THE CORPORATION OF THE CITY OF MARKHAM
101 Town Centre Boulevard
Anthony Roman Centre
Markham, Ontario
L3R 9W3

REQUEST FOR QUOTATION

135-Q-25
MILLIKEN MILLS C.C. KITCHEN REFURBISHMENT

CLOSING TIME: **Friday June 20, 2025 @ 3:00 p.m. local time**

MANDATORY SITE MEETING: **Wednesday June 4, 2025 @ 10:30 a.m. (on-site)**

Only Contractors that have been pre-qualified under Request for Pre-qualification #097-P-23 "Category A" will be eligible to submit a Bid in response to this Request for Quotation

DOCUMENT PICK-UP

This document is available for purchase at https://markham.bidsandtenders.ca for the non-refundable sum of $30.00. If you require assistance, please contact 1-800-594-4798 (8:00 a.m. - 5:00 p.m. EST) or support@bidsandtenders.ca.

BID SUBMISSION

The Corporation of the City of Markham shall **ONLY** accept **ELECTRONIC BID SUBMISSIONS** submitted through the City's Bidding System website. Bid submissions submitted and/or received by any other method shall be rejected, unless the City has instructed otherwise by published Addendum.

All Bids must be submitted electronically only via the Bidding System, no later than the specified Closing Time. Late Bids will not be accepted by the City's Bidding System.

Bidders are cautioned that the timing of Bid submission is based on when the Bid is RECEIVED by the Bidding System, not when a Bid is submitted by a Bidder, as Bid transmission can be delayed in an "Internet Traffic Jam" due to file transfer size, transmission speed, etc.

PROCUREMENT REPRESENTATIVE

Ian Thompson, Senior Buyer, Procurement Services Department
Phone: 905-477-7000, Ext. 2218 Email: ithompson@markham.ca

NOTE: Bid questions and submissions are to be submitted through the Bidding System.

SCHEDULE A – BID FORMS

The following sections of the Bid Form are required to be completed by the Bidder:

Schedule of Prices

- **Credit Card Acceptance**
- **Payment Terms**
- **Bid Price (Excluding Taxes)**
- **Summary Table**

References

- **Reference List**
- **Unresolved Litigation**

Subcontractors

- **Relevant Subcontractor List**

Declarations

Note: Schedule A above is an electronic section that needs to be inputted on https://markham.bidsandtenders.ca in order to create a Bid submission. The inclusion of this section in this bid document is for preview purposes only.

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Attachment B – City Health and Safety Documents
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- **Sheet No. 1 - Key Plan General Notes List of Drawing**
- **Sheet No. 2 - Kitchen (162) Existing Conditions and demolition**
- **Sheet No. 3 - Kitchen (162) New Work**
- **Sheet No. 4 - Kitchen (162) Elevations**

Attachment D – Milliken Mills CC_Kitchen Reno_Drawings Issued for Review_Apr2825
Technical Specifications – (Section 00000, Section 01110, Section 01210, Section 01320, Section 01330, Section 01360, Section 01450, Section 01560, Section 01730, Section 03484, Section 06100, Section 06410, Section 09670, Section 09900, Section 15010, Section 15400, Section 16010, Section 16100, Section 16111, Section 16131 and Section 16132)
Attachment E – Product Sheet 115.0435.802_faucet
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1 PROJECT DESCRIPTION

The City of Markham is soliciting Bids to replace existing flooring, millwork, kitchen island and kitchen appliances in the Milliken Mills Community Centre Kitchen. The Kitchen is used by facility bookings, instructional programs and supports programs and services delivered by the Milliken on The Move (MOTM) Seniors Club. The existing kitchen was built in 1989 and re-furnished in 2003. This replacement will support city-run cooking programs and large catered events in which cooking is done onsite.

The Specifications and Scope of Work (collectively, the "Work") for this project are as set out in this Request for Quotation, as may be amended by addendum issued by the City.

2 GENERAL CONDITIONS OF THE CONTRACT

SUCCESSFUL BIDDER'S RESPONSIBILITIES AND CONTROL OF THE WORK

i. The Successful Bidder shall have complete control of the Work and shall effectively direct and supervise the Work so as to ensure conformance with the Contract Documents;
ii. The Successful Bidder shall be solely responsible for construction means, methods, techniques, sequences and procedures and for coordinating the various parts of the Work under the Contract;
iii. The Successful Bidder shall perform its work in a good and workmanlike manner and in accordance with the drawings and specifications of the Contract;
iv. The Successful Bidder shall provide competent supervision and Key Personnel with the requisite skill and expertise to perform the Work;
v. The Successful Bidder shall employ suitable equipment and Key Personnel to verify the Work was deployed/installed/implemented per the Contract Documents; and,
vi. The Successful Bidder shall be solely responsible for construction safety at the Place of the Work and for compliance with the rules, regulations and practices required by the applicable construction safety legislation.
vii. All damage to the facility and site caused by the Work must be repaired by the Contractor at no additional expense to the City

3 MANDATORY SITE MEETING

All bidders interested in this Bid opportunity must attend a mandatory site meeting scheduled on **Wednesday June 4, 2025 @ 10:30 a.m. local time**

The meeting will convene on site at the front desk of the Milliken Mills C.C. 7600 Kennedy Road, Markham, ON, L3R 9S5. The purpose of the meeting is to provide a brief overview of the project, respond to bidder questions and to allow bidders to perform whatever evaluations of the existing project site conditions as deemed necessary. Only those Bidders whose attendance is registered at the site meeting by the City will be permitted to submit a Bid in response to this Request for Quotation.

Subsequent site visits must be coordinated with the project manager Ryan Hanna: 905-477-7000 ext. 3776.

4 SPECIFICATIONS AND SCOPE OF WORK

i. **Work Plan:**
The project entails replacing the Kitchen flooring, upper and lower millwork, kitchen island/prep station, two (2) gas stoves with oven, one (1) refrigerator, one (1) ice maker and one (1) freezer. outlined in the "Milliken Mills_Kitchen Reno_Technical Specifications_revised May1425" in Attachment C.

ii. **Reporting:**

- The Contractor to submit a construction schedule including all tasks with both start and end dates within 2 weeks after the contract is awarded. The Contractor is responsible to update the construction schedule and to submit the latest version to the Project Manager after each update.
- The Contractor shall submit weekly progress reports to the Project Manager via email.
- The weekly progress report to include photos and updates on project completion information.
- The Contractor to submit the weekly progress report via e-mail to the Project Manager every Friday prior to 2:00 p.m.

iii. **Inspection of Work:**

All Work must be completed to the satisfaction of the Project Manager and any questions as to proper procedures or quality of workmanship will be resolved by the same.

iv. **Payment & Invoice:**

"Proper Invoice" means a written bill or other request for payment in respect of Work supplied under the Contract, which shall contain the following information:

(a) Contractor's name and address, and name, title, telephone number and mailing address of the person to whom payment is to be sent.
(b) The date of the Proper Invoice and the period during which the Work was supplied. Payment shall be made only for Work supplied prior to the date of the Proper Invoice.
(c) Information identifying the authority, in the Contract or otherwise, under which the Work was supplied (Contract number, or as otherwise required by the Contract).
(d) A description, including quantity where appropriate, of the Work that was supplied.
(e) The amount payable for the Work that was supplied, and the payment terms (sub-totals, totals, holdback and taxes to be separately shown on invoice).
(f) Contractor HST Registration Number.
(g) City of Markham Purchase Order Number.
(h) City of Markham Project Manager / Department.

v. **Pre-Start Meeting:**

A pre-start meeting will be required for review of logistics and coordination of invoicing procedure. All safety legislation will be reviewed and submitted at this meeting. The meeting will take place at the Milliken Mills C.C. 7600 Kennedy Road, Markham, ON, L3R 9S5. The Contractor's operational manager responsible for all paperwork and invoicing, and possibly the lead hand of the working crew (s) will be required to attend. This is not a separate line item and will be included in the Bid Price.

5 WORK SCHEDULE & HOURS OF WORK

i. The Contractor shall be responsible to coordinate and execute continuous service utilizing sufficient workers on all Work under this Contract;
ii. The Contractor shall complete the work within **4 weeks or 19 working days** from the date of mobilization, weather permitting.
iii. Regular work hours for the duration of the Work are between 7:00 am to 7:00 pm Monday to Friday, excluding holidays.
iv. Written approval from the Project Manager is required to work at any other time;
v. The City will NOT be responsible for any overtime payments or any additional costs should the Contractor perform night and weekend work.

6 CONTRACT

By submitting a completed Bid Form, the Bidder agrees to be bound by the terms and conditions of this Request for Quotation and the following: The City's General Terms and Conditions (attached hereto) and the City's Purchasing By-law # 2017-8, which can be found on the City's website:
http://checkmark.markham.ca/corporate-corner/Documents/Policies/Purchasing/GTC-Consultants.pdf#search=general%20terms%20and%20conditions

All capitalized terms used herein and not otherwise defined shall have the meanings assigned in the City's *General Terms and Conditions*.

The evaluation of the Bid prices will be based on the **Bid Price (Excluding Taxes) set out in the "Summary Table"**. **Submission of the Bid Price (Excluding Taxes) in the Summary Table is a MANDATORY requirement of this Request for Quotation. The failure by a Bidder to submit the Bid Price (Excluding Taxes) shall result in the Bid being rejected as non-compliant.**

The Bidder agrees that this Request for Quotation, the City's *General Terms and Conditions (Parts I and III)*, the Successful Bidder's submission, the Purchase Order, and any other written agreement between the City and the Successful Bidder regarding the Work shall form the Contract between the City and the Successful Bidder.

7 ANTICIPATED SCHEDULE

It is anticipated that the procurement process will be administered as follows:

Mandatory Site Meeting	**Wednesday June 4, 2025 @ 10:30 a.m.**
Deadline for submitting Questions	Monday, June 9, 2025 @ 3:00 pm
Response Deadline for Questions	Thursday, June 12, 2025 @ 3:00 pm
Closing Date and Time	Friday, June 20, 2025 @ 3:00 pm
Anticipated Contract Award	June / July
Contract Start Date	September 2, 2025
Contract Completion Date	September 26, 2025

Note: Although every effort will be made to adhere to this schedule, the City, in its sole discretion, reserves the right to change the dates without notification as and when required. This schedule is for information purposes only and is not to be relied upon.

8 CONTRACT TERM & WARRANTY

8.1 The Warranty Period for improper workmanship and defective Materials is one (1) year from the Work completion date.

8.2 All the Work must be completed by **September 26, 2025** ("Contract Time") unless otherwise specified in the Contract.

Note: It is the Successful Bidder's responsibility to maintain insurance documentation until the end of the warranty period and forward updates to the Procurement Division prior to the expiry date.

9 CITY OF MARKHAM CONTRACTOR'S SAFETY PROGRAM

The Successful Bidder must comply with the City of Markham's Contractor Safety program including (as a minimum):

i. Provision of a properly completed Contractor Safety Pre-start Submission Checklist and supporting documentation;
ii. Attendance by the Successful Bidder to the Contractor Pre-start Safety Meeting;
iii. All other requirements of the City's Contractor Safety Program that pertain to this project will be communicated by the City's Project Manager to the Successful Bidder prior to commencement of the project;
iv. Compliance by the Contractor is mandatory;
v. Once a contract is awarded, failure to comply with any aspect of the City's Contractor Safety Program, or any observation by the City or Ministry of Labour of a health and safety legislative violation on the part of the Contractor is fair and reasonable grounds, on the part of the City, to terminate the contract without penalty to the City; and

Refer to The City Health and Safety Documents (see Attachment B).

10 VENDOR PERFORMANCE EVALUATION

The performance of the Successful Bidder will be evaluated at the completion of the Work based on the criteria and metrics outlined in the City of Markham's "Vendor Performance Management" procedures. The City's Project Manager will use a pre-determined scorecard to ensure an objective assessment of a Vendor's or Service Provider's performance, by applying established evaluation criteria such as: Quality, Project Management (Health and Safety, Schedule Management, Communications), cost control (budget management) and performance of product during warranty period.

Performance evaluation may be used to provide feedback to the Vendor/Service Provider; to provide the Vendor/Service Provider with the opportunity to implement performance improvements during the Contract; and to justify an award or non-award of future

Contracts by the City in accordance with the terms of the City of Markham's "Vendor Performance Management" procedures. Continued incidence of non-compliance can be reflected in the Vendor/Service Provider's performance evaluation and may affect the ability to work for the City in the future.

11 CONTRACTOR'S RESPONSIBILITY

i. Mobilization, demobilization, site safety, administration, site clean-up, warranties, general requirements, barriers, temporary works, protection, signage, traffic control, coordination, etc.;
ii. All damage to the facility and site caused by the Work must be repaired by the Contractor at no additional expense to the City;
iii. At no time during performance of the Work are fire routes to be obstructed;
iv. It is the responsibility of all contractors to take accurate measurement of all areas prior to submitting a bid. The City will not be responsible for any errors or omissions. Contractors can contact the facility coordinator\supervisor to arrange an appointment to assess the environment;

12 ACCESSIBILITY FOR ONTARIANS WITH DISABILITIES ACT (AODA) COMPLIANCE

All information and documents provided to the City which are to be publicly available, as determined by the City in its sole discretion, must be made accessible according to the Accessibility for Ontarians with Disabilities Act (AODA). All materials must meet the Website Content Accessibility Guidelines (WCAG) 2.0 Level AA standard, with all PDF documents meeting the PDF U/A standard. To ensure that WCAG and PDF U/A standards are met, a PAC report, common look report or equivalent is required to be provided for all public-facing materials.

13 AMENDMENTS TO THE CITY'S GENERAL TERMS AND CONDITIONS

The following amendments shall apply to the City's *General Terms and Conditions - Contractor* for the purposes of this Request for Quotation:

1) Revise: Part III, Section 16.1 (a) (Commercial General Liability) – the reference to "$2,000,000.00" shall be deleted and replaced with "$5,000,000.00";

2) Delete: Part III, Section 16.1 (a)(iv) (Commercial General Liability Insurance), as follows:
(iv) an exception to the pollution liability exclusion for Hostile Fire, or an endorsement adding back in coverage for Hostile Fires where there exists an absolute pollution exclusion;

3) Delete: Part III, Section 16.1(c) (Professional Liability Insurance), as follows:

(c) Professional Liability Insurance, in a minimum amount of $1,000,000.00 inclusive per claim and $2,000,000.00 in the aggregate for each policy period. Upon completion of the Warranty Period the policy shall remain in force for twelve (12) months;

ATTACHMENT A

THE CORPORATION OF THE CITY OF MARKHAM
OCTOBER 1, 2019 Version 9

GENERAL TERMS AND CONDITIONS - CONTRACTOR

PART I – DEFINITIONS

The terms below shall have the following meanings:

"**Bid**" means the offer of a Bidder to furnish goods or services in response to a Quotation issued by the City.

"**Bidder**" means any individual, corporation or other person submitting a response to a Quotation issued by the City. "**Bid Form**" means the "Bid Form" section of the Quotation, which must be completed by the Bidder and include the Bid Price and the signature of the authorized signing representative(s) of the Bidder.

"**Bid Price**" means the total bid price for the Work as specified in the Bid, EXCLUDING all applicable taxes.

"Bidding System" means the City's online web-based solution for issuing solicitations and/or receiving online bid submissions and posting bid results.

"**Business Days**" means a day other than a Saturday, Sunday, statutory holiday or other holiday that is observed by the City.

"**City**" means The Corporation of the City of Markham, and shall include any elected official, director, officer, employee or agent of the City who has been authorized to act on its behalf.

"**Closing Time**" means the date and time that all Bids must be received by the City as specified in the Quotation.

"**Competent Person**" means a person who is qualified because of knowledge, experience and training to organize the Work and its performance, is familiar with the *Occupational Health and Safety Act*, R.S.O. 1990, c. O.1 and Regulations, as amended, that apply to the Work, and has knowledge of any potential or actual danger to health or safety in the workplace. "**Conflict of Interest**" means a situation in which the personal, private or commercial interests of a Bidder, Contractor or Subcontractor (or their directors, officers, employees, or agents) conflict with the interests of the City.

"**Contract**" means the legally binding agreement between the City and the Successful Bidder, which agreement is comprised of the Quotation, the Bid, the Purchase Order and any other written agreement between the City and the Successful Bidder regarding the Work, unless otherwise specified in the Quotation.

"**Contract Award**" means the notice in writing (signed by a duly authorized representative of the City) that a Bidder has been selected as the Successful Bidder for the purposes of a Quotation.

"**Contractor**" means the Successful Bidder which has been awarded the Contract by the City for the Work.

"**Council**" means the Council of The Corporation of the City of Markham.

"**Deliverables**" means all services, materials, plans, designs, drawings, data, products, equipment, devices, hardware, software or other deliverables created, developed, prepared or provided by or on behalf of the Contractor in connection with the Work or the Contractor's obligations under the Contract.

"**General Terms and Conditions**" mean the City's *General Terms and Conditions*, as may be revised by the City from time to time.

"**Purchase Order**" means the form of purchase order used by the City to procure goods and/or services.

"**Purchasing By-law**" means the by-law enacted by Council with respect to the procurement of goods and/or services by the City, which by-law may be revised by Council from time to time.

"**Quotation**" means a request for quotation, request for proposal, request for tender, request for pre-qualification, expression of interest (and any addenda thereto issued by the City) or other document by which Bids are solicited by the City.

"**Successful Bidder**" means the Bidder which has been awarded the Contract by the City for the Work.

"**Subcontractor**" means the individual, corporation or other person engaged by the Contractor to complete a portion of the Work.

"**Total Bid Price**" means the total bid price for the Work as specified in the Bid, INCLUDING all applicable taxes.

"**Work**" means the labour, materials, products, equipment and/or services specified in the Quotation and, upon Contract Award, required to complete the requirements of the Contract.

PART II – INSTRUCTIONS TO BIDDERS

1. QUOTATION PROCESS

By submitting a Bid in response to a Quotation, the Bidder agrees to be bound by the terms and conditions of the Quotation and the City's *General Terms and Conditions* and *Purchasing By-Law* #2017-8, which can be found on the City's website: https://www.markham.ca/wps/portal/home/business/bids-tenders/bylaw-terms-and-conditions/05-by-law-terms-and-conditions or from the City.

2. MANDATORY REQUIREMENTS

The failure by a Bidder to comply with any requirement of a Quotation which is identified as "MANDATORY" shall result in the Bid being rejected as non-compliant.

3. MANDATORY SITE MEETING

If a Quotation indicates that a MANDATORY site meeting shall be held, all Bidders must attend the site meeting (on the date and time indicated) and register with the City's representative. Failure to attend and register shall result in the Bid being rejected as non-compliant.

4. BIDDER'S RESPONSIBILITY

4.1 It is the Bidder's responsibility to examine all components of the Quotation, including all appendices, schedules, forms and addenda, and to seek clarification of any requirement that they consider unclear before submitting a Bid. The failure of any Bidder to examine any component of the Quotation or to seek clarification shall not relieve the Bidder of any obligation with respect to their Bid or any Contract awarded based on their Bid.

4.2 Should a Bidder find discrepancies in or omissions from the Quotation, or have any questions regarding a Quotation, the Bidder shall direct all inquires to the designated City staff specified on the Quotation cover page. No oral interpretations shall be effective to modify any provisions of the Quotation. Only written addenda issued by the City shall modify the Quotation.

4.3 It is the Bidder's responsibility to review the Work site and to include in their Bid any items that might have been missed from the specifications that would reasonably be considered part of the specifications. The Bidder shall take into account all obstacles that may be faced during the Work when setting prices in the Bid.

5. ADDENDA

5.1 The City reserves the right, in its sole discretion, to revise the Quotation *prior to* the Closing Time. If the City exercises this right, the revisions shall be by addendum forwarded through the Bidding

System or to the email address provided. The addendum shall form part of the Quotation upon issuance by the City.

5.2 It is the responsibility of the Bidder to confirm that they have received all addendums that have been issued by the City. Bidders should check on line at https://markham.bidsandtenders.ca or contact the City prior to submitting their Bid.

6. CONFIDENTIALITY

All correspondence, documentation and information provided by the City to Bidders in connection with a Quotation;

(a) are and shall remain the property of the City,

(b) shall be treated by Bidders as confidential, and

(c) shall not be used for any purpose other than for replying to the Quotation and completing the requirements of the Contract.

7. BID SUBMISSION

7.1 The City shall not be liable for, nor reimburse any Bidder for, costs incurred in the preparation and/or submission of a Bid.

7.2 Bidders are required to disclose in their Bid any real or potential Conflict of Interest.

7.3 Bidders are required to disclose in their Bid a list of all proposed Subcontractors. The City reserves the right, in its sole discretion, to accept or reject any or all Subcontractors proposed in a Bid (and any subsequent changes thereto). Upon request, Bidders shall provide evidence satisfactory to the City (as determined by the City in its sole discretion) that the proposed Subcontractors have the qualifications, experience and resources to complete the Work.

7.4 If a Quotation requires the submission of paper copy of the Bids:

(a) The Bid shall be legible, written in ink or typed. Any erasures, overwriting or strike-outs should be initialed by the person(s) signing on behalf of the Bidder.

(b) Bids shall be submitted in a sealed envelope, with a submission label clearly identifying the Bid number and project description.

(c) The Bid Form shall bear the legal name and signature of the authorized signing representative(s) of the Bidder. If a joint Bid is submitted, the Bid Form shall be signed on behalf of each of the Bidders and, if the authorized signing representative for both Bidders is one individual, such individual shall sign separately on behalf of each Bidder.

(d) Bids shall be in the possession of the City, date and time stamped no later than the Closing Time. Bids received by the City after the Closing Time shall NOT be accepted and shall be returned unopened to the Bidders.

(e) The use of mail or courier for delivery of a Bid shall be at the risk of the Bidder. Bids submitted by email or other telecommunications shall not be accepted, unless otherwise specified in the Quotation.

7.5 If a Quotation requires the submission of Bids through the Bidding System:

(a) Bids shall be received by the Bidding System, no later than the Closing Time. Bidders are cautioned that the timing of their Bid submission is based on when the Bid is

RECEIVED by the Bidding System, **not** when a Bid is submitted by the Bidder, as Bid transmission can be delayed by an "Internet traffic jam" due to file transfer size, transmission speed etc. Bidders should allow sufficient time to upload their Bid submission and attachment(s) and to resolve any issues that may arise. The Closing Time shall be determined by the City's Bidding System web clock.

(b) Where, in the sole opinion of the City, the Bidding System has experienced or is experiencing an issue affecting the receipt of Bids, or there is a failure of the underlying infrastructure, the City may extend the Closing Time without prior notice. As soon as practicable in the circumstances, the City will notify Bidders that the Closing Time has been extended. Once the issue has been resolved, the City shall notify Bidders of the new Closing Time via an addendum released through the Bidding System.

(c) Bidders should contact the City, at least twenty-four (24) hours prior to the Closing Time, if they encounter any problems. The Bidding System will send a confirmation email to the Bidder advising that their Bid was submitted successfully. Bidders should contact the City immediately if they do not receive a confirmation email.

(d) To ensure receipt of the latest information and updates via email regarding a Quotation, or if a Bidder has obtained a Quotation from a third party, the onus is on the Bidder to create a Bidding System Vendor account and register as a "Plan Taker" for the Quotation opportunity at https://markham.bidsandtenders.ca.

7.6 Adjustments by any method to a Bid already submitted shall NOT be considered. A Bidder desiring to make adjustments to a Bid shall submit a revised Bid prior to the Closing Time.

7.7 Bids shall be irrevocable and valid for acceptance by the City for a period of NINETY (90) Business Days from the Closing Time, unless otherwise specified in the Quotation.

7.8 Disclosure of information submitted to the City in connection with a Quotation is subject to the *Municipal Freedom of Information and Protection of Privacy Act ("MFIPPA")*. Bidders should clearly indicate in their Bid which parts, if any, are exempt from disclosure under MFIPPA.

8. BID PRICE

8.1 The quantities referenced in a Quotation are estimates only and shall be used as a basis for calculating the Bid Price. These quantities are not guaranteed to be accurate and are furnished without any liability to the City. The City reserves the right, in its sole discretion, to increase or decrease quantities as required. Payment shall be based on actual quantities ordered, received and accepted for use by the City.

8.2 The Bid Price shall include all labour, materials, products, equipment, services, cash allowances, costs, expenses, disbursements, duties, overhead and profit required to complete the Work, with the unit price for each Work item detailed in the Bid (if required by the Quotation).

8.3 If a Quotation requires the submission of paper copy of the Bids and in the event of an ambiguity, discrepancy or mathematical error in the prices set out in the Bid, the City shall have the right, in its sole discretion, to resolve such ambiguity, discrepancy or mathematical error in accordance with the following:

(a) In the event of an ambiguity or discrepancy between the lump sum price and the unit price for any Work item ("Unit Price Error"), the unit price shall prevail. Extensions, sub-totals and

totals shall be corrected accordingly, and adjustments resulting from the correction shall be applied to the Bid Price and Total Bid Price.

(b) In the event of an ambiguity, discrepancy or mathematical error other than described in Section 8.3(a) above:

(i) the Bid Price shall prevail over all other prices contained in the Bid (including, without limitation, the Total Bid Price) (collectively, the "Summary Prices"), and the Bid Price shall be capable of acceptance by the City; and

(ii) the City reserves the right (in its sole discretion) to seek clarification from the Successful Bidder regarding any such ambiguity, discrepancy or mathematical error in the Summary Prices, to correct such ambiguity, discrepancy or mathematical error in the Summary Prices (as confirmed by the Successful Bidder), and to require that the Successful Bidder initial such corrected ambiguity, discrepancy or mathematical error.

8.4 In the event that the City exercises any of its rights under Section 8.3 above:

(a) The Bid Price shall NOT be considered uncertain, erroneous, non-compliant or incapable of acceptance by the City; and

(b) The Bid shall NOT be considered non-compliant or incapable of acceptance by the City.

9. BLACK-OUT PERIOD

To ensure that the City's procurement process is fair, open and transparent to all Bidders, there shall be no communication between the City and Bidders during a Quotation process, except as specified in the Quotation. Any communication between a Bidder and City staff or Council (other than as specified in the Quotation) may result in the Bid being rejected as non-compliant.

10. BID OPENING

"Requests for Tenders" and "Requests for Proposals" shall be opened at a public meeting at the Markham Civic Centre, 101 City Centre Boulevard, Markham, Ontario. The Bid opening shall be done in public approximately fifteen (15) minutes after the Closing Time. For "Requests for Tenders", only the Bid Price shall be read out. For "Requests for Proposals", only the names of the Bidders shall be read out.

If a Quotation requires the submission of Bids through the Bidding System, , a public Bid opening will not be held. The names of the Bidders and the unverified Bid Price shall be posted on the City's Bidding System on the same day as the Closing Time.

All Bid prices are subject to review and verification by the City

11. WITHDRAWAL OF BIDS PRIOR TO THE CLOSING TIME

Paper copy Bid Withdrawal

11.1 A Bidder may request that their Bid be withdrawn. The withdrawal shall be allowed if the request is received by the City prior to the Closing Time. Withdrawal requests shall be made in writing by an authorized representative of the Bidder and should be directed to the designated City staff specified on the Quotation cover page. Telephone requests shall NOT be considered.

11.2 Bids confirmed by the City as withdrawn prior to the Closing Time shall be returned unopened to the Bidder.

11.3 The withdrawal of a Bid does not disqualify a Bidder from submitting another Bid for the same Quotation prior to the Closing Time.

11.4 If more than one Bid is submitted by the same Bidder for the same Quotation and no withdrawal notice has been received by the City prior to the Closing Time, the Bid bearing the latest date and time shall be considered the intended Bid. All earlier Bids shall be considered void and shall be returned unopened to the Bidder.

Bidding System Bid Withdrawal

11.5 If more than one Bid is submitted by the same Bidder for the same Quotation, the Bid received by the Bidding System bearing the latest date and time shall be considered the intended Bid.

12. WITHDRAWAL OF BIDS DURING PUBLIC BID OPENING

12.1 In some instances, the Bids for more than one Quotation are opened at the same public meeting. At such public meeting, at the conclusion of the reading out of Bids for the first Quotation, the low Bidder on that Quotation may withdraw any of their remaining Bids relative to those other Quotations which have not yet been opened by advising the City's representative. The City's representative shall read out the Bidder's name and announce that the Bid has been withdrawn.

12.2 Bids withdrawn under this procedure cannot be reinstated.

13. WITHDRAWAL OF BIDS AFTER THE CLOSING TIME

Withdrawal requests received after the Quotation Closing Time shall NOT be permitted.

14. NOTICE

14.1 Every notice, including any addendum, that the City may be required to give to the Bidder *prior to* the Closing Time shall be deemed to have been properly given if forwarded through the Bidding System or to the email address provided when the Quotation was downloaded from Biddingo.com or obtained from the City. Bidders are requested to acknowledge receipt of addenda as indicated in the Quotation.

14.2 Every notice, including any addendum, that the City may be required to give to the Bidder *after* the Closing Time shall be deemed to have been properly given if forwarded by the Bidding System or by email to the address provided in the Bid.

15. ACCEPTANCE / REJECTION OF BIDS

15.1 The City reserves the right, in its sole discretion, and without incurring any liability whatsoever, to accept or reject any or all Bids, or to cancel the Quotation process at any time, without cause, if deemed in the best interests of the City to do so.

15.2 Unless otherwise specified in the Quotation, Bids which are qualified or restricted by any statement added to the Bid or a covering letter shall be rejected as non-compliant.

15.3 Any Bid which is incomplete, illegible, which contains alterations not called for, fails to comply with the requirements of the Quotation, or is otherwise irregular in any way (collectively, "Irregularities"), may be rejected as non-compliant by the City. The City reserves the right, in its sole discretion, to waive minor Irregularities and seek clarification from the Bidder regarding such minor Irregularities.

15.4 The City reserves the right, in its sole discretion, to ask for clarification regarding or to solicit additional information regarding any information included in a Bid, or (except for MANDATORY requirements) to request that a Bidder provide information not included in the Bid.

15.5 If the City is unable to verify bonding requirements, upon request by the City, the Bidder shall be given five (5) business days to remedy the verification to the City's satisfaction.

16. DISQUALIFIED VENDORS

The City, in its sole discretion, may disqualify a vendor from participation in a Quotation process, or place a vendor's name on a list of disqualified vendors for a period of two (2) years on the basis of documented poor performance, non-performance, Conflict of Interest (including, without limitation, involvement in any litigation or contractual dispute with the City), or failure to accept a Contract Award. This information may be obtained from within the City or through reference checks. A written notice of the decision shall be provided to the vendor by the City. From and after the delivery of such notice, the disqualified vendor shall not be eligible to participate in any Quotation process, or to provide goods or services to the City for so long as the supplier remains on the list of disqualified vendors (as applicable). After the two (2) year period referred to above, disqualified vendors, who are otherwise in good standing, may request that their name be removed from the list. Removal of names from the list shall be at the sole discretion of the City.

17. CONTRACT AWARD

17.1 The award of a Contract is based on the best value for the City based upon quality, service and price. The award is subject to the City's budget restrictions, limitations and approvals.

17.2 The City reserves the right, in its sole discretion, to negotiate with the lowest priced Bidder / highest ranked Bidder (as applicable, and whose reference checks meet or exceed the expectation of the City in accordance with Section 17.4 below) in the event that the Bid Prices submitted by the Bidders exceed the City's budget. If an acceptable contract cannot be concluded with such Bidder, the City reserves the right to negotiate a contract acceptable to the City with the next lowest priced Bidder(s) / highest ranked Bidder(s) (as applicable) in succession.

17.3 The City reserves the right, in its sole discretion, to award in whole or in part (including, without limitation, by part, item or group of items), or to award to more than one Bidder.

17.4 The City reserves the right, in its sole discretion, not to award to the lowest priced Bidder, the highest ranked Bidder or to any Bidder whose reference checks do not meet or exceed the expectations of the City (as determined by the City in its sole discretion) regarding past performance, timely project completion, health and safety performance, experience, qualifications, financial standing, appropriate manpower, equipment and/or facilities, or any other criteria deemed necessary by the City to meet the requirements of the Quotation.

17.5 The acceptance of a Bid and Contract Award to the Successful Bidder shall be indicated by notice in writing signed by a duly authorized representative of the City. No other act of the City shall constitute the acceptance of a Bid and Contract Award.

17.6 Upon acceptance of a Bid and Contract Award by the City, and upon submission by the Successful Bidder of all documents required by the Quotation, a Purchase Order shall be issued to the Successful Bidder.

17.7 In the event that the Successful Bidder fails to accept the Contract Award or fails to submit to the City all documents required by the Quotation within ten (10) Business Days of notification, the City may, in its sole discretion:

(a) Grant additional time to fulfill the requirement; or

(b) Cancel the Contract Award, award to another Bidder which meets the Quotation requirements, and exercise any remedies available to the City (including, without limitation, forfeiture of any bid deposit or enforcement of any bid bond).

18. NO LIABILITY

The City, its affiliates, elected officials, directors, officers, employees and agents shall not be liable (in contract, tort or otherwise) for any costs, expenses, losses or damages incurred, sustained or suffered by any Bidder or any third party, prior or subsequent to, or by reason of the acceptance or rejection by the City of any Bid, by reason of any award decision (or delay thereof) by the City, by reason of the cancellation of the Quotation process, or by reason of the exercise by the City of any of its rights specified in the Quotation or the City's *General Terms and Conditions.*

PART III – CONTRACT TERMS AND CONDITIONS

1. CONTRACT

1.1 The Contract shall be governed by and construed in accordance with the laws of the Province of Ontario and the federal laws of Canada applicable therein.

1.2 The Contract shall consist of the following (collectively, the "Contract Documents"), unless otherwise specified in the Quotation;

(a) Purchase Order,
(b) Bid,
(c) Quotation,
(d) the City's *General Terms and Conditions,* and
(e) any other written agreement between the parties regarding the Work.

1.3 In the event of a conflict or inconsistency *among* the Contract Documents, the provision in the document first listed above shall prevail, unless otherwise expressly provided in any Contract Document.

1.4 In the event of a conflict or inconsistency *within* the Contract Documents, the order of priority of documents, from highest to lowest, shall be:

(a) Supplementary Conditions;
(b) General Conditions of the Contract;
(c) Specifications;
(d) Contract Drawings;
(e) City of Markham Engineering Criteria and Standard Drawings;
(f) Special Provisions;
(g) Ontario Provincial Standard Drawings; and
(h) Ontario Provincial Standard – General Conditions of the Contract.

2. CONTRACT TERM

The term of the Contract shall be as specified in the Contract, unless otherwise extended or amended by mutual written agreement of the City and the Contractor ("Contract Term"). Notwithstanding the expiry of the Contract Term, the terms and conditions of the Contract shall continue to apply during the Warranty Period.

3. WORK

3.1 The Work shall start and be completed as set out in the Contract, unless otherwise extended or amended by mutual written agreement of the City and the Contractor. Unless otherwise specified in the Contract, Work shall start within five (5) Business Days after issuance of a Purchase Order, and shall be carried out on a continuous basis until final completion of the Work.

3.2 The Contractor shall make no change or alteration to the Work, or perform any additional work without the City's prior, written approval.

4. CONTRACTOR'S RESPONSIBILITY

4.1 The Contractor shall comply with all federal, provincial and municipal laws and regulations applicable to the Work.

4.2 The Contractor shall obtain all permits and licenses required to perform the Work, and shall not do or suffer to be done anything in violation of any such permits and/or licenses.

4.3 The Contractor shall bear the risk and responsibility of any loss, damage or expense of any nature or kind whatsoever to the Work or to the Contractor arising from strikes or labour disputes, other than such loss, damage or expense caused by the failure of the City to meet its obligations under the Contract.

4.4 The Contractor shall bear the risk and responsibility of any equipment, tools, or supplies delivered to any site or facility by or on behalf of the Contractor, prior to, during or after carrying out the Work, unless otherwise expressly provided in the Contract.

4.5 The Contractor shall ensure that all persons employed or engaged by the Contract to perform the Work, when using any City buildings, premises, equipment, hardware or software, shall comply with all security policies, regulations or directives relating to such buildings, premises, equipment, hardware or software.

4.6 The Contractor shall furnish all personnel required to perform the Work, and all such personnel shall be competent and qualified to perform the Work. Where specific personnel have been proposed by the Contractor for the performance of the Work, and have been accepted by the City, such personnel shall not be replaced with other personnel without the prior written consent of the City, such consent not to be unreasonably withheld.

5. HEALTH AND SAFETY

The Contractor shall comply with the City's health and safety policies, the *Occupational Health and Safety Act*, R.S.O. 1990, c. O.1 and Regulations, as amended, and all applicable industry standards for the Work.

6. CODE OF ETHICS

6.1 The Code of Purchasing Ethics published by the Supply Chain Management Association (SCMA) and the National Institute of Government Purchasing (NIGP) Code of Ethics shall apply to all purchases of goods and/or services by the City. SMAC's Code of Ethics can be found at www.scma.com. NIGP's Code of Ethics can be found at www.nigp.org

6.2 The Contractor shall read, understand and conduct itself according to the Values "Honesty/Integrity, Professionalism, Responsible Management, Serving the Public Interest and Conformity to the Laws…" as outlined in the SMAC Code of Ethics. Failure to do so shall result in the termination of the Contract and exclusion from future Quotations.

7. RECORDS

The Contractor shall maintain at all times, detailed and accurate records of all transactions relating to the Contract. The City reserves the right, in its sole discretion, to inspect and audit the books, payrolls,

accounts and records of the Contractor at any time during the Contract Term, and at any time thereafter, as required by the City. The Contractor shall supply certified copies of payrolls and any other records required by the City. The City shall provide the Contractor 48 hours prior written notice of its requirement for such audit or certified copies.

8. INDEPENDENT CONTRACTORS

The relationship of the City and the Contractor is one of independent contractors. Nothing contained in the Contract is intended to place the City and the Contractor in the relationship of partners, joint ventures, principal-agent, or employer-employee, and neither the City nor the Contractor shall have any right to obligate or bind the other party in any manner whatsoever. The Contractor is responsible for all legally required employer and employee contribution and deductions, compensation and benefits for itself and its personnel.

9. SUBCONTRACTORS

9.1 The Contractor shall not assign or sublet the Contract (or any part thereof) or subcontract any portion of the Work without the prior written consent of the City.

9.2 No Subcontractor shall, under any circumstances, relieve the Contractor of its liabilities and obligations under the Contract. Should any Subcontractor fail to perform the Work in a satisfactory manner, the City may, in its sole discretion, require the Contractor to replace such Subcontractor.

9.3 The City shall have no obligation to deal directly with any Subcontractor. The Contractor shall be solely responsible for the payment of all amounts owing to Subcontractors. The Contractor shall coordinate the provision of the products and/or services by Subcontractors in a manner acceptable to the City, and shall ensure that Subcontractors comply with the terms and conditions of the Contract. The Contractor shall be liable to the City for all costs or damages arising from the acts, omissions, negligence or willful misconduct of Subcontractors.

10. CONFLICT OF INTEREST

If, during the Contract Term, a Conflict of Interest (or the appearance of same) arises, or the Contractor is retained by another client giving rise to a potential Conflict of Interest, the Contractor shall immediately inform the City. If a Conflict of Interest is deemed to exist by the City, the Contractor shall (if required by the City) take such steps as are necessary to remove the Conflict of Interest to the satisfaction of the City, failing which the City may, in its sole discretion, terminate the Contract.

11. PRIVACY

The Contractor agrees and acknowledges that the City is bound by the *Municipal Freedom of Information and Protection of Privacy Act*, R.S.O. 1990, c. M.56, as amended, and any other Provincial or Federal privacy legislation that may be in effect during the Contract Term (collectively "Privacy Legislation"). The Contractor agrees to be bound by the Privacy Legislation, and agrees that it shall not directly or indirectly disclose, distribute or use any Personal Information provided to it by the City, without obtaining the prior written consent of the City. "Personal Information" means information which relates to an individual and allows that individual to be identified, and includes any information defined from time to time as "personal information" under any Privacy Legislation.

12. CONFIDENTIALITY

12.1 "City Confidential Information" means;

(a) Personal Information, confidential, secret or proprietary information, including data, technical information, financial information, business information (including business plans, strategies and practices) of the City which is disclosed to or obtained by the Contractor in connection with the Contract, and

(b) all information related to the operations of the City which comes to the attention of the Contractor in the course of performing the Work, but excludes any such information which;

(i) is or becomes publicly available,

(ii) is already rightfully in the possession of the Contractor and not subject to any pre-existing obligation of confidentiality,

(iii) is independently developed by the Contractor outside the scope of the Contract, or (iv) is rightfully obtained by the Contractor from third parties.

12.2 The Contractor shall protect the City Confidential Information at all times and in the same manner as the Contractor protects the confidentiality of its own proprietary and confidential information, but in no event with less than a reasonable standard of care. The Contractor shall not, without the prior written consent of the City, disclose City Confidential Information to any person nor use City Confidential Information for any purpose other than for the benefit of the City in connection with the Work.

13. OWNERSHIP OF DELIVERABLES

13.1 Unless otherwise expressly provided in the Contract, the City shall have all ownership rights in and to all originally developed Deliverables, vesting in the City immediately upon their creation and at every stage of their development. The Contractor hereby assigns to the City all right, title and interest (including, without limitation, copyright and other intellectual property rights) in and to such Deliverables, and the Contractor expressly waives the Contractor's moral rights in respect of such Deliverables. The Contractor shall provide reasonable assistance to the City in the preparation of all documents necessary to evidence the City's ownership rights in and to such Deliverables (including, without limitation, obtaining a waiver of moral rights from all authors).

13.2 If the Deliverables contain any pre-existing materials owned or licensed by the Contractor that are incorporated into the Deliverables ("Contractor Materials"), the Contractor hereby grants to the City a perpetual, non-transferrable, non-exclusive, royalty-free licence to use the Contractor Materials to the extent reasonably necessary or convenient to receive or enjoy the benefits of the Deliverables.

14. WARRANTY

14.1 The Contractor represents and warrants that the Work shall be performed in a professional and workmanlike manner, in accordance with applicable industry standards.

14.2 The Contractor represents and warrants that the Deliverables;

(a) shall be in accordance with the requirements specified in the Contract and with all applicable laws, bylaws, regulations and standards,

(b) shall function or otherwise perform in accordance with the features, functional and technical specifications provided in the Contract, and

(c) shall in no way infringe or violate the intellectual property rights of any person.

14.3 The Contractor represents and warrants that if at any time prior to one year (or such longer warranty/guarantee period specified in the Contract) after completion of the Work (the "Warranty Period"), the Deliverables or any part of the Work becomes defective or is deficient or fails due to defect in design, material or workmanship, or otherwise fails to meet the requirements of the

Contract, then the Contractor, upon request by the City, shall make good every such defect, deficiency or failure at the Contractor's cost and expense.

15. INDEMNITY

The Contractor shall indemnify and hold harmless the City (and its affiliates, elected officials, directors, officers, employees and agents) (collectively, the "Indemnified Parties") from and against all actions, suits, claims, demands, liens, proceedings and judgments which may be brought against or made upon the Indemnified Parties, and against all liabilities, damages, losses, costs, charges and expenses (including legal expenses) which may be incurred, sustained or suffered by the Indemnified Parties, resulting from or arising out of the infringement (actual or alleged) by the Deliverables of the intellectual property rights of any person, or the acts or omissions of the Contractor (its Subcontractors, agents or employees) in connection with the Contract or the performance of the Work.

16. INSURANCE

16.1 The Contractor shall purchase and maintain in force, at their own expense (including the payment of all deductibles), during the Contract Term and the Warranty Period (unless otherwise stated), the following policies of insurance underwritten by insurers licensed to conduct business in the Province of Ontario and satisfactory to the City (unless otherwise specified in the Contract):

(a) Commercial General Liability Insurance policy shall include coverage for but not limited to Bodily Injury, Person Injury, Property Damage and Contractual Liability with a minimum amount of $2,000,000.00 for each occurrence, and include:

(i) an endorsement certifying that the **The Corporation of the City of Markham** is included as an additional insured;
(ii) a cross liability clause;
(iii) non-owned automobile coverage including legal liability for damage to hired automobiles; and,
(iv) an exception to the pollution liability exclusion for Hostile Fire, or an endorsement adding back in coverage for Hostile Fires where there exists an absolute pollution exclusion.

(b) Automobile Policy for all licensed Motor Vehicles owned or leased by the Contractor in a minimum amount of $2,000,000.00 for each occurrence.

(c) Professional Liability Insurance, in a minimum amount of $1,000,000.00 inclusive per claim and $2,000,000.00 in the aggregate for each policy period. Upon completion of the Warranty Period the policy shall remain in force for twelve (12) months.

The policies shall be-endorsed to the effect that such insurance policies shall not be altered, cancelled or allowed to expire without thirty (30) days advance written notice to the City. All policies shall apply as primary and not as excess of any insurance available to the City.

Upon request by the City, the Contractor shall furnish the City with a certificate of insurance (in a form satisfactory to the City, in its sole discretion) confirming that the Contractor has in place the required insurance.

If applicable, and based upon the operations of the sub-consultant, sections 16.1 a & b. shall apply in the same manner to any sub-contractor as it would to the Contractor. Further, it is the Contractor's

obligation to ensure that the sub-contractor is aware of these obligations. Upon request, the Contractor shall provide to the City confirmation of the sub-contractor's insurance.

16.2 The Contractor shall furnish the City with a certificate of insurance (in a form satisfactory to the City, in its sole discretion) confirming that the Contractor has in place the above-mentioned insurance policies. The certificate of insurance shall also contain an endorsement to the effect that such insurance policies shall not be altered, cancelled or allowed to expire without thirty (30) days advance written notice to the City.

17. DEFAULT AND TERMINATION

17.1 Any of the following shall be considered to be an "Act of Default" by the Contractor:

(a) Failure to comply with the terms and conditions of the Contract, and such failure is not remedied within ten (10) calendar days after written notice of such failure by the City.

(b) Breach of Section 11 (Privacy) or Section 12 (Confidentiality).

(c) Assignment, transfer, conveyance, sublet, or disposition of the Contract or the Contractor's right, title, or interest therein to any person without the prior written consent of the City.

(d) Failure to comply with all federal, provincial and municipal laws and regulations applicable to the Work.

(e) Commencement of any proceeding under bankruptcy, creditor protection or similar law in respect of the Contractor, or appointment of a receiver, receiver-manager or liquidator in respect of the Contractor.

17.2 Where an Act of Default occurs, the City reserves the right, in its sole discretion and upon providing written notice to the Contractor, to immediately invoke any applicable bond(s) and/or terminate the Contract.

17.3 The City reserves the right, in its sole discretion, to terminate the Contract, in whole or in part, without cause, upon providing thirty (30) days prior written notice to the Contractor.

17.4 Upon receipt of a notice of termination hereunder, the Contractor shall immediately cease performance of the Work (unless otherwise directed by the City in writing) and promptly remove all Contractor and Subcontractor equipment from the City's property.

17.5. In the event of termination hereunder, the City shall not incur any liability whatsoever to the Contractor except for payment for the goods and/or services that have been satisfactorily delivered or performed by the Contractor up to the effective date of termination.

18. FORCE MAJEURE

Neither the City nor the Contractor shall be liable for default or delay in the performance of obligations under the Contract due to causes beyond the reasonable control of (and not due to the fault or negligence of) the party affected, including, without limitation, natural disasters, plagues, epidemics, war, insurgence, terrorism, and power outages. The Contractor shall give the City prompt written notice when any such cause has or appears likely to delay deliveries and/or performance of the Work, and shall take appropriate action to avoid or minimize such delay. If any such default or delay threatens to impair the Contractor's ability to meet delivery requirements for materials, supplies and/or services, the City shall have the right,

without any liability to the Contractor, to terminate the portion or portions of the Contract so affected upon written notice to the Contractor.

19. TRANSPORTATION AND DELIVERY

All prices shall include transportation and delivery charges and customs duties fully prepaid by the Contractor to any specified destination within the corporate limits of the City. The F.O.B. point shall be the destination specified in the Contract.

20. PURCHASE ORDER/INVOICES

The Purchase Order number shall appear on all documentation relating to the Contract, including, but not limited to, invoices and delivery/packing slips. Invoices that do not include the applicable Purchase Order number, item number and order description shall not be processed, and shall be returned to the Contractor until the appropriate information is provided. All invoices shall be forwarded to Accounts Payable, City of Markham, 101 City Centre Boulevard, Markham, Ontario.

21. PAYMENT

21.1 Unless otherwise specified in the Contract, all prices shall be in Canadian dollars and payment shall be made to the Contractor twenty-eight (28) calendar days after Receipt of Proper Invoice by the City. Where applicable, taxes shall be shown separately.

21.2 The Contractor shall invoice the City monthly on a time and expense basis, charging the goods/services/actual hours/disbursements, as applicable, incurred each month up to the Contract amount. If the Work involves a fixed fee contract, the fees payable shall not exceed the fixed fee amount, unless the City has provided prior written approval. If the Work involves progress payments, the invoice schedule shall be based on the Work schedule and milestones as outlined in the Contract. The Contractor, when invoicing for expenses, shall provide receipt for those expenses.

21.3 Where there is a question of non-performance by the Contractor, the disputed portion of the invoice may be withheld by the City. In the event that the City is entitled to a discount for prompt payment, the withholding of payment as provided herein shall not deprive the City from taking such discount.

21.4 In the event that an invoice amount is determined to be in error by the City (or the City's payment certifier) after payment is made to the Contractor, the City shall notify the Contractor in writing, and the Contractor shall make a correction adjustment on the next invoice.

21.4 For the purposes of this Section 21, "**Proper Invoice**" means a written bill or other request for payment in respect of Work supplied under the Contract, which shall contain the following information:

(a) Contractor's name and address, and name, title, telephone number and mailing address of the person to whom payment is to be sent.
(b) The date of the Proper Invoice and the period during which the Work was supplied. Payment shall be made only for Work supplied prior to the date of the Proper Invoice.
(c) Information identifying the authority, in the Contract or otherwise, under which the Work was supplied (Contract number, or as otherwise required by the Contract).
(d) A description, including quantity where appropriate, of the Work that was supplied.
(e) The amount payable for the Work that was supplied, and the payment terms (sub-totals, totals, holdback and taxes to be separately shown on invoice).
(f) Contractor HST Registration Number.
(g) City of Markham Purchase Order Number.
(h) City of Markham Project Manager / Department.

21.5 For the purposes of this Section 21, "**Receipt of Proper Invoice**" means the date that a Proper Invoice is received by the City, which date shall be deemed to be: (a) if sent by mail or personal delivery, the date received at the address specified by the Contract, provided that if such day is not a Business Day, then receipt shall be deemed to be the Business Day next following such day ("Delivery Date"); and (b) if sent by electronic communication, the date of transmission, provided that if such day is not a Business Day or if it is received after the end of normal business hours on the date of transmission, then it shall be deemed to have been received at the opening of business on the first Business Day next following the transmission ("Transmission Date"); and (c) the later of the date of the Proper Invoice and the Delivery Date or Transmission Date (as applicable).

22. SALES TAX

The City is subject to payment of sales and excise taxes imposed by the Federal and Provincial Governments. Should there be any approved variation in any tax or duty imposed by the Province of Ontario or the Government of Canada which becomes directly applicable to the goods/services to be purchased during the Contract Term, the Contractor and the City mutually agree to allow the appropriate increase or decrease in the prices as of the date they become effective. The onus is on the Contractor to bring to the City's attention any such changes. All Provincial and Federal taxes shall be shown separately on the applicable invoice.

23. ACCESSIBILITY STANDARDS FOR CUSTOMER SERVICE

23.1 In accordance with Ontario Regulation 429/07, Accessibility Standards for Customer Service Sect. 6, every provider of goods and services shall ensure that every person who deals with members of the public or participates in the developing of the service providers' policies, practices and procedures governing the provision of goods and services to members of the public, shall be trained on the following:

(a) How to interact and communicate with persons with various types of disability.
(b) How to interact with persons with disabilities who use assistive devices or require the assistance of a guide animal, or a support person.
(c) How to use equipment that is available on the premises that may help in the provision of goods or services.
(d) What to do if a person with a particular type of disability is having difficulty accessing the provider's goods or services.
(e) Information on the policies, practices and procedures governing the provision of goods and services to people with disabilities.

23.2 Contractors that provide customer service on behalf of the City shall meet the requirements of Ontario Regulation 429/07 with regard to training. A document describing the training policy, a summary of the contents of the training and details of training dates and attendees shall be submitted to the City upon request. The following website may be referenced for the purposes of training: http://www.mcss.gov.on.ca/mcss/serve-ability/splash.html.

24. CONSTRUCTION ACT

Where the *Construction Act*, R.S.O. 1990, c. C.30, as amended, (the "Act") and the regulations thereto (the "Regulations") apply to the Contract, the following sections shall be applicable unless otherwise specified in the Contract Documents:

(a) Labour and Material Payment Bond. Upon Contract Award, the Contractor shall provide the City with a labour and material payment bond, in the form prescribed by the Regulations, that,
(i) is of an insurer licensed under the *Insurance Act* to write surety and fidelity insurance;

(ii) has a coverage limit of at least 50 per cent of the Bid Price, or such other percentage of the Bid Price as may be prescribed; and

(iii) (extends protection to subcontractors and persons supplying labour or materials to the improvement.

The labour and material bond may set out the claims process applicable in respect of the bond.

(b) Performance Bond. Upon Contract Award, the Contractor shall provide the City with a performance bond, in form prescribed by he Regulations, that,

(i) is of an insurer licensed under the *Insurance Act* to write surety and fidelity insurance; and

(ii) has a coverage limit of at least 50 per cent of the Bid Price, or such other percentage of the Bid Price as may be prescribed.

The performance bond may set out the claims process applicable in respect of the bond.

(c) Basic Holdback. The City shall retain a holdback ("Basic Holdback") equal to 10 per cent of the price of the services or materials as they are actually supplied under the Contract until all liens that may be claimed against the Basic Holdback have expired or been satisfied, discharged or otherwise provided for in accordance with the Act.

(d) Holdback for Finishing Work. Where the Contract is certified to be substantially performed by the City, but services or materials remain to be supplied to complete the Work, the City shall retain, from the date of the Certificate of Substantial Performance a separate holdback ("Finishing Holdback") equal to 10 per cent of the price of the remaining services or materials as they are actually supplied under the Contract, until all liens that may be claimed against the holdback have expired or been satisfied, discharged or otherwise provided for in accordance with the Act.

(e) Contract Substantially Performed.

(i) When the Contract has been substantially performed (in accordance with the Act), the Contractor shall apply to the City to certify substantial performance. A "Statutory Declaration" (in a form acceptable by the City, declaring that that all accounts for labour, subcontracts, products, services, and construction machinery and equipment which have been incurred by the Contractor in the performance of the Work have been paid) and a Workplace Safety and Insurance Board "Certificate of Clearance" (in a form acceptable by the City) shall accompany the application.

(ii) If the City is in agreement that the Work has been substantially performed, a "Certificate of Substantial Performance" (in the form required by the Regulations) shall be signed and issued to the Contractor within seven (7) days of signing.

(iii) The Contractor shall publish a copy of the "Certificate of Substantial Performance" in a construction trade newspaper (as that term is defined in the Regulations), and provide suitable evidence of the publication to the City.

(iv) The City shall retain, from the date of the Certificate of Substantial Performance, a Finishing Holdback equal to 10 per cent of the price of the services or materials that remain to be supplied to complete the Work.

(f) Contract Deemed Completed. When the Contract is deemed to be completed (in accordance with the Act), the Contractor shall apply to the City to certify completion. A "Statutory Declaration" (in a form acceptable by the City, declaring that that all accounts for labour, subcontracts, products, services, and construction machinery and equipment which have been incurred by the Contractor in the performance of the Work have been paid) and a Workplace Safety and Insurance Board "Certificate of Clearance" (in a form acceptable by the City) shall accompany the application.

(g) Payment of Basic Holdback. Subject to subsection 24(i) below, upon certification of substantial performance of the Contract by the City and expiration of the sixty (60) day period following publication of the Certificate of Substantial Performance, and provided there are no lien claims (or all lien claims have been satisfied, discharged or otherwise provided in accordance with the Act), the City shall make payment of the Basic Holdback, so as to discharge all claims in respect of that holdback.

(h) Payment of Finishing Holdback. Subject to subsection 24(i) below, upon certification of completion of the Contract by the City and expiration of the sixty (60) day period following the date of certification, and provided there are no lien claims (or all lien claims have been satisfied, discharged or otherwise provided for in accordance with the Act), the City shall make payment of the Finishing Holdback, so as to discharge all claims in respect of that holdback.

(i) Non-payment of Holdback. The City may refuse to pay some or all of the Basic Holdback or Finishing Holdback amount the City is required to pay, if,

(i) the City publishes a notice in the prescribed form specifying the amount of the holdback that the City refuses to pay, and the notice is published in the manner set out in the Regulations no later than 40 days after the date on which,

(A) the applicable certification or declaration of substantial performance is published, or
(B) if no certification or declaration of substantial performance is published, the date on which the Contract is completed, abandoned or terminated; and

(ii) the City notifies, in accordance with the Regulations, if any, the Contractor of the publication of the notice.

(j) Contract Termination. In the event that the Contract is terminated, for any reason, the Contractor shall publish, in the manner set out in the Regulations, a notice of the termination in the prescribed form.

(k) Adjudication. Either the City or the Contractor may refer to adjudication a dispute with the other party to the Contract, in accordance with the adjudication procedure set out in the *Construction Act*, R.S.O. 1990, c. C.30, and *O.Reg.306/18*.

25. GENERAL INSTRUCTIONS FOR WORK ON CITY PROPERTY

25.1 The Contractor shall keep one copy of the Contract at the Work site.

25.2 The Contractor shall coordinate all Work with the City's representatives to ensure minimum disruption of public service and inconvenience to occupants of and visitors to public buildings.

25.3 The Contractor shall ensure that there is no interference with the use of and safe passage to and from public buildings, public sidewalks and roads without the prior written approval of the City. Material shall not be stored in or obstruct roadways, sidewalks or passageways without the prior written approval of the City. The Contractor shall not interfere with or damage privately or publicly-owned adjacent property.

25.4 Prior to and during the performance of the Work, the Contractor shall establish the location of existing utility lines, and shall ensure that same are protected and maintained.

25.5 Where alterations are necessary, the Contractor shall ensure that new and old Work shall be joined, cut, removed, patched, repaired or finished in a professional and workmanlike manner to the satisfaction of the City.

25.6 The Contractor shall provide and maintain temporary facilities and services required to carry out the Work. All such temporary facilities and services shall be removed by the Contractor upon completion of the Work.

25.7 The Contractor shall only use new products unless otherwise specified in the Contract. The Contractor shall deliver and store material and equipment to manufacturers' instructions, with manufacturers' labels and seals intact. When material or equipment is specified by standard or performance specifications, the Contractor shall, upon request by the City, obtain from the manufacturer an independent testing laboratory report, stating that the material or equipment meets or exceeds specified requirements.

25.8 The Contractor shall keep the Work site clean and hazard-free throughout the Work period, and shall provide for proper storage, removal and disposal of garbage. All debris shall be transported to an authorized dump, waste treatment site or recycling facility by the Contractor, and disposed of in accordance with applicable by-laws, laws and regulations (all at the Contractor's expense).

25.9 The Contractor shall make such explorations and probes as are necessary to ascertain any protective measures required before proceeding with demolition and removal.

25.10 The Contractor shall protect existing structures, furnishings and persons by providing and maintaining adequate temporary protective coverings during the performance of the Work. The Contractor shall be responsible for any injury to persons, damage to existing structures and furnishings as a result of the Work. Any damage occurring as a result of the Work shall be repaired or replaced by the Contractor at the Contractor's expense and to the satisfaction of the City (in its sole discretion).

25.11 The Contractor shall provide and maintain adequate fire protection in accordance with the regulations and requirements of the City's Fire and Emergency Services Department.

25.12 The Contractor shall provide and arrange for traffic control where necessary for delivery of materials, removal of garbage, or any other activity related to the Work as required by applicable by-laws, laws and regulations.

25.13 The Contractor shall take the necessary precautions to keep dust, dirt and noise to an acceptable level, as directed by the City or as required by applicable by-laws, laws and regulations.

25.14 The Contractor shall provide suitable protection for all entrances and exit ways into all buildings, all fresh air intakes, telephone, hydro, and mechanical rooms, elevators shafts and all plumbing, against dust, dirt, water and fumes.

25.15 The Contractor shall provide canvas tarps from ground to roof for all entrance and exit ways, floors, walls and all standing fixtures against spillage of materials and/or damage during the Work period.

25.16 The Contractor shall not store materials or use a truck or other equipment in a manner which would load the structure beyond its design capacity.

25.17 The Contractor shall ensure that all persons employed or engaged by the Contractor to perform the Work use designated existing sanitary facilities and not undress, use profane language or make coarse gestures while on City property.

25.18 The Contractor shall be responsible for and take every precaution reasonable in the circumstances for the protection of all workers associated with the Work (whether employed by the Contractor, the City or a third party), and for the protection of all other persons. The Contractor shall ensure that all persons employed or engaged by the Contractor to perform the Work are supervised by a Competent Person and trained to perform the specific tasks of their jobs in a healthy and safe manner, and that documentation to support such training remains current during the Work period.

25.19 The Contractor shall ensure that all tools, equipment and machinery brought to the Work site shall be used, stored and maintained properly in accordance with applicable laws, regulations and industry standards.

25.20 The Contractor shall ensure that all materials brought to the Work site shall be used, stored, handled, transported and disposed of properly in accordance with applicable laws, regulations and industry standards. All materials delivered to the City or used in conjunction with the Work shall have applicable Material Safety Data Sheets in accordance with Workplace Hazardous Materials Information Systems ("WHMIS") regulations in the Province of Ontario. Applicable Material Safety Data Sheets shall be available for inspection at the Work site at all times while such materials are present.

25.21 The Contractor shall notify the City of all hazardous materials delivered to the City or used in conjunction with the Work, including without limitation, all products controlled federally and/or provincially under WHMIS or Transportation of Dangerous Goods regulations, and all designated substances as defined in the *Occupational Health and Safety Act*, R.S.O. 1990, c. O.1 and Regulations.

Attachment B

THE CORPORATION OF THE CITY OF MARKHAM

City Health and Safety Documents

The City of Markham
Health and Safety Core Policy

28 April 2023

The City's strategic plan, "***Building Markham's Future Together***" states that "We will foster a safe and healthy work environment". The City of Markham (the City) holds employee physical and psychological health, safety and wellbeing as integral to the success of the Municipality as a whole. Therefore, the City is committed to maintaining a healthy and safe workplace by engaging all employees in enhancing their well-being and preventing occupational injury and illness through timely and effective hazard recognition, assessment and control activities.

Workplace injuries and illnesses are preventable. To achieve the goal of an injury and illness free workplace, the active participation and support of the Chief Administrative Officer, Commissioners, Directors, Managers, Supervisors, Employees and Unions is required. To that end, the City maintains a Health and Safety Management System (HSMS) to achieve the following objectives:

- Prevention of occupational injuries and illnesses, including less visible injuries and illnesses such as those that relate to psychological health and ergonomics.
- Recognition, assessment and control of health and safety hazards including steps to address and reasonably control the risk of violence and harassment in the workplace;
- Development and communication of health and safety policies and programs (including standards, procedures, guidelines and instructions) that support the safety, psychological and physical health and wellbeing of employees;
- Provision of training and instruction to staff in applicable legislation, safe work procedures, and hazard identification and reporting;
- Identification, communication and support of the health and safety rights, roles and responsibilities of all employees;
- Awareness by all employees of their responsibility to work safely and to report all hazardous conditions in a timely manner;
- Prohibition of reprisal against employees for exercising their legislated rights;
- Appointment of competent persons as managers and supervisors who are held accountable for the health and safety of all employees under their supervision;
- Support of managers and supervisors in fulfilling their health and safety responsibilities;
- Confirmation that the City's expectations regarding health and safety are communicated to and met by contractors, subcontractors and suppliers while working at City facilities and worksites; and
- Annual review of the HSMS, including this policy, health and safety incident statistics and other relevant information, in order to ensure system sustainability as well as effectiveness of the HSMS in preventing workplace injuries and illnesses.

In order for the City's HSMS to be effective, staff must work together at all levels of the organization to ensure that the intent of this policy is fulfilled. Commitment to psychological health and wellness and the prevention of injuries and illnesses through a robust internal responsibility system, in which all employees work together to identify and eliminate or control hazards, must form an essential part of this organization's culture and each employee's day-to-day activities.

Andy Taylor
Chief Administrative Officer

Trinela Cane Commissioner Corporate Services	Bryan Frois Sr. Manager Executive Operations, Strategic Initiatives & Communications	Adam Grant Fire Chief	Arvin Prasad Commissioner Development Services	Claudia Storto City Solicitor & Director of People Services	Eddy Wu Acting Commissioner Community Services

Sumon Archarjee Chief Information Officer	Frank Clarizio Director Engineering	Mary Creighton Director Recreation Services	Stephanie DiPerna Director Building Standards
Chris Rickett Director Economic Growth, Culture & Entrepreneurship	Giulio Cescato Director Planning & Urban Design	Kimberley Kitteringham Director Legislative Services	Alice Lam Director Operations

Mark Visser Acting Treasurer	Graham Seaman Director Sustainability & Asset Management	Eddy Wu Director Environmental Services

PROJECT PRE-START
HEALTH & SAFETY MEETING CHECKLIST

During the pre-start meeting held on _____, the following City of Markham health & safety expectations were communicated to those present.
"Constructor" means any of constructor, contractor or general contractor for the purpose of this document.

	Green sections are to be completed by all Contractors and Constructors
	Yellow sections are to be completed by Constructors only
	Blue sections are to be completed by Contractors only

Scope of work, location & contract number:	Estimated duration of project: (from – to)

Constructor for this Project OR Contractor for this project:

☐ The Contractor has submitted a job safety plan (JSP) for the work to be performed

☐ There will be sub-contractors / trades working on this project (list): _____

_____

_____

☐ All pertinent information discussed at this meeting will be shared by the Constructor/Contractor with all sub-contractors / trades and others present at the worksite as well as the JSP.

Inspectors, Engineers, Architects that will be present onsite during the project: (list)

☐ City's Contractor Pre- start Submissions Checklist has been completed and submitted along with required documentation as described on the checklist

☐ The Constructor for the project, named above, shall ensure that all health and safety legislative requirements are met for this project including but not limited to the Occupational Health and Safety Act and Regulation 213.

Number of workers that will be present on the project: _____ per shift _____ over the duration of the project

Site Supervisor / Foreperson: _____ (5 or more workers present).

☐ The supervisor named shall comply with all requirements specified in Regulation 213

☐ The supervisor's weekly inspection is documented

Health and Safety Representatives: (list name of representative and employer)

☐ All required permits have been obtained and a copy provided to the City Project Manager for this project including:

☐ Municipal Consent (Utilities) ☐ Occupancy Permits (all other)

Check All High Risk Tasks that will be performed as a part of the scope of work for this project:

☐ Confined space entry ☐ Work in roadways ☐ Creating excavations / trenches
☐ Work in excavations / trenches ☐ Work at heights >3M
☐ Work at heights < 3M:

Ladder styles to be used: ☐ straight ☐ extension ☐ step ☐ platform ladder ☐ none

☐ Operation of motor vehicle onsite: list: _____

☐ Operation of construction or other heavy equipment (such as cranes, forklift trucks) (list: _____
_____)

☐ Lockout - Tagout ☐ Hot Work – if checked, City HW Permits to be used ☐ Yes or ☐ No, for the following reason: _____

☐ Work with WHMIS Hazardous Products or other Hazardous Chemical: (list) _____
Note: if a hazardous product will be brought on site, the SDS must be provided to the Project Manager

☐ Other high risk task(s) or activities (list / describe: _____

☐ Energized Electrical Work<50Volts ☐ Energized Electrical Work 50 Volts to 600Volts ☐ Energized Electrical Work >600Volts

If energized electrical work is being performed, justification as follows:

☐ de-energizing introduces additional or increased hazard

☐ task being performed is not feasible in a de-energized state (due to equipment design or operational limitations)

☐ for energized electrical work <50V, there will be no increased exposure to electrical burns or explosion due to electric arcs

If energized electrical work is being performed:

☐ an *energized electrical work permit* has been completed for the work or appropriate written safe work instructions have been provided;

☐ PPE will be provided to and used by the worker(s) performing the energized electrical work

Designated Substance Assessment is complete and all designated substance present at the worksite have been communicated to the contractor by the City (or designate)	☐	Designated Substances on site are (list):
The contractor is qualified to work on / near the identified designated substances	☐	
All hazards that relate to this project have been identified, communicated to workers and controlled appropriately (engineering, safe work instructions, orientation training, PPE, etc.)	☐	Confirmed by:

The Site Foreman/Supervisor will ensure that any worker that does not appear to be in a "fit to work" conditions, is not permitted to operate equipment or otherwise perform work. This may be due to use of a substance such as alcohol, marijuana, medication or may be due to fatigue or medical condition.	☐	
An emergency plan has been developed to address all potential emergencies that could occur on site, including fire, explosion, medical, etc. If emergency exits or routes will be blocked, a contingency plan or route is in place. Same for file panels, sprinklers, extinguishers.	☐ ☐	
A current copy of the City of Markham Health & Safety Policy has been forwarded to the Contractor and the Contractor has read and understands it.	☐	
The Contractor understands his/her responsibilities and accountabilities under federal and provincial health and safety and criminal law. The contractor is in no way absolved from these legal responsibilities regardless of any submissions to the City of Markham or any discussions. The purpose of the pre-start submissions checklist and this checklist is to communicate the City's expectations regarding contractor safety. The City does not take responsibility for evaluating the quality of safety training provided by the Contractor or Subcontractor to their employees; that is the responsibility of the Contractor or Subcontractor. The City seeks to confirm that training is in place for the hazards associated with this project and job site.	☐ ☐ ☐	
The Contractor shall ensure that all federal and provincial laws are followed by supervisors and workers working on site, whether they work for the contractor, subcontractor or other. If the City representative (Project Manager or Senior Health & Safety Specialist) observes that health and safety rules and legal requirements are not being upheld or other hazardous condition exist at the worksite that could result in serious injury, the City representative may stop the work without penalty. ***Work shall not continue until the hazard is corrected.***	☐ ☐ ☐	.
Qualified 1st Aid providers will be on site at all times during work	☐	

In the event of an incident / accident / near miss – a City of Markham accident form will be completed and forwarded to the City Project Manager within 24 hours of the incident. It is understood by all parties that a violent incident (as defined in the Occupational Health and Safety Act – including threat, actual or attempted violent act) must be reported on accident form and forwarded as described above. The City Project Manager & Senior Health & Safety Specialist shall be notified immediately if there is a critical injury, exposure or other event that causes the Ministry of Labour (MOL) to attend (except routine inspection by MOL). A copy of any MOL field inspection report or other report shall be provided to the City by the Constructor or Contractor, including orders issued to the Constructor, Contractor or Sub-contractor. The report copy shall be provided to the City within 24 hours of issue; a copy of any related notice of compliance shall be provided to the City by the Constructor or Contractor within 24 hours of submission to MOL (or due date according to orders issued if NOC is not submitted).	☐ ☐ ☐ ☐	
The contractor / constructor has implemented a program to meet legislative requirements with respect to the prevention of violence and harassment in the workplace, including a written policy, violence risk assessment(s) and worker training. The Constructor, Contractor and any Sub-contractors have completed Health and Safety General Awareness training for Supervisors and Workers in accordance with Regulation 297. The Constructor, Contractor and any Sub-contractors have implemented and enforce a policy to ensure employees who are present on the site are free of impairment and are fit for work at all times while at work. This policy includes clear direction that: • no employee may use or be under the adverse influence of alcohol and/or drugs whether legal, illegal, prescription or over-the-counter. This includes but is not limited to recreationally used cannabis. • no employee shall use, possess, distribute or sell controlled substances, including but not limited to cannabis, alcohol or illegal drugs.	☐ ☐ ☐	

Form 1000 - "Registration of Constructors and Employers Engaged in Construction" completed by City of Markham, contractors and subcontractors to be posted at the project. The Constructor or General Contractor has been provided a copy for each employer present on the site. "Notice of Project" completed and filed with the local MOL Office & to be posted at the project	☐ ☐	
The Constructor / Contractor will ensure that cell phones and other hand held electronic devices are not used by workers when driving or operating vehicle, machinery or equipment while onsite.	☐	
The General Contractor / Constructor for this project has been provided with a copy of the pre-start safety submissions checklist for all inspectors or other individuals (other than City employees) who will be present on site. It is understood by all parties in attendance at this meeting that the constructor names above is in charge of the worksite and responsible for the ongoing safety of all those present on the site. As such, all persons present at the site must comply with the safety requirements stipulated by the constructor. The City shall ensure that any City employee attending this worksite has received appropriate safety training to attend the site and perform the tasks assigned to them. All City employees attending the site will be advised by the City project manager that the Constructor names above is in charge of the site. All City employees are instructed as to their legal health and safety responsibilities and they shall comply. If the Constructor observes non-compliance on the part of City staff, the Constructor is to reporting it to the City as soon as possible (City Project Manager, Senior Health and Safety Specialist or other City Contact).	☐ ☐ ☐ ☐	
The Corporation of the City of Markham reserves the right to audit the worksite(s) included in this project for compliance with health and safety laws and industry standards. Those persons who may attend the site(s) include the Senior Health and Safety Specialist or designate.	☐	

Other Discussion:			
Representative(s) for the Contractor, Sub-Contractor: (use additional pages if required)			
Name	**Signature**	**Company**	**Date**
City of Markham Project Manager: (use additional pages if required)			
		Corporation of the City of Markham	
		Corporation of the City of Markham	
		Corporation of the City of Markham	
Name	**Signature**	**Company**	**Date**

Distribution: Original to be retained in project file, Copies to contractor, purchasing department, facility manager and Senior Health & Safety Specialist.

Contract / Project No.:
Project Description:
City of Markham Representative for this project:

PART I: GENERAL LEGISLATIVE COMPLIANCE:

On behalf of _____ (the Company), I confirm that the following
(insert name of company)

information is true and correct: (*sign at the bottom of this document to confirm*)

The Company has read and understands the City of Markham's General Terms & Conditions. The Company has received a copy of the City of Markham's (the City) Health & Safety Policy and understands the City's expectations regarding health and safety as it relates to performance of work on behalf of the City including work on this project. These expectations are described (but not limited to) the City Contractor Safety information package.

The Company will ensure that all persons brought on site by them, including their employees and sub-contractors, abide by the City's health and safety rules as well as all applicable legislative requirements, including the Ontario Occupational Health and Safety Act and Regulations (OHSA) and the Workplace Safety and Insurance Act and Regulations (WSIA).

The Company has been provided a list of all designated substances and other hazardous materials present at the work site.

The Company has assessed the risk to their workers of opioid overdose/poisoning in the workplace, including when working at sites; based on this assessment the Company shall ensure compliance with OHSA (Section 25.2) including provision of a naloxone kit and trained first aid providers as required. The Company shall ensure same compliance with OHSA, Section 25.2 for any sub-contractors engaged by the Company in the performance of this work.

If work in confined space(s) is being performed, the Company understands that they must complete either the City's 'Coordination Document' (for multiple employer entries) or the City's 'Single Contractor Acknowledgement of Compliance' form, provided a copy of the completed form to the City and must meet or exceed the requirements described in the City's Confined Space Program.

If hot work is being performed, the Company understands that they must meet or exceed the requirements described in the City's Hot Work Program, including completion and timely submission of hot work permit(s) to the City Project Manager.

If electrical work is being performed, the Company understands that they must meet or exceed the requirements of the City's Electrical Safety Program. This includes Lockout-Tagout as required.

The Company has endeavored to ensure that ergonomic aspects of the tasks performed have been considered in order to prevent or reduce ergonomic injuries in the workplace.

The Company understands that this document and all associated submissions do not waive their legal obligations under the OHSA and Regulations, Workplace Safety & Insurance Act (WSIA) and Regulations, or any other legislation.

The Company will ensure that all supervisors (as defined in the Act), workers and sub-contractors fulfill their legal responsibilities per the Act, WSIA and Regulations and other applicable legislation and that supervisors understand and will comply with the following City expectations:

- A job hazard analysis (JHA) has been completed and a job safety plan (JSP) developed in relation to this project and the scope of work; a City Contractor JHA/JSP form or equivalent shall be used to document this;
- Onsite supervisor will ensure that a daily inspection of the work site is completed and a record of those inspections is made available to the City representative on request;
- Onsite Supervisor will engage all workers on site in regular safety talks and make available a record of attendance on request by the City representative;
- Onsite supervisor will ensure all workers work in compliance with the Act & Regulations and applicable City policies and procedures;
- Onsite supervisor will ensure that a City 'Contractor Report of Accident / Incident' is completed for any accidents, incidents, threats or acts of violence, damage to property or other hazardous act that occurs during the project work; the completed report shall be forwarded to the City Representative for the project within 24 hours of the incident. In the event of a critical injury or fatality, the onsite supervisor shall immediately advise the City Representative for the project and the Senior Health, Safety & Wellness Specialist (Nancy Myles, 416-358-6293)

The Company has forwarded the records checked (✔) in Part II, Section 1 and will make available the records checked (✔) in Part II, Section 2.

PART II: TRAINING & DOCUMENTATION SUBMISSION REQUIREMENTS:

Complete all parts of the following 2 section checklist.

For items listed in "Section 1: Training & Health and Safety Compliance", check all training that apply to the work being performed. Training that is mandatory for all workers in Ontario is pre-checked. For all items checked including mandatory training, attach proof of training for employees who will perform work at a City workplace or worksite. Training matrices may be submitted as proof of training; they must indicate: worker name, type of training, date of training and training expiry date.

For items listed in "Section 2: Records to be made available on request", check all that apply to the work being performed and ensure they available when requested by City Representative.

SECTION 1: TRAINING & HEALTH AND SAFETY COMPLIANCE **CONFIRMATION OF TRAINING**	To be Submitted
WHMIS General (all onsite workers)	✔
WHMIS Specific (all onsite workers)	✔
Basic Safety Awareness Training for Workers (per Regulation 297)	✔
Basic Safety Awareness Training for Supervisors (per Regulation 297)	✔
Transportation of Dangerous Goods (if products listed in TDG Regulations are transported to / within / from the City of Markham)	
Confined Space for all workers working in / entering areas identified as confined spaces	
Work at Heights (per Regulation 297)	
Aerial Work Platforms / Elevated Working Platforms	
Ladder Safety	
Scaffold Safety	
Designated Substances – Handling, Use, Storage, Protective Measures & Disposal of applicable Designated Substances or other hazardous materials (PCB's, mould, etc.)	
Driver Safety	
Construction and other Heavy Equipment	
Cranes / Hoists / Rigging	
Mobile Equipment, Machinery - Powered Industrial Vehicles (forklift truck, etc.)	
Specific Vehicle / Equipment Training not listed above	
1st Aid / CPR for all 1st Aid Providers onsite	✔
Traffic Control / Traffic Protection / Work in Roadways / Book 7	
Trenching	
Lock out / Tag out	
Electrical Safety / Electrical Certification or Licensing	
Hot Work	
Hazardous waste disposal specific to the hazardous material being disposed of	
Safe Outdoor Work in Seasonal Weather (summer / winter as appropriate)	
Health & safety program, policy and procedures review for your company	
Basic Ergonomic Principles for Safe performance of work	
Supervisor Due Diligence (for all site supervisors)	
CONFIRMATION OF HEALTH AND SAFETY LEGISLATIVE COMPLIANCE:	
Documentation indicating: • Number of WSIB lost work day claims this year (to date) and the past 2 years • Number of critical injuries this year (to date) and the past 2 years • Number of Ministry of Labour, Immigration, Training & Skills Development (MLITSD) field visits and inspections (this year, to date and past 2 years) • Number of MLITSD Investigations (this year, to date and past 2 years) • Number of MLITSD orders issued this year (to date) and the past 2 years (this year, to date and past 2 years)	
Current WSIB Clearance Certificate (Schedule 1) or Letter of Good Standing (Schedule 2)	
Form 1000 - "Registration of Constructors and Employers Engaged in Construction" completed by City of Markham, contractors and subcontractors (also to be posted at the project) (if applicable)	
"Notice of Project" completed and filed with the local MLITSD Office (also to be posted at the project) (if applicable)	
List of all Controlled Products / Designated Substances / Other Hazardous Materials brought onsite (include a description of their use in the project) – SDS for each must be available on project site.	

Company Health & Safety Policy Statement and Program Extract / Summary	
SECTION 2: RECORDS TO BE MADE AVAILABLE ON REQUEST	
All applicable licenses, certificates and training records pertaining to qualification to perform the work but not listed above for each worker on site (includes: driver abstracts and licences, electrical and millwrights licensing , steam fitting, welder CWB tickets, supervisor training records etc.)	
Inspection, preventive maintenance and repair records for all machinery, equipment and vehicles brought on site. (including rented / leased equipment)	
Job Specific Hazard Training & General Safety Training records not listed above for each worker	
All pertinent Health & Safety Procedures for the scope of work.	
Assessment(s) of the potential for violence or harassment in the workplace, related policy and records of employee training for the prevention of violence and harassment.	

Distribution: Original to be retained in project file, copy to facility manager if applicable and Senior Health & Safety Specialist if requested.

Representative for the Contractor:

The above information is true and correct. I have authority to represent the Company named below for the purpose of completing this document for the project described here.

Name	Signature	Company	Date

Contractors must submit a Job Safety Plan (JSP) for the work they will perform on behalf of the City. The JSP must be based on a thorough assessment of the actual and potential hazards that pose a risk to health and safety of all those present including the Contractor's workers, City employees and members of the public. *A copy of the JSP must be submitted to the City Project Manager before the work is started. If the work or hazards change, a new JSP must be submitted*.

This form may be used for the purpose of documenting the JSP. If another form is to be used, it must be pre-approved by the City Project Manager or Senior Health & Safety Specialist. The JSP will be used by the City's Project Manager to monitor the work on site.

PART A: TO BE COMPLETED BY THE ***CITY PROJECT MANAGER*** FOR THIS PROJECT/WORK.		
City Project Manager Name	Cell Phone	Date
Contract/PO/Release No.	Contractor Name	
Expected Duration of Project	Location of Project	
Description of Project		

Indicate if any of the following ***designated substances*** are present at the worksite. Review the City's Designated Substance Assessment Report for the building / site in order to identify all designated substances present. *Circle all that are present*

Arsenic Asbestos Benzene Lead Mercury Silica

Description: (for all those circled, describe the specific location, condition and if it is expected that it will be disturbed or otherwise impact the work or workers present for the project)

_____
_____
_____

☐ Additional pages are attached.

List all known / potential hazards at the worksite, that are present before the project starts or will be introduced independent of the Contractor's work but that that may impact the work / workers present for the project. (For further guidance refer to the "Contractor Job Hazard Assessment and Safety Plan" guide)

_____
_____
_____
_____
_____
_____
_____

☐ Additional pages are attached.

☐ Pre-job / pre-start walk-thru of the jobsite has been conducted with the Contractor

☐ The City Project Manager will ensure that City staff who work in or attend the worksite are trained and competent to be in attendance in the area.

PART B: TO BE COMPLETED BY THE ***CONTRACTOR'S REPRESENTATIVE, WHO WILL ACT AS SITE SUPERVISOR*,*** OVERSEEING THE WORK AND WILL BE ONSITE FOR THE DURATION OF THE PROJECT – OR DESIGNATE. (*SUPERVISOR AS DEFINED BY THE OCCUPATIONAL HEALTH & SAFETY ACT).		
Prepared by:	Cell Phone:	Date:
Primary Contractor Name:		
Contract/ PO / Release No.	Expected Duration of Project	
Location of Project		
Brief Description of Project		
Required Permits: (list all required permits and frequency of completion – a copy of all required permits must be provided to the City Project Manager on a timely basis)		

Site Supervision:

☐ The Contractor shall ensure that all federal and provincial laws are followed by supervisors and workers working on site, whether they work for the contractor, subcontractor or other.

List all Competent Persons* who will be supervising* any aspect of work on the project:
("Competent Person" and "Supervisor" as defined by the Occupational Health & Safety Act)

Competent Person / Supervisor	Area of Competency	Cell Phone
_____	_____	_____
_____	_____	_____
_____	_____	_____

☐ Worksite inspections will be conducted daily to ensure hazards are identified and controlled appropriately, including housekeeping and fire prevention concerns, etc.

Emergency Contact Information

1st Aid Provider onsite:	Police / Fire / EMS: 9-1-1
Joint Health & Safety Representative onsite:	Ministry of Labour: 1-877-202-0008

☐ City Project Manager for this project will be called by the worksite Supervisor (or designate) if a serious injury occurs at the worksite.

☐ A City Contractor Incident form will be completed and sent to the Project Manager within 24 hours for all incident resulting in injury.

☐ The City Project Manager will be advised by the worksite Supervisor (or designate) if the Ministry of Labour attends the worksite for any reason. A copy of any Ministry of Labour field visit report, field investigation report or any other MOL report that is issued to the Contractor for the worksite or work will be forwarded to the City Project Manager, including any orders issued by the Ministry of Labour. Same for TSSA attendance at the site.

Closest Hospital: (name, address, directions)

☐ Map attached

☐ 1st Aid Supplies will be available onsite	☐ All workers onsite will be advised of this emergency information

List all Sub-contractors and their scope of work:
Subcontractor #1: (Name of firm, Contact Name, Cell Phone#, Scope of Work)
Subcontractor #2: (Name of firm, Contact Name, Cell Phone#, Scope of Work)
Subcontractor #3: (Name of firm, Contact Name, Cell Phone#, Scope of Work)
Actual / Potential Hazards of the Job / Project:
Vehicles /Equipment / Machinery to be used onsite: _____ _____
WHMIS Controlled Products to be used onsite: (attach SDS sheet for each)_____ _____ ☐ Workers who will be working with these controlled products onsite have been trained in the specific safe handling, use and storage of them. ☐ These controlled products will be stored safely while onsite.
Work Activities / Tasks Hazard Assessment: Break down the scope of work by work activity. For each activity, describe the *hazards* associated with the work and the *control measures* that will be put in place to reduce the risk of injury or harmful health exposure to an acceptable level. (If additional space is required, add pages)
1. Work Activity/ Tasks: _____ Hazards: _____ Control Measures: _____ ☐ There is a written safe work procedure in place for this activity
2. Work Activity/ Tasks: _____ Hazards: _____ Control Measures: _____ ☐ There is a written safe work procedure in place for this activity
3. Work Activity / Tasks: _____ Hazards: _____ Control Measures: _____ ☐ There is a written safe work procedure in place for this activity
4. Work Activity / Tasks: _____ Hazards: _____ Control Measures: _____ ☐ There is a written safe work procedure in place for this activity
5. Work Activity / Tasks: _____ Hazards: _____ Control Measures: _____ ☐ There is a written safe work procedure in place for this activity
6. Work Activity / Tasks: _____ Hazards: _____ Control Measures: _____ ☐ There is a written safe work procedure in place for this activity

Training, Licensing & Certification Requirements: Based on the hazard assessment above, describe the training required for staff who will be present onsite. ***The Contractor is responsible to maintain records of training to reflect required training. For sub-contractors, the Contractor must confirm that training is current.***

All workers onsite: _____

_____

Subcontractors:_____

_____

Specific Tasks / Job Positions: _____

_____

Required Personal Protective Equipment:

All workers / persons onsite: _____

_____

Task / Area Specific Equipment: (describe the PPE and where/when it is required) _____

_____

_____

☐ Page attached

Other Protective Equipment (other than PPE) to perform the Work

_____

_____

_____

_____

☐ Page attached

Other Control Measures:

Hazard	Control Measure

Additional Control Measures to Protect Other Workers & Members of the Public:

Employee Information and Awareness - JSP

☐ All workers onsite will be provided a worksite orientation including being made aware of all known hazards relating to this project and worksite including the information contained in this JSP; this information will be provided to them before they start work on the site.

☐ On an ongoing basis, where the Contractor becomes aware of a health or safety hazard, this information will be provided to workers onsite in a timely manner.

PART C: TO BE COMPLETED BY CITY PROJECT MANAGER AND CONTRACTOR REPRESENTATIVE
This JSP does not replace the Contractor's responsibility to comply with all applicable legislation including the Ontario Occupational Health & Safety Act and Regulations, Canada's Criminal Code, Ontario Fire Code, etc. The Contractor is responsible to address all health or safety concerns that arise out of the Contractor's work, in a timely and effective manner. Where City staff are aware of a health or safety concern related to this project, they will bring the concern to the attention of the Contractor. However, if the City representative (Project Manager, Senior Health and Safety Specialist, Supervisor or designate) observe or are made aware that health and safety rules or legislative requirements are being contravened or other hazardous condition exists at the worksite and a serious risk to health or safety exists, the City representative has the authority to and will stop the work without penalty. If the Contractor observes non-compliance on the part of City staff, the Contractor is to reporting it to the City as soon as possible (City Project Manager, Senior Health and Safety Specialist or other City Contact).

Representative for the Contractor:	City Representative (Project Manager) for this project:
_____ _____ _____ Name (print) Signature Date	_____ _____ _____ Name (print) Signature Date

CONSTRUCTOR & CONTRACTOR SAFETY PROGRAM
HEALTH & SAFETY INCIDENT INVOLVING CONSTRUCTOR OR CONTRACTOR

To be completed immediately following any incident that impacts the health and/or safety of person(s). To be completed by the General Contractor/site supervisor/foreman and forwarded, within 12 hours of the incident, to the City of Markham Project Manager, City Facility Manager (if applicable) and the City Senior Health & Safety Specialist (email: nmyles@markham.ca or fax: 905-479-7774).

Note: The City Project Manager, Facility Manager (if applicable) & Senior Health & Safety Specialist shall be notified immediately in the event of critical injury to a person, exposure or other event that causes the Ministry of Labour to attend (random inspections that do not result in the issuance of orders is exempt)

City of Markham Project Identification	
City of Markham Project Manager Contact	
General Contractor (if applicable)	
Contractor / Subcontractor (as applicable)	

Type of Incident: (check all that apply)

☐ Injury to person(s)* ☐ Exposure of person(s)* to harmful material, chemical, gas

*if injury/exposure to person indicate: (check all that apply)

- Name of Injured/ Exposed Person(s): _____
- 2. ☐ your employee ☐ City of Markham employee ☐ member of public ☐ other: _____
- 3. ☐ Critical Injury.

  Was it reported to MOL: ☐ YES, date: _____

  ☐ NO, reason for not reporting: _____

☐ Report of violence or threat of violence

☐ Vehicle or Heavy Equipment Accident

☐ Damage to property, equipment, machinery

☐ MOL attendance at site. Were orders issued? ☐ YES (attach) ☐ NO

Date & Time of Incident (indicate am/pm)	
Location of Incident (include: facility name, address, site description, and exact location at site/facility)	

Witnesses:	Name	Address	Phone

CONSTRUCTOR & CONTRACTOR SAFETY PROGRAM
HEALTH & SAFETY INCIDENT INVOLVING CONSTRUCTOR OR CONTRACTOR

Incident Description: (include all pertinent details such as position of persons, equipment / machinery present, weather, weights, distances, sizes, volumes, and a step-by-step description of events) (use additional pages if required)

☐ additional pages attached ☐ pictures attached ☐ MOL orders attached

Immediate Impact:

☐ Injury/Exposure to person.
Describe injury (including body part and side) _____
_____

Attention Required: ☐ 1st Aid only ☐ Medical Assistance ☐ Critical Injury ☐ Fatality ☐ WSIB Reportable

As a result of the injury, will employee be absent from work for their next scheduled shift?
☐ Yes ☐ No ☐ Not Applicable

☐ Damage to vehicle, equipment, machinery or property. Describe: _____
_____

Root Cause	
Corrective Action(s) (include person responsible and timeline)	
Person Completing this Report (include: company, position, name, signature)	

City of Markham Use only

Contractor Incident No.:	Project Manager:	Received by Project Manager (date and time):
Reviewed by Project Manager (sign and date):	Comments by Project Manager: (* also complete "follow up" section below)	
Reviewed by Senior Health & Safety Specialist (sign and date):	Comments by Senior Health & Safety Specialist:	

* Follow Up: (to be completed by Project Manager)
Was a "Contractor Health & Safety Incident Follow Up" meeting held?
☐ YES – Date: _____ (attach completed "Contractor Health & Safety Incident / Event Report & Corrective Action Follow Up" form)
☐ NO - Reason for not holding meeting?
_____

Forwarded to: (list all)
☐ Department Manager: _____ ☐ Director: _____ ☐ Commissioner: _____

Contractor Health & Safety Incident / Event
Corrective Action Follow Up Meeting Checklist

To be completed by the City Project Manager or Senior Health & Safety Specialist at the corrective action follow-up meeting to be held after an incident or other event that results in (or has the potential to result in) critical injury, serious injury, MOL order issuance, unsafe condition or other health and safety concern held by the City involving a constructor, general contractor, contractor, or subcontractor.

Project Identification & Location:	Contractor Incident No.:
Contractor Contact:	☐ Pre-start Submissions Checklist Attached ☐ Pre-start Safety Meeting Checklist Attached ☐ MOL Report Attached
Incident Date & Time:	Project Closing Date:
Describe the Incident:	

Ministry of Labour present: ☐ YES ☐ NO If yes, reason for presence:
☐ Random Site Inspection ☐Targeted Site Inspection (describe): _____
☐ Critical Injury Investigation (date of CI): _____ ☐ Worker Complaint
☐ Other Investigation (describe): _____
☐ Other: _____

*MOL Report / Orders issued: ☐ NO ☐ YES
If 'yes', to whom: _____ Acknowledgement of Compliance forwarded on: _____

*Note: if MOL issued report, orders, etc. – a copy must be attached to this form

Identified Legislative Violation(s) , Hazard(s), Concern(s):

Identification of Violation(s) of Corporate Contractor Safety Expectations:

Corrective Action(s)

Concern & Action	Person Responsible	Due Date	Confirmation Date	Confirmed by

Follow Up Site Audit: Performed by: Date & Time:

Findings:

Check Any/All High Risk Tasks involved in above:

- ☐ Confined Space Entry
- ☐ Work at Heights (>3M)
- ☐ Work on Ladders / Scaffolds / AWP
- ☐ Operation of Vehicles or other Mobile Equipment
- ☐ De-energized Electrical (Lockout-Tagout)
- ☐ Electrical Work<50Volts
- ☐ Electrical Work 50 Volts to 600Volts
- ☐ Electrical Work >600Volts
- ☐ Hot Work
- ☐ Machines requiring guarding
- ☐ Work with Controlled Products or other Hazardous Chemical: (list) _____
- ☐ Other (describe)_____

Other Discussion:

Representative for the Contractor:

Name	**Signature**	**Company**	**Date**

City of Markham Project Manager:			**Senior Health & Safety Specialist:**		
			Nancy Myles		
Name	**Signature**	**Date**	**Name**	**Signature**	**Date**

<u>Distribution</u>: Original to be retained in project file, Copies to contractor, purchasing department, facility manager and Senior Health & Safety Specialist.

Attachment C

CITY OF MARKHAM

TECHNICAL SPECIFICATION

FOR

PROJECT: **KITCHEN RENOVATION**

FACILITY: **Milliken Mills Community Centre**

ADDRESS: **7600 Kennedy Road, City of Markham**

Date of issue: **May 14, 2025**

Section Number **Title** **No. PAGES**

PART I

DIVISION 00 - BID DOCUMENTS

PART II

DIVISION 1 - GENERAL REQUIREMENTS

DIVISION 2 - SITE WORK

Nil

DIVISION 3 - CONCRETE

DIVISION 4 to DIVISION 5 INCLUSIVE

Nil

DIVISION 6 – WOOD, PLASTICS AND COMPOSITES

DIVISION 7 to DIVISION 8 INCLUSIVE

Nil

DIVISION 9 - FINISHES

DIVISION 10 to DIVISION 14 INCLUSIVE

Nil

DIVISION 15 - MECHANICAL

DIVISION 16 - ELECTRICAL

LIST OF DRAWINGS

Consultant's Project Number: 6520/F01

Drawing No.	**Drawing Name**
1	Key Plan List of Drawings General Notes
2	Kitchen (162) Existing Conditions and Demolition
3	Kitchen (162) New Work
4	Kitchen (162) Elevations

End of Table of Contents

PART 1 - GENERAL

1.1 Section Includes

.1 Title and description of Work.
.2 Contract Method.
.3 Work sequence.
.4 Contractor use of premises.

1.2 Work Covered by Contract Documents

.1 Work of this Contract involves a variety of items, including but not limited to:

- Upgrade Kitchen (162) with new millwork
- Flooring
- Painting

All work is located at Milliken Mills Community Centre, 7600 Kennedy Road Avenue in Markham, Ontario.

1.3 Contract Method

.1 Construct Work under single, stipulated price contract.

1.4 Work Sequence

.1 Work is to be completed in a continuous manner (in accordance with the specified phasing) so that the facility may resume its regularly scheduled programming as soon as possible. Refer to the City's Front-End for further details on the schedule requirements.

.2 Maintain fire access/control.

1.5 Contractor Use of Premises

.1 Contractor shall limit use of premises for Work and storage.

.2 Coordinate use of premises under direction of Owner.

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

PART 2 - PRODUCTS

2.1 Not Used

.1 Not used.

PART 3 – EXECUTION

3.1 Not Used

.1 Not used.

End of Section

PART 1 - GENERAL

1.1 Section Includes

.1 Cash allowances.

.2 Reserved.

1.2 References

.1 City's Front-End

1.3 Cash Allowances

.1 Reserved.

.2 Amount of cash allowance, for Work, is in the amount shown on the Bid Form and is as follows:

.1 Testing and inspection
.2 Kitchen Appliances

.3 Expenditures under cash allowance will be authorized by City of Markham.

.4 For any required independent testing and inspection, the Consultant will confirm the type and number of tests required.

.5 For the Kitchen Appliances: The contractor will supply and install the specified kitchen appliances which are:

Item	Qty	Description
1	1 ea	**REACH-IN REFRIGERATOR**
		 HABCO Manufacturing Model No. SE46HCSX Refrigerator, reach-in, two-section, bottom mounted self-contained Cassette® refrigeration, (2) self-closing solid locking doors, (6) shelves, interior lighting, designed to operate between 34°F to 39°F, white aluminum interior, stainless steel Xterior™ (front & sides). front breathing Free&Clear™ condenser coil, R290 Hydrocarbon refrigerant, 1/4 HP, 115v/60/1-ph, 4.3 amps, cord with NEMA 5-15P, cULus, NSF, Q-Code Q464421
	1 ea	Limited (3) year parts and labour warranty, standard
	1 ea	Additional limited (2) year compressor-motor part warranty, standard
2	1 ea	**REACH-IN FREEZER**
		 HABCO Manufacturing Model No. SF28HCSX Freezer Merchandiser, one-section, 47-1/2"W x 31"D x 78-3/8"H, bottom-mount self-contained refrigeration, (2) self-closing hinged glass door, (10) adjustable shelves, digital controller featuring visual/audible product protection alarm, factory set-point -23°C (-10°F), digital thermometer, switched LED interior display lighting, white aluminum interior with stainless steel floor, black exterior, R290 Hydrocarbon refrigerant, 1 HP, 115v/60/1-ph, 7.3 amps, cord with NEMA 5-15P, cULus, NSF, Q-Code Q272421
	1 ea	Limited (3) year parts and labour warranty, standard
	1 ea	Additional limited (2) year compressor-motor part warranty, standard

Item	Qty	Description
3	1 ea	**ICE MAKER WITH BIN, CUBE-STYLE**
		Hoshizaki (Distributed by Permul & RSL) Model No. KM-231BAJ Ice Maker With Bin, Cube-Style, 24"W, air-cooled, self-contained condenser, production capacity up to 213 lb/24 hours at 70°/50° (147 lb AHRI certified at 90°/70°), 80 lb built-in ice storage capacity, crescent style cube, front opening bin, stainless steel exterior, 6" painted legs, ice bin opening is ADA compliant, 115v/60/1-ph, 7.1 amps, NEMA 5-15P, NSF, cETLus, UL
	1 ea	Warranty: 3-Year parts & labor on entire machine
	1 ea	Warranty: 5-Year parts & labor on evaporator
	1 ea	Warranty: 5-Year parts on compressor & air-cooled condenser
4	1 ea	**RANGE, 36", 6 OPEN BURNERS**
		Garland Canada Model No. G36-6R (Garland/U.S. Range (Garland Canada)) G Starfire Pro Series Restaurant Range, gas, 36", (6) 33,000 BTU open burners, cast iron top & ring grates, standard oven, includes (2) oven racks & 3 position rack guides, stainless steel front, sides, plate rail, 2-piece back guard and shelf, 6" stainless steel legs with adjustable feet, 236,000 BTU
	1 ea	Gas type to be specified
	1 ea	6" Stainless steel legs with adjustable feet, standard
5	1 ea	**RANGE, 36", 6 OPEN BURNERS**
		Garland Canada Model No. G36-6R (Garland/U.S. Range (Garland Canada)) G Starfire Pro Series Restaurant Range, gas, 36", (6) 33,000 BTU open burners, cast iron top & ring grates, standard oven, includes (2) oven racks & 3 position rack guides, stainless steel front, sides, plate rail, 2-piece back guard and shelf, 6" stainless steel legs with adjustable feet, 236,000 BTU
	1 ea	Gas type to be specified
	1 ea	6" Stainless steel legs with adjustable feet, standard

.6 While the supply of the kitchen appliances will be paid for out of the Cash Allowance. The contractor is to include for the installation of the kitchen appliances in their bid.

1.4 .1 Reserved.

1.5 Overhead and Profit .1 The Contractor's overhead and profit when applied to changes to the contract is understood to include:

.1 The Contractor's and Sub-Contractor's administrative and incidental costs relating to a change including, without limitation, head office and site office expenses, associated traveling costs, all vehicle costs, downtime, estimating, purchasing, project coordination, workers' tools, financing costs including holdback, bonding and insurance costs, business development.

.2 The salaries of Superintendents, Project Managers, engineers, timekeepers, accountants, clerks, watch persons and other site supervision staff above foreperson level employed directly on the Work; Administrative costs including payroll and benefits burden, shop drawing production and record drawings, clean-up and disposal of waste materials, etc.

PART 2 - PRODUCTS

2.1 Not Used .1 Not Used.

PART 3 - EXECUTION

3.1 Not Used .1 Not Used.

End of Section

PART 1 - GENERAL

1.1 Section Includes .1 Schedule, form, content.

1.2 Related Sections .1 Section 01330 – Submittal Procedures.

1.3 Schedules Required .1 Submit schedules as follows:

.1 Construction Progress Schedule.
.2 Cost Breakdown.
.3 Submittal Schedule for Shop Drawings and Product Data.
.4 Submittal Schedule for Samples.
.5 Product Delivery Schedule.
.6 Cash Allowance Schedule for purchasing Products.
.7 Shutdown or closure activity.

1.4 Format .1 Prepare schedule in form of a horizontal Gantt bar chart.

.2 Provide a separate bar for each major item of work, trade or operation.

.3 Split horizontally for projected and actual performance.

.4 Provide horizontal time scale identifying first work day of each week.

.5 Format for listings: Table of Contents of this specification.

.6 Identification of listings: By specification Section numbers and specification subjects.

1.5 Submission .1 Submit initial format of schedules within 15 working days after award of Contract.

.2 Submit schedules in electronic format, forward through e-mail as pdf files.

.3 Submit one opaque reproduction, plus 2 copies to be retained by Consultant.

.4 Consultant will review schedule and return review copy within 10 days after receipt.

.5 Resubmit finalized schedule within 7 days after return of review copy.

.6 Submit revised progress schedule with each application for payment.

.7 Distribute copies of revised schedule to:

.1 Job site office.
.2 Subcontractors.
.3 Other concerned parties.

.8 Instruct recipients to report to Contractor within 10 days, any problems anticipated by timetable shown in schedule.

1.6 Progress Photographs

.1 Progress Photographs By Consultant

.1 Consultant will take periodic progress photographs.

.2 Progress Photographs By Contractor

.1 Contractor will take daily photographs to illustrate the progress of the work. These photographs to be emailed weekly to the consultant. In addition, at the end of the project, the contractor is to organize all photographs on a CD and submit to the consultant as part of the closeout documents.

1.7 Submittals Schedule

.1 Include schedule for submitting shop drawings, product data and samples.

.2 Indicate dates for submitting, review time, resubmission time, last date for meeting fabrication schedule.

.3 Include dates when reviewed submittals will be required from Consultants.

PART 2 - PRODUCTS

2.1 Not Used

.1 Not Used.

PART 3 - EXECUTION

3.1 Not Used

.1 Not Used.

End of Section

PART 1 - GENERAL

1.1 Section Includes

.1 Shop drawings and product data.

.2 Samples.

.3 Certificates and transcripts.

1.2 Related Sections

.1 Section 01320 - Construction Progress Documentation.

.2 Section 01450 - Quality Control.

.3 Reserved.

1.3 Administrative

.1 Submit to Consultant submittals listed for review. Submit with reasonable promptness and in orderly sequence so as to not cause delay in Work. Failure to submit 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.

.2 Work affected by submittal shall not proceed until review is complete.

.3 Present shop drawings, product data, samples and mock-ups in SI Metric units.

.4 Where items or information is not produced in SI Metric units converted values are acceptable.

.5 Review submittals prior to submission to Consultant. This review represents that necessary requirements have been determined and verified, or will be, and that each submittal has been checked and coordinated with requirements of Work and Contract Documents. Submittals not stamped, signed, dated and identified as to specific project will be returned without being examined and shall be considered rejected.

.6 Notify Consultant, in writing at time of submission, identifying deviations from requirements of Contract Documents stating reasons for deviations.

.7 Verify field measurements and affected adjacent Work are coordinated.

.8 Contractor's responsibility for errors and omissions in submission is not relieved by Consultant's review of submittals.

.9 Contractor's responsibility for deviations in submission from requirements of Contract Documents is not relieved by Consultant review.

.10 Keep one reviewed copy of each submission on site.

1.4 Shop Drawings and Product Data

.1 The term "shop drawings" means drawings, diagrams, illustrations, schedules, performance charts, brochures and other data which are to be provided by Contractor to illustrate details of a portion of Work.

.2 Indicate materials, methods of construction and attachment or anchorage, erection diagrams, connections, explanatory notes and other information necessary for completion of Work. Where articles or equipment attach or connect to other articles or equipment, indicate that such items have been coordinated, regardless of Section under which adjacent items will be supplied and installed. Indicate cross references to design drawings and specifications.

.3 Allow 10 days for Consultant's review of each submission.

.4 Adjustments made on shop drawings by Consultant are not intended to change Contract Price. If adjustments affect value of Work, state such in writing to Consultant prior to proceeding with Work.

.5 Make changes in shop drawings as Consultant may require, consistent with Contract Documents. When resubmitting, notify Consultant in writing of any revisions other than those requested.

.6 Accompany submissions with transmittal letter, in duplicate, containing:
- .1 Date.
- .2 Project title and number.
- .3 Contractor's name and address.
- .4 Identification and quantity of each shop drawing, product data and sample.
- .5 Other pertinent data.

.7 Submissions shall include:
- .1 Date and revision dates.
- .2 Project title and number.
- .3 Name and address of:
  - .1 Subcontractor.
  - .2 Supplier.
  - .3 Manufacturer.
- .4 Contractor's stamp, signed by Contractor's authorized representative certifying approval of submissions, verification of field measurements and compliance with Contract Documents.

.5 Details of appropriate portions of Work as applicable:
- .1 Fabrication.
- .2 Layout, showing dimensions, including identified field dimensions, and clearances.
- .3 Setting or erection details.
- .4 Capacities.
- .5 Performance characteristics.
- .6 Standards.
- .7 Operating weight.
- .8 Wiring diagrams.
- .9 Single line and schematic diagrams.
- .10 Relationship to adjacent work.

.8 After Consultant's review, distribute copies.

.9 Submit 6 prints and 1 electronic copy of shop drawings for each requirement requested in specification Sections and as consultant may reasonably request.

.10 Submit 6 prints and 1 electronic copy of product data sheets or brochures for requirements requested in specification Sections and as requested by Consultant where shop drawings will not be prepared due to standardized manufacture of product.

.11 Delete information not applicable to project.

.12 Supplement standard information to provide details applicable to project.

.13 If upon review by Consultant, no errors or omissions are discovered or if only minor corrections are made, copies will be returned and fabrication and installation of Work may proceed. If shop drawings are rejected, noted copy will be returned and resubmission of corrected shop drawings, through same procedure indicated above, must be performed before fabrication and installation of Work may proceed.

.14 The review of shop drawings by Consultant is for sole purpose of ascertaining conformance with general concept. This review shall not mean that Consultant approves detail design inherent in shop drawings, responsibility for which shall remain with Contractor submitting same, and such review shall not relieve Contractor of responsibility for errors or omissions in shop drawings or of responsibility for meeting all requirements of construction and Contract Documents. Without restricting generality of foregoing, Contractor is responsible for dimensions to be confirmed and correlated at job site, for information that pertains solely to fabrication processes or to techniques of construction and installation and for coordination of Work of all sub-trades.

1.5 Samples	.1	Submit for review samples in duplicate/triplicate as requested in respective specification Sections. Label samples with origin and intended use.
	.2	Deliver samples prepaid to Consultant's business address.
	.3	Notify Consultant in writing, at time of submission of deviations in samples from requirements of Contract Documents.
	.4	Where colour, pattern or texture is criterion, submit full range of samples.
	.5	Adjustments made on samples by Consultant are not intended to change Contract Price. If adjustments affect value of Work, state such in writing to Consultant prior to proceeding with Work.
	.6	Make changes in samples which Consultant may require, consistent with Contract Documents.
	.7	Reviewed and accepted samples will become standard of workmanship and material against which installed Work will be verified.
1.6 Progress Photographs	.1	Contractor to maintain progress photographs in accordance with Section 01320 - Construction Progress Documentation. . A mandatory requirement for this project is for the contractor to submit **all** progress photographs on a CD at the end of the project as part of the closeout documents. Photographs to be labeled by date/construction activity. Submission of photographs (in hard copy format) will be required in the event of a discrepancy between the Consultant and Contractor

PART 2 - PRODUCTS

2.1 Not Used	.1	Not Used.

PART 3 - EXECUTION

3.1 Not Used	.1	Not Used.

End of Section

1. CONTRACTOR USE OF PREMISES

.1 Limit access of construction personnel to existing building only at locations approved by the Owner.

Ensure that construction personnel perform work in existing building only as required under the Contract; and that they do not use it as access to work areas, except for work in existing building, or for other purposes.

.3 Use of washroom and services in existing building by construction personnel is strictly prohibited.

.4 Construction personnel shall use areas of the existing building for their purposes only as designated by the Owner and only while Work is in progress. Prohibit lounging and smoking. Keep assigned areas clean and return them to an "as was" condition at completion of construction.

.5 Smoking is strictly prohibited on all property.

.6 Do not take meal and coffee breaks in the existing building. Provide space outside the building, or in site trailer for workers' breaks.

.7 Keep traffic through existing occupied areas to an absolute minimum in executing the Work.

.8 Minimize noise, dust, and odours to ensure patrons in areas adjacent to the construction area are disturbed as little as possible. Implement immediate corrective action to cease or limit disagreeable annoyances to patrons upon notification by Owner.

.9 Make good damage to building, fixtures, and fittings caused during use by construction personnel by replacement with new work. Include cost of installation and making good of other work thereby affected in replacement.

.10 Assume total responsibility for security of construction areas within the existing building upon commencement of Work, particularly where construction areas are exposed to the exterior. Secure construction areas by methods compatible with the total security established for building.

.11 Construction personnel shall use areas of the existing buildings only in a manner as determined by the Work.

.12 Arrange with the Owner for appropriate times for noisy and dusty work.

2. OWNER'S USE OF EXISTING BUILDING

.1 The existing building will remain in use throughout the duration of construction of the Work. The Owner will maintain control over operation of building systems during construction.

.2 Provide and maintain continuation of fire protection, fire walls and fire rated assemblies in existing building.

.3 Maintain existing exits and provide proper and safe means of egress from all parts of existing building to open spaces at all times to the approval of jurisdictional authorities. Identify, provide exit lights, and illuminate temporary means of egress.

.4 Execute work in existing building at times approved by Owner, so not to inconvenience their occupation or in any manner hinder their use of building.

.5 Give Owner two weeks (minimum 14 working days) notice of intention to commence work in a room or area of existing building.

.6 Execute work as quietly as possible in and around existing building at all times Owner is occupying it. Schedule noisy operations with Owner to achieve least disturbance to staff and students.

3. DUST CONTROL

.1 Prior to any work being done or removal of ceiling tiles or opening of ceiling access hatches, erect a floor to ceiling dust tight partition which completely encloses the area of work;

.1 Maintain barriers throughout the work and repair or replace as required or instructed.

.2 Completely remove barrier when work is finished and remove any marks left by tape or studs.

.2 Post "Construction Zone" signage outside barrier and entrance to all work areas.

.3 Take precautions when working on existing ceilings, ducts and piping systems. Protect workers with the following minimum requirements:

.1 Carefully remove acoustical ceiling panels keeping horizontal if possible, and vacuum and clean the panels immediately upon removal.

.2 Clean air ducts, conduits and space above the ceiling with a HEPA filter equipped vacuum cleaner prior to start of any work.

.4 Throughout the work period, ensure that:

.1 Plastic barrier flaps or doors to construction area remain closed.
.2 Place adhesive floor strips or walk-off mats outside the door to the construction area.
.3 Clean and vacuum construction and surrounding areas frequently with vacuum cleaners equipped with HEPA filters.
.4 Vacuum carpeted areas daily or more often if necessary
.5 Shampoo carpets when the construction work is complete.
.6 Remove dust from body and clothing when traversing Owner occupied areas.

.5 Carts, tools and equipment entering the construction area should remain there until the work is complete. Clean thoroughly prior to removal from the construction area.

4. PROTECTION

.1 Protect staff and visitors from any danger arising from the work. Supply, erect. maintain and remove signs, barricades, barriers, etc. as required, sharp tools and dangerous objects must not be left unattended.

.2 The job site shall remain clean and tidy at all times. Only those materials required each day are to be brought to the job Site.

.3 Remove all garbage and scrap from work site on a daily basis, or more often if required. Owner's recycle containers and garbage bins shall not be used.

.4 Fire routes or personnel thoroughfares must not be obstructed. Fire doors must not be wedged open or latches disengaged.

.5 Safety clearances are required before any cutting, welding, core drilling, open flame work or dust work is done. A request in writing to the Owner must be made and approved a minimum of 72 hours before this work is anticipated.

.6 Provide dust tight partitions to prevent dust and dirt migrating from the work area. Remove when no longer required.

7 Apply craft paper to all windows (interior & exterior) for privacy. Remove when no longer required (i.e. when the construction work is complete). Interior windows to be covered completely from top to bottom; exterior windows to be covered up to 2400mm in height to allow some natural daylight to enter the space.

5. EMERGENCY AND FIRE PROTECTION

.1 Provide and maintain at all times, ready access to fire-fighting equipment

.2 While work is proceeding in existing building, existing fire hoses and fire extinguishers shall be used as required. Recharge fire extinguishers if used and re-rack hoses,

.3 Provide temporary portable fire extinguishers throughout the work and at every work area

.4 Prior to execution of any work which may possibly start a fire, provide proper and suitable precautions and fire extinguishers. Provide fire-watch during and for minimum 6 hours after all welding operations.

6. TEMPORARY EXHAUST

.1 Maintain areas of construction and demolition under negative pressure during the work. Employ minimum 400 L/s temporary exhaust system to provide directional airflow from occupied space through dust screens.

.2 Provide and maintain during the work, temporary exhaust system discharging to the building exterior, consisting of discharge ducts, exhaust fan, atmospheric draft damper,

temporary duct with taped joints from exhaust fan through new opening in the building envelope and extract points within each contained construction area.

End of Section

PART 1 - GENERAL

1.1 Section Includes

.1 Inspection and testing, administrative and enforcement requirements.

.2 Tests and mix designs.

.3 Mill tests.

.4 Equipment and system adjust and balance.

1.2 Related Sections

.1 Section 01210 - Allowances.

.2 Section 01330 - Submittal Procedures.

.3 Section 01420 - References.

.4 Section 01780 - Closeout Submittals.

1.3 Inspection

.1 Allow Consultant access to Work. If part of Work is in preparation at locations other than Place of Work, allow access to such Work whenever it is in progress.

.2 Give timely notice requesting inspection if Work is designated for special tests, inspections or approvals by Consultant instructions, or law of Place of Work.

.3 If Contractor covers or permits to be covered Work that has been designated for special tests, inspections or approvals before such is made, uncover such Work, have inspections or tests satisfactorily completed and make good such Work.

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

1.4 Independent Inspection Agencies

.1 Independent Inspection/Testing Agencies will be engaged by Owner for purpose of inspecting and/or testing portions of Work.

.2 Allocated costs: to Section 01210 - Allowances.

.3 Provide equipment required for executing inspection and

testing by appointed agencies.

.4 Employment of inspection/testing agencies does not relax responsibility to perform Work in accordance with Contract Documents.

.5 If defects are revealed during inspection and/or testing, appointed agency will request additional inspection and/or testing to ascertain full degree of defect. Correct defect and irregularities as advised by Consultant at no cost to Consultant. Pay costs for retesting and reinspection.

1.5 Access to Work

.1 Allow inspection/testing agencies access to Work, off site manufacturing and fabrication plants.

.2 Co-operate to provide reasonable facilities for such access.

1.6 Procedures

.1 Notify appropriate agency and Consultant in advance of requirement for tests, in order that attendance arrangements can be made.

.2 Submit samples and/or materials required for testing, as specifically requested in specifications. Submit with reasonable promptness and in an orderly sequence so as not to cause delay in Work.

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

1.7 Rejected Work

.1 Remove defective Work, whether result of poor workmanship, use of defective products or damage and whether incorporated in Work or not, which has been rejected by Consultant as failing to conform to Contract Documents. Replace or re-execute in accordance with Contract Documents.

.2 Make good other Contractor's work damaged by such removals or replacements promptly.

.3 If in opinion of Consultant it is not expedient to correct defective Work or Work not performed in accordance with Contract Documents, Owner may deduct from Contract Price difference in value between Work performed and that called for by Contract Documents, amount of which shall be determined by Consultant.

1.8 Reports	.1	Submit 4 copies of inspection and test reports to Consultant.
	.2	Provide copies to Subcontractor of work being inspected or tested.
1.9 Tests and Mix Designs	.1	Furnish test results and mix designs as may be requested.
	.2	The cost of tests and mix designs beyond those called for in Contract Documents or beyond those required by law of Place of Work shall be appraised by Consultant and may be authorized as recoverable.
1.10 Mill Tests	.1	Submit mill test certificates as required of specification Sections.
1.11 Equipment and Systems	.1	Submit adjustment and balancing reports for mechanical, electrical and building equipment systems.
	.2	Refer to appropriate sections for definitive requirements.

PART 2 - PRODUCTS

2.1 Not Used	.1	Not Used.

PART 3 - EXECUTION

3.1 Not Used	.1	Not Used.

End of Section

PART 1 - GENERAL

1.1 Section Includes

.1 Barriers.

.2 Environmental Controls.

.3 Traffic Controls.

.4 Fire Routes.

1.2 Related Sections

.1 Section 01510 - Temporary Utilities.

.2 Section 01520 - Construction Facilities.

1.3 References

.1 Canadian General Standards Board (CGSB)
- .1 CGSB 1.189M-84, Primer, Alkyd, Wood, Exterior.
- .2 CGSB 1.59-97, Alkyd Exterior Gloss Enamel.

.2 Canadian Standards Association (CSA International)
- .1 CSA-O121-M1978, Douglas Fir Plywood.

1.4 Installation and Removal

.1 Provide temporary controls in order to execute Work expeditiously.

.2 Remove from site all such work after use.

1.5 Hoarding

.1 Erect temporary site enclosure using new 2.0 m high mod-u-loc steel wired fence. Provide one lockable truck gate. Maintain fence in good repair.

.2 Provide barriers around trees and plants designated to remain. Protect from damage by equipment and construction procedures.

1.6 Guard Rails and Barricades

.1 Provide secure, rigid guard rails and barricades around excavations and open shafts.

.2 Provide as required by governing authorities.

1.7 Access to Site

.1 Provide and maintain access roads, sidewalk crossings, ramps and construction runways as may be required for access to Work.

1.8 Public Traffic Flow	.1	Provide and maintain competent signal flag operators, traffic signals, barricades and flares, lights, or lanterns as required to perform Work and protect the public.
1.9 Fire Routes	.1	Maintain access to property including overhead clearances for use by emergency response vehicles.
1.10 Protection for Off-Site and Public Property	.1	Protect surrounding private and public property from damage during performance of Work.
	.2	Be responsible for damage incurred.

PART 2 - PRODUCTS

2.1 Not Used	.1	Not Used.

PART 3 - EXECUTION

3.1 Not Used	.1	Not Used.

End of Section

PART 1 - GENERAL

1.1 Section Includes

.1 Requirements and limitations for cutting and patching the Work.

1.2 Related Sections

.1 Section 01110 - Summary of Work.

.2 Section 01330 - Submittal Procedures.

1.3 Submittals

.1 Submit written request in advance of cutting or alteration which affects:
- .1 Structural integrity of any element of Project.
- .2 Integrity of weather-exposed or moisture-resistant elements.
- .3 Efficiency, maintenance, or safety of any operational element.
- .4 Visual qualities of sight-exposed elements.
- .5 Work of Owner or separate contractor.

.2 Include in request:
- .1 Identification of Project.
- .2 Location and description of affected Work.
- .3 Statement on necessity for cutting or alteration.
- .4 Description of proposed Work, and products to be used.
- .5 Alternatives to cutting and patching.
- .6 Effect on Work of Owner or separate contractor.
- .7 Written permission of affected separate contractor.
- .8 Date and time work will be executed.

1.4 Materials

.1 Required for original installation.

.2 Change in Materials: Submit request for substitution in accordance with Section 01330 - Submittal Procedures.

1.5 Preparation

.1 Inspect existing conditions, including elements subject to damage or movement during cutting and patching.

.2 After uncovering, inspect conditions affecting performance of Work.

.3 Beginning of cutting or patching means acceptance of existing conditions.

.4 Provide supports to assure structural integrity of surroundings; provide devices and methods to protect other portions of project from damage.

.5 Provide protection from elements for areas which may be exposed by uncovering work; maintain excavations free of water.

1.6 Execution

.1 Execute cutting, fitting, and patching including excavation and fill, to complete Work.

.2 Fit several parts together, to integrate with other Work.

.3 Uncover Work to install ill-timed Work.

.4 Remove and replace defective and non-conforming Work.

.5 Provide openings in non-structural elements of Work for penetrations of mechanical and electrical Work.

.6 Execute Work by methods to avoid damage to other Work, and which will provide proper surfaces to receive patching and finishing.

.7 Employ original installer to perform cutting and patching for weather-exposed and moisture-resistant elements, and sight-exposed surfaces.

.8 Cut rigid materials using masonry saw or core drill. Pneumatic or impact tools not allowed on masonry work without prior approval.

.9 Restore work with new products in accordance with requirements of Contract Documents.

.10 Fit Work airtight to pipes, sleeves, ducts, conduit, and other penetrations through surfaces.

.11 At penetration of fire rated wall, ceiling, or floor construction, completely seal voids with firestopping material, full thickness of the construction element.

.12 Refinish surfaces to match adjacent finishes: For continuous surfaces refinish to nearest intersection; for an assembly, refinish entire unit.

.13 Conceal pipes, ducts and wiring in floor, wall and ceiling construction of finished areas except where indicated otherwise.

PART 2 - PRODUCTS

2.1 Not Used .1 Not Used.

PART 3 - EXECUTION

3.1 Not Used .1 Not Used.

End of Section

PART 1 - GENERAL

1.1 Section Includes

.1 Provide all materials, labour, and equipment necessary to complete concrete repairs, replacements, upgrades and appurtenances as shown on the drawings and described herein.

1.2 Related Sections

.1 Read and conform to Division 00, Division 1, Division 2 and Division 3 which all apply to and form part of the work.

PART 2 - PRODUCTS

2.1 Materials

.1 Polymer Modified Mortar:

Polymer modified mortar shall be pre-packaged mortar, either latex or epoxy based, and shall be supplied by one of the following companies:

Horizontal Surfaces

Company	Product
Concrete Chemicals	- REDKRETE
Fosroc Construction Chemicals	- Renderoc SD2
The Master Builders Company Ltd.	- EMACO R310
Sika Canada Inc.	- SikaTop 122 PLUS

Vertical and Overhead Surfaces

Company	Product
Fosroc Construction Chemicals	- Renderoc HB2
Sika Canada Inc.	- SikaTop 123 PLUS

.2 Bonding Agent:

Bonding agent may be either latex or epoxy and shall be as supplied by one of the following companies:

Company	Product
Cappar Ltd.	- CAPBOND E
Concrete Chemicals	- Concrete Adhesive #900
Fosroc Construction Chemicals	- Nitobond 881-43
The Master Builders Company Ltd.	- CONCRESIVE LIQUID LPL
W.R. Meadows of Canada Ltd.	- SEALTIGHT REZI- WELD 1000
Sika Canada Inc.	- SikaTop Armatec 110 EpoCem
Sternson Ltd.	- BONDING AGENT ST-432

.3 Elastomeric Joint Sealant:

Elastomeric Joint Sealant will be entirely suited for the purpose required and shall be as supplied by one of the

following companies:

Company	Product
Fosroc Construction Chemicals	- Nitoseal 225
Sika Canada Inc.	- Sikaflex-1a
Sternson Ltd.	– STERNSON RC-2

.4 Silane Penetrating Sealer:

Silane Penetrating Sealer will be entirely suited for the purpose required and shall be as supplied by one of the following companies.

Company	Product
Cappar Ltd.	- CAPSEAL W
Concrete Chemicals	- CONSEAL
Fosroc Construction Chemicals	- Dekguary P-40
The Master Builders Company Ltd.	- MASTERSEAL SL 40
Sika Canada Inc.	- SikaGUARD 71H
Sternson Ltd.	- HYDROZO ENVIROSEAL 20
Thorosystems Products of Canada Ltd.	– THOROSILOXANE 8S

PART 3 - EXECUTION

3.1 Prepatory Work

.1 Reserved

.2 Prior to commencement of repairs, brush clean all faces to present a clean, intact concrete surface free of deleterious material. Blow clean using oil-free compressed air.

3.2 Location and Determination of Unsound Areas

.1 Notwithstanding the information supplied by the Consultant, the Contractor shall, prior to removal, chain drag or sound all surfaces and mark the outline of all defective, unsound, or deteriorated concrete to be removed. The marking shall be in a contrasting colour to that of the slab. The pattern for cutting and removal shall be mutually agreed upon between the Contractor and the Consultant such that unnecessary concrete removal is avoided.

.2 The Contractor shall verify with the Consultant all areas of repair, and/or removal involved, prior to commencing removal.

3.3 Temporary Shoring .1 Design, supply and install temporary shoring to maintain the integrity of the existing structure during repairs.

3.4 Removals .1 The perimeter area and depth of concrete removal shall be controlled in keeping with the plans and specifications. However, all delaminated, deteriorated, and defective concrete shall be removed.

.2 Concrete shall be removed to produce a square-sided cut using sawcutting and chipping hammers.

.1 The perimeter of all areas of repair shall be sawcut a minimum of 12 mm deep with the following stipulations:

.1 Chipping of perimeter corners to a vertical edge is permitted to prevent sawcut over-run.

.2 Chipping of the perimeter to a vertical edge is permitted when the existing reinforcing steel has insufficient cover to permit the required 12mm deep sawcut and the Contractor has verified this through use of a covermetre.

.3 Chipping of the perimeter to a vertical edge is permitted when obstructions such as handrails, prevent the reasonable and safe use of a concrete saw.

FEATHER EDGES AND SAWCUT OVER-RUNS ARE NOT PERMITTED.

Care shall be exercised so as not to injure, cut, or otherwise damage the reinforcing steel or the surrounding sound areas.

.3 Chipping hammer size shall not exceed 7 kg. (15 lbs.) and shall not be operated closer than 3 m (10 ft.) to each other.

.4 Where reinforcing steel is encountered and more than 50% of the bar perimeter is exposed, or the bond between the bar and the concrete is broken, extend the concrete removal around the reinforcing steel bar so that there is a 20mm minimum clearance between the steel and the surrounding sound concrete.

.5 All scale, rust, and corrosion products shall be removed from the exposed reinforcing steel by mechanical methods. Areas shall be cleaned so that all surface contaminants,

sediment deposits and deleterious materials are removed and coarse aggregate of the sound concrete exposed.

.6 Re-tie all exposed, existing reinforcing steel. In large areas, where reinforcing bars are completely exposed, they shall be re-tied at each intersecting point and securely anchored to the sound concrete surface by drilled in anchors at one (1.0) metre centers maximum. The original concrete cover distance to the bar shall be maintained or increased as directed. Supply and installation of anchors and tying of reinforcement shall be incidental to the contract and no further or separate payment shall be made.

End of Section

PART 1 - GENERAL

1.1 GENERAL REQUIREMENTS

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

1.2 WORK IN OTHER SECTIONS

.1 Related Work Specified in Other Sections

Section 03484	:	Specialty Repair Concrete Work
Section 06410	:	Architectural Millwork
Section 09650	:	Resilient Tile Flooring
Section 09900	:	Painting

1.3 REFERENCE STANDARDS

CSA O86-09: Engineering Design in Wood

CSA O121-08: Douglas Fir Plywood

CAN/CSA-O122-06: Structural Glued-Laminated Timber

CSA O141-05: Softwood Lumber

CSA O151-04: Canadian Softwood Plywood

CSA O325-07: Construction Sheathing

CAN/CSA G164-M92 (R2003): Hot Dip Galvanizing of Irregularly Shaped Articles

1.4 SOURCE QUALITY

.1 Lumber identification: by grade stamp of an agency certified by Canadian Lumber Standards Accreditation Board.

.2 Plywood identification: by grade mark in accordance with applicable CSA standards.

1.5 SHOP DRAWINGS

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

.2 Submit drawings to the Engineer for examination, giving complete information necessary for the fabrication of the various members and components of the structure, including material specifications and the location, type and size of all connections.

.3 Erection Drawings shall show sizes and locations of all members and give complete location and details for setting anchor bolts and levelling plates. The elevations of all bearing plates shall be clearly shown.

.4 Glued Laminated Fabricator shall provide design drawings sealed by an Engineer licensed in Ontario. Drawings shall indicate all critical information pertaining to the project including:-
: Span, depth, slope and spacing of all members, and overall dimensions.
: Design top and bottom chord live and dead load; also ground snow load where applicable.
: Forces in members, reactions and combined axial and bending stress ratios.
: Plate sizes, lumber grades and bracing requirements.
: Required bearing length and any special notes important to the structural performance of the trusses. These drawings must be approved by the Engineer prior to the commencement of fabrication.

.5 Do not commence fabrication until final approval of shop drawings is received.

1.6 HANDLING AND STORAGE

.1 Fabricated member's and sub-components shall be so handled and stored that they are not subject to damage.

.2 Framing anchors and/or hangers shall be provided by the Contractor in accordance with the drawings.

.3 Field erection of the members, including items such as proper handling, safety precautions, temporary bracing to prevent toppling and buckling during erection, and any other safeguards or procedures consistent with good workmanship and good building erection practices, shall be the responsibility of the General Contractor.

.4 Proper erection bracing shall be installed to hold the member true and plumb and in safe condition until permanent bracing and bridging can be solidly nailed in place to form a structurally sound roof framing system.

PART 2 - PRODUCTS

2.1 LUMBER MATERIAL

2.1.1 General: Lumber shall be spruce/pine/fir number 1 and 2 grades, unless specified otherwise, softwood, S4S, moisture content 19% or less in accordance with following standards in the ratio of 67% and 33% respectively:-
.1 CSA 0141.
.2 NLGA Standard Grading Rules for Canadian Lumber, latest edition, revised according to Supplement No. 1.

2.1.2 Plywood: Douglas Fir (DF), spruce plywood conforming to CSA 0121, standard construction, tongue and groove to thickness shown on drawings. Minimum thickness 15 mm unless noted otherwise.

2.1.3 Laminated Veneer Lumber: Southern yellow pine or douglas fir providing a minimum flexural stress resistance (F6) of 2900 psi, based on 12" deep section, modules of elasticity of 2.0 x 10^6 psi minimum.

2.1.4 Fasteners: Proprietary fasteners toggle bolts, expansion shields and lag bolts, screws and lead or inorganic fibre plugs, explosive actuated fastening devices, recommended for purpose by manufacture. Use stainless steel or galvanized to CSA G164-M fasteners for all exterior fastening and for any damp or moist areas.

2.1.5 Wood Preservative: Surface-applied wood preservative: clear copper napthenate or 5% pentachlorophenol solution, water repellant preservative.

2.1.6 Furring, blocking, nailing strips, grounds, rough bucks: Spruce, pine, douglas fir, S25 type, standard grade, nominal sizes unless noted. All material shall be pressure treated where concealed or installed exterior to the building or built into masonry, concrete or roofs.
- 2.1.6.1 S2S is acceptable.
- 2.1.6.2 Board sizes: "Standard" or better grade.
- 2.1.6.3 Dimension sizes: "Standard" light framing or better grade.

2.1.7 Floor/Roof Sheathing: Tongue and groove spruce or fir plywood to thickness shown on drawings, minimum 15mm unless noted otherwise.

2.1.8 Material shall be straight, sawn square, true, dressed four sides properly sized, shaped to correct dimensions from nominal sizes noted on drawings.

2.2 ROOF AND FLOOR SHEATHING

.1 This division of the specification shall include for the design, materials, equipment and labour for the complete installation of the plywood roof deck and sheathing system.

PART 3 - EXECUTION

3.1 GLUED LAMINATED LUMBER BEAMS/JOISTS

.1 This section of the specifications shall include the furnishings of all design, materials, equipment and labour necessary for the prefabrication, delivery and permanent setting of glued laminated lumber beams. It shall also include all the miscellaneous parts, including bridging, temporary and permanent bracing, and all related items of hardware, metal hangers, anchors and special metal shapes necessary for the proper prefabrication, erection, assembly, supporting and anchoring of the wood trusses.

.2 The design and fabrication criteria of all wood members shall meet with latest issue of Ontario Building Code, with National Building Code of Canada, National Research Council, Ottawa, and CSA 086, "Code of Recommended Practice for Engineering Design in Timber"; and "Design Specifications for Light Metal Plate Connected Wood Trusses" by Truss Plate Institute.

.3 All lumber used for members shall conform to the published stress ratings for the appropriate species and grades as set out in the official grading rules of the appropriate lumber association.

.4 All lumber shall conform to the recognized nominal sizes shown on the plans or truss engineering designs. All members shall be cut from lumber which bears the proper grade-mark stamps of a recognized grading association or licensed lumber inspection agency.

.5 All connector plates shall be manufactured from ASTM A446 Grade 'A' prime commercial quality galvanized sheet steel of no less than 20 gauge thickness which has a minimum yield of 33,000 psi and a minimum ultimate tensile strength of 45,000 psi.

3.2 FURRING AND BLOCKING

.1 Install furring and blocking as required to all space-out and support as required for the project.

.2 Align and plumb faces of furring and blocking to tolerance of 1:600.

3.3 NAILING STRIPS, GROUNDS AND ROUGH BUCKS

.1 Install rough bucks, nailers and linings to rough openings as required to provide backing for frames and other work.

.2 Install rough bucks, nailers, framing and linings to wall supports, openings as noted for support of lockers, shelving, chalkboards, tackboards, chair rail, cabinets, millwork, washroom accessories and other accessories to be mounted on drywall partitions.

3.4 FASTENERS

.1 Frame, anchor, fasten, tie and brace members to provide necessary strength and rigidity.

.2 Countersink bolts where necessary to provide clearance for other work.

3.5 SURFACE-APPLIED WOOD PRESERVATIVE

.1 Treat all surfaces including cut ends of material with wood preservative before installation.

.2 Apply preservative by dipping, or by brush to completely saturate and maintain wet film on surface, for minimum 3 minute soak on lumber and one minute soak on plywood.

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

3.6 INSTALLATION

.1 Lay out work carefully and to accommodate work of others. Cut and fit accurately. Erect in position indicated by drawings. Align, level, square, plumb, and secure work permanently in place. Brace work temporarily as required. Join work only over solid bracing.

.2 Bore holes true to line and to same size as bolts. Drive bolts into place for snug fit, and use plates or washers for bolthead and nut bearings. Turn up bolts and lag screws tightly when installed, and again just before concealed by other work or at completion of work.

.3 Co-operate with work of other Sections to ensure that unity of actions will ensure orderly progress to meet construction schedule.

.4 Provide anchors, bolts and inserts, required for attachment of the work of this Section, to those performing the work of other Sections and who are responsible for their installation.

.5 Work shall include rough hardware such as nails, bolts, nuts, washers, screws, clips, hangers, connectors, and strap iron required for installation of work and all operating hardware required on work of this Section for temporary use.

.6 Do not attach work by wood plugs or blocking in concrete or masonry. Use lead shields, expansion shields, concrete nails, or similar methods only as approved by the Architect.

.7 Do not regard grounds, blocking, furring, and such other fastening provisions as shown on Drawings as exact or complete. Provide required provisions for fastening, located and secured to suit site conditions, and adequate for intended support.

.8 Cut fastening work into lengths as long as practicable and with square ends. Erect work plumb, in true planes, and fastened rigidly in place.

.9 Grounds around openings in cavity wall systems, under sills and thresholds to provide continuous support shall be 50 mm (2") minimum thickness, preservative treated.

.10 Install supports and furring members as required to receive components of cabinetwork.

.11 Install blocking at roofs, as indicated on Drawings, secured permanently to structure, trimmed and levelled to accommodate roofing components, and to receive flashings.

.12 Joists and beams shall be installed by experienced workmen in strict accordance with the manufacturer's specifications and requirements.

.13 All beams, joists and other structural components shall be installed in a proper manner, plumb, level and in true planes. Brace until all components are intact and secured together.

.14 All members shall be accurately cut to length, angle and be true to line to assure tight joints.

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

3.7 SPECIAL PROTECTION

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

END OF SECTION

PART 1 - GENERAL

1.1 General Requirements

.1 The General Conditions of the Contract and the General Requirements of Division 1, form part of this section, and must be read in conjunction with the requirements of this section. The work of this section shall comply with all requirements of Division 1 – General Requirements.

.2 The Contractor shall, together with any and all Subcontractors involved in the work of this section, examine all surfaces or conditions relating to the Work, in order to determine the acceptability of such surfaces or conditions for the work of this section to commence.

.3 Subcontractors shall report in writing, any observed defects or deficiencies in any surfaces or conditions that would adversely affect the work of this section, to the Contractor for correction prior to commencing the work of this section.

.4 Commencement of the work of this section shall imply acceptance of all surfaces and conditions.

1.2 Section Includes

.1 Provision of all labour, materials, equipment and incidental services necessary to provide all mill-fabricated architectural woodwork and associated hardware, including the following:

.1 Shop fabrication.

.2 Delivery to the site.

1.3 Reference Standards

.1 ANSI-A135.4; Hardboard
.2 ANSI A208.1; Particleboard, Mat-formed Wood
.3 ANSI A208.2; Medium Density Fiberboard
.4 ANSI/BHMA-A156.9; Cabinet Hardware
.5 KCMA (Kitchen Cabinetmakers Manufacturers Association)
.6 ANSI A-161.2-1998 (Revised)
.7 AWMAC / AWI Quality Standards Illustrated
.8 National Lumber Grades Authority (NLGA) Standard Grading Rules for Canadian Lumber
.9 National Hardwood Lumber Association (NHLA) Rules for the Measurement and Inspection of Hardwood and Cypress
.10 CAN3-A172; High Pressure, Paper Base, Decorative Laminates
.11 CSA O112.6/O112.7; Resorcinol Resin Adhesive
.12 CAN/CGSB-71.19; Adhesive, Contact, Sprayable
.13 CAN/CGSB-71.20; Adhesive, Contact, Brushable
.14 CSA-B111-1974; Wire Nails, Spikes and Staples
.15 CAN/CSA-G164; Hot Dip Galvanizing of Irregularly Shaped Articles
.16 CSA-O115; Hardwood and Decorative Plywood
.17 CSA-O112 Series; CSA Standards for Wood Adhesives
.18 CSA-O121; Douglas Fir Plywood

.19 CAN/CSA-O141; Softwood Lumber
.20 CSA-O151; Canadian Softwood Plywood.

1.4 Quality Assurance

.1 Fabricator

.1 Work of this section shall be performed by subcontractors having a minimum of 3 years documented experience in shop fabrication of architectural woodwork (millwork). Submit proof of experience to Consultant. Fabricators shall have sufficient equipment and personnel to complete the architectural woodwork (millwork) portion of this contract.

.2 Installation

.1 Work shall be performed in strict accordance with reviewed shop drawings, and in accordance with all warranty requirements.

.3 Pre-installation Meeting

.1 Convene a pre-installation meeting for the work specified in this section. Attendees must include, as a minimum, representatives of the following:

.1 Contractor (Site Superintendent & Project Manager)

.2 Installation Subcontractor (Site Foreman & Project Manager)

.3 Product Manufacturer and/or Distributor (Technical Representatives),

.4 Related Subcontractors,

.5 Consultant, and

.6 Owner

1.5 Shop Drawings

.1 Submit shop drawings in accordance with Section 01330.

.2 Clearly indicate all materials, details of construction, profiles, jointing, fastening, installation schedule , colours and other related details.

.3 Details and sections must to scale.

1.6 Mock-Up

.1 Shop-prepare one typical base cabinet unit, complete with all hardware and applied finishes and install on site at designated location for Consultant’s review.

.2 If approved by the Consultant, the accepted unit will establish the base minimum for acceptable work.

.3 If rejected, remove mock-up unit and replace with unit acceptable to Consultant.

1.7 Delivery, Storage and Handling	.1	Protect finished surfaces against damage with heavy kraft paper over doors and countertops during and after delivery.
	.2	If required, store millwork in ventilated areas, protected from extreme changes of temperature or humidity.
	.3	Do not deliver or install millwork until necessitated by coordination with work of other trades, or until area is sufficiently climate controlled so as not to expose millwork to damage from excessive changes in temperature or humidity.

PART 2 - PRODUCTS

2.1 Source Quality Control	.1	Millwork fabricator will supply to the Consultant, shipping labels and/or bills of lading for panel materials used in the work of this Section, for verification purposes.
2.2 Materials	.1	As noted on the drawings. Laminate shall be General Purpose (HGS) type 107.
2.3 Colours	.1	The Consultant/owner will select colours from the manufacturer's standard colour range samples provided by the contractor.
2.4 Adhesives	.1	Contact Adhesive: to CAN/CGSB-71.19 and CAN/CGSB-71.20.
	.2	Hot Melt Adhesive: of approved manufacturer.
	.3	Resorcinol Adhesive: to CSA-O112.6 or O112.7.
	.4	Sealer: water-resistant sealer or glue.
2.5 Accessories	.1	Draw Bolts: Industry standard, cadmium plated, self-tightening type for use in panel and countertop jointing.
	.2	Nails and staples: to CSA-B111, plain finish.
	.3	Wood screws: to CSA-B35.4, cadmium plated.
	.4	Sealant: to Section 07 92 00.
2.6 Hardware	.1	All cabinet hardware shall meet or exceed the requirements of ANSI/BHMAA156.9.
	.2	Drawer Slides: Galvanized steel construction, ball bearings separating tracks, telescoping full Heavy Duty Drawer Slides: Galvanized steel construction, ball bearings separating tracks, telescoping full extension type, 200 lb class.

.3 Drawer and Door Pulls: "U" shaped pull, stainless steel with satin finish, 90 mm centres.

.4 All hardware must comply to AODA (Accessibility for Ontarians with Disabilities Act)

2.7 Fabrication .1 In accordance with the drawings.

2.8 Finishes .1 In accordance with the drawings.

PART 3 - EXECUTION

3.1 General .1 Examine the site and take all measurements necessary to ensure accurate and proper fitting of this work into the building and around all obstructions or projections already in place and/or shown on the drawings and to suit the locations of service piping, all as required to produce a neat, first class installation.

3.2 Cabinet Installation .1 Install prefinished millwork at locations shown on drawings. Position accurately, level, plumb straight.

.2 Fasten and anchor millwork securely. Provide heavy-duty fixture attachments for wall-mounted cabinets.

.3 Scribe and cut as required to fit abutting walls and to fit properly into recesses and to accommodate piping, columns, fixtures, outlets or other projecting, intersecting or penetrating objects. Provide filler panels of same construction and finish as cabinets. Maximum size of fillers not to exceed 25mm. Maximum uniform joint between fillers and adjacent wall surface not to exceed 3mm.

.4 At junction of counter or backsplash and adjacent wall finish, apply small bead of clear sealant.

3.3 Fastenings .1 Provide all fastenings, anchors, and accessories required for installation of this work.

.2 Keep exposed fastenings to a minimum; evenly spaced, and uniformly arranged.

.3 Supply adequate instructions and/or templates and if necessary supervise installation where fastening or accessories are required to be built into work of other trades.

3.4 Hardware Installation .1 Supply and install all finish hardware required for cabinet work.

3.5 Protection	.1	Cover finished surfaces with heavy kraft paper or put in cartons during shipment. Protect installed surfaces by approved means. Do not remove until immediately before final inspection.

END OF SECTION

PART 1 GENERAL

1.01 SUMMARY

A. Section Includes:

1. Fluid applied seamless flooring.

2. Joint, edge, and termination strips.

3. Prior to installation of structural floor slab, review, in writing, of all requirements of concrete substrate regarding finish, level tolerance, and curing; see INSPECTION in Part 3.

4. Locate all flexible joints required. See submittals below.

5. Accessories necessary for complete installation.

B. Related Sections:

1. Specialty Repair Concrete Work Section 03484.
   a. Concrete sub-floor to be level (maximum variation not to exceed ¼ inch in 10 feet) and to have a steel troweled finish. No curing agents or other additives which could prevent bonding should be used unless the mechanical surface preparation method completely removes the curing agent residue or sealer.

1.02 REFERENCE STANDARDS

The publications listed below from a part of this specification to the extent referenced. The publications are referred to in the text by the basic designation only.

A. American Society for Testing and Materials (ASTM) Publications:

C-307 Test Method for Tensile Strength of Chemical-Resistant Mortars.

C-501 Test Method for Relative Resistance to Wear Unglazed Ceramic Tile by the Taber Abraser.

C-531 Test Method for Linear Shrinkage and Coefficient of Thermal Expansion of Chemical-Resistant Mortars, Grouts, and Monolithic Surfacing.

C-579 Test Methods for Compressive Strength of Chemical-Resistant Mortars and Monolithic Surfaces.

C-580 Test Method for Flexural Strength and Modulus of Elasticity of Chemical-Resistant Mortars, Grouts, and Monolithic Surfacing.

C-884 Test Method for Thermal Compatibility Between Concrete and an Epoxy Resin Overlay.

D-570 Water Absorption of Plastics.

D-695 Compression Properties of Rigid Plastic.

B. Military Specifications (Mil. Spec.)

MIL D-3 134 F (Impact Resistance) Section 4.7.3.

MIL D-3 134 F (Indentation Resistance) Section 4.7.4.

MIL D-3234 F (Resistance to Elevated Temperature) Section 4.7.5.

C. ACI 301 Specifications for Structural Concrete for Buildings (most recent edition). Committee in Concrete 403 bulletin 59-43, Bond Strength to Concrete.

1.03 DEFINITIONS

A. Epoxy Resin Flooring specified under this section is referenced on the drawings.

1.04 SYSTEM DESCRIPTION

A. System shall be a 90-125 mils thick epoxy surfacing with chemical and UV resistant epoxy grout and aliphatic low odor 90% solids urethane sealer.

1.05 SUBMITTALS

A. Samples: Submit 6 by 6 inch cured samples of flooring system indicating color combination and non-skid properties. Approved samples will be used during installation for product match.

B. Certified Test: Submit two copies of suppliers/ manufacturers written certification that flooring system meets or exceeds required properties.

C. Manufacturers Application Instructions: Submit descriptive data and specific recommendations for mixing, application, curing including any precautions of special handling instructions required to comply with the Occupational Safety and Health Act.

D. Shop Drawings: Shop Drawings shall be furnished showing installation of cove base and termination details, and details at floor material transitions and where adjoining equipment.
   1. Locate and provide detailing for flexible joints required for flooring in area of installation.

E. Maintenance Instructions: Submit current copies of the flooring manufacturer's printed recommendations on maintenance methods and products. Submit in accordance with Section 01730 - Operation and Maintenance Manuals.

1.06 QUALITY ASSURANCE

A. Materials used in the floor surfacing shall be the products of a single manufacturer.

B. Installation shall be performed by an applicator with minimum 5 years experience in work of similar nature and scope. Installer must be approved by the manufacturer of the floor surfacing materials. The contractor shall furnish a written statement from the manufacturer that the installer is acceptable.

C. Installer to verify locations of all flexible joints required by the provisions of this Section and by the recommendations of the related material manufacturers.
   1. Joint locations may or may not be shown in drawings.
   2. Refer to drawings required under SUBMITTALS above.

D. Installer to keep daily log of the date of installation, room number, type, color, and method of application of product being installed. Log must be available for inspection by the Engineer upon request.

E. Contractor to have proven experience with specified system.

F. Portable mock-up: Prior to starting application of flooring, provide full scale portable mock-up to establish acceptable quality, durability, and appearance. Mock-up size must not be less than 4 square feet.
   1. Acceptable mock-up to be standard of quality for installed work.
   2. Unacceptable installed work to be removed and replaced until acceptable. Aesthetically unacceptable but well bonded work may be overlaid or recoated per Manufacturer's instructions if thickness clearances permit.

G. Qualifications:
   1. Installer: Must be acceptable to Owner, Engineer, and Manufacturer.

1.07 PROJECT CONDITIONS

A. Maintain the ambient room and the floor temperatures at 60 degrees Fahrenheit, or above, for a period extending from 72 hours before, during and after floor installation. Concrete to receive surfacing shall have cured for at least 28 days and shall have been free of water for at least 7 days.

B. Dew Point: Substrate temperature must be minimum of 5 degrees above dew point prior to, during or up to 24 hours after application of flooring system.

C. Illumination: Apply flooring system only where a minimum of 30 footcandles exist when measured 3 feet from surface.

D. Advise other trades of fixtures and fittings not to be installed until flooring is cured and protected.

1.08 PROTECTION

A. Protect adjacent surfaces not scheduled to receive the flooring by masking, or by other means, to maintain these surfaces free of the flooring material.

B. Provide adequate ventilation and fire protection at all mixing and placing operations. Prohibit smoking or use of spark or flame producing devices within 50 feet of any mixing or placing operation.

C. Provide polyethylene or rubber gloves or protective creams for all workmen engaged in applying products containing epoxy.

1.09 PRODUCT DELIVERY, STORAGE, AND HANDLING

A. All materials shall be delivered to project site in original manufacturer's sealed containers including type of material, batch numbers, date of manufacture, and pertinent labels intact and legible.

B. Store materials in dry protected area at a temperature between 60° F to 80° F.

C. Follow all manufacturer's specific instructions and prudent safety practices for storage and handling.

1.10 WARRANTY

A. Contractor to guarantee work under this Section to be free from defects of material and installation for the duration of the warranty period. Defects occurring during warranty period shall be repaired, in a manner satisfactory to the Owner and the Engineer, at no additional cost to the Owner.
1. Warranty Period: Two (2) Years.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Stonsheild HRI by Stonhard OR
B. Troweled quartz flooring by Dur-A-Flex Inc. OR
C. Troweled quartz flooring by Durabond Technical Coatings Limited OR
D. Sikafloor Quartzite HBD by Sika Canada OR
E. Approved Equal

2.02 MATERIALS

A. Cementitious Tile Backboard:

B. Flexible Membrane: Flexible Epoxy.

C. Prime Coat: Two component penetrating damp-proof epoxy or moisture vapor control system if required.

D. Matrix: Matrix-epoxy/aggregate composition.

E. Grout coat: Two component chemical and UV resistant clear epoxy.

F. Sealer: Two component chemical and UV resistant, low odor clear urethane.

2.04 MIXING

A. Apply resinous flooring to specified physical properties.

B. Provide slip-resistant, cleanable finish. Samples to be approved by Owner and Engineer.

2.05 FINISHES

A. Color as selected by Engineer or Owner from the manufacturer's standard colors.

PART 3 EXECUTION

3.01 PREPARATION

A. Obtain Engineer's approval of mock-up before installing flooring; see QUALITY ASSURANCE in **PART 1.**

B. Preparation of Surface:
1. Inspect surfaces to receive flooring and verify that condition is smooth and free from conditions that will adversely affect execution, permanence, or quality of work.
   a. Remove all projections, all debris detrimental to flooring system, and dirt, oil contaminates, grease, and surface coatings affecting bond.

2. Notify Engineer or Owner in writing prior to commencing work of any conditions deemed unsatisfactory for the installation; installation of flooring materials is understood as acceptance of the substrate as satisfactory.

3. Concrete: The General Contractor shall be responsible for hiring an independent testing service to test for moisture content and moisture vapor emission rate; install no flooring over concrete until the concrete has been cured and is sufficiently dry to achieve permanence with flooring as determined by material manufacturer's recommended bond and moisture tests.

   a. Effectively remove concrete laitance by steel shot blasting or other method approved by flooring manufacturer.

   b. Concrete slab shall have an efficient puncture-resistant moisture vapor barrier 10 mils thick minimum placed directly under the concrete slab (for slab on grade). Do not use vapor barrier manufactured with recycled material. Testing must be done to verify that the moisture vapor emission rate of the slab does not exceed that as recommended by the manufacturer at time of installation of the flooring or at any future date. Moisture vapor emission and moisture content testing must conform with the requirements of ASTM F-1869-11 (Calcium Chloride Test) and ASTM F-2170-11 (Relative Humidity Probe Test). If any test result shows excessive levels of moisture content or vapor emission rate, apply manufacturer’s recommended moisture vapor emission control material.

c. Treat cracks in concrete using manufacturer's recommended practice. Rout out crack and fill with rigid epoxy; Reinforce crack with fiberglass cloth. Refer to section 3.02.B. Crack isolation membrane treatment may be alternative treatment, consult with manufacturer for recommendations.

3.02 INSTALLATION

A. Install all floor materials in strict conformance with manufacturer's instructions.

B. Match finished work to approved samples, uniform in thickness, sheen, color, pattern and texture, free from defects detrimental to appearance.

C. Apply temporary protection until floor is fully cured. The General Contractor shall protect the finished floor from the time that the sub-contractor completes the work.

End of Section

PART 1 - GENERAL

1.1 Scope

.1 Read and conform to Division 00 and Division 1 which both apply to and form part of the work.

.2 Provide materials, labour and equipment for painting and finishing new materials used in upgrading, renovating, adding to or demolishing shown on the drawings, described herein, or as necessary to complete the work.

.3 Priming woodwork on arrival to Site.

.4 Interior painted finishes.

.5 Exterior painted finishes.

1.2 Work Under Other Sections

.1 Shop coat of paint - under respective Sections.

1.3 Standards

.1 Paint Materials: To CAN/CGSB Standards listed in Finishes, 1-GP series. Provide signed certificate stating materials comply with the standards and that paint materials for each coating are products of one manufacturer only. Use only odourless solvent products in all interior locations. Do not mix or thin. Use materials and colours directly from the manufacturers' containers.

.2 Workmanship standards: Apply finishes to CAN/CGSB 85-GP series as applicable with sufficient coats to provide full coverage, colour match and uniform sheen, but using minimum number of coats specified. Conform to regulations of authorities having jurisdiction.

1.4 Samples

.1 Submit the successful manufacturers colour system with the approved colours marked and related to those used on the approved colour schedule. Submit the colours to [the Owner] for approval and retention in the project file. Ensure finished work matches manufacturer's colour sample.

1.5 Environmental Requirements

.1 Do not apply paint finish in areas where dust is being generated.

.2 Spray painting is not allowed. Use only new clean brushes or rollers.

.3 Do not clean equipment, brushes, rollers, etc. on the premises.

.4 During paint operations, provide sufficient fresh air circulation.

.5 In cold weather, use temporary exhaust fans or ozone air purifier.

1.6 Delivery and Storage

.1 Deliver materials in original containers with labels intact and seals unbroken.

.2 Store materials under cover and protect from fire at all times. Housing Authority will not provide material storage space.

1.7 Protection

.1 Protect floor surfaces and built-in furnishings with clean drop cloths.

PART 2 - PRODUCTS

2.1 Colours

.1 Colours: to match adjacent wall surfaces or as selected by Owner.

.2 Contractor to provide colour samples to Owner for Owner's Approval.

2.2 Interior Finish Materials

.1	**For Concrete Block**	CAN/CGSB Standard
	One coat Block Filler	1-GP-188M Latex
	One coat Primer Sealer	Not required with FIL K452 noted below OR Benjamin Moore Insl-X STIX Waterborne Bonding Primer SXA-110
	Two coats Latex Satin Finish	Benjamin Moore Ultra Spec Masonry Acrylic Latex Satin – FIL K452 Colour to be determined
.2	**For Gypsum Board Walls and Ceilings**	
	One coat Primer Sealer	Benjamin Moore Ultra Spec 500 Interior Latex Primer K534
	Two coats Latex Pearl Finish	Benjamin Moore Ultra Spec 500 Interior Satin/Pearl F545 Colour to be determined
.3	**For Wood Trim**	
	One coat Primer Sealer	Benjamin Moore Ultra Spec 500 Interior Latex Primer K534 OR Fresh Start Undercoater and Primer/Sealer K032
	Two coats Latex Pearl Finish	Benjamin Moore Ultra Spec 500 Interior Satin/Pearl F545 Colour to be determined
.4	**For Primed Ferrous Metal Surfaces**	
	One coat Priming or Spot Priming	Benjamin Moore Advance Waterborne Interior Alkyd Primer K790
	Two coats Semi Gloss Finish	Advance Waterborne Interior Alkyd Semi Gloss K793

Colour to be determined

2.3 Exterior Finish Materials

.1 **For Primed Ferrous Metal Surfaces**

One coat Spot Priming	1.40-M87 Oil Alkyd
Two coats Exterior Enamel	1.59-M88 Alkyd

.2 **For Galvanized and Zinc Coated Metal**

One coat Galvanized Metal Primer	1-GM-198M Oil Base
Two coats Exterior Enamel	1.59-M88 Alkyd

.3 **For Masonry, Concrete and Stucco Surfaces**
Two coats Exterior Masonry Coating 1.GP-138M Latex

PART 3 - EXECUTION

3.1 Preliminary Work

.1 Give at least 3 days notice to the Owner before starting work.

.2 Provide temporary protection to all areas during operations.

3.2 Preliminary Repairs

.1 Cut away the cracked or fissured finish to expose the primary substrate for a minimum of 300mm on both sides of the cracks or fissures.

.2 Examine substrate surface and where cracks or fissures are due to normal settlement or acceptable building movement, fill with compatible materials to material manufacturers directions and the Owner's approval.

.3 Fill and neatly join repairs to existing work for both substrate and finish; trowel to an even, level and matching texture; cure and sand as required.

.4 Reprime entire repair to ensure colour and texture matches the surrounding finished surfaces prior to normal repainting operations.

3.3 Preparation of Surfaces

.1 Touch up shop primer on steel with CAN/CGSB 1-GP-40M applied to CAN/CGSB 85-GP-14M.

.2 Prepare masonry, stucco, and concrete surfaces to CAN.CGSB 85-GP-31M.

.3 Prepare concrete floors to CAN/CGSB 85-GP-32M.

.4 Prepare new and repaired plaster and wallboard surfaces to CAN/CGSB 85-GP-33M. Fill cracks with plaster patching compound.

3.4 Application

.1 Sand and dust between each coat to remove defects visible from a distance up to 1.5 m.

.2 Finish bottoms, edges, tops and cut-outs of doors after fitting as specified for door surfaces.

.3 Finish tops of cabinets and projecting ledges, above and below sight lines as specified for surrounding surfaces.

.4 Finish closets and alcoves as specified for adjoining rooms.

.5 Repainted surfaces within already painted areas must colour match existing.

.6 After painting; drawers, window sashes and doors must operate freely.

3.5 Mechanical and Electrical Equipment

.1 Paint exposed conduits, pipes, hangers and other mechanical and electrical equipment occurring in finished areas. Colour and texture to match adjacent surfaces, except where noted otherwise.

.2 Keep sprinkler heads free of paint.

.3 Paint disconnect switches for fire alarm system and exit light systems in 'Fire Safety' yellow enamel.

3.6 Completion

.1 Remove protection; make good damage to this and adjacent work.

.2 Remove materials, debris, tools, plant and equipment from the premises.

3.7 Clean-up

.1 Remove rubbish, rags and oily waste from the site daily and at final completion and keep areas clean.

.2 Upon completion, clean blemished surfaces to Housing Authority satisfaction. Repair any damage. Replace hardware plates, drapes, pulls, etc.

.3 Leave building and painted site equipment in a 'cleaned and polished' condition.

End of Section

PART 1 - GENERAL

1.1.1 **General Requirements**

1.1.2 Conform to Sections of Division 1 as applicable.

1.1.3 Section 15010 applies to and governs work of all Sections of Division 15.

1.1.4 Conform to Electrical General Requirements, Section 16010.

1.1.5 Conform to Division 16 requirements for Motors, Starters and Wiring.

1.2 **References**

1.2.1 CAN/CGSB-1.40-M89: Primer, Structural Steel, Oil Alkyd Type.

1.2.2 ANSI B31.1 to B31.9 inclusive: Piping.

1.3 **Description**

1.3.1 Provide work in accordance with full intent and meaning of Drawings and Specifications as required to result in complete operating systems.

1.3.2 Drawings show arrangement and general design. Work is suitably outlined on Drawings with regard to sizes, locations, general arrangements and installation details. Mains and connections thereto are indicated more or less in diagram except where in certain cases Drawings may include details giving exact locations and arrangements required.

1.3.3 Classify and apportion materials and performance of labour to several trades involved in accordance with local customs, rules, regulations, jurisdictional awards, decisions, insofar as they may apply and as required to efficiently execute work involved in this Contract.

1.4 **Electrical Requirements**

1.4.1 General:

1.4.1.1 Comply with requirements of Ontario Hydro Electrical Safety Code.

1.4.1.2 All equipment specified in Division 15 or shown on Mechanical Drawings to be supplied and installed by Division 15 and wired by Division 16 unless specifically indicated otherwise.

1.4.1.3 The nominal electrical service available for mechanical equipment is 575 volts, 3 ph, 60 Hz, and 120 volts, 1 ph, 60 Hz, unless specifically stated otherwise on Drawings.

1.4.1.4 Provide motors with all electrically driven equipment furnished under this Contract.

1.4.1.5 If Consultant gives approval of substitution of any item of mechanical equipment, include and pay for all necessary electrical changes (labour, materials, overhead, etc.) due to substitution of equipment.

1.4.2 Starters, Disconnects, Motor Control Centres, etc.:

1.4.2.1 As specified in Division 16, Electrical. Division 15 is responsible for coordinating electrical equipment requirements with Division 16, prior to procuring Division 15 equipment.

1.4.3 Wiring:

1.4.3.1 Provide power and control wiring as defined under respective Sections of Divisions 15 and 16. Refer to and conform with Division 16 for details of raceways, boxes, wiring, colour coding, etc.

1.5 ELECTRIC MOTORS

1.5.1 Unless specified otherwise, use CSA approved motors with the following characteristics:

1.5.2 Motors 250 watts (1/3 hp) and under: Use continuously rated squirrel cage induction type with capacitor start, CEMA "N" starting characteristics and a minimum of Class "A" insulation, unless specified otherwise.

1.5.3 Motors 370 watts (1/2 hp) and over: Use continuously rated squirrel cage induction type with CEMA "B" starting characteristics and a minimum of Class "B" insulation.

1.5.4 Use drip-proof type motor with a 1.15 service factor, unless specified or required otherwise by the motor location. Totally enclosed motors must be fan cooled and have a 1.0 service factor.

1.5.5 Provide motors of adequate size and type for intended service. Unless stated otherwise, use ambient temperature of 40ºC (104ºF).

1.5.6 Unless specified otherwise, starters for electric motors will be provided by Division 16.

1.5.7 All motors exposed to the outdoors to be TEFC.

1.6 Submittals

1.6.1 General:

1.6.1.1 See Controls, Section 15900, for additional requirements.

1.6.2 Shop Drawings:

1.6.2.1 Submit shop drawings for equipment supplied by Division 15 and as herein listed. Supplement shop drawings with brochures where necessary or as required. The initial submission of shop drawings for any one trade shall include a checklist of all related specified items for that trade to ensure complete submittal and review.

1.6.2.2 Submit seven copies of such drawings or brochures to Consultant for review. If items are not as specified, resubmit seven corrected copies.

1.6.2.3 Prepare shop drawings, specifically for this work, in sufficient detail to avoid decisions being made in shop or field.

1.6.2.4 General shop drawings showing more than one size or model will not be considered unless properly marked up.

1.6.2.5 Include performance data and characteristic curves with all pump shop drawings.

1.6.2.6 Include wiring diagrams and schematics for equipment which has electrical controls or devices furnished with equipment. Wiring diagrams alone are not sufficient; schematic and interconnecting drawings, and written sequence of operation of equipment are required for review.

1.6.2.7 Clearly indicate materials and/or equipment being supplied, all details of construction, finish, accurate dimensions, capacities and performance on shop drawings and brochures. Identify equipment shop drawings with designations as indicated on Drawings or in Specifications. If not complied with, shop drawings will not be reviewed and will be returned to Contractor.

1.6.2.8 Each shop drawing and/or brochure must bear stamp and signature of responsible official in Contractor's and Subcontractor's organization, for each submission, as evidence that drawing has been checked against requirements as called for in Specifications and Drawings. Also, in cases where equipment attaches to and/or where there is external wiring connecting to other equipment, check that it has been properly coordinated with this equipment, whether supplied under this or other contracts.

1.6.2.9 Revisions to shop drawings will not be allowed, after they are reviewed, unless further review and submission is required.

1.6.3 Record Drawings:

1.6.3.1 Maintain an accurate dimensional record of underground piping and deviations and changes in above ground piping, ductwork and equipment from Contract Drawings. Transfer this information to two sets of record drawings filed at project site and submit to Consultant at completion of project.

1.6.4 Installation and Start-up Instructions:

1.6.4.1 Furnish three copies of installation instructions and three copies of start-up instructions for any equipment requested by Consultant.

1.6.5 Operation and Maintenance Instruction Manuals:

1.6.5.1 Provide three copies of complete operation and maintenance instructions for equipment furnished under this Contract.

1.6.5.2 Bind instructions in loose-leaf 3-ring binders. When only one volume is required, provide a complete index. When more than one volume is required, include in first book a complete index of all volumes and an individual index in each succeeding volume. Include following manuals:

- Schematic diagram of electrical systems.
- Control shop drawings and operating sequence, including wiring of components.
- Wiring diagram of control panels.
- Operating instructions, including start-up and shut-down procedure.
- Maintenance instructions, including preventive maintenance instructions for components of equipment.
- Lubricating instructions and recommended cycle of lubrication for each item of equipment, including various types of lubricants.
- Complete parts list of assemblies and their component parts, showing manufacturer's name, catalogue number, and nearest replacement source.
- List of recommended spare parts and quantity of each item to be stocked.
- Manufacturers' warranties and guarantees.

Above applies to component parts of equipment, whether they are manufactured by supplier of equipment or are supplied as a component part of item of equipment.

1.7 **Quality Assurance**

1.7.1 Regulatory Requirements:

1.7.1.1 Conform to governing Municipal and Provincial Codes, Rules and Regulations and/or Authorities having jurisdiction.

1.7.1.2 Codes and Standards referred to hereinafter are by inference, in each case, latest issue of the Specified Code or Standard, including all revisions and amendments thereto as adopted and published at date of bid closing.

1.7.1.3 Do all work and supply all equipment in accordance with requirements and recommendations of latest issue of applicable standards and codes of:

- National Standards of Canada (NSC)
- Canadian General Standards Board(CGSB)
- Canadian Standards Association (CSA)
- American National Standards Institute (ANSI)
- American Society for Testing and Materials (ASTM)
- American Society of Mechanical Engineers (ASME)
- Ontario Regulation 403/97 (Ontario Building Code) (OBC)
- Ministry of Housing Ontario Regulation 189/94 and 190/94
- Ontario Fire Code(OFC)
- Ontario Ministry of Labour
- Sheet Metal and Air Conditioning Contractors' National Association (SMACNA)

1.7.2 Permits and Fees:

1.7.2.1 Obtain all permits required for installation of mechanical trades work, arrange for inspections tests therewith and pay all costs for permits, inspections, and associated fees. Obtain permits immediately after notification of award of Contract.

1.7.2.2 Obtain copies of Drawings, from the Consultant, for submission with application for permits.

1.8 **Site Conditions**

1.8.1 Existing Service:

1.8.2 Do not shut down or make connections to any existing service without written permission of the Consultant.

PART 2 - PRODUCTS

2.1 **Materials and Equipment**

2.1.1 Use materials and equipment as specified herein, or specified equivalent. Design of mechanical systems has been based on first listed supplier and model number/size stated in Equipment Schedules.

2.1.2 Where an item of material or any equipment is specifically identified by a manufacturer's trade name and/or catalogue number, make no substitution except as provided for in the City’s Front-End Documentation.

2.1.3 In the case of some items of equipment, one or more additional names of acceptable equal manufacturers are listed in the Clause describing an item or a group of items. The design, layout, space allocation, connection details, etc., are based on the products named first in the description of each item. The products named first in the description of each item establish the quality of

manufacture, and design standards, for all other manufacturers of that item. The general approval indicated by listing the names of other manufacturers is to establish the quality of manufacture and design standards only and is subject to final review of shop drawings, performance data, test reports, production samples (if required) by Consultant, and equipment shipped to site. Ensure that the products used meet the requirements specified as shown on the Contract Drawings.

2.1.4 Suppliers wishing to submit other items of equipment for approval as an equal to those specified must follow the procedures as listed in the City's Front-End Documentation. Approval for substitution of equipment will only be given on the understanding that all details, accessories, features and performance meet the Specifications unless otherwise stated. Deviations from the Specifications must be stated in writing at time of application for approval.

2.1.5 Reserved.

2.1.6 Reserved.

2.1.7 After execution of the Contract, substitution of equipment will be considered only if equipment accepted cannot be delivered in time to complete the work in proper sequence, or if the manufacturer has stopped production of the accepted item. In such cases, requests for substitution must be accompanied by proof of equality and difference in price and delivery, in the form of Certified Quotations from suppliers of both specified and proposed equipment. Credit any decrease in price, involved in substitution, to the Owner by reduction of the Contract Price. The Contractor will not be reimbursed for any such increase in price.

2.1.8 Where equipment other than the equipment used as a basis for design, layout and space allocation is used, produce and submit revised layouts of equipment, pipes, ducts, etc., in the areas affected. Submit these Drawings with the Shop Drawings. Failure to produce these Drawings is an indication by the Contractor that they are not required and the original space allocations are adequate for the substituted equipment.

2.2 **Pipe Sleeve Seal**

1. "Link-Seal"

2.3 **Motors, Starters, Disconnects, Motor Control Centres**

1. Refer to Division 16.

2.4 **Pipe Hangers**

1. Grinnell
2. Myatt
3. Carpenter & Paterson

2.5 **Firestopping**

2.5.1 Use only service penetration firestop components and assemblies certified by ULC in accordance with ULC-S115-M95 "Standard Method of Fire Tests of Firestop Systems".

2.6 **Isolating Unions**

1. Epco
2. Marpac "Petro"
3. Corrosion Service

2.7 **Caulking Compounds**

1. Denso-Plast
2. Execution

PART 3 - EXECUTION

3.1 **Protection**

3.1.1 Protect all work and materials, before and after erection, from weather and other hazards, and keep in a clean and orderly manner.

3.1.2 Protect pipe ends, valves, and parts of equipment left unconnected to prevent damage or intrusion of foreign matter. Provide pipe caps for threaded male connections, and plugs for threaded female connections.

3.2 **General Installation Requirements**

3.2.1 General:

3.2.1.1 Conform with applicable requirements of Occupational Health and Safety Act and Regulations for Construction Projects.

3.2.2 Measurements and Deviations:

3.2.2.1 Before installing piping, review existing architectural, structural, and electrical conditions against mechanical drawings. Where interference may occur, and departures from arrangements as shown are required, consult with other trade sections involved, come to agreement as to changed locations or elevations, and obtain approval of Consultant for proposed changes, before proceeding with work.

3.2.2.2 Examine work of other trade sections and contractors, prior to commencement of mechanical installations. Report in writing, to Consultant, any discrepancies which will affect mechanical installations. Failure to do so shall be considered acceptance of conditions.

3.2.2.3 Where Site conditions require minor deviations from indicated arrangements or locations, make such changes on approval of Consultant without additional cost to Owner.

3.2.2.4 Should any discrepancies occur during installation of mechanical work, which will necessitate major revisions to mechanical trades work or work of other trade sections or contractors, notify Consultant immediately and obtain his written authorization before proceeding with the work.

3.2.3 Scaffolding and Hoisting Equipment:

3.2.3.1 Refer to and comply with Section 01001, General Requirements.

3.2.3.2 Do not drill, cut or weld building steel, or building structure, for erection of materials or equipment, without prior written approval of Consultant.

3.2.4 Overloading:

3.2.4.1 During installation of mechanical work, do not load any part of building structure with load greater than it is capable of bearing. Bear full responsibility should any accident occur or damage result through violation of this requirement.

3.2.4.2 Any temporary supports, used during installation, must be as strong as permanent supports.

3.2.5 Cutting and Patching:

3.2.5.1 Should cutting, repairing, and patching of previously finished work, of other trades, be required to allow installation of mechanical work, pay all costs for trade section concerned to perform work.

3.2.5.2 Do not cut or drill holes through floors, roof or structural members before obtaining permission from the Consultant.

3.2.5.3 For penetrations through walls, not required to have a fire rating, seal all spaces between pipe or pipe and surrounding wall construction with a fire-rated foam sealant. Use 3M Fire Barrier or Dow Fire Stop UL Classified fire rated foam sealant. Do this as the work progresses to avoid leaving inaccessible holes at completion of the job.

3.3 Equipment Installation

3.3.1 General:

3.3.1.1 Erect equipment in a compact, neat and workmanlike manner. Align level and adjust for satisfactory operation. Install in such a manner that connecting and disconnecting of piping and accessories can be made readily and that all parts are easily accessible for inspection, operation, maintenance and repair.

3.3.1.2 Install and start up items of equipment in complete accordance with the manufacturer's printed installation and operating instructions.

3.3.2 Noise and Vibration:

3.3.2.1 Select noise and vibration levels of equipment and systems to conform to design intent. If unnecessary noise or vibration should be created by any mechanical equipment and systems, and transmitted to occupied portions of building or other mechanical work, make all necessary changes and additions as approved by Consultant without additional cost.

3.3.3 Lubrication:

3.3.3.1 Lubricate all equipment prior to start up, in accordance with manufacturer's printed instructions.

3.4 **Piping Construction Methods**

3.4.1 General:

3.4.1.1 Unless specified otherwise herein, construct and install all piping in accordance with ANSI Sections B31.1 to B31.9 as applicable to service, except that soldered joints will not be permitted in compressed gas piping.

3.4.1.2 Inspect pipe and fittings for soundness and clean of all dirt and other foreign matter immediately prior to installation. Reject all damaged items.

3.4.1.3 Install piping in most direct, straight, and functional manner possible. Except where otherwise shown, install all vertical lines plumb, and run horizontal lines parallel to building walls. Install piping close to walls, partitions and ceilings. On multiple runs of piping, space piping to allow for installation of insulation and for proper operation and servicing of valves.

3.4.1.4 Ensure that trenches for piping, below grade, are dry and firm when laying pipe.

3.4.2 Expansion and Contraction:

3.4.2.1 Install all piping so as to be free from strain and distortion due to expansion and contraction and governed by requirements of ANSI B31.1, except as hereinafter modified. Allow for expansion and contraction by offsets, expansion U-bends or loops. Do not use expansion joints of any type unless specifically indicated on Drawings or specified under another Section of Division 15 for a particular installation.

3.4.2.2 Base provision for expansion and contraction on 25 mm (1") movement per 30 m (100 feet) of steel pipe and 38 mm (1-1/2") movement per 30 m (100 feet) of copper or brass pipe for each 55EC (100EF) temperature difference from 21EC pipe for each 55EC (100EF) temperature difference from 21EC (70EF) ambient. Fabricate expansion bends in steel pipe from pipe sections and long radius welding elbows.

3.4.3 Lines, Grades and Slopes:

3.4.3.1 Install liquid and air lines free of pockets and pitch to drain, at low points in line, with valves or traps installed as required for drainage of the lines.

3.4.3.2 When slope is not indicated on Drawings, install piping to following minimum slopes:

1. Drainage piping: 1:50 on drains of NPS 3 size and less and 1:100 on drains of NPS 4 and larger. In special circumstances as provided for under the Codes and Regulations and express approval of Consultant, drains of NPS4 size and larger may be laid at a lesser slope.

2. Domestic water lines: pitch to low points so that all lines may be completely drained.

3. Compressed gas and natural gas: slope down 1:1000 in direction of flow.

3.4.4 Immersion Wells and Sensing Bulbs:

3.4.4.1 Where a temperature sensing bulb or immersion well is installed in piping of NPS 2-1/2 size and less, increase the tee fitting and piping in which bulb or well is inserted, a minimum of one pipe size larger than adjoining pipe, to prevent restriction of flow of liquid.

3.4.4.2 To improve heat transfer, pack all immersion wells in piping for liquids up to a temperature of 150EC (300EF), with a mineral type grease, prior to installation of sensing bulb.

3.4.5 Pipe Joints:

3.4.5.1 Ream all pipe ends and thoroughly clean all dirt, cuttings, and foreign matter from pipe after cutting and threading. Thoroughly clean all fittings, valves and equipment before connections are made. Cut copper tubing with a tube cutter and clean the joining surfaces of the tubing and fitting with fine emery cloth. Wipe clean with a dry cloth.

3.4.5.2 Make screwed joints with Teflon tape or Masters metallic compound. Apply compound to the male threads only. Take particular care to prevent the compound from reaching the interior of the pipe or fittings.

3.4.5.3 Make soldered joints, on copper tubing, in accordance with the following usage:

Service	Solder Type
Dom. Hot and Cold water	lead free w' matching flux

3.4.5.4 Do not use core type solder. Use solder conforming to ASTM requirements.

3.4.6 Unions:

3.4.6.1 Provide unions where indicated on Drawings and as noted herein.

3.4.6.2 Do not conceal unions in walls, partitions or ceilings unless access thereto is provided.

3.4.6.3 Provide dielectric unions at all connections between copper tubing and ferrous piping.

3.4.7 Fittings:

3.4.7.1 Use of couplings between fittings, valves, and equipment, will not be permitted except on long runs in pipe sizes NPS 2 or smaller. Where length of pipe between fittings requires a connection, make the joint by welding. Do not use running couplings in any pipeline.

3.4.7.2 Fittings, and ancillary items installed in systems operating at pressures in excess of 103 kPa (15 psig), must be registered in accordance with CSA B51-97.

3.4.7.3 Use eccentric reducing fittings in locations where piping changes size, and at connections to equipment, to provide proper drainage or venting of lines. Do not use bushings.

3.4.7.4 Use standard pipe fittings for changing direction of piping. Mitred joints, or field fabricated pipe bends, are not permitted. Use long radius welded steel elbows unless short radius elbows are specifically authorized by the Consultant.

3.4.8 Piping Connections to Mains:

3.4.8.1 Make branch connections of gas, and compressed air lines, to respective horizontal piping of larger diameter, to upper quadrant of larger pipe.

3.4.9 Sleeves:

3.4.9.1 Install sleeves where piping passes through foundations, above grade floors, and walls. Fabricate sleeves of Schedule 40 black steel pipe or type "K" copper tubing for installation in foundations or floors, and of 1 mm (20 ga.) galvanized sheet steel where installed in above grade walls.

3.4.9.2 Terminate sleeves flush with finished ceilings, walls and floors on grade. For piping passing through floors above grade extend sleeve a minimum of 75 mm (3") above the floor.

3.4.9.3 For pipes entering structures from below grade, seal annular space between sleeve and pipe with prefabricated seals.

3.4.9.4 Coat exterior surface, of all ferrous material sleeves, with a heavy asphalt emulsion.

3.4.10 Valves:

3.4.10.1 Supply and install valves in all locations indicated on Drawings, at all piping connections to equipment and where required for sectionalizing a system or floor.

3.4.10.2 Use gate, butterfly, or ball valves, as indicated on Drawings, for shut-off purposes.

3.4.10.3 Install check valves as indicated on Drawings, and wherever required to ensure flow of liquid in one direction.

3.4.10.4 Provide drain valves with hose thread outlet connection, or valve with long nipple on outlet, at all low points of each water system, and above all riser or branch stop valves, for proper drainage of lines.

3.5 **Pipe Hangers and Supports**

3.5.1 General:

3.5.1.1 Support or suspend all piping with necessary hangers, structural supports and/or brackets as shown on Drawings and/or as required, to prevent sagging, warping and vibration and to allow for movement due to expansion and contraction. Place hangers and supports close to fittings, valves and/or other heavy parts.

3.5.1.2 Do not allow loads, of any nature, to be transmitted through piping connections to equipment not specifically designed for such loads. Where flexible connections are not called for at connections to equipment, support pipe by stands attached to both pipe and supporting structure so that force in any direction is not transmitted to the equipment.

3.5.1.3 Use trapeze type hangers, where pipes are grouped together, unless specifically indicated otherwise on Drawings. Suspend horizontal member by adjustable rods with locking feature for maintaining level and slope. Space trapeze type hangers based on closest interval required by any pipe supported thereon. Provide any auxiliary steel required to support trapeze between building steel.

3.5.1.4 Do not hang any pipe, from another pipe, unless specifically indicated on Drawings.

3.5.2 Hangers:

3.5.2.1 Use standard weight clevis hangers with level adjustment and locknut.

3.5.2.2 Use clevis type hangars of wrought steel construction with adjustable rod, level locking feature and backnuts.

3.5.2.3 For copper tubing provide copper coated hangers. Regulations of some municipalities require that copper tubing be taped with a plastic tape at hanger

location, or hanger be provided with a plastic insert. Meet these requirements when required, in which case the copper coating may be omitted on the hanger.

3.5.3 Hanger Spacing:

3.5.3.1 For horizontal runs of black or galvanized steel pipe, other than for plumbing service, do not exceed maximum distances between supports and with minimum diameter rods as follows:

	Distance		Dia. of Rod	
Pipe Size(NPS)	(m)	(ft)	(mm)	(in)
Up thru 1¼	1.8	(6)	10	(3/8)
1½	1.8	(6)	10	(3/8)
2	3.05	(10)	10	(3/8)

3.5.3.2 Provide additional hangers in locations where there are concentrated loads such as valves, specialties, etc.

3.5.3.3 For horizontal runs of copper tubing for services other than plumbing, do not exceed 1.8 m (6 ft.) between hangers for lines up to and including NPS 3/4 and 2.4 m (8 ft.) for lines of NPS 1 and larger.

3.5.3.4 For horizontal runs of piping fabricated of PVC, use hanger spacing as recommended by manufacturer.

3.6 **Excavating, Backfilling and Rough Grading**

3.6.1 Section 02315, Excavating, Trenching, and Backfilling to provide excavating, backfilling and rough grading for Mechanical Work including trenches.

3.7 **Miscellaneous Steel**

3.7.1 Supply and install miscellaneous structural supports, platforms, and braces, as required to hang or support all equipment, piping and similar items, unless

3.8 **Painting**

3.8.1 Painting and Cleaning:

3.8.1.1 Touch up minor damage to finish on equipment with standard factory applied baked enamel finish. If, in the Consultant's opinion, the damage is too extensive to be remedied by touch up, replace damaged equipment.

3.8.1.2 Clean steel by scraping, wire brushing or other effective means to remove base scale, rust, oil, dirt or other foreign matter.

3.8.1.3 Apply 1 coat of zinc chromate iron oxide primer, conforming to CAN/CGSB-1.40-M89, to all miscellaneous steel.

3.8.1.4 In field touch up all bolt heads and nuts, and previously unpainted connections and surfaces, damaged during erection, with primer as hereinbefore specified.

3.8.1.5 Give two coats of primer to all surfaces which will be inaccessible after erection.

3.8.1.6 Thoroughly remove all foreign matter, from steelwork, on completion of installation.

3.9 **Disconnection and Demolition of Existing Work**

3.9.1 Disconnect and seal off mechanical equipment and services as required on Site.

3.9.2 Be responsible for demolition and removal of mechanical equipment and services designated for removal on Drawings and as required by work.

3.10 **Pressure Tests**

3.10.1 Make specified pressure tests on all piping included in this Contract. Furnish all pumps, compressors, gauges and connectors necessary for tests.

3.10.2 Conduct tests in presence of the Consultant and all other personnel of governing authorities having jurisdiction. Notify all parties in ample time to permit them to be present. Conduct tests before piping is painted, covered or concealed.

3.10.3 Conduct hydrostatic tests for a minimum period of 2 hours, or longer when requested by Consultant or governing authority, at test pressure specified under respective Sections of Specifications.

3.10.4 During this time the pressure shall remain constant and the exterior surfaces of pipe or fittings shall not show any cracks or other form of leak.

3.10.5 For pneumatic tests, first pressurize system with air to approximately one-half specified pressure, but not to exceed 345 kPa (50 psig), and examine all joints for leaks with a soapsuds solution. After required repairs have been made and the soap test has been met satisfactorily, pressure system with air to test pressure specified under respective Section of Specifications.

3.10.6 Conduct final tests on natural gas piping in accordance with requirements of local Utility or governing authority. If feasible, make tests when ambient air temperature is approximately constant. Take into account corrections for pressure change, due to temperature differential, as approved by Consultant.

3.10.7 Disconnect pumps or compressors, used for applying test pressure, during test period.

3.10.8 Disconnect and/or remove equipment or specialties not designed to withstand test pressure during test. Reconnect same after completion of test.

3.10.9 Promptly correct any defects that develop through tests and re-test to complete satisfaction of Consultant and other parties involved.

3.10.10 Forward copies of all final tests on all pressure and drainage piping, and a copy of governing authority approvals, to Consultant immediately on acceptance of tests and/or approvals.

3.10.11 Final payment for work will not be made until above has been received.

3.11 **Cleaning, Testing and Approval Records**

3.11.1 Maintain records of all pressure tests and approvals by Plumbing Inspector, and similar items and forward these to the Owner on completion of work. Provide Consultant with copy of records on completion of each test, cleaning operation, and similar items.

3.12 **Adjustment and Operation of Systems**

3.12.1 When work is complete, adjust all equipment items, of various systems, for proper operation within framework of design intent, and operating characteristics as published by equipment manufacturer.

3.12.2 Additional instructions are specified under respective Sections of this Division.

3.12.3 Consultant reserves right to require services of an authorized representative of manufacturer in the event that any item of equipment is not adjusted properly. Arrange for such services and bear all incurred costs thereof. After completion of adjustments, place the systems in full operating condition and advise Consultant that work is ready for acceptance.

3.13 **Performance Testing and Balancing**

3.13.1 Assume responsibility for testing, balancing, and placing all heating water and pool re-circulation systems in operation.

3.13.2 Retain independent Balancing Firm to balance heating water and pool re-circulation systems.

3.13.3 Provide all instruments required to test and balance systems. Balance systems in accordance with design requirements indicated on Drawings. Report to Consultant immediately any deficiencies in systems or equipment performance resulting in design requirements being unobtainable.

3.13.4 On completion of testing and balancing of all systems, submit to Consultant a typewritten report (3 copies) of findings, including complete data of pump performance, static pressures, water flow rates, and ampere readings of all motors, taken at motor terminals when equipment is operating under full load conditions.

3.13.5 Submit with each copy of report, complete sets of piping layout prints neatly marked in red, showing all locations at which test readings were taken, and flow measurement. Show differential pressure across pumps. Obtain piping layout prints from Consultant.

3.14 **Acceptance**

3.14.1 After all equipment has been installed and adjusted and all systems balanced, conduct performance tests in presence of Consultant. Arrange time for these tests at convenience of Consultant and Owner. Conduct tests under climatic circumstances to ensure complete and comprehensive tests and of such a manner and duration as Consultant may deem necessary.

3.14.2 During these tests, demonstrate correct performance of all equipment items and of systems they comprise. Should any system or any equipment item fail to function as required, make such changes, adjustments or replacements necessary to meet performance requirements. Repeat tests until these requirements have been fully satisfied and all systems accepted by Consultant.

End of Section

1.0 GENERAL

1.1 SHOP DRAWINGS AND PRODUCT DATA

.1 Submit shop drawings on plumbing fixtures, equipment and accessories.

1.2 FIXTURES AND TRIM

.1 Architectural drawings shall govern in determination of number and location of fixtures.

.2 Fixtures and trim in any one washroom or location to be the product of one manufacturer and of the same type.

1.3 OPERATION AND MAINTENANCE DATA

.1 Provide operation and maintenance data for incorporation into manual.

2.0 PRODUCTS

2.1 DRAINAGE WASTE AND VENT PIPING AND FITTINGS

.1 Buried sanitary drain and vent piping:
- .1 ABS-DWV to CSA-B181.1 with solvent weld fittings.
- .2 PVC-DWV to CSA-B181.2 with solvent weld fittings.
- .3 Plastic to CSA-B182.1 with solvent weld fittings.

.2 Above ground sanitary drain and vent piping:
- .1 Piping up to 65 mm:
  - .1 PVC-DWV to CSA-B181.2 with solvent weld fittings.
  - .2 Copper DWV to ASTM B306 with wrought copper fittings to ANSI B16.29. Solder, tin-lead 50:50 to ASTM B32 type 50A.
- .2 Piping 75 mm and larger:
  - .1 PVC-DWV to CSA-B181.2 with solvent weld fittings.
  - .2 Cast iron to CSA-B70 with one layer of protective coating, mechanical joints, neoprene or butyl rubber compression gaskets and stainless steel clamps.

2.2 DOMESTIC WATER SUPPLY COPPER PIPING AND FITTINGS

.1 Domestic water system within building.
- .1 Above ground: copper tube, hard drawn, type L: to ASTM B88M.

.2 Fittings
- .1 Bronze pipe flanges and flanged fittings, Class 150 and 300: to ANSI B16.24.
- .2 Cast bronze threaded fittings, Class 125 and 250: to ANSI/ASME B16.15.
- .3 Cast copper, solder type: to ANSI B16.18.
- .4 Wrought copper and copper alloy, solder type: to ANSI/ASME B16.22.
- .5 NPS 2 and larger: roll grooved to CSA B242.

.3 Joints
.1 Rubber gaskets, 16mm thick: to ANSI/AWWA , C111/A21.11.
.2 Bolts, nuts, hex head and washers: to ASTM A307, heavy series.
.3 Solder: Solder: 95/5 antimonial tin “Lead Free” solder.
.4 Teflon tape: for threaded joints.
.5 Grooved couplings: designed with angle bolt pads to provide rigid joint, complete with EPDM flush seal gasket.
.6 Dielectric connections between dissimilar metals: dielectric fitting to ASTM F492, complete with thermoplastic liner.

2.3 VALVES

.1 Gate valves
.1 NPS 2 and under, soldered: to MSS SP-80, rising stem, Class 125, 862 kPa, bronze body, screw-in bonnet, solid wedge disc.
.2 NPS 2-1/2 and over, flanged: to MSS SP-70, non-rising stem, Class 125, 862 kPa, flat flange faces, cast-iron body, bronze trim, bolted bonnet.

.2 Ball Valves
.1 NPS 2 and under, soldered: to ANSI B16.18, Class 150, bronze body, stainless steel ball, PTFE Teflon adjustable packing, brass gland and PTFE seat, steel lever handle, with NPT to copper adaptors.

2.4 FLOOR DRAINS

.1 Floor drains to CAN3-B79.

.2 Ref. FD: refer to plumbing fixture schedule on drawings
.1 Standard of acceptance: Ancon, Zurn, J.R. Smith and Mifab will be accepted as equal.

2.5 CLEANOUTS

.1 Ref: stack cleanout.
.1 Lacquered cast iron with large access area and bolted gasketted cover. For tiled areas unit shall be complete with stainless steel round access cover.
.1 Standard of acceptance: Ancon CO-460. Zurn, Jay R. Smith and Mifab will be accepted as equal.

.2 Ref: line cleanout for wall access.
.1 Cleanout plug with expandable gasket, complete stainless steel round access cover and 90 mm long anchor screw.
.1 Standard of acceptance: Ancon CO-440. Zurn, Jay R. Smith and Mifab will be accepted as equal.

2.6 WATER HAMMER ARRESTORS

.1 Type: bellows to PDI-WH-201.
.1 Stainless steel construction with welded nestled bellows with precharged air.
.1 Standard of acceptance: Ancon SG. Zurn, Jay R. Smith and Mifab will be accepted as equal.

2.7 TRAP SEAL PRIMERS

.1 All brass, with integral vacuum breaker, NPS 1/2 solder ends, NPS 1/2 drip line connection.

.1 Standard of acceptance: Ancon MS-810. Zurn, Jay R. Smith and Mifab will be accepted as equal.

2.8 PLUMBING FIXTURES

.1 Refer to plumbing fixture specification Section 15600.

2.9 NATURAL GAS PIPE, FITTINGS AND VALVES

.1 Pipe: black steel, schedule 40, to ASTM A53.

.2 Pipe joints: threaded with Rectoseal A5 pipe dope or welded joints.

.3 Fittings size NPS 2 and smaller: Class 150, malleable iron threaded, to ANSI B16.3.

.4 Fittings size NPS 2 1/2 and larger: schedule 40, steel buttwelding to ANSI/ASME B16.9.

.5 Valves: code approved lubricated plug valves or ball valves.

.6 Pressure regulators: local utility gas code approved suitable for the pressure indicated on drawings.

3.0 EXECUTION

3.1 DRAIN, WASTE AND DOMESTIC PIPING WATER PIPING VALVES AND FITTINGS

.1 Install in accordance with Ontario Building Code and Local Authorities having jurisdiction.

.2 Support all piping as per manufacturer's recommendations. Shall be installed with individual supports of sufficient strength, quality and spaced adequately to prevent any sagging. Pipe hangers shall consist of clevis hangers with threaded rods and suitable clamping device at top end. Where supporting copper pipe, the pipe shall be isolated from the hanger with electrolytic action tape or equivalent.

.3 Piping which does not bear certification markings will be rejected by Engineer and shall be replaced with an approved material at the contractor's expense.

.4 Cut square, ream and clean tubing and tube ends, clean recesses of fittings and assemble without binding.

.5 Where possible install piping close to building structure to minimize furring, conserve headroom and space. Group exposed piping.

.6 Make connections to fixtures and equipment in accordance with manufacturer's instructions.

.7 **PVC-DWV PIPE SHALL NOT BE INSTALLED IN CEILING SPACES USED AS A RETURN AIR PLENUM. WHERE PLASTIC PIPE PENETRATES A FIRE SEPARATION, IT SHALL BE INSTALLED WITH A ULC LISTED AND APPROVED FIRE STOP DEVICE(S) AT THE PLANE OF FIRE SEPARATION. REFER TO MECHANICAL DRAWINGS TO CLARIFY WHICH CEILING SPACES ARE USED AS A RETURN AIR PLENUM AND TO ARCHITECTURAL DRAWINGS FOR FIRE SEPARATION WALLS.**

IN A CEILING SPACE USED AS A RETURN AIR PLENUM ONLY COPPER PIPE, CAST IRON PIPE AND SYSTEM XFR 15-50 PVC-DWV PIPING AS MANUFACTURED BY IPEX WILL BE ACCEPTABLE.

3.2 PRESSURE TESTS

.1 Conform to requirements of Section 15010 - General Requirements.

3.3 FLUSHING, CLEANING AND DISINFECTION

.1 After pressure tests have been completed and approved as per section 15010, flush domestic water piping with a sufficient flow until all foreign materials have been removed and the flushed water is clear.

.2 When flushing has been completed, introduce chemicals into the piping to disinfect the system piping in accordance with the Ontario Building Code and authority having jurisdiction. Flush and sanitize with chemical cleaning agents to remove all traces of solvents and fluxes used in installation. When disinfection is complete, flush and fill the system with clean water.

.3 Ensure that when new piping is installed to an already cleaned and disinfected system, this new piping shall be completely isolated from the existing system.

3.4 VALVES

.1 Isolate equipment, plumbing fixtures and branches with gate or ball valves or as indicated.

.2 Balance hot water recirculation system using lockshield ball valves.

3.5 FLOOR DRAINS

.1 Install floor drains with finished floor. Confirm floor elevations with General Contractor prior to commencement of work.

.2 All floor drains shall be individually trapped primed and vented.

3.6 CLEANOUTS

.1 In addition to those required by code and as indicated, install at base of all soil and waste stacks.

.2 Bring cleanouts to wall or finished floor unless serviceable form below floor.

3.7 ACCESS DOORS

.1 Install at wall to service stack cleanouts and isolation valves for accessibility.

3.8 WATER HAMMER ARRESTORS

.1 Install on branch lines to each fixture or group of fixtures having a quick closing device such as flush valves.

3.9 TRAP SEAL PRIMERS

.1 Install as per manufacturer' recommendations.

.2 For floor drains, install trap seal primer on cold water supply to nearest frequently used plumbing fixture, in concealed space. Install soft copper tubing to floor drain.

3.10 FIXTURE TRAPS

.1 Provide p-traps for all plumbing fixtures without built-in traps. Exposed p-traps shall be chrome plated, for all other areas shall be brass.
.2 Shall be sized and located in accordance with manufacturer's recommendation.

3.11 FIXTURE INSTALLATION

.1 Connect fixtures complete with chrome plated rigid of flexible supplies with screwdriver stops, reducers and escutcheons. Each fixture shall be piped drained and separately trapped. Hot water faucets shall be on left.

.2 Mount and support fixtures level and square and in accordance with manufacturer's roughing-in details.

.3 For barrier free basins, insulate sanitary and hot water supply lines with 25mm thickness of fibreglass insulation.

3.12 GAS PIPING

.1 Install in accordance with local gas utility requirements and CAN/CSA-B149.1.

.2 Assemble piping using fittings manufactured to ANSI standards.

.3 Connect to equipment in accordance with manufacturer's instruction unless otherwise indicated.

.4 Slope piping down in direction of flow to low points.

.5 Install drip points:
  .1 At low points in piping system.
  .2 At each connection to equipment.

.6 Use eccentric reducers at pipe size change installed to provide positive drainage.

.7 Provide clearance for access and for maintenance.
.8 Ream pipes, clean scale and dirt, inside and out.

.9 Install piping to minimize pipe dismantling for equipment removal.

.10 Install valves with stems upright or horizontal unless otherwise approved by Engineer.

.11 Install valves at branch take-offs to isolate each piece of equipment and as indicated.

.12 Install exterior pressure regulator as per manufacturer's installation instructions for applicable gas service pressure.

.13 Test system in accordance with CAN/CSA-B149.1 and requirements of authorities having jurisdiction.

.14 Purge after pressure test in accordance with CAN/CSA-B149.1.

.15 Provide Engineer with signed inspection certificate of approval as provided by local gas utility. Installer's certificate will not be acceptable.

End of Section

PART 1 - GENERAL

1.1 Scope

.1 Conform to Sections of Division 1 as applicable.

.2 Section 16010 shall apply to and govern work of all Sections of Division 16.

.3 Provide all materials, labour and equipment to complete the electrical work as shown on the drawings, described herein, or as necessary to complete the work.

1.2 Codes and Standards

.1 Do complete installation in accordance with the editions of the following codes and standards in force at the time of construction as applicable:

.1 Ontario Electrical Safety Code

.2 Ontario Electrical Safety Code Bulletins

.3 Ontario Building Code

.4 Ontario Fire Code

.5 Municipal Regulations

.2 Electrical Terminology - CAN/CSA 2781-92.

.3 Install all work for the approval and/or acceptance of the local Electrical Safety Authority (ESA) Office and other Agencies having Jurisdiction.

1.3 Quality Assurance

.1 Regulatory Requirements

.1 Electrical Safety Authority Approval: Immediately upon award of the Contract, submit complete set of electrical drawings, as prepared by the Consultant, to the ESA for approval. Prepare and submit any other documents required for approval, providing the Consultant with a copy of such documentation and proof of application.

.2 Materials and workmanship shall be in accordance with requirements and recommendations of applicable rules, regulations, standards and codes as specified hereunder, or the requirements of these specifications and drawings whichever are the most stringent. All products shall bear certification label of the Canadian Standards Association (CSA), ESA, or other approved certification agency as applicable.

.3 Agency names and abbreviations:

Ontario Electrical Safety Code (OESC)

Canadian Standards Association (CSA)

Electrical Safety Authority (ESA)

Underwriter's Laboratories of Canada (ULC)

Electrical and Electronic Manufacturers Association of Canada (EEMAC)

Joint Industrial Council (JIC)

Ontario Building Code (OBC)

Ontario Fire Code (OFC)

Boards, Service Companies or other Authorities having jurisdiction as indicated.

.4 Permits, Fees and Certificates: Except as provided in Division 1, give notices, obtain permits, pay fees required for work of Division 16. Before the final certificate of payment is issued by the Owner, furnish Consultant with certificates as evidence that work installed conforms to laws and regulations of all governing authorities, including the ESA Certificate of Inspection. Determine detailed requirements of local authorities having jurisdiction and conform to those requirements.

.5 Prepare and provide any additional drawings or specifications required by the Electrical Safety Authority, Municipal, Supply or other governing Authorities. Supply a copy of such documentation to the Consultant.

.6 Notify Consultant of any changes required by Electrical Safety Authority Inspection Department prior to making changes.

.2 Qualifications

.1 Work shall be executed by Electrical Contractor or his designated sub-contractor, holding a valid Contractors' license (Master’s License).

.2 Work shall be performed by qualified Electricians holding valid Ontario certificates of qualification.

.3 The fire detection and signalling components shall be verified by technicians qualified in accordance with the Ontario Fire Code and where the building has an existing fire alarm system be employed by the current building fire alarm system maintenance contractor.

.3 Work Site

.1 Maintain a stamped set of permit documents at the project site.

1.4 Project/Site Conditions

.1 Existing Conditions

.1 Examine Site and Contract Documents in accordance with Instructions to Bidders and Clause 3.1 below.

.2 Interruption of Services

.1 Any interruption of electrical services to any part of existing building(s) shall come at a time agreeable to Owner. Make all necessary arrangements with Owner and any outside monitoring agency or authority. Include in Contract Sum for any overtime required to ensure that interruption is held to a minimum. Refer to drawings for additional information.

.2 Any additional overtime work shall be carried out without additional cost to Owner.

.3 Work Clearances

.1 Where any parts of the systems or equipment are located by dimensions on the drawings verify the dimensions at the site. If any discrepancy or interference with other equipment is found which will constitute a major revision from the work indicated or specified, notify the Consultant before proceeding further. Alter without charge the location of conduit, raceways, wiring and other equipment, within a distance of 3 m, if so directed by the Consultant prior to installation. Provide accurate revised estimates of any additional materials or labour beyond 3 m, when directed by the Consultant.

1.5 Records and Documentation

.1 Drawings and Specifications

.1 The specifications are to be read in connection with the drawings. Do not use either alone. Items included in one but omitted from the other are to be included in the work

.2 The drawings for this Division are diagrammatic only and show the general arrangement of the work. The Contractor before undertaking the work shall prepare an integrated set of electrical interference drawings as necessary to identify and resolve any interference problems prior to the fabrication and installation of any conduit, wiring or equipment.

.3 The indicated location and elevation of existing services, equipment and fittings are approximate. Verify them before construction.

.4 Drawings show the general arrangement of receptacles, switches, devices, equipment, etc. Follow them, as closely as actual building construction and other trades will permit. Allow for movement of indicated items of up to 3 m from position shown without additional cost. Conserve headroom. Ensure products will fit the space available. Make necessary field measurements prior to installation to assure products will fit. If changes in design are required notify

the Consultant and provide products that suit the true intent and meaning of the contract documents.

.5 Where specifications, drawings or regulations conflict, comply with the most severe unless otherwise approved in writing by the Consultant.

.2 Shop Drawings

.1 The Contractor shall submit 7 copies, or such number as specified in Division 1, of shop drawings as identified below to the Consultant for review. Contractor to ensure his name and address appear on all shop drawings.

.2 Provide shop drawings and specifications for:

.1 Switchgear, switchboards, panelboards, circuit breakers, enclosed switches, fused disconnects, transformers, transfer switches, splitters.
.2 Motor starters, motor controllers, motor control assemblies, control panels, or other electro-mechanical devices supplied by Division 16.
.3 Electric heating appliances.
.4 Light fixtures, emergency lighting components and exit signs.
.5 Fire alarm system control panels, fire detectors, other alarm initiating devices, signalling appliances, addressable modules.
.6 Firestop materials.
.7 Warning or hazard labels to be applied under this contract.
.8 Any other electrical device or component which differs from that specified in the drawings or these specifications.

.3 Review of shop drawings by the Consultant is in reference to general design only and shall not relieve the Contractor from furnishing equipment of proper dimensions, size, quantity or quality. Furthermore such review shall not relieve the Contractor from the responsibility for any error or omission of any sort in the shop drawings or other construction proposed or designed by him.

.4 This Contractor shall bear all costs or damages which may result from the fabrication, supply, or installation of any equipment prior to the review of the shop drawings, and no work shall be done until the shop drawings have been reviewed.

.5 Drawings shall indicate or include the following as applicable and shall show evidence of being checked by the Contractor:

.1 Model selected, including full catalogue number
.2 Full electrical ratings such as voltage, current, power, etc.
.3 Dimensions or size
.4 Total weight
.5 Shipping sections
.6 Bill of material
.7 Mounting and installation details
.8 Schematic and wiring diagrams
.9 Nameplate diagrams
.10 Colour
.11 Delivery

.3 Record Drawings

.1 Maintain an extra set of white prints on the project and clearly note, as the project progresses, all the changes in location and/or the sizes of wiring, raceways, wiring devices, appliances, circuit connections, heating and lighting fixtures, thermostats, panelboards, enclosed switches, disconnects, motors, starters, protective and alarm initiation devices and signal appliances, disconnects and other equipment.

.2 Where wiring is buried or concealed, accurately dimension the actual location related to the permanent building walls and finish floor levels.

.3 Provide all such drawings to the Consultant as a complete set of "as-built" record drawings.

.4 The Final Certificate of Acceptance will not be issued until satisfactory "as-built" record drawings are filed with the Owner.

.4 Insert Drawings

.1 Where penetrating structural members, concrete slabs and the like, prepare and provide insert drawings, showing the location and size of all sleeves, anchor bolts, openings and miscellaneous inserts required for each of the electrical systems. Sleeves are to be Schedule 40 steel pipe sized for free passage of conduit. Supply copies of these drawings to the Consultant, and, together with the necessary inserts and instructions to each of the trades responsible for building-in these inserts well in advance of the construction work. Supervise and coordinate the installation of all such inserts.

.5 Operation and Maintenance Instructions

.1 Provide five copies, or such other number as may be indicated in Division 1, of operation and maintenance data in a manual format.

.2 Ensure each manual includes, as applicable, the following:

.1 Material list for all devices, appliances, control panels, modules and the like used in this project.

.2 Copies of all reviewed shop drawings.

.3 All manufacturer’s operating and maintenance instructions for each system and its components.

.4 Copies of verification, test and start-up reports and check lists, test and inspection certificates

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.3 One manual shall contain the original copies of verification, test and start-up reports and check lists, test and inspection certificates

.4 Final completion will not be issued until these instructions have been reviewed by the Consultant and submitted to the Owner.

1.6 Trial Usage

.1 Trial usage by the Owner or his agents of any electrical device, machinery, apparatus, equipment and other work supplied under this Division before final completion and written acceptance by Consultant is not to be construed as evidence of acceptance by Owner.

.2 Owner and his agents shall have privilege of such trial usage as soon as Contractor claims that said work is completed, in accordance with Drawings and specifications for such reasonable length of time as Owner deems sufficient for making a complete test.

.3 No claim for damage shall be made for injury to or breaking of any parts of such tested work, whether caused by weakness or inaccuracy of structural parts or by defective materials or workmanship of any kind whatsoever.

1.7 Instruction of Operating Staff

.1 Arrange for fully qualified personnel to instruct the Owner's operating staff on the operation of each electrical system; on the maintenance and adjustment of the equipment and on the scope and coverage of all warranties.

.2 Use the Operating and Maintenance Manual for instructional purposes and ensure that the Owner's operating staff are made familiar with all its contents.

1.8 Maintenance Tools

.1 The Contractor shall provide the Owner as part of this contract all necessary tools, etc. to allow proper maintenance of the installed equipment.

1.9 Protection

.1 Always protect personnel from exposed live electrical equipment, outlets or wiring. Suitable personal protective equipment (PPE) to be used at all times.

.2 Shield and provide temporary warning sign for all exposed live electrical equipment or wiring.

.3 Rooms without lockable doors containing exposed live electrical equipment or wiring shall be provided with temporary lockable doors except when under the direct supervision of a qualified electrician.

1.10 Warranties

.1 Provide a signed certificate warranting each electrical system covering labour and material for a period of at least one year from the date of Final Acceptance by the Owner. Attach manufacturer's extended equipment warranties, each made out in the name of the Owner. File such warranties in the Operating and Maintenance Manuals to be delivered to the Owner.

PART 2 - PRODUCTS

2.1 Voltage Ratings

.1 Operating voltages: to CAN3-C235-83.

.2 Motors, electric heating, lighting, control and distribution devices and equipment, communications, security and fire alarm systems to operate satisfactorily from a 60 Hz source between 85% and 110% of rated voltage. Equipment to operate in extreme operating conditions established in above standard without damage to the equipment.

2.2 Materials and Equipment

.1 Nameplates

.1 Lamicoid 3 mm thick plastic engraving sheet, white face, black core, mechanically attached with self-tapping screws. For fire alarm systems use the same material except red face with white core.

.2 Nameplate Sizes:

Size 1	10 x 50 mm	1 line	3 mm high letters
Size 2	12 x 70 mm	1 line	5 mm high letters
Size 3	12 x 70 mm	2 lines	3 mm high letters
Size 4	20 x 90 mm	1 line	8 mm high letters
Size 5	20 x 90 mm	2 lines	5 mm high letters
Size 6	25 x 100 mm	1 line	12 mm high letters
Size 7	25 x 100 mm	2 lines	6 mm high letters

.3 Wording on nameplates to be approved by Consultant prior to manufacture.

.4 Lettering to be at least 3 mm high.

.5 All identification to be in English and French, or as required by Owner.

.6 On disconnects, switchboards, panelboards, control panels, transfer switches and fire alarm panels: indicate equipment being controlled, voltage and phases. Mount on front, top outside cover. For fire alarm panels in finished areas mount inside.

.7 Terminal cabinets, splitters and pull boxes: indicate system and voltage.

.8 To identify all conductors at panels, terminal strips and equipment.

.9 Panelboards to have directory legibly updated, or branch circuit breakers to have one (1) permanent label affixed on deadfront immediately adjacent to circuit breaker.

.10 Transformers indicated capacity, primary and secondary voltage.

.11 Fire alarm panels, fire pumps, and supply circuit breakers, disconnect switches, controllers and junction box covers for fire alarm systems to be coloured red.

.2 Equipment

.1 Refer also to Section 16100.

.2 All equipment, fixtures and devices to be new, free from defects, manufactured to the standard(s) quoted and to incorporate any additional specific requirements noted.

.3 All equipment to be certified by an agency listed in ESA Bulletin 2-7, latest edition, as suitable for the application. Where there is no alternative to supplying material, which is certified by such an agency, obtain special approval from ESA, or other authority having jurisdiction.

.4 All equipment supplied under this contract shall not exceed the space requirements allocated on the drawings unless approved by the Consultant.

.5 Where material or apparatus of more than one manufacturer is specified, then these are acceptable and any of those specified may be used.

.6 In addition to the manufacturers specified, Division 16 may propose alternative manufacturers of equipment and/or apparatus for acceptance; refer to the City's front-end documentation for procedures on substitutions.

.7 Reserved.

.3 Hazardous Materials

.1 Ensure all equipment and materials are suitably labelled for hazards. Keep material safety sheets on file at the job site and supply a set for the operation and maintenance information. Provide suitable labels on all containers holding hazardous materials.

.2 All equipment rated more than 240 Vac, or less if an arc flash hazard exists, shall carry a suitable label warning of any potential arc flash or electric shock hazard.

.4 Conduit, Conduit Fastenings and Conduit Fittings

.1 Refer to Section 16111.

.5 Splitters, Junction, Pull Boxes and Cabinets

.1 Refer to Section 16131.

.6 Outlet Boxes, Conduit Boxes and Fittings

.1 Refer to Section 16132.

.7 Fire Alarm System

.1 Refer to Section 16721.

.8 Lighting Equipment

.1 Lighting layout to conform to the drawings if required

.2 Light fixtures to be as specified on the drawings complete with lamps

.9 Fasteners

.1 Provide permanent fastenings, anchors, adhesives and accessories required for proper performance of the work.

.2 Fasteners shall be protected from corrosion. Except where supplied by the manufacturer specifically for the application, fasteners located in wet, damp, unheated or poorly heated areas shall be hot-dipped galvanized or stainless steel.

.3 Do not use impact driven (explosive, hammer, etc.) fastening devices except where the Consultant has indicated acceptability

.4 Do not use organic plugs in concrete or masonry

.5 Prevent electrolytic action between dissimilar metals..

.10 Wire and Cable

.1 All installed wire and cable shall use copper conductors.

.2 Building wire: Size as per OESC, but not less than No. 12 AWG for power circuits, No. 14 AWG for control circuits outside factory assembled control panels, with T90 Nylon for all above grade interior wiring, RW90XLPE for all above grade exterior wiring and RWU90 XLPE for all below grade wiring.

.3 Equipment wire: To be used only in manufacturers' factory tested assemblies.

.4 Non-metallic sheathed cable: Not to be used on this project.

.5 Armoured Cables: Size as per OESC, and above, with insulation rated for a maximum allowable temperature of 90° C. Armour to be of the interlocking type fabricated from aluminium strip, Type TECK90 copper. To be used only in concealed locations, from junction boxes to device boxes mounted in suspended ceilings or existing partitions finished on both sides and totally within service rooms. Must have integral copper bonding conductor.

.6 Surface mounted wireways to be used only where specified or approved in advance by Owner and Consultant.

.7 Wiring colour shall be as follows;

1. 600 and 208 Vac: Phase A - red, phase B - black, phase C - blue
2. 120 Vac: Live conductors - black

3. All voltages: Neutral - white
4. All voltages: Ground - green or bare
5. All voltages: Isolated ground - green with yellow band
6. DC control wiring: Negative - blue. Positive - red

Note: Where only black coloured conductors are available, use coloured tape or other approved coloured markings to permanently identify phases in all junction and terminal boxes in accordance with the colour code above.

2.3 Grounding and Bonding

.1 All equipment shall be grounded and bonded in accordance with the Ontario Electrical Safety Code.

.2 All bonding conductors shall be copper and, unless otherwise indicated, if less than #4 AWG and not part of an approved cable assembly shall be insulated and green in colour.

.3 Grounding and bonding lugs and connectors shall be suitable for copper and approved for the purpose.

PART 3 - EXECUTION

3.1 Examination

.1 Verification of Conditions

.1 Where any parts of systems and/or pieces of equipment are located by dimensions on Drawings check and verify such dimensions at Site.

.2 Notify Consultant before proceeding further if any discrepancy or interference with other equipment is found which will necessitate revision in or deviation from Work as indicated or specified.

.3 Location of conduit, raceways, wiring and other equipment shall be altered without charge to Owner if so directed by Consultant provided change is ordered before installation, and does not necessitate additional labour and material.

3.2 Preparation

.1 Cutting and Patching

.1 Cutting of holes up to 200 mm (8") in diameter and related patching shall be done under Division 16 in accordance with the insert drawings.

.2 For holes and other openings larger than 200 mm (8") in diameter contact Consultant.

.3 Be responsible for any additional cost incurred for patching as a result of oversizing of openings, unless cut by others.

3.3 Installation

.1 Instruct and supervise other Divisions, such as Mechanical, doing related work.

.2 Electrical products and methods of installation shall be in accordance with the relevant Sections of Division 16 in this Specification, and the applicable requirements of other Divisions.

.3 Correct installed work as directed by an authorized inspector of Authorities having jurisdiction.

.4 Finishes

.1 Equipment to be finished in accordance with Manufacturer's standard paint finish or as specified.

.2 Clean and touch up surfaces of shop-painted equipment scratched or marred during shipment or installation, with factory supplied touch-up paint to match

original paint. If the Owner deems the damage to be major or the touch up to be unsatisfactory replace the damaged part entirely.

.3 Clean and prime exposed non-galvanized hangers, racks and fastenings to prevent rusting.

.4 Isolation Painting: Apply one full bodied coat of bituminous base purpose-made undercoating to all underground steel conduits and fittings prior to application of cover; back paint all raceways, hangers, racks, junctions, pull and outlet boxes being cast into concrete, masonry, or into contact with dissimilar materials.

.5 Customs Fashion: Where the finishes are specified to be executed by Section 09900: Painting, mask protect all necessary orifices, plates, switches, signs, manufacturers' labels, approval, certification, warning, other information labels, or other fitments. Notify the painter. After finishes have cured remove maskings, test and ensure equipment is operating correctly.

.5 Wiring Identification

.1 Maintain phase sequence and colour coding throughout.

.2 Use colour coded wires in communication cables, matched throughout system.

.6 Wiring Terminations

.1 Lugs, terminals and screws used for mechanical termination of wiring to be suitable for copper and aluminium conductors.

.2 Terminations to equipment to be with manufacturer's supplied mechanical pressure wire connectors or compression connectors.

.3 Wire splices to be made in junction boxes only. Wire nuts to be suitable for the conductors being spliced and are not to be used for wire sizes exceeding #8 AWG. Wire over #8 AWG to be spliced only at suitable splitter blocks or with suitable compression connectors.

.4 Split bolt wire connectors are not to be used without specific written permission from the Consultant, except where supplied as part of approved equipment.

.7 Manufacturers' Nameplates, Rating and Instruction Labels, Approval and Certification Labels

.1 Visible and legible after equipment is installed.

.8 Warning Signs

.1 As specified or to meet the requirements of ESA.

.9 Mounting Heights

.1 Measure mounting height dimension from operator's working floor level (finish) to centre-line of electrical device or enclosure, unless otherwise indicated or specified herein.

.2 Unless otherwise specified, detailed on drawings, or required by code, the following heights shall be used:

Item		Height
Local wall switches		1200 mm
Wall receptacles:	Minimum	460 mm
	Washrooms and above counters	1065 mm
	Service rooms	1400 mm
Panelboards (top circuit breaker)		1500 mm
Cradle telephone & TV/data outlets		Same as receptacles
Wall telephone/Interphones/thermostats		1200 mm
Wall clocks		2100 mm
Door access keypads, push buttons, etc.		1200 mm

.3 Heights are subject to change to suit structural requirements, and other Site conditions, and therefore as work progresses, and before installing equipment, obtain instructions or directions from Owner or Consultant for alternative heights or relocation.

.10 Existing Installations

.1 Where connections are required to existing electrical equipment install necessary raceways and wiring and connect as required for proper operation.

.2 Provide new wiring for new and affected existing lighting fixtures, switches, receptacles, outlets and other electrical equipment installed or moved during the Work.

.3 Repair damage caused by such works, including repainting required due to lack of reasonable care. Bring discrepancies regarding installation to Consultant's attention for decision regarding procedure to be taken.

.4 Maintain and protect existing wiring during construction. Where interruption of services cannot be avoided, coordinate interruption with Owner.

.5 Provide temporary feeder connections to equipment where interruption of services is not allowed.

.6 Existing minor installations, such as conduits, boxes and wiring devices, which interfere with new electrical equipment installation, may be rerouted or relocated on prior approval of Owner or Consultant.

.11 Grounding

.1 Ground electrical equipment in accordance with requirements of Ontario Electrical Safety Code and as indicated on the Drawings and elsewhere in these specifications.

.2 Arrange grounds so that under normal operating conditions no injurious amount of current will flow in any grounding conductor. Connect single-phase loads so that there is least possible unbalance of supply.

.3 Conduit and armour shall not be relied upon solely to provide grounding or bonding connections. All wireways shall contain a suitably sized bonding conductor.

.4 The resistance of grounding electrodes shall be less than the maximum permissible values for each type of installation or equipment concerned.

.12 Firestopping and Weatherstopping

.1 Where raceways, cables or other electrical equipment pass through fire separations pack the space between the sleeve/opening and installed electrical materials with a firestopping material suitable and approved for the application in accordance with the manufacturer's instructions for the firestop material.

.2 Where raceways, cables or other electrical equipment pass through exterior walls pack the space between the sleeve/opening and installed electrical materials with a suitable weatherstop material. Pack the interior of any conduit.

3.4 Field Quality Control

.1 Tests

.1 At completion of installation, or as required, conduct grounding resistance tests, voltage tests, or other tests and inspections as are called for below or in other sections of this specification or on the drawings. Make corrections where necessary and as directed.

.2 Notify the Consultant at least two business days in advance of all tests and inspections. Consultant reserves the right to witness all tests and inspections.

.3 Voltage provided to equipment in installation shall not exceed minimum and maximum permissible limits for equipment.

.4 Perform insulation tests for installed wiring and equipment with appropriate megohmmeter (megger). For tests where end use equipment cannot involving solid state circuitry use a megger rated at 500 Vdc, for all other tests on equipment, or conductors rated up to 300 Vac use a megger rated at 1000 Vdc, for all other conductors rated up to 1000 Vac use a megger rated at 2500 Vdc, for equipment rated for more than 750 Vac or conductors rated more than 1000 Vac contact Consultant.

.5 If resistance to ground is less than recommendations on any tested lighting or power circuit, consider such circuit defective and replace it.

.6 Megger supply circuit conductors for supply and branch circuit conductors for emergency lighting, exit signs, and electric door controls.

.7 Test performance of equipment for mechanical and electrical defects. Make adjustments necessary for such equipment. When equipment has been placed in permanent operation give to operating personnel all necessary tuition and instructions for its operation and maintenance.

.8 Test conduits that are to be reused or installed and left empty for clear bore, using a ball mandrel brushes and a snake. Use a lignum vitae ball of a diameter approximately 85% of the conduit internal diameter. Clear any conduit that rejects the ball mandrel in an approved manner, without damage, or replace.

.9 If encountered and changed in any way, verify installation of the fire detectors, manual pull stations and audible alarms and furnish a report of the verification to the Consultant.

.10 Make such other tests as may be required by other Sections of this Specification.

.11 Furnish labour, materials, instruments and bear other costs in connection with all tests, obtain required certificates of approval, acceptance, and compliance with regulations of agencies having jurisdiction and as specified. Work shall not be deemed complete and final certificate of acceptance will not be issued, until such certificates have been delivered to Consultant.

3.5 Delivery and Storage

.1 Deliver, store and maintain packaged material and equipment with manufacturer's seals and labels intact. Immediately remove packaged materials with broken seals from site. Protect all materials and equipment from weather.

3.6 Disposal

.1 Dispose of all removed electrical devices, fixtures, equipment, conduit, wire, etc. where not directed to turn over to the Owner.

.2 Where directed to turn materials and equipment over to the Owner, ensure that these are not damaged during removal.

.3 Keep work areas to be used by the building occupants open and clean on a daily basis. Clean up all debris on completion.

3.7 Cleaning

.1 Before starting and commissioning operations, installed new electrical enclosures, equipment and control devices shall be vacuum-cleaned to remove dust, dirt, metal particles and other small debris.

.2 Ensure no foreign objects, tools, or materials are left inside cabinets, control panels, enclosed switches and similar electrical enclosures before energizing equipment.

.3 Clean and polish all systems ready for use, in particular lighting fixture reflectors, lenses, lamps and surfaces.

3.8 Asbestos

.1 If asbestos is encountered immediately contact the Owner and Consultant.

End of Section

PART 1 - GENERAL

1.1 Scope

.1 Conform to other Sections of this Specification and Drawings as applicable.

.2 Conform to General Electrical Requirements, Section 16010 as applicable.

1.2 Standards

.1 Refer to Ontario Electrical Safety Code, Appendix A, for a list of product standards.

PART 2 - PRODUCTS

2.1 Materials and Equipment

.1 Switchboards, Panelboards and Circuit Breakers

.1 Switchboards, conforming to CSA C22.2 No. 244 refer to Drawings for details.

.2 Circuit Breakers, moulded case type, conforming to CSA C22.2 No.5.1, bolt-on, quick make, quick break, with arc quenching device, trip free handle, thermal overload protection combined with instantaneous magnetic trip, with interrupting and current rating as noted on Drawings. Minimum interrupting capacity shall be 10 kA or as indicated on drawings.

.3 Where 2 or 3 pole circuits are indicated on Drawings, circuit breakers shall have a common trip; extension tie handles alone will not be accepted.

.4 Panelboards as noted on drawings.

.2 Motor Starters, Disconnect Switches and Fuses

.1 Disconnect switches shall be fused or non-fused industrial heavy-duty type switches, horsepower rated, conforming to CSA C22.2 No.4, with quick make, quick break contacts, ratings and fuses as indicated on Drawings.

.2 Fuses shall be Class J, non-time delay, unless otherwise specified, suitably rated to protect circuits against overload and short circuit.

.3 Where separately mounted, motor starters and disconnect switches shall be complete with CSA Type 1 Enclosures for indoor mounting, or CSA Type 3 Enclosures for outdoor mounting or as indicated on Drawings.

.4 Motor starters to be sized as noted on the drawings.

.3 Wires and Cables

.1 Building wire: Size as per OESC, but not less than No. 12 AWG for power circuits, No. 14 AWG for control circuits outside factory assembled control

panels, with T90 NYLON for interior wiring above grade, RW90 XLPE for exterior wiring above grade and RWU90 XLPE for wiring below grade.

.2 Size branch circuits and feeders for maximum 2% voltage drop from panelboard to farthest outlet in circuit and large enough to be protected by fuse or circuit breaker of which they form a part, except as noted or scheduled on the Drawings.

.3 Feeders, circuit wiring and ancillary items shall be colour-coded for phase identification.

.4 Neutral Conductor: Full capacity, white covering and continuous throughout system without fuses, circuit breakers or switches of any kind.

.5 Connectors: Compression connectors for joining conductors to be properly sized and insulated as required. Mechanical pressure connectors with slotted screws or for external drive wrenches to be CSA certified for CU-AL, unless otherwise specified. Split-bolt connectors are not acceptable.

.6 Emergency lighting on dc circuits to be wired as recommended by the emergency lighting manufacturer.

.7 For other wire and cable refer to Drawings and Section 16010.

.4 Light Fixtures

.1 Light fixtures including emergency light fixtures shall be as noted on Drawings complete with lamps, LED's, ballasts or drivers as required to operate.

.2 Where light fixtures are recessed or flush mounted they shall be suitable for such installation. Where they penetrate a moisture barrier, a boot approved for the use or other suitable means shall be employed to re-establish the moisture barrier around the fixture. A space recommended by the fixture manufacturer, but in no case less than 75 mm shall be maintained between recessed fixtures and insulation, except where the fixture has been specifically approved for direct contact with insulation. Where they penetrate a fire separation a box of suitable material or other approved means shall be employed around the fixture to maintain the fire separation rating. Such a box shall be sized in accordance with the fixture manufacturer's requirements.

.5 Exit Signs, Emergency Light Batteries and Combination Exit Signs and Batteries

.1 Exit signs shall be as noted on the Drawings. If supplied with aperture for downward lighting, this aperture shall be opened. Arrow pointing as indicated on the Drawings.

.6 Wiring Devices

.1 Wiring devices shall be new, as indicated on the Drawings and in these specifications complete with new wall plates and installed as shown.

.2 Wall plates installed in finished areas shall match the colour of the portion of the wiring device visible after installation. In service areas the wall plate shall be galvanized steel unless otherwise specified.

.3 Wiring devices outdoors if surface mounted shall be in weather-resistant boxes with weather-resistant covers and if flush mounted shall have weather-resistant covers.

.7 Fire Alarm System

.1 Refer to Drawings for fire alarm system additions

.2 Equipment must be listed for use with and compatible with existing fire alarm system.

2.2 Alternatives

.1 Shop drawings must be supplied as indicated and for all alternatives.

PART 3 - EXECUTION

3.1 Installation

.1 Location of Equipment

.1 Switchboards, Panelboards, control panels, boxes, splitter troughs and cabinets shall be surface mounted, locate where indicated on drawings. Refer to Section 16010 for mounting heights.

.2 Disconnect Switches, Panels, Panelboards and Motor Control Assemblies

.1 Install at locations as indicated on Drawings.

.2 Provide respective identification in accordance with the designations indicated on Drawings.

.3 Panelboard directories shall be neatly typed indicating the end use of all branch and feed circuit breakers, or disconnects.

.4 Where installation of any equipment requires the shutdown of existing powered equipment or feeders; such shutdown shall be scheduled for a time suitable to the Owner. The Owner shall be notified again immediately before any such scheduled power shutdown.

.3 Light Fixtures.

.1 Install at locations indicated on Drawings.

.2 Emergency lights and rechargeable batteries with emergency lights shall be ceiling or wall mounted as appropriate or indicated on the drawings. Mounting

height to be not less than 2.0 m or more than 4.2 m above the finished floor unless otherwise specified.

.4 Wiring

.1 Armoured cable shall be TECK90 copper and installed only where permitted.

.2 Conduit shall be concealed except in service rooms, closets or other areas specifically permitted by the Owner.

.3 Finished surface conduit or wireways shall be installed only where specifically permitted.

.5 Exit Signs, Emergency Lights, Batteries and Combination Exit Signs and Batteries

.1 If a rechargeable battery is specified with a cord and attachment plug this shall be connected to an outlet box with only one receptacle per charger, box to be located immediately beside an exit light fixture.

.2 Exit signs to be wall or ceiling mounted as shown in the drawings. Mounting height to be not less than 2.2 m or more than 2.5 meters above finished floor unless otherwise specified.

.6 Fire Alarm System

.1 Contractor shall protect any fire detectors/alarms during all phases of construction to prevent false alarms due to dust, etc. When the Contractor is not on site the fire detectors/alarms shall be uncovered and fully functional. False alarms due to inadequate protection shall be the responsibility of the Contractor.

.2 Refer to Drawings.

.3 Installation, testing and verification must be done in accordance with CAN/ULC Standards S524, S536 and S537.

.4 Changes to the existing fire alarm system must be done by a firm qualified to do the work. If done by a firm other than that currently maintaining the existing fire alarm system, then the entire building fire alarm system must be re-verified with copies of the report supplied to the Owner and Consultant.

End of Section

PART 1 - GENERAL

1.1 Scope

.1 Conform to other Sections of this Specification as applicable.

.2 Conform to General Electrical Requirements, Section 16010 as applicable.

1.2 Drawings

.1 Drawings do not indicate conduit runs.

PART 2 - PRODUCT

2.1 Conduit

.1 Acceptable Types

.1 Electrical metallic tubing (EMT) with compression fittings, only where permitted by the Ontario Electrical Safety Code, the Ontario Building Code, the drawings and these specifications.

.2 Rigid galvanized steel.

.3 Rigid PVC conduit where permitted by the Ontario Electrical Safety Code, the Ontario Building Code and these specifications.

.2 Do not use smaller than 21 mm (3/4") trade size conduits and fittings.

.3 All conduit shall be of a grade or type suitable for the application and as specified.

2.2 Conduit Fastenings

.1 Single hole galvanized or PVC coated steel clamps may be used to secure conduit (2") 50 mm and smaller to walls and ceilings, two hole galvanized or PVC coated steel clamps must be used to secure conduit greater than (2") 50 mm. PVC fittings to be used with PVC conduit.

.2 Beam clamps to secure conduits to exposed steel work. Lead anchors or expansion shields shall be used to attach clamps to masonry walls

.3 Galvanized channel type supports for two or more conduits.

.4 Six mm diameter threaded stainless steel or hot-dipped galvanized rods to support suspended channels.

.5 All clamps or support assemblies to be corrosion resistant.

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 (1") 25 mm and larger conduits.

.3 Watertight compression connectors, couplings and fittings may be used with EMT installations.

2.4 Fish Cord

.1 Fish cord shall be polypropylene.

PART 3 - EXECUTION

3.1 Installation

.1 Run all conduit concealed in finished areas.

.2 Run all exposed conduit tight to walls or ceilings, parallel to building lines.

.3 Install conduits to conserve headroom in exposed locations and cause minimum interference in spaces through which they pass. Avoid blocking access openings.

.4 A copper bonding wire shall be in all conduit and EMT runs.

.5 Rigid galvanized steel-threaded conduit may be used except where other types are specified. Conceal in interior areas.

.6 Electrical metallic tubing (EMT) may used only in interior heated finished and service areas except where other types are specifically specified, or where prohibited by the Ontario Electrical Safety Code or the Ontario Building Code. Conceal in all finished areas.

.7 Rigid PVC conduit may be used below grade, on building exteriors where mechanically protected and where suitably encased in concrete. Use only factory made bends and offsets. Conduit rated FT4 and with a cross sectional area of 625 mm or less, nominal size 27 mm (1), may be used in wet areas or where subject to prolonged dampness.

.7 Seal all openings for conduit in walls, masonry or concrete and weatherstop all conduit interiors where passing through exterior walls. Firestop where passing through fire separations.

.8 Bend metal conduit cold. Replace conduit if kinked or flattened more than 1/10th of its original diameter.

.9 Mechanically bend steel conduit over 3/4" diameter.

.10 Use only concentric bends. Do not use angle fittings together with bends. Bends improperly formed not accepted. Do not bend over sharp objects.

.11 Properly ream conduit ends. Provide necessary fittings, couplings, locknuts and bushings.

.12 Field threads on rigid conduit must be of sufficient length to draw conduits up tight.

.13 Where conduits become blocked, remove and replace blocked section. Do not use liquids to clean out conduits.

.14 Conduits must be dry before installing wire.

.15 Install fish cord in empty conduits.

.16 Group surface mounted conduits wherever possible on suspended surface channels.

.17 Locate conduits behind infrared or gas fired heaters with 1.5 m clearance.

.18 Run conduits in flanged portion of structural steel.

.19 Do not pass conduits through structural members such as beams, joists and columns except as indicated.

.20 Do not locate conduits less than 75 mm from steam or hot water lines when run in parallel, or less than 25 mm at crossovers.

.21 Do not install horizontal runs in masonry walls.

.22 Do not install conduits in terrazzo or concrete toppings.

.23 Slope underground and long conduit runs to provide drainage. Do not drain into boxes.

.24 Conduit runs should terminate in closed boxes. Where this is not possible ends shall be bushed to prevent injury to exiting conductors. Empty conduits shall be sealed to prevent entry of foreign material.

3.2 Existing Installation

.1 Existing conduit, EMT, fittings and boxes may be reused if clean, undamaged, free from corrosion, undisturbed, suitable for the application, and in full compliance with the current requirements of the OESC and these specifications.

End of Section

PART 1 - GENERAL

1.1 Scope

.1 Conform to other Sections of this Specification as applicable.

.2 Conform to General Electrical Requirements, Section 16010 as applicable.

PART 2 - PRODUCTS

2.1 Splitters

.1 To be used only where indicated on Drawings.

.2 Sheet metal enclosure with welded corners and formed hinged cover suitable for locking in closed position, CSA Type 1 for dry, indoor locations.

.3 Terminal sizes to match required size and number of incoming and outgoing conductors as indicated.

.4 At least three spare terminals on each set of lugs in splitters less than 400 A.

2.2 Junction and Pull Boxes

.1 Galvanized welded steel, cast or other non-corroding construction with gasketted screw-on flat covers for surface mounting.

.2 Covers with 25 mm minimum extension all around, for flush-mounted pull and junction boxes.

.3 Junction boxes sized to accept more than two independent circuits will contain suitable terminal strips to terminate conductors. Terminals shall be sized to match conductor size and amperage.

2.3 Cabinets

.1 To be used only where indicated on Drawings or permitted by Owner and Consultant

.2 Type E: CSA type 1 for dry indoor locations of sheet steel galvanized or factory painted, handle, lock and catch for surface mounting. For wet, damp or outdoor locations, CSA Type 3 sheet steel, gasketted hinged door and return flange overlapping sides, handle, lock and catch, for surface mounting.

.3 Type T: CSA type 1 for dry indoor locations of sheet steel galvanized or factory painted, handle, lock and catch for surface mounting. For wet, damp or outdoor locations, CSA Type 3 sheet steel cabinet, with gasketted hinged

door with latch and lock. Both types to be complete with 2 keys and a sheet steel backboard.

2.4 Grounding

.1 All boxes to contain adequate provision for terminating grounding and bonding conductors and to bond the box.

PART 3 - EXECUTION

3.1 General

.1 Support boxes and cabinets independently of connecting conduits. Drywall, wallboard, ceiling tile, decorative panelling and the like must not be relied upon for support. Where the building is required to be of non-combustible construction all box and cabinet supports shall also be non-combustible.

3.2 Splitter Installation

.1 Splitter ratings and location only as specified on the drawings.

.2 Install splitters and mount plumb, true and square to the building lines.

.3 Extend splitters full length of equipment arrangement except where indicated otherwise.

3.3 Junction, Pull Boxes and Cabinet Installation

.1 Install pull boxes in inconspicuous but accessible locations such as Mechanical, or Electrical rooms, or in hung ceiling space.

.2 When installed in ceiling spaces, lockable access hatches must be provided unless ceiling tile of the lay-in or snap-in type is used.

.3 Mount cabinets only where indicated or permitted by Owner and Consultant, with top not higher than 2 m above finished floor.

.4 Install terminal blocks as required in Type T cabinets.

.5 Install pull boxes so as not to exceed 30 m of conduit run between pull boxes.

.6 Grouped small junction boxes shall not be used in place of a single larger junction box.

.7 Where flush mounted, grout into masonry openings, and in all cases restore finish to surrounding wall.

3.4 Terminal Boxes

.1 Install control terminal boxes as indicated on the drawings or permitted by Owner and Consultant.

.2 Control terminals to be suitably sized for conductors being used.

.3 Conductors under screw-type terminals to have ring or spade-type compression terminations.

.4 All control conductors to be numbered and Contractor to supply terminal layout diagram.

.5 Contractor to leave 20% of each size of terminal, but not less than one pair, spare (empty).

.6 Each spare control conductor to be labelled as such and terminated as above at a separate terminal.

.7 Terminal boxes to have hinged covers

.8 Where terminal size and ratings are suitable control terminal boxes may be used as junction boxes.

3.5 Identification

.1 Provide equipment identification in accordance with Section 16010 - Electrical - General Requirements.

End of Section

PART 1 - GENERAL

1.1 Scope

.1 Conform to other Sections of this Specification as applicable.

.2 Conform to General Electrical Requirements, Section 16010 as applicable.

PART 2 - PRODUCTS

2.1 Outlet and Conduit Boxes - General

.1 Size boxes in accordance with the Ontario Electrical Safety Code.

.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 Surface mounted utility boxes not to be used for finished interior work.

.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, where required, for flush mounting devices in finished walls.

2.3 Masonry Boxes

.1 If required, electro-galvanized steel masonry single and multi gang boxes for devices flush mounted in exposed block walls.

2.4 Concrete Boxes

.1 If required, electro-galvanized sheet steel concrete type boxes for flush mount in concrete with matching extension and plaster rings as required.

2.5 Conduit Boxes

.1 Cast FS or FD aluminium boxes with factory-threaded hubs, mounting feet and gasketted covers for exterior surface wiring of switches, receptacle and devices, if required.

2.6 Non-Metallic Boxes

.1 Moulded non-metallic boxes to be used only with non-metallic conduit and to be of compatible material.

.2 To be used outdoors only with suitable covers and gaskets, or in connection with rigid PVC conduit, unless otherwise specified.

2.7 Fittings - General

.1 Bushing and connectors with nylon insulated throats.

.2 Knockout fillers to be used 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. Drywall, wallboard, ceiling tile, decorative panelling and the like must not be relied upon for support. Where the building is required to be of non-combustible construction all box supports shall also be non-combustible.

.2 For flush installations mount outlets flush with finished wall using plaster rings as necessary to permit wall finish to come within 6 mm of opening.

.3 Provide correct size of openings in boxes for conduit, and armoured cable connections. Reducing washers are not allowed.

.4 Boxes to be flush mounted in finished areas, surface mounted in warehouse, production and other unfinished areas, unless otherwise shown on drawings.

.5 Boxes in warehouses, production areas and other areas exposed to dampness, unheated or poorly heated shall be either non-metallic or conduit boxes with gasketted covers.

.6 Boxes containing end-of-line resistors shall have covers with a symbol or label indicating the contents.

.7 Box covers used for fire alarm wiring and components shall be red in colour.

.8 Boxes installed outside shall be weather-resistant, corrosion-resistant, suitable for the purpose, with gasketted covers and mounted high enough to avoid contact with soil.

.9 Conduit fittings (condulets) not to be concealed.

3.2 Existing Installation

.1 Existing device boxes may be reused if clean, undamaged, free from corrosion, undisturbed and in full compliance with the requirements of the OESC and these specifications.

End of Section

Attachment D

GENERAL NOTES

1. THE ONTARIO BUILDING CODE, 2024 EDITION, SHALL BE THE BASIS FOR THE DESIGN AND CONSTRUCTION OF THIS WORK.
2. ALL DIMENSIONS GIVEN ON THE DRAWINGS MUST BE FIELD CHECKED AND ANY INCONSISTENCIES REPORTED TO THE ENGINEER BEFORE PROCEEDING WITH THE WORK.
3. ALL WORK SHALL BE PERFORMED IN COMPLIANCE WITH THE OCCUPATIONAL HEALTH AND SAFETY ACT 1980, REG. 213/91, LATEST REVISIONS.
4. ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH CURRENT PROVINCE OF ONTARIO AND CITY OF MARKHAM STANDARDS.

DEMOLITION & REMOVALS

1. REMOVE EXISTING MATERIALS AND COMPONENTS AS NOTED ON DRAWINGS. NOTIFY THE CONSULTANT IMMEDIATELY (AND PRIOR TO PROCEEDING) IF ADDITIONAL REMOVALS ARE REQUIRED IN ORDER TO FACILITATE THE COMPLETE SCOPE OF THE WORK.
2. THE CONTRACTOR SHALL NOTIFY THE CONSULTANT IF ADDITIONAL REMOVALS ARE REQUIRED IN DETERIORATED AREAS (WHERE REHABILITATION WORK IS INTENDED). CONTRACTOR IS NOT TO PROCEED UNTIL THEY HAVE WRITTEN APPROVAL TO DO SO.
3. ALL DEBRIS AND GARBAGE MUST BE PROMPTLY REMOVED FROM THE SITE AT THE END OF EACH DAY.
4. EVERY EFFORT SHALL BE MADE BY THE CONTRACTOR TO RECYCLE ALL BUILDING MATERIALS, WHERE FACILITIES EXIST. THE CONTRACTOR IS RESPONSIBLE FOR ALL CHARGES AND FEES ASSOCIATED WITH THE REMOVAL OF GARBAGE AND ITEMS FOR RECYCLING. THE CONTRACTOR IS ALSO ENTITLED TO ANY REIMBURSEMENT FROM THE RECYCLED MATERIALS.
5. EXERCISE SPECIAL CARE DURING REMOVALS IN FINISHED AREAS TO NOT DAMAGE EXISTING SURFACES.
6. ALL SURFACES DAMAGED DURING CONSTRUCTION ARE TO BE RESTORED TO PRE-CONSTRUCTION CONDITION OR BETTER.

SITE SAFETY

1. PORTIONS OF THE SITE ARE TO REMAIN IN-USE DURING CONSTRUCTION. PROVIDE SECURE HOARDING, BARRICADES OR OTHER EQUIPMENT AS REQUIRED.
2. CONTRACTOR TO PROVIDE SIGNAGE ON EXTERIOR SIDE OF BUILDING ADVISING THAT THE VARIOUS ITEMS OF CONSTRUCTION INSIDE ARE UNDER CONSTRUCTION.
3. CONTRACTOR TO EXERCISE SPECIAL ATTENTION TO NOISE AND DUST GENERATION WITH RESPECT TO OCCUPANTS AND VISITORS DURING ALL PHASES OF THE WORK.
4. CONTRACTOR SHALL ERECT TEMPORARY PLATFORMS, SCAFFOLDING, SHORING, RAMPS, STAIRS ETC. AS REQUIRED FOR THE SAFE EXECUTION OF THE WORK.

CLOSEOUT NOTE:

THE CONTRACTOR IS TO PROVIDE ALL CLOSEOUT DOCUMENTS IN ACCORDANCE WITH THE CITY'S FRONT-END. IN ADDITION, THE CONTRACTOR IS TO ENSURE THAT ALL CLOSEOUT DOCUMENTS (INCLUDING MAINTENANCE AND OPERATIONAL MANUALS) ARE PROVIDED IN PDF.

WARRANTY NOTE:

1. AT A MINIMUM, THE CONTRACTOR IS TO PROVIDE A TWENTY-FOUR (24) MONTH WARRANTY PERIOD FOR ALL WORK UNDERTAKEN AS PART OF THIS PROJECT.
2. AT A MINIMUM, ANY SUB-CONTRACTORS AND/OR SUB-TRADES ARE TO PROVIDE A TWENTY-FOUR (24) MONTH WARRANTY PERIOD FOR ALL WORK UNDERTAKEN AS PART OF THIS PROJECT.
3. THE CONTRACTOR IS TO REFER TO THE DRAWINGS AND SPECIFICATIONS FOR ADDITIONAL INFORMATION ON EXTENDED WARRANTIES FOR SPECIFIC EQUIPMENT AND/OR WORK.

BARRIER FREE:

1. NOTE THAT THE DESIGNATION OF B/F ON THESE DRAWINGS DENOTE BARRIER FREE (OR ACCESSIBILITY).

SHOP DRAWINGS:

1. PRIOR TO THE SUBMISSION OF SHOP DRAWINGS, IT IS THE CONTRACTOR'S RESPONSIBILITY TO VISIT THE SITE AND PERFORM A DETAILED SITE SURVEY INCLUDING SITE MEASUREMENTS AND ELECTRICAL RATINGS.
2. THE CONTRACTOR IS RESPONSIBLE FOR SUBMITTING SHOP DRAWINGS FOR THE NEW WORK AND THE SHOP DRAWINGS SHALL INCLUDE ALL ASSOCIATED COMPONENTS AND WORK. THIS IS INCLUDING PRODUCT CUT SHEETS FOR ALL ITEMS.
3. REFER TO BARRIER FREE REQUIREMENTS NOTE ON SHEET No. 1.

BARRIER FREE REQUIREMENTS:

1. AS THE ONTARIO BUILDING CODE (OBC) AND CITY OF MARKHAM ACCESSIBILITY DESIGN GUIDELINES ARE DOCUMENTS WHICH ARE EVOLVING AND CHANGING, THE CONTRACTOR MUST PROVIDE ADDITIONAL INFORMATION ON SUBMITTED SHOP DRAWINGS WHICH HAVE BARRIER FREE COMPONENTS. THIS ADDITIONAL INFORMATION WILL INCLUDE (BUT NOT BE LIMITED TO) THE MOUNTING HEIGHTS FOR ALL COUNTERS, DOOR HARDWARE, BARRIER FREE ACTIVATION BUTTONS, GRAB BARS, DOOR HANDLES, VISION STRIPS IN DOORS AND SIDELITES, ETC.

EXISTING WALL/CEILING MOUNTED ITEMS:

ON ANY WALL/CEILING SURFACES REQUIRING WORK, ANY MOUNTED ITEMS WHICH ARE NOT PART OF THE SCOPE OF REMOVAL ARE TO BE CAREFULLY REMOVED AND EITHER STOCKPILED FOR REINSTALLATION OR REROUTED FOR FUNCTIONING SYSTEMS. THIS INCLUDES, BUT IS NOT LIMITED TO, LIGHT SWITCHES, ELECTRICAL PANELS, SIGNAGE, FIRST AID KITS, FIRE ALARM PANELS, ELECTRICAL OUTLETS AND/OR CONDUITS, FIRE SAFETY PLANS, NOTIFICATION BOARDS, EXIT SIGNS, LIGHTS, HEATERS, DIFFUSERS, WAYFINDINGS, VENTILATION GRILLES, ETC.

EXISTING SIGNAGE:

IT IS IMPERATIVE THAT ANY EXIT SIGNAGE OR DIRECTIONAL SIGANGE OR BARRIER FREE SIGNAGE THAT IS REMOVED TO FACILITATE THE WORK IS REINSTALLED ONCE ALL WORK HAS BEEN COMPLETED. REINSTALLATION SHALL BE IN APPROVED LOCATIONS AND AT APPROVED MOUNTING HEIGHTS.

GENERAL NOTES FOR PAINTING:

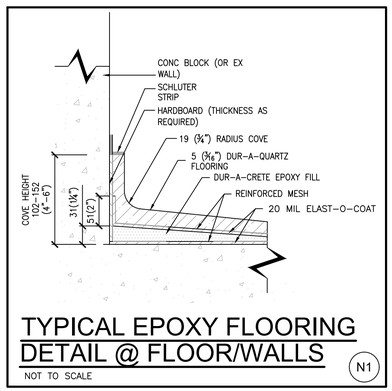
1. ALL PAINTING APPLICATIONS AND FINISHED PRODUCTS SHALL CONFORM TO THE CURRENT EDITION OF THE MASTER PAINTER'S INSTITUTE (MPI) ARCHITECTURAL PAINTING SPECIFICATION AND THE MASTER PAINTER'S INSTITUTE (MPI) MAINTENANCE REPAINTING MANUALS.
2. CLEAN AND PREPARE ALL SURFACES THAT ARE TO BE PAINTED IN ACCORDANCE WITH THE MPI TECHNICAL INFORMATION AND THE MANUFACTURER'S RECOMMENDATIONS.
3. PROVIDE MINIMUM OF FOUR (4) LITRES OF EXTRA PAINT MATCHING EACH COLOUR USED IN SEALED, UNOPENED, ORIGINAL CONTAINERS BEARING THE ORIGINAL MANUFACTURER'S LABEL AND COLOUR INDICATOR.
4. WHERE POSSIBLE, PROVIDE PAINT THAT IS MANUFACTURED IN CANADA AND IS CONSIDERED TO BE A CANADIAN PRODUCT (I.E. CLOVERDALE PAINT, BEAUTI-TONE PAINT, ETC.).

GENERAL NOTES FOR ROUGH CARPENTRY:

1. ALL CARPENTRY WORK AND MATERIALS SHALL CONFORM TO CAN/CSA-O86-14, CSA O141-05 (R2014), CSA O151-09 (R2014), CSA O437 Series-93 (R2011) AND THE NATIONAL LUMBER GRADES AUTHORITY (NLGA).
2. ALL LUMBER SHALL BE SPF SPECIES; LIGHT FRAMED GRADE CATEGORY, PRESSURE TREATED UNLESS NOTED OTHERWISE. CONTRACTOR TO IDENTIFY WHERE FSC-CERTIFIED WOOD IS PROVIDED.
3. WIRE NAILS, SPIKES AND STAPLES TO CSA B111-1974 (R2003), TYPE 304 OR 316 STAINLESS STEEL, COMMON WIRE TYPE FOR GENERAL USE AND SPIRAL TYPE FOR STRUCTURAL CONNECTIONS.
4. WOOD PRESERVATIVE PRESSURE TREATMENT TO CSA O80; USING ALKALINE COPPER QUARTERNARY (ACQ) PRESERVATIVE.
5. WOOD PRESERVATIVE SURFACE APPLICATION TO CSA O80, BRUSH APPLIED.
6. WHEN WOOD IS IN CONTACT WITH CEMENTITIOUS MATERIALS, ROOFING AND RELATED METAL FLASHINGS HAVE NOT BEEN PREVIOUSLY PRESSURE TREATED, BRUSH APPLY TWO (2) COATS OF SURFACE APPLIED PRESERVATIVE TREATMENT ON WOOD.
7. APPLY TWO (2) COATS OF SURFACE APPLIED PRESERVATIVE TREATMENT TO SAWN ENDS OF PRESSURE TREATED MATERIAL.
8. CONSTRUCT FRAMING MEMBERS CONTINUOUS WITHOUT SPLICES UNLESS NOTED OTHERWISE.
9. FOR ALL EXTERIOR APPLICATIONS, PROVIDE FULLY GALVANIZED JOIST HANGERS, POST SHOES AND ACCESSORIES.

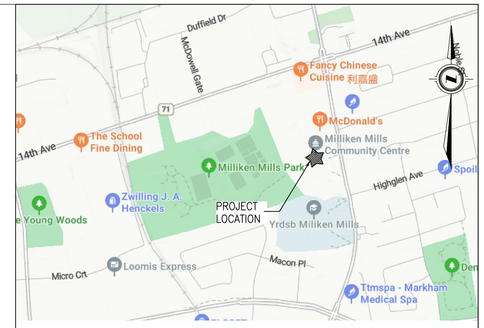
GENERAL NOTES FOR ARCHITECTURAL WOODWORK:

1. ALL CARPENTRY WORK AND MATERIALS SHALL CONFORM TO THE CURRENT EDITIONS OF ANSI A208.1-2009, ANSI/NEMA LD 3-2005, CAN/CGSB-11.3-M87, CSA O112, CSA O115-M1982 (R2001), CSA O141-05 (R2014), CSA O151-04 (R2014) AND THE NATIONAL LUMBER GRADES AUTHORITY (NLGA).
2. ALL WORK SHALL CONFORM TO THE ARCHITECTURAL WOODWORK MANUFACTURERS ASSOCIATION OF CANADA (AWMAC): ARCHITECTURAL WOODWORK STANDARDS – EDITION 1, 2009 (OR LATEST REVISION), CUSTOM GRADE.
3. WORK SHALL BE PERFORMED BY PERSONS SPECIALIZING IN CUSTOM CARPENTRY WITH MINIMUM THREE (3) YEARS DOCUMENTED EXPERIENCE.
4. SUBMIT A 12-MONTH WARRANTY OR 100% MAINTENANCE BOND COVERING LABOUR AND MATERIALS FOR ALL MILLWORK.
5. SUBMIT SHOP DRAWINGS IDENTIFYING ALL MATERIALS, DIMENSIONS, PROFILES, FASTENING METHODS, JOINTING DETAILS, FINISHES, GRAIN DIRECTION, ACCESSORIES, LOCATION OF WORK BY OTHERS (I.E. MECH. / ELECT.) AND ALL HARDWARE. SHOP DRAWINGS TO BE SEALED BY A PROFESSIONAL ENGINEER FOR ALL COMPONENTS THAT MUST CONFORM TO THE ONTARIO BUILDING CODE.
6. HIGH-PRESSURE DECORATIVE LAMINATE SHALL BE 1.2mm THICK HORIZONTAL GENERAL PURPOSE STANDARD (HGS), TYPE 107 GRADE (HORIZONTAL FORMING GRADE [HGP] FOR POSTFORMING) MANUFACTURED BY WILSONART, FORMICA OR ARBORITE.
7. EDGE-BANDING TO BE 3mm THICK SOLID POLYVINYL CHLORIDE (PVC) WITH EASED EDGE, COLOUR AND PATTERN TO MATCH ADJACENT SURFACES UNLESS NOTED OTHERWISE.
8. ADHESIVES AND SEALANTS TO MEET CAN/CGSB OR CSA STANDARDS AS RECOMMENDED BY THE MANUFACTURED, AND MUST COMPLY WITH THE VOC LIMIT REQUIREMENTS FOR LOW-EMITTING MATERIALS AS ESTABLISHED BY THE LATEST VERSION OF LEED CERTIFICATION PRACTICES.



TYPICAL EPOXY FLOORING DETAIL @ FLOOR/WALLS (N1)

NOT TO SCALE

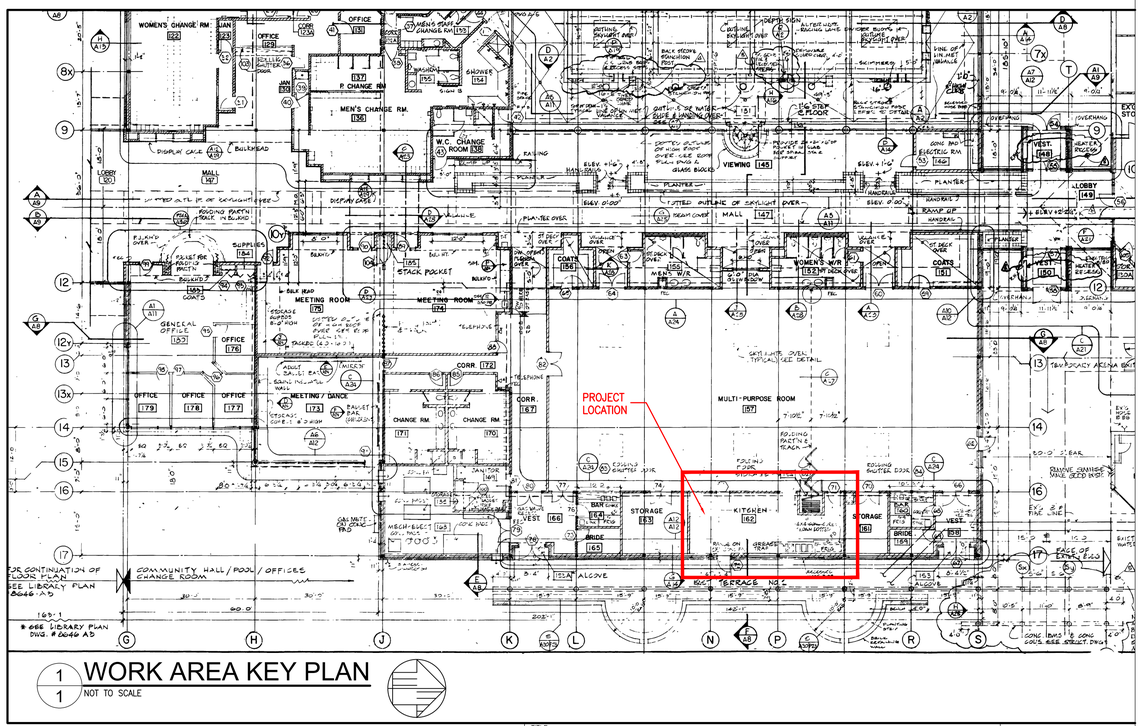


KEY PLAN

NOT TO SCALE

LIST OF DRAWINGS

Sheet No. 1	KEY PLAN GENERAL NOTES LIST OF DRAWINGS
Sheet No. 2	KITCHEN (162) EXISTING CONDITIONS AND DEMOLITION
Sheet No. 3	KITCHEN (162) NEW WORK
Sheet No. 4	KITCHEN (162) ELEVATIONS



WORK AREA KEY PLAN (1/1)

NOT TO SCALE

	No.	REVISIONS	DATE	BY
DESIGN PTM/JAM	1	ISSUED FOR REVIEW	APR 28/2025	JAM
DRAWN EMB				
CHECKED PTM/JAM				
APPROVED PTM/JAM				
DATE APRIL 2025				
CAD 6520F01				

CONSULTANT

Peter T. Mitches & Associates Limited
Project Managers & Consulting Engineers

ENGINEER'S STAMP

ENGINEER'S STAMP

MARKHAM

The Contractor shall check and verify all dimensions and report all errors and omissions to OWNER Designee for his/her written direction before proceeding with the Work.

A/B A Detail No. B Sheet No. where detailed

SCALE: NOT TO SCALE

TITLE

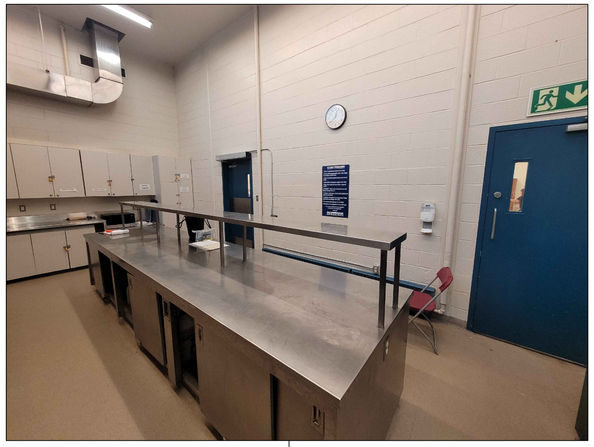
KITCHEN RENOVATION AT MILLIKEN MILLS COMMUNITY CENTRE, 7600 KENNEDY ROAD, CITY OF MARKHAM

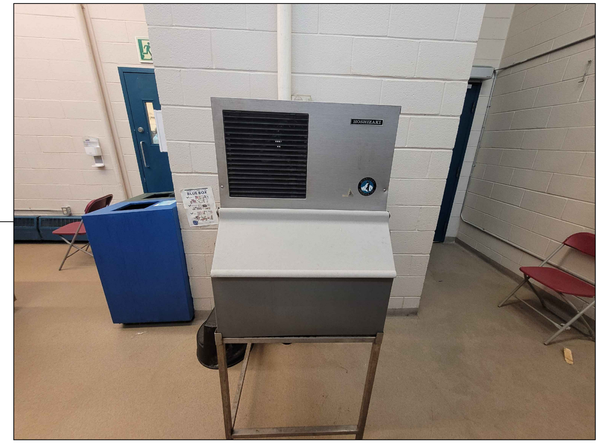
KEY PLAN
GENERAL NOTES
LIST OF DRAWINGS

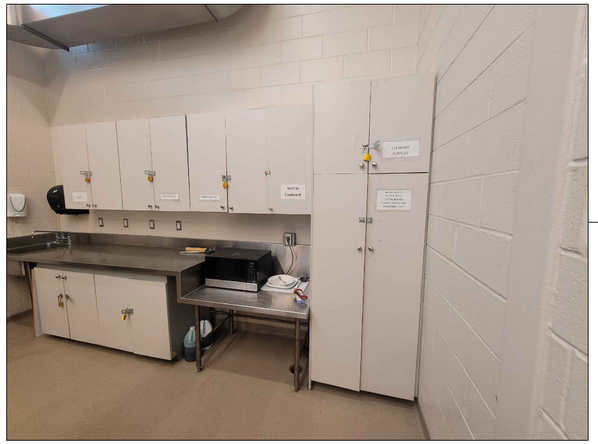
PROJECT No. 6520/F01

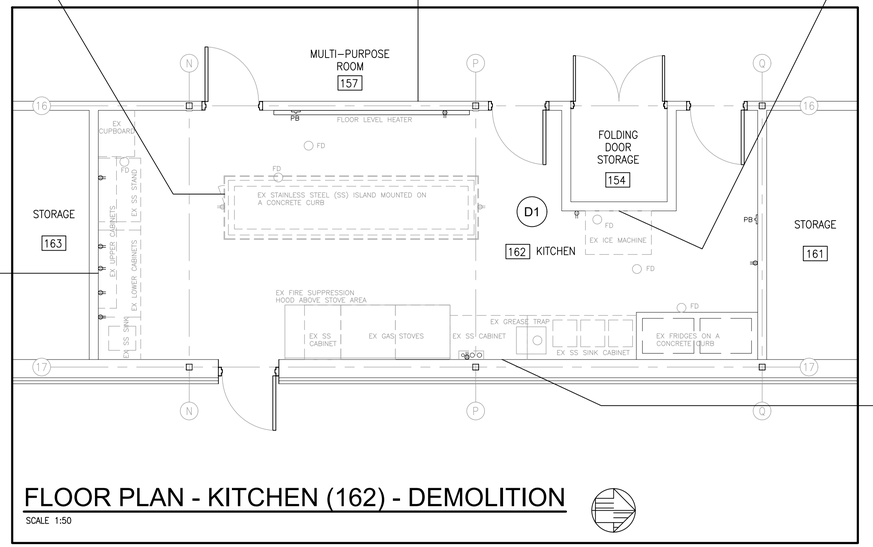
SHEET No. 1

PLAN FILE No. 6520/F01









FLOOR PLAN - KITCHEN (162) - DEMOLITION

SCALE 1:50

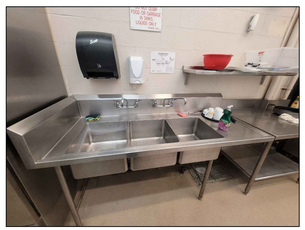


PHOTO SHOWING THE EXISTING TRIPLE SINK STAND AND FAUCETS, ON THE EAST WALL

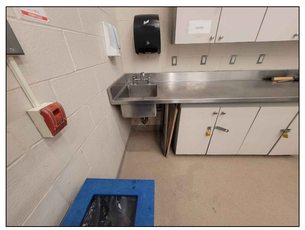


PHOTO SHOWING THE EXISTING SINGLE SINK STAND AND FAUCET, ON THE SOUTH WALL

D1

KITCHEN (162) DEMOLITION:

1.0 REMOVE ALL EXISTING STAINLESS STEEL FLOOR MOUNTED SHELVES AND CABINETS AND DISPOSE OF OFF-SITE. REMOVE ALL EXISTING STAINLESS STEEL SINK UNITS AND FAUCETS AND DISPOSE OF OFF-SITE. PLUMBING CONNECTIONS TO REMAIN AND BE REUSED, CAP TO PROTECT AS REQUIRED.
1.1 REMOVE ALL EXISTING MELAMINE UPPER AND LOWER CUPBOARDS AND DISPOSE OF OFF-SITE.
1.2 AT THE EXISTING STAINLESS STEEL ISLAND, DISCONNECT ALL ELECTRICAL COMPONENTS AND SAFELY CAP ALL WIRING. REMOVE ENTIRE STAINLESS STEEL ISLAND, COMPLETE, AND DISPOSE OF OFF-SITE. INCLUDE TO REMOVE ISLAND POWER PANEL AND ALL ELECTRICAL COMPONENTS TO BELOW THE FLOOR LEVEL.
1.3 ONCE THE EXISTING STAINLESS STEEL ISLAND IS REMOVED, REMOVE EXISTING CONCRETE CURB THAT IS BELOW THE EXISTING ISLAND AND DISPOSE OF OFF-SITE. ENSURE THAT THE CONCRETE CURB IS FULLY REMOVED SUCH THAT THE AREA BELOW THE FINISHED CURB IS AT THE SAME ELEVATION AS THE SURROUNDING FLOOR.
1.4 REMOVE THE EXISTING FRIDGES FROM THE EXISTING CONCRETE CURB AND DISPOSE OF OFF-SITE. THE EXISTING CONCRETE CURB IS TO REMAIN.
1.5 REMOVE THE EXISTING GAS STOVES AND DISPOSE OF OFF-SITE. ENSURE THE GAS CONNECTION IS SAFELY CAPPED FOR THE REMOVAL.
1.6 REMOVE THE EXISTING ICE MACHINE AND DISPOSE OF OFF-SITE.
1.7 REMOVE ALL FLOOR DRAINS AND CLEAN OUTS. PROTECT EXPOSED PIPING FROM CONSTRUCTION DEBRIS. THE FLOOR DRAINS AND CLEANOUTS TO BE REMOVED IN ORDER TO SUPPLY AND INSTALL NEW FLOOR DRAINS AND CLEANOUTS.
1.8 THE WALL MOUNTED STAINLESS STEEL SHELF AT THE TRIPLE SINK AREA IS NOT TO BE DISTURBED.
1.9 PRIOR TO REMOVING ANY WALL MOUNT ITEM NOT DETAILED HERE, OBTAIN WRITTEN PERMISSION FROM THE OWNER AND THE CONSULTANT.
1.10 THE HOOD FIRE SUPPRESSION SYSTEM FOR THE GAS STOVES IS NOT TO BE DISTURBED.
1.11 PROTECT ALL VENTS AND GRILLES AGAINST CONSTRUCTION DEBRIS/DUST.
1.12 REMOVE THE EXISTING FLOOR FINISH AND WALL BASE/COVE, IN PREPARATION FOR FLOOR REPAIR AND NEW FLOORING.

	No.	REVISIONS	DATE	BY
DESIGN PTM/JAM	1	ISSUED FOR REVIEW	APR 28/2025	JAM
DRAWN EMB				
CHECKED PTM/JAM				
APPROVED PTM/JAM				
DATE APRIL 2025				
CAD 6520F01				

CONSULTANT

Peter T. Mitches & Associates Limited
Project Managers & Consulting Engineers

ENGINEER'S STAMP

ENGINEER'S STAMP

MARKHAM

The Contractor shall check and verify all dimensions and report all errors and omissions to OWNER Designee for his/her written direction before proceeding with the Work.

A/B A Detail No.
B Sheet No. where detailed

SCALE

SCALE – 1 : 50
0.5 0 1.0m

TITLE

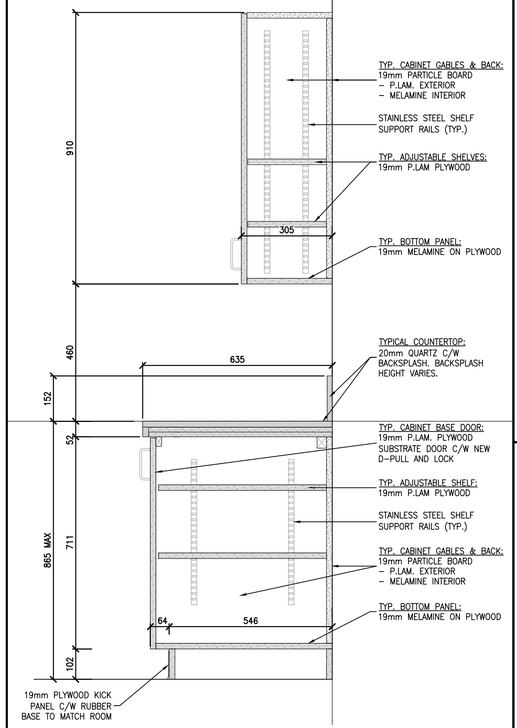
KITCHEN RENOVATION AT MILLIKEN MILLS COMMUNITY CENTRE, 7600 KENNEDY ROAD, CITY OF MARKHAM

KITCHEN (162) EXISTING CONDITIONS AND DEMOLITION

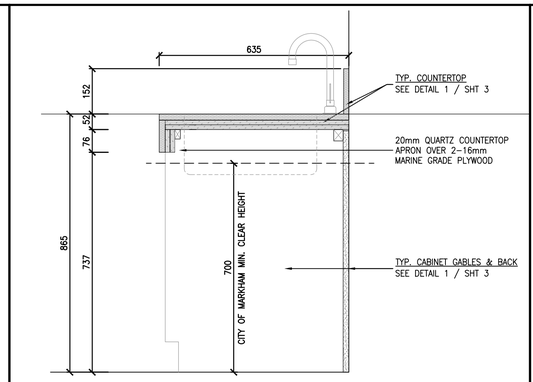
PROJECT No. **6520/F01**

SHEET No. **2**

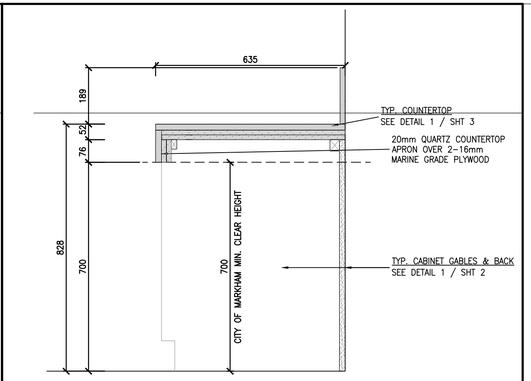
PLAN FILE No. **6520/F01**



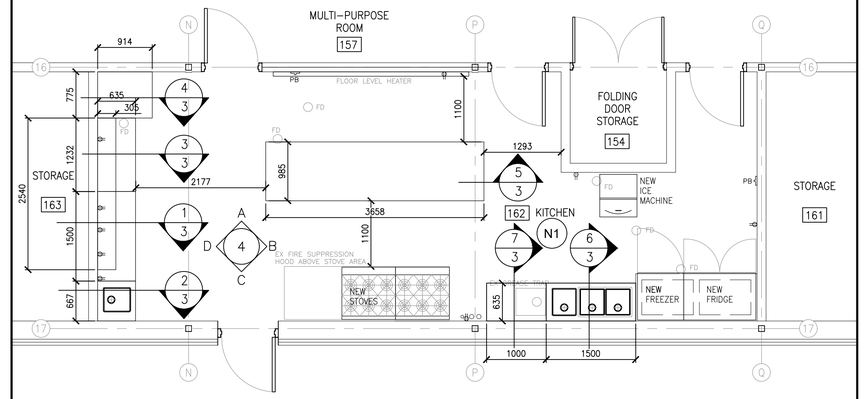
1/3 TYP. KITCHEN SECTION
SCALE 1:10



2/3 KITCHEN SINK AREA @ SOUTH WALL
SCALE 1:10



3/3 MICROWAVE AREA @ SOUTH WALL
SCALE 1:10



1/3 FLOOR PLAN - KITCHEN (162) - NEW WORK
SCALE 1:50

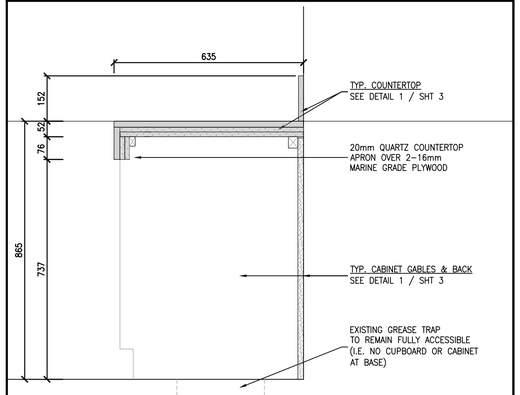
N1

KITCHEN (162) NEW WORK:

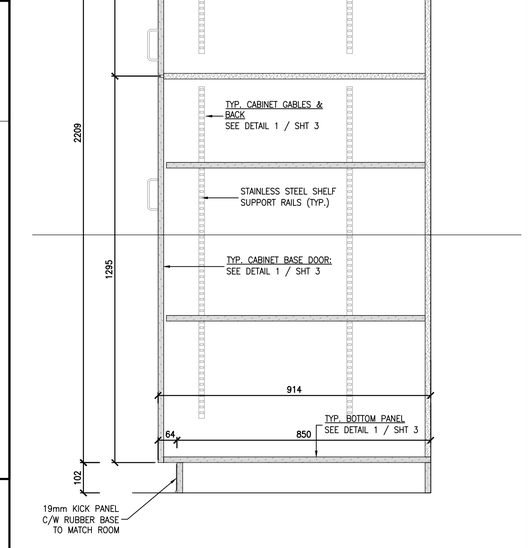
1.0 INSTALL THE NEW KITCHEN EQUIPMENT THAT WILL BE PROVIDED BY OWNER: FRIDGES, STOVES AND ICE MACHINE. ENSURE GAS CONNECTION FOR THE NEW STOVES IS IN ACCORDANCE WITH REGULATIONS.
1.1 SUPPLY AND INSTALL NEW PLASTIC LAMINATED MILLWORK AS SHOWN ON THE DETAILS (UPPER CABINETS, LOWER CABINETS, STORAGE CUPBOARD, ISLAND). ALL PLASTIC LAMINATE (PLAM) MUST BE 1.2mm GENERAL PURPOSE (HGS) TYPE 107. ALL INTERIOR CUPBOARDS MUST BE SURFACED WITH WHITE MELAMINE. THERE SHALL BE NO CHIPBOARD PERMITTED IN ANY CABINET CONSTRUCTION, ASIDE FROM CABINET GABLES AND BACKS.
1.2 PLASTIC LAMINATE COLOUR TO BE SELECTED BY THE OWNER FROM A STANDARD RANGE. PROVIDE LAMINATED EDGES AND CABLE ENDS FOR ALL EXPOSED SURFACES.
1.3 NEW COUNTERTOPS AND BACKSPLASHES TO BE AS FOLLOWS:
  a. 20mm (¾"±) THICK HANSTONE QUARTZ COUNTERTOP ON 2 LAYERS OF 16mm (⅝") THICK MARINE–GRADE (MOISTURE RESISTANT) PLYWOOD (COLOUR TO BE SELECTED FROM STANDARD RANGE);
  b. PROVIDE NEW 20mm (¾") THICK HANSTONE QUARTZ BACK SPLASHES, HEIGHT TO MATCH DRAWINGS (VARIES), ADHERED TO WALL;
  c. FINISH ALL JOINTS FOR A SEAMLESS FINISH;
  d. CAULK TOP OF BACKSPLASHES TO WALLS.
1.4 NEW HARDWARE TO BE AS FOLLOWS:
  a. DOOR PULLS: 128mm (5 ⅜") CONTEMPORARY ANTIMICROBIAL PULL "9381281954B" BY RICHELIEU, OR APPROVED EQUAL.
  b. DOOR HINGES: 110–DEGREE OPENINGS WITH SELF–CLOSING SPRINGS, "90 SERIES" BY BLUM OR APPROVED EQUAL.
  c. DOOR & DRAWER BUMPERS: CLEAR NYLON, "MP30311" BY RICHELIEU OR APPROVED EQUAL.
  d. DOOR LOCKS: CAM LOCKS COMPLETE WITH KEYS, "BP140001140" BY RICHELIEU, OR APPROVED EQUAL – SIZE TO SUIT PANEL THICKNESS, ETC. ALL KEYED ALIKE, CHROME FINISH.
1.5 NEW SINKS SHALL BE:
  a. THE NEW SINKS AT THE EAST WALL SHALL BE ONE UNDERMOUNT DOUBLE SINK, FRANKE CANADA MODEL PROFESSIONAL 2.0 SINK – PS2X120–16–16–CA, 122.0528.605 WITH ONE FAUCET, FRANKE CANADA MODEL PESCARA SEMI–PRO FAUCET – PES–SPX–304, 115.0435.802 AND ONE UNDERMOUNT SINGLE SINK, FRANKE CANADA MODEL PROFESSIONAL 2.0 SINK – PS2X110–15–CA, 122.0528.555 WITH ONE FAUCET, FRANKE CANADA MODEL PESCARA SEMI–PRO FAUCET – PES–SPX–304, 115.0435.802,
  b. THE NEW SINK AT THE SOUTH WALL SHALL BE ONE UNDERMOUNT SINGLE SINK, FRANKE CANADA MODEL PROFESSIONAL 2.0 SINK – PS2X110–15–CA, 122.0528.555 WITH ONE FAUCET, FRANKE CANADA MODEL PESCARA SEMI–PRO FAUCET – PES–SPX–304, 115.0435.802,
1.6 REPAINT ALL THE WALLS IN THE KITCHEN. PAINT COLOUR TO BE DETERMINED BY OWNER.
1.7 PROVIDE NEW NON–SLIP EPOXY FLOORING IN THE KITCHEN IN ACCORDANCE WITH DETAILS NOTED ON THE PLANS. THE NON–SLIP EPOXY FLOORING SHALL BE APPLIED TO THE EXISTING CONCRETE SLAB THAT HAS BEEN PREPARED IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS, MAINTAINING ALL FLOOR DRAINS AND CLEANOUTS, WITH ZERO LOW AREAS FOR PONDING WATER (I.E. THE ENTIRE FLOOR IS TO BE PREPPED TO SLOPE TO ALL AVAILABLE FLOOR DRAINS), DO NOT CREATE PONDING AREAS IN NEW EPOXY FLOORING. NEW EPOXY FLOORING SHALL BE NON–SLIP WATERPROOF EPOXY FLOORING, STONHARD STONSHEILD HRI, COLOUR TO BE GOTHAM GRAY OR AS SELECTED BY OWNER. EPOXY FLOORING SYSTEM SHALL BE A MORTAR SYSTEM C/W WATERPROOFING. PROVIDE COVE/BASE AS PER DETAIL ON SHEET No. 1.
1.8 PROVIDE ALL NEW FLOOR DRAINS AND CLEANOUTS, COMPLETE WITH COVERS/GRATES. ALL FLOOR DRAINS AND CLEANOUTS SHALL BE AT THE SAME ELEVATION AS THE NEW EPOXY FLOORING. THERE SHALL BE NO FLOOR DRAINS OR CLEANOUTS WITH THEIR GRATES BELOW OR ABOVE THE FINISHED ELEVATION OF THE SURROUNDING NEW EPOXY FLOORING (I.E. NO "LIP" OR "DEPRESSION" AT FLOOR DRAINS OR CLEANOUTS).

APPROXIMATE QUANTITIES:

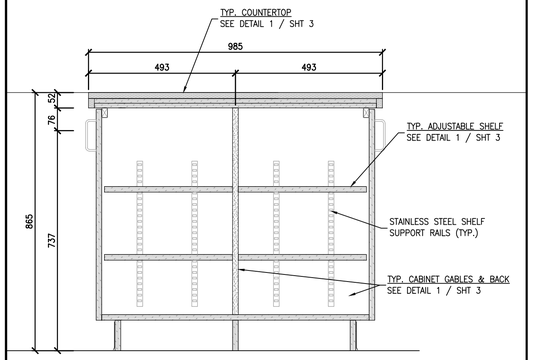
WALLS TO BE PAINTED:	65 SQUARE METRES
NEW EPOXY FLOORING:	45 SQUARE METRES
NEW FLOOR DRAINS OR CLEANOUTS:	8



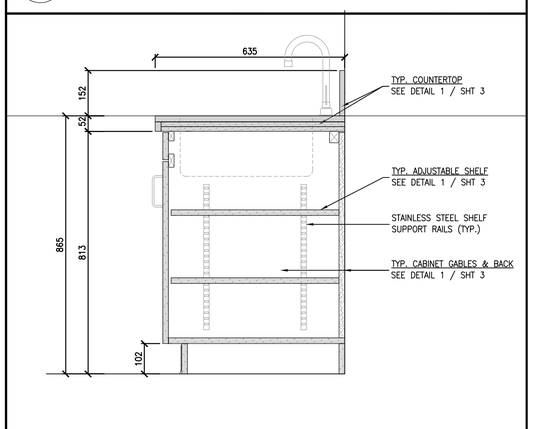
7/3 AREA AT GREASE TRAP ON EAST WALL
SCALE 1:10



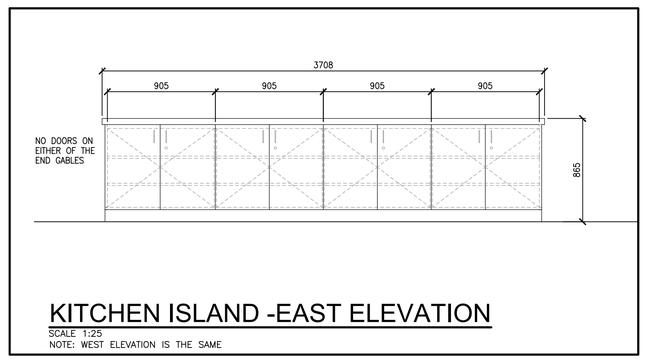
4/3 STORAGE CABINET SECTION
SCALE 1:10



5/3 ISLAND
SCALE 1:10



6/3 KITCHEN SINK @ EAST WALL
SCALE 1:10



KITCHEN ISLAND -EAST ELEVATION
SCALE 1:25
NOTE: WEST ELEVATION IS THE SAME

	No.	REVISIONS	DATE	BY
DESIGN PTM/JAM	1	ISSUED FOR REVIEW	APR 28/2025	JAM
DRAWN EMB				
CHECKED PTM/JAM				
APPROVED PTM/JAM				
DATE APRIL 2025				
CAD 6520F01				

CONSULTANT
Peter T. Mitches & Associates Limited
Project Managers & Consulting Engineers

ENGINEER'S STAMP

ENGINEER'S STAMP

MARKHAM

The Contractor shall check and verify all dimensions and report all errors and omissions to OWNER Designee for his/her written direction before proceeding with the Work.

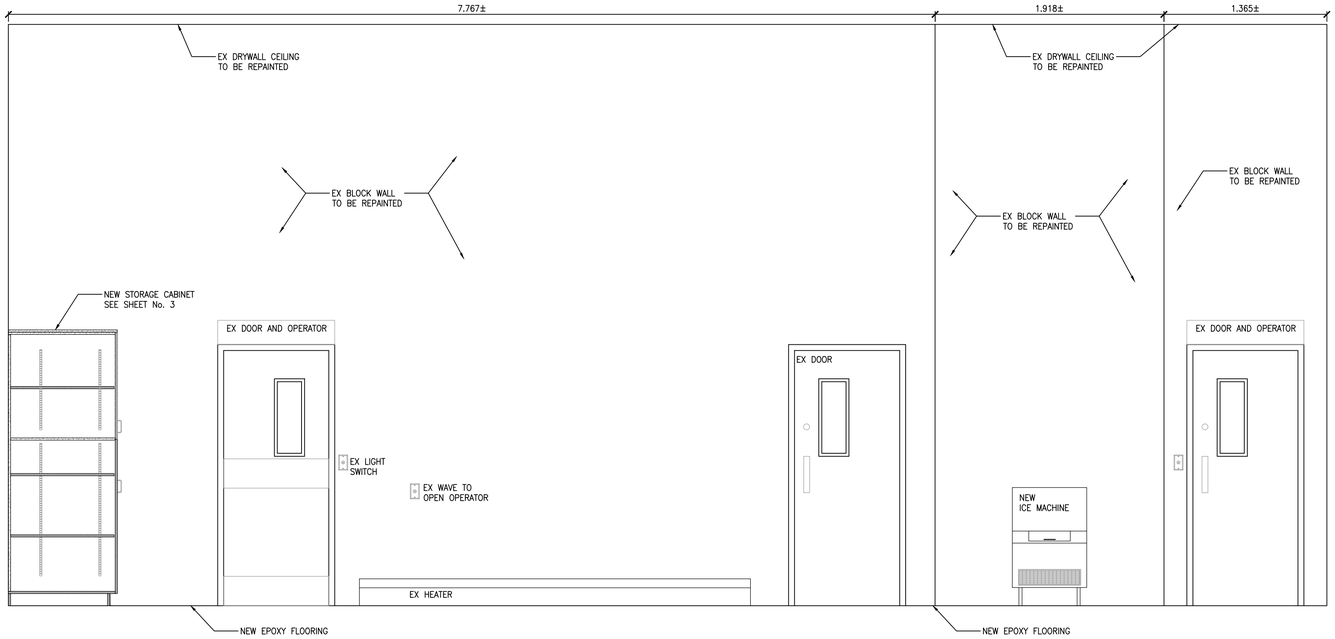
A/B A Detail No. B Sheet No. where detailed

SCALE
SCALE – 1 : 10
0.1 0 0.2m
SCALE – 1 : 25
0.25 0 0.5m
SCALE – 1 : 50
0.5 0 1.0m

TITLE
KITCHEN RENOVATION AT
MILLIKEN MILLS COMMUNITY CENTRE,
7600 KENNEDY ROAD, CITY OF MARKHAM

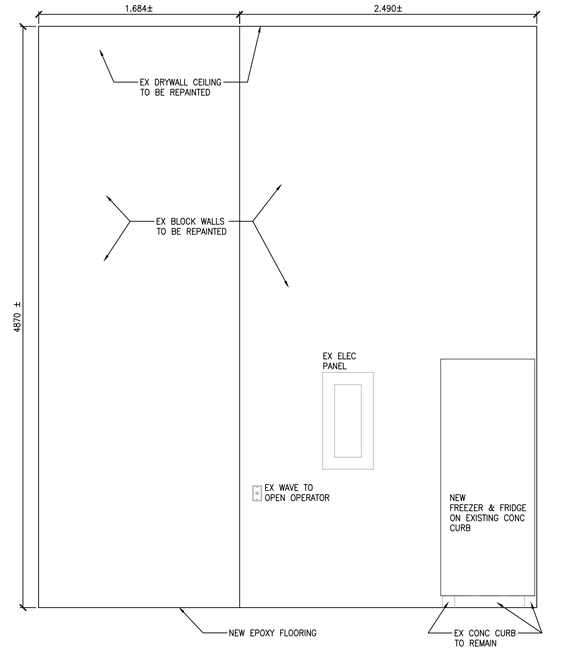
KITCHEN (162)
NEW WORK

PROJECT No. 6520/F01
SHEET No. 3
PLAN FILE No. 6520/F01



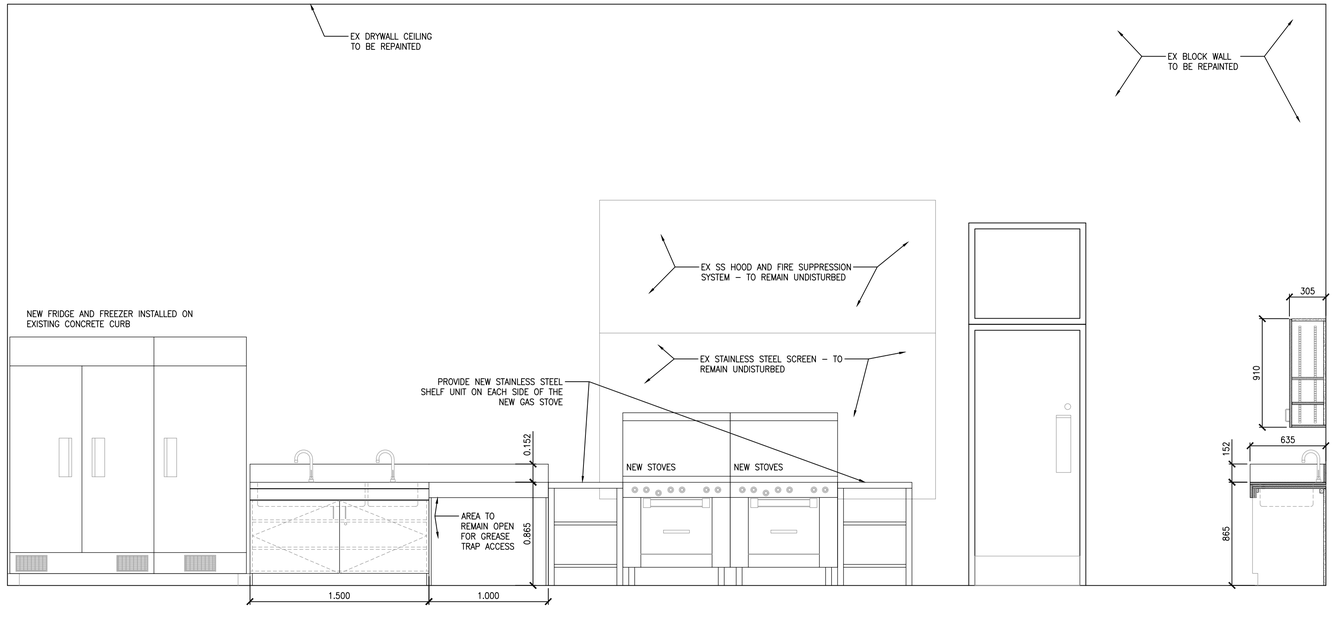
A : WEST WALL

SCALE 1:25



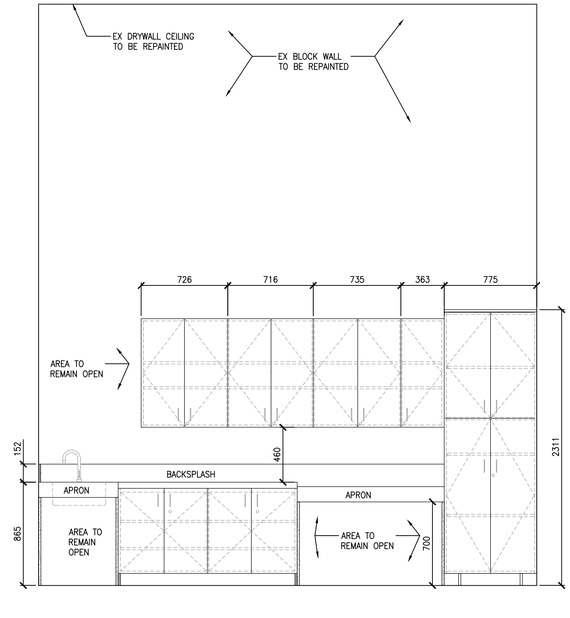
B: NORTH WALL

SCALE 1:25



C: EAST WALL

SCALE 1:25



D: SOUTH WALL

SCALE 1:25

DIGITAL COLOUR BOARD

CEILING PAINT

CLOVERDALE ARTISIAN WHITE CA013

WALL PAINT

CLOVERDALE MERINO CA062

EPOXY FLOORING

STONSHIELD GOTHAM GRAY

PLAM MILLWORK

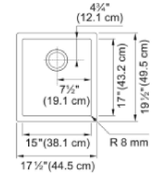
WILSONART NILE VELVET 15515

QUARTZ COUNTERTOP

HANSTONE QUARTZ SERENITY POLISHED FINISH

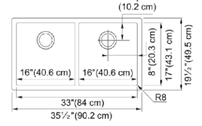
SINGLE SINK – FRANKE CANADA

Professional 2.0 Sink - PS2X110-15-CA | 122.0528.555



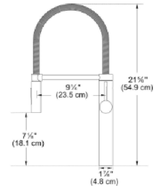
DOUBLE SINK – FRANKE CANADA

Professional 2.0 Sink - PS2X120-16-16-CA | 122.0528.605



FAUCET – FRANKE CANADA

Pescara Semi-Pro Faucet - PES-SPX-304 | 115.0435.802



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DESIGN PTM/JAM	1	ISSUED FOR REVIEW	APR 28/2025	JAM
DRAWN EMB				
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DATE APRIL 2025				
CAD 6520F01				

CONSULTANT

Peter T. Mitches & Associates Limited
Project Managers & Consulting Engineers

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MARKHAM

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A/B A Detail No. B Sheet No. where detailed

SCALE

SCALE – 1 : 25
0.25 0 0.50m

TITLE

KITCHEN RENOVATION AT MILLIKEN MILLS COMMUNITY CENTRE, 7600 KENNEDY ROAD, CITY OF MARKHAM

KITCHEN (162) ELEVATIONS

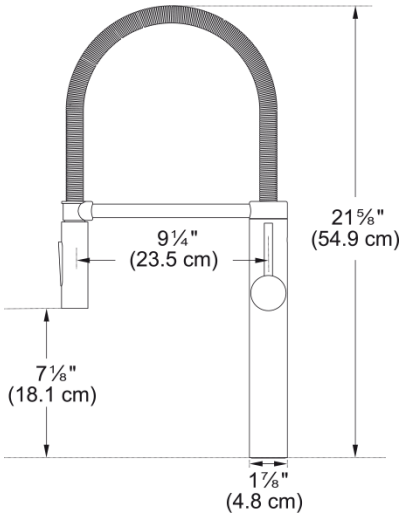
PROJECT No. **6520/F01**

SHEET No. **4**

PLAN FILE No. **6520/F01**

Attachment E

Pescara Semi-Pro Faucet - PES-SPX-304 | 115.0435.802



Stainless Steel 22-inch Single Handle Semi-Pro Kitchen Faucet with Magnetic Sprayer Dock. The Intuitive, ergonomic design allows easy toggling between spray and stream. The arch design offers exceptional space for cleaning or filling large pots and pans. The magnetic docking system provides an intuitive, quick release and keeps the spray head securely in place when not in use. Solid brass construction ensures long-lasting performance. This model replaces the FFPD4350 Pescara Faucet

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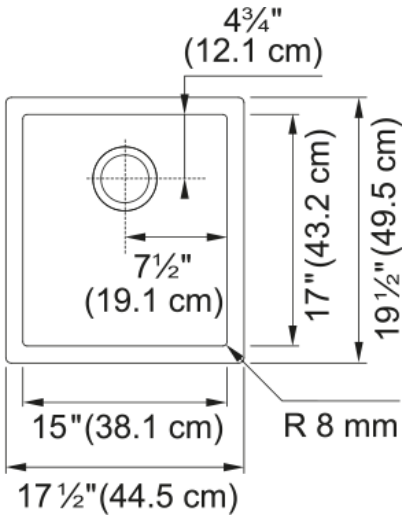
Aspect	
Spout type	S - semi-professional
Color	Stainless steel
Type of material	Stainless steel 304
Flexible pullout hose material	Metal
Spray head material	Plastic
Product Dimensions	
Faucet hole diameter	35 mm
Cartridge dimension	35 mm
Installation	
Mounting type	Shank
Water supply hose connection	1/2"
Water supply hose length	650 mm
Product specifications	
Pressure	High pressure
Faucet type	Spray
Faucet operation	Side lever
Faucet rotation	360°
Product identification	
Product brand	FRANKE
Product family	Mythos
Collection	Pescara
Features	
Water saving feature	Yes
Type of aerator	Cache

Attachment F

Professional 2.0 Sink - PS2X110-15-CA | 122.0528.555



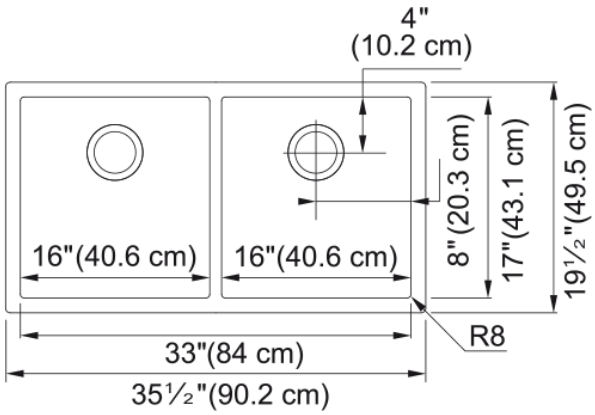
17.5-in. x 19.5-in. 16 Gauge Stainless Steel Single Bowl Kitchen Sink. The Professional sink collection boasts refined touches for the home chef. Deeper bowls are undermounted to integrate beautifully into the surrounding worktop. We didn't sacrifice aesthetics for durability, made of 16-gauge commercial-grade stainless steel and a beautiful finish that takes minimal care to maintain a clean, attractive look. Available in a variety of size and configuration options, Professional is sure to work into your kitchen area and bring everything a cook requires. Sink strainer assembly included.

Aspect	
Sink type	Sink
Type of material	Stainless steel
Number of bowls	1
Color	Steel
Surface finsh	Silk
Product Dimensions	
Length (right to left)	17.48
Width (front to back)	19.488
Large bowl size: right to left	15
Large bowl size: front to back	17
Large bowl: depth	7.992
Installation	
Minimum cabinet size	18''
Product specifications	
Installation type	Undermount
Drain hole	3 1/2"
Position of drainer	No drainer
Product identification	
Product brand	FRANKE
Product family	None
Collection	Professional Series
Certified by	IAPMO
Features	
Drainers number	No drainer
Product reversibility	No

Faucet ledge	No
Strainer assembly included	Yes
Strainer Assembly	Manual
Overflow	No
Number of faucet holes	No faucet hole
Soap dispenser hole	No

Attachment G

Professional 2.0 Sink - PS2X120-16-16-CA | 122.0528.605



35.5-in. x 19.5-in. 16 Gauge Stainless Steel Undermount Double Bowl Kitchen Sink . The Professional sink collection boasts refined touches for the home chef. Deep bowls are undermounted with a 0.5-in reveal so that custom-fit accessories can work within the sink to create a seamless workflow while prepping meals. Made of 16-gauge commercial- grade stainless steel with a beautiful Diamond finish that takes minimal care to maintain a clean, attractive look. The removable drain cover was designed to sit flush over the drain to keep glassware from tipping over and to maximize the usable bottom surface of the bowl. Bottom Grid, Strainer Assembly and Drain Cover included.

Aspect	
Sink type	Sink
Type of material	Stainless steel
Number of bowls	2
Color	Steel
Surface finsh	Diamond
Product Dimensions	
Length (right to left)	35.551
Width (front to back)	19.488
Large bowl size: right to left	16
Large bowl size: front to back	17
Large bowl: depth	9.764
Small bowl size: right to left	16
Small bowl size: front to back	17
Small bowl: depth	9.764
Installation	
Minimum cabinet size	36''
Product specifications	
Installation type	Undermount
Drain hole	3 1/2"
Position of drainer	No drainer
Product identification	
Product brand	FRANKE
Collection	Professional Series
Certified by	IAPMO

Features

Drainers number	No drainer
Product reversibility	No
Faucet ledge	No
Strainer assembly included	Yes
Strainer Assembly	Manual
Overflow	No
Number of faucet holes	No faucet hole
Soap dispenser hole	No

BID FORM

135-Q-25 - 135-Q-25 MILLIKEN MILLS C.C. KITCHEN REFURBISHMENT

Opening Date: May 29, 2025 1:30 PM
Closing Date: June 20, 2025 3:00 PM

Schedule of Prices

*Denotes a "**MANDATORY"** field

Do not enter $0.00 dollars unless you are providing the line item at zero dollars.

If the line item and/or table is "**NON-MANDATORY"** and you are not bidding on it, leave the table and/or line item blank.Do not enter a $0.00 dollar value.

Any HST amounts normally shown as “included” in goods or services are to be backed out and shown separately. HST will be calculated based on the **Bid Price (Excluding Taxes)** in the Summary Table below**.** Bidders are to show a separate line item for HST on their invoices and draw certificates

Payment Term Discount

If no discount, payment will be made in accordance with either Part III of the City’s *General Terms and Conditions or City's Procurement Contract* - specific to the "Payment" clause identified therein.

In connection with any discount offered for early payment, time shall be computed from receipt of an approved invoice by the City Accounts.

Payable Department. NOTE: Invoices not mailed to the City Accounts Payable department, will have the discount extended accordingly.

Payment shall be considered to have been made on the date which appears on the payment cheque.

The City, in its sole discretion, will not take any discounts into consideration when determining the lowest priced Bid and the best value to the City.

☐ We will not be submitting for Payment Term Discount

Description	Discount (%)

Bid Price (Excluding Taxes)

Item No. and Description	Estd. Quantity	Unit Price (Excluding Taxes) *	Total Bid Price
Labour Costs	1		
Materials Costs	1		
Installation of Kitchen Appliances	1		
		Subtotal:	

Testing and Inspection - Cash Allowance

Item No. and Description	Estd. Quantity	Unit Price (Excluding Taxes)	Total Bid Price
Testing and Inspection / Cash Allowance	1	$5,000.0000	$ 5,000.00
		Subtotal:	$ 5,000.00

Kitchen Appliances - Cash Allowance

Item No. and Description	Estd. Quantity	Unit Price (Excluding Taxes)	Total Bid Price
Kitchen Appliances / Cash Allowance	1	$25,000.0000	$ 25,000.00
		Subtotal:	$ 25,000.00

Summary Table

Note: evaluation of the Bid prices will be based on the Bid Price (Excluding Taxes) set out in the summary table below.

Bid Form	Amount
Bid Price (Excluding Taxes)	
Testing and Inspection - Cash Allowance	$ 5,000.00
Kitchen Appliances - Cash Allowance	$ 25,000.00
HST (13%)	$ 3,900.00
Total Contract Amount:	

Reference List

List three (3) references of past projects of similar size and scope from the last 5 years.

Note: Reference checks may not be limited to those supplied by the Bidder. The City reserves the right not to award to the lowest priced Bidder whose reference checks do not provide proof of their performance and/or qualifications.

Line Item	Company Name *	Contact Person *	Email Address *	Phone number *	Contract Value *	Description of Work *	Completion Date *
1							
2							
3							

Unresolved Litigation

Question	Response *
Does your company currently have any ongoing or unresolved litigation involving the City of Markham or any other municipalities.	○ Yes ○ No

Sub-Contractors

Bidders are requested to list all Subcontractor(s) and type of Work proposed to be used for this project. Bidders are requested not to indicate “TBD” (To Be Determined) or “TBA” (To Be Announced) or similar wording and are requested not to indicate multiple choices of Subcontractor names for any Subcontractor category in their list of Subcontractors.

Bidders are requested to list only one (1) Subcontractor for each type of Work.

Bidder(s) will be required, upon request by the City, to produce a list of references for all or any proposed Subcontractors within three (3) business days.

Relevant Subcontractor List

Section or Part of Work	Company Name *	Address *	Contact Person Name *	Contact Phone Number	Description of work *	Product

Addenda, Terms and Conditions

DECLARATION

The Bidder hereby acknowledges and agrees:

1. To provide all goods and services as more specifically set out in this Quotation, including but not limited to the scope of work, specifications, drawings, addenda (if issued by the City), the terms and conditions, etc. stated herein, which are expressly acknowledged and which shall form part of the Contract with the Successful Bidder.

2. This Bid is made without any connections, knowledge, comparison of figures or arrangements with any other company, firm or person making a Bid for the same Work and is in all respects fair and without collusion or fraud.

3. Bids shall be irrevocable and valid for acceptance by the City for a period of ninety (90) business days from the Closing Time. Bid Prices shall be guaranteed by the Successful Bidder until final completion of the Contract (including any renewal term).

4. The evaluation of the Bid prices will be based on the Bid Price (Excluding Taxes) set out in the Summary Table. Notwithstanding the foregoing, the City reserves the right, in its sole discretion, to award in whole or in part (including, without limitation, by part, item or group of items), or to award to more than one Bidder, in which case the evaluation of the Bid prices will be based on the Bid price for the applicable part, item or group of items.

5. The Bidder agrees to provide all necessary labour, material and equipment necessary to complete the Work or provide goods and services as applicable and as per the Work described in this Quotation for the quoted price on the Bid Form.

6. Declare that all information stated in response to this Quotation is in all respects fair and true.

☐

I/We have the authority to bind the proponent/bidder to these declarations and acknowledgements and to submit the accompanying proposal/bid on behalf of the proponent/bidder.

The Bidder shall declare any potential conflict of interest that could arise from submitting a Bid.

Does the Bidder have a potential conflict of interest? ○ **Yes** ○ **No**

The Bidder acknowledges and agrees that the addendum/addenda below form part of the Bid document

Please check the box in the column "**I have reviewed this addendum"** below to acknowledge each of the addenda.

File Name	I have reviewed the below addendum and attachments (if applicable)	Pages
There have not been any addenda issued for this bid.		