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## **Request for Proposal**

Sandyford Place Balcony Replacements

35 – 43 Duke Street, Hamilton

Closing Date: Thursday, May 7, 2020 at 2:00 p.m.

**KALOS ENGINEERING INC.**  
300 York Boulevard  
Hamilton, Ontario L8R 3K6  
Email: [hankh@kaloseng.ca](mailto:hankh@kaloseng.ca)

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## APPENDICES

### GENERAL CONDITIONS

- : Canadian Standard Construction Document,  
CCDC 2, 2008 (Not Bound in this Specification)

### DIVISION 1 - GENERAL REQUIREMENTS

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2 of 7	Stair Plans	February 21, 2020
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5 of 7	3 <sup>rd</sup> . & 4 <sup>th</sup> Floor Framing Plan & Notes	February 21, 2020
6 of 7	3 <sup>rd</sup> Floor Framing Plan & Notes	February 21, 2020
7 of 7	Side Elevation & Sections	February 21, 2020

**END OF SECTION 00150**

**SPECIFICATIONS  
FOR  
SANDYFORD PLACE  
BALCONY REPLACEMENTS  
35-43 DUKE STREET HAMILTON**

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**ARTICLE 1: CONTRACT DOCUMENTS**

All bidders shall consult the Contract Documents. The Contract Documents will consist of the following:

1. Canadian Standard Construction Document, CCDC 2, 2008 Stipulated Price Contract. This document consists of the Agreement between Owner and Contractor, and the General Conditions of the Stipulated Price Contract.
2. Tender Form with Appendices.
3. Instructions to Bidders
4. Contents of Specifications.
5. Supplementary General Conditions.
6. Schedules/Standard Details included in the Specifications.
7. Specifications as listed in Contents of Specifications.
8. Drawings as listed in the Specifications.
9. Addenda issued prior to tender delivery.

**ARTICLE 2: OWNER**

Sandyford Place

**ARTICLE 3: PLACE OF BUILDING**

35-43 Duke Street, Hamilton

**ARTICLE 4: DELIVERY OF TENDERS**

1. Submit tender by email only  
  
: ATTENTION: Hank Huitema  
hankh@kaloseng.ca.  
  
: **not later than 2:00 p.m.**  
: **on Thursday, May 7, 2020**

**No tender will be received after this time.**

**ARTICLE 5: AWARD OF CONTRACT**

1. Tenders are to remain open for acceptance by the Owner for a period of thirty (30) days from the date of closing.
2. Alternate Prices submitted are to remain open for acceptance by the Owner for a period of sixty (60) days from the date of closing.

3. The Owner will not necessarily award a contract to a bidder, or to the bidder submitting the lowest tender.

**ARTICLE 6: EXAMINATION**

1. Bidders shall examine all Contract Documents, and shall also visit the place of building and carefully examine all conditions affecting the site and work to be done thereon.
2. No payments for extra work will be allowed to the Contractor for conditions which can be determined by examination of the Contract Documents or the site, or both.

**ARTICLE 7: TENDERS**

1. Submit tenders on unaltered Tender Forms, furnished with the Specification.
2. The Tender shall be Bulk Sum Tender for all the Work included in the Contract Documents.
3. Fill in all blanks in the Tender Form and Appendices as specified and instructed. TENDER DOCUMENTS NOT COMPLETED IN FULL MAY BE REJECTED.
4. Sign and seal tender submitted. Incorporated companies shall affix their corporate seal under the hand of their duly authorized officers.

**ARTICLE 8: DISQUALIFICATION OF TENDERS**

1. Tenders received after the specified latest delivery time will be disqualified and returned unopened.
2. Upon presentation of evidence of collusion, intent to defraud, or other illegal practices on the part of the bidder his tender will be disqualified whether unopened or not.

**ARTICLE 9: QUESTIONS OF CONTRACT DOCUMENTS**

1. The Consultant will be responsible for clarification of Contract Documents only as incorporated into Addenda, or otherwise communicated by letter or E-mail to holders of tender documents on record.

2. Address all queries to:

: Kalos Engineering Inc.  
300 York Boulevard, Hamilton, Ontario L8R 3K6  
ATTENTION: Mr. Hank Huitema  
Telephone (905) 333-9119x101  
Email: hankh@kaloseng.ca

#### ARTICLE 10: SITE ORIENTATION MEETING

1. A site meeting for all tenderers has been arranged for Friday April 24, 2020 at 10:00am to review the site and prepare any questions which will require an answer by addendum. Due to the restrictions in place due to the COVID-19 virus we will meet in the parking lot and keep the recommended 6' distance apart.

#### ARTICLE 11: MATERIAL VARIATIONS

This is a Base Bid Specification. Materials or articles specified by Brand Name, Catalogue Number, Manufacturer's or Supplier's name shall be used for the basis of this Contract. Where more than one such source is specified for the same material or article, the Tenderer must select the one of his choice which will be subject to Consultant's approval.

1. The Tender amount shall be based on the materials and equipment specified.
2. The Tender amount which will be considered is that arrived at after the cost differences of all substitutions which the Owner wishes to make have been applied to the Base Bid.
3. Cost, quality, service and supply being equal, Canadian goods shall have preference over Foreign goods. Similarly, local goods shall have preference among Canadian goods. The Contractor shall be responsible for and pay all costs incurred by the Owner and Consultants for review and acceptance or rejection of alternate products substituted or incorporated into the project without the prior written consent of the Consultant.
4. Alternative Prices are the only solicited changes to the base bid materials.

**Unspecified materials or rejected alternates, if built into the work, shall be replaced with the specified or accepted material at no additional cost to the Owner.**

Alternative materials or articles may be proposed by the Tenderer under the following conditions:

1. This list should show product names of alternatives and whether any difference will be made in the quoted sum for each alternative, should it be accepted. Differences quoted must include for all necessary changes to the structure, finishes, etc. to accommodate the proposed alternatives.
2. The Consultant has the right to accept any or all such alternatives, in which event the Contract shall be changed accordingly.

#### ARTICLE 12: DISCREPANCIES

1. The Tenderer shall report to the Consultant all discrepancies, omissions, errors, departures from Building Code Requirements, by-laws and/or good construction practice and points considered to be of dubious intent, so that the Consultant may, at his own discretion, issue instructions by Addenda.

**ARTICLE 13: ADDENDA**

1. During the Bidding Period, Tenderers may be instructed by Addenda to make additions, deletions or alterations to the Contract Documents. Addenda, if any, will be issued to all Bidders prior to Tender closing date. All Addenda shall become a part of the Contract Documents and they shall be acknowledged in the space provided.

**ARTICLE 14: TENDER DOCUMENTS**

1. One (digital) set of Tender documents, for Bidding purposes, will be issued by the Consultant to each of the invited General Contractors.

**ARTICLE 15: SALES TAX**

1. The Tender amount shall INCLUDE the Provincial Sales Tax and all other Taxes and Levies in force at the time of tendering. Such tax as may be required by Statute to be shown separately shall be so shown, but shall be included in the Tendered Amount.
2. The Tender amount shall NOT INCLUDE the Federal Goods and Services Tax. Such Tax shall be shown separately on the Tender Form as Extra to the tendered amount.
3. The contractor will indicate on each application for payment as a separate amount the appropriate HST the Owner is legally obliged to pay. This amount will be paid to the Contractor in addition to the amount certified for payment under the Contract.

**ARTICLE 16: NON-COMPLIANCE**

1. Failure to comply with any of the requirements in these Instructions to Bidders may cause a Tender to be declared improper and immediately rejected.

**ARTICLE 17: ALTERNATE PRICES**

1. Bidders shall include the Alternate Prices on Appendix 'A' and attach it to Tender Form submitted.

**ARTICLE 18: TEMPORARY FACILITIES**

1. Bidders are advised that they are to provide in their Bids, including all costs, for all temporary heat, hydro, water, protection, etc. and project security, as outlined in Section 01500 - Temporary Facilities and Controls of the specifications.

**ARTICLE 19: FAIR WAGE SCHEDULE**

1. All Contractors bidding on this project is requested to observe all statutes concerning the Hamilton Fair Wage Schedule.

**ARTICLE 20: PERMITS AND FEES**

1. The Owner has applied and paid for the Building Permit.
2. The Contractor shall be responsible for applying and paying for, and obtaining all other approvals necessary for the completion of the Work.
3. The cost of all permits and approvals shall be reimbursed by the Owner upon submission with the Contractors first progress billing.

**ARTICLE 21: PREQUALIFIED BIDDERS**

1. Bidders are advised that this is an Invited Tender with three (Contractors requested to submit a bona fide Tender for this project.
2. The following is a list of Prequalified Bidders for the Project:
  - Bestco Construction Ltd.
  - Demik Construction
  - Schilthuis Construction Ltd.

**END OF INSTRUCTIONS TO BIDDERS**



**TENDER FORM  
SANDYFORD PLACE  
BALCONY REPLACEMENTS  
35-43 DUKE STREET, HAMILTON**

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**NAME OF CONTRACTOR:** \_\_\_\_\_

**TO:**

**GENTLEMEN:**

1. I/We, the undersigned Tenderer, declare that we have carefully examined all Tender Documents including the Specifications, Drawings, Schedules, Addenda \_\_\_\_\_, the Agreement between Owner and Contractor, and the General Conditions of the Contract of the Standard Construction Document, CCDC 2, 2008 Stipulated Price Contract, as supplemented for this Project; and the Instructions to Bidders; and visited and investigated the site, and examined all conditions affecting the Work; and if notified in writing of the acceptance of this Tender within thirty (30) days of the date below, we agree to provide all materials necessary and perform all Work shown and described in these documents for the Stipulated Price of:

\_\_\_\_\_ (Dollars)

<b>GENERAL CONTINGENCY</b>	<b>\$</b>	<b>20,000.00</b>
<b>CASH ALLOWANCE</b>	<b>\$</b>	<b>2,500.00</b>
<b>STIPULATED PRICE</b>	<b>\$</b>	_____
<b>H.S.T. (13%) extra</b>	<b>\$</b>	_____
<b>TOTAL</b>	<b>\$</b>	_____

in lawful money of Canada; included in which are all applicable Provincial Sales and Excise taxes, custom duties, freight, exchange and all other charges.

2. The undersigned agrees, if notified of award of a Contract, to immediately commence Work actively and to complete in \_\_\_\_\_ weeks and ready for occupancy by the \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_.
3. The undersigned agrees that the Alternate Prices, Appendix "A" completed and submitted in accordance with Article 17 of the Instructions to Bidders will apply to the Work where and if accepted by the Owner.

4. The undersigned agrees that the Alternate Proposals, Appendix "B" completed and submitted in accordance with Article 17 of the Instructions to Bidders will apply to the Work where and if accepted by the Owner.
5. The undersigned agrees that the Construction Schedule, Appendix "C" completed and submitted in accordance with the Instructions to Bidders will apply to the Work required for completion of the project.
6. The undersigned hereby submits that he has carefully examined the site of the proposed Work and existing conditions; the requirements of the construction schedule; and has satisfied himself that all Subcontractors, material suppliers, and equipment suppliers on which this Tender is based are capable of meeting all requirements of the schedule, and of executing the Work in accordance with the Drawings and Specifications, the Instructions to Bidders, Tender Form and Form of Agreement, listed in Article 1 of this Tender Form.
7. The undersigned agrees that this Tender is valid and subject to acceptance by the Owner for a period of thirty (30) days from date of Tender receipt, and that if notified of award of the Contract he will:
  - : execute a contract with the Owner on the Specified 'Form of Agreement'.
  - : furnish to the Owner, in care of the Consultant, copies of Bonds, Insurance Policies, etc. as specified and as required by the General Conditions and Supplementary General Conditions of the Contract.
8. We have attached to this Tender Form the following documents:
  - : Alternate Prices, Appendix "A"
  - : Proposed Alternates, Appendix "B"
  - : Construction Schedule, Appendix "C"

9. Signature of Bidder:

( \_\_\_\_\_ )  
Name of Firm

( \_\_\_\_\_ )  
Signed by

( \_\_\_\_\_ )  
Dated at

( \_\_\_\_\_ )  
This day of \_\_\_\_\_ 2020

Seal

**END OF TENDER FORM**

1. Herewith is the list of Alternate Prices to which reference is made on the submitted Tender Form, in Article 17:-

**OWNER:** \_\_\_\_\_

**CONTRACTOR:** \_\_\_\_\_

2. It is agreed and understood that the following Alternate Prices if accepted by the Owner will apply to the Contract and include materials, labour, equipment, delivery, handling, statutory charges, overhead and profit, and other related charges, and inclusive of all duties and taxes applicable, and similar charges on account of such work, measured complete in place.

3. The undersigned agrees that the Alternate Prices submitted are valid and subject to acceptance by the Owner for a period of sixty (60) days from the Tender receipt.

4. **ALTERNATE PRICES**

**: Alternate Price No. 1:**

Replace pressure treated decking with 5/4"x6" composite decking (Timbertech or approved equal)

\_\_\_\_\_ Dollars (\$) \_\_\_\_\_  
Extra or Credit

**: Alternate Price No. 2:**

Replace pressure treated decking with 1"x6" Ipe or Paulope decking

\_\_\_\_\_ Dollars (\$) \_\_\_\_\_  
Extra or Credit

5. **SIGNATURE OF BIDDER:**

( \_\_\_\_\_ )  
( \_\_\_\_\_ )  
Name of Firm

( \_\_\_\_\_ )  
( \_\_\_\_\_ )  
Signed By

( \_\_\_\_\_ )  
( \_\_\_\_\_ )  
Dated at

( \_\_\_\_\_ )  
( \_\_\_\_\_ )  
This day of \_\_\_\_\_ 2020

**END OF APPENDIX "A"**

1. Herewith is the list of Proposed Alternatives (Material Variations) to which reference is made on the submitted Tender Form, in Article 17:-

to substitute for \_\_\_\_\_

\_\_\_\_\_

as specified in Section(s) \_\_\_\_\_ Specifications,

the following alternatives: \_\_\_\_\_

2. The Proposed Alternative is submitted for the following reason:

\_\_\_\_\_

\_\_\_\_\_

3. We ensure that a comparison has been made of all specified characteristics, that the Proposed Alternative does not alter the intent of the Drawings and Specifications, and we hereunder tabulate significant variations which lessen the performance characteristics and quality of materials, increase the weights and/or dimensions, and substitute different materials for those specified.

For the Specified Project

For the Proposed Alternative

\_\_\_\_\_

1. :

2. :

3. :

4. :

(Attach cuts and engineering specification data if pertinent)

4. The change to the Stipulated Sum tendered if the Proposed Alternative(s) is accepted is:

- 1. \_\_\_\_\_ DOLLARS (\$) \_\_\_\_\_ )  
EXTRA/CREDIT
- 2. \_\_\_\_\_ DOLLARS (\$) \_\_\_\_\_ )  
EXTRA/CREDIT
- 3. \_\_\_\_\_ DOLLARS (\$) \_\_\_\_\_ )  
EXTRA/CREDIT
- 4. \_\_\_\_\_ DOLLARS (\$) \_\_\_\_\_ )  
EXTRA/CREDIT

5. **SIGNATURE OF BIDDER:**

( \_\_\_\_\_ )  
( \_\_\_\_\_ )  
Name of Firm

( \_\_\_\_\_ )  
( \_\_\_\_\_ )  
Signed By

( \_\_\_\_\_ )  
( \_\_\_\_\_ )  
Dated at

( \_\_\_\_\_ )  
( \_\_\_\_\_ )  
This day of \_\_\_\_\_ 2020

(SEAL)

**END OF APPENDIX "B"**

1. Herewith is the proposed critical path Construction Schedule to which reference is made on the submitted Tender Form:-

**OWNER:** \_\_\_\_\_

**CONTRACTOR:** \_\_\_\_\_

2. It is agreed that the following schedule has been thoroughly examined and will be maintained throughout the project in order to achieve the Completion date requested.

3. **CRITICAL PATH SCHEDULE**

4. **SIGNATURE OF BIDDER:**

( \_\_\_\_\_ )  
Name of Firm

( \_\_\_\_\_ )  
Signed By

( \_\_\_\_\_ )  
Dated at

( \_\_\_\_\_ )  
This day of \_\_\_\_\_ 2020

**END OF APPENDIX "C"**

THE GENERAL CONDITIONS OF THE STIPULATED PRICE CONTRACT, STANDARD CONSTRUCTION DOCUMENT - CCDC 2 - 2008, shall be considered complete only as amended and supplemented by the following SUPPLEMENTARY GENERAL CONDITIONS.

**GC 2.3 REVIEW AND INSPECTION OF THE WORK**

Add the following new paragraph:-

2.3.6 The Contractor shall co-ordinate and incorporate all recommendations of the inspections performed by the Independent Inspection/Testing Agencies, who will be acting as the Consultant's/Owner's authorized agent, as noted in Section 01050 Allowances of the Specifications.

**GC 3.14 CLEANUP**

Add the following new paragraph:-

3.14.4 The Contractor shall carry out a thorough professional cleaning of all surfaces, fixtures and equipment prior to Substantial Performance of the Contract and Owner Occupancy.

**GC 5.1 FINANCING INFORMATION REQUIRED OF THE OWNER**

Add the following new paragraphs:-

5.1.3 Reasonable disclosure, for the purpose of this Contract, shall be interpreted as pertaining only to the limits set forth for the Bond Amounts requested as they relate to the monies allotted for the Contract Agreement between the Owner and Contractor.

**GC 5.2 APPLICATIONS FOR PROGRESS PAYMENT**

Add the following new paragraphs:-

5.2.7 Applications for each payment after the initial request shall include a Statutory Declaration on a form acceptable to the Owner.

5.2.8 Applications for payment of Statutory Holdbacks shall include a Statutory Declaration, and other documents, i.e. Declaration of Completion of Contract, Declaration of Last Supply, as deemed necessary by the Owner.

**GC 5.1 FINANCING INFORMATION REQUIRED OF THE OWNER**

Add the following new paragraph:-

5.1.3 Reasonable evidence of financing shall only apply to the Stipulated Contract Price only and not be inclusive of any other agreements or arrangements made by the Owner for the Project. All costs incidental to and associated with requests for evidence of financing shall be paid for by the party making such requests.

## **GC 6.2 CHANGE ORDER**

Add the following new paragraph:-

- 6.2.3 Changes involving an increase in the Contract Sum, evaluated in accordance with GC 6.1, GC 6.2, GC 6.3, GC 6.4, and 6.5, shall be calculated on the following basis:-
- Material cost will be the actual material cost. Labour rates will be the net hourly rates, plus the current fair wage burden currently followed locally.
  - Contractor's mark-up on General Contract work will be 10% + 5%.
  - Contractor's mark-up on Trade Contractor's work will be 10%.
  - Trade Contractor's mark-up charged on their own work will be 10% + 5%.
  - Main Trade Contractor's mark-up on minor subtrade's work will be 5%.
  - Contractor and Trade Contractors will not be entitled to charge a fee or charge for overhead and profit on credits to the Contract.

## **GC 8.2 NEGOTIATION, MEDIATION AND ARBITRATION**

Add the following new paragraphs:-

- 8.2.9 Within five (5) days of receipt of the Notice of Arbitration by the responding party under paragraph 8.2.6, the Owner and the Contractor shall give the Consultant a written notice containing:-
- a) a copy of the Notice of Arbitration
  - b) a copy of Supplementary Conditions 8.2.9 to 8.2.15 of this Contract, and
  - c) any claims or issues which the Contractor or the Owner, as the case may be, wishes to raise in relation to the Consultant arising out of the issues in dispute in the arbitration.
- 8.2.10 The Owner and the Contractor agree that the Consultant may elect, within ten (10) days of receipt of the notice under paragraph 8.2.9, to become a full party to the arbitration under paragraph 8.2.6 if the Consultant:-
- a) has a vested or contingent financial interest in the outcome of the arbitration;
  - b) gives the notice of election to the Owner and the Contractor before the arbitrator is appointed;
  - c) agrees to be a party to the arbitration within the meaning of the rules referred to in paragraph 8.2.6, and
  - d) agrees to be bound by the arbitral award made in the arbitration.
- 8.2.11 If the Consultant is not given the written notice required under paragraph 8.2.9, both the Owner and the Contractor are stopped from pursuing an action, counter claim or other proceeding or making an application against the Consultant arising out of the issues in dispute in the arbitration between the Owner and the Contractor under paragraph 8.2.6.



8.2.12 If an election is made under paragraph 8.2.10, the Consultant may participate in the appointment of the arbitrator and, notwithstanding the rules referred to in paragraph 8.2.6, the time period for reaching agreement on the appointment of the arbitrator shall begin to run from the date the respondent receives a copy of the Notice of Arbitration.

8.2.13 The arbitrator in the arbitration in which the Consultant has elected under paragraph 8.2.10 to become a full party may:-

- a) on application of the Owner or the Contractor, determine whether the Consultant has satisfied the requirement of paragraph 8.2.10, and
- b) make any procedural order considered necessary to facilitate the addition of the Consultant as a party to the arbitration.

8.2.14 The provisions of paragraph 8.2.9 shall apply mutatis mutandis to written notice to be given by the Consultant to any sub-consultant.

8.2.15 In the event of Notice of Arbitration given by the Consultant to a sub-consultant, the sub-consultant is not entitled to any election with respect to the proceeding, as outlined in 8.2.10, and is deemed to be bound by the arbitration proceeding.

#### **GC 11.1 INSURANCE**

Add the following new paragraphs:-

11.1.6 The Contractor shall provide and maintain, in addition to all insurance as set out in General Conditions GC 11.1, a binder to his own policy jointly naming the Contractor, all Subcontractors, the Owner and all Consultants to include:-

- a) The addition of Builders Risk and Collapse Factor to the basic coverage for both the existing, renovated, and new facilities for the duration of the Contract and be maintained for a period of twelve (12) months from the date of Substantial Performance of the Work.

**END OF SUPPLEMENTARY GENERAL CONDITIONS**

**1.1 Contract Documents**

- .1 Work will be performed under one contract; bound by the Agreement Between Owner and Contractor, Canadian Standard Construction Document - CCDC 2-2008 Stipulated Price Contract.

**2.1 General Conditions**

- .1 The General Conditions of the Stipulated Price Contract, Standard Construction Document - CCDC 2-2008, and the Supplementary General Conditions, Section 00400 shall form an integral part of this Specification.

**3.1 General Requirements**

- .2 All provisions of each Section of Division 1 shall apply to all other Divisions and Sections of the Specification.

**END OF SECTION 01000**

### 1.1 Description of Work

- .1 All Work described in the Specifications, Schedules, Drawings or referred to in the Contract Documents, shall be governed by the General Conditions & Supplementary General Conditions of the Stipulated Price Contract - CCDC 2-2008.
- .2 All Work described in Division I includes, but is not restricted to, the following requirements for setting out procedures, administration, standards, approvals, general construction safety/protection of property and people.
- .3 Work in these Specifications is divided into descriptive Sections which are not intended to indemnify absolute contractual limits between the Contractor and his Subcontractors, nor between Subcontractors or Suppliers. The Contractor shall be responsible for organizing all division of labour and supply of materials necessary and essential to complete the Project in all its parts, to provide a total enclosure and protection from weather of interior spaces, and as established in the General Conditions of the Contract.

### 2.1 Work Covered By Contract Documents

- .1 Work of this Contract comprises the construction of all works required and as shown for a complete project, including but not limited to the following:-
  - .1 Barricade existing exits and windows to the balcony
  - .2 Complete removal of existing balcony, all levels, including footings
  - .3 Excavation and concrete placement for new footings and piers
  - .4 Backfill and regrading.
  - .5 Construction of new balcony per the drawings including stairs, railings and connection to elevator shaft.

### 3.1 Codes Reference Standards, Regulatory Agencies and Specifications

- .1 Perform all Work in accordance with current Ontario Building Code O. Reg. 332/12 and any other code of Provincial or local application, provided that, in any case of conflict or discrepancy, the more stringent requirements shall apply and govern.
- .2 Perform all Work in accordance with all requirements of the Construction Safety Act, latest edition, of the Province of Ontario, as well as all other applicable regulations of jurisdictional authorities.
- .3 Meet or exceed requirements of contract documents, specified standards, codes and referenced documents.
- .4 Remedial Work required to review and/or correct Work installed, covered, buried and not inspected shall be carried out at the Contractors expense.
- .5 Unless the edition date is specified, consider that references to manufacturer's and published codes, standards and specifications are made to the latest edition, (revision) approved by the issuing organization, current at the date of this Specification.

- .6 Reference standards and specifications are quoted in this Specification to establish minimum standards. Work which in quality exceeds these minimum standards shall be considered to conform.
- .7 Should the Contract Documents conflict with quoted reference standards or specifications, the General Conditions of the Contract shall govern.
- .8 Where reference is made to manufacturer's directions, instructions, inspections or specifications, they shall include full information on storing, handling, preparing, mixing, installing, erecting, applying, anchoring or other matters concerning the materials pertinent to their use and their relationship to materials with which they are incorporated.

#### 4.1 **Documents Required**

- .1 Maintain at job site, one copy each of the following:-
  - .1 Contract Drawings/Specifications/Addenda.
  - .2 Copy of Approved Current Work Schedule.
  - .3 Building Permit/Drawings. Construction Record Drawings.
  - .4 Field Instructions and Site Inspection Reports.
  - .5 Notices of Change and Change Orders.
  - .6 Reviewed, Stamped Shop Drawings and Schedule.
  - .7 Independent Inspection and Field Test Reports.
  - .8 Authority Inspection Permits, Reports and Certificates.

#### 5.1 **Work Schedule**

- .1 Provide to the Consultant, within ten (10) working days after Contract award, a construction schedule showing anticipated progress stages, sequencing, milestone dates, delivery dates and final completion of Work within time period required by Contract Documents.
- .2 Provide to the Consultant, prior to the first Project Site Meeting a shop drawing schedule showing the discipline, received date, schedule required date, and status of each shop drawing to be provided.
- .3 Provide updated schedules on an monthly basis to permit the Consultant to evaluate and communicate to the Owner the status of Work for future Progress Billing purposes.

#### 6.1 **Site Meetings/Progress Records**

- .1 As specified in Section 01200.
- .2 Interim monthly reviews of Work Progress, based on the current Work Schedule, will be conducted by the Consultant, Project Manager, Consultants, and Contractor and any necessary corrections to the schedule shall be noted and updated by Contractor in conjunction with all subtrades and suppliers to the satisfaction of the Consultant, Project Manager at least once every thirty (30) working days. Copies of the updated

schedule shall be submitted to the Consultant, Project Manager for their review and comments.

### **7.1 Approval of Work**

- .1 Where reference is made to jurisdictional authorities, it shall mean all authorities who have within their constituted powers the right to enforce the laws of the place of building.
- .2 Where reference is made in these Specifications that Work is to proceed or to meet the approval of jurisdictional authorities, Consultant or others, such approval shall be in writing.

### **8.1 Work During Non-Business Hours**

- .1 The Contractor is cautioned that the Consultant, Project Manager and/or Sub-Consultants, cannot be committed to site attendance at the site except for normal working hours i.e. Monday to Friday 7:00 am to 6:00 p.m. excluding holidays. All and any Work performed during such times, requiring either the presence of the, Project Manager, Consultants, Owner or other Authorities, and carried out without their specific written prior approval, shall be performed solely at the General Contractor's responsibility.
- .2 Notify the Consultant, Project Manager at least ninety-six (96) hours in advance of Work at night (7:00 p.m. to 6:00 a.m.) on weekdays, Saturdays, Sundays and Statutory or declared holidays. Undertake no work during the foregoing times without the Consultant's, Project Manager's written approval.
- .3 The Contractor shall be responsible for and pay all costs for City of Hamilton Inspection Fees based on a Cost plus 15% administration fee, which are additional to the inspection fees paid, for all inspections which are carried out on weekdays after 6:00 p.m., Saturdays, Sundays, Statutory or declared holidays.

### **9.1 Project Co-ordination**

- .1 Assume full responsibility for the co-ordination and co-operation of all trades.
- .2 Employ a qualified superintendent who shall:-
  - .1 Be on the site at all times and control all Work throughout.
  - .2 Have full authority to act on the Consultant's instructions.
  - .3 Have full knowledge of Construction and this Project in particular.
  - .4 Not be changed without prior approval of the Consultant.
- .3 Co-ordinate use of construction plant and equipment including cranes, hoists, ladders, scaffolds and similar items with the work of the various trades. The cost of such use is subject to whatever arrangement exists between Contractor and trades. Include all costs with respect to construction plant and equipment in the Contract Price.

- .4 Co-ordinate all service terminations with appropriate Authorities.
- .5 Ensure compliance with Transport Canada Regulations for all Work on the air side of this project.

#### **10.1 Workmen, Suppliers and Subcontractors**

- .1 Assign Work only to workmen, suppliers and Subcontractors who have complete knowledge, not only of the conditions of this Specification, but of jurisdictional requirements, reference standards and specifications, in particular of Transport Canada.
- .2 Give preference to use of local workmen, suppliers and Subcontractors wherever possible.

#### **11.1 Co-operation and Co-ordination of Subcontractor's Work**

- .1 Co-ordinate all construction components in each area and on which subsequent Work depends to facilitate mutual progress, and to prevent conflict between parts of the Work performed by all trades.
- .2 The Contractor shall ensure that each of his Subcontractors make known to him, and to other Subcontractors, the environmental and surface conditions required for the execution of the Subcontractor's Work, and the sequence of other's Work required for installation of the Subcontractor's Work.
- .3 The Contractor shall ensure that each Subcontractor, before he commences his Work, fully understands the site requirements and conditions preceding and subsequent to his Work, and that each Subcontractor execute his preparatory Work properly as required by the Subcontractors whose Work depends upon it.
- .4 Subcontractors/Suppliers who give installation information in error, or too late to incorporate in the Work, shall be responsible for having any and all Work carried out which was thereby additionally made necessary to correct the situation.
- .5 Remove Work which has been installed in error, incorrectly or substituted without approval and which is unsatisfactory for subsequent Work immediately at no additional expense to the Owner.
- .6 The Contractor shall ensure that setting drawings, templates, and all other information necessary for the location and installation of materials, holes, sleeves, inserts, anchors, accessories, fastenings, connections, and access panels are provided by each Subcontractor whose Work requires co-operative location and installation by other Subcontractors.
- .7 Schedule delivery of materials, supplied by one Subcontractor to be installed by another, well in advance of commencement of the installation.

**12.1 Contractor's Use of Site**

- .1 Do not unreasonably encumber site with materials or equipment. Remove all materials from site as they accumulate daily.
- .2 Use of site is limited and restricted to the areas for work and storage as shown on the drawings and as designated by the Consultant.
- .3 Restore, at completion of Work, all adjacent property, surfaces, sidewalks, etc. to original condition of commencement of work to satisfaction of the Consultant.

**13.1 Access to Site**

- .1 The Contractor shall direct and control access and delivery of all construction materials and equipment onto and within the site. He shall provide flagmen and guards as required.
- .2 The Contractor shall be completely responsible for delivery vehicles, and materials and equipment while they are on the site, and shall pay all costs for their immediate removal or relocation should they impede the access of others.

**14.1 Parking**

- .1 Parking shall be allowed only with the prior approval and in authorized areas as agreed to and directed by the Consultant/Owner.

**15.1 Access for Equipment**

- .1 Fitments and other equipment shall be made up in sections of such size as can be easily transported in and through the building to the final location without alteration or damage to the building.
- .2 Should it become necessary at any time during the execution of the Work to move materials and/or equipment which have been temporarily placed, when so directed by the, make arrangements with those who are furnishing such materials and equipment to move them or cause them to be moved to a different location as directed without additional charge.

**16.1 Setting out of Work**

- .1 The Contractor shall establish necessary lines, levels, and provide batter boards or other means to control the accurate positioning of all elements of work.
- .2 The Contractor shall verify all existing grades, property lines and levels shown on the Drawings.
- .3 Before commencing installation of Work, verify that it is laid out accurately in accordance with intent of Drawings, and that positions, levels and clearances to

adjacent Work are maintained. If Work is installed in wrong location, rectify it before construction continues.

- .4 The Contractor shall furnish to the Consultant, certification from a licensed Ontario Land Surveyor that the Building and other parts of the work are located in accordance with the Contract requirements. Setting out of Work shall be in conformity with the Municipal Setback requirements. The Surveyor's Certification shall represent an independent and disinterested verification of the Contractor's layout work. The Surveyor shall promptly verify and certify the lines and levels of any part of the work at any time it may be deemed necessary by the Consultant. Any deviation from the drawings shall be reported to the Consultant in writing within twenty-four (24) hours of discovery.

#### **17.1 Examination of Site Before Execution of Work**

- .1 Examine site, and ensure that each Subcontractor whose Work is related to site conditions has examined it, so that all are fully informed on all particulars, which affect Work thereon and at the place of building, and in order that construction proceeds competently and expeditiously.
- .2 Examine completed Work, Work in progress, and Work yet to be carried out by others under other Sections of the Specifications.
- .3 Verify dimensions of completed Work in place before fabrication of Work to be incorporated with it.
- .4 Verify that previously executed Work and surfaces are satisfactory for installation or application, or both, and that performance of subsequent Work will not be affected. Commencement of Work shall constitute acceptance of site conditions and surfaces as satisfactory.
- .5 Report to Consultant any and all defects in previously completed Work which will affect the scheduling and quality of all subsequent Work.
- .6 No allowance will be made for difficulties encountered in the Work which were in existence or could have been anticipated at the time the Work was tendered.
- .7 No allowance will be made for difficulties encountered in the Work which are a result of the lack of co-operation/co-ordination on the part of the Contractor of any of his Trades or Suppliers.

#### **18.1 Protection of Work, Property and Persons**

- .1 Work shall include necessary methods, materials and construction to ensure that no damage or harm to Work, materials, property and persons results from the Work of this Contract. Temporary facilities relating to protection are specified in Section 01500. Schedule the work so that security and safety is maintained at all times.
- .2 Keep excavations Work free of water at all times. Pump dry as required.



- .3 Keep surfaces on which finish materials will be applied free from grease, oil and other contamination which would be detrimental in any way to the application of finish materials.
- .4 Locate, identify and protect existing services from damages. If necessary, relocate active services to ensure that they function continuously in safety and without risk of damage. Any damage caused to existing services and/or property shall be made good at the Contractor's expense.
- .5 Do not damage landscaped areas by piling of surplus soil over them, by dumping of debris over them or compacting the soil within the drip line of the trees/shrubs.
- .6 Special precautions to be taken to protect all existing planting on the site. Do not damage or cut root systems of existing trees; stockpile any surplus material over them or use trees for anchorage. Remove only those trees or shrubs which are designated to be removed and/or replanted. Protect, and if damaged make good, adjacent property.
- .7 Assume full responsibility for the provision of all protection against rain, wind, snow, ice, storms, frost, heat and vandalism so as to maintain work area free from injury or damage.
- .8 Cease work and notify the Consultant if low temperatures make it impossible to continue operations safely in spite of cold weather precautions.
- .9 Notify the Consultant should the job be closed down for any reason and assume full responsibility, for providing adequate protection, security, etc. during the shutdown.
- .10 The Contractor is cautioned to use appropriate demolition methods in order to fully protect all existing structure. Do not carry out any work in a manner that will endanger any structural members, services.
- .11 Take all necessary precautions to protect the occupants, the public, passersby and adjoining property against flying dust and debris.

#### **19.1 Fire Prevention and Safety**

- .1 The Contractor shall enforce fire protection methods of good housekeeping, and adherence to local and underwriter's fire regulations. Provide ULC approved fire extinguishers, and other fire fighting services and equipment except where more explicit requirements are specified as the responsibility of individual Subcontractors.
- .2 Maintain clear emergency exit paths for personnel at all times.
- .3 Use only fire resistant tarpaulins and similar protective covering on site.
- .4 Ensure that each Subcontractor stores his volatile waste in approved closed containers and removes them from premises daily.

**20.1 Public Protection**

- .1 When necessary, the Contractor must post a flagman who will be responsible for safety and direction of pedestrian traffic past the site.
- .2 Maintain existing exiting routes and access from the existing premises.

**21.1 Provisions for Traffic**

- .1 Particular effort shall be applied to the safety of pedestrian flow past the site. Any activity which has potential for interference with pedestrian flow shall first be approved by the Consultant. Provide temporary guide barriers, signage and flagmen as required for safe and efficient control of pedestrian flow.

**22.1 Mud Tracking**

- .1 The Contractor shall take all steps necessary to prevent the tracking of mud beyond the site and assume all responsibilities for the tracking of mud, dirt and debris resulting from his operations, beyond the site and shall pay all costs necessary for the clean-up resulting from this operation.

**23.1 Dust Control**

- .1 The Contractor shall take such steps as may be required to prevent dust nuisance resulting from his operations from spreading beyond the site.
- .2 Where the work requires the sawing of asphalt or the sawing or grinding of concrete, blades and grinders of the wet type shall be used together with sufficient water to prevent the incidence of dust. The cost of all such preventative measures shall be borne by the Contractor.

**24.1 Security**

- .1 The contractor shall provide secure, solid closures to any opening which will not be able to be closed in with the new construction due to any circumstances which may arise.
- .2 Ensure that the site security is operating at all times construction is proceeding and that the temporary site enclosure is secured at the end of each days work.

**25.1 Salvage and Disposal**

- .1 Items of antiquity, including coin, art, anthropology, etc. which are on the site at the time of signing of Contract, which are uncovered or unearthed during the construction, shall remain the property of the Owner and shall be turned over to him immediately and without prejudice.
- .2 Unless otherwise specified, salvaged material which will not to be reused within the new construction, surplus materials and construction debris shall become property of

Contractor. The Contractor shall pay all associated costs and arrange for the safe removal and disposal away from site.

### **26.1 Loading of Building**

- .1 No one shall store materials in building or utilize it for construction purposes in any manner which would exceed design loading on any building element.
- .2 Temporarily support or strengthen parts of the structure subjected to excessive loads during construction.
- .3 Place loads on concrete slabs and members only after they have cured as required by this Specification and when approved by the Consultant.

### **27.1 Location of Apparatus**

- .1 The location of apparatus, fixtures, outlets, etc., shown or specified shall be considered as only approximate. The actual locations shall be as directed and as required to suit the conditions at the time of installation. Before installation the Contractor shall notify the Consultant and ascertain the actual desired final location required. The Consultant shall have the right to change these locations without change to the Contract Sum providing the distance moved does not exceed 3000 mm (10'-0") and the information is given before the installation is made.

### **28.1 Fastenings**

- .1 Work of each Subcontractor shall include necessary fastenings, anchors, inserts, attachment accessories and adhesives. Where installation part of Work of other Subcontractor, locate devices and co-operate with them as required.
- .2 Do not use fastenings which cause spalling or cracking of materials in which installed.
- .3 Install metal-to-metal fastenings fabricated of the same metal, or of a metal which will not set up electrolytic action causing damage to fastenings or components, or both, under moist conditions. Use only non-corrosive, galvanized steel or stainless steel fastenings.
- .4 Install Work with fastenings or adhesives in sufficient quantity to provide permanent secure anchorage of materials, constructions, components and equipment. Space anchors within limits of load-bearing or shear capacity.
- .5 Space exposed fastenings evenly and in an organized pattern. Keep number to a minimum. For exposed fastenings use metal of same material, texture, colour and finish as metal on which they occur.

### **29.1 Existing Services**

- .1 Where Work involves capping/cutting or relocation of existing services, carry out work at times directed by governing authorities.

- .2 Before commencing Work, establish location and extent of service lines in area of Work and notify the Consultant of findings.
- .3 Submit schedule to and obtain approval from the Consultant and Owner and for any shutdown or closure of active service or facility. Adhere to approved schedule and provide notice to affected parties.
- .4 Where unknown services are encountered, immediately advise Consultant and confirm findings in writing.
- .5 Record location of all new, capped or abandoned site services accurately on "Construction Record Drawings".
- .6 All rough-in to point of equipment connection is to be carried out by the Mechanical and Electrical Contractors as part of the General Contract for the Work. This Contractor shall be responsible for setting of the equipment in place and ensuring that all electrical and mechanical connections to this equipment is carried out correctly and as required by the equipment manufacturer.
- .7 Final connection to equipment will be carried out under the Work of the General Contract for the Building Alteration and Addition.
- .8 Do not interrupt existing services except as approved by the Consultant. Give the Consultant or governing authority seven (7) days clear notice of intention to interrupt existing services.
- .9 In the event existing services are uncovered or disrupted accidentally, make complete restoration on a priority basis and provide adequate protection to avoid further disruption until diversion or alternative arrangements are made.

### **30.1 Cleaning**

- .1 Each Subcontractor shall clean and remove from his finished Work all stains, soiling, markings, labels, scratches, spatters, droppings, and debris. He shall leave his Work and adjacent finished Work in new condition.
- .2 Ensure that only cleaning materials are used which are recommended for the purpose by both the manufacturer of the surface to be cleaned and of the cleaning material.
- .3 No debris, waste or excess material shall be burned or buried at site. Ensure that volatile fluid wastes are not disposed of in storm or sanitary sewers or in open drain courses. Do not allow waste material and debris to accumulate in an unsightly or hazardous manner. Provide containers in which to collect waste material and debris. Sprinkle dusty accumulations with water.
- .4 Ensure that cleaning operations are scheduled to prevent dust or other foreign matter affecting surfaces which are wet or tacky.

- .5 Each Subcontractor shall supply the Contractor with instructions for final cleaning of his Work, and for inclusion in Project Data Book as more exactly specified in each trade Section and in Section 01300.
- .6 Ensure that cleanup is carried out daily to provide a neat, orderly and safe site for all personnel working on the site.
- .7 The final project cleanup and cleaning of all components shall be carried out by the Contractor in accordance with Section 01700 - Project Closeout.

**END OF SECTION 01005**

**1.1 Generally**

- .1 Perform all Work in or on existing building in accordance with the Specifications and Drawings and by tradesmen specializing in such work.
- .2 It is to be emphasized that all Work be performed to ensure the integrity of the design and original materials of the existing facility is to be maintained.

**2.1 Owner's Use of Existing Building**

- .1 The entire facility will remain in complete operation during the renovation, alteration phases of the project. The Contractor, in conjunction with the Consultant and Owner, will develop a phasing sequence of the Work that permits, so far as is practical, the normal operation of the facility. The phasing requirements shall be as defined by written description and/or schematic diagram in the Contract Documents.
- .2 The Owner shall be permitted to work within the existing building without hindrance or restrictions. No construction work will take place during the normal operating hours of the facility, which are listed in the Instructions to Bidders, unless instructed otherwise.
- .3 The Owner shall have full authority to restrict access and control security to the site and throughout the entire facility. Existing service and delivery accesses are to remain operational at all times during construction.

**3.1 Contractor's Use of Existing Building**

- .1 Execute work in existing building at times approved and as mutually agreeable to Owner. Prepare a schedule and give Owner sufficient notice of intention to commence work in a room or area of existing building so that he may prepare the space and determine time work may commence.
- .2 Maintain access to service and delivery entrances for use by the Owner. Maintain existing exits to provide proper and safe means of egress from all parts of existing building to open spaces at all times to the approval of the Consultant and jurisdictional authorities. Provide sufficient illumination and exit lights.
- .3 Prohibit use of existing washrooms and services in building by construction personnel unless approved by the Consultant.
- .4 The Contractor shall co-ordinate work and make all necessary arrangements with the Owner's security force to ensure that security of the building and control of access by construction personnel are maintained while work is in progress. All costs for additional security shall be paid for by the Contractor.
- .5 The Contractor shall control and limit access of construction personnel to all areas of the existing building and ensure that construction personnel perform work only as required under the Contract and not as access to other work areas, any other purposes.

- .6 The Contractor shall maintain all existing heating, air conditioning, ventilation, fire alarm and sprinkler protection, and emergency lighting at levels normal for office requirements throughout the facility during normal business hours for the Owner.
- .7 No construction work causing oppressive noise, dust, fumes or hazards within the existing facility shall be carried out during business hours without the installation of temporary enclosures and the approval of the Owner. Execute all work as quietly as possible to achieve least disturbance to Owner.

#### **4.1 Protection**

- .1 Provide temporary dust screens and security separation at all times, to the Consultant's and Owner's satisfaction, between the Contractor's work area and the remaining operating portion of the facility and as shown on the drawings.
- .2 Provide temporary, weathertight, dust tight and lockable partitions between existing building and all new Work. Weatherproof openings made in walls and roofs of existing building, immediately they are opened.
- .3 Protection of existing building elements, in particular roofs, air barriers and waterproofing membranes shall be substantial enough to prevent any damage as a result of traffic over, or falling objects penetrating them.
- .4 Protection of all property shall include but not be limited to equipment, furniture plantings, walkways and adjacent property other similar items whether included and noted on the drawings or not. Take all precautions to ensure that no structural damage is caused to the existing building and adjacent structures by demolition and alteration work, or by new construction.

#### **5.1 Removal of Existing Work and Salvage**

- .1 Ensure during removal that materials, components and similar items to be reused are protected from damage. Provide all necessary supports, wrappings and other means to protect surfaces, materials and components that are to be removed or remain in place.
- .2 Relocation of existing equipment shall be carried out and co-ordinated by this Contractor unless noted otherwise. The Contractor shall ensure that all material and tradesmen necessary for the disconnection and reconnection of equipment to be removed and/or relocated, either by the Contractor or the Owner, shall be present at all times during this Work and shall have available all material necessary to complete the work.
- .3 Remove carefully all building elements, components, materials, and equipment noted to be relocated by the Specifications and drawings. Store and protect relocated items until built into new locations. Limit removal of items to smallest areas possible, and make good disturbed adjacent surfaces.
- .4 Remove debris and accumulated dirt from existing building immediately as it

accumulates. Ensure that during removal operations through the existing building that existing work is not damaged and dirt, debris and dust are not spread.

- .5 Maintain work areas in existing building constantly broom clean to avoid tracking of dirt into adjacent areas. Immediately clean up debris resulting from work of Contract that is deposited in existing building outside of work areas. Make a daily inspection to ensure that work and construction access areas are maintained clean and undamaged as specified.
- .6 Carry out all cutting, fitting, patching, and replacement of existing components carefully in a manner to provide the least disturbance to all existing finished surfaces.

#### **6.1 Shutdowns and Connections to Existing Services**

- .1 Provide the Owner with a preliminary schedule of shutdowns of mechanical and electrical services prior to commencement of the work. Shutdowns shall be scheduled for normal working hours to cause minimum interference with normal building operations. After hours shutdowns shall take place no additional cost to the Owner. **In no case shall service interruptions affect the total building.**
- .2 Notification of any interruption or shutdown of any mechanical or electrical service shall be made in writing by the Contractor to the Consultant accompanied by a sketch or full details of the proposed interruption at least two (2) weeks in advance of such interruption.
- .3 Temporary and permanent mechanical or electrical services connections are to be made only in consultation with the appropriate governing authority and by prior arrangement. Restore all services to original condition unless specified otherwise.

#### **7.1 Replacement Work**

- .1 Make good materials, and prepare surfaces and repair all existing and new finished surfaces damaged, or disturbed in the existing building.
- .2 Finish new surfaces flush with existing surfaces. Make junctions between existing and new or remedial work invisible. Make surfaces adjacent to one another of the same material, unit sizes, colour and texture. Review intended methods of making good with the Consultant prior to commencement of Work.

**END OF SECTION 01030**



**1.1 Generally**

- .1 Cash allowances and the Construction Contingency Allowance specified shall be carried, administered and co-ordinated by the General Contractor as part of the Work of his Contract.
- .2 Include the General Contractor's charges for overhead and profit, on account of all Cash Allowances and Construction Contingency Allowance as specified, in the Contract Price in accordance with the General Conditions of the Stipulated Price Contract. Article GC 4.1 Cash Allowances and Article GC 4.2 Contingency Allowance.
- .3 Include with each expenditure from the appropriate Allowances, all applicable taxes as specified in the General Conditions of the Stipulated Price Contract, Article GC 10.1 - Taxes and Duties. HST is extra to the amounts carried for this work.
- .4 List all Allowances separately on each and every billing and expend Allowances only on the Consultant's agreement and written instructions.
- .5 Credit the Owner with unused portion of all Allowances in statement of reconciliation prior to the final billing for the project. The Consultant will issue a final Change Order to cover this payment.

**2.1 Construction Contingency Allowance**

- .1 **Include in your tender a Construction Contingency Allowance to cost and perform additional Work as directed by the Consultant and Owner.**

A Cash Allowance of Twenty Thousand Dollars (\$20,000.00).

**3.1 Cash Allowances**

- .1 **For Inspection and Testing Services Specified for:**

Section 02200 : Earthwork (compaction)

Section 03300 : Cast-in-Place Concrete

A Cash Allowance of Two Thousand Five Hundred Dollars (\$2,500.00).

**END OF SECTION 01050**

### 1.1 Generally

- .1 The Contractor shall be responsible for preparing, for the first project site meeting, a schedule of all requested and required submittals listing all shop drawings, samples, reports, manuals, drawings intended for submission to the Consultant.
- .2 The Contractor shall co-ordinate and distribute all submissions, to the Consultant as well as Subtrades and suppliers, to ensure that the flow of documents is performed in a timely manner to maintain the construction schedule.
- .3 All submittals specified and requested in all Sections of these Specifications shall be made by the General Contractor, directly to the Consultant. Submit copies to the Sub-Consultants and jurisdictional authorities only on the instructions or in agreement with the Consultant.
- .4 Submissions containing substitutions or alternates will be returned immediately by the Consultant or Sub-Consultants.

### 1.2 Construction Schedules

- .1 Submit in accordance with Section 01005.

### 1.3 Shop Drawings

- .1 The Consultant shall review, stamp and return the digital copy of all shop drawings marked "**No Comments**", "**Comments as Noted**" or "**Revise and Resubmit**". A copy of all shop drawings marked "**No Comments or Comments as Noted**" shall be retained at the site for the Consultant, Consultants and trades to review. Only drawings stamped "**Revise and Resubmit**" need be resubmitted. The Contractor shall be responsible for printing the reviewed shop drawings.
- .2 Submit to the Consultant one (1) digital (PDF) copy of all shop drawings for the items of Work noted throughout this Specification, and in accordance with GC 3.11 of the Agreement.
- .3 Submit shop drawings for signs, hoardings, fences, barricades, shoring and bracing, hoists, temporary supports, enclosures, stairs and similar Work specified in Division 1 when requested by the Consultant or jurisdictional authorities in accordance with their requirements.
- .4 **The Contractor shall check, stamp, sign and make notations he considers necessary on shop drawings before each submission. Shop drawings not checked and signed will be returned without review.**
- .5 Do not proceed with Work dependent on shop drawing information until Consultant's and Contractor's review is finalized. Shop drawings marked, "No Comments" shall not relieve the Contractor of his responsibility for execution of Work in accordance with Contract Documents.

- .6 The following information shall be shown on shop drawings:-
- title, project name, date, scale, manufacturer, fabricator and installer.
  - materials, finishes, fabrication and erection dimensions.
  - clear and obvious deviations or proposed changes from drawings or specifications.
- project specific details to indicate construction arrangement of parts, connections, anchorage, fastener type, and interconnections with other Work.
- information to verify that superimposed loads will not affect function, appearance and safety of this or related Work.
  - assumed design loadings, material specifications for load-bearing members.
  - dimensions and dimensioned locations of proposed chases, sleeves, cuts and holes in structural members.
  - Engineer's seals, calculations and notations as required.
- .7 Fabricate Work exactly as shown on shop drawings. If shop practice dictates revisions, revise drawings and resubmit.

#### **1.4 Guarantees and Warranties**

- .1 Provide the extended guarantees as specified in each applicable Section of this Specification.
- .2 Extended guarantees shall commence on termination of the standard one year guarantee granted in this Contract as specified in Article GC 12.3 - Warranty of the General Conditions, and shall be an extension of these same provisions.
- .3 Each extended guarantee shall be submitted in a format, identical to the other and as approved by Consultant.
- .4 In addition to the normal one year guarantee as required by the contract, submit written guarantee to include all extended guarantee items with application for Final Certificate of Payment.

#### **1.5 Maintenance Manual and Operating Instructions**

- .1 Submit Maintenance Manuals to the Consultant at completion of Project prior to application for Certificate of Substantial Performance. Maintenance Manual shall consist of shop drawings, extended guarantees and Project Data Book.
- .2 The Project Data Book shall
- consist of a hard-cover, black, vinyl-covered, loose-leaf, 215 x 280 mm (8½" x 11") binder
  - have a title sheet, or sheets preceding data on which shall be recorded Project name, date, list of contents and Contractor's and Subcontractors' names

- be organized into applicable Sections of Work with each section separation by hard paper dividers with plastic covered tabs marked by Section
- contain only typed or printed information and notes, and neatly drafted drawings
- contain Warranties/Guarantees including extended Warranties/Guarantees with the names, addresses and phone numbers for servicing.
- contain maintenance and operating instructions on all building, and mechanical and electrical equipment
- contain brochures and parts listed on all equipment sources of supply for all proprietary products used in the Work
- contain lists of supply sources for maintenance of all equipment in Project of which more detailed information is not included above
- contain finished hardware schedule
- contain one (1) copy of final reviewed, stamped and signed shop drawing issued for Project, on which have been recorded changes made during fabrication and installation caused by unforeseen conditions.

## 1.6 Application for Payment

- .1 Applications for Payment must be accompanied by:
  - .1 The Contractor's Statement of Payment.
  - .2 Progress Draw showing a schedule of values of various trades and for various parts of the work in a format acceptable to the Consultant.
  - .3 A Statutory Declaration, duly signed by the Contractor and all Subcontractors, stating that all Subcontractors and suppliers have been paid to date and that there are no liens outstanding or filed.
  - .4 Letter of Good Standing from Workplace Safety and Insurance Board (WSIB).

## 1.7 Construction Record Drawings:

- .1 The Contractor will be provided with two sets of prints to be used as Record Drawings on which he shall mark clearly "IN RED, IN A NEAT AND LEGIBLE MANNER", all deviations from the Contract Documents in the Work as constructed, caused by site conditions and including Consultant originated changes, Contractor/Sub-Contractor originated changes, Site Instructions, Supplementary Instructions, Addenda, instructions by correspondence and Jurisdiction authority approvals. Carefully record location of concealed elements which are required for maintenance, alteration work, and building additions, including elements of foundation, horizontal and vertical location of utilities and appurtenances, location of internal utilities concealed in construction, and all field changes of dimension and detail. Eradicate all obsolete information.
- .2 Maintain record drawings in good condition, available at all times for inspection by Consultant's site representatives, and do not use for construction purposes.

**END OF SECTION 01300**

## 1.1 General Requirements

- .1 Work shall include temporary facilities and controls required as construction aids or by jurisdictional authorities or as otherwise specified. Install to meet needs of construction as Work progresses. Maintain during use, remove at completion of need and make good adjacent Work and property affected by their installation.
- .2 Work shall include fixed or portable structures as shown and as required for storage, offices, washrooms, etc. as required for safety, security and to meet the needs of the construction project and the Owner as otherwise specified.
- .3 Temporary facilities shall include provisions for construction safety as required by the Construction Safety Act, 213/91 amended O. Reg. 64/18 of the Province of Ontario, or latest edition, as well as all other applicable regulations of jurisdictional authorities.
- .4 Construct temporary Work of new materials unless use of second-hand materials is approved by the Consultant.
- .5 Ensure that structural, mechanical and electrical characteristics of temporary facilities are suitable and adequate for use intended. Be responsible that no harm is caused to persons and property by failure of temporary facilities because of placing, location, stability, protection, structural sufficiency, removal or any other cause.
- .6 Prepare shop drawings and specifications of temporary Work, and submit for approval if required by jurisdictional authorities and to the Consultant in accordance with Section 01300.
- .7 Pay all costs for any and all temporary facilities and controls including, but not limited to, permits, transportation, set-up, maintenance and leases.

## 2.1 Construction Aids

- .1 Erect scaffolding independent of building walls, and remove promptly when no longer required. Do not allow scaffolds to interfere with continuing "Work".
- .2 Each user of scaffolding which is not his own shall be responsible for its examination and testing before using it. He shall make it secure if necessary, or shall notify the Contractor in writing that he will not commence Work until it is made secure; otherwise he will be held responsible for accidents and acceptance of the scaffolding.
- .3 Work shall include temporary enclosure for building as required to protect it, in its entirety or in its parts, against the elements, to maintain environmental conditions required for Work within the enclosure, and to prevent damage to materials stored within. Design enclosures to withstand wind pressures required for the building by jurisdictional authorities. Use structural framing of building for support of temporary enclosure framing only upon verification that the load limits of the building frame will not be exceeded, and upon approval of the Consultant. Keep surfaces of enclosures free of snow and ice to avoid overloading of building structure. Erect enclosures to allow complete accessibility for installation of materials during the time enclosures remain in place.

### 3.1 Protective Fences, Devices, Barricades

- .1 Install temporary constructions to ensure protection to the public, premises and all personnel as specified other Sections of this Specification and the General Conditions of the Contract.
- .2 Protect roofs by substantial temporary construction to ensure that no damage occurs. Protection shall be provided by materials of sufficient thickness, positively secured to prevent all damage to structure and finish, and to waterproofing qualities of membranes whenever each of these individual components are exposed. Damage shall include harm resulting from all construction Work, such as falling objects, wheel and foot traffic, failure to remove debris, or scaffolding and hoisting operations.
- .3 Work shall include barricades for traffic control, and to prevent damaging traffic over finished areas, sidewalk and curb protection, as well as safety barricades, hoardings and otherwise as may be required.
- .4 **Erect protective enclosures around all trees and planting material noted to remain. Verify all items to be protected with the Consultant prior to commencement of work.**

### 4.1 Security

- .1 Maintain security of construction site by control of access through enclosing fences during times Work is in progress, and by locking hardware otherwise.
- .2 Maintain security at all times construction is shut down because of a strike or a lockout, or for whatever reason the project is unoccupied.
- .3 Maintain security and construction of site in accordance with Section 01005

### 5.1 Field Office

- .1 Erect a secure weathertight insulated temporary office for the Consultant's and Contractor's use. It shall contain facilities as required for Contractor, a Conference table and chairs for site meetings, and facilities for the Consultant.
- .2 Heat and light the office to minimum code requirements for office buildings.
- .3 Maintain and pay for telephone and facsimile service at the site available to Contractors and the Consultant during entire construction.
- .4 Provide separate office with desk, drawing board, fax machine, telephone, heat and lights for the Project Manager's use. Cost for telephone to be paid from the Cash Allowance allotted in Section 01050.

## 6.1 Storage Sheds

- .1 Provide secure weathertight sheds in which to store construction materials that require protection from the elements. Include construction and operating hardware, with security locks, as required.
- .2 Provide lighting and heat in those storage areas containing materials to protect them from freezing or cold temperatures.
- .3 Storage for painters' materials and tools shall be separated from other storage areas.
- .4 Locate all sheds where approved by the Consultant and Project Manager.

## 7.1 Temporary Water, Electricity, Heat, Lighting

- .1 The Contractor shall be responsible for and shall assume the cost for provision of water, electricity, heat and lighting required for construction of the facilities, for the duration of the project.
- .2 The Contractor shall supply electric power for all construction purposes. Make connections available to any part of the Work within distance of a 100'-0" extension. Provide power at temporary storage sheds and field office and classroom facility.
- .3 Make connections for electric power for construction purposes (not heating or welding) at only the main switchboard, after it is installed. Feed from a separate sub-feed switch.
- .4 Temporary electric service shall include distribution conductors and necessary components. Provide a power centre for miscellaneous tools and equipment with weatherproof distribution box, a minimum of four 20 Amp grounded outlets, and circuit breaker protection for each outlet.
- .5 The Contractor shall heat building during construction to maintain temperature for working surface, and during conditions required by all specified materials. Use only heating methods approved by the Consultant and jurisdictional authorities. Salamanders will not be permitted.
- .6 **Provide lighting for:**
  - emergency evacuation, safety and security throughout the Project at intensity levels required for jurisdictional authorities
  - performance of Work throughout areas as required, evenly distributed, and at intensities to ensure that proper installations and applications are achieved
  - performance of finishing Work in areas as required, evenly distributed and of an intensity of at least 15 foot candles.

**.7 Use of Permanent Heating Systems by Contractors:**

- .1 If permission is granted by the Consultant, Owner and Sub-Consultants to use the permanent heating system for temporary heating, the following conditions must be rigidly adhered to:
- Entire heating system and its controls must be 100% completed.
  - Filters shall be inspected daily and replaced weekly. All open ended ducts to be capped with filter cloth.
- .2 Upon termination of the temporary heating period and prior to acceptance by the Owner, the Contractor shall:
- Replace all filters. Vacuum all ducts, coils, etc.
  - Open-up, clean and inspect all equipment. This must be done in the presence of the Owner's representative.
  - Provide the Owner with letter from each manufacturer of all the equipment used stating that their respective equipment is in A-1 condition at the date of acceptance by the Owner.
  - All guarantees will commence on the date of the Owner's acceptance.
- .8 Make arrangements for connections to water, sewer, gas, electric and telephone utilities as required for temporary use during construction. Pay connection and disconnection charges, and for use of services required by construction.

**8.1 Dust Control**

- .1 Prevent spread of dust beyond the construction site by wetting or by other means approved by the Consultant.

**9.1 Project Identification**

- .1 Work shall include Project sign painted by a professional sign painter on overlaid plywood, framed and mounted on braced posts. Only Owner's, Project, Consultant's and Sub-Consultant's and Contractor's names shall appear on sign. Submit shop drawings for approval. Size of sign shall be 2400mm x 2400mm (8' x 8') approximately.
- .2 Erect sign in location as directed by the Consultant. Project sign to be detailed later.
- .3 Only specified Project sign and notices regarding safety, caution or instructions shall be placed on or near site.

**END OF SECTION 01500**



### 1.1 **Construction Safety Measures**

- .1 Observe and enforce construction safety measures required by National Building Code latest edition, Provincial Government, Workplace Safety and Insurance Board and municipal statutes and authorities.
- .2 In event of conflict between any provisions of above authorities, the most stringent provision governs.

### 2.1 **Fire Protection**

- .1 Eliminate fire hazards and prevent damage to work, materials, equipment and other property, both public and private.
- .2 Provide and maintain in working order, adequate temporary Underwriters' labelled fire extinguishers and locate in prominent positions, to the approval of authorities having jurisdiction.

### 3.1 **First Aid**

- .1 Provide and maintain on the site in a clean, orderly condition, completely equipped first aid facilities which shall be readily accessible at all times to all employees.
- .2 Designate certain employees who are properly instructed to be in charge of first aid. At least one such employee shall always be available on the site while work is being carried on.
- .3 A telephone call list for summoning aid, such as doctors, ambulances, Pulmotors, and rescue squads from outside sources shall be conspicuously posted.

### 4.1 **Overloading**

- .1 Ensure no part of Work is subjected to a load which will endanger its safety or will cause deformation.

### 5.1 **Falsework**

- .1 Design and construct falsework in accordance with CSA S269.1-16 or latest edition.

### 6.1 **Scaffolding**

- .1 Design and construct scaffolding in accordance with CSA Z797-18 or latest edition.

### 7.1 **Cranes/Hoisting Equipment**

- .1 Do not commence any hoisting/erection on site without prior approval of the Consultant.
- .2 Prepare a schedule of operations when such equipment is to be employed and submit for approval.

**8.1 Disposal of Wastes**

- .1 Do not bury rubbish and waste materials on site.
- .2 Do not dispose of waste or volatile materials, such as mineral spirits, oil or paint thinner into waterways, storm or sanitary sewers.
- .3 Fires and burning of rubbish on the site shall not be permitted.

**9.1 Siltation Control**

- .1 Erect siltation control fences were noted on drawings to protect existing drainage channels.

**10.1 Drainage**

- .1 Provide temporary drainage and pumping as necessary to keep excavations and site free from water.
- .2 Do not pump water containing suspended materials into waterways, sewer or discharge systems.
- .3 Control disposal or runoff of water containing suspended materials or other harmful substances in accordance with local authority requirements.

**11.1 Pollution Control**

- .1 Control emissions from equipment and plant to local authorities emission requirements.
- .2 Cover or wet down dry materials and rubbish to prevent blowing dust and debris. Provide dust control for temporary roads.

**12.1 Toxic and Hazardous Waste**

- .1 Prior to commencement of Work, ensure that all reasonable precautions have been taken to determine if toxic or hazardous substances are present on the site.
- .2 Address unforeseen conditions expeditiously and report to the Consultant, jurisdiction having authority, immediately, any conditions found on the site.
- .3 Do not bury any waste material on the site which could be deemed to be considered toxic or hazardous.

**END OF SECTION 01510**

### 1.1 **Final Cleaning**

- .1 Before final inspection, replace all material damaged during construction or which is otherwise defective, marred or deficient.
- .2 In addition to requirements for cleaning-up specified in the General Conditions of the Contract and as specified in the various sections of the Specifications, the Work by the Contractor shall include one (1) final cleaning by skilled cleaning specialists prior to Substantial Completion of the project and Occupancy by the Owner.
- .3 Final cleaning shall remove dust, stains, paint spots, soil, grease, fingerprints and accumulations of construction materials in accordance with manufacturers instructions for each material. This Work shall include but not be limited to:
  - : remove temporary protections and make good defects before commencement of final cleaning.
- .4 Maintain final cleaned state of the project, or portions thereof, until Owner has taken possession of project.

### 2.1 **Demonstration of Systems**

- .1 Each Subcontractor shall give a complete demonstration in the presence of the Owner of the operation of all systems and equipment installations once they are complete and when the Consultant is advised that the building is to be handed over to the Owner. Responsible personnel from the Subcontractors whose Work is being demonstrated shall be present as required at these demonstrations.

### 3.1 **Construction Record Drawings**

- .1 Record, on white prints, Work constructed differently than shown on Contract Documents. Record all changes in the Work caused by site conditions; by Owner, Consultant, Sub-Consultants, Contractor and Sub-contractors originated changes; and by site instructions, supplementary instructions, field orders, change orders, addenda, correspondence and directions of jurisdictional authorities. Accurately record location of concealed structure and mechanical and electrical services, piping, conduits, pull boxes, junction boxes and similar Work not clearly in view, the position of which is required for maintenance, alteration Work and future additions. Do not conceal critical Work until its location has been recorded.
- .2 Make records in a neat and legibly printed manner with a non-smudging medium.
- .3 Identify each record drawing as "Project Record Copy", maintain drawings in good condition, do not use them for construction purposes and make available to the Consultant at all times.

#### 4.1 **Substantial Completion Certificate**

- .1 The following articles, in addition to those set forth under the General Conditions of the Contract, are to be submitted to the Consultant before issuance of the **Substantial Performance Certificate**.
- .2 **General**
  - .1 Building Permit Copy of Drawings and Specifications, Building Permit, and all other permits/inspection approvals/documentation received during the course of construction from all Authorities.
  - .2 Verification of Fire Alarm, Emergency Lighting and Sprinkler System
  - .3 Copies of all Independent inspection reports as specified.
  - .4 Construction Record Drawings.
  - .5 Maintenance Manuals and Operating Instructions.
  - .6 Copies of all Warranties and Manufacturers inspection reports.
  - .7 Preliminary Deficiency List prepared by the Contractor for review by all trades and the Consultant and Sub-Consultants.

#### 5.1 **Final Documentation**

- .1 Provide the following documentation as applicable before completion will be declared:
  - .1 Adjusted and reconciled cash allowances.
  - .2 Written statement of completion from Contractor and all other declarations as requested by the Consultant.
  - .3 Original copy of newspaper listing, as required under the Construction Lien Act.
  - .4 Abstract of title from Registrar of Land Registration and/or Certificate of Encumbrances at termination of lien period.

#### 6.1 **Final Inspection and Close-Out**

- .1 Arrange for, conduct and document final inspections, close-out and take-over at completion of Work of this Specification in accordance with procedures described in **OAA/OGCA TAKE-OVER PROCEDURES**, OAA/OGCA Document No. 100, January 31, 2008.

**END OF SECTION 01700**

## **PART 1 – GENERAL**

### **1.1 General Requirements**

- .1 Division 1, General Requirements is a part of this Section and shall apply as if repeated here.

### **1.2 Work in Other Sections**

- .1 Related Work Specified in Other Sections:

Section 01030	:	Work in Existing Building
Section 01500	:	Temporary Facilities & Controls
Section 03300	:	Cast-in-Place Concrete
Section 05100	:	Structural Metal Framing

### **1.3 Qualifications**

- .1 Execute work of this Section only by a firm who specializes in such work, has adequate equipment and skilled tradesmen to perform it expeditiously, and is known to have been responsible for demolition work similar to that specified, during a period of at least the last five years.

### **1.4 Requirements of Regulatory Agencies**

- .1 Perform demolition work in accordance with latest edition requirements of CSA S350-M1980 (R2003), the Fire Protection Act and the Occupational Health and Safety Act and Regulations for Construction Projects of the Province of Ontario, Section 01005 General Instructions of the specifications and as otherwise required by jurisdictional authorities to save persons and property from harm resulting from work of this Section.
- .2 Obtain and pay for permits, notices and inspections required by jurisdictional authorities for work of this Section.

### **1.5 Salvage and Disposal of Materials**

- .1 Assume responsibility for demolition and removal of elements noted to be removed or altered in the condition they are at time notified of award of demolition contract.
- .2 Items of antiquity, including coin, art, anthropology etc. which are on the site at the time of bidding and when uncovered or unearthed during the course of construction shall remain the property of the Owner and shall be turned over to him immediately and without prejudice.
- .3 All excess materials resulting from the demolition necessary for the project, except as specified or noted on the drawings, shall become the property of the Contractor who shall remove the same as quickly as possible to his designated disposal area. The retention of materials on the site for sale or salvage purposes is forbidden. Burning of materials and/or debris on the site is strictly forbidden.

- .4 Remove, clean, store, and protect all specified salvage items until required to be built into the project.
- .5 Remove debris daily, immediately as it accumulates. Do not overload trucks and otherwise take means to prevent spillage during travel.

### 1.6 Access to Site

- .1 Provide for complete and safe access at all times to the building for the Owner and the public to the areas designated for continuous operations by the Owner.
- .2 Do not impede pedestrian or vehicular traffic on public ways within or adjacent to the premises by Work in progress or stored materials.

## PART 2 - PRODUCTS

Not Applicable

## PART 3 - EXECUTION

### 3.1 Examination

- .1 Before commencing any demolition Work, ensure in examination of the site that all possible factors concerning the demolition have been investigated, and in particular the following are known:-
  - .1 Methods and means available for material handling, disposal, storage and transportation.
  - .2 Method of construction of structures, fixtures and services to be demolished.
  - .3 Disconnection of services to all fixtures completed.
  - .4 Hoarding and temporary barriers installation completed.
- .2 Review demolition Work to be performed in its entirety with the Consultant. Do not proceed without his approval of demolition methods which will be used.

### 3.2 Special Protection

- .1 Ensure that adjacent private and public properties, both within and without the premises, are protected from damage resulting from work of this Section. Protection shall consist of fences, barricades, signs, and substantial constructions to provide physical protection. Property shall include, but not be limited by, structures and their finishes and appurtenances; site improvements; trees, planting and landscaping; furnishings, fixtures, hardware and equipment.
- .2 Protect existing items designated to remain and materials designated for salvage. In event of damage, immediately replace such items or make repairs to approval of Consultant and at no additional cost to the Owner.

- .3 Erect shoring, bracing and other structures to prevent collapse, settlement and movement of property.
- .4 Post danger signs in conspicuous locations to warn persons that demolition is in progress. Barricade all access by unauthorized persons to areas in which demolition is in progress.
- .5 Employ sufficient competent watchmen to guard all portions of the work site during all times outside of regular working hours. This shall include nights, Sundays, holidays, and during strikes and lockouts, until demolition work is completed.
- .6 It is essential that the minimum inconvenience be experienced by neighbourhood premises. Tarpaulins, and spraying with water shall be employed to keep down dust nuisance. Noise shall be kept to a minimum.
- .7 Remove protections and barricades only if and when directed by Consultant.
- .8 Notify the Consultant, Sub-Consultants immediately of any damage to structures, buried and above-ground services, trees or shrubs, bench marks or survey monuments which occurs as a result of Work of this Section.

### **3.3 Existing Services**

- .1 Verify the location of all existing services within the project boundary prior to commencing work. Arrange and pay for the disconnection, capping and plugging of all gas, water, sewer, hydro, telephone and other services to the buildings at the property line. In each case, the utility company involved shall be notified in advance, and its approval obtained before commencing that portion of the work.
- .2 Do not interrupt existing services except as approved by the Consultant. Give the Consultant seven (7) days clear notice of intention to interrupt existing services. In the event existing services are uncovered or disrupted accidentally, make complete restoration on a priority basis and provide adequate protection to avoid further disruption until diversion or alternative arrangements are made.

### **3.4 Schedule of Demolition**

- .1 Commence demolition as soon as all permits are obtained, temporary facilities are in place and when authorized by the Owner.
- .2 Elements noted to be removed and disposed of shall include, but not be limited to the following:-
  - .1 Existing balcony structure.
  - .2 All footings and piers.

**3.5 Schedule of Salvage & Relocation**

- .1 Ensure that the specifications and drawings are referred to for the complete extent of this Work. Carry out all salvage under the supervision of the applicable Subcontractor whose Work includes the reinstallation of that specific product.
- .2 Elements noted to be removed, relocated and reinstalled shall include but not be limited to the following:-

**3.6 Restoration**

- .1 Remove hoarding, barricades and other temporary construction on completion of demolition.
- .2 Reinstate areas immediately adjacent to the work to match the condition of adjacent undisturbed work. Backfill all excavations and compact to provide uniform, even surface.

**END OF SECTION 02110**



## PART 1 - GENERAL

### 1.1 General Requirements

- .1 Division 1, General Requirements, is a part of this section and shall apply as if repeated here.

### 1.2 Work in Other Sections

- .1 Related Work Specified in Other Sections

Section 05100	:	Structural Metal Framing
Section 06200	:	Rough Carpentry

### 1.3 Reference Standards

CSA-A23.1-19 – Concrete Materials and Methods of Concrete Construction  
CSA A23.2-19 – Test Methods and Standard Practices for Concrete  
CAN/CSA-A3001: Portland Cement  
CAN/CSA-A23.5-M86: Supplementary Cementing Materials  
CAN/CSA-A362-93: Blended Hydraulic Cement  
CSA G30.18-09 (R2019): Carbon steel bars for concrete reinforcement  
CSA G30.3-M1983 (R1998): Cold-Drawn Steel Wire for Concrete Reinforcement  
ASTM A820/A820M-16, Standard Specification for Steel Fibres for Fibre Reinforced Concrete.

### 1.4 Samples

- .1 At least (3) weeks prior to commencing work, inform the Consultant of the proposed mix design and proposed source of ready mixed concrete.
- .2 A sample of the finishes shall be prepared and remain as the minimum acceptable standard for the project.

### 1.5 Certificates

- .1 Provide certification that plant, equipment, and materials to be used in concrete comply with requirements of CSA-A23.1.
- .2 Provide certification that mix proportions selected will produce concrete of specified quality and yield and that strength will comply with CSA-A23.1.

### 1.6 Quality Assurance

- .1 The Contractor shall employ an independent inspection and testing company to carry out all testing and inspection as required. The Consultant will appoint the inspection and testing company. The cost of inspection and testing shall be paid by the Contractor, out of the Cash Allowance carried for this testing under Division 1.

- .2 Samples and methods of moulding shall conform to the requirements of CSA-A23.2.
- .3 Additional testing shall be made if there is a distinct change in job conditions or if required by the Consultant or the authority having jurisdiction.
- .4 Compression tests shall be performed in accordance with CSA-A23.2 and good practice.
- .5 Failure to meet strength requirements will result in rejection of materials, strengthening or replacement of those portions that failed to develop the specified strength.
- .6 Concrete slump shall be tested at time that cylinders are cast and at such other times deemed necessary.
- .7 **The addition of water and admixtures on the site is hereby prohibited and unacceptable for the project.**

#### 1.7 **Submittals**

- .1 Submit shop drawings in accordance with Section 01300 Submittals.

#### 1.8 **Waste Management And Disposal**

- .1 Designate a cleaning area for tools to limit water use and runoff.
- .2 Carefully coordinate the specified concrete work with weather conditions.
- .3 Ensure emptied containers are sealed and stored safely for disposal away from children.
- .4 Prevent plasticizers, water-reducing agents and air-entraining agents from entering drinking water supplies or streams. Using appropriate safety precautions, collect liquid or solidify liquid with an inert, non-combustible material and remove for disposal. Dispose of all waste in accordance with applicable local, provincial and national regulations.
- .5 Choose least harmful, appropriate cleaning method which will perform adequately.

### **PART 2 – PRODUCTS**

#### 2.1 **Materials**

- .1 **Formwork:** As specified in Section 03100.
- .2 **Formwork Lumber:**
  - .1 Plywood and wood formwork materials to CSA-A23.1. Formwork materials brought on site shall be new.
  - .2 Panels shall be fabricated for use as form panels, finished one side with form coating, with sealed edges and a minimum thickness of 17mm.

- .3 Panels shall be smooth and free from defects which would show up on concrete surfaces exposed to view.
- .4 Form Coating: Formaseal, as manufactured by Sternson Construction Products.
- .5 Joint Tape: Non-staining, water impermeable, self-releasing.
- .6 Form Ties: Removable or snap-off metal ties, fixed or adjustable length, free of devices leaving holes larger than 25mm diameter in concrete surface, and not leaving metal closer than 25mm to the surface of the concrete.
- .7 Tie Hole Plugs: 25mm dia. tapered P.V.C. hole plugs.
- .8 Reinforcing Steel: Billet steel, grade 400R, deformed bars to CAN/CSA-G30.18 to sizes shown on structural drawings. Where none is shown, provide 15M bars at 300mm centres as minimum steel.
- .9 Wire Mesh: Welded Wire Fabric to sizes and locations shown on drawings. Where none is shown, provide 152x152xMW18.7xMW18.7 W.W.F. one layer as minimum.
- .10 Portland Cement: to CAN/CSA-A3001, Type GU.
- .11 Water: to CSA-A23.1.
- .12 Aggregates: To CSA-A23.1. Coarse aggregates to be normal density. Use blend of 10mm and 20mm for coloured patterned concrete slabs.
- .13 Air Entraining Admixture: To CAN/CSA3-A23.5.
- .14 Chemical Admixtures: To CAN/CSA3-A23.5 water reducing type WN. Consultant to approve accelerating or set retarding admixtures during cold and hot weather placing.
- .15 Non-Shrink Grout: Sternson M-Bed Superflow or approved equal.
- .16 Premoulded Membrane: Shall be Sealtight 7100-312 (PMPC), W. R. Meadows.

## 2.2 Concrete Mixes

- .1 Proportion normal density concrete in accordance with CSA A23.1, to give following properties for concrete in foundation walls, footings and any other unspecified concrete:
  - .1 Cement: Type GU Portland cement, minimum 275 kg/m<sup>3</sup>
  - .2 Maximum 25% slag cement content
  - .3 Minimum compressive strength at 28 days: 25 MPa.
  - .4 Nominal size of coarse aggregate: 20 mm.
  - .5 Slump at time and point of discharge: 50 to 100 mm.
  - .6 Air content: 0 to 3%.

- .2 Proportion normal density concrete in accordance with CSA-A23.1, to give following properties: for concrete in exterior structural slabs and sidewalks/curbs:
  - .1 Cement: Type GU Portland cement, minimum 275 kg/m<sup>3</sup>
  - .2 Maximum 25% slag cement content
  - .3 Minimum compressive strength at 28 days: 32 MPa.
  - .4 Class of exposure: C-2.
  - .5 Nominal size of coarse aggregate: 20 mm.
  - .6 Slump at time and point of discharge: 60 to 100 mm.
  - .7 Air content: 5 to 8%.
- .3 Do not change job mix formula without prior approval of the Consultant.
- .4 In addition to 28 day strength tests, 7 days test may be carried out. If average strength at 7 days is less than 70% of specified 28 day strength, check mix at once and adjust to ensure required strength is obtained.

### PART 3 - EXECUTION

#### 3.1 Workmanship

- .1 All concrete shall be as set forth in CSA-A23.1 and shall be composed of cement, fine and coarse aggregates and water.
- .2 Concrete shall be delivered and discharged within 1½ hours after the introduction of the mixing water at the batch plant.
- .3 Mixing, placing, compaction, curing, hot and cold weather protection shall conform to CSA-A23.1. Use power vibrators in sufficient number and in location and duration to the Consultant's complete satisfaction as required.
- .4 Obtain the Consultant's approval before placing concrete. Provide 24 hour notice prior to placing of concrete.
- .5 Pumping of concrete is permitted only after approval of equipment and mix.
- .6 Ensure reinforcement and inserts are not disturbed during concrete placement in order to maintain proper coverage.
- .7 Prior to placing of concrete obtain the Consultant's approval of proposed method for protection of concrete during placing and curing in adverse weather.
- .8 Maintain accurate records of poured concrete items to indicate date, location of pour, quality, air temperature and test samples taken.
- .9 Do not place load upon new concrete until authorized by the Consultant.

### 3.2 Formwork

- .1 Verify lines, levels and column centres before proceeding with formwork and ensure dimensions agree with drawings.
- .2 Construct forms to produce finished concrete conforming to shape, dimensions, locations and levels indicated within tolerances required by CSA-A23.1.
- .3 Align form joints and make watertight. Keep form joints to minimum.
- .4 Use 25mm chamfer strips on all vertical and horizontal corners of exterior retaining walls as indicated on drawings.
- .5 All surfaces of formwork which face concrete, which will be exposed to view are to be coated with protective form coating to minimize transfer of wood grain to finished concrete.
- .6 Clean formwork in accordance with CSA-A23.1 before placing concrete.
- .7 Re-use of formwork is subject to requirements of CSA-A23.1.
- .8 When forms are stripped during the curing period, cure and protect the exposed concrete.
- .9 Movement and displacement of formwork during construction, variations in excess of specified tolerances and marked and disfigured surfaces that cannot be repaired by specified methods will be considered defective work performed by this Section.
- .10 Reconstruct defective formwork and replace concrete and reinforcement placed in defective formwork at no additional cost to the Owner.

### 3.3 Finishing

- .1 Finish all concrete surfaces in accordance with Section 03350.

### 3.4 Curing and Protection

- .1 Cure and protect newly finished slabs and steps in accordance with CSA A23.1.
- .2 Coat exterior slabs, curbs with curing compound and leave for 30 days. Apply sealer after curing period has expired.
- .3 Cure finished concrete surfaces in a manner which will leave the surface with a uniform appearance and with a minimum of discolouration after drying. Ensure that curing compounds are compatible with adhesives for finishes to be applied later.
- .4 For all concrete slabs that are to remain exposed, curing compound is to be applied at a rate required for use as a sealer/hardener, in accordance with the manufacturer's instructions.

### 3.5 Field Quality Control

- .1 Inspection and testing of concrete and concrete materials will be carried out by a Testing Laboratory designated by the Consultant in accordance with CSA-A23.1.
- .2 The Consultant will take additional test cylinders during cold weather concreting. Cure cylinders on job site under same conditions as concrete which they represent.
- .3 Inspection or testing by Consultant will not augment or replace contractor quality control nor relieve him of his contractual responsibility.

### 3.6 Tolerances

- .1 Cast-in-Place concrete shall be constructed within the dimensional tolerances specified in CSA-A23.1, as specified elsewhere in this section. Concrete floor slabs shall be constructed as moderately flat slabs and within the tolerances listed below.
- .2 Conform in line, level and plumbness to the following tolerances. These are maximum values.
- .3 Variation from vertical, in lines and surfaces of walls piers:

:	In height of 3m (10')	-	6mm (1/4")
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- .4 Variation from level or from grades shown in floors grade:

:	In any 3m (10')	-	3mm (1/8")
:	In any bay up to 6m (20')	-	6mm (1/4")
:	In any 12m (40')	-	12mm (1/2")
- .5 Variation from straight or from correct position in walls:

:	In length up to 6m (20')	-	12mm (1/2")
:	In any 12m (40')	-	12mm (1/2")
- .6 Variation in size and location of sleeves, floor open and the like and in location of bolts, inserts and fastenings:

:		-	6mm (1/4")
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- .7 Variation in location of bolts, inserts, sleeves and fastenings when in group:

:		-	3mm (1/8")
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- .8 Variation in cross-section of slabs, walls and piers:

:	Maximum oversize	-	12mm (1/2")
:	Maximum undersize	-	6mm (1/4")
- .9 There shall be no variations from required level at junction of walls and floors.
- .10 Where drains occur, floors shall be properly and uniformly sloped to allow complete drainage of the area.

### 3.7 Defective Concrete

- .1 Concrete is defective when:
  - .1 Containing visible honeycombing or embedded debris.
  - .2 Concrete damaged by freezing or which is unsatisfactory due to placement at too high a temperature.
  - .3 Average 28 day strength of any three consecutive strength tests is less than specified minimum 28 day strength.
  - .4 Any 28 day strength test result in less than 88% of specified minimum 28 day strength.
  - .5 Cracking occurs in locations other than at control and construction joints.
  - .6 Curing is not carried out strictly according to the specifications.
- .2 Remove and reconstruct in entirety any defective concrete footing, slabs, walls as directed by the Consultant.

### 3.8 Cold Weather Protection

- .1 Refer to CSA Standards CSA-A23.1 and CSA-A23.2 Provisions and Publications. Include for tarped heated enclosures - no non-freeze additives such as calcium will be tolerated on this project.

**END OF SECTION 03300**

## PART 1 - GENERAL

### 1.1 General Requirements

- .1 Division 1, General Requirements, is a part of this Section and shall apply as if repeated here.

### 1.2 Work In Other Sections

- .1 Related Work Specified in Other Sections

Section 03300	:	Cast-in-Place Concrete
Section 05500	:	Miscellaneous Metal

- .2 Products Supplied Under Work of this Section and Installed Under Work of Other Sections

Section 03300	:	To install anchor bolts and loose bearings plates
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### 1.3 Reference Standards

CSA S16-19: Design of Steel Structures  
CSA W59-18: Welded Steel Construction (Metal Arc Welding)  
CSA G40.20-13 (R2018): General Requirements for Rolled or Welded Structural Quality Steel  
CSA G40.21-13 (R2018): Structural Quality Steel  
CSA W48-18 Filler Metals and Allied Materials for Metal Arc Welding  
CAN/CSA G164-18): Hot Dip Galvanizing of Irregularly Shaped Articles  
ASTM F3125/F3125M-18: Standard Specification for Structural Bolts, Steel, Heat Treated 830 MPa Minimum Tensile Strength  
The Ontario Building Code, (O. Reg. 332/12)

- .1 Do structural steel work in accordance with CAN/CSA-S16.14 or latest edition except where specified otherwise.
- .2 Do welding in accordance with CSA W59-18 except where specified otherwise.
- .3 All work shall conform to National Building Code and any other Provincial or local application, provided that, in any case of conflict or discrepancy, the more stringent requirements shall apply and govern.
- .4 CAN/CSA-S16.1 latest edition, "Limited States Design of Steel Structures" shall be the basis for design and construction of all structural steel on this project.



#### **1.4 Design of Details and Connections**

- .1 Design details and connections in accordance with requirements of CAN/CSA-S16, latest edition, to resist forces, moments and shears indicated.
- .2 For non-standard connections, submit sketches and design calculations stamped and signed by qualified professional Engineer registered in the Province of Ontario.
- .3 For standard connections, select details from CISC Handbook of Steel Construction to ensure structural adequacy.
- .4 Submit shop fabrication details stamped and signed by a qualified professional licensed in the Province of Ontario.

#### **1.5 Shop Drawings**

- .1 Submit shop drawings in accordance with Section 01300 Submittals.
- .2 Indicate shop and erection details including cuts, copes, connections, holes, bolts and welds. Indicate welds by welding symbols defined in CSA-W59-18.
- .3 Submit copy of erection drawings to the Consultant for review and reference.
- .4 Submit a copy of stamped shop drawings for the cold formed steel, including all connections.
- .5 Submit all weld procedures pertinent to the work prior to or along with the first submission of shop drawings, for subsequent review and acceptance by the Consultant.

#### **1.6 Storage and Handling**

- .1 Handle all materials with the necessary care to prevent damage to fittings, finishes and alignments.
- .2 Materials damaged due to faulty storage or handling shall be repaired or replaced, without additional expense to the Owner, all to the satisfaction of the Consultant.
- .3 Replace promptly all items verified as received in a damaged condition.

#### **1.7 Examination**

- .1 Examine surfaces with which Work is to be anchored or connected.
- .2 Report to the Consultant, all unsatisfactory conditions likely to prevent or prejudice the proper installation of the work.
- .3 Commencement of Work implies unconditional acceptance of substrate and surface and condition to which all members are to be anchored and secured.

### 1.8 Quantity of Items

- .1 Where a component, device, item or part of material is referred to in the singular number, such reference shall mean as many as are required to complete the work.

## PART 2 - PRODUCTS

### 2.1 Materials

- .1 Structural steel: to CAN/CSA-G40.21 Grade 350W for rolled sections and plates, Grade 350W for Hollow Structural sections.
- .2 Anchor bolts: to CAN/CSA-G40.21, Grade 300W.
- .3 Bolts, nuts and washers: to ASTM A325M.
- .4 Welding materials: to CSA W48 Series.
- .5 Shop paint primer: to CGSB 1-GP-40M.
- .6 Hot dip galvanizing: galvanize steel, where indicated, to CAN/CSA G164, minimum zinc coating of 600 g/m<sup>2</sup>.
- .7 Cold Formed Steel: to CSA S136-16 or latest edition.
- .8 Lintels: As required to complete all work as part of this project. Steel Lintels shall be approved over all openings including mechanical, electrical and architectural drawings and as shown on the drawings.

## PART 3 - EXECUTION

### 3.1 Inspection and Co-ordination

- .1 The Contractor shall field check all dimensions and elevations affecting his trade at the site. All discrepancies shall be reported to the Consultant before proceeding with the work.
- .2 The Contractor shall report in writing all defects in the work prepared under other sections of the Specifications which will affect the work of this Section. Commencement of the work will imply acceptance of previously prepared work.
- .3 Verify all requirements and dimensions of existing, proceeding and following Work before commencing fabrication.

### 3.2 Fabrication

- .1 Fabricate structural steel, as indicated, in accordance with CAN/CSA-S16.1 and in accordance only with reviewed and stamped shop drawings.
- .2 Supply fastenings, anchors and accessories required for fabrication and erection of Work. Make exposed metal fastenings and accessories of same material, texture, colour and finish as base metal on which they occur unless otherwise shown or specified. Keep exposed fastenings to absolute minimum and inconspicuous, spacing them evenly and setting them out neatly. Make fastenings of permanent type.
- .3 Beams shall be rolled sections, combined as noted. Beam connections shall be standard double angle clip type, developing full strength of all the members.
- .4 Clean all steel members by scraping, wire brushing or other effective means to remove loose mill scale, rust, oil or other foreign matter. Surfaces shall be thoroughly dry before painting.
- .5 Apply one (1) shop coat of paint, conforming to CGSB 1-GP-40D primer, to all surfaces except surfaces to be in contact with or encased in concrete and surfaces and edges to be field welded or high tension bolted.
- .6 Apply two (2) shop coats of paint, conforming to CGSB 1-GP-40D primer to all surfaces which will be inaccessible after assembling. Touch up all bolts, welds and surfaces of connecting members damaged during construction.
- .7 All steel exposed to weather shall be hot dip galvanized (no primer).
- .8 All members shall be assembled true and without twists or open joints. Shop connections shall be welded.
- .9 High tensile bolted connections, where used, shall be in accordance with CAN/CSA-S16 latest edition. Holes shall be accurately spaced and of size to allow insertion of bolts of 1.5 mm (1/16") diameter less than hole diameter.
- .10 Welding shall be executed so as to avoid damage or distortion to the work. Welds on exterior work shall be continuous to provide proper weathering; all welds on exposed finished work shall be ground smooth.
- .11 There shall be no burning of holes in members in the shop or field without the permission of the Consultant. If consent is given, burned members shall be finished to an acceptable appearance.
- .12 Mark materials in accordance with CAN/CSA-G40. Do not use die stamping. If steel is to be left in unpainted condition, place marking at locations not visible from exterior after erection. Shop mark bearing assemblies and splices for fit and match.

### 3.3 Erection

- .1 Erect structural steel as indicated in accordance with CAN/CSA-S16 latest edition and in accordance with shop drawings.
- .2 Continuously seal members by continuous welds where indicated. Grind smooth.
- .3 Obtain written permission of the Consultant prior to field cutting or altering of structural members.
- .4 Touch up shop primer to bolts, rivets, welds and burned or scratched surfaces at completion of erection.
- .5 Erection of structural steel on site shall be properly co-ordinated by the Contractor with the work of all other trades. Co-ordinate the work to incorporate all electrical appurtenances, and protect same from damage during erection.
- .6 Bolted assemblies for base connections shall not be tightened until at least 72 hours after the grout pad has been placed.
- .7 All bolts shall be tightened by using a suitable torque wrench, torquing as required in CAN/CSA-S16 latest edition.
- .8 Damaged work will not be accepted on site. Damaged work arriving on site will be returned to the shop for repair and/or refinishing.
- .9 All temporary supports shall be attached to the work in such a manner so as not to mar the surface on the finished section.
- .10 All steel shall be set accurately to the lines and elevations shown on the Drawings.
- .11 Assume full responsibility for the correct plumbing, alignment and setting of all members; set all guys, braces, etc., necessary to maintain the structure during erection, and until such time as the work of other trades is in place.

**END OF SECTION 05100**

## PART 1 - GENERAL

### 1.1 General Requirements

- .1 Division 1, General Requirements, is a part of this Section and shall apply as if repeated here.

### 1.2 Work in Other Sections

- .1 Related Work Specified in Other Sections
  - Section 03300 : Cast-in Place Concrete
  - Section 05100 : Cast-in Place Concrete

### 1.3 References

CSA O121-17: Douglas Fir Plywood  
CSA O141-05 (R2014): Softwood Lumber  
CSA O151-17: Canadian Softwood Plywood  
ASTM A325M – 14: Standard Specification for Structural Bolts, Steel, Heat Treated 830 MPa Minimum Tensile Strength  
CAN/CSA G164-M92 (R2003): Hot Dip Galvanizing of Irregularly Shaped Articles

### 1.4 Source Quality

- .1 Lumber identification: by grade stamp of an agency certified by Canadian Lumber Standards Accreditation Board.
- .2 Plywood identification: by grade mark in accordance with applicable CSA standards.

### 1.5 Shop Drawings

- .1 Submit shop drawings in accordance with Section 01300 Submittals.
- .2 Erection Drawings shall show sizes and locations of all members and give complete location and details for setting anchor bolts and levelling plates. The elevations of all bearing plates shall be clearly shown.

## PART 2 - PRODUCTS

### 2.1 Lumber Material

- .1 General: Lumber shall be spruce/pine/fir number 1 and 2 grades, unless specified otherwise, softwood, S4S, moisture content 19% or less in accordance with following standards in the ratio of 67% and 33% respectively:-
  - .1 CSA 0141-05.
  - .2 NLGA Standard Grading Rules for Canadian Lumber, 2003.

- .2 Plywood: Douglas Fir (DF), spruce plywood conforming to CSA 0121-M1978, standard construction, tongue and groove to thickness shown on drawings. Minimum thickness 15 mm unless noted otherwise.
- .3 Fasteners: Proprietary fasteners toggle bolts, expansion shields and lag bolts, screws and lead or inorganic fibre plugs, explosive actuated fastening devices, recommended for purpose by manufacture. Use stainless steel or galvanized to CSA G164-M1981 fasteners for all exterior fastening and for any damp or moist areas.
- .4 Wood Preservative: Surface-applied wood preservative: clear copper naphthenate or 5% pentachlorophenol solution, water repellent preservative.
- .5 Furring, blocking, nailing strips, grounds, rough bucks: Spruce, pine, douglas fir, S25 type, standard grade, nominal sizes unless noted. All material shall be pressure treated where concealed or installed exterior to the building or built into masonry, concrete or roofs.
  - .1 S2S is acceptable.
  - .2 Board sizes: "Standard" or better grade.
  - .3 Dimension sizes: "Standard" light framing or better grade.
- .6 Material shall be straight, sawn square, true, dressed four sides properly sized, shaped to correct dimensions from nominal sizes noted on Drawings.

## PART 3 - EXECUTION

### 3.2 Furring and Blocking

- .1 Install furring and blocking as required to all space-out and support as required for the project.
- .2 Align and plumb faces of furring and blocking to tolerance of 1:600.

### 3.3 Fasteners

- .1 Frame, anchor, fasten, tie and brace members to provide necessary strength and rigidity.
- .2 Countersink bolts where necessary to provide clearance for other work.

### 3.4 Surface-Applied Wood Preservative

- .1 Treat all surfaces including cut ends of material with wood preservative before installation.
- .2 Apply preservative by dipping, or by brush to completely saturate and maintain wet film on surface, for minimum 3 minute soak on lumber and one minute soak on plywood.

- .3 Re-treat surfaces exposed by cutting, trimming or boring with liberal brush application of preservative before installation.

### 3.5 Installation

- .1 Lay out work carefully and to accommodate work of others. Cut and fit accurately. Erect in position indicated by drawings. Align, level, square, plumb, and secure work permanently in place. Brace work temporarily as required. Join work only over solid bracing.
- .2 Bore holes true to line and to same size as bolts. Drive bolts into place for snug fit, and use plates or washers for bolt head and nut bearings. Turn up bolts and lag screws tightly when installed, and again just before concealed by other work or at completion of work.
- .3 Co-operate with work of other Sections to ensure that unity of actions will ensure orderly progress to meet construction schedule.
- .4 Provide anchors, bolts and inserts, required for attachment of the work of this Section, to those performing the work of other Sections and who are responsible for their installation.
- .5 Work shall include rough hardware such as nails, bolts, nuts, washers, screws, clips, hangers, connectors, and strap iron required for installation of work and all operating hardware required on work of this Section for temporary use.
- .6 Do not attach work by wood plugs or blocking in concrete or masonry. Use lead shields, expansion shields, concrete nails, or similar methods only as approved by the Consultant.
- .7 Do not regard grounds, blocking, furring, and such other fastening provisions as shown on Drawings as exact or complete. Provide required provisions for fastening, located and secured to suit site conditions, and adequate for intended support.
- .8 Cut fastening work into lengths as long as practicable and with square ends. Erect work plumb, in true planes, and fastened rigidly in place.
- .9 Grounds around openings in cavity wall systems, under sills and thresholds to provide continuous support shall be 50 mm (2") minimum thickness, preservative treated.
- .10 Install supports and furring members as required to receive components of cabinetwork.
- .11 Install blocking at roofs, as indicated on Drawings, secured permanently to structure, trimmed and levelled to accommodate roofing components, and to receive flashings.
- .12 All members shall be accurately cut to length, angle and be true to line to assure tight joints.

- .13 Correct alignment and plumb must be maintained until specified lateral bracing is installed. Cutting and altering of trusses is not permitted except by approval by the Engineer. Heavy concentrated loads must not be placed on top of trusses until permanent bracing and decking have been installed. In any event, these temporary loads must not exceed the truss design loads.

### **3.6 Special Protection**

- .1 When it is required that wood maintain dimensional stability and tolerances to ensure accurate installation of later work, store and install it only in dry areas, and where no further installation of moist materials is contemplated.

**END OF SECTION 06100**