in a three-ring binder with a rigid vinyl cover;
 - .2 enter, on the title page, "Données d'utilisation et guide d'entretien" (Operating and Maintenance Data), the name of the project, the date and the table of contents;
 - .3 divide the contents into sections to match those of these specifications; mark each section with a labelled tab, covered with celluloid which is fastened to a divider sheet made of heavy paper.

18. DOCUMENTS FOR FINAL ACCEPTANCE (continued)

- .2 Include the following information in addition to the prescribed data:
 - .1 instructions from the manufacturers for the fabricated products and the finished materials;
 - .2 the names, addresses and telephone numbers of the subcontractors and the suppliers;
 - .3 the various warranties and bonds, indicating:
 - .1 the name and address of the project;
 - .2 the date on which the warranty takes effect;
 - .3 the term of the warranty;
 - .4 the object of the warranty and the remedies which it provides;
 - .5 the signature and the seal of the Contractor;
 - .6 the additional components used as replacement parts and mentioned in the various sections, as well as the name of the manufacturer and the source;
 - .4 type the lists and comments clearly; ensure that the drawings, diagrams and publications from the manufacturers are clear;
 - .5 add a complete set of shop drawings, bound separately and showing the corrections and the changes made during the fabrication and installation.

19. CONTRACTUAL WARRANTIES

- .1 All of the contractual warranties from the Contractor, his subcontractors, suppliers and others shall take effect on the date of the signature of the certificate of the provisional acceptance of the work.

20. AS-BUILT PLANS

- .1 The Contractor shall provide the CSC Representative with two (2) sets of opaque copies of the plans to be kept in the project file.
- .2 Keep the plans and note accurately on them any differences with respect to the provisions of the contract documents, the changes required because of the nature of the site, and all other types of changes that were made.
- .3 Enter the changes in red.
- .4 Include the following information:
 - .1 The changes made following changes that were ordered and directives that were received on the site.

20. **AS-BUILT PLANS (continued)**

- .5 Once the work has been completed, but prior to the final inspection, enter the corrections carefully on the second set of plans and submit the two (2) complete sets to the Professionals.

21. **CSC REPRESENTATIVE MAINTENANCE AND OPERATING MANUALS**

- .1 Loose-leaf sheets, 215 x 280 mm, bound in three (3)-ring binders with a rigid vinyl cover with a pocket on the back of the rear cover. Provide, initially, a complete copy for verification and comments by the Professionals. Following the verification, this copy shall be corrected by the Contractor and returned to the Professionals with two (2) other corrected copies. Provide, in all, a total of two (2) manuals.
- .2 Indicate the contents of each binder in the pocket located on the back of the rear cover.
- .3 Contents
(Divisions 2 to 14):
 - .1 The cover page of the binder shall contain the following information:
 - .1 the date on which it was submitted;
 - .2 the name, location and number of the project;
 - .3 the names and addresses of the Contractor and all of his subcontractors;
 - .2 the table of contents;
 - .3 the list of replacement materials;
 - .4 the list of specified special tools;
 - .5 the list of replacement parts;
 - .6 the warranties;
 - .7 the copies of the certificates of approval and the other required certificates;
 - .8 the verified shop drawings and the product descriptions.

- END -

PART 1 – SHOP DRAWINGS, DATA SHEETS AND SAMPLES

1.1 DEFINITION

- .1 The expression “shop drawings” shall signify the drawings, schematic drawings, diagrams, graphics, illustrations, tables and other printer matter which the Contractor transmits to the CSC Representative in order to show, in detail, a part of the work which is required by the specifications or which the CSC Representative may reasonably request.

1.2 PURPOSE OF THE VERIFICATION

- .1 The sole purpose of the verification of the shop drawings transmitted by the Contractor is to ascertain that the information contained therein conforms to the general concept of the project, as explained in Article 5 of Section 01100.

1.3 VERIFICATION PROCEDURE

- .1 Make sure that two (2) copies of the shop drawings have been prepared. Once the verification has been performed, the CSC Representative shall transmit one annotated copies to the Contractor.
- .2 Confirm and coordinate the dimensions on the work site.
- .3 Report to the CSC Representative, I writing, any situation which does not conform to the final plans and specifications and prepare the shop drawings as directed by him.
- .4 Indicate the manufacturing processes, the construction techniques, the assembly details, the manner of installation and any information which is pertinent to the coordination of the work of other sections.
- .5 Indicate clearly each discrepancy with respect to the final plans and specifications.
- .6 Where shop drawings indicate several variations of a product or accessories for which a choice is given, indicate clearly each proposed component.
- .7 Identify, verify, approve, date, sign and seal the drawings before transmitting them to the CSC Representative.
- .8 Where necessary, make the changes to the shop drawings which are required by the CSC Representative so that they are compatible with the final plans and specifications.

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1.3 **VERIFICATION PROCEDURE (continued)**

- .9 For each new issue of the shop drawings, indicate the changes that were made since the issuing of the previous version, whether or not they were requested by the CSC Representative.
- .10 Where several shop drawings are required for a section, the examination of these for purposes of verification shall not be performed until they have all been transmitted to the CSC Representative.
- .11 Do not perform any fabrication work until the shop drawings have been verified.
- .12 At the time of issue of each shop drawing, provide written indication of the delivery delays.
- .13 Conform to the list of documents and samples to be submitted, which is found in Article 1.5 at the end of this section.
- .14 **Do not transmit any shop drawings by fax.**

1.4 **SAMPLES**

- .1 Where needed, the CSC Representative shall designate the products for which the Contractor must transmit a sample of reasonable dimensions for approval, as required by Article 6 of Section 01100. Conform to the list of samples which is found in Article 1.5 at the end of this section.
- .2 The sample shall bear a data label, indicating its origin, its designation and the use for which this product is intended in the work.
- .3 The Contractor shall provide the CSC Representative with samples of the materials or fabricated items which he will use and he shall indicate the manner in which he intends to finish them. Once accepted, these samples shall be identified and shall serve as models for the work which is to be performed in accordance with the contract.
- .4 All of the samples shall be submitted in three (3) copies; one (1) copy shall be returned to the Contractor once it has been approved, one (1) shall be kept in the CSC Representative's office, and one (1) shall be transmitted to the CSC Representative.

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1.4 **SAMPLES (continued)**

- .5 Each sample shall be clearly identified with the name of the project, the contract number, the name of the supplier, the name of the fabricator and an identification number, and shall be accompanied by a short technical description which provides all of the details.
- .6 Where needed, make the changes required by the CSC Representative and submit new samples for approval.

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1.5 **LIST OF DOCUMENTS AND SAMPLES TO BE SUBMITTED**

Section No.	Heading	Shop drawings	Samples	Data sheets	Maintenance manuals	Maintenance materials	Warranty	See comment no.
05500	Metal work	X	X	X			X	
06100	Rough carpentry and general work			X			X	
07560	SBS Modified bitumen membrane roofing	X	X	X			X	

COMMENTS

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- END -

PART 1 - GENERAL

1.1 CONTENTS OF THIS SECTION

- .1 Temporary utility services.
- .2 Work site installations.
- .3 Construction aids.
- .4 Installation and removal of temporary work.
- .5 Access roads.
- .6 Functional signage.
- .7 Site office.
- .8 Storage.
- .9 Work site enclosure.
- .10 Signs.
- .11 Dust protection barriers.
- .12 Temporary protective measures.
- .13 Temporary enclosures.
- .14 Storage and admissible loads.
- .15 Fire protection.
- .16 Work site cleanliness.
- .17 Cleaning during the construction and final cleaning.
- .18 Existing equipment.
- .19 Odour control.

1.2 COMMON REQUIREMENTS

- .1 Supply, put in place or set up the temporary access and protective work required to permit the performance of the work as quickly as possible.
- .2 Disassemble the components and remove them from the work site when they are no longer needed.

1.3 TEMPORARY UTILITY SERVICES

- .1 Fire protection
 - .1 Provide the fire protection equipment required by the relevant insurance companies and by the codes and regulations in force, and assume the responsibility for its maintenance.
 - .2 Refer to the engineering documents to determine the measures to be taken for the protection of the premises and its contents during work involving the cutting of steel and welding.

1.4 **WORK SITE INSTALLATIONS**

- .1 Site organization
 - .1 Provide a complete and readily identified first aid kit, and store it in a readily accessible location.
 - .2 Where needed, the subcontractors shall provide their own office. Indicate to them the location where this office may be installed.
- .2 Telecommunications and information processing
 - .1 The Contractor may use, without charge, the telephone lines of the Owner which are in place for telephone and data transmission purposes.
- .3 Sanitary installations
 - .1 The existing sanitary installations may not be used. The Contractor shall provide portable temporary sanitary installation.

1.5 **CONSTRUCTION AIDS**

- .1 Lifting equipment
 - .1 Supply and install the hoists required for the movement of workers, materials and equipment and provide for their maintenance and operation. Make the necessary financial arrangements with the subcontractors for the use of the hoisting equipment.
 - .2 The operation of the hoisting equipment shall be performed by qualified workers.

1.6 **FUNCTIONAL SIGNAGE**

- .1 Functional signage
 - .1 Provide interior and exterior signage to provide notification of the presence of the work site and to give instructions for pedestrian circulation.
 - .2 The indications appearing on the instruction panels and on the safety notices shall be written so as to conform to the Charter of the French Language and to the language policy of the Owner. The graphic symbols shall conform to CAN/CSA-Z321-96 (R2006).
 - .3 Maintain the approved panels and notices in good condition for the entire duration of the work, relocate them as the work progresses, and remove them from the site at the end of the work.

1.7 INSTALLATION AND REMOVAL OF TEMPORARY WORK

- .1 Supply and install the work site equipment and the temporary work required to permit the work to begin without delay.
- .2 The Contractor shall restore to operating condition the installation(s) and surfaces which were damaged by his own use or by that of his subcontractors and his employees.
- .3 Once the work has been completed, dismantle this temporary work and remove it from the work site.

1.8 ACCESS ROADS

- .1 Install and maintain suitable roads to permit access to the work site.
- .2 Maintain and clean the public circulation roads used by the Contractor's vehicles. Respect all of the municipal regulations in force regarding this. Repair all damage resulting from their use.
- 3 The Contractor shall restore the portion of the site used as an access road to its original condition.

1.9 SITE OFFICE

- .1 A copy of the plans and specification shall remain at all times in a room designated by the CSC Representative. This room shall be used for the site meetings.

1.10 STORAGE

- .1 The Contractor may not use the existing spaces to store his materials, and the Owner will not make rooms available for his use in the existing building.
- .2 The Contractor shall provide his own spaces for the storage of materials and of materials to be recuperated from the demolition work as indicated in Section 02060, DEMOLITION.

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1.11 **WORK SITE ENCLOSURE**

- .1 The contractor shall erect all of the fences, barriers, barricades, passageways and other safety components required by the various laws and regulations in force, in accordance with their provisions.
- .2 Where required by the work, provide the building openings with temporary protective closures. If there is a risk of damage to the existing buildings, protect the existing windows with plywood.

1.12 **DUST PROTECTION BARRIERS**

- .1 Supply and install dust protection barriers or partitions to prevent the spread of dust during work which produces dust and to protect the public, the workers and the areas where the work has been completed.
- .2 Maintain and relocate the protection barriers and partitions until this work has been completed.
- .3 Construct the barriers using 38 x 89 mm wood studs installed at 400 mm o.c. with polyethylene sheeting on one side of the barrier, sealed at its perimeter, and 12.7 mm plywood on the other side.
- .4 To prevent the entry of dust into the mechanical systems, the Contractor shall block off the grilles and the open sections of ductwork and cover all of the louvers (supply and return) which may be affected by dust, with flexible filters. He shall submit the types of filter for approval and shall replace them regularly so that the mechanical systems remain unaffected.
- .5 Seal the perimeter of the unused existing doors which adjoin the work site zone with removable adhesive tape.
- .6 Once the construction work has been completed, the Contractor shall thoroughly remove, from the walls, the floor and the ceiling, all traces of sealant, dust, grease and other foreign matter left by the work. He shall also clean thoroughly the temporary partitions with a vacuum cleaner and then remove them.

1.13 **TEMPORARY SECURITY MEASURES**

- .1 During the performance of the work, avoid creating dust and causing noise, vibrations and any other nuisance which might disturb the users of the building and the surrounding area.
- .2 Without regard for the cost, use work methods which result in the least amount of dust, noise, vibrations and other nuisances.
- .3 Notify the CSC Representative of any nuisance which might hinder the normal activities of the users during the hours of use, and take measures to permit the peaceful use of the building; perform work outside of the normal hours of use where prolonged nuisance would result.

1.14 **STORAGE AND ADMISSIBLE LOADS**

- .1 Perform the work and impose loads in accordance with the limits indicated in the contract documents concerning the activities and the movement of loads.
- .2 Do not load or permit the loading of part of the work with a load or a force which could threaten its integrity.
- .3 Do not encumber the premises unreasonably with equipment or materials.
- .4 Relocate the stored materials and equipment which hinder the work of another contractor.

1.15 **FIRE PROTECTION**

- .1 Supply, install and maintain the temporary firefighting equipment required during the performance of the work by the insurance companies having jurisdiction and by the applicable codes, regulations and laws.
- .2 It is prohibited for the Contractor to block the exits that are required for the evacuation of the premises.
- .3 It is prohibited to make an open fire or to burn trash on the work site.

1.16 WORK SITE CLEANLINESS

- .1 Main the work site in good order, clean and free of accumulations of waste and debris.

1.17 CLEANING DURING THE CONSTRUCTION AND FINAL CLEANING

- .1 On a daily basis, keep the rooms, including the roofs, free of debris and trash.
- .2 Keep the work site clean and the public areas free of debris and trash.
- .3 Provide containers on the work site for the collection of debris and trash.
- .4 Remove trash and debris from the work site. Use a trash chute that meets safety standards.
- .5 Pass a vacuum cleaner on the interior of the building before commencing the finish painting, and continue to do this as needed, until the building is nearly complete and ready for occupancy.
- .6 When the building is nearly complete or ready for occupancy, perform an inspection of the exposed interior and exterior surfaces.
- .7 Remove grease, dust, dirt, stains, labels, fingerprints and other foreign matter from the exposed finished interior and exterior surfaces, including the glazing and other polished surfaces.
- .8 Clean the reflectors, diffusers and other lighting surfaces.
- .9 Sweep the asphalt surfaces and rake the rest of the grounds.
- .10 Remove debris and surplus materials from the technical spaces and the other accessible concealed spaces.
- .11 Replace the filters of the heating, ventilation and air-conditioning systems if the equipment was operating during the construction.

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1.18 **EXISTING EQUIPMENT**

- .1 The Contractor shall detach, disconnect, disassemble, transport, reassemble, reinstall and reconnect all of the existing equipment and furnishings as shown on the plans. In addition, he shall leave the premises in a satisfactory state of cleanliness.

1.19 **ODOUR CONTROL**

- .1 The Contractor shall take all necessary steps to prevent intolerable odours (such as tar and others) that originate from the work site from disturbing the occupants. Notify the CSC Representative twenty-four (24) hour in advance of any work that falls into this category.

- END -

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PART 1 - GENERAL

1.1 OBJECT

- .1 Ensure that the construction project and the activities at the institution proceed without inconvenient interruptions or delays and that the security of the institution is maintained at all times.

1.2 DEFINITIONS

- .1 “Prohibited items” means:
 - a) intoxicating substances, including alcoholic beverages, drugs and narcotics;
 - b) weapons or components of weapons, ammunition and any other object designed to kill, wound or neutralize a person, or any object modified or assembled for this purpose, for which prior permission to possess it has not been authorized;
 - c) explosives or bombs or components of these;
 - d) amounts of money which exceeds the regulatory limits of 25,00 \$
 - e) any articles not described in paragraphs a) through d), which are possessed without prior authorization and which may place the security of persons or of the institution in danger.
- .2 “Unauthorized tobacco products” means: tobacco products including, but not limited to, cigarettes, cigars, tobacco, chewing tobacco and snuff, cigarette rollers, matches and lighters, all of which are considered to be unauthorized items.
- .3 “Commercial vehicle” means: any motor vehicle intended for the transport of materials, equipment or tools required for the construction project.
- .4 “CSC” means Correctional Services Canada.
- .5 “Warden” means the warden of the institution or his authorized representative.
- .6 “Construction employees” means the employees of the general contractor, one of his subcontractors, equipment operators, material suppliers, testing and inspection laboratories, and regulatory bodies.
- .7 “Departmental Representative” means the project manager for Public Works and Government Services Canada (PWGSC) or for Correctional Services Canada (CSC), depending on the project.

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1.2 **DEFINITIONS (continued)**

- .8 “Perimeter” means the area of the institution enclosed within the security fences and walls which limit the movements of the inmates.
- .9 “Construction zone” means the area, as indicated in the contract documents, within which the contractor is authorized to work. This may or may not be isolated from the security perimeter of the institution.

1.3 **PRELIMINARY MEASURES**

- .1 Before commencing the work, the Contractor shall meet with the Warden in order to:
 - .1 discuss the nature and scope of all of the activities related to the project;
 - .2 determine the security measures which are acceptable to both parties, in accordance with this directive and the specific needs of the institution.
- .2 The Contractor shall:
 - a) ensure that all of the construction employees are familiar with the CSC requirements concerning security;
 - b) ensure that the CSC requirements concerning security are always prominently displayed on the work site;
 - c) cooperate with the staff of the institution to ensure that the construction employees respect all of the requirements concerning security.

1.4 **CONSTRUCTION EMPLOYEES**

- .1 The Contractor shall submit to the Warden a list of the names, including the dates of birth, of all of the employees who will be working on the construction site, as well as a security clearance form duly completed for each employee.

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1.4 **CONSTRUCTION EMPLOYEES (continued)**

- .2 Expect that the processing of the security clearance requests will take one (1) week. No employee shall be admitted to the institution without duly approved security clearance and a recent photo ID, such as a provincial driver's licence. Security clearance authorizations are specific to each CSC institution and an authorization obtained from another institution is not valid for the institution where this project will be carried out.
- .3 The Warden may require that photographs of the faces of the construction employees be taken and displayed in certain appropriate areas of the institution or transferred to a data base for identification purposes. The Warden may require that photo ID cards be prepared for all of the construction employees. These cards shall be left at the designated point of entry, where they shall be handed to the employees upon their arrival at the institution. They shall be worn at all times, in a visible place on their clothing, while they are at the institution.
- .4 Where there is reason to suspect that a person may present a security risk, he will be denied access to the property of the institution.
- .5 A construction employee on the construction site shall be immediately expelled from the property of the institution if:
 - .1 he appears to be under the influence of alcohol, a drug or a narcotic;
 - .2 he is behaving in an abnormal or confused manner;
 - .3 he is in possession of a prohibited item.

1.5 **VEHICLES**

- .1 Any person who leaves an unattended vehicle on the property of CSC shall close the windows, lock the doors and trunk and remove the keys. The owner of the vehicle or the employee of the firm which owns the vehicle shall keep the keys securely on his person.
- .2 At any time, the Warden may limit the number and type of vehicles permitted within the perimeter of the institution.

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1.5 **VEHICLES (continued)**

- .3 The persons who deliver material required for the project are required to obtain security clearance, and shall remain with their vehicles for the duration of their stay within the institution. The Warden may require that they be accompanied by an employee of the institution or by a commissionaire.
- .4 If the Warden permits trailers to remain within the security perimeter of the institution, the doors on these trailers must remain locked in a secure manner at all times, as must also be done with the windows, when the trailers are left unoccupied. The windows shall be protected with expanded metal mesh. All of the trailers to be used by the Contractor for storage, both inside and outside the perimeter, shall remain locked in a secure manner when they are not in use.

1.6 **PARKING**

- .1 The Warden shall identify the authorized parking areas to be used for the vehicles of the construction employees. Parking in other areas is prohibited and vehicles which are incorrectly parked may be towed away.

1.7 **DELIVERIES**

- .1 Every delivery of materials, equipment or tools for the project shall be addressed to the Contractor in order to distinguish it clearly from those that are intended for the institution. The Contractor shall ensure that his employees are present on site to receive deliveries, because the CSC staff **will not accept any delivery** of materials, equipment or tools destined for the Contractor.

1.8 **TELEPHONES**

- .1 No installation of a telephone, fax or computer connected to the Internet shall be permitted inside the security perimeter of the institution without the prior authorization of the Warden.

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1.8 **TELEPHONES (continued)**

- .2 The Warden shall ensure that telephones, fax machines and computers that have been provided with an Internet connection are not installed in a location which is accessible to inmates. Access to each computer shall be protected by a password, thereby preventing any connection to the Internet by unauthorized persons.
- .3 Unless specifically authorized by the Warden, cellular and wireless digital telephones, including but not limited to messaging equipment, pagers, BlackBerrys, and telephones used as two-way radios, shall not be used in areas that are accessible to inmates. Where cellular telephones are permitted, their users shall not allow inmates to use them.
- .4 The Warden may authorize but limit the use of two-way radios.

1.9 **WORKING HOURS**

- .1 The work week at the institution extends from Monday through Friday, between 7:30 a.m. and 4:15 p.m.
- .2 Working hours during the evening shall be permitted until 19:00 p.m. only on demand.
- .3 Work will not be permitted during weekends and statutory holidays without the permission of the CSC Representative. A minimum of seven days advance notice will be required to obtain the required permission. In case of emergencies or other special circumstances, this advance notice may be waived by the CSC Representative.
- .4 No overtime work will be allowed without permission of the CSC Representative. Give a minimum forty-eight (48) hours advance notice when overtime work on the construction project is necessary and approved. If overtime work is required because of an emergency such as the completion of a concrete pour or work to make the construction safe and secure, the contractor shall advise the CSC Representative as soon as this condition is known and follow the directions given by the Director. Costs to Canada for such events may be attributed to the Contractor.

1.10 **TOOLS AND EQUIPMENT**

- .1 Keep on the work site a complete list of the tools and equipment which will be used during the construction project. Make this list available for inspection when required.
- .2 Keep up to date the list of tools and equipment mentioned above for the entire duration of the construction project.
- .3 Never leave tools unsupervised; this applies especially to mechanical tools, cartridge-activated tools, cartridges, files, saw blades, carbide blades, wires, rope, ladders and all types of hoisting equipment.
- .4 Store tools and equipment in approved secure locations.
- .5 Lock all tool boxes following use. The Contractor's employees shall keep the keys on themselves at all times.
- .6 Attach and lock any scaffolding which has not been erected; where erected, the scaffolding shall be attached in a secure manner, to the satisfaction of the Warden.
- .7 Advise the Warden immediately of the loss or disappearance of any tool or piece of equipment.
- .8 The Warden shall ensure that the security staff undertake checks of the contractor's tools and equipment in accordance with the list provided by him:
 - .1 at the beginning and at the end of each construction project;
 - .2 weekly, if the project lasts longer than a week.
- .9 Certain tools and equipment, such as cartridges and saw blades for metal, are subject to very strict control. The Contractor shall ensure that he obtains an adequate supply for the day's work. The used cartridges and blades shall be returned to the representative at the end of each work day.
- .10 When propane or natural gas is used for the heating of the project, the institution will require that an employee of the contractor supervise the construction work site outside of working hours.

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1.11 **PRESCRIPTION DRUGS**

- .1 Employees of a contractor who must take prescription medications during the work day shall obtain authorization from the Warden to be permitted to bring with them the dosage for one day.

1.12 **RESTRICTIONS ON THE USE OF TOBACCO**

- .1 The contractors and the construction employees are not authorized to smoke on the inside of the institution or on the outside, within the perimeter of the institution. They shall not have in their possession, within the perimeter, any unauthorized tobacco products.
- .2 The contractors and the construction employees who contravene this policy will be immediately asked to cease smoking or to throw away any unauthorized tobacco products. If they refuse, they will be ordered to leave the institution.
- .3 Smoking shall only be permitted outside the perimeter of the institution, in a location designated by the Warden.

1.13 **PROHIBITED OBJETS**

- .1 Weapons, ammunition, explosives, alcoholic beverages, drugs and narcotics are prohibited on the property of the institution.
- .2 The discovery of one or more prohibited objects on the work site and the identification of the person(s) responsible for the presence of this object or these objects shall be reported immediately to the Warden.
- .3 The contractors must be vigilant with regard to their employees and to the employees of their subcontractors since the discovery of a prohibited object may result in the cancellation of the security authorization of the employee in question. A serious infraction may result in the expulsion from the site of the institution of the company involved for the duration of the construction project.
- .4 If weapons or ammunition are found in the vehicle of a contractor, a subcontractor, a supplier or one of their employees, the security clearance of the driver of the vehicle will be immediately revoked.

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1.14 **SEARCHES**

- .1 Any person or vehicle entering the property of the institution may be subjected to a search.
- .2 When the Warden has reasonable grounds to believe that an employee of the Contractor is in possession of smuggled goods or a prohibited item, he may require that this person be searched.
- .3 The personal effects of every employee arriving at the institution may be subject to verification for the purpose of detecting the presence of traces of prohibited drugs.

1.15 **VEHICULAR CIRCULATION**

- .1 Vehicles may access and leave the institution, under escort, by the vehicular access gate, during the following periods:
 - .1 from 7:30 a.m. to 11:00 a.m.
 - .2 from 12:30 p.m. to 4:15 p.m.
 - .3 from 5:45 p.m. to 6:00 a.m. (for evening or night shift work).
 Construction vehicles shall not leave the institution until an inmate count has been performed.
- .2 The Contractor shall notify the Warden twenty-four (24) hours in advance of the arrival of heavy equipment, such as concrete mixers, cranes, etc.
- .3 Vehicles loaded with soil or garbage, and any other vehicle which is judged to be impossible to search, can't leave the institution and can't pass the gate before an official account of the prisoners have been done and shall remain under the constant supervision of CSC staff or of commissionaires under the authority of the Warden.
- .4 Before a commercial vehicle is admitted inside the perimeter of the institution, the Contractor or his representative must certify that the contents of the vehicle are definitely required for the performance of the construction work.
- .5 Access to the property of CSC shall be refused to any vehicle if its contents, in the opinion of the Warden, represent a risk to the security of the institution.
- .6 The private vehicles of the construction employees shall not be admitted within the security perimeter of medium- and maximum-security institutions without the explicit authorization of the Warden.

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1.15 **VEHICULAR CIRCULATION (continued)**

- .7 Where prior authorization has been given by the Warden, a vehicle may be used in the morning to bring a group of employees to the work site and in the evening to take them from the work site. This vehicle may not remain on the premises during the day.
- .8 With the authorization of the Warden, certain equipment may be left on the work site overnight or during the weekend. These must be locked and their battery must be removed. The Warden may require that this equipment be secured with a chain and a padlock to a fixed object.

1.16 **CIRCULATION OF CONSTRUCTION EMPLOYEES ON PRISON PROPERTY**

- .1 Subject to the need to maintain adequate security, the Warden shall allow the Contractor and his employees as much freedom of action and movement as possible.
- .2 However, notwithstanding the previous paragraph, the Warden may:
 - .1 prohibit or limit access to any part of the institution;
 - .2 require that, during the entire construction project or during certain periods, the construction employees be accompanied by a CSC security guard or commissionaire in certain sectors of the institution.
- .3 All of the construction employees shall remain on the work site during the coffee/health breaks and the lunch period. They are not authorized to eat in the lounge for the correctional staff or in the dining room of the institution.

1.17 **SUPERVISION AND INSPECTION**

- .1 The construction activities and the movements of personnel and vehicles shall be monitored by the CSC security personnel in order to ensure that the applicable security requirements have been respected.
- .2 The CSC staff shall ensure that the construction workers properly understand the need for monitoring and inspections, and that this understanding persists for the entire duration of the project.

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1.18 **WORK STOPPAGES**

- .1 At any time, the Warden may prohibit the Contractor and his employees and the subcontractors and their employees from entering the work site or may order them to leave immediately because of a security incident in progress within the institution. The site supervisor of the contractor responsible for the site shall note the name of the CSC employee who transmitted the order and the time that it was given, and he shall comply with the order which he has received as quickly as possible.
- .2 The Contractor shall inform the Departmental Representative of the situation within twenty-four (24) hours of the cessation of the work.

1.19 **CONTACT WITH THE INMATES**

- .1 Without specific authorization, it is prohibited to enter into contact with the inmates, to speak with them, to give them objects or to receive objects from them. Any failure by an employee to respect this requirement will result in his expulsion from the work site and the revocation of his security authorization.
- .2 Cameras are prohibited on the property of CSC.
- .3 The above notwithstanding, where the Warden has authorized the use of cameras, it is strictly prohibited to photograph the inmates or CSC employees or any part of the institution for which it is not necessary to take photographs for the performance of this contract.

1.20 **COMPLETION OF THE CONSTRUCTION PROJECT**

- .1 Upon completion of the construction project or, where necessary, at the time of taking charge of the installations, the Contractor shall remove all of the materials, tools and equipment that are required by the construction contract to be left at the institution.

- END -

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PART 1 - GENERAL

1.1 GENERAL

- .1 The Contractor shall manage his activities so that the health and safety of the public and the site personnel as well as the protection of the environment always take precedence over matters related to cost and the work schedule.

1.2 REFERENCES

- .1 Canada Labour Code - Part II, Canada Occupational Health and Safety Regulations.
- .2 Canadian Standards Association (CSA).
- .3 Workplace Hazardous Materials Information System (WHMIS).
- .4 An Act respecting Occupational health and safety, R.S.Q. c. S-2.1, 2002.
- .5 Safety Code for the construction industry, R.Q. c. S-2.1, r. 6, 2001.

Standard: Notwithstanding the publication date for the standards referenced in the Safety Code for the construction industry, always use the version which is in force at the time of its application.

1.3 DOCUMENTS / SAMPLES

- .1 Submit all documents and samples in conformity with the section 01300.
- .2 10 days before construction start, transmit to the CSC Representative and the Commission de la santé et de la sécurité du travail (CSST) the health and safety program specific to the construction activity as described in the section 1.6. If necessary, the general contractor must update his prevention program to reflect any changes to the initial plans. Following the reception of the prevention program and at any time during the work, the CSC Representative can ask for its modification to adapt it to the work on site. The general contractor will have to proceed with the required modifications before work start.
- .3 Transit to the CSC Representative a copy of any federal or provincial inspector's inspection reports, notice of corrections or recommendations within 24 hours of their reception.

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1.3 **DOCUMENTS / SAMPLES (continued)**

- .4 Transmit to the CSC Representative any investigation report concerning any accident with injury or pointing out any potential hazard for health and safety within 24 hours of their reception.
- .5 Transmit to the CSC Representative the data sheet for all controlled product at least three (3) days before they are used on site.
- .6 Transmit to the CSC Representative a copy of the formation certificates required for the application of the prevention program including:
 - .1 General health and safety course on work sites;
 - .2 Security agent certificate;
 - .3 First-aid and CPR on work site;
 - .4 Work subject to asbestos conditions;
 - .5 Work in enclosed spaces;
 - .6 Locking / securing procedures;
 - .7 Wearing and adjustment of individual protection equipments;
 - .8 Forklift truck safe use;
 - .9 Working platform lift;
 - .10 and any other formation required by regulations or by the prevention program.
- .7 Medical examinations; when required by law, regulation, directive, specification or by a prevention program, the general contractor must:
 - .1 Before mobilisation, transmit to the CSC Representative the medical examination certificate for all surveillance employees and any other employee attending the first site meeting concerned by this article's first paragraph.
 - .2 Afterwards, transmit as one goes along and without any delays all medical examination certificates of any new incoming worker concerned by this article's paragraph.
- .8 Emergency plan: the emergency plan, as described in the article 1.7.3, must be transmitted to the CSC Representative with the prevention program.
- .9 Notice of work start: the notice of work start must be transmitted to Commission de la santé et de la sécurité au travail before the work start and copied to the CSC Representative. A copy of this notice must be available and visible on site at all time. During demobilisation, the notice of end of work must be transmitted to the CSST with a copy to the CSC Representative.

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1.3 **DOCUMENTS / SAMPLES (continued)**

- .10 Engineer's plans and notice of conformity: the general contractor must transmit to the CSST and to the CSC Representative an engineer' signed and sealed copy of all the plans and notice of conformity required in virtue of the Satefy Code for the construction industry (S-2.1, r.6), of any other law, rules or any clause from the specifications or the contract. A copy of the those documents must be available at all time on the work site.
- .11 Certificate of conformity delivered by the CSST: the certificate of conformity is a document delivered by the CSST an confirms that the general contractor complies with the CSST requirements, that he has paid all amount due in relation with the awarded contract. This document must be transmitted to the CSC Representative at the end of work.

1.4 **IDENTIFICATION OF DANGERS, WORK METHODS, EQUIPMENT AND INSTALLATIONS**

- .1 The Contractor shall identify the dangers associated with each of the tasks to be performed on the work site.
- .2 The Contractor shall plan and organize the work so as to favour the elimination of the source of the dangers or to provide collective protection, thereby reducing the need for individual protective equipment to a minimum. Where individual protection against falls is required, the workers shall use a body harness which conforms to CSA Z259.10-06. A safety belt may not be used to provide protection against a fall.
- .3 A piece of equipment, a tool or a protective device which cannot be installed or used without compromising the health and safety of the workers or the public shall be considered to be unsuitable for the work to be performed.
- .4 All mechanical equipments must be inspected before their delivery on site. Before using a mechanical equipment, the general contractor must transmit to the CSC Representative a certificate of conformity signed by an approved mechanic. At any time, if the CSC Representative suspects a defect or a risk of accident, he can order the immediate shutdown of the machine and require a second inspection performed by a specialist of this choice.

1.5 LEGAL AND REGULATORY REQUIREMENTS

- .1 Conform to all of the laws, regulations and standards which apply to the performance of the work.
- .2 Respect the prescribed standards and regulations so as to ensure the normal progress of the work on sites which are contaminated by hazardous or toxic substances.

1.6 SPECIFIC CONDITION APPLICABLE TO THE WORK SITE

- .1 On this work site, the Contractor shall respect the following specific condition:
 - .1 Within 10 working days of the date of the awarding of the contract, the Contractor shall submit, for purposes of coordination and for the approval of the Warden and the authorities of CSC, a plan which shows the arrangement, on the site, of the storage areas for materials and of the temporary installations which are required to make the construction site secure.

1.7 HEALTH AND SAFETY MANAGEMENT

- .1 Accept and assume all of the tasks and obligations which normally belong to the “principal contractor” in accordance with the Act respecting Occupational health and safety (R.S.Q., c. S-2.1) and the Safety Code for the construction industry (R.S.Q., c. S-2.1, r. 6).
- .2 Develop a prevention program specific for the work based on identification of the risks and put this program in application from the beginning of work to its demobilization. The prevention program must take into account the information in the article 1.7. It must be transmitted to all person involved in conformity with the article 1.2. The prevention program must include:
 - .1 The business policy regarding health and safety;
 - .2 The description of the work, the total cost of the work, the schedule with its workforce chart;
 - .3 A flowchart of the health and safety’s responsibilities;
 - .4 The physical and material organization of the job site;
 - .5 The first-aid norms;
 - .6 The identification of the risks on the job site;
 - .7 The identification of the risks related to the work to be executed, including the prevention program and their applicability modality;
 - .8 The required formation;
 - .9 The procedures in situation of accident/injuries;

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1.7 **HEALTH AND SAFETY MANAGEMENT (continued)**

- .10 A written commitment from all stakeholders to comply with this prevention program;
- .11 A job site inspection schedule based on the prevention measures.
- .3 The general contractor must develop an efficient emergency plan, in relation with the job site characteristics and conditions. The emergency plan must be transmitted to all involved stakeholders, in conformity with the article 1.2. The emergency plan must include:
 - .1 The evacuation procedure;
 - .2 The identification of the resources (police, firefighter, ambulance, etc.);
 - .3 The identification of the persons in charge of the job site;
 - .4 The identification of the first-aiders;
 - .5 The required formation for the persons in charge of its application;
 - .6 And any other information necessary related to the job site characteristics.

1.8 **RESPONSABILITIES**

- .1 Irrespective of the size of the work site or the number of workers present, name a capable person to supervise and be responsible for health and safety. Take all of the measures required to ensure the health and safety of persons and property, both on the site and in the immediate surroundings of the site, which may be affected by the work.
- .2 Take whatever measures are needed to ensure the enforcement and respect of the health and safety requirements contained in the contract documents, provincial and federal regulations, the applicable standards and the specific prevention programme for the site, and conform, without delay, with any order or correction notice issued by the “Commission de la santé et de la sécurité du travail”.
- .3 Take whatever measures are needed to keep the site clean and orderly for the entire duration of the work.

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1.9 **UNFORESEEN EVENTS**

- .1 When a source of danger which was not mentioned in the specifications and which could not be identified during the preliminary site visit becomes apparent as a result of or during the performance of the work, the Contractor shall immediately stop the work and introduce temporary protective measures for the workers and the public and notify the Engineer verbally and in writing. The Contractor shall thereafter make the required changes to the prevention programme so that the work can be recommenced in full safety.

1.10 **INSPECTION OF THE WORK AREAS AND CORRECTION OF DANGEROUS SITUATIONS**

- .1 Inspect the work areas and complete a site inspection schedule at least once a week.
- .2 Immediately take the measures required to correct any infractions of laws and regulations and any dangerous situations which have been identified by a government inspector, the Architect, the construction health and safety coordinator, or during the periodic inspections.
- .3 Transmit written confirmation to the Architect of all of the measures taken to correct any infractions and dangerous situations.
- .4 Work stoppages: Provide full authority to the person who has been given the responsibility for health and safety to order the stoppage and the resumption of the work where he judges it necessary or desirable for reasons of health and safety. He shall ensure that the health and safety of the public and the site personnel as well as the protection of the environment always take precedence over matters related to cost and the work schedule.
- .5 Without limiting the scope of articles 1.7 and 1.8, the Architect may order, at any time, the stoppage of the work if, in his opinion, there exists a danger or risk for the health or safety of the site personnel or the public or for the environment.

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1.11 **POWDER-ACTUATED AND FASTENING AND OTHER TOOLS**

- .1 The use of powder-actuated fastening and other tools are forbidden on the site of the Institution La Macaza.

- END -

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PART 1 - GENERAL

1.1 SECTION CONTENTS

- .1 This section of the specifications governs the equipment and labour for:
 - .1 The interior and exterior demolition work shown on the architectural plans.
 - .2 The recuperation of items to be removed, reinstalled, relocated or handed over to the Warden.
 - .3 The penetrations and openings required in the roof deck, walls, ceilings and in the steel mesh fence and the patching of surfaces.
 - .4 The interior and exterior demolition shown on the structural plans.

PART 2 - GENERAL REQUIREMENTS

2.1 REFERENCE STANDARDS

- .1 CSA S350-M1980 (R2003), Code of Practice for Safety in Demolition of Structures.
- .2 Quebec safety codes for construction work, most recent editions with revisions, and especially Part 8 of the National Building Code of Canada.

2.2 EXAMINATION OF THE PREMISES

- .1 The Contractor shall coordinate the scope of the work with the construction plans before he undertakes this work.
- .2 Bring any ambiguities to the attention of the Architect before proceeding with the demolition work.

2.3 CONDITION OF THE WORK TO BE DEMOLISHED

- .1 Undertake the demolition of the work in the condition in which it is found on the day the contract is awarded.

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2.4 **PROTECTIVE MEASURES**

- .1 Take all necessary measures to protect the parts of the adjacent buildings which are to remain and to avoid causing damage to them.
- .2 Supply and install all components required for purposes of bracing and shoring. Repair any work which suffers damage and assume responsibility for any injuries which result from the demolition work.
- .3 Ensure that the electrical and mechanical systems which are not affected by the work remain in operation at all times.
- .4 The exits shall be kept clear and in operation for the duration of the work.

PART 3 - MATERIALS

- .1 Repair and patch, using the same materials as the existing ones, all of the adjacent surfaces which are damaged by the work of this section.
- .2 Repair, using the same materials, all of the walls, partitions, floors and ceilings.

PART 4 - EXECUTION

4.1 **WORK AND USE OF THE PREMISES**

- .1 Unless otherwise indicated, remove all of the demolition materials from the work site, in accordance with the requirements of the authorities having jurisdiction.
- .2 Carefully remove recuperated materials and equipment, store them in a well-protected location, and then reinstall them in the new work as indicated on the plans and in the specifications.
- .3 Carefully remove the materials and equipment to be handed over to the Warden and deliver them to the location which he has designated.
- .4 Disturb the occupants as little as possible during the performance of the work, and allow the normal use of the premises insofar as possible.

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4.1 **WORK AND USE OF THE PREMISES (continued)**

- .5 If, in the opinion of the Warden and/or the Architect, the demolition work and any work which is disruptive to the occupants should be performed in the evening, at night and/or on weekends, the Owner shall be notified at least forty-eight (48) hours in advance of any intervention in the existing portions or where the normal operation of the building may be disrupted.
 - .1 Only workers whose presence is required for the performance of the work in the various parts of the building or on the site will be allowed access to these areas, and this access will be limited to these areas.
 - .2 The Contractor shall not store materials in areas which are not directly affected by the work and, more specifically, he shall not use these areas to perform preliminary work or as a workshop.
 - .3 Unless required in order to perform the work, no circulation or use of a specific room within the existing buildings will be authorized.
 - .4 Where the means for providing safety have been reduced as a result of the work for this contract, implement all of the temporary measures needed to ensure proper safety.
 - .5 If work needs to be performed near rooms used by the occupants, supply and install dust-protection screens, partitions, and notice boards for temporary warnings. If there is a risk of damage to windows, protect them with plywood.
 - .6 Repair and restore to good condition, to the satisfaction of the Architect, all damage caused to entries, sidewalks, grounds, grass, fences, existing finishes which are to remain, etc., and which resulted from the work for this contract.
 - .7 Patch and clean all damage resulting from the penetrations and the work of all of the trades. Unless indicated otherwise on the plans, the finishes shall be repaired to match the existing finishes.
 - .8 Perform all of the work involving penetrations, grooves, demolition in the floors, walls, partitions, ceilings, etc., which is required by all of the trades. Make as new all of the elements which are damaged by this work. Unless indicated otherwise, the finishes shall match the existing finishes.
 - .9 Remove all of the equipment and accessories that are fastened to the walls in the rooms which are affected by the work, and hand over to the Warden any items which will not be reused.
 - .10 Carefully remove the furnishings, equipment and gratings, etc., and reinstall them.
 - .11 Daily, as the demolition work progresses, the Contractor shall remove from the premises all of the materials which result from this work, and shall leave the premises perfectly clean by removing all of the perishable and other debris and all other trash. No piling of debris shall be permitted.

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4.2 **PREPARATORY WORK**

- .1 Disconnect the electrical, plumbing and telephone networks which supply the areas to be demolished in accordance with the laws and regulations of the authorities having jurisdiction. Install warning signs on the electrical equipment and networks which must remain live during the course of the work in order to supply other parts of the building.
- .2 Disconnect the mechanical equipment and plug their intakes and outlets to satisfy the requirements of the authorities having jurisdiction.

4.3 **DEMOLITION**

- .1 Demolish portions of the building to permit the performance of the reconstruction work as indicated.
- .2 Any cuts or penetrations in the concrete slabs or walls shall be performed using concrete saws and diamond drill bits in accordance with the requirements of the sections governing the demolition work.
- .3 Remove cables and other components which interfere with the restoration or repair of the existing work and restore them to their place as the work progresses.
- .4 It is prohibited to sell or burn any demolition materials on the site.
- .5 Collect all contaminated and hazardous materials and dispose of them off site taking all the necessary safety precautions.

4.4 **OWNERSHIP OF THE MATERIALS**

- .1 Unless otherwise indicated in the other divisions, the materials resulting from the demolition become the property of the General Contractor and shall be removed from the site, with the exception of materials and other items which are required to be relocated or handed over to the Warden. Refer to the indications on the plans.

- END -

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PART 1 - GENERAL

1.1 SECTION CONTENTS

- .1 This section of the specifications governs the supply of all the materials, labour, supervision, tools, equipment, and all of the services required for the performance of all of the work structural steel, frames and other miscellaneous metal work:
 - .1 Connecting bolts, supports, anchors, pipes required for the installation of all the work specified in this section and required by others.
 - .2 Galvanizing, painting, coating, thermally sprayed metallic Coating or other finishes required for all the work and not specified in section 06100.
 - .3 Framing of the new openings, modifications of the existing structure required for all the work specified.
- .2 Interior:
 - .1 Stains, handrails, guardrails shown in drawings.
 - .2 Other miscellaneous metal works indicated on the plans and show in details.
 - .3 The new roof hatch.
 - .4 Modification of the existing steel mesh fence indicated on the plans and fabrication and installation of new steel mesh fence.
- .3 Exterior:
 - .1 Galvanized steel guard rail on the roof.

1.2 RELATED SECTIONS

- .1 The demolition work Section 02060
- .2 These specific works all specified by the structural Engineer and shown
 - .1 Structural steel
 - .2 Supports and connecting accessories required in the modification of the existing structure
- .3 Paint and coating Section 06100

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PART 2 – GENERAL REQUIREMENTS

2.1 GENERAL

- .1 The Contractor shall refer to the general and special conditions, all of the pertinent articles of which shall form an integral part of this section. Plans and drawing by the structural engineer form an integral part and complete this section.

2.2 SITE EXAMINATION

- .1 Before commencing his work, the Contractor shall verify the work of the other contractors and the related services and the site conditions which affect the work of this section. It is his responsibility to identify every error and defect in the existing work which might compromise the perfect completion of his work and to notify the Architect of this immediately, in writing.
- .2 No work shall be commenced until these errors and defects have been corrected. The act of commencing the work shall be interpreted as an acceptance of the existing work and of the site conditions.

2.3 SHOP DRAWINGS

- .1 Works shall be executed in accordance with the verified shop drawings by the Architect and the structural Engineer. The shop drawings shall indicate materials, complete details of members, profiles, sizes, connection details, reinforcing, tolerances and dimensions.
- .2 The shop drawings will be dated and stamped by a structural Engineer member of the Ordre des Ingénieurs du Québec.
- .3 The shop drawings shall indicate erection drawings, elevations, details, welded connections and anchors of the hand-rail as well as the stair and landing. The works shall be designed by an Engineer and will be in accordance with the National Building Code of Canada 2005.
- .4 Under any circumstances work shall begin before the shop drawings have been verified. The verification is limited to the shape, general dimensions and finished materials and do not remove the responsibility of the contractor to verify field dimensions prior to shop fabrication and to ensure stability of the work.

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2.4 **STANDARDS AND DESIGN CRITERIA**

- .1 In general, materials required and used for the metal work, design criteria and assembly requirements shall be in accordance with the standards specified in this section. All the work shall meet specific requirements specified in the National Building Code of Canada, last edition for the structural loads imposed by the design.
- .2 Under any circumstances, oversized item designed for aesthetic reason shall be reduced.
- .3 Stairs, handrail, landing, bolt and anchors shall be designed to withstand vertical and horizontal loads as required in the National Building Code, current edition.
- .4 Execute the details and the shaping of the stairs in accordance with the requirements specified in the Metal Stairs Manual (AMP 510-92) fifth edition, 1992, of the NAAMM.

2.5 **COOPERATION**

- .1 The contractor will be working closely with other sub-contractor. This cooperation is fundamental to the good progress of work and the Architect will not tolerate any flaw in the execution of the work because of a lack of cooperation.

2.6 **WARRANTY**

- .1 Provide a written warranty of five years against all defects of the materials, the execution and the installation to take effect on the date of issue of the certificate of provisional acceptance of the work by the CSC Representative.

PART 3 - PRODUCTS

3.1 PRODUCTS

- .1 Materials shall be free of any defects which could alterate the hardness, the resistance and the appearance.
- .2 Metal pieces will have structural property required to resist stress load.
- .3 All the metal fitting will be made of the same material, finish and colour as the metal pieces which they will be fix to.
- .4 Profiles and steel plate: in accordance with ACNOR G40.21, type 38W and G-40.3 last edition.
- .5 Steel pipe: pipe used for bending or welding shall be ASTM A53, type E.
- .6 Welding materials in accordance with ACNOR W59.1, last edition.
- .7 Factory applied primer: in accordance with ONGC 1-GP-40d.
- .8 Galvanized primer: high in zinc, in accordance with ONGC 1-GP-181M.
- .9 Galvanization: hot-dip galvanizing with zinc layer minimum thickness 610g/m^2 ($202 / \text{pi}^2$) in accordance with ACNOR G164 last edition.
- .10 Chromium: chromium on metal with layers of copper of 0,90 mm thickness, nickel of 0,10 mm thickness and chromium 0,25 mm thickness.
- .11 Sulfur: commercial grade for the laying of metal poles.
- .12 Bolts and nuts: in accordance with ASTM A307-68.
- .13 Galvanized steel grating from Fisher-Ludlow.
- .14 Security mesh for the steel mesh fence: galvanized steel mesh 50 x 50 x 5 mm.

3.2 **ANCHORS**

- .1 Supply and install screws, bolts, threaded dowels, washers and nuts etc. required to fix various elements and to ensure an overall permanent strength.
- .2 Use galvanized steel, stainless steel or treated against rust anchors where required.
- .3 Metallic works shall be firmly executed where shown on drawings.
- .4 Apparent anchors shall be verified by the Architect before installing.

PART 4 - EXECUTION

4.1 **FACTORY ASSEMBLY AND INSTALLATION**

- .1 Work shall be prepared and assembled in factory. Units shall be fabricated complete or in the largest sections practicable for transport and field assembly. Provisions for field assembly shall be completed in the shop.
- .2 Works shall be executed in accordance with the plans and the drawings given by the contractor and verified by the Architect and the structural Engineer. Any work shall not begin without those verification.
- .3 Welding shall be ground smooth and weld spatter flux, slag and oxide shall be removed from finished surface.
- .4 Dissimilar metals shall be protected from galvanic corrosion by means of pressure tapes, coatings or isolators.
- .5 Metals in contact with concrete or grout shall be protected with a heavy coat of bituminous paint or other means of separation.
- .6 Metalwork shall be fabricated true to shape, size, and tolerances as shown, with straight lines, square corners of smooth bends, free from twists, kinks, warps, dents and other imperfections.
- .7 Iron metal will receive anti-rust primer (2 layers).

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4.2 **SHAPING**

- .1 Metalwork shall be fabricated true to shape, size and tolerance as shown with straight lines and strong connections.
- .2 Unless specified otherwise, use only steel, galvanized steel or stainless steel.
- .3 Metalwork shall be assembled with flat head screws, tapping screws, tamper screws or bolt which has been preapproved by the Architect.
- .4 Units shall be fabricated and assembled in factory and ready for field assembly.
- .5 Unless otherwise specified, continuous welds shall be provided on all structural members and grind seal welds flush, for assembly.

4.3 **ASSEMBLY**

- .1 Metalwork shall be assembled to straight lines and true curves.
- .2 Supply proper anchors which have been preapproved by the Architect such as stud, dip, bolt, bar, expandable tampon etc. Apparent anchors shall have decorative head or cap preapproved by the Architect.
- .3 Make the proper connections on site with high resistance steel anchor bolts or by welding in accordance with ACNOR S16-1969 and S1651-1975.
- .4 Baseplates and anchor bolts shall be grouted with non-shrink grout.
- .5 After completion of the assembly, make the required touch up on bolts, welding, rivet and burned surfaces.
- .6 Apply a zinc-filled paint on galvanized material which had been locally damaged by welding.

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4.4 **PRIMER COAT APPLIED IN SHOP AND ON FIELD**

- .1 A primer coat shall be applied in shop on every metallic elements except those in galvanized steel.
- .2 Apply a free primer mixture on dry, clean and rust free surfaces.
- .3 The primer shall penetrate all the joints and shall be dry before manipulation.
- .4 An inspection shall be made on field by the Architect or the CSC Representative.
- .5 All products damaged wether prior to or during installation shall be rejected at the contractor's expense.
- .6 Surfaces after field assembly which could not be in reach shall receive 2 layers of primer previously in the shop.
- .7 Welding performed at the shop or at the field on galvanized steel shall receive a zinc-filled paint to restore and repair the galvanized skin.

4.5 **VARIOUS METALLIC ELEMENTS**

- .1 Various work: supply other metallic elements such as angles, plates and shapes shown on drawings but not necessarily specified in other sections.

4.6 **SHAPED STEEL ELEMENTS**

- .1 Supply and install as shown in drawings the stairs, the guard rail and the handrails in shaped steel, the ramp, catwalk, interior and exterior works specified in the drawings.
- .2 Hot-dip galvanized steel shall be used for exterior assemblies with a minimum coating of zinc thickness of 610g / m² conform to ACNOR G164-1922 Standards. Dimensions shown in drawing shall be respected unless otherwise specified.
- .4 Follow the shapes shown in drawings.
- .5 Welds shall be continuous, water tight and ground smooth. Welds shall be repaired to produce a workmanlike appearance and received a zinc-filled product.

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4.6 **SHAPED STEEL ELEMENTS (continued)**

- .6 Supply and install deformed steel reinforcement dowels as shown on plans. Insert dowels into pre-drilled holes in the existing concrete slab and adhere them in place with epoxy adhesive.

4.7 **INTERIOR STAIRS, GUARD RAIL AND HANDRAILS**

- .1 Stairs shall be built as shown on drawings and in accordance with the following specifications.
- .2 Stair stringers and landings in steel profiles shall comply with the load bearing charts. They will be braced as shown on drawings. Unless otherwise specified, the channels “C” shall be closed at the end with a 6 mm plate, welded in a continuous way to the stringer.
- .3 Stair treads shall be as shown on drawings.
- .4 Despite they indications on drawings, the stairs, the landings and the fasteners shall be designed to resist a minimal load of 490 kg/m² (100 pds / sq²) unless otherwise specified on the shop drawings. The shop drawings shall be approved and signed by an independent structural Engineer member of the OIQ.
- .5 The guard-rails shall be as shown on drawings.

4.8 **EXTERIOR GUARD-RAIL**

- .1 Exterior guard-rail shall be made in hot-dip galvanized steel after assembly.
- .2 Exterior guard-rail shall be as shown on drawings.

- END -

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PART 1 - GENERAL

1.1 SECTION CONTENTS

- .1 The Contractor shall supply all of the materials, labour, equipment, tools and the accessories in accordance with the specifications and drawings and for the subcontractor apply to this section including but not limited to:
 - .1 Protection works and work site safety.
 - .2 Wood blocking on roof.
 - .3 Wood backing required for others.
 - .4 Wood blocking required for openings.
 - .5 Curbs for mechanical units.
 - .6 Curbs for mechanical pipes and electrical.
 - .7 Rough carpentry and wood blocking for the execution and completion of the parapet, overhang, expansion joints, etc.
 - .8 Sealing plate under the roof openings.
 - .9 Plywood for parapet.
 - .10 The removal and the reinstallation of equipment, accessories and items indicated on the plans.
 - .11 Paint of damaged surfaces resulted from work.
 - .12 Paint of the roof hatch.
 - .13 Patching and repair of the existing surfaces damaged by the work.
 - .14 Bolt and anchors.
 - .15 Mineral wool in parapets and curbs.
 - .16 Preservative.
 - .17 Polyethylene for protection.
 - .18 In general, all the work required for the job and not specifically called out.
 - .19 The final cleaning.

1.2 RELATED SECTIONS

- | | | |
|----|---|---------------|
| .1 | Temporary closing against intrusion and bad weather | section 01500 |
| .2 | Demolition | section 02060 |
| .3 | SBS modified bitumen membrane roofing | section 07560 |

1.3 EXAMINATION OF THE PREMISES

- .1 Before commencing his work, the Contractor shall verify the work of the other contractors and the related services and the site conditions which affect the work of this section.

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1.3 **EXAMINATION OF THE PREMISES (continued)**

- .2 It is his responsibility to identify every error and defect in the existing work which might compromise the perfect completion of his work and to notify the Architect of this immediately, in writing.
- .3 No work shall be commenced until these errors and defects have been corrected.
- .4 The act of commencing the work shall be interpreted as an acceptance of the existing work and of the site conditions.

PART 2 - MATERIALS

2.1 **GENERAL**

- .1 Material shall be certified by an organisation accredited by the Canadian Lumber Standards Accreditation Board.
- .2 Maximum moisture of 19% for rough carpentry at the time of use.
- .3 Maximum moisture of 10% for carpentry work at the time of use.
- .4 Material shall be straight and square on all surfaces with the longest dimensions.
 - .1 Rough Carpentry
Will be Est sprinet, grade no 1, each piece of lumber shall conform to ACNOR 086-1976, and bear the official grade mark. Each piece shall have an average moisture of 19 percent or less. Wood to be used for non-showing construction.
 - .2 Plywood for blocking
Douglas Fir to receive preservative type pressure treatment with a minimum moisture content of 19 percent after pressure treatment.
 - .3 Plywood for exterior use
Douglas Fir, 13 mm, 16 mm, 19 mm exterior grade pressure treatment with a maximum moisture content of 19 percent after pressure treatment, finished one side and grooved.
 - .4 Plywood for interior use
Douglas Fir, 19 mm.
 - .5 Rough hardware
Fastenings , framing clips, screws, etc. galvanized steel where

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exposed to weather or where members are built-in to roofing.

- .6 Furring
Will be sprinet, grade no1 with a maximum moisture content of 19 percent and shall be conform to ACNOR Standard specifications.
- .7 Thermal insulation
Fiber glass batts 89 mm and 152 mm from Fiberglass or similar approved.
- .8 Nails and spikes
Galvanized, conform to ACNRO B-111-1974.
- .9 Hardware
Bolt, nut, washer, screws, cadmium plated steel and galvanized metal plate.
- .10 Pre-treated lumber
Where called for on the drawings or specified herein, exposed lumber for rough carpentry, parapets and new openings shall be conform to ACNOR 080 and to be pressure treated with ACQ Preserve or ACC K33.
- .11 Polyethylene
Polyethylene 6 mils CHMC approved.

PART 3 – EXECUTION OF THE WORK

3.1 GENERAL

- .1 Construct all of the work required for the safety of persons and the protection of the work; modify, relocate and repair it as needed during the course of the work, in accordance with the requirements of the “Ministère du Travail” (Department of Labour).
- .2 Provide protection for the entries and exits which must remain in operation during the entire period of construction.
- .3 Coordinate with other work the location and the exact dimensions for all the rough carpentry related to the installation of the equipment such as vent, spot light, pipe, etc.
- .4 Perform the work carefully and accurately. Align all of the components, install them straight, plumb and level, and fasten them securely in place.
- .5 Material shall be delivered in suitable containers plainly marked with brand and manufacturer’s name.

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3.1 **GENERAL (continued)**

- .6 Rough carpentry shall produce joints true, tight and well nailed with members assembled in accordance with the Drawings. Carefully select lumber pieces. Select individual pieces so that knots and obvious defects will not interfere with placing bolts or proper nailing or marking proper connections.

3.2 **SECURITY REQUIREMENTS**

- .1 Construct a temporary balustrade around openings and along the perimeter of the roof. Close and repair the decking if necessary and execute the temporary work required by code.

3.3 **BACKING AND WOOD BLOCKING**

- .1 Furnish and install all the backing and the wood blocking necessary by others and in particular for the installation of the accessories and equipments to be reinstalled on the roof.

3.4 **WOOD BACKING FOR THE OPENING**

- .1 Furnish and install the wood backing and the plywood into the wood deck as shown on drawings for the installation of all the accessories. Use only preservative pressure treated lumber.

3.5 **CURBS, PARAPETS AND OVERHANG**

- .1 Install all the lumber required for the construction of the parapets, the curbs for the mechanical and electrical equipments as shown on drawings. The lumber shall be preservative pressure treated pine and exterior plywood. The bottom plate shall be firmly anchored to the wood deck.
- .2 Wood work must be executed in accordance with the plans and the drawings and must meet the requirements specified in the roofing specifications of the Q.R.M.A.
- .3 Before closing all the wood work, make sure that the insulation has been done adequately and has been verified by the Architect. No space should be left without any insulation.

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3.6 **WOOD BOXES AROUND MECHANICAL PIPE**

- .1 Construct with preservative pressure treated lumber boxes around mechanical pipe which pass across the roof deck.
Note: All boxes shall be 50 mm higher than the height of the exterior parapets.

3.7 **BOLT AND ANCHORS**

- .1 Furnish all the bolt and anchors required for the works.
- .2 Parapets shall be fixed with screws every 400 mm c/c to the wood deck.

3.8 **MINERAL WOOL**

- .1 In the parapets, overhang, and the curbs, where rigid insulation can't be used, install mineral wool in bats as shown in the drawings.

3.9 **CURBS FOR MECHANICAL EQUIPMENT ON THE ROOF**

- .1 Furnish and install all the lumber and the backing in preservative pressure treated wood 38 x 89 mm or 38 x 140 mm and exterior plywood 13 and 19 mm required for the execution of all the curbs.
Note: Curbs shall be 50 mm higher than the height of the exterior parapets.

3.10 **PRESERVATIVE**

- .1 Brush apply two coats of preservative treatment on site cut ends and site cut wood in contact with other wood surfaces and where moisture could cause rot.
Preservative shall be made of Ammoniacal Copper Quaternary Compound (ACQ) 2%.

3.11 **EXTERIOR WOOD**

- .1 All wood and plywood used for blocking and built into roofing, or otherwise shown, and exposed to moisture shall be pressure treated and be damp-proof and the plywood shall be exterior type.

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3.12 **GENERAL WORK**

- .1 Included in this section all the rough carpentry, the insulation, the backing and the blocking as shown on drawings necessary to fix all the equipments and accessories.

3.13 **PAINTING OF DAMMAGED SURFACES**

- .1 **General:**
 - .1 Prepare all of the surfaces in accordance with the standards from the CGSB 85-GP series.
 - .2 The surfaces to be painted shall be perfectly dry, free of all dirt, rust, flaking, grease, mould, chemical products, dust, etc.
 - .3 All of the surfaces shall be dry, properly sanded and cleaned, free of dust, dirt, grease, rust and other foreign matter.
 - .4 The surfaces shall be prepared so as to ensure perfect adherence of the paint, stain or varnish to the surface and to provide a smooth finish.
- .2 **Preparation:**
 - .1 **Surfaces already painted**
 - .1 Clean with a solution of trisodium phosphate (TSP), Polyprep #771-137 by Sico or approved equivalent. Rinse well with clear water.
- .3 **Products:**
 - .1 **Primer:** Apply one (1) coat of paint, product #870-177, super-white latex primer/sealer.
 - .2 **Finish:** Apply two (2) coats of interior 100% acrylic latex, product #771-5XX series, finish to match existing.

3.14 **PAINTING OF THE ROOF HATCH**

- .1 Metallic surface with factory applied primer.
 - .1 Finish: apply two (2) coats of "Corrostop" paint anti-rust , pre-mixed colour ultra-white, flat, 635-150.

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3.15 **FINAL CLEANING**

- .1 Upon completion of the work, the Contractor shall clean the building and the grounds affected by the work. He shall clean all of the new and existing surfaces that were soiled by the work or by the circulation of the employees and equipment. The Contractor shall also clean fully the rooms affected by the work (floors, walls, ceilings, doors and frames, windows, furnishings and equipment).

- END -

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PART 1 - GENERAL

1.1 SECTION CONTENTS

- .1 This section of the specifications governs the supply of all the materials, labour, supervision, tools, equipment, and all of the services required for the performance of all of the work described in these specifications and/or indicated on the plans, and specifically includes:
 - .1 The inspection of the preparatory work done by others.
 - .2 Execution of the new membrane including gypsum board, vapour, barrier, insulation, membrane, support panel, flashing, parapets and upstands.
 - .3 Base sheet membrane for flashings.
 - .4 Flashing around conducts.
 - .5 Flashing of curbs.
 - .6 Walkways.
 - .7 Sealing work.
 - .8 Polyvinyl flashing.
 - .9 Membrane contraction joint.
 - .10 Self-adhesive membrane.
 - .11 Roof drain.
 - .12 Metal flashing.
 - .13 Fire retardant support panel.
 - .14 Materials and accessories required for completion of the work specified in this section.
 - .15 The reinstallation of the existing equipments and accessories previously removed.
 - .16 The roof hatch.
 - .17 The pennants for the roof drain.
 - .18 Tapered insulation.
 - .19 Adhesive.
 - .20 Vent pipe.
 - .21 Lap band over support panel joints.

1.2 RELATED SECTIONS

- .1 The demolition work section 02060
- .2 Parapet section 06100

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1.3 **CONTRACTOR QUALIFICATIONS**

- .1 Roofing contractors and sub-contractors must, when tendering and during works, possess a roofing contractor operating license, must also be registered with the Q.R.M.A. and the C.R.C.A. and meet all the requirements of R.S.Q., chapter Q-1, act respecting building contractors vocational qualifications.

1.4 **REFERENCE STANDARDS**

- .1 Membrane must meet or exceed requirements specified in the roofing specifications manuals of the C.R.C.A and the Q.R.M.A.

1.5 **SITE EXAMINATION**

- .1 The roof contractor shall hire a roofing consultant chosen by the CSC Representative for the inspection and the site examination for the complete work of the replacement of the membrane including the deck, the vapour barrier, the membrane including the deck, the vapour barrier, the membrane and all the flashings.
- .2 The site examination fees are at the owner's expense.

1.6 **PRECONDITION**

- .1 The assembly of the roofing membrane shall be performed during dry weather with a temperature higher than 4° (40° F) using only new dry and perfect materials.
- .2 If the temperature is colder than the minimum asked, the contractor shall notify the inspector of his ways of installing the membrane. The inspector could ask for additional measures.
- .3 At all time, materials will be adequately protected and stored in a dry and property ventilated area, away from any wilding flame or spark, and sheltered from the elements and any harmful substances.
- .4 Improper materials will be marked by the inspector and take away form the site.

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1.7 **PROTECTION**

- .1 During the work, the roofing contractor shall adequately protect the materials, his work and the building from bad weather.

1.8 **MATERIALS STORAGE AND DELIVERY**

- .1 All materials will be delivered and stored in their original packaging, in conformance with the requirements described in the manufacture's technical documentation.

1.9 **WARRANTIES**

- .1 The contractor will provide a written and signed document to the owner's name certifying that the work executed will remain in place and free of waterproofing defect for a 5 year period from the date of acceptance.
- .2 Execution of the roofing membrane will be executed in strict compliance with the requirements of the Q.R.M.A.

1.10 **COOPERATION**

- .1 The contractor shall provide to the sub-contractor any material necessary to the work and shall notify the workers of any preparatory work required to fix adequately the material of the roofing membrane.

PART 2 - PRODUCTS

2.1 **PRIMER**

- .1 Elastocol 500 or Roofcraft from IKO
 - .1 Description: Primer installed on parapets and curbs.
 - .2 Property: Black liquid made from bitumen fast-evaporating solvents and adhesive enhancing additives.

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2.2 **ADHESIVE**

- .1 Adhesive for insulation and support panel made of two component, quick setting, low expansion foam urethane adhesive. Specified product: DUOTACK by SOPREMA or ADPHALT by FRANSYL.

2.3 **VAPOUR BARRIER**

- .1 Self-adhesive membrane composed of SBS modified bitumen, with a surface screen made of high-density polyethylene laminated between two layers of polyethylene films. The width of the membrane is 1.14 m (45 in) to allow the membrane to fit on the top of most structural deck profiles. The self-adhesive underface is protected with a silicone plastic release film. SOPRAVAP'R by SOPREMA or PERMATE-STICK by FRANSYL. Used with elastocol 500 or Multigrip.

2.4 **ASPHALT FELT**

- .1 #15 Asphalt felt in accordance with CSA A123.3.

2.5 **INSULATION**

- .1 Expanded polystyrene insulation board according to standard ULC, CAN/ULC-S701 and ASTM C1338 evaluation report R04-690 mold resistance, width x length 914 mm x 2438 mm with shiplap edge. Total thickness 108 mm factory laminated composite panel (12,7 mm) on both faces of a fireproof fiberglass sheet, double-sided 3" self-adhesive over lapping strip laminated with a 180 gr membrane of 2,2 mm thick, consisting of a polyester reinforcement with a thermo fusible under face and surface POLYBASE-R+ 180THR by FRANSYL.
- .2 **Accepted equivalence**
 - .1 High performance support panel composed of SBS modified bitumen membrane with a non-woven polyester reinforcement, factory-laminated on a HD polyisocyanurate insulation board. The surface is covered with a thermo fusible film SOPRASMART ISO HD 180 by SOPREMA,
 - .2 Closed-cell polyisocyanurate foam insulation board laminated on both sides with a fiberglass yarn-reinforced organic paper SOPRA-ISO by SOPREMA.

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2.5 **INSULATION (continued)**

- .3 **Tapered insulation**
Expanded polystyrene insulation sloped board according to standard ULC, CAN/ULC-S701 and ASTM C1338, evaluation report R04-690, width x length 1220 mm x 1220 mm mold resistance CCMC #13027-L. Thermal transmission R4 (RSI-0.7) for one inch (25 mm) thickness B120LON THR by FRANSYL.

2.6 **BASE SHEET MEMBRANE FOR FLASHING AND PARAPETS**

- .1 Membrane composed of SBS modified bitumen and non-woven polyester reinforcement. Both sides are covered with a thermofusible plastic film. The surface shall be marked with three (3) chalk lines to ensure proper roll alignment.
- .2 In conformance with: CGSB 37.56-M (9th Draft).
- .3 Properties:
 - .1 Strain energy (550N “ 5 cm).
 - .2 Breaking strength $\geq 8\%$.
 - .3 Ultimate elongation (%): 30%.
 - .4 Static puncture resistance (n): ≥ 300 N
 - .5 Cold bending at -30 °C, no cracking.
- .4 Specified product: SOPRALENE FLAM 180 to SOPREMA or TORCHFLEX TP-180- FF-BASE by IKO.

2.7 **ROOFING CAP SHEET MEMBRANE**

- .1 Description: Roofing membrane composed of SBS modified bitumen with a non-woven polyester reinforcement and elastomeric bitumen. The surface is protected by white coloured granules. The underface is covered with a thermofusible plastic film.

In conformance with: CGSB 37.56-M (9th Draft).

Properties:

Strain energy (kN/m)	11,9
Breaking strength (kN/m)	19,5
Ultimate elongation (%)	61
Tear resistance (N)	70
Static puncture resistance (N)	470
Dimensional stability (%)	-0.2

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2.7 **ROOFING CAP SHEET MEMBRANE (continued)**

Plastic flow (°C)	≥ 105
Cold bending at -30 °C	No cracking
Lap joint strength (kN/m)	Pass > 4 kN/m
Specified Product: SOPRASTAR FLAM HD GR by SOPREMA or ARMORCOOL white granules by IKO.	

2.8 **METAL FLASHING**

- .1 Prepainted galvanized steel sheet .50 (26 gage) baked enamel finish, Vicwest colour VW-6071 Stone Grey.

2.9 **URETHANE SEALANTS**

- .1 Dymeric 240 FC by TREMCO, ASTM C920, type M two component urethane, chemical curing as specified on drawings. Use with joint backing made of round foam rod compatible with the sealant oversized 30%.

2.10 **NAILS AND FASTENERS**

- .1 Spiral nails and steel washers, 1' or 1 ½" length in conformance with ACNOR B111-1974, spreadsheet 12, galvanized steel.
Fasteners "Glasfast" in conformance with ONGC 37-GP-5M.

2.11 **SELF ADHESIVE MEMBRANE**

- .1 Self-adhesive membrane composed of SBS modified bitumen and non-woven polyester reinforcement such as SOPRALEM FLAM STICK with primer ELASTOCOL 500 by SOPREMA or ARMOUREBOND FLASK by IKO Industries Ltd.

2.12 **BUTYL RUBBER FLASHING**

- .1 Minimum 1,2 mm reinforced tape with butyl adhesive compound, traction resistance 8,3 Kpm, elongation 50%, colour black.

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2.13 **GYPSUM-FIBER ROOFBOARD**

- .1 No-combustible glass fibre-covered roof board, 12,7 mm thickness. In conformance with ASTM E84 and ASTM C1177 and UL790.
- .2 Specified products: Greenglass Prime by FRANSYL or DENSDECK Prime by GPG.

2.14 **ADHESIVE FOR GYPSUM ROOF BOARD**

- .1 Two-component urethane base adhesive. Lexcan Insultac II with primer MULTIGRIP by FRANSYL.

2.15 **BITUMINOUS BOARD**

- .1 Semi-rigid roofing support panel.
- .2 Two asphalt-saturated fiberglass liners.
- .3 Mineral-reinforced asphaltic core.
- .4 Thickness: 6,4 mm.
- .5 Dimensions: 1220 mm x 2440 mm.
- .6 Specified products: SOPRABOARD by SOPREMA or Protecto Board by IKO.

2.16 **ROOF DRAIN**

- .1 Roof drain with complete anti-vandalism system, permanent dome strainer with opening lid, rigid copper drain sleeve, without joint, clip and vertical solder; 32 oz copper flange folded down in the sleeve; compatible with U-Flow Seal; dome strainer 260 mm diameter with evenly distributed orifices.
- .2 Specified Products: MURPHCO Ultra-Dome or Flip-Top by Lexcor.
- .3 Match the copper sleeve with the existing rainwater leader.
- .4 Retrofit roof drain seal such as MAXXFLO LEXCOR by FRANSYL.

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2.17 **VENT STACK FLASHING**

- .1 Insulated Stack-Jack Flashing finish 1100-0T alloy aluminium pre-molded urethane insulation liner with vandal proof vent stack cap in aluminium. Specified Products SJ-26 and SJ-33 by Thaler or approved equivalent.

2.18 **TERMINATION BAS**

- .1 Made from specially extruded aluminium without sharp edges, flat with no ledges with slotted holes 8" on center, thickness 0,090".
- .2 Specified products: TB-90-8 by TRUFAST.

2.19 **THERMOFUSIBLE TAPE**

- .1 Thermofusible tape constructed using a reinforcing mat of durable no-woven reinforced polyester, which is coated and impregnated with SBS modified bitumen. Top and bottom faces in thin poly-film; thickness 3 mm; width x length: 247,6 mm x 330 mm.
Installation method: heat welding.
Specified products: POLYTAPE 180 by FRANSYL or POLYBASE TAPE by SOPREMA.

2.20 **FLAG POLE FOR ROOF DRAIN**

- .1 Flag pole 12 mm diameter solid fiberglass rod material of high strength thermal set resin and approximately 55% continuous fiber reinforcement; heavy duty 10 oz typical, visibility blaze orange fluorescent material. Hex base in zinc chromate plated with hex head bolt in stainless steel.
- .2 Specified products: WMA 120BKS Mount Plate.

2.21 **MEMBRANE WALKWAYS**

- .1 Additional layer of membrane (roofing cap sheet membrane) where shown on roof plan. Colour white.

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2.22 **ROOF HATCH**

- .1 Metal roof hatch type L, size width 762 mm x length 2438 mm; the roof hatch shall be insulated, single leaf and pre-assembled from the manufacturer BILCO or JOURNAULT-JOUPLEX.
 - .1 Cover shall be 14 gauge paint bond G-90 galvanized steel.
 - .2 Cover insulation shall be fiberglass 25,4 mm thickness and protected by a metal liner 22 gauge paint bond G-90.
 - .3 Factory finish shall be alkyd based red oxide primed steel.

PART 3 – EXECUTION OF THE WORK

3.1 **SURFACE EXAMINATION AND PREPARATION**

- .1 Surface examination and preparation must be completed in conformance with instructions in the membrane manufacturer's technical documentation.
- .2 Before roofing work begins, the owner's representative and roofing foreman will inspect and approve deck conditions (including slopes and wood grounds) as well as flashings at parapets, roof drains, plumbing vents, ventilation outlets and other construction joints. If necessary, a non-conformity notice will be issued to the contractor so that required corrections can be carried out. The start of roofing work will be considered as acceptance of conditions for work completion.
- .3 Do not begin any portion of work before surfaces are clean, smooth, dry, and free of ice and debris. Use of calcium or salt is forbidden for ice or snow removal.
- .4 Be sure plumbing, carpentry and all other works have been duly completed.
- .5 No materials will be installed during rain or snowfall.

3.2 **GENERAL REQUIREMENTS**

- .1 Install plywood where equipment such as pump or winch will be installed for lifting material to protect the building exterior wall.
- .2 This instruction is complementary to those listed in the specifications for all the protection needed on the existing surfaces and for the work done by other sub-contractor.

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3.3 **EXECUTION**

- .1 Install the roofing material on dry and clean surfaces in conformance with instructions in the membrane manufacture's technical documentation.
- .2 Roofing work must be completed in a continuous fashion as surfaces are readied and as weather conditions allows it.
- .3 Protect the exposed surfaces of finished work to avoid damage during roof installation and material transportation.
- .4 Ensure waterproofing of roofs at all times including protection during installation work by other trades and protection as work is completed (vents, drains, etc.) and seal all joints that are not covered by a cap sheet membrane the same day. A second cap sheet cannot be installed if any moisture is present in joints.

3.4 **EQUIPMENT FOR EXECUTION OF WORK**

- .1 Keep the equipment and the tools to be used for the execution of the roofing in a good condition.
- .2 Use only the propane torch recommended by the manufacturer's membrane.

3.5 **NAILING**

- .1 Nails for the flashing are specified further in metal flashing.
- .2 If rails are necessary for the installation of a bitumen felt or other materials, look for the instructions of the manufacturer.
- .3 Not used nails and other debris on the roof have to be removed rapidly.

3.6 **BITUMEN SEALANT**

- .1 Sealant work and sealant material must be in conformance with the specifications described in this section and with the drawings.
- .2 The sealant for the flashing shall be DYMERIC 240.
- .3 Horizontal joints between the flashing the roofing membrane and the metal flashing shall be sealed.

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3.7 **GYPSUM BOARD**

- .1 The gypsum board shall be fixed mechanically to the existing wood deck in conformance with Factory Mutual requirements including the PLPRS1-29.
- .2 The fastener and all the anchors pieces for the wood shall penetrate at least 20 mm in the wood.

3.8 **VAPOUR BARRIER**

- .1 Material and installation
Furnish and install the vapour –barrier membrane with the proper primer in accordance with the indications of the manufacturers.
- .2 Before beginning the job, the contractor shall verify all the surfaces to receive the vapour barrier and make sure that all surfaces are rigid, without gap, smooth, dry, clean and damage free.

3.9 **INSULATION (PANELS WITH FACTORY, LAMINATED MEMBRANE POLYBASE R+180-THR**

- .1 Install the proper amount of installation panels per day that could be recovered. At each end of the day or when the weather is bad, seal the insulation pane border. Take away the seal the next day before continuing the job.
- .2 Examine and repair the vapour barrier during execution of the work.
- .3 Panels shall be installed in parallel rows with the border recovered by the support panels.
- .4 Cut end boards to suit. Fit boards tight together.
- .5 Apply beads of roofing adhesive in accordance with manufacturer's written instructions. Insulation panels shall be pressed to insure maximum contact with adhesive.
- .6 Heat-weld the overlaps. Install the tape on each joint.

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3.10 **SUPPORT PANEL (SOPRASMART, SOPRA-ISO)**

- .1 Cover Polyiso insulation with one layer of support panel 13 mm thickness. Apply beads of roofing adhesive to insulation on accordance with manufacturer's written instructions.
- .2 Adhere the support panel in adhesive to insure maximum contact with adhesive.
- .3 During execution, the support panels shall be protected against bad weather.
- .4 All boards must be in perfect connection, without any significant variances in level and must be completely adhered to the surface, before installing the cap membrane.
- .5 Seal end laps by welding a 250 mm wide protection strip centered on the joint where the overlap is missing.

3.11 **BASE SHEET FLASHING INSTALLATION**

- .1 Apply base sheet flashing only after primer coat is dry.
- .2 Cut off corners at end laps to be recovered by the next roll. Installed the membrane in one-meter-wide strip. Overlap side lap by along lines provided for the purpose, and overlap end laps by 100 mm. Stagger end joints by 100 mm.
- .3 This base sheet membrane must be welded directly to the prepared surface, proceeding from top to bottom, using a propane torch.
Rail the membrane every 300 mm c/c on top at 25 mm from border.
- .4 Overlap the membrane on top of the membrane installed on the support panels.

3.12 **ROOFING CAP SHEET INSTALLATIONS**

- .1 Make sure the support panel with the laminated membrane is free of wrinkles, swellings or fish mouths.
- .2 Starting at drain. Unroll the cap sheet membrane on the base sheet without adhering, taking care to align the first strip parallel to the edge of the roof.
- .3 Heat-weld according to the following instructions of membrane manufacturer.

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3.12 **ROOFING CAP SHEET INSTALLATIONS (continued)**

- .4 The heat-welding shall melt both surfaces (base sheet and cap sheet), while unrolling the cap sheet the installer shall fix the cap membrane in the bitumen bead.
- .5 During installation be careful not to overheat the membrane.
- .6 Cut off corners at end laps to be covered by the next roll.
- .7 Overlap side laps by a long lines provided for this purpose (75 mm) and overlap end laps by 150 mm.
- .8 Heat-weld between 2 layers and avoid the formation of wrinkles, voids of fishmouths.
- .9 At the end of the work, verify all the joints and the overlap.
- .10 Make sur not to over-weld at overlap. Bitumen shall not be seen in smudge.
- .11 Lay an additional layer of membrane for the walk-way.

3.13 **INSTALLATION OF HEAT-WELDED CAP SHEETS ON UPSTANDS AND PARAPETS**

- .1 This cap sheet must be installed in one-meter-wide strip. Overlap side laps by a long lines provided for this purpose and overlap end laps by 150 mm. The side joints must overlap and must be staggered by at least 100 mm with respect to the joints of the cap sheet on the field surfaces, to avoid areas of excessive membrane thickness.
- .2 Use a propane torch and round-nose trowel to embed the surface granules in the layer of hot bitumen starting from the chalk line on the field surface to the bottom edge of the upstands or parapet as will as on the granulated vertical surfaces that are to be overlapped.

3.14 **METAL FLASHINGS**

- .1 **Material**
 - .1 Galvanized steel, 0,50 mm thickness, enamel baked finish, stone grey colour installed by the slater.

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3.14 **METAL FLASHINGS (continued)**

- .2 Welding
 - .1 Stripper and welding shall be approved for the conditions of the roofing.
- .3 Fasteners
 - .1 Nails, screws, washers and other fasteners shall be made of anti-rust material and be compatible with the surfaces in contact. Fasteners shall be approved.
 - .2 Apply an etchant on all metallic surfaces which may receive bitumen. Those surfaces shall receive at least two layers of hot bitumen and vents or pipe shall be pressed in bitumen sealant.
 - .3 The roofing contractor shall install the metallic flashing in accordance with the best modern practices and allowing the metal to contract and expand. All vertical joints shall be sliding and filled with a polysulfide compound such as Thiolastic. Joints shall be folded 12 mm and the joints on corner shall be nailed to the parapet behind the drip every 600 mm c/c.
 - .4 The roofing contractor shall indicate in shop drawings all the flashing and the control joints for verification.

3.15 **SELF-ADHERED BASE SHEET**

- .1 Install a self-adhered membrane where specified by the Architect and if the conditions on site require such an installation. Apply the base sheet only after primer coat is dry. Install the self-adhered membrane in accordance with the manufacturer's recommendations.

3.16 **FIRE RETARDANT SUPPORT PANEL ON PARAPET AND UPSTANDS**

- .1 Install the fire retardant support panels on parapets and upstands according to the drawings. Those panels will be fixed on a bitumen felt mechanically fixed to the structure.

3.17 **ROOF DRAIN**

- .1 Install the roof drains according to the drawings.
- .2 Seal the roof drains with the existing rainwater leaders.

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3.17 **ROOF DRAIN (continued)**

- .3 The roofing contractor shall supply and install the new drains with the dome strainers.
- .4 The roofing contractor shall take responsibility of the seals between the drains and the rainwater leader.
- .5 The roofing contractor shall provide shop drawings for verification before installation.
Installation:
 - .1 Install an elastomeric sealant. Between each layer of membrane.
 - .2 The roof drain shall lay in elastomeric sealant with a copper flange.
 - .3 The roofing contractor shall respect all the specifications of the manufacturer and make sure that the drain is installed at the bottom of a depression.
 - .4 The plumbing installation should be made in conformity with the appropriate provincial rules and with the recommendation of the Q.R.M.A.

3.18 **WARRANTY INSPECTION**

- .1 The roofing contractor shall execute every 5 years an inspection in company of a CSC Representative and produce a report at the beginning of each 5 years period.
- .2 Defects and leaking covered by the warranty of the roofing contractor shall be repaired by the contractor to restore the roofing system at no extra cost.

3.19 **WATER TESTING**

- .1 The roofing contractor shall execute a water test at the end of the work to verify the drainage and the sealing of the roofing system.

3.20 **FLASHING OF THE MECHANICAL CURBS**

- .1 Install metallic flashing under the mechanical curbs. Those curbs shall be in accordance with the specifications of the Q.R.M.A. see section 06100.

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3.21 **FLASHING AROUND PIPE**

- .1 Execute bitumen flashing with metallic cover around mechanical pipe and conduct which pass through the roof.

3.22 **THE PENNANTS (FLAG POLE) FOR THE ROOF DRAIN**

- .1 Install on top of each roof drain a pennant showing the position of the drain. Install the pennants in accordance with the recommendations of the manufacturer. Fix the pennants with anti-rust fasteners.

3.23 **ROOF HATCH**

- .1 Supply and install where shown on drawings. The roof hatch 762 mm x 2440 mm in galvanized steel on insulated parapets which shall be 100 mm higher than the perimetric parapets.
- .2 The roof hatch shall have heavy pintle hinges and resist wind loads when open. The roof hatch shall be locked inside with a padlock furnish by the owner. Exterior shall be galvanized steel gage 14 with curb installation. Painting shall be executed by section 06100.
- .3 Furnish and install a folding hand rail 38 mm ø as shown in drawing. Painting shall be executed by section 06100.

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