THE CITY OF GREATER SUDBURY

CONTRACT GDD08-9
TENDER FOR NEW HOLD WASHROOM AT GREATER SUDBURY AIRPORT

Issued by the
Supplies & Services Section
Finance Division
on behalf of
Greater Sudbury Airrport

DARRYL MATHE,
MANAGER OF SUPPLIES & SERVICES/PURCHASING AGENT

Cost for Document Pick-Up:

$25.00 plus GST
($26.25)

2008-07-17

TO: ALL BIDDERS

SUBJECT: CONTRACT GDD08-9, TENDER FOR A NEW HOLD WASHROOM AT THE GREATER SUDBURY AIRPORT

The City of Greater Sudbury is requesting tenders to the supply of all labour, materials and equipment for the construction of New Hold Washroom at the Greater Sudbury Airport, 2126 Skead Road, Sudbury.

A **Mandatory Information Meeting** has been scheduled to take place at 10:00 a.m., on Thursday, July 24th, 2008 at the Greater Sudbury Airport, 2126 Skead Road, Sudbury. Bidders are asked to meet at the Information desk in the Airport Terminal. **Only those bidders who attend this meeting will be allowed to submit a tender for this project.**

Attached is the subject Tender that must be submitted using the address label sheet provided to the City of Greater Sudbury, Supplies & Services Section, 2nd Floor, Tom Davies Square, 200 Brady Street, Sudbury **NO LATER THAN** 11:00 a.m., (our time) on Wednesday, July 30th, 2008.

Tenders will be opened by the Tender Opening Sub-Committee, the same day at 2:30 p.m., in Committee Room C-21 Main Floor, Tom Davies Square. Results from the opening will be posted to the City's website by end of business day, on Wednesday, July 30th, 2008.

Communications

Communication (including clarification required from a technical perspective and/or from a purchasing perspective, with the exception of the Personal Information Release Form) between the CGS and prospective vendors MUST BE in written format via email or fax. To facilitate comprehensive responses, Proponents are encouraged to email their questions as soon as possible to tenders@greatersudbury.ca or fax to (705) 671-8118. The deadline for questions is 10:00 am, Monday, July 21st, 2008. No verbal instructions or verbal information to Proponents will be binding on the CGS. **Do not contact any other staff persons, other than the Supplies & Services Section staff, regarding this Tender.**
The lowest or any tender not necessarily accepted.

Yours truly,

Leigh Lesar
Supplies & Services Co-ordinator

cc: B. Johnston, CEO, Sudbury Airport

CONTRACT GDD08-9
TENDER FOR CONSTRUCTION OF A NEW HOLD WASHROOM AT THE GREATER SUDBURY AIRPORT

CHECKLIST

The following checklist has been included to ensure that all of the City's requirements are met:

1. Each bidder shall submit with their Tender, a bid deposit in the form of a Bid Bond or Certified Cheque or Irrevocable Letter of Credit or Money Order **with an Agreement to Bond** in the amount of **$6,000.00**

   The successful General Contract bidder shall supply, within ten (10) days of written notification by the Owner of the acceptance of his Tender, guarantee bonds made in favour of the City of Greater Sudbury, as follows:

❑	Performance Bond	100% of the Stipulated Sum Contract
❑	Labour and Material Payment Bond	100% of the Stipulated Sum Contract

   Delivery by the bidder to the owner of such bonds shall be a condition precedent to formalization of a contract. ❑

   OR

   Each bidder shall submit with their Tender, a bid deposit in the form of a Certified Cheque or Irrevocable Letter of Credit or Money Order in the amount of **$7,500.00** which will serve as a **performance guarantee** for the successful bidder until the completion of the project. ❑

2. The successful bidder will be required to submit Proof of Insurance as noted in the tender document. ❑

3. The successful bidder will be required to submit to the City of Greater Sudbury, a W.S.I.B. Clearance Certificate ❑

4. Proponents have completed the Addendum Acknowledgement section if an addendum(s) has been issued. Failure to acknowledge the receipt of an addendum on the Tender Bid Form could result in your tender being rejected. ❑

5. Please provide one (1) complete copy of your tender submission designated as the original. ❒

6. The work will commence upon award and will be completed no later than two to three weeks following contract award. ❑

7. Validity of Tenders - See Schedule "C' to By-law 2006-270, as amended. ❑

8. The Tender Bid Form provided must be used. Alteration of the Tender Bid Form is prohibited. If white out is used, please initial your corrections. ❑

9. Ensure address label-sheet is affixed to the front of your sealed tender envelope/package submission. The Supplies & Services section will not be held responsible for envelopes or packages that are not labelled. ❑

10. The Terms and Conditions and Specifications have been carefully reviewed and all requirements have been submitted with your tender. ❒

11. The Fair Wage Policy **is not applicable to this project.** ❑

12. The sub-contractor list has been completed and submitted. Failure to submit the sub-contractor list will result in automatic rejection of your tender. ❑

CONTRACT GDD08-9

TENDER FOR CONSTRUCTION OF NEW HOLD WASHROOM AT THE GREATER SUDBURY AIRPORT

TENDER/PROPOSAL TERMS & CONDITIONS

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CITY OF GREATER SUDBURY
TERMS AND CONDITIONS

The undersigned hereby bids to perform or supply the work covered by this Tender/Proposal and must conform to the City Purchasing By-Law 2006-270.

1. DEFINITIONS

In this Proposal, as well as in all specifications, the following definitions shall apply unless otherwise indicated:

a) "City" means The City of Greater Sudbury;

b) "Bidder" or "Tenderer" or "Proponent" means the individual, firm, company or Corporation submitting Tender/Proposals to the City;

c) "Work" means any of the under-noted or any combination thereof;

(i) supply or provision of articles or materials;
(ii) supply of labour;
(iii) performance of functions or tasks;
(iv) provision of services;
(v) equipment operated or not operated; or
(vi) construction or repairs as specified;
(vii) security deposit

d) "Total Acquisition Cost" means an evaluation of quality and service in the assessment of a Bid and the sum of all costs including purchase price, all non refundable taxes, warranties, local service costs, life cycle costs, time of completion or delivery, inventory carrying costs, operating and disposal costs for determining the Lowest Compliant Bid.

2. SCOPE OF WORK

Please see specifications.

3. PROPOSAL DESIGNS (Not applicable)

The Evaluation Committee will accept up to a maximum of three (3) conceptual design options from each Bidder. Ensure that all designs are labelled accordingly and crossed referenced within the submission to pricing structures, Provide photos and illustrations of proposed concept.

4. DRAWINGS

The City Engineering Services Section shall be provided with a set of drawings for this project.

5. COPIES OF TENDER

Bidders are requested to provide one original (1) copy of their tender. Please attach your bid deposit to the Original Tender Bid Form.

6. ADDENDA

Bidders may, during the Tender/Proposal period, be advised by addenda of required additions to, deletions from, or alterations in the requirements of the Tender/Proposal documents.

A copy of all Addenda shall be either hand delivered, sent by courier, electronic correspondence, or fax, to each prospective Bidder who has obtained Tender/Proposal Documents. Also, notice of the addenda will be posted on the City's Web Page.

Where an addendum must be issued later than two days prior to the specified closing date, the closing date may be extended to allow four working days between the issuance of the addendum and the revised closing date. **This extension of the closing date is optional and shall be used as required.**

Addenda will be issued under the following circumstances:

a) Interpretation of Tender/Proposal documents as a result of questions from prospective Bidders;

b) Revision, deletions, additions or substitutions of any portion of Tender/Proposal documents.

All such changes as addressed in the addenda shall become an integral part of the Tender/Proposal documents and shall be allowed for in arriving at the Tender/Proposal price.

(Only applicable If the document is posted on the City's web) In order to view Addendums on the City's website, you must download the original document and the Addendum will appear at the beginning.

7. COSTS INCURRED BY PROPONENTS

All expenses involved with the preparation and submission of Proposals to the City of Greater Sudbury, or any work performed in connection therewith shall be borne by the proponent. No payment will be made for any Proposals received or for any other effort required or made by the proponent prior to commencement of work as defined by the Proposal approved by the City of Greater Sudbury.

8. WHEN BIDS EXCEED ESTIMATES (For tenders only)

Re-tendering should be avoided when the bids exceed the estimate and the bid results have been read out at a Public Tender opening as the cost of re-tendering is very high. Therefore, we reserve the right to negotiate with the lowest formal Bidder.

9. CCDC 2-1994 CONTRACT (NOT applicable)

The Successful bidder will be required to enter into and execute a CCDC 2-1994 Contract with the City of Greater Sudbury. The General Conditions of the Stipulated Price Contract, Canadian Construction Document CCDC 2-1994 shall form part of the Tender Contract, and together with all other drawings and documents, shall govern the work of all trades under this contract. Further, the successful General Contractor shall be required to supply General Commercial Liability Insurance in the amount of $3 Million, not $2 Million as noted in the CCDC2 - 1994 contract and related supplementary conditions.

10. PRE-QUALIFICATION (When applicable)

When applicable, Bidders will be required to pre-qualify to submit a Tender/Proposal. **The City reserves the right to pre-qualify those proponents who have had no experience with the City.** The pre-qualification may be a separate process or part of the Tender/Proposal call. The following are some of the requirements that must be submitted prior to the specified deadline for application for pre-qualification:

a) A letter from the Bidder's Bank Manager addressed to the City of Greater Sudbury, attesting to the Bidders' financial capability to complete the contract.
b) A written schedule of **all** contracts successfully completed by the Bidder in the previous three (3) years.
c) Include the value of each contract, the name of the owner, and the name and telephone number of the owners contact person who is willing and able to attest to the Bidder's capability to perform this contract work.
d) The name, qualifications, and experience of the proposed superintendent for this contract work.
e) A list of equipment available for this contract work, and whether "owned" or "rented".

The envelope containing details should be clearly marked with the Contract Number, Contract Title and the word 'Pre-Qualification'. In some cases an address label will be provided.

Each Bidder who has submitted a pre-qualification application, will be notified as soon as they have been pre-qualified. The Bidder will then be advised how and where he may receive a Tender/Proposal bid form and/or envelope.

11. PRESENTATIONS

The City of Greater Sudbury may require proponents to give a presentation in support of their proposal.

12. WORK LOCATION - As per attached or specified.

13. GENERAL CONDITIONS, STANDARD SPECIFICATIONS & DRAWINGS

Plans and specifications, if applicable, will be attached. All work shall be carried out in accordance with the Ontario Building Code and current Specifications and Drawings.

All tenders/proposals shall remain valid and open for acceptance for a period of ninety (90) days from the tender/proposal closing. Bidders shall ensure that sub-trade and supply quotations are valid for a sufficient length of time to accommodate the above-noted validity period.

14. CLOSING DATE AND OPENING OF TENDERS/PROPOSALS

Tender/Proposals shall be prepared on the forms provided and are to be sealed and submitted in the tender envelope provided or using the address label sheet provided and identified as a Tender/ Proposal for the contract concerned on the Tender/Proposal envelope. The Tender/Proposal(s) will be opened by the Tender Opening Committee of the City of Greater Sudbury. Bidders need not be present at the opening of the Tender/Proposals unless specifically invited for the purpose of explaining some detail pertaining to their bid. Tender/Proposal Opening Results may be posted to the City's Web Page at www.greatersudbury.ca. Bidders will be advised by letter of the acceptance, or otherwise of their tender, as soon as the contract has been finally awarded.

15. CONFIDENTIALITY

The Contractor, on behalf of itself, its directors, officers, employees, agents and subcontractors, acknowledges that for the purposes of this tender, it is bound by the provisions of the Municipal Freedom of Information and Protection of Privacy Act, R.S.O. 1990, c. M.56, as amended by (the "Act"). The contractor agrees that all information provided to it by the City, or gathered in the course of providing services is being provided on a confidential basis for the purposes of the administration of the services being provided by the Contractor and is protected by the provisions of the Act.

The contractor shall not use, at any time during the term of this Contract, or thereafter, any of the information acquired by it during the course of carrying out the services provided for herein for any purposes other than the provision of the services or such other purposes authorized in writing by the City.

16. STAGES OF PROPOSAL EVALUATION (RFP's only)

City Representatives will conduct the Evaluation of Proposals as follows:

An initial review by the City to determine which Proposals meet the minimum requirements. Proposals which do not comply with the City's minimum requirements may be disqualified.

The next step will consist of a scoring by the City of each qualified proposal on the basis of the rated criteria noted below. The highest scored Proposal will be selected.

At the discretion of the City, the City may choose to invite up to three (3) short-listed proponents to prepare a formal presentation to the City. In addition, short-listed proponents may be asked to attend interviews or negotiations with the City, provide a tour of facilities and provide additional general information prior to selection.

17. EVALUATION GRID CRITERIA (RFP's only)

The following is the evaluation grid criteria outlining how your proposal will be scored:

Description	**Points**

18. LOCAL PARTNERSHIPS

The City encourages out of town proponents to seek local partner(s) where local expertise exists.

19. NEGOTIATIONS AND REVIEW OF OFFERS (RFP's only)

Discussions may be conducted with proponents for the purpose of clarification of their proposals to assure full understanding of and responsiveness to the solicitation requirement.

All proposals will be evaluated using the evaluation grid criteria noted unless the proposal does not meet the minimum requirements and are therefore not short-listed. Once the evaluation committee has reviewed the initial proposal submissions using the evaluation grid, the evaluation committee will recommend an award to a specific firm, if clear-cut superiority of an offer is obvious.

The City reserves the right to request a best and final offer from only those proponents meeting our full requirements or from the short list developed by the evaluation committee.

All information will be kept under strict security until after an award recommendation has been made.

All discussions and negotiations must be coordinated through the Supplies & Services Office. Do not contact any Municipal Staff regarding this RFP other than the Supplies & Services Section Staff.

20. SUBSTITUTIONS

Where, if pursuant to the contract documents, the Bidder is required to supply an article or group of related articles designated by trade or supplier's name followed by the words "or approved equal" or similar such terminology, the Tender/Proposal shall be based only upon supplying the article or group of articles so designated, which shall be regarded as the standard of quality required by the specifications.

No ruling on a proposed substitution and "approved equal" will be made prior to acceptance of the Tender/Proposal. No substitutions shall be made without the prior written approval of the appropriate General Manager or their designate. No Tender/Proposal price shall be based on a presumed acceptance by the appropriate General Manager or their designate of a substitute item or supply.

21. TIPPING FEES

The cost of the tipping fees to dispose of excess materials on City Landfill sites will be paid by the City.

22. TAXES, DUTIES AND FREIGHT

The appropriate taxes will be charged and indicated in the Total Bid Price. The following government tax requirements are summarized only and full particulars are contained in Section 108-10 of the General Conditions which shall, in cases prevail.

a) Ontario Provincial Sales Tax, (PST)

Ontario Provincial Sales Tax shall be included in the sums and rates for materials that enter into and form part of the works.

b) Federal Goods and Services Tax, (GST)

Applicable Federal Goods and Services Tax shall not be included in the prices quoted. GST shall be added at the end of the Schedule of Unit Prices to arrive at the Total Tender/Proposal Price or Contract Price.

c) Changes to Government Taxes

Where a change in Canadian Federal or Provincial taxes occur after the Tender/Proposal Closing Date for a contract, and this change could not have been anticipated at the time of bidding, the City will increase or decrease contract payments to account for the exact amount of tax involved. Claims for compensation for additional tax cost shall be submitted the Bidder to the City Engineer. Such claims for additional costs shall be submitted not later than 30 days after the date of acceptance of the work.

Prices shall be F.O.B. destination shown and shall include all fees, charges, surcharges and/or expenses associated with the delivery of any kind.

23. PERMITS/LICENCES/APPROVALS

Unless otherwise expressly agreed by the City in writing, the successful proponent shall be responsible for **applying for**, **obtaining and maintaining**, at its own cost (with the exception of Building Permit **fees**, municipal Site Plan Approval or Committee of Adjustment application **fees**) all necessary permits, licences, consents and approvals relating to the provision of Services in accordance with the Contract and shall not do or suffer to be done anything in violation of any such permits, licences, consents and approvals. If the attention of the Successful proponent is called to any such violation on the part of the successful proponent, or of any person employed or engaged by the successful proponent, the successful proponent shall immediately desist from and correct such violation.

Further, Upon completion of work, the Bidder must furnish final certificates of approval by the inspecting authority

24. AWARD

The City reserves the right to award by item, or part thereof, groups of items, or parts thereof, or all items of the Tender/Proposal, and to award contracts to one or more Bidders submitting identical Tender/Proposals as to price; to reject any and all Tender/Proposals or in whole or in part; to waive technical defects, irregularities and omissions if, in so doing, the best interests of the City will be served.

Should the City receive only one (1) Tender on commodities/services that have a known multiple source potential, the right is reserved to recall or cancel the competition or to negotiate the prices/terms offered by the Bidder.

The City reserves the right to make awards within ninety (90) days from the date Tender/Proposals are opened, unless otherwise specified in the Tender/Proposal, during which period Tender/Proposals shall not be withdrawn unless the Bidder distinctly states in his Tender/Proposal that acceptance thereof must be made in a shorter specified time.

A Bidder must be prepared, if requested, to present evidence of experience, ability, service facilities and financial standing necessary to meet satisfactorily the requirements set forth or implied in the Tender/Proposal. All work must be scheduled and approved by the proper City employee at the appropriate City facility. The lowest or any Tender/Proposal not necessarily accepted.

25. EXECUTION OF CONTRACT

The Bidder agrees that, notwithstanding anything to the contrary in this Contract, that a maximum of ninety (90) days shall be allowed between the date that Tender/Proposals are opened and the date that a Tender/Proposal is awarded, cancelled, or recalled.

Following contact award, the City shall notify the successful Bidder that his Tender/Proposal had been accepted. The formal contract agreement will be sent to the successful Bidder in person or by mail, with instructions on how to properly complete and sign the document.

The successful Bidder is to be allowed not more than fourteen (14) days from receipt of the document for execution of the contract document. Failure to execute the contract documents or to provide the necessary guarantees, insurance, etc. within the specified time may result in the forfeiture of the Tender/Proposal Deposit.

There shall be no variation or substitution from this Tender/Proposal unless approved in writing by the Manager of Supplies and Services or his designate.

Receipts of the goods, materials, equipments, work or service shall not waive any of the terms and conditions hereof. Defective goods, materials or equipment will be returned at the supplier's risk and expense.

Failure to deliver and/or complete within the times set out within this document, shall entitle the City to cancel this Tender/Proposal without incurring or being liable for any costs, fees, charges or surcharges of any kind whatsoever.

Time to be of the essence of this Tender/Proposal.

26. ASSIGNMENT

It is mutually agreed and understood that the Bidder shall not assign, transfer, convey, sublet or otherwise dispose of his contract or his right, title or interest therein, or his power to execute such contract to any other person, firms, company or Corporation without the previous written consent of the appropriate General Manager or designate.

27. PRE-CONSTRUCTION MEETING

A pre-construction meeting shall be scheduled with the successful Bidder, following contract award. The Bidder will be required to submit to the City the following information at that time, namely:

a) A construction "Progress Schedule" indicating clearly the proposed order and time allowance for various phases of the work in sufficient detail to show weekly progress.

b) A listing of sub-contractors and suppliers that the Bidder wishes to utilize for completing work on the contract.

c) Requirements for Building Construction and Renovation Contracts: the successful Bidder(s) must provide a copy of a current City of Greater Sudbury Electrical and/or Plumbing License for any Bidders who plan to carry out the work as outlined in the contract specifications. Licenses must be provided at the pre-construction meeting.

28. WORKERS' SAFETY AND INSURANCE

Bidders shall submit, prior to commencement of work, or part of a pre-qualification, a certificate of good standing from the Workers' Safety and Insurance Board of Ontario or independent status.

a) Please provide the following:

i) Workplace Safety & Insurance Board Firm Number
ii) Workplace Safety & Insurance Board Account Number
iii) a "Clearance Certificate" issued by WSIB indicating that the Bidder's account is in good standing.

b) The bidder understands and agrees that the provisions of the Occupational Health & Safety Act and Regulations and the City's Health Safety policies will be strictly adhered to at all times.

c) The bidder will provide the following equipment when reporting on construction, renovation or service contracts, where required:

Hard hat; reflective traffic vest; first aid kit; flares; fire extinguisher; hearing protection; eye protection; CSA approved foot wear, and that the equipment will be maintained in good operating order.

d) The WSIB does recognize "Independent Operators" in the construction industry. This individual will have the following characteristics:

- offers services to various firms; reports to the government as a self-employed business (Revenue Canada/GST); owns and operates his/her equipment.

This person, therefore is not automatically covered for WSIB purposes. This person must contact WSIB for a "worker status ruling" as an independent operator and subsequently provide the City with a copy of the letter from the WSIB**.**

29. CONTRACT GUARANTEE AND INSURANCE

The bidder hereby agrees on acceptance,

a) to perform this contract in accordance with the terms hereof;

b) to save the City, its agents or employees, harmless from liability of any kind for the use of any composition, secret process, invention, article or appliance furnished or used in the performance of the contract of which the Bidder is not the patentee, assignee or licensee;

c) to guarantee the work for a period of one (1) year unless otherwise specified herein, such guarantee to be against defective material or workmanship and to make good any consequential damage as a result of such damage or defect or repairs;

d) to furnish adequate protection from damage for all work, to repair damage of any kind, for which he or his workmen are responsible, to the premises or equipment, to his own work or the work of other persons;

e) to pay for all permits, (with the exception of Building Permits), licenses and fees and to comply with all by-laws and regulations of the City and other lawfully constituted authorities and with all relevant statutes or regulations;

29. CONTRACT GUARANTEE AND INSURANCE (Continued)

f) must carry Comprehensive General Liability (bodily injury and property damage) in the amount of three million ($3,000,000) dollars unless otherwise stated. The Comprehensive General Liability Insurance will include coverage for completed operations and contractual liability under this contract. The successful Bidder will be required to provide the City with insurance certificates evidencing the Bidder's compliance certificate of insurance and insurance policies must clearly state that the City of Greater Sudbury as an additional name insured. Before commencement of the work, the Bidder shall provide the City with a certified copy of the insurance.

g) The Liability Insurance must cover the use of explosives prior to such use when the work involves the use of explosives. The Bidder shall be solely responsible for all damage, loss or costs resulting directly or indirectly from the use of explosives. The Bidder shall indemnify and save harmless the City of Greater Sudbury from and against all claims, demands, loss, damages and costs resulting directly or indirectly from the use of explosives.

With respect to the Comprehensive General Liability Insurance, the City of Greater Sudbury must be added as additional insured.

The certificate(s) of insurance and copies of insurance policy(ies), each stating that this insurance is the primary insurance for purposes of the Bidder's General Liability and property damage and any other claims against the City, must be filed with the General Manager of Public

Works within fourteen (14) days of official notification of contract award. The City of Greater Sudbury reserves the right to approve all Certificates of Insurance.

This policy must contain a "No Exclusion for Blasting Clause".

The insurance coverage noted shall be maintained in force throughout the term of the contract. The policy shall provide the City 30 days written notice of any cancellation. The Bidder shall be responsible for deductible amounts under the policies.

All risk property insurance shall be in joint names of the Bidder and the City insuring not less than the sum of the amount of the contract price. The coverage shall be maintained continuously until 10 days after the date of the final certificate of payment.

Automobile Liability Insurance:

Automobile liability insurance in respect of licenced vehicles shall have limits of not less than $2,000,000 insurance per occurrence for bodily injury, death and damage to property covering all licensed vehicles owned or leased by the Bidder and endorsed to provide the City with not less than 30 days notice in writing in advance of any cancellation.

h) to comply with the provisions of the Occupational Health and Safety Act, Regulations and the City of Greater Sudbury Health and Safety Policies, and the Bidder further agrees that the City shall be at liberty to terminate this contract or halt all or any part of the work there under without incurring any liability to the Bidder, should the Bidder be in breach of the aforesaid Act, Regulations or Policies;

i) to save the City, its agents or employees, harmless from liability of any kind to the Worker's Safety and Insurance Board arising out of the performance of this contract;

j) to employ only licensed tradesmen where so required by law and to furnish satisfactory proof thereof when required by the City.

29. CONTRACT GUARANTEE AND INSURANCE (Continued)

k) Supervision:

The Bidder shall keep the Contract under its control and shall not assign, transfer or sublet any portion without first obtaining the approval of the City. The consent of the City to any such assignment, transfer, or subletting shall not relieve the Bidder of any responsibility for the proper commencement, execution and completion of the operation according to the terms of the contract. The Bidder shall receive all notices, communication, orders, instructions, or legal service as if it were performing the work with its own equipment and personnel.

The Bidder shall exercise competent supervision of work at all times through a supervisor who has authority to receive on behalf of the Bidder any orders or communications relating to the Work. Any supervisor or worker who is not acceptable to the City, by reason of incompetence, improper conduct, etc., shall be replaced by the Bidder forthwith.

The Bidder shall abide by the hours of work for occupations involved in accordance with the law of the Province of Ontario or Government of Canada.

For your convenience, the Certificate of Insurance can be downloaded from the City's Web Page at www.greatersudbury.ca.

30. DEPOSIT

a) Each bidder shall submit a Bid Bond, Certified Cheque or Irrevocable Letter of Credit or Money Order **in the amount of $6,000.00**, together with an Agreement to Bond.

OR

b) A Certified Cheque, Irrevocable Letter of Credit or Money Order in the amount of **$7,500.00** which will serve as a performance guarantee until the completion of the project.

The Tender/Proposal deposit of the lowest or successful Bidder shall be retained by the Owner until the contract has been successfully executed and all terms have been fulfilled. This is normally 60 days after award has been made.

Bidder deposit cheques will be returned to unsuccessful Bidders no later than two weeks after the contract award.

A bid deposit from any previous contract is not an acceptable alternative for the bid deposit requested.

The successful Bidder may substitute an Irrevocable Letter of Credit from a Chartered Bank in place of the Certified Cheque. The Irrevocable Letter of Credit should be on the City's form, attached.

Failure to submit the Tender/Proposal deposit in the manner hereinbefore set out will cause a Tender/Proposal to be rejected as an incomplete Tender/Proposal.

If, in the opinion of the Manager of Supplies & Services, General Manager or designate, the Bidder refuses or neglects to perform the work required under this specification in an orderly manner without delay, The City of Greater Sudbury may cancel the contract and demand forfeiture of the monies represented by the deposit cheque and the said City of Greater Sudbury may make such other arrangements for the continuation of the contract as may be deemed advisable and in the best interest of the said City.

Upon such cancellation of the contract, the Bidder shall be entitled to payment for that portion of the work which, in the opinion of the Manager of Supplies & Services, he has completed on the date of cancellation.

In the event of default or failure on the Bidder's part so to do, the Bidder agrees that the City shall be at liberty to retain the surety or sureties, cash, certified cheque, letter of credit, or bid bond deposited by the Bidder to the use of the City and to accept the next lowest or any Tender/Proposal, or to advertise for new

30. DEPOSIT (Continued)

Tender/Proposals, or to carry out the work in any other way it may deem best and the bidder also agrees to pay the City the difference between this Tender/Proposal and any greater sum which the City may expend or incur by reason of such default or failure, or by reason of such action on the part of the City, including the cost of advertisement for new Tender/Proposals, and to indemnify and save harmless the City and its officers and servants from all loss, damage, cost, charges and expenses which it or they may suffer or be put to by reason of any such default or failure.

31. PERFORMANCE GUARANTEE (Not applicable)

If submitting Option 30a) the successful Bidder shall supply, within ten (10) days of written notification by the Owner of the acceptance of his Tender/Proposal, guarantee bonds made in favour of the City of Greater Sudbury, as follows:

1.	Performance Bond	100% of the Stipulated Sum Contract
2.	Labour and Material Payment Bond	100% of the Stipulated Sum Contract

Delivery by the bidder to the Owner of such Bonds shall be a condition precedent to formalization of a contract.

Costs of such bonds shall be included in the Stipulated Sum bid.

32. RISK

The work shall remain at the risk of the bidder until delivery of the work covered by this Tender/Proposal.

33. HOLDBACK

In accordance with the Construction Liens Act, a hold back in the amount of 10% of the total Tender/Proposal bid shall be enforced for a period of 45 days after substantial completion.

34. SOILS REPORTS

These reports are prepared for design purposes, and when provided to the Bidders, are for information purposes only. Bidders bidding on or undertaking the works must rely on their own investigation and interpretation of this information, and draw their own conclusions as to how this will affect their bidding and construction techniques.

35. MATERIALS/EQUIPMENT

CSA or ESA Approval or other approved Agencies - all electrical equipment and component parts must be Canadian Standard Association (CSA) approved or Electrical Safety Authority (ESA) approved or other approved agencies.

a) All materials required by the bidder in carrying out the terms of this contract shall be supplied at his expense.

b) The bidder shall make or cause to be made and shall maintain an inventory of all hazardous materials and all hazardous physical agents that are present in the materials utilized by the Bidder in carrying out the terms of this contract, in accordance with the Occupational Health & Safety Act, as amended and the Controlled Products Regulations under the Workplace Hazardous Materials Information System, as amended.

35. MATERIALS/EQUIPMENT (continued)

c) The Bidder shall ensure that:

(i) every container utilized in carrying out the terms of this contract that contains hazardous material is and remains labelled in the prescribed manner. The bidder ensures that;

(ii) an unexpired material safety data sheet, containing such information and in such form as may be prescribed by the above-noted legislation or any other such legislation, is obtained or prepared by the Bidder, and;

iii) and material safety data sheets required by Clauses (i) & (ii) are made available by the Bidder in compliance with the above-noted legislation or any other such legislation.

d) The bidder will meet current and applicable standards of the Occupational Health & Safety Act, Regulations and the City of Greater Sudbury Health and Safety Policies.

e) Bidder is responsible for Pre-Start Health & Safety Review.

36. PAYMENT

Where there is a question of non-performance involved, payment in whole or in part against which to charge back any adjustment required, will be withheld.

No money shall become due or be payable under this contract unless and until a certificate therefore shall have been signed by the said Manager of Supplies and Services, General Manager or designate, the possession of which is hereby made a condition precedent to the right of the Bidder to be paid or to maintain any action for such money or for any part thereof.

Progress Payment - will only be provided if it is part of the contract and the terms are agreeable to both the Bidder and the City.

37. QUANTITIES

Where quantities are set out in a Schedule of Unit Prices which forms part of the contract documents, it is pointed out that these quantities are approximate only and are given as a basis for comparing Tender/Proposals only.

Payment will be based on the final quantities used. In the case of an error in extending the unit prices, the unit price shall be used to determine the corrected Tender/Proposal price.

The prices bid by the bidder shall include all costs incurred as a result of carrying out the work under winter conditions.

Contingency Allowance: Must be included in the bid price and will not be accepted as an addition unless through a change order.

38. CANCELLATION OR DELETION

The City reserves the right to reject any or all Tender/Proposals and the lowest or he highest, as the case may be, will not necessarily be accepted.

The City reserves the right to cancel or delete any portion of the work and the Bidder agrees to such cancellation or deletion without any claim whatsoever because of such cancellation or deletion.

38. **CANCELLATION OR DELETION** (continued)

The City, in its uncontrolled and unfettered discretion, may declare a specific work not within the intent of this contract because of scope or quantity and reserves the right to call and let a separate Tender/Proposal for a similar work covered hereby and the Bidder acknowledges such right and waives any claim for the City's exercise thereof in good faith.

Notwithstanding the acceptance of a Tender/Proposal or the awarding of the contract by the Manager of Supplies and Services, the contract shall not become effective and shall not be binding upon the municipality until a written contract embodying the instructions, specifications, terms and conditions set out in the Tender/Proposal documents and the accepted Tender/Proposal of the successful Bidder, has been signed by the Manager of Supplies and Services/Purchasing Agent.

In the event of strikes, accidents or unexpected events causing stoppage of work, the City reserves the right to suspend this contract.

39. WITHDRAWAL OF OFFER

A bidder may request that his or her submitted tender be withdrawn, up until the closing time for a particular contract. Withdrawals can only be made in person and the bidder wishing to withdraw from a particular Tender must attend at the Purchasing Agent's office and execute an appropriate withdrawal form, signed by a principal of the bidder, or provide a letter from the bidder, signed by a principal, withdrawing the Tender. The Agent and Treasurer together shall then open the Tender Box, retrieve the withdrawn Tender and hand it back unopened to the bidder. The completed withdrawal form, specific to the time of return, shall then be signed by the Agent and Treasurer, placed into the Tender Box and the Tender Box re-locked.

The withdrawal of a tender does not disqualify a bidder from submitting another tender for the same contract provided that all of the tender procedures are observed and the new bid is deposited in the Tender Box prior to the terminal time for closure. However, unless withdrawal
procedures have been followed, more than one (1) Tender from the same bidder may result in the disqualification of the bidder.

The Tender Deposit shall be forfeited to the City when a bidder attempts to withdraw his or her tender after tenders have been opened, in addition to any consequence or legal penalty that may apply.

40. INDEMNIFICATION (HOLD HARMLESS)

The successful Proponent shall indemnify and hold harmless the City of Greater Sudbury, its officers, council members, partners, agents and employees from and against all actions, claims, demands, losses, costs, damages, suits or proceedings whatsoever which may be brought against or made upon the City of Greater Sudbury and against all loss, liability, judgements, claims, suits, demands or expenses which the City of Greater Sudbury may sustain, suffer or be put to resulting from or arising out of the Successful proponent's failure to exercise reasonable care, skill or diligence or omissions in the performance or rendering of any work or service required hereunder to be performed or rendered by the successful proponent, its agent, officials and employees.

41. THE BIDDER/PROPONENT DECLARES THAT:

a) No person, other than the Bidder has any interest in this Tender/Proposal or in the contract proposed to be entered into.

b) This Tender/Proposal is made without any connection, knowledge, comparison of figures or arrangements with any other person or persons, making a Tender/Proposal for the same work, and is in all respects fair and without collusion or fraud.

c) That several matters stated in the said Tender/Proposals are in all respects true.

d) The Bidder has carefully examined the locality and site of the proposed works, and offers to enter into a contract and to do all the work, on the terms and conditions, and under the provisions herein set forth, and to accept full payment therefore in accordance with the schedule of prices hereto annexed, and the Bidder also agrees that this Tender/Proposal is to continue open to acceptance until this Tender/Proposal is executed on behalf of the City and that the City may at any time without notice, accept this Tender/Proposal whether any other Tender/Proposal has been previously accepted or not, and the Bidder hereby agrees that if the Bidder withdraws this Tender/Proposal before the City shall have considered the Tender/Proposal and awarded a contract, the amount of the deposit on this Tender/Proposal shall be forfeited to the City.

e) No member of Council or employee of the City has any pecuniary interest, direct or indirect in this Tender/Proposal.

f) The bidder as well as his heirs, executors, administrators, successors and assigns are deemed to forfeit all claims against the City under the contract including claims for all work done and/or supplies and/or services furnished under it if it should appear that a member of Council or an employee of the City
has been given, has, or is at any time given a pecuniary interest direct or indirect in this Tender/Proposal or a contract resulting from this Tender/Proposal.

g) No payment will be made under a contract resulting from this Tender/Proposal until an Affidavit or a Statutory Declaration has been sworn by the person claiming payment or by such other person as the Council deems acceptable, to the effect that no member of the Council or employee of the City has any direct or indirect, pecuniary interest in such contract or in the money thereby claimed and that the amount of the claim is correct.

42. FREEDOM OF INFORMATION AND PRIVACY ACT

The City of Greater Sudbury will consider all Bidder responses as confidential subject to the limitations set out under the Municipal Freedom of Information and Protection of Privacy Act, 1989

43. **GENERIC SPECIFICATIONS**

To ensure that there are fair and equitable opportunities to all suppliers to bid wherever possible generic specifications will be used to describe goods or services or the term "brand name" or "equivalent" can be used. Equivalent must be approved equal by consultant or end user, in writing.
*Note: Where the City has standardized on products/equipment that product or equivalent will be used.

44. PRIVILEGE CLAUSE

Council, the Manager of Supplies and Services/Purchasing Agent or a Purchaser, as the case may be, shall, in awarding contracts, have regard to:

(1) compliance with specifications;

(2) the total acquisition cost;

(3) the ability, capacity and skill of the Supplier to perform the contract;

(4) whether the Supplier can perform the contract promptly and within the time specified without delay or interference;

(5) the quality of performance of previous contracts with the City and with others;

(6) the sufficiency of the financial resources of the Supplier to satisfy the contract;

(7) the quality, availability and adaptability of the goods and services to the particular use required;

(8) the ability of the Supplier to provide future maintenance and services; and

(9) any other specifications included in the contract

(10) All tenders/proposals or any tender/proposal may be rejected and contract may be awarded to any supplier not necessarily the lowest or highest as the case may be.

45. RECORD AND REPUTATION

Without limiting or restricting any other right or privilege of the City and regardless of whether or not a Tender or Proposal or Proponent/Bidder otherwise satisfies the requirements of a Tender or RFP, the City may reject summarily any Proposal or Tender from any person where:

1) In the opinion of the Council of the City of Greater Sudbury or the Manager of Supplies & Services/Purchasing Agent, the commercial relationship between the City and the Bidder/Proponent has been impaired by the prior and/or current act(s) or omission(s) of such Bidder/Proponent including but not limited to:

   a) litigation with the City of Greater Sudbury;

   b) the failure of the Proponent/Bidder to pay, in full, all outstanding payments (and where applicable, interests and costs) owing to the City by such Proponent, after the City has made demand for payment of same;

   c) the refusal to follow reasonable directions of the City or to cure a default under any contract with the City as and when required by the City or the City's Representatives;

   d) the Proponent refusing to enter into a contract with the City after the Proponent or Bidders tender or proposal, bid or quote has been accepted by the City;

45. RECORD AND REPUTATION (Continued)

e) the bidder/Proponent refusing to perform or to complete performance of a contract with the City, at any time, after the Proponent has been awarded the contract by the City;

f) act(s) or omission(s) resulting in a claim by the City under a bid bond, a performance bond, a warranty bond or any other security required to be submitted by the Proponent on a RFP or a Tender; within the five (5) year period immediately proceeding the date on which the RFP/Tender is awarded;

2) In the opinion of the Council of the City of Greater Sudbury or General Manager or the Manager of Supplies & Services/Purchasing Agent or designate, there are reasonable grounds to believe that it would not be in the best interests of the City to enter into a contract with the Proponent/Bidder, including (without limiting the generality of the foregoing);

a) the conviction of that person or any person with whom that person is not at arm's length within the meaning of the Income Tax Act (Canada) of an offence under any taxation statute in Canada;

b) the conviction or finding of liability of that person under the Criminal Code or other legislation or law, whether in Canada or elsewhere and whether of a civil, quasi-criminal or criminal nature, of moral turpitude including but not limited to fraud, theft, extortion, threatening, influence peddling and fraudulent misrepresentation;

c) the conviction or finding liability of that person under the Environmental Protection Act, or corresponding legislation of any other province or any member of the European Union or the United States of America, where the circumstances of that conviction evidence a gross disregard of the part of that person for the environmental well-being of the communities in which it carries on business.

d) the conviction or finding of liability of that person relating to product liability or occupational health or safety, whether of Canada or elsewhere, where the circumstances of that conviction evidence a gross disregard on the part of that person for the health and safety of its workers or customers;

e) the conviction or finding of liability of that person under the Securities Act or the corresponding legislation of any other province or any member of the European Union or the United States of America or any state thereof.

46. VALIDITY OF TENDERS

See Schedule 'C' to Purchasing By-Law 2006-270, attached hereto.

47. ALL TERMS AND CONDITIONS MUST CONFORM TO THE CITY'S PURCHASING BY-LAW, 2006-270.

48. ERRORS AND OMISSIONS

The City of Greater Sudbury shall not be held liable for any errors or omissions in any part of this Tender/Proposal. While the City of Greater Sudbury has used considerable effort to ensure an accurate representation of information in this Tender/Proposal, the information contained in the Tender/Proposal is supplied solely as a guideline for Bidders. The information is not guaranteed or warranted to be accurate by the City of Greater Sudbury, nor is it necessarily comprehensive or exhaustive. Nothing in the Tender/Proposal is intended to relieve the Bidders from forming their own opinions and conclusions with respect to the matters addressed in the Tender/Proposal.

49. CONFLICT OF INTEREST

All firms are required to disclose to the City any potential Conflict of Interest, may it be pecuniary or otherwise. If a conflict of interest does exist with the potential successful proponent, the City may, at its discretion, refrain from awarding the project to the proponent.

The proponent covenants that it presently has no interests and it shall not acquire any interest, direct or indirect, which would conflict in any manner or degree with the performance of its service hereunder. The proponent further covenants that in the performance of this contract no person having such known interest shall be employed.

50. ALTERNATIVE PROPOSALS (Not applicable for Tenders)

Proponents may wish to submit one (1) or more proposals representing an alternative to the requirements of the Terms of Reference. Such alternatives are welcome, provided that they comply with the essential requirements set forth in this document and contain adequate justification (including costs) to the alternatives to allow comparison to the base submissions. The evaluation committee will be the sole decision maker on what alternative is acceptable. Proposals that do not comply with the essential requirements are not encouraged and will be rejected. If you are submitting an alternative proposal, attach the alternative to the Proposal Bid Form and submit in one (1) envelope. Do not alter the original Proposal Bid Form provided.

51. EXCLUSIVITY CLAUSE

The City makes no guarantee of the value or volume of work to be assigned to the successful proponent. The Agreement executed with the successful proponent will not be an exclusive contract for the provision of the described deliverables. The City may contract with others for the same or similar deliverables to those described or may obtain the same or similar deliverables internally.

52. COMMUNICATIONS

All communication must be directed through the Supplies and Services Section (as noted in the covering letter) before and after the close of the Tender or Request for Proposal. This is to ensure that all bidders and proponents receive the same answers to all questions and in the case of RFP evaluations, Committee members are not subject to lobbying.

Bidders and proponents that do not follow this instruction may be subject to disqualification.

53. RESULTS

The results of the successful proponent and the accepted price shall be deemed public information following the award of the contract, however unit prices will not be disclosed where proposals were requested as a total contract price.

We reserve the right to publish the total evaluation scores of all proponents and the total bid amounts of all proponents. Unsuccessful proponent(s) may request information regarding their evaluation from the Purchasing Agent or his designate.

54. ELECTRONIC COMMERCE

When proponents are provided with the option of emailing their proposal response to the noted tender email address, please ensure that the representative authorized to bind the corporation/company /partnership signs the proposal bid form via electronic signature.

55. TERMS OF PAYMENT

The terms of payment for all invoices relating to this tender/proposal are net 30 days unless otherwise specified in the document.

56. ANTI-IDLING POLICY

The City of Greater Sudbury endeavours to be an environmentally responsible municipal government. We encourage contractors performing on behalf of the CGS to avoid, whenever possible, unnecessary engine idling.

57. FAIR WAGE POLICY (NOT APPLICABLE)

For all new building and renovation construction over $160,000.00, the City of Greater Sudbury Fair Wage Policy must be adhered to. The City's Fair Wage Policy and the Provincial Wage Schedule for Zone 24 Sudbury can be found on our tender website: http://www.greatersudbury.ca/pubapps/tenders/.

58. SALES TAX

The successful bidder, if and when required, will provide any necessary documentation that the City would require to support sales tax recovery claims.

59. SUB-CONTRACTOR LIST

The sub-contractor list provided with this tender document must be completed. Failure to complete the sub-contractor list will result in your tender being automatically disqualified.

SCHEDULE "C"

to By-Law 2006-270 of the City of Greater Sudbury

	IRREGULARITY	RESPONSE
1	Late Bid.	Automatic rejection and not opened or read publicly.
2	Unsealed Envelope.	Automatic rejection.
3	No Bid Security or agreement to bond or insufficient Bid Deposit or agreement to bond.	Automatic rejection.
4	Bids completed and/or signed in erasable medium.	Automatic rejection.
5	All required sections of Bid documents not completed.	Automatic rejection unless, in the consensual opinion of the Agent, General Manager in charge of the Bid Solicitation and the City Solicitor, the incomplete nature is trivial or insignificant.
6	Qualified Bids (Bids qualified or restricted by an attached statement).	Automatic rejection unless, in the consensual opinion of the Agent, General Manager in charge of the Bid Solicitation and the City Solicitor, the qualification or restriction is trivial or not significant.
7	Bids received on documents other than those provided or specified by the City.	Automatic rejection.
8	Bids Containing Clerical Errors, which are trivial or insignificant.	48 hours to correct and initial errors. The determination of what constitutes trivial or insignificant errors shall be made in the consensual opinion of the Agent, General Manager in charge of the Bid Solicitation and the City Solicitor
9	Failure to execute Agreement to Bond (Surety's Consent) or Bonding company corporate seal or signature missing from Agreement to Bond.	Automatic rejection.
10 (a)	Failure to execute Bid Bond by Bidder and Bonding Company.	Automatic rejection.
(b)	Corporate seal of the Bidder and Bonding Company, missing.	48 hours to correct.
11	Documents - Execution	
(a)	Corporate seal or signature missing; signatory's authority to bind the corporation or signature missing.	48 hours to rectify situation.
(b)	Corporate seal and signature missing; signatory's authority to bind the corporation and signature missing.	Automatic rejection.

	IRREGULARITY	RESPONSE
12	Erasures, Overwriting or Strike-Outs which are not initialed:	
(a)	uninitialled changes to the Tender documents, other than unit prices, which are trivial or not significant;	48 hours to initial. The determination of what constitutes trivial or insignificant uninitialled changes shall be made in the consensual opinion of the Agent. General Manager in charge of the Bid Solicitation and the City Solicitor.
(b)	unit prices in the Schedule of Prices have been changed but not initialed and the Contract totals are consistent with the price as changed;	48 hours to initial change in unit price. The determination of what constitutes trivial or insignificant uninitialled changes shall be made in the consensual opinion of the Agent, General Manager in charge of the Bid Solicitation and the City Solicitor.
(c)	unit prices in the Schedule of Prices which have been changed but not initialed and the Contract totals are inconsistent with the price as changed;	Automatic rejection.
13	Mathematical errors which are not consistent with unit prices.	48 hours to initial corrections as made by the Supplies and Services Division.
14	Bids, in which all necessary Addenda, which have financial implication, have not been acknowledged.	Automatic rejection.
15	Any other irregularities.	The Agent, General Manager in charge of the Bid Solicitation and the City Solicitor acting in consensus shall have authority to waive other irregularities or grant 48 hours to initial such other irregularities, which they jointly consider to be trivial or insignificant.

Certificate of Insurance - Contractors

This is to certify that the insured, named below is insured as described below.

Name of Insured	Telephone Number (Area Code)

Insured's Address	City	Postal Code

Contract Title and Number To Which This Certificate Applies

Full Description of Work

LIABILITY	INSURER'S NAME	POLICY NUMBER	EFFECTIVE DATE yr mo day	EXPIRY DATE yr mo day	LIABILITY LIMITS (Bodily Injury & Property Damage-Inclusive)	DEDUCTIBLE
Commercial General Liability					$	$
Umbrella/Excess ☐ Follow Form Auto ☐ Follow Form Liability					$	$
Commercial General Liability	Includes: Occurrence Basis, including Personal Injury, Property Damage, Broad Form Property Damage (including Completed Operations), Contractual Liability, Non-Owned Auto Liability, Operations Performed by Sub-Contractors, Employees As Additional Insureds, Products–Completed Operations, Contingent Employers Liability, Cross Liability Clause and Severability of Interest Clause.					

CHECK WHICH OF THE FOLLOWING ARE INCLUDED IN THE COMMERCIAL GENERAL LIABILITY POLICY:

☐ CCDC Compliance	☐ Total Pollution Exclusion	☐ Standard Pollution Exclusion	☐ Limited Pollution Coverage (120 Hour)
☐ Hot Process Roofing Exclusion / Restriction	☐ Off-Premise Welding Exclusion	☐ Off-Premise Welding Limit $	

CHECK WHICH OF THE FOLLOWING ARE INCLUDED IN THE COMMERCIAL GENERAL LIABILITY POLICY: (When NOT Performed By Sub-Contractors)

☐ Underpinning Coverage	☐Pile Driving Coverage	☐Demolition Coverage	☐Blasting Coverage	☐ Collapse

The CITY OF GREATER SUDBURY has been added as an additional insured to the above policies but only with respect to their interest in the operations of the Named Insured.

OTHER POLICIES	INSURER'S NAME	POLICY NUMBER	EXPIRY DATE yr mo day	EXPIRY DATE yr mo day	LIMITS OF COVERAGE
Motor Vehicle Liability "All vehicles owned or operated by the insured"					$
Builder's Risk					$
Environmental Impairment Liability					$
Asbestos Abatement					$
Mold Remediation					$
Professional Liability					$
Watercraft					$
Other					$

This certifies that the policies of insurance described above have been issued by the undersigned to the Insured named above and are in force at this time. If cancelled or materially changed in any manner that would affect the CITY OF GREATER SUDBURY as outlined in coverage specified herein for any reason, so as to affect this certificate, thirty (30) days prior written notice with the exception of motor vehicle liability being fifteen (15) days prior written notice, by registered mail or facsimile transmission will be given by the insurer(s) to:

CITY OF GREATER SUDBURY, ATTENTION: RISK MANAGEMENT / INSURANCE OFFICER

200 BRADY STREET, P.O. BOX 500, STATION A, SUDBURY, ON, P3A 5P3 FAX: (705) 673-0344

This certificate is executed and issued to the aforesaid City of Greater Sudbury, the day and date herein written below.

Name and Address of Insurance Company or Broker (completing form)	Telephone Number with Area Code	Fax Number with area code

Name of Authorized Representative or Official (**Please Print**)	Signature of Authorized Representative or Official	Date (Year, Month, Day)

SAMPLE

IRREVOCABLE LETTER OF CREDIT – SAMPLE ONLY

Letter of Credit No. _____ Amount: $ _____

Initial Expiry Date: _____

TO: The City of Greater Sudbury
P.O. Box 5000, Station 'A'
Sudbury, ON P3A 5P3

WE HEREBY AUTHORIZE (The City of Greater Sudbury) YOU TO DRAW ON THE

_____ (Name of Bank and Branch)

(of _____, _____)
City Postal Code

for the account of _____
(Bank Customer)

UP TO THE AGGREGATE AMOUNT OF _____
(Dollar Amount, Canadian)

$ _____, Payable on Demand.
(available on demand as follows)

accompanied by the original of this Letter of Credit when fully drawn down)

PURSUANT TO THE REQUEST OF our customer: _____,
(Bank Customer)

we the _____,
(Name of Bank)

hereby establish and give to you an Irrevocable Letter of Credit in your favour in the total amount of ____ _____ as required pursuant to an Agreement made between the City of (Bidder) Greater Sudbury and _____which may be drawn on by you at any time, and
(Landowner)

from time to time, upon written demand for payment made upon us by you, which demand we shall honour without inquiring whether you have the right as between yourself and the (our) said customer to make such demand, and without recognizing any claim of our said customer, (or objection by it to payment to you).

WE UNDERSTAND THAT THIS LETTER OF CREDIT relates to services to be performed pursuant to an agreement between the customer and the municipality and referred to as the

_____
(Name of Project)

THE AMOUNT of this Letter of Credit may be reduced from time to time as advised by notice in writing (given to us) to the undersigned from time to time by the (you) municipality.

It is understood that this obligation is between the _____
(Bank Name)

and The City of Greater Sudbury and any notice referred to in the preceding paragraph shall not be used for any other purpose than herein set forth.

It is further understood that the obligation of the undersigned under this Credit is an obligation to pay money only and that in no circumstances shall the _____ be obliged to perform or cause
(Bank Name)
to be performed any work under the said Agreement.)

THIS IRREVOCABLE LETTER OF CREDIT will continue in force for a period of one year, but shall be subject to the condition hereinafter set forth.

IT IS A CONDITION of this Letter of Credit that it shall be deemed to be automatically extended without amendment for year to year from the present or any future expiration date hereof, unless at least 30 days prior to any such future expiration date, we notify you in writing by registered mail that we elect not to consider this Letter of Credit to be renewable for any additional period.

THIS IRREVOCABLE LETTER OF CREDIT will continue to _____and will
(date-one year)
expire at our counters on that date and you may call for payment of the full amount outstanding under this Irrevocable Letter of Credit at any time up to the close of business on that date. It is a condition of this Irrevocable Letter of Credit that it shall be deemed to be automatically extended for one year from the present or of any future expiration date hereof, unless thirty days prior to any such date we shall notify you in writing by Registered Mail that we elect not to consider this Letter of Credit renewed for any such additional period. Upon receipt by you of such notice, you may draw hereunder.

Partial drawings are permitted.

The demand drawn under this Irrevocable Letter of Credit is to be endorsed and shall state on its face that it is drawn on

_____, _____
(Bank Name) (Bank Address)

Irrevocable Letter of Credit # _____, dated _____.)

DATED AT_____, Ontario, this _____ day of _____, 2008.

COUNTERSIGNED

BY: _____
(Name of Bank)

Per:_____
"I have the authority to bind the Company/Corporation/Partnership."

Per:_____
"I have the authority to bind the Company/Corporation/Partnership."

SAMPLE

AGREEMENT TO BOND

We, the undersigned, hereby agree to become bound as for _____

_____ a bond
(BIDDER'S NAME)

totalling One Hundred Per Cent (100%) of the Contract amount, and conforming to the Instruments of Contract attached hereto, for the full and due performance of the works shown as described herein, if the Tender for

_____ is
(CONTRACT NUMBER & TITLE)

accepted by the City of Greater Sudbury.

It is a condition of this Agreement that if the above mentioned Tender is accepted, a Performance Bond must be completed with the undersigned within fourteen (14) days of acceptance of the Tender related thereto, otherwise this Agreement shall be null and void.

DATED this _____ day of _____2008

_____
Name of Bonding Company

SEAL

_____

Signature of Authorized Person
Signing for Bonding Company

CONTRACT GDD08-9

DRAWINGS - W/SPECIFICATIONS
(NOTE: DRAWINGS SHOULD BE PRINTED ON 11 X 17 PAPER)

NOTE: DRAWINGS ARE AT THE BACK OF THIS DOCUMENT.

S P E C I F I C A T I O N S

City of Greater Sudbury Airport

New Hold Room Washroom,
2126 Skead Rd. Garson, Ontario

Project No. 0823
May 23, 2008

CASTELLAN JAMES + PARTNERS
ARCHITECTS INC

289 Cedar Street, Sudbury, Ontario P3B 1M8
TEL (705) 674-2300 FAX (705) 674-2185

ARCHITECTURAL SEAL

Castellan James + Partners Architects Inc. has prepared the following specification sections:

00200	06210
00800	
01010	07900
01015	
01021	08710
01150	08711
01200	
01300	09250
01310	09665
01340	09900
01350	
01400	10800
01500	
01545	
01546	
01600	
01630	
01700	

END OF SECTION

MECHANICAL / ELECTRICAL SEAL

K. Lang Engineering Ltd. has prepared the following specification sections:

15001	16001
15010	16010
15030	16050
15050	16111
15260	16122
15300	16132
15412	16141
15414	16505
15440	
15870	
15891	

END OF SECTION

DRAWINGS INDEX

Architectural		Dated
	Cover Sheet	
A-0.1	Information Sheet	Rev. 1 May 23, 2008
OBC .1	Ontario Building Code Review	Rev. 1 May 23, 2008
A-1.0	Field of Operations Floor Plan	Rev. 1 May 23, 2008
A-1.1	Field of Operation Site Plan	Rev. 1 May 23, 2008
A-2.0	Partial Floor Plan Demolition & Hoarding Plan	Rev. 1 May 23, 2008
A-3.0	Partial Floor Plan	Rev. 1 May 23, 2008
A-4.0	Partial Reflected Ceiling Plan Above New Washroom	Rev. 1 May 23, 2008
A-4.1	Reflected Ceiling Plan New Washroom	Rev. 1 May 23, 2008
A-5.0	Interior Elevations and details	Rev. 1 May 23, 2008

Mechanical / Electrical		Dated
ME-0	Mechanical-Electrical Systems – Title Page	Rev. 1 May 23, 2008
ME-1	Mechanical-Electrical Systems – Key Plan	Rev. 1 May 23, 2008
M-1.1	Plumbing Systems	Rev. 1 May 23, 2008
M-2.1	Ventilation Systems	Rev. 1 May 23, 2008
M-3.1	Fire Protection Systems	Rev. 1 May 23, 2008
E-1.1	Electrical Systems	Rev. 1 May 23, 2008

END OF SECTION

1. Usage of Abbreviations

1.1 Many words or expressions that are repeated frequently on the drawings are abbreviated to reduce the amount of wording that might obscure the detailing. To avoid misinterpretation, these abbreviations are listed, with their full meaning, in this Section.

1.2 In addition to those noted in Article 2, some other abbreviations, commonly used in Specifications, are separately listed, in Article 4. Refer also to electrical drawings and specifications for other abbreviations used in electrical documents.

1.3 Abbreviations not listed here may be used in Room and Door Schedules, and technical Sections of the specifications and are defined in the Schedules and specification sections where they are used.

2. List of Architectural Drawing Abbreviations

A

ABV	Above	ADH	Adhesive
AFF	Above Finished Floor	ADJ	Adjustable
ACCT CLR	Accent Colour	AGG	Aggregate
AC	Acoustic	A/C	Air Conditioner
ACU	Acoustic Ceiling Unit	AVB	Air Vapour Barrier
AC MET D	Acoustic Metal Deck	AL or ALUM	Aluminum
ACP	Acoustic Panels	AB	Anchor Bolt
AC PLAS	Acoustic Plaster	AN or ANOD	Anodized
ACT	Acoustic Tile	ARCH	Architectural
AWU	Acoustic Wall Unit	AD	Area Drain
AWP	Acoustic Wall Panel	ASPH	Asphalt
ACL	Acrylic Cube Louvre	ADJ	Adjustable

B

BE	Baked Enamel	BH	Bore Hole
B	Base	BOT	Bottom
BSMT	Basement	BL	Bottom Layer
B PL	Base Plate	BR	Brick
BM	Beam	BLDG	Building
BRG	Bearing	BU	Built-up
BLK	Block	BUR	Built-Up Roof
BLKG	Blocking	BH or BLKHD	Bulkhead
BD	Board		

C

CAB	Cabinet	CEM	Cement
CANT	Cantilever	CEM BD	Cement Board
CPT	Carpet	CTR	Centre
CPT T	Carpet Tile	C/L	Centre Line

C (cont.'d)

CI	Cast Iron	CC	Centre to Centre
CB	Catch Basin	CT	Ceramic Tile
CLG	Ceiling	CMT	Ceramic Mosaic Tile
CF	Chair Fabric	CONC/H	Concrete with Hardener
CHAN	Channel	CONC/S	Concrete with Sealer
CHK	Checkered	CS	Concrete Sealed
CH PL	Checker Plate	CE	Conductive Epoxy
CO	Cleanout	COND	Conduit
CLR	Clear	CONN	Connect or Connection
CLOS	Closet	CONST	Construction
COFF	Coffered	CONT	Control or Continuous
CRC	Cold Rolled Channel	CJ or CJT	Control Joint
CW	Cold Water	CONV	Convector
COL	Column	CK	Cork
COMPL	Complete	CG	Corner Guard
C/W	Complete With	CB	Cove Base
CONC	Concrete	CWP	Crystalline Waterproofing
CONC BL	Concrete Block		

D

DP	Dampproofing	DR	Door
DL	Dead Load	DWL	Dowel
D or DP	Deep	DS	Downspout
DMNT	Demountable	DRP	Drapery
DET	Detail	DWG	Drawing
DIA	Diameter	DF	Drinking Fountain
DIM	Dimension	DD	Dutch Door
DO	Ditto		
DIV	Division		

E

EA	Each	EP	Epoxy
EE	Each End	EP TER	Epoxy Terrazzo
EF	Each Face	EQUIP	Equipment
EW	Each Way	ESO	Owner Supplied Equipment
ELEC	Electrical	EXH	Exhaust
EP	Electrical Panel	EXIST	Existing
EL or ELEV	Elevation	EM	Expanded Metal
ELEV	Elevator	EXP JT or EJ	Expansion Joint
EMERG	Emergency	EXP	Exposed
ENCL	Enclosure	EXP STR	Exposed Structure
EQ	Equal	EXT	Exterior

F

FEAT W	Feature Wall	FA	Fire Alarm
FAP	Fibre Acoustic Panel	FE or FEXT	Fire Extinguisher

F (cont.'d)

FBRGL	Fibreglass	FH	Fire Hose
FLD	Field	FHC	Fire Hose Cabinet
FIN	Finish or Finished	FHR	Fire Hose Rack
FPRG	Fireproofing	FL	Floor
FRR	Fire-resistance Rating	FD	Floor Drain
FLUOR	Fluorescent	FDN	Foundation
FTG	Footing	FR	Frame
FGL	Float Glass	FUT	Future
FF	Force Flow Heater		

G

GALV	Galvanized	GRAN	Granite
GA	Gauge	GRAN T	Granite Tile
GDL	Girt Datum Line	GF	Ground Floor
GL	Glass	GB or GBD	Gypsum Board
GL BLK	Glass Block	GPC	Gypsum-Plaster Ceiling
GR	Grade	GPW	Gypsum-Plaster Wall

H

HDW	Hardware	HOR EF	Horizontal Each Face
HDWD	Hardwood	HB	Hose Bibb
HTR	Heater	HW	Hot Water
HT or HGT	Height	HYD	Hydrant
H	Hollow	HP	Hydro Pole
HC	Hollow Core		
HC WD	Hollow Core Wood Door		
HM	Hollow Metal		
HOR	Horizontal		

I

ID	Inside Diameter	INV	Invert
INS or INSUL	Insulation or Insulated		
INT	Interior		

J

J or JAN	Janitor		
JT	Joint		

K

KPL	Kickplate	KD	Knockdown
kN	Kilonewton	KO	Knockout
kPa	Kilopascals		

L

LAM	Laminate	LP	Lighting Panel
LDG	Landing	LWB	Light Weight Block
LAT	Lateral	LIN	Linoleum
LAV	Lavatory	LL	Live Load
LAP	Lay-in Acoustic Panel	LG	Long

M

MH	Manhole	MCL	Metal Cubic Louvre
MR	Marble	MET DK	Metal Deck
MACH	Machine	METF	Metal Flashing
MFR	Manufacturer	MET GRTG	Metal Grating
MAS	Masonry	MET GR CLG	Metal Grid Ceiling
MAS FL	Masonry Flashing	MLP	Metal Lath and Plaster
MO	Masonry Opening	MET LIN CLG	Metal Linear Ceiling
MAX	Maximum	MT	Metal Threshold
MECH	Mechanical	MET T PTN	Metal Toilet Partition
MPa	Megapascal	MIN	Minimum
MWP	Membrane Waterproofing	MTD	Mounted
MET	Metal		

N

NF	Near Face	NTS	Not to Scale
NRC	Noise Reduction Coefficient		
NIC	Not in Contract		

O

OGL	Obscure Glass	OPP	Opposite
OC	On Centre	OD	Outside Diameter
OWSJ	Open-Web Steel Joist	OA	Overall
OPNG	Opening	O/H	Overhead
OPR	Operator	OWG	One Way Glass

P

PT	Paint	PL	Plaster or Plate
PTD	Painted	PLYWD	Plywood
PR	Pair	PVC	Polyvinyl Chloride

P (cont.'d)

PNL	Panel	PCT	Porcelain Ceramic Tile
PF	Panel Fabric	P or PREC	Precast
PARG	Parging	PCON	Precast Concrete
PTN	Partition	PREFAB	Prefabricated
P ACS FLG	Pedestal Access Flooring	PREF	Prefinished
PER	Perimeter	PRFL	Profile

P (cont.'d)

PL or PLAS	Plaster	PROP L	Property Line
PLAM	Plastic Laminate	PA	Public Address

Q

QT	Quarry Tile		

R

R	Radius or Resilient	RSF	Resilient Sheet Flooring
RWL	Rainwater Leader	RA	Return Air
REC	Recessed	REV	Revised or Revision
RECEPT	Receptacle	RM	Room
REINF	Reinforced / Reinforcing	RSD	Rolling Steel Door
RCB	Reinforced Cement Board	RD	Roof Drain
RCONC	Reinforced Concrete	RO	Rough Opening
REQD	Required	RFT	Rubber Floor Tile
REQT	Requirement	RSF	Rubber Sheet Flooring
RB	Resilient Base	RST	Rubber Stair Treads

S

SAN	Sanitary	SQ	Square
SND	Sanitary Napkin Dispenser	ST	Stain
SNR	Sanitary Napkin Receptacle	S&U	Stain and Urethane
SAN SEW	Sanitary Sewer	S&V	Stain and Varnish
SCHED	Schedule	SS or ST STL	Stainless Steel
SCRN	Screen	STD	Standard
SECT	Section	SPD	Standard Proctor Density
SVC	Sheet Vinyl Cove	STL	Steel
SV	Sheet Vinyl Flooring	STL BM	Steel Beam
SIM	Similar	STL FL DK	Steel Floor Deck
SL	Sliding	STL PL	Steel Plate
SS	Janitor Slop Sink	STN	Stone
SC WD	Solid Core Wood Door	ST SEW	Storm Sewer
STC	Sound Transmission Class	STR	Structure or Structural
SC	Special Coating	SVT	Solid Vinyl Tile
SPEC	Specification	SUSP	Suspended
SF	Sports Flooring	SWBD	Switchboard
SFPRG	Sprayed Fireproofing		

T

TEL	Telephone	T	Top
TP	Telephone Panel	T&B	Top and Bottom
TMPD	Tempered	TOPG	Topping
TPGL	Tempered Plate Glass	TDD	Towel Dispenser Unit
TRR	Temperature Rise Rating	TRGL	Translucent Glass
TER	Terrazzo	TRANSV	Transverse

T (cont.'d)

TER T	Terrazzo Tile	T	Tread
TSAT	Thermostat	TYP	Typical
TH	Thick or Thickness		
THR	Threshold		
T & G	Tongue and Grooved		

U

UCUT	Undercut	UP or U/P	Unpainted
UGRD	Underground	U	Urethane
U/S	Underside	UR	Urinal
U/F	Unfinished		
UNS	Unless Noted Otherwise		

V

V	Varnish	VEST	Vestibule
VB	Vapour Barrier	VCF	Vinyl Coated Fabric
VENT	Ventilated or Ventilation	VCT	Vinyl Composition Tile
VERT	Vertical	VT	Vinyl Tile
VERT B	Vertical Blinds	VWF	Vinyl Wall Fabric
VERT EF	Vertical Each Face		

W

WH	Wall Hydrant	WD	Wood
WR or WRM	Washroom	WD BK	Wood Blocking
WP	Waterproof or Waterproofing	WDV	Wood Veneer
WT	Weight		
W/	With		

3. List of Structural Drawing Abbreviations

B	Bottom	REINF	Reinforcement
BM	Beam	RC	Reinforced Concrete
BL.	Bottom Lower Layer		
BUL	Bottom Upper Layer	SECT	Section
		STIRS	Stirrups
CANT	Cantilever	SW	Short Way
COL	Column		
CONC	Concrete	T	Top
		T&B	Top and Bottom
-DO-	Ditto	TLL	Top Lower Layer
DP	Deep	TUL	Top Upper Layer
DWLS	Dowels	T&S	Temperature & Shrinkage Steel
DIAG	Diagonal		
		V	Vertical
EW	Each Way	VEF	Vertical Each Face

		VOF	Vertical Outside Face
H	Horizontal		
HEF	Horizontal Each Face	WCol	Wind Column
HOF	Horizontal Outside Face	WWF	Welded Wire Fabric
L	Long		
LW	Long Way		

4. List of Specification Abbreviations

AA	The Aluminum Association
ACI	American Concrete Institute
AISC	American Institute of Steel Construction
ANSI	American National Standards Institute
ASTM	American Society of Testing and Materials
AWI	Architectural Woodwork Institute
AWMAC	Architectural Woodwork Manufacturers Association of Canada
CAN	Standards Council of Canada
CCDC	Canadian Construction Documents Committee
CEC	Canadian Electrical Code (published by CSA)
CEMA	Canadian Electrical Manufacturer's Association
CGSB	Canadian Government Standards Board
CISC	Canadian Institute of Steel Construction
CLA	Canadian Lumberman's Association
CPCA	Canadian Painting Contractors' Association
CPCI	Canadian Prestressed Concrete Institute
CRCA	Canadian Roofing Contractor's Association
CSA	Canadian Standards Association
DND	Department of National Defence
FM	Factory Mutual Engineering Corporation
IEEE	Institute of Electrical and Electronic Engineers
IPCEA	Insulated Power Cable Engineers Association
NAAMM	National Association of Architectural Metal Manufacturers
NBC	National Building Code
NEMA	National Electrical Manufacturer's Association
NRC	National Research Council
OBC	Ontario Building Code
OGCA	Ontario General Contractors Association
OPSS	Ontario Provincial Standard Specifications
SSPC	Steel Structures Painting Council
TTMAC	Terrazzo, Tile and Marble Association of Canada
ULC	Underwriters' Laboratories of Canada

Conform to these standards, in whole or in part, as specifically requested in the specifications.

END OF SECTION

1. Division One Requirements

1.1 The provisions of all Sections of Division One shall apply to each section of the Specifications, including those of Divisions 15 and 16.

2. Geo-technical Investigation

2.1 A Geotechnical Investigation report has not been prepared for this project

3. Toxic and Hazardous Substances and Materials

3.1 General: The renovation and expansion of the airport in 2000 addressed the matter of Toxic and Hazardous Substances and Materials and the work area of this project is not expected to contain these. However, precautions and attention should be paid to the matter as described in the following sections .

3.2 The City of Greater Sudbury previously commissioned a number of environmental site assessment studies, audits and reports for the Sudbury Airport to determine the presence of environmentally hazardous materials on site. Copies of the applicable reports are available from the owner for review. They include the following:

.1 Sudbury Airport Environmental Baseline Study – Phase 1 and Site Environmental Audit Final Report prepared by Jacques Whitford Environmental Limited dated July 28, 1999 (8 pages – note partial report only),

.2 Sudbury Airport Environmental Baseline Study, 2nd Draft prepared by Beatty Franz & Associates Limited dated August 1999 (13 pages– note partial report only),

.3 Letter from Transport Canada dated July 28, 1993 regarding removal of out-of-service underground tanks (4 pages),

.4 Sudbury Airport Underground Storage Tank System Removal Report prepared by Golder Associates Ltd. dated December 1993 (49 pages),

3.3 All information shall be reviewed by the Contractor. It shall be understood that such examination shall be for reference only and comments and recommendations contained therein shall not be taken as superseding the requirements of the Contract Documents. Original copies of the reports are on file at the City of Greater Sudbury and/or at the Airport and may be reviewed upon request.

3.4 No responsibility is assumed by the Owner nor the Consultant for the scope or accuracy of these Reports. The Trade Contractor shall review the reports and the existing site and extract his own conclusions and interpretations. The Contractor shall satisfy himself with regards to all matters relating to toxic and hazardous substances and materials affecting the Work.

3.5 Should the Contractor encounter buried items containing environmentally hazardous substances stop work and notify the Consultant immediately. Do not proceed until written instructions have been received from the Consultant.

3.6 There are known friable materials containing asbestos in area of Work. Demolition of materials containing hazardous substances can be hazardous to health. Inform all subtrades of the presence of asbestos and other hazardous materials in areas of Work within the existing Air Terminal Building.

3.7 All existing asbestos containing materials are to be removed from the existing Air Terminal Building as part of this expansion and renovation program. Provide and pay for the services of a qualified subcontractor to direct all work involving material containing asbestos including provision of inspection and testing services, as required, to verify clean up completed in accordance with requirements of authorities having jurisdiction. Submit reports to Consultant for review. Take adequate precautions to avoid disturbing friable materials containing asbestos except when being dealt with under the direct supervision and using procedures prescribed by this subcontractor.

3.8 Conform to Regulation respecting Asbestos on Construction Projects and in Buildings and Repair Operations - made under Occupational Health and Safety Act as amended as well as all other requirements of authorities having jurisdiction.

3.9 Carry out all work and dispose of all asbestos and designated hazardous substances in accordance with the requirements of authorities having jurisdiction.

3.10 In event of unexpected discovery of friable material that may contain asbestos, suspend work in area in question and immediately report, orally and in writing to office of Construction Health and Safety Branch, Ministry of Labour nearest to work place and to Consultant. The Consultant will authorize remedial work, if any, in writing. Do such remedial work as addition to Contract.

3.11 In addition to inspection and testing specified to be provided as part of Work or provided by Contractor for its own verification of Work, the Owner may appoint separately an independent inspection and testing company to confirm asbestos abatement work is satisfactorily performed. The Owner will pay costs of such additional inspection and testing; except where such additional tests or inspections reveal work not in accordance with Contract then Contractor shall bear cost of such tests and further tests as required, to verify acceptability of corrected work

4 Polychlorinated Biphenyls (PCB's)

4.1 There are no known lighting fixture ballasts or transformers containing PCB's in area of Work.

4.2 Carry out all work and dispose of all light fixtures in accordance with the requirements of authorities having jurisdiction.

END OF SECTION

1. GENERAL

1.1 The General Conditions of the Stipulated Price Contract Canadian Standard Construction Document - CCDC 2-1994, Articles GC1 through GC12 inclusive, form part of this Contract.

1.2 The following Supplementary Conditions modify, change, delete from and/or add to the Articles of Agreement, the Definitions, and the General Conditions of the Stipulated Price Contract, Standard Construction Document CCDC 2-1994.

1.3 Where any Article, Paragraph or Sub-paragraph in the Agreement and/or General Conditions is supplemented by one of the following paragraphs, the provisions of such Article, Paragraph or Sub-paragraph shall remain in effect and the supplemental provisions shall be considered as added thereto.

1.4 Where any article, paragraph, or sub-paragraph in the Agreement and/or General Conditions is amended, voided, or superseded by any of the following paragraphs, the provisions of such article, paragraph, or sub-paragraph not so amended, voided, or superseded shall remain in effect.

1.5 The term "provide" as used in the Contract Documents, shall mean the furnishing of all labour, materials, equipment, transportation and all other services required, including all costs in connection therewith, to complete the Work.

1.6 Wherein the word "submit" is used in the Contract Documents, it shall be followed by the words "to the Consultant" unless the context provides otherwise. Wherein the words "approved", "designated", "directed", "inspected", "instructed", "permitted", "required", "satisfactory", and "selected" are used in the Contract Documents, they shall be followed by the words "by the Consultant" unless the context provides otherwise.

1.7 Throughout the Contract Documents, wherein the term "Value Added Taxes" is used, amend to read "Goods and Services Tax".

1.8 Throughout the Contract Documents, wherein the term "Certificate of Total Performance of the Work" is used, amend to read: "Statement of Completion of the Contract", and any other reference to the word "Certificate" then referring to "Certificate of Total Performance" shall be amended to read "Statement".

1.9 The following Articles, Definitions, General Conditions, paragraphs subparagraphs or clauses thereof have been modified in these Supplementary Conditions:

AGREEMENT BETWEEN OWNER AND CONTRACTOR:

Article A-5: PAYMENT

DEFINITIONS

Value Added Taxes

Indirect and Direct Costs (added)

GENERAL CONDITIONS OF THE STIPULATED PRICE CONTRACT

GC 1.1 CONTRACT DOCUMENTS

GC 3.1 CONTROL OF THE WORK

GC 3.8 SUBCONTRACTORS AND SUPPLIERS

GC 3.11 SHOP DRAWINGS

GC 5.2 PROGRESS PAYMENT

GC 5.3 APPLICATIONS FOR PROGRESS PAYMENT

GC 5.4 SUBSTANTIAL PERFORMANCE OF WORK

GC 5.7 FINAL PAYMENT

GC 6.2 CHANGE ORDER

GC 8.1 AUTHORITY OF THE CONSULTANT

GC 8.2 NEGOTIATION, MEDIATION AND ARBITRATION

GC 11.1 INSURANCE

2. MODIFICATIONS TO AGREEMENT BETWEEN OWNER AND CONTRACTOR

2.1 ARTICLE A-5 PAYMENT

.1 Insert the following values in the blanks of Paragraph 5.1: "ten" AND "10".

.2 Insert the following in the blanks of Paragraph 5.3.1: "one" AND "1".

3. DEFINITIONS

3.1 Delete Item 20, "Value Added Taxes" in its entirety and replace with "Goods and Services Tax" to read:

"20. Goods and Services Tax shall be as levied by the Federal Government and is computed at Six Percent (6%) of the Contract Price. The payment or collection of which is by the legislation imposing such tax an obligation of the Contractor".

3.2 Add new Item 21:

"21. Indirect and Direct Costs

.1 Indirect Costs

Indirect costs include but are not limited to such soft cost items as:

(a) Head office overhead
(b) Off-site supervision (including non-working foremen)
(c) Change order preparation, research, negotiation, and associated travel
(d) Site supervision (including working foremen)

.2 Direct Costs

Direct costs include but are not limited to such hard cost items as:

(a) Labour
(b) Material
(c) Off-site material carrying costs
(d) Shipping costs
(e) Restocking charges
(f) Additional performance and payment bond premiums
(g) Temporary protection
(h) Temporary heat, light, and power
(i) Material re-handling costs
(j) Safety equipment, staging, scaffolding, and lights".

4. MODIFICATIONS TO GENERAL CONDITIONS

4.1 GC 1.1 CONTRACT DOCUMENTS

.1 Amend paragraph 1.1.10 to read as follows:

"1.1.10 "The Contractor will be provided with any returned drawings and specifications. Additional copies of drawings will be provided at cost."

4.2 GC 3.1 CONTROL OF THE WORK

.1 Add the following paragraph:

"3.1.3 The Contractor shall review the Contract Documents and shall promptly report to the Consultant any error or inconsistency which may be reasonably determined by comparing the various Drawings to each other and to the applicable Sections of the Specifications, and not proceed with the Work affected until he has received corrected or missing information from the Consultant."

4.3 GC 3.8, SUBCONTRACTORS AND SUPPLIERS

.1 Add new paragraph 3.8.7:

"3.8.7 The responsibility as to which Subcontractor provides labour, products and services rests solely with the Contractor".

4.4 GC 3.11 SHOP DRAWINGS

.1 Add the following to Paragraph 3.11.5:

"3.11.5 (cont'd.)
Subject to any agreement to the contrary between the Contractor and the Consultant, the Consultant shall be allowed a minimum period of fifteen (15) working days from the receipt by the Consultant of any shop drawing for their return to the Contractor."

4.5 GC 5.2 APPLICATIONS FOR PROGRESS PAYMENT

.1 Add the following paragraph:

"5.2.4 The second and all subsequent applications for payment including application for release of holdback shall be accompanied by a Statutory Declaration, executed by the Contractor, in the form prescribed by the Consultant, declaring that all accounts for labour, subcontracts, products, construction machinery and equipment and other indebtedness which may have been incurred by the Contractor in the performance of the work for which the Owner might in any way be held responsible have been paid in full except holdback monies properly retained."

4.6 GC 5.3 PROGRESS PAYMENT

.1 Amend Paragraph 5.3.2. to read as follows:

"5.3.2 The Owner shall make payment to the Contractor on account in accordance with the provisions of Article A-5 of the Agreement - Payment no later than fifteen (15) days after the date of a certificate for payment is received by the owner."

4.7 GC 5.4 SUBSTANTIAL PERFORMANCE OF WORK

.1 Add the following paragraph:

"5.4.5 Procedures upon application by the Contractor for Certificate of Substantial Performance of the Work, and for statement of Completion of the contract, respectively, shall be in accordance with OAA/OGCA Document No. 100, November 1983, Take Over Procedures."

4.8 GC 5.7 FINAL PAYMENT

.1 Add the following to Paragraph 5.7.1:

"5.7.1 (cont'd)

The Contract shall be deemed to be completed when the price of completion or correction of known defects is not more than the lesser of

.1 one percent (1%) of the contract price; and

.2 $1,000.00."

.2 Amend paragraph 5.7.4 to read as follows:

"5.7.4 Subject to the provision of paragraph 10.4.1 of GC 10.4 - WORKERS' COMPENSATION, and any lien legislation applicable to the Place of the Work, the Owner shall, no later than fifteen (15) days after the issuance of a final certificate for payment, pay the Contractor as provided in Article A-5 of the Agreement - PAYMENT."

4.9 GC 6.2 CHANGE ORDER

.1 Add the following paragraphs:

"6.2.3 The value of a change shall be determined in one or more of the following methods:

.1 by estimate and acceptance in a lump sum;

.2 by unit prices set out in the Contract or subsequently agreed upon;

.3 by cost and a fixed or percentage fee.

"6.2.4 In the case of changes in the Work to be paid for under methods (.1) and (.3) of paragraph 6.2.3, the Contractor and Subcontractor, respectively, may add to the reasonable net cost of additional work a fee, or mark-up, inclusive of overhead and profit, limited to the following:

.1 Subcontractor may add to the total net cost of labour and materials, a fee, or mark-up, equal to fifteen percent (15%) of such cost.

.2 The Contractor may add to the net cost of additional work by a Subcontractor, a fee, or mark-up, equal to ten percent (10%) of the total sum quoted by such Subcontractor.

.3 The Contractor may add to the total net cost of labour and materials of additional work to be carried out by his own forces a fee, or mark-up equal to fifteen percent (15%) of such cost.

.4 Such fee or mark-up, by Contractor and Sub-contractor respectively, shall be based on net additional cost for any one change in the Work, such net additional cost being derived by deducting credits for labour and materials involved in deleted work from the cost of labour and materials involved in additional work. When quantities of the same product or material are changed in the same Change in the Work, the change in the Contract Price shall be based on the net difference in quantity between the product or material deleted and the same product or material added. The procedure of crediting deleted material at a

certain unit cost and then charging the aggregate quantity of the same material at a higher unit cost will not be accepted.

"6.2.5 In the case of a Change in the Work to be paid for under method (2) of Paragraph 6.2.3, involving a class of work for which a unit price was required to be quoted in the Tender proposal, the cost to be paid for such class of work, derived by deducting quantity of deleted work involved in such change from the quantity of additional work involved in such change, multiplied by the applicable unit prices quoted.

"6.2.6 'Overhead' shall include any additional charges and/or premiums for Permits, Bonds, Insurance, Site Supervision, Office Administration and the like, which may result from Changes in the Work, whether calculated on the basis of quoted Unit Prices, or on the basis of Cost Plus Fee or Mark-up."

"6.2.7 Except where Unit Prices have been quoted, the value of a change in the Work shall be determined by method (3)."

"6.2.8 Where the additional cost of a change in the Work has been quoted by the Contractor and accepted by the Owner in the form of a lump sum as evidenced by the issuance of a Change Order, such quoted cost shall be deemed to have included all costs, including any costs for delay of work, which are or may be occasioned by such change. No later claims for additional costs will be considered."

4.10 GC 8.1 AUTHORITY OF THE CONSULTANT

.1 Amend paragraph 8.1.1 to read as follows:

"8.1.1 Differences between the parties to the Contract as to the interpretation, application or administration of this Contract or any failure to agree where agreement between the parties is called for, herein collectively called disputes, which are not resolved in the first instance by findings of the consultant as provided in GC 2.2 - Role of the Consultant, paragraphs 2.2.6 and 2.2.7, shall be settled in accordance with the requirements of Part 8 of the General Conditions - DISPUTE RESOLUTION."

.2 Amend paragraph 8.1.2 to read as follows.

"8.1.2 A party shall be conclusively deemed to have accepted a finding of the Consultant under GC 2.2 - ROLE OF THE CONSULTANT and to have expressly waived and released the other party from any claims in respect of the particular matter dealt with in that finding unless, within 15 Working Days after receipt of that finding, the party sends a notice in writing of dispute to the other party and to the Consultant, which contains the particulars of the matter in dispute and the relevant provisions of the contract documents. The responding party shall send a notice in writing of reply to the dispute within 10 Working Days after receipt of the notice of dispute setting out particular of this response and any relevant provisions of the Contract Documents."

.3 Add the following paragraphs:

"8.1.4 It is agreed that no act by either party shall be construed as a renunciation or waiver of their rights or recourses, provided they have given the notices in accordance with paragraph 8.1.2 and have carried out the instructions as provided in paragraph 8.1.3."

"8.1.5 If the dispute is not resolved in the first instance by the decision of the Consultant, then either party may submit the dispute to such judicial tribunal as the circumstances may require."

"8.1.6 In recognition of the obligation by the Contractor to perform the disputed work as provided in paragraph 8.1.3, it is agreed that settlement of dispute proceedings may be commenced immediately following the dispute in accordance with the aforegoing settlement of dispute procedures."

4.11 GC8.2 NEGOTIATION, MEDIATION AND ARBITRATION

.1 Delete paragraphs 8.2.1 through to 8.2.8 regarding dispute resolution, in their entirety.

4.12 GC 11.1 INSURANCE

.1 Paragraph 11.1.1.1, General Liability Insurance.

Revise general liability insurance limits to not less than three million and xx/100 dollars ($3,000,000.00) per occurrence.

END OF SECTION

1. Owner and Public Occupancy During Construction

1.1 The existing Air Terminal Building - and, specifically the Hold Room (Rm 123) and Screening Room (Rm 126) will need to remain occupied and in use for the duration of the construction period. Rooms 124 (the existing hold Room Washroom) and 126 (Secure Room) respectively, will not be occupied or used during construction and are available for use by the contractor. A portion of the Screen Room (Rm 125) and Hold Room (Rm 123) are described as being within the work area in order to provide access to the work area and in order to provide the ability to works in areas within this contract. Do not disrupt airport business except as specifically phased / scheduled or as permitted by the Owner and/or Consultant. Execute Work to cause minimum interference with activities in existing premises and to maintain maximum safety and security to occupants at all times and in accordance with Owner's instructions and/or requirements.

1.2 As the building will remain occupied during the work of this Contract, the work is to be sequentially phased to suit the ongoing use of the existing Air Terminal Building. Construct the work in phases as indicated to provide for continuous public usage and security of the premises during construction. Do not close off public usage of facilities until use of one phase of Work provides alternate usage.

1.3 It is essential that the Contractor co-ordinate and proactively consult with the Owner and Airport Security throughout the duration of the Contract in order to maintain established security protocols as required by authorities having jurisdiction as well as to maintain the ongoing functional operation of the airlines and Air Terminal Building.

1.4 Provide temporary protection for safe handling of public, personnel, pedestrians and vehicular traffic including, but not necessarily limited to, interior hoarding and barricades, and the like. Refer to the specific requirements of Section 01500, Temporary Facilities and Controls. The Contractor shall always be mindful of the need to maintain ongoing security for the duration of the Contract within the airport in general and specifically with respect to the adjacent Screening Room and Hold Room which are classified as being within the 'secure environment of the airport' (i.e. passengers have been screened).

1.5 Co-operate and consult with the Owner, on a continuous/daily basis and as required, in scheduling operations to minimize conflicts, maintain security and to facilitate Owner usage. Co-ordinate Construction Schedule with Owner to suit public occupancy of the existing building during construction and maintain existing and/or ongoing site security. Schedule and substantially complete designated portions of Work for Owner's occupancy prior to Substantial Performance of entire Work. Refer to the contract drawings for description of Area of Work, Access to Area of Work and Temporary Parking for Area of Work of Contract.

1.6 It is essential that necessary arrangements be made to maintain uninterrupted all services which are necessary for the effective functioning of the existing building program, operations and security levels. This includes delivery of new materials, removal, cutting, reconnecting, reinstalling, rerouting, and reinstatement of material and of services completed. Note that noise and and dust disturbance must be kept to a minimum

1.7 Execute all work as quietly as possible within the existing building during all times that it is occupied. Schedule dusty and noisy operations to achieve the least disturbance.

1.8 Maintain fire access / control throughout all areas of the building including areas to remain occupied during construction / renovations as well as areas subject to new construction / renovations. Provide safety barricades and lights as indicated or where directed.

1.9 Provide unrestricted access for designated security personnel to all areas subject to renovations for the duration of the construction work.

2. Access of Personnel and Movement of Equipment

2.1.1 Contractor shall limit use of premises for Work, for storage and for access, to allow ongoing Owner occupancy, and public usage of the existing terminal building.

2.1.2 Coordinate use of premises under direction of Owner and Consultant.

2.1.3 Obtain and pay for use of additional storage or work areas needed for operations under this Contract.

2.1.4 The Owner and security staff are to be provided with unrestricted access to all areas of the building under construction for the duration of the renovation and expansion project.

3. Unserviceable Areas

3.1 Mark off areas made unserviceable by Work of this Contract by providing plainly visible signage.

3.1.2 Co-ordinate this work in careful consultation with the Owner and concurrently with Owner's airport security requirements.

4. Unused Section

5. Security Requirements

5.1 It is essential that the Contractor co-ordinate and proactively consult with the Owner and Airport Security throughout the duration of the Contract in order to maintain established security protocols as required by authorities having jurisdiction as well as the ongoing functional operation of the airlines and Air Terminal Building.

5.2 The Contractor shall always be mindful of the need to maintain ongoing security for the duration of the Contract.

5.3 All workers on Site may be subject to security checks and may be required to obtain security clearance before commencing the Work. All workers employed on the Site shall be required to carry photo-identification at all times.

5.4 These security checks, if required, shall be arranged by the Owner's security personnel. The Contractor will be required to provide to the Owner, names, addresses, social insurance numbers and consents of all of its workers, and that of any Sub-Contractor's workers performing work on Site.

5.5 Any worker who is unable to obtain security clearance, or who refuses to consent to such security checks, upon notice by the Owner to Contractor, shall not be permitted to work on Site.

5.6 During course of Work, new workers not included in original submission may likewise be subject to security

check. Such new workers shall not be allowed on Site until clearance is given by the Owner.

6. Construction Strategy

6.1 General:

The airport requires that the work is to occur with the least amount of disruption to operations and has identified a 'work window' for the contractor. The strategy is generally as follows:

1. Award the Contract
2. Strategy: the intent is to have all materials, products, etc. on site prior to commencement of construction. The work sequence will be hoarding , demolition and new construction as a series of uninterrupted sequential tasks in order to minimize the construction duration and interruption to Airport use and activities.
3. Shop Drawings: Contractor to submit all shop drawings immediately for review and approval in order to secure delivery of products, etc as soon as possible. And, contractor will also order all materials specified (including those not requiring shop drawings) and arrange to have on site as required to suit the pace and needs of the work. Work to start after all products, etc. have been delivered to site.
4. Demolition: The contractor will undertake and complete major demolition in as complete a manner as possible as one work task. This work will occur between the hours of 11:00pm and 5:00am.During these hours, and while undertaking demolition, trucks may be parked in the Temporary parking area noted on drawing A-1.0.Note demolition must occur immediately prior to new construction. i.e. demolition cannot be performed and work site left dormant until new construction starts.
5. New Construction: may occur between the hours of 9:00am and 5:00pm - or, if the contractor chooses between the hours of 11:00pm and 5:00am.
6. The Airport will arrange for airport security based on the hours of operation tabled within.
7. Project Schedule: After Award of Contract, the Contractor will prepare a project schedule based on the strategy described above. The Airprort realizes that his strategy implies that demolition/construction may not, in fact, occur until 4weeks+/- after award of contract.
8. Co-ordinate all daily operations, in advance with the owner.

6.1.1 Erect Hoarding Barrier at location indicated on Drawing A-1.0 as per agreed upon schedule.

6.1.2 The owner has designated a location for a contractor trailer and contractor parking area. Refer Drawing A-1.1

6.1.3 The Owner will vacate the existing Barrier Free Washroom (i.e.Rm124) and Secure Room (i.e. Rm 126) located within the Hold Room Area for the duration of the construction project. Door 132X will be the only Contractor's access door to the work area.

6.1.4 Make good existing wall and ceiling finishes and floor finishes within the work area and if necessary beyond; hoarding area with paint as specified herein.

6.1.5 Access to Area of Work to be free and clear of debris - and must be kept clean to the consistency of the adjacent floors at all times.

END OF SECTION

1. Division One Requirements

1.1 The provisions of all Sections of Division One shall apply to each section of the Specifications, including those of Divisions 15 and 16.

2. Subdivision of Work

2.1 The Specifications have generally been divided into trade divisions, and the trade divisions into sections for the purpose of ready reference, but a section may consist of more than one (1) Subcontractor or supplier. The responsibility for determining which Subcontractor or Supplier provided labour, materials, products, equipment and services to complete the work rests solely with the Contractor.

3. Contracts

3.1 Construct work under single Stipulated Price Contract. The General Conditions of the Contract for Stipulated Price CCDC Document 2-1994, and Supplementary Conditions, Section 00800 form an integral part of this Specification.

4. Discrepancies and/or Omissions

4.1 If the Contractor finds discrepancies in, or omissions from the Drawings, Specifications or other Contract Documents or has any doubt as to the meaning or intent of any part thereof the Consultant shall be notified at once. The Consultant will send written instructions or explanations. Neither the Owner nor the Consultant will be responsible for oral instructions.

5. Examination

5.1 Make a careful examination of the site of the project, and investigate and be satisfied as to all matters relating to the nature of the work to be undertaken, as to the means of access and egress thereto and there from, as to the obstacles to be met with, as to the rights and interests which may be interfered with during the construction of the work, as to the extent of the work to be performed and any and all matters which are referred to in the Drawings, Specifications and other Contract Documents, or which are necessary for the full and proper understanding of the work and the conditions under which it will be performed.

5.2 No allowance shall be made subsequently in this connection on behalf of the Contractor for any error or negligence on its part.

5.3 Before commencing the work of any Section, the work of other Sections upon which it may depend, shall be carefully examined. Report any defects which might affect the new work in writing to the Consultant. Commencement of new work shall imply acceptance of all work by other Sections upon which the new work depends.

6. Public Utilities and Services

6.1 Verify limitations imposed on project work by presence of utilities and services, and ensure no damage occurs to them.

6.2 Notify service authorities concerned so that they protect, remove, relocate or discontinue them, as they may require.

6.3 Make arrangements and pay for connection charges for services required for project work.

6.4 Locate pipes, conduit, wires, fill pipes, vents, regulators, meters, and sanitary service work in inconspicuous locations. If not shown on drawings, verify location of service work with Consultant before commencing installation.

7. Unused section

8. Co-ordination of Other Contractors' Work

8.1 Co-operate with, correlate, co-ordinate this work with that of Other Contractors who may have separate contracts with the Owner, in order to complete the work as expeditiously as possible.

8.2 Prior to commencement of work, ensure that all Other Contractors are fully conversant with the extent of the Work, the conditions and materials on the project, the schedule of completion, restrictions to safety, and to access. Also ensure that all Subcontractors are fully conversant with the extent of work involved with Other Contractors.

9. Building Dimensions and Coordination

9.1 Ensure that all necessary job dimensions are taken and all trades are co-ordinated for the proper execution of the work. Assume complete responsibility for the accuracy and completeness of such dimensions, and for co-ordination.

9.2 Verify that all work, as it proceeds, is executed in accordance with dimensions and positions indicated which maintain levels and clearances to adjacent work, as set out by requirements of the drawings, and ensure that work installed in error is rectified before construction resumes.

9.3 Check and verify all dimensions referring to the work and the interfacing of all services. Verify all dimensions, with the trade concerned when pertaining to the work of other trades. Be responsible to see that Subcontractors for various trades cooperate for the proper performance of the Work.

9.4 Avoid scaling directly from the drawings. If there is ambiguity or lack of information, immediately inform the Consultant. Be responsible for any change through the disregarding of this clause.

9.5 All details and measurements of any work which is to fit or to conform with work installed shall be taken at the building.

9.6 Advise Consultant of discrepancies and if there are omissions on drawings, particularly reflected ceiling plans and jointing patterns for paving, ceramic tile, or carpet tile layouts, which affect aesthetics, or which interfere with services, equipment or surfaces. DO NOT PROCEED without direction from the Consultant.

9.7 Ensure that each Subcontractor communicates requirements for site conditions and surfaces necessary for the execution of the Subcontractor's work, and that he provides setting drawings, templates and all other information necessary for the location and installation of material, holes, sleeves, insets, anchors, accessories, fastenings, connections and access panels. Inform other Subcontractors whose work is affected by these requirements and preparatory work.

9.8 Prepare interference drawings to properly coordinate the work where necessitated. Refer to Section 01340, Shop and Interference Drawings.

10. Labels and Nameplates

10.1 Do not install permanent or permanently attached labels, trademarks, and nameplates in visible locations on materials and components, unless required for operating instructions or by Jurisdictional Authorities.

11. Use of Premises Before Substantial Performance

11.1 The Work shall be occur as a single continuous undertaking in order to provide the owner with a completed project as soon as possible and in in order to minimize disruption within the airport for as short a period as possible – and to permit the Owner's continued use of the premises during construction. The Owner shall have the right to enter and occupy the work area, in whole or in part, for the purpose of placing fittings and equipment, or for other use, before completion of the Contract if, in the opinion of the Consultant, such entry and occupancy does not prevent or interfere with the Contractor in the performance of the Contract. Such entry shall in no way be considered as an acceptance of the Work in whole, or in part, nor shall it imply acknowledgement that terms of the Agreement are fulfilled.

12. Unused Section

13. Regulatory Requirements

13.1 Minimum Standard: Unless reference is made in the Contract Documents to other standards, all work shall conform to or exceed the minimum applicable standards of The Building Code, and/or the governing Jurisdictional Authorities.

13.2 Construction Safety: Include all provisions for construction safety, such as fences, barricades, bracing supports, storage facilities, sanitation facilities, fire protection, standpipes, electrical supply, temporary heat, ventilation, construction equipment with its supports and guards, stairs, ramps, platforms, runways, ladders, scaffolds, guardrails, temporary flooring, rubbish chutes, walkway lighting, and

morality lighting, all as required by the Occupational Health and Safety Act, and amendments thereto and the Fire Code Ontario Regulation 388/97 as well as all other applicable regulations of Jurisdictional Authorities.

14. Examination Before Execution of Work

14.1 Make good defects in the Work on which further execution of work depends.

14.2 Verify dimensions of prepared work before fabrication of that work which is dependent on the prepared work.

14.3 Do not proceed with the execution of the work unless the work which is to receive it and site conditions are satisfactory. Commencement of all work of all sections shall imply that prepared work and site conditions are satisfactory.

15. Specification Reference to Standards and Codes

15.1 Where reference is made to published standards and codes, such references shall be considered to refer to the 2006 edition of The Ontario Building Code for standards.

16. Air Leakage and Expansion Control

16.1 Recognizing that wall and roof materials are not dimensionally stable, and that they move differentially from the structural frame, the location of cracks should be anticipated and an airtight diaphragm and/or flexible sealants incorporated to maintain air-tightness, and to prevent problems due to vapour condensation.

16.2 In addition, connections between structural steel members are not airtight and perimeter connections must be made airtight.

16.3 Although concealed behind convectors, panelling, wallboard or suspended ceilings, the interior surfaces of exterior walls and roofs shall be made airtight. Ensure that backup masonry walls are well laid with full mortar joints, and wallboard joints are sealed.

16.4 The manner of installation of all pipes, ducts, conduits, and electrical outlets shall be thoroughly co-ordinated to prevent the occurrence of air leaks: when pipes or conduits run adjacent to exterior walls and are to be furred in, not only shall the exterior wall be airtight, but it shall be adequately insulated to prevent cold spots on which condensation could occur in the cold space. Provide a continuous air seal between the airtight part of a wall or ceiling and the frames of all openings such as windows, doors, hatches, ducts, grilles, louvres, structural steel members and the like.

16.5 As a general rule, the air / vapour barrier must be on the interior (warm) side of the insulation and should be in contact with it.

16.6 In addition to the specific requirements in each technical section of the Specification, make allowance for expansion control throughout the construction. Ensure that poured paving and slabs, exterior to the

building structure, together with applied materials are not tight to building face, and that expansion control joints are left to accommodate movement.

16.7 Take particular care in constructing walls around wet areas such as showers, to avoid moisture transfer to adjacent building areas.

17. Local Labour and Fair Wages

17.1 Wherever possible, the Contractor shall give preference to the use of local labour, building mechanics, suppliers and subtrades. Rates of wages, hours and conditions of work of persons employed on the work shall be in accordance with Provincial Codes, and as generally recognized and accepted in the locality.

18. Locating Services Prior to Placing of Slabs

18.1 Record exact location of all services with dimensions to the Grid Lines and Datum Lines, and show on Record Drawings prior to placing concrete. DO NOT place concrete until this is done. Co-ordinate Mechanical, Electrical, and concrete trades.

19. Sleeving

19.1 Assess requirements for sleeving the structural elements for passing of pipes, conduits and other mechanical or electrical components, and include all work required for approved interfacing between the structure, all mechanical and electrical work, and other components of the work.

20. Concealing of Mechanical and Electrical Components

20.1 Include work required to modify indicated location of pipes, ducts, conduits, and other mechanical or electrical components to fully conceal such components from view in finished spaces.

21. Life and Fire Safety

21.1 Enforce all requirements established by Jurisdictional Authorities and Underwriters for life safety, fire prevention, and fire protection.

22. Drainage

22.1 Ensure that positive drainage is provided to floor, as set in their final positions, and at all other locations to prevent water infiltration beyond drain area. Provide constant slopes for drained surfaces to drains and drainage courses.

22.2 Verify the extent of each area served by a drain, or drainage course, to eliminate possible undrained surfaces. Co-ordinate the work of involved Subcontractors before each of their work proceeds.

23. Unused Section

24. Work Not in Contract

24.1 Any Work not in this Contract (noted N.I.C. on drawings) shall be governed by Article GC 3.2 "Other Contractors" in the General Conditions.

25. Documents at Job Site

25.1 Maintain at job site, one copy each of the following and make same available to the Consultant upon request:

.1 Contract drawings.

.2 Specifications.

.3 Addenda.

.4 Reviewed shop drawings.

.5 Change orders.

.6 Other modifications to Contract.

.7 Field test reports.

.8 Copy of approved work schedule.

.9 Manufacturer's installation and application instructions.

.10 Standards (latest edition) referred to in Specifications.

.11 Ontario Building Code and Guide to the Ontario Building Code, 1997 edition.

26. Existing Conditions

26.1 Make good surfaces and finishes damaged or disturbed due to Work of this Contract to match existing. Ensure that material used to repair damage is compatible with existing work.

26.2 Term "make good" shall mean repairing or filling operations performed on existing floors, walls, ceiling or any other exposed surfaces. Perform cutting and patching where applicable as specified herein. It is intended that finished surfaces match and line with existing adjoining surfaces.

26.3 Restore Site to condition equal to or, if specified elsewhere, to condition better than existing conditions.

26.4 Restore lands outside of limits of Work which are disturbed due to Work to original condition in addition to complying with requirements of General Conditions of the Contract.

27. Cutting and Patching

27.1 Do not cut, drill or sleeve load-bearing members without obtaining Consultant's written approval for each condition.

27.2 Schedule and coordinate Work to minimize cutting and patching. Cut and patch as required to make work fit. Use workers qualified in work being cut and patched to ensure that it is correctly done.

27.3 Cut, patch and make good to accommodate Work and to leave Work in finished condition. Cutting in this sense shall mean actual cutting of components to allow new components to pass through or to provide new openings. Cutting shall not mean mere drilling of holes to accommodate screws, anchors, bolts or other fasteners as such. Such drilling is part of Section's installation function.

27.4 Use workers qualified in work being cut and patched to ensure that it is correctly done.

27.5 Make cuts with clean, true, smooth edges to tolerances required and in conformance with industry practice for applicable class of work. Make patches undetectable in finished work.

27.6 Cutting and patching of existing concrete slab-on-grade shall be the responsibility of the Contractor. The Contractor shall be responsible for coordinating the extent to suit the requirements of Divisions 15 and 16.

28. Clean Up

28.1 Further to the General Conditions, maintain the work in a tidy condition and free from the accumulation of dust, waste products and debris, other than that caused by the Owner, other Contractors or their employees.

28.2 Conform to all requirements established by jurisdictional authorities for environmental and pollution control.

28.3 Prevent dust from spreading to adjoining properties. Keep roads and sidewalks free from excavated materials, dirt and debris, snow, and ice.

28.4 Clean up daily at end of each work shift / minimally daily.

END OF SECTION

1. Selection of Products

1.1 If requested by the Consultant, provide the following services and/or information:

.1 Assist the Consultant in determining qualified and/or acceptable suppliers.

.2 Obtain proposals from suppliers and/or sub-contractors.

.3 Make all appropriate recommendations for consideration of Consultant.

.4 Notify Consultant of any effect anticipated by selection of product or supplier under consideration, on construction schedule and contract sum.

1.2 On notification of selection by Consultant and/or Owner, enter into purchase agreement / contract with designated suppliers and/or sub-contractors.

2. General

2.1 All testing and inspection work will be paid for by the Owner, however the General Contractor is responsible for co-ordination.

2.2 The Cash Allowances shall be expended as the Owner directs and only through the Consultant's written instructions.

2.3 Include in Contract Price the Contractor's charges for handling at site, including un-crating and storage, protection from elements and damage, labour, installation and finishing, testing, adjusting and balancing, and other expenses including overhead and profit on account of Cash Allowance in accordance with Article GC 4.1 of the General Conditions of the Contract as amended.

2.4 Credit the Owner with any unused portion of Cash Allowances in the statement for final payment.

2.5 If a test made under payment by a specified allowance proves that the material or system is not in accordance with the Documents, then the subsequent testing including Owner's testing of replacement materials or systems shall be Contractor's expense and not taken from Cash Allowance.

2.6 Add or deduct any variation in cost from the Cash Allowance. No adjustment will be made to Contractor's expense.

2.7 Cash Allowance do not include Goods and Services Tax (GST).

3. Cash Allowances

3.1 Provide a Cash Allowance in the sum of six thousand and xx/100 Dollars ($6,000.00) to cover the cost of x-raying of existing concrete slab to locate existing services, as required.

END OF SECTION

1. General

1.1 Apply Unit, Separate, Itemized and Alternative Prices to Work as directed by the Consultant in accordance with the stipulations in this Section and the General Conditions of the Contract.

1.2 All prices described in this Section shall include the total cost of materials, labour, tools, equipment, fees, insurance costs, testing, preparation of drawings, submittals, calculations, supervision, inspections, deliveries, travelling, out-of-town accommodations, rentals, duties, taxes, head office and site office overheads, profits, and all other direct and indirect expenses required to fully perform the specified Work.

1.3 All Unit Prices shall be valid until the Total Performance of the Work.

1.4 All Separate, Itemized and Alternative Prices shall be valid until the latest possible date by which they could be implemented without affecting the date of Substantial Performance.

1.5 Changes to Work not covered by Unit, Itemized, Separate or Alternative Prices shall be established by using current labour rates, including mandatory benefits, prevailing local market prices of materials and/or equipment, taxes, specific fees related to the change only, and overhead costs as defined below.

1.6 Overhead shall include all costs of:

.1 Operating head office and site facilities.

.2 Head office and site personnel.

.3 Custom duties, basic permits and other licences required by jurisdictional authorities.

.4 Insurance.

.5 All services defined in Sections 01300, Submittals and 01400, Quality Control.

.6 Calculations, inspections, testing.

.7 Deliveries, travelling, out-of-town accommodations.

.8 Hand and small power tools required for the efficient completion of the Work.

2. Unit Price

1.7 Unit Prices submitted on appendices to Tender shall apply to any and all Work complete in place which can be measured in the specified units regardless of the variations in productivity and job conditions, or the time when instructions to carry out that Work will be issued.

1.8 Unit Prices shall apply only to the net change in quantities for each unit of Work in each change to the Work, provided that the instructions of a contemplated change have been given to the Contractor before the start of that Work and/or ordering of equipment.

1.9 After the Work covered by the applicable Unit Price has started, the Unit Price shall cover the new Work without any credit for Work already completed.

2. Itemized Price

2.1 An Itemized Price is included in the Stipulated Price, and could be deducted from it, in case the Work covered by that price will be, at Owner's choice, excluded from the Contract.

2.2 Submit Itemized Prices as requested in other Sections of the Specifications and/or on the Appendices to Tender.

3. Separate Price

3.1 A Separate Price covers Work not included in the Stipulated Price. At Owner's choice it can be rejected or accepted for incorporation into this Contract or carried out under a Separate Contract.

3.2 Submit Separate Prices as requested in other Sections of the Specifications and/or on the Appendices to Tender.

4. Alternative Price

4.1 An Alternative Price defines the net cost difference between two different materials, products or processes described in the Specifications and/or in the Appendices to Tender.

4.2 An Alternative Price for any work component identified as a second choice (an alternative) shall include all costs required to modify related and surrounding Work so that the alternative could function properly.

4.3 The above mentioned modification shall be acceptable to the Consultant.

5. Changes to Work

5.1 Conform to the requirements of the General Conditions, and Section 01300, Submittals for pricing contemplated and or changes to the Work.

5.2 Any costs related to preparation of the necessary documentation for changes/contemplated changes are deemed to be included in the specified overhead and profit.

END OF SECTION

1. Project Meetings for Co-ordination

1.1 In consultation with the Consultant at the commencement of construction, arrange for site meetings weekly or as appropriate to the stage of construction, for project coordination. Such meetings shall fall at the same time each week the meeting is scheduled.

1.2 Responsible representatives of the Contractor's and Subcontractor's office and field forces and suppliers shall be obliged to attend.

1.3 Inform the Owner, Consultant, and those others whose attendance is obligatory, of the date of each meeting, in sufficient time to ensure their attendance.

1.4 The Owner will provide physical space for meetings. Prepare an agenda, chair and record the minutes of each meeting. Relevant information must be made available to all concerned, in order that problems to be discussed may be expeditiously resolved. Identify "action by: _____".

1.5 Within three (2) days after each meeting, distribute two (2) copies of the minutes to each invited person.

2. Pre-construction Meeting

2.1 Within five (5) days after award of Contract, request a meeting of parties in contract to discuss and resolve administrative procedures and responsibilities.

2.2 Include in the agenda the following:

.1 Appointment and/or introduction of official representative of participants in the Work.

.2 Scheduling of Work as anticipated for the project. Schedule to include a detailed breakdown of mechanical and electrical works.

.3 Interference with ongoing business.

.4 Work by other Contractors.

.5 Schedule of submission of shop drawings and samples.

.6 Requirements for temporary hoarding, facilities, storage sheds, utilities.

.7 Delivery schedule of specified equipment.

.8 Site and building security.

.9 Contemplated change notices, change orders, procedures, approvals required, mark-up percentages permitted, time extensions, overtime, administrative requirements.

.10 Record drawings.

.11 Maintenance manuals.

.12 Take-over procedures, acceptance, warranties.

.13 Monthly progress claims, administrative procedures, photographs, holdbacks.

.14 Appointments of inspection and testing agencies or firms.

.15 Insurances, transcript of policies.

.16 Schedule for progress meetings.

3. Project Meetings for Progress of Work

3.1 Conduct progress meetings in accordance with the schedule and/or decisions made at pre-construction meeting.

3.2 Inform the Owner, Consultants, Subcontractors and suppliers and those whose attendance is obligatory, of the date of the meeting, in sufficient time to ensure their attendance.

3.3 Include in the agenda the following:

.1 Review, approval of minutes of previous meeting.

.2 Review of Work progress since previous meeting.

.3 Field observations, problems, conflicts, Security issues

.4 Problems which impede construction schedule.

.5 Review of off-site fabrication delivery schedules.

.6 Corrective measures and procedures to regain projected schedule.

.7 Revisions to construction schedule.

.8 Progress during succeeding work period.

.9 Review submittal schedules: expedite as required.

.10 Maintenance of quality standards.

.11 Pending changes and substitutions.

.12 Review proposed changes for effect on construction schedule and on completion date.

.13 Other business.

4. Progress Records

4.1 Maintain a permanent written record on the site of the progress of the work using standard OGCA form. This record shall be available to the Consultant at the site, and a copy shall be furnished to same on request. The record shall contain:

.1 Daily work conditions, including dust , noise, disruption, other.

.2 Dates of the commencement and completion of stage or portion of the work of each trade in each area of the project.

.3 Conditions encountered at work area.

.4 Security Report , issues: specific to Screening Area, Hold Room and Airport (general)

.5 Report (daily) times that contractor is on site for duration of project.

.6 Work force on project daily per trade.

.7 Visits to site by personnel of Consultant, Jurisdictional Authorities and testing companies.

END OF SECTION

1. Submittals After Receipt of Notice to Proceed

1.1 Submit the following:

.1 Initial Construction Schedule in accordance with Section 01300, within fifteen (15) days of receipt of Notice to Proceed with Work.
.2 *List of all Shop Drawings and delivery dates of materials, products etc.*

2. Submittals Prior to Commencement of Work

2.1 Submit the following:

.1 Performance Bond.
.2 Labour and Material Payment Bond.
.3 Certificate of Construction Insurances.
.4 Shop Drawings and delivery dates of materials, products.

3. Submittals Prior to First Payment Claim

3.1 Submit the following:

.1 Letter of Good Standing from Workplace Safety & Insurance Board (WSIB).
.2 Schedule of shop drawing and sample submission.
.3 Product delivery schedule.
.4 Breakdown of progress claim, to Consultant's standard.

4. Submittals During Progress of Construction

4.1 Submit the following during the course of construction:

.1 Construction schedule updates.

.2 unused

.3 Samples

.1 The Contractor shall submit for the Consultant's approval such standard manufacturers' samples as the Consultant may reasonably require. Samples shall be labelled as to origin and intended use in the work and shall conform to the requirements of the contract documents.

.2 Submit samples where specified in each applicable trade section of the Specifications. Unless specified otherwise make samples of adequate size to represent the material intended for use on this project.

.3 Where the degrees of marking or colour cannot be adequately be shown in a single

sample, submit a range of samples to show the extremes of colour and marking. Identify samples with project number, date, and name of Contractor. Materials used in building shall correspond to approved samples for quality, colour, texture, finish, and thickness.

.4 Where the degrees of marking or colour cannot be adequately be shown in a single sample, submit a range of samples to show the extremes of colour and marking. Identify samples with project number, date, and name of Contractor. Materials used in building shall correspond to approved samples for quality, colour, texture, finish, and thickness.

.5 Submit two (2) samples of each item required unless specified otherwise.

.4 Progress records in accordance with Section 01200, Meeting and Progress Records and testing and inspection reports in accordance with Section 01400, Quality Control.

.5 Record Drawings

.1 Maintain, as the work progresses, until project duration, one (1) set of project Record Drawings. The full size drawings shall be in white prints while the 8-1/2" x 11" detail drawing sheets shall be in photocopies. Refer to mechanical and electrical for their requirements.

.2 Record accurately on the Record Drawings, all changes to the Contract Documents as constructed, such as Consultant / Engineer originated changes, Contractor / Subcontractor originated changes, Site Instructions, Supplementary Instructions, Addenda, instructions by correspondence and Jurisdictional Authority approvals. Carefully record location of concealed elements as required for future maintenance, alteration work, and building additions. Delete information made obsolete by changes, and accurately draw or duplicate instructions and indicate all changes listed herein. Refer to Mechanical and Electrical Specification Divisions for additional requirements.

.3 Clearly mark each of the project Record Drawings "Project Record Copy". Maintain in good condition. Make the File Copy available at all times for inspection or use by the Consultant.

.4 Keep the File Record Drawings current and do not record irrelevant information. Do not permanently conceal any work until the required information has been recorded.

.5 Submit to the Consultant, the record drawings and one (1) bound photocopy of the Drawing Detail Sheets with the application for Substantial Performance of the project.

.6 Shop Drawings: Submit shop drawings in accordance with Section 01340, Shop Drawings and in accordance with Mechanical and Electrical Divisions of the Specifications.

.7 List of Paint Materials: Submit list of paint materials in accordance with Section 09900, Painting and Finishing.

5. Submittals When Project is Substantially Performed

5.1 Manufacturer's Data Book and Shop Drawings

.1 Provide the Owner with shop drawings and Manufacturer's Data Books at the completion of the Project.

.2 Shop drawings shall consist of two complete sets of final "REVIEWED" and "REVIEWED AS MODIFIED" shop drawings, on which corrections have been recorded of changes made during fabrication and installation of unforeseen conditions. Do not include drawings which were noted "REVISE AND RESUBMIT".

.3 The Manufacturer's Data Book shall consist of two (2) bound copies of hard, black, vinyl-covered loose leaf binders, to accommodate 8-1/2" x 11" sheets. Binders shall match in all dimensions. A title sheet labelled "Manufacturer's Data Book" with project name, and the date of Substantial Performance and list of contents shall precede data. Organize required material into applicable sections of work. Each section shall be marked by labelled tabs protected with celluloid covers fastened to hard paper dividers.

.4 The Manufacturer's Data Book shall contain:

.1 Equipment and operating instructions on all operable equipment and on all mechanical and electrical equipment, plumbing fixtures, and architectural hardware. Notes shall be typed. Drawings shall be neatly drafted and inked, or white-printed. Refer to Divisions 15 and 16 for additional requirements.

.2 Maintenance instructions for all exterior, and interior floors, walls and ceiling surfaces.

.3 Operating and maintenance instructions for all mechanical and electrical equipment.

.4 Original brochures on all equipment.

.5 Parts lists on all equipment including a list of suppliers.

.6 All additional material used in the project beyond that indicated by brochures listed under the various sections, showing manufacturers and sources of supply.

.7 Names, addresses and telephone numbers of the designer(s) and major contractor(s) who worked on the building.

.8 Commissioning data such as air and water flows and regulating valve positions.

5.2 Affidavits

.1 Submit to the Consultant affidavits which are specified in other Sections of the Specifications.

.2 Submit affidavits in duplicate, and signed by a responsible officer of the certifying company.

5.3 Final Hydro Inspection Certificates/Approval Certificates: Collect the following from each trade whose work requires Electrical Safety Authority inspection / approval certificates and submit to the Consultant:

.1 Original, final Electrical Safety Authority inspection certificates.

.2 Original approval certificates (CSA, ULC, etc.) for specified equipment.

5.4 Inspection Reports: Submit to the Consultant, in accordance with the technical Sections of the Specifications.

5.5 Extended Warranties: Provide the extended warranties specified. These extended warranties shall commence immediately after the expiration of the standard one (1) year warranty included in the Contract under Article GC 12.3, Warranty and the General Conditions of the Contract. The Contractor shall submit them on the Form of Warranty, a sample of which is included in this Section.

5.6 Extra Materials: Provide the Owner with extra materials for future maintenance use, as specified in the technical Sections of the Specifications.

5.7 Fixture Suspension Certificate: Submit to the Consultant a certificate from independent inspection company in accordance with Section 09510, Acoustic Ceilings.

5.8 Plumbing, Heating and Building Inspection Certificates: Submit to the Consultant certificates of Plumbing, Heating and Building Inspection.

5.9 Record Drawings: Refer to "Record Drawings" and "Record Specifications" articles in this section. For information to be recorded, submit two copies of "as constructed" drawings showing all changes from the original contract documents.

SAMPLE FORM OF EXTENDED WARRANTY

NOTES:

1. Items shown in brackets are to be changed to give the specific information for this project and trade.

2. Extended warranties are to be submitted through the General Contractor.

3. If validity of extended warranty is related to proper maintenance and servicing of equipment, etc., full details must be provided in the maintenance manuals.

(Date)

To: (Owner's Name and Address)

EXTENDED WARRANTY

(Name of Trade and Specification Section, or brief description of work covered).

OWNER: (Owner's Name and Address)

PROJECT: (Full name and correct address)

WORK COVERED: (Refer to Technical sections. State clearly, description of work covered, including consequential damage to other work, and what remedial action will be taken under the Warranty).

WARRANTY PERIOD: Commences on date of Certificate of Substantial Performance * and expires on _____.

(Name and Address of General Contractor)

(Name and Address of Trade Contractor)

_____ (Signature and Corporate Seal)

_____ (Signature and Corporate Seal)

* (Unless otherwise agreed)

END OF SECTION

1. General Requirements

1.1 Submit projected construction schedule for entire Work. Revise schedule when it cannot readily be related to the actual stage of construction.

1.2 Accurately represent the intent of the Construction Sequence reflected in the specifications. Refer Construction Sequencing 01010.

2. Form of Schedules

2.1 Prepare in form of horizontal bar chart or C.P.M. network. Provide separate horizontal bar column for each trade or operation, or separate activity for each operation that can be completed independently of other operations or trades. Provide as follows:

.1 Order: Chronological order of beginning of each item of work.

.2 Identification: Identify each column by distinct graphic delineation.

.3 Horizontal Time Scale: Identify first workday of each week.

.4 Scale and Spacing: To allow space for updating.

.5 Minimum Sheet Sizing: 11" x 17".

3. Content of Schedules

3.1 Submit complete sequence of construction by activity, as follows:

.1 Shop Drawings - Submittal dates, dates reviewed copies will be required.

.2 Decision dates for products specified by allowances, selection of finishes and colours, etc.

.3 Fabrication and delivery lead time.

.4 Dates for beginning and completion of each element of construction, specifically: concrete placement, subcontractor work, equipment installations and equipment tests.

3.2 Identify work of logically grouped activities.

3.3 Show projected percentage of completion for each item of work as of first day of each month.

3.4 Submit separate sub-schedule showing submittals, review times, procurement schedules, and delivery dates. And, clearly identify potential disruption timers /days and the nature of the disruption anticipated.

3.5 Submit sub-schedules to define critical portions of entire schedule.

3.6 Identify Hours of Work for each work day and for all work days in order to allow the Owner to address Airport Security requirements. Project for the entire work week – minimally two(2) weeks at a time.

4. Updating

4.1 Show all changes occurring since previous submission of updated schedule.

4.2 Indicate progress of each activity, and show completion dates.

4.3 Include major changes in scope, activities modified since previous updating, revised projections due to changes, and other identifiable changes.

4.4 Provide narrative report including discussion of problem areas, including current and anticipated delay factors and their impact; corrective action taken or proposed, and its effect; effect of change in schedules of any work being done by the Owner or other parties for him; and description of revisions (effect on schedule due to change of scope, revisions in duration of activities, and other changes that may affect schedule).

5. Submittals

5.1 Submit initial schedules within fifteen (15) days after date of Notice to Proceed. Consultant and Owner will review schedules and return review copy within ten (10) days after receipt. If required, resubmit within seven (7) days after return of review copy.

5.2 Submit updated schedules with monthly draw, accurately depicting progress to first day of each month.

6. Distribution

6.1 Distribute copies of reviewed schedules to job-site file, subcontractors, and other concerned parties.

6.2 Instruct recipients to report any liability to comply and provide detailed explanation with suggested remedies.

END OF SECTION

1. Shop Drawing General Requirements

1.1 Where specified or where deemed to be required by the Consultant, submit shop drawings to the Consultant in the following manner:

1.1.1 Submit one (1) original and five (5) prints of each shop drawing with title block appearing at lower right-hand corner. Do not fold originals. Submit originals in roll form to enable legible prints to be made.

1.1.2 The use of photographed Consultant's drawings for shop drawing purposes is not acceptable, unless otherwise approved by Consultant in writing.

1.1.3 Prior to submission to the Consultant the Contractor shall review all shop drawings. By this review the Contractor represents that he has determined and verified all field measurements, field construction criteria, materials, catalogue numbers, and similar data, or will do so, and that he has checked and coordinated each shop drawing with the requirements of the work and of the Contract Documents. The Contractor's review of each shop drawing shall be indicated by stamp, date, and signature of a responsible person. The Shop Drawing shall clearly indicate whether it is for review or for record purposes.

1.1.4 The Contractor (and Subcontractor(s) where appropriate), shall mark any information requested by the fabricator, confirm any matters in doubt, check and sign each trade shop drawing, and make any other notations he considers necessary before submitting to the Consultant for review.

1.1.5 Drawings requiring several or extensive changes will be marked "REVISE AND RESUBMIT", otherwise one (1) white print and original will be returned marked "REVIEWED" or "REVIEWED WITH COMMENTS" and shall not be returned to the Consultant. Drawings marked "NOT REVIEWED" are either not required, or from an unacceptable supplier.

1.1.6 Manufacturer's catalogue cuts will be acceptable, providing they are 8-1/2" x 11" originals, and they indicate all choices including sizes, colours, model number, options, and other pertinent data. Only three (3) copies need to be submitted to the Consultant, except for colour sample sheets.

1.2 Shop drawings shall show:

1.2.1 The name of the project.

1.2.2 Kinds of material and finishes.

1.2.3 Sections, arrangements and details which indicate complete construction, as well as all interconnections with other work.

1.2.4 Fabrication and erection dimensions, together with quantities and/or locations.

1.2.5 Assumed design loadings, all dimensions of elements and material specifications for all load-bearing members.

1.2.6 Data verifying that superimposed loads will not affect function, appearance and safety of work shown on shop drawings, as well as other work interconnected.

1.2.7 Proposed chases, sleeves, cuts, and holes in structural members.

1.2.8 The time that the fabricator considers necessary from the date that he receives the Contractor's authority to proceed (and shop drawing is returned) until the fabricated work will be delivered to the site, and for installation, if appropriate.

1.2.9 A 4-1/2" x 3" high block for Consultant's review stamp, and another block of the same size for review stamp of Contractor's Engineer.

1.3 The review by the Consultant is for the sole purpose of ascertaining conformance with the general design concept. The review shall not mean that the Consultant approves the detail design inherent in the shop drawings, responsibility for which shall remain with the Contractor submitting same, and such review shall not relieve the Contractor of his responsibility for errors or omissions in the shop drawings or of his responsibility for meeting all requirements of the Contract Documents. The Contractor is responsible for dimensions to be confirmed and correlated at the job site, for information that pertains solely to fabrication processes or to techniques of construction and installation, and for coordination of the work of all trades.

1.4 The review of this drawing and/or any notes added to it, does not constitute authorization to proceed with any work which, in the Contractor's or Supplier's opinion, will involve extra cost to the Owner.

1.5 In the event of any conflict between the Contract Documents and a shop drawing, the Contract Documents shall govern.

1.6 Keep copies of "reviewed" and "reviewed with comments" shop drawings on site for Consultant's review.

2. Interference Drawings

2.1 The Contractor shall prepare colour-coded interference drawings in order to properly coordinate the work of all trades, such as, but not restricted to, plumbing and fire protection, sheet metal and air conditioning, electrical and building structure.

2.2 Bear all costs involved for the preparation of these drawings and the changes necessitated due to interference discovered by their preparation. Advise all trades and the Consultant of any rerouting or relocation required.

2.3 If interferences are discovered advise Consultant immediately and do not proceed until adjustments are approved.

2.4 Submit copies of drawings for the Consultant's records.

END OF SECTION

PART 1 - GENERAL

1.1 General Requirements

1.1.1 Division One, General Requirements is part of this Section and shall apply as if repeated here.

1.2 Description

1.2.1 This Section covers work for protection of environment as applicable to this Project.

1.2.2 Provisions of this Section supplement requirements of Contract Documents.

1.3 Environmental Practices

1.3.1 Implement environmentally sound practices in this Project by incorporating products that lessen burden on environment in production, use and final disposition. Support implementation of reduction, reuse and recycling strategies and use of environmentally sound products. Promote use of environmentally responsible packaging practices by reducing and/or eliminating products with excessive packaging in this Project.

1.4.2 Employ environmentally sound products which are made, used and disposed of in a manner that significantly reduces harm to environment. Product selection criteria be based on requirements of CSA Z760-94, Life Cycle Assessment and CSA Z762-95, Design for the Environment. Use product which improves energy efficiency in its production and use, reduces hazardous by-products, uses recycled material, and/or product itself can be recycled or reused, and/or in some way is environmentally benign.

1.4 Build Green Products

1.4.1 Build Green Products: Building materials, building finishes, furnishings or specialty products which have a recycled content originating from industrial, commercial, institutional or household sources, or which demonstrate efficient use of renewable resources. These products must meet the criteria of the Build Green Labeling Program and demonstrate current compliance with applicable codes and standards.

1.5 Packaging Requirements:

1.5.1 Implement waste reduction on this Project by using products specified in Contract Documents from manufacturers who promote reduction and elimination of excessive packaging practices in accordance with Ont. Reg. 104/94. Adhere to Canadian Code of Preferred Packaging Practices.

1.5.2 Use, where appropriate, combination of packaging materials such as re-usable containers, blanket wrap or cushioning material provided that all reasonable requirements of materials handling, transportation and storage are observed.

1.5.3 Use packaging materials such as kraft paper and corrugated cartons that is made from reclaimed products to facilitate recycling of secondary materials.

1.5.4 Use packaging material which clearly displays their recycled content and recyclability.

1.5.5 Ensure packaging materials are removed from Site and disposed of in an environmentally responsible manner.

1.6 Indoor Air Quality

1.6.1 Conform to requirements of CSA Z204-94 - Guidelines for Managing Indoor Air Quality in Office Building (Occupational Health and Safety) including but not limited to following:

1.6.2 Commissioning process shall be in accordance with requirements of Division 15; involve Owner, Consultants, Sub-Contractors in performance verification (including temperature control and facility automation systems) and generally as follows;

.1 check initial operation of all equipment;

.2 verify performance of initial testing and balancing;

.3 review and assembling equipment documentation;

.4 preparation of commissioning brief; and

.5 preparation preliminary operating manual.

.6 preparation preliminary operating manual.

1.6.3 Take pro-active measures to prevent entry of dust into existing and new HVAC systems throughout construction phase – and into the adjacent Screen Area and Hold Rooms.

1.6.4 Take into consideration use of electrically powered equipment on Site in lieu of gas or propane powered to reduce possibility of carbon monoxide sickness and odours of gas or propane spreading throughout building.

1.6.5 Schedule sequence of installation of finishing materials to reduce harm to indoor air quality. Provide necessary ventilation during and after installation of 'wet' products such as paints, sealants, adhesives and of 'packaged dry' products.

1.6.6 Isolate substances producing hazardous emissions from circulating air. Locate outside air intakes away from potential sources of contaminations.

1.7 Dust Control and Cleaning Requirements

1.7.1 Standards: Maintain project in accordance with the latest edition of The Occupational Health and Safety Act.

1.7.2 Hazards Control

.1 Store volatile wastes in covered metal containers, and remove from premises daily.

.2 Prevent accumulation of wastes which create hazardous conditions.

.3 Provide adequate ventilation during use of volatile or noxious substances.

1.7.3 Conduct cleaning and disposal operations to comply with local ordinances and anti-pollution laws:

.1 Do not burn or bury rubbish and waste materials on project site.

.2 Do not dispose of volatile wastes such as mineral spirits, oil, paint thinner, excavated material or debris in storm, sanitary drains, streams or waterways.

1.7.4 Undertake control measures to prevent nuisances due to dust in any phase of construction.

1.7.5 Transport dusty materials in covered haulage vehicles

1.7.6 Transport wet materials in suitable watertight haulage vehicles.

1.8 Waste Disposal

1.8.1 Do not burn rubbish on Site. Obtain approval, and use following off-site disposal alternatives, depending upon materials involved; burying, composting, recycling, municipal collection, or local dump or sanitary landfill site.

1.9 Noise Control

1.9.1 *Noise (and vibration) during any work hours that coincide with active occupied use of the adjacent Screen Area and Hold Room at Flight Boarding times generated by tools and equipment is not permitted. Specifically co-ordinate use of tools, etc with the Owner.*

PART 2 - PRODUCTS

2.1 Materials

2.1.1 Use only cleaning materials recommended by manufacturer of surface to be cleaned.

2.1.2 Use cleaning materials only on surfaces recommended by cleaning material manufacturer.

PART 3 - EXECUTION

3.2 During Construction

3.2.3 Execute cleaning to ensure that building, grounds, and public properties are maintained free from accumulations of waste materials and rubbish. Keep site clear mud and pooling of water due to severe rain. Ensure that work is not stopped because of failure to provide access to site.

3.2.4 Wet down dry materials and rubbish to prevent blowing dust.

3.2.5 At reasonable intervals during progress of Work, clean site and public properties and dispose of waste materials, debris and rubbish.

3.2.6 Collection of waste materials, debris and rubbish must occur during 11:00pm to 5:00am time – or, as agreed to in advance with the Owner.

3.2.7 Remove waste materials, debris and rubbish from site and legally dispose of at public or private dumping areas off Owner's property.

3.2.8 Vacuum-clean interior building areas when ready to receive finish painting and continue vacuum cleaning on an as-needed basis until building is ready for Substantial Performance or occupancy.

3.2.9 Obtain from each Subcontractor, instructions which designate proper methods and materials to be use in final cleaning, and submit such instructions to the Consultant. Include instructions in Manufacturer's Data Book specified in Section 01300, Submittals.

3.2.10 Handle materials in a controlled manner with as few handlings as possible; do not drop or throw materials from heights.

3.2.11 Schedule cleaning operations so that dust and other contaminants resulting from cleaning process will not fall on wet, newly painted surfaces.

3.3 Final Cleaning

3.3.1 At completion of Work, remove waste materials, rubbish, tools, equipment, machinery, and surplus materials, and clean all surfaces exposed to view; leave project clean and ready for occupancy.

3.3.2 Employ experienced workers, or professional cleaners, for final cleaning.

3.3.3 In preparation for Substantial Performance or occupancy, conduct final inspection of interior and exterior surfaces exposed to view, and of concealed spaces.

3.3.4 Remove grease, dust, dirt, stains, labels, fingerprints, and other foreign materials from all sight-exposed interior and exterior finished surfaces; polish resilient and ceramic surfaces so designated to shine finish. Vacuum carpet.

3.3.5 Clean and polish glass and mirrors.

3.3.6 Repair, patch and touch up marred surfaces to specified finish, to match adjacent surfaces.

3.3.7 Broom-clean paved surfaces; rake clean other surfaces of grounds.

3.3.8 Clean filters, exposed ductwork, and structure.

3.3.9 Clean bulbs and lamps and replace those burned out.

3.3.10 Clean diffusers and grilles.

3.3.11 Clean sinks, faucets, and water closets and controls.

3.3.12 unused

3.3.13 Maintain cleaning until project, or portion thereof, is occupied by Owner.

3.4 Removal of Temporary Facilities

3.4.1 Completely remove temporary facilities from site, including signs and foundations, making good any damage when no longer required.

END OF SECTION

1. Related Requirements

1.1 Section 01300: Submission of samples to confirm product quality.

1.2 Section 01600: Material and workmanship quality - reference standards.

2. Independent Testing and Inspection Companies

2.1 Naming of Companies

.1 The Consultant will name independent inspection and testing companies to inspect and report on compliance of Work with the Specifications. For simplicity, independent inspection and testing companies are referred to in the documents as "Inspector(s)".

.2 Inspection and testing by Inspector(s) is carried out for the Consultant's information and does not relieve the Contractor from its responsibility to perform Work in accordance with the Contract Documents.

2.2 Payment: Unless specified otherwise, payment for inspection and testing will be paid from Cash Allowance specified in Section 01021, Cash Allowances.

2.3 Work to be Tested and/or Inspected: As listed in Section 01021, Cash Allowances and individual specification Sections.

2.4 Access to the Work: Representatives of the Inspector(s) shall have access to the Work at all times. The Contractor shall provide assistance and facilities for such access in order that the Inspector(s) may properly perform its function.

2.5 Extent of Testing: The extent of testing and inspection and the number of tests, if not specified in the applicable technical section of the Specifications, shall be verified with the Consultant before proceeding. Extra payment for testing and inspection beyond what the Consultant intends will be the Contractor's responsibility.

2.6 Notification of Work to be Tested: Be responsible for notifying all Inspector(s) as to when they will be required to inspect the work. Notify Inspector(s) at least 48 hours prior to testing.

2.7 Materials for Testing and Mock-Ups

2.7.1 Submit samples and/or materials required for testing. Submit with reasonable promptness and in an orderly sequence so as not to cause delay in the Work.

2.7.2 Provide labour and facilities to obtain and handle samples and materials on site. Provide sufficient space to store and cure test samples.

2.8 Reports: Inspector(s) will submit copies of inspection and test reports promptly to the Consultant, the

Owner, the Contractor, other applicable Consultants, and jurisdictional authorities.

3. Contractor's Quality Control

3.1 Obtaining and payment of inspections, tests, or Engineer's stamps required by Code or Ordinances, or by a plan approval authority and made by a legally constituted authority, shall be the responsibility of the Contractor, unless otherwise provided by the Contract Documents.

3.2 Be responsible for inspection or testing performed exclusively for own quality control and convenience, and testing, adjustment and balancing of mechanical and electrical systems, and pay all costs associated therewith.

4. Inspection by Consultant

4.1 Give the Consultant advance notice of shop fabrication, field erection and other phases of the Work so as to afford him reasonable opportunity to inspect the Work for compliance with contract requirements. Failure to meet this requirement may be cause for the Consultant to classify the Work as defective.

4.2 Uncover any Work that has been designated for special tests, inspections or approvals before such is made, have the inspections or tests satisfactorily completed and make good such Work.

4.3 The Consultant may order any part of the Work to be examined if such Work is suspected to be not in accordance with the Contract Documents. If, upon examination such Work is found not in accordance with the Contract Documents, correct such Work and pay the cost of examination and correction. If such Work is found in accordance with the Contract Documents, the Owner will pay the cost of examination and replacement.

5. Mock-Ups

5.1 General

5.1.1 Prior to proceeding with the Work, prepare mock-ups as requested in the individual sections of the specifications and in this section. Include for Work of all Sections required to provide mock-ups.

5.1.2 Construct in specified locations or as selected by the Consultant.

5.1.3 Prepare mock-ups for Consultant's review with reasonable promptness and in an orderly sequence, so as not to cause any delay in the Work.

5.1.4 Failure to prepare mock-ups in ample time is not considered sufficient reason for an extension of Contract Time and no claim for extension by reason of such default will be allowed.

5.1.5 Remove mock-ups at conclusion of Work or when acceptable to Consultant.

6. Construction Tolerances

6.1 Unless more restrictive/demanding requirements are specified in other Sections, the following construction tolerances could be accepted:

.1 "plumb and level" - 3 mm in 3 m (1/8” in 10’-0”).

.2 "square" - 10 seconds more or less than 90 degrees.

.3 "straight" - 3 mm (1/8”) under a 3 m (10’-0”) long straight edge.

.4 Tolerances shall not be cumulative.

7. Non-Compliance With Inspections and Tests

7.1 If the initial inspections and tests required to establish compliance with the Contract Documents indicates non-compliance with the Contract Documents, subsequent testing or re-inspection occasioned by non-compliance shall be performed by the same Inspector(s) and the cost thereof borne by the Contractor.

7.2 Where factual evidence exists that defective workmanship has occurred or that work has been carried out incorporating defective materials, the Consultant may have tests, inspections or surveys performed, analytical calculation of structural strength made and the like in order to help determine whether the work must be replaced. Tests, inspections or surveys carried out under these circumstances will be made at the Contractor's expense, regardless of their results, which may be such that, in the Consultant's opinion, the work may be acceptable.

7.3 All testing shall be conducted in accordance with the requirements of the Ontario Building Code, except where this would in the Consultant's opinion cause undue delay or give results not representative of the rejected material in place. In this case, the tests shall be conducted in accordance with the standards given by the Consultant.

7.4 Materials or workmanship which fails to meet specified requirements may be rejected by the Consultant whenever found at any time prior to final acceptance of the work regardless of previous inspection. If rejected, defective materials or work incorporating defective materials or workmanship shall be promptly removed and replaced or repaired to the satisfaction of the Consultant, at no expense to the Owner.

8. Testing and Demonstration of Operable Equipment and Systems

8.1 Ensure that the Owner's representatives are adequately instructed in all aspects of operation and maintenance of manual and automated systems and/or equipment, and all tests and adjustments have been performed to ensure smooth, trouble free operation is achieved, in compliance with Contract Documents.

END OF SECTION

1. Field Offices and Sheds

1.1 Construction Office

1.1.1 Not Required

1.2 Telephone, Fax Machine, Email

1.2.1 Site Superintendent to have a functioning cell phone onsite at all times. The number to be identified at the pre-construction meeting. All Faxes/Emails will be sent directly to the Contractors office for site distribution.

1.3 Storage Sheds

1.3.1 Not Required

2. Utilities

2.1 Existing Services

2.1.1 Exercise extreme caution when working near existing utilities, whether above or below ground, and damage to of any nature or from any cause shall be the complete responsibility of the Contractor. The Contractor shall also be responsible for notifying the various utilities and arranging for proper stakeouts. The bracing of any poles, if necessary, will be done by the Contractor at his expense.

2.1.2 The Owner will not be responsible for delays in construction (if any) resulting from interference with utility relocations.

2.2 Heat

2.2.1 Heat building during construction only by a method approved by the Consultant and which meets the requirements of Jurisdictional Authorities. Maintain temperature within building during construction to ensure proper finishing and curing of all specified materials. Salamanders will not be permitted.

2.2.2 Maintain temperatures at minimum 10 degrees Celcius unless specified otherwise.

2.2.3 Place temporary heating units so that formwork and its supports are not endangered, and that no material gets damaged because of the excessive heat from the units.

2.2.4 The permanent heating system or portions thereof may not be used for temporary heating.

2.2.5 All costs for temporary heat shall be borne by the Contractor.

2.3 Water

2.3.1 Provided existing permanent services are adequate to service building as well as construction, it may be available for use of Contractor and Sub-Contractors employed on this Project.

2.3.2 Contractor may connect to existing water supply for use of all trades. Cost of water reasonably so used will be provided without charge.

2.3.2 All costs for installation, maintenance and removal shall be borne by the Contractor.

2.4 Electric Power

2.4.1 Provided existing permanent services are adequate to service building as well as construction, it may be available for use of Contractor and Sub-Contractors employed on this Project.

2.4.2 Contractor may connect to existing electricity for use of all trades except for purpose of power welding and electric heating. Obtain Consultant's written permission prior to connection.

2.4.3 Provide all necessary connections and extensions from temporary source to locations of work, as required, at expense of the Contractor. Furnish electrical connection from nearest available sources and maintain in good condition until permanent system is installed and ready for use.

2.4.4 Cost of electricity reasonably so used will be provided without charge.

2.4.5 Provide temporary lighting throughout the building. Maintain not less than 160 LUX level.

2.4.6 Temporary power distribution wiring shall comply with the Ontario Hydro Electrical Safety Code. Obtain inspection certificates and approvals for temporary electrical work.

2.4.7 Power to adjacent Screening Room (125) area and Hold Room (123) must not be interrupted.

2.5 Sanitary Facilities

2.5.1 Temporary use of washrooms by the contractor is permitted. However, if use by contractor is deemed problematic, for whatever reason by the owner, temporary use of interior facilities will be terminated and the contractor will be required to provide portable washroom units of the chemical type for use during construction. Maintain in clean condition.

2.5.2 All costs for washroom units and their maintenance shall be borne by the Contractor.

2.6 Building Enclosure

2.6.1 Work shall include temporary enclosure for building as required to protect it, in its entirety, or its parts, against all vandals, the elements, and to maintain temperatures which ensure conditions for installation that prevent harm to all materials.

2.6.2 Erect temporary enclosures to allow accessibility for the installation of all materials during the time the enclosures remain in place.

2.6.3 Design temporary enclosures to withstand all wind pressures. Structural framing of the building may be used

within load limits for which the framing is designed, for support of temporary enclosures. Keep surfaces of temporary enclosures free of snow and ice, to avoid overloading of building framing.

3. Barriers and Protection

3.1 Not Used

3.2 Dust Nuisance, Mud, Snow and Ice Removal

3.2.1 Prevent nuisance to adjacent properties near the works from dust raising and mud deposits, by taking appropriate anti-dust and mud measures, at such times as found necessary, and as directed by the Consultant, or at any other times complaints of dust or mud are received from the public by either the Contractor, the Consultant, or the Owner.

3.2.2 Keep walkways free of snow and ice, both on and adjacent to site.

3.2.3 Remove mud deposits from all paved surfaces.

3.3 Dust Partitions:

3.3.1 Provide dust tight screens or partitions to localize dust generating activities, and for the protection of workers, areas scheduled to remain occupied during construction, finished areas of work and the public.

3.3.2 Maintain and relocate, as required, to suit construction sequencing and until such work is complete.

3.3.3 The location, extent and scheduling of erection and removal of these partitions will be established to suit Owner's requirements for ongoing operation of the existing Air Terminal Building during construction.

3.4 (Interior) Hoarding:

3.4.1 Erect temporary hoarding, as scheduled or required by authorities having jurisdiction, using 2" x 4" (38 mm x 89 mm) construction grade lumber framing at 24" (620 mm) centres and 4' x 8' x 1/2" (1200 mm x 200 mm x 13 mm) thick exterior grade fir plywood to CSA O121-M1978.

3.4.2 Apply plywood panels vertically. Provide suitable supports to adequately brace the hoarding in accordance with the requirements of authorities having jurisdiction.

3.4.3 Refer architectural drawings for hoarding detail.

3.4.4 Note: the Hoarding required must also function as a dust control screen and as a Security enclosure.

3.4.5 Hoarding to be painted on the side facing the Screening Area and Hold Room (only).with two (2) coats of interior Latex paint in colour to be selected by Consultant. Maintain public side of enclosure in clean condition.

3.4.6 Provide lockable truck entrance gates as indicated or required and pedestrian doors as directed and

conforming to applicable traffic and/or airport safety restrictions. Equip gates and doors with locks and keys.

3.4.7 Relocate and/or reconfigure, as required, to suit construction phasing described in Section 01010, Construction Sequencing.

3.5 Security Barricades / Enclosures:

3.5.1 In order to maintain security, install Hoarding as Described above.

3.5.2 Relocate and/or reconfigure, as required, to suit construction phasing described in Section 01010, Construction Sequencing.

4. Construction Aids

4.1 Roads and Walks

4.1.2 Completely restore all surfaces disturbed.

4.1.4 Provide for access of emergency vehicles to premises at all times.

5. Not Used

6. Safeguards

6.1 In addition to the requirements of the Occupational Health and Safety Act provide temporary safeguards and protection adequate to maintain standard safety practices and to protect against:

.1 Accident or injury to any workman and other persons on the site, adjacent work and property, roads and walks.

.2 Damage to any part of the work and to any adjoining or adjacent structure, property, pavement, walks, services and other similar items by frost, weather, overloading, and any other cause resulting from the execution of the work.

.3 Particular attention shall be paid to the prevention of fire and elimination of fire hazards which would endanger the work or adjacent buildings and premises.

.4 Particular attention shall be paid to the prevention of spills or releases of asbestos, PCB's or mercury which would endanger the work at the site and at adjacent buildings and premises.

6.2 Should any part of the work or any buildings, pavements, trees, poles, hydrants, cultivated or grassed areas, etc., on or surrounding the site and adjacent to any road leading thereto, become damaged or disfigured due to lack of failure of such protection, make good with material identical with existing and adjoining surfaces, or compensate the Owner for value of same.

6.3 Provide all necessary temporary enclosures, hoardings, fences, gates, guardrails, hoists, stairs, ladders,

scaffolding, staging, runways, night-lights, and barriers as necessary for the work. Conform to all such requirements of the Labour Laws and other Provincial or local labour safety laws, applicable thereto. Be responsible for all scaffolding, formwork, or other temporary supports used during the work. Where such structures are of a complicated nature, employ the services of a Registered Professional Engineer to design such scaffolding, framework, or other temporary supports. Support all scaffolding independently of the building's finished surfaces. Arrange to avoid when not in use to permit work to proceed unimpeded, and promptly remove when no longer required.

6.4 Not Used

6.5 Should work be stopped for any cause, provide protection for the work and all necessary temporary cold weather heating during all such periods of work stoppages.

6.6 Keep all portions of the work properly and efficiently drained during construction and until completion, and the Contractor will be held responsible for all damage which may be caused or result from water backing up or flowing over, through, from, or along any part of the works, whether such damage is to the works, to the existing building, or to neighbouring properties.

6.7 Underground Electrical Services: provide safeguards to existing underground electrical services.

END OF SECTION

PART 1 - GENERAL

1.1 General Requirements

1.1.1 The Contractor shall perform the Work in a safe manner and shall comply with all applicable municipal, provincial, and federal legislation and any other regulation by authorities having jurisdiction of construction projects. In the event of conflict between any provisions on the above authorities, the most stringent provision shall apply.

1.1.2 Comply with current standards and requirements of the City of Greater Sudbury.

1.2 References

1.2.1 The Occupational Health & Safety Act - Occupational Health & Safety Legislation.

1.2.2 Ont. Reg. 213/91 - Regulation for Construction Projects.

1.2.3 Ont. Reg. 516/92 - Regulation for Industrial Establishment.

1.2.4 Ont. Reg. 357/91 - Regulation for Roll-Over Protective Structures

1.2.5 Ont. Reg. 523/92 - Window Cleaning Regulation

1.2.6 Ont. Reg. 860/90 - Work Place Hazardous Material Information System (W.H.M.I.S.)

1.2.7 The Environment Protection Act:

.1 Ont. Reg. 347 - Waste Management

.2 Ont. Reg. 346 - Air Emissions

.3 Ont. Reg. 362 - PCBs

.4 Ont. Reg. 630 - Spills

1.2.8 Ont. Reg. 403/97 - Ontario Building Code 1997

1.2.9 Transportation of Dangerous Goods Act

1.2.10 Workplace Safety & Insurance Board (WSIB)

1.2.11 CSA S269.1 - Falsework for Construction Purposes

1.2.12 CSA S350-M80 – Code of Practice for Safety in Demolition of Structures

1.2.3 CAN/CSA-S269.2 - Access Scaffolding for Construction Purposes.

1.2.124 FCC No. 301 - Standard for Construction Operations.

1.2.5 Canadian Electric Code, Part 1 CSA C22.1-1994 (17th Edition).

1.2.136 CAN/CSA - W117.2 - Safety in welding, cutting and allied processes.

1.3 Information Requirement

1.3.1 Prior to commencement of this contract, the Contractor must provide an Occupational Health and Safety Policy and Procedures as described in the Occupational Health and Safety Act for review by the Consultant.

1.3.2 The Contractor shall provide a copy of the company's CAD7 Workplace Safety & Insurance Board Rating for review by the Consultant.

1.3.3 The Contractor shall ensure and provide evidence that any individual with responsibility for the project's implementation is a competent worker as defined in the Occupational Health and Safety Act for approval by the Consultant.

1.3.4 The Contractor where required by the O.H.S.A. Regulations, shall register the project with the Director of Construction Health and Safety Branch of the Ministry of Labour within (30) thirty days of undertaking the project and prior to starting work on the site. A copy of the registration (Notice of Project) must be posted on a visible location on the site and a copy forwarded to the Consultant.

1.3.5 The Contractor shall propose the name of any competent worker as supervisor with accompanying qualification for approval by the Consultant.

1.3.6 The Contractor shall draft and present to the Consultant for review an emergency plan to be used in the case of a critical injury, accident or incident on site. This document must be kept up to date and must be discussed with all trades and Sub-Contractors working on site.

1.3.7 The Contractor shall provide to the Consultant copies of all inspection reports including all accident/incident reports and associated documentation.

1.4 Construction Safety Measures

1.4.1 The Contractor shall conform to and enforce strict compliance with the Occupational Health & Safety Act and Construction Regulations, the Environmental Protection Act, Workplace Hazardous Materials Information System (WHMIS), Transportation of Dangerous Goods Act, and any other pertinent legislation for construction projects.

.1 The Contractor for purposes of the Occupational Health & Safety Act, will be designated as the constructor for this project and will assume all of the responsibilities of the constructor set out in that Act and its Regulations.

.2 The Contractor shall monitor the Work to ensure that all applicable Health & Safety Regulations are followed. Violations will be documented, appropriate action taken, and records kept on file.

.3 The Contractor shall be informed of any minor violations of the Occupational Health & Safety Act or its Regulations and shall correct such minor violations immediately.

.4 The Consultant or its authorized representative shall stop the Work immediately for any major violation of the Occupational Health & Safety Act or its Regulations. The Contractor shall not resume the Work until any such violation has been rectified.

.5 The Contractor shall be responsible for any delay in the progress of the Work due to a violation of legislated or City health and safety requirements, and shall take the necessary steps to avoid delay in the final completion of the Work without additional cost to the City.

1.4.2 The Contractor shall provide a telephone, first aid kit, stretcher, blanket, eye wash station, and any other measures foreseeable in the site office, or other appropriate location, for emergency use.

1.5 Inspections and Reports

1.5.1 The Contractor shall note any preventative or corrective measures taken to uphold site safety on Inspection Reports and supply them for review by the Consultant if requested.

1.5.2 The Contractor shall ensure, and provide documented evidence that the work is being inspected especially as it relates to temporary structures, bracing falsework, form work, scaffolds, work platforms, excavations, cranes and hoisting equipment or any other area requiring inspection under the Occupational Health and Safety Act.

1.6 Workplace Hazardous Materials Information System (WHMIS)

1.6.1 Comply with requirements of Workplace Hazardous Materials Information System (WHMIS) regarding use, handling, storage, and disposal of hazardous materials, and regarding labelling and provision of material safety data sheets acceptable to Labour Canada and Health and Welfare Canada.

1.6.2 Deliver copies of (MSDS) Material Safety Data Sheets to the Consultant on delivery of materials.

1.6.3 Further to the requirements of the Workplace Hazardous Materials Information System (WHMIS), commence application of flammable, noxious or volatile materials only after the following requirements are met:

.1 Notify the Consultant at least 48 hours in advance of the start of application and receive permission to proceed.

.2 Provide adequate ventilation during application.

.3 Provide enclosures as required and as directed by the Consultant to contain fumes / vapours within application area.

.4 Post warning signs and barriers as required by regulations and as directed by the Consultant to restrict access to application area.

.5 Provide workers with necessary respiration devices to safeguard health.

.6 Provide a suitable number of fire extinguishers immediately adjacent to the area of application for volatile and flammable materials.

.7 Material Safety Data Sheets are provided directly to the Consultant for all products brought onto Site, as soon as such materials are brought onto Site where required by the Construction Safety Act. Additional copies of Material Safety Data Sheets to remain on site.

1.6.3 Notwithstanding the requirements of preceding paragraphs, applications which might affect the well being of any occupants and workers on Site or disrupt work of other contractors may be rescheduled by the Consultant for evening or week-end work.

1.6.4 Contractor shall be responsible for ensuring that all information regarding the handling of all materials, avoidance of spills, cleanup, installation of materials, ventilation, smoking regulations and the like, designed to minimize the levels of indoor air pollution in the final work shall be communicated to all subcontractors and Safety Committees.

1.7 Designated Substance Requirements

1.7.1 The Contractor shall propose a work plan for the removal of designated substances, in accordance with all applicable legislation, for review and discussion with the Consultant and Sub-Contractors prior to work in this area proceeding.

1.7.2 Where there is a requirement to dispose or store PCBs or other hazardous wastes, the Contractor shall propose a safe handling plan for review and approval by the Consultant prior to the work in this area proceeding. Permits will have to be secured by the Contractor, as necessary.

1.7.3 Prior to starting work, the Contractor shall register the project as a hazardous waste site and document the waste generated providing documentation describing the proposed activities with the Ministry of the Environment and Energy (MOEE).

1.7.4 The Contractor shall provide evidence of competency with regards to the Environmental Protection Act, Bill 309.

1.7.5 The Contractor shall ensure and provide evidence that all hazardous waste removed from the site is sent to a licensed waste disposal site by a licensed carrier and advise the Consultant when necessary testing is to be carried out.

1.7.6 The Contractor shall retain copies of all hazardous waste manifests on file.

1.7.7 The Contractor shall establish and provide evidence of having established approved PCB storage facilities to accommodate waste generated from on-site activities. Provide evidence that registration procedures are being followed.

1.7.8 The Contractor shall ensure that appropriate handling of all waste materials occur.

1.7.9 The Contractor shall perform regular inspections of the work and note the location and description of

designated substances on site and communicate the information to all Sub-Contractors/workers.

1.7.10 The Contractor shall inspect the project daily to monitor compliance with Designated Substances Regulations.

1.7.11 The Contractor shall provide access to the Consultant for review of all inspection reports.

PART 2 - PRODUCTS

2.1 Protective Clothing, Equipment and Devices

2.1.1 Comply with requirements of Section 21 - Ont. Reg. 213/91.

2.1.2 The Contractor shall provide six safety helmets at the site for visitors. All visitors must wear safety helmets and approved safety boots and other equipment as required.

2.2 Fall Protection

2.2.1 Comply with requirements of Section 26 - Ont. Reg. 213/91 and Section 85 - Ont. Reg. 516/92.

2.3 Housekeeping

2.3.1 Comply with requirements of Section 35-39 - Ont. Reg. 213/91 and Sections 52-58 - Ont. Reg. 213/91.

2.3.2 The Contractor shall implement a daily job site clean up program for all trades to maintain the Work site in a tidy and safe condition.

.1 Keep work areas, stairways, walkways, clean of obstruction, scrap materials, lumber, rags and other debris.

.2 Pile or stack materials in a orderly manner; wedge or block materials to prevent rolling.

2.3.3 Provide fire extinguishing equipment in sufficient numbers. Have equipment inspected regularly and recharge when necessary.

2.4 Ventilation and Respiratory Protection

2.4.1 Comply with requirements of Section 46 to 47 - Ont. Reg. 213/91 and Section 127 to 128 -Ont. Reg. 516/92.

2.5 Signs

2.5.1 Comply with requirements of Section 44 - Ont. Reg. 213/91.

2.5.2 The Contractor shall post signs in prominent locations and in sufficient numbers to warn workers of a hazard on a project.

2.5.3 The Contractor shall post the Corporation's Safety Awareness Bulletin as supplied by the Consultant
.

2.5.4 The Contractor shall post signage restricting access to authorized personnel only. Ensure that site access is strictly controlled.

2.6 Confined Space

2.6.1 Comply with requirements of Section 60 to 63 - Ont. Reg. 213/91 and Section 67 to 71 - Ont. Reg. 516/92.

2.6.2 The Contractor shall ensure, if the Work involves entering a confined space, procedures as laid out in Sections of Ont. Reg. 213/91 are followed. Proof of competency shall be provided upon request by the Consultant.

2.7 Public Way Protection

2.7.1 Comply with requirements of Section 64 to 66 - Ont. Reg. 213/91.

2.7.2 The Contractor shall ensure that every measure foreseeable is taken to protect the general public. Where necessary, provide covered ways for public passage.

2.8 Access / Egress

2.8.1 Comply with requirements of Section 70 to 72 - Ont. Reg. 213/91.

2.9 Stairs / Landings

2.9.1 Comply with requirements of Section 75 to 77 - Ont. Reg. 213/91.

2.10 Ladders

2.10.1 Comply with requirements of Section 78 to 84 - Ont. Reg. 213/91 and Section 18, 19 and 73 - Ont. Reg. 516/92.

2.11 Guardrails / Protective Coverings

2.11.1 Comply with requirements of Section 85 and 86 - Ont. Reg. 213/91 and Section 14 and 15 - Ont. Reg. 519/92.

2.12 Forms, Formwork, Falsework

2.12.1 Comply with requirements of Section 87 to 92 - Ont. Reg. 213/91.

2.12.2 Design and construct falsework in accordance with CSA S269.1.

2.12.3 The Contractor shall ensure that no part of the Work is subjected to a load which will endanger its safety or cause permanent deformation. Load no part of structure, falsework, formwork or scaffolding during construction with a load greater than it is calculated to bear safely. Make every support as strong as a

permanent support.

2.12.4 For all framework, falsework and re-shoring, ensure that it is built to meet working loads, stresses, etc. and provide evidence of verification by a professional engineer.

2.13 Welding and Cutting

2.13.1 Comply with requirements of Section 122 to 124 - Ont. Reg. 213/91.

2.13.2 Welding and cutting tasks, "hot work", shall be carried out in accordance with CAN/CSA 117.2 - M87, noting particularly the safety, training and supervisory requirements.

2.13.3 When welding or cutting must be done in a location not designated for such purpose, inspection and authorization shall be required in writing ("Hot Permit") before any such operations commence. The permit shall be issued by an experienced fire safety supervisor, or their appointee, who shall have inspected the work area and confirm that precautions have been taken to prevent fire. For an elaboration of basic and special precautions, see NFPA pamphlet 51B. This document contains an illustration of a typical permit.

2.13.4 The hot work contractor shall supply his hot work safety policy for the approval of the Consultant.

2.14 Scaffolding and Work Platforms

2.14.1 Comply with requirements of Section 125 to 142 - Ont. Reg. 213/91.

2.14.2 Design and construct scaffolding in accordance with CSA S269.2.

2.14.3 The Contractor shall ensure that all scaffolding over 15 m (49’-0”) or 10 m (32’-8”), if shell and tube, is designed and inspected by a Professional Engineer. Provide verification documents for review by the Consultant. Maintain documents on site throughout the project.

2.15 Elevating Work Platforms

2.15.1 Comply with requirements of Section 143 to 149 - Ont. Reg. 213/91 and Sections 51 to 54 Ont. Reg. 516/92.

2.16 Cranes, Hoisting, and Rigging

2.16.1 Comply with Requirements of Section 152 - Ont. Reg. 213/91.

2.16.2 The Contractor shall retain copies and make available for inspection all log books, inspection records detailing repairs, modifications and tests for cranes or similar hoisting devices.

2.17 Electrical/Mechanical Hazards and Lockout

2.17.1 Comply with requirements of Section 45 and 181 to 195 - Ont. Reg. 213/91 and Sections 40 to 44 - Ont. Reg. 516/92.

2.17.2 Comply with requirements of Sections 48, 60 and 188 - Ont. Reg. 213/91 and Sections 46, 72, 78 to 82 - Ont.

Reg. 516/92.

2.18 Not Used

2.19 Demolition

2.19.1 Comply with requirements of Section 212 to 221 Ont. Reg. 213/91, Section 72 - Ont. Reg. 516/92 and CSA S350-M80 – Code of Practice for Safety in Demolition of Structures.

PART 3 - EXECUTION

3.1 Excavations and Trenches

3.1.1 Comply with requirements of Section 222 to 242 - Ont. Reg. 213/91.

3.1.2 The Contractor shall coordinate and monitor the Work of all trades involved in trenching related work on the project.

3.1.3 If an excavation affects the stability of adjacent structures, the Contractor shall obtain the services of a Professional Engineer at his own cost who will specify in writing precautions to be taken to protect the structure affected. This record shall be maintained on site and strictly adhered to during the work.

3.1.4 Prefabricated, hydraulic or engineered support systems shall be designed by a Professional Engineer and a record shall be maintained on site which includes the capability of each device.

3.2 Work in Compressed Air

3.2.1 Comply with requirements of Section 332 to 399 - Ont. Reg. 213/91.

3.3 Existing Exits and Occupied Floor Areas

3.3.1 Maintain all existing exits and accesses to exits serving portions of the existing building scheduled to remain in use by the Owner, including corridors and doorways, free of impediments and obstructions.

3.3.2 Where an exit or access to exit is unavoidably blocked provide an acceptable alternate exit and/or access route, clearly defined and protected so that it is separated from the construction area by a smoke and dust tight partition equivalent to a 45 minute fire separation. Proposed alternate exits shall be to the satisfaction of authorities having jurisdiction.

3.3.3 At existing occupied floor areas exposed to new construction, provide a temporary dust tight partition equivalent to a 45 minute fire separation.

3.4 Modifications to Existing Fire Alarm System

3.4.1 Where work involves or necessitates modifications to the existing fire alarm system, carefully phase and schedule such work, under the direction and coordination of a technical representative of the manufacturer of

the fire alarm equipment, to minimize number and duration of temporary shutdown required.

3.4.2 Whenever such shutdown occurs which will leave all or a portion of the premises without fire alarm protection, notify the Owner and municipal fire department in advance of the time and estimated duration of such shutdown, so that the Owner may institute alternate protective measures acceptable to the fire department.

END OF SECTION

PART 1 - GENERAL

1. Fire Safety Plan

1.1 All Contractors and their personnel shall be familiar with this section and its requirements.

1.2 Be familiar with the Airport protocols and Fire Sefety Plans

2. Fire Department Briefing

2.1 The General Contractor shall coordinate arrangements for the trade Contractors to be briefed on Fire Safety at their pre-work conference by the Fire Chief before any work is commenced.

3. Reporting Fires

3.1 Know the location of nearest fire alarm box and telephone, including the emergency phone number.

3.2 Report immediately all fire incidents to the Fire Department as follows:

.1 activate nearest fire alarm box, or
.2 telephone.

3.3 Person activating fire alarm box shall remain at the box to direct Fire Department to scene of fire.

3.4 When reporting a fire by telephone, give location of fire, name or number of building and be prepared to verify the location.

4. Interior and Exterior Fire Protection and Alarm Systems

4.1 Fire protection and alarm systems shall not be:
.1 obstructed,
.2 shut Off, or
.3 left inactive at the end of a working day or shift without notification and authorization from the Fire Chief or his representative.

4.2 Fire hydrants, standpipes and hose systems shall not be used for other than fire fighting purposes unless authorized by the Fire Chief.

5. Fire Extinguishers

5.1 The Contractor shall supply fire extinguishers, as scaled by the Fire Chief, necessary to protect, in an emergency, the work in progress and the Contractor's physical plant on site.

6. Blockage of Roadways

6.1 The Fire Chief shall be advised of any work that would impede fire apparatus response. This includes violation of minimum overhead clearance, as prescribed by the Fire Chief, erecting of barricades and digging

of trenches.

7. Smoking Precautions

7.1 Although smoking is not permitted in hazardous areas, care must still be exercised in the use of smoking materials in non-restricted areas.

7.2 Smoking is not permitted within the existing building.

8. Rubbish and Waste Materials

8.1 Rubbish and waste materials are to be kept to a minimum.

8.2 The burning of rubbish is prohibited.

8.3 All rubbish shall be removed from the work site at the end of the work day or shift or as directed.

8.4 Extreme care is required where it is necessary to store oily waste in work areas to ensure maximum possible cleanliness and safety.

8.5 Greasy or oily rags or materials subject to spontaneous combustion shall be deposited and kept in an approved receptacle and removed as required.

9. Flammable Liquids

9.1 The handling, storage and use of flammable liquids are to be governed by the current National Fire Code of Canada.

9.2 Flammable liquids such as gasoline, kerosene and naptha may be kept for ready use in quantities not exceeding 45 litres provided they are stored in approved safety cans bearing the Underwriter's Laboratory of Canada or Factory Mutual seal of approval. Storage of quantities of flammable liquids exceeding 45 litres for work purposes, requires the permission of the Fire Chief.

9.3 Transfer of flammable liquids is prohibited within buildings or on jetties.

9.4 Transfer of flammable liquids shall not be carried out in the vicinity of open flames or any type of heat-producing devices.

9.5 Flammable liquids having a flash point below 38^{o}C such as naptha or gasoline shall not be used as solvents or cleaning agents.

9.6 Flammable waste liquids for disposal, shall be stored in approved containers located in a safe ventilated area. Quantities are to be kept to a minimum and the Fire Department is to be notified when disposal is required.

10. Hazardous Substances

10.1 If the work entails the use of any toxic or hazardous materials, chemicals and/or explosives, or otherwise creates a hazard to life, safety or health, work shall be in accordance with the National Fire Code of Canada.

10.2 The Fire Chief is to be advised, and a 'Hot Work' permit issued in all cases involving welding, burning or the use of blow torches and salamanders, in buildings or facilities. Special precautions are necessary to safeguard life and property from damage by fire or explosives.

10.3 Wherever work is being carried out in dangerous or hazardous areas involving the use of heat, fire watchers, equipped with sufficient fire extinguishers shall be provided. The determination of dangerous or hazardous areas along with the level of precaution necessary for Fire Watch shall be at the discretion of the Fire Chief. Contractors are responsible for providing fire watch service for their work on a scale established and in conjunction with the Fire Chief at the pre-work conference.

10.4 Where flammable liquids, such as lacquers or urethanes are to be used, proper ventilation shall be assured and all sources of ignition are to be eliminated. The Fire Chief is to be informed prior to and at the cessation of such work.

11. Questions and/or Clarifications

11.1 Any questions or clarification on Fire Safety in addition to the above requirements shall be directed to and cleared through the Fire Chief.

END OF SECTION

1. General

1.1 Obtain specified construction materials and equipment from suppliers in the same locality as the project as much as possible.

1.2 Do not substitute materials, equipment or methods different from that shown on Drawings and specified, without written approval of Consultant. Make application for approval of substitution to Consultant. Note: *Substitution will not be considered after shop drawings review and approval it the schedule will be negatively impacted.*

1.3 Use only materials, components and equipment which are in production. If so requested provide a precise model and shop drawings for viewing by Consultant.

1.4 Manufacture, pack, ship, deliver and store materials and equipment so that no damage occurs to structural and functional qualities and finished appearances.

1.5 Ensure that materials, while transported, stored, or installed, are not exposed to an environment which would increase their moisture content beyond the maximum specified, or in a manner detrimental to their function or appearance, or both.

2. Transportation and Handling of Materials

2.1 Schedule deliveries of materials to enable work to be executed without delay – and as anticipated by the construction strategy described herein. Before delivery, arrange for receiving at site.

2.2 Deliver packaged materials and equipment and store until use, with manufacturer's seals and labels intact.

2.3 Label packaged goods to describe contents, quantities, and other information as specified.

3. Storage and Protection of Materials

3.1 Store materials on site or in storage sheds with secure protection against all harmful environmental conditions. Prevent damage, adulterations, staining, and soiling of materials while stored.

3.2 Store manufactured materials in accordance with manufacturer's instructions.

3.3 Store steel, lumber, masonry units, precast concrete work, and similar materials on platforms raised clear of ground.

3.4 Store finished materials and woodwork under cover at all times.

3.5 All damaged materials will be rejected for use and thereupon shall be immediately removed from site.

3.6 Note: DO NOT store any material on roofing which will cause damage to membrane. This applies to lumber, steel, wood cases, pipes, conduits, insulation, concrete block or any other materials.

4. Anchoring Devices

4.1 In addition to requirements for fastening devices specified in the technical Sections of the Specifications, include for all fastenings, inserts, anchors, and accessories required for execution of work, and be entirely responsible for their installation.

4.2 Unless specified otherwise in the technical sections of the Specifications, use metal fastenings of same material as the metal component they are anchoring, of metal which will not set up electrolytic action which could cause damage to fastenings or components under moist conditions. In general, use non-corrosive or hot-dipped galvanized steel as exterior anchors for windows, roofing, sheet metal, and anchors occurring on or in an exterior wall or slab or interior wet areas such as showers, janitors, garbage rooms, kitchens, or similar spaces where moisture will be present.

4.3 If exposed fastenings and accessories are allowed by the Documents in finished areas, use fastenings and accessories of same texture, colour and finish as base metal on which they occur. Keep such exposed fastenings and accessories to a minimum, spaced and laid out evenly and neatly and cut off to make them as inconspicuous as possible, but still provide necessary securement.

4.4 Install anchoring devices in such a manner as to provide positive, permanent anchorage of unit to be anchored in position. Space anchors within limits of their capacities. Select all anchoring devices to have a safety factor of four (4) against failure for their design load.

4.5 Install fastenings of permanent type. Do not install wood plugs.

4.6 Fastenings which cause spalling or cracking of material to which anchorage is made are not permitted.

4.7 The use of explosive powder tools will not be permitted under any circumstances unless equipped with a device which positively prevents free flight of the stud.

5. Workmanship and Qualifications of Workers

5.1 Use competent experienced workers, thoroughly skilled in the trade in which they are performing work.

5.2 Strictly follow manufacturer's written instructions, directions and specifications when performing the work. If instructions are not available, obtain directions from the manufacturer in writing before proceeding. The proceeding of work without this direction is the Contractor's responsibility. It is the Contractor's responsibility to conform to Code requirements in the event that manufacturer's instructions and directions conflict with the Ontario Building Code.

5.3 Be responsible for obtaining up-to-date changes in manufacturer's application procedures.

6. Workmanship

6.1 Notify the Consultant in writing if these Specifications and/or Drawings conflict in any way with manufacturer's instructions. The Consultant will then rule which specifications shall be followed. If applicable, a copy of those instructions shall be made available at job site.

END OF SECTION

1. Related Requirements Specified Elsewhere

1.1 Section 01340: Shop drawings.

1,2 Section 01010: Construction Sequencing

2. Substitutions

2.1 During bidding, Consultant will consider written requests from prime bidders for substitutions, received at least seven (7) working days prior to bid closing date; requests received after that time will not be considered.

2.2 All requests for substitution, be it during bidding or at construction stage shall include complete data substantiating compliance with the Contract Documents and delivery date confirmation or concerns.

2.2.1 For products:

.1 Product identification, including manufacturer's name and address.

.2 Manufacturer's literature:
- .1 Product description
- .2 Performance test data
- .3 Reference standards.

.3 Samples.

.4 Name and address of similar projects on which product was used, and date of installation.

2.2.2 For construction methods:

.1 Detailed description of proposed method.

.2 Drawings illustrating methods.

2.2.3 Itemized comparison of proposed substitution with product or method specified.

2.2.4 Data relating to changes in construction schedule.

2.2.5 Relation to separate contracts.

2.3 In making request for substitution, Contractor represents:

2.3.1 He/she has investigated proposed product or method, and determined that it is equal or superior in all respects to that specified.

2.3.2 He/she will provide the substitution with the same guarantee as that for product or method specified .

2.3.3 He/she will coordinate installation of accepted substitution into work, making such changes as may be required for work to be complete in all respects.

2.3.4 Requests for substitutions during construction shall state what cost difference if any, will be made in the Contract Price for each substitution, and schedule impact ,should it be accepted,

2.4 Substitutions will not be considered if:

2.4.1 They are indicated or implied on shop drawings or project data submittals without formal request.

2.4.2 Acceptance will require revision of Contract Documents.

2.4.2 Schedule is negatively impacted.

3. Products List

3.1 Within fifteen (15) days after date of Contract, submit to Consultant one (1) reproducible transparency of complete list of all products which are proposed for installation.

3.2 Tabulate list by each specification section.

3.3 For products specified under reference standards, include with listing of each product:

- .1 Name and address of manufacturer.
- .2 Trade name.
- .3 Model or catalogue designation.
- .4 Manufacturer's data:
  - .1 Performance and test data.
  - .2 Reference standards.
- .5 Material safety data sheets.

4. Contractor's Options

4.1 For products specified only by reference standards, select any product meeting standards, by any manufacturer.

4.2 In order to establish standards of quality, the Consultant has in the detailed Specifications, referred to certain products by name and catalogue number. Where the drawings have shown specific detailing, dimensions, ratings, characteristics and other performance criteria the details are based on one specific manufacturer and not combinations of more than one.

4.3 For products specified by naming several products or manufacturer's, select any product and manufacturer named.

4.4 For products specified by naming one or more products, but indicating the phrase "or alternate approved by Consultant" after specified product, Contractor must submit request for substitution, for any product not specifically named.

4.5 For products specified by naming only one product and manufacturer and without the phrase "or alternate approved by Consultant ", there is no option, and no substitution will be allowed.

END OF SECTION

1. Final Inspections and Close Out

1.1 Arrange for, conduct and document final inspections, close-out and take-over at Completion of the Contract in accordance with procedures described in OAA/OGCA TAKE-OVER PROCEDURES, Document No. 100.

1.2 Five (5) days prior to Substantial Performance, set up a meeting with Subcontractors and Suppliers to go over their various disciplines with the Owner. Prior to Substantial Performance and as scheduled with the Consultant, provide instructional sessions for new equipment. At this time, one (1) copy of the approved brochures and operating manuals shall be given to the Owner. Instructional period shall be in as many sessions as required to properly disseminate information to Owner's technical staff.

END OF SECTION

PART 1 – GENERAL

1.1 General Requirements

1.1.1 Division One, General Requirements is part of this Section and shall apply as if repeated here.

1.2 Work Included In This Section

1.2.1 Installation of wood doors.

1.2.2 Installation of finish hardware supplied under Section 01021, Cash Allowances for hollow metal, wood and aluminum doors.

1.3 Product Delivery, Storage and Handling

1.3.1 Accept delivery of doors and finish hardware.

1.3.2 Inspect doors for damage, upon delivery to the site. Hollow metal doors which cannot be readily corrected by sanding, shall be promptly returned to the manufacturer.

1.3.3 Store doors in a dry and clean location. Store in a temperature and humidity controlled area. Stack 6" (150 mm) off the floor.

1.3.4 Be responsible for any damage to doors and hardware from time of delivery until accepted by Owner after installation.

1.4 Jobsite Control and Distribution of Hardware

1.4.1 Provide locked room for the storage of hardware at the job and a person responsible for the control and distribution of hardware.

PART 2 - PRODUCTS

NOT APPLICABLE

PART 3 - EXECUTION

3.1 Installation

3.1.1 Finish Hardware

.1 Set, fit and adjust hardware according to manufacturer's directions. Hardware shall operate freely. After installation, adjust door closers for closing and latching speed and panic devices for proper latching. Protect installed hardware from damage and paint spotting.

.2 Pre-drill kickplates and doors before attachment of plates. Apply with water-resistant adhesive and countersunk stainless steel screws.

.3 Locate hardware in accordance with requirements specified in Section 08710.

.4 Thresholds: Site measure openings before cutting. Set thresholds on two continuous beads of caulking conforming to Section 07900.

.5 Door Closers and Holders: Install door closers in such a manner that door opening is unaffected, and that maximum swing is permitted.

3.1.2 Not Used

3.1.3 Not Used

3.1.4 Wood Doors

.1 Prepare doors for installation with the required bevels, clearances and mortises for hardware. Install all applicable hardware, including hinges.

.2 Hanging of doors. Leave 3/32" (2 mm) shy (recessed) from rebate, even after bumpers are installed. Where trimmed in the field, have painter seal top and bottom edges of doors under Section 09900, Painting and Finishing.

3.2 Adjusting and Cleaning of Finish Hardware

3.2.1 Check and adjust each operating hardware item to ensure proper operation and function of unit.

3.2.2 Lubricate moving parts as recommended by hardware manufacturer. Use graphite type lubricant if no other is recommended.

3.2.3 Repair or replace defective materials and units which cannot be adjusted and lubricated to operate freely and smoothly. Re-install items found improperly installed.

3.2.4 Prior to date of Substantial Performance, re-adjust and re-lubricate as necessary.

3.2.5 Instruct Owner's designated personnel in the proper adjustment and maintenance of hardware and finishes at time of final hardware adjustment.

END OF SECTION

PART 1 - GENERAL

1.1 General Requirements

1.1.1 Division One, General Requirements is part of this Section and shall apply as if repeated here.

1.2 Referenced Standards

1.2.1	ASTM C790-90	Recommended Practices for Use of Latex Sealing Compounds
1.2.2	ASTM C804-83 (Reapproved 1988)	Standard Practices for Use of Solvent-Release Type Sealant
1.2.3	ASTM D1056-85	Standard Specification for Flexible Cellular Materials --Sponge or Expanded Rubber
1.2.4	ASTM D1565-81 (Reapproved 1986)	Standard Specification for Flexible Cellular Materials - Vinyl Chloride Polymers and Copolymers (Open Cell Foam)
1.2.5	CAN/CGSB-19.13-M87	Sealing Compound, One-Component, Elastomeric, Chemical Curing
1.2.6	CAN/CGSB-19.17-M90	Sealing Compound, One-Component, Acrylic Emulsion Base
1.2.7	CAN/CGSB 19.22-M89	Sealing Compound, Mildew-Resistant, for Tubs and Tiles
1.2.8	CAN/CGSB-2-19.24-M90	Sealing Compound, Multi-Component, Chemical Curing
1.2.9	Sealant and Waterproofers Institute.	Sealant and Caulking Guide Specification.

1.3 Quality Assurance

1.3.1 Have work performed by a recognized established caulking and sealing contractor having at least ten (10) years experience and with skilled workers thoroughly trained and competent in the use of caulking and sealing equipment and the specified materials.

1.3.2 In order that recommendations may be made, arrange with sealant manufacturers for one of their technical representatives to visit the site, prior to application of this work, to discuss with the Contractor, in the presence of the Consultant, the procedures to be adopted and to review site conditions, and surfaces and joints to be sealed.

1.3.3 Discuss the following items:

.1 Weather conditions under which work will be done.

.2 Anticipated frequency and extent of joint movement.

.3 Joint design.

.4 Suitability of durometer hardness and other properties of material specified.

1.4 Submittals

1.4.1 Samples

.1 Prepare sample joints at site of each type of caulking and sealant for each joint condition. Do not proceed with work until each sample joint has been approved by Consultant.

.2 Approved joints shall represent minimum acceptable for work.

.3 Submit manufacturer's name for each compound which will be used on project before commencing work.

1.4.2 Product Data: Submit product data of sealants and caulking proposed in accordance with Section 01300.

1.4.3 Extended Warranty

.1 Submit a warranty in accordance with Section 01300.

.2 Total warranty period shall be one (1) year.

1.5 Job Conditions

1.5.1 Apply materials only to completely dry surfaces, and at air and material temperatures above minimum established by manufacturer's specifications.

1.5.2 The applicator is responsible for ensuring the sealants are applied under acceptable conditions. Substrate temperatures of less than 4°C require special considerations, to ensure a clean, dry substrate and proper sealant wet-out.

.1 The substrate to which sealant is to be applied should be dry. This is particularly crucial where the substrate is porous and subject to water absorption. Although the joint interface may appear to be dry, the substrate below the immediate joint surface may still be moist. This moisture can migrate rapidly to the joint surface thereby contaminating any preparation.

.2 Use a quick flashing solvent such as MEK or Tremco 200 Cleaner to clean the substrates.

NOTE: Ensure the substrate and/or any coating on the substrate is compatible with MEK or Tremco Cleaner 200.

.3 After solvent cleaning, wipe the joint interfaces dry with a second clean rag.

.4 Immediately following cleaning, install the sealant and tool it.

PART 2 - PRODUCTS

2.1 Materials - General

2.1.1 Labels indicating conformance to specified reference specifications will be acceptable as verification that contents meet specified requirements. Colour will be selected by Consultant from manufacturer's full range. Colours shall match surface on which it occurs unless noted otherwise.

2.1.2 Sealants shall be non-bleeding and capable of supporting their own weight. All caulking, sealants, cleaning solvents, fillers and primers shall be compatible with each other.

2.2 Sealant Type B

2.2.1 Interior, non-traffic bearing: one (1) component, interior acrylic latex emulsion base, conforming to CAN/CGSB-19.17-M.

2.2.2 Acceptable materials:

.1 Tremflex 834 as manufactured by Tremco Limited,
.2 Parr-crylic as manufactured by Loctite Canada Inc.,
.3 Alternate approved by Consultant.

2.3 Sealant Type C

2.3.1 Interior sanitary caulking: one (1) component, chemical curing, mildew resistant, silicone conforming to CAN/CGSB-19.22-M, containing non-toxic fungicidal agents.

2.3.2 Acceptable materials:

.1 DC786 as manufactured by Dow Corning Canada Limited
.2 Sanitary 1700 as manufactured by GE Silicones Canada,
.3 Proglaze as manufactured by Tremco Limited,
.4 Alternate approved by Consultant.

2.4 Primers

2.4.1 Specifically designed for use with sealants on surfaces encountered, compatible with joint forming materials and as recommended by sealant manufacturer, to assure adhesion of sealants and to prevent staining of substrate material.

2.5 Sealant Backing

2.5.1 Extruded or preformed, compressible, resilient, non-waxing, non-extruding, non-staining strips of closed cell polyethylene or urethane foam rod, diameter 25% wider than joint width. Sizes and shapes to suit various

conditions and manufactured especially for caulking purpose.

2.5.2 Backing shall be compatible with sealant, primer and substrate. Ensure that sealant backing is not cut nor punctured during installation.

2.6 Bond Breaker

2.6.1 Tape of type supplied or recommended by sealant or caulking manufacturer.

2.7 Cleaning Material

2.7.1 Non-corrosive, non-staining, solvent type, xylol, methyl-ethyl-ketone (MEK), toluol, isopropyl alcohol (IPA) or as recommended by sealant manufacturer and acceptable to material or finish manufacturers for surfaces adjacent to sealed areas.

PART 3 - EXECUTION

3.1 Preparation

3.1.1 Remove moisture, loose mortar, dust, oil, grease, oxidation, mill scale, coatings, and all other materials affecting bond of compounds by brushing, scrubbing, scraping, or grinding, from surfaces to which caulking compounds must adhere.

3.1.2 Ensure joints are suitable to accept sealant and caulking. Ensure that releasing agents, coatings, or other treatments have either not been applied to joint surfaces, or that they are entirely removed.

3.1.3 Remove existing caulking and/or sealant from all joints (where indicated on Drawings). Ensure that all joint interfaces are clean

3.1.4 Clean joints and spaces which are to be sealed and ensure they are dry and free of dust, loose mortar, oil, grease, oxidation, coatings, form release agents, sealers and other foreign material.

3.1.5 Clean porous surfaces such as concrete, masonry or stone by wire brushing, grinding or sandblasting as required to obtain clean and sound surfaces.

3.1.6 Remove laitance by grinding or mechanical abrading. Remove loose particles present or resulting from grinding, abrading or sandblast cleaning by thorough brushing. Clean ferrous metals of rust, mill scale and foreign materials by wire brushing, grinding or sanding.

3.1.7 Remove oils by sandblast cleaning

3.1.8 Wipe non-porous surfaces such as metal and glass to be sealed, except pre-coated metals, with cellulose sponges or clean rags soaked with ethyl alcohol, ketone solvent, xylol or toluol and wipe dry with clean cloth. Where joints are to be sealed with silicone based sealants clean joint with methyl-ethyl-ketone (MEK) or xylol. Do not allow solvent to air-dry without wiping. Clean pre-coated metals with solutions or compounds which will not injure finish and which are compatible with joint primer and sealant. Check ferrous metal surfaces are

painted before applying sealant.

3.1.9 Before any work is commenced, test the materials for indications of staining or poor adhesion.

3.1.10 Do not apply material to masonry until mortar has cured.

3.1.11 Do not exceed shelf life, and pot life of the materials and installation times, as stated by the manufacturers.

3.1.12 Become familiar with the work life of the material to be used. Do not mix two part materials until required for use.

3.1.13 Mix sealants thoroughly with a mechanical mixer capable of mixing at 80-100 rpm without mixing air into the materials. Continue mixing until the material is a uniform colour and free from streaks of unmixed material.

3.1.14 Mask areas adjacent to the joints as required. Prevent contamination of adjacent surfaces. Remove masking promptly after the joint has been completed.

3.2 Application

3.2.1 Work of this Section shall include all sealing and caulking, except where specified under the work of other Sections, to make the building weather and air tight, as indicated typically on drawings, and as otherwise specified.

3.2.2 Apply materials in accordance with the recommendation of the material manufacturer, in particular, backer rod, priming and depth-to-width ratio. Maintain 2:1 width/depth ratio: minimum joint size shall be 6 mm (1/4") x 6 mm (1/4"), maximum depth of sealant to be 13 mm (1/2").

3.2.3 Install joint backing material to achieve correct and uniform joint profile. Where joint design or depth of joint prevents use of joint backing material, apply bond breaker tape to prevent three-sided adhesion.

3.2.4 Do not stretch, twist, puncture or tear joint backing. Butt joint backing at intersections. Install bond breaker tape at back of joint where joint backing is not required or cannot be installed

3.2.5 Apply primer with a brush which will permit all joint surfaces to be primed. Perform priming immediately before installation of caulking or sealant.

3.2.6 Caulking and sealants shall be of gun or knife grade consistency to suit the joint condition. Use gun nozzles of the proper sized to suit the joints and the caulking and sealing material.

3.2.7 Apply sealant using hand operated guns or pressure equipment fitted with suitable nozzle size and equipment approved by sealant manufacturer. Apply in accordance with manufacturer's directions and recommendations.

3.2.8 Force sealant into joint and against sides of joints to obtain uniform adhesion. Use sufficient pressure to completely fill all voids in joint regardless of variation in joint widths and to proper joint depth as prepared. Ensure full firm contact with interfaces of joint. Superficial pointing with skin bead shall not be acceptable.

3.2.9 Finish face of compound to form smooth, uniform beads free from ridges, wrinkles, sags, air pockets and embedded impurities. At recesses in angular surfaces, finish compound with flat face, flush with face of materials at each side. At recesses in flush surfaces, finish compound with concave face flush with face of materials at each side.

3.2.10 After joints have been completely filled, tool them neatly to a slight concave surface.

3.2.11 Caulk joints in site painted materials after adjacent surfaces have been painted.

3.3 Schedule

3.3.1 General: Use one (1) of the sealants specified for each type in the following locations. Ensure sealant chosen (from several specified under each type under "MATERIALS") for each location is recommended by manufacturer for use for conditions encountered.

3.3.2 Sealant Type B: Install in the following interior locations:

.1 Joints between interior hollow metal door frames and adjacent wall / partition construction.

.2 Joints between masonry and concrete surfaces.

.3 Joints between gypsum board and masonry, or other materials.

.4 Joints between louvres and other surfaces.

.5 Penetrations through roofs, floors and walls other than firestopping.

.6 All other interior locations where sealing is required or noted on Drawings except in locations designated for Types A and C and except where sealing is specified in other Sections.

3.3.3 Sealant Type C: Install in the following locations:

.2 Joints between washroom vanities, counters and backsplashes and adjacent wall surfaces in kitchens, washrooms and wet areas.

.2 Joints between urinals and walls.

3.4 Cleaning

3.4.1 Do not use chemicals, scrapers, or other tools which would damage surfaces of caulked or sealed materials when excess compounds or droppings are removed. Work damaged by cleaning shall be made good under work of this Section.

3.5 Repair

3.5.1 Cut out damaged caulking and sealing, re-prepare and prime joints and install new material as specified to the Consultant's satisfaction.

3.6 Protection of Completed Work

3.6.1 Provide wood planks or other approved, non-staining means of protection for the completed caulking and sealants installations where required to protect the work from mechanical, thermal, chemical and other damage by other construction operations and traffic.

3.6.2 Maintain protection securely in place until project completion. Remove protection when so directed by the Consultant.

END OF SECTION

PART 1 - GENERAL

1.1 General Requirements

1.1.1 Division One, General Requirements is part of this Section and shall apply as if repeated here.

1.1.2 Throughout the specification, type of materials are specified by manufacturer's name and catalogue number in order to establish standards of quality and performance and not for the purpose of limiting competition. Unless specifically stated otherwise such as locks/locksets, the bidder may use the alternate products specified, except that the burden is upon the bidder to prove such quality. Supply samples if required, to permit a fair evaluation of the proposed substitute with respect to quality, serviceability, warranty and cost.

1.2 Work Included in This Section

1.2.1 Supply to the site, all finish hardware specified complete with templates and installation instructions, together with all required screws, expansion shields, anchors and other related accessories for satisfactorily attaching or installing all finish hardware.

1.2.2 Package hardware separately for each opening and state clearly on each package the number and description of the opening for which the hardware is intended.

1.3 Hardware Consultant

1.3.1 Furnish the services of a fully experienced Architectural Hardware Consultant (A.H.C.) to be in attendance at all times during installation at normal working hours to co-ordinate and check shop drawings and provide consultation services when required and on-site inspections.

1.3.2 All hardware shall be inspected after installation by the Manufacturer's and/or Owner's representative who shall certify in writing to the Owner, that all hardware has been supplied and installed in accordance with the specifications and Hardware List, and are functioning properly.

1.3.3 At project completion instruct the Owner's Representative on all aspects of maintenance and adjustments of all Finish Hardware.

1.3.4 Following award of contract, arrange to meet with Owner and Consultant to finalize the keying schedule.

1.4 Co-ordination of Related Work

1.4.1 Co-ordinate the hardware with other allied trades such as carpentry, millwork, wood doors, hollow metal frames and others.

1.5 Handling and Storage

1.5.1 Handle and store materials on job site in such a manner that no damage will be done to the materials.

1.5.2 Deliver and store materials undamaged in a dry area.

1.5.3 Wrap all hardware in separate packages complete with all trimming and screws required for each item, distinctly labelled and numbered for each opening to correspond with the final reviewed Finish Hardware Schedule.

1.6 Hardware Reinforcement

1.6.1 Provision of hardware reinforcing required to provide a firm support for hardware is under other sections of these specifications, however, it shall be the responsibility of this section to check that all doors, frames and panels are reinforced in a satisfactory manner to provide a firm support. Report any doors, frames or panels that have not been adequately reinforced.

1.7 Fire and Building Codes

1.7.1 All hardware shall comply with applicable fire and building codes *(including 2006 OBC)* and requirements of local authority having jurisdiction over hardware. All electrical items must have CSA approval.

1.7.2 For all doors indicated on Door Schedule as requiring a fire-resistance rating, hardware shall have been tested and listed by ULC as meeting requirements for use on labelled fire doors, and shall bear labels or markings attesting to such listing.

1.8 Barrier Free Requirements

1.8.1 The building is designed to meet the needs of barrier free access. All hardware shall be supplied and installed in accordance with the 2006 Ontario Building Code and CAN/CSA-B61-M90.

1.9 Submittals

1.9.1 Shop Drawings

.1 It shall be the responsibility of the hardware supplier to examine the plans and schedules to satisfy itself that all hardware listed can be used as specified.

.2 Prepare and submit to the Consultant for review, five (5) copies of hardware schedule showing all hardware required for each opening.

.3 Fully detail schedule as to actual factory catalogue numbers, quantities, hardware locations, etc. Include catalogue cut sheets of each item of hardware.

.4 Arrange schedule in the same format and numerical sequence as that in the accompanying schedule.

.5 All pages of the schedule shall be printed on 8-1/2" x 11" sized paper.

.6 Within seven (7) days after receiving reviewed hardware schedule, supply two (2) copies of the schedule to the Consultant. Bind in a hard cover with provision for insertion of additional pages.

1.9.2 Samples

.1 Submit samples of the complete line of hardware and finishes to the Consultant in accordance with Section 01300, if and when requested, to accompany any proposal for substitution. Fully label each sample as to manufacturer, type, size, and location for which its use is proposed.

.2 Remove samples from the Consultant's office promptly upon request of Consultant.

.3 Substitute new samples for any samples that are not considered by the Consultant to be equal to the hardware scheduled. Final approved samples will be retained by the Consultant until the project is completed.

.4 Do not order hardware from the manufacturers until the samples have been approved by the Consultant, and the hardware and finishes supplied are identical with the approved samples.

1.9.3 Not Used

1.9.4 Submit the following to the Consultant:

.1 One (1) set wrenches for locksets, exit devices and door closers.

.2 Three (3) sets of manufacturer's installation instructions for locksets.

.3 Three (3) sets of manufacturer's instructions in regard to proper care of hardware including lubrication of locksets, exit devices and door closers.

.4 One (1) complete set of template schedules.

.5 Catalogue cuts of all hardware installed.

1.10 Changes

1.10.1 Check all changes to the work of this section, that may be issued and revise the reviewed hardware schedule accordingly. Submit all revisions to the hardware schedule to the Consultant for review.

1.11 Warranty

1.11.1 Submit a warranty in accordance with Section 01300, Submittals, covering the repair or replacement of defective work within specified periods.

1.11.2 Provide total warranty of five (5) years for door closers and two (2) years for all other hardware.

1.11.3 State in the warranty that any defective (material and operation) item of hardware shall be replaced immediately upon notification that item is defective at no expense to Owner.

1.12 Definition of Finishes and Symbols

AL, 689	Aluminum Paint
C, P	Prime Paint
C15, 619	Dull-Nickel Plated
C32D, 630	Dull-Stainless Steel
C28	Satin Finish Aluminum - Anodized
C26D, 626	Dull-Chromium Plated
CA, AL	Aluminum Anodized
STS	Self Tapping Screws
WS/S	Wood Screws and Shield
SB	Sex Bolts
SB & MS	Sex Bolts & Machine Screws
TB Only	Thru Bolt Only
NRP	Non Removable Pin
RH	Right Hand
RHR	Right Hand Reverse
LH	Left Hand
LHR	Left Hand Reverse
SLC	Strike Lip Length to Centre
FMS	Full Machine Screws
AMS	Arm Machine Screws
MS	Machine Screws
TMS	Template Machine Screws
KA	Keyed Alike
KD	Keyed Different
FBB	Template - Ball Bearing
GROMM & MS	Grommet Nuts & Machine Screws

1.13 Hardware Location of Doors

1.13.1 Standard hardware location dimensions shall be in accordance with Canadian Metric Guide for Steel Doors and Frames (Modular Construction) prepared by Canadian Steel Door and Frame Manufacturer's Association unless indicated or scheduled otherwise.

PART 2 - PRODUCTS

2.1 In accordance with the requirements of Section 08711, Hardware Schedule.

2.2 Supplementary Material Requirements:

2.2.1 The following supplements the Finish Hardware Schedule. Where conflict occurs, the Finish Hardware Schedule shall govern:

.1 Locks and Latches

.1 Supply strikes in stainless steel C32D.

.2 Where lever handles are specified, locks and latches shall be specially designed for lever handles. Lever trim shall be through-bolted.

.3 Latch bolts to be anti-friction three piece bolts.

.2 Closers

.1 All door closers shall be hydraulically controlled and full rack and pinion in operation.

.2 Each closer shall have adjustable general speed, latch speed and back check control.

.3 Supply special closer keys and wrenches as usually packed with closers.

.4 Supply all necessary attaching brackets, mounting channels, cover plates, etc. where necessary for correct application of door closers.

.3 Pulls, Pushplates, Kickplates

.1 Door pulls shall have concealed mounting.

.2 Length of kickplates shall be 1-1/2" (38 mm) less than door width for single door and 1" (25 mm) less than door width for door in pairs.

.3 All stainless steel plates are to be 1/16" (1.6 mm) thick and of one manufacturer's product, free from burrs and sharp edges. Use Type 304 stainless steel only.

.4 Provide pushplates and kickplates with temporary strippable plastic coating.

2.3 Templates

2.3.1 All hardware applied to metal doors and frames shall be made to template.

2.3.2 Check Hardware Schedule, Drawings and Specifications, and furnish promptly to applicable trades any templates, template information and manufacturer's literature, required for proper preparation for and application of hardware, in ample time to facilitate progress of work.

2.4 Fasteners

2.4.1 Provide screws, bolts, expansion shields, and other fastening devices as required for the satisfactory installation and operation of the hardware. Provide Robertson or Phillips heads.

2.4.2 Fastening devices shall be of the same finish as the hardware which is to be fastened.

2.4.3 Where a pull is scheduled on one side of the door and a pushplate on the other side, issue installation directions to the trade responsible for fixing, so that the pull is secured through the door from the reverse side,

and the pushplate installed to cover the screws. Supply flush pulls with machine screws for attaching as specified above.

2.4.4 For fastenings in concrete for floor stops and thresholds, use machine screws in expansion shields.

2.4.5 For door closers for doors in wet areas, mount on non wet side with stainless steel or brass screws (nickel plated) to prevent corrosion.

PART 3 - EXECUTION

3.1 Examination

3.1.1 Before furnishing any hardware, carefully check all Architectural Drawings of work requiring hardware, verify door swings, door and frame material and operating conditions, and assure that hardware will fit work to which it is to be attached.

3.1.2 Check shop drawings and frame and door lists affecting hardware type and installation, and certify to correctness thereof, or advise Consultant in writing of required revisions.

3.2 Installation

3.2.1 In accordance with the requirements of Section 06210, Installation of Doors and Finish Hardware.

3.3 Hardware Headings

3.3.1 In accordance with Section 08711, Hardware Schedule.

END OF SECTION

Manufacturer's Legend

Hinges	Stanley Hinge
Locksets	Best Access Systems
Closers	Sargent
Stops, kickplates, push, pulls, misc	Canadian Builders Hardware

Heading # 1

1 Single Door 124 Existing Hold Room 123 to Existing Barrier Free Washroom 124 RH
1 Single Door 124A Existing Hold Room 123 to New Washroom 124A RH

4	Hinges	CB168 4-1/2 X 4-1/2	*(Existing – Reuse @ Door 124)*	652
4	Hinges	CB168 4-1/2 X 4-1/2	*(Door 124A)*	
1	Privacy Set	35H-0-L-14H	*(Existing – Reuse @ Door 124)*	626
1	Privacy Set	45H-O-L-14H	*(Door 124A)*	626
2	Closer	EN 351 DA-RO		
2	Kickplate	12 x 34 NEF		630
2	Wall Stops	130		619

END OF SECTION

PART 1 - GENERAL

1.1 General Requirements

1.1.1 *Division One, General Requirements is part of this Section and shall apply as if repeated here.*

1.2 Related Sections - *unused*

1.3 Referenced Standards

1.3.1	CAN/CSA-A82.27-M91	Gypsum Board Products
1.3.2	CSA-A82.31-M1991	Gypsum Board Application
1.3.3	GA-214-90	Gypsum Association.
1.3.4	Can ULC-S135	Magnesiacore
1.3.5	2006 Ontario Building Code	

1.4 Product Delivery, Storage and Handling

1.4.1 Package finish materials.

1.4.2 Store materials in a protected dry area. Store gypsum board flat in piles with edges protected.

1.4.3 Ensure that finish metal members are not bent, dented, or otherwise deformed.

1.4.4 Deliver products only supplied under the work of this Section to those who are responsible for installation, to the place they direct, and to meet installation schedules.

1.4.5 Package fire-rated materials with Underwriters Laboratories of Canada labels attached.

1.5 Job Conditions

1.5.1 Environmental Conditions

.1 Install work only in areas closed and protected against weather, and maintained between 10°C and 21°C. In cold weather, ensure that heat is introduced in sufficient time, before work commences to bring surrounding materials up to these temperatures, and maintained until materials installed by this Section have cured.

.2 Do not install work in any area unless satisfied that work in place has dried out, and that no further installation of damp materials is contemplated.

.3 Do not install work at areas used as part of the natural displacement ventilation system for

movement of air unless satisfied that the movement of air is not compromised by obstructions, debris or dust.

PART 2 - PRODUCTS

2.1 Materials

2.1.1 Gypsum Board: Conforming to CAN/CSA-A82.27, as manufactured by Canadian Gypsum Company, Domtar Construction Materials or Westroc Industries Limited as follows:

.1 Fire-Rated Gypsum Board: Type "X", generally 16mm (5/8") or, in thicknesses indicated, with tapered edges, classified for fire hazard by Underwriters Laboratories of Canada, and labelled in conformance with the ULC Label Service for the application specified.

2.1.2 Joint Materials

.1 Joint Reinforcing Tape: 2" (50 mm) wide x 0.3 mm thick perforated paper with chamfered edges.

.2 Joint and Skim Compounds: gypsum with latex resin, possessing good adhesion, mixed with fresh, unadulterated water, having no detrimental effect on compounds.

2.1.3 Accessories: As manufactured by Canadian Gypsum Company, Domtar Construction Materials, Westroc Industries Limited or Bailey Metal Products Limited as follows:

.1 Corner Beads: #25 steel, zinc-coated with flanges suitable for thickness of wallboards on which applied, and suitable for taping and plastering over.

.2 Casing Beads: #25 steel, zinc-coated, channel-shaped, suitable for taping and plastering over.

.3 Ceiling and Wall Reveals / Edge Trims: purposed made, extruded aluminum, edge trims / reveal mouldings as manufactured by Pittcon Industries or Fry Reglet Corporation or alternate approved by Architect. The use of "J" moulding or roll formed steel is not permitted.

.4 Control Joints: Crimped, roll-formed zinc, as CGC #093, with flanges for tape reinforcement or two casing beads set with gap for movement, and backed with flexible air seal membrane.

.5 Thermal Break Tape: No.220D pvc tape manufactured by Sellotape Canada Ltd. or other reputable manufacturer.

2.1.4 Fastenings and Ties

.1 Screws: Self-drilling, self-tapping, case-hardened, Phillips head, gypsum board screws with corrosion-resistant finish. #6 x 1" (25 mm) for single thickness panel fastening, and #7 x 1-5/8" (40 mm) for double thickness panel fastening.

.2 Tie Wire: 1/16" (1.6 mm) diameter galvanized soft annealed steel wire.

.3 Twist Clips: Caddy acoustical tee combination washer - wing nut, as manufactured by Erico Products Ltd.

.4 Concrete Anchors: Phillips Red Head TW-614 or other make of tie wire sleeve anchors conforming to US Federal Specs. FF-S-325, Group II Type 3, Class 3, and QQ-2-235, Type II, Class 3. Do not use powder activated fasteners for ceiling support.

2.1.2 Steel Studs: Depth to suit span except where wider depths are shown on Drawings. Knurled flanges 1-1/4" (32 mm) wide with edges doubled back at least 3/16" (4.8 mm); #25 gauge (0.59 mm) steel galvanized, typical, with girts as required and with service access holes. For specific locations indicated on Drawings use minimum #18 gauge steel galvanized material. Where structural studs are indicated select gauge of steel to suit the applications.

2.1.3 Retainer Studs: As manufactured by Bailey Metal Products, or Insulock Systems.

2.1.4 Partition Runners: As specified for studs with flanges a minimum 5" (125 mm) high, and to suit depth of studs as required to serve as backing for carpet base or terrazzo where carpet or terrazzo occurs.

2.1.5 Bracing Channels: For partitions, 3/4" wide x 1-1/2" high x 16 gauge thick (19 mm x 38.1 mm x 1.6 mm) cold-rolled, galvanized steel.

2.1.6 Furring Channels: #25 gauge galvanized, nominal size of 7/8" (22 mm) deep by 1-1/4" (32 mm) face, hat type with knurled face.

2.1.7 Resilient Channels: CGC RC-1 or equivalent by other reputable manufacturers.

2.1.8 Acoustical Caulking: "Acoustical Sealant" by Tremco (Canada) Limited.

2.1.9 Sound Attenuation : Friction fit, "Thermafibre" 3-1/2" (88.9 mm) thick sound attenuation batts by Canadian Gypsum Company Limited, "Quietzone" by Owens-Corning, "Sound Attenuation" blankets by the Roxul Company, or "SAB" by Fibrex Insulations Inc.

2.1.10 Control Joint Strip: Roll formed zinc coated metal with a tape protected void, 1/4" (6 mm) wide throat size x 1/2" (12.7 mm) deep with flanges for embedding in joint compound.

2.1.11 Skim Coating: "Durabond 90" or equivalent manufactured by Domtar Gypsum. compound.

2.1.12 Trim: D-200 Drywall Metal Trim by Bailey Metal Products Limited. Generally at the following locations or as indicated on drawings; at window returns, bulheads, and drywall butting concrete block.

2.1.13 Wall Angle Moulding: BMF 'F' Mould by Bailey Metal Products Limited; at drywall(vertical)/ acoustic tile interface conditions. Colour to be white.

2.1.14 Acoustic Board: Sonopan, 19mm thick board as manufactured by Louiseville Specialty Products. tel 819.228.2789.

2.1.15 Corner Guards (CG): Shall be purpose-made, 3'-0" high x 16 gauge (1.6 mm) minimum thickness Type 304, No. 4 finish stainless steel with 2" (50 mm) returns and 1/8" (3 mm) radius corners. Install with adhesive / concealed fasteners in locations as indicated on Drawings.

PART 3 - EXECUTION

3.1 Examination

3.1.1 Before application of gypsum board commences, ensure that services have been installed, tested and approved by Consultant; that conduits, pipes, cables and outlets are plugged, capped or covered; and that fastenings and supports installed by others are in place.

3.1.2 Ensure that environmental conditions and work preceding that of this Section are satisfactory.

3.1.3 Verify that work performed under other Sections as a part of a ULC specification for a fire-rated assembly has been done in accordance with that specification.

3.2 Installation in General

3.2.1 Install furring, studs, gypsum board, accessories, and all other related products in strict accordance with CSA Standard A82.31, including Appendix B "Control Joints". Where the standard does not incorporate specific products and methods, follow the manufacturer's directions. Use 5/8" (16 mm) thick gypsum board for interior work unless detailed otherwise.

3.2.2 Install work within 1/8" (3 mm) of dimensioned location unless approved otherwise by Consultant, and flat to tolerance of 1/8" (3 mm) maximum in 10'-0" (3 m) and 1/16" (1.6 mm) maximum in any running 12' (300 mm).

3.2.3 Co-ordinate the work of this Section with that of other Sections. Ensure that adequate preparation is made for the attachment of hangers, fasteners, stiffeners, and reinforcing. Provide for carrying and integration of flush-mounted and recessed components only after consultation and verification of methods with those performing the work of Divisions 15 and 16. Do not use through-the-roof hangers.

3.2.4 Do not install metal framing, trim, casings, or accessories which have been bent, dented, or otherwise deformed.

3.2.5 Securely attach trim, casings, framing and accessories. Attachment by means of tape is unacceptable.

3.2.6 Framing and furring shown on Drawings is indicative, but do not regard it as exact or complete. Construct work to provide adequate strength to withstand stresses imposed by use without distortion and to maintain dimensions indicated on drawings.

3.2.7 Erect supporting and finish materials to dimensions indicated on drawings, plumb, level, straight, and square to adjoining elements.

3.2.8 Provide for movement at intersections with structural members to avoid transference of loads to this work. Construct vertically sliding deflection space at top of partitions by means of double channels. Secure top

channel to structure and bottom channel to stud work. Secure board only to bottom track making allowance for up to 3/4" (19 mm) deflection of structure. Cut board short at top and caulk this joint.

3.2.9 Make allowance for thermal movements in gypsum board systems.

3.2.10 Provide control joints in gypsum board work in locations as indicated on Drawings and at no greater spacing than 20'-0" (6000 mm) in each direction, at perimeters of ceilings where they abut walls and other vertical surfaces, at abutting structural elements, at dissimilar walls and ceilings, at structural expansion and control joints, and at other locations where stresses are likely to develop as recommended by board manufacturer. Line up control joints with joints in other construction or with centrelines of mullions, columns, piers, or similar building elements.

3.2.11 Form control joints using continuous furring channels along each side of joint locations, and filling control joint space with specified joint strip, secured in place, making straight joints.

3.2.12 Install casings and thermal breaks at junctions of gypsum board with exterior door, window, or screen joints.

3.2.13 Do not support the work of this Section from, nor make attachment to ducts, pipes, conduit or the support framing of the work of other Sections. Place supplementary steel supports as required to maintain hanger spacing and to keep mechanical ducts free from hangers being secured to.

3.2.14 Do not apply gypsum board in close proximity to hot pipes or heating ducts.

3.2.15 Install materials with the minimum of joints. Tightly butt joints without force and neatly align them.

3.2.16 Frame openings on each side with suitable sections. Provide clearances required at mechanical and electrical services such as grilles, diffusers, access panels and lighting fixtures only after verification of requirements in each case.

3.2.17 Co-operate with those installing the work of other Sections. Where the work of others penetrates gypsum board construction, fit openings snugly, and to ensure cover by escutcheons or plates utilized.

3.3 Fixture, Cabinet, Toilet Partition and Urinal Screen Supports

3.3.1 Verify location of supports within gypsum board assemblies to support wall mounted lights, fitments, cabinets, plumbing fixtures, wall plates required for grab bars and any other item attached to drywall. Co-operate and co-ordinate with all trades and provide information in ample time to ensure supports are provided in the correct locations, and are adequate to support the loads.

3.4 Partition Stability

3.4.1 Where partitions do not extend to structure, provide suitable internal reinforcement to prevent lateral movement of the partitions. Secure head runners to acoustic tees by means of "twist clips".

3.5 Concrete Anchors

3.5.1 Locate anchorage points in reinforced concrete floor slab underside in accordance with gypsum board manufacturers suspension requirements. Drill holes with carbide-tipped drill bits conforming to ANSI B94.12. Install anchors; minimum installation depth and method of expansion shall be as recommended by the anchor manufacturer.

3.6 Not Used

3.7 Metal Stud Partition Framing

3.7.1 Secure runner channels at floor and tops of partitions for their full lengths, at 24" (610 mm) o.c. with concrete fasteners or as suitable for the substrate material. Install runner channels also at heads and sills of openings. Secure runners at openings by cutting flanges, turning up webs, and screwing to studs.

3.7.2 Butt, not mitre, runners at wall intersections and corners. At ceilings, lap and screw channels together.

3.7.3 Space studs at 16" (400 mm) o.c. generally, and at no greater distance than 2" (50 mm) from abutting walls, partitions and corners.

3.7.4 Secure studs to runners by screws, crimping, or welding as required by stud type to conform with manufacturer's design specification.

3.7.5 Utilize only proper stud sizes to meet all the requirements of this specification. Span studs of 1-5/8" (40 mm) depth no greater than 8'-10" (2700 mm) between supports, 2-1/2" (65 mm) depth, 11'-9" (3600 mm) and 3-5/8" (92 mm) depth, 15'-9" (4800 mm).

3.7.6 Double studs at all door jambs. At each jamb of doors exceeding either 36" (915 mm) width or 2-1/2" (63 mm) in thickness or both, install a structural channel reinforcing extending from floor structure to structure above, and adequately anchored at each end.

3.7.7 Brace studs with stiffeners over doors in partitions of greater height than 10'-0" (3000 mm) spaced as preceding, and above and below window type openings spaced not more than 6" (150 mm) from the top and bottom of openings. Stiffeners shall be 3/4" (19 mm) bracing channels, wire tied or welded to each stud, and extending horizontally across entire length of each braced partition and across two full stud spaces at each side of door and window openings.

3.7.8 Splice studs only when unavoidable by nesting with 8" (200 mm) minimum lap, and fastened with one screw in each flange.

3.7.9 Co-ordinate work with others installing horizontal runs of service lines so that work of all is done simultaneously. Where standard holes are too small for installed services, notch studs and splice notched flange with a splice piece 12" (300 mm) longer than notch, fastened with two screws.

3.7.10 Unless shown otherwise on drawings, all partitions, together with wallboard facing, shall extend above ceilings to underside of structure above.

3.7.11 Ensure that electrical and telephone boxes are not installed back to back.

3.7.12 Screw frame anchor clips of frames supplied and installed under the work of another Section, to jamb studs and head and sill runners. Provide adequate fastening to prevent movement of frames within partitions.

3.8 Not Used

3.9 Acoustically Treated Walls and Bulkheads

3.9.1 Install board 5/8" (16 mm) short at top, bottom and edges and fill with caulking. Caulk on both sides of wall. Caulk after gypsum board is in place, not before.

3.9.2 Stagger all joints in double layer gypsum board construction.

3.9.3 Pack partition cavities with acoustical insulation or as indicated on drawings and/or details. Friction fit insulation securely between studs.

3.9.4 Fill all butt joints of gypsum board with joint filler prior to taping or finishing.

3.9.5 Caulk or plaster fill all penetrations through gypsum board for electrical boxes, wiring, pipes, ducts and all similar items. Caulk airtight around electrical and communication boxes before plate is installed.

3.9.6 Do not let fastening screws extend through to opposite set of studs.

3.9.7 Build bulkheads above acoustically rated doors and partitions and folding partitions as detailed.

3.9.8 Acoustically treated walls in all rooms and spaces designated for music use and functions must be air tight.

3.10 Installation of Gypsum Board

3.10.1 Extend boards into door, window, and other opening reveals.

3.10.2 Back all joints with a framing member.

3.10.3 Install boards in maximum lengths and widths to minimize joints, and never in lengths of under 6'-0" (1800 mm). Stagger end joints where they are unavoidable. Locate joints in ceilings and soffits where least prominently discernible.

3.10.4 Form neat joints at mill ends and at field-cut edges of wallboard panels. Cut paper on face with a knife. Smooth by sanding and rubbing edges together.

3.10.5 Fasten boards to metal support members by sheet metal gypsum board screws at 12" (300 mm) o.c. no closer than 3/8" (10 mm) to and no farther than 1/2" (12.7 mm) from centre of joints. Do not force adjacent boards into place. Allow moderate contact. Provide extension slips where required. Drive screws to form a slight depression, but no so paper cover is broken.

3.10.6 Where curved gypsum board is indicated, wet boards and bend to required radius, and block in position until dry. Finished curved surface shall be smooth and even.

3.11 Treatment of Gypsum Board Joints

3.11.1 Fill joints, screwholes, and depressions on board surfaces exposed to view to provide smooth, seamless surfaces, and square, neat corners. Use jointing compounds and reinforcing tapes in conformance with manufacturer's specifications. Ensure that board is tight against framing members, fasteners are properly depressed, and adhesives have sufficiently cured.

3.11.2 Fill joints, edges and corners by Gypsum Association Level 5 three coat tape and joint filler method.

3.11.3 At external corners, install corner beads secured to framing at 6" (150 mm) o.c. on alternate flanges. Fill to nose of corner bead with joint filler and topping cement, as specified for bevelled joints.

3.11.4 At casing beads installed at all edges of board exposed to view, where board butts against other materials, with no trim to conceal junction at control joints, at perimeter of ceiling surfaces, at top of partitions where they stop against continuous ceiling surfaces, and where otherwise shown on drawings, secure casing beads to framing at12" (300 mm) o.c.

3.11.5 At screwheads, fill holes and depressions with a two-coat application of joint filler.

3.12 Joint and Surface Treatment of Cement Board - Typical

3.12.1 Apply 2" (50 mm) glass fibre tape over joints and corners. Press firmly and uniformly in place to avoid bumps. Apply in accordance with manufacturer's directions.

3.12.2 Where board is to serve as substrate for paint or coating, apply 1/8" (3 mm) thick uniform water resistant skim coat, ready to receive paint or coating.

3.13 Installation of Accessories

3.13.1 Install accessories such as access panels, and grilles when supplied by other sections. Obtain prior Consultant's approval of locations of accessories prior to installation.

3.13.2 Gypsum board infill at access panels shall have taped edges. Apply gypsum board with adhesive. Fill and sand smooth perimeter edges as specified for joint finishing.

3.14 Not Used

3.15 Cleaning and Patching

3.15.1 Remove droppings and excess joint compound from work of others and from work of this Section, before it sets.

3.15.2 Make good to cut-outs for services and other work, fill in defective joints, holes, and other depressions with joint compounds.

3.15.3 Make good defective work, and ensure that surfaces are smooth, evenly textured, and within specified

tolerances to receive finish treatments.

3.15.4 Clean off beads, casings, and other metal trim, and leave all surfaces ready for specified finishes.

END OF SECTION

PART 1 - GENERAL

1.1 General Requirements

1.1.1 Division One, General Requirements is part of this Section and shall apply as if repeated here.

1.2 Referenced Standards

1.2.1 ASTM F1303-97 Standards Specification for Sheet Vinyl Floor Covering with Backing.

1.3 Submittals

1.3.1 Samples: Submit samples of sheet flooring in accordance with Section 01300 for Consultant's approval.

1.3.2 Maintenance Instructions: Submit to Consultant for binding into Manufacturer's Data Book, in accordance with Section 01300.

1.3.3 Extra Stock: Deliver to Owner on completion of work, 2% of resilient sheet flooring of each colour installed.

1.4 Product Delivery, Storage and Handling

1.4.1 Package flooring materials and identify contents of each package. Store materials for 21°C for at least 48 hours before installation.

1.5 Job Conditions

1.5.1 Environmental Temperature: Install resilient flooring only when base surfaces and air temperatures have been maintained between 21°C and 32°C for 72 hours preceding installation, and will be so maintained during installation and for 7 days thereafter.

1.5.2 Protection

.1 Prevent traffic and work on newly-laid floors by barricading until work has set.

.2 After floors have set, and until project completion, cover work by methods which will ensure that they are not damaged by traffic.

.3 Ensure that adequate ventilation and spark-proof electrical equipment are provided, and smoking is prohibited, in areas where flammable adhesives are used. Store materials to prevent spontaneous combustion.

PART 2 - PRODUCTS

2.1 Materials

2.1.1 Resilient Sheet Flooring (RSF): Altro "Impressionist II", resilient sheet safety flooring as distributed by Compass Flooring Ltd., or alternate approved by Consultant. Colours shall as selected by the Consultant from manufacturer's standard range.

2.1.2 Accessories

.1 Colours of accessories to be selected later by the Consultant.

.2 Welding rods: PVC to later selection by the Consultant from manufacturer's standard range of colours.

.3 Transition trim, reducing strips, from full range available from Finercraft and Johnsonite Industries.

2.1.3 Sub-floor Filler and Leveller: As recommended by manufacturer to suit subfloor on which its material is installed.

2.1.5 Primers and Adhesives: Low VOC types as recommended by manufacturer of material to suit substrate surfaces and conditions.

2.1.6 Cleaner: Neutral chemical compound that will not damage sheet or affect its colour.

2.1.7 Sealant: As recommended by flooring manufacturer.

PART 3 - EXECUTION

3.1 Preparation

3.1.1 Clean subfloor with wire brushes and prime concrete surfaces which are dusting or chalking.

3.1.2 Remove soil and deposits which would lessen the bond between resilient flooring materials and the surfaces to which they are applied. Fill joints, cracks, and holes in these surfaces and level surface irregularities with filler. Remove prime paint and wire brush steel base surfaces.

3.1.3 Dry vacuum entire floor area immediately prior to application of adhesive.

3.1.4 It is imperative that the sub-floor must be completely smooth and clean prior to application of new floor.

3.2 Resilient Sheet Flooring Application

3.2.1 Install sheet flooring to areas as indicated on Room Finish Schedule. Install in strict accordance with manufacturer's recommendations and instructions.

3.2.2 Apply adhesive uniformly over entire surface to be covered, using recommended trowel. Do not spread more adhesive than can be covered by flooring before initial set takes place.

3.2.3 Lay flooring to produce a minimum number of seams. Border widths minimum 1/3 width of full material.

3.2.4 Run sheets in direction of traffic. Double cut sheet joints.

3.2.5 Tightly butt together all joints and seams in sheet flooring. Continuously hot weld joints and seams in strict accordance with manufacturer's printed instructions. Upon completion, ensure a strong tight seam, properly sealed and welded for the entire length of seam.

3.2.6 As installation progresses, roll flooring with 75 kg. roller to remove adhesive ridges, entrapped air and ensure full adhesion.

3.2.7 Cut flooring neatly around fixed objects.

3.2.8 Continue flooring over areas which will be under built-in furniture and equipment.

3.2.9 Apply small bead of silicone sealant at juncture between flooring and all built-in furniture and floor mounted fitments (i.e. toilets, cabinets, etc.).

3.2.10 Terminate flooring at centreline of door in openings where adjacent floor finish or colour is dissimilar. Ensure smooth transition.

3.2.11 Install transition trim edge strips at unprotected or exposed edges where flooring terminates.

3.2.12 Provide integral cove base where indicated on the Drawings and Room Finish Schedule. Install continuous vinyl cove fillet strip at junction of flooring and wall.

.1 Cap top of cove base with stainless steel cap. Seal top of stainless steel strip and wall with sealant in accordance with flooring manufacturer's instructions.

.2 Neatly heat weld all inside and outside corners.

3.2.13 Apply sealant to all pipes and services passing through the floor, to ensure a watertight seal.

3.2.14 At new flush clamp drains remove clamping ring. Fix flooring into body of drain and mechanically clamp with clamping ring. New drains must be as specified to ensure proper installation with flooring.

3.2.15 Do not allow any traffic or equipment on floor for a minimum of 24 hours.

3.3 Cleaning

3.3.1 Clean flooring in accordance with manufacturer's instructions.

END OF SECTION

PART 1 - GENERAL

1.1 General Requirements

1.1.1 Division One, General Requirements is part of this Section and shall apply as if repeated here.

1.1.2 Examine the Specifications and Drawings for the work of other Sections regarding the provisions for prime and finish coats. Paint or finish all materials installed throughout the project which are required to be painted and which are left unfinished or unpainted by other Sections. The only exception to this requirement is where the drawings, specifications, or schedules state positively and explicitly that a surface is not be finish painted.

1.2 Related Sections

1.2.1 Section 01355, Waste and management materials

1.2.2 Section 01395, Environmental Goals

1.3 Referenced Standards

1.3.1	SSPC	Steel Structures Painting Council, "Steel Structures Painting Manual, Vol. 2"
1.3.2	ASTM D523-89	Test Method for Specular Gloss
1.3.3	*Unused*	
1.3.4	CAN/CGSB-1.4-92	Petroleum Spirits Thinner
1.3.5	CAN/CGSB-1.5-M91	Low Flash Petroleum Spirits Thinner
1.3.6	CAN/CGSB-1.40-M89	Primer, Structural Steel, Oil Alkyd Type
1.3.7	CAN/CGSB-1.57-M90	Alkyd, Interior, Semigloss Enamel
1.3.8	CAN/CGSB-1.59-M89	Alkyd, Exterior Gloss Enamel
1.3.9	CAN/CGSB-1.68-M91	Solvent Type Primer-Sealer for Interior Wall
1.3.10	CAN/CGSB-1.76-M91	Interior and Exterior Heat Resistant Enamel
1.3.11	CAN/CGSB-1.100-M89	Interior Latex Type, Flat Paint
1.3.12	CAN/CGSB-1.119-M89	Primer-Sealer, Wall, Interior Latex Type
1.3.13	CAN/CGSB-1.135-M91	Flat Alkyd Enamel for Equipment

1.3.14	CAN/CGSB-1.143-M90	Heat Resistant Aluminum Enamel, Silicone Alkyd
1.3.15	CAN/CGSB-1.181-92	Ready Mixed Organic Zinc-Rich Coating
1.3.16	CAN/CGSB-1.188-M90	Emulsion Type Filler Masonry Block
1.3.17	CAN/CGSB-1.195-M90	Interior Semi-gloss Latex Paint
1.3.18	CAN/CGSB-1.209-93	Low Sheen Latex Interior Paint
1.3.19	CGSB 85-GP-16M	Painting Galvanized Steel
1.3.20	CGSB 85-GP-32M	Painting Concrete Floors
1.3.21	CAN/CGSB-85.100-93	Painting
1.3.22	ECP	Environmental Choice Program
1.3.23	ECP-07-89	Water-borne Surface Coatings
1.3.24	ECP-12-89	Solvent-borne Paints
1.3.25	OPCA	Ontario Painting Contractors Association
1.3.26	ULC	Underwriters' Laboratories of Canada
1.3.27	CAN/ULC-S102-M88	Standard Method of Test for Surface Burning Characteristics of Building Materials and Assemblies

1.4 Submittals

1.4.1 Samples

.1 Submit 2-12" x12" (300 mm x 300 mm) samples of every colour required in accordance with Section 01300. Include a complete list of paint and finish materials to be used, showing the name of the manufacturer, the catalogue number, grade and quality of the materials proposed for use.

.2 Colours shall match those specified in the Material and Colour Schedule. Colours selected for work of this Section shall be based on products manufactured by Para Paints Canada Inc.

.3 Apply samples of finishes in a testing area in the building in the presence of the Consultant. Apply samples with the correct material, number of coats, colour, texture and degree of gloss required. Refinish if required, until approval of the Consultant is obtained. Location of testing area shall be as approved by the Consultant.

.4 Leave test areas undisturbed until completion of the work. Approved work in the test area shall serve as a standard for similar work throughout the project. Work which does not match the approved finishes shall be corrected and refinished at no expense to the Owner.

.5 Submit opaque paint samples in triplicate on 4" x 8" (100 mm x 200 mm) draw down cards on black and white. Submit samples of stains and clear finishes in triplicate on 2" x 4" x 3/8" thick (50 mm x 100 mm x 10mm) piece of wood of same species as scheduled to receive stain or clear finish.

1.4.2 List of Materials: Submit a list of materials proposed for use on the work, for review at least thirty (30) days before the materials are required. The list shall bear the manufacturer's official certification that the materials listed thereon are the best quality made by the company.

14.3 Extra Materials: Supply Owner with one clearly identified sealed 4 litre can of each colour and type of paint, stain, and varnish for this work for future maintenance. Take such materials to designated storage area in the building.

1.5 Product Delivery, Storage, and Handling

1.5.1 Storage and Safety Precautions: Store containers of paint, varnish, thinner, and other volatile materials in well-ventilated designated room under lock and key, where they will not be exposed to excessive heat or direct rays of the sun. Keep containers tightly closed when not in actual use. Remove used cloths from building every night, and when not in use. Take precautions against spontaneous combustion by burning, drenching in water, or placing in air-tight covered metal containers. Provide warning signs where toxic materials and explosive solvents are used. Provide CO2 fire extinguisher of 9 kg. capacity in this room while area is used for paint storage.

1.5.2 Ventilation: Ventilate, heat and maintain storage area at minimum temperature of 10 deg C (50 deg F) and protected from direct rays of sun.

1.5.3 Protection: Protect the work of other trades from damage. Post signs at freshly-painted surfaces immediately following their completion. Any soiling of concrete pavement attributable to this section due to spillage, mixing of material, or any other cause whatsoever, to be entirely reinstated under this Section at no expense to the Owner.

1.5.4 Fire Safety Requirements:

.1 Provideone(1) [9 kg] [Type ABC] dry chemical fire extinguisher adjacent to storage area.

.2 Store oily rags, waste products, empty containers and materials subject to spontaneous combustion in ULC approved, sealed containers and remove from site on a daily basis.

.3 Handle, store, use and dispose of flammable and combustible materials in accordance with National Fire Code of Canada requirements.

.4 Non of the above is intended to relieve or limit the responsibilities of this trade, or to fully describe the obligations of this trade.

1.5.5 Waste Management and Disposal:

.1 Remove from site and dispose of packaging materials at appropriate facilities.

.2 *Separate* for place in designated containers waste in accordance with Waste Management Plan (WMP).
.3 Place materials defined as hazardous or toxic in designated containers.
.4 Handle and dispose of hazardous materials in accordance with Canadian Environmental Protection Act (CEPA), provincial and Municipal regulations.
.5 Ensure emptied containers are sealed and stored safely.
.6 Unused paint, coatings, materials must be disposed of at official hazardous material collections site as approved by municipal and local s
.7 tandards.
.8 Paint, stain and wood preservative finishes and related materials (thinners, and solvents) are regarded as hazardous products and are subject to regulations for disposal. Information on these controls can be obtained from Provincial Ministries of Environment and Regional levels of Government.
.9 Material which cannot be reused must be treated as hazardous waste and disposed of in an appropriate manner.
.10 Place materials defined as hazardous or toxic waste, including used sealant and adhesive tubes and containers, in containers or areas designated for hazardous waste.
.11 To reduce the amount of contaminants entering waterways, sanitary/storm drain systems or into ground follow these procedures:
.1 Retain cleaning water for water-based materials to allow sediments to be filtered out.
.2 Retain cleaners, thinners, solvents and excess paint and place in designated containers and ensure proper disposal.
.3 Return solvent and oil soaked rags used during painting operations for contaminant recovery, proper disposal, or appropriate cleaning and laundering.
.4 Dispose of contaminants in approved legal manner in accordance with hazardous waste regulations.
.5 Empty paint cans are to be dry prior to disposal or recycling (where available).
.12 Where paint recycling is available, collect waste paint by type and provide for delivery to recycling or collection facility.
.14 Set aside and protect surplus and uncontaminated finish materials: Deliver to or arrange collection by employees, individuals, or organizations pre-approved and/or authorized by the owner .

1.6 Job Conditions

1.6.1 Environmental Temperature: Do not paint or finish in unclean or improperly ventilated areas. Maintain ambient and substrate temperatures and humidity conditions within acceptable limits as recommended by paint manufacturer. Maintain adequate ventilation at all times to control excessive humidity.

1.6.2 Protection

.1 Provide metal pans or adequate tarpaulins to protect floors in areas assigned for the storage and mixing of paints.

.2 Use sufficient drop cloths and protective coverings for the full protection of floors, furnishings, and work not being painted. Protect mechanical, electrical, and special equipment hardware, all other components of the building which do not require painting from paint spotting and other soiling during the painting process.

.3 Leave above areas clean and free from evidence of occupancy upon completion of painting.

.4 Protect paint materials from fire and freezing.

.5 Keep waste rags in metal drums containing water, and remove from building at end of each working shift.

1.6.3 Lighting: Provide a minimum of 161 lux lighting on surfaces to be painted.

PART 2 - PRODUCTS

2.1 Materials

2.1.1 Paint

.1 Highest grade, first line quality product of the manufacturer. Painting and finishing materials shall comply with or exceed CAN2-85-100 for Premium Grade Work and complying with the specified generic formula guide in accordance with the manufacturer's recommendations.

.2 Refer to Material and Colour Schedule for colours. Paints are identified as (P). Colours will be selected from Para Paints Canada Inc. and shall be matched by paint supplier. The following manufacturers are acceptable:

.1 Para Paints Canada Inc.
.2 ICI Paints Canada (Glidden)
.3 Pratt and Lambert Inc.
.4 PPG Canada Inc.
.5 Sherwin-Williams Company of Canada Limited
.6 Colour Your World
.7 Benjamin Moore Paints
.8 Sico Inc.

.3 The Consultant reserves the right to refuse any paint or finishing material if in his opinion it is incapable of matching specified colours or is not suitable or adequate for the use which it is proposed.

.4 Paint and finishing materials for each procedure listed in Finish Schedule shall be products of single manufacturer.

.5 Paint products shall meet or exceed requirements of ECP-07 Guidelines for water based paints and ECP-12 Guidelines for solvent based paints. In addition, paint products shall meet or exceed applicable performance standards issued by CGSB or other such standards approved by accredited standards writing organizations.

.6 Paint shall have excellent flowing and brushing properties. Paint shall cure free of sags, runs, wrinkles to yield desired finish specified.

.7 Sheen shall be as selected by Consultant.

PART 3 -EXECUTION

3.1 Inspection

3.1.1 Verify moisture content of surfaces with electronic moisture metre. Do not proceed without written directions if moisture reading is higher than 12-15%.

3.1.2 Ensure temperature of surfaces to be finished is between 10 and 20 deg C (50 and 68 deg F). Proceed with work only when surfaces and conditions are satisfactory for production of a first-class job. Report to Consultant, in writing, any surfaces which are found to be unsatisfactory. Commencement of work shall imply acceptance of substrate surfaces.

3.1.3 Remove dust, grease, rust, and extraneous matter from all surfaces, except that rust occurring on items specified to be primed under other Sections shall be removed and work re-primed under those Sections.

3.2 Preparation

3.2.1 Concrete and Masonry

.5 Test surfaces for alkalinity with pink litmus paper or other standard industry method.

.6 Where extreme alkalinity occurs, wash surface with 4% solution tetrapotassium pyrophosphate where latex base paint is to be used, and with zinc sulphate solution where other paint bases are to be used.

.7 Etch normal concrete surface to receive alkyd paint with commercial muriatic acid solution (1 part to 20 parts water by volume). Follow with complete rinsing with clean water.

.8 Rub down surfaces of different textures and remove mortar spots and sharp edges with a scraper. Patch where required. Fill masonry and concrete surfaces with primer/block filler to fill all holes and pores.

3.2.2 Gypsum Board: Inspect to ensure joints are completely filled and sanded smooth. Inspect surfaces for "nail popping", screw heads not recessed and taped, breaks in surface or other imperfections and have repaired as required. Fill small nicks or holes with patching compound and sand smooth.

3.2.3 Unprimed Ferrous Metal Surfaces: clean with power tools to SSPC-SP3 specifications before application of the primer coat.

3.2.4 Galvanized and Pre-Primed Surfaces

.1 New Metal With Wipe Coated Galvanizing: Thoroughly clean to remove all grease, oil, dirt and all other contaminants which may be present on the surface. Mineral Spirits or Xylol are acceptable solvents to use for this purpose - that is, to remove grease, oil, dirt and similar contaminants. Remove scale by wire brushing.

.2 Weathered Metal With Wipe Coated Galvanizing: For old and weathered galvanized and preprimed metal, thorough surface preparation is essential - to ensure that all contaminants have been removed from the surface and pretreat as for New Metal.

.3 Spangled Type Galvanizing: Treat with vinyl wash primer to provide proper bond for paint finish.

3.2.5 Not Used

3.2.6 Not Used

3.3 Protection

3.3.1 Provide scaffolding, staging, platforms and ladders, as required for execution of work. Erect scaffolding to avoid interference with work of other trades. Comply with Occupational Health and Safety Act.

3.3.2 Provide drop cloths or adequate plastic sheets to protect floors in areas assigned for storage and mixing of paints.

3.3.3 Mask and cover all surrounding surfaces to provide neat, clean, true juncture lines, and to keep paint from adjacent surfaces. Upon completion, remove masking and clean adjacent surfaces free of overspray spatters, drips, smears and overspray.

3.3.4 Mask labels and specification plates occurring on equipment to be painted and ULC labels on doors and frames.

0.3.5 Remove finish hardware, electrical switch and outlet covers to protect from paint splatter. Mask items not removable. Use sufficient drop cloths and protective coverings for full protection of floors, furnishings, mechanical, electrical and special equipment, all other components of building which do not require painting or to be removed, from paint spotting and other soiling. Re-install items when paint is dry. Clean any components that are paint spotted or soiled.

0.3.6 Keep waste rags in covered metal drums containing water and remove from building at end of each day.

0.3.7 Prohibit traffic, where possible, from areas where painting is being carried out and until paint is cured. Post “wet paint” or other warning signage during and on completion of work.

0.3.8 When handling solvent coating materials, wear approved vapour/particulate respirator as protection from vapours. Dust respirators do not provide protection from vapours.

3.3.9 Protect and keep sprinkler heads free of paint.

3.4 Workmanship

3.4.1 Apply work using skilled tradesmen working under direction of a capable foreman, and according to manufacturer's specifications; in a workmanlike manner; with suitable clean equipment in good condition; in dust-free and under adequate illumination and suitable conditions for production of best results; evenly, uniform in sheen, colour and texture, free from brush marks, sags, crawls, runs, or other defects detrimental to appearance or performance; and in a manner to prevent spattering or spilling over finished surfaces.

3.4.2 Mix paint on site and use unadulterated, except where specified otherwise in manufacturer's directions.

3.4.3 Use same brand of paint for primer, intermediate, and finish coats.

3.4.4 Do not apply succeeding coats until preceding coat is dry and hard.

3.4.5 Lighten preceding coats 25% white (tint white coats) from the colour called for in the Colour and Material Schedule.

3.4.6 It is generally intended that material be applied by brush or roller. Spray painting will be permitted in areas where advantageous, but Consultant shall be consulted and shall approve each area before spray painting commences. Consultant may at any time prohibit the use of spray painting for such reasons during application as carelessness, poor masking, or protective measures, paint fogs drifting into prepainted surfaces or other finishes, disturbance to other trades, or failure to obtain a dense, even, opaque finish.

3.4.7 Sand lightly between coats with No. 00 sandpaper.

3.4.8 Do not apply last coat of varnish on stained wood surfaces until all gloss varnish applications have been inspected and approved by the Consultant.

3.5 Application

3.5.1 Note: In addition to specific notes included in this specification refer to Material and Colour Schedule for additional requirements. Provide finish uniform in sheen, colour and texture, free from streaks, shiners and brush or roller marks or other defects.

3.5.2 Follow manufacturer's preparation and application instructions.

3.5.3 Paint all exposed surfaces where specifically noted on Room, Material and Finish Schedule.

3.5.4 Unless specifically noted, do not paint stainless steel, chrome, baked enamel, plastic laminate, solid phenolic plastic, glass, tile, porcelain enamel, ceramic surfaces, equipment name or specification plates, fire resistance labels, washroom fixtures, manhole and catch basin covers, floors or sprinkler heads. Make good paint finish on items where painted surfaces have become marred or defaced.

3.5.5 Examine the Drawings and Specifications for the work of other sections regarding the provisions for prime and finish coats. Paint or finish all materials installed throughout the project which are required to be painted and which are left unfinished or unpainted by other sections. The only exception to this requirement is where

the Drawings, specifications or schedules state positively and explicitly that a surface is not to be finish painted.

3.5.6 In areas where painting is not called for, painting is not required, with the following exceptions, which require paint: plywood backboards, all other exposed wood and hollow metal doors and frames. Colours selected by Consultant.

3.5.7 Paint interior of all pipe and duct spaces, visible through grilles and slots in suspended acoustic tile ceiling grid, black matte finish. Paint interior of lighting coves and valances, including interior of angles supporting louvres, white.

3.5.8 Paint glazing rebates and stops of hollow metal sections before glass is installed.

3.5.9 Paint convectors, grilles, conduit, pipes, ducts, hangers, brackets, panels, access panels, exposed steel, concrete inserts, bus ducts, and other articles on or near finished surface shall to match the colour of the surface on which the article appears, except where noted otherwise on Schedules.

3.5.10 Identification paint schedule as follows:

.1 Fire protection system: red, alkyd enamel.

.2 Systems posing safety hazards: yellow, alkyd enamel.

.3 Safe systems: green, alkyd enamel.

3.5.11 Do not paint circuit breakers, switches, and receptacles, or similar electrical components.

3.5.12 Paint surfaces where mirrors will be directly applied to prevent moisture bleed through wall.

3.5.13 For finished interior wood that is to be painted, apply one coat of approved best grade white interior trim primer, reduced with thinners in accordance with manufacturer's printed directions, to ALL surfaces of wood as soon as material is delivered and before it is built in. Use brushes for applying material to interior wood.

3.5.14 Paint entire plane of areas exhibiting incomplete or unsatisfactory coverage and of areas which have been cut and patched. Patching not acceptable.

3.5.15 Do not paint over ULC labels on doors and frames and over identification labels on mechanical and electrical equipment.

3.6 Disposal of Paint Waste

3.6.1 Be responsible for removal and disposal of material and waste generated by this Section. And, also do so consistent with Environmental Goals described in Section 01395.

3.6.2 Remove empty and partly used containers from Site and recycle or disposed of as Hazardous Waste in accordance with local municipal, provincial and federal environmental regulations. Provide proof of such

action in form of receipts of tipping fees, disposal fees or bills of lading, as applicable.

3.6.3 Remove from Site peripheral items, such as clean up solvents, paint brushes, rags, and similar items and dispose of where necessary in accordance with local municipal, provincial and federal environmental regulations

3.6.4 Do not rinse off of latex paints from brushes and rags under running water tap. While work is ongoing, whether using latex or alkyd products, rinse off all brushes and rags in container with appropriate solvent (water or paint thinner). Leave such container in well lit and well ventilated area , away from any flammable conditions. Dispose of emulsion created in accordance with local municipal, provincial and federal environmental regulations.

3.7 Finish Schedule

3.7.1 The following Formulae are intended to provide completely opaque surfaces. If surfaces are not completely opaque, apply additional coats at no additional cost to the Owner.

3.7.2 Consult Consultant before painting any surface not included in the formulae as listed.

3.7.3 Exposed Gypsum Board Wall Surfaces:
One (1) coat of primer - sealer,
Two (2) coats of interior acrylic latex enamel, eggshell finish.

3.7.4 Exposed Gypsum Board Ceilings, Coves and Bulkheads:
One (1) coat of primer - sealer,
Two (2) coats of interior acrylic latex enamel, semi - gloss finish.

3.7.5 Ferrous Metal Surfaces:
One (1) coat of rust inhibitive enamel primer - for galvanized surfaces use galvanized metal primer.
Two (2) coats of alkyd enamel, semi-gloss finish. Use exterior grade for exterior work and interior grade for interior work.
Undercoating is not required where surfaces are wipe-coated galvanized.
Prime caulking compound as required.

3.7.6 Insulated and Non-insulated Pipes, Ducts, Conduit, Valve Fittings, Equipment and Ancillary Items where "Exposed" in Completed Work:

Insulated Work:
One (1) coat of latex primer – sealer,
Two (2) coats of interior alkyd enamel, eggshell finish.

Non-Insulated Work :
One (1) coat of structural steel primer,
Two (2) coats of interior alkyd enamel, eggshell finish.

3.7.7 Prepare surfaces as required by applying proper primers on the surface to which paint is applied – and,

ensure that any/all primers ,by others, can accept the work of this section. For surfaces above ceilings, paint surfaces after all services have been installed and prior to ceiling installation.

END OF SECTION

1. GENERAL

1.1 This Specification and any Addenda hereto form part of the Contract Documents and shall be read in conjunction with them.

1.2 Responsibility as to which trade provides required articles or materials rests solely with the Consultant. Extras will not be considered based on grounds of difference or interpretation or specifications as to which trade involved shall provide certain specialties or materials.

1.3 Include all labour, material and equipment required for the installation, testing and putting into operation complete mechanical and electrical systems as shown on the plans and as specified in accordance with all applicable codes and standards and to the satisfaction of the authorities having jurisdiction.

2. INSTALLATION

2.1 All work shall be executed in a workmanlike manner by tradesmen licensed in the particular trade. Governing codes and regulations represent the minimum acceptable standards.

2.2 The Prime Consultant's Drawings and Instructions shall govern the exact location of all items.

2.3 Install all products and services in accordance with the manufacturer's requirements and/or instructions.

2.4 Pay all costs for Manufacturer's Certification and/or testing of equipment and systems.

2.5 Provide all bases, supports, hangers and fasteners to properly support all items.

2.6 Ensure that the loading on the structure does not exceed the maximum loading.

2.7 Install all equipment to allow free access for maintenance.

2.8 For reciprocating or rotating equipment, install suitable vibration isolation products to protect the equipment and system and to prevent the transmission of objectionable noise to occupied portions of the building.

2.9 All products installed shall meet the applicable CSA, ULC, CGA Requirements.

2.10 Verify exact dimensions and space available on site prior to ordering material or shop fabrication to ensure that systems and products will suit.

2.11 Cutting and breaking of walls and floor slabs for the installation of Mechanical and Electrical work shall be by each Division. Patching of all existing finishes shall be by this Division.

3. CODES AND FEES

3.1 Provide all permits, licenses and certificates required for the Work.

3.2 Pay all patent, royalty and license fees.

3.3 Arrange for inspection of all work by the authorities having jurisdiction. On completion of the work, furnish final unconditional certificates of approval by the inspecting authorities.

3.4 Comply with the requirements of the latest edition of the applicable CSA Standards, the requirements of all Federal, Provincial and Municipal Codes, the applicable Standards of the Underwriter's Laboratory Canada and all other authorities having jurisdiction. These Codes and Regulations Constitute an integral part of these Specifications.

3.5 Submit all required documentation to the authorities for their approval and comments before starting with any work. Provide all additional documentation as may be required.

3.6 Immediately inform the Consultant in writing if modifications to the work are requested as a result of the authorities review for issuing approvals and permits.

4. SUPERVISION/CO-ORDINATION

4.1 Maintain at the project site at all times qualified personnel to ensure that all work will be carried out in accordance with the contract documents.

4.2 Review all Contract Documents and become thoroughly acquainted with the Work.

4.3 Co-ordinate the work with all Divisions. Inform all Divisions of the locations of openings, chases, sleeves, supports, services, connections, etc. to be incorporated into the Work.

4.4 Before commencing any work of this Division, inform the Consultant in writing of any detrimental factors affecting the Work.

4.5 Maintain at the site one copy of all shop drawings and up-to-date as-built drawings.

4.6 Lay out and schedule all work to preclude interference with other work being carried out in the building. Cooperate with and give every facility to the several trades to expedite and have all materials and equipment installed to the best advantage.

4.7 Where equipment is to be built in with work of others to allow the necessary openings and space to be left. Piping, ductwork, conduits, etc. shall be installed neatly and closely to the building structure. If in the Consultant's opinion, piping, ductwork or other work is not installed as it should be, it will be taken out and replaced.

4.8 Be responsible for the condition of all material and equipment supplied under this contract and provide all necessary protection for same. Be responsible for the protection and maintenance of the work until the building has been completed and accepted. Damaged materials shall be rejected.

4.9 Coordinate with the General Contractor regarding locations of all holes for pipes, ducts, conduits, etc. in the contract before walls are built. Do all drilling for expansion bolts, hanger rods, brackets, supports, etc. Coordinate with the General Contractor regarding responsibility for all cutting and patching required for the work.

4.10 Be responsible for the establishment of all grades and elevations in connection with mechanical equipment, ductwork, piping, drains, etc.

4.11 Follow the recommended installation details and procedures for all equipment as found in suppliers technical data, supplemented by details given herein by these specifications or the drawings.

4.12 The drawings indicate the general location and route to be followed by the pipes which are to be installed under this contract. Where the required piping is not shown on the plans or only shown diagrammatically the pipes shall be installed in such a way as to conserve head room and interfere as little as possible with free use of the space through which they pass.

4.13 Lay out and schedule all work to preclude interference with other work being carried out in the building. Cooperate with an give every facility to the several trades to expedite and have all materials and equipment installed to the best advantage. When necessary prepare scaled interference drawings at 1:50 scale (1/4" = 1'-0") to assist with piping and ductwork installations in mechanical rooms, ceiling spaces and other applicable locations.

5. USE OF SYSTEMS DURING CONSTRUCTION

5.1 The permanent systems or any part thereof shall not be used during construction without written approval by the Consultant.

6. PROTECTION

6.1 Protect all finished and unfinished work of this and other Divisions from damage due to carrying out of this work.
6.2 Keep equipment dry and clean at all times.
6.3 Protect all equipment, outlets, conduit, boxes, piping and ductwork with temporary caps and plugs to prevent damage and/or entry of foreign material.
6.4 Protect exposed fixtures, trim, etc. with a suitable covering or coating immediately following installation to ensure protection during the balance of the construction period.

7. OWNER'S EQUIPMENT

7.1 Provide all necessary connections required for equipment of Owner and other Divisions. Examine all Contract Documents and identify all requirements.
7.2 Provide isolation devices as required to the equipment, for all services.

8. EXCAVATION, BACKFILL, GRADING

8.1 All excavation, backfill and grading required for the completion of the mechanical portions of the contract shall be completed by the Division 15 contractor in accordance with the requirements of Division 2.

9. DRAWINGS AND SPECIFICATIONS

9.1 The drawings and specifications are complementary each to the other and what is called for by one shall be binding as if called for by both.
9.2 Should any discrepancy appear between the drawings and specifications which leaves the trade in doubt as to the true intent and meaning of the plans and specifications, a ruling shall be obtained from the consultant before submitting tender. If this is not done it will be assumed that the most expensive alternate has been included.
9.3 Review the mechanical, architectural, structural and electrical drawings and specifications prior to submitting tender and report any discrepancies to the Consultant.
9.4 Prior to submitting his tender, the bidder shall carefully examine the site and ascertain all conditions which shall affect his trade. No extras will be allowed for work resulting from conditions that would have been evident upon a thorough examination of site.
9.5 The terms "General Contractor" and/or "General Trades Contractor" used in the Division 15 documents shall refer to the Prime Contractor for the project.

10. INSPECTION CERTIFICATION AND REVIEW

10.1 Arrange for inspection of all work by the authorities having jurisdiction. On completion of the work furnish final unconditional certificates of approval by the inspecting authorities.
10.2 Provide all gauges, instruments and other necessary measuring equipment required for review of the work by the Consultant. Arrange for review of Products during manufacture.
10.3 Attend, promptly, to any deficiencies reported.
10.4 The Division shall provide full time supervision and inspection of the work. The Division is responsible for quality control.
10.5 Request final review when the completed installation has been checked by the Division and all deficiencies have been rectified.

11. TRIAL USAGE, DEMONSTRATION, INSTRUCTION TO OWNER

11.1 The Owner has the privilege of the trial usage of mechanical systems or parts thereof for the purposes of testing and learning the operational procedures.

11.2 Carry out the trial usage over a length of time as deemed reasonable by the Consultant, at no extra charge.

11.3 Carry out the operations only with the express knowledge and under supervision of the Sub-Contractor who shall not waive any responsibility because of trial usage.

11.4 Trial usage shall not be construed as acceptance by the Owner.

11.5 Instruct the Owner's representative in all aspects of the operation of systems and equipment.

11.6 Arrange for and pay for services of service engineers and other manufacturer's representatives required for instruction on specialized portions of the installation.

11.7 Submit a complete list of system instructions to the Consultant at the time of final inspection, stating for each system:

.1 Date instructions were given to the Owner's staff.

.2 Name of persons instructed.

.3 Other parties present (manufacturer's representative, consultants, etc.).

.4 Signature of the Owner's staff stating that they properly understand the system installation, operation and maintenance requirements.

.5 Prior to the commissioning of all equipment the Contractor shall provide a signed completion slip from all trades involved with the installation. Completion slip format to be provided by the Consultant.

12. MAINTENANCE MANUALS

12.1 Submit maintenance manuals in accordance with the requirements of Section 01300, Submittals.

12.2 Assemble manuals, each containing data sheets, brochures, operating maintenance and lubricating instructions and a complete set of reviewed and "as-built" shop drawings and bind in hard cover. Present one copy for review and hand the review copy plus a duplicate to the Owner. The manual shall contain the following:

.1 Valves and Fittings:

- Provide one copy of valve chart for the building;
- a list of valves as per the valve chart indicating size, type, catalogue number and make of each valve.

12.2 .2 Instrumentation and Control:

- Complete instrument list for all gauges.
- sequence and description of operation for each system;
- control diagram for each system complete with equipment summary giving system designation and catalogue number for each component;
- catalogue leaflet of each component used.

13. ELECTRICAL WIRING FOR MECHANICAL SYSTEMS

13.1 Division 15 Mechanical Contractor shall supply and install the following:
- .1 All conductors and terminations for low voltage (50V or less) mechanical control systems. Carry out the work in accordance with the requirements of Division 16.
- .2 All terminations of low voltage control devices for mechanical systems.

13.2 Division 15 Mechanical Contractor shall supply to the Division 16 Electrical Contractor the following:
- .1 Necessary relays and contactors for interlocked mechanical control systems.
- .2 Other devices as may be indicated on the drawings for mechanical control systems.
- .3 Combination magnetic starters with Hand-Off-Auto selector switch for all circulating pumps and exhaust fans.

13.3 Division 16 Electrical Contractor to supply and install the following:
- .1 All wiring systems 120 Volt and greater for power and control relating to mechanical equipment.
- .2 Breakers, local disconnect switches for mechanical equipment.

13.4 Division 16 Electrical Contractor shall install and connect those items relating to Mechanical Control Systems as listed in above.

13.5 It is the responsibility of the Division 15 Mechanical Contractor to coordinate and ensure that control systems for mechanical equipment are complete and functional in accordance with the manufacturer's guidelines and as specified in the documents.

14. SHOP DRAWINGS

14.1 Submit shop drawings in accordance with the requirements of Section 01340, Shop Drawings.

14.2 The term "shop drawings" means drawings, diagrams, illustrations, schedules, performance charts, brochures and other data which are to be provided by the Contractor to illustrate details of a portion of the Work.

14.3 The Contractor shall arrange for the preparation of clearly identified shop drawings as called for by the Contract Documents or as the Consultant may reasonably request.

14.4 Prior to submission to the Consultant the Contractor shall review all shop drawings. By this review the Contractor represents that he has determined and verified all field measurements, field construction criteria, materials, catalogue numbers and similar data or will do so and that he has checked and coordinated each shop drawing with the requirements of the Work and of the Contract Documents. The Contractor's review of each shop drawing shall be indicated by stamp, date, and signature of a responsible person.

14.5 The Consultant will review and return shop drawings in accordance with any schedule agreed upon, or otherwise with reasonable promptness so as to cause no delay. The Consultant's review will be for conformity to the design concept and for general arrangement only and such review shall not relieve the Contractor of responsibility for errors or omissions in the shop drawings or of responsibility for meeting all requirements of the Contract Documents unless deviation on the shop drawings has been approved in writing by the Consultant.

14.6 The Contractor shall make any changes in shop drawings which the Consultant may require consistent with the Contract Documents and resubmit unless otherwise directed by the Consultant. When resubmitting, the Contractor shall notify the Consultant in writing of any revisions other than those requested by the Consultant.

END OF SECTION

1. GENERAL

1.1 This section covers items common to all sections of Division 15.

2. EQUIPMENT LIST

2.1 Complete list of equipment and materials to be used on this project and forming part of tender documents by adding manufacturer's name, model number and details of materials, and submit for approval.

2.2 Submit for approval within 10 days after award of contract.

3. EQUIPMENT CONNECTIONS

3.1 Unions or flanges: provide for ease of maintenance and disassembly.

3.2 Space for servicing, disassembly and removal of equipment and components: provide as recommended by manufacturer or as indicated.

3.3 Equipment drains: pipe to floor drains.

3.4 Install equipment, rectangular cleanouts and similar items parallel to or perpendicular to building lines.

4. ANCHOR BOLTS AND TEMPLATES

4.1 Supply anchor bolts and templates for installation by other divisions.

5. TRIAL USAGE

5.1 Consultant may use equipment and systems for test purposes prior to acceptance. Supply labour, material, and instruments required for testing.

6. PROTECTION OF OPENINGS

6.1 Protect equipment and systems openings from dirt, dust, and other foreign materials with materials appropriate to system.

7. FIRESTOPPING

7.1 Firestopping material and installation within annular space between pipes, ducts, insulation and adjacent fire separation.

8 ESCUTCHEONS

8.1 On pipes passing through walls, partitions, floors and ceilings in finished areas.

8.2 Chrome or nickel plated brass or Type 302 stainless steel, one piece type with set screws.

8.3 Outside diameter to cover opening or sleeve.

8.4 Inside diameter to fit around finished pipe.

9. ACCESS DOORS

9.1 Supply access doors to concealed mechanical equipment for operating, inspecting, adjusting and servicing.

9.2 Flush mounted 600 x 600 mm for body entry and 300 x 300 mm for hand entry unless otherwise noted. Doors to open 180°, have rounded safety corners, concealed hinges, screwdriver latches and anchor straps.

9.3 Where installed in a fire rated wall or ceiling, the rating of the door must equal or surpass the rating of the surface in which it is installed.

.1 Special areas such as Natatorium, all Changeroom areas and all Washrooms: use stainless steel with brushed satin or polished finish as directed by Consultant.

.2 Remaining areas: use prime coated steel.

END OF SECTION

1. REQUIREMENTS INCLUDED

1.1 Reference standards.
1.2 Product quality, availability, storage, handling, protection, transportation.
1.3 Manufacturer's instructions.
1.4 Workmanship, co-ordination, cutting, fastenings.
1.5 Existing facilities.

2. RELATED STANDARDS

2.1 Section 15010: Mechanical General Provisions.

3. REFERENCE STANDARDS

3.1 Within the text of the specifications, reference may be made to the following standards:

ASHRAE	- American Society of Heating, Refrigeration and Air Conditioning Engineers
AISC	- American Institute of Steel Construction
ANSI	- American National Standards Institute
ASTM	- American Society of Testing and Materials
CEC	- Canadian Electrical Code (published by CSA)
CEMA	- Canadian Electrical Manufacturer's Association
CISC	- Canadian Institute of Steel Construction
CPCA	- Canadian Painting Contractor's Association
CSA	- Canadian Standards Association
FM	- Factory Mutual Engineering Corporation
IEEE	- Institute of Electrical and Electronic Engineers
NBC	- National Building Code
NEMA	- National Electrical Manufacturers' Association
OBC	- Ontario Building Code
NFPA	- National Fire Protection Association
ULC	- Underwriters' Laboratories of Canada

3.2 If there is question as to whether any product or system is in conformance with applicable standards, the Consultant reserves the right to have such products or systems tested to prove or disprove conformance.
3.3 The cost for such testing will be borne by the Owner in the event of conformance with Contract Documents or by the Contractor in the event of non-conformance.
3.4 Conform to latest date of issue of reference standards effect on date of submission of bids except where a specific date or issue is specifically noted.

4. PRODUCTS AND MATERIALS

4.1 Quality

.1 Products, materials, equipment and articles (referred to as products throughout the specifications) incorporated in the work shall be new, not damaged or defective, and of the best quality (compatible with specifications) for the purpose intended. If requested, furnish evidence as to type, source and quality of products provided.

.2 Defective Products, whenever identified prior to the completion of work, will be rejected, regardless of previous inspections. Inspection does not relieve responsibility, but is a precaution against oversight or error. Remove and replace defective products at own expense and be responsible for delays and expenses caused by rejection.

4.1 .3 Should any dispute arise as to the quality or fitness of products, the decision rests strictly with the Consultant based upon the requirements of the Contract Documents.

.4 Unless otherwise indicated in the specifications, maintain uniformity of manufacture for any particular or like item throughout the building.

.5 Permanent labels, trademarks and nameplates on Products are not acceptable in prominent locations, except where required for operating instructions, or when located in mechanical or electrical rooms.

4.2 Availability

.1 Immediately upon signing contract, review product delivery requirements and anticipate foreseeable supply delays for any items. If delays in supply of products are foreseeable, notify the Consultant of such, in order that substitutions or other remedial action may be authorized in ample time to prevent delay in performance of work.

.2 In the event of failure to notify the Consultant at commencement of work and should it subsequently appear that work may be delayed for such reason, the Consultant reserves the right to substitute more readily available products of similar character, at no increase in contract price.

4.3 Storage, Handling and Protection

.1 Handle and store products in a manner to prevent damage, adulteration, deterioration and soiling and in accordance with manufacturer's instructions when applicable.

.2 Store packaged or bundled products in original and undamaged condition with manufacturer's seals and labels intact. Do not remove from packaging or bundling until required in the work.

.3 Store products subject to damage from weather in weatherproof enclosures.

.4 Remove and replace damaged products at own expense and to the satisfaction of the Consultant.

4.4 Transportation

.1 Pay costs of transportation of products required in the performance of work.

.2 Transportation cost of products supplied by the owner will be paid for by the Owner. Unload handle and store such products.

5. MANUFACTURER'S INSTRUCTIONS

5.1 Unless otherwise indicated in the specifications, install or erect products in accordance with manufacturer's instructions. Do not rely on labels or enclosures provided with products. Obtain written instructions directly from manufacturers.

5.2 Notify the Consultant in writing, of conflicts between the specifications and manufacturer's instructions, so that the consultant may establish the course of action.

5.3 Improper installation or erection of products, due to failure in complying with these requirements, authorizes the Consultant to require removal and re-installation at no increase in contract price.

6. WORKMANSHIP

6.1 General

.1 Workmanship shall be the best quality, executed by workers experienced and skilled in the respective duties for which they are employed. Immediately notify the Consultant if required work is such as to make it impractical to produce required results.

6.1 .2 Do not employ any unfit person or anyone unskilled in their required duties. The Consultant reserves the right to require the dismissal from the site, workers deemed incompetent, careless, insubordinate or otherwise objectionable.

.3 Decisions as to the quality or fitness of workmanship in cases of dispute rest solely with the Consultant whose decision is final.

6.2 Co-ordination

.1 Ensure co-operation of workers in laying out work. Maintain efficient ant continuous supervision.

.2 Be responsible for co-ordination and placement of openings, sleeves and accessories.

6.3 Concealment

.1 In finished areas, conceal pipes, ducts and wiring in floors, walls and ceilings, except where indicated otherwise.

.2 Before installation, inform the Consultant if there is a contradictory situation. Install as directed by the Consultant.

6.4 Cutting and Remedial Work

.1 Perform cutting and remedial work required to make the parts of the work come together. Co-ordinated the work to ensure this requirements is maintained.

.2 Perform cutting and remedial work by specialists familiar with the materials affected. Perform in a manner to neither damage nor endanger any portion of work.

6.5 Location of Fixture

.1 Consider the location of fixtures, outlets, and mechanical and electrical items indicated as approximate. Refer to the Consultant's drawings for exact locations.

.2 Inform the Consultant of a conflicting installation. Install as directed.

6.6 Fastenings

.1 Provide metal fastenings and accessories in same texture, colour, and finish as adjacent materials, unless indicated otherwise.

.2 Prevent electrolytic action between dissimilar metals and materials.

.3 Use noncorrosive hot dip galvanized steel fasteners and anchors for securing exterior work, unless stainless steel or other material is specifically requested in the affected specification section.

.4 Space anchors within their load limit or shear capacity and ensure they provide positive permanent anchorage. Wood, or any other organic material plugs are not acceptable.

.5 Keep exposed fastenings to a minimum, space evenly and install neatly.

.6 Fastenings which cause spalling or cracking of material to which anchorage is made are not acceptable.

6.7 Protection of Work in Progress

.1 Adequately protect work completed or in progress. Work damaged or defaced due to failure in providing such protection is to be removed and replaced, or repaired, as directed by the Consultant, at no increase in contract price.

.2 Prevent overloading of any part of the building. Do not cut, drill or sleeve any load bearing structural member, unless specifically indicated without written approval of the Consultant.

6.8 Existing Utilities

.1 When breaking into or connecting to existing services or utilities, execute work at times directed by local governing authorities, with a minimum of disturbance to work and/or building occupants.

.2 Protect, relocate or maintain existing active services. When inactive services are encountered, cap off in a manner approved by authority having jurisdiction and stake or otherwise record location of capped service.

END OF SECTION

PART 1 - GENERAL

1.1 The following conditions shall be an integral part of the work of this Division 15 Mechanical.

.1 The General Conditions of the contract documents and Section 15001.
.2 General Conditions of the specifications.
.3 The requirements of the Contract Documents.
.4 The requirements of this Subdivision.

PART 2 - SCOPE

2.1 This Subdivision shall:
.1 Perform all of the work of this Division at the place of the work.
.2 Provide all of the Products to the place of the work.
.3 Provide all of the necessary construction machinery and equipment "at" and "off" the place of work.
.4 Provide any and all incidental items essential to and necessary for the completion of the work and installation of Products.
as per the requirements of the Contract Documents and/or as herein specified.

PART 3 - SYSTEMS

3.1 The mechanical contractor, Division 15, shall perform the work required and not necessarily limited to:

.1 Removals and relocations of existing mechanical systems as scheduled.
.2 Plumbing systems including sanitary pipe works, water pipe works and fixtures for the washroom.
.3 Connection to existing sanitary sewer services and water systems as indicated.
.4 Relocate fire extinguishers and cabinets as indicated.
.5 Ventilation systems including exhaust fans and ducted systems.
.6 Thermal insulation systems for pipe works.

END OF SECTION

PART 1 - GENERAL

1.1 References

1.1.1 CAN4-S102-M83, Surface Burning Characteristics of Building Materials and Assemblies.
1.1.2 CGSB 51-GP-9M-76, Thermal Insulation, Mineral Fibre, Sleeving for Piping and Round Ducting.
1.1.3 CGSB 51-GP-11M-76, Thermal Insulation, Mineral Fibre, Blanket for Piping, Ducting, Machinery and boilers.
1.1.4 CAN/CGSB-51.12-M86, Cement, Thermal Insulating and Finishing.
1.1.5 CAN/CGSB-51.40-M80, Thermal Insulation, Flexible, Elastomeric, Unicellular, Sheet and Pipe Covering.
1.1.6 CGSB 51-GP-52M-77, Vapour Barrier Jacket and Facing Material for Pipe, Duct and Equipment Thermal Insulation.
1.1.7 CGSB 51-GP-53M-77, Jacketing, Polyvinyl, Chloride Sheet for Insulating Pipes, Vessels and Round Ducts.

1.2 Shop Drawings

1.2.1 Submit shop drawings in accordance with Section 15001.
1.2.2 Submit for approval manufacturer's catalogue literature related to installation, fabrication for pipe, fittings, valves and jointing recommendations.

1.3 Definitions

1.3.1 For purposes of this section:
.1 "CONCEALED" - insulated mechanical services and equipment in hung ceilings and non-accessible chases and furred spaces.
.2 "EXPOSED" - will mean "not concealed" as defined herein.

PART 2 - PRODUCTS

2.1 Definitions

2.1.1 All components of insulation system to have maximum flame spread rating of 25 and maximum smoke developed rating of 50 in accordance with CAN4-S102.
2.1.2 Materials to be tested in accordance with ASTM C411.
2.1.3 Materials manufactured by Fibreglas or Johns-Manville will be considered acceptable.

2.2 P-1 Formed Mineral Fiber to 200°C

2.2.1 Application for piping and fittings on:
.1 Domestic hot water, temperature 60°C.
2.2.2 Materials:
.1 CGSB 51-GP-9M, rigid mineral fiber sleeving for piping.
.2 Thermal conductivity "k" shall not exceed 0.034 w/m°C at 24°C mean temperature when tested in accordance with ASTM C335.
.3 Insulation Thickness to ASHRAE 90.1; see insulation schedule.

2.3 P-2 Formed Mineral Fiber With Vapour Barrier to 85°C

2.3.1 Application for piping and fittings on:
- .1 Domestic cold water, temperature 4°C.

2.3.2 Material:
- .1 CGSB 51-GP-9M, rigid mineral fiber sleeving for piping and CGSB 51-GP-52M, vapour barrier jacket and facing material.
- .2 Thermal Conductivity "k" shall not exceed 0.034 W/m.°C at 24°C mean temperature when tested in accordance with ASTM C335.
- .3 Insulation Thickness to ASHRAE 90.1; see insulation schedule.

2.6 Fastenings

2.6.1 For insulation systems P-1, P-2, P-3:
- .1 Tape: self adhesive, aluminum, ULC labelled for less than 25 flame spread and less than 50 smoke developed.
- .2 Lap seal adhesive: quick-setting for joints and lap sealing of vapour barriers.
- .3 Lagging adhesive: fire retardant coating.

2.6.2 For insulation system P-4 and underside of roof drain body.
- .1 Contact adhesive: quick-setting for seams and joints.
- .2 Tape: self adhesive PVC.

2.7 Insulation Cement

2.7.1 To CAN/CGSB-51.12.

PART 3 - EXECUTION

3.1 Application

3.1.1 Apply insulation after required tests have been completed and approved by the Consultant. Insulation and surfaces shall be clean and dry when installed and during application of any finish. Apply insulation materials, accessories and finishes in accordance with manufacturer's recommendations and as specified herein.

3.1.2 Insulation on roof drain body held in place with 100% coverage of adhesive.

3.1.3 On piping with insulation and vapour barrier, install high density insulation under hanger shield. Maintain integrity of vapour barrier over full length of pipe without interruption at sleeves, fittings and supports.

3.2 Installation

3.2.1 Install in accordance with ANSI/NFPA 90A and ANSI/NFPA 90B.

3.2.2 Vertical pipe over NPS 3: insulation supports welded or bolted to pipe directly above lowest pipe fitting. Thereafter, locate on 4.5 m centres.

3.2.3 Expansion joints in insulation: terminate single layer and each layer of multiple layers in straight cut at intervals recommended by manufacturer. Leave void of 25 mm between terminations. Pack void lightly with P3 flexible mineral insulation.

3.2.4 Seal and finish exposed ends and other terminations with insulating cement.

3.2.5 Expansion joints in piping: provide for adequate movement of expansion joint without damage to insulation or finishes.

3.2.6 Orifice plate mounting flanges, flanges and unions at equipment, expansion joints, valves, other components requiring.

3.2.7 Insulation is not required for: Chrome plated piping, valves and fitting.

3.3 Fastenings

3.3.1 Secure pipe insulation by tape at each end and centre of each section, but not greater than 900 mm on centres.

3.4 Insulation Thickness

SERVICE	Branch Runouts (*)	25 mm and less (NPS 1)	32 to 50 mm (NPS 1.25 to 2)	65 to 100 mm (NPS 2.5 to 4)	>125 mm (NPS 5)
Cold Water - 'P2"	12 mm	12 mm	19 mm	25 mm	25 mm
Domestic Hot Water - 'P1'	12 mm	25 mm	25 mm	38 mm	38 mm

END OF SECTION

Part 1 General

1.1 GENERAL REQUIREMENTS

1.1.1 Conform to Sections of Division 1 as applicable.

1.1.2 Conform to General Mechanical Requirements, Section 15001.

1.2. REFERENCES

1.2.1

NFPA 10	- Portable Fire Extinguishers
NFPA 13	- Installation of Sprinkler Systems
Ontario Building Code	
Ontario Fire Code	

1.3 SCOPE

1.3.1 Section includes modification of the existing sprinkler systems to accommodate the new partitioning and the new ceiling systems.

1.4 SPRINKLER SYSTEM DESCRIPTION

1.4.1 Design, supply and install altered sprinkler systems to match existing systems using materials and methods of like kind and quality.

1.4.2 New sprinkler heads to match existing devices.

1.5 QUALITY ASSURANCE

1.5.1 Qualifications

1.5.1.1 Accredited member in good standing of Canadian Automatic Sprinkler Association shall perform work under this Section.

1.5.2 Regulatory Requirements

1.5.2.1 Fire protection work requires approval of Owner's fire insurance underwriter and the Consultant.

1.5.2.2 Provide sprinkler systems in accordance with NFPA-13 requirements for light hazard occupancy.

1.5.2.3 Ontario Electrical Safety Code

1.5.2.4 National Fire Protection Association (NFPA)

1.5.2.5 Canadian Standards Association (CSA)

1.5.2.6 Underwriters' Laboratories of Canada (ULC)

1.5.2.7 Ontario Fire Code

Part 2 Products

2.1 **GENERAL**

2.1.1 Unless otherwise noted, furnish ULC listed and labelled and FM approved items, equipment and apparatus for installation under this Section.

2.2 **PIPE, FITTINGS AND VALVES**

2.2.1 Pipe, fittings and valves are to be selected by the system designer for each specific service; all materials and methods to comply with NFPA-13 and the Ontario Building Code requirements.

2.2.2 Pipe:
.1 Ferrous: to ANSI/NFPA 13.
.2 Fittings and joints to ANSI/NFPA 13:

.

2.3 **SPRINKLER HEADS**

2.3.1 To match existing devices.

Part 3 Execution

3.1 Supply and install in accordance with the NFPA-13 Standard and the Ontario Fire Code and as indicated on the drawings.

3.2 Match existing systems using materials and methods of like kind and quality.

END OF SECTION

PART 1 - GENERAL

1.1 References
1.1.1 ANSI B16.18-1984, Cast Copper Alloy Solder Joint Pressure Fittings.
1.1.2 ANSI B16.22-1980, Wrought Copper and Copper Alloy Solder-Joint Pressure Fittings.
1.1.3 ANSI B16.24-1979, Bronze Pipe Flanges and Fittings, Class 150 and 300.
1.1.4 ASTM B88M-[88a], Specification for Seamless Copper Water Tube (Metric).

1.2 Product Data
1.2.1 Submit product data in accordance with Section 15001.
1.2.2 Submit data for following: all valves.

1.3 Maintenance Data
1.3.1 Provide maintenance data for incorporation into manual specified in Section 15001.

PART 2 - PRODUCTS

2.1 Piping
2.1.1 Domestic hot, cold and recirc systems, within building.
- .1 Above ground: copper tube, hard drawn, type L: to ASTM B88M.
- .2 Buried and embedded: copper tube, soft annealed, type K: to ASTM B88M, in long lengths and with no buried joints.

2.2 Fittings
2.2.1 Bronze pipe flanges and flanged fittings, Class 150 and 300: to ANSI B16.24.
2.2.2 Cast bronze threaded fittings, Class 125 and 250: to ANSI/ASME B16.15.
2.2.3 Cast copper, solder type: to ANSI B16.18.
2.2.4 Wrought copper and copper alloy, solder type: to ANSI B16.22.
2.2.5 Grooved end fittings 51 mm and up may be used in conjunction with a rigid coupling. Standard of acceptance is Victaulic Style 606.

2.3 Joints
2.3.1 Solder/brazing: to contain less than 0.2% lead and to suit application.
2.3.2 Grooved end assembled with manufacturer's lubricant.

2.4 Valves - General
2.4.1 Products manufactured by Crane, Jenkins or Watts.

2.5 Swing Check Valves
2.5.1 NPS 2 and under, soldered:
- .1 To MSS SP-80, Class 125, 860 kPa, bronze body, bronze swing disc, screw in cap, regrindable seat.

2.6 Ball Valves

2.6.1 NPS 2 and under, soldered:

.1 To ANSI B16.18, Class 150.

.2 Bronze body stainless steel ball, PTFE Teflon adjustable packing, brass gland and Buna N seat, steel lever handle, with NPT to copper adaptors.

PART 3 - EXECUTION

3.1 Installation

3.1.1 Install in accordance with Part 7 of the Ontario Building Code (Provincial Plumbing Code) and local authority having jurisdiction except where specified otherwise.

3.1.2 Cut square, ream and clean tubing and tube ends, clean recesses of fittings and assemble without binding.

3.1.3 Assemble all piping using fittings manufactured to ANSI standards.

3.1.4 Install tubing close to building structure to minimize furring, conserve headroom and space. Group exposed piping and run parallel to walls.

3.1.5 Connect to fixtures and equipment in accordance with manufacturers instructions unless otherwise indicated.

3.1.6 Buried tubing:

.1 Lay in well compacted washed sand in accordance with AWWA Class B bedding.

.2 Bend tubing without crimping or constriction. Minimize use of fittings.

3.2 Valves

3.2.1 Isolate equipment, fixtures and branches with ball valves.

3.2.2 Balance recirculation system using lockshield ball valves. Mark settings and record on as-built drawings on completion.

3.3 Disinfection

3.3.1 Flush out, disinfect and rinse system to requirements of authority having jurisdiction. After testing, provide acceptable water quality test report.

END OF SECTION

PART 1 - GENERAL

1.1 References

1.1.1 CSA B181.2
1.1.2 CAN4-S102.2
1.1.3 CAN4-S115

PART 2 - PRODUCTS

2.1 PVC Drain, Waste And Vent Piping Systems

2.1.1 PVC Drain, Waste and vent pipe and fittings shall be certified to CSA B181.2 and when used in buildings required to be of non-combustible construction, they shall be listed by ULC in accordance with the CAN4-S102.2 standard and clearly marked with the certification logo indicating the flamespread requirement as stipulated by the Ontario Building Code.

2.1.2 Where permitted by Code and this specification PVC systems may be used for sanitary and storm drainage lines.

PART 3 - EXECUTION

3.1 Installation

3.1.1 Install in accordance with Part 7 of the Ontario Building Code (Provincial Plumbing Code) and local authority having jurisdiction except where specified otherwise.

3.1.2 PVC-DWV is not permitted in a ceiling space used as a return air plenum.

3.1.3 PVC-DWV is not permitted in a vertical shaft.

3.1.4 Install and connect pipe and fittings in strict accordance with the manufacturer's approved instructions using approved solvent cement.

3.2 Firestopping

3.2.1 Certified firestopping devices are required wherever the system penetrates a vertical or horizontal fire separation.

3.2.2 Refer to the Architectural documents for the location of and extent of fire separations within the building.

3.3 Testing

3.3.1 Test in accordance with Part 7 of the Ontario Building Code (Provincial Plumbing Code) and local authority having jurisdiction except where specified otherwise.

END OF SECTION

PART 1 - GENERAL

1.1 References

.1 CAN/CSA-B45 Series-88, CSA Standards on Plumbing Fixtures.
.2 CAN/CSA-B125-M89, Plumbing Fittings.

1.2 Product Data

.1 Submit product data in accordance with Section 15001.
.2 Indicate: dimensions, construction details and roughing-in dimensions for all fixtures and trim.

1.3 Maintenance Data

.1 Provide maintenance data for incorporation into manual specified in Section 15001.
.2 Data to include:
  .1 Description of plumbing fixtures and trim giving manufacturers name, type, model, year and capacity.
  .2 Details of operation, servicing and maintenance.
  .3 Recommended spare parts list.

1.4 Fixtures and Trim

.1 Manufacture plumbing fixtures in accordance with CAN/CSA-B45 Series.
.2 Manufacture plumbing fittings in accordance with CAN/CSA-B125.
.3 Plumbing fixtures and faucets to meet water conservation guidelines as set out in Part 7 of the Ontario Building Code.
.4 Architectural drawings to govern in determination of number and location of fixtures.
.5 Fixtures in any one washroom or location to be product of one manufacturer and of same type.
.6 Trim in any one washroom or location to be product of one manufacturer and of same type.
.7 Exposed plumbing brass to be chrome plated.
.8 Selection of fixtures and trim is generally based on American Standard fixtures and Cambridge Brass trim. Equivalent products as manufactured by those companies below will be accepted as equal.

Fixtures	- Crane, Kohler, Eljer.
Trim	- Delta HDF, Waltec, Moen
Stainless Steel Sinks	- American Standard, Arista Newman, KIL
Carriers	- Ancon, Zurn

PART 2 - PRODUCTS

2.1 Plumbing Fixtures

All plumbing fixtures are to be CSA approved and are to meet latest water consumption regulations. It is the responsibility of the supplier to ensure compatibility between fixtures and trim to meet the intent of this schedule.

2.2 **See fixture schedule on drawings.**

PART 3 - EXECUTION

3.1 Installation

.1 Connect fixtures complete with supplies and drains, trapped, supported level and square Hot water faucets shall be on left. Fixtures on outside walls to have supplies from floor; other fixtures to be served from wall. Wall hung fixtures to be securely and firmly mounted.

.2 Install designated fixtures in accordance with Barrier Free Access Standards.

.3 Commission all fixtures and adjust for proper operation.

.4 Refer to Architectural documents for mounting heights.

END OF SECTION

PART 1 - GENERAL

1.1 References

.1 AMCA 99-1986, Standards Handbook.

.2 ANSI/ASHRAE 51-1985, Laboratory Methods of Testing Fans for Rating.

1.2 Shop Drawings and Product Data

.1 Submit shop drawings and product data in accordance with Section 15001.

.2 Product data to include fan curves and sound rating data.

1.3 Operating and Maintenance Data

.1 Provide operation and maintenance data for incorporation into manual specified in Section 15001.

1.4 Certification of Ratings

.1 Catalogued or published ratings shall be those obtained from tests carried out by manufacturer or those ordered by him from independent testing agency signifying adherence to codes and standards in force.

PART 2 - PRODUCTS

2.1 Fans General

.1 Capacity: CFM total/static pressure Pa, r/min, bhp W, model and size and sound ratings as indicated.

.2 Statically and dynamically balanced. Constructed in conformity with AMCA 99.

.3 Ratings: based on tests performed in accordance with ANSI/AMCA 210, and ANSI/ASHRAE 51.

.4 Bearings: sealed lifetime ball bearings of self aligning type with oil retaining, dust excluding seals and a certified minimum rated life of 80,000 h in accordance with AFBMA L10 life standard. Bearings to be rated and selected in accordance with AFBMA9 and AFBMA 11.

2.2 Fan Schedule

.1 See drawings.

2.3 Fan Controls

.1 See schedule - provide fan controls including starters, timers, speed control switches, time clocks and related items to Division 16 contractor for installation.

PART 3 - EXECUTION

3.1 Installation

.1 Install in accordance with manufacturer's instructions.

END OF SECTION

PART 1 - GENERAL

1.1 References

.1 SMACNA HVAC Duct Construction Standards, Metal and Flexible, 1985.
.2 SMACNA HVAC Duct Leakage Test Manual, 1985.
.3 ASHRAE Handbook, Fundamentals, and Systems Volumes.

1.2 Shop Drawings and Product Data

.1 Submit shop drawings and product data in accordance with Section 15001.

1.3 Certification of Ratings

.1 Catalogue or published ratings shall be those obtained from tests carried out by manufacturer or independent testing agency signifying adherence to codes and standards.

PART 2 - PRODUCTS

2.1 Ductwork - Low Pressure Metalic to 500 Pa.

2.1.1 Seal Classification

.1 Classification as follows:

Maximum Pressure Pa	SMACNA Seal Class
500	[B]
250	[B]
125	[B]
125	[B]

.2 Seal classification:
  .1 Class A: longitudinal seams, transverse joints, duct wall penetrations and connections made airtight with sealant and tape.
  .2 Class B: longitudinal seams, transverse joints and connections made airtight with sealant.
  .3 Class C: transverse joints and connections made air tight with gaskets, sealant or combination thereof. Longitudinal seams unsealed.
  .4 Unsealed seams and joints.

2.1.2 Sealant

.1 Sealant: oil resistant, polymer type flame resistant duct sealant. Temperature range of minus 30°C to plus 93°C.

2.1.3 Tape

.1 Tape: polyvinyl treated, open weave fiberglass tape, 50 mm wide.

2.1.4 Duct Leakage

.1 In accordance with SMACNA HVAC Duct Leakage Test Manual.

2.1.5 Fittings

.1 Fabrication: to SMACNA.
.2 Radiused elbows: standard radius or short radius with single thickness turning vanes.
.3 Square elbows: to 400 mm with single thickness vanes.
.4 Square elbows: over 400 mm with double thickness vanes.
.5 Main supply duct branches with splitter damper.
.6 Sub branch duct with 45° entry and balancing damper on branch.
.7 Transitions:
  .1 Diverging: 20° maximum included angle.
  .2 Converging: 30° maximum included angle.
.8 Offsets: square elbows or full radiussed elbows.

2.1.6 Galvanized Steel

.1 Lock forming quality: Z90 zinc coating.
.2 Thickness: to ASHRAE and SMACNA.
.3 Fabrication: to ASHRAE and SMACNA.
.4 Joints: to ASHRAE and SMACNA or proprietary manufactured duct joint.
.5 Special galvanized steel suitable for painting for exposed duct systems.

2.2 Dampers - Balancing

2.2.1 Manufacture to SMACNA standards.

2.2.2 Splitter Dampers

.1 Of same material as duct but one sheet metal thickness heavier, with appropriate stiffening.
.2 Double thickness construction.
.3 Control rod with locking device and position indicator.
.4 Rod configuration to prevent end from entering duct.
.5 Pivot: piano hinge.
.6 Folded leading edge.

PART 3 - EXECUTION

3.1 Ductwork - Low Pressure Metalic to 500 Pa.

3.1.1 General

.1 Do work in accordance with ASHRAE, CSA B228.1 and SMACNA.
.2 Do not break continuity of insulation vapour barrier with hangers or rods. Insulate strap hangers 100 mm beyond insulated duct.
.3 Support risers in accordance with ASHRAE and SMACNA.
.4 Install breakaway joints in ductwork on each side of fire separation.
.5 Install proprietary manufactured flanged duct joints in accordance with manufacturer's instructions.

END OF SECTION

1. GENERAL

1.1 Work shall include the furnishing of all labour and materials unless specifically noted otherwise to complete and put into operating condition. All electrical systems as indicated on the drawings and specified in this specification.

1.2 Include all labour, material and equipment required for the installation, testing and putting into operation complete electrical systems as shown on the plans and as specified in accordance with all applicable codes and standards and to the satisfaction of the authorities having jurisdiction.

1.3 Refer to the Architectural Specifications for information relating to bidding and contract requirements, general requirements and site work.

2. INSTALLATION

2.1 All work shall be executed in a workmanlike manner by tradesmen licensed in the particular trade. Governing codes and regulations represent the minimum acceptable standards.

2.2 The Prime Consultant's Drawings and Instructions shall govern the exact location of all items.

2.3 Install all products and services in accordance with the manufacturer's requirements and/or instructions.

2.4 Pay all costs for Manufacturer's Certification and/or testing of equipment and systems.

2.5 Provide all bases, supports, hangers and fasteners to properly support all items.

2.6 Ensure that the loading on the structure does not exceed the maximum loading.

2.7 Install all equipment to allow free access for maintenance.

2.8 For reciprocating or rotating equipment, install suitable vibration isolation products to protect the equipment and system and to prevent the transmission of objectionable noise to occupied portions of the building.

2.9 All products installed shall meet the applicable CSA, ULC, CGA Requirements.

2.10 Verify exact dimensions and space available on site prior to ordering material or shop fabrication to ensure that systems and products will suit.

2.11 Cutting and breaking of walls and floor slabs for the installation of Electrical work shall be by each Division. Patching of all existing finishes shall be by this Division.

3. CODES AND FEES

3.1 Provide all permits, licenses and certificates required for the Work.

3.2 Pay all patent, royalty and license fees.

3.3 Arrange for inspection of all work by the authorities having jurisdiction. On completion of the work, furnish final unconditional certificates of approval by the inspecting authorities.

3.4 Comply with the requirements of the latest edition of the applicable CSA Standards, the requirements of all Federal, Provincial and Municipal Codes, the applicable Standards of the Underwriter's Laboratory Canada and all other authorities having jurisdiction. These Codes and Regulations Constitute an integral part of these Specifications.

3.5 Submit all required documentation to the authorities for their approval and comments before starting with any work. Provide all additional documentation as may be required.

3.6 Immediately inform the Consultant in writing if modifications to the work are requested as a result of the authorities review for issuing approvals and permits.

4. SUPERVISION/CO-ORDINATION

4.1 Maintain at the project site at all times qualified personnel to ensure that all work will be carried out in accordance with the contract documents.

4.2 Review all Contract Documents and become thoroughly acquainted with the Work.

4.3 Co-ordinate the work with all Divisions. Inform all Divisions of the locations of openings, chases, sleeves, supports, services, connections, etc. to be incorporated into the Work.

4.4 Before commencing any work of this Division, inform the Consultant in writing of any detrimental factors affecting the Work.

4.5 Maintain at the site one copy of all shop drawings and up-to-date as-built drawings.

4.6 Lay out and schedule all work to preclude interference with other work being carried out in the building. Cooperate with an give every facility to the several trades to expedite and have all materials and equipment installed to the best advantage.

4.7 Where equipment is to be built in with work of others to allow the necessary openings and space to be left. Piping, ductwork, conduits, etc. shall be installed neatly and closely to the building structure. If in the Consultant's opinion, piping, ductwork or other work is not installed as it should be, it will be taken out and replaced.

4.8 Be responsible for the condition of all material and equipment supplied under this contract and provide all necessary protection for same. Be responsible for the protection and maintenance of the work until the building has been completed and accepted. Damaged materials shall be rejected.

4.9 Coordinate with the Consultant regarding locations of all holes for pipes, ducts, conduits, etc. in the contract before walls are built. Do all drilling for expansion bolts, hanger rods, brackets, supports, etc. Coordinate with the General Contractor regarding responsibility for all cutting and patching required for the work.

4.10 Be responsible for the establishment of all grades and elevations in connection with electrical equipment, ductwork, piping, drains, etc.

4.11 Follow the recommended installation details and procedures for all equipment as found in suppliers technical data, supplemented by details given herein by these specifications or the drawings.

4.12 The drawings indicate the general location and route to be followed by the pipes which are to be installed under this contract. Where the required piping is not shown on the plans or only shown diagrammatically the pipes shall be installed in such a way as to conserve head room and interfere as little as possible with free use of the space through which they pass.

5. USE OF SYSTEMS DURING CONSTRUCTION

5.1 The permanent systems or any part thereof shall not be used during construction without written approval by the Consultant.

6. PROTECTION

6.1 Protect all finished and unfinished work of this and other Divisions from damage due to carrying out of this work.

6.2 Keep equipment dry and clean at all times.

6.3 Protect all equipment, outlets, conduit, boxes, piping and ductwork with temporary caps and plugs to prevent damage and/or entry of foreign material.

6.4 Protect exposed fixtures, trim, etc. with a suitable covering or coating immediately following installation to ensure protection during the balance of the construction period.

7. OWNER'S EQUIPMENT

7.1 Provide all necessary connections required for equipment of Owner and other Divisions. Examine all Contract Documents and identify all requirements.

7.2 Provide isolation devices as required to the equipment, for all services.

8. DRAWINGS AND SPECIFICATIONS

8.1 The drawings and specifications are complementary each to the other and what is called for by one shall be binding as if called for by both.

8.2 Should any discrepancy appear between the drawings and specifications which leaves the trade in doubt as to the true intent and meaning of the plans and specifications, a ruling shall be obtained from the Consultant before submitting tender. If this is not done it will be assumed that the most expensive alternate has been included.

8.3 Review the mechanical, architectural, structural and electrical drawings and specifications prior to submitting tender and report any discrepancies to the Consultant.

8.4 Prior to submitting his tender, the bidder shall carefully examine the site and ascertain all conditions which shall affect his trade. No extras will be allowed for work resulting from conditions that would have been evident upon a thorough examination of site.

9. INSPECTION CERTIFICATION AND REVIEW

9.1 Arrange for inspection of all work by the authorities having jurisdiction. On completion of the work furnish final unconditional certificates of approval by the inspecting authorities.

9.2 Provide all gauges, instruments and other necessary measuring equipment required for review of the work by the Consultant. Arrange for review of Products during manufacture.

9.3 Attend, promptly, to any deficiencies reported.

9.4 The Division shall provide full time supervision and inspection of the work. The Division is responsible for quality control.

9.5 Request final review when the completed installation has been checked by the Division and all deficiencies have been rectified.

10. TRIAL USAGE, DEMONSTRATION, INSTRUCTION TO OWNER

10.1 The Owner has the privilege of the trial usage of electrical systems or parts thereof for the purposes of testing and learning the operational procedures.

10.2 Carry out the trial usage over a length of time as deemed reasonable by the Consultant, at no extra charge.

10.3 Carry out the operations only with the express knowledge and under supervision of the Sub-Contractor who shall not waive any responsibility because of trial usage.

10.4 Trial usage shall not be construed as acceptance by the Owner.

10.5 Instruct the Owner's representative in all aspects of the operation of systems and equipment.

10.6 Arrange for and pay for services of service engineers and other manufacturer's representatives required for instruction on specialized portions of the installation.

10.7 Submit a complete list of system instructions to the Consultant at the time of final inspection, stating for each system:

.1 Date instructions were given to the Owner's staff.

.2 Name of persons instructed.

.3 Other parties present (manufacturer's representative, consultants, etc.).

.4 Signature of the Owner's staff stating that they properly understand the system installation, operation and maintenance requirements.

.5 Prior to the commissioning of all equipment the Contractor shall provide a signed completion slip from all trades involved with the installation. Completion slip format to be provided by the Consultant.

11 MAINTENANCE MANUALS

11.1 Submit manuals in accordance with Section 01300, Submittals.

11.2 Assemble three manuals, each containing data sheets, brochures, operating maintenance and lubricating instructions and a complete set of reviewed and "as-built" shop drawings and bind in hard cover. Present one copy for review and hand the review copy plus a duplicate to the Owner. The manual shall contain the following:

.1 Instrumentation and Control:

- sequence and description of operation for each control system;
- control diagram for each system complete with equipment summary giving system designation and catalogue number for each component;
- catalogue leaflet of each component used.

.2 Other Equipment:

- Maintenance instructions for fire alarm systems, emergency light systems and communication systems;
- Maintenance instructions for all other equipment containing moving parts or requiring lubrication;
- include in instructions all information as listed for specific equipment.

12. AS-BUILT DRAWINGS

12.1 Site records:

.1 The Consultant will provide 2 sets of white prints as required for each phase of the work. Mark therein all changes as work progresses and as changes occur. This shall include changes to existing electrical systems, control systems and low voltage control wiring.

.2 On a weekly basis, transfer information to reproducibles, revising reproducibles to show all work as actually installed.

.3 Use different colour waterproof ink for each service.

.4 Make available for reference purposes and inspection at all times.

12.2 As-built drawings:

.1 Identify each drawing in lower right hand corner in letters at least 12 mm high as follows: - "AS BUILT DRAWINGS: THIS DRAWING HAS BEEN REVISED TO SHOW Electrical SYSTEMS AS INSTALLED" Signature of Contractor and date.

.2 Submit to Consultant for approval and make corrections as directed.

.3 Submit completed reproducible as-built drawings with Operating and Maintenance Manuals.

15. SHOP DRAWINGS

15.1 The Contractor shall provide one reproducible copy and two other copies of Shop Drawings for approval. Refer to Section 01340.

15.2 Shop drawings shall be submitted using the prepared "Shop Drawing Submittal Form" for each item.

15.3 The term "shop drawings" means drawings, diagrams, illustrations, schedules, performance charts, brochures and other data which are to be provided by the Contractor to illustrate details of a portion of the Work.

15.4 The Contractor shall arrange for the preparation of clearly identified shop drawings as called for by the Contract Documents or as the Consultant may reasonably request.

15.5 Prior to submission to the Consultant the Contractor shall review all shop drawings. By this review the Contractor represents that he has determined and verified all field measurements, field construction criteria, materials, catalogue numbers and similar data or will do so and that he has checked and coordinated each shop drawing with the requirements of the Work and of the Contract Documents. The Contractor's review of each shop drawing shall be indicated by stamp, date, and signature of a responsible person.

15.6 The Contractor shall submit shop drawings to the Consultant for his review with reasonable promptness and in orderly sequence so as to cause no delay in the Work or in the work of Other Contractors. If either the Contractor or the Consultant so requests they shall jointly prepare a schedule fixing the dates for submission and return of shop drawings. Shop drawings shall be submitted in the form of reproducible transparencies or prints as the Consultant may direct. At the time of submission the Contractor shall notify the Consultant in writing of any deviations in the shop drawings from the requirements of the Contract Documents.

15.7 The Consultant will review and return shop drawings in accordance with any schedule agreed upon, or otherwise with reasonable promptness so as to cause no delay. The Consultant's review will be for conformity to the design concept and for general arrangement only and such review shall not relieve the Contractor of responsibility for errors or omissions in the shop drawings or of responsibility for meeting all requirements of the Contract Documents unless deviation on the shop drawings has been approved in writing by the Consultant.

15.8 The Contractor shall make any changes in shop drawings which the Consultant may require consistent with the Contract Documents and resubmit unless otherwise directed by the Consultant. When resubmitting, the Contractor shall notify the Consultant in writing of any revisions other than those requested by the Consultant.

END OF SECTION

PART 1 - GENERAL

1.1 **Reference**

.1 This Section supplements "The General Conditions" and Division 1, and forms part of every Section of Division 16.

1.2 **Access Doors**

.1 Wherever any item of electrical equipment requiring accessibility, maintenance or adjustment is concealed, ensure adequate access, or provide an Access Door and arrange for its installation by the Division in whose work it occurs.

.2 Doors shall be sized for proper and easy access, and located to suit the concealed device. In removable acoustic panel ceilings, no Access Doors are required. Use ULC labelled related Access Doors in all fire rated walls and ceilings, which act as fire barriers and match the Door type with the ceiling type and applied finish.

.3 Submit for the Consultant's review, floor plans and shop drawings showing the size, type and exact location of all Access Doors.

.4 All Access Doors shall be shown on the Record Drawings. Notations adjacent to each Access Door shown on the drawings, shall indicate frequency of maintenance required for item or items above or behind the Door.

1.2 **Cleaning**

.1 Do final cleaning in accordance with Division 1.

.2 Clean luminaire reflectors and lenses, lamps and other surfaces that have been exposed to construction dust and dirt. Clean the insides and outsides of panelboards, splitters and other electrical equipment, and completely remove all debris and tools from the project.

1.3 **Codes and Standards**

.1 Complete the installation of the work in accordance with the latest editions of the Ontario Building Code, Ontario Electrical Safety Code, C.S.A., U.L.C., N.F.P.A., O.S.H.A. or other Codes, as required.

.2 Comply with O.E.S.C. Electrical Bulletins in force at time of Bid submission. While not identified and specified by number in this Division, they are to be considered as forming part of related Standards.

.3 Abbreviations for electrical terms are as per C.S.A. Z85.

1.4 **Completion of Contract**

.1 All the equipment must be cleaned and tested, before final acceptance by the Consultant.

.2 From the date of issuance of a "Certificate of Substantial Performance", all equipment, materials and workmanship, other than lamps, must be unconditionally warrantied for not less than 1 (one) year.

.3 Replace, at no cost, all incandescent lamps burned out during a 30 (thirty) day period and all burned-out fluorescent and HID lamps for a period of 90 (ninety) days after date of issuance of certificate of "Substantial Performance" for the Contract for the building.

.4 Defects and deficiencies which originate or become evident during the warranty period must be repaired or replaced, at no cost.

1.4 .5 If, during the warranty period, transformers, ballasts or other noise and vibration producing equipment are considered by the Consultant to exceed acceptable standards, then these must be replaced without delay or additional cost to the Owner. All work relating to the replacement of defective items must be carried out after normal working hours and at a time which is acceptable to the Owner.

1.5 **Contract Drawings**

.1 The Drawings for the Electrical work are diagrammatic performance Drawings only, intended to convey the scope of work and indicate the general arrangement and approximate location of apparatus and fixtures, and the approximate sizes and locations of equipment and outlets. The Drawings do not intend to show Architectural, Mechanical or Structural details.

.2 Do not scale or measure Drawings, but obtain information regarding accurate dimensions, from the dimensions shown on the Architectural Drawings, or by site measurements. Follow the Electrical Drawings for laying out the work.

.3 Refer to the other Division's Coordination Drawings, to become familiar with all conditions affecting the work, and verify suitable spaces exist, in which the equipment will be installed.

.4 Make, at no additional cost, any changes or additions to materials and equipment necessary to accommodate Structural conditions (offsets around beams, columns, etc.).

.5 Alter at no additional cost, the location of materials and/or equipment as directed, provided that the changes are made before installation, and do not necessitate additional materials.

.6 Install ceiling mounted components (such as lighting fixtures, heat detectors, speakers, etc.) in accordance with dimensioned reflected ceiling drawings, prepared by the Architectural Consultant.

.7 Leave space clear, and install equipment to accommodate future materials and/or equipment as indicated or specified, or to accommodate equipment and/or materials supplied by other Contractors.

.8 Verify that the spaces in which the equipment is to be installed is sufficient and install all equipment to maintain head room and clearances, to conserve space, comply with codes, and to ensure adequate space for future servicing.

.9 Confirm at the site, the exact location of equipment, outlets and fixtures, and the location of outlets for equipment supplied by other Contractors, before installation.

1.6 **Cutting and Patching**

.1 All cutting and patching to be carried out by this Division.

1.7 **Definitions**

.1 Wherever the words "equal", "approved", or "approved equal" are used, it shall be understood to mean "equal", "approved", or "approved equal" in the opinion of the Consultant only.

.2 Wherever the words "install", "provide", or "supply and install", are used, it shall be understood to mean "provide and install, inclusive of all labour, materials, installation, testing, and connections" for the item to which referred.

.3 "Concealed" is defined as "out of sight" in "normal" viewing conditions, and includes buried in concrete, above acoustic tile or gypsum board ceilings, within masonry or gypsum board constructed walls, withing cable trays or below raised access floors.

1.8 **Existing Conditions**

.1 Visit the site and examine the existing conditions affecting the work of this Division.

.2 No claim for extra payment shall be made for extra work made necessary by circumstances encountered due to conditions which were visible upon, or reasonably inferable from an examination of the site prior to submission of the Bid.

1.9 **Intent**

.1 It is the intent of these drawings and specifications that the Contractor provide complete and operational systems as required.

.2 Where differences occur, the maximum condition shall govern.

.3 Any miscellaneous items, hardware, devices, wiring, etc., not specifically described, but required for the operation of the system, must be provided and included as part of the Bid.

1.10 **Location of Outlets**

.1 Locate receptacle, telephone A/V and data outlets from dimensional Architectural elevation drawings or from site coordination documents prepared by the Architect. Do not install outlets back-to-back in walls, but allow minimum 150mm horizontal clearance between boxes.

.2 Change location of outlets at no extra cost or credit, providing distance does not exceed 3m and information is given before installation.

.3 Locate light switches on latch side of doors, unless otherwise shown.

.4 Locate disconnect devices in mechanical rooms, boiler rooms and elevator machine rooms on latch side of door, unless otherwise shown.

.5 Where devices are shown adjacent to one another in plan but occur at different elevations, they shall be vertically aligned.

1.11 **Materials and Equipment**

.1 All materials and equipment shall be new, C.S.A. certified, and manufactured to the Standards specified.

.2 Where there is no alternative to supplying equipment which is not C.S.A. certified, obtain special approval from the local Inspection Department.

.3 Indicate which manufacturer is carried in the Bid, on the Supplementary Tender Form. If this is not indicated, the specified "Base" equipment (the first name in the list) shall be assumed to have been carried.

.4 "Substitute" manufacturer's equipment must be equal in intent, construction and performance, in every respect, as defined by the Consultant, or will be rejected by the Consultant at the time of shop drawing submittal, the Contractor being instructed to provide the "Base" equipment as specified.

.5 Be aware that all equipment, whether "Base", "Approved equal" or "substitute" must fit into the space allocated. Be responsible for any increase in space requirements, due to non-conformity to the above requirement.

.6 If a single item is specified, the specified item shall form the basis of the Bid, with no substitutes allowed. The Contractor however, still has the option of offering a "deduction" from the Bid, by suggesting a "substitution" in the Supplementary Electrical Tender Form.

.7 If a manufacturer is noted by the Contractor in the substitute column only, that manufacturer will be considered as a substitute, and a savings from the Base Bid Price must be shown. The Base Bid Price must include the base and "approved equal" manufacturers only.

1.12 **Mounting Heights**

.1 Mounting height of equipment is from finished floor to centre line of equipment unless specified or indicated otherwise.

.2 If mounting height of equipment is not indicated, verify with Consultant before proceeding with installation.

.3 Local switches: 1200 mm

.4 Wall receptacles: vertically

Above floors: 400 mm
Above top of continuous baseboards heater: 150 mm
Above top of counters or splash back: 150 mm
In mechanical rooms and parking areas: 600 mm

1.13 **Permits and Fees**

.1 Submit to the local Electrician Inspection Department, Local Utility, and Telephone Supply Authorities, the necessary number of Electrical Drawings and Specifications for examination, special inspection and/or approval, prior to the commencement of the work, and pay all costs, associated fees, and any excess cable or meter charges. If required prepare any additional drawings/documents required by the Authority.

.2 The General contractor will provide upon request, at the Contractors cost, the required quantity of drawings and specifications.

.3 Arrange for the timely installation of the permanent hydro and telephone service, and comply with all of the Authorities requirements.

.4 Provide Certificate(s) of Acceptance from the Authorities Inspection Department, upon completion of work.

1.14 Electrical Wiring for Mechanical Systems

1.14.1 Division 15 Mechanical Contractor shall supply and install the following:

.1 All conductors and terminations for low voltage (50V or less) mechanical control systems. Carry out the work in accordance with the requirements of Division 16.

.2 All terminations of low voltage control devices for mechanical systems.

1.14.2 Division 15 Mechanical Contractor shall supply to the Division 16 Electrical Contractor the following:

.1 Necessary relays and contactors for interlocked mechanical control systems.

.2 Other devices as may be indicated on the drawings for mechanical control systems.

.3 Combination magnetic starters with Hand-Off-Auto selector switch for all new circulating pumps and exhaust fans.

1.14.3 Division 16 Electrical Contractor to supply and install the following:

.1 All wiring systems 120 Volt and greater for power and control relating to mechanical equipment.

.2 Breakers, local disconnect switches for mechanical equipment.

1.14.4 Division 16 Electrical Contractor shall install and connect those items relating to Mechanical Control Systems as listed in above.

1.14.5 It is the responsibility of the Division 15 Mechanical Contractor to coordinate and ensure that control systems for mechanical equipment are complete and functional in accordance with the manufacturer's guidelines and as specified in the documents.

END OF SECTION

PART 1 - GENERAL

1.1 The following conditions shall be an integral part of the work of this Division 16 Electrical.

.1 The General Conditions of the contract documents and Section 16001.
.2 General Conditions of the specifications.
.3 The requirements of the Contract Documents.
.4 The requirements of this Subdivision.

PART 2 - SCOPE

2.1 This Subdivision shall:
.1 Perform all of the work of this Division at the place of the work.
.2 Provide all of the Products to the place of the work.
.3 Provide all of the necessary construction machinery and equipment "at" and "off" the place of work.
.4 Provide any and all incidental items essential to and necessary for the completion of the work and installation of Products.
as per the requirements of the Contract Documents and/or as herein specified.

PART 3 - SYSTEMS

3.1 The electrical contractor, Division 16, shall perform the work required and not necessarily limited to:

.1 Removals and relocations in the renovated area and about the existing facility as indicated.
.2 Electrical devices and branch wiring systems.
.3 Lighting systems as scheduled.
.4 Electrical power systems for mechanical equipment.
.5 Electrical power systems for Owner's equipment.

3.2 All work must be scheduled with the General Contractor and this contractor shall maintain a suitable work force at the site to perform the required work as required; refer to the phasing schedule in te Architectural specifications.

END OF SECTION

PART 1 - GENERAL

1.1 Location of Conduit

.1 Drawings do not indicate all conduit runs. Those indicated are in diagrammatic form only.

PART 2 - PRODUCTS

2.1 Conduits

.1 Rigid galvanized steel threaded conduit.
.2 Epoxy coated conduit: with zinc coating and corrosion resistant epoxy finish inside and outside.
.3 Electrical metallic tubing (EMT): with couplings.
.4 Rigid pvc conduit.
.5 Flexible steel conduit and liquid-tight flexible metal conduit.
.6 FRE conduit.

2.2 Conduit Fastenings

.1 One hole steel straps to secure surface conduits 50 mm and smaller. Two hole steel straps for conduits larger than 50 mm.
.2 Beam clamps to secure conduits to exposed steel work.
.3 Channel type supports for two or more conduits at 2 m oc.
.4 Six mm dia threaded rods to support suspended channels.

2.3 Conduit Fittings

.1 Fittings: manufactured for use with conduit specified. Coating: same as conduit.
.2 Factory "ells" where 90° bends are required for 25 mm and larger conduits.
.3 Watertight connectors and couplings for EMT. Set-screws are not acceptable.

2.4 Expansion Fitting for Rigid Conduit

.1 Weatherproof expansion fittings with internal bonding assembly suitable for 100 mm linear expansion.
.2 Watertight expansion fittings with integral bonding jumper suitable for linear expansion and 19 mm deflection in all directions.
.3 Weatherproof expansion fittings for linear expansion at entry to panel.

2.5 Fish Cord

.1 Polypropylene.

PART 3 - EXECUTION

3.1 Installation

.1 Install conduits to conserve headroom in exposed locations and cause minimum interference in spaces through which they pass.
.2 Conceal conduits except in mechanical and electrical service rooms.
.3 Use EMT conduit except where specified otherwise.
.4 Use electrical metallic tubing (EMT) except in cast concrete above 2.4 m not subject to mechanical injury.
.5 Use rigid pvc conduit underground.
.6 Use flexible metal conduit for connection to motors in dry areas, connection to recessed incandescent fixtures without a prewired outlet box, connection to surface or recessed fluorescent fixtures, work in movable metal partitions.
.7 Use liquid tight flexible metal conduit for connection to motors or vibrating equipment in damp, wet or corrosive locations.
.8 Use explosion proof flexible connection for connection to explosion proof motors.
.9 Install conduit sealing fittings in hazardous areas. Fill with compound.
.10 Bend conduit cold. Replace conduit if kinked or flattened more than 1/10th of its original diameter.
.11 Mechanically bend steel conduit over 3/4" (19 mm) dia.
.12 Field threads on rigid conduit must be of sufficient length to draw conduits up tight.
.13 Install fish cord in empty conduits.
.14 Run 2-1" (25 mm) spare conduits up to ceiling space and 2-1" (25 mm) spare conduits down to ceiling space from each flush panel. Terminate these conduits in 6" x 6" x 4" (152 x 152 x 102 mm) junction boxes in ceiling space or in case of an exposed concrete slab, terminate each conduit in surface type box.
.15 Where conduits become blocked, remove and replace blocked section. Do not use liquids to clean out conduits.
.16 Dry conduits out before installing wire.

3.2 Surface Conduits

.1 Run parallel or perpendicular to building lines.
.2 Locate conduits behind infrared or gas fired heaters with 1.5 m clearance.
.3 Run conduits in flanged portion of structural steel.
.4 Group conduits wherever possible on suspended, surface channels.
.5 Do not pass conduits through structural members except as indicated.
.6 Do not locate conduits less than 75 mm parallel to steam or hot water lines with minimum of 25 mm at crossovers.

END OF SECTION

PART 1 - GENERAL

1.1 Product Data

.1 Submit product data in accordance with Section 16001.

PART 2 - PRODUCTS

2.1 Building Wires

.1 Conductors: stranded for 10 AWG and larger. Minimum size: 12 AWG.

.2 Copper conductors: size as indicated, with 600 V insulation of chemically cross-linked thermosetting polyethylene material rated RW90.

2.2 Teck Cable

.1 Conductors:

- .1 Grounding conductor: copper.
- .2 Circuit conductors: copper, size as indicated.

.2 Insulation:

- .1 Chemically cross-linked thermosetting polyethylene rated type RW90, 600 V.

.3 Inner jacket: polyvinyl chloride material.

.4 Armour: interlocking aluminum.

.5 Overall covering: thermoplastic material.

2.3 Mineral Insulated Cables

.1 Conductors: solid bare soft-annealed copper, size as indicated.

.2 Insulation: compressed powdered magnesium oxide to form compact homogeneous mass throughout entire length of cable.

.3 Overall covering: annealed seamless copper sheath, Type M1 rated 600 V, 250°C.

.4 Outer jacket: PVC applied over sheath for direct bury cables only.

2.4 Armoured Cables

.1 Conductors: insulated, copper, size as indicated.

.2 Type: AC90.

.3 Armour: interlocking type fabricated from aluminum strip.

2.5 Aluminum Sheathed Cable

.1 Conductors: copper, size as indicated.

.2 Insulation: type RA90 rated 600 V.

.3 Sheath: aluminum applied to form continuous corrugated sheath.

.4 Outer jacket of pvc applied over sheath for direct burial and wet locations.

2.6 Control Cables

.1 Shielded cables to suit system manufacturer's guidelines.

PART 3 - EXECUTION

3.1 Installation of Building Wires

.1 Install wiring as follows:

.1 In conduit systems in accordance with Section 16111.

.2 In surface and lighting fixture raceways in accordance with Section 16113.

3.2 Installation of TECK Cable 1 - 1000 V

.1 Install cables.

.2 Group cables wherever possible on channels.

.3 Terminate cables in accordance with Section 16151 - Wire and Box Connectors - 0 - 1000 V.

3.3 Installation of Mineral - Insulated Cables

.1 Run cable, securely supported by straps.

.2 Make cable terminations by using factory-made kits.

.3 At cable terminations use thermoplastic sleeving over bare conductors.

.4 Where cables are buried in cast concrete or masonry, sleeve for entry of cables.

.5 Do not splice cables.

.6 Do not use aluminum sheathed cable in cast concrete or masonry construction.

3.4 Installation of Armour Cables

.1 Group cables wherever possible.

.2 Terminate cables in accordance with Section 16151 - Wire and Box Connectors - 0 - 1000 V.

3.5 Installation of Aluminum Sheathed Cable

.1 Group cables wherever possible on channels.

.2 Terminate cables in accordance with Section 16151 - Wire and Box Connectors - 0 - 1000 V.

3.6 Installation of Control Cables

.1 Install control cables in conduit.

.2 Ground control cable shield.

3.7 General

.1 Unless otherwise noted wiring for this project is to be RW90.XLPE copper conductors in EMT conduit.

.2 The use of BX cable is restricted to runouts to light fixtures (Max. 10 ft. long) and to wiring systems in stud partitions.

END OF SECTION

PART 1 - GENERAL

1.1 References

.1 CSA C22.1- Canadian Electrical Code, Part 1.
.2 Ontario Electrical Safety Code

PART 2 - PRODUCTS

2.1 Outlet and Conduit Boxes General

.1 Size boxes in accordance with CSA C22.1.
.2 4" (102 mm) square or larger outlet boxes as required for special devices.
.3 Gang boxes where wiring devices are grouped.
.4 Blank cover plates for boxes without wiring devices.
.5 347 V outlet boxes for 347 V switching devices.
.6 Combination boxes with barriers where outlets for more than one system are grouped.

2.2 Sheet Steel Outlet Boxes

.1 Electro-galvanized steel single and multi gang flush device boxes for flush installation, minimum size 3" x 2" x 1-1/2" (76 x 50 x 38 mm) or as indicated. 4" (102 mm) square outlet boxes when more than one conduit enters one side with extension and plaster rings as required.
.2 Electro-galvanized steel utility boxes for outlets connected to surface-mounted EMT conduit, minimum size 4" x 2-1/8" x 1-7/8" (102 x 54 x 48 mm).
.3 4" (102 mm) square or octagonal outlet boxes for lighting fixture outlets.
.4 4" (102 mm) square outlet boxes with extension and plaster rings for flush mounting devices in finished plaster or tile walls.

2.3 Masonry Boxes

.1 Electro-galvanized steel masonry single and multi gang boxes for devices flush mounted in exposed block walls.

2.4 Concrete Boxes

.1 Electro-glavanized sheet steel concrete type boxes for flush mount in concrete with matching extension and plaster rings as required.

2.6 Fittings - General

.1 Bushing and connectors with nylon insulated throats.
.2 Knock-out fillers to prevent entry of debris.
.3 Conduit outlet bodies for conduit up to 1- 1/4" (32 mm) and pull boxes for larger conduits.
.4 Double locknuts and insulated bushings on sheet metal boxes.

PART 3 - EXECUTION

3.1 Installation

.1 Support boxes independently of connecting conduits.

.2 Fill boxes with paper, sponges or foam or similar approved material to prevent entry of debris during construction. Remove upon completion of work.

.3 For flush installations mount outlets flush with finished wall using plaster rings to permit wall finish to come within 6 mm of opening.

.4 Provide correct size of openings in boxes for conduit, mineral insulated and armoured cable connections. Reducing washers are not allowed.

END OF SECTION

PART 1 - GENERAL

1.1 **Reference**

.1 Read and be governed by Section 16010.

PART 2 - PRODUCTS

2.1 **Standards**

.1 Construction of manually operated general purpose AC switches is to be based on CSA C22.2 No. 111, snap switches on CSA C22.2 No. 55, and receptacles, plugs and similar wiring devices on CSA C22.2 No. 42.

.2 Devices shall be Specification Grade and of one manufacturer throughout.

2.2 **Switches**

.1 Switches shall be suitable for the voltage and load controlled and shall be single pole or three way as indicated.

.2 The shall have terminal holes approved for No.10 AWG wire, silver alloy contacts, and urea or melamine mouldings for parts subject to carbon tracking.

.3 They shall be suitable for back and side wiring, and rated for tungsten filament and fluorescent lamps, and up to 80% of rated capacity of motor loads.

.4 White rocker style switches, shall be used for 120V circuits, in all finished areas not on LV or occupancy sensor control.

.5 Door switches shall be suitable for the mounting location, and rated for the load controlled.

.6 Colour: White

.7 Cover Plates: Stainless steel to suit.

.8 Devices equal to:

120V single pole - 15A	Leviton # CSB1-15-W
120V single pole - 20A	Leviton # CSB1-20-W
120V three way	Leviton # CSB3-13-W
120V pilot light	Leviton # 1201-PL-CLR

2.3 **Receptacles**

.1 Duplex receptacles shall be CSA Type 5-15 R, 125V, 15A, U ground.

.1 They shall be white and are to be of the except black for all floor box locations.

.2 They shall be suitable for (No. 10 AWG) for back and side wiring, have break-off links for use as split receptacles, and shall have 8 (eight) back wired entrances, 4 (four) side wiring screws and double wipe contacts with rivetted grounding contacts.

2.3 .2 Single receptacles shall be CSA type 5-15 R, 125V, 15A, U ground.
.1 They shall have white moulded housings and coverplate, and be suitable for (No. 10 AWG) back and side wiring, with 4 (four) back wired entrances, and 2 (two) side wiring screws.
.3 Other receptacles shall have ampacity and voltage as indicated.
.4 A/V and Cable TV devices:
.1 All A/V devices shall be provided by the A/V Contractor, and the cable TV devices shall be provided by the cable TV company.
.5 Standard of Acceptance: Leviton Series.
.1 Duplex Receptacle: # BR-15-W
.2 Isolated Ground: # 5262-IG-W
.3 Quad Receptacles: # 1254-W.
.4 Range Receptacles: # 5373
.5 Dryer Receptacles: # 5372
.6 G.F.C.I. receptacles: # 6598-W
.7 Outdoor receptacles are to be of tamper resistant design and are to incorporate a GFCI breaker at the panelboard.
.6 Coverplates: Stainless steel to suit.
.1 Cover Plates:
.2 For outdoor receptacles, locking type weater resistant cover plates.
.3 Sheet steel utility box covers for devices in surface boxes in mechanical rooms or service areas.

PART 3 - EXECUTION

3.1 **Installation**
.1 Switches:
.1 Install single throw switches with lever in 'UP' position when switch closed.
.2 Install switches in gang type outlet box when more than one switch is required in one location.
.2 Receptacles:
.1 Install receptacles in gang type outlet box when more than one device is required in one location.
.2 For single and ganged cable TV outlet locations, install coverplate with white blank plate in outlet position.
.3 Coverplates:
.1 Protect coverplate finish until painting and other work is finished, or install after painting is complete.
.2 Install suitable matching common (ganged) coverplates where wiring devices are grouped. Ensure blank sections where required for A/V, telephone, TV and data devices.
.3 Do not use flush type coverplates on surface mounted boxes.
.4 Identification:
.1 Provide circuit identification for all receptacles as scheduled on the drawings.

END OF SECTION

PART 1 - GENERAL

1.1 **Reference**
- .1 Read and be governed by Section 16010.

1.2 **Related Work**
- .1 Comply with relevant Sections of this and other Divisions of this Specification.

PART 2 - PRODUCTS

2.1 **Lamps**
- .1 Incandescent:
  - .1 Standard 'A' shape bulb, medium base, inside frosted, 1000 h life, 120V.
  - .2 Reflector 'R' shape bulb, medium base, inside frosted, 2000 h life, 120V.
  - .3 Parabolic aluminized reflector 'PAR' shape bulb, medium skirted base, clear, 2000 h life, spot or flood as required, 120V.
- .2 Fluorescent:
  - .1 Rapid start, 265mA, T8 shape bulb, 20,000 h life, minimum initial lumens:
    32W - 3050 - F032/41K
    40W - 3800 - F040/41K
  - .2 Compact fluorescent, single end bi-pin, 10,000 h life, minimum initial lumens:
    13W - 860 - F13TT/27K
    28W - 1600 - F28TT/27K
    36W - 2900 - F36TT/27K

2.2 **Ballasts**
- .1 General
  - .1 Ballasts shall be manufactured to CSA C22.2 No. 74, and be CBM Certified.
  - .2 Ballast voltage shall be as required by circuit connection on the drawings.
- .2 Fluorescent - Rapid Start Ballasts.
  - .1 All rapid start energy saving ballasts shall have group 'A' sound rating. Non-energy saving ballasts shall be group 'A' or instant start, rapid start and compact fluorescent, group 'B' for low temperature rapid start, group 'C' for simline or HO, and group 'D' for VHO lamps. Electronic ballast types shall be at least 6db lower than non-electronic types.
- .3 Electronic - Rapid Start Bal;lasts
  - .1 Ballasts shall be suitable for T8, T10 or T12 rapid start or simline lamp types, as required. They shall operate between 20 and 60 Khz.
  - .2 Third harmonic content must not exceed 25% of input current for discrete electronic ballasts, or 10% for I.C. ballasts.
  - .3 Ballasts shall have an average lamp current crest factor of 1.4, provide sequenced start progression, and operate lamps without flicker.

2.3 **Luminaires**

.1 All luminaires to be manufactured in accordance with CSA 22.2 No. 9. Combustible materials used, must comply with the flame spread and smoke development classification prescribed by the CAN/ULC - S102.2M Code.

.2 The manufacturers of all luminaires must guarantee that their painted reflecting surfaces achieve a minimum of 85% reflectivity with a colour fastness not to exceed 0.5 after 250 h of exposure in an Atlas fade-ometer, and that the maximum temperature of any ballasts, will not exceed 90°C at normal design voltage, plus 2 (two) percent, in the location of its normal use.

.3 Reflective aluminum sheet shall be fabricated from special aluminum alloys and chemically brightened, subsequently anodically treated to specifications established by Alcoa, to produce:

.1 Finish for commercial service, minimum density of coating 7.8g/m², minimum reflectivity 88% for specular, 80.5% for semi-specular and 75% for diffuse.

.2 Finish for regular industrial service, minimum density of coating 14.8g/m², minimum reflectivity 82% for specular and 73% for diffuse.

.4 Luminaire wires are to be minimum #14 AWG copper with A-18 flame, heat and moisture resistant insulation, rated 600V, 90°C., and installed as per CSA C22.2 No. .28

2.5 **Luminaire Schedule**: See drawings.

PART 3 - EXECUTION

3.1 **Installation of Lighting Fixtures**

.1 Fixtures shall have C.S.A. labels and shall be complete with lamps, ballasts and all necessary accessories for their hanging and mounting. Fixtures shall be installed in accordance with the manufacturer's instructions.

.2 Unless otherwise indicated support all lighting fixtures, including those mounted in suspended ceilings, directly from the building structure.

.3 Fluorescent & HID fixtures installed in inverted T bar ceilings may not be supported by the ceiling support system.

.4 Provide and install all necessary supports and hangers prior to the installation of the ceilings. All supports or hangers shall be of a non-combustible nature. Provide metal channels or similar supports as required.

.5 Recessed fixtures shall have trim designed to fit into ceiling types used. Before ordering fixtures check ceiling types used in various areas on the latest Architectural Drawings. Assume full responsibility to supply fixtures with appropriate trims.

.6 Fixtures delivered to site shall be stored in clean, dry and protected areas until required for installation.

.7 Supply plaster frames and rings for all fixtures recessed in non-removable ceilings (i.e. plaster, drywall, asbestos cement, wood, sheet metal, etc.). Hand these to the appropriate trade for installation. Supervise the installation to ensure correct mounting and spacing.

.8 Co-ordinate the installation of lighting fixtures with all Trades to provide spacing intended.

3.1 .9 Fixtures shall be installed in accordance with the reflected ceiling layouts with due consideration for mechanical diffusers, bulkheads and other obstructions. Check Mechanical and Architectural drawings before roughing in to avoid any conflict.

.10 All fixtures shall be installed accurately, in line and level. Fixtures shown in continuous rows or broken lines shall be fully aligned so that all rows appear as straight lines. Crooked lines or misplaced fixtures will not be accepted and such poor workmanship shall be corrected.

END OF SECTION

THE CITY OF GREATER SUDBURY

CONTRACT GDD08-9
TENDER FOR CONSTRUCTION OF A
NEW HOLD WASHROOM AT THE GREATER SUDBURY AIRPORT

FORMS

CONTRACT GDD08-9
TENDER FOR CONSTRUCTION OF NEW HOLD WASHROOM
AT THE GREATER SUDBURY AIRPORT
TENDER BID FORM

Total Cost for Construction of a New Hold Washroom
at the Greater Sudbury Airport (as per Scope of Work/drawings) **$**_____

PLUS 5% GST **$**_____

GRAND TOTAL **$**_____

❑ This project will commence upon award. The project will be completed **NO LATER THAN** two to three weeks following contract award.

❑ A bid deposit in the amount as indicated has been submitted with your tender.

Sub-contractors (Provide only one name for each)

The UNDERSIGNED lists herein the individual Sub-contractors for the trades listed below and who he proposes to employ on the Project, and upon whose sub-trade or supply quotation he has based the Contract Price quoted herein, and agrees that no change shall be made in the list, unless approved by the Owner, as regards such Sub-contractor or Supplier actually employed on the Work:

Trade	**Sub-contractor or Major Supplier**
Gypsum Board	
Flooring	
Painting and Finishing	
Mechanical	
Electrical	

Note: Failure to complete the sub-contractor list above will result in automatic rejection of your tender.

The undersigned has read, understands and acknowledges all instructions, terms and conditions contained in this Tender document:

COMPANY NAME: _____

ADDRESS: _____

PHONE: _____ **FAX:**_____ **EMAIL:**_____

NAME & POSITION OF PERSON SIGNING:_____
Please Print

SIGNATURE: _____ **DATE:**_____
"I have the authority to bind the Corporation/Company/Partnership"

LOWEST OR ANY TENDER NOT NECESSARILY ACCEPTED.

CONTRACT GDD08-9
TENDER FOR CONSTRUCTION OF NEW HOLD WASHROOM
AT THE GREATER SUDBURY AIRPORT

ADDENDUM ACKNOWLEDGEMENT FORM

Addendum Acknowledgment Section: See Item 14 of Schedule 'C' of Purchasing By-Law 2006-270 as amended (attached). Failure to complete this section when addendums have been issued may render your Proposal as non-compliant. Please ensure you complete this section if an addendum(s) has been issued.

If awarded the contract, the Bidder agrees to complete the work in accordance with the Tender Specifications, and the following Addenda:

Addendum No. ___, dated _____, 2008. Addendum No. ___, dated _____, 2008.

Addendum No. ___, dated _____, 2008. Addendum No. ___, dated _____, 2008.

COMPANY NAME: _____

SIGNATURE:_____
"I have the authority to bind the corporation/company/partnership"

ATTACH THIS LABEL SHEET TO THE FRONT OF YOUR RFP ENVELOPE/PACKAGE SUBMISSION

TENDER
TO BE RETURNED TO:

THE CITY OF GREATER SUDBURY
C/O SUPPLIES AND SERVICES
200 BRADY STREET,
2nd FLOOR, TOM DAVIES SQUARE
BOX 5000, STN. A
SUDBURY ON P3A 5P3

CONTRACT GDD08-9
TENDER FOR THE CONSTRUCTION OF A
NEW HOLD WASHROOM AT THE GREATER SUDBURY AIRPORT

Bidder's Name: _____

Address: _____

_____

For City Use Only:

Date and Time Received:

NOTE: This address label/sheet must be affixed to the front of your sealed Tender envelope/ package submission. The Supplies & Services section will not be held responsible for envelopes or packages that are not labeled.

CITY OF GREATER SUDBURY AIRPORT

NEW HOLD ROOM WASHROOM

2621 SKEAD RD., GARSON, ONTARIO

MAY 23, 2008 - ISSUED FOR TENDER

CASTELLAN JAMES + PARTNERS
ARCHITECTS INC
289 CEDAR STREET, SUDBURY, ONTARIO P3B 1M8 t.705 674 2300 f.705 674 2185

SET No. PROJECT NO. 0823

DOOR SCHEDULE

DOOR							FRAME				RATING	
No.	Type	Width	Height	Material	Finish	Glass	Type	Material	Finish	Glass	Hours	REMARKS
124	A	36"	96"	WD	PT	~	F1	HM	PT	~		Match existing door and frame
124A	A	36"	96"	WD	PT	~	F1	HM	PT	~		Match existing door and frame
125	~	~	~	~	~	~	~	~	~	~	~	Contractor access door for work

DOOR SCHEDULE NOTES:

1. A HYPHEN (~) IS USED IN ANY COLUMN THAT DOES NOT APPLY TO A PARTICULAR DOOR.
2. DOOR TYPE REFERS TO DOOR ELEVATIONS SHOWN ELSEWHERE IN THIS SCHEDULE. DOOR TYPE IS INDEPENDENT OF DOOR MATERIAL (EG. A TYPE "A" DOOR MAY BE WOOD OR HOLLOW METAL). SEE ALSO DETAIL DRAWINGS.
3. DOOR WIDTH IS THE LEAF SIZE IN FEET AND INCHES FOR SINGLE DOORS AND FOR EACH LEAF IN A PAIR OF DOORS OF EQUAL WIDTH. \
4. TYPICAL FRAME SECTIONS ARE SHOWN ELSEWHERE IN THIS SCHEDULE OR ON CONSTRUCTION DETAILS. FRAME DEPTHS FOR DOORS AND SCREENS SHALL BE DEPTH OF WALL PLUS 1" (25 MM), TYPICAL.
5. FIRE RATING INCLUDES BOTH THE FIRE PROTECTION RATING IN MINUTES OR HOURS (EG. 1/3 HR, 3/4 HR, 1-1/2 HR) AND THE TEMPERATURE RISE LIMIT WHERE APPLICABLE. TEMPERATURE RISE LIMITS OF 250C/450F AFTER 30 MINUTES AND 250C/450F AFTER 1 HOUR (60 MIN.) ARE ABBREVIATED AS TRL30 AND TRL60 ON THE SCHEDULE. DOORS IN REQUIRED NON-RATED FIRE SEPARATIONS (SMOKE SEPARATIONS) ARE INDICATED AS "0 HR" IN THIS COLUMN FOR INFORMATION REGARDING HARDWARE REQUIREMENTS. WHERE LABELLED DOORS ARE INSTALLED IN GLAZED SCREENS, THE ENTIRE SCREEN FRAME SHALL BE LABELLED.
6. KEYING FOR ALL EXISTING DOORS IS TO BE REVISED TO SUIT OWNER'S REQUIREMENTS.
7. REFER TO SPECIFICATION FOR HARDWARE INFORMATION.

ROOM FINISH SCHEDULE

ROOM		FLOOR		WALL		CEILING			Remarks
Number	Name	Material	Base	Material	Finish	Material	Finish	Height	
123	HOLD ROOM	(E)CPT	(E)CPT*	(E)GB GB	PT	(E)GB (E)ACU	(E)PT ~	10'-4" 11'-0"	Install new carpet base to match existing.
124	EXISTING WASHROOM	LIN	LIN	(E)GB GB	PT	(E)GB GB	PT	6'-7"/ 8'-6"	
124A	NEW WASHROOM	LIN	LIN	GB	PT	GB	PT	8'-3"	

ROOM FINISH NOTES:

1. IN ADDITION TO THE PAINT FINISHING INDICATED ON THE ROOM FINISH SCHEDULE, PAINT SHALL BE APPLIED TO OTHER MATERIALS AS DESCRIBED IN SPECIFICATION SECTION 09900 AND AS NOTED ON THE DRAWINGS.
2. AN ASTERISK (*) IN ANY COLUMN INDICATES A REFERENCE TO A NOTE IN THE REMARKS COLUMN TO THE RIGHT.
3. ALL CAULKING AND SEALANTS TO MATCH COLOUR OF MATERIAL ON WHICH IT OCCURS UNLESS OTHERWISE APPROVED.
4. ALL RECESSED CONVECTORS, GRILLES, ACCESS PANELS, WALL FINS, EXPOSED PIPES, HANGERS, GUARDRAILS, LADDERS, AND MISCELLANEOUS METAL OTHER THAN SPECIALTY FINISHES OR BAKED ENAMEL SHALL BE FINISHED TO MATCH SURFACE ON WHICH IT OCCURS UNLESS OTHERWISE SCHEDULED.
5. WHERE NEW FLOOR FINISHES ARE SCHEDULED, REMOVE EXISTING FINISH MATERIALS AND PREPARE SUBSTRATE, AS REQUIRED, TO SUIT INSTALLATION OF NEW MATERIAL. MAKE GOOD EXISTING FINISHES AND MATERIALS, AS REQUIRED.
6. PAINT ALL EXPOSED STRUCTURE, DUCTS, CONDUIT, RACEWAYS, SPRINKLER PIPING, ETC. AND OTHER MECHANICAL AND ELECTRICAL SERVICES THAT ARE VISIBLE AT THROUGH ACOUSTIC SUSPENSION SYSTEMS EXPOSED STRUCTURE SCHEDULED.
7. ALL ITEMS REFERENCED IN *ITALICS* REFER TO EXISTING FINISHES. MAKE GOOD EXISTING FINISHES, AS REQUIRED, TO SUIT.
8. REFER TO ABBREVIATIONS FOR ABBREVIATIONS OF MATERIALS, FINISHES, ETC. USED IN THE ROOM FINISH AND DOOR SCHEDULES, AND TECHNICAL SECTIONS OF THE SPECIFICATION. ABBREVIATIONS MAY ALSO BE DEFINED IN THE SPECIFICATION SECTIONS WHERE THEY ARE USED

REFERENCE CONVENTION:

SYMBOL	REFERENCE
A / A-1.0 DETAIL SCALE = 1:1	TITLE- SECTIONS & DETAILS
FLOOR PLAN SCALE = 1:1	TITLE- PLAN & ELEVATIONS
A / A-1.0	BUBBLE-CROSS-SECTION
A / A-1.0	BUBBLE-ELEVATION
A / A-1.0	BUBBLE-DETAIL

LIST OF CONSULTANTS:

Architect: CASTELLAN JAMES + PARTNERS
ARCHITECTS INC
289 Cedar Street Suite 300, Sudbury, Ontario P3B 1M8
TEL: 705 674-2300 FAX: 705 674-2185
EMAIL: crozon@cjparch.com

Mechanical / Electrical Consultant: K. Lang Engineering Ltd.
202-469 Bouchard St., Sudbury, Ontario P3E 2K8
TEL: 705 522-8110 FAX: 705 522-8262
EMAIL: lang@bellnet.ca

ASSEMBLIES TYPES:

PARTITION ASSEMBLY

P1
- -5/8" GYPSUM BOARD
- -3 5/8" METAL STUDS @ 16" O.C.
- -ACOUSTIC BATT INSULATION
- -3/4" ACOUSTIC BOARD
- -5/8" GYPSUM BOARDS

P2
- -5/8" GYPSUM BOARD
- -EXISTING METAL STUDS
- -NEW ACOUSTIC BATT INSULATION
- -3/4" ACOUSTIC BOARD
- -5/8" GYPSUM BOARDS

P3
- -5/8" GYPSUM BOARD
- -6" METAL STUDS @ 16"O.C.
- -6" METAL STUDS @ 16"O.C. STAGGER STUDS
- -ACOUSTIC BATT INSULATION
- -3/4" ACOUSTIC BOARD
- -5/8" GYPSUM BOARDS

P4 TEMPORARY HOARDING
- -1/2" PLYWOOD
- -2"x4" STUDS @ 24"O.C.
- -ACOUSTIC BATT INSULATION
- -1/2" PLYWOOD

CEILING ASSEMBLY

C1
- -1/2" PLYWOOD SHEATHING
- -6" METAL STUDS @ 16" O.C.
- -3/4" ACOUSTIC BOARD
- -5/8" GYPSUM BOARDS

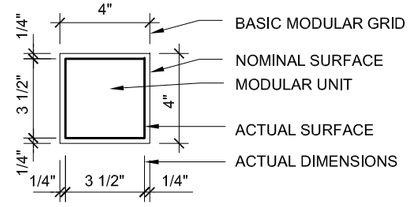
DRAWING INDEX:

GENERAL NOTES:

1. THIS DRAWING TO BE READ IN CONJUNCTION WITH ARCHITECTURAL DRAWINGS LISTED.
2. ANY DISCREPANCIES, OMISSIONS OR CONFLICTS SHALL BE REPORTED TO OWNER PRIOR TO WORK PROCEEDING.
3. ALL CONTRACTORS SHALL COMPLY WITH PART 3 OF THE ONTARIO BUILDING CODE (1997) ACT, MUNICIPAL BYLAWS. ENVIRONMENTAL LAWS AND ALL OTHER GOVERNING AUTHORITIES HAVING JURISDICTION.
4. SCHEDULE ALL WORK AND ACTIVITIES WITH AIRPORT MANAGER. REFER TO SPECIFICATION FOR MORE COMPLETE INSTRUCTION.

SMALL SCALE ASSEMBLY DRAWINGS IN PLAN, ELEVATION, OR SECTION SHOW DIMENSIONS TO GRID LINES OR TO NOMINAL SURFACES OF AN OFF-GRID COMPONENT OR TO CENTER LINE OF CONSTRUCTION ASSEMBLY.

IMPERIAL



MODULAR COORDINATION NOTES:

ALL WORKING DRAWINGs ARE DIMENSIONED BY THE MODULAR COORDINATION METHOD IN CONFORMANCE WITH THE SERIES OF STANDARDS FOR METRIC DIMENSIONAL COORDINATION IN BUILDINGs CAN3-A31, M-75.

THE POSITION AND SIZE OF BUILDING COMPONENTS ON THIS DRAWING ARE CONTROLLED BY THE BASIC MODULAR GRID OF 4".

LARGE SCALE DETAIL DRAWINGS SHOW DIMENSIONS FROM GRID LINES TO ACTUAL SURFACE OF A COMPONENT.

Drawn by: JS
Checked by: DC
Project No.: 0823
Date: MAY 23, 2008
Scale: N/A
Drawing No.: A-0.1

No.:	Revision / Version:	Date:
1	ISSUED FOR TENDER	MAY 23, 2008

CITY OF GREATER SUDBURY AIRPORT
2126 SKEAD RD., GARSON, ONTARIO

NEW HOLD ROOM WASHROOM

INFORMATION PAGE

CASTELLAN JAMES + PARTNERS
ARCHITECTS INC
289 CEDAR STREET, SUDBURY, ONTARIO P3B 1M8 (705) 674-2300 (705) 674-2185
BCDN 4022

ONTARIO ASSOCIATION OF ARCHITECTS
DENNIS CASTELLAN
LICENCE
3607

Firm Name:	Castellan James + Partners Architects Inc.
Certificate of Practice Number:	4022
Contact :	269 Cedar Street, Sudbury ,On Dennis Castellan, BArch BES,BSc OAA MRAIC
The Certificate of Practice Number of the holder is the holder's BCDN.	3607
Name of Project:	City of Greater Sudbury, New Hold Room Washroom
Location:	2621 Skead Road, Garson, Ontario
	CJP Project No. 0823 Date : June, 2008

The architect noted above has exercised responsible control with respect to design activities. The architect's seal number is the architect's BCDN

2006 Ontario Building Code Data Matrix: Div B Part 11 – Renovation

2006 OBC Reference

Introduction
The original terminal building was constructed in 1972 and a renovation and addition to the existing terminal was constructed in 2000. The building is still used as a Air Terminal Building, with administrative offices, restaurant and kitchen The proposed renovations (i e new Hold Room washroom) to the existing building are minor in nature and will occur on one (1) floor Modification include adding a new (second washroom) adjacent to the existing Barrier Free Washroom (124) within the Existing Hold Room (123) and Existing Screening Room (125)`.

The *Building Area* is 8,732 m2 (28,649 sf)
The *Gross Floor Area* is **11**,540 m2 (37,861 sf)
Building Height two (2) storeys
Streets Facing : 3
Construction: Noncombustible
Sprinklered: 2000 addition is sprinklered, existing Air Terminal Building is unsprinklered

Current OBC Classification Equivalency:
3.2.2.26 Group A, Division 2, Up to 2 Storeys, Increased Area ,Sprinklered
Floors: Fire Separations (with 45 min FRR *if combustible construction*):no FRR if noncombustible
Mezzanines: FS (with 45 min FRR *if combustible construction*): no FRR if noncombustible
Load bearing Walls. Columns, arches supporting assemblies required to have FRR:45min FRR or be noncombustible
Roof: N/A
Sprinklers : required

Construction index and hazard index: 11.2.1 1 (1) states that "where proposed construction will result in the change of major occupancy of all or part of an existing building to another major occupancy, the building shall be classified as to its, (a) construction on the basis of construction index" and (b) "occupancy on the basis of hazard index"
There is no major change of major occupancy proposed by way of this renovation."

11.1	Existing Building classification:	Describe Existing Use: Group A, Division 2, Up to 2 Storeys, Increased Area, Sprinklered ☑ Not Applicable (no change of major occupancy)	11.2 1 T 11 2.1.1A T 11 2.1.1B to N
[B]11.2	Alteration to Existing Building is:	Basic Renovation ☑ Extensive Renovation ☐	[B] 11.3.3.1 [B] 11.3.3.2

[B]11.3	Reduction in Performance Level:				[B]11.4.2
		Structural:	☑ No	☐ Yes	[B]11.4.2.1
		By Increase in occupant load:	☑ No	☐ Yes	[B]11 4.2.2
		By change of major occupancy:	☑ No* *refer notes 1 &2.*	☐ Yes	[B]11 4.2.3
		Plumbing.	☑ No	☐ Yes	[B]11 4.2.4
		Sewage-system:	☑ No	☐ Yes	[B]11.4.2.5
[B]11.4	Compensating Construction:	Structural	☑ No	☐ Yes (explain)	
		N/A			[B] 11.4.3
		Increase in occupant load:	☑ No	☐ Yes (explain)	[B]11.4.3.2
		No increase in OL			[B]11.4.3.3
		Chang			
		Change of major occupancy:	☑ No	☐ Yes (explain)	[B]11.4.3.4
		N/A			
		Plumbing:	☑ No	☐ Yes (explain)	[B]11 4.3.5
		N/A			
		Sewage System:	☑ No	☐ Yes (explain)	
		N/A			[B]11 4.3.6
[B]11.5	Compliance Alternatives Proposed:	☑ No ☐ Yes (give number(s)			[B]11.5.1
[B]11.6	Alternative Measures Proposed:	☑ No ☐ Yes (explain)			[B]11.5.2

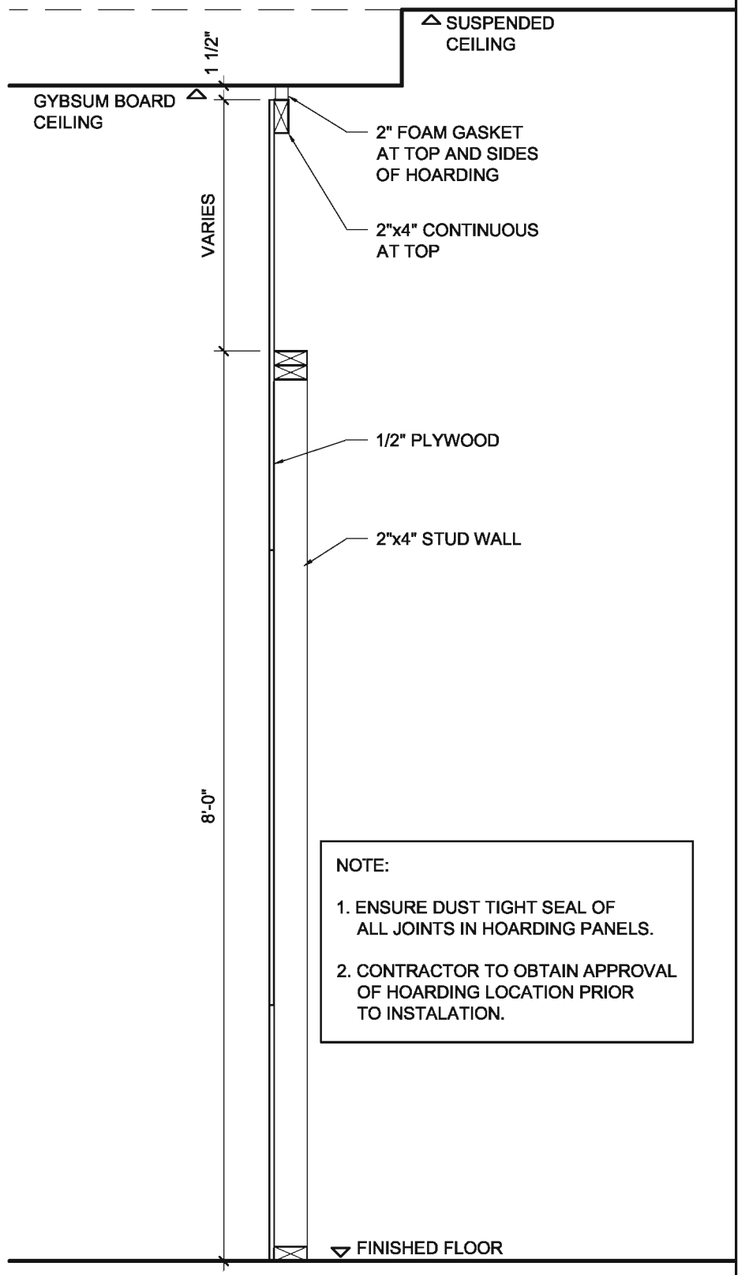
Drawn by: JS
Checked by: DC
Project No.: 0823
Date: MAY 23, 2008
Scale: N/A
Drawing No.: OBC.1

No:	Revision / Version:	Date:
1	ISSUED FOR TENDER	MAY 23, 2008

CITY OF GREATER SUDBURY AIRPORT
2126 SKEAD RD., GARSON, ONTARIO
NEW HOLD ROOM WASHROOM
ONTARIO BUILDING CODE REVIEW

CASTELLAN JAMES + PARTNERS
ARCHITECTS INC
BCDN 4022

ONTARIO ASSOCIATION OF ARCHITECTS
DENNIS CASTELLAN
LICENCE
3607

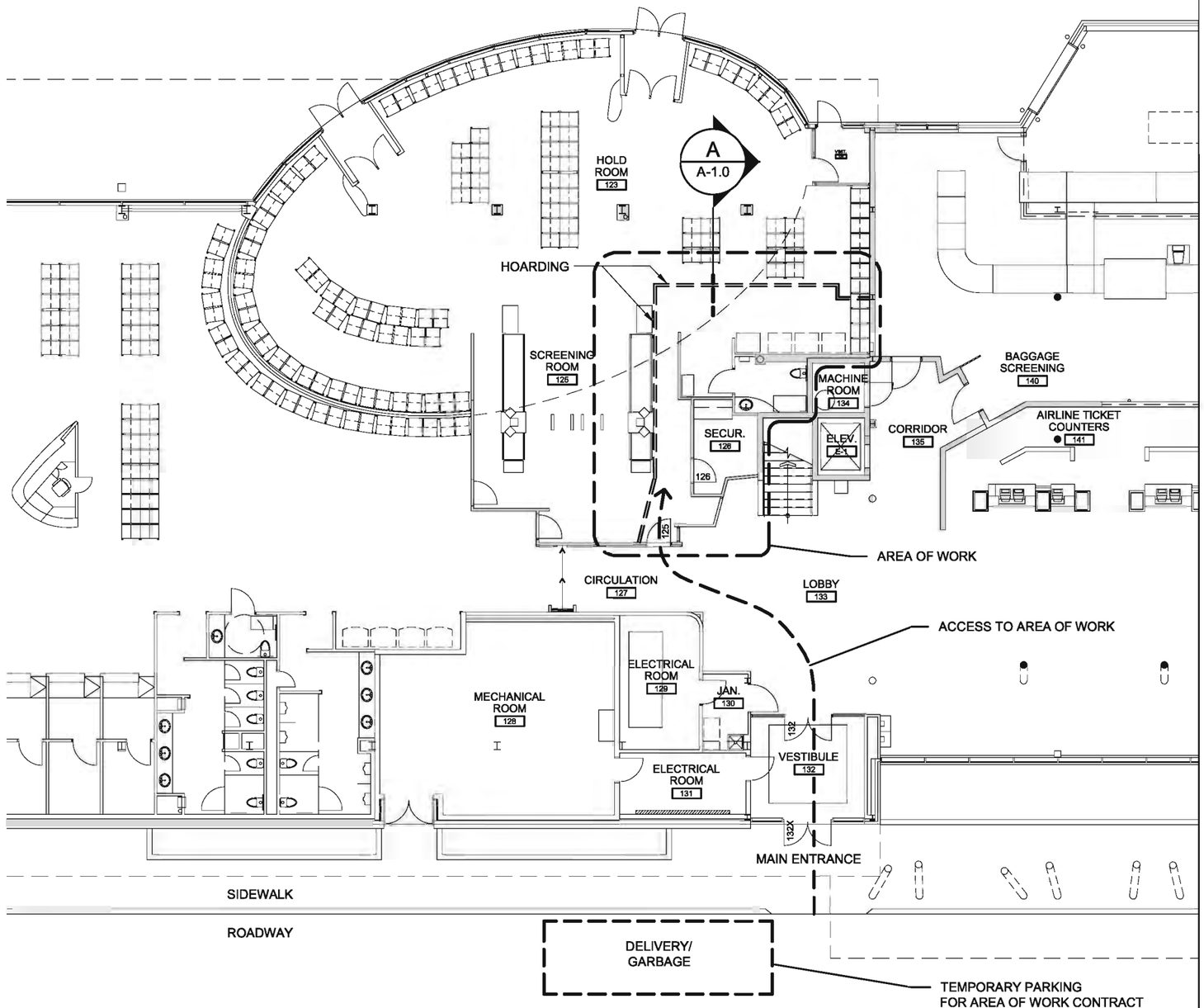


NOTE:

1. ENSURE DUST TIGHT SEAL OF ALL JOINTS IN HOARDING PANELS.
2. CONTRACTOR TO OBTAIN APPROVAL OF HOARDING LOCATION PRIOR TO INSTALATION.

HOARDING SECTION (A / A-1.0)

SCALE = 1/2"=1'-0"



Drawn by: JS
Checked by: DC
Project No.: 0823
Date: MAY 23, 2008
Scale: 1/16"=1'-0"
Drawing No.: A-1.0

No.:	Revision / Version:	Date:
1	ISSUED FOR TENDER	MAY 23, 2008

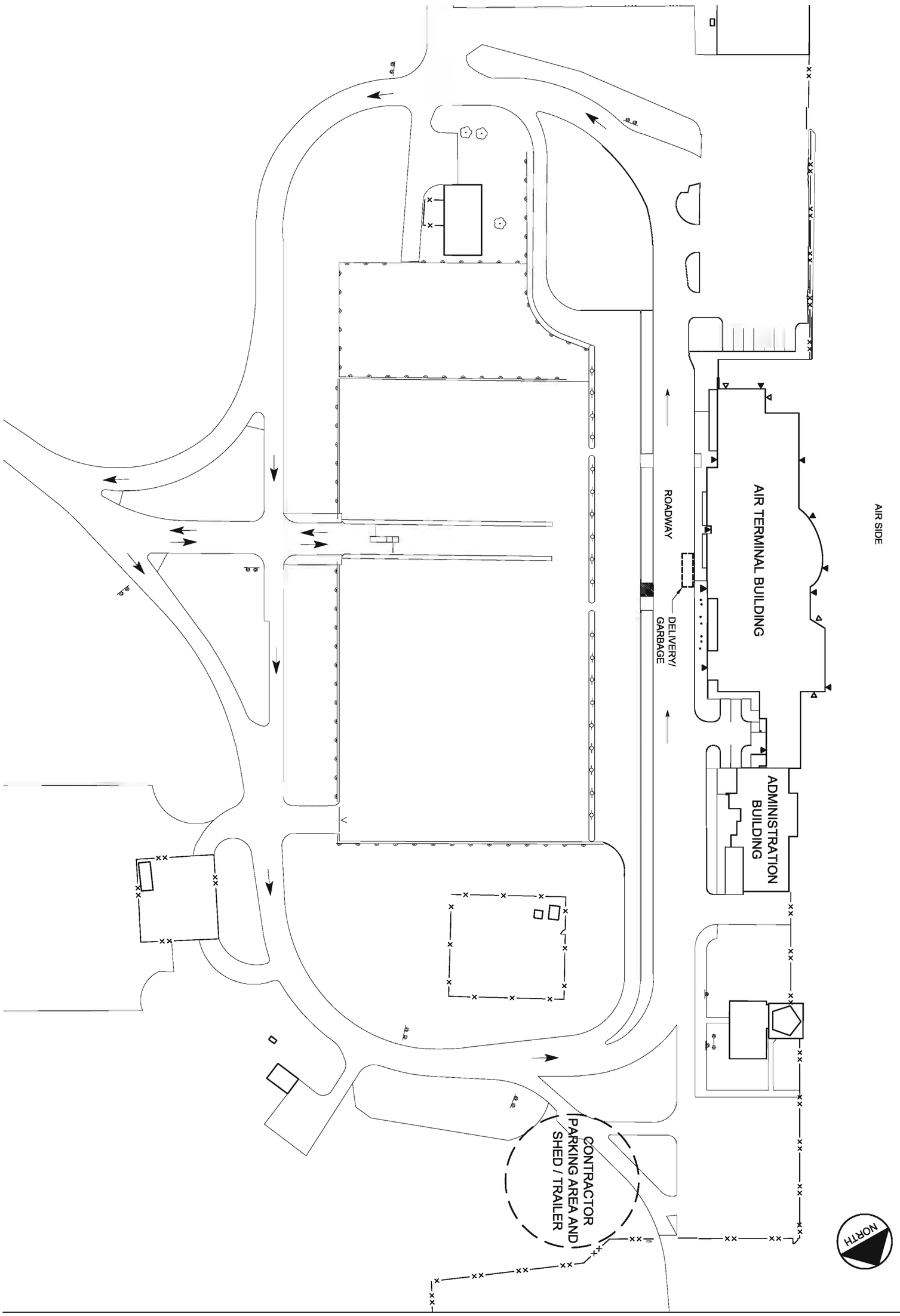
CITY OF GREATER SUDBURY AIRPORT
2126 SKEAD RD., GARSON, ONTARIO

NEW HOLD ROOM WASHROOM

FIELD OF OPERATIONS
FLOOR PLAN

CASTELLAN JAMES + PARTNERS
ARCHITECTS INC
288 CEDAR STREET, SUDBURY, ONTARIO P3B 1M8 (705) 674-2300 (705) 674-2160
BCDN 4022

ONTARIO ASSOCIATION OF ARCHITECTS
DENNIS CASTELLAN
LICENCE 3607



ONTARIO ASSOCIATION OF ARCHITECTS
DENNIS CASTELLAN
LICENCE
3607

CITY OF GREATER SUDBURY AIRPORT
2126 SKEAD RD., GARSON, ONTARIO

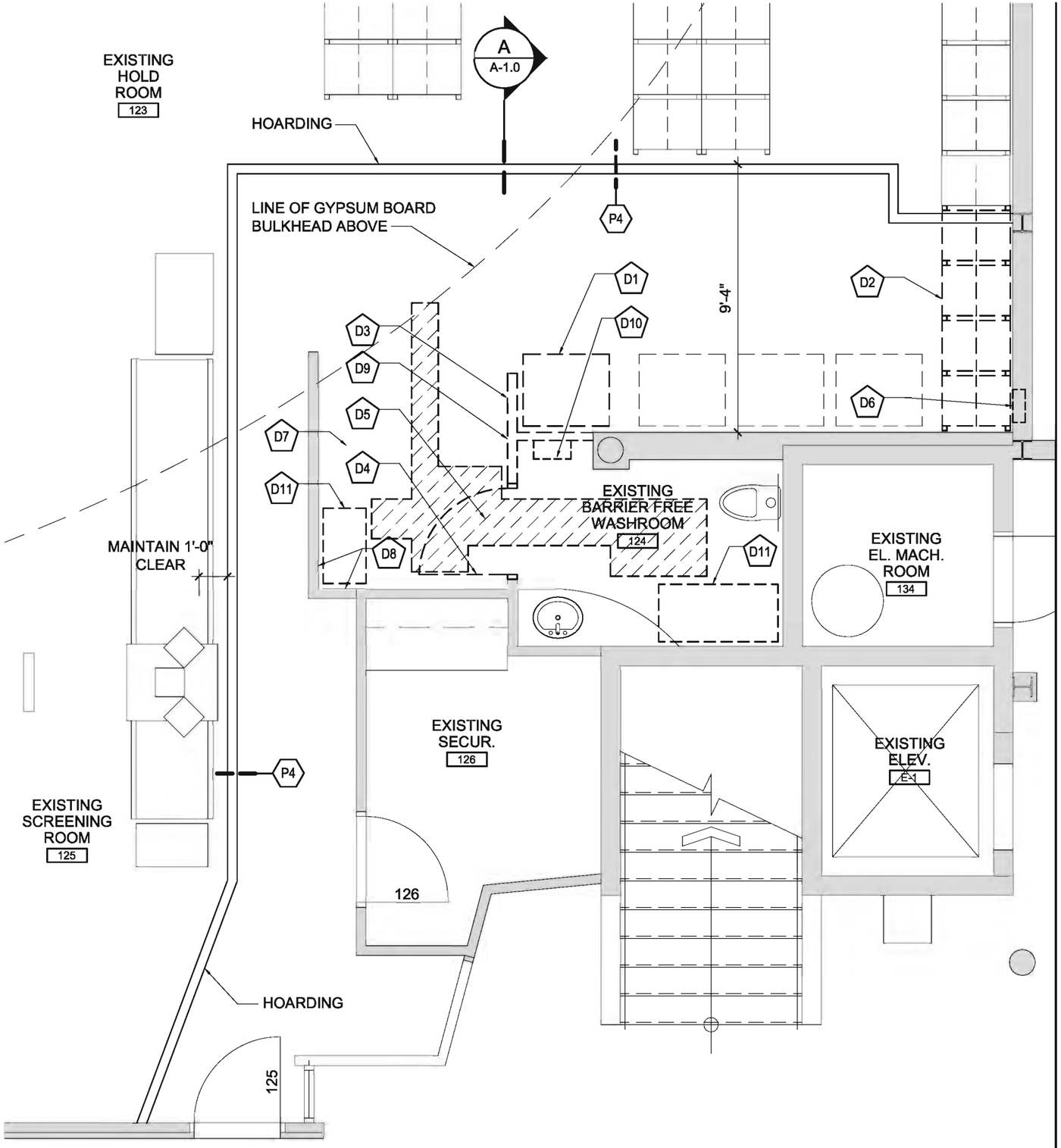
NEW HOLD ROOM WASHROOM

FIELD OF OPERATIONS
SITE PLAN

CASTELLAN JAMES + PARTNERS
ARCHITECTS INC
288 CEDAR STREET, SUDBURY, ONTARIO P3B 1M8 t.705 674 2300 f.705 674 2186
BCDN 4022

No.:	Revision / Version:	Date:
1	ISSUED FOR TENDER	MAY 23, 2008

Drawn by: JS
Checked by: DC
Project No.: 0823
Date: MAY 23, 2008
Scale: N.T.S.
Drawing No.: A-1.1



LEGEND

EXISTING DOORS AND WALL ASSEMBLIES TO BE REMOVED

EXISTING DOORS AND WALL ASSEMBLIES TO REMAIN

AREA POF SLAB REMOVAL

GENERAL NOTES:

1. REFER TO MECHANICAL AND ELECTRICAL DRAWINGS FOR ADDITIONAL DEMOLITION REQUIREMENTS.
2. ENSURE AT ALL TIMES THAT DUST AND DEBRIS DOES NOT ESCAPE INTO SPACES OUTSIDE OF HOARDED AREA.

DEMOLITION NOTES:

- D1 RELOCATED EXISTING VENDING MACHINE OWNER TO CONFIRM LOCATION
- D2 REMOVE EXISTING SEAT CENTER SECTION AND CONNECT EXISTING END SECTIONS TURN OVER REMAINING SEATS TO OWNER
- D3 REMOVE EXISTING METAL STUD PARTITION
- D4 REMOVE EXISTING HOLLOW METAL DOOR AND FRAME, SALVAGE HARDWARE FOR USE IN NEW CONSTRUCTION
- D5 AREA OF SLAB REMOVAL FOR NEW PLUMBING SANITARY LINES
  -SAWCUT AND REMOVE EXISTING SLAB
  -PERFORM WORK FOR NEW SERVICES
  -REINSTATE WITH NEW CONCRETE SLAB AND VAPOUR BARRIER, FINISHED READY FOR NEW FLOORING
- D6 REMOVE AND RELOCATE EXISTING FIRE EXTINGUISHER CABINET
- D7 CUT BACK EXISTING CARPET AS REQUIRED FOR NEW CONSTRUCTION. PROTECT EXISTING CARPET TO REMAIN.
- D8 REMOVE GYPSUM BOARD AS REQUIRED ON EXISTING LOW WALL IN PREPARATION FOR NEW CONSTRUCTION
- D9 REMOVE WASHROOM SIGNAGE AND RE-USE IN NEW CONSTRUCTION
- D10 REMOVE AND RELOCATED WALL MOUNTED GARBAGE CONTAINER
- D11 RELOCATE FURNITURE CABINETS AS DIRECTED BY OWNER

Drawn by: JS
Checked by: DC
Project No.: 0823
Date: MAY 23, 2008
Scale: 1/4"=1'-0"
Drawing No.: A-2.0

No.:	Revision / Version:	Date:
1	ISSUED FOR TENDER	MAY 23, 2008

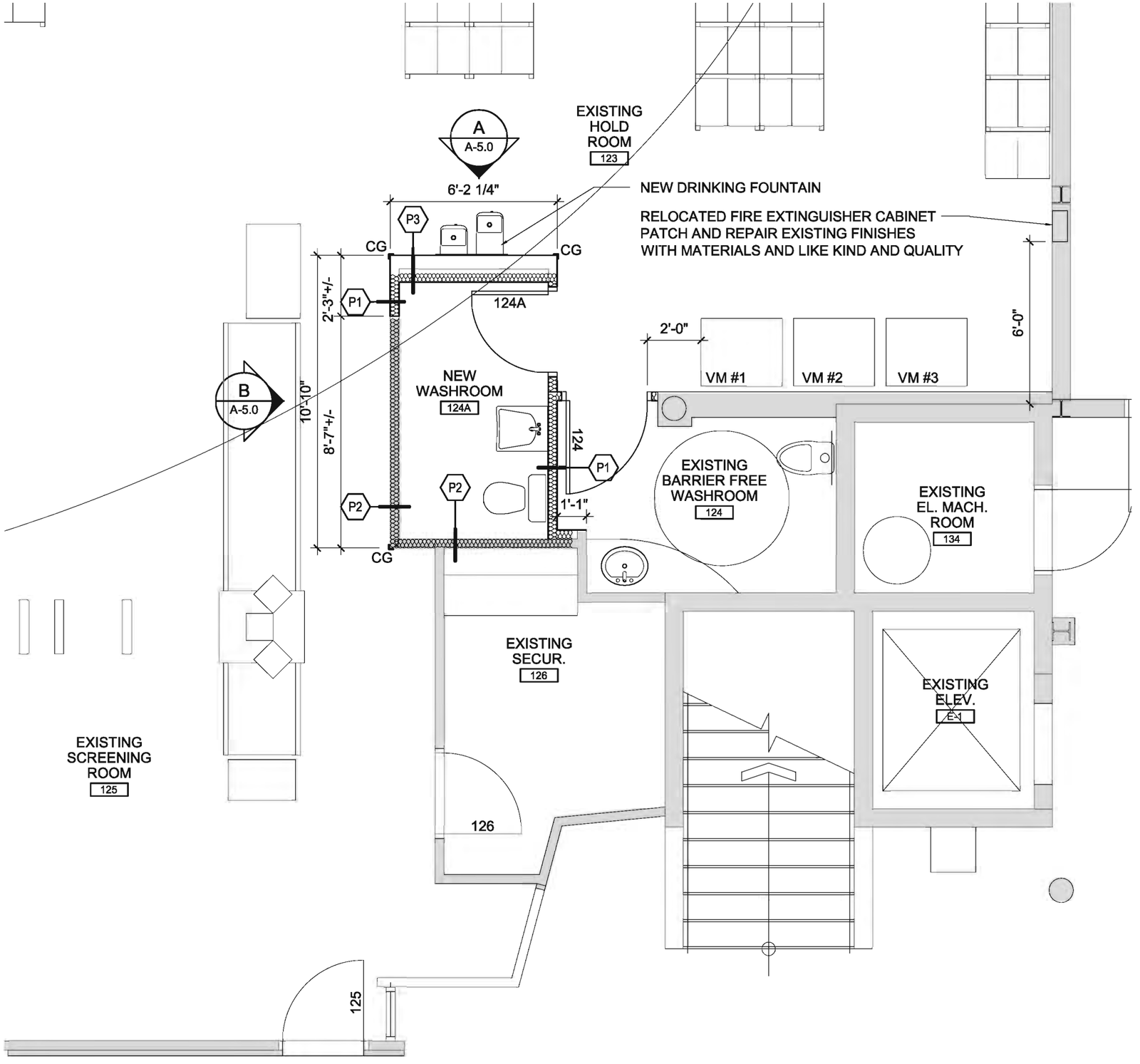
CITY OF GREATER SUDBURY AIRPORT
2126 SKEAD RD., GARSON, ONTARIO

NEW HOLD ROOM WASHROOM

PARTIAL FLOOR PLAN
DEMOLITION & HOARDING PLAN

CASTELLAN JAMES + PARTNERS
ARCHITECTS INC
200 CEDAR STREET, SUDBURY, ONTARIO P3B 1M6 T 705 674 2200 F 705 674 2196
BCDN 4022

ONTARIO ASSOCIATION OF ARCHITECTS
DENNIS CASTELLAN
LICENCE 3607



LEGEND:

	DENOTES NEW PARTITION
	DENOTES EXISTING PARTITION WITH NEW INSULTION
	DENOTES EXISTING CONSTRUCTION
VM	DENOTES VENDING MACHINE N.I.C.
CG	DENOTES CORNER GUARDS

GENERAL NOTES:

1. PATCH AND REPAIR ANY SURFACES AFFECTED BY CONSTRUCTION WITH MATERIALS OF LIKE KIND AND QUALITY.

Drawn by: JS
Checked by: DC
Project No.: 0823
Date: MAY 23, 2008
Scale: 1/4"=1'-0"
Drawing No.: A-3.0

No.: | Revision / Version: | Date:
1 | ISSUED FOR TENDER | MAY 23, 2008

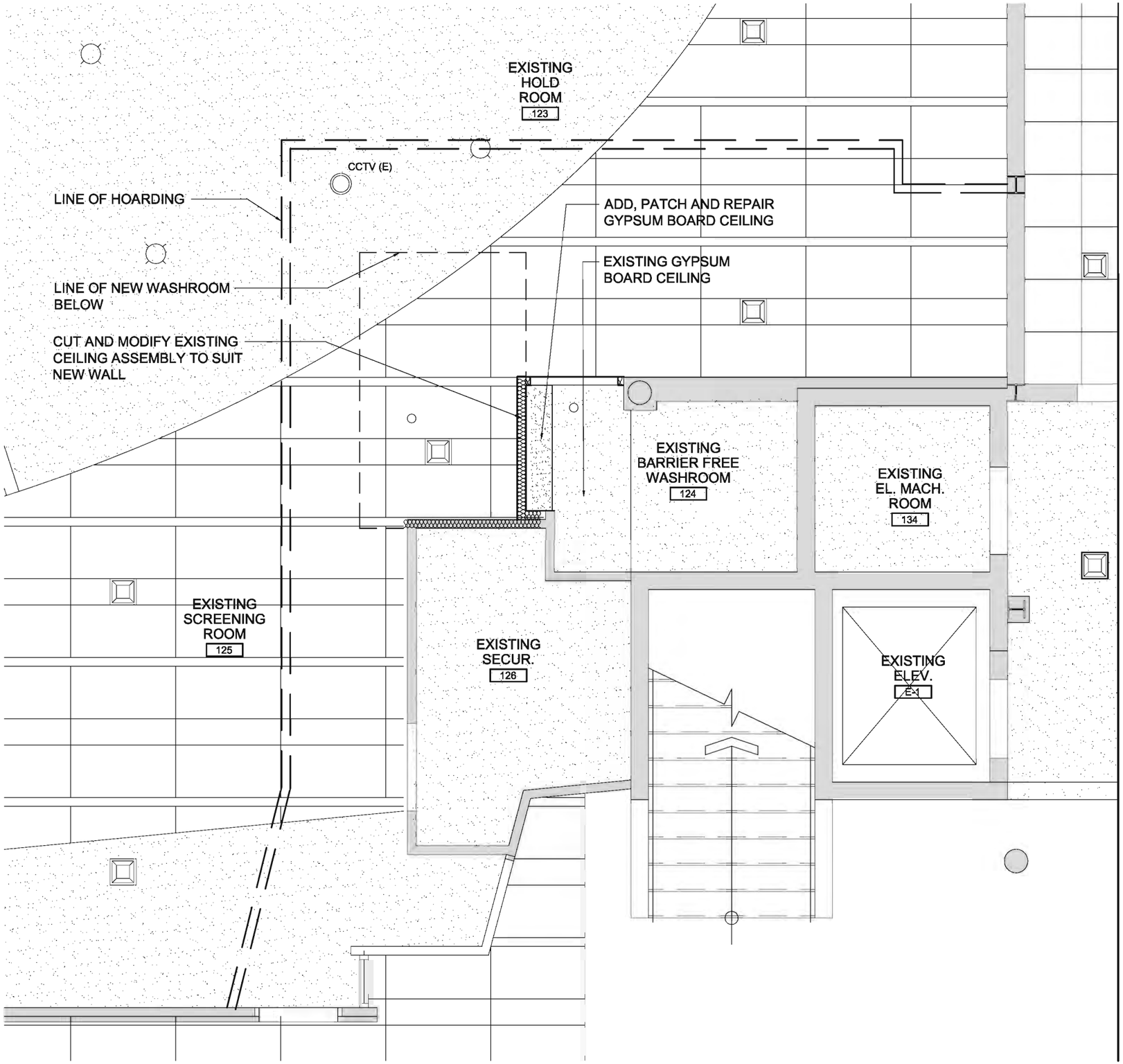
CITY OF GREATER SUDBURY AIRPORT
2126 SKEAD RD., GARSON, ONTARIO

NEW HOLD ROOM WASHROOM

PARTIAL FLOOR PLAN

CASTELLAN JAMES + PARTNERS
A R C H I T E C T S I N C
288 CEDAR STREET, SUDBURY, ONTARIO P3B 1M8 1 705 674 2300 1 705 674 2186
BCDN 4022

ONTARIO ASSOCIATION OF ARCHITECTS
DENNIS CASTELLAN
LICENCE
3607



LEGEND:

- DENOTES NEW PARTITION
- DENOTES EXISTING PARTITION WITH NEW INSULTION
- DENOTES EXISTING CONSTRUCTION
- DENOTES NEW GYPSUM BOARD CEILING
- DENOTES EXISTING GYPSUM BOARD CEILING
- DENOTES NEW EXHAUST FAN REFER TO MECH. DWGS.
- CCTV (E) DENOTES EXISTING SECURITY CAMERA DOME
- DENOTES NEW WALL MOUNTED LIGHTING FIXTURE REFER TO ELEC. DWGS.

GENERAL NOTES:

1. PATCH AND REPAIR ANY SURFACES AFFECTED BY CONSTRUCTION WITH MATERIALS OF LIKE KIND AND QUALITY.

Drawn by: JS
Checked by: DC
Project No.: 0823
Date: MAY 23, 2008
Scale: 1/4"=1'-0"
Drawing No.: A-4.0

No.:	Revision / Version:	Date:
1	ISSUED FOR TENDER	MAY 23, 2008

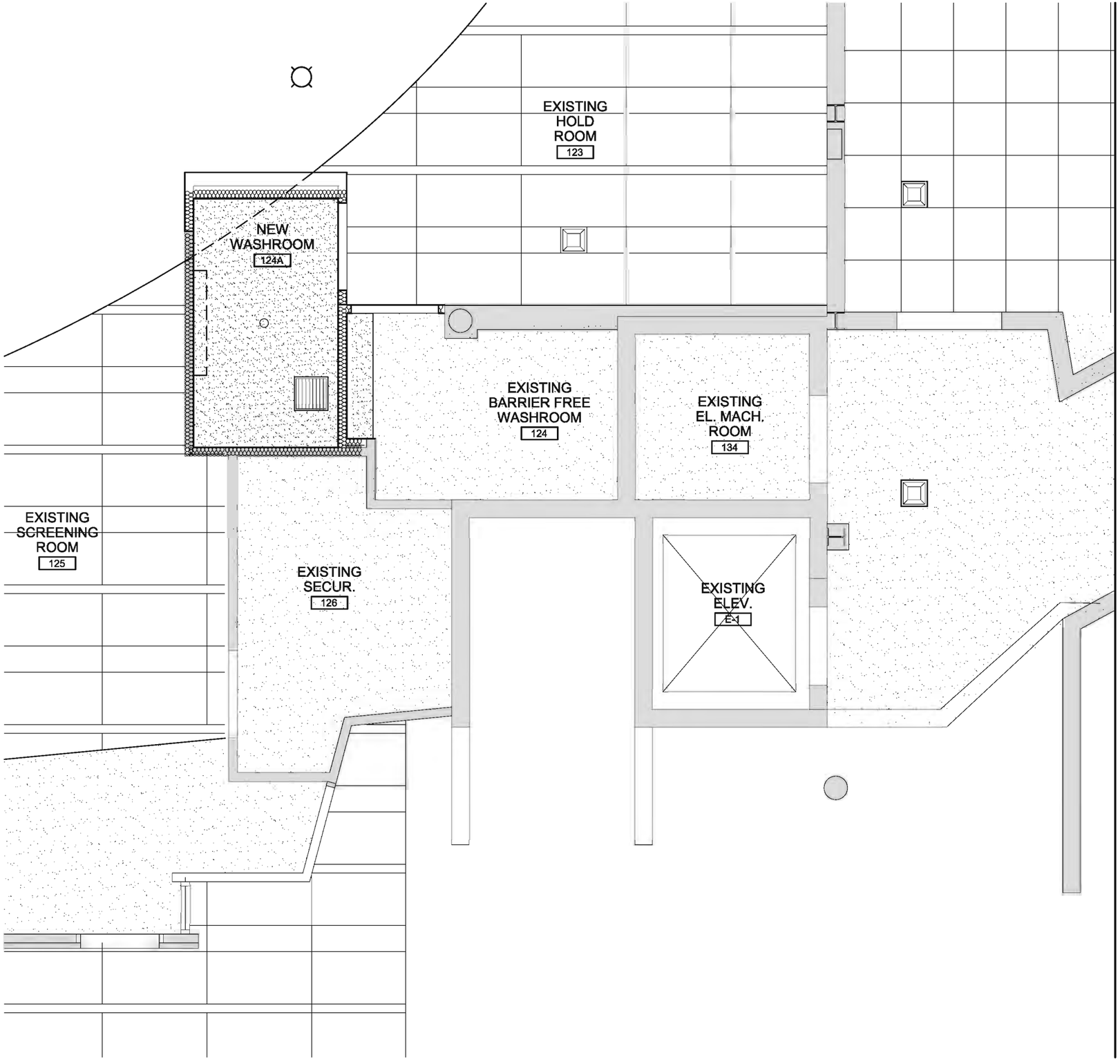
CITY OF GREATER SUDBURY AIRPORT
2126 SKEAD RD., GARSON, ONTARIO

NEW HOLD ROOM WASHROOM

PARTIAL REFLECTED CEILING PLAN
ABOVE NEW WASHROOM

CASTELLAN JAMES + PARTNERS
ARCHITECTS INC
281 CEDAR STREET, SUDBURY, ONTARIO P3B 1M8 (705) 674-2300 (705) 674-2166
BCDN 4022

ASSOCIATION OF ARCHITECTS ONTARIO
DENNIS CASTELLAN
LICENCE
3607



LEGEND:

- DENOTES NEW PARTITION
- DENOTES EXISTING PARTITION WITH NEW INSULTION
- DENOTES EXISTING CONSTRUCTION
- DENOTES NEW GYPSUM BOARD CEILING
- DENOTES EXISTING GYPSUM BOARD CEILING
- DENOTES NEW EXHAUST FAN REFER TO MECH. DWGS.
- DENOTES NEW WALL MOUNTED LIGHTING FIXTURE REFER TO ELEC. DWGS.

GENERAL NOTES:

1. PATCH AND REPAIR ANY SURFACES AFFECTED BY CONSTRUCTION WITH MATERIALS OF LIKE KIND AND QUALITY.

Drawn by: JS
Checked by: DC
Project No.: 0823
Date: MAY 23, 2008
Scale: 1/4"=1'-0"
Drawing No.: A-4.1

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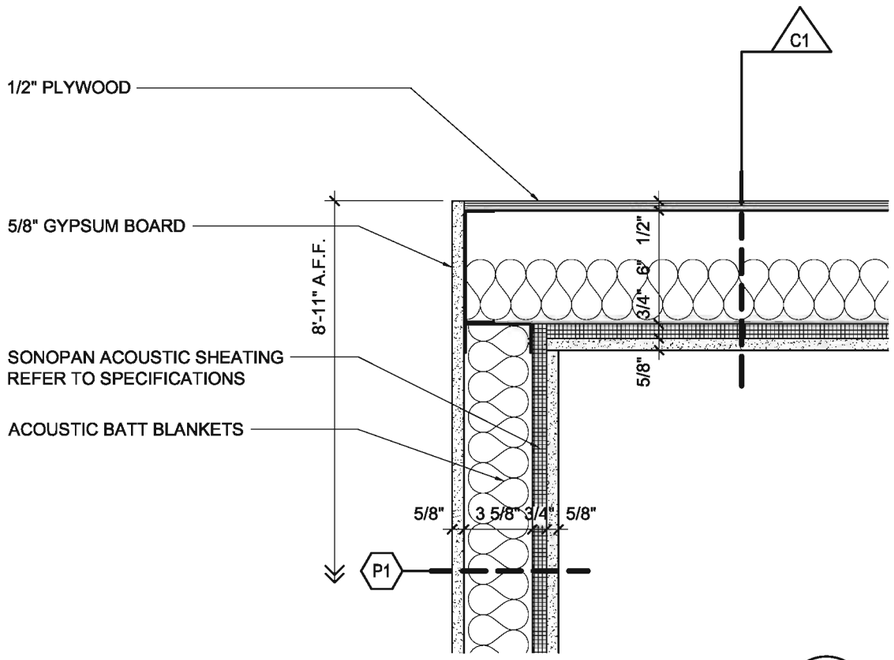
CITY OF GREATER SUDBURY AIRPORT
2126 SKEAD RD., GARSON, ONTARIO

NEW HOLD ROOM WASHROOM

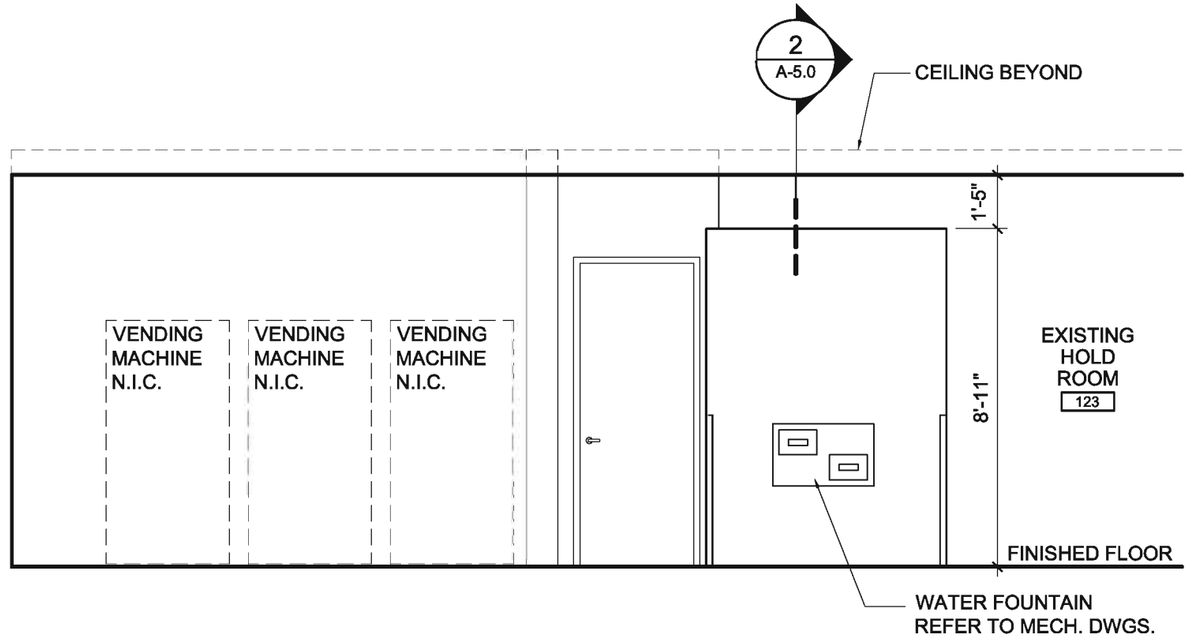
RELFLECTED CEILING PLAN
NEW WASHROOM

CASTELLAN JAMES + PARTNERS
ARCHITECTS INC
249 CEDAR STREET, SUDBURY, ONTARIO P3B 1M8 1 705 674 2200 1 705 674 2186
BCDN 4022

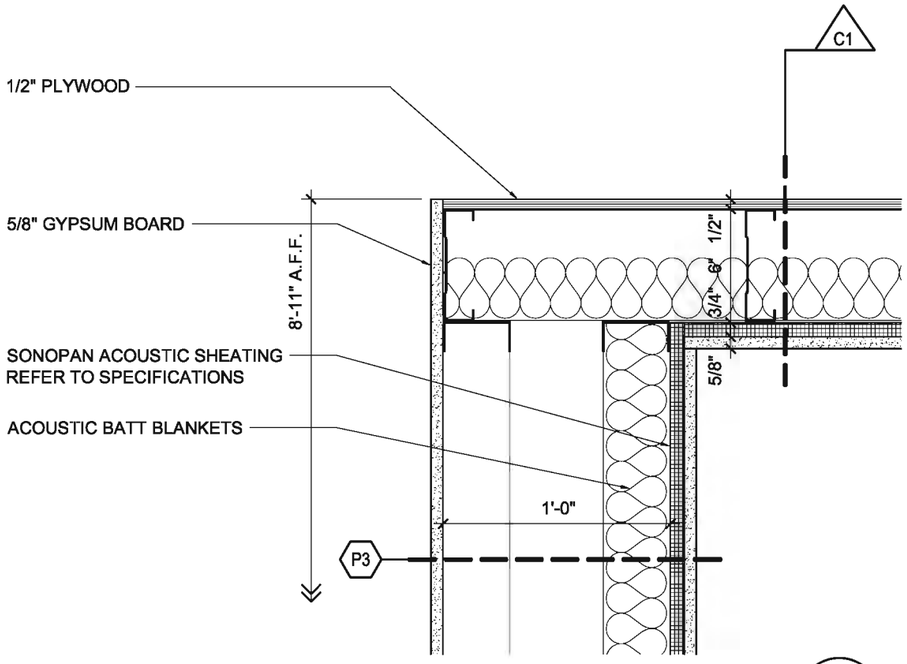
ONTARIO ASSOCIATION OF ARCHITECTS
DENNIS CASTELLAN
LICENCE
3607



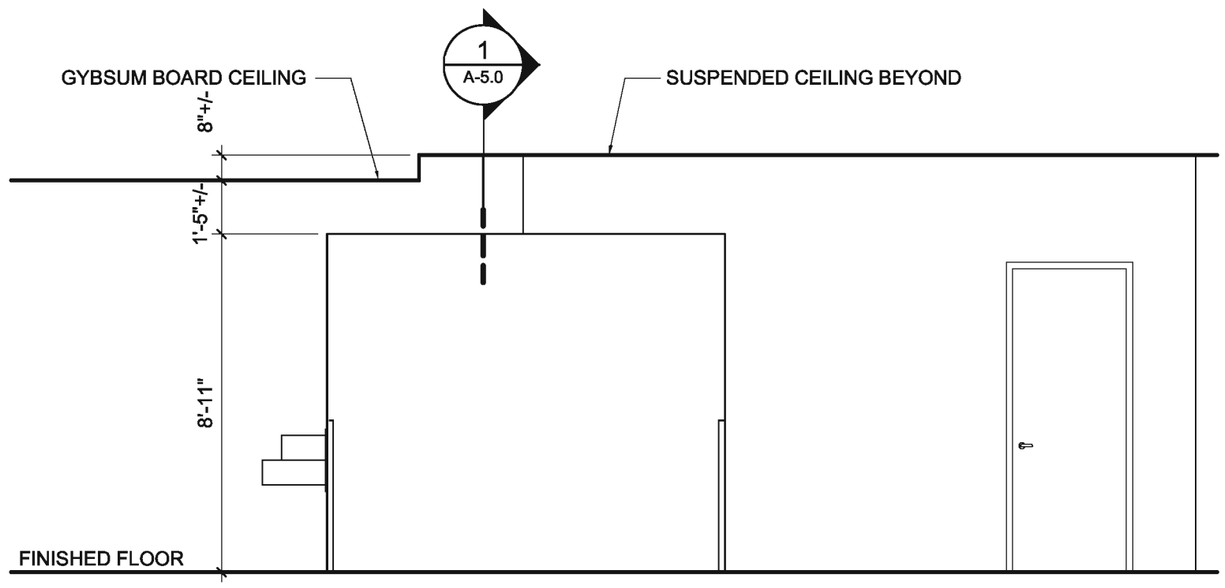
SECTION 1 / A-3.0
SCALE = 1 1/2"=1'-0"



INTERIOR ELEVATION A / A-3.0
SCALE = 1/4"=1'-0"



SECTION 2 / A-3.0
SCALE = 1 1/2"=1'-0"



INTERIOR ELEVATION B / A-3.0
SCALE = 1/4"=1'-0"

Drawn by: JS
Checked by: DC
Project No.: 0823
Date: MAY 23, 2008
Scale: AS NOTED
Drawing No.: A-5.0

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CITY OF GREATER SUDBURY AIRPORT
2126 SKEAD RD., GARSON, ONTARIO

NEW HOLD ROOM WASHROOM

INTERIOR ELEVATIONS AND DETAILS

CASTELLAN JAMES + PARTNERS
ARCHITECTS INC
288 CEDAR STREET, SUDBURY, ONTARIO P3B 1M8 1705 674 2020 1705 674 2185
BCDN 4022

ASSOCIATION OF ARCHITECTS ONTARIO
DENNIS CASTELLAN
LICENCE
3607

MECHANICAL - ELECTRICAL SYSTEMS
NEW HOLD ROOM WASHROOM
AIR TERMINAL BUILDING
SUDBURY AIRPORT

2621 Skead Road, Sudbury, ON

K. LANG ENGINEERING LTD.
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MECHANICAL - ELECTRICAL DRAWING LIST

PLUMBING LEGEND

- SANITARY PIPING
- SANITARY PIPING BELOW
- DOMESTIC COLD WATER PIPING
- DOMESTIC HOT WATER PIPING
- WC — WATER CLOSET
- FD — FLOOR DRAIN
- LAV — LAVATORY
- CO — FLOOR CLEANOUT
- DF — WATER COOLER
- X — EXISTING DEVICE TO REMAIN

VENTILATION LEGEND

- EXHAUST AIR DUCTWORK
- FD — FIRE DAMPER
- EF — EXHAUST FAN

SPRINKLER LEGEND

- SP — SPRINKLER PIPING
- FEC — FIRE EXTINGUISHER CABINET
- FULLY RECESSED SPRINKLER HEAD
- SPRINKLER HEAD SIDEWALL
- X — EXISTING DEVICE

ELECTRICAL LEGEND

- FLUORESCENT LIGHT FIXTURE
- CEILING MOUNTED LIGHT FIXTURE
- $ — SINGLE POLE LIGHT SWITCH
- DUPLEX RECEPTACLE
- ABOVE COUNTER RECEPTACLE
- GFI — GROUND FAULT RECEPTACLE
- FAN — FAN CONNECTION
- SPECIAL RECEPTACLE AS INDICATED
- CCTV CAMERA
- ELECTRICAL PANEL

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05/23/2008

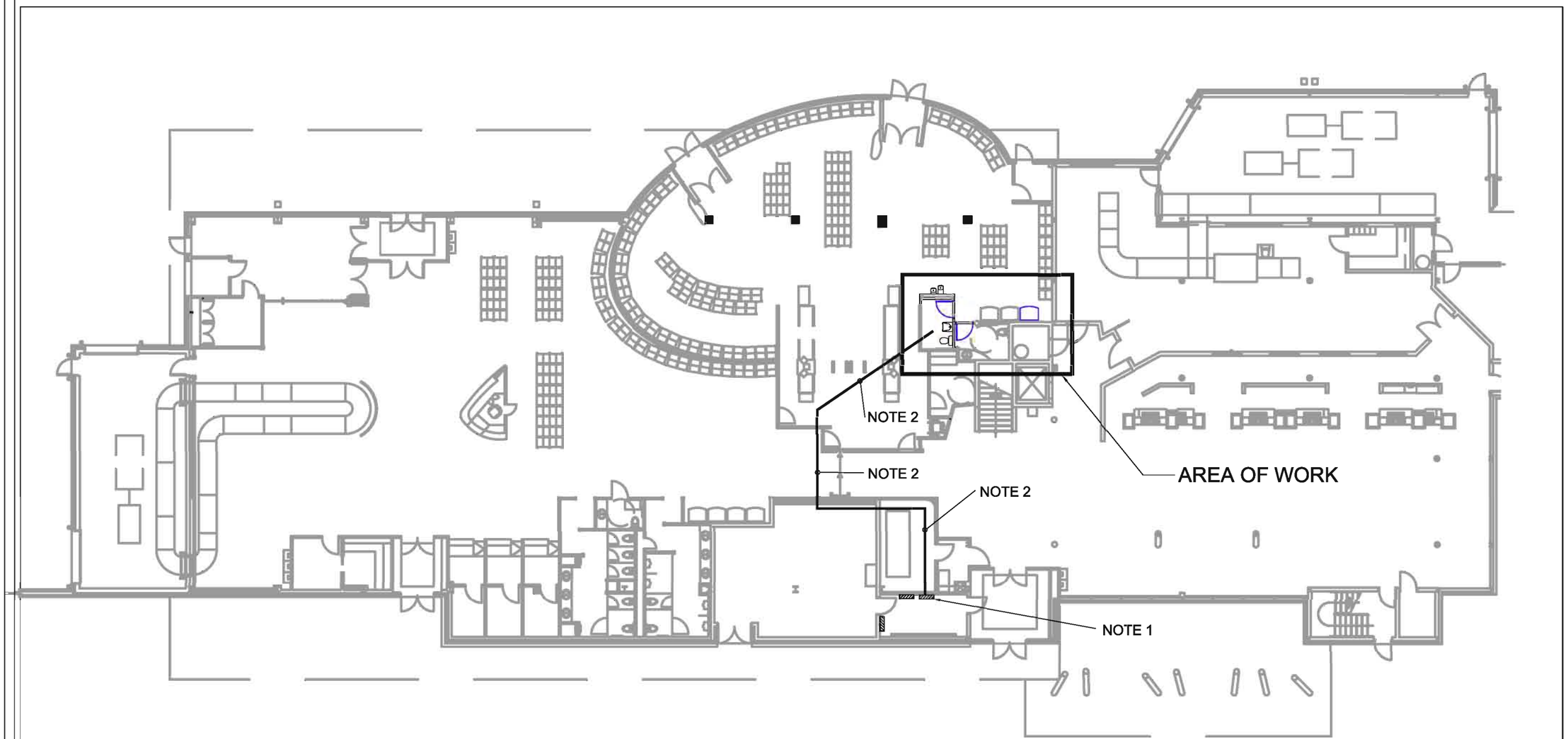
PROFESSIONAL ENGINEER — REGISTERED — PROVINCE OF ONTARIO — 3179 — K.G. LANG

Project: NEW HOLD ROOM WASHROOM AIR TERMINAL BUILDING SUDBURY AIRPORT 2621 Skead Road, Sudbury, ON

Drawing: MECHANICAL-ELECTRICAL SYSTEMS - TITLE PAGE

Drawn by: M.A.
Checked by: K. L.
KLE Project No.: 3179
Date: May 15, 2008
Scale: As Noted
Drawing No.: ME-0

11" x 17" - Plot AT 1/4" = 1'-0"



KEY PLAN
Scale: nts

NORTH

NOTE 1 PROVIDE TWO NEW 15A-1P BREAKERS IN EXISTING LIGHTING PANEL IN ELECTRICAL ROOM.

NOTE 2 EXTEND NEW CIRCUITRY - #12/BX CABLING THROUGH EXISTING CEILINGS TO AREA OF WORK.

NEW CIRCUIT # 1 - 15A-120V FOR WATER COOLER - NOTE # E13 - DRAWING # E-1.1.
NEW CIRCUIT # 2 - 15A-120V FOR LIGHTS, FAN AND RECEPTACLE
- NOTES # E9, E10 & E12 - DRAWING # E-1.1.

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K. LANG ENGINEERING

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REGISTERED PROFESSIONAL ENGINEER
3179
K.G. LANG
PROVINCE OF ONTARIO

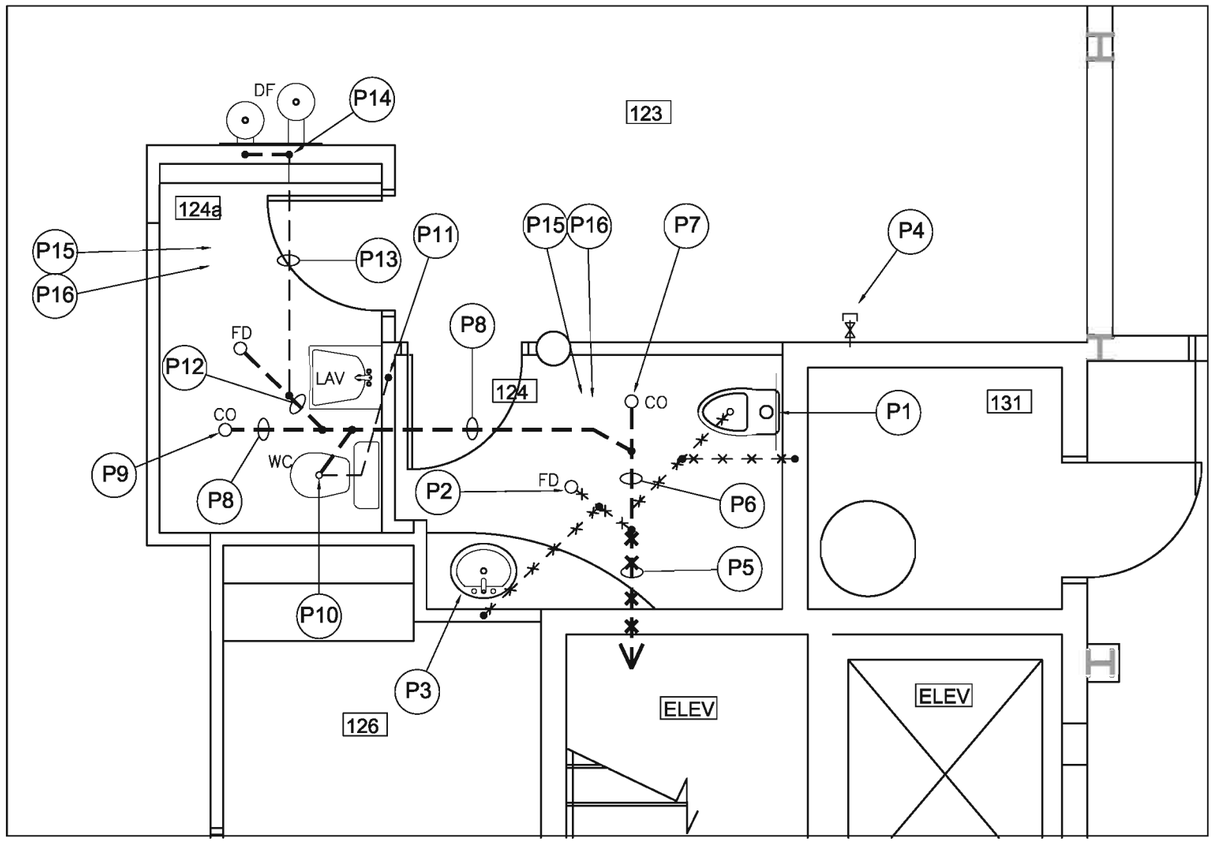
05/23/2008

Project: NEW HOLD ROOM WASHROOM
AIR TERMINAL BUILDING
SUDBURY AIRPORT
2621 Skead Road, Sudbury, ON

Drawing: MECHANICAL-ELECTRICAL
SYSTEMS - KEY PLAN

Drawn by: M.A.
Checked by: K. L.
KLE Project No.: 3179
Date: May 15, 2008
Scale: As Noted
Drawing No.: ME-1

11" x 17" - Plot AT 1/4" = 1'-0"



PARTIAL FLOOR PLAN

Scale: 1/4" = 1'-0"

NORTH

PLUMBING SYSTEM NOTES

- (P1) EXISTING WATER CLOSET TO REMAIN
- (P2) EXISTING FLOOR DRAIN TO REMAIN
- (P3) EXISTING LAVATORY TO REMAIN
- (P4) EXISTING WATER SUPPLY FOR VENDING UNITS TO REMAIN
- (P5) ASSUMED LOCATION OF EXISTING 4" SANITARY SEWER LINE BELOW FLOOR
- (P6) APPROXIMATE LOCATION OF CONNECTION OF NEW 4" BRANCH SEWER LINE TO EXISTING PIPING SYSTEMS BELOW FLOOR
- (P7) NEW 4" FLOOR CLEANOUT EQUAL TO ZURN # ZN-1402-4
- (P8) NEW 4" SANITARY SEWER LINE BELOW FLOOR
- (P9) NEW 4" FLOOR CLEANOUT EQUAL TO ZURN # ZN-1402-4
- (P10) PROVIDE 3" SANITARY WASTE CONNECTION WITH 2" WET VENT TO LAVATORY DRAIN.
  PROVIDE 1" COLD WATER SUPPLY - SEE NOTE # P16
- (P11) EXTEND 2" WET VENT FROM FLOOR, 1.25" TRAP CONNECTION AND EXTEND 1.5" SANITARY VENT UP - SEE NOTE # P15
  PROVIDE 0.5" HOT AND COLD WATER SUPPLY - SEE NOTE # P16
  INSTALL TRAP SEAL PRIMER ON COLD WATER LINE AND EXTEND 0.5" PRIMER LINE TO THE FLOOR DRAIN. PRIMER EQUAL TO ZURN # Z-1022
- (P12) 3" BRANCH SANITARY LINE TO FLOOR DRAIN 'FD'
- (P13) 2" WET VENT FOR FLOOR DRAIN TO DRINKING FOUNTAIN 'DF'
- (P14) 2" WASTE UP, TWO 1.25" TRAP CONNECTIONS FOR DRINKING FOUNTAINS, 1.5" SANITARY VENT UP - SEE NOTE # P15.
  EXTEND 0.5" COLD WATER SUPPLY TO DRINKING FOUNTAIN - SEE NOTE # P16.
- (P15) TWIN SANITARY VENT PIPES TOGETHER IN WALL/CEILING OF NEW WASHROOM AND EXTEND THROUGH CEILING OF EXISTING WASHROOM TO CONNECT TO EXISTING SANITARY VENT PIPE SYSTEMS IN CEILING OF ADJACENT WASHROOM AREA.
- (P16) EXTEND NEW WATER LINES THROUGH CEILING FROM EXISTING WATER PIPING SYSTEMS IN CEILING OF EXISTING WASHROOM TO THE NEW WASHROOM AS FOLLOWS:
  WATER CLOSET 1" CW
  LAVATORY 0.5"CW & 0.5"HW
  FOUNTAIN 0.5" CW

PLUMBING FIXTURES

WC NEW FLOOR MOUNT WATER CLOSET WITH FLUSH VALVE AND OPEN FRONT SEAT LESS COVER.
CLOSET BOWL EQUAL TO AMERICAN STANDARD MADERA ELONGATED 6 L BOWL # 2234 015.
FLUSH VALVE EQUAL TO ZURN # Z-6000-WS1
SEAT EQUAL TO BEMIS # 1955-SSC - BLACK

LAV NEW WALL MOUNT LAVATORY WITH CARRIER, HANDS FREE BATTERY OPERATED FAUCET AND OPEN GRID STRAINER WITH CHROME PLATED P-TRAP
LAVATORY EQUAL TO AMERICAN STANDARD MURRO # 0954 000 WITH # 0059 020 SHROUD.
CONCEALED ARM CARRIER EQUAL TO ZURN # Z-1231 SERIES
FAUCET EQUAL TO ZURN # Z-6912-A-CP4-MV WITH MIXING VALVE, 4" COVER PLATE AND BATTERIES.
WASTE EQUAL TO CAMBRIDGE # 33T260 - OPEN GRID
TRAP EQUAL TO CAMBRIDGE # 33T311 CAST BRASS

PLUMBING FIXTURES

DF DUAL HEIGHT BARRIER FREE ACCESS STAINLESS STEEL WATER COOLER WITH HANDS FREE OPERATION AND CHILLER UNIT TO PROVIDE 8GPH OF CHILLED WATER
EQUAL TO HAWS MODEL H-1011.8 HO

FD FLOOR DRAIN EQUAL TO ZURN # ZXN-211-A-3"

TSP TRAP SEAL PRIMER EQUAL TO ZURN # Z-1022

CO FLOOR CLEANOUT EQUAL TO ZURN # ZN-1402-4"

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K. LANG ENGINEERING

No.:	Revision / Version:	Date:
0	Issued For Review	May 16, 2008
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REGISTERED PROFESSIONAL ENGINEER 3179 K.G. LANG PROVINCE OF ONTARIO

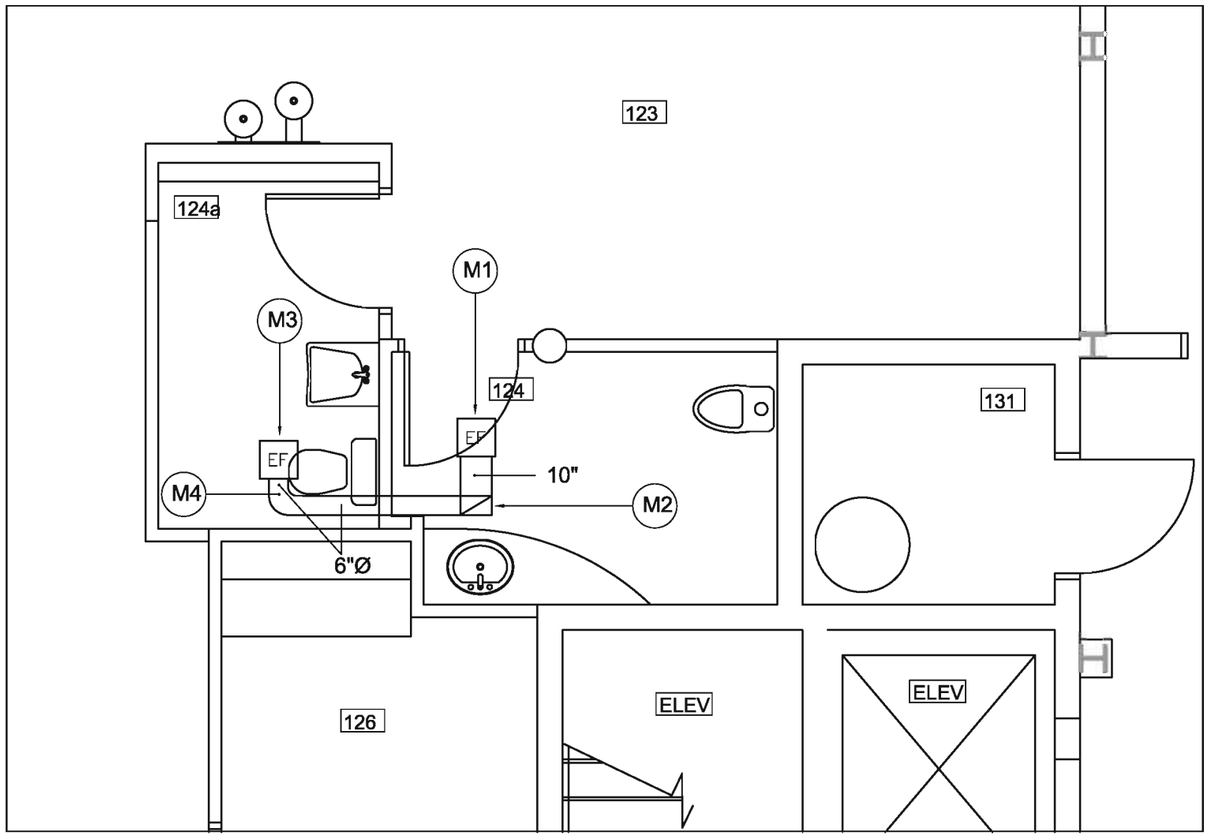
05/23/2008

Project: NEW HOLD ROOM WASHROOM
AIR TERMINAL BUILDING
SUDBURY AIRPORT
2621 Skead Road, Sudbury, ON

Drawing: PLUMBING SYSTEMS

Drawn by: M.A.
Checked by: K. L.
KLE Project No.: 3179
Date: May 15, 2008
Scale: As Noted
Drawing No.: M1.1

11" x 17" - Plot AT 1/4" = 1'-0"



PARTIAL FLOOR PLAN

Scale: 1/4" = 1'-0"

NORTH

VENTILATION SYSTEM NOTES

(M1) EXISTING CEILING EXHAUST FAN

(M2) EXISTING 10" x 6" VERTICAL EXHAUST DUCT UP

(M3) NEW CEILING MOUNTED EXHAUST FAN EQUAL TO GREENHECK MODEL SP-B80, 68 CFM AT 0.25" SP, 3.2 SONES, WITH 54W-120V MOTOR, INTEGRAL BACKDRAFT DAMPER AND REMOTE # GTD FAN/LIGHT TIME DELAY SWITCH.

(M4) NEW 6"Ø EXHUAST DUCT THROUGH CEILING FRAMING AND UP TO EXISTING CEILING ABOVE - EXTEND 6"Ø DUCT THROUGH CEILING TO EXISTING WASHROOM CEILING AND CONNECT TO EXISTING 10" x 6" EXHAUST DUCT RISER.

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REGISTERED PROFESSIONAL ENGINEER 3179 K.G. LANG PROVINCE OF ONTARIO

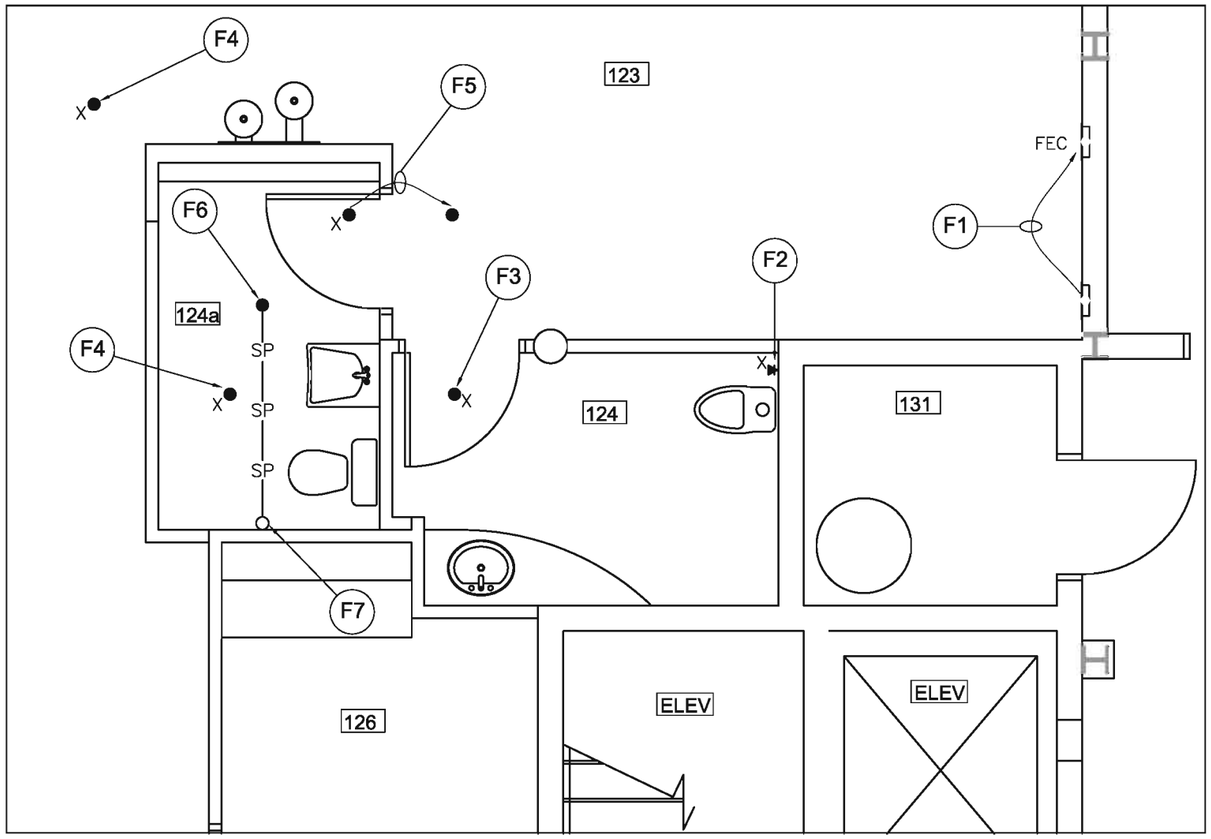
05/23/2008

Project: NEW HOLD ROOM WASHROOM
AIR TERMINAL BUILDING
SUDBURY AIRPORT
2621 Skead Road, Sudbury, ON

Drawing: VENTILATION SYSTEMS

Drawn by: M.A.
Checked by: K. L.
KLE Project No.: 3179
Date: May 15, 2008
Scale: As Noted
Drawing No.: M2.1

11" x 17" – Plot AT 1/4" = 1'-0"



PARTIAL FLOOR PLAN

Scale: 1/4" = 1'-0"

NORTH

FIRE PROTECTION NOTES

- (F1) EXISTING RECESSED FIRE EXTINGUISHER CABINET TO BE RELOCATED AS SHOWN.
- (F2) EXISTING WALL SPRINKLER HEAD TO REMAIN
- (F3) EXISTING RECESSED CELING SPRINKLER HEAD TO REMAIN
- (F4) EXISTING RECESSED CELING SPRINKLER HEAD TO REMAIN
- (F5) EXISTING RECESSED CELING SPRINKLER HEAD TO BE RELOCATED AS SHOWN - EXTEND PIPING TO SUIT.
- (F6) NEW SPRINKLER HEAD IN NEW WASHROOM CEILING . NEW SPRINKLER HEAD TO BE PHANTOM STYLE TO MATCH EXISTING HEADS.
- (F7) EXTEND NEW 1" PIPING FROM EXISTING SYSTEMS DOWN INTO CEILING FRAMING (APPROXIMATELY 24" BELOW EXSITING CEILING) AND THROUGH CEILING FRAMING TO NEW HEAD.

SPRINKLER SYSTEM NOTES

1. REVISIONS TO THE EXISTING SPRINKLER SYSTEMS ARE TO BE DESIGNED AND INSTALLED BY QUALIFIED SPRINKLER SYSTEM CONTRACTORS. THE LAYOUT AND PIPE SIZING INDICATED ON THE DRAWING IS TO BE USED AS A GUIDE ONLY FOR THE QUANTITY AND LOCATION OF HEADS.
2. DESIGN, INSTALL AND TEST ENTIRE SYSTEM IN ACCORDANCE WITH NFPA 13.
3. TESTING TO BE WITNESSED BY AUTHORITY HAVING JURISDICTION.
4. SPRINKLER SYSTEMS FOR THE BUILDING AS FOLLOWS:
   HAZARD CATEGORY – LIGHT.
5. IT IS THE RESPONSIBILITY OF THE SPRINKLER CONTRACTOR TO REMOVE AND REPLACE EXISTING CEILING FINISHES OUTSIDE OF THE RENOVATION AREA AS REQUIRED FOR THE INSTALLATION.
6. SPRINKLER HEADS – MATCH EXISTING SYSTEMS
7. LOCATE SPRINKLER HEADS TO ACCOMODATE EXISTING LIGHT FIXTURES AND HVAC GRILLES – SEE ARCHITECTURAL CEILING PLANS.
8. MATCH EXISTING SYSTEMS USING MATERIALS AND METHODS OF LIKE KIND AND QUALITY.

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PROFESSIONAL ENGINEER 3179 K.G. LANG REGISTERED PROVINCE OF ONTARIO

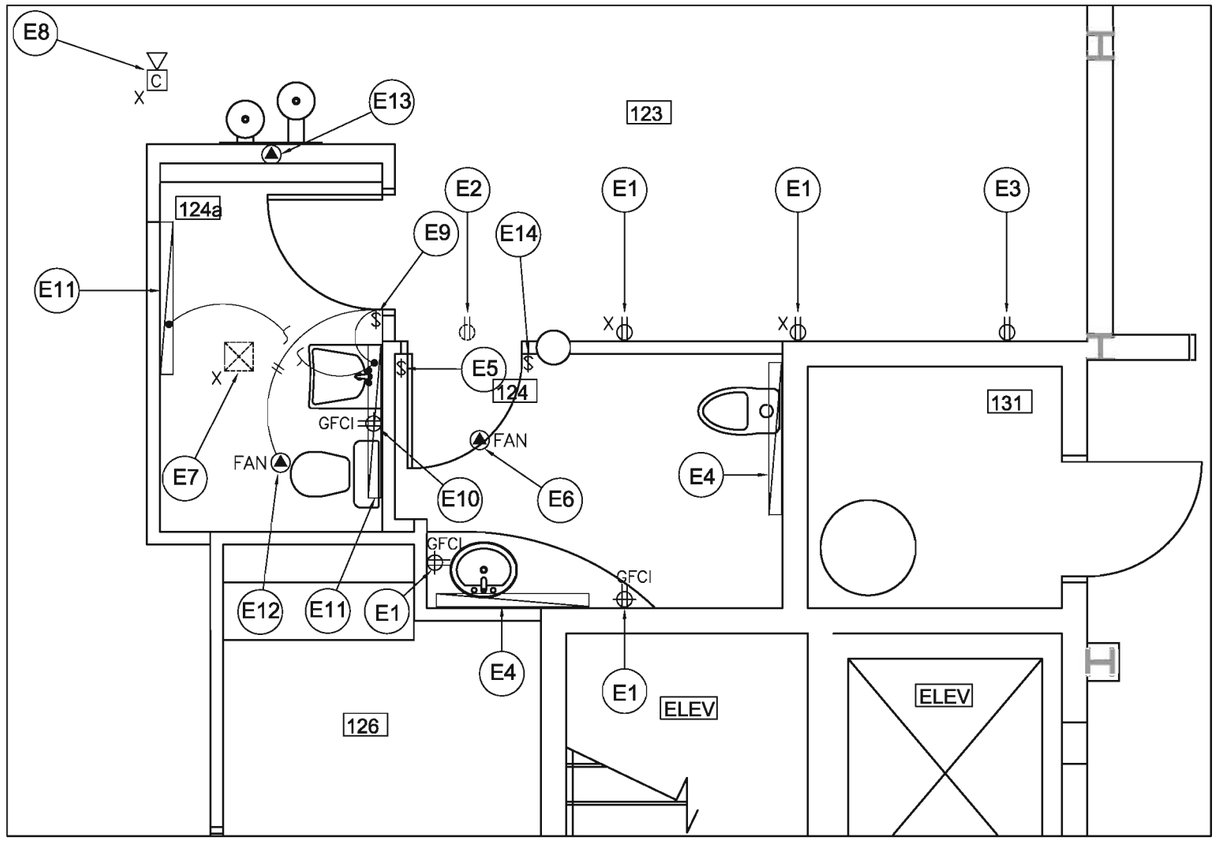
05/23/2008

Project: NEW HOLD ROOM WASHROOM
AIR TERMINAL BUILDING
SUDBURY AIRPORT
2621 Skead Road, Sudbury, ON

Drawing: FIRE PROTECTION SYSTEMS

Drawn by: M.A.
Checked by: K. L.
KLE Project No.: 3179
Date: May 15, 2008
Scale: As Noted
Drawing No.: M3.1

11" x 17" – Plot AT 1/4" = 1'-0"



PARTIAL FLOOR PLAN

Scale: 1/4" = 1'-0"

NORTH

ELECTRICAL SYSTEM NOTES

- (E1) EXISTING RECEPTACLE TO REMAIN.
- (E2) EXISTING RECEPTACLE AND ASSOCIATED WIRING FOR VENDING UNIT TO BE REMOVED TO PERMIT CONSTRUCTION OF NEW DOOR OPENING. RELOCATE RECEPTACLE TO NEW LOCATION - SEE NOTE # E3.
- (E3) NEW LOCATION OF RELOCATED VENDING UNIT SPLIT RECEPTACLE. EXTEND EXISTING CIRCUITRY (NOTE # E2) THROUGH ADJACENT ELEVATOR MACHINE ROOM TO SUIT.
- (E4) EXISTING WALL MOUNT FLUORESCENT FIXTURE TO REMAIN.
- (E5) EXISTING FAN/LIGHT 3-WIRE SWITCH AND ASSOCIATED CIRCUITRY TO BE REMOVED AND RELOCATED - SEE NOTE # E14.
- (E6) EXISTING FAN CONNECTION TO REMAIN.
- (E7) EXISTING LIGHT FIXTURE IN HIGH CEILING TO REMAIN.
- (E8) EXISTING CCTV CAMERA IN HIGH CEILING TO REMAIN.
- (E9) NEW FAN/LIGHT TIME DELAY SWITCH FOR NEW WASHROOM AT 48" AFF. SEE DETAIL # 1/E1.2 FOR WIRING. SEE NOTE # E15 FOR CIRCUITRY.
- (E10) NEW GFCI RECEPTACLE AT 42" AFF. SEE NOTE # E15 FOR CIRCUITRY.
- (E11) NEW WALL MOUNT FLUORESCENT LIGHT FIXTURE WITH TWO F032-T8 LAMPS MOUNTED AT 7'-0" AFF. FIXTURES EQUAL TO THOMAS DAYBRITE # CUBE-L-2-32-W-120-EB-GENRS.
- (E12) 120V POWER TO EXHAUST FAN - SEE DETAIL # 1/E1.2 FOR WIRING. SEE NOTE # E15 FOR CIRCUITRY.
- (E13) 15A-120V CIRCUIT TO RECEPTACLE FOR WATER COOLER. SEE NOTE # E15 FOR CIRCUITRY.
- (E14) RELOCATED FAN/LIGHT TIME DELAY SWITCH FOR EXISTING WASHROOM AT 48" AFF. SEE DETAIL # 1/E1.2 FOR WIRING. REUSE EXISTING CIRCUITRY.
- (E15) TWO NEW 15A-120V CIRCUITS FROM EXISTING ELECTRICAL ROOM. SEE DRAWING # ME-1 FOR DETAILS.

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K.G. LANG
PROVINCE OF ONTARIO

05/23/2008

Project: NEW HOLD ROOM WASHROOM
AIR TERMINAL BUILDING
SUDBURY AIRPORT
2621 Skead Road, Sudbury, ON

Drawing: ELECTRICAL SYSTEMS

Drawn by: M.A.
Checked by: K. L.
KLE Project No.: 3179
Date: May 15, 2008
Scale: As Noted
Drawing No.: E1.1

11" x 17" - Plot AT 1/4" = 1'-0"