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Request for Tender

Document Number: 2023-518T

Document Title: GENDER NEUTRAL CHANGEROOM UPGRADES AT TOMKEN AND RISING HILL REPORTING STATIONS FOR PEEL REGIONAL PARAMEDIC SERVICES, CITY OF MISSISSAUGA AND BRAMPTON, PROJECT 23602

Date Issued: Friday, September 1, 2023

Non-Mandatory Virtual Bidder's Meeting: Tuesday, September 12, 2023, at 10:00 a.m. via Microsoft Teams

ELECTRONIC BID SUBMISSIONS ONLY shall be received by the Agency through the Bidding System no later than:

12:00 noon local time
Tuesday, September 26, 2023

It is the Bidder's sole responsibility to ensure that:

- **the submission is received electronically by the Agency through the Bidding System by the date and time specified above**
- **the submission is accompanied by all required documentation including but not limited to a digital bid bond in the amount of $50,000**

Procurement Representative: Karen McCullough, Senior Procurement Analyst
Telephone Number: 437-247-7692

GENDER NEUTRAL CHANGEROOM UPGRADES AT TOMKEN AND RISING HILL REPORTING STATIONS FOR PEEL REGIONAL PARAMEDIC SERVICES, CITY OF MISSISSAUGA AND BRAMPTON, PROJECT 23602

For **GENDER NEUTRAL CHANGEROOM UPGRADES AT TOMKEN AND RISING HILL REPORTING STATIONS FOR PEEL REGIONAL PARAMEDIC SERVICES, CITY OF MISSISSAUGA AND BRAMPTON, PROJECT 23602**, as required, and as specified within this Document.

- Section 22 42 46 Fixture Carriers

Division 23 – Heating, Ventilating and Air Conditioning

- Section 23 31 13 Ductwork and Specialties
- Section 23 37 13 Grilles, Registers and Diffusers

Division 26 – Electrical

- Section 26 05 00 General Instructions for Electrical
- Section 26 05 10 Electrical Basic Materials
- Section 26 05 29 Grounding and Bonding
- Section 26 09 23 Lighting Control System
- Section 26 24 10 Electrical Distribution
- Section 26 51 13 Lighting Equipment

Division 28 – Electronic Safety and Security

- Section 28 31 02 Fire Alarm System

5.3 Drawings

6825 Tomken Road, Mississauga, ON

- A01 Key Plan, Site Plan and General Notes, Wall Types & Detail
- A02 Part Plan – Existing Washroom Demolition Floor Plan & RCP, Photos – Existing Conditions
- A03 Part Plan – Proposed Gender-Neutral Shower & Washroom Plan, RCP, Washroom Accessories & Shower Stall Notes
- A04 TYP. Washroom Accessories Installation Detail, Door Schedule & Room Finish Schedule
- M01 Key Plan, Site Plan, General Notes and Demolition Plan
- M02 Plumbing Demolition and Proposed
- M03 Drainage and HVAC Proposed
- M04 Fire Protection Plan Proposed
- E01 Electrical Key Plan, Site Plan and General Notes, Wall Types & Detail
- E02 Electrical Schedule and Detail
- E03 Electrical Power and Communications Demolition Plan
- E04 Electrical Lighting Demolition Plan
- E05 Electrical Power and Communications Plan
- E06 Electrical Lighting Plan

25 Rising Hill Ridge, Brampton, ON

- A01 Key Plan, Site Plan, General Notes and Wall Type
- A02 Demolition – Part of Existing Floor Plan & RCP, Notes & Photos – Existing Condition
- A03 Washroom & Shower Plan, Details and Accessories
- A04 Washroom & Shower RCP, Door Schedule and Room Finish Schedule
- M01 Key Plan, Site Plan, General Notes and Demolition Plan
- M02 Washroom & Shower Plan Plumbing Demolition Plan and Plumbing Plan

- M03 Neutral Washroom & Shower Plan Drainage Existing Plan and Drainage Plan
- M04 Washroom & Shower Plan HVAC Plan and Fire Protection Plan
- E01 Electrical Key Plan, Site Plan and General Notes, Wall Types & Detail
- E02 Electrical Second Floor Power Distribution Plan, Schedule and Detail
- E03 Electrical Lighting, Power and Communications Demolition Plan
- E04 Electrical Lighting, Power and Communications Plan

5.4 Site Photographs - 6825 Tomken Road, Mississauga, ON
5.5 Site Photographs - 25 Rising Hill Ridge, Brampton, ON
5.5 CCDC2 Stipulated Price Contract 2008 - This is not attached but forms part of the Contract
5.7 Digital Bid Bond
5.8 Form of Release at Substantial Performance of the Work
5.9 Performance Bond substantially in the form required under the *Construction Act* - This is not attached but forms part of the Contract
5.10 Labour and Material Payment Bond substantially in the form required under the *Construction Act* - This is not attached but forms part of the Contract
5.11 Owner's Staff/Other Contractors Project Construction Coordination Form
5.12 Owner's Staff/Other Contractors Anticipated to Attend Site for Contractor Coordination
5.13 Online Bidding System forms

1. **DEFINITIONS**

(a) "Agency" means The Regional Municipality of Peel, Peel Regional Police, Peel Housing Corporation and any other government or agency or board on behalf of which The Regional Municipality of Peel is acting and for the purposes of the performance of the Contract shall mean the municipality or entity awarding the Contract. For purposes of the Contract, "Agency" shall include "Owner" as defined in the Contract.

(b) "Bidder" means any proponent, respondent or other person or entity who has obtained official procurement documents for the purpose of submitting, or who has submitted a Bidder Submission in response to the Document. Furthermore, the definition of "Bidder" shall include any entity affiliated or related to the Bidder (including any entity with the same directing mind as the Bidder) as determined in the discretion of the Director of Procurement, in consultation with the Regional Solicitor.

(c) "Bidder Submission" means the document as completed by the Bidder for the purpose of offering to sell to the Agency the goods and/or services specified in the Document, and includes but is not limited to quotations, tenders and proposals.

(d) "Bidding System" means the electronic system used by the Agency for its public tenders, bids and request for proposals at the following website: peelregion.bidsandtenders.ca, which is required to be used for all dissemination of information by or on behalf of the Agency and all submissions from Bidders for this Document.

(e) "Document" means the document describing the goods and/or services to be purchased and the terms upon which the goods and/or services are to be purchased and includes, without limitation, those documents referenced on the index of the Document and such addenda as may be issued by the Agency from time to time.

(f) "Operator" means the Owner's operations and maintenance employees, and/or contract operator of the site where the Work is being performed.

(g) "Procurement Representative" means the person named as the Procurement Representative or designate on the Document.

(h) "Region of Peel" has the same meaning as the Agency.

(i) "Vendor" means the successful Bidder and includes the term "Contractor" who enters into the Contract with the Agency for the provision of the goods and/or services set out in this Document.

(j) "Consultant" means **Moon-Matz Ltd.**

2. **INFORMATION AND COMMUNICATIONS**

2.1 Any questions or information required regarding this Document must be submitted through the Bidding System via peelregion.bidsandtenders.ca by clicking the 'Submit a Question' button for the selected bid opportunity at least four working days prior to closing. Do not submit your questions via e-mail. No oral communications will be considered binding.

2.2 Any Bidder who requests and/or receives any information, with regards to this Document, by any person(s) other than the Procurement

Representative or designate, may be disqualified from further consideration.

2.3 It is recommended that vendors add noreply@bidsandtenders.ca to their "safe senders" lists in their e-mail systems and monitor their spam/ clutter/ junk filters to ensure they do not miss automatically generated messages sent by bidsandtenders.ca that relate to this bid opportunity.

3. **NON-MANDATORY BIDDERS VIRTUAL MEETING**

3.1 A non-mandatory Bidders Meeting has been scheduled in an effort to provide relevant information that may assist Bidders in preparing their Bidder Submission.

3.2 The non-mandatory Bidders Meeting will be held online through Microsoft Teams and is scheduled for **Tuesday, September 12, 2023.**

3.3 The details for the Microsoft Teams meeting are as follows:

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Microsoft Teams meeting

Join on your computer, mobile app or room device

Click here to join the meeting

Meeting ID: 265 348 469 153

Passcode: vAfzgb

Download Teams | Join on the web

Or call in (audio only)

+1 289-401-3582,,285126083# Canada, Brampton

(844) 589-6880,,285126083# Canada (Toll-free)

Phone Conference ID: 285 126 083#

3.4 Bidders are reminded that this meeting is NON-MANDATORY. Attendance will be at the discretion of the Bidder, however, Bidders who choose not to attend will be deemed to have received all of the information made available to attendees. A Bidder's failure to attend the non-mandatory Bidders Meeting is at the Bidder's sole risk and responsibility.

3.5 During the Bidders Meeting, Bidders may ask questions and seek clarifications pertaining to the Bid Document. Notwithstanding that the Agency may give oral answers at a meeting, such answers shall not be considered final unless issued by way of an Addendum to the Bid Document. Therefore, Bidders are strongly encouraged to submit such questions in writing and in accordance with the instructions contained in the Bid Document.

3.6 No statement, consent, waiver, acceptance, approval or anything else said or done in any Bidders Meeting by the Agency or any of its respective advisors, employees or representatives shall amend or waive

any provision of the Bid Document, or be binding on the Agency or be relied upon in any way by Bidders, except when and only to the extent expressly confirmed in an Addendum to the Bid Document issued in accordance with the process identified in the Bid Document.

4. **DATE AND PLACE FOR RECEIVING BIDDER SUBMISSIONS AND ACCEPTANCE PERIOD**

4.1 ELECTRONIC BID SUBMISSIONS ONLY shall be received by the Agency through the Bidding System and must be received on or before 12:00 noon local time in Brampton, Ontario on **Tuesday, September 26, 2023.**

4.2 The closing date and time shall be determined by the Agency's Bidding System.

4.3 This procurement is being advertised in accordance with the applicable procurement obligations outlined in the Canada-European Union Comprehensive Economic and Trade Agreement (CETA), Canadian Free Trade Agreement (CFTA), and the Ontario-Quebec Trade and Cooperation Agreement (OQTCA).

4.4 Bidder Submissions submitted and/or received by any other method will be disqualified by the Agency unless instructed otherwise by published addenda in respect of the Document.

4.5 Only documents found on the Region of Peel's website at peelregion.bidsandtenders.ca are to be considered "official" documents. The Region of Peel accepts no responsibility for the accuracy or completeness of information found on other websites. The onus is on the Bidder to check the Region of Peel's website to verify they have received all relevant information. The Bidder risks submitting a non-compliant bid if addenda or other required information is missing, and disqualification could result.

4.6 It is the Bidder's sole responsibility to ensure their Bidder Submission is received by the time and date specified in the Agency's Bidding System. The receipt of Bidder Submissions can be delayed due to a number of factors including, but not limited to, "internet traffic", file transfer size, and transmission speed. The Bidder should allow sufficient time to upload its Bidder Submission, including any attachments. Late Bidder Submissions will not be accepted by the Agency's Bidding System.

4.7 A Bidder Submission will only be considered to be submitted once it has been RECEIVED by the Agency in its Bidding System, regardless of when the Bidder Submission was submitted by the Bidder.

4.8 Bidders will be sent a confirmation e-mail by the Agency's Bidding System to the e-mail address provided by the Bidder when it registered as a Plan Taker in the Bidding System for the Document advising that its Bidder Submission was submitted successfully. Bidders should not consider its Bidder Submission to have been submitted until it has received the confirmation e-mail.

4.9 The Bidder is solely responsible for the delivery of its Bidder Submission in the manner and by the closing date and time prescribed in the Agency's Bidding System. Each Bidder is responsible for the actual delivery of its Bidder Submission prior to the closing time and closing date.

4.10 The Agency is not responsible for any incomplete or misdirected Bidder Submissions due to electronic technical problems arising out of the Bidder's use of the Agency's Bidding System.

4.11 Bidder Submissions received by the Agency in accordance with the terms and conditions of the Document shall be irrevocable and open for acceptance for a period of 90 days following the date of the Bidder Submission closing.

5. **ADDENDA**

Addenda, if required, issued by the Procurement Representative and related to this Contract shall hereby form part of the Contract.

Any addenda related to this Contract will be posted through the Bidding System at peelregion.bidsandtenders.ca. Although the Bidding System will attempt to notify registered Bidders of when addenda are posted on the Bidding System, the Agency does not guarantee any receipt of notifications by Bidders and waives any responsibility. It is the sole responsibility of Bidders to check the Bidding System often to inform themselves of any posted addenda.

Bidders shall acknowledge receipt of any addenda when submitting their Bidder Submission through the Bidding System. Bidders shall check a box for each addendum and any applicable attachments that have been issued before a Bidder can submit their Bidder Submission online all in accordance with the terms and conditions of the Document and the Bidding System.

The Agency encourages Bidders not to submit their Bid Submission prior to forty-eight hours before the Document closing time and date, in the event that an addendum is issued. If a Bidder submits their Bidder Submission prior to this or at any time prior to the Document closing and an addendum is issued by the Agency, the Bidding System shall WITHDRAW their Bidder Submission and change their Bidder Submission to an INCOMPLETE STATUS (NOT accepted by the Agency) and the withdrawn Bidder Submission can be viewed by the

Bidder in the "MY BIDS" section of the Bidding System. The Bidder is solely responsible to:

i) make any required adjustments to their Bidder Submission;
ii) acknowledge the addendum/addenda; and
iii) ensure the re-submitted Bidder Submission is RECEIVED by the Agency through the Bidding System no later than 12:00 noon local time on the Document closing date.

NOTES TO BIDDERS: Additional company contacts are recommended for the reasons outlined below:

- Do not invite any additional contacts that you do not want to have access to view, edit, submit and/or withdraw or who may be in direct competition, for example a company may have two divisions that could compete for the same bid opportunity.
- You are strongly urged, when creating or updating a Bidding System Bidder account, to add additional company contacts to create their own login to the Bidding System. This will permit your invited contacts that have created their own login to manage (register, submit, edit and withdraw) Bids which your company is a Registered Plan Taker for. In the event you are on vacation, or due to illness, etc., these additional contacts may act on your company's behalf and have the authority to receive addendum notifications from the Bidding System and where permitted by the terms and conditions of the Document, to submit Bidder Submissions electronically through the Bidding System and/or withdraw and/or edit and/or acknowledge addendum/addenda, on your behalf.
- If you are an invited company contact, it is imperative that you create your login from the link contained in the e-mail invitation. Do NOT go directly to peelregion.bidsandtenders.ca website and create a separate Bidder account.

6. **CONTRACT AWARD**

The Agency reserves the right to award the Contract in its entirety or in part to one or more Vendors in accordance with its requirements. Prior to award, the Agency reserves the right to perform a site visit at the Bidder's facilities for the purpose of evaluating the Bidder Submission.

Without limiting, and in addition to all other rights to which the Agency is entitled pursuant to this Document, the Agency shall be entitled to fully evaluate the Bidder Submission, which evaluation may include, without limitation, a review of references provided by the Bidder and of those that may be obtained by the Agency independently, past performance history of contracts between the Bidder and the Agency and/or between the Bidder and third parties, past completion history (including completion of full contract term, late or extended completion of contract and late delivery of goods or services), litigation and claims history of the Bidder (including previous, existing or potential litigation with the Agency or

others and construction liens filed by the Bidder or subcontractors), delivery of incorrect services, customer service and responsiveness, or history of bidding unrealistic pricing, any of which may result in higher ultimate costs or other difficulties for the Agency, and to reject a Bidder Submission if the same is, in the Agency's sole opinion, unsatisfactory, or would not provide the best value to the Agency.

7. **QUANTITIES**

Quantities in the Document are approximate only and are based on information available to the Agency at the time of tendering. Final quantities for payment of tender items supplied on a unit price basis shall be based on actual field measurements as determined by the Agency.

8. **BID PRICING CHANGES**

The legislation and regulations governing the workplace in Ontario, including, without limitation, the Canadian *Income Tax Act*, the Canadian *Immigration and Refugee Protection Act*, Ontario *Employment Standards Act, 2000*, *Employer Health Tax Act*, *Labour Relations Act, 1995*, *Occupational Health and Safety Act* and *Workplace Safety and Insurance Act, 1997* may change at any time and may impact upon Bidders' pricing and overhead costs. In submitting its Submission, each Bidder hereby acknowledges that it has considered any proposed changes to legislation and regulations, and any impact such changes, if any, may have on its pricing. Bidders are advised that the Agency will not entertain requests to change submitted bid prices for this Document based on changes to the minimum wage or other legislative or regulatory amendments made under any statute. It is each Bidder's obligation to operate according to all applicable law at all times. For clarity, each Bidder takes on all risk and responsibility for cost increases due to legislative and regulatory changes. For further clarity, each Bidder takes on all risks due to health, environmental, social, emergency or other factors which may arise and which may result in unforeseen or otherwise uncalculated costs or legal circumstances to the Bidder in order to complete the Work, to keep its workers or the public safe according to applicable law and government order, or to address other intervening circumstances. The Bidder is required to arrange its own contractual and subcontractor obligations for labour, materials or other matters related to this contract so as to minimize or eliminate extra costs or circumstances which may jeopardize its ability to fulfill its contractual obligations to the Agency under this Document or Contract award.

9. **TIME OF COMPLETION**

The Contractor shall diligently complete the Work in accordance with the time of completion set out in 9.1 below. **The Substantial Performance Date shall not extend beyond the time provided below after the written order for commencement of the Works by the Owner.**

If this time limit is not sufficient to permit completion of the Work by the Contractor within the Working Hours, the Contractor shall add and/or augment the Working Hours throughout the life of the Contract to the extent necessary to

ensure that the Work will be completed within the time limit specified. Any additional costs occasioned by compliance with these provisions will be considered to be included in the prices bid for the various items of Work and no additional compensation will be allowed.

Any extension of working hours beyond those specified in this Contract will require written authorization of the Owner.

9.1 The Contractor agrees to have the Works "Substantially Performed" in accordance with this Document by **January 15, 2024,** after written order for commencement of the Work by the Owner.

The Contractor agrees that they will deliver the whole of the Works completed in accordance with this Document by **February 16, 2024,** after the date of Substantial Performance Date.

10. **DIGITAL BID BOND**

To be considered, the Bidder's Submission must include a digitally created and electronically delivered bid bond in the form of bond included in Appendix 5.7 herein, naming the Agency as Obligee, in the amount of **$50,000**.

The bond must be issued by a surety company licensed to issue surety bonds in the Province of Ontario.

The bond must be delivered by means of a service or application recognized as meeting in whole or in part the Surety Association of Canada's mandatory requirements for e-bonding solutions. Photocopies, images or scanned facsimiles will not be accepted.

It is to be noted that the digital bid bonds of all Bidders will not necessarily be verified by the Agency. Prior to award of the Contract, the Agency will verify the digital bid bond of the Bidder who is proposed to be awarded the Contract by the Agency. Where the digital bid bond is not verifiable, the bid will be deemed non-compliant and disqualified. In such a case, the Agency will proceed to verify the digital bid bond of the next Bidder proposed to be awarded the Contract, and continue the process as necessary, until a digital bond is verified by a fully compliant Bidder whose bid is proposed to be awarded the Contract by the Agency.

If a digital bid bond and an Agreement to Bond are requested by the Agency and the surety company only provides the Bidder with a merged version, the Bidder is required to upload the merged document in both applicable fields of the online Bidding System forms.

The digital bid bond of the Bidder whose submission is accepted shall be called upon should the Bidder fail to execute a Contract and provide the necessary documents as required within this Document (such as a satisfactory bond,

insurance certificate, Workplace Safety and Insurance Board letter of clearance) within seven days after receiving written notice from the Agency of the award of the Contract to the Bidder.

11. **ELECTRONIC AGREEMENT TO BOND**

In order to be considered for award, the Bidder shall submit through the Bidding System as part of their Bidder Submission, an Agreement to Bond in the form attached in Appendix 5.1, completed by a Bonding Company permitted to issue performance bonds and labour and material payment bonds in Ontario and with an A.M. Best rating of B+ or better. Any others will not be accepted. Each Bidder must submit the completed Agreement to Bond as part of their Bidder Submission in order to validate their Bidder Submission.

If a digital bid bond and an Agreement to Bond are requested by the Agency and the surety company only provides the Bidder with a merged version, the Bidder is required to upload the merged document in both applicable fields of the online Bidding System forms.

Upon receipt of written notice from the Agency that it has been awarded the Contract, the successful Bidder shall provide, within seven days of such notice, a digitally created and electronically delivered Performance Bond and a Labour and Material Payment Bond, each for the amount of **50 per cent** of the total lump sum price, substantially in the forms required under the *Construction Act*, to guarantee the performance of all obligations of the Contract.

The Performance Bond and a Labour and Material Payment Bond must be submitted by the successful Bidder in a digital format that meets the following Surety Association of Canada (SAC) criteria:

11.1 The version of the bond submitted by the successful Bidder must be verifiable by the Agency with respect to the totality and wholeness of the bond form including: the content, all digital signatures, and all digital seals with the Surety Company, or an approved verification service provider of the Surety Company.

11.2 The version of the bond submitted by the successful Bidder must be viewable, printable and storable in pdf format or other standard electronic file format acceptable to the Agency, and in a single file.

11.3 Photocopies, images or scanned facsimiles of bonds will not be accepted.

11.4 The verification of the successful Bidder's submitted bonds may be conducted by the Agency immediately or at any time during the life of the bond and at the discretion of the Agency, with no requirement for passwords or fees.

11.5 The results of the bond verification must provide a clear, immediate and printable indication of pass or fail regarding item 11.1.

11.6 Bonds failing the verification process will NOT be considered to be valid and will NOT be accepted by the Agency as satisfying the requirements of the Contract.

Following award, the Vendor shall be required to execute an agreement with the Agency on the terms of the CCDC2 Stipulated Price Contract 2008, as amended by the Agency's Supplementary Conditions as contained herein.

12. **INSURANCE**

The insurance shall be maintained continuously from the commencement of the work until the end of warranty period established within these contract documents following the date of the completion Certificate.

The Agency's Certificate of Insurance shall be completely filled in with the required information. No other form shall be accepted.

A deductible clause is only acceptable if the Contractor submits a signed and sealed letter stating the following:

"We (insert Contractor's name) authorize the Region of Peel to appoint an independent adjuster to settle any claims arising from this Contract which are for amounts less than our insurance deductible figure. Furthermore, the Region can deduct any amounts of justifiable claims from monies owing to the Contractor."

13. **VENDOR AS CONSTRUCTOR**

The Vendor acknowledges that, if the Agency does not enter into any other contracts for the project, the Vendor is the "constructor" and the "employer" within the meaning of the Occupational Health and Safety Act (Ontario) and the Vendor undertakes to carry out the duties, obligations and responsibilities of the constructor and the employer with respect to the project. In this project, the Agency may have cause to enter into more than one contract for the project. Additionally, there may be instances where the Agency's staff are required to attend the project site for specified intervals to perform work associated with the project. In such cases, the Vendor is required and agrees to fulfill all of the duties, obligations and responsibilities of the "constructor" and "employer" with respect to the project and on behalf of the owner, in accordance with the terms and conditions set out in SC 15 of the Supplementary General Conditions, and the Guidelines set out in GUIDELINES FOR THE CONTRACTOR WHERE OWNER'S STAFF AND OTHER CONTRACTORS ARE REQUIRED TO PERFORM WORK ON THE PROJECT SITE below.

14. **GUIDELINES FOR THE CONTRACTOR WHERE OWNER'S STAFF AND OTHER CONTRACTORS ARE REQUIRED TO PERFORM WORK ON THE PROJECT SITE**

Requirements for the contractor where other vendors/contractors or the Owner's staff/other contractors are required to attend the project site to perform work associated with the project are as follows.

The contractor shall:

(a) Assume and fulfill the responsibility of constructor for all Owner's staff/other contractors attending the project site to conduct required Work.
(b) Provide orientation to Owner's staff/other contractors prior to Work commencement at the site.
(c) Identify a site supervisor contact or assistant for all Owner's staff/other contractors.
(d) Maintain a sign in/out log of all visitors to the site, including owner's staff/other contractors.
(e) Maintain a signed copy of the Owner's Staff/Other Contractors Project Constructor Coordination Form (Appendix 5.11) for any Owner's staff/other contractors on site, in which all such persons working on the site shall provide a signed acknowledgement that they will comply with the contractor's safety program and safety instructions.
(f) In order to avoid delays, provide sufficient notice and coordinate Owner's staff/other contractors' work so it does not impact or conflict with any other work happening at the site.
(g) Schedule Owner's staff/other contractors' work as close as possible to substantial completion to avoid the majority of construction hazards and risk to Owner's staff/other contractors.
(h) Maintain a log of all Form 1000 provided by each employer on site.

15. **VENDOR PERFORMANCE EVALUATIONS**

The Agency will utilize its Contractor Performance Evaluation Form as per the Performance Evaluations Procedure F35-27 (the "Procedure") to provide a written evaluation and record of the successful Bidder's/ Contractor's performance on this Contract. Evaluation on Contractor performance under this Contract will be used to provide feedback to the Vendor for performance improvements and/or to acknowledge satisfactory performance, to determine the Bidder's eligibility or ineligibility to bid on future Agency Contracts and to justify award or non-award of future Contracts.

The complete Procedure, guidelines and Contractor Performance Evaluation Form can be found on the Agency's website at peelregion.ca/procurement, "Vendor Performance Evaluations" or https://peelregion.ca/procurement/#perf.

This Procedure and all related information may be amended from time to time and the most up-to-date version shall form part of this Contract. Bidders shall be aware that, if they are awarded this Contract, they shall be evaluated on the basis of the Procedure.

16. **SUBCONTRACTORS**

The Bidder shall provide in the Bidder Submission the name and address of each of its proposed subcontractors to be utilized in this project.

Attention is drawn to Section GC 3.7 of the General Conditions, Section SC19 of the Supplementary Conditions and to the instructions on the List of Suppliers and Subcontractors in the online Bidding System forms.

It is the responsibility of Bidders to ensure any subcontractors they retain are in good standing with the Agency under the Procedure and meet all requirements of this Document and are thus eligible to perform work on Agency contracts. Prior to bidding on this Document, Bidders shall contact the Agency at 905-791-7800 ext. 7538 to obtain a list of Contractors suspended from performing work on any Agency contracts as a subcontractor. Should a Bidder name any subcontractor in its Bidder Submission that is suspended as a subcontractor under the Procedure, the Bidder shall be required to name a replacement satisfactory to the Agency, acting reasonably, at no additional cost to the Agency, failing which the Bidder shall be deemed non-compliant and not given consideration for Contract award. By submitting a Bidder Submission, the Bidder accepts that the Agency has no liability to the Bidder or any subcontractor or third party related to the rejection of a subcontractor who is ineligible to be considered, or otherwise unsatisfactory to the Agency.

The Contractor shall arrange that each of the Contractor's Owner-approved Subcontractors whose subcontracts have a value of **$50,000** or greater, together with surety companies approved by the Owner, shall furnish to the Contractor a Performance Bond and a separate Labour and Material Payment Bond each in the amount of 50 per cent of the total value of the respective subcontract. The Performance Bond and the Labour and Material Payment Bond are to be substantially in the forms prescribed under the *Construction Act*, each adjusted only to reflect that it is to be obtained by the applicable Subcontractor instead of the Contractor. The Owner will not reimburse the Contractor separately for the cost of the bonds, therefore the Subcontractor should allow for the cost in the subcontractor's lump sum price.

The Owner will not require completed Agreement to Bond forms for the subcontractors' bonds mentioned above to be submitted by the Bidder at the time of tendering. The Bidder may decide, at the Bidder's discretion, to obtain Agreements to Bond from the Bidder's subcontractors at the time of tendering.

17. **BIDDER SUBMISSION**

(a) The Bidder Submission must be submitted electronically using the Bidding System.

(b) A person or persons with authority to bind the Bidder must electronically declare on the online Bidding System that their Bidder Submission has been made entirely in accordance with the Document.

(c) All pricing in the Bidder Submission must be expressed in figures, and must be in Canadian Dollars.

(d) Prices in the Bidder Submission must include all costs necessary to complete the Work in accordance with the Document including customs and duties.

(e) The Bidder represents, warrants and confirms that no oral or written alterations or variations in the Document and/or Contract have been

made by the Bidder and none shall be valid or binding upon the Agency unless authorized by the Agency in writing.

(f) Bidder Submissions which are qualified or subject to any conditions, limitations or restrictions shall be rejected by the Agency.

(g) The Bidder acknowledges that it is solely responsible for obtaining and reviewing all Contract documents and all addenda issued by the Agency pertaining to the Document.

Only Bidders that are registered as a Plan Taker for this Document with Bids and Tenders at peelregion.bidsandtenders.ca and have obtained this Document from Bids and Tenders or the Agency, may submit a Bidder Submission.

Should the Agency receive a Bidder Submission that is subsequently found to be from a Bidder that is not a registered Plan Taker with Bids and Tenders at peelregion.bidsandtenders.ca, and the Bidder did not obtain the Document from Bids and Tenders or the Agency, the Agency reserves the right to reject the Bidder Submission as non-compliant and give it no further consideration for contract award.

18. **AGENCY RIGHTS**

The Agency reserves the right, in its sole and absolute discretion to:

(a) deem a Bidder Submission to be unbalanced and may reject any and all Bidder Submissions, which it so deems, and for this purpose, “unbalanced” shall include, without limitation, a Bidder Submission which does not reflect a realistic breakdown of the costs of each or any portion of the Work;

(b) adjust the totals in a Bidder Submission where there are errors in extensions, additions or computations. In such cases, the unit prices shown shall govern;

(c) reject any or all Bidder Submissions, accept a Bidder Submission which is not the lowest price, reject a Bidder Submission even if it is the only one received by the Agency; and cancel or suspend or delay this request for Bidder Submissions at any time either before or after the receipt of Bidder Submissions, following which the Agency may proceed as it determines in its sole discretion, including without limitation, negotiating with any one or more of the Bidders or any other person or entity for the performance of the Work under such terms and conditions as the Agency may decide in its sole discretion, or issuing a new request for Bidder Submissions on the same or modified terms, all without liability to itself;

(d) if making an award of the Contract in its entirety or in part, to one or more Vendors, make changes to the content of the Contract to address unforeseen circumstances which may have arisen during the bidding period, including but not limited to health, environmental, social or emergency events including but not limited to epidemics and pandemics, which require responses to ensure the health and safety of workers, the health of the public and of Agency staff, and the efficacy of the project are maintained at all times, if in doing so the best interests of the Agency will

be served, and the Agency will assess the expected costs of such changes and make a contingency allowance for same, which the Vendor may claim costs against on a zero mark-up basis upon proof sufficient to the Agency, unless such changes are expected to be able to be accommodated by the Vendor without change to the Contract Price;

(e) award the Contract in its entirety or in part, to one or more Vendors, if in doing so the best interests of the Agency will be served;

(f) inspect and have a demonstration of the goods and/or services offered prior to award of a Contract and request evidence of experience, ability or financial standing;

(g) waive formalities, technical defects, irregularities and omissions in a Bidder Submission, and may accept a Bidder Submission which does not comply with the formal requirements of the Document, if in doing so the best interests of the Agency will be served;

(h) remove from the Agency's list of vendors the name of any vendor and/or Bidder for failure to accept a contract or for unsatisfactory performance or non-performance of a contract;

(i) fully evaluate the Bidder Submission, which evaluation may include, without limitation, a review of references provided by the Bidder and of those that may be obtained by the Agency independently, past performance history of contracts between the Bidder and the Agency and/or between the Bidder and third parties, past completion history (including completion of full contract term, late or extended completion of contract and late delivery of goods or services), litigation and claims history of the Bidder (including previous, existing or potential litigation with the Agency or others and construction liens filed by the Bidder or subcontractors), delivery of incorrect services, customer service and responsiveness, or history of bidding unrealistic pricing, any of which may result in higher ultimate costs or other difficulties for the Agency, and to reject a Bidder Submission if the same is, in the Agency's sole opinion, unsatisfactory, or would not provide the best value to the Agency;

(j) reject and disqualify any or all Bidder Submissions based on a Bidder's Vendor Performance Rating, status and standing as per the Agency's Vendor Performance Evaluations procedures, as amended from time to time;

(k) seek further information and/or clarification, including without limitation a detailed price breakdown, from any Bidder after the closing time, for the purposes of assisting the Agency in interpreting and evaluating any Bidder Submission and in interpreting any inconsistencies which may appear in any Bidder Submission, and the Agency shall have the right to consider and rely on such further information and clarifications in evaluating the Bidder Submissions and awarding the Contract; and

(l) either before, after or as a change to the terms of the Contract award, to temporarily suspend or to alter the timelines of the Contract delivery schedule or any other terms of the Contract in its sole discretion, in response to circumstances beyond the Agency's control or legislative changes or orders of a government, related to health (such as public

health, occupational health and safety or construction safety), environmental, social or other emergent or unforeseen circumstances such as epidemics and pandemics.

19. **CONFIDENTIAL INFORMATION/OWNERSHIP AND DISCLOSURE OF BIDDER SUBMISSIONS**

(a) The Vendor agrees to protect and maintain the confidentiality of all personal or other information, including all personal health information, that the Vendor accesses or of which the Vendor acquires knowledge of as a result of the services in this Contract, and agrees to use, collect, disclose, retain, protect and dispose of the personal (health) information only in accordance with all privacy legislation applicable to the Agency where it is acting on behalf of the Agency. Disclosure of any information shall be done only with the Agency's prior written consent. The provisions of the indemnity clause in this Contract apply to any breach of privacy or confidentiality in this clause. The Vendor shall ensure that its directors, officers, employees, agents, subcontractors and anyone else for whom it is responsible in law all adhere to the requirements of this section regarding privacy and confidentiality.

(b) The Agency, and the Agency's responsibilities under this Contract, are subject to all applicable privacy legislation including the *Municipal Freedom of Information and Protection of Privacy Act*, R.S.O. 1990 c.M.56, as amended ("MFIPPA") and/or the *Personal Health Information Protection Act*, 2004 ("PHIPA") with respect to the collection, use, disclosure, retention and protection of confidential, sensitive or personal (health) information under the Agency's custody and control. Under an MFIPPA request, all documents provided to the Agency by the Vendor pursuant to the procurement process which led to this Contract, and the Contract itself and associated documents, may be required by law to be made available to a requesting member of the public, with the possible exception that the party submitting certain information requests that it be treated as confidential and that there is an appropriate exemption to disclosure in MFIPPA, or a non-disclosure requirement in either MFIPPA or PHIPA.

(c) The Bidder Submissions, along with all correspondence, documentation and information provided to the Agency by any Bidder in connection with or arising out of the Bidder Submission, once received by the Agency, shall become the property of the Agency and may be appended to any agreement and/or purchase order with the successful Bidder. Bidders must identify in their Bidder Submissions any scientific, technical, proprietary, commercial or other confidential information, the disclosure of which could cause them injury.

(d) In public bids, the name of each Bidder and the lump sum price contained in their Bidder Submission shall be published on the Bidding System.

(e) Where award is to be made by Regional Council, the Peel Police Services Board or the Board of Directors of Peel Housing Corporation, information regarding all Bidder Submissions, including names of each

Bidder, lump sum prices and the annual or overall value of the Contract and/or Bidder Submissions shall be included in public reports to Regional Council or the relevant Boards such that the information is released publicly. The Bidder acknowledges that the Agency cannot guarantee it can honour requests to keep Bidder information confidential in light of applicable law requirements, and also in light of the need for transparency and public disclosure where release of Bidder information in public Council reports related to a specific project or procurement process is necessary.

20. **COLLUSION AND CONFLICT OF INTEREST**

(a) By submitting a Bidder Submission, each Bidder represents and warrants that no member, officer or employee of the Agency or Council has or will have an interest, directly or indirectly, in the performance of the Contract, or in the supplies, work or business in connection with the said Contract, or in any portion of the profits thereof, or in any monies to be derived therefrom; the Bidder Submission is not made in collusion with any other Bidder making a Bidder Submission for the same goods and services and is, in all respects, fair and without fraud; and that neither it nor any of its subcontractors nor any of their respective representatives has any actual, apparent or potential conflict of interest or existing business or other relationship with the Agency or any or any other party or person providing advice or services to the Agency with respect to the Document or the Work or any of their respective representatives that gives rise or might give rise to an unfair advantage (a “Conflict of Interest”). Each Bidder acknowledges that it is within the Agency’s discretion to determine whether a Conflict of Interest exists.

(b) Should the Bidder give or offer any gratuity to or attempt to bribe any member of the Agency, or to commit collusion or fraud, the Agency shall be at liberty to reject the Bidder Submission or, if a Contract has been awarded, terminate the Contract forthwith, without liability to itself, and to rely upon the sureties as provided for.

(c) By submitting a Bidder Submission for this Document, each Bidder thereby releases and forever discharges the Agency from any and all liability related to any determination the Agency may make regarding Conflicts of Interest, including any disqualification, prohibition, rejection or contract termination which may result therefrom.

(d) In addition to all other rights in this Document or otherwise available at law or in equity, the Agency may, in its discretion, immediately disqualify a Bidder Submission or may terminate any contract entered into in connection with or resulting from the Document, without liability, penalty or cost, upon giving notice to the Bidder if the Bidder or any of their respective representatives fails to disclose or has failed to disclose any Conflict of Interest.

21. **HARMONIZED SALES TAX (HST) INFORMATION**

The Agency is subject to the payment of provincial and federal taxes imposed by the Provincial and Federal Governments and, if required, the collection of any withholding tax for non-resident Vendors. All prices within this document shall be quoted exclusive of HST.

22. **ACCESSIBILITY FOR ONTARIANS WITH DISABILITIES**

The Vendor shall comply with the *Accessibility for Ontarians with Disabilities Act* 2005, and its Regulations thereunder with regard to the provision of goods or services to persons with disabilities. The Vendor acknowledges that pursuant to the *Accessibility for Ontarians with Disabilities Act* 2005, the Region of Peel must, in deciding to purchase goods or services through its procurement process, consider accessibility for persons with disabilities to such goods or services. This legislation can be accessed through the following link to the Government of Ontario's website: ontario.ca/laws/statute/05a11. You may also access this link at peelregion.ca/procurement, "Additional Information for Bidders" and view the accessibility standards.

23. **INVOICING AND ELECTRONIC PAYMENT INSTRUCTIONS**

23.1 **All invoices must be sent to the individual ordering the goods/ services or as directed at the time of the order placement. Failure to do so will result in a delay of payment.**

23.2 The Agency's method of payment is by Electronic Funds Transfer (EFT). The Vendor will be required to provide the Agency with the Application for Vendor Direct Deposit form containing original signatures in ink, by return mail, fax or hand delivered, the following banking information:

23.2.1 Names of two Company Officers, their titles, e-mail addresses, fax numbers, and phone numbers. Note: Both Company Officers must sign off on any subsequent changes to the Vendor's banking information.

23.2.2 Company mailing and remittance addresses.

23.2.3 Banking information including a void cheque.

23.2.4 The Vendor is required to notify the Agency of any changes to this information immediately.

24. **VENDOR AS CONSTRUCTOR**

The Vendor acknowledges that, if the Agency does not enter into any other contracts for the project, the Vendor is the "constructor" and the "employer" within the meaning of the *Occupational Health and Safety Act* (Ontario) and the Vendor undertakes to carry out the duties, obligations and responsibilities of the constructor and the employer with respect to the project. Obligations include but are not limited to making necessary response and change to operations required

by any level of government pursuant to applicable law, regulation or special emergency order in the event of any health, environmental, social, emergency or other risk, including but not limited to response to municipal, provincial or federal orders. If the Agency assesses that the Vendor has not made sufficient response and change to operations to be in compliance with applicable law related to same, the Agency may, as a contractual obligation under this Document or Contract award, require additional Work modifications or arrangements as part of the appropriate response by the Contractor to public health, occupational health and safety or construction safety or to the above-noted risks or other emergency circumstances, which the Contractors shall accommodate at no extra cost to the Agency in order to protect its workers, the public or the Agency's staff unless the Vendor can provide proof acceptable to the Agency of additional costs. In addition, the Agency may choose to set up a contingency allowance to draw from during the applicability of government orders or regulation related to public health, occupational health and safety or construction safety measures to deal with health, environmental, social, emergency or other extraordinary risks, meant to address future government orders or regulations which are not in place as of the date of closing of this Document but which arise in the course of the Work. For any change order related to the above circumstances, the Vendor shall submit details of extra costs and agrees to charge actual costs on a zero mark-up basis.

In this project, the Agency may have cause to enter into more than one contract for the project. Additionally, there may be instances where the Agency's staff are required to attend the project site for specified intervals to perform work associated with the project. In such cases, the Vendor is required and agrees to fulfill all of the duties, obligations and responsibilities of the "constructor" and "employer" with respect to the project and on behalf of the owner, in accordance with the terms and conditions set out in SC 15 of the Supplementary General Conditions, and the Guidelines set out in GUIDELINES FOR THE CONTRACTOR WHERE OWNER'S STAFF AND OTHER CONTRACTORS ARE REQUIRED TO PERFORM WORK ON THE PROJECT SITE below.

25. **EMERGENCY RESPONSE REQUIREMENTS**

25.1 In addition to the Contractor's obligations to follow all applicable law pursuant to s. 1.4 in A-1 and s. 10.2.3, including but not limited to that applicable to public health, occupational health and safety and to construction safety, the parties acknowledge that there may arise circumstances, such as epidemics and pandemics, where they intend to cooperate in good faith with each other to resolve concerns which may arise related to health, environmental, social or other emergency circumstances, so as to continue the Work and to avoid any increases in Contract Price or delay in progress of the Work wherever possible.

25.2 The parties acknowledge the Delay terms in s. 6.5.3 related to causes beyond the Contractor's control. There may be circumstances which arise after Contract Award, and relate to any contingency allowance

which the Region of Peel may have put in place or which a party believes extend beyond or in addition to such contingency allowance terms, but which do not meet those circumstances in s. 6.5.3 and which the parties wish to discuss. Such topics may include the following non-exhaustive list:

.1 stop Work;
.2 suspend Work;
.3 change Work;
.4 change Substantial Performance Date or Contract Completion;
.5 change critical path of Construction Schedule;
.6 change subcontractors or suppliers per GC 3.7,
the parties agree to:
.7 use s. 8.2.3 to conduct amicable discussions or negotiations;
.8 to work within Part 6 wherever possible to agree upon any changes;
.9 to work together notwithstanding s. 6.3.3 where needed; and,
.10 the parties agree that in such circumstances, s. 7.2.2 delay prior to termination by the Contractor shall be extended to 120 days or longer.

25.3 This section is to be distinguished from s. 10.2.7 as it is acknowledged that the circumstances for discussion in this regard relate to situations where health, environmental, social or emergency needs or government regulation related to same may dictate the Contractor's response to, within the terms of the Contract, request changes which will not result in a change to Contract Price if they are discussed early and promptly or where a change to Contract Price may be agreed between the parties on a zero mark-up basis, and where it is the preference of both parties that the Work continue, even though subject to differing or extra health or safety obligations.

25.4 In such discussions or negotiations, the following is applicable:

25.4.1 changes in the Work would preferably be made by agreement;
25.4.2 if changes are requested by the Contractor, there shall be no extra cost to the Owner or costs on a zero mark-up basis as may be agreed upon with the Owner; and
25.4.3 if changes are requested by the Owner, there shall be no extra cost to the Owner unless the Contractor provides records as may be necessary to support a claim on a zero-mark-up basis to which the Owner could agree.

SCHEDULE 1

Supplementary Conditions for Standard Construction Document CCDC2 2008 Stipulated Price Contract

SC.1 GENERAL

These Supplementary Conditions presuppose the use of the Standard Construction Document CCDC2 - 2008 Stipulated Price Contract. These "Supplementary Conditions" void, supersede or amend the "Agreement", "Definitions" and "General Conditions" as hereinafter provided, as the case may be.

SC.2 AGREEMENT

1. Amend Article A-1 THE WORK as follows:

   (a) **add** "diligently" to the beginning of paragraph 1.1.

   (b) **add** new paragraph 1.4 as follows:

   "1.4 provide all the labour, materials, equipment, machinery, Products and work including, without limitation, all Commissioning services required by the Contract Documents in order to fully complete and construct the Work and in accordance with, and satisfaction of, all applicable federal, provincial, municipal and local laws, regulations, rules, by-laws, guidelines, standards, permits, statutes, ordinances, and codes including, without limitation, those relating to occupational health and safety and any and all obligations, responsibilities and duties required by or set out in any site plan agreement or approval, attributable to the Place of the Work and/or the proposed development therein, and furnish efficient business and construction administration and superintendence consistent with the interests of the Owner."

2. **Add** the following documents to the existing list of Contract Documents set out in Article A-3 CONTRACT DOCUMENTS:

   - Addenda, as issued
   - Instructions to Bidders
   - Supplementary General Conditions to CCDC2-2008
   - Agreement to Bond
   - Specifications
   - **Division 01 – General Requirements**
     - Section 01 00 00 General Requirements
   - **Division 02 – Existing Conditions**
     - Section 02 41 00 Demolition
   - **Division 07 – Thermal and Moisture Protection**
     - Section 07 84 00 Firestopping
     - Section 07 92 00 Joint Sealing

- **Division 08 – Openings**
  - Section 08 11 00 Metal Doors and Frames
  - Section 08 71 00 Door Hardware
- **Division 09 – Finishes**
  - Section 09 21 16 Gypsum Board Assemblies
  - Section 09 22 16 Non-Structural Metal Framing
  - Section 09 30 00 Tiling
  - Section 09 51 13 Acoustical Panel Ceilings
  - Section 09 67 00 Epoxy Flooring
  - Section 09 91 00 Painting
- **Division 10 – Specialties**
  - Section 10 28 10 Toilet and Bath Accessories
  - Section 10 51 00 Metal Lockers
- **Division 20 – Mechanical**
  - Section 20 05 00 General Instructions for Mechanical Sections
  - Section 20 05 29 Mechanical Hangers and Supports
- **Division 21 –Fire Suppression**
  - Section 21 13 00 Sprinkler Systems
- **Division 22 – Plumbing**
  - Section 22 11 13 Pipes, Valves and Fittings (Plumbing System)
  - Section 22 42 00 Plumbing Fixtures and Trim
  - Section 22 42 46 Fixture Carriers
- **Division 23 – Heating, Ventilating and Air Conditioning**
  - Section 23 31 13 Ductwork and Specialties
  - Section 23 37 13 Grilles, Registers and Diffusers
- **Division 26 – Electrical**
  - Section 26 05 00 General Instructions for Electrical
  - Section 26 05 10 Electrical Basic Materials
  - Section 26 05 29 Grounding and Bonding
  - Section 26 09 23 Lighting Control System
  - Section 26 24 10 Electrical Distribution
  - Section 26 51 13 Lighting Equipment
- **Division 28 – Electronic Safety and Security.**
  - Section 28 31 02 Fire Alarm System
- **Drawings**

6825 Tomken Road, Mississauga, ON

- A01 Key Plan, Site Plan and General Notes, Wall Types & Detail
- A02 Part Plan – Existing Washroom Demolition Floor Plan & RCP, Photos – Existing Conditions
- A03 Part Plan – Proposed Gender-Neutral Shower & Washroom Plan, RCP, Washroom Accessories & Shower Stall Notes

- A04 TYP. Washroom Accessories Installation Detail, Door Schedule & Room Finish Schedule
- M01 Key Plan, Site Plan, General Notes and Demolition Plan
- M02 Plumbing Demolition and Proposed
- M03 Drainage and HVAC Proposed
- M04 Fire Protection Plan Proposed
- E01 Electrical Key Plan, Site Plan and General Notes, Wall Types & Detail
- E02 Electrical Schedule and Detail
- E03 Electrical Power and Communications Demolition Plan
- E04 Electrical Lighting Demolition Plan
- E05 Electrical Power and Communications Plan
- E06 Electrical Lighting Plan
  25 Rising Hill Ridge, Brampton, ON
- A01 Key Plan, Site Plan, General Notes and Wall Type
- A02 Demolition – Part of Existing Floor Plan & RCP, Notes & Photos – Existing Condition
- A03 Washroom & Shower Plan, Details and Accessories
- A04 Washroom & Shower RCP, Door Schedule and Room Finish Schedule
- M01 Key Plan, Site Plan, General Notes and Demolition Plan
- M02 Washroom & Shower Plan Plumbing Demolition Plan and Plumbing Plan
- M03 Neutral Washroom & Shower Plan Drainage Existing Plan and Drainage Plan
- M04 Washroom & Shower Plan HVAC Plan and Fire Protection Plan
- E01 Electrical Key Plan, Site Plan and General Notes, Wall Types & Detail
- E02 Electrical Second Floor Power Distribution Plan, Schedule and Detail
- E03 Electrical Lighting, Power and Communications Demolition Plan
- E04 Electrical Lighting, Power and Communications Plan
- Site Photographs - 6825 Tomken Road, Mississauga, ON
- Site Photographs - 25 Rising Hill Ridge, Brampton, ON
- CCDC2 Stipulated Price Contract 2008 - This is not attached but forms part of the Contract
- Digital Bid Bond
- Form of Release at Substantial Performance of the Work
- Performance Bond substantially in the form required under the Construction Act - This is not attached but forms part of the Contract

- Labour and Material Payment Bond substantially in the form required under the Construction Act - This is not attached but forms part of the Contract
- Owner's Staff/Other Contractors Project Construction Coordination Form
- Owner's Staff/Other Contractors Anticipated to Attend Site for Contractor Coordination
- Online Bidding System forms

3. **Add** new paragraphs 3.2 and 3.3 to Article A-3 CONTRACT DOCUMENTS, as follows:

"3.2 If either the Specifications or the Request for Tender (or other procurement document issued by the Owner) provide for more than one improvement to be made under the Contract, and such improvements are to be made to lands that are not contiguous, then each such improvement is deemed to be made and performed under a separate contract for the purposes determining Substantial Performance of the Work and completion of the contract, and for any other purpose under section 2 of the Construction Act, and the relevant provisions of this Contract will be deemed amended accordingly.

3.3 Paragraph 3.2 will apply to all of the Contractor's contracts with its Subcontractors and Suppliers working on each such improvement on a pass through basis. The Contractor shall include in all of its contracts with Subcontractors and Suppliers notice of such deeming of separate contracts for such purposes, and shall ensure that it separates the Work and the supply of Products for each improvement."

4. **Delete** ARTICLE A-5 PAYMENT in its entirety and **replace** with the following:

"**ARTICLE A-5 PAYMENT**

5.1 Subject to, and in accordance with, the provisions of the Contract Documents and the *Construction Act* the Owner shall:

.1 make monthly progress payments to the Contractor on account of the Contract Price when due in the amount certified by the Consultant together with such Value Added Taxes as may be applicable to such amount certified by the Consultant;

.2 upon Substantial Performance of the Work, pay the Contractor the unpaid balance of the basic holdback amount when due together with such Value Added Taxes as may be applicable to such payment; and

.3 upon the issuance of the final certificate for payment, pay to the Contractor the unpaid balance of the Contract Price when due together with such Value Added Taxes as may be applicable to such payment.

5.2 As such payments become due, the Contractor shall, in accordance with the terms of its agreements with any Subcontractors, Suppliers and workmen, pay all of its Subcontractors, Suppliers and workmen in full on account of work properly performed or Products properly supplied, as applicable, less any holdback monies retained in compliance with the *Construction Act*.

5.3 In the event of loss or damage occurring where payment becomes due under the property and boiler and machinery insurance policies, payments shall be made to the Contractor in accordance with the provisions of GC 11.1 - INSURANCE of the General Conditions.

5.4 Interest

.1 Should either party fail to make payments as they become due under the terms of the Contract or in an award by arbitration or court, interest at the greater of one per cent per annum above the bank rate and the minimum rate required under the *Construction Act* on such unpaid amounts shall also become due and payable until payment. Such interest shall be compounded on a monthly basis. The bank rate shall be the rate established by the Bank of Canada as the minimum rate at which the Bank of Canada makes short term advances to the chartered banks.

.2 Interest shall apply at the rate and in the manner prescribed by paragraph 5.4.1 of this Agreement on the amount of any claim advanced and for which the Contractor is thereafter entitled to payment, either pursuant to Part 8 - Dispute Resolution of the General Conditions, or otherwise, from the date the amount would have been due and payable under the Contract, had it not been in dispute, until the date it is paid."

SC.3 RECEIPT OF AND ADDRESSES FOR NOTICES IN WRITING

1. In paragraph 6.1, **delete** "or other form of electronic communication during the transmission of which no indication of failure of receipt is communicated to the sender.", and **delete** "or other form of electronic communication".

2. **Add** new paragraph 6.2 to Article A-6 RECEIPT OF AND ADDRESSES FOR NOTICES IN WRITING, as follows:

"6.2 In addition to the addresses, requirements and timelines set out in paragraph 6.1, the following applies:

.1 for the purposes of Part I.1 the *Construction Act* (Prompt Payment) and Part 5 - PAYMENT,

(i) applications for payment and Proper Invoices will be considered given or delivered by the Contractor to the Owner when they are received by the Owner and such receipt can be verified; and

(ii) notices of non-payment will be considered to have been given or delivered by the Owner to the Contractor when they have been sent by the Owner and such delivery can be verified, and

.2 for the purposes of Part II.1 of the *Construction Act* (Adjudication), any notices, communications or delivery of documents to be given under the *Construction Act* will:

(i) in the case of the Owner, be given by the Contractor, by electronic mail, to adjudication@peelregion.ca and to the individuals and locations indicated in the Owner's Notice in Writing delivered to the Contractor prior to the commencement of the Work; and

(ii) in the case of the Contractor, be given by the Owner to individuals and locations indicated in the Contractor's Bidder Submission."

SC.4 LANGUAGE OF THE CONTRACT

1. **Delete** paragraph 7.1 and **replace** with the following:

"7.1 When the Contract Documents are prepared in both English and French languages, it is agreed that in the event of any apparent discrepancy between the English and French versions, the English language shall prevail."

SC.5 SUBCONTRACTORS

1. **Add** new ARTICLE A-9 - ASSIGNMENT OF SUBCONTRACTS, as follows:

"**ARTICLE A-9 ASSIGNMENT OF SUBCONTRACTS**

9.1 The Owner shall not be deemed by virtue of the Contract or for any other reason to have any contractual relationship with or obligation to any Subcontractor or Supplier but the Contractor hereby agrees that in the event that:

.1 the Contract is terminated; or

.2 the Contractor's right to continue the Work is terminated;

and at the sole and absolute option of the Owner, any or all subcontracts for Work or Products as may be selected by the Owner, in its sole and absolute discretion, shall, upon notice to the Contractor and the affected Subcontractors and Suppliers from the Owner, be assigned to the Owner, without any further action being necessary from the Contractor or the affected Subcontractors and Suppliers and in order to ensure the Owner's rights, the Contractor shall:

.3 contractually obligate each of its Subcontractors and Suppliers to agree that each such subcontract shall be assignable, at the Owner's option, to the Owner, upon delivery of the notice described above, in the event that:

(i) the Contract is terminated; or

(ii) the Contractor's right to continue the Work is terminated.

9.2 The Contractor shall provide satisfactory evidence to the Owner that this obligation has been fulfilled."

SC.6 DEFINITIONS

1. In definition "1. Change Directive" **delete** the words "within the general scope of the Contract Documents".

2. In definition "4. Consultant" **add** the following sentence after the last sentence:

   "The words 'Engineer', 'Architect' or 'Consultant' wherever used in the Contract Documents shall be regarded as synonymous."

3. In definition "8. Contract Time" **delete** "Substantial Performance of the Work" and **replace** with "the Substantial Performance Date"

4. In definition "9. Contractor" add the following sentence after the second sentence:

   "For the purpose of the Contract, the words 'Contractor', 'Vendor' or 'General Contractor' shall be regarded as synonymous."

5. In definition "10. Drawings" **add** "and approved, in writing, by the Owner" after the word "issued," in the second line.

6. In definition "13. Place of the Work" **add** the following sentence:

   "The term 'Place of the Work' and 'Site' wherever used in the Contract Documents shall be regarded as synonymous."

7. In definition "16. Provide" **add** the following after "install":

   "or supply, install and connect as applicable, complete and in place, including accessories, finishes, tests, and services required to render each item so specified complete and ready for use."

8. In definition "17. Shop Drawings" **delete** "which the Contractor provides" and **replace** with "to be provided by the Contractor".

9. In definition "18. Specifications" **add** "and approved, in writing, by the Owner" after "issued," in the first line.

10. In definition "25. Work" **add** ", Products, installation, Commissioning and Testing, checkout, start-up, testing" after "total construction".

11. **Delete** definition "26. Working Day" in its entirety and **replace** with the following:

    "26. **Working Day**

    Working Day means a day when the Regional Municipality of Peel is open, Monday to Friday, and does not include weekends or statutory holidays."

12. **Add** the following new definitions in the appropriate order alphabetically:

    "27. **Authorities Having Jurisdiction**

The phrase Authorities Having Jurisdiction or the term Authorities means those authorities having jurisdiction under law over the Work or parts thereof.

28. **Commission and Test**

Commission and Test means, and Commissioning and Testing refers to, the procedure which includes testing, reviewing, inspecting, checking, testing, adjusting and measuring Work performed by the Contractor to demonstrate and verify the installation, operation and performance of all components and the entire system, including certification of any such Commissioning and Testing.

29. **Construction Schedule**

Construction Schedule means the schedule indicating the timing of major activities of the Work submitted by the Contractor and approved in writing by the Owner including attaining Substantial Performance of the Work by the Substantial Performance Date as described in GC 3.5 - CONSTRUCTION SCHEDULE.

30. **Contract Completion**

Contract Completion means when the entire Work except those items arising from the provisions of GC 12.3 - WARRANTY has been performed to the requirements of the Contract Documents and is so certified by the Consultant.

31. **Excess Soil**

Excess Soil includes “excess soil” within the meaning of the Excess Soil Regulation.

32. **Excess Soil Legislation**

Excess Soil Legislation means any laws, ordinances, rules, regulations or codes, which are or become in force during the performance of the Work dealing with the excavation, management, handling, storage, removal, disposal and transportation of Excess Soil including, the Excess Soil Regulation.

33. **Excess Soil Regulation**

Excess Soil Regulation means the On-Site and Excess Soil Management Regulation (O. Reg. 406/19).

34. **Hazardous Material**

Hazardous Material means, collectively, any contaminant, designated substance, waste, hazardous waste or subject waste (as defined in the Ontario Environmental Protection Act and any associated regulations as amended from time to time (the “EPA”) or the *Ontario Occupational Health & Safety Act* and any associated regulations, as amended from time to time (the “OHSA”)), toxic substance (as defined in the *Canadian Environmental Protection Act* and any associated regulations, as amended from time to time (the “CEPA”)), dangerous goods (as defined in the *Transportation of Dangerous Goods Act* (Canada) and any associated regulations, as amended from time to time (“TDGA”)), or pollutant (as defined in the EPA), or any other substance or material which, when released

to the natural environment, is likely to cause harm, injury, loss, damage, impairment or degradation to the natural environment or a risk or harm, injury, loss, damage, or impairment to human health and safety, including asbestos, “PCBs”, arsenic, silica and any other contaminant, substance, or material defined or regulated in, or for purposes of, any applicable law. Whenever the terms “toxic and hazardous substances” is used in the Contract, it shall be deemed amended to read “Hazardous Material”.

35. **Install**

Install means the placement of materials, equipment, or components, including receiving, unloading, transporting, storage, uncrating and installing, and performance of such testing and finish work as is compatible with the degree of installation specified.

36. **Other Contractor**

Other Contractor means an individual, firm, partnership or corporation having a separate contract with the Owner for work other than that required by the Contract Documents.

37. **Project Leader**

Project Leader means the “project leader” within the meaning of the Excess Soil Regulation.”

38. **Proper Invoice**

Proper Invoice means an application for payment in the form of invoice provided by the Owner to the Contractor, if applicable, containing the information that may be required for the application for payment to constitute a “proper invoice” under the *Construction Act*, including the following:

1. All of the information specified to be included in a proper invoice as set out in section 6.1 of the *Construction Act*, namely:
    a. the Contractor’s name and address;
    b. the date of the application for payment and the period during which the Work was performed;
    c. information identifying the authority, whether in the Contract or otherwise, under which the Work was performed;
    d. a description, including quantity where appropriate, of the Work performed and Products supplied;
    e. the amount payable for the Work performed, and the payment terms; and
    f. the name, title, telephone number and mailing address of the person to whom payment is to be sent;
2. an original statutory declaration in the form of CCDC 9A, or other form of statutory declaration that includes the same unqualified declaration,

certifying that all accounts of the Contractor have been paid in full, less only the amounts of holdback due to them for the relevant dates, that all liabilities incurred by the Contractor and its subcontractors and suppliers in carrying out the Contract have been discharged and that all liens under the Contract have expired or have been satisfied, discharged or provided for by payment;

3. the total amount of expenditures to date and the total estimated expenditures to be made for the remaining balance of the Work;

4. satisfactory evidence in the form of a Certificate of Clearance issued by the Workplace Safety and Insurance Board that the Contractor has made suitable provision for meeting any liability under the *Workplace Safety and Insurance Act*, 1997 prior to the release of any monthly progress payment;

5. any certificates, inspection reports, or data resulting from Commissioning and Testing required under the Contract Documents confirming the satisfactory completion of such Commissioning and Testing; and

6. all documents evidencing that the Work complies with the Excess Soil Legislation and such other documents as required by the Excess Soil Legislation; and

7. any additional information that the Owner or the Consultant may reasonably require."

39. **Release**

Release means a release by the Contractor substantially in the form set out in the Contract Documents or as the Owner may prescribe.

40. **Reports**

Reports means the Reports set out in Article A-3 - CONTRACT DOCUMENTS.

41. **Rules of Mediation and Arbitration**

Rules of Mediation and Arbitration mean the rules as provided in CCDC 40 in effect at the time of bid close."

42. **Substantial Performance Date**

Substantial Performance Date means the date by which the Contractor shall attain Substantial Performance of the Work as specified in Article A-1 - THE WORK.

43. **Supply or Furnish**

Supply or Furnish means fabrication or procurement of materials, equipment, or components, or performance of services to the extent specified and shown. Where used with respect to materials, equipment, or components, the term includes crating and delivery to the Place of the Work but is not intended to include installation of items, either temporary or final.

SC.7 - GC 1.1 CONTRACT DOCUMENTS

1. **Delete** the first sentence in paragraph 1.1.1 and **replace** it with the following:

   "1.1.1 The intent of the Contract Documents is to include the construction, labour, Products, Construction Equipment and other services necessary, complementary or ancillary, for the performance and completion of the Work by the Contractor in accordance with the Contract Documents or properly inferable from them."

2. In paragraph 1.1.6 **add** the following at the end of the provision:

   "or in establishing the extent of the work to be performed by a trade."

3. In paragraph 1.1.7.1 **add** after "from highest to lowest, shall be:"

   - Addenda, as issued
   - Instructions to Bidders
   - Supplementary General Conditions to CCDC2-2008
   - Agreement to Bond
   - Specifications
   - **Division 01 – General Requirements**
     - Section 01 00 00 General Requirements
   - **Division 02 – Existing Conditions**
     - Section 02 41 00 Demolition
   - **Division 07 – Thermal and Moisture Protection**
     - Section 07 84 00 Firestopping
     - Section 07 92 00 Joint Sealing
   - **Division 08 – Openings**
     - Section 08 11 00 Metal Doors and Frames
     - Section 08 71 00 Door Hardware
   - **Division 09 – Finishes**
     - Section 09 21 16 Gypsum Board Assemblies
     - Section 09 22 16 Non-Structural Metal Framing
     - Section 09 30 00 Tiling
     - Section 09 51 13 Acoustical Panel Ceilings
     - Section 09 67 00 Epoxy Flooring
     - Section 09 91 00 Painting
   - **Division 10 – Specialties**
     - Section 10 28 10 Toilet and Bath Accessories
     - Section 10 51 00 Metal Lockers
   - **Division 20 – Mechanical**
     - Section 20 05 00 General Instructions for Mechanical Sections
     - Section 20 05 29 Mechanical Hangers and Supports
   - **Division 21 – Fire Suppression**
     - Section 21 13 00 Sprinkler Systems
   - **Division 22 – Plumbing**

- Section 22 11 13 Pipes, Valves and Fittings (Plumbing System)
- Section 22 42 00 Plumbing Fixtures and Trim
- Section 22 42 46 Fixture Carriers

- **Division 23 – Heating, Ventilating and Air Conditioning**
  - Section 23 31 13 Ductwork and Specialties
  - Section 23 37 13 Grilles, Registers and Diffusers
- **Division 26 – Electrical**
  - Section 26 05 00 General Instructions for Electrical
  - Section 26 05 10 Electrical Basic Materials
  - Section 26 05 29 Grounding and Bonding
  - Section 26 09 23 Lighting Control System
  - Section 26 24 10 Electrical Distribution
  - Section 26 51 13 Lighting Equipment
- **Division 28 – Electronic Safety and Security**
  - Section 28 31 02 Fire Alarm System
- **Drawings**

6825 Tomken Road, Mississauga, ON

- A01 Key Plan, Site Plan and General Notes, Wall Types & Detail
- A02 Part Plan – Existing Washroom Demolition Floor Plan & RCP, Photos – Existing Conditions
- A03 Part Plan – Proposed Gender-Neutral Shower & Washroom Plan, RCP, Washroom Accessories & Shower Stall Notes
- A04 TYP. Washroom Accessories Installation Detail, Door Schedule & Room Finish Schedule
- M01 Key Plan, Site Plan, General Notes and Demolition Plan
- M02 Plumbing Demolition and Proposed
- M03 Drainage and HVAC Proposed
- M04 Fire Protection Plan Proposed
- E01 Electrical Key Plan, Site Plan and General Notes, Wall Types & Detail
- E02 Electrical Schedule and Detail
- E03 Electrical Power and Communications Demolition Plan
- E04 Electrical Lighting Demolition Plan
- E05 Electrical Power and Communications Plan
- E06 Electrical Lighting Plan

25 Rising Hill Ridge, Brampton, ON

- A01 Key Plan, Site Plan, General Notes and Wall Type
- A02 Demolition – Part of Existing Floor Plan & RCP, Notes & Photos – Existing Condition
- A03 Washroom & Shower Plan, Details and Accessories
- A04 Washroom & Shower RCP, Door Schedule and Room Finish Schedule

- M01 Key Plan, Site Plan, General Notes and Demolition Plan
- M02 Washroom & Shower Plan Plumbing Demolition Plan and Plumbing Plan
- M03 Neutral Washroom & Shower Plan Drainage Existing Plan and Drainage Plan
- M04 Washroom & Shower Plan HVAC Plan and Fire Protection Plan
- E01 Electrical Key Plan, Site Plan and General Notes, Wall Types & Detail
- E02 Electrical Second Floor Power Distribution Plan, Schedule and Detail
- E03 Electrical Lighting, Power and Communications Demolition Plan
- E04 Electrical Lighting, Power and Communications Plan
- Site Photographs - 6825 Tomken Road, Mississauga, ON
- Site Photographs - 25 Rising Hill Ridge, Brampton, ON
- CCDC2 Stipulated Price Contract 2008 - This is not attached but forms part of the Contract
- Digital Bid Bond
- Form of Release at Substantial Performance of the Work
- Performance Bond substantially in the form required under the Construction Act - This is not attached but forms part of the Contract
- Labour and Material Payment Bond substantially in the form required under the Construction Act - This is not attached but forms part of the Contract
- Owner's Staff/Other Contractors Project Construction Coordination Form
- Owner's Staff/Other Contractors Anticipated to Attend Site for Contractor Coordination
- Online Bidding System forms

4. In the first sentence of paragraph 1.1.9 **delete** "and shall remain the Consultant's property" and **replace** with "not the Contractor's property"

5. **Add** new paragraph 1.1.11 and new paragraph 1.1.12, as follows:

"1.1.11 The Contractor shall review the Contract Documents and shall report promptly to the Owner and the Consultant any error, inconsistency, or omission the Contractor may discover. If the Contractor does discover any error, inconsistency, or omission in the Contract Documents, the Contractor shall not proceed with the Work affected until the error, inconsistency or omission has been addressed and in dealing with such error, inconsistency or omission the Contractor shall co-operate with the Owner in good faith to resolve such errors, inconsistency or omission so as to avoid any increase in the Contract Price or delay in the progress of the Work.

1.1.12 The Contractor declares and represents that in entering into the Contract with the Owner for the performance of the Work, it has reviewed any and all documentation including, without limitation, the Reports provided by the Owner and has either visually investigated for itself the character of the Work to be done and all local conditions including, without limitation, the position of all pole lines, conduits, watermains, sewers and other underground and overground utilities and structures, or that, not having so reviewed or visually investigated, the Contractor has assumed and does hereby assume all risk of conditions now existing or arising in the course of the Work which could have been reasonably identified by a visual inspection or which are identified or inferred in any information provided by the Owner including, without limitation, the Reports, which might or could make the Work, or any items thereof more expensive in character, or more onerous to fulfill, than was contemplated or known when the Contract was signed."

SC.8 - GC 1.4 ASSIGNMENT

1. **Delete** paragraph 1.4.1 in its entirety and **replace** with the following:

"1.4.1 The Contractor shall not assign the Contract, or any portion thereof, without the prior written consent of the Owner, which consent may not be unreasonably withheld. The Owner shall be entitled to assign the Contract to any person, corporation, or other entity (the "Assignee"). Upon the assumption by the Assignee of the Owner's obligations under the Contract, the Owner shall be released from its obligations arising under the Contract."

SC.9 TIME IS OF THE ESSENCE OF THE CONTRACT

1. **Add** new GC 1.5 TIME as follows:

"GC 1.5 TIME

1.5.1 All time limits stated in the Contract Documents are of the essence of the Contract."

SC.10 CONFIDENTIALITY AND CO-OPERATION, CONSULTATION AND CO-ORDINATION

1. **Add** new GC 1.6 CONFIDENTIAL INFORMATION/OWNERSHIP AND DISCLOSURE OF CONTRACTOR SUBMISSIONS as follows:

"**GC 1.6 CONFIDENTIAL INFORMATION/OWNERSHIP AND DISCLOSURE OF CONTRACTOR SUBMISSIONS**

1.6.1 The Contractor agrees to protect and maintain the confidentiality of all personal or other information, including all personal health information, that the Contractor accesses or of which the Contractor acquires knowledge of as a result of the services in this Contract, and agrees to use, collect, disclose, retain, protect and dispose of the personal (health) information only in accordance with all privacy legislation applicable to the

Owner where it is acting on behalf of the Owner. Disclosure of any information shall be done only with the Owner's prior written consent. The provisions of the indemnity clause in this Contract apply to any breach of privacy or confidentiality in this clause. The Contractor shall ensure that its directors, officers, employees, agents, subcontractors and anyone else for whom it is responsible in law all adhere to the requirements of this section regarding privacy and confidentiality.

1.6.2 The Owner, and the Owner's responsibilities under this Contract, are subject to all applicable privacy legislation including the Municipal Freedom of Information and *Protection of Privacy Act*, R.S.O. 1990 c.M.56, as amended ("MFIPPA") and/or the *Personal Health Information Protection Act*, 2004 ("PHIPA") with respect to the collection, use, disclosure, retention and protection of confidential, sensitive or personal (health) information under the Owner's custody and control. Under an MFIPPA request, all documents provided to the Owner by the Contractor pursuant to the procurement process which led to this Contract, and the Contract itself and associated documents, may be required by law to be made available to a requesting member of the public, with the possible exception that the party submitting certain information requests that it be treated as confidential and that there is an appropriate exemption to disclosure in MFIPPA, or a non-disclosure requirement in either MFIPPA or PHIPA.

1.6.3 The Contractor's Submission, along with all correspondence, documentation and information provided to the Owner by any Contractor in connection with or arising out of the Contractor's Submission, once received by the Owner, shall become the property of the Owner and may be appended to any agreement and/or purchase order with the successful Contractor. Contractors must identify in their Submissions any scientific, technical, proprietary, commercial or other confidential information, the disclosure of which could cause them injury.

1.6.4 In purchases where a public opening of the Contractor's Submission will be taking place, the name of each Contractor and the lump sum price contained in their Submission shall be read out by the Owner at the public opening.

1.6.5 Where award is to be made by Regional Council, the Peel Police Services Board or the Board of Directors of Peel Housing Corporation, information regarding all Contractor's Submissions, including names of each Contractor, lump sum prices and the annual or overall value of the Contract and/or the Contractor's Submissions shall be included in public reports to Regional Council or the relevant Boards such that the information is released publicly. The Contractor acknowledges that the Owner cannot guarantee it can honour requests to keep Contractor information confidential in light of applicable law requirements, and also in light of the need for transparency and public disclosure where release of

the Contractor's information in public Council reports related to a specific project or procurement process is necessary."

2. **Add** new GC 1.7 CO-OPERATION, CONSULTATION AND CO-ORDINATION as follows:

"**GC 1.7 CO-OPERATION, CONSULTATION AND CO-ORDINATION**

1.7.1 The Contractor shall, at all times and as part of the Work, fully assist, cooperate, consult and coordinate with the Consultant and any other consultants or other entities retained or identified by the Owner which are related to the Project (collectively, the "Other Entities"). The objective of such assistance, co-operation, consultation and co-ordination is to make certain the Work is properly coordinated with and integrated with the work and services of the Other Entities.

1.7.2 Without limiting the generality of any other provision in the Contract, the Contractor shall attend all design, construction, general co-ordination and progress meetings relating to the Work between the Consultant, the Owner and Other Entities and any other meeting relating to the Project as requested by the Owner to discuss and resolve all matters and issues relating to the Project. The Contractor shall, on a timely basis, prepare and distribute detailed minutes to the Owner of the construction and progress meetings which it attends, if requested by the Owner."

SC.11 - GC 2.1 AUTHORITY OF THE CONSULTANT

1. In paragraph 2.1.3 **delete** "against whom the Contractor makes no reasonable objection and".

SC.12 - GC 2.2 ROLE OF THE CONSULTANT

1. **Add** the following sentence to paragraph 2.2.3 "The presence of such project representatives at the Place of the Work will not abrogate any of the Contractor's responsibility to perform the Work as required by the Contract Documents."

2. In paragraph 2.2.6 **add** "to the Contractor" after the words "the Consultant will not be responsible" in each of the first two sentences.

3. In paragraph 2.2.7 **delete** "Except with respect to GC 5.1 - FINANCING INFORMATION REQUIRED OF THE OWNER, the" and **replace** with "The".

4. In paragraph 2.2.17 **add** "to the Contractor" after the words "the Consultant does not guarantee".

SC.13 - GC 2.3 REVIEW AND INSPECTION OF THE WORK

1. In paragraph 2.3.1 **delete** "the Consultant" and **replace** with "Consultant and Owner" in the second sentence only.

2. **Amend** paragraph 2.3.2 as follows:

(a) **delete** "tests" and **replace** with "Commissioning and Testing";

(b) **add** “regulations, rules, by-laws, standards, guidelines, permits, statutes, codes,” before “laws or ordinances”;

(c) **add** “, and any applicable Commissioning and Testing” at the end of the first sentence; and

(d) **add** “and of any applicable Commissioning and Testing” at the end of the second sentence.

3. In paragraph 2.3.6 **delete** “designated in” and **replace** with “required by”, **delete** “designated by” and **replace** with “required by” and **add** “or required by the Consultant” after “Contract Documents”.

4. In paragraph 2.3.7 **delete** “designated in” and **replace** with “required by”.

SC.14 - GC 2.4 DEFECTIVE WORK

1. In paragraph 2.4.1 **delete** “Consultant” in the first instance and replacing it with “Consultant and/or Owner” and by adding “, at the Contractor’s expense,” after “Contract Documents,”

SC.15 - GC 3.2 CONSTRUCTION BY OWNER OR OTHER CONTRACTORS

1. **Delete** paragraph 3.2.2.2 in its entirety and **replace** with “3.2.2.2 INTENTIONALLY DELETED”.

2. **Add** the following to paragraph 3.2.2.3:

“.3 Without restricting the generality of paragraph 3.6.1, the Contractor acknowledges that the Contractor is the “constructor” and the “employer” within the meaning of the OHSA and the Contractor undertakes to carry out the duties, obligations and responsibilities of the constructor and the employer with respect to the Project. In the event that the Owner enters into more than one contract for the Project or engages Other Contractors to perform work or services at the Place of the Work while the Contractor is the “constructor” and the “employer”, the Owner shall contractually require the Other Contractors to abide by the health and safety instructions, directions, policies and procedures of the Contractor. For clarity, the Contractor, in fulfilling the role of “constructor” and “employer”, shall have the right to remove the Other Contractors from the Place of the Work should they not comply with the Contractor's safety program and safety instructions. Without restricting the generality of any other term or condition in the Contract, the Contractor shall indemnify and hold harmless the Owner from any liability for claims, damages or penalties, including reasonable legal fees to defend any offences, arising from the Contractor’s failure to comply with the duties, responsibilities and obligations of the constructor and the employer under the OHSA.”

3. In paragraph 3.2.2.4, **add** the words “as the Owner considers appropriate” after the words “GC 11.1 - INSURANCE” in the second line.

4. In paragraph 3.2.3.3 **add** “Failure by the Contractor to so report shall invalidate any claims against the Owner by reason of deficiencies in the work of Other

Contractors or Owner's own forces except those deficiencies not then reasonably discoverable."

5. **Add** new paragraph 3.2.3.4 as follows:

".4 coordinate and perform the Work with care and diligence so as to ensure that the Owner and the Other Contractors will be in a position to proceed according to schedule with the delivery, installation and testing of the equipment and other components to be incorporated into the Project and allow the Owner and the Other Contractors reasonable opportunity to receive and store materials and products on site and to perform their work."

SC.16 - GC 3.4 DOCUMENT REVIEW:

1. **Add** new paragraph 3.4.2 as follows:

"3.4.2 Notwithstanding the foregoing, inconsistencies and omissions shall not include lack of reference on the Drawings or in the Specifications to labour and/or Products that are required or normally recognized within respective trade practices as being necessary for the complete execution of the Work."

SC.17 - GC 3.5 CONSTRUCTION SCHEDULE

1. **Delete** paragraph 3.5.1 and **replace** it with the following:

"3.5.1 The Contractor shall:

.1 prior to commencement of construction, prepare and submit to the Owner and the Consultant for their review and acceptance a construction schedule indicating the critical path for the Project, using "Primavera Project Planner" or equivalent, demonstrating that the Work will be performed in conformity with the Contract Time, and shall conform to the phasing and sequencing requirements for the Work as set out in the Contract Documents or as otherwise required by the Consultant or the Owner including, without limitation, a Products delivery schedule with respect to the Products whose delivery is critical to the schedule of the Work. The Contractor shall provide the schedule information required by this paragraph 3.5.1.1 in both electronic format and hard copy. Once approved by the Owner and the Consultant, the construction schedule submitted by the Contractor under this paragraph 3.5.1.1, as updated by the Contractor and approved by the Owner, shall become the "Construction Schedule";

.2 monitor the progress of the Work on a weekly basis relative to the Construction Schedule and update the Construction Schedule on a monthly basis;

.3 perform the Work in accordance with the Construction Schedule;

.4 advise the Consultant of any revisions required to the Construction Schedule as a result of extension of the Contract Time in accordance with PART 6 - CHANGES IN THE WORK; and

.5 identify potential variances between scheduling and scheduled completion dates and implement necessary adjustments in the Construction Schedule in order to meet the Substantial Performance Date.

2. **Add** new paragraph 3.5.2 and new paragraph 3.5.3 as follows:

"3.5.2 On request of the Consultant, the Contractor shall provide information regarding the progress of the Work or any part of it, or, copies, schedules and orders covering materials, components and services. The Contractor shall cooperate fully with the Consultant, and shall ensure that all Subcontractors and Suppliers and anyone for whom the Subcontractors and Suppliers may be responsible also cooperate and make available on request the same documents.

3.5.3 Without limiting the other obligations of the Contractor under GC3.5, the Contractor shall not amend the Construction Schedule (including, without limitation, any changes to the critical path) without the prior written approval of the Owner."

SC.18 - GC 3.6 CONTRACTOR'S PERSONNEL COMMITMENT

1. **Delete** GC 3.6 - SUPERVISION in its entirety and **replace** it with the following:

"**GC 3.6 CONTRACTOR'S PERSONNEL COMMITMENT**

3.6.1 The Contractor shall furnish a competent and adequate staff, who shall be in attendance at the Place of the Work at all times, as necessary, for the proper administration, co-ordination, supervision and superintendence of the Work; organize the procurement of all materials and equipment so that they will be available at the time they are needed for the Work; and keep an adequate force of skilled workmen on the job to complete the Work in accordance with all requirements of the Contract Documents.

3.6.2 Prior to commencement of the Work, the Contractor shall select a competent and experienced full time project manager (the "Project Manager") who shall be in attendance at the Place of the Work or on the road and engaged in the Work at all times, and a competent and experienced full time site supervisor (the "Site Supervisor") who shall be in attendance at the Place of the Work at all times. Both the Project Manager and Site Supervisor shall be Gold Seal Certified or equivalent. The Project Manager shall have full responsibility for the prosecution of the Work, with full authority to act in all matters as may be necessary for the proper co-ordination, supervision, direction and technical administration of the Work, who shall attend site meetings in order to render reports on the progress of the Work and who shall have authority

to bind the Contractor in all matters related to this Contract. The Project Manager and the Site Supervisor shall be satisfactory to the Owner and shall not be changed except for good reason and with the prior written approval of the Owner.

3.6.3 The Project Manager and Site Supervisor shall represent the Contractor at the Place of the Work and notices and instructions given to the Project Manager and/or the Site Supervisor shall be held to have been received by the Contractor.

3.6.4 The Contractor may not change its Project Manager or its Site Supervisor without the Owner's prior written approval which shall not be unreasonably withheld. Further, the Contractor shall not employ or continue to employ on the Work anyone to whom the Owner may reasonably object.

3.6.5. The Contractor shall provide the Owner and the Consultant with the names, addresses and telephone numbers of the Project Manager, the Site Supervisor and other responsible field persons who may be contacted for emergency and other reasons during non-working hours."

SC.19 - GC 3.7 SUBCONTRACTORS AND SUPPLIERS

1. In paragraph 3.7.4 **add** "or anyone else performing the Work" after "Supplier".

2. **Add** new paragraph 3.7.7 as follows:

"3.7.7 The Contractor shall not change any of the Subcontractors or Suppliers proposed by him in writing and accepted by the Owner at the signing of the Contract without the Owner's prior written consent or execute any subcontracts for the performance of the Work without the Owner's prior written consent."

SC.20 - GC 3.8 LABOUR AND PRODUCTS

1. **Amend** paragraph 3.8.2 as follows:

(a) **add** "and free from defects" after "new"; and

(b) **delete** the second sentence of paragraph 3.8.2 and **replace** it with the following:

"All Products and workmanship shall be in every respect of the best quality and the Work shall be performed in accordance with the best modern practice. Whenever the Contract Documents, or directions of the Consultant, admit of a reasonable doubt about what is permissible, and when they fail to state the quality of any Work, the interpretation that requires the quality be consistent with the quality of similar Products specified is to be followed."

2. **Delete** paragraph 3.8.3 and **replace** it with the following:

"3.8.3 The Contractor shall:

.1 maintain good order and discipline among all personnel engaged on the Work;

.2 not employ any persons on the Project whose labour affiliation (or lack thereof) is incompatible with other labour employed in connection with this Project or at the Place of the Work; and

.3 act promptly on all problems of labour relations including grievances and jurisdictional disputes. The Contractor shall not employ on the Work anyone not skilled in the task assigned to him and the Owner has the right to require the Contractor to remove from the workforce for the Work any employee, representative or other personnel deemed by the Owner, acting reasonably, to be incompetent, careless or otherwise objectionable, or whose actions are contrary to public interest or inconsistent with the best interest of the Owner."

3. **Add** new paragraph 3.8.4 as follows:

"3.8.4 The cost for overtime required beyond the normal working day to complete individual construction operations of a continuous nature, such as pouring or finishing of concrete or similar work, or work that the Contractor elects to perform at overtime rates without the Owner or the Consultant requesting it shall not be chargeable to the Owner and shall be at the sole cost and expense of the Contractor."

4. **Add** new paragraph 3.8.5 as follows:

"The Owner and the Contractor acknowledge and agree that the beneficial ownership of any portion of the Products required by the Contract Documents to be incorporated and form part of the Work shall pass to the Owner immediately upon payment therefore or upon incorporation thereof as part of the Work, whichever first occurs. For greater certainty, title to Products delivered, but not installed, shall pass to the Owner when paid for (subject to any applicable holdback). The Contractor agrees to promptly execute and deliver to the Owner, from time to time as the Owner may require, any further documentation required to identify, evidence, perfect or protect the Owner's beneficial, or registered, interest in the Products, including, without limitation, any registrations pursuant to the Personal Property Security Act (Ontario). Notwithstanding the foregoing, the Contractor acknowledges and agrees that it shall continue to bear the risk of loss or damage with respect to the Work until the date of acceptance of the Work by the Owner in accordance with the Contract Documents."

SC.21 - GC 3.10 SHOP DRAWINGS

1. In paragraph 3.10.1 **add** "or as the Consultant may reasonably request" at the end of the paragraph.

SC.22. - GC 3.13 CLEAN UP

1. **Add** new paragraph 3.13.4 as follows:

"3.13.4 The Owner shall have the right to back charge cleaning to the Contractor if it is not done within 24 hours of written notice to clean and the Owner shall have the right to back charge cost of damage to the Place of the Work caused by Contractor's, Subcontractor's or Supplier's transportation in and out of the Place of the Work if not repaired within 5 Working Days of written notice to repair or before final payment, whichever is earlier."

SC.23 OPERATIONAL RISKS

1. **Add** new **GC 3.14 - OPERATIONAL RISKS** as follows:

"**GC 3.14 - OPERATIONAL RISKS**

3.14.1 The position of all pole lines, conduits, water mains, sewers and other underground and overground utilities and structures is not necessarily shown on the Contract Drawings, and, where shown, the accuracy of the position of such utilities and structures is not guaranteed. Before starting Work, the Contractor shall inform himself of the exact locations of such utilities and structures, and shall be liable for damages, as a result of any act or omission, to any utilities identified or reasonably to have been identified, whether or not the result of negligence, by those for whom he is responsible. Unless otherwise specified, the Contractor shall temporarily support or relocate such utilities and structures, or temporarily remove them, and restore them, to the satisfaction of the owners of the utilities and structures. The Contractor waives any claim and releases the Owner and the agents of the Owner from all liability for damages suffered as a result of such Contract Drawings or any operation required under this paragraph.

3.14.2 Permanent relocation of underground or overhead utilities will be performed and paid for by the Owner, if necessitated by coincidence of lines or grades, or both unless such relocation has been specifically included within the Work by the drawings or specifications. The Contractor shall be responsible for scheduling permanent relocations of utilities with the Work.

3.14.3 The Consultant will provide the Contractor in writing with bench marks and points of reference to be used by him in setting out the Work. The Owner will be responsible only for the correctness of the information so supplied. From these bench marks and points of reference the Contractor will do his own setting out. The setting out by the Contractor shall include but shall not be limited to the preparation of grade sheets, the installation of centre lines stakes, grade stakes, offsets and site rails."

SC.24 - GC 5.1 FINANCING INFORMATION REQUIRED OF THE OWNER

1. **Delete** GC 5.1 - FINANCING INFORMATION REQUIRED OF THE OWNER in its entirety and **replace** it with the following:

"**GC 5.1 ESTIMATES**

5.1.1 On the 25th day of each month during the Contract Time, the Contractor will deliver to the Consultant a draft of the Contractor's proposed application for payment for all of the Work performed by the Contractor in that month (a "Draft Application"), in order to facilitate and expedite payments under GC 5.2 - APPLICATIONS FOR PROGRESS PAYMENT, GC 5.3 - PROGRESS PAYMENT and GC 5.8 - FINAL PAYMENT, including an estimate of the Work to be performed and Products to be delivered at the date of such application for payment but before the end of that month and including any reports or certificates confirming the satisfactory completion of any Commissioning and Testing of any part of the Work that the Contractor will include in its final and proper application for payment pursuant to paragraph 5.2.1.

5.1.2 The Contractor shall review with the Consultant and the Owner, at a scheduled time, the Draft Application and the percentage of the Work completed for each item indicated in the schedule of values. This procedure shall be complied with for each Draft Application for payment.

5.1.3 Nothing in GC 5.1 - ESTIMATES is intended to condition, pre-condition, prevent or delay the Contractor's right to submit its final and proper applications for payment in accordance with paragraph 5.2.1 of this Contract and the *Construction Act*."

SC.25 - GC 5.2 APPLICATIONS FOR PROGRESS PAYMENT

1. Delete paragraphs 5.2.1 and 5.2.2 and **replace** with the following:

"5.2.1 Notwithstanding GC 5.1 - ESTIMATES and the submission of a Draft Application, the Contractor shall submit its final and proper application for payment to the Consultant and the Owner monthly as the Work progresses on the first Working Day after the end of the month to which the application for payment relates. Applications for payment not submitted on that day may be deferred by the Owner to the next following month. Applications for payment submitted after the 180th day after the end of the month to which the application for payment relates will not be accepted or paid for by the Owner.

5.2.2 The Contractor shall ensure that each application for payment for Work complies with the requirements set out in this Contract, and will include as part of it application for payment of all the documents and information required in this Part 5 - PAYMENT and required for a Proper Invoice, including any reports or certificates confirming the satisfactory completion of any Commissioning and Testing of any completed part of the Work. The Owner may, in its discretion, reject any application for payment that does not comply with GC 5.2 - APPLICATIONS FOR PROGRESS PAYMENT or GC 5.3 - PROGRESS PAYMENT, or the Owner may withhold up to 100 per cent of the amounts otherwise payable in relation to that application for payment until such application for payment includes

all of the documents and information required under this Part 5 - PAYMENT and for a Proper Invoice."

2. **Add** new paragraphs 5.2.8 to 5.2.12 as follows:

"5.2.8 The Contractor must provide with each application after the first, an original statutory declaration in the form of CCDC 9A, or other form of statutory declaration that includes the same unqualified declaration certifying that all accounts for the subcontracts, construction machinery and equipment, materials, Products, labour and other indebtedness which may have been incurred by the Contractor and for which the Owner might in any way be held responsible have been paid in full, except for amounts properly retained as holdback or as an identified amount in dispute.

5.2.9 After the first application for payment, with each subsequent application for payment the Contractor shall submit evidence of compliance with the applicable worker's compensation legislation at the Place of the Work, including payments due thereunder.

5.2.10 The Contractor shall submit with each application for payment, payment receipts for products and materials purchased under conditional sales contracts. Authorization for payment of products and materials purchased under conditional sales contracts shall not be made by the Owner until evidence of payment is submitted.

5.2.11 Payment by the Owner pursuant to the Contract shall not preclude the Owner from thereafter disputing any of the items involved and shall not be construed as acceptance of any part of the Work.

5.2.12 The Contractor shall utilize and submit two copies of the "Contractor's Application for Payment", in a form satisfactory to the Owner, when submitting the formal application for payment. In addition, a breakdown of approved Change Orders and percentage completed of each shall be included, in a form satisfactory to the Owner. Deviation or incomplete submissions with respect to the approved breakdown will require resubmission of the application for payment."

SC.26 - GC 5.3 PROGRESS PAYMENT

1. In paragraph 5.3.1.2 **delete** "10 calendar days" and **replace** with "5 Working Days"

2. **Delete** paragraph 5.3.1.3 in its entirety and **replace** with the following:

"subject to the certifications set out in the Consultant's certificate for payment and the *Construction Act*, including the delivery of a notice of non-payment under the *Construction Act*, the Owner shall make payment to the Contractor on account as provided in Article A-5 of the Agreement - PAYMENT on or before 28 days after the date that the Consultant or the Owner receives the Contractor's application for payment and Proper Invoice in accordance with this Contract."

3. **Add** new paragraph 5.3.2 as follows:

"5.3.2 If the Contractor fails to comply with paragraph 5.2 - APPLICATIONS FOR PROGRESS PAYMENT or paragraph 10.4 - WORKERS COMPENSATION, the Owner shall not be required to make payments to the Contractor until the obligation has been complied with."

SC.27 - GC 5.4 SUBSTANTIAL PERFORMANCE OF THE WORK

1. **Add** "Subject to paragraph 3.2 of Article A-3 - CONTRACT DOCUMENTS," at the beginning of paragraph 5.4.1.

2. **Add** new paragraph 5.4.4 as follows:

"5.4.4 At the time of issuance by the Consultant of the certificate of Substantial Performance of the Work, the Consultant shall:

.1 notify the Contractor of the value of the Warranty Holdback required by paragraph 12.4 - WARRANTY HOLDBACK, hereof.

.2 prepare a separate certificate (the "Substantial Performance Payment Certificate") showing:

(i) the value of work completed to date,

(ii) the value of outstanding or uncompleted work,

(iii) the value of the required Warranty Holdback,

(iv) the amount of the holdback being held in accordance with the *Construction Act* (allowing for any previous release of holdback to the Contractor in respect of completed Subcontractors, Suppliers and deliveries of pre-selected equipment),

(v) the amount due the Contractor, and

.3 prepare a payment certificate releasing to the Contractor the holdback held in accordance with the *Construction Act* in respect of Work performed up to the date of Substantial Performance of the Work which will certify, among other matters, that all documents and information have been delivered by the Contractor that are required under GC 5.5 - PAYMENT OF HOLDBACK UPON SUBSTANTIAL PERFORMANCE OF THE WORK.

SC.28 - GC 5.5 PAYMENT OF HOLDBACK UPON SUBSTANTIAL PERFORMANCE OF THE WORK

1. In paragraph 5.5.1.1 **add** "containing all of the information and documents required under this Contract and of a Proper Invoice and including all final reports and certificates confirming satisfactory completion of all required Commissioning and Testing, to the extent applicable" after "application for payment".

2. **Amend** paragraph 5.5.1.2 as follows:

(a) **delete** "CCDC 9A Statutory Declaration" and **replace** with "an original statutory declaration in the form of CCDC 9A, or other form of statutory

declaration that includes the same unqualified declaration, that all liabilities incurred by the Contractor and its Subcontractors and Suppliers in carrying out the Contract have been discharged, and that all liens in respect of the Contract and subcontracts thereunder have expired or have been satisfied, discharged or provided for by payment into court;"

(b) **add** "materials," before "labour";

(c) **add** "or by any Subcontractor, or Supplier" after "Contractor";

(d) **delete** "." and **replace** with ", and"

3. **Add** new paragraphs 5.5.1.3 to 5.5.1.9 as follows:

".3 submit the documents required to demonstrate compliance under GC 10.4 - WORKERS' COMPENSATION;

.4 submit a written undertaking by the Contractor to complete expeditiously any outstanding Work and to discharge all unfulfilled obligations under the Contract;

.5 submit the Contractor's final claim for all amounts incurred before and on the date of Substantial Performance of the Work;

.6 submit a Release by the Contractor;

.7 submit any certificates, inspection reports, or data resulting from Commissioning and Testing required under the Contract Documents confirming the satisfactory completion of such Commissioning and Testing;

.8 submit all manuals, as-built drawings and other turnover documents required under the Contract Documents; and

.9 submit all documents evidencing that the Work complies with the Excess Soil Legislation and such other documents as required by the Excess Soil Legislation."

4. In paragraph 5.5.2 **delete** "statement as provided in" and **replace** with "other documents required to be provided pursuant to"

5. **Delete** paragraph 5.5.3 in its entirety and **replace** with the following:

"5.5.3 Notwithstanding the foregoing, if the Contractor has not provided the documents required by the General Conditions by the 30th day after the publication of the certificate of Substantial Performance of the Work, the Owner, at its discretion, shall be entitled to withhold an amount equal to up to 100 per cent of the amount of statutory holdback as security for the Contractor's delivery of the outstanding document(s). In the event of a withholding under this GC 5.5.3, the Owner shall pay the withheld amount to the Contractor upon the earlier of (a) the Contractor's delivery of such documents, (b) the end of the limitation period related to any claim that could arise from the Contractor's non-delivery, and (c) a determination by

the Consultant that such withheld amount should be released to the Contractor."

6. Amend paragraph 5.5.4 as follows:

   (a) **delete** "the holdback amount authorized by the certificate for payment of the holdback" and **replace** with "the statutory holdback amount and any other holdback amount authorized by the certificate for payment of the holdback, subject to the delivery by the Owner of a notice of non-payment under the *Construction Act*"; and

   (b) **delete** "third party monetary claims against the Contractor which are enforceable against the Owner" and **replace** with "claims against the Contractor".

7. **Add** new paragraph 5.5.6, as follows:

   "5.5.6 If the Work includes more than one improvement to be made under the Contract, and such improvements are deemed to be made and performed under separate contracts pursuant to paragraph 3.2 of Article A-3 - CONTRACT DOCUMENTS, then, pursuant to the Construction Act, the Owner shall release holdback in accordance with this GC 5.5 upon the issuance of a certificate of Substantial Performance of the Work for each such improvement. The parties acknowledge and agree that, notwithstanding any release of holdback pursuant to this paragraph 5.5.6, the Owner shall be entitled to withhold amounts for the purposes of and pursuant to GC 12.4 - WARRANTY HOLDBACK as if the Owner had not made any release of holdback pursuant to this GC 5.5.6."

SC.29 - GC 5.6 PROGRESSIVE RELEASE OF HOLDBACK

1. **Delete** GC 5.6 in its entirety and **replace** with "5.6 INTENTIONALLY DELETED".

SC.30 - GC 5.7 FINAL PAYMENT

1. In paragraph 5.7.1 **add** "as defined in Section 2(3) of the *Construction Act*" after the words "Work is completed" and add "containing all of the documents and information required under the Contract or of a Proper Invoice and including all final reports and certificates confirming satisfactory completion of all required Commissioning and Testing, to the extent applicable" after the words "final payment".

2. **Amend** paragraph 5.7.4 as follows:

   (a) **delete** "5 calendar days after" and **replace** with "28 calendar days after"; and

   (b) **delete** "." and **replace** with "provided that the Contractor shall provide the Owner and the Consultant, in a form acceptable to the Owner, a sworn statement that all accounts for the materials, labour, subcontracts, Products, Construction Equipment and other indebtedness which may have been incurred by the Contractor and for which the Owner might in any way be held responsible have been paid in full, except for amounts

properly retained as a holdback or as an identified amount in dispute and submit the documents required to demonstrate compliance with paragraph 10.4 - WORKERS' COMPENSATION."

3. **Add** new paragraph 5.7.5 as follows:

"5.7.5 At the time of issuance by the Consultant of the final certificate of payment, the Consultant shall:

.1 Prepare a certificate (the "Completion Payment Certificate") showing:

(i) the final Contract Price,

(ii) the amount of the further 10 per cent holdback (based on the value of further work completed over and above the value of work completed shown in the Substantial Performance Payment Certificate),

(iii) the value of the required Warranty Holdback, and

(iv) the amount due to the Contractor.

.2 Prepare a payment certificate releasing to the Contractor the further 10 per cent holdback. Subject to the provisions of the *Construction Act*, including the Owner's issuance of a notice of non-payment of holdback, and the submission by the Contractor of the documents required by the General Conditions, such further 10 per cent holdback shall become payable after 60 days from the date of completion of the Work as established by the final certificate of payment.

If, at the end of the Warranty Period, any monies are still being retained by the Owner as Warranty Holdback or for other reasons, the Consultant will issue a certificate (the "Warranty Holdback Payment Certificate") releasing the monies due the Contractor.

SC.31 - GC 5.8 WITHHOLDING OF PAYMENT

1. In paragraph 5.8.1 **delete** "If" and **replace** with "Subject to applicable lien legislation, if"

SC.32 LIENS

1. **Add** new GC 5.10 LIENS as follows:

"GC 5.10 LIENS

5.10.1 Notwithstanding any other term or condition in the Contract Documents, the Owner shall not be obligated to make payment to the Contractor, if at any time such certificate or payment was otherwise due:

.1 a claim for lien arising from the performance of the Work has been registered against the Place of Work, or given to the Owner,

.2 a written notice of lien has been delivered to the Owner in accordance with the *Construction Act*; or

.3 the Owner or mortgagee of the Place of Work has received a written notice of lien.

5.10.2 In the event that a construction lien arising from the performance of the Work is registered against the Place of Work, or given to the Owner, the Contractor shall, within 10 calendar days, at its sole expense, vacate or discharge or otherwise remove the lien from title to the premises. If the lien is merely vacated, the Contractor shall, if requested, undertake the Owner's defence of any subsequent lawsuit commenced in respect of the lien at the Contractor's sole expense.

5.10.3 In the event that the Contractor fails or refuses to vacate or discharge a construction lien within the time prescribed above, if the Owner receives a notice of lien, the Owner shall, at its option, be entitled to take all steps necessary to vacate and/or discharge the lien, and all costs and expenses incurred by the Owner in so doing (including, without limitation, legal fees on a full indemnity basis, disbursements, the cost of any security to vacate the lien and any payment which may ultimately be made out of or pursuant to security posted to vacate the lien) shall be for the account of the Contractor, and the Owner may deduct such amounts from amounts otherwise due or owing to the Contractor. If the Owner vacates the lien, it shall be entitled to retain all amounts it would be required to retain pursuant to the *Construction Act* if the lien had not been vacated.

5.10.4 Without limiting any of the foregoing, the Contractor shall indemnify the Owner for all costs (including, without limitation, legal fees on a full indemnity basis) it may occur in connection with the claim for lien or subsequent lawsuit brought in connection with the lien, or in connection with any other claim or lawsuit brought against the Owner by any person that provided services or materials to the Place of Work which constituted a part of the Work.

5.10.5 This GC 5.10 does not apply to construction liens claimed by the Contractor."

SC.33 - GC 6.1 OWNER'S RIGHT TO MAKE CHANGES

1. In paragraph 6.1.1.2 **add** "or a Change Directive" after "Change Order"

2. **Add** new paragraphs 6.1.3 to 6.1.8 as follows:

"6.1.3 The value of a change shall be determined in one or more of the following methods: (a) by estimate and acceptance in a lump sum; (b) by unit prices set out in the Contract or subsequently agreed upon; (c) by cost and a fixed or percentage fee.

6.1.4 Where changes in the Work are paid for under method (b) of paragraph 6.1.3, the value of changes is based on the net difference in quantities with the appropriate unit rate applied.

6.1.5 Where changes in the Work are to be paid under method (c) of paragraph 6.1.3, the cost to the Owner shall be the actual cost of credits and where additional work is required, the cost to the Owner shall be the actual cost plus a percentage covering overhead and profit, after all credits included in the change have been deducted. Wherein changes in the Work are to be paid under method (c) of paragraph 6.1.3, an allowance covering overhead and profit shall be calculated as follows:

.1 on Work performed by the Contractor's own forces, 10 per cent; and

.2 on Work performed by Subcontractors or Suppliers, five per cent.

6.1.6 If any change in the Work is made by which the amount of Work to be done is decreased, or if the whole or any portion of the Work is dispensed with, the Owner shall, subject to paragraph 6.3.3, not be liable to the Contractor for any costs or damages whatsoever including, without limitation, any indirect, consequential or special damages, such as loss of profits, loss of opportunity or loss of productivity.

6.1.7 A Change Order shall be a final determination or adjustment in the Contract Time and Contract Price. There shall be no adjustments to the Contract Time or Contract Price or compensation or payment of any kind whatsoever (including, without limitation, claims for loss of productivity) based on the aggregate number, scope or value of changes in the Work whether resulting from Change Order or Change Directive.

6.1.8 It is the express intention of the parties that any claims by the Contractor for a change in the Contract Price and/or Contract Time shall be barred unless there has been strict compliance with the requirements of all of PART 6 - CHANGES IN THE WORK and the Contractor has notified the Owner and Consultant, within the earlier of: (i) ten (10) Working Days of any event or circumstance of which Contractor has knowledge which provides the Contractor with a change in the Contract Price and/or Contract Time pursuant to the terms and conditions of the Contract, or (ii) such other period of time expressly allowed for by the Contract. Such notice from the Contractor shall include without limitation, sufficient and adequate information and documentation to allow the Consultant and the Owner to properly consider the claim of the Contractor (including, without limitation, the cause of the change in the Contract Time, a description of the impact on the change in the Contract Time will have on the critical path of the Construction Schedule and a description of the portions of the Work affected thereby and a breakdown of the change in the Contract Price, together with all pertinent details and all other backup information and documents). The Contractor has an ongoing obligation to augment

the information and documents described in this paragraph as it becomes available. No course of conduct or dealing between the parties, no express or implied acceptance of alterations or additions to the Work, and no claims that the Owner has been unjustly enriched by any alteration or addition to the Work, whether in fact there is any such unjust enrichment or not, shall be the basis of a claim for additional payment under this Contract or a claim for any extension of the Contract Time."

SC.34 - GC 6.3 CHANGE DIRECTIVE

1. **Delete** paragraph 6.3.2 and **replace** it with "6.3.2 INTENTIONALLY DELETED"
2. In paragraph 6.3.7.1 **add** "while directly engaged in the work attributable to the change" after "in the direct employ of the Contractor".
3. In paragraph 6.3.7.1 (2) **add** "required as a result of the change" after "materials or equipment".
4. In paragraph 6.3.7.3 **add** "reasonable" before "travel".
5. In paragraph 6.3.7.5, **delete** "and hand tools not owned by the workers" and **replace** with "exclusive of hand tools".
6. In paragraph 6.3.7.9 **add** "provided however that the costs included in such amounts shall be limited to the actual costs of the items described in this paragraph 6.3.7 changing 'Contractor' to 'Subcontractor' as necessary".
7. **Add** "not caused by the Contractor or anyone for whom it is responsible" to the end of paragraph 6.3.7.17.
8. At the end of paragraph 6.3.7, **add** the following:

   "All other costs attributable to the change in the Work including the costs of all administrative or supervisory personnel are included in overhead and profit calculated in accordance with the provisions of paragraph 6.1.5 of GC 6.1 - OWNER'S RIGHT TO MAKE CHANGES".

SC.35 - GC 6.4 CONCEALED OR UNKNOWN CONDITIONS

1. In paragraph 6.4.1.1 and paragraph 6.4.1.2 **add** "or the Reports" after "Contract Documents".
2. In paragraph 6.4.2 **add** "Having regard to and subject to the liabilities and responsibilities assumed by the Contractor pursuant to GC 3.14 - OPERATIONAL RISK," at the beginning of the first and second sentences.
3. **Add** the following to the end of paragraph 6.4.4 "or GC 14 - EXCESS SOIL, as applicable."
4. **Add** new paragraph 6.4.5 as follows:

   "6.4.5 Without limiting the generality of any other provision in the Contract Documents, during the performance of the Work, the Contractor shall, as a part of the Contract Price and Work, perform any additional geotechnical and subsurface and other investigations, tests and studies

beyond those being provided by the Owner, which a reasonable and prudent contractor would conduct to ascertain the nature and extent of subsurface or otherwise concealed physical conditions at the Place of the Work."

SC.36 - GC 6.5 DELAYS

1. In paragraph 6.5.1 **delete** "them" in the second line and **replace** with "the Consultant" and **delete** "performance of the Work" in the first line and **replace** with "performance of a critical path activity on the Construction Schedule".

2. In paragraph 6.5.1 **add** the following to the end of the paragraph:

   ", provided that the Owner shall not be liable for any other costs or damages whatsoever including, without limitation, any indirect, consequential, or special damages, such as loss of profits, loss of opportunity or loss of productivity resulting from such delay."

3. **Delete** paragraph 6.5.2 in its entirety and **replace** with the following:

   "6.5.2 The Contractor shall be responsible for all delays and damages resulting from a stop work order issued by a court or other public authority caused by an act or omission of the Contractor or any person or other entity employed or engaged by the Contractor directly or indirectly. In such cases there shall be no extension to the Contract Time and the Contractor shall not be relieved of its obligations under the Contract Documents. The Contractor shall take all required steps to accelerate the work to make up for any schedule delays caused by its act or omission and shall absorb all costs incurred to rectify any damages caused by its act or omission."

4. **Delete** paragraph 6.5.3 in its entirety and **replace** with the following:

   "6.5.3 If the Contractor is delayed in the performance of the Work by:

   .1 labour disputes, strikes, lock-outs affecting the Work or the Project,

   .2 fire, unusual delay by common carriers or unavoidable casualties,

   .3 abnormally adverse weather conditions,

   .4 any cause beyond the Contractor's control that would make performance of the work impossible other than one resulting from a default or breach of Contract by the Contractor, or

   .5 a stop work order issued by a court or other public authority, and providing that such order was not issued as the result of an act or omission of the Contractor or any person or other entity employed or engaged by the Contractor directly or indirectly,

   then the Contract Time shall be extended for such reasonable time as the Consultant may recommend in consultation with the Contractor. The

extension of time shall not be less than the time lost as the result of the event causing the delay, unless the Contractor agrees to a shorter extension. The Contractor shall not be entitled to payment for costs incurred by such delays unless such delays result from actions by the Owner, Consultant or anyone employed or engaged by them directly or indirectly provided that the Owner shall, in such instance, only be liable for reasonable costs incurred by the Contractor and shall not be liable for any other costs or damages whatsoever including, without limitation, any indirect, consequential, or special damages, such as loss of profits, loss of opportunity or loss of productivity resulting from such delay. Notwithstanding the foregoing, the Contractor shall use its best efforts to minimize the impact of such event upon the performance of the Work and Contract Time."

5. In paragraph 6.5.4, **add** "and Owner" after "Consultant" and **add** the following to the end:

"Without limiting the generality of the foregoing, the following shall also apply to the event of delay dealt with by paragraphs 6.5.1, 6.5.2 or 6.5.3:

.1 the notice provided by the Contractor as set out in this paragraph 6.5.4 shall include, without limitation, the information and documentation required by paragraph 6.1.8.

.2 the Contractor shall take all reasonable steps to minimize the impact of the delay event upon the performance of the Work, the Contract Time and the Contract Price, resume performance of all its obligations under the Contract affected by the delay as soon as practicable and use all reasonable endeavours to remedy any failure to perform.

Failure to adhere strictly to these notice provisions shall constitute a waiver and release of any obligation of the Owner to extend the Contract Time as a result of such delay and of any claim by the Contractor for costs as a result of such delay."

6. **Add** new paragraph 6.5.6 as follows:

"6.5.6 If the Work should be behind schedule for a reason other than as described in paragraphs 6.5.1 to 6.5.3 (inclusive), or if any of the Subcontractors or Suppliers or anyone for whom they are responsible delay the progress of any portion of the Work necessary to complete the Work on schedule, the Contractor shall not be relieved of its obligations under the Contract Documents and shall use all possible and, if necessary, extraordinary measures to bring the Work back on schedule. The Contractor shall exercise all reasonable means within its discretion, such as directing any Subcontractors or Suppliers creating delays to increase their labour forces and equipment, to improve the organization and expediting of the Work, or to work overtime as may be necessary. The Contractor shall provide any additional supervision, co-ordination and expediting, including overtime by its own personnel as may be required to

achieve this end. The costs and expenses incurred by the use of such measures and overtime shall be borne by the Contractor, the Suppliers and/or the Subcontractors."

SC.37 - GC 7.1 OWNER'S RIGHT TO PERFORM THE WORK, TERMINATE THE CONTRACTOR'S RIGHT TO CONTINUE WITH THE WORK, OR TERMINATE THE CONTRACT

1. In paragraph 7.1.1 **add** "or terminate the Contract" after "Work" in the third line.
2. In paragraph 7.1.2 **add** ", fails or neglects to maintain the latest Construction Schedule provided pursuant to paragraph 3.5" immediately following the word "properly" in the first line and **delete** "to a substantial degree and if the Consultant has given a written statement to the Owner and the Contractor that sufficient cause exists to justify such action."
3. In paragraph 7.1.5 **add** "or terminates the Contract" after "Work" in the first line and **add** "without prejudice to any other right or remedy which is available to the Owner" before "the Owner shall be".
4. In paragraph 7.1.5.2 **delete** "until a final certificate for payment is issued".
5. In paragraph 7.1.5.3 **delete** "; however, if such costs of finishing the Work is less than the unpaid balance of the Contract Price, the Owner shall pay the Contractor the difference".
6. **Add** paragraphs 7.1.7 to 7.1.11 as follows:

   "7.1.7 Notwithstanding any other provision in the Contract Documents, the Contract may be terminated by the Owner without cause. Any such termination shall be effected by delivery to the Contractor of a notice of termination, specifying the date upon which such termination becomes effective. The Owner's entitlement to so terminate the Contract shall be absolute and unconditional and exercisable by the Owner in its sole and absolute discretion.

   7.1.8 In the event of any termination by the Owner pursuant to paragraph 7.1.7, the Contractor shall only be entitled to payment of the following amounts:

   .1 that portion of the Contract Price relating to Work performed prior to the termination date, as certified by the Consultant; plus

   .2 Subcontractor and sub-subcontractor cancellation costs (which costs shall not include loss of profit claims) reasonably incurred by the Contractor as the result of such termination; provided the Contractor has substantiated such costs to the Owner's reasonable satisfaction and after the Owner has reviewed the details thereof; plus

   .3 subject in all cases to the Owner being informed of all details relating thereto and the prior written approval of the Owner being obtained (which approval may not be unreasonably withheld), reasonable demobilization costs defined to include equipment and

office dismantling, transportation to Contractor's storage facility, lease or rental cancellation costs, transportation of the Contractor's employees to their home offices, provided each such demobilization cost shall be reasonable and substantiated (to the Owner's reasonable satisfaction) by the Contractor.

7.1.9 Except as described in paragraph 7.1.8, the Contractor shall not be entitled to any additional reimbursement on account of any such termination including, without limitation, indirect, special, consequential or other damages, including, without limitation, loss of profits, loss of opportunity or loss of productivity, notwithstanding any other provision of the Contract Documents.

7.1.10 The terms of the Contract, which expressly or by their nature are intended to survive the termination or discharge of the Contract, shall survive such termination or discharge including, without limitation, GC 12.3 - WARRANTY.

7.1.11 Upon a termination, the Owner may publish a notice of termination in the form and manner prescribed in the *Construction Act*. For greater certainty, a termination in accordance with this GC 7.1 will be effective whether or not a notice of termination is published."

SC.38 - GC 7.2 CONTRACTOR'S RIGHT TO STOP THE WORK OR TERMINATE THE CONTRACT

1. In paragraph 7.2.2 **delete** "20" and **replace** with "60".

2. **Delete** paragraph 7.2.3.1 in its entirety and **replace** with "7.2.3.1 INTENTIONALLY DELETED".

3. In paragraph 7.2.3.2 **add** "subject to the other terms and conditions of the Contract," before "the Consultant".

4. In paragraph 7.2.3.3 **add** "subject to the other terms and conditions of the Contract," before "the Owner".

5. In paragraph 7.2.3.4 **delete** "except for GC 5.1 FINANCING INFORMATION REQUIRED OF THE OWNER".

6. In paragraph 7.2.3 **add** "and instruct the Owner to correct the default in the five (5) Working Days immediately following the receipt of such notice." at the end of the paragraph.

7. **Delete** paragraph 7.2.4. in its entirety, renumber paragraph 7.2.5 as paragraph 7.2.6 and **add** the following new paragraph 7.2.4 and new paragraph 7.2.5:

"7.2.4 If the default cannot be corrected in the 5 Working Days specified, the Owner shall be in compliance with the Contractor's instructions if the Owner:

.1 commences the correction of the default within the specified time; and

.2 provides the Contractor with an acceptable schedule for such correction, and

.3 corrects the default in accordance with such schedule.

7.2.5 If the Owner fails to correct the default in the time specified or subsequently agreed upon, without prejudice to any other right or remedy the Contractor may have, the Contractor may suspend the Work for not more than 90 days or terminate the Contract."

SC.39 - GC 8.1 AUTHORITY OF THE CONSULTANT

1. In paragraph 8.1.1 **delete** "." at the end of the sentence and **replace** with "if the Owner and the Contractor both agree. If both parties do not agree to settle the dispute in accordance with GC 8.2 - NEGOTIATION, MEDIATION AND ARBITRATION, then either party may refer the dispute to the Courts."

2. **Delete** paragraph 8.1.2 and paragraph 8.1.3 in their entirety and **replace** with the following:

"8.1.2 If a dispute is not resolved promptly, or the Owner and the Contractor cannot agree where agreement is required, the Consultant shall give such written instructions as in the Consultant's opinion are necessary for the proper performance of the Work and to prevent delays pending settlement of the dispute. The parties shall act immediately according to such instructions, it being understood that by so doing neither party will jeopardize any claim the party may have. If it is subsequently determined that such instructions were in error or at variance with the Contract Documents, the Owner shall pay the Contractor the costs incurred by the Contractor in carrying out such instructions which the Contractor was required to do beyond what the Contract Documents correctly understood and interpreted would have required, including costs resulting from interruption of the Work."

SC.40 - GC 8.2 NEGOTIATION, MEDIATION AND ARBITRATION

1. In paragraph 8.2.1 **delete** "Rules of Mediation of Construction Disputes as provided in CCDC 40 in effect at the time of bid closing" and **replace** with "Rules of Mediation and Arbitration, as applicable".

2. In paragraph 8.2.1.2 **delete** "either party by notice in writing requests" and **replace** with "both parties agree".

3. In paragraph 8.2.4 **delete** "Rules of Mediation of Construction Disputes as provided in CCDC 40 in effect at the time of bid closing" and **replace** with "Rules of Mediation and Arbitration, as applicable".

4. In paragraph 8.2.6 **delete** "Rules of Arbitration of Construction Disputes as provided in CCDC 40 in effect at the time of bid closing" and **replace** with "Rules of Mediation and Arbitration, as applicable".

5. Add new paragraphs 8.2.9 and 8.2.10, as follows:

"8.2.9 Notwithstanding anything else in this Contract, in the event of a dispute relating to payment arising prior to the completion of the Work, the parties may adjudicate such dispute in accordance with the *Construction Act*. If the Contractor issues a notice of adjudication to the Owner, it will include with such notice a description of the reasons for its dispute that includes a reference to the applicable application for payment and Proper Invoice, all Notices in Writing demanding payment, authority for the claim under the Contract (including copies of any applicable Change Order, Change Directive or written approval of any change).

8.2.10 The parties acknowledge and agree that the adjudication of a payment dispute in accordance with the *Construction Act* will not pause, withdraw, discontinue, or prejudice any mediation, arbitration, or court proceeding that relates to the same matter and that was commenced prior to the delivery of a notice of adjudication under the *Construction Act* unless the parties otherwise agree in writing."

SC.41 - GC 9.1 PROTECTION OF WORK AND PROPERTY

1. In paragraph 9.1.1 and paragraph 9.1.3, **delete** "property adjacent to the Place of the Work" and **replace** with "property adjacent to, in the vicinity of or proximate to the Place of the Work".

2. **Delete** paragraph 9.1.1.1 in its entirety and **replace** with "9.1.1.1 INTENTIONALLY DELETED"

SC.42 - GC 9.2 TOXIC AND HAZARDOUS SUBSTANCES

1. **Add** new paragraphs 9.2.10 to 9.2.14 as follows:

"9.2.10 Neither the Contractor nor anyone for whom it is responsible shall bring on to the Place of the Work any toxic or hazardous substances and materials except as needed in order to perform the Work. If such toxic or hazardous substances or materials are required, storage in quantities sufficient to allow work to proceed for fourteen (14) calendar days only shall be permitted. All such toxic and hazardous materials and substances shall be handled and disposed of only in accordance with all Laws that are applicable at the Place of the Work. Without limiting the generality of any other provision in the Contract, the Contractor shall promptly provide the Owner with Material Safety Data Sheets for such toxic or hazardous substances or materials.

9.2.11 The Contractor shall indemnify and hold harmless the Owner and Consultant and their respective officers, directors, agents and employees, independent contractors from and against any and all liabilities, costs, expenses, and claims resulting from bodily injury, including death, harm or damage to the environment, and damage to property of any person, corporation or other entity, that arises from the use by the Contractor or anyone for whom the Contractor is responsible of any toxic or hazardous substances or materials at the Place of the Work.

9.2.12 The Contractor shall be familiar with, and comply with, the workplace hazardous materials information system. The Contractor shall ensure that all employees and Subcontractors and anyone for whom they are responsible who work with or in proximity to hazardous material fully understand all potential hazards and have been thoroughly trained to deal with any emergencies. Without limiting the generality of the foregoing, all employees and Subcontractors and anyone for whom they are responsible shall be able to:

a) Recognize and understand the labelling on hazardous materials; and

b) Understand material safety data sheets and are knowledgeable on how to safely use, store, handle and dispose of hazardous materials.

9.2.13 The Contractor shall ensure all material safety data sheets pertinent to the completion of the Work are at the Place of the Work.

9.2.14 For the purposes of GC 9.2 - Toxic and Hazardous Substances, the definition of Hazardous Material shall exclude Excess Soil."

SC.43 - GC 10.1 TAXES AND DUTIES

1. **Delete** GC 10.1 TAXES AND DUTIES in its entirety and **replace** with the following:

"**GC 10.1 TAXES AND DUTIES**

10.1.1 The Contract Price shall include all taxes, tariffs and customs duties in effect at the time of the bid closing except for Value Added Taxes payable by the Owner to the Contractor as stipulated in Article A-4 of the Agreement - CONTRACT PRICE.

10.1.2 Any increase or decrease in costs to the Contractor due to changes in such included taxes, tariffs and duties after the time of the bid closing shall increase or decrease the Contract Price accordingly.

10.1.3 The Contractor shall provide a detailed breakdown of additional taxes, tariffs and duties in a form satisfactory to the Owner. Profit and overhead shall not be included in the increase or decrease in costs incurred by the Contractor due to changes in the aforementioned taxes, tariffs and duties.

10.1.4 Where an exemption or recovery of government sales taxes, tariffs, customs duties or excise taxes is applicable to the Contract, the parties agree to cooperate with each other to obtain such exemptions. Refunds that are properly due to the Owner and have been recovered by the Contractor shall be promptly refunded to the Owner. In addition, any reduction or elimination of taxes, tariffs or customs duties that take effect after the date of bid closing resulting in savings to the Contractor shall be due to the Owner in the form of a credit to the Contract Price."

SC.44 - GC 10.2 LAWS, NOTICES, PERMITS, AND FEES

1. **Delete** paragraph 10.2.2 in its entirety and **replace** with the following:

   "10.2.2. Without limiting the generality of any other provision in the Contract, the Contractor shall obtain and pay for, at its sole expense and cost, all permits, development approvals, licences, certificates, charges, refundable deposits, and approvals including, without limitation, building permit, site plan approval, water and sanitary sewer permits, water and sewer connection charges, site alteration permits, curb cut and road cut permits, sign permits, hydro approvals, and occupancy permit necessary for the performance of the Work and the use and occupation of the Work by the Owner in accordance with the Contract Documents, the cost of which shall all be included in the Contract Price."

2. **Delete** paragraph 10.2.3 in its entirety and **replace** with the following:

   "10.2.3. The Contractor shall comply, and shall require its employees, agents, Subcontractors, Suppliers and anyone for whom they are responsible to comply, with all laws, ordinances, guidelines, standards, permits, statutes, by-laws, rules, regulations, or codes and all of the Owner's policies and procedures which are or become in force and are applicable to the performance of the Work including, without limitation, all those relating to the preservation of the public health, occupational health and safety and to construction safety."

3. In paragraph 10.2.5 **delete** "The Contractor" and **replace** with "Subject to paragraph 3.4.1, the Contractor".

4. **Delete** paragraph 10.2.6 in its entirety and **replace** with the following:

   "10.2.6. If the Contractor fails to notify the Owner and the Consultant in writing, fails to obtain direction as required in paragraph 10.2.5, and/or performs work that it knows or ought to have known that contravenes any laws, ordinances, guidelines, standards, permits, statutes, by-laws, rules, regulations, or codes, the Contractor shall be responsible for and shall correct the violations thereof, and shall bear the costs, expenses, and damages attributable to the failure to comply with the provisions of such laws, ordinances, guidelines, standards, permits, statutes, by-laws, rules, regulations, or codes."

5. **Add** new paragraph 10.2.8 as follows:

   "10.2.8. Without limiting the generality of any other provision in the Contract Documents, the Contractor shall cause all certificates to be furnished that are required or given by the appropriate governmental or quasi-governmental Authorities as evidence that the Work as installed conforms with the laws and regulations of

Authorities Having Jurisdiction, including, without limitation, certificates of compliance for the Owner's occupancy or partial occupancy. The certificates are to be final certificates giving complete clearance of the Work, in the event that such governmental or quasi-governmental Authorities furnish such certificates."

SC.45 - GC 10.3 PATENT FEES

1. In paragraph 10.3.1 **add** "indemnify and" before "hold the" in the second line.

2. In paragraph 10.3.2 **add** "by the Owner" after "supplied to the Contractor."

SC.46 - GC 11.1 INSURANCE

1. **Delete** GC 11.1 INSURANCE in its entirety and **replace** with the following:

"**GC 11.1 INSURANCE**

11.1.1 Without restricting the generality of GC 12.1 - INDEMNIFICATION, the Contractor shall provide, maintain and pay for the following insurance coverage's:

1. Commercial General Liability insurance shall be with limits of not less than $2,000,000 per occurrence with an annual aggregate limit of not less than $4,000,000 within any policy year. The policy shall be maintained for at least twenty-four (24) months from the date of Substantial Performance of the Work.

   The insurance shall be in the name of the Contractor, include the Owner as an additional insured, and include bodily injury including death, personal injury, property damage including loss of use thereof, contractual liability, non-owned automobile liability, owner's and contractor's protective, products and completed operations, employer's liability, contingent employer's liability with coverage including the operations and activities of the Contractor and those for whom the Contractor is in law responsible. The policy shall contain cross liability and severability of interest clauses.

   The insurance coverage shall not be less than the insurance provided by IBC Form 2100, or its equivalent replacement, provided that IBC form 2100 shall contain the latest edition of the relevant CCDC endorsement form and shall include an endorsement with respect to sudden and accidental pollution acceptable to the Owner (including an extension for a standard provincial or territorial form of non-owned automobile liability policy) and IBC Form 2320.

   The policy will include but is not limited to the liability of the insureds arising out of their general supervision, if any, or such operations with respect to safety or otherwise, or arising out of the ownership or control of the premises on which such operations are performed.

All liability coverage shall be maintained for completed operations hazards from the date of Contract Completion on an ongoing basis for a period of six (6) years following the date of Contract Completion.

To achieve the desired limit, umbrella or excess liability insurance may be used. Subject to satisfactory proof of financial capability by the Contractor, the Owner may agree to increase the deductible amounts.

All policies of insurance shall be primary and shall not act as co-insurance or as excess coverage to any policies obtained by the Owner for its sole protection.

Prior to commencement of the Work and upon the placement, renewal, amendment or extension of all or any part of the insurance, the Contractor shall promptly provide the Owner with a certified true copy of the policy(ies) by an authorized representative of the insurer together with copies of any amending endorsements or a Certificate of Insurance on the Owner's form evidencing compliance with the policy requirements and endorsed to provide the Owner with not less than 30 days' notice in writing in advance of any cancellation, change or amendment restricting coverage.

2. Automobile insurance in respect of vehicles that are required by law to be insured under an Automobile Insurance Policy, shall have limits of not less than $2,000,000 inclusive per accident or occurrence for bodily injury, death and damage to property, covering all licensed vehicles owned or leased by the Contractor, and endorsed to provide the Owner with not less than 30 days' notice in writing in advance of any cancellation, change or amendment restricting coverage. The policy shall be maintained for at least twenty-four (24) months from the date of Substantial Performance of the Work. Where the policy has been issued pursuant to a government-operated automobile insurance system, the Contractor shall provide the Owner with confirmation of automobile insurance coverage for all automobiles registered in the name of the Contractor.

7. Standard Exclusions

7.1 In addition to the broad form property exclusions identified in IBC 4042 (1995) and 4047 (2000), the Contractor is not required to provide the following insurance coverages:

Asbestos
Cyber Risk
Mould
Terrrorism

11.1.2 Prior to commencement of the Work and upon the placement, renewal, amendment, or extension of all or any part of the insurance, the Contractor shall promptly provide the Owner with confirmation of coverage and, if required, a certified true copy of the policies certified by an authorized representative of the insurer together with copies of any amending endorsements applicable to the Work or Certificate of Insurance on the Owner's form evidencing compliance with the policy requirements and endorsed to provide the Owner with not less than 30 days' notice in writing in advance of any cancellation, change or amendment restricting coverage.

11.1.3 The parties shall pay their share of the deductible amounts in direct proportion to their responsibility in regard to any loss for which the above policies are required to pay, except where such amounts may be excluded by the terms of the Contract.

11.1.4 If the Contractor fails to provide or maintain insurance as required by the Contract Documents, then the Owner shall have the right to provide and maintain such insurance and give evidence to the Contractor and the Consultant. The Contractor shall pay the cost thereof to the Owner on demand or the Owner may deduct the cost from the amount which is due or may become due to the Contractor.

11.1.5 All required insurance policies shall be with insurers licensed to underwrite insurance, in the Province of Ontario and shall be at the approval, not unreasonably withheld, of the Owner."

11.1.6 If the Owner or the Consultant requests that any adjudicators, other consultants, experts or administrators attend the Place of the Work in order to inspect or review any part of the Work, the Owner or the Consultant shall provide the Contractor with a Notice in Writing of such attendance. The Contractor shall ensure that the Place of the Work is safe for such attendance, inspection or review, and shall accompany such persons throughout the attendance to ensure any such attendance, inspection or review is completed in a safe manner."

SC.47 - GC 11.2 CONTRACT SECURITY

1. In paragraph 11.2.2 **delete** "in accordance with the latest edition of CCDC approved bond forms" and **replace** with "substantially in the forms required under the *Construction Act* and with a surety company deemed acceptable by the Owner."

2. **Add** new paragraph 11.2.3 as follows:

"11.2.3 The Contractor shall, as part of the Contract Price, provide a Performance Bond with a face value of **50 per cent** of the Contract Price and a Labour and Material Payment Bond with a face value of **50 per cent** of the Contract Price, substantially in the form required under the *Construction Act*. The Performance Bond shall be in effect for a period of not less than two years from the earlier of (a) the date of Substantial Performance of the Work or (b) the date on which a notice in respect of the default that is the subject of a claim

under the Performance Bond is received by the surety for the Performance Bond.

The Labour and Material Payment Bond shall be in effect for a period of not less than one year after the date on which the Contractor last performed Work on the Contract, including Work performed under any warranty or guarantees provided in the Contract.

The Performance Bond and a Labour and Material Payment Bond must be submitted by the Contractor in a digital format that meets the criteria of the Surety Association of Canada (SAC) and as stated in the Contract Documents."

SC.48 - GC 12.1 INDEMNIFICATION

1. **Delete** paragraph 12.1.1 in its entirety and **replace** with the following:

"12.1.1 The Contractor shall indemnify the Owner, the Consultant and their respective officers, council members, chairs, partners, agents, employees, servants, insurers, advisors, consultants, contractors, successors and assigns (collectively the "Indemnified Parties"), and save them harmless from and against any and all claims, demands, losses, costs, damages, actions, causes of action, suits or proceedings and all other liabilities, losses and expenses including bodily injury or death to any Person, harm or damage to the environment, or loss or damage to property, court costs, interest, legal fees, adjusting fees and disbursements (collectively "claims") made against or suffered or incurred by the Indemnified Parties, directly or indirectly and which arise from or are connected with:

.1 any failure or alleged failure by the Contractor (or any Subcontractor, Supplier or anyone for whom the Contractor and/or its Subcontractors and Suppliers may be responsible) to comply with the Contract Documents including any applicable Laws or Regulations, including provincial workers' compensation laws or regulations;

.2 any infringement or alleged infringement by the Contractor (or any Subcontractor, Supplier or anyone for whom the Contractor and/or its Subcontractors and Suppliers may be responsible) of any intellectual property right including without limitation any misuse, passing off or infringement or alleged infringement of trade-marks;

.3 any defective or potentially hazardous goods used by the Contractor (or any Subcontractor, Supplier or anyone for whom the Contractor and/or its Subcontractors and Suppliers may be responsible);

.4 any form of theft, fraud, or illegal activity by the Contractor (or any Subcontractor, Supplier or anyone for whom the Contractor and/or its Subcontractors and Suppliers may be responsible) or any of their respective agents, directors, officers, or employees;

.5 any wilful act, omission or negligence of the Contractor (or any Subcontractor, Supplier or anyone for whom the Contractor and/or its Subcontractors, and Suppliers may be responsible), or any of their respective agents, directors, officers, servants, contractors or employees;

.6 any negligence by the Contractor (or any Subcontractor, Supplier or anyone for whom the Contractor and/or its Subcontractors, and Suppliers may be responsible) directly or indirectly arising or contributing to or alleged to arise out of the Contractor's performance of or the failure to perform the Work, or out of the conditions of the work, the job site, adjoining land, driveways, streets or alleys used in connection with the performance of the Work under this Contract;

.7 any negligence, errors or omissions, or monies owing to the Owner for claims payable under this indemnity due to failure of any insurance required of Subcontractors or Suppliers thereof as retained by Contractor, but shall not include any claims arising solely from the active negligence of the party asking to be defended, indemnified or saved harmless; and

.8 any failure or alleged failure by the Contractor to comply with the requirements of GC 14 - EXCESS SOIL (including, the Excess Soil Legislation and the duties and responsibilities of the Project Leader) and any orders, fines, penalties, charges, alleged offences, actions, demands, directions, or proceedings imposed or commenced by a governmental authority or third party, as applicable, and legal fees and disbursements to defend same, arising out of or attributable to the Excess Soil Legislation including, the Owner's failure or alleged failure to comply with any duties or responsibilities it may be found to have, or alleged to have, as a Project Leader."

2. **Delete** paragraphs 12.1.2 and 12.1.3 in their entirety and **replace** each with "INTENTIONALLY DELETED."

SC.49 - GC 12.2 WAIVER OF CLAIMS

1. **Delete** paragraph 12.2 in its entirety and **replace** with the following:

"**GC 12.2 WAIVER OF CLAIMS**

12.2.1 Subject to any rights or remedies provided by the *Construction Act*, as of the date of the final certificate for payment, the Contractor expressly waives and releases the Owner from all claims against the Owner including, without limitation, those that might arise from the negligence or breach of contract by the Owner except:

.1 those made in writing in compliance with the Contract Documents prior to the Contractor's application for final payment and still unsettled; and

.2 those arising from the provisions of GC 9.2 - TOXIC AND HAZARDOUS SUBSTANCES AND MATERIALS or GC 10.3 PATENT FEES

SC.50 - GC 12.3 WARRANTY

1. **Delete** paragraph 12.3.1 in its entirety and **replace** it with the following:

"12.3.1 The Contractor agrees to remedy, at its costs, any defects in materials and workmanship which are identified by the Owner within a period of 24 months (except where otherwise noted for a longer period of time in the Contract Documents) from the date of Substantial Performance of the Work (the "Warranty Period"). This warranty shall cover labour and material, including, without limitation, the costs of removal and replacement of covering materials. This warranty shall not limit extended warranties on any items of equipment or material called for elsewhere in the specifications or otherwise provided by any manufacturer of such equipment or material."

2. In paragraph 12.3.3 **delete** "one year" and **replace** with "24 months".

3. In paragraph 12.3.4 **delete** "one year" and **replace** with "24 months".

4. **Add** the following to paragraph 12.3.5:

"The carrying out of the replacement work and making good of defects shall be executed at such times as convenient with the Owner which may entail overtime work on the part of the Contractor. Additional charges for overtime work in this regard must be borne by the Contractor."

5. **Delete** paragraph 12.3.6 in its entirety and **add** new paragraphs 12.3.6 to 12.3.9:

"12.3.6 Any material or equipment requiring excessive servicing during the Warranty Period (or free maintenance period, if applicable) shall be considered defective and the warranty (or free maintenance period) shall be deemed to take effect from the time that the defect has been corrected so as to cause excessive servicing to terminate.

12.3.7 The final payment certificate shall not relieve the Contractor from its responsibility under this GC 12.3 - WARRANTY.

12.3.8 Following Substantial Performance of the Work, and without limiting the Contractor's warranty under this GC 12.3, the Contractor shall assign to the Owner, to the extent assignable, the benefit of all warranties and guarantees relating to the Work. The assignment shall expressly reserve the right of the Contractor to make any claims under such warranties and guarantees and such assignment shall in no way prejudice any rights of or benefits accruing to the Contractor pursuant to such warranties and guarantees.

12.3.9 The provisions of the GC 12.3 - WARRANTY shall not deprive the Owner of any action, right or remedy otherwise available to the Owner for the

Contractor's failure to fulfill its obligations or responsibilities under the Contract and shall not be construed as a waiver of claims in favour of the Contractor or as a limitation on the time in which the Owner may pursue such other action, right or remedy. The warranties set out in the Contract are not supplemental to and do not limit or preclude the application of any other conditions and warranties, express or implied, by law or trade usage."

6. **Add** new paragraph GC 12.4 - WARRANTY SECURITY HOLDBACK as follows:

"**GC 12.4 WARRANTY SECURITY HOLDBACK**

12.4.1 The Contractor agrees that the Owner may withhold an amount of the payments due by the Owner to the Contractor hereunder as security for the Contractor's performance of its warranty obligations hereunder (the "Warranty Holdback"). The amount of the Warranty Holdback shall be determined based on the contract price in accordance with the following table:

CONTRACT PRICE		VALUE OF WARRANTY HOLDBACK ($)
FROM ($)	TO ($)	
Less than 0.1M		4 per cent of Final Contract Price
0.1 M	0.5 M	4,000 on first 0.1 M + 3.0 per cent on next 0.4M
0.5 M	1.0 M	16,000 on first 0.5 M + 2.4 per cent on next 0.5M
1.0 M	2.0 M	28,000 on first 1.0 M + 2.2 per cent on next 1.0M
2.0 M	4.0 M	50,000 on first 2.0 M + 2.0 per cent on next 2.0M
4.0 M	6.0 M	90,000 on first 4.0 M + 1.8 per cent on next 2.0M
6.0 M	10.0 M	126,000 on first 6.0M + 1.5 per cent on next 4.0M
Over 10.0 M		186,000 on first 10.0M + 1.0 per cent on balance

For the avoidance of doubt, the Warranty Holdback shall be adjusted from time to time to account for changes to the contract price as a result of approved Change Orders and Change Directives.

12.4.2 In order to fund the Warranty Holdback, the Owner may, at its sole discretion, retain the Warranty Holdback progressively as a percentage of some or all progress payment to the Contractor, or retain a lump sum upon the achievement of Substantial Performance of the Work or, if insufficient funds have been retained at the time of Substantial Performance of the Work, retain a portion of any remaining payment owing to the Contractor, including any remaining progress payment, final or finishing work payment, or the holdback under the *Construction Act*, if any.

12.4.3 The Owner shall release the Warranty Holdback, less any amount due to the Owner by the Contractor hereunder, at the end of the Warranty Period. Notwithstanding the foregoing:

.1 after the first 12 months of the Warranty Period, the Contractor may apply for a release of 80 per cent of the Warranty Holdback, provided that balance of the Warranty Holdback shall not be below $5,000 as a result of the release and provided that there are no outstanding deficiencies at the time of the application; and

.2 The Contractor may apply in writing to the Owner at the time of Substantial Performance of the Work to substitute for the monies retained as the Warranty Holdback an alternative warranty security of equivalent or greater value comprising:

(i) one or more irrevocable letters of credit, or

(ii) another readily negotiable security.

Acceptance of any such alternative shall be at the sole discretion of the Owner.

Following receipt and acceptance of any such alternative security by the Owner, the Consultant shall release to the Contractor the monies previously retained for warranty security purposes.

The Owner may, at its discretion, allow the total Warranty Holdback to be made up in part of monies retained under the Contract and in part of an alternative warranty security as indicated in (a) and (b) above provided that the total value of such parts, as determined by the Owner, shall be not less than the required value as derived from the table set out above.

Such alternative warranty security or the monies derived therefrom, less any deductions made as provided for in the Contract, shall be released to the Contractor following the issuance by the Consultant of a Warranty Holdback Payment Certificate."

SC.51 MISCELLANEOUS

1. **Add** new PART 13 MISCELLANEOUS as follows:

"**PART 13 MISCELLANEOUS**

GC 13.1 REVIEW BY OWNER AND REVIEW BY CONSULTANT

13.1.1 Neither the Owner's and/or Consultant's receipt, review or approval of any documents or the Work nor the failure of the Owner and/or Consultant's to provide comment shall limit, waive or diminish the Contractor's obligations, responsibilities, duties or liabilities under the Contract. The review or approval by the Owner and/or Consultant is intended only to ascertain that the document or the performance of the Contractor's duties, liabilities, responsibilities or obligations under the Contract including, without limitation, the Work generally meets the intention of the Contract and is not an assurance or confirmation of the adequacy, quality, fitness, suitability or correctness of the Contractor's

obligations, responsibilities, duties and liabilities under the Contract including, without limitation, the Work, for which the Contractor is solely responsible in accordance with the Contract.

GC 13.2 CARE AND SKILL

13.2.1 The Contractor acknowledges, confirms, represents and warrants to the Owner that:

.1 in performing the Work, it shall at all times exercise the degree of care and skill that ought to be exercised by contractors in performing work of the nature contemplated herein; and

.2 it has the necessary experience, skill and expertise required to enable it to fulfill its obligations, duties, liabilities, and responsibilities herein.

GC 13.3 USE AND/OR OCCUPATION OF COMPLETED PORTIONS OF THE WORK

13.3.1 Upon the Owner's request, the Owner shall, at any time or times, have the right of occupying and/or using any part or parts of the Work (including, without limitation, for the purposes of installing and testing fittings and equipment), whether partially performed or entirely complete, or whether completed on schedule or not, before the completion of the Work.

13.3.2 In the event the Owner desires to exercise the privilege of occupancy and/or use of the Work as provided above, the Contractor shall co-operate with the Owner throughout in making available for the Owner's use such building services as heating, ventilation, cooling, water, lighting and telephone for the space or spaces to be occupied and/or used, and if the equipment required to furnish such services is not entirely completed at the time the Owner desires to occupy and/or use the aforesaid space or spaces, the Contractor shall make every reasonable effort to complete same as soon as possible to the extent that the necessary equipment can be put into operation and use and any extra cost beyond that originally required to complete the Work arising from such early occupancy and/or use shall be borne by the Owner.

13.3.3 In the event that the Owner exercises the privilege of occupancy and/or use of the Work as provided above, it agrees to do so, so as not to materially interfere with the respective work of the Contractor, Subcontractors or Suppliers and under the understanding that the Owner will be occupying premises within a construction site which will require compliance with all normal construction site requirements including, without limitation, health and safety requirements.

13.3.4 It shall be understood, however, that the Owner's occupancy and/or use of such space or spaces of the Work shall not constitute the Owner's acceptance of any Work, materials or equipment which are not in

accordance with the requirements of the Contract Documents, nor affect the warranty period under the Contract, nor relieve the Contractor from his obligations, duties, responsibilities, and liabilities to complete the Work, nor for responsibility for loss or damage due to or arising out of defects in, or malfunctioning of, any Work, material or equipment, nor from any other unfulfilled duties, liabilities, obligations or responsibilities under the Contract nor from any other duty, liability, obligation or responsibility under the Contract including, without limitation, the Contractor's warranty obligations. If, however, damage results from any act by the Owner, the Owner shall assume its share of the responsibility for such damage.

GC 13.4 NON-INTERFERENCE

13.4.1 The Contractor acknowledges that the Place of the Work is and will continue to be occupied by the Owner and the Owner will continue to carry out its normal operations at the Place of the Work. The Contractor agrees to perform the Work in the least intrusive manner possible. Without limiting the generality of the foregoing, the Contractor acknowledges and agrees that it shall carry out its duties, responsibilities, and obligations under the Contract in such a manner so as not to disrupt or interfere with any of the Owner's or any third party's existing facilities and ongoing operations or activities or other operations located in the area adjacent to, in the vicinity of or proximate to the Place of the Work.

GC 13.5 LIQUIDATED DAMAGES

13.5.1 It is expressly agreed by the parties that if the date of Substantial Performance of the Work occurs later than the Substantial Performance Date, the Contractor shall pay to the Owner liquidated damages calculated as **$100.00** for each calendar day that Substantial Performance of the Work extends beyond the Substantial Performance Date. It is expressly agreed that it is difficult to calculate the damages which would result from the Contractor's failure to attain Substantial Performance of the Work by the Substantial Performance Date, and the parties agree that the liquidated damages are not intended to be penalties but rather represent the parties' best estimate of damages resulting from the delay.

13.5.2 In the event that the Consultant reasonably determines that the Contractor is not progressing in accordance with the Construction Schedule with the result that the Contractor will not achieve Substantial Performance of the Work by the Substantial Performance Date, the Owner will commence to hold back amounts from payments due to the Contractor totalling an amount sufficient to cover the Consultant's estimate of liquidated damages that may be payable pursuant to paragraph 13.5.1. In the event that the Owner hold backs more than is owed pursuant to paragraph 13.5.1, it shall forthwith pay such excess to the Contractor.

13.5.3 The Owner may deduct any amount due under this paragraph from any monies that may be due or payable to the Contractor on any account whatsoever. The liquidated damages payable under this paragraph are in addition to and without prejudice to any other remedy, action or other right that may be available to the Owner.

GC 13.6 DAMAGES AND MUTUAL RESPONSIBILITY

13.6.1 If either party to the Contract should suffer damage in any manner because of any wrongful act or neglect of the other party or of anyone for whom the other party is responsible in law, then that party shall be reimbursed by the other party for such damage. The reimbursing party shall be subrogated to the rights of the other party in respect of such wrongful act or neglect if it be that of a third party.

13.6.2 Claims for damage under paragraph 13.6.1 shall be made in writing to the party liable within reasonable time after the first observance of such damage and if undisputed shall be confirmed by Change Order. Disputed claims shall be resolved as set out in Part 8 for the General Conditions - DISPUTE RESOLUTION.

13.6.3 If the Contractor has caused damage to the work of another contractor on the Project, the Contractor agrees upon due notice to settle with the other contractor by negotiation or arbitration. If the other contractor makes a claim against the Owner on account of damage alleged to have been so sustained, the Owner shall notify the Contractor and may require the Contractor to defend the action at the Contractor's expense. The Contractor shall satisfy a final order or judgement against the Owner and pay the costs incurred by the Owner arising from such action.

13.6.4 If the Contractor becomes liable to pay or satisfy a final order, judgment, or award against the Owner, then the Contractor, upon undertaking to indemnify the Owner against any and all liability for costs, shall have the right to appeal in the name of the Owner such final order or judgment to any and all courts of competent jurisdiction.

GC 13.7 RIGHT OF SET-OFF

13.7.1 The Owner has the right to set-off against the balance due or to become due to the Contractor under the Contract, any reasonable and substantiated amounts due or to become due from the Contractor to the Owner under the Contract.

GC 13.8 SOFTWARE

13.8.1 Without limiting the generality of any other provision in the Contract, the Contractor, as a part of the Work, shall supply and install all software required by the Contract Documents or included with any systems required by the Contract Documents (“Software”). The Contractor shall grant or obtain a perpetual, irrevocable non-exclusive royalty-free license to use the Software sufficient for the Owner’s purposes.”

GC 13.9 SEVERABILITY

13.9.1 If, in any jurisdiction, any provision of the Contract or its application to any party or circumstance is restricted, prohibited or unenforceable, the provision shall, as to that jurisdiction, be ineffective only to the extent of the restriction, prohibition or unenforceability without: (i) invalidating the remaining provisions of the Contract; (ii) affecting the validity or enforceability of such provision in any other jurisdiction; or (iii) affecting its application to other parties or circumstances."

SC.52 EXCESS SOIL

1. **Add** new PART 14 EXCESS SOIL, as follows:

"**PART 14 EXCESS SOIL**

GC 14 EXCESS SOIL

14.1 The Contractor shall determine if the Excess Soil Legislation applies to the Work or the Project and shall provide the Owner with immediate written notice of such determination. For clarity, the Contractor acknowledges and agrees that this is an ongoing obligation of the Contractor during the performance of the Work.

14.2 If the Excess Soil Legislation applies to the Work or the Project, the Contractor, at the Contractor's cost and expense, shall:

i) be solely responsible for compliance with the requirements of the Excess Soil Legislation during the performance of the Work; and

ii) perform the Work in accordance with, and subject to, the Excess Soil Legislation and the Contract Documents

14.3 Without restricting the generality of any other provision in the Contract Documents:

i) for the duration of the Project, until Contract Completion, in respect of the Work, the Project and the Place of the Work, the Contractor shall carry out, and fulfill, the duties and responsibilities of the Project Leader in accordance with the requirements of the Excess Soil Legislation;

ii) the Contractor's responsibilities under paragraph 10.2.2 include procuring, and, as a part of the Contract Price, paying for, all permits, approvals, registrations and disposal fees, costs and expenses required by the Excess Soil Legislation; and

iii) the documents at the Place of the Work referred to in paragraph 3.9.1 include, all documents evidencing that the Work complies with the Excess Soil Legislation and such other documents as required by the Excess Soil Legislation.

14.4 For clarity, this GC 14 - EXCESS SOIL is applicable to Excess Soil, even when such Excess Soil differs materially from those indicated in the

Contract Documents or is of a nature which differs materially from those ordinarily found to exist and generally recognized as inherent in construction activities of the character provided for in the Contract Documents.

14.5 This GC 14 EXCESS SOIL does not limit, and is in addition to, any other responsibility or liability of the Contractor in connection with the Contract."

Appendix 5.1

AGREEMENT TO BOND

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

In a Performance Bond totalling **50 per cent** of the Contract amount and a Labour and Material Payment Bond totalling **50 per cent** of the Contract amount, substantially in the forms required under the *Construction Act* and conforming to the Instruments of Contract attached hereto, for the full and due performance of the Works shown as described herein, if the Tender for

is accepted by the Owner.

It is a condition of the Contract that if the above-mentioned Tender is accepted by the Agency, application for a Performance Bond and a Labour and Material Payment Bond, each in the amount of **50 per cent** of the Contract amount, and each substantially in the forms prescribed by the *Construction Act*, must be completed with the undersigned within 7 days of acceptance of Tender related thereto, otherwise this Agreement shall be null and void.

Dated this _____day of _____, _____.

_____
Name of Bonding Company

_____
Signature of Authorized Person Signing
for Bonding Company (Company Seal)

_____
Position

1. GENERAL

1.1 General

1.1.1 Work in this Specification is divided into descriptive Sections which are not intended to identify absolute contractual limits between subcontractors, nor between the Contractor and their subcontractors. The Contractor is responsible for organizing division of labour and supply of materials essential to complete the Contract.

1.1.2 The Specifications and Contract Drawings are complementary and items mentioned or indicated on one may not be mentioned or indicated on the other.

1.1.3 Mention in the Specifications or indication on the Contract Drawings of materials, products, operations, or methods, requires that the Contractor provide each item mentioned or indicated of the quality or subject to the qualifications noted; perform according to the conditions stated each operation prescribed; and provide labour, materials, products, equipment and services to complete the Work in all respects on both the sites.The work is to be performed in occupied building on both the sites.

1.1.4 Project Locations and Details:

Project Location	Project Description	Address	Contract Drawings Reference
1	Gender Neutral Changeroom at Tomken and Rising Hill, both Reporting Stations of Peel Regional Paramedic Services (PRPS),	6825 Tomken Road Mississauga ON L5T 1N4.	A01, A02, A03, A04, M01, M02, M03, M04, E01, E02, E03, E04, E05, E06
2		25 Rising Hill Ridge Brampton ON L6Y 0C3	A01, A02, A03, A04, M01, M02, M03, M04, E01, E02, E03, E04,

1.2 A. Scope of Work (For Tomken)

Provide all labour, material, products, equipment and services for demolition, removal, installation of new walls, painting, wall and floor tiles, plumbing, HVAC, power and lighting, sprinklers, fire alarm system and other project work as per the Contract Drawings listed under the item 1.1.4 above for both the project locations. Work under this Project includes, but is not limited to the following:

1.2.1 Demolish existing partion walls, existing acoustic ceiling tiles washroom partitions, toilet, urinal, existing sanitary napkin dispenser, sanitary bin etc. complete with accessories and dispose off site.

1.2.2 Remove and dispose of existing ceramic cove base and floor ceramic tiles complete with mortar bed to expose existing base

surface for installation of new ceramic tiles with tile cove in the corridor.The size of the floor tile will be 12”x24”.

1.2.3 Remove the exiting flooring and provide new epoxy non-slip flooring in rooms 0204 barrier free water closet (B/F WC), 0204a (Gender-Neutral W/C and 0205 (Gender-Neutral W/C and Shower). Terminate cove base 200mm high cove feather out and trim evenly along wall to provide smooth transition with adjacent wall finish.

1.2.4 All the existing wall (EW1 to EW6) will receive new ceramic title upto the full height. The size of the ceramic wall tile should be in size 4” x 16”. All the four walls in the room will have full height tiles. New partition wall will have tiles on both sides and full height from floor to ceiling.

1.2.5 Remove and dispose of the existing lighting fixtures.

1.2.6 Remove and re-locate existing kitchenette millwork. Cap and shut off water plumbing as required.

1.2.7 Supply and install Roll-in shower stall with complete accessories with textured non-slip floor.

1.2.8 Supply and install all the washroom accessories such as grab bars, folding bench, soap dispeser, paper towel dispensers, waste receptacle bins etc..

1.2.9 Provide new acoustic ceiling panel system complete with galvanized steel suspension system and accessories. Colour to match existing

1.2.10 Paint all walls, doors and frames (both new and existing walls and doors from both sides.

1.2.11 Supply and install hollow metal doors with hardware including Automatic Door Operator (ADO) on the door shown on the Contract Drawings.

1.2.12 Supply and install of horizonal wall mounted adult changing station.

1.2.13 Supply and install new free standing single tier metal lockers. The lockers should be from General Storage Systems Canada..No substitution is permitted.

1.2.14 All new plumbing fixtures shall be supplied and installed with all required supports, accessories, drainage, vent and water connections to make the fixtures complete. All the fixtures to be used on this project shall be white or as selected by the Consultant.

1.2.15 Supply and install tilt mirror above all lavatories and duplex power receptacles.

1.2.16 Supply and installation of air supply ducts with diffusers. Complete the air balancing and provide report to the Consultant.

1.2.17 Replace and re-locate all the existing sprinkler heads to the proposed new location as shown on the Contract Drawings. Modify the sprinkler piping as required.

1.2.18 Supply and install new luminaires, conduit, wiring, switches and all other accessories required. All the electrical cable to be used on this project shall be copper and inside conduit. Minimum size of the conduit: 21mm.

1.2.19 Supply and install washroom signage. Shall be paid from Cash Allowance.

1.2.20 All the materials/components to be used on this project shall be new. Materials/Components removed from site shall not be used any where. All materials/components removed shall be legally disposed off site.

1.2.21 It is intended that the Work supplied under these Contract Documents at the Project locations shall be complete and fully operational in every detail for the purpose required. Include materials not herein mentioned, but which may be found necessary to complete or perfect any portion of the Work in accordance with the Contract Documents.

B. <u>Scope of Work (For Rising Hill)</u>

Provide all labour, material, products, equipment and services for demolition, removal, installation of new walls, painting, wall and floor tiles, plumbing, HVAC, power and lighting, sprinklers, fire alarm system and other project work as per the Contract Drawings listed under the item 1.1.4 above for both the project locations. Work under this Project includes, but is not limited to the following:

1.2.1 Demolish existing partion walls, existing acoustic ceiling tiles washroom partitions, toilet, urinal, existing sanitary napkin dispenser, sanitary bin etc. complete with accessories and dispose off site.

1.2.2 Remove and dispose of existing ceramic cove base and floor ceramic tiles complete with mortar bed to expose existing base surface for installation of new ceramic tiles with tile cove in the corridor.The size of the floor tile will be 12”x24”.

1.2.3 Remove the exiting flooring and provide new epoxy non- slip flooring in room 0204 (Gender-Neutral W/C and Shower). Terminate cove base 200mm high cove feather out and trim evenly along wall to provide smooth transition with adjacent wall finish.

1.2.4 All the existing walls in room 0204 (Gender-Neutral W/C and Shower) will receive new ceramic title up to the full height. The size of the ceramic wall tile should be in size 4” x 16”. All the four walls in the room will have full height tiles. New partition wall will have tiles on both sides and full height from floor to ceiling.

1.2.5 Remove and dispose of existing lighting fixtures.

1.2.6 Supply and install Roll-in shower stall with complete accessories with textured non-slip floor.

1.2.7 Supply and install all the washroom accessories such as grab bars, folding bench, soap dispeser, paper towel dispensers, waste receptacle bin etc..

1.2.8 Provide gypsum board to make gypsum board ceiling in room 0204 (Gender-Neutral W/C and Shower) continuous.

1.2.9 Paint all walls, doors and frames (both new and existing walls and doors from both sides.

1.2.10 Supply and install hollow metal doors with hardware on the door shown on the Contract Drawings.

1.2.11 Supply and install new free standing single tier metal lockers. The lockers should be from General Storage Systems Canada.No substitution is permitted.

1.2.12 All new plumbing fixtures shall be supplied and installed with all required supports, accessories, drainage, vent and water connections to make the fixtures complete. All the fixtures to be used on this project shall be white or as selected by the Consultant.

1.2.13 Supply and install tilt mirror above all lavatories and duplex power receptacles.

1.2.14 Supply and installation of air supply ducts with diffusers. Complete the air balancing and provide report to the Consultant.

1.2.15 Replace and re-locate all the existing sprinkler heads to the proposed new location as shown on the Contract Drawings. Modify the sprinkler piping as required.

1.2.16 Supply and install new luminaires, conduit, wiring, switches and all other accessories required. All the electrical cable to be used on this project shall be copper and inside conduit. Minimum size of the conduit: 21mm.

1.2.17 Supply and install washroom signage. Shall be paid from Cash Allowance.

1.2.18 All the materials/components to be used on this project shall be new. Materials/Components removed from site shall not be used any where. All materials/components removed shall be legally disposed off site.

1.2.19 It is intended that the Work supplied under these Contract Documents at both the Project locations shall be complete and fully operational in every detail for the purpose required. Include materials not herein mentioned, but which may be found necessary to complete or perfect any portion of the Work in accordance with the Contract Documents.

1.3 **Submittals**

Be prepared to submit the shop drawings, operation and maintenance data, maintenance materials, samples of any or all specified materials, as reasonably requested by the Consultant/Agency. The Contractor shall not purchase any equipment unless Shop Drawings are reviewed and approved in writing by the Consultant.

1.4 **Job Conditions**

1.4.1 Report in writing to the Consultant, prior to commencing work, any conditions or defects encountered on the site, upon which the Work depends, and which may adversely affect the performance of the Work.

1.4.2 Do not commence work until such conditions or defects have been investigated and corrected.

1.4.3 Commencement of the Work implies acceptance of surfaces and conditions. No claim for damages or resulting extra work will be

accepted except where such conditions cannot be determined prior to construction.

1.4.4 The Contractor is to be responsible for making good, repair and restoration of existing conditions. In all cases, blend with existing conditions.

1.4.5 Any item not specifically mentioned in the following Specifications or shown on the Contract Drawings but is implied or required to complete the Work will be included in the Contract Price.

1.4.6 Life safety system shall always be operational throughout the construction.

1.5 **Utilities**

The Contractor is responsible for all damage and subsequent repair to utilities resulting from their operations.

1.6 **Site Inspection**

1.6.1 Determine all conditions, difficulties and limitations that may be encountered and may affect the performance of the Work before the commencement of Work.

1.6.2 Verify all dimensions and requirements that will affect the execution of the Work as specified.

1.6.3 Failure to follow this procedure does not relieve the Contractor from their responsibilities to carry out the Work in accordance with the Contract Documents at the awarded Contract Price.

1.6.4 Contract Drawings are, in part, diagrammatic and are intended to convey the Scope of Work and indicate general and approximate locations and arrangements of the Work. Contract Drawings do not show all details, construction types and all other building elements built into the existing project. The Consultant is not responsible for accurate presentation of the existing building construction. Obtain more accurate information about locations, arrangements and sizes from study and co-ordination of Contract Drawings and site conditions. Become familiar with every condition affecting these matters before proceeding with the Work.

1.6.5 Contract Drawings and Specifications complement each other, and neither is to be considered alone. Hence, any item omitted in one, but mentioned or implied in the other must be provided at no extra cost to the Agency.

1.7 **Contractor's Use of Site**

1.7.1 Limit areas for work and storage as directed on site by the Agency.

1.7.2 Maintain free access route for ambulance, fire, and garbage trucks.

1.7.3 Do not disconnect any services without prior written authorization by the Agency. Notify the Agency in writing at least 72 hours in advance of planned interruption to existing services. Restore all interrupted plumbing and electrical services at the end of each working day.

1.7.4 Garbage bins, if required, shall be arranged by Contractor, and will be placed on site at the direction of the Agency.

1.7.5 Maintain existing fire main and water supplies at all times during construction.

1.7.6 Coordinate and provide necessary services, access, exiting and other facilities as required.

1.8 **Applicable Standards**

All work shall be done in strict compliance with the National Building Code of Canada, Ontario Building Code (OBC), Ontario Fire Code (OFC) the Electrical Safety Code (ESC), and all local and municipal by-laws and requirements. All components of the system shall be ULC listed and labelled. Material shall meet current ASTM and ANSI Standards

1.9 **Warranty**

1.9.1 Provide **On-Site Warranty** for 2 years for parts, equipment, and labour from the date of Substantial Performance of the Project. The Warranty service shall be provided with a guaranteed response time of twenty-four hours.

1.9.2 Make good promptly, without any expense to the Agency, any defects which occur during the entire warranty period.

1.9.3 Prior to the end of the one-year and two-year warranty periods following the date of Substantial Performance of the Work, perform with the Agency inspections of the Work and review any defects or deficiencies which have been observed and reported during that period. Perform appropriate repairs to the Work in accordance with the Contract Documents.

1.9.4 The warrantees shall in no way supplant any other warrantees of a longer period.

1.10 **Work Schedule**

1.10.1 Immediately upon award of Contract and pre-construction meeting, Contractor shall submit all the shop drawings within two weeks to the Consultant for approval and ordering before the start of construction.

1.10.2 Time is of the essence. The Project must be Substantially Performed on or before **January 15, 2024** and must be completed in all respects by **February 16, 2024**. No extension of time shall be allowed.

1.10.3 All Work under this Project shall be carried out during the normal business hours between 7:00 am to 3:00 pm. The Work will be performed in the occupied building.

1.10.4 Work must be carried out and completed in a continuous period. Be prepared to reschedule some work due to Agency's daily operations and activities without any additional cost to the

1.10.5 The Consultant will issue one Substantial Completion Certificate (Form-9) covering both the sites upon Substantial Performance of Work.

1.10.6 Once the Work has started, it must be carried out and completed in a continuous time.

1.10.7 Work shall be executed concurrently at both the facilities.

1.11 **Qualifications of Contractors and Workers**

1.11.1 Workers shall be skilled trades workers, thoroughly trained, possessing a document of apprenticeship in trade performing under this Contract.

1.11.2 At any time, should the Work be unsatisfactory in the Agency's opinion, such document of proof of the worker's experience must be presented or the worker replaced.

1.11.3 Give particular attention to finished dimensions and elevations of the Work. Make finished work fit indicated spaces accurately. Make finished work flush, plumb, true to lines and levels and accurate in all respects.

1.12 **Permits, Inspection and Approval Certificates**

1.12.1 The building permit will be obtained by the Agency for this Project including payment of permit fees. The Contractor shall be responsible for all other inspections and certificates, as required by the local municipality or testing agencies. Pay all associated costs to the authorities.

1.12.2 Comply with all laws, ordinances, rules, and regulations relating to the Work and to the preservation of the public health.

1.12.3 Be responsible for the safety of all workers and equipment on the project in accordance with all applicable legislation.

1.12.4 The Contractor shall be responsible for all inspections by the City and close-out of building permits immediately after the completion of the Project. Provide written confirmation to Consultant/Agency on permit closure.

1.13 **Health and Safety**

1.13.1 For the purpose of the Contract, the term "Constructor" as defined in the *Occupational Health and Safety Act* shall mean the Contractor who will be responsible for ensuring that the provisions of the statutes, regulations and by-laws pertaining to safe performance of the Work are to be observed.

1.13.2 The Contractor will ensure that all the measures and procedures prescribed in the following Acts and Regulations are carried out on both the sites:

.1 The *Occupational Health and Safety Act*.

.2 The Regulations for Construction Projects.

.3 Workplace Hazardous Materials Information Systems WHMS Regulations.

.4 The *Environmental Protection Act* and Regulations.

.5 All other legislation, regulations, and standards as applicable.

1.13.3 In the event of conflict between any of the provisions of statues, regulations and by-laws, and other requirements of authorities, the most stringent provision applies.

1.13.4 Every employer and every worker performing work on the Site must comply with the requirements above. Ensure that the health and safety of workers, employees of the Agency and public are protected in relation to the Work performed on the Site.

1.13.5 Maintain on site for the entire duration of the project, a hazardous material log containing all required Material Safety Data Sheets (MSDS). Log shall be open for inspection by the Agency, Consultant, and all personnel on the Site. Provide copies of MSDS for any controlled products prior to delivery to the site.

1.13.6 The Contractor will provide proof that staff working on site have a valid "working at height" training before start of Work.

1.14 **Regulatory Requirements**

1.14.1 The Contractor will comply with acceptable standards of the materials and performance of Work in accordance with codes and standards referred to in the Specification.

1.14.2 Comply with all by-laws and regulations of authorities having jurisdiction. These codes and regulations constitute an integral part of the Contract Documents.

1.14.3 In the event of conflict between Contract Documents specified herein, execute the Work in accordance with the most stringent requirements.

1.15 **Quality Control**

1.15.1 The Contractor will be responsible for quality control methods and procedures to ensure performance of the Work in accordance with the Contract Documents.

1.15.2 The Contractor is responsible for layout and survey for setting out the Work. Prior to setting out the Work, verify dimensions and elevations shown on the Contract Drawings and report to the Consultant any unsatisfactory conditions that may adversely affect the proper completion of the Work.

1.15.3 The Contractor will set-up and maintain permanent reference points and be responsible for accuracy of such reference points. Establish lines and levels required for the performance of the Work.

1.16 **Temporary Facilities and Controls**

1.16.1 Hoarding, Fencing and Barriers:

.1 Prevent unauthorised entry to the construction site. Barricade, guard, or lock access points to the satisfaction of the Consultant / Agency.

.2 Install signs for movement of the people and vehicles around the Site as required by the Consultant / Agency.

.3 Remove fencing, barriers, and barricades upon Contract completion.

1.16.2 Scaffolding, Hoists, and other lifting devices:

.1 Select, operate, and maintain scaffolding and hoisting equipment as required to perform the Work and as directed by the Consultant/ Agency..

.2 Design and construct scaffolding in accordance with CAN/CSA S269.2-M.

.3 Take precautions to prevent the overloading of formwork and scaffolding or other temporary structures during the progress of the Work.

1.16.3 First-Aid Facilities: Provide site equipment and medical facilities necessary to supply first-aid service to injured personnel in accordance with regulations of the *Workman's Compensation Act*. Maintain facilities for the entire duration of Contract.

1.17 **Shop Drawings / Samples**

1.17.1 Submit the shop drawings as reasonably requested by the Consultant. The shop drawings must indicate the names and phone numbers of the manufacturer. All the dimensions shall be in metric. Allow 2 weeks for the Consultant's review of each submission.

1.17.2 Drawings submitted by the Contractor as required herein are the property of the Agency who may use and duplicate such drawings where required in association with the Work.

1.17.3 Submissions shall include one copy in electronic format (PDF is acceptable). However, in instances where catalogue items are specified, 2 clean copies of the manufacturer's catalogue may be submitted.

1.17.4 Be prepared to submit samples of any or all specified materials if requested by the Agency.

1.18 **Additional Work and Changes**

Unless through written order reviewed by the Consultant and countersigned or otherwise approved by the Agency's representative, no additional work shall be undertaken by the Contractor.

1.19 **Access to Place of Work**

The Work must be performed in an occupied area. Contractor shall co-ordinate with Agency for access card and key requirements.

1.20 **Contractor's Site Office**

Office space and telephone will not be provided by the Agency.

1.21 **Washroom Facilities**

Contractor will provide and maintain portable toilet on site in compliance with *Occupational Health and Safety Act* for use by the workmen of the Contractor.

1.22 **Parking**

Limited parking may be allowed on site. Location and number of parking spots shall be at the direction of the Agency.

1.23 **Power and Water**

The Agency will provide temporary electric power and water for construction. The electric power will be supplied through existing 120V, 15A receptacles. If additional power source is required, Contractor shall coordinate with the Agency and arrange for at Contractor's expense. Standard 12.5 mm exterior hose bibs are available for water.

1.24 **Site Signs**

Contractor's site signs are not permitted.

1.25 **Safety Signs**

Provide safety signs and boards for attention to staff and visitors.

1.26 **Responsibility for Temporary Structures**

Contractor is responsible for erecting the temporary structures, as required on site, to perform the work on all the sites. Contractor will take precautions to prevent the overloading of formwork and scaffolding and all the other temporary structures constructed during the progress of the Work. Contractor is responsible for removal of the temporary structure to the satisfaction of the Agency immediately after completion of the Work.

1.27 **Fire Protection**

1.27.1 Take precautions to prevent fires. Provide and maintain temporary fire protection equipment of a type appropriate to the hazard anticipated in accordance with authorities having jurisdiction, governing codes, regulations, by-laws and to the satisfaction of the Consultant and insurance authorities.

1.27.2 Provide and maintain fire extinguishers and accessories as required on the site. All fire protection measures shall have the approval of all prevailing regulations.

1.27.3 Obtain hot work permit in advance from the Agency as and when required. Provide sufficient notice to the Agency in the event of fire alarm shutdowns.

1.27.4 Fire detection system shall be put in by-pass during hot work or as required during the project execution. During the construction, the Contractor will co-ordinate with the City and Fire Monitoring Company for by-passing and re-activating the fire detection system, as required.

1.28 **Project Supervision and Coordination**

1.28.1 Take reasonable measures to control noise and dust during construction. Control execution of all work to minimize interference of occupants' use of the building. Be responsible for workers' activities while on the site.

1.28.2 Keep at the job site at least one copy, including all amendments, of each of the following:
- .1 Contract Drawings.
- .2 Specifications.
- .3 Change Orders.
- .4 Daily records of all work performed.
- .5 Proof of WHMIS training for all site personnel.
- .6 Product data sheets to meet the WHMIS requirements.
- .7 *Occupational Health and Safety Act*, latest edition.
- .8 Project Work Schedule.

1.28.3 Notify all staff and subcontractors that the Contractor is entirely responsible for site safety. No actions or lack of action by the Agency or Consultant shall be deemed to be an instruction related to safety of the workplace.

1.28.4 Contract Drawings are intended to convey the Scope of Work and indicate general and approximate locations and arrangement of Work. Verify all lines, levels and dimensions shown and report all discrepancies to the Consultant before commencing the Work.

1.29 **Material Delivery and Storage**

1.29.1 Deliver materials in original bundles, packages, and containers. Take particular care that materials are carefully handled to prevent damage to new and existing work. Storage space will not be provided by the Agency.

1.29.2 Do not install damaged materials. Remove all damaged materials promptly from the project site.

1.29.3 Agency will not accept any delivery on behalf of the Contractor.

1.29.4 Deliver, store, and handle material in accordance with manufacturer's written instructions.

1.29.5 Store material in dry location preferably indoor, off ground and in accordance with the manufacturer's recommendations in clean, dry, and well-ventilated area.

1.29.6 Store and protect Air Conditioner's from nicks, scratches, and blemishes.

1.30 **Cleaning and Isolation of Work Area**

1.30.1 Remove all materials, equipment and debris from the property and leave the premises clean and tidy to the Agency's satisfaction. If the site is not kept clean, the Agency reserves the right to have the site cleaned at the Contractor's expense from the outstanding amount owed plus administration.

1.30.2 All debris must be removed from the premises and taken to an authorized disposal area at the Contractor's expense at the end of each day's work. Use of the Agency's garbage container is strictly prohibited.

1.31 **Cutting, Patching and Remedial Work**

1.31.1 Provide labour, products, equipment, services, and tools necessary for cutting, patching and remedial work affected by the Work.

1.31.2 Where existing work is to be made good, match new work exactly with the existing work in material, construction, and finish to the satisfaction of the Agency.

1.31.3 Where existing work is to be made good, there shall be no visible difference in appearance, performance or aesthetics between the existing work and the new work at 3 metres from the surface being made good.

1.31.4 Properly prepare surfaces to receive patching, finishing, and painting.

1.32 **Fire Barriers**

1.32.1 Where the conduit or devices are required to pass through fire rated separations, make penetrations and provide fire barrier seals with a fire resistance rating equivalent to the rating of the separation. Seal all the penetrations to the satisfaction of the Consultant.

1.32.2 Prior to installation, submit for review, proposed fire barrier seal materials, method of installation and ULC system number.

1.32.3 Acceptable Manufacturer: 3M or approved equivalent.

1.33 **Sleeve and Formed Opening Location Drawings**

1.33.1 Prepare and submit the drawings to the Consultant for review indicating all required sleeves. Such drawings shall be accurately dimensioned and shall relate sleeves, recesses and formed openings to suitable grid lines and elevation datum. Contractor shall submit such drawings immediately upon the award of Contract.

1.33.2 Make all modifications to locations as directed by the Consultant at no extra cost to the Agency.

1.34 **Final Cleaning**

1.34.1 In addition to progress cleaning, work shall include final cleaning by skilled cleaning specialists on completion of the Project.

1.34.2 Final cleaning shall remove dust, stains, paint spots, soil, grease, and accumulations of construction materials. Work shall be done in accordance with manufacturer's instructions for each material.

1.35 **Pre-Construction Meetings**

Attend a pre-construction meeting, arranged, and conducted by the Agency and Consultant. Provide at the pre-construction meeting the baseline construction schedule developed using MS Project for review and approval by the Consultant/Agency. Upon commencement, provide updated monthly schedules demonstrating any variances/delays. Prepare and distribute minutes of all meetings.

1.36 **Site Mobilization, Site Protection and Demobilization**

1.36.1 Mobilization - Provide all the necessary labour, equipment, scaffolding, and materials necessary to mobilize and provide site safety and administration for the Work on site and to conform to all requirements in the Contract Documents. The Contractor is to provide safe access to all building entrances and exits for the

duration of construction. The Contractor is to include for installing all required fencing and barricades, overhead protection at work area locations coinciding with pedestrian walkways, and signage as required by the Ministry of Labour (MOL).

1.36.2 Site protection – The Contractor is to protect all Work areas from possible damage caused or incurred during the construction process. Any damages that are caused shall be repaired at the Contractor's expense. The Contractor is to provide protection to all areas as required to complete the specified work including roof.

1.36.3 Building Protections – Any damages to building equipment, roof and office finishes shall be repaired at the Contractor's expense.

1.36.4 Demobilization - Demobilization to include the removal of all tools and equipment necessary to conform to all requirements as specified in the Contract Documents. The demobilization also includes the thorough cleaning of the Work area prior to the Consultant and the Agency's final review for final acceptance of the Work. This includes the removal of all temporary protection, equipment, waste, and surplus materials from site and leave in neat, tidy condition to the satisfaction of the Agency.

1.36.5 Carry out all the Work in strict accordance with *Occupational Health and Safety Act.*

1.37 **Product Substitutions**

Lump-Sum Contract Price must be based on specified products in the Contract Documents. Proposals for alternate products may be submitted in writing to the Consultant, only after award of the Contract. No alternates will be permitted without prior written approval from the Consultant and the Agency. The Contract price will be adjusted accordingly to all credits arising from any alternates, if accepted and approved, by the Consultant/Agency.

1.38 **Progress Meetings**

Attend regularly scheduled progress meetings every two weeks to be held on site at times and dates that are mutually agreed to by the Agency, Consultant and Contractor.

1.39 **Progress Payments**

Upon award of Contract, the Contractor shall submit a complete breakdown of the Contract for approval by the Consultant/Agency. With each progress billing, the Contractor will indicate percentage of work complete, in the form acceptable to the Agency/Consultant.

1.40 **Red Line Drawings**

1.40.1 Mark in coloured ink on a set of whiteprints, which will be provided, every change and deviation from other services where they are shown on Contract Drawings, so that on completion of the job the red line drawings shall indicate the changes as actually installed. Red line drawings shall be kept at the Project site and shall be kept up to date as the work progresses. Submit

completed red line drawings before final certificate of job acceptance is issued.

1.40.2 Upon completion of the Work, the red line drawings shall be submitted to the Consultant for review and production of Record Drawings for the Agency.

1.41 **Progress Photographs**

1.41.1 Submit the progress photographs at the following milestones:
- .1 at 50% demolition work.
- .2 at the completion of demolition work
- .3 at 25%, 50% and 100% work completion.

1.41.2 Photo Print Size: 100mm x 150mm (4" x 6")

1.41.3 Total number of Photographs: 20 for each facility.

1.42 **Final Inspections and Close Out**

The close-out document should have the following documents for each site seprately:

1.42.1 Approved copy of shop drawings.
1.42.2 Operation and maintenance manuals.
1.42.3 ESA and all other testing certificates.
1.42.4 Warranty letter - 2 years from the date of Substantial Performance.
1.42.5 Red line drawings / as-builts.
1.42.6 Confirmation regarding closure of building permit.
1.42.7 Other documents reasonably requested by the Consultant/Agency

1.43 **Contingency Allowance**

Contingency Allowance of $90,000.00 has been established for both the sites in total. The Contingency Work must be approved in advance by the Agency. Unexpended portion of contingency allowance will be deducted from the Contract Price.

1.44 **Cash Allownce**

Cash allowance of $ 45,000 has been provided in total for both the sites for signage . Contractor will not charge any overhead and profit on cash allowance. Unexpended portion of cash allowance will be deducted from the Contract Price.

2. **PRODUCTS** – Not Applicable

3. **EXECUTION** – Not Applicable

END OF SECTION

1. GENERAL

1.1 General Requirements

1.1.1 Conform to Section 01 00 00 – General Requirements and all documents referred to therein.

1.1.2 Provide all labour, materials, products, equipment and services necessary for demolition and removals work in accordance with the Contract Documents.

1.2.3 Work has to be performed in the occupied areas.

1.2 Work Includes

Requirements for demolishing, salvaging and removing wholly or in part the various items designated on the Contract Drawings or required to be removed or partially removed for the receipt of the Work of this Contract, including not limited to:

1.2.1 Remove existing wall assemblies, piping, conduits, wiring and others as shown on the Contract Drawings and as required by the Work.

1.2.2 Remove any other site conditions, appurtenances and materials to allow the new construction as indicated on the Contract Drawings.

1.2.3 Hydro demolition is not permitted.

1.2.4 All materials removed must be legally disposed of off-site.

1.3 References

1.3.1 CSA S350-M, Code of Practice for Safety in Demolition of Structures

1.4 Submittals

1.4.1 Submit shop drawings, diagrams and details as requested by the Consultant.

1.4.2 Ten calendar days prior to start of demolition and removals work, submit for review, drawings, diagrams or details showing sequence of disassembly work and supporting structures in accordance with authorities having jurisdiction.

1.4.3 Have submissions signed and sealed by Professional Engineer licensed and permitted to practise in Province of Ontario.

1.4.4 Give timely notice to utility authorities controlling services and appurtenances which will be affected by demolition work.

1.5 Quality Assurance

1.5.1 Regulatory Requirements: Prepare waste audits, waste reduction work plans, source separation programs and recycling programs as required by jurisdictional authorities and update programs and implement such programs as required.

1.5.2 Perform the Work of this section in accordance with the '*Environmental Protection Act*' including Ontario Regulation 102 and the '*Environmental Assessment Act*' including Ontario Regulation 103.

1.5.3 The Contractor must engage a registered Professional Engineer who holds a certificate of authorization and an appropriate level of liability insurance to prepare demolition procedures.

1.6 **Site Conditions**

Perform operations, machine and equipment movements, deliveries and removals at time or times that will permit uninterrupted operations in and around structures, including parking, deliveries and site access and egress.

2. **PRODUCTS**

2.1 **Materials**

All materials requiring removal shall become the Contractor's property and shall be removed and disposed of from the site, as the work progresses, unless indicated otherwise.

3. **EXECUTION**

3.1 Clean up rubble and debris, resulting from the Work promptly, sort for recycling and dispose at end of day or place in waste disposal bins. Empty bins on a regular basis. Stockpiling of rubble, debris and surplus products on site will not be permitted.

3.2 Remove, handle and transport products indicated to be salvaged and stored for future use. Transport products to storage area(s) designated by the Consultant. Perform work to prevent any damage to products during removal and in storage. Products damaged during removal, will be inspected by the Consultant. The Consultant will determine extent of damage and accept or refuse products.

3.3 Examine adjacent structures and other installations prior to commencement of demolition and removals work in accordance with Authorities having Jurisdiction.

3.4 Ascertain condition of all existing services affected by the demolition. All existing to remain services that are affected by the demolition or removals must be re-instated as fully operational after demolition or removals.

3.5 **Protection**

3.5.1 Prevent movement or damage of adjacent structures, services, walks, paving, and adjacent grades to remain. Supply and install bracing and shoring as required. Make good damage caused by demolition to acceptance of the Consultant.

3.5.2 Do not interfere with use of adjacent areas. Maintain free, safe passage to and from adjacent areas.

3.5.3 Pay particular attention to prevention of fire and elimination of fire hazards which would endanger work or adjacent structures and premises.

3.5.4 Supply and install adequate protection for materials to be re-used, set on ground and prevent moisture pick-up. Cover stockpiles of materials with tarpaulins.

3.5.5 Close off access to areas where demolition is proceeding by barricades and post warning signs.

3.5.6 Supply, install and maintain legal and necessary barricades, guards, railings, lights, warning signs, security personnel and other safety measures, and fully protect persons and property.

3.5.7 Blasting is not permitted.

3.6 **Preparation**

3.6.1 Remove abandoned lines as required for remedial work. Post warning signs on electrical lines and equipment which is required to remain energized.

3.6.2 Disconnect and cap designated mechanical services:

1. Sanitary and water lines: Remove and dispose of as required for remedial work.
2. Other services: Remove and dispose of as required for remedial work.

3.6.3 Do not disrupt active or energized utilities designated to remain undisturbed.

3.6.4 Perform rodent and vermin control to comply with health regulations.

3.7 **Demolition**

3.7.1 Perform demolition with extreme care. Confine effects of demolition to those parts which are to be demolished.

3.7.2 Perform work and prevent inconvenience to persons outside those parts which are to be demolished.

3.7.3 Carry out demolition in accordance with the requirements of CSA S350-M.3.6.4.

3.7.4 Perform the Work to minimize dusting. Keep work area wetted down with fog sprays to prevent dust and dirt from rising.

3.7.5 Do not sell or burn materials on site.

3.7.6 At the end of each day's work, leave work in safe condition with no part in danger of toppling or falling.

3.7.7 Drainage and sewer system protection:

.1 Ensure that no dust, debris or slurry enters drainage and sewer system on site.

.2 Remove and dispose of debris and slurry promptly from site.

.3 Comply with By-Law from authorities having jurisdiction.

3.7.8 Concrete: Demolish concrete by methods which avoid impact loads on items which are not to be demolished.

3.8 **Disposal of Materials**

Remove from site rubble, debris and other materials resulting from demolition and removals work in accordance with authorities having

jurisdiction, except where specified or indicated on the Contract Drawings to be reused.

3.9 **Restoration**

Where demolition removed a structure or installation, rough grade and restore area in accordance with authorities having jurisdiction and as indicated by the Contract Documents.

END OF SECTION

1. **GENERAL**

1.1 **General Requirements**

Conform to Section 01 00 00 – General Requirements and all documents referred to therein.

1.2 **Scope of Work**

1.2.1 Furnish all labour, materials and equipment necessary to supply and install fire stopping materials to maintain the integrity of the fire resistance rated assemblies at openings and penetrations.

1.2.2 Provide firestopping system(s) of sufficient thickness, width and density to provide and maintain a fire resistance rating, in accordance with ULC.

1.2.3 Provide a seal completely filling all annular spaces to prevent the passage of flame, smoke and gases through the openings in the fire separation, in which it is installed throughout the Project.

1.3 **Related Sections**

Refer to Divisions 23, 26 and 28 for any firestopping requirements specific to specified pieces of equipment.

1.4 **Submittals**

1.4.1 Submit shop drawings for review by the Consultant. Shop drawings to show proposed material, reinforcement, anchorage, fastenings and method of installation. Construction details to accurately reflect actual job conditions.

1.4.2 Submit manufacturer's product data for materials and prefabricated devices, providing descriptions are sufficient for identification at job site. Include manufacturer's printed instructions for installation.

2. **PRODUCTS**

2.1 **Materials**

2.1.1 Firestopping and Smoke Seal Systems: in accordance with CAN4-S115-M85.

.1 Asbestos-free materials and systems capable of maintaining an effective barrier against flame, smoke and gases in compliance with requirements of CAN4-S115-M85 and not to exceed opening sizes for which they are intended.

2.1.2 Service Penetration Assemblies: certified by ULC in accordance with CAN4-S115-M85 and listed in ULC Guide No.40-U19.

2.1.3 Service Penetration Firestop Components: certified by ULC in accordance with CAN4-S115-M85 and listed in ULC Guide No.40-U19.13 and ULC Guide No.40-U19.15 under the label service of ULC.

2.1.4 Fire-resistance rating of installed firestopping assembly not less than the fire-resistance rating of surrounding floor and wall assembly.

2.1.5 Firestopping and smoke seals at openings intended for ease of re-entry such as cables: elastomeric seal; do not use cementitious or rigid seal at such locations.

2.1.6 Firestopping and smoke seals at openings around penetrations for pipes, ductwork and other mechanical items requiring sound and vibration control: elastomeric seal; do not use a cementitious or rigid seal at such locations.

2.1.7 Primers: to manufacturer's recommendation for specific material, substrate, and end use.

2.1.8 Water (if applicable): potable, clean and free from injurious amounts of deleterious substances.

2.1.9 Damming and Back-Up Materials, Supports and Anchoring Devices: to manufacturer's recommendations, and in accordance with tested assembly being installed as acceptable to authorities having jurisdiction.

2.1.10 Sealants for Vertical Joints: non-sagging.

2.1.11 All materials provided by this Section including but not limited to coatings, sealants, primers and adhesives, are to have low VOC content.

2.1.12 Acceptable Manufacturers: A/D Fire Protection, 3M Canada Inc. Tremco Limited or approved equivalent.

3. EXECUTION

3.1 Preparation

3.1.1 Examine sizes and conditions of voids to be filled to establish correct thicknesses and installation of materials. Ensure that substrates and surfaces are clean, dry and frost free.

3.1.2 Prepare surfaces in contact with firestopping materials and smoke seals to manufacturer's instructions.

3.1.3 Maintain insulation around pipes and ducts penetrating fire separation without interruption to vapour barrier.

3.1.4 Mask where necessary to avoid spillage and over coating onto adjoining surfaces; remove stains on adjacent surfaces.

3.2 Application

3.2.1 Apply firestopping and smoke seals in strict accordance with manufacturer’s instructions and tested designs to provide the required temperature and flame rated seal, and to prevent the passage of smoke.

3.2.2 Provide temporary forming as required and remove forming only after materials have gained sufficient strength and after initial curing.

3.2.3 Install firestop before pipe insulation installation has commenced.

3.2.4 Completely fill and seal voids with firestopping and smoke seal materials.

3.2.5 Remove excess compound promptly as work progresses and upon completion.

3.2.6 Allow materials to cure. Do not cover up material until full curing has taken place.

3.3 **Schedule**

3.3.1 Firestop and smoke seal at:

.1 Penetrations through fire-resistance rated assemblies.

.2 Top and side connections of fire-resistance rated assemblies.

.3 Around mechanical and electrical assemblies penetrating fire separations at wall, floors and ceilings throughout the Project.

.4 Rigid Ducts: greater than 129cm²: Firestopping to consist of bead of firestopping material between retaining angle and fire separation and between retaining angle and duct, on each side of fire separations.

3.4 **Clean-Up**

3.4.1 Remove excess materials and debris and clean adjacent surfaces immediately after application.

3.4.2 Remove temporary dams after initial set of firestopping and smoke seal materials.

END OF SECTION

1. **GENERAL**

1.1 **General Requirements**

1.1.1 Conform to Section 01 00 00 – General Requirements and all documents referred to therein.

1.2 **Scope of Work**

1.2.1 Provide sealant work required to make building sealed tightly from the exterior and the interior to withstand the action of the elements and to complete the building envelope air and vapour barriers, and all other sealant work.

1.2.2 Wherever the term 'caulking' is used, it shall mean sealant work.

1.3 **Related Sections**

1.3.1 Section 08 11 00 – Metal Doors and Frames

1.4 **Quality Assurance**

Applicator for the Work of this section to:

1.4.1 Have at least proven satisfactory experience in this type of work.

1.4.2 Have adequate equipment and skilled personnel to expediently complete the Work of this Section in an efficient and very best workmanlike manner.

1.5 **Submittals**

1.5.1 Submit a name of sealant manufacturer for the Consultant's approval.

1.5.2 Supply a sample container of each type of caulking or sealant.

1.5.3 A sample joint prepared at the site in a location directed by the Consultant shall be approved by the Consultant before the Work commences. Approved joint will represent minimum acceptable for this Work.

1.6 **Warranty**

Warrant the work against defects in materials and workmanship for a period of two (2) years from the date of Substantial Completion. Under the warranty, the materials shall not breakdown, decompose, lose their resilience, crack, stain adjacent surfaces, nor lose bond with sides of joints.

2. **PRODUCTS**

2.1 **Materials**

2.1.1 Caulking Type-A: Dymeric 2-part sealant by Tremco Ltd. or approved equal. This product must meet the requirements of CAN 2-19.24-M80.

2.1.2 Caulking Type-B: One component silicone base, mildew resistant sealant conforming to C.G.S.B. No.19-GP-18M. Sealant by Tremco Ltd.

2.1.3 Caulking Type-C: One component Dymonic by Tremco Ltd. or approved equal, meeting C.G.S.B. No.19-GP-5M.
2.1.4 Primer: Type and brand approved by caulking compound manufacturer to suit conditions encountered on this project and to prevent staining of adjacent materials.
2.1.5 Joint Filler: White, non-absorbent, extruded closed cell foam polyethylene, compatible with sealant and 25 per cent wider than joint.
2.1.6 Cleaning Agent: Cleaning agent shall be as recommended by caulking manufacturer.
2.1.7 All materials provided by this Section, including but not limited to coatings, sealants, primers and adhesives, are to have low VOC content.
2.1.8 All sealants, cleaning solvents, joint backing and primers shall be compatible with each other.
2.1.9 Colours for the sealants shall be selected later by the Consultant and not necessarily standard colours.

3. EXECUTION

3.1 Preparation

3.1.1 Thoroughly clean and prime all surfaces in accordance with the printed instructions of the manufacturer of the caulking or sealant compound being used.
3.1.2 All joints to be sealed shall be firm, dry and free from dust, oil, grease, loose mortar or other foreign matter deleterious to bond.
3.1.3 Clean ferrous metal of all rust, mill scale and foreign materials by wire brushing, grinding or sanding.
3.1.4 Remove all lacquer, paint or other coatings from metal or wood where caulking compounds are to be supplied.
3.1.5 Mask joints in interior masonry prior to priming. Remove tape immediately after the finished tooling of the sealant is accomplished and before a surface skin has started to form.
3.1.6 Caulk joints in surfaces to be painted before surfaces are painted. Where surfaces to be caulked are primed in shop before caulking, check to make sure priming paint and caulking are compatible. If they are incompatible, inform the Consultant and change caulking to compatible type approved by the Consultant.

3.2 Installation

3.2.1 Prime surfaces where required by sealant type to provide positive permanent adhesion and to prevent staining.
3.2.2 Before caulking, fill spaces deeper than 12.7mm with joint filler, packed tightly in place and set below finished surfaces to suit specified sealant depth. Provide joints less than 12.7mm deep with an approved joint breaker.
3.2.3 Joint Dimensions: Joint width shall not be less than 3mm. Depth shall be 3mm to 10mm and always less than joint width.

3.2.4 Fill joints to sealant depth with caulking compound. Applications of sealant shall be by approved recognized skilled applicators in strict accordance with manufacturer's printed directions, under the supervision of the sealant manufacturer, using pressure guns and equipment of his approval. Exposed sealant surfaces shall be smooth, free from ridges, wrinkles, air pockets and embedded foreign materials.

3.2.5 To keep sealant within joint, use a concave profile tool unless noted otherwise.

3.2.6 Remove excess sealant or droppings which would set up or become difficult to remove from finished surfaces. Chemicals, scrapers or other tools which affect finished surface shall not be used for such approval. Finished surfaces damaged due to this Work shall be replaced at the Contractors expense to the satisfaction of the Agency.

3.2.7 Use materials specified in the following locations:

.1 Type-B: Generally for interior use where surfaces won't be painted such as: around plumbing fixtures, sink/counter/wall junctions, electrical conduits, pipes and walls, ducts, etc.

.2 Type-C: for interior control joints, window and door frames, etc.

.3 Where caulking is to be painted over, verify type of caulking with the Consultant before proceeding.

.4 Confirm particular uses with the Consultant on site.

3.3 **Clean-up**

Remove excess materials and debris and clean adjacent surfaces immediately after application.

END OF SECTION

1. **GENERAL**

1.1 **General Requirements**

1.1.1. Conform to Section 01 00 00 – General Requirements and all documents referred to therein.

1.2 **Scope of Work**

1.2.1 Furnish all labour, materials and equipment necessary to supply all hollow metal doors, hollow metal view windows, screen units, door frames and anchoring accessories as indicated on the Contract Drawings and specified herein.

1.2.2 All hollow metal doors and frames to be factory prime painted ready for finish painting on site by Section 09 91 00 Painting. Colours to be selected by the Consultant/Agency.

1.3 **Related Sections**

1.3.1 Section 09 22 16 – Non Structural Metal Framing

1.3.2 Section 09 91 00 – Painting

1.4 **Quality Assurance**

1.4.1 Door and frame supplier to be an active member of the Canadian Steel Door and Frame Manufacturers' Association and a history of successful production acceptable to the Agency.

1.5 **References**

The following standards and criteria to serve as minimum guidelines for materials and fabrication of all hollow metal work covered for this Section:

1.5.1 Canadian Manufacturing Specification for Steel Doors and Frames.

1.5.2 Canadian Fire Labeling Guide for Steel Doors and Frames.

1.5.3 CGSB 1-GP- 40M: Prime Painting.

1.5.4 CGSB 31-GP-104M: Phosphatizing.

1.6 **Submittals**

1.6.1 Submit shop drawings for Consultant's review. Shop drawings shall clearly indicate each type of door and frame material, reinforcement, openings, glazing stops, fastenings and finishes on a door and frame schedule. Clearly identify each unit.

1.7 **Delivery, Storage and Handling**

1.7.1 Deliver materials to site with each unit bearing a legible identifying mark corresponding to the approved shop drawings. Store on site as directed by the Consultant.

2. **PRODUCTS**

2.1 **Materials**

2.1.1 Steel: To be zinc wipe coated galvanized steel conforming to ASTM #A527 (class designation ZF001) or prime painted cold

rolled steel conforming to ASTM #A568. All steel to be commercial grade and stretcher leveled in thicknesses to meet the following minimum standards:

.1 Frames to be 1.6mm (16 gauge) units.
.2 Door faces to be 1.2mm (18 gauge) uno.
.3 Door top and bottom channels to be 1.2mm (18 gauge) uno.
.4 Lock and strike reinforcing to be 1.6mm (16 gauge).
.5 Hinge reinforcing to be 3.4mm (10 gauge).
.6 Flush bolt reinforcing to be 1.6mm (16 gauge).
.7 Reinforcing for surfaced hardware to be 2.7mm (12 gauge).
.8 Glass stops to be 0.9mm (20 gauge).
.9 Anchors to be 1.6mm (16 gauge).
.10 Jamb Spreaders to be 1.2mm (18 gauge).
.11 Stainless Steel doors and frames to be:
.1 16 Gauge Type 304 Stainless Steel.
.2 Number 4 brushed finish.
.3 Doors to have full polyurethane insulated core.
.4 Insulated frames.

2.1.2 To the greatest extent possible, use materials with a large percentage of recycled content and sourced regionally.

2.1.3 All materials provided by this Section, including but not limited to coatings, sealants, primers and adhesives, are to have low VOC content.

2.1.4 Each door shall be provided with three hinges or four hinges for universal washroom doors.

2.2 Fabrication

2.2.1 Doors:

.1 Flush with no face seams and 3mm bevel in 51mm on door edges.
.2 Vertical, mechanically interlocking seams on hinge and lock edges, sealed with Resin Reinforced Polyvinyl Chloride (RRPC) adhesive.
.3 Steel end channels projection welded to top and bottom of door. Provide vinyl or steel weather top cap for exterior doors.
.4 Stiffened, insulated and sound deadened with pre-expanded small cell honey-comb core, completely filling the inside of the door and laminated of the door skins with ULC approved adhesive.
.5 Mortised, reinforced, drilled and tapped for three templated hinges and a standard cylindrical lock or blank reinforced for push/pull or rim panic.
.6 Filled with polyurethane foam or rigid fibre glass insulation for exterior doors only.

.7 Make provisions for louvres and glazing as indicated and provide necessary glazing stops.

2.2.2 Welded Frames:

.1 Used in conjunction with new masonry partitions and in drywall partitions for screen units.

.2 Either mitred or mechanically jointed and securely welded on the inside of the profile. Fit frames with channel or angle spreaders to ensure proper frame alignment when setting and during construction.

.3 Provide an adjustable tee anchor for every 600mm of jamb length. Provide clip angles or plates for anchoring base of jambs to floor slab.

.4 Mortised, reinforced, drilled and tapped for hinges and strikes. Strike and hinge reinforcing to be protected by metal guard boxes.

.5 Where site welding or splicing is required due to size of unit, the location of field joints to be shown on the shop drawings and strictly adhered to.

.6 Furnished with three rubber bumpers.

.7 Make provisions for glazing as indicated and provide the necessary glazing stops.

2.2.3 Welding to conform to CSA W59-M1984. All exposed welds to be ground flush and smooth. All open joints, depressions and seams to be filled with suitable filler or by continuous brazing or by welding. Finish welds to be ground smooth and uniform.

2.2.4 Hardware to be supplied and installed by others. Refer to hardware listing to ensure proper door reinforcement and backing to accept installation of hardware items.

2.2.5 Fire Rated Doors and Frames: Where a fire rating is indicated on the door and frame schedule, the doors, frames and screens to be constructed as tested and approved by the Underwriters' Laboratories of Canada and bearing the appropriate label.

3. EXECUTION

3.1 Preparation

3.1.1 Clean, scrape and remove rust, mill scale, grease or extraneous material from doors and frames following fabrication. Flood coat with air-drying paste filler and sand to eliminate all irregularities.

3.1.2 Materials coated with a corrosion resistant steel primer.

3.2 Installation

3.2.1 Frame installation into masonry partitions.

3.2.2 Frame installation into drywall partitions.

3.2.3 Install doors in frames.

3.3 **Protection**

Use all means necessary to protect materials before, during and after installation and to protect installed work and materials of all other trades.

END OF SECTION

1. **GENERAL**

1.1 **General Requirements**

1.1.1 Conform to Section 01 00 00 – General Requirements and all documents referred to therein.

1.2 **Scope of Work**

1.2.1 Supply of temporary locking cylinders and keys for construction purposes. Allow for construction master key to pass all cylinders.
1.2.2 Supply of finishing hardware as listed in the hardware schedule.
1.2.3 Supply of bolts, screws, expansion shields and special fastening devices required to properly install finishing hardware.
1.2.4 Supply of cylinders for aluminum doors.
1.2.5 Supply and installation of Automatic Door Operators (ADO).

1.3 **Related Sections**

1.3.1 Section 08 11 00 – Metal Doors and Frames
1.3.2 Power connection to automatic door operators. Provision of conduit between operators and activators, cable and power connection to electric hold open devices and electric strikes by Division 26 – Electrical. Contractor to coordinate and provide fully functional ADO on specified doors.

1.4 **References**

1.4.1 Hardware for Labeled Fire Doors.
1.4.2 Ontario Building Code, latest edition.

1.5 **Submittals**

1.5.1 Submit shop drawings for Consultant review and comment.
1.5.2 Prepare a detailed finishing hardware schedule itemizing each opening. List all doors by number including size, hand, swing and any and all relevant details effecting the application of finishing hardware.
1.5.3 Submit catalogue cuts of all proposed hardware.
1.5.4 Submit samples for approval as required.
1.5.5 Submit template information to the Contractor for preparation of product in related sections and installation of finishing hardware.
1.5.6 Prepare for review a detailed key schedule.
1.5.7 Submit wiring diagrams and a description of operation for electrified hardware systems specified.
1.5.8 Upon job completion, submit to the Agency two “Operation and Maintenance Manuals” containing the following information:
.1 Maintenance instructions for each item of hardware.
.2 Final Hardware Schedule.
.3 Final Keying Schedule.

1.6 **Delivery, Storage and Handling**

Hardware is to be delivered to the site in the manufacturer's original packaging. Each item of hardware to be clearly marked with the door number and item number corresponding to the approved hardware schedule. The Contractor shall receive, check and be responsible for all items of hardware delivered to the jobsite. Prior to delivery to the jobsite, a dry, secure room is to be provided for storage of the finishing hardware.

1.7 **Warranty**

1.7.1 Provide a minimum two year warranty for finishing hardware.
1.7.2 Provide a minimum 10 year warranty for door closers.
1.7.3 Warranty to commence from date of Substantial Completion of the Project.

1.8 **Performance Requirements**

1.8.1 Obtain each type and variety of door hardware from a single manufacturer, unless otherwise indicated, and generally comply with the following provisions:
1.8.2 Accessibility requirements in accordance with ANSI 117.1.
1.8.3 Handles, Pulls, Latches, Locks, and other Operating Devices: Shape that is easy to grasp with one hand and does not require tight grasping, tight pinching, or twisting of the wrist.
1.8.4 Door Closers: Maximum opening force requirements as follows:
1.8.5 Interior Hinged Doors: 22.2 N (5 lbf) applied perpendicular to door.
1.8.6 Fire Doors: Minimum opening force allowable by authorities having jurisdiction.
1.8.7 Thresholds: Maximum 13 mm (½") high; bevel raised thresholds with a slope of maximum 1:2.
1.8.8 Latches, Locks, and Exit Devices: Maximum 67 N (15 lbf) to release the latch, and shall not require the use of a key, tool, or special knowledge for operation.
1.8.9 Door Closers: Maximum 133 N (30 lbf) to door in motion and maximum 67 N (15 lbf) to open door to minimum required width.

2. **PRODUCTS**

2.1 **Hardware Items**

2.1.1 Only door locksets and latches listed on ANSI/BHMA Standards list are acceptable for use on this project.
2.1.2 Use one manufacturer's products only for similar items.

2.2 **Door Hardware**

2.2.1 Locks and latches:
.1 Bored and preassembled locks and latches: to ANSI/BHMA A156.2, 4000 bored lock, grade 1, designed for function and keyed as stated in Hardware Schedule.
.2 Lever handles: design as indicated in Hardware Schedule.
.3 Roses: round.

.4 Normal strikes: box type, lip projection not beyond jamb.
.5 Electrical strikes: to ANSI/BHMA A156.31 Electric Strikes and Frame Mounted Actuators Grade 1.
.6 Cylinders: key into keying system as directed.
.7 All corresponding cylinders to be removable.
.8 Finished as indicated in Hardware Schedule.

2.2.2 Butts and hinges:
.1 Butts and hinges: to ANSI/BHMA A156.1, designated by letter A and numeral identifiers, followed by size and finish, listed in Hardware Schedule.
.2 Interior hinges of steel, unless otherwise indicated.
.3 Continuous hinges shall be heavy duty as indicated, full height, complete with installation aids and fasteners to suit door and frame conditions. Hinge to have access to electrical items without removing hinge.
.4 Quantity, size and width of hinges in accordance with manufacturer's recommendations and ASNI/BHMA 156.1.

2.2.3 Exit devices:
.1 To ANSI/BHMA A156.3, function, grade and finish as per schedule. Rim type with push pad design.

2.2.4 Door Closers and Accessories:
.1 Door controls (closers): to ANSI/BHMA A156.4, designated by letter C and numeral identifiers listed in Hardware Schedule, size in accordance with ANSI/BHMA A156.4. Table A1.
.2 Closers of narrow, slim line design complete with backcheck, rack and pinion hydraulic action.
.3 Closers equipped with full cover, complete with secure and concealed mounting screws
.4 Adapter plates for added reinforcing shall be added to any opening if required to suit field conditions or door design.
.5 Closers shall include all necessary arm brackets, cush arm supports and blade stop spacers to suit door swing, frame reveals or stop conditions.
.6 Closers capable of field adjustments of at least fifteen (15) percent.
.7 Finish as indicated in Hardware Schedule.

2.2.5 Door Operators:
.1 Power-operated pedestrian doors: to ANSI/BHMA A156.10.
.2 Complete with all components including operator housing, power operator, electronic control, soft start, switching networks, and all connecting hardware.
.3 Design intent and function of opening as indicated in Hardware Schedule. Supplier to include additional components and power supplies required to properly operate all hardware devices, door control devices, remote

control devices, complete with any special cables or wirings to connect all parts.

.4 Operator housing shall be complete with finished end caps prepared for mounting to door frame.

.5 Operator housing shall be factory assembled with all necessary components for proper operation and switching. Relays, wiring harness and other components shall be plug-in type.

.6 Operator controls shall include adjustable time delay, safe-swing circuit as well as provision for accessories as detailed in Hardware Schedule.

.7 Complete unit shall be mounted with provisions for easy servicing or replacement without removing the door or frame.

.8 All wiring shall be of shielded type with proper number and gauge of conductor wires to install all components as specified.

.9 Installation of operators shall be carried out by manufacturer's certified and authorized personnel.

2.2.6 Power Supplies:

.1 To ANSI/BHMA 156.19, designated by numerical identifiers listed in Hardware Groups.

.2 Shall be concealed in ceiling space of suitable adjacent area.

.3 Shall interface with all electrical security components and supplied with all relays and devices to operate as per Hardware Schedule.

.4 When key switch is used, it will operate as per hardware notes and reset the power supply.

2.2.7 Architectural door trim: to ANSI/BHMA A156.6, as listed in Hardware Schedule.

.1 Door protection plates: 1.27 mm thick stainless steel, finished to BMHA 630.

.2 Push plates: 1.27 mm thick stainless steel finished to BMHA 630.

.3 Push/Pull units: type stainless steel finished to BMHA 630.

.4 Fastened with through bolts or concealed bolts depending on application.

.5 Where pull has back plate, fasteners will be countersunk and bevelled with no sharp edges.

.6 Where bolts cannot be concealed under the push plate they shall have a grommet washer finished to match other hardware.

2.2.8 Auxiliary hardware: to ANSI/BHMA A156.16, as listed in Hardware Schedule.

.1 Combination stop and holder, floor mounted: finished to BMHA 626.

.2 Surface bolt lever extension flush bolt: finish to BMHA 626.

2.3 **Fastenings**

2.3.1 Use only fasteners provided by manufacturer. Failure to comply may void warranties and applicable licensed labels.

2.3.2 Supply screws, bolts, expansion shields and other fastening devices required for satisfactory installation and operation of hardware.

2.3.3 Exposed fastening devices to match finish of hardware.

2.3.4 Where pull is scheduled on one side of door and push plate on other side, supply fastening devices, and install so pull can be secured through door from reverse side. Install push plate to cover fasteners.

2.3.5 Use fasteners compatible with material through which they pass.

2.4 **Keying**

2.4.1 Doors, padlocks and cabinet locks to be master keyed as directed. Prepare detailed keying schedule in conjunction with Owner.

2.4.2 Provide keys in triplicate for every lock in this Contract.

2.4.3 Stamp keying code numbers on keys and cylinders.

2.4.4 Provide all permanent cores and keys to Owner.

2.5 **Finishes**

2.5.1 Provide finishes as indicated in hardware schedule.

3. **EXECUTION**

3.1 **Examination**

3.1.1 Size and condition of opening shall be verified as to door frames being plumb and of correct tolerance to receive doors and hardware.

3.2 **Installation**

3.2.1 Review proper mounting heights with the Consultant and Agency.

3.2.2 Standard mounting heights, unless otherwise noted:

.1 Locks/Latches: 1023mm to centre line of strike from finished floor.

.2 Deadlocks: 1219mm to centre line of strike from finished floor.

.3 Exit Devices: 1023mm to centre line of strike from finished floor.

.4 Door Pulls: 1067mm to centre line of pull from finished floor.

.5 Push Plate: 1143mm (45”) to centre line of push plate from finished floor.

3.2.3 The above noted mounting heights are a recommended standard and may vary under special applications and conditions.

3.3 **Field Quality Control**

3.3.1 After installation of hardware, inspect the installation and certify that the hardware is correctly installed and in accordance with the manufacturer's recommendations.

3.4 **Adjusting and Cleaning**

3.4.1 Upon final completion, the hardware is to be left clean and free from defect. Hardware found defective is to be repaired or replaced.

3.4.2 All door closers are to be inspected for proper installation and adjustment. Proved a written report from the manufacturer's representative confirming proper door closer installation and submit the report to the Consultant.

3.5 **Protection**

3.5.1 The Contractor shall provide proper protection of hardware until turned over to the Agency.

END OF SECTION

1. **GENERAL**

1.1 **General Requirements**

1.1.1 Conform to Section 01 00 00 – General Requirements and all documents referred to therein.

1.2 **Scope of Work**

1.2.1 Furnish all labour, materials and equipment necessary to supply and install all gypsum board and accessories as indicated on the Contract Drawings and specified herein.

1.2.2 Furnish all labour, materials and equipment necessary to supply and install rock wool batt insulation as indicated on the Contract Drawings and specified herein.

1.3 **Related Sections**

1.3.1 Section 09 22 16 – Non-Structural Metal Framing
1.3.2 Section 09 30 00 –Tiling
1.3.3 Section 09 51 13 – Acoustical Panel Ceilings
1.3.4 Section 09 91 00 – Painting

1.4 **Quality Assurance**

1.4.1 The Work of this Section to be executed by skilled workmen fully qualified in the installation of materials listed and in strict accordance with manufacturer's written instructions.

1.5 **References**

The following standards and criteria are to serve as minimum guidelines for materials and installation of the Work covered by this Section:

1.5.1 CSA A82.21-M1978 (R1984): Gypsum and Terms Relating to Gypsum Products.
1.5.2 CSA A82.30-M1980: Gypsum Board Products.
1.5.3 CSA A82.30-M1980: Interior Furring, Lathing and Gypsum.
1.5.4 CSA A82.31-M1981: Gypsum Board Application.

1.6 **Delivery, Storage and Handling**

1.6.1 Co-ordinate delivery of materials to the site with the Contractor in order to avoid any unnecessary delays in construction and to avoid damage due to excessive storage periods.

1.6.2 Materials to be delivered in undamaged, original factory wrappings with labels and seals intact. Store materials on job site in a dry, weatherproof, heated location and place gypsum board flat in piles without overhanging boards.

1.7 **Project Conditions**

1.7.1 Maintain temperature of rooms, surfaces and materials between 13°C and 21°C for a period of at least 72 hours before start of installation and until takeover by the Agency. Co-ordinate with the Contractor to provide for temporary heat, proper ventilation and

good lighting in areas where the Work of this Section is being carried out.

2. **PRODUCTS**

2.1 **Acceptable Manufacturers**

2.1.1 The Contract Drawings and Specifications for work of this Section are based upon products manufactured by Canadian Gypsum Co. Ltd. (CGC), Westroc Industries Ltd., Domtar Construction Materials or approved equal.

2.2 **Materials**

2.2.1 Standard Gypsum Board: To be 1220mm wide by maximum practical length to minimize end joints, ends square cut and long edges tapered on face side. Use 12.7mm thick gypsum board on walls and 15.9mm thick gypsum board on ceilings and bulkheads unless otherwise noted.

2.2.2 Fire-Rated Gypsum Board: To be 1220mm wide by maximum practical length to minimize end joints, ends square cut and long edges tapered on face side. Use 12.7mm thick fire-rated gypsum board on walls and 15.9mm thick fire-rated gypsum board on ceilings and bulkheads unless otherwise noted. Each sheet of fire-rated gypsum board to be classified and labelled in accordance with ULC label service for application specified.

2.2.3 Water Resistant Gypsum Board: To be 1220mm wide by maximum practical length to minimize end joints. Use "Sheetrock", water resistant brand panels for use in washrooms and low to medium humidity areas.

2.2.4 Cement Board: to be 1500mm length, 900mm width and 12.7mm thick "Durock Cement Board" or approved equal. Use on metal studs in shower and wet areas and where indicated on Contract Drawings.

2.2.5 Trim Accessories:

.1 Cornerbead to be fill type, polyvinyl chloride (PVC) bullnose type with 32mm flange widths. Use one continuous piece per location for protecting external corners. Use pre-manufactured interior and exterior corner pieces at all intersections.

.2 Control joint to be fill type made from roll-formed zinc with a tape protected 6mm opening, 11mm deep to produce a neat hairline joint.

.3 Metal edge trim to be fill type, "L" shaped moulding with 22mm flange, #200-A by CGC and in appropriate thickness to suit required board. Flat tape finished edges to leave smooth surface for painting. J-mould is not acceptable for this project.

2.2.6 Fasteners: To be 25mm long, Type-S bugle head screws for single layer gypsum board application to interior studs, and 41mm long, Type-S bugle head screws for double layer gypsum board

application to interior studs. All fasteners to conform to CSA A82.31-M1980.

2.2.7 Adhesive: to be laminating compound as recommended by drywall manufacturer, Durabond 90 or approved equal.

2.2.8 Joint Filler: To be factory pre-mixed, asbestos free, conventional drying type, ready to use joint compound shipped in plastic lined container. "CGC All-Purpose Ready-To-Use Joint Compound" or approved equal.

2.2.9 Reinforcing Tape: To be 50mm wide, perforated, cross laminated fibre joint tape. "Perf-A-Tape" or approved equal.

2.2.10 Acoustic Caulking: To be synthetic rubber, non-staining, non-drying caulking conforming to CGSB 19-GP-21M. "Parr Sound Caulk" or approved equal.

2.2.11 Vapour Barrier: to be 6mm polyethylene conforming CAN2-51.33-M80, Type-2.

2.2.12 Mineral Wool Sound Insulation: To be Roxul AFB, mineral fibre insulation or approved equal. Thickness as indicated on the Contract Drawings.

2.2.13 Mineral Wool Thermal Insulation: To be Roxul 'Flexibatt' or Roxul 'Plus', mineral fibre insulation or approved equal. Thickness as indicated on the Contract Drawings.

2.2.14 To the greatest extent possible, use materials with a large percentage of recycled content and sourced regionally.

2.2.15 All materials provided by this Section, including but not limited to coatings, sealants, primers and adhesives, are to have low VOC content.

3. EXECUTION

3.1 Inspection

3.1.1 Prior to the installation of insulation systems and gypsum board, carefully inspect the Work of other trades and verify that all such work is complete to the point that this installation may properly commence.

3.1.2 Notify the Consultant in writing if surfaces are not suitable for work of this Section. Do not proceed until such defects have been rectified.

3.2 Preparation

3.2.1 Do not start installation of the Work until metal support framing, bucks, anchors, blocking, electrical and mechanical work which is to be installed in, behind or between drywall has been properly installed, tested, and approved.

3.2.2 Co-operate with those installing the Work specified in other Sections to accommodate their work. Where work or other trades penetrate gypsum board construction, accurately scribe and cut openings to ensure frames, escutcheons and plates which are utilized, and properly cover the opening provided.

3.3 **Installation**

3.3.1 Insulation:

.1 Install sound attenuation batt insulation, into voids of interior metal stud partitions where indicated on the Contract Drawings.

.2 Install batt insulation into wall and ceiling spaces to provide continuous thermal protection.

.3 Receive approval from the Consultant of all insulation installations before applying gypsum board.

3.3.2 Standard and Fire-Rated Gypsum Board:

.1 Erect one layer of gypsum board (rated or non-rated depending on requirements) to the metal support framing with long dimension parallel to the supports for partitions and at right angles to the supports for ceilings and bulkheads. Locate joints over studs and butt sheets moderately together. All joints to be staggered, kept away from prominent locations and placed on different studs on opposite side of partition.

.2 Apply panels to ceiling and then to walls. Drywall on partitions and bulkheads to run to the underside of mineral acoustic tile ceilings unless otherwise noted on the Contract Drawings. Extend gypsum board into door frame and screen reveals, behind fitments, mirrors, lockers, shower cabinets and behind other movable items.

.3 Attached panels to framing supports using power driven screws. Screw fasteners at standard gypsum board ceilings to be spaced 200mm on centre (o.c.) on edges and field. Screw fasteners at standard gypsum board partitions to be spaced at 300mm on centre (o.c.) on edges and field. For fire-rated ceilings and partitions, refer to appropriate ULC design for fastener spacing. Drive fasteners into gypsum board to form a slight depression but so as not to break paper cover.

.4 Apply fire-rated gypsum board to fire-rated ceilings and protection covers at steel beams and columns prior to installation of adjacent gypsum board assemblies.

.5 Cut ends and edges, scribe or make cut-outs within field of panels in a neat workmanlike manner.

.6 In areas where a second layer of gypsum board is required, screw apply to first layer and offset all joints in face layer from base layer joints.

.7 Perimeter of all soundproofed partitions to receive one bead of acoustical caulking.

3.3.3 Glue-Applied Gypsum Board:

.1 Report unsatisfactory conditions in block and/or concrete substrates to the Consultant for rectification prior to commencing the Work.

.2 Apply compound in strict accordance with manufacturer's recommended rate of application and methods. Firmly and evenly press gypsum board against compound. Provide temporary bracing of face panels until compound dries. Secure gypsum board to masonry/concrete using concrete nails spaced at 600mm o.c. along perimeter and centerline of gypsum board panel. Use proper tools to ensure that nail heads do not break surface of gypsum board paper facing.

3.3.4 Accessories:

.1 Erect accessories straight, plumb or level, rigid and at proper plane. Use full length pieces where practical. Make joints tight, accurately aligned and rigidly secured. Mitre and fit corners accurately, free from rough edges. Secure with fasteners at 150mm o.c.

.2 Install corner beads at all external corners. Install metal edge trim around perimeter of suspended ceilings. Install metal edge trim where gypsum board butts against surfaces having no trim concealing junction and where indicated. Seal joints with sealant.

.3 Install insulating strips continuously at edges of gypsum board or casing beads abutting metal window or exterior door frames, to provide thermal break.

.4 Construct control joints of either preformed units or two back-to-back metal edge trims set in gypsum board facing and supported independently on both sides of joint.

.5 Provide continuous polyethylene dust barrier behind and across control joints.

.6 Locate control joints at changes in substrate construction and/or at approximate 10m spacing on long corridor runs.

.7 Install access doors to electrical and mechanical fixtures specified in the respective Sections. Rigidly secure frames to framing or furring systems.

3.3.5 Interior Finishing:

.1 Finish face panel joints and internal angles with joint system consisting of bedding coat, joint tape and three coats of all-purpose joint compound installed according to manufacturer's written directions and feathered out onto panels faces. Allow each application of joint compound to thoroughly dry before applying succeeding coat.

.2 Finish corner beads, control joints and trim as required with three coats of all-purpose joint compound feathered out onto panels' faces.

.3 Fill screw head depressions with all-purpose joint compound to bring flush with adjacent surface of gypsum board so as to be invisible after painting is completed.

.4 Sand lightly to remove burred edges and other imperfections. Avoid sanding adjacent surface of board.

.5 Completed installation to be smooth, level or plumb, free from waves and other defects and ready for painting.

3.3.6 Apply textured spray coating in strict accordance with manufacturer's written instructions for installation.

3.4 **Adjusting and Cleaning**

3.4.1 After the application of the primer coat of paint, it may become evident that some patching work is necessary to drywall or finishing application. This patching to be executed by this Section in accordance with the finishing specifications outlined in Item 3.3.5.

3.4.2 After completion of the Work, remove all leftover materials, tools and equipment from job site.

END OF SECTION

1. **GENERAL**

1.1 **General Requirements**

1.1.1 Conform to Section 01 00 00 – General Requirements and all documents referred to therein.

1.2 **Scope of Work**

1.2.1 Furnish all labour, materials and equipment necessary to supply and install non-load bearing light steel stud framing as indicated on the Contract Drawings and specified herein.

1.2.2 Furnish all labour, materials and equipment necessary to supply and install light steel support framing for constructing suspended gypsum board ceilings and bulkheads as indicated on the Contract Drawings and specified herein.

1.3 **Related Sections**

1.3.1 Section 08 11 00 – Metal Doors and Frames
1.3.2 Section 09 21 16 – Gypsum Board Assemblies
1.3.3 Section 09 51 13 – Acoustical Panel Ceilings
1.3.4 Section 10 28 10 – Toilet and Bath Accessories

1.4 **System Description**

1.4.1 Metal support systems for interior partitions, ceilings and bulkheads to consist of non-load bearing light steel framing.

1.5 **Quality Assurance**

1.5.1 Provide sufficient, skilled workmen and supervisors who are present at all times during execution of this portion of the Work and who are thoroughly familiar with the type of construction, materials and techniques involved.

1.5.2 In the acceptance or rejection of metal support systems, no allowance will be made for lack of skill on the part of workmen.

1.6 **References**

1.6.1 The following standards and criteria are to serve as minimum guidelines for materials, fabrication and installation of all the Work covered by this Section: CSSB1 50M-1987: Lightweight Steel Framing Manual.

1.7 **Submittals**

1.7.1 Shop drawings to include all necessary shop details and erection diagrams. Clearly indicate member sizes, locations, thicknesses exclusive of coating and materials. Include connection details for attaching framing to itself and for attachment to the structure. Show splice details where permitted. Indicate dimensions, openings, requirements of related work and critical installation procedures. Show temporary bracing required for erection purposes.

1.7.2 Do not fabricate metal support systems until all shop drawings have been reviewed by the Consultant.
1.7.3 As per the requirements of Section 01 00 00.

1.8 **Delivery, Storage and Handling**
1.8.1 Co-ordinate delivery of material to the site in order to avoid any unnecessary delays in construction and to avoid damages due to lengthy storage periods.
1.8.2 Products to be protected from conditions that may cause physical damage or corrosion.

2. **PRODUCTS**
2.1 **Acceptable Manufacturers**
2.1.1 The Contract Drawings and specifications for the Work of this Section are based upon metal support systems fabricated by Bailey Metal Products Limited. Equal products by Canadian Gypsum Company Ltd., Dietrich Metal Framing or approved equal are acceptable provided they meet or exceed the criteria specified herein and are reviewed by the Consultant.

2.2 **Materials**
2.2.1 Non-Loadbearing Channel Stud Framing: to be roll-formed from 0.53mm (25 gauge) base steel thickness, hot dipped galvanized sheet steel into stud depths of 41mm, 64mm, 92mm and 152mm as required for screw attachment of gypsum board. Flanges to be knurled with edges doubled back. Studs to have knock-out service holes at 460mm centres.
2.2.2 Non-Loadbearing Floor and Ceiling Tracks: to be roll-formed from 0.53mm (25 gauge) base steel thickness, hot dipped galvanized sheet steel into widths to suit stud size and with 29mm flange height.
2.2.3 Metal Channel Stiffener: to be minimum 19mm x 9.5mm x 1.2mm thick cold rolled, zinc galvanized steel.
2.2.4 Furring Channels: to be roll-formed from 0.53mm (25 gauge) base steel thickness, hot dipped galvanized sheet steel into 19mm deep x 32mm face, hat-type runners with knurled face.
2.2.5 Ceiling Runner Channels: to be minimum 38mm deep x 13mm wide x 1.519mm thick, cold rolled, zinc galvanized steel.
2.2.6 Resilient Channels: to be 0.53mm (25 gauge), 12.7mm x 66mm x 3660mm long, RC-1 by Canadian Gypsum Company Ltd. or approved equal.
2.2.7 Clips: to be fabricated from galvanized wire of suitable size to adequately attach furring channels to runner channels.
2.2.8 Tie Wire: to be 1.2mm (18 gauge) galvanized soft annealed steel wire.
2.2.9 Hanger Wire: to be 4.76mm diameter galvanized mild steel rod.

2.2.10 Acoustical Sealant: to be synthetic rubber, non-staining, non-drying sealant. Parr Sound Caulk or approved equal conforming to CGSB 19-GP-21M.

2.2.11 Insulating Strip: to be rubberized, moisture resistant, 3mm closed cell neoprene strip, 12mm wide with self-sticking permanent adhesive on one face, lengths as required.

2.2.12 Building Paper: to be 6.8kg (15lbs.) asphalt impregnated felt paper damp course for under non-load bearing steel runners on slab-on-grade construction.

2.2.13 To the greatest extent possible, use materials with a large percentage of recycled content and sourced regionally.

2.2.14 All materials provided by this Section, including but not limited to coatings, sealants, primers and adhesives, are to have low Volatlite Organic Compound (VOC) content.

3. EXECUTION

3.1 Inspection

3.1.1 Prior to the installation of metal support systems, carefully inspect the installed work of all other trades and verify that all such work is complete to the point where this installation may properly commence.

3.1.2 In the event of discrepancy, immediately notify the he Consultant. Do not proceed with installation in areas of discrepancy until all such discrepancies have been fully resolved.

3.2 Installation

3.2.1 Non-load bearing light steel stud framing for walls and bulkheads:

.1 Align partition tracks at floor and ceiling and secure at 400mm on center maximum.

.2 Place studs vertically at 400mm on center and not more than 50mm from abutting walls and at each side of openings and corners. Position studs in tracks at floor and ceiling. Cross brace steel studs as required to provide rigid installation to manufacturer's instruction.

.3 Erect metal studding to the tolerance of 1:1000 and maintain the required dimensions indicated on the Contract Drawings.

.4 Framing and furring shown on the Contract Drawings are schematic. Do not regard it as exact or complete. Construct the Work to provide adequate strength to withstand stresses imposed by use without distortion.

.5 Attach studs to floor and ceiling tracks using screws or pop rivets.

.6 Co-ordinate simultaneous erection of studs with installation of service lines. When erecting studs ensure web openings are aligned.

.7 Co-ordinate erection of studs with installation of door/window frames and special supports or anchorage for work specified in other Section.

.8 Provide two studs extending from floor to ceiling at each side of openings wider than stud centres specified. Secure studs together, 50mm apart using column clips or other approved means of fastening placed alongside frame anchor clips.

.9 Erect track at head of door/window openings and sills of sidelight/window openings to accommodate intermediate studs. Secure track to studs at each end, in accordance with manufacturer's instruction. Install intermediate studs above and below openings in same manner and spacing as wall studs.

.10 Frame openings around built-in equipment, cabinets, access panels, etc., on four sides. Extend framing into reveals. Check clearances with equipment suppliers.

.11 Provide 41mm stud or furring channel secured between studs for attachment of fixtures behind lavatory basins, toilet and bathroom accessories, and other fixtures including grab bars and towel rails, attached to steel stud partitions.

.12 Install steel studs or furring channel between studs for attaching electrical and other boxes.

.13 Extend partitions to ceiling height except where noted otherwise on the Contract Drawings.

.14 Maintain clearance under beams and structural slabs to avoid transmission of structural loads to stud.

.15 Install continuous insulating strips to isolate studs from uninsulated surfaces.

.16 Install two continuous beads of acoustical sealant or insulating strip under tracks around perimeter of sound control partitions.

3.2.2 Ceiling and soffit suspension systems for gypsum board:

.1 Install hangers to support the grillage for suspended gypsum board ceilings independent of walls, columns, pipes, ducts and other similar components. Provide hanger tabs and install hangers plumb and securely anchored to structure.

.2 Space hangers for runner channels at 1200mm on center. each way and not more than 150mm from boundary walls, interruptions of continuity and changes in direction.

.3 Hang and tie runner channels at maximum 1200mm on center in one direction and not more than 150mm from boundary walls, interruptions of continuity and change in direction. For fire-rated assemblies space runner channels

at maximum 600mm on center. Install runner channels transversely to sub-grid or structural framing members.

.4 Install furring channels perpendicular to runner channels at 400mm o.c. and not more than 150mm from boundary walls, interruption of continuity and change in direction. Secure furring channels to supports with clips approved by manufacturer or with double wire ties.

.5 Frame with furring channels, perimeter of openings for access panels, light fixtures diffusers, grilles, etc.

.6 Erect entire hanger and suspension system adequate to support the ceiling assembly, including services incorporated, with a maximum deflection of 1/360 in span of each component member and free from horizontal movements.

.7 Support light fixtures by providing additional ceiling suspension around perimeter of fixture.

3.2.3 Wall and Resilient Channel Furring:

.1 Install wall furring for gypsum board wall finishes in accordance with CSA A82-.31-M1980, except where specified otherwise.

.2 Furr openings around built-in equipment, cabinets, access panels, etc., on four sides. Extend furring into reveals. Check clearances with equipment suppliers.

.3 Furr duct shafts, beams, columns, pipes and exposed services where indicated.

3.3 **Adjusting and Cleaning**

3.3.1 Adjust and shim framing members as required to provide erection tolerances as specified herein.

3.3.2 After completion of the Work, clean up and remove all leftover material, debris and equipment from the job site.

END OF SECTION

1. **GENERAL**

1.1 **General Requirements**

1.1.1 Conform to Section 01 00 00 – General Requirements and all documents referred to therein.

1.2 **Scope of Work**

1.2.1 Furnish all labour, materials and equipment necessary to supply and install tiles to extents indicated on the Contract Drawings, room finish schedules and as specified herein.

1.3 **Related Sections**

1.3.1 Section 09 21 16 – Gypsum Board Assemblies

1.4 **Quality Assurance**

Do tile Work in accordance with Installation Manual 200 - 1979 “Ceramic Tiles” produced by Terrazzo Tile and Marble Association of Canada (TTMAC) except where specified otherwise. Work shall be executed by a subcontractor with at least five years successful and proven experience in the Work of this Section and employing qualified fully trained mechanics.

1.5 **Submittals**

1.5.1 Submit duplicate 600mm square sample panels of each colour, texture and size. A pattern of samples to 12.7mm thick plywood and grout joints to represent project installation. Obtain approval of each tile sample prior to supplying material to the project.

1.6 **Delivery, Storage and Handling**

1.6.1 Deliver packaged materials in original unopened containers.

1.6.2 Keep delivered material dry and free from stains. Store cementitious material off damp surfaces.

1.7 **Project Environment**

1.7.1 Maintain a minimum 14°C air temperature at tile installation area for 24 hours prior to, during and after installation. Make arrangements with the Contractor for temporary heat, proper ventilation, and good lighting in areas where the Work of this Section is being carried out.

1.7.2 Prohibit all traffic in areas where tiles are being installed.

2. **PRODUCTS**

2.1 **Materials**

2.1.1 Ceramic Tile: to be 100mm x 405mm x 10mm Matte finish, ‘Colour and Dimensions Series’ by Olympia Floor and Wall Tile.

.1 Drawing Designation CT-1: Tender Grey

.2 Drawing Designation CT-2: Taupe

.3 Drawing Designation CT-3: Dark Taupe

.4 Drawing Designation CT-4: Dark Grey

2.1.2 Provide a full range of trim pieces as required to provide coved and bullnosed transitions and changes in direction.

2.1.3 Waterproof Membrane in shower areas: to be WP-980 Waterproof and Crack Isolation Membrane by Flextile Ltd or approved equal.

2.1.4 Sealer: Non- wax penetrating sealer, recommended by tile manufacturer.

2.1.5 Mortars and Adhesives: Use of following mortars or adhesives is Contractor's choice, subject to restrictions stated and Site conditions, except where epoxy or acid resistant mortar and grout is required.

.1 Thin Set Mortar: ANSI 118.1, or ANSI 118.4 (CGSB 71-GP-30M for Type 2) except where epoxy adhesive required: For glazed and unglazed wall and floor tile: water absorption class MR 2: Kerabond or Ultraflex II by Mapei or Multicure (Modified System) by C-Cure or Number 52 Versatile by Flextile. For vitreous floor tile: with less than 0.5 per cent absorption; and size 300mm x 300mm or larger; water absorption class MR 1: Multicure (Modified System) by C-Cure or Kerabond/Keralastic by Mapei or Number 52 Versatile by Flextile. For high absorption glazed wall tile, with water absorption class MR 4: C-Cure wall mix by C-Cure or Kerabond by Mapei.

.2 Mortar Bed: Mixed on Site of following components:
Cement: CAN/CSA-A5-M, Type 10 Portland.
Sand: CSA A179.
Hydrated Lime: To ASTM C207, Type S.
Latex or Acrylic Additive: Formulated for use in Portland cement mortar, by Thoro, or C-Crylic 200 by C-Cure, or Acrylic Mortar Additive by Flextile or Planacrete 50 by Mapei or Laticrete 3701 by Laticrete or Acryli-crete 5000 by Crest or Permalast by Lepage.
Water: Potable, free of minerals detrimental to mortar and grout mixes.

.3 Adhesives:
Organic Adhesive: CGSB 71-GP-22M, Type 1 for intermittent wet areas, Duoflex number 90, or number 99 by Flextile or Ultramastic 1 by Mapei or TA-190 Double Duty Modular, or Perma II-2001 by LePage, or Dymac number 68 by Dymac; Type 2 elsewhere, Econobond number 93 by Flextile or Crest 3000 by Crest or Perma II-2002 by LePage, or Dyamc number 64 by Dymac except where epoxy is required.
Epoxy Adhesive: ANSI A118.3, CGSB 71-GP-30M Type 1 (100 per cent solids epoxy), Chemset by Master Builders or Epoxy 100 by C-Cure, Latapoxy SP-100 by Laticrete, Kerapoxy by Mapei or Flex-Epoxy 100 by Flextile.
Epoxy Adhesive: ANSI A118.3, Chemset by Master Builders or Epoxy 100, 200 by C-Cure, Flex-Epoxy, Flex-

Epoxy 100 by Flextile, or Kerapoxy by Mapei, or Latapoxy 210, Latapoxy SP-100 by Laticrete, or Crest Epoxy 200, Epoxy 100 by Crest.
Number 90 Duoflex by Flextile, or Ultramastic I by Mapei, or Perma I-2001 by LePage, or Dymac number 68 by Dymac.

2.1.6 Grouts: Use of following grouts is Contractor's choice subject to restrictions stated. Colour grout-white for ceramic and glass tile work. Porcelain Tile flooring grout to be to later selection from manufacturer's standard range of not less than 32 colour options:

.1 Portland Cement Sanded Grout: Floor Grout by Flextile or Ultra/Colour by Mapei; or mixed on Site cement grout, consisting of one part Portland cement and two parts sand. Colour as selected by Consultant. For white colour, in lieu of grey cement, use White Portland Cement, Type 10, CAN/CSA-A5-M, manufactured by Federal White Cement Co.

.2 Dry Cure Unsanded Grout: Thin-set, narrow joint, up to 3mm (1/8 inches) wide, by Flex-Epoxy 200 Modified Emulsion by Flextile, or C-Cure Polymer Modified unsanded grout by C-Cure, or Keracolor unsanded grout mixed with Plastijoints by Mapei.

.3 Epoxy Grout: Chemset by Master Builder, or Epoxy 100 by C- Cure, or Flex-Epoxy 100 by Flextile, or Kerapoxy by Mapei, or Latapoxy SP-100 by Laticrete. Use mandatory with epoxy adhesive.

2.2.7 Accessories

.1 Reinforcing Mesh: 50mm x 50mm x 1.6mm x 1.6mm galvanized steel wire mesh complying with CSA G30.5-M.

.2 Transitions/trims: As required for complete installation and as indicated on Contract Drawings.

2.2.8 Submit atleast 3 colours for review and comment by Consultant and Agency.

2.2 **Mixes**

2.2.1 Mortar Bed

.1 Scratch Coat: One part cement, 1/5 to 1/2 parts hydrated lime to suit job conditions, four parts sand, one part water. Adjust water volume depending on water content of sand. Use as little water as possible to obtain a stiff mix.

.2 Slurry Bond Coat: Cement and water mixed to creamy paste.
Latex additive may be included.

.3 Mortar Bed for Floors: One part Portland cement, four parts sand, one part water. Adjust water volume

depending on water content of sand. Latex additive may be included.

.4 Mortar Bed for Walls and Ceilings: One part cement, 1/5 to 1/2 parts hydrated lime to suit job conditions, four parts sand and one part water. Adjust water volume depending on water content of sand. Latex additive may be included.

.5 Levelling Coat: One part cement, four parts sand, one part water, including minimum 1/10 part latex additive (as per manufacturer's instructions) such as Level-Cure by C-Cure.

.6 Bond or Setting Coat: One part cement, 1/3 part hydrated lime, one part water.
Measure mortar ingredients by volume.

2.2.2 Thin Set Mortar: Mix to manufacturer's instructions.

2.2.3 Organic Adhesive: Pre-mixed.

3. EXECUTION

3.1 Inspection

3.1.1 Before proceeding with installation, inspect all surfaces to receive tile and report defects to the Consultant.

3.1.2 Ensure that surfaces are dry, clean, well cured and free from deleterious matters detrimental to a positive bond. Surface variation shall not exceed 6mm over 3m.

3.1.3 Commencement of installation signifies acceptance of surfaces and, if repairs to these surfaces are required after installation, it shall be done at no expense to the Agency.

3.2 Preparation

3.2.1 Carefully pre-plan layout of tile to provide a symmetric pattern within wall areas and fittings. Tile layout to minimize cutting and leaving no tile less than half full size.

3.2.2 Co-ordinate with other trades to ensure proper placement, cutting and fitting of items to be installed within ceramic tile areas. Do not start the Work until work of other trades which affects the tile areas is completed.

3.3 Installation

3.3.1 Apply metal lath to CSA A82.30-M.

3.3.2 Wipe back side of tile with slightly damp towel or sponge to remove dust, dirt and/or residue. Apply back-buttered thin coat of fresh mortar or adhesive approximately 2mm thick to back side of each tile immediately before laying into freshly applied wet notch trowel applied mortar bond coat. Provide 100 per cent mortar coverage at perimeter edges and corners.

3.3.3 Apply tile and backing materials to clean and sound surfaces and in accordance with setting system specified.

3.3.4 Remove paper facing after setting and adjust tiles where applicable.

3.3.5 Maximum Surface Tolerance: 1:800.
3.3.6 Make joints between tiles uniform and approximately 1.5mm wide, plumb, straight, true, even and flush with adjacent tile. Ensure sheet layout not visible after installation. Align patterns.
3.3.7 Lay out tiles so perimeter tiles are minimum 1/2 size.

3.3.8 Neatly cut and fit tile units around corner, fitments, fixtures, drains and other built-in objects to maintain uniform joint appearance. Make cut edges smooth, even and free from chipping. Edges resulting from splitting are not acceptable. Smooth all cut edges with carborundum block.
3.3.9 Where floor slopes are indicated, ensure that application of tiles are true, leaving no pockets or depressions unable to drain properly.
3.3.10 Place as large an area as can be covered with tile before mortar or adhesive has reached its initial set in one operation. When more setting mortar or adhesive has been spread than can be properly covered, cut back unfinished portion to clean, beveled edge and remove.
3.3.11 Form intersections, corners, returns and bases accurately.
3.3.12 Maintain 6mm wide standard uniform joint width between Type-1ceramic tile units. Ensure joints are true, straight and plumb. Maintain tile surfaces flush with no arises or ridges.
3.3.13 Make internal angles square, external angles bullnose. Use bullnose edged tiles for bullnose effect. Use bullnosed edge tiles where edges of tile at terminations are left exposed.
3.3.14 Sound tiles after setting and remove and replace hollow sounding tiles to obtain full bond.
3.3.15 Make coved base of the same material as floor tile.
3.3.15 Use round trim at termination of wall tile panels, except where panel abuts projecting or right-angle surface or flush adjacent surface.
3.3.16 Install thresholds at doors. Install thresholds at junction of tile flooring and dissimilar material.
3.3.17 Allow minimum 24 hours after installation of tiles before grouting. Grout all joints, pressing grout compound into base of joints. Remove all excess grout by wiping diagonally across the joints with a damp sponge.
3.3.18 Make control joints at max 6m in each direction or follow grid lines of building where indicated. Make joint width same as tile joints. Fill control joints with sealant in accordance with manufacturer's recommendations. Keep building expansion joints free of mortar or grout.
3.3.19 Sealer: Apply one coat sealer in accordance with manufacturer's instructions to unglazed tile floors, except in wet areas designated by Consultant.
3.3.20 Finished joints to be solid, free from voids, cracks, foreign materials and excess mortar or grout.

3.3.21 Install transition strips at all tile edges with changes in finished floor elevation.
3.3.22 Do not permit foot traffic for minimum 48 hours after installation.
3.3.23 Ensure completed work is free from broken, damaged or faulty tiles. Clean installed tile surfaces after installation and grouting has cured, remove all mortar, grout and other stains caused by this trade.
3.3.24 Keep control joints clean and free of mortar and grout.
3.3.25 Do not expose any cut tile edges.
3.3.26 All cut tiles must be minimum 50% of original tile size in length and width.
3.3.27 Promptly clean-up and remove from the premises all rubbish and surplus material from the Work of this Section.

3.4 **Protection**

3.4.1 Prohibit all traffic in work areas during installation and for 72 hours after installation of tile.

3.5 **Cleaning**

3.5.1 Remove all rubbish and surplus materials from the work of this Section promptly as work proceeds and on completion.

END OF SECTION

1. **GENERAL**

1.1 **General Requirements**

1.1.1 Conform to Section 01 00 00 – General Requirements and all documents referred to therein.

1.2 **Scope of Work**

1.2.1 Furnish all labour, materials and equipment necessary to supply and install suspension grid system complete with hangers, tie wire, fastenings and hold down clips as indicated on the Contract Drawings and specified herein.

1.2.2 Furnished all labour, materials and equipment necessary to supply and install mineral acoustic ceiling tiles and acoustical panels, as indicated on the Contract Drawings, room finish schedules and as specified herein.

1.3 **Related Sections**

1.3.1 Section 09 21 16 – Gypsum Board Assemblies
1.3.2 Section 09 22 16 – Non-Structural Metal Framing
1.3.3 Divisions 21 and 23 – Mechanical items installed in ceiling systems
1.3.4 Divisions 26, and 28 – Electrical items installed in ceiling systems

1.4 **Quality Assurance**

1.4.1 Suspension grid system and acoustic ceilings to be installed by fully qualified workmen and in strict accordance with system manufacturer's printed instructions to produce a first class installation.

1.4.2 Suspension grid system to be installed by an approved subcontractor who is to assume complete responsibility for leveling the system.

1.5. **References**

The following standards and criteria to serve as minimum guidelines for materials and installation of all acoustical work covered for this Section:

1.5.1 CAN2-92.1-M77: Acoustical Units, Prefabricated.
1.5.2 ASTM C636: Specification for Acoustical Tile and Lay-in Ceiling Suspension Systems.

1.6 **Submittals**

1.6.1 Submit duplicate samples of acoustical panels for approval prior to ordering. Submit duplicate 300mm long samples of ceiling suspension system including all parts and trim.

1.6.2 Upon approval of materials and components, install a full size ceiling mock-up.

1.7 **Delivery, Storage and Handling**

1.7.1 Materials to be delivered to job site in undamaged original factory wrappings and stored in a dry, weather-proof, heated location.

1.7.2 Do not deliver materials to the site until the building is ready for the installation of this material.

1.8 **Project Conditions**

1.8.1 Permit wet work to dry prior to commencement of installation.

1.8.2 Maintain uniform minimum temperature of 15°C and humidity of 20 to 40 per cent before, during and after installation.

1.8.3 Store materials in work area 48 hours prior to installation.

1.9 **Co-ordination**

1.9.1 Co-ordinate installation of suspension grid system with mechanical and electrical trades in order to obtain proper locations of electrical fixtures and air distribution grilles.

1.9.2 It is the intent that all fixtures, grilles, vents etc. are to be symmetrically located in the ceiling layout, unless otherwise indicated.

2. **PRODUCTS**

2.1 **Acceptable Manufacturers**

2.1.1 This portion of the Specification has been prepared on the basis of using suspension grid system and mineral acoustic ceiling tiles by Donn Canada Ltd. and Canadian Gypsum Co.or approved equivalent.

2.2 **Materials**

2.2.1 Suspension Grid System: to be Donn DX (non-rated ceilings) exposed tee ceiling system consisting of the following items:

.1 Main tees to be double web design, 38mm deep with rectangular bead and integral reversible splice. Exposed flange of 23.8mm with rolled on prefinished cap. Holes for cross tees spaced at 150mm o.c. and holes for hanger wire at 50mm o.c.

.2 Cross tees to be double web design, 38mm deep with 23.8mm exposed flange to match main tees. Web extended to form a positive interlock between cross tee webs and through intersecting main tee holes. Lower flange extended and offset to provide a flush level.

.3 Wall moulding to be electro-galvanized steel pre-painted and formed into 25mm x 19mm angle to match tee bars.

.4 Finish for grid members to be factory-applied low sheen, flat white on the exposed flanges.

2.2.2 Acoustic Tile: to be CGC Aspen Illusion 2/24 panels, item 652, standard with SLT edges.

2.2.3 Hanger Wire: to be galvanized, soft annealed, steel wire of sufficient diameter to suit the ULC design requirements for fire-rated assemblies. Provide 2.6mm diameter wire for non-fire rated ceilings.

2.2.4 Hold-Down Clips: to be spring steel 9.5mm wide formed to fit contour of rectangular bead.

2.2.5 Carrying Channels: to be galvanized cold rolled steel, 38mm deep with 10mm wide flanges and 1200mm long. Wire channels face to face to bridging members with 16 gauge galvanized, soft annealed steel tie wire.

2.2.6 Accessories: to include splices, clips, wire ties, retainers and miscellaneous moulding, to complement suspension system components, as recommended by system manufacturer.

2.2.7 To the greatest extent possible, use materials with a large percentage of recycled content and sourced regionally.

2.2.8 All materials provided by this Section, including but not limited to coatings, sealants, primers and adhesives, are to have low VOC content.

3. EXECUTION

3.1 Inspection

3.1.1 Prior to installation, carefully inspect the installed work of all other trades and verify that such Work is complete to the point where the installation of acoustical treatment may properly commence.

3.1.2 Do not erect ceiling suspension until work above ceiling has been properly inspected by the Consultant.

3.2 Preparation

3.2.1 Supply hangers and inserts to support the grid in time to be installed into structural system if required.

3.2.2 Commence installation after the building has been totally enclosed and dust generating activities have been completed. Do not commence the Work in areas where glazing is incomplete or concrete is not thoroughly dry.

3.3 Installation

3.3.1 Suspension systems using exposed tee bar grid members to form a 610mm x 1219mm layout. Layout centerline of ceiling both ways, to provide balanced borders at room perimeter with border units not less than 300mm unless otherwise indicated on reflected ceiling plan.

3.3.2 Secure hangers firmly to lower chord of metal bar joists or to cold-rolled support channels attached to bar joists or bridging. Crimping of hanger or attachment of hanger to pipes and ducts will not be permitted. Hangers must not exceed 5 degrees of plumb.

3.3.3 Hang suspended grid system with hangers wired at approximately 1219mm o.c. maximum, both ways. Secure hangers to main tees by looping end of hanger through hole in tees and tying end of hanger to its vertical suspension with minimum two twists.

3.3.4 Install cross tee sections at right angles and lock securely in place at intersection to provide a rigid assembly.

3.3.5 Install wall mouldings at junctions of ceiling and vertical surfaces. Butt joints neatly, square and true in alignment. Provide spring

clips to produce tight installation. Spring clips are required near exterior door openings and at fire-rated ceiling systems.

3.3.6 Frame grid system at openings for light fixtures, air diffusers, speakers and at changes in ceiling heights. Furr ceilings down around ducts, beams, bulkheads or other items as maybe required.

3.3.7 Level entire grid system to provide flush finished surface in true planes and free from dropping, warped or uneven joints. Finish grid system to be leveled to 1:1000. The suspension system to have maximum deflection of 1/360th spans.

3.3.8 Support light fixtures and diffusers with separate additional ceiling suspension hangers within 150mm of each corner and at maximum 600mm around perimeter of fixture.

3.3.9 Walls to be at least prime coated and mechanical rough-in to be completed prior to proceeding with installation of acoustic tile.

3.3.10 Carefully install acoustic ceiling tiles. Be responsible for all cutting and fitting of ceiling tiles around ducts, pipes, conduits, grilles, registers, diffusers, speakers, light fixtures, brackets and similar items. Butt joints tight, terminate edges with moulding.

3.4 **Adjusting and Cleaning**

3.4.1 Touch up scratches, abrasions, voids and other defects in painted surfaces to the approval of the Consultant.

3.4.2 Clean up and remove debris, caused by this construction after the completion of installation.

3.5 **Extra Stock**

Supply to the Agency two unopened undamaged boxes of each type and style of acoustical ceiling tile used in this Contract.

END OF SECTION

1. GENERAL

1.1 General Requirements

1.1.1 Conform to Section 01 00 00 – General Requirements and all documents referred to therein.

1.1.2 Provide labour, materials, products, equipment and services required to complete epoxy non- slip flooring as indicated on the Contract Drawings and specified in this Section of the Specification.

1.2 References

ASTM C307	Test Method for Tensile Strength of Chemical Resistant Mortar, Grouts and Monolithic Surfacings
ASTM C413	Test Method for Absorption of Chemical-Resistant Mortars Grouts, Monolithic Surfacings and Polymer Concretes.
ASTM C579	Test Method for Compressive Strength of Chemical- Resistant Mortars Grouts, Monolithic Surfacings and Polymer Concretes.
ASTM C580	Test Method for Flexural Strength and Modulus of Elasticity of Chemical-Resistant Mortars Grouts, Monolithic Surfacings and Polymer Concretes
ASTM D4263	Test Method for Indicating Moisture in Concrete by the Plastic Sheet
CGSB 81-GP-5M	Flooring, Seamless, Decorative Epoxy, Trowelled Finish CGSB 81-GP-10M Application of Seamless Flooring
CAN/CGSB-19.24-M	Multi-Component, Chemical Curing Sealing Compound

1.3 Submittals

1.3.1 Product data: Submit manufacturer's Product data indicating Manufacturer’s technical data, installation instructions and general recommendations for the flooring material specified..

1.3.2 Maintenance Data: Submit manufacturer's acceptance of substrate prior to installation in writing. Submit verification of moisture content of floor prior to installation.

1.3.3 Test Reports: If requested, submit test data reports indicating that material/system supplied and installed meets performance requirements listed herein.

1.4 Quality Assurance

1.4.1 Perform Work of this Section by a company that has a minimum of five years proven experience in installations of a similar size and nature and that is approved by manufacturer. Submit to Consultant, applicator’s current certificate of approval by the material manufacturer as proof of compliance.

1.5 **Site Conditions**

1.5.1 Do not install the Work of this Section outside of the following environmental ranges without Product manufacturer's written acceptance:

.1 Ambient air and surface temperature: 15°C to 30°C.

.2 Relative Humidity: In accordance with manufacturers' requirements.

.3 When no dust is being raised.

.4 In well-ventilated and broom clean areas.

1.5.2 Install temporary protection and facilities to maintain the Product manufacturer's, and the above specification, environmental requirements for 24 hours before, during, and 24 hours after installation.

1.5.3 Post do not enter and appropriate warning signs at conspicuous locations.

1.6 **Delivery, Storage, and Handling**

1.6.1 Store materials at site in an area specifically set aside for purpose that is locked, ventilated, and maintained at a minimum temperature of 16°C.

1.6.2 Ensure that health and fire regulations are complied with in storage area, and during handling and application.

1.7 **Tolerances**

1.7.1 Finish seamless flooring surfaces to produce plumb and level floor, or straight where sloped to drains, within tolerance of 3mm in 3m.

1.8 **Delivery, Storage, and Handling**

1.8.1 Store materials at site in an area specifically set aside for purpose that is locked, ventilated, and maintained at a minimum temperature of 16°C.

1.8.2 Ensure that health and fire regulations are complied with in storage area, and during handling and application.

1.8.3 Store flammable materials in safe, approved containers to eliminate fire hazards and remove from Site at end of each work shift

1.8.4 Do not use materials that has been stored for period of time exceeding maximum recommended shelf life of materials

1.9 **Environmental Requirements**

1.9.1 Verify that newly placed concrete has cured for at least 28 days prior to intended application. Test for moisture content by chipping out samples sufficient for testing in accordance with ASTM 1864-81 (RA88), Standard Test for Moisture in Mineral Aggregates. Do not install coatings if moisture exceeds three per cent content by mass. Obtain approval of flooring

manufacturer of moisture content of subfloors before proceeding with application

1.9.2 Maintain minimum air and surface temperatures at 16° C (60°F) for 24 hours before, during, and for 48 hours following application, or until cured.

1.9.3 Maintain well-lit and well-ventilated area.

1.9.4 Comply with flooring manufacturer's directions for maintenance of substrate temperatures, ventilation and other conditions required to execute and protect work.

1.10 **Protection**

1.10.1 Protect adjacent surfaces from damage resulting from work of this Section. If necessary, cover or mask adjacent surfaces to those receiving flooring including fixtures and equipment.

1.10.2 Materials soiled by coatings during application and storage, and from which soil cannot be completely removed, shall be replaced by this Section at no extra cost.

1.10.3 Erect barriers to prevent entry and presence of workers not performing work of this Section during application of flooring and for 48 hours following completion of application.

1.10.4 Post "No Smoking" signs while work is in progress and curing. Ensure that spark-proof electrical equipment is used in areas where flammable materials are being applied. Prevent use of open flames or equipment that may cause sparks during this phase of work.

2. PRODUCTS

2.1 Materials

2.1.1 Drawing Designation **F-1 at Tomken & Rising Hill**:

.1 Epoxy Seamless Flooring and base (F-1 at Tomken & Rising Hill): CGSB 81-GP-5M, 100% solids, no VOC, no odour; multi-coat system consisting of 2- component epoxy primer, trowel applied epoxy matrix (coloured resin, silica aggregates) and 2 coats two-part epoxy top coat in colour to match floor body

.2 Total assembly thickness: 6mm minimum

.3 Finish: Slip-resistant

.4 Colour: White

.5 Acceptable products:

- Duochem Inc.: Duochem 9400/9450 top-coat
- Stonehard Ltd.: Stonclad GS/GS4 top-coat
- Or Approved equal

3. EXECUTION

3.1 Examination

3.1.1 Verify condition of previously installed Work upon which this Section depends. Report defects to Consultant. Commencement of Work means acceptance of existing conditions.

3.1.2 Test surfaces for moisture content to ensure that they are suitable for application.

3.2 **Preparation**

3.2.1 Prepare substrate in accordance with manufacturer's written instructions. Diamond grind and vacuum substrate free of debris and dust.

3.2.2 Project adjacent surfaces from damage resulting from this Work. Mask and/or cover adjacent surfaces, fixtures, and equipment as necessary.

3.2.3 Remove oil, dirt and grease with industrial detergent, as recommended by epoxy manufacturer's representative.

3.3 **Waterproof Membrane Application**

3.3.1 Apply waterproofing membrane over primed surfaces, in accordance with manufacturer's written instructions, in finished thickness of not less than 0.0889mm (35 mils) in all areas subject to water exposure.

3.4 **Protection**

3.4.1 Erect barriers to prevent the entry and presence of personnel not performing work of this Section during application of floor sealer, and for 48 hours following completion of application.

3.5 **Installation**

3.5.1 **General:**

.1 Prepare, mix materials and apply each component of flooring system in strict accordance with CGSB 81-GP-10M and manufacturer's printed directions to produce uniform monolithic wearing surface of thickness indicated for each system, with integral
cove bases, uninterrupted except at divider strips, sawn joints or other types of joints required.

.2 Apply flooring with care to ensure that no laps, pin holes, voids, crawls, skips or other marks or irregularities are visible, and to provide uniform appearance.

.3 Work coating into corners and other restricted areas, up and over equipment bases, and into recesses in floors to ensure full coverage.

.4 Make clean true junctions with no visible overlap between adjoining applications of coatings.

.5 Match approved sample for colour, sheen, texture and slip resistance.

.6 For large areas, stop each day's production at metal dividing strip at lines approved by Consultant.

3.5.2 Primer: Apply primer over prepared substrate, at manufacturer's recommended spreading rate with timing of application coordinated with subsequent application of topping mix to

ensure optimum adhesion between flooring materials and substrate.

3.5.3 Trowel Applied Matrix:

Combine aggregate to blended epoxy resin to form trowellable mortar.

Trowel apply mix over tacky primer in number of coats and at spreading rates required to produce minimum thickness specified, or as required to achieve minimum drainage slopes where concrete substrate insufficiently sloped.

Allow topping to harden minimum time recommended by manufacturer before applying finish coats.

3.5.4 Epoxy/Epoxy Top-Coats:

When trowelled epoxy matrix has hardened, remove imperfections by lightly abrading surface and vacuum clean.

Apply two finish coats at spreading rate and following method recommended by manufacturer to achieve 0.254mm (10 mils) minimum thickness and to obtain specified finish to match approved samples.

Allow minimum recommended drying time between coats.

3.5.5 Cove Bases:

Provide base struck straight to provide line for wall finish. Cap with manufacturer's recommended cove strip. Terminate base 200mm high cove, feather out and trim evenly along wall to provide smooth transition with adjacent wall finish. Ensure top-coat is compatible with wall coating prior to application. Round interior and exterior corners

3.5.6 Thresholds:

.1 Where flooring terminates at doorways, and difference in height occurs between seamless flooring and other finishes, install thresholds.

.2 Where flooring terminates at doorways, and difference in height occurs between seamless flooring and other floor finishes, cut back slab for 32mm width to allow full thickness of seamless flooring to be flush with adjacent floor finish (chasing).

.3 Where flooring terminates at doorways, and floor finishes are of same thickness, provide metal divider strips flush with surfaces.

3.5.7 Floor Drains:

.1 Slope flooring to drains minimum of 3.2mm in 300mm from furthest surface point.

.2 Grind concrete around perimeter to provide 6mm (1/4 inch) thickness of flooring material which is flush with top of drain and slopes as indicated on Drawings.

3.5.8 Chasing: Provide chase where flooring does not abut against vertical surface by chiselling out 38mm wide chase to straight saw-cut 12mm depth.

3.5.9 Control Joints: Where substrate is interrupted by isolation, control or expansion joints, provide saw-cut joint in flooring after floor installation, install backer rod and fill with manufacturer's recommended epoxy or urethane sealant.

3.6 **Field Quality Control**

3.6.1 Provide manufacturer's flooring representative written reports on the status and compliance of work with manufacturer's standards and specified requirements.

3.7 **Adjustment and Cleaning**

3.7.1 Touch up and refinish minor defects in work. Refinish entire coated surface areas where finish is damaged or otherwise unacceptable.

3.7.2 Remove promptly as work progresses spilled or splattered coating materials from adjacent surfaces.

3.7.3 Clean floors on completion of Work. Do not mar surfaces while removing splatters.

3.7.4 Protect completed work from traffic for at least one week to allow proper curing of floor finish. Protect work from any trades using area after completion of installation.

END OF SECTION

1. **GENERAL**

1.1 **General Requirements**

1.1.1 Conform to Section 01 00 00- General Requirements and all documents referred to therein.

1.1.2 Provide all labour, materials, products, equipment and services to paint all walls, doors and frames (both new and existing walls and doors from both sides) as indicated on the Contract Drawings and Specified in this Section of the Specification.

1.2 **Scope of Work**

1.2.1 Furnish all labour, materials and equipment necessary to supply and install:

.1 Interior Primer.

.2 Interior Paint.

1.2.2 It is the intent that the Work of this Section includes the painting of all surfaces as noted in the room finish schedules and the painting of all items as indicated on the Contract Drawings, within Specifications or general finish notes.

1.3 **Related Sections**

1.3.1 Section 09 21 16 – Gypsum Board Assemblies

1.4 **References**

1.4.1 Green Seal Standard GS-11; May 20, 1993.

1.4.2 MPI (APL) – Master Painters Institute SSPC (PM1) – Steel Structures Painting Manual, Vol. 1, Good Painting Practice; Society.

1.5 **Definitions**

Paints are available in a wide range of sheens or glosses, as measured by a gloss meter from a 60 degree angle from vertical, as a percentage of the amount of light that is reflected. The following terms are used to describe the gloss of our products:

1.5.1 Flat: Less than 5 per cent.

1.5.2 Matte: 0 to 10 per cent.

1.5.3 Eggshell: 10 to 25 per cent.

1.5.4 Satin: 20 to 35 per cent.

1.5.5 Semi-Gloss: 35 to 70 per cent.

1.5.6 Gloss: 70 to 85 per cent.

1.6 **Submittals**

1.6.1 Submit under provisions of Division 01.

1.6.2 Product Data: Provide a complete list of all products to be used, with the following information for each:

.1 Manufacturer's name, product name and/or catalogue number and general product category

.2 Cross-reference to specified paint system(s) that the product is to be used in; include description of each system.

1.6.3 Samples: Submit three paper samples, 127mm x 178mm (5" x 7") in size, illustrating selected colours for each colour and system selected with specified coats cascaded.

1.6.4 Manufacturer's Instructions: Indicate special surface preparation procedures.

1.6.5 Maintenance Data: Submit data on cleaning, touch-up and repair of painted and coated surfaces.

1.7 **Quality Control**

1.7.1 Locate testing area in building to establish standard of workmanship, texture, gloss and coverage where designated. Completely finish a sample room for each finishing system to test application, coverage, colour, texture and glass of finish materials. Retain test area until completion of the Work. Use approved work in test areas as a standard for corresponding work throughout the building. Correct and refinish work that does not compare with the approved finishes.

1.8 **Environmental Conditions**

1.8.1 Do not apply paint finish in area where dust is being generated.

1.8.2 Maintain minimum air temperatures of 10ºC for paint 18ºC for varnish in areas to be painted for 24 hours prior to and after application.

1.9 **List of Materials**

1.9.1 Submit a written list of materials proposed for use on work, prepared by paint manufacturer to Agency for review.

1.10 **Environmental Conditions**

1.10.1 Provide two litres of paint of each colour used on the project for maintenance purposes. Turn over to the Agency.

1.10.2 At project closeout, provide all colour mixture names and codes with associated room and door/frame references to the Agency for accurate future colour matching.

2. **PRODUCTS**

2.1 **Manufacturers**

Acceptable manufacturer: Benjamin Moore. Substitutions not permitted.

2.2 **Delivery and Storage**

2.2.1 Deliver materials to and store on site in the manufacturer's sealed and labelled containers. Materials are subject to inspection and approval by the Agency before seals are broken. Reject unlabelled containers and containers with broken seals.

2.2.2 Store containers of paint, varnish, thinner and other volatile materials in well ventilated places where they will not be exposed to excessive heat or direct rays of sun. Keep tightly closed when not in actual use. Remove used cloths from building every night and when not in use. Take precautions against spontaneous combustion by drenching with water or placing in air-tight covered metal containers.

2.2.3 Protect work of adjacent surface against paint splattering and make good at own expense any such damage.

2.2.4 Provide adequate tarpaulin or drop-sheets for adjacent surfaces and floors. Remove finished hardware, switch plates and the like, from items and surfaces to be painted or coated, and re-affix on completion of painting or coating. Pay costs for removal and replacement of all elements to be protected as required to complete the work of this section.

2.2.5 Post with "Wet Paint" signs and bar from contact, finished areas liable to contact during drying.

2.2.6 Maintain C02 fire extinguisher of minimum 10 kg capacity in paint storage area.

2.3 **Materials**

2.3.1 Metal Surfaces:

.1 Primer (1-GP-40) CP.
.2 Semi- Gloss (1-GP-57) CP.
.3 Gloss (1-GP-60) CP.
.4 Galvanized surfaces (1-GP-178)

2.3.2 Woodwork:

.1 Primer (1-GP-38) CP.
.2 Semi- Gloss (1-GP-57) CP.
.3 Gloss (1-GP-60) CP.
.4 Primer (1-GP-36 Type 1) CP. Thinned according to manufacturer's Specifications.
.5 Semi -Gloss (1-GP-36 Type 11) CP.
.6 Gloss (1-GP-36 Type 11) CP.

2.3.3 Gypsum Board, Plaster, Masonry, Concrete, and Wallpaper Surfaces:

.1 Primer (1-GP-119) CP.
.2 Semi- Gloss (1-GP-57) CP.
.3 Gloss (1-GP-60) CP.
.4 Flat (1-GP-1118) CP.

2.4 **Mixing**

2.4.1 So far as practicable, paint shall be factory mixed for immediate application without thinning or other adulterations at the site. Mixing shall be in accordance with applicable painting standards. Paint and coating materials shall be used up within the period of the shelf-life recommended by the manufacturers.

2.5 **Colour**
To be selected by the Agency at a later date. Allow for up to five different colours for selection.

2.6 **Extra Materials**
Two (2) litres of each colour of paint used on this project.

3. **EXECUTION**

3.1 **Preparation**

3.1.1 Remove furniture, electrical plates, mask all surfaces not to be painted.

3.1.2 All loose paint, rust, and so forth, shall be removed and all surfaces that are to be refinished shall be sanded.

3.1.3 Concrete and Concrete Masonry: Clean surfaces free of loose particles, sand, efflorescence, laitance, form oil, curing compounds and other substances which could impair coating performance or appearance.

3.1.4 Concrete Floors: Remove contaminants which could impair coating performance or appearance. Verify moisture transmission and alkaline-acid balance recommended by coating manufacturer; mechanically abrade surface to achieve 80-100 grit medium sandpaper texture.

3.1.5 Gypsum Board: Repair cracks, holes and other surface defects with joint compound to produce surface flush with adjacent surfaces.

3.1.6 Masonry Surfaces – Restored: Remove loose particles, sand, efflorescence, laitance, cleaning compounds and other substances that could impair coating performance or appearance.

3.1.7 Metals – Aluminum, Mill-Finish: Clean and etch surfaces with a phosphoric acid-water solution or water based industrial cleaner. Flush with clean water and allow to dry, before applying primer coat.

3.2 **Application**

3.2.1 Brush and roller shall be used. Spraying will not be permitted. Seal knots with vinyl sealer (CGSB 1-GP-126M) prior to priming.

3.2.2 Material shall be evenly applied and shall not show brush marks, runs, overlapping, bristles, and the like. Care shall be used. Sand and dust between each coat.

3.2.3 Dividing line between painted and unpainted surfaces shall be crisp and straight

3.3 **Completion**

3.3.1 Upon completion, all surfaces including glass shall be cleaned and shall be free from paint.

3.3.2 All protection shall be removed, damage to this and adjacent work resulting from the Work of this Contract shall be made good and materials, debris, tools and equipment shall be removed from the premises and the buildings and site left in a clean, dust free condition satisfactory to the Consultant and to the Agency.

END OF SECTION

1. **GENERAL**

1.1 **General Requirements**

Conform to Section 01 00 00 – General Requirements and all documents referred to therein.

1.2 **Scope of Work**

1.2.1 Furnish all labour, materials, products, equipment and services to supply and install washroom accessories as shown on the Contract Drawings and specified herein.

1.3 **Related Sections**

1.3.1 Section 09 21 16 – Gypsum Board Assemblies
1.3.2 Section 09 22 16 – Non-Structural Metal Framing
1.3.3 Section 09 30 00 – Tiling

1.4 **Quality Assurance**

1.4.1 Toilet and bath accessories to be installed by fully experienced workmen in strict accordance with the manufacturer's instructions and reviewed shop drawings.

1.5 **Submittals**

1.5.1 Submittals as per requirements of Section 01 00 00 and as noted herein. Submit shop drawings or catalogue illustrations in quadruplicate for review by the Consultant. Clearly indicate size and description of components, base materials, surface finish inside and out, hardware and locks, attachment devices, description of rough-in frames and building-in, and details of anchors for grab bars.

1.6 **Delivery, Storage and Handling**

1.6.1 Carefully wrap accessories ensuring protection during shipping and storage.
1.6.2 Coordinate delivery of toilet and bath accessories to the site with the Contractor in order to avoid unnecessary delays in construction and to avoid damage due to excessive storage periods.
1.6.3 Store materials in weathertight enclosures and take all necessary precautions to protect finishes from damage.

1.7 **Coordination**

1.7.1 Coordinate location of toilet and bath accessories with all other pertinent trades to ensure the installation of adequate back-up blocking or reinforcing.

2. **PRODUCTS**

2.1 **Acceptable Manufacturers**

2.1.1 Supplier of toilet and bath accessories is Frost Products Ltd. and/or Bobrick, unless noted otherwise. Substitutions may be

acceptable only upon review and approval at the sole discretion of the Agency.

2.2 **Materials**

2.2.1 Paper Towel Dispenser (PTD): Frost, Model 109-705 – Hands Free, Paper Roll Towel Dispenser, Type-304 No.4 brushed finish stainless steel. Unit operates with AC adaptor (included), keyed tumbler lock, front loading, detection zone senses hand when placed in a position under dispenser to deliver a 6 to 9" length of towel. Unit Size: 400mm (15-3/4" L) x 298mm (11-3/4" W) x 235mm (9-1/4" D). Weight: 5.3kg. (12 lbs.).

2.2.2 Waste Receptacle (WR): Bobrick, Model B-2300 – Floor-Standing Dome-Top Waste Receptacle. Satin-finish, stainless steel body with black steel-domed top. Removable top with fingerprint-resistant textured powder coated finish has 150mm (6") diameter opening for hygienic, no-touch disposal of waste. Galvanized steel liner has grommeted lift holes. Capacity: 68L (18 gal.). Unit: 380mm (15") diameter, 785mm (31" H (38).

2.2.3 Jumbo Toilet Tissue Dispenser (TTD or TT): Bobrick, Model B2892 – Surface-Mounted Twin Jumbo-Roll Toilet Tissue Dispenser. Satin-finish, stainless steel. Equipped with tumbler lock. Spindles hold two 255mm (10") diameter rolls with 55mm (2-1⁄4") diameter core rolls; convertible for 75mm (3") diameter core rolls. Sliding access panel exposes one roll at a time, allows easy roll change-over. Wide viewing slot in door. Quick reloading. Unit size is 530mm (20-13⁄16" W) x 290mm (11-3⁄8" H) x 135mm (5-5⁄16").

2.2.4 Tilt Mirror: Tilt mirror frame shall be type 304 stainless steel with beveled front to hold frame tightly against mirror; corners shall be welded, ground, and polished smooth; all exposed surfaces shall have satin finish with vertical grain. Select float glass mirror shall be guaranteed for 15 years against silver spoilage. All edges shall be protected by plastic filler strips. Back shall be protected by full-size, shock-absorbing, water-resistant, nonabrasive, 3mm thick polystyrene padding. Back and inner stiffener frame shall be galvanized steel, one-piece welded construction with slots for mounting screws and integral screw-head lock. Acceptable Product/Manufacturer: Model B-293-1836 by Bobrick.

2.2.5 Grab Bars (GBR): Bobrick, Model B-5806 Series – Straight Grab Bar. 32mm (1-1/4") diameter tubing. Constructed of 1.2mm (18 ga.), Type-304, satin-finish stainless steel tubing. Concealed mounting flange 3mm (1⁄8") thick, Type-304 stainless steel plate, 50mm (2" W) x 80mm (3-1⁄8" H) with screw holes for concealed anchors. Cover snaps over mounting flange to conceal screws. Provide one set of two grab bars at each handicapped water closet location as shown on the Contract Drawings. Also provide one pair of grab bars in all handicapped (barrier free) showers to

meet accessibility requirements. Grab bar material and anchorage to withstand downward pull of 2.2 kN.

2.2.6 Soap Dispenser (SD): Deb, Model TF2CHR – Touch-Free Soap Dispenser. Stainless steel unit.

2.2.7 Adult Change Table: Bobrick KB3000-AHL – Adult Changing Station:

.1 Size: 1023mm (40-9/32" D) x 1913mm (75-5/16" W) x 1536mm (60 15/32" H)

.2 Safety: Unit tested to meet ISO 60601 and ISO 17966 Unit shall have a battery backup system to safely operate changing bed in the event of a power interruption.

.3 Unit designed to have redundancy by being equipped with two chains for height adjustability.

.4 Emergency Stop: Unit is equipped with emergency stop to break power to actuator in an emergency

.5 Powered-Height Adjustability: Electronically adjustable from 12" (300mm) to 41" (1041mm). Unit has two sets of electronic controls: located on face of wall cover; and, on front of changing bed in open, down position. Optional control pendant available for height adjustment

.6 Front Safety Guard: One-hand operation. Guard shall lock in raised position along front side of changing bed. Guard shall have dip in top edge to facilitate caregiver reaching over guard to change patient. Guard shall rotate and lock under changing bed in stored position.

.7 Weight Capacity: Tested to support 500 lbs (227 Kg). static load.

.8 Durability: Cycle tested through range of motion 28,000 times at 500lbs. Stress tested to 100,000 cycles with 500lbs. bounce load test. Meets IK10 impact rating.

.9 Cleaning: The unit shall be designed and tested to meet IPX4 rating and shall have no exposed wiring/cables for disinfecting and cleaning. Unit can be hosed without compromising the electronics

.10 Frame: Shall be constructed of 2" powder coated steel tubing.

.11 Changing Bed: Surface shall be 75-1/4"(1911mm) long, 31-1/2"(800mm) wide. Can be raised and lowered with one-hand. Produced from UHMW PE 1000 to be cut resistant while providing hammock for comfort. Surface shall be designed to be replaceable in the field.

.12 Warranty: Three year limited warranty on parts; one year on labor.

.13 Electrical: The unit shall operate at 24V / via 120V wall outlet. It shall include a grounded power cord and have a splash proof control system rated at IPX4.

.14 Optional security lap strap.

.15 Adjustable height changing station shall have cut resistant single piece UHMW PE bed surface, attached to continuous 2" (50mm) square powder costed steel frame and integrated adjustable front guard.

.16 Front guard shall be operable with one hand and lock in the up and down positions.

.17 Changing station shall have two integrated controls to be electronically height adjustable from 12" (300mm) - 41" (1040mm) and will have a fail-safe battery backup to prevent against unit failure during power outage.

.18 Clear indication lights give the status of the mains power connection and battery level. All moving parts shall be concealed or guarded in such way at to protect against pinch points or entrapment.

.19 The changing station shall be designed to support a load of up to 500lbs, with a changing surface that hammocks to provide optimal comfort to the occupant. Bed surface shall be cut resistant and field replaceable, with tamper resistant fasteners to connect it to the steel frame.

.20 Changing surface shall be no less than 75 ¼" (1911mm) x 31 ½" (800mm). Changing station shall be tested to meet IK10 Rating and shall have no exposed wiring/cables.

.21 Changing station shall be capable of being hosed down for cleaning and can be used in wet room environment without compromising electronics.

2.2.8 Shower Curtain and Accessories: Frost, Model 1144 Series:

.1 Shower Rod (Chrome): Model 1144, 25mm (1") diameter, stainless steel.

.2 Shower Curtain: Model 1144-502, 1219mm (48" W) x 1981mm (78" L), 100 per cent mildew and cold treated PEVA (polyethylene vinyl acetate), 0.2mm (8 ga.) thickness, standard white colour.

.3 Curtain Hooks and Accessories: 1144-501L (pack of 12). Provide one set per shower.

2.2.9 Folding Shower Seat in Barrier-Free Showers: Frost, Model 975. One piece phenolic top, 8mm (5/16") thick. Unit frame is fabricated from 1" O.D. 1.27mm (18 ga.), brushed finish Type-304 stainless steel. Welded construction, features full 360 degree welds on all joints. Support and flanges are also stainless steel with brushed finish. Provide at all barrier-free showers as shown on the Contract Drawings.

2.2.10 Heavy Duty Stainless Steel Shelves (Typical): Bobrick, Model B-298 Series, in locations and lengths as shown on the Contract Drawings:

.1 Model B-298x18: 457mm (18" L). Provide: 8 total.

.2 Model B-298x24: 610mm (24" L). Provide: 4 total.

2.2.11 Utility Stainless Steel Shelves: Bobrick, Model B-239-34 – Shelf with Mop, Broom Holders and Hooks. 864mm (34" L) x 330mm

(13" H), three (3) anti-slip mop holders, four (4) hooks, satin-finish stainless steel. Provide as indicated on the Contract Drawings. Provide: 5 total.

2.2.12 Wall Clothes Hooks: Bobrick, Model B-682 - Single Coat Hook. Bright-polished stainless steel. Flange is 50mm (2") x 50mm (2"). Hook: 25mm (1" W), 165mm (6-1⁄2" H). Projects 80mm (3-1⁄16") from wall. Concealed wall plate. Provide: 28 total as indicated on the Contract Drawings.

2.2.13 Emergency Call System: New Dado for emergency call system

2.3 **Fabrication**

2.3.1 Weld and grind joints of fabricated components flush and smooth. Use mechanical fasteners only where approved.

2.3.2 Wherever possible form exposed surfaces from one sheet of stock, free of joints.

2.3.3 Brake form sheet metal work with 1.5mm radius bends.

2.3.4 Form surfaces flat without distortion. Maintain flat surfaces without scratches or dents.

2.3.5 Back paint components where contact is made with building finishes to prevent electrolysis.

2.3.6 Hot dip galvanized, concealed ferrous metal anchors and fastening devices.

2.3.7 Shop assemble components and package complete with anchors and fittings.

2.3.8 Deliver inserts and rough-in frames to jobsite at appropriate time for project schedule. Provide templates, details and instructions for building in anchors and inserts.

2.3.9 Provide steel anchor plates and components for installation on studding and building framing.

3. EXECUTION

3.1 **Inspection**

3.1.1 Prior to installation of toilet and bath accessories, carefully inspect the installed work of all other trades and verify that all such work is complete to the point where this installation may properly commence.

3.2 **Installation**

3.2.1 Refer to washroom layouts for general location of accessories. Exact location and mounting heights of all accessories to be directed on site by the Consultant.

3.2.2 Install all toilet and bath accessories in strict accordance with manufacturer's recommendations and as specified herein.

3.2.3 Install and secure accessories rigidly in place as follows: Stud walls: Provide steel back-plates with threaded studs or plugs as required.

3.2.4 Install grab bars on built-in anchors provided by bar manufacturer.

3.2.5 Use tamper proof screws/bolts for fasteners.

3.2.6 Fill units with necessary supplies shortly before Final Completion of the Project.

3.3 **Adjusting and Cleaning**

3.3.1 Make good all wall finishes after accessory installation, to the satisfaction of the Consultant.

3.3.2 At completion of installation, clean up and remove all debris caused by this construction.

END OF SECTION

1. **GENERAL**

1.1 **General Requirements**

1.1.1 Conform to Section 01 00 00 – General Requirements and all documents referred to therein.

1.1.2 Provide labour, materials, products, equipment and services for supply and installation of single tier metal lockers as indicated on the Contract Drawings and specified in this Section of the Specification complete with filler panels and trims where applicable.

1.2 **Submittals**

1.2.1 Shop Drawings

.1 Submit shop drawings and colour samples.

.2 Include details of lockers, trim, end panels, gauges of materials, methods of installation and fastening.

.3 Job check dimensions where work is installed against finished surfaces.

1.2.2 Samples: Submit samples of materials if requested before commencing work.

2. **PRODUCTS**

2.1 **Materials**

2.1.1 Single Tier Lockers:

.1 Freestanding and anchored to adjacent assemblies

.2 Install lockers grouped as per layout indicated on the Contract Drawings.

.3 Finish: Powder coated. Locker banks will be in three different colour selections by Consultant from manufactures standard decorator colour range. Exposed trim, frame, base, filler and end panel colour to match door colour. Interior of lockers, 223 Oyster Grey.

.4 Acceptable product/manufacturer: “G.S.S. Decor Tri-Lock Mod-u- vent II, Single Tier” by General Storage Systems Canada, (1-800- 265-9055). No substitutions permitted.

2.2 **Fabrication**

2.2.1 Lockers shall be 455mm wide x 610mm deep x 1830mm high; single tier and two tier as indicated.

2.2.2 Doors: Heavy duty, full double-pan box welded construction of cold rolled stretcher levelled sheet steel 1.89mm (14 ga) thick outer panel and full width 0.76mm (22 ga) thick inner panel welded all four sides for a total door depth of 27.5mm (1-1/8”). Provide 25mm cell honeycomb core and recessed locking arrangement. Doors shall be set flush to frames.

2.2.3 Door Frames: Cold rolled not less than 1.52mm (16ga) thick sheet steel formed to a channel shape and horizontal members welded to vertical member.

2.2.4 Comprised of sides, back, shall be no less than 1.52mm (16ga) and should not contain extra unnecessary holes unless otherwise specifically used for the assembly of the lockers and accessories on the project. Edges shall be formed to provide a strong and rigid assembly when bolted or riveted together Locker backs are flanged at right angles providing a triple thickness of metal at the back corner connections. Shelves, tops and bottoms shall be interchangeable; not less than 1.52mm (16ga) and formed into a sturdy pan with a lip formed front edge for additional strength and safety. Provide positive drain in bottom.

2.2.5 Bases: 89mm high, 1.91mm (14ga) thick, galvanneaed steel prefinished. Colour to match trim and doors.

2.2.6 Trim: 1.52mm thick (16ga) sheet steel.

2.2.7 Hinges: continuous 18ga. hinge securely welded to the frame and fastened to the door with screws or rivets.

2.2.8 Door handle: recessed handle 1.91mm (14ga) thick, with padlock hasp. Stainless steel with bright finish.

2.2.9 Equip each full height locker with:

.1 Two non-removable rubber bumpers placed 200mm from the top and bottom of the door on the lock side.

.2 One hat shelf with 25mm upstand at back to form curb, placed 406mm from top of locker and set 25mm in from back for ventilation.

.3 19mm dia. aluminum coat rod.

.4 Three single wall hooks.

.5 Numbered number plates complete with numbers in order shown on shop drawings.

2.2.10 Ventilation: Provide proven, unobstructed free-flow ventilation at top and bottom of lockers. Provide perforated, ventilated door fronts.

2.2.11 Sloped Tops: Provide sloped tops on all locker banks.

3. EXECUTION

3.1 Installation

3.1.1 Install lockers in locations shown on the Contract Drawings, plumb, level and rigidly attached both to each other and to building structure.

3.1.2 Install filler panels and trims as required to close openings between lockers and surrounding or adjacent surfaces.

3.1.3 Provide dress end panels at exposed ends of locker bank, blank fillers and trim as required.

3.1.4 No manufacturer's names are allowed on the front of the lockers.

3.1.5 Make provision for padlocking all locker doors. Padlocks supplied by Agency.

END OF SECTION

1. **GENERAL**

1.1 **Work Included**

1.1.1 Conform to Section 01 00 00 - General Requirements and all documents referred to therein.

1.1.2 Provide mechanical components and accessories which may not be specifically shown on the Contract Drawings or stipulated in the Specifications, but are required to ensure complete and operational systems.

1.1.3 The work involves modification and addition to existing mechanical building systems including:

.1 Heating, Ventilating and Air-Conditioning (HVAC) systems as shown on the Contract Drawings and as specified herein including ductwork, duct insulation, grilles and diffusers, and the like.

.2 Plumbing and drainage systems as shown on the Contract Drawings and as specified herein including all plumbing equipment, fixtures, fittings, accessories, piping etc.

.3 Fire protection systems as shown on the Contract Drawings and as specified herein including sprinkler systems, fire stopping of all service penetrations through fire separations and fire walls using approved materials and methods, and the like.

.4 Performance testing, adjusting and balancing of all systems described above and commissioning of all other associated mechanicalsystems.

.5 Provide on-site warranty from the date of Substantial Completion of two (2) year parts and labour on the entire mechanical installation.

1.2 **Regulations**

1.2.1 Work shall be performed in accordance with codes, rules, regulations, by-laws and requirements of the authorities having jurisdiction.

1.2.2 The plumbing and drainage systems shall comply with regulations respecting plumbing made under the *Ontario Water Resources Act* except as modified by rules, regulations and by-laws of authorities having jurisdiction.

1.2.3 These Specifications are supplementary to the requirements above.

1.2.4 Contract Drawings and Specifications should not conflict with the above regulations but where there are apparent discrepancies, the Contractor shall notify the Consultant.

1.2.5 Refer to Division 26 (Electrical) Specifications for codes, regulations and standards relating to conduit and wiring for gas detection systems and building automation system.

1.3 **Examination of Site**

1.3.1 It is the responsibility of the Contractor and all trades to familiarize themselves with the site and all existing conditions during the Site Visit.

2. **PRODUCTS** – Not Applicable

3. **EXECUTION** – Not Applicable

END OF SECTION

1. **GENERAL**

1.1 **General Requirements**

1.1.1 Conform to Section 01 00 00 – General Requirements and all documents referred to therein and Section 20 05 00 – General Instructions for Mechanical Sections.

1.2 **Work Included**

1.2.1 Provide all labour, materials, products, equipment and services to supply and install hangers and supports, as indicated on the Contract Drawings and specified in this Section of the Specification.

1.2.2 Piping and equipment shall be complete with all necessary supports and hangers required for a safe and workmanlike installation.

1.2.3 Hangers, supports, anchors, guides and restraints shall be selected to withstand all static and dynamic loading conditions which act upon the piping system and associated equipment. Prepare detailed shop drawings for all mechanical and submit to the Consultant for their review and approval. Equipment over 136kg (300lbs.) to be hung from structure must show all anchors and guides, for all systems with the potential for thermal expansion/contraction and/or loads due to weight or thrust. The Contract Documents shall bear the signed seal of a Professional Engineer licensed to practice in the appropriate discipline in the Province of Ontario (PEO). The Contract Documents shall include all details of construction, static and dynamic forces at points of attachment, etc. necessary for review and acceptance by the Consultant. Make adjustments as necessary. No anchor points shall be permitted without reviewed shop drawings and, where installed prior to review, shall be removed and replaced to the satisfaction of the Consultant.

2. **PRODUCTS**

2.1 **Materials**

2.1.1 Provide hangers and supports manufactured by Anvil International , E. Myatt & Co or approved equivalent.

2.1.2 All pipe hangers and supports shall be manufactured to the latest requirements of MSS-SP-58. Where applicable, design and manufacture of hangers and supports shall also conform to ANSI/ASME Code for Pressure Piping B31.1.

2.1.3 Pipe rolls shall have cast iron rollers, shaped to accept the outside diameter of the insulated pipe. Roll shall either rotate on a steel shaft mounted on a cast iron stand or shall roll on a cast iron bed plate.

2.1.4 Pipe slide assembly shall be manufactured to the latest requirements of MSS-SP-69. Assembly shall be complete with

carbon steel structural or fabricated tee, 100 per cent virgin Polytetrafluoroethylene (PTFE) bonded slide plates and carbon steel base.

.1 For cold services such as domestic cold water, dual temperature, and chilled water to maintain the integrity of the insulation and vapour barrier and where slides cannot be directly welded to the pipe provide a plain carbon steel pipe clamp to be welded to the tee support. Clamp shall be full length of tee support and shall be minimum 150mm or as recommended by manufacturer for the specific pipe size.

.2 For hot services such as steam, heating water, etc. where the piping is 50mm and larger, use a standard catalogue protection saddle tack welded to the pipe, which provides a space between the pipe and tee equal to the thickness of the insulation. Weld the tee to the protection saddle.

.3 For longitudinal movement only provide hold down lugs.

.4 For free movement in all directions width of slide plate base shall be sufficient for full travel.

.5 As an alternative to the above, for compact installations, tees may be welded to the pipe directly provided that the temperature is suitable, extended structural or fabricated tees are used, and the tee is vapour sealed at the insulation and completely insulated to prevent condensation for cold services. Provide details and obtain approval from the Consultant prior to proceeding with this arrangement.

2.1.5 Roof supports for pipe or duct runs greater than 9m shall be Thaler Roof Specialities.

2.1.6 Roof supports for pipe or duct runs less than 9 metres shall be Thaler Roof Specialties or Portable Pipe Hangers Inc.

2.1.7 All hangers, supports, brackets and other devices installed exterior to the building shall be galvanized to prevent failure from environmental corrosion. If galvanized components cannot be used submit samples of proposed substitute for review and approval of the Consultant prior to installation.

2.2 **Constant Support Hangers**

2.2.1 For piping at hanger locations where the vertical movement of the piping is 12mm of more or where necessary to avoid the transfer of load to adjacent hangers or connected equipment, pipe hangers shall be constant support design.

2.2.2 The total travel for constant support hangers shall be equal to travel plus 20 per cent. In no case shall the difference between the actual and total travel be less than 25mm. The constant

support hanger shall have travel scales on both sides of the support frame for inspection purposes.

2.2.3 Each constant support hanger shall be individually calibrated prior to shipment to support the exact loads specified.

2.2.4 Alloy springs shall meet the requirements of ASTM A-125 and shall be shot peened and examined by magnetic particle. The spring rate tolerance shall be +/-5 per cent.

2.2.5 Constant supports shall have a wide range of load adjustability. No less than 10 per cent of this adjustability shall be provided either side of the calibrated load for plus or minus field adjustment. Load adjustment scale shall be provided to aid the field in accurate adjustment of loads and load adjustment shall be possible without the use of special tools and shall not impact the travel capabilities of the supports.

2.2.6 Constant supports shall be furnished with travel stops to prevent upward and downward movement of the hanger. The travel stops shall be factory installed so that the hanger level is at the cold position. The travel stops shall be designed to permit future re-engagement.

3. EXECUTION

3.1 Installation

3.1.1 Pipe hangers shall be capable of supporting the pipe in all conditions of operation. They shall allow free expansion and contraction of the piping, and prevent.

3.1.2 Piping shall be supported from walls, beams, columns, and slabs using approved structural attachments. In situations where approved attachments cannot be used, alternative attachments or substructure assemblies shall receive approval prior to installation by the Consultant. Prior approval shall be given for any cutting or drilling of building structural steel. Damage or modification to the structure through welding, cutting, or drilling shall not be permitted without written approval from the Consultant. The Contractor shall supply anchor bolts and base diagrams for equipment and pipe supports showing exact location of attachments.

3.1.3 All drilling for hangers, rod inserts and work of similar nature shall be done by this Division.

3.1.4 Auxiliary structural members shall be provided where piping, ducts or equipment must be suspended between the joists or beams of the structure, or where required to replace individual hanger to allow for installation on new services. Auxiliary structural members shall be the same material and finish as the primary structure (i.e. prime painted, galvanized, etc.). Submit details for all equipment over 136kg (300lbs.) for review by the Consultant.

3.1.5 Depending on the type of structure, hangers shall be either clamped to steel beams or joists, or attached to approved concrete inserts. Submit proposed hanger details for review and acceptance by the Consultant. Make adjustments as necessary to satisfy the requirements of the Consultant.

3.1.6 For precast concrete construction, hanger rods shall pass between slabs and be supported on the slab within the topping by a 100mm x 100mm x 3mm steel plate welded to the hanger rod. A lock nut threaded to the hanger rod together with a 50mm minimum diameter washer shall be applied tight against the under surface of the deck to prevent rising of the hanger.

3.1.7 Approved type expansion shields and bolts may be used for pipe up to 100mm diameter where the presetting of concrete inserts is not practical. Submit proposed hanger details for review and acceptance by the Consultant. Make adjustments as necessary to satisfy the requirements of the Consultant.

3.1.8 Suspension from metal deck shall not be allowed unless specifically accepted by the Consultant. Shop Drawings of the proposed method of suspension must be submitted for review.

3.1.9 Hangers, hanger rods and inserts in all parking and ramp areas shall meet the requirements of CAN/CSA-S413-94 (R2005) and shall be of corrosion-resistant material or have an effective, durable corrosion resistant coating. Submit samples for approval by the Consultant.

3.1.10 Hanger rods shall be subject to tensile loading only. Suspended piping shall be supported by adjustable hanger rods sized as follows:

	Pipe Size	Hanger Rod Diameter
.1	50mm and under	9mm
.2	65mm and 75mm	12mm
.3	100mm and 125mm	16mm
.4	150mm	19mm
.5	200mm to 300mm	22mm

3.1.11 Unless otherwise specified or shown hanger spacing for all services shall be as follows:

	Nominal Pipe Diameter	Maximum Span
.1	Up to and including 25mm	2.1m
.2	32mm to 125mm	3.0m
.3	150mm and larger	4.6m
.4	In addition, provide a hanger within 600mm on each side of valves on pipes over 38mm diameter, elbows or tees.	

3.1.12 Hanger spacing for plumbing and drainage services shall be in accordance with the plumbing code.

3.1.13 Hanger spacing for fire protection services shall be in accordance with the N.F.P.A. Codes.

3.1.14 All horizontal piping 50mm diameter and larger shall be supported by adjustable wrought iron clevis type hangers. Smaller piping shall be supported by adjustable split ring hangers or clevis type hangers.

3.1.15 Suspending one hanger from another shall not be permitted.

3.1.16 For hot water or steam piping 50mm and larger, use a standard catalogue protection saddle tack welded to the pipe, which provides a space between the pipe and hanger equal to the thickness of the insulation.

3.1.17 For hot water or steam piping 38mm and smaller, use line size hangers.

3.1.18 For cold water services such as domestic cold water, chilled water pipe on dual chilled and hot water pipe 25mm and smaller, install a section of high density insulation complete with continuous vapour barrier between the pipe and the hanger.

3.1.19 For cold water services such as domestic cold water, chilled water pipe or dual chilled and hot water pipe larger than 25mm, use a galvanized steel shield between the insulation and the hanger. Between the shield and the pipe, install a section of high density insulation complete with continuous vapour barrier. Refer to the shield width shall be minimum 0.25 (1/4) of the pipe circumference. The length and gauge shall be as follows:

.1 150mm long and 1.98mm (14 US gauge) for pipe larger than 25mm up to 50mm diameter.

.2 250mm long and 2.78mm (12 US gauge) for pipes 65mm to 300mm diameter.

3.1.20 Hangers and riser clamps in contact with copper pipe shall be copper coated construction or plastic coated. Taped hangers and riser clamps shall not be accepted.

3.1.21 Unless otherwise specified or shown in the Contract Documents, all pipes supported from below shall be mounted on pipe rolls or pipe slides.

3.1.22 Provide constant support hangers where shown in the Contract Documents for horizontal or vertical pipes which require vertical movement for expansion. Vertical movement shown for these hangers shall be movement either up or down. Provide hangers to allow for movement in both directions.

3.1.23 Unless otherwise specified or shown in the Contract Documents, vertical pipes shall be supported at least every fourth floor or every 12m maximum.

3.1.24 Pipe slides shall be pre-engineered type. Structural or fabricated tees shall be welded to the pipe or to the protection saddle as shown in the Contract Documents.

3.1.25 Other means of support shall be as shown on the Contract Drawings or as specified hereunder.

3.1.26 For special equipment supports refer to specific equipment sections. Where no support method is identified secure wall mounted equipment to metal framing or masonry, with steel toggle or expansion fasteners, machine screws or sheet metal screws as applicable. Plastic, fibre or soft metal inserts shall not be acceptable. Wall mounted equipment shall not exceed 45.5kg in weight or 250mm in depth unless reviewed or detailed by the Consultant. Where framing does not permit direct attachment, provide metal strut sub-framing or minimum 19mm fire retardant treated plywood backboards, unpainted, attached to the framing. Provide attachments for backboards at 600mm on centres with no less than 4 attachments.

END OF SECTION

1. **GENERAL**

1.1 **General Requirements**

1.1.1 Conform to Section 01 00 00 – General Requirements and all documents referred to therein.

1.1.2 Provide all labour, material, products, equipment and services to modify and and test the existing sprinkler systems as indicated on the Contract Drawings and specified in this Section of the Specification.

1.1.3 Sprinkler system shall conform to applicable NFPA Standards and to all authorities' requirements.

1.2 **Submittals**

1.2.1 Shop Drawings: Submit sprinkler drawing layouts for review by the Engineer.

1.2.2 Submit hydraulic design calculations duly stamped by a fire protection Engineer.

2. **PRODUCTS**

2.1 **Materials**

2.1.1 General:

.1 All components used in the sprinkler system shall be ULC listed. UL or FM listed equipment not bearing a ULC listing shall only be acceptable if written approval from the local authority is obtained.

.2 All components used in the sprinkler system shall be manufactured in Canada or USA, whenever available.

2.1.2 Pipe, valves and fittings less than 1206kPa working pressure shall be as follows:

.1 Pipe, black steel, Schedule 40, A.S.T.M. A53.

.2 Fittings for a minimum of 1206kPa working pressure, 1035kPa malleable iron ASME B16.3, 860kPa cast iron ASME B16.4, butt welding schedule 40 ASME B16.25 or roll grooved Victaulic, Gruvlok or Tyco.

.3 All valves shall be ULC listed.

.4 Fittings with grooved connections at all legs of the fitting or couplings, shall be equal to Victaulic 920, Tyco/Central Figure 730, or Gruvlok Figure 7045 Clamp-T will be accepted. Fittings and couplings that are not acceptable are ones equal to Victaulic 921, Tyco/Central Sprinkler Strap 40-5, or Gruvlok Figure 7045 U-bolt.

2.1.3 No grooved fittings or products shall be used except for those specified. All grooved products shall be of one manufacturer.

2.1.4 Pipe valves and fittings over 1206kPa working pressure shall be as follows:

.1 Pipe, black steel, schedule 40, A.S.T.M. A53 (up to 2070kPa).

.2 Fittings, 2070kPa malleable iron ASME B16.3, 1720kPa cast iron ASME B16.4, or butt welding schedule 40 ASME B16.25.

.3 Dry pipe and fittings shall be galvanized.

.4 Gate valves 50mm and smaller all bronze, rising stem, screwed Class 200, Crane No.459 UL listed and to local authorities approval.

.5 Ball valves 50mm and smaller may be used as an alternative to specified gate valves, bronze body, chrome plated brass ball, stainless steel stem, TFE seat. Equal to Victaulic Series 728 Firelock.

.6 Gate valves 65mm and larger, steel body, flanged or welded, Exalloy stellite trim, O.S.&Y. equal to Class 1930kPa Crane No.47XUF or Kitz 150SCL and Class 300 above 1930kPa Crane No.33XUF or Kitz 300 SCL and to local authorities approval.

.7 Check valves 50mm and smaller all bronze, swing check, class 200, to local authorities' approval.

.8 Check valves 65mm and larger, steel body, flanged or welded Exalloy trim, equal to Class 1930kPa Crane 147X or Kitz 150SCO, and Class 300 above 1930kPa Crane 159X or Kitz 300SCO, and to local authorities approval.

.9 Express riser shall be welded pipe and fittings.

2.1.5 Sprinklers shall be the automatic spray type, ULC listed and as approved by I.A.O. or F.M. as applicable. Where heads are located close to heating coils, unit heaters or other hot equipment, they shall be of the high temperature type to suit regulations.

2.1.6 Sprinkler heads in finished or unfinished areas with acoustic or gypsum wall board ceiling indicated as light or ordinary hazard shall be quick response, standard coverage, chrome plated heads, pendent with chrome plated escutcheon. Reliable Model F1FR, Viking Microfast Model-M, Tyco/Central TY3231, Victaulic V2708.

2.1.7 Sprinkler heads in finished areas with acoustic or gypsum wall board ceiling indicated as light hazard or ordinary hazard shall be quick response, concealed type with white cover plate. Reliable Model G4A, Viking Mirage, Tyco/Central RFII, Victaulic V2708.

2.1.8 Provide extended coverage sprinkler heads only as required by N.F.P.A. to satisfy general sprinkler head layouts as shown without reducing the area of protection.

2.1.9 Unless otherwise specified, hangers shall conform to the requirements of N.F.P.A. 13.

3. EXECUTION

3.1 Installation

3.1.1 Spacing of sprinklers shall suit the hazard of the occupancy. Where specific locations of sprinkler heads have been shown on

the Contract Drawings, these shall be maintained. Sizing of piping shall be based on hydraulic design. Provide hydraulic calculations and detailed design drawings suitable for Permit approval and pay the required fee.

3.2 **Testing of System**

3.2.1 All testing shall be executed in accordance with the latest regulations of N.F.P.A 13 and with any other regulations that the authoritative inspector demands.

3.3 **As-Built Requirements**

The Contractor shall be responsible for necessary modifications to the installation, in the event that the as-built hydraulic calculations do not meet the design criteria.

END OF SECTION

1. **GENERAL**

1.1 **General Requirements**

1.1.1 Conform to Section 01 00 00 – General Requirements and all documents referred to therein.

1.1.2 Provide all labour, material, products, equipment and services to supply, install and test plumbing system as indicated on the Contract Drawings and specified in this Section of the Specification.

2. **PRODUCTS**

2.1 **Materials**

2.1.1 Pipes and fittings shall be in accordance with the following unless specified otherwise by local authorities.

2.1.2 All city and domestic water, above grade, 75mm and smaller, less than 1380kPa working pressure:

.1 Pipe: Copper tubing, type “L”, hard drawn, ASTM B88. Fittings: wrought copper solder joint pressure fittings, ANSI/ASME B16.22 or cast copper alloy solder joint pressure fittings, ANSI/ASME B16.18.

.2 Joints made with 95-5 tin antimony, 96-6 tin silver, or 96-4 tin silver solder, ASTM B32.

.3 Grooved end copper fittings conforming to ASTM B75 etc.

.4 Couplings to be designed with angle bolt pads to provide a rigid joint:

.1 Installation ready for direct stab installation without field disassembly, complete with grade EHP gasket, rated for -35°C to 121°C (-30°F to 250°F) Victaulic 607.

.2 Copper tubing standard coupling complete with EPDM flush seal gaskets rated for -35°C to 110°C (-30°F to 230°F Victaulic 606.

.5 Drain valves, isolation valvesshall be 4137kPa WG 19mm ball valves with bronze body or forged brass body, male threaded garden hose end, brass cap and chain equal to Watts B-6000, Crane 9202 complete with kit, Jenkins 201J complete with kit, Toyo 5046, Kitz 58CC or Apollo 78-100.

.6 Hose bibs shall be for 1380kPa non-shock, bronze body with composition disc and 19mm garden hose thread, complete with a ULC vacuum breaker.

2.1.3 All domestic water above grade 75mm and smaller, over 1380kPa working pressure and under 2070kPa working pressure:

.1 Pipe: Copper tubing, type “L”, hard drawn, ASTM B88.

.2 Joints, brazed.

.3 Grooved end copper fittings conforming to ASTM B-75.

2.1.4 Sanitary drains and vents above grade shall be cast iron or copper pipe installed as in regulations, except where copper pipe is used,

joints to be made with 95-5 solder. ABS and PVC pipes are not acceptable.

2.1.5 Vent stack covers shall be equal to Thaler Metal Industries SJ-24/SJ-25 and shall be 1100-0T alloy aluminum with vandal proof removable cap and EPDM base seal, PVC coated deck flange or bituminous deck flange as required to suit roof membrane.

2.1.6 Buried sanitary piping inside the building shall be SDR 28 rigid for 100mm (4") to 150mm (6"), SDR 35 for 200mm (8") and larger, green PVC gasket hub and spigot pattern sewer pipe and injection molded and fabricated gasket fittings to meet the requirement of CAN/CSA B182.2 with assembled with PVC pipe lubricant.

3 EXECUTION

3.1 Installation

3.1.1 Valves shall be provided as shown on the Contract Documents and as required for the satisfactory operation and control of all equipment and shall be installed to enable each piece of equipment to be isolated.

3.1.2 Connections between copper and steel pipe shall be made with brass or bronze fittings where other type of connection is not specified in regulations.

3.1.3 All piping shall run parallel with closest wall.

3.1.4 Piping in walk-in pipe spaces shall be installed as close to one wall as possible.

3.1.5 Slope all drains and vents in accordance with the plumbing code but not less than the minimum slopes shown on the Contract Drawings. Slope all water lines 25mm in 12m unless shown otherwise.

END OF SECTION

1. **GENERAL**

1.1 **General Requirements**

1.1.1 Conform to Section 01 00 00 – General Requirements and all documents referred to therein.

1.1.2 Provide all labour, materials, products, equipment and services to supply, install and test plumbing fixtures and trim as indicated on the Contract Drawings and as specified in this Section of the Specification.

2. **PRODUCTS**

2.1 **Materials**

2.1.1 Plumbing fixtures shall be as indicated and specified with all required supports, accessories, drainage, vent and water connections to make the fixtures complete.

2.1.2 The flow rates of fittings that supply water to a fixture shall not exceed the maximum flow rates listed in Part 7 of the OBC under the Water Efficiency Section.

2.1.3 Fixtures shall be American Standard, Crane, Eljer or Kohler, equivalent to the fixtures specified. Fixtures shall be white.

2.1.4 Fittings and trim shall be American Standard, Crane, Kohler, Sloan, Chicago Faucets, Symmons, or Delta/Cambridge except where specified otherwise. All exposed valves, fittings, escutcheons, trim, etc., at each fixture shall be polished chrome plated brass, unless specified otherwise.

2.1.5 Fittings and trim shall be American Standard, Crane, Delta/Cambridge, Kohler, Sloan, Chicago Faucets, Symmons or Moen equivalent to the trim specified. All exposed valves, fittings, escutcheons, trim, etc., at each fixture shall be polished chrome plated brass unless specified otherwise.

2.1.6 Carriers shall be furnished for all wall hung water closets, urinals, and lavatories. Carriers shall be in conformance with Section 22 42 46 – Fixture Carriers.

2.2 **Water Closets and Urinals-**

2.2.1 All flush valves shall have non-syphon by-pass and factory set rate of flow.

2.2.2 Water closets at Rising Hill WC-1 ' – 'Wall hung flush valve' shall be "Low Consumption", wall hung for flush valve, vitreous china, elongated syphon jet flush action bowl, fully glazed at least 54mm internal trap way, about 250mm x 300mm large water surface, 4.8L flush, and 38mm top spud with condensate channel. American Standard #3351.128 Afwall FloWise Elongated High Efficiency HET toilet, Crane Placidus 3446, Eljer Signature 111-2105, Kohler Kingston K-4330:

.1 Flush valves for WC unit above shall be Toto TET1LN Series Model TET1LN32#CP automatic infrared sensor activated, toilet flus valve. Heavy- duty zinc die-cast cover

with polished chrome finish. Vandal resistant hex head screws. Low water consumption of 4.8L flush (1.28gpf). Automatic sensor adjustment on installation. Manual override button incorporated. Piston valve and solenoid with self-cleaning mechanism. Automatic flush every twenty four hours if not used. Angle stop and vacuum breaker included with accessories. Through the use of Toto's Eco-Power Flush valves, using the valve 12 flushes per day will fully recharge the valve for up to 10 years.

.2 Flush valve for water closet in the PRPS (Room 118) shall be Sloan Royal Optima #153-1.28 WB ES-S, concealed Flushometer for Top Spud Toilet, 4.8L (1.28 US Gal.) factory set flow, quiet action 'PERMEX' diaphragm type with dual filter by-pass, infrared sensor, solenoid operated flush controller circuitry, courtesy flush over-ride button, bak-chek angle stop (wheel handle operated), exposed CP elbow for top spud connection, high pressure vacuum breaker, housed in 333mm x 432mm (13-1/8" x 17") recessed box located above the toilet, 5VA power required per unit. Sensor to clear toilet seat. Sloan #EL-154, Box Mount Hard Wired Transformer, 120VAC/24VAC, 50VA shall operate up to 10 'Optima' flush valve units.

.3 Seats for above shall be elongated heavy-duty solid plastic toilet seat, less cover, with stainless steel stainless steel check hinge and stainless steel posts, washers, and nuts. Bemis 1955-C, Centoco #500STSCC, Kohler Lustra K-4670-C, Olsonite 10CCSS.

.4 Transformer shall be Sloan #EL-154, 120/24VAC 50VA.

2.2.3 Water closets at Tomken WC-1 – Floor mounted concealed flush valve' shall be Barrier-Free Design, "Low Consumption", 420mm high, floor mounted for flush valve, vitreous china, elongated syphon jet flush action bowl, fully glazed at least 50mm internal trap way, about 250mm x300mm large water surface, 4.2L flush, and 38mm back spud. American Standard Madera Flowise Elongated 3463.001 or equivalent from Crane,Eljer, or Kohler.

.1 Electronic flush valve unit for WC unit above shall be a safe 24 volt system with fixed program-automatic 8 second blocking time, field adjustable flush delay setting, volume and sensing range,and manual over ride capability. Both a modular junction box and 110 to 24VAC transformer are to be supplied with valve. The flush valve shall be quiet action, diaphragm flush and renewable seat with wheel handle angle pressure loss check stop. Unit to be supplied with metal recessed box and vandal resistant stainless steel face, measuring approximately 333mm x 432mm for both valve and sensor housing and chrome plated exposed back spud coupling connection. Sloan "Optima"

#140-1.28-16-WB-ES-S withEL-154 transformer, or equivalent from Delta Commercial, or Zurn.

.2 Seat for WC fixture above shall be elongated heavy-duty solidplastic open front with cover, stainless steel check hinge and stainless steel posts, washers, and nuts. Bemis 1950SS; Centoco 820STS; Kohler Lustra K-4670-C; Olsonite 46SS.

.3 Mount sensor to clear toilet seat.

2.2.4 Urinals– 'Wall hung flush valve' shall be "Low Consumption", wall hung for flush valve, vitreous china, wash out flush action 1.9L per flush, extended sides for privacy, integral flush spreader, 19mm top spud, wall hangers, open trap, removable stainless steel strainer, 50mm outlet, connecting flange with gasket and bolts. American Standard Washbrook 6590.005, Crane Cromwell 7397, Eljer Correcto 161-1050, Kohler Bardon Superior K-4960-ET.

.1 Flush valves for urinal unit above shall be Toto TEU1LN Series model TEU1LN12#CP automatic infrared sensor activated, urinal flush valve. Heavy- duty zinc die-cast cover with polished chrome finish. Vandal resistant hex head screws. Low water consumption of 1.9L flush (0.5gpf). Automatic sensor adjustment on installation. Manual override button incorporated. Piston valve and solenoid with self-cleaning mechanism. Automatic flush every twelve hours if not used. Angle stop and vacuum breaker included with accessories. Through the use of Toto's EcoPower flush valves, using the valve 30 flushes per day will fully recharge the valve for up to 10 years.

2.3 **Lavatories**

2.3.1 Lavatories shown as type 'L-1 – Wall hung (Barrier free design & general use)' shall be 560mm x 533mm x 127mm –190mm deep with a single centre hole only. Basin to be wall hung, vitreous china, rear overflow, for concealed arm carrier. American Standard Murro 0955.000, Crane Serena 129H, Eljer Freestyle 051-2204. Provide semi pedestal American Standard Murro 0059.020, Crane Serena 132, Eljer Freestyle 051-2205, Kohler Pinoir K-2035-4 to cover exposed piping.

.1 Faucet for lavatory unit above shall be 100mm centreset, solid cast brass body with integral proximity sensor, with vandalresistant 0.5GPM flow spray outlet, control module, solenoid, strainer, circuitry, tempered water supplied by mixing valve with back checks and stops housed in 250mm square box concealed above ceiling. Flexible conduit from control module to faucet and solenoid to be provided. Each unit shall be supplied with a 120/24 VAC 50VA Transformer (15VA power required for each unit). Delta Commercial 591T0256 with 30393 transformer, Kohler K-

10951 with K-13481 power supply, Sloan ETF-600-A-VPB-MIX60-A with EL-154 transformer.

2.3.2 Drain for all lavatory units with exposed under counter installation shall be 32mm size, polished chrome plated offset open grid, and cast brass lavatory waste strainer, 17ga tubular offset. Provide safety covers as per local codes. Delta Commercial 33T290; Kohler K-13885; McGuire 155WC; Zurn Z-8746.

2.3.3 "P" trap for all lavatory units shall be polished chrome plated cast brass, adjustable body 32mm size with cleanout plug, 17ga tubular wall bend. Safety covers are to be supplied as per local codes for exposed under counter installation. Delta Commercial 33T311; McGuire 8872C; Zurn Z-8700-D; Kholer K8998.

2.3.4 Supplies for all lavatory units shall be a pair of chrome plated, heavy pattern angle lavatory supplies, lockshield, screw driver slot, stuffing box cartridge, 10mm IPS brass inlet supply nipple, flexible braided stainless steel risers, and stainless steel wall flange. Delta Commercial 47T2512SD; McGuire H165LKN3RB; Zurn ZH-8820-LR-LK-3.

2.4 **Showers**

2.4.1 Freedom Roll In Shower, Model APFQ6334BF875, APF6334BF875, 63"x34"x78.875", 7/8" barrier free threshold with pre-leveled and reinforced shower base, one piece for new construction, 3 molded soap ledges, acrylic with tile pattern, c/w ADA compliant accessories, including grab bars, folding shower seat, collapsible water retainer, weighted shower curtain and rod, slide bar with handheld shower, pressure balance valve, caulkless drain.Base shall be textured non-slip floor.

3. **EXECUTION**

3.1 **Installation**

3.1.1 Provide necessary plates, brackets, cleats, supports, etc., for rigidly securing fixtures in place. Accurately lay out all roughing piping, avoiding off-sets.

3.1.2 Examine fixtures for defects. Remove and replace any fixture which, in the opinion of the Consultant, is damaged. Make necessary adjustments to ensure fixtures function as per manufacturer's operating criteria. Clean and polish all fixtures and trim upon completion.

3.1.3 Ensure wall-mounted fixtures with back water connections have an adjacent access door, unless the pipe space is sufficiently wide to allow the water connection to be made from within the pipe space. For this, pipe space shall be 600mm minimum clear width.

3.1.4 Fixtures shall be installed symmetrical with wall tile pattern, unless otherwise dimensioned or shown on the Contract Drawings.

END OF SECTION

1. **GENERAL**

1.1 **General Requirements**

1.1.1 Conform to Section 01 00 00 – General Requirements and all documents referred to therein and Section 20 05 00 – General Instructions for Mechanical Sections.

2. **PRODUCTS**

2.1 **Materials**

2.1.1 Fixtures carriers shall be J.R. Smith, Zurn, Mifab or Watts.

2.1.2 Carriers shall be furnished for all wall hung water closets, urinals, lavatories, service sinks and drinking fountains. Carriers shall be floor mounted and supported independently of the wall. Carriers shall be suitable for each particular fixture. Carrier feet shall not project beyond finished wall.

2.2 **Water Closet Carriers**

2.2.1 Carriers for water closets shown as 'WC-2' shall be as described herein. Refer to the Contract Drawings for locations.

2.2.2 Carriers for water closets with single adjustable horizontal discharge shall be 100mm all coated cast iron fittings, rear anchor bolt factory assembled, face plate with rear anchor support, heavy duty legs, adjustable short cast iron nipple, plated hardware, cap nuts, test plug and protection cap. J.R. Smith 0210Y Single Horizontal Carrier, Zurn Z-1203-N (L/R) 4-29, Mifab MC-10-3-6 or Watts CA-101-(L/R)-M3-M12.

2.2.3 Carriers for back to back water closets with adjustable horizontal discharge shall be 100mm all coated cast iron fittings, factory assembled face plate with heavy duty legs, adjustable short cast iron nipple, plated hardware, cap nuts, test plug and protection cap. J.R. Smith 0210YD-2-95, Zurn Z-1203-ND4-29, Mifab MC-10D-6 or Watts CA-101-D- M3.

2.2.4 Carriers for wheelchair use shown as 'WC-1' shall be mounted 400mm above finished floor to rim of toilet.

2.3 **Urinal Carriers**

Carriers for wall hung urinals shown as 'U-1' shall be all coated with block base feet supports and plate type system with bottom bearing plates. J.R. Smith 637, Zurn Z-1222, Mifab M-32 and Ancon CA-321.

2.4 **Lavatory Carriers**

Carriers for barrier free wall-hung lavatories shown as 'L-2' shall be all coated with rectangular steel uprights, welded block base feet support and extended concealed arms with locking device and levelling screws. J.R. Smith 700-27-M31, Zurn Z-1231-79, Mifab MC-42 and Watts CA-411-WC.

3. **EXECUTION**

3.1 **Installation**

3.1.1 Rigidly secure all fixture carriers to the floor using approved anchor bolts and inserts.

3.1.2 Verify the finished wall location and type of wall construction and elevation of finished floor before installation of carriers.

3.1.3 Installation height of the plumbing fixtures shall be in accordance of all applicable codes and standards.

END OF SECTION

1. **GENERAL**

1.1 **General Requirements**

1.1.1 Conform to Section 01 00 00 – General and all documents referred to therein.

1.1.2 Provide all labour, materials, products, equipment and services to supply and install the sheet metal and ductwork systems as indicated on the Contract Drawings and specified in this Section of the Specification.

1.2 **Submittals**

1.2.1 Shop Drawings: Submit shop drawings of all products and equipment. Include manufacturer's data sheets for certification, performance criteria, ratings and physical dimensions and finishes.

1.2.2 Coordination:

.1 Prepare coordination and fabrication drawings at a minimum scale of 1:50 (1/4"=1'-0") and coordinate with other trades affected by this Work to ensure access to other portions of the Work is not impeded by the ductwork systems.

.2 Maintain these drawings on site and make them available for review by the Consultant when requested.

1.2.3 Project Condition:

.1 Environmental Requirements: Maintain a space work temperature not less than the minimum ambient working temperature as required by the duct sealant manufacturer requirements. Remove and replace all ductwork sealant installed where the space temperature is less than these recommendations.

.2 Environmental Requirements: Temporarily cap-off ductwork openings to protect against dirt accumulation inside the ductwork.

1.3 **Reference Standards**

Comply with the latest edition of the following:

1.3.1 SMACNA Standards

1.3.2 ASHRAE Standards

1.3.3 ASTM A 525M, Specification for General Requirements for Steel Sheet, Zinc-Coated (Galvanized) by the Hot-Dip Process.

2. **PRODUCTS**

2.1 **Ductwork**

2.1.1 Rectangular Ductwork:

.1 Galvanized Steel Sheet: Z275 (G90) for unpainted ductwork.

.2 Galvanized Steel Sheet: ZF075 (A25) designation zinc coating to ASTM A653/A653M for painted ductwork.

2.1.2 Flexible Ductwork (only above ceilings):
- .1 Return Air Plenums: ULC approved aluminum core construction with mechanical lock spiral joints and insulated with 25mm thick insulation and covered with a vinyl outer sleeve. Flexmaster – T/L-VT or approved equivalent.
- .2 Non-Return Air Plenums: ULC approved aluminum core construction with mechanical lock spiral joints and insulated with 25mm insulation and covered with a mylar outer sleeve. Flexmaster – T/L-MT or approved equivalent.

2.1.3 Metal Duct Sealant – High Velocity Duct Sealer:
- .1 3M EC800
- .2 Foster #30-02
- .3 Duro-Dyne S-2
- .4 or approved equal

2.2 Ductwork Accessories

2.2.1 Flexible Duct Connections:
- .1 Heavy glass fabric double coated with neoprene and attached to 0.6mm (24 ga.) metal strips 75mm wide.
- .2 Fabric length between metal strips:
  - .1 Minimum 75mm for ducts of maximum size in either dimension or diameter of 750mm or less.
  - .2 150mm for ducts of 775mm size and larger.
- .3 Acceptable Manufacturers:
  - .1 Duro-Dyne “Grip-Loc Type SMFN”
  - .2 Ventfabrics “Ventglas”
  - .3 DynAir
  - .4 Or approvaed equal

2.2.2 Turning Vanes:
- .1 Material: Hollow airfoil type, fabricated of same material as duct in which they are installed.
- .2 Acceptable Manufacturers:
  - .1 Duro-Dyne
  - .2 Dynair
  - .3 Aero-Dyne
  - .4 Or approved equal

2.2.3 Access Doors in Ductwork and Plenums:
- .1 Hand Door:
  - .1 Construction: 0.7mm (24 ga.) galvanized steel, double flanged frame and insulated door complete with insulation backing plate.
  - .2 Fasteners: zinc plated cam-lock fasteners, minimum two per door, with safety retaining chain.

2.2.4 Probe Inlets:

.1 Material: Test Opening Enclosures complete with locking cap, chain, gaskets, insulating plug and extensions for insulated ductwork.
.2 Acceptable Manufacturers:
.1 Ventlok No.699
.2 Duro-Dyne IP-1 or IP-2
.3 Or approved equal

2.2.5 Automatic Control Dampers:
.1 Modulating Control Dampers: Opposed blades
.2 Two Position Control Dampers: Parallel blades except were indicated otherwise.
.3 Damper Blades and Frames:
.1 Extruded aluminum 6063-T5.
.2 Maximum Blade Length: 1.2m without internal frame support.
.3 Maximum Blade Length: 1.2m without internal frame support.
.4 Blade Edge Seals: EPDM gaskets.
.5 Frame Side Seals: Extruded TPE or cambered stainless steel.
.6 Frame Style: Flanged to duct.
.7 Jack Shaft: Extendable, combination of aluminum and zinc/nickel coated steel.
.8 Damper Leakage: 50L/s/m² damper face area at 1kPa differential static pressure.
.4 Bearings:
.1 Thermal plastic resin copolymer, nylon or oil impregnated bronze
.2 At blade axles, linkage devices, etc.
.5 Damper blades and frame for outside exhaust and intake air applications:
.1 As above
.2 Operating temperature: -40°C to 68°C.
.3 Thermally broken and insulated blades; expanded polyurethane foam insulation.
.4 Damper leakage: 21L/s/m² damper face area at 1kPa differential static pressure.
.6 Acceptable Manufacturers:
.1 Tamco – Series 1000.
.2 Nailor Industries – Series 2000.
.3 Tamco – Series 9000 SC (exhaust and air intake applications).
.4 Nailor – Series 2000IBF (exhaust and air intake applications).
.5 Or approved equal

2.2.6 Acoustic Treatment:
.1 Acoustic Duct Insulation:
.1 Rigid Board:

.1 Rigid coated fibreglass duct liner conforming to CAN/ULC S102-M88, CGSB 51-GP-11M, NFPA 90A and 90B.
.2 Fibreglass firmly bonded with thermosetting resin into a rigid board.
.3 Air surface protected with tough reinforced coating including an Environmental Protection Agency (EPA) registered antimicrobial agent.
.4 Operating Temperatures: to 120ºC (250ºF)
.5 Density: 48kg/m³ (3lb/ft³)
.6 K-Value: 0.033W/mºC at 24ºC (0.23 BTU/in/ft²◦F at 75◦F)
.7 Acoustical Performance:
.1 25mm thick; 0.7 Noise Criteria Rating (NCR)
.2 38mm thick; 0.8 NCR
.3 50mm thick; 0.95 NCR

.2 Acceptable Manufacturers:
.1 John Manville – Permacote Linacoustic R-300.
.2 Knauf – Rigid Plenum Liner.
.3 Manson.
.4 or approved equivalent.

.2 Flexible Duct Liner:
.1 Flexible coated fibreglass duct liner conforming to CAN/ULC S102-M88, CGSB 51-GP-11M, NFPA 90A and 90B.
.2 Fibreglass firmly bonded with thermosetting resin into a flexible blanket.
.3 Air surface protected with tough reinforced coating including an EPA registered antimicrobial agent.
.4 Operating Temperatures: to 120ºC (250ºF)
.5 Density: 24kg/m³ (1.5lb/ft³)
.6 K-Value: 0.035W/mºC at 24ºC (0.24 BTU/in/ft²◦F at 75◦F)
.7 Acoustical Performance:
.1 13mm thick; 0.55 NCR
.2 25mm thick; 0.7 NCR
.3 38mm thick; 0.85 NCR
.4 50mm thick; 0.95 NCR
.8 Acceptable Manufacturers:
.1 John Manville – Permacote Linacoustic HP of RC.
.2 Knauf – Duct Liner EM.
.3 Manson.
.4 or approved equivalent.

.3 Fasteners:

.1 Fasten acoustic liner to inside of duct with weld pins with integral heads.

.2 Use fasteners of securing pins of size and length as required by insulation weight, thickness, fastener spacing and design.

.3 In addition to mechanical type fasteners, adhere insulation to inside of duct with Foster No.81-99 or Monsey Bakor No.230-04 fire retardant adhesive. Seal all joints with Foster No.30-36 of Monsey Bakor No.120-09 mastic sealant.

.4 Edge sealing treatment Product recommended by the insulation manufacturer.

.5 Acceptable Manufacturers:

.1 Manson.

.2 Knauf.

.3 Manville.

.4 or Approved equivalent.

3. EXECUTION

3.1 Ductwork

3.1.1 General:

.1 Install ductwork in arrangement shown on the Contract Drawings in accordance with standards and recommended practices of ASHRAE and SMACNA. Provide required offsets and transitions, whether specifically indicated or not, to facilitate duct installation and to avoid interference with building structure, piping, equipment and services.

.2 Duct sizes as shown on the Contract Drawings. Where ducts are to have internal acoustical liner, adjust duct size to accommodate acoustic liner thickness; clear inside dimensions as shown on the Contract Drawings.

.3 Fabricate ductwork free from vibration, rattle or drumming under operating conditions; reinforce, brace, frame, place gaskets, etc. to comply with performance criteria.

.4 Place galvanized screens of 13mm x 13mm mesh x 2.7mm diameter wire for air intakes, exhausts and open ends of ductwork.

.5 Install ductwork in locations and at elevations appropriate to ceiling heights shown on the Contract Drawings. Where required to be concealed, install ductwork in furred spaces provided in walls and ceilings. Where there is no provision for concealment install duct as close as possible to walls, partitions and overhead structures to attain maximum headroom and clearance.

.6 Where shape of duct changes, install transition piece so that angle of side of transition piece does not exceed 15 degrees from straight run of duct being connected, unless shown otherwise on the Contract Drawings. For transitions

where more than one side converges or diverges use the following:

.1 Converging Transition: Maximum included angle 30 degrees.

.2 Diverging Transition: Maximum included angle 20 degrees.

.7 Brace and stiffen all ducts, and make tight so that they will not breathe, rattle, vibrate or sag. Cross-break all rectangular ducts with heights or widths of 300mm or larger.

3.1.2 Pressure Class/Seal Class:

.1 Fabricate ductwork to SMACNA pressure classification as follows unless otherwise noted on the Contract Drawings.

.2 Seal ductwork in accordance with SMACNA sealing requirements as follows:

.1 Seal Class “A”: All transverse joints, longitudinal seams and duct wall penetrations.

.2 Seal Class “B”: All transverse joints and longitudinal seams only.

.3 Seal Class “C”: Transverse joints only.

.4 Seal Class “D”: None.

System	Pressure Class	Sealing Class
Constant Volume Supply	750Pa (+3”)	B
Building Exhaust (washroom exhaust, general exhaust)	500Pa (+/-2”)	C
Fire Rated (exhaust)	750Pa (+/-3”)	B

3.1.3 Sleeves:

.1 Install sleeves where ducts pass through walls or floors. Pack space between duct and sleeve with mineral wool and seal both ends with non-inflammable fire resistant sealing compound. Install sheet metal closure plates on each side of wall to cover sleeve.

.2 Sleeves of the same sheet material as for ductwork and one gauge thicker.

3.1.4 Air Intakes and Exhausts: At air intakes, exhausts and open ends in ductwork install removable galvanized screens securely fastened in place.

3.1.5 Equipment Connections:

.1 Install neoprene gasketed flanged joints at duct connections to air conditioning units, coils, etc. Fabricate flanges from mild steel angles to match equipment flanges.

.2 Install air terminal units (ATU) and silencers (S) independent of ductwork, with rods or angles of sizes adequate to support load.

3.1.6 Paint Finish and Touch-Up:

.1 In office areas paint interior of ductwork for at least 300mm behind supply and exhaust grilles with matte black paint to render ductwork invisible from occupied space.

.2 Touch-up galvanized steel damaged as a result of fabrication, including welding, with zinc dust galvanized primer.

3.1.7 Supports and Hangers:

.1 Support Intervals:

.1 Ducts up to 1500mm in width; minimum 2400mm centres.

.2 Ducts 1500mm in width and over; 1200mm centres.

.2 Steel Angle Hangers:

.1 Provide steel angle hangers for supporting all ductwork.

.2 Mild steel rod hangers of 10mm diameter minimum size, with 38mm x 38mm x 3mm steel angle across bottom of duct and attach hanger to angle (not the duct).

.3 Install miscellaneous steel angles or channels as required between joists or building steel for structural support of duct where building framing spacing does not coincide with the required hanger spacing.

3.2 Rectangular Ductwork

3.2.1 General:

.1 Material: galvanized steel for unpainted ductwork, unless otherwise shown on the Contract Drawings.

.2 Metal thickness and construction methods as specified herein for various size ranges of ducts.

.3 Cross-break flat surfaces of duct between joints, or between joints and intermediate reinforcements, to prevent vibration or buckling.

.4 Seal joints on all rectangular ductwork with high velocity duct sealer. Duct-tape will not be allowed.

3.2.2 Joints:

.1 Longitudinal Joints: Pittsburgh-Lock joints tightly closed along full length of seam.

.2 Transverse Joints: Ductmate, Nexus or TDC connections of class to suit size of duct and pressure of system.

3.2.3 Fittings:

.1 Elbows, transition sections and take-off fittings: use metal one gauge heavier than thickness specified for duct in which they are installed.

.2 Radius elbows: standard radius design with inner radius equal to width of elbow unless shown otherwise, Pittsburgh-Lock seams, and with ends to match transverse joints of duct.

.3 Square elbows: where elbows are shown as square type, fit elbows with air turning vanes of double blade construction.

3.3 **Flexible Duct Connections**

3.3.1 Use flexible duct connections between fans and/or air handling units and connecting ductwork, between unit components, in ducts at building expansion joints, and in other locations shown on the Contract Drawings.

3.3.2 Install flexible connectors with fabric in folds, not drawn tight.

3.3.3 Install internal guides to prevent flexible connection from collapsing on suction side of fans.

3.3.4 For installation between sections of air handling units, install flexible connectors suitable for connecting to flanges of casings where so provided.

3.4 **Turning Vanes**

3.4.1 Provide hollow airfoil type turning vanes in ductwork where shown on the Contract Drawings and in 90 degree square duct elbows, fabricated of same material as duct in which they are installed.

3.5 **Access Doors**

3.5.1 Provide access doors in ductwork and for plenums to allow servicing, maintenance and inspection of:

.1 Control damper;

.2 Fire dampers;

.3 Fire detectors;

.4 Control elements;

.5 As shown on the Contract Drawings.

3.5.2 Provide “Hand Doors” in ductwork of sizes as follows:

Access Type	Duct Dimension	Access Door Size
One hand and sight	Less than 400mm	300mm x150mm
Two hands and sight	Between 400mm and 500mm	450mm x 250mm
Head and Shoulders	Between 500mm and 760mm	530mm x356mm
Body plus ladder	Between 760mm and 1320mm	635mm x 430mm

3.6 **Balancing Dampers**

3.6.1 Use rectangular opposed blade dampers at the following locations:

.1 At floor connections to riser shafts/ducts.

.2 In supply and return ductwork where main ducts are split into two more trunks.

.3 At rectangular branch duct connections to main or trunk ducts.

.4 As shown on the Contract Drawings.

3.6.2 Do not use splitter dampers.

3.6.3 Use low pressure butterfly dampers at the following locations:

.1 At branch connections on the downstream side of terminal boxes.

.2 At individual branch outlets serving grilles or diffusers.

3.6.4 Dampers supplied with diffusers or grilles are to be used to balance ±10 per cent of indicated airflow, are not in lieu of branch dampers.

3.7 **Relief Dampers**

Install steel angle or channel frames at wall openings as required to mount relief damper (complete with fire damper) as shown on the Contract Drawings.

3.8 **Probe Inlets**

Install probe inlets in ductwork at locations as follows:

3.8.1 In main supply and return ducts.

3.8.2 Inlet and outlet side of fans.

3.8.3 Other locations as required by Testing and Balancing trade, to permit testing, balancing and measurement of air quantities and static pressure in air handling systems.

3.8.4 Locate probe inlets a sufficient distance from elbows or transition sections to ensure stable readings of non-turbulent air and install 75mm from corners and at 150mm centres across long side of duct.

3.9 **Inspection, Testing and Balancing**

3.9.1 Cleaning:

.1 Prior to start-up of fans, blow out complete systems of ductwork with high velocity air for not less than two hours using where possible the installed air handling equipment to full capacity and by blanking off duct sections to achieve required velocity. Do not install air filters prior to blow-out of ductwork systems. Use auxiliary portable blowers for cleaning where installed fan systems are not adequate to blow out complete system free from dust and dirt.

.2 After duct systems have been blown out, clean interior of plenums, coils, and register, grille or diffuser outlet collars with industrial type vacuum cleaner. On completion of cleaning process, install new filters before placing systems in final operation.

3.9.2 Balancing of Air Systems: Balance air handling systems and submit the report to the Consultant for review and acceptance.

END OF SECTION

1. **GENERAL**

1.1 **General Requirements**

1.1.1 Conform to Section 01 00 00 – General Requirements and all documents referred to therein and Section 20 05 00 – General Instructions for Mechanical Sections.

1.1.2 Provide all labour, materials, products, equipment and services to supply and install Grilles, Registers and Diffusers as indicated on the Contract Drawings and specified in this Section of the Specification.

1.2 **Related Sections**

1.2.1 Section 09 21 16 – Gypsum Board Assemblies

1.2.2 Section 09 51 13 – Acoustical Panel Ceilings

1.3 **Submittals**

1.3.1 Shop Drawings: Submit detailed shop drawings of all components furnished under this Section as per Division 01. Manufacturer to indicate ceiling installation type for each type of diffuser specified.

1.3.2 Manufacturer's Data: Submit test results of all diffuser models to be used on the project, including air pattern and noise levels for air quantities from 10 per cent to 110 per cent of the required maximum air flow.

2. **PRODUCTS**

2.1 **General**

2.1.1 Diffusers, registers and grilles shall be from EH Price or approved equivalent.

2.1.2 Select all diffusers to provide uniform air coverage without overlap. Air velocity up to a height of 1800mm above the floor shall be 0.127m/s to 0.254m/s.

2.1.3 Noise generated by diffusers shall be such that room sound pressure level does not exceed noise criteria NC-32 with an 8dB room attenuation, the sound power level reference to 10 to -12 power watts.

2.1.4 All volume and air pattern devices shall be fully adjustable from the face of the diffuser, register or grille.

2.1.5 In gypsum board or plaster ceiling applications, provide matching mounting frame.

2.1.6 In T-bar ceilings, grilles and diffusers to suit ceiling grid as required imperial or metric.

2.1.7 Diffusers shall meet test requirements of A.S.H.R.A.E. Standard 36B-63, including air pattern and noise levels for air quantities from 10 per cent to 110 per cent of the required maximum air flow. Sound power tests shall be measured in accordance with ASHRAE Standards 36B-63 and NC ratings shall be determined using an 8dB room attenuation factor.

2.2 **Return, Exhaust and Transfer Grilles (Egg-Crate)**

2.2.1 Shall be aluminum construction. Egg crate shall be 12mm deep, formed of 12mm wide aluminum strips on 12mm centres. Strips shall be approximately 0.64mm thick. Grilles shall be enclosed in a channel frame for inverted T-bar mounting or with a flanged frame for plaster or gypsum ceiling mounting. Grilles shall lay on inverted T-bar ceiling suspension system.

3. **EXECUTION**

3.1 **Installation**

3.1.1 Coordinate placing of diffusers, registers and grilles in ceilings with electrical and ceiling installation trades and exact location to final approval of the Consultant.

3.1.2 For exposed ductwork installations, all connections to grilles shall be oversized and shall have in-turned flanges to meet the flange of the grilles and the duct. Out-turned or exposed flanges with screw mounting shall not be accepted.

3.1.3 Install mounting frame tied into plaster and gypsum board ceilings to allow lay in type diffusers to rest on the frame.

END OF SECTION

1. **GENERAL**

1.1 **General Requirements**

1.1.1 Conform to Section 01 00 00 – General Requirements and all documents referred to therein.

1.2 **References**

1.2.1 Complete the installation of the Work in accordance with the latest editions of the Ontario Building Code, Ontario Electrical Safety Code, C.S.A., U.L.C., N.F.P.A., O.S.H.A. or other codes as required.

1.3 **Application**

1.3.1 This Section applies to and is an integral part of all succeeding Sections of this Division of the Specification.

1.4 **Definitions**

1.4.1 The following are definitions of words found in Sections of this Specification and on associated drawings:

1.4.2 "Concealed": Hidden from normal sight in furred spaces, shafts, crawl spaces, ceiling spaces, walls and partitions;

1.4.3 "Exposed": All work normally visible to building occupants;

1.4.4 "Provide" (and tenses of "Provide"): Supply, install and connect complete.

1.4.5 "Install" (and tenses of "install"): Install, and connect complete;

1.4.6 "Supply": Supply only.

1.4.7 "Work": All equipment, permits, materials and labour to provide a complete electrical installation as required and detailed in Drawings and Specification.

1.4.8 "Authorities" or "Authorities Having Jurisdiction": Any and all current laws or by-laws of any federal, provincial or local authorized agencies having jurisdiction over the sum total or parts of the work including, but not restricted to the Municipal Planning and Building Department, Municipal Fire Department, Labour Canada, Provincial Fire Marshall, Local Hydro Supply Authority, Ontario Building Code, Construction Safety Act, Municipal Public Works Department, Canadian Electrical Code with Ontario Supplement, hereinafter referred to as the "Code", Electrical Safety Authority and all Inspection Bulletins.

1.4.9 "Drawings and Specifications": "Contract Drawings and Specifications".

1.5 **Work Included**

1.5.1 Provide all labour, materials, equipment and services to complete the Work of the Electrical Division as further specified in the Specification and as shown on the Contract Drawings.

1.5.2 Should any discrepancy appear between these Specifications and the Contract Drawings or between one part of the Specifications and another, or between one location on the Contract Drawings and another, to cause doubt as to the true meaning and intent of the Contract Drawings and Specifications, the Contractor shall immediately bring this to the attention of the Consultant. If this is not done prior to Tender close, the Contractor shall provide/install the more expensive alternative under the Contract as recommended by the Consultant.

1.6 **Scheduling of Product Delivery**

1.6.1 Every effort must be made to ensure delivery of all materials and products in the Contract Documents on time. At commencement of Contract, assist Contractor in preparation of schedule of order dates for items requiring long delivery periods.

1.7 **Examination of Site**

1.7.1 Prior to submitting a tender carefully examine conditions at the site, which may or will affect the work.

1.7.2 Refer to and examine all contract documents, including room finish schedules to determine finished, partially finished and unfinished areas of the building.

17.3 Ensure that materials and equipment are delivered to the site at the proper time and in such assemblies and sizes so as to enter into the building and to be moved into the spaces where they are to be located without difficulty. Be responsible for every cutting and patching involved in getting assemblies into place.

1.8 **Quality Assurance**

1.8.1 General Codes and Standards:

.1 Comply with the Ontario Building Code and Canada Labour Code, Part 4.

.2 Where provisions of pertinent codes or local by-laws conflict with these Specifications and Contract Drawings or each other, comply with the more stringent provisions.

.3 Operating voltages shall comply with CAN3-C235-83.

.4 Ground system shall comply with CSA Standard C22.1.

1.8.2 Provide new materials bearing certification marks or labels acceptable under Ontario Electrical Safety Code. Equipment must bear, on manufacturer's label, certification mark or label acceptable under Electrical Safety Authority.

1.8.3 Provide units of same manufacture where two or more units of same class or type of equipment are required.

1.8.4 Manufacturer's names are stated in this Specification to establish a definite basis for tender submission and to clearly describe the quality of product that is desired for the work.

1.8.5 Standard Specifications: Ensure that the chemical and physical properties, design, performance characteristics and methods of construction of all products provided comply with latest issue of applicable standard specifications issued by authorities having jurisdiction, but such standard specifications shall not be applied to decrease the quality of workmanship, products and services required by the Contract Documents.

1.8.6 Electrical Codes and Permits:

.1 The work shall be carried out in accordance with these Contract Drawings and Specifications and shall comply with the essential requirements of the latest editions of the Canadian Electrical Code C.22.1 and the Electrical Safety Code (together with applicable bulletins issued by the Inspection Department of Electrical Safety Authority). In no instance, however, shall the standards established by the Contract Drawings and Specifications be reduced by any of the codes referred to above. In the event of conflicting requirements, the codes shall take precedence over these Contract Documents and the Consultant's decision shall be final and binding.

.2 Arrange for and obtain all necessary permits (except Building Permit), inspection and approvals from authorities having jurisdiction, and also pay all applicable fees. The Contractor shall conform to all Municipal Codes and By-laws which affect the work.

.3 Applicable Codes:

.1 Ontario Electrical Safety Code;

.2 Canadian Electrical Code, with applicable regional amendments;

.3 Ontario Building Code;

.4 National Building Code;

.5 Ontario Fire Code;

.6 National Fire Code and Fire Commissioner Canada requirements.

.4 Before starting any work, submit the required number of copies of Contract Drawings and Specifications to the Electrical Safety Authority and the local authority for approval and comments. Comply with any changes requested as part of the Contract, but notify the Consultant immediately of such changes for proper processing of these requirements. Prepare and furnish any additional drawings, details or information as may be required by the Consultant.

.5 On or before the completion of this Contract, obtain at own expense, the necessary certificate of inspection from the

Inspection Branch of the Electrical Safety Authority of Ontario and forward same to the Consultant.

.6 Equipment and material must be acceptable to Electrical Safety Authority.

.7 Where materials are specified which require special inspection and approval, obtain such approval for the particular installation with the co-operation of the material supplier.

.8 Supply and install warning signs, nameplates and glass covered Single Line Diagrams as required by Electrical Safety Authority.

.9 Submit required documents and shop drawings to authorities having jurisdiction in order to obtain approval for the Work. Copies of the Contract Drawings and Specifications may be used for this purpose.

1.9 **Requirements of Contract Drawings**

1.9.1 The Contract Drawings are essentially performance drawings, partly schematic, intended to convey the scope of work and extent of work. They only indicate general arrangement and approximate location of apparatus, fixtures and general typical sizes and locations of equipment and connections. The Contract Drawings do not intend to show architectural, structural or mechanical details.

1.9.2 Do not scale the Contract Drawings, but obtain information involving accurate dimensions to structure from those shown on the Contract Drawings, or by site measurements of existing areas. Follow the Contract Drawings in laying out the work.

1.9.3 Make, at no additional cost, any changes or additions to materials, or equipment necessary to accommodate structural conditions (runs around beams, columns and suchlike). Alter, at no additional cost, the location of materials or equipment to maximum three meters, or as directed, provided that the changes are made before installation and do not necessitate additional material or labour.

1.9.4 Leave space clear and install work to accommodate future materials and equipment as indicated and to accommodate equipment and material supplied by other trades. Verify all equipment sizes in relation to space allowed and check all clearances.

1.9.5 Confirm on the site, the exact location and mounting elevation of equipment and fixtures as related to Architectural or Structural details. Confirm location of outlets or connection points for equipment supplied by other trades.

1.10 **Coordination with Mechanical Divisions**

1.10.1 Unless indicated otherwise on the Contract Drawings, Division 26 (Electrical) shall be responsible for the supply and installation of the following if applicable:

.1 Provisions of disconnects to all mechanical equipment.

.2 All power wiring (120V and above) to all mechanical equipment.

.3 All motorized damper power connections (120V and above).

.4 Fire alarm devices.

.5 Wiring to electric space heaters.

1.10.2 Should the Contractor change any of the motor or equipment sizes from those identified in the Contract Documents at any stage of the project to aide their installation, the Contractor will incur all extra electrical costs to revise the electrical feeders, breakers, starters and equipment to supply power to the revised piece of equipment.

1.11 **Submittals – Shop Drawings**

1.11.1 Submittals shall include, but not be limited to the following:

.1 Submittals/shop drawings shall indicate clearly the materials and/or equipment actually being supplied, all details of construction, accurate dimensions, capacity, operating characteristics and performance. Each shop drawing shall give the identifying number of the specific assembly for which it was prepared (e.g. MCC-1).

.2 Each shop drawing for non-catalogue items shall be prepared specifically for this project. Shop drawings and brochures for catalogue items shall be marked clearly to show the items being supplied.

.3 Each shop drawing or catalogue sheet shall be stamped and signed by the Contractor to indicate that he has checked the drawing for conformance with all requirements of the Contract Drawings and Specifications, that he has co-ordinated this equipment with other equipment to which it is attached and/or connected and that he has verified all dimensions to ensure the proper installation of equipment within the available space and without interference with the work of other trades. Ensure that electrical co-ordination is complete before submitting shop drawings for review.

.4 Contractor to submit all submittals/shop drawings electronically in PDF format. Submittal to come complete with a transmittal bound to the PDF file with the transmittal identifying the total number of pages in the submittal including the transmittal page. For any submittal with pages larger than 27.94cm x 43.18cm (11”x17”), the

Contractor is to submit a minimum of three hard copies unless additional copies are identified in the Contract Documents.

.5 Installation of any equipment shall not start until after final review of shop drawings by the Consultant has been obtained.

.6 When requested, shop drawings shall be supplemented by data explaining the theory of operation.

.7 Provide space for shop drawing review stamps for the Contractor and Consultant. This space shall be clear of all technical information and shall not be on the back of any sheets.

.8 One original shop drawing will be returned either hard copy or electronically. All copies required for the trades, suppliers or other Consultants will be copied or printed by the Contractor.

1.12 **Materials**

1.12.1 Make and quality of materials used in the construction of this work shall be subject to the approval of the Consultant.

1.12.2 Materials and equipment supplied by this Division shall be new and free from defects and shall be as specified by the manufacturer's name and catalogue reference.

1.12.3 All equipment, accessories and specified manufacturers within the Contract Documents are preferred Vendors.

1.12.4 The carrying of alternates will be at Contractor's own risk and will only be approved with written consent by the Consultant after award of the Contract.

1.12.5 Where a certain manufacturer's equipment has been specified by name or model number, the Contractor shall be responsible for ensuring that the performance and quality of any proposed alternative meets the specified equipment and that the same access or maintenance space is available for the alternative manufacturer's equipment and that piping, duct and electrical connections can be made at no extra cost to the Contract. Prior approval in writing will be required from the Consultant before any alternative is accepted.

1.13 **Dimensions and Qualities**

1.13.1 Dimensions shown on the Contract Drawings are approximate. Verify dimensions by reference to shop drawings and field measurement.

1.13.2 Quantities or lengths indicated in Contract Documents are approximate only and shall not be held to gauge or limit the Work.

1.13.3 Make necessary changes or additions to routing of conduit, cables, cable trays, and the like to accommodate structural,

mechanical and architectural conditions. Where raceways are shown diagrammatically run them parallel to building column lines.

1.14 **Equipment Locations**

1.14.1 Devices, fixtures and outlets may be relocated, prior to installation, from the location shown on the Contract Drawings, to a maximum distance of 3m without adjustment to Contract price.

1.14.2 Switch, control device and outlet locations are shown diagrammatically.

1.15 **Contract Drawings and Installation**

1.15.1 The Contract Drawings are intended to show the general character and Scope of the Work and not the exact details of the installation. The installation shall be complete with all accessories required for a complete and operative installation.

1.15.2 The location, arrangement and connection of equipment and materials shown on the Contract Drawings represent a close approximation to the intent and requirements of the contract. The right is reserved by the Consultant to make reasonable changes required to accommodate conditions arising during the progress of the work, at no extra cost to the Agency.

1.15.3 Certain details indicate on the Contract Drawings are general in nature and specific labelled detail references to each and every occurrence of use are not indicated, however, such details shall be applicable to every occurrence on the Contract Drawings.

1.15.4 The actual location of switches, outlets and luminaires, etc. shall be reviewed by the Consultant before installation.

1.15.5 The location and size of existing services shown on the Contract Drawings are based on the best available information. The actual location of existing services shall be verified in the field before work is commenced. Particular attention shall be paid to buried services.

1.15.6 Changes and modifications necessary to ensure co-ordination and avoid interference and conflicts with other trades or to accommodate existing conditions, shall be made at no extra cost to the Agency.

1.15.7 Adequate space and provisions shall be left for removal of components and servicing of equipment, with minimum inconvenience to operation of systems.

1.15.8 Where equipment is shown to be ‘roughed-in only’ obtain accurate information from the Consultant before proceeding with the Work.

1.15.9 Contractor is to review all Contract Documents to confirm locations of devices and equipment.

1.15.10 This Contractor is responsible to mark-out his work, fully co-ordinated with all other trades, in sufficient time for review by the Consultant prior to rough-in. Prepare dimensioned layouts of each

room prior to rough-in for review by the Consultant. Do not proceed with any work until the Consultant has reviewed the layout drawings.

1.15.11 Contractor may be required to prepare working detail drawings supplementary to the Contract Drawings, when deemed necessary by the Consultant, for all areas where a multiplicity of materials and or apparatus occur, or where work due to architectural and structural considerations involves special study and treatment. Such drawings may be prepared jointly by all trades affected, or by the one trade most affected with due regard for and approval of the other trades, all as the Consultant will direct in each instance. Such drawings must be reviewed by the Consultant before the affected work is installed.

1.15.12 Carry out all alterations in the arrangement of work which has been installed without proper study and approval, even if in accordance with the Contract Documents, in order to make such work come within the finished lines of walls, floors and ceilings, or to allow the installation of other work, without additional cost. In addition, make any alterations necessary in other work required by such alterations, without additional cost.

1.15.13 Prepare installation drawings for equipment, based upon approved shop drawings, to check required Code clearances, raceway, busway and cable entries, sizing of housekeeping pads and structure openings. Submit installation drawings to Consultant for review.

1.16 As-Built Drawings

1.16.1 Mark locations of feeder conduits, junction and terminal boxes and ducts or conduits run for this project.

1.16.2 Record deviations from branch circuit numbers shown on Contract Drawings.

1.16.3 Prepare diagrams of interconnecting wiring between items of equipment including equipment supplied under other Specification Sections.

1.17 Operating and Maintenance Manuals

1.17.1 Provide Operating and Maintenance Manuals as per the requirements of Division 01.

1.17.2 Requirements for Manuals:

.1 Binders shall be identified on the binding edges as “Maintenance Instructions and Data Book”, for each project location complete with project addresses and titles

.2 Terminology used in all the Sections shall be consistent.

.3 Include the master index of all systems, the name of the Contractor, Electrical subcontractors and the date of Substantial Performance for the Contract.

.4 Include all necessary warranty information.
.5 Each binder shall have a complete index for all volumes.
.6 Each binder shall be no more than half filled.
.7 There shall be a separate section for all materials used on the project which fall under the WHMIS legislation. There shall be a hazard data sheet for each of the materials.
.8 There shall be a separate section for all Insurance Certificates, Test Certificates, Verification Forms and Test Forms.
.9 All relevant information relating to a system or product shall be contained within one binder.
.10 The manual sections shall follow the Specification Sections.
.11 Any diagrams, installation drawings, single line diagrams charts, etc. shall be mechanically reduced while maintaining full legibility to standard page size. If this cannot be achieved they shall be carefully folded and contained within a clear plastic wallet within the manual.

1.17.3 Data for Manuals:
.1 Equipment data shall contain:
.1 Operating instructions;
.2 Operating conditions such as temperature and pressure;
.3 Location of equipment;
.4 Maintenance instructions and schedules for one (1) year routine;
.5 Recommended list of spare parts;
.6 Maintenance schedule;
.7 Troubleshooting table showing where to look for problems under various conditions of malfunction;
.8 All wiring diagrams;
.9 Equipment operating curves;
.10 Equipment nameplate data and serial numbers.
.2 System data shall contain:
.1 Listing of all systems;
.2 All equipment locations;
.3 Equipment name tags;
.4 Cleaning, maintaining and preserving instructions for all material, products and surfaces. Include warnings of harmful cleaning, maintaining and preserving practices.
.3 Other manuals are required for:
.1 Lighting systems;
.2 Fire alarm systems.
.4 As-Built documentation shall contain:
.1 Reviewed As-Built shop drawings;

.2 As-Built construction drawings;
.3 Originals of test forms;
.4 Originals of test certificates.

1.18 **Firestopping**

1.18.1 Provide firestopping as per the requirements of Section 07 84 00 – Firestopping and as describe herein. Where there is a discrepancy the more stringent requirement shall apply.

1.18.2 Firestopping and smoke seal systems shall be in accordance with CAN4 S115.

.1 Asbestos free materials and systems capable of maintaining an effective barrier against flame, smoke and gases in compliance with requirements of CAN4 S115 M85 and not to exceed opening sizes for which they are intended.

.2 Fire stop system rating for service penetrations to suit Ontario Building Code 1997, 3.1.9.1 Firestopping of Service Penetrations.

.3 Firestop system rating for sealing junction of rated walls to rated floors and ceilings to suit Ontario Building Code.

1.18.3 Service penetration assemblies: Certified by ULC in accordance with CAN4 S115 M85 and listed in ULC Guide No.40 U19.

1.18.4 Service penetration firestop components: Certified by ULC in accordance with CAN4 S115 M85 and listed in ULC Guide No.40 U19.13 and ULC Guide No.40 U19.15 under the Label Service of ULC.

1.18.5 Fire resistance rating of installed fire stopping assembly not less than the fire resistance rating of surrounding floor and wall assembly, and in accordance with Ontario Building Code.

1.18.6 Firestopping and smoke seals at openings intended for ease of re-entry such as cables. Do not use cementitious or rigid seal at such locations.

1.18.7 Firestopping and smoke seals at openings around penetrations for pipes, ductwork and other mechanical items requiring sound and vibration control: Elastomeric seal. Do not use a cementitious or rigid seal at such locations.

1.18.8 Primers: Shall meet manufacturer's recommendation for specific material, substrate and end use.

1.18.9 Water (if applicable): Potable, clean and free from injurious amounts of deleterious substances.

1.18.10 Damming and backup materials, supports and anchoring devices: to manufacturer's recommendations, and in accordance with tested assembly being installed as acceptable to authorities having jurisdiction.

1.18.11 Sealants for Vertical Joints: Non-sagging.

1.18.12 Colour: If range available to Consultant's choice of standard colours, generally to match background colour where visible in finished spaces.

1.18.13 Through non-fire or non-smoke separations or where waterproof membrane is field applied, where pipes are insulated, sleeves shall be sized to accommodate the insulation and vapour barrier.

1.18.14 Where holes are core drilled in existing structures, sleeves shall be provided as specified complete with fire stopping as noted above.

1.18.15 Submit a complete firestopping system shop drawing package, identifying the products that may be used on the project. Prior to submitting data, review with authority having jurisdiction to confirm acceptability of proposed materials and assemblies.

1.18.16 Installation:

.1 Install fire stopping and smoke seal material and components in accordance with ULC certification and manufacturer's instructions.

.2 Seal holes or voids made by through penetrations, poke through termination devices, and un-penetrated openings or joints to ensure continuity and integrity of fire separation are maintained.

.3 Provide temporary forming as required and remove forming only after materials have gained sufficient strength and after initial curing.

.4 Tool or trowel exposed surfaces to a neat finish.

.5 Remove excess compound promptly as work progresses and upon completion.

1.19 Miscellaneous Metal Fabrications

1.19.1 Conduit and equipment provided under this Division shall be complete with all necessary supports and hangers required for a safe and workmanlike installation.

1.19.2 Provide "U" type support strut as manufactures by Unistrut.

1.19.3 It shall be the responsibility of Divisions 3, 5, 21, 22 and 23 of this Specification to supply Contractor with anchor bolts and base diagrams of equipment showing exact location of anchor bolts.

1.19.4 All drilling for hangers, rod inserts and work of similar nature shall be done by this Division.

1.19.5 Auxiliary structural members shall be provided under the Section concerned where conduits or equipment must be suspended between the joists or beams of the structure, or where required to replace individual hanger to allow for installation on new services. Submit details for review as requested by the Consultant.

1.19.6 Depending on type of structure, hangers shall be either clamped to steel beams or joists, or attached to approved concrete inserts.

1.19.7 Approved type expansion shields and bolts may be used for conduit up to 100mm diameter where the pre-setting of concrete inserts is not practical. Submit shop drawings as per Section 01 33 00 – Submittal Procedures.

1.19.8 Suspension from metal deck shall not be allowed unless specifically accepted by the Consultant. Drawings of the proposed method of suspension must be submitted for review as per Section 01 33 00 – Submittal Procedures.

1.19.9 Suspending one hanger from another shall not be permitted.

1.19.10 All hangers, supports, brackets and other devices used outside the building wall shall be galvanized. If galvanized components cannot be used submit samples of proposed substituted for review before installation.

1.20 **Sleeve and Formed Opening Location Drawings**

1.20.1 Chases and openings not located in accordance with the above provisions shall be made at the expense of this Division. Cutting of structural members shall not be permitted without specified written acceptance of the Consultant.

1.20.2 Provide sleeves for all service penetrations through walls, partitions, floor slabs, plenums and similar barriers. At non-rated barriers fill the annular space between the service and the sleeve with fire rated insulation as specified for rated separations and caulk around the edges with a minimum 12mm thick of fire-rated compound or acoustic non-setting mastic.

1.20.3 Through all fire or smoke separations, after testing, the annular space between conduit sleeves shall be firestopped.

1.20.4 Where holes are to be installed in existing structure, Contractor is to core drill the holes required. Contractor is required to scan all areas prior to coring and confirm layout with Consultant prior to completing work. When installing sleeves in existing structures, sleeves shall be provided as specified complete with a combination puddle/anchor flange bolted to the floor. Seal watertight between the flange and the floor.

1.20.5 All sleeves are to extend 100mm above finished floor to accommodate a 100mm concrete pad. Contractor to pour the concrete pad with the pad extending 100mm on all sides of the sleeve.

1.21 **Superintendence**

1.21.1 Maintain at the job site, at all times, qualified personnel and supporting staff, with proven experience in erecting, supervising, testing and adjusting projects of comparable nature and complexity.

1.21.2 The supervising personnel and their qualifications are subject to the approval of the Consultant.

1.22 **Patents**

1.22.1 Pay all royalties and licence fees, and defend all suits or claims for infringement of any patent right, and save the Agency and Consultant harmless of loss or annoyance on account of suit, or claims of any kind for violation of infringement of any letters, patent or patent rights, by this Subcontractor or anyone directly or indirectly employed by him or by reason of the use by him or them of any part, machine, manufacture or composition of matter on the work, in violation or infringement or such letters, patent or rights.

1.23 **Rights Reserved**

1.23.1 Rights are reserved to furnish any additional detail drawings, which in the judgment of the Consultant may be necessary to clarify the work and such drawings shall form a part of this contract.

1.24 **Workmanship**

1.24.1 Install equipment, ductwork, conduit and cables in a workmanlike manner to best suit space, to present a neat appearance and to function properly to the satisfaction of the Consultant.

1.24.2 Install equipment and apparatus requiring maintenance, adjustment or eventual replacement with due allowance therefore.

1.24.3 Include in the work all requirements of manufacturers shown on the shop drawings or manufacturers installation instruction.

1.24.4 Replace work unsatisfactory to the Consultant without extra cost.

1.24.5 Make provision to accommodate future plant and equipment indicated on drawings.

1.24.6 Protect from damage all equipment delivered to the site and during installation. Any damage or marking of finished surfaces shall be made good to the satisfaction of the Consultant.

1.25 **Mounting Heights**

1.25.1 Mounting height of equipment is from finished floor to centreline of equipment unless specified or indicated otherwise.

1.25.2 If mounting height of equipment is not indicated verify before proceeding with installation.

1.25.3 Install electrical equipment at the following heights unless indicated otherwise.

- .1 Signalling Devices: 2100mm AFF (minimum)
- .2 Visual Signal Devices: 2100mm AFF (minimum)
- .3 End of Line Devices: 1600mm AFF
- .4 Local Switches: 1050mm
- .5 Wall Receptacles/Data/Telephone:
  - .1 General: 450mm
  - .2 Above top of continuous baseboard heater: 200mm

.3 Above top of counters, back splash or desks: 175mm
.4 In Mechanical room: 1200mm
.6 Hand Dryers: 1200mm to top
.7 Barrier Free Buttons: 1000mm AFF

1.26 **The Agency's Right to Relocate Electrical Items**

1.26.1 The Agency reserves the right to relocate electrical items (light fixtures, battery pack) during construction, but prior to installation, without cost, assuming that the relocation per item does not exceed 3 metres from the original location. No credits shall be anticipated where relocation per item of, to maximum and including 3 metres reduces materials, products and labour.

1.26.2 Should relocations per item exceed 3 metres from the original location the Contract Price will be adjusted accordingly.

1.26.3 Necessary changes, due to lack of coordination, and as required and when approved, shall be made at no additional cost, to accommodate structural and building conditions. The location of pipes and other equipment shall be altered without charge to the Agency, if approved, provided the change is made before installation.

1.27 **Sprinklers**

1.27.1 Where the area is sprinklered and electrical distribution equipment is located in sprinklered areas, enclosures shall be louvered and gasketed and provided with water-tight roof assemblies with overhanging drip shields. The equipment shall be fabricated by the manufacturer in such a way as to prevent sprinkler fluid from entering the equipment and interfering with its operation as per the requirements of C.S.A. C22.1 Rule 26-006.

1.28 **Trial Usage**

1.28.1 The Consultant reserves the right to use any system, piece of equipment, device, or material for such reasonable lengths of time and at such times as may be required to make a complete and thorough test of the same, or for the purpose of learning operational procedures, before the final completion and acceptance of the work. Such tests shall not be construed as evidence of acceptance of the work, and it is agreed and understood that no claim for damage will be made for injury or breakage to any part or parts of the above due to the aforementioned tests, where such injuries or breakage are caused by a weakness or inaccuracy of parts, or by defective materials or workmanship of any kind. Supply all labour and equipment required for such tests.

1.28.2 Perform and pay for all costs associated with any testing required on the system components where, in the opinion of the Consultant the equipment manufacturer's ratings or specified performance is not being achieved.

1.29 **Instruction to the Agency**

1.29.1 Instruct the Agency's designated representatives in all aspects of the operation and maintenance of all systems and equipment.

1.30.2 Arrange for, and pay for services of service engineers and other manufacturer's representatives required for instruction in the operation of systems and equipment.

1.30.3 Submit to the Consultant at the time of final inspection a complete list of systems stating for each system:

.1 Date instruction were given to the Agency's staff.

.2 Duration of instruction.

.3 Name of persons instructed.

.4 Other parties present (manufacturer's representative, consultants)

1.30.4 Obtain the signature of the Agency's staff verifying that they properly understood the system installation, operation and maintenance requirements, and that they have received the specified manuals and "As-Built" drawings.

1.31 **System Acceptance**

1.31.1 Submit original copies of letters from the manufacturers of all systems indicating that their technical representatives have inspected and tested the respective systems and are satisfied with the method of installation, connection and operation.

1.31.2 These letters shall state the names of persons present at testing, the methods used, and a list of functions performed with location and room numbers where applicable.

1.31.3 Submit such letters for Fire Alarm System Testing.

1.32 **Cleaning**

1.32.1 Before energizing any systems, inspect and clean the inside of panel boards, switchgear, and cabinets to ensure that they are completely free from dust and debris.

1.32.2 Clean all polished, painted and plated work bright. Clean all lighting fixtures.

1.32.3 Remove all debris, surplus material and all tools

1.32.4 Carry out additional cleaning operating of systems as specified in other Sections of this Division.

1.32.5 Contractor to clean all electrical equipment, inside and out, prior to turn over to the Agency. Equipment is subject to inspection by the Consultant and/or Agency.

1.32.6 Contractor is responsible to remove own waste from the site. All re-usable materials shall be recycled.

1.33 **Painting/Finishes**

1.33.1 Touch up minor chips or damage to electrical equipment, installed in this Division, with standard, factory supplied, enamel finish.

1.33.2 Colour code, as specified herein, outlet boxes, pull boxes, junction boxes by applying a small dab of paint to inside and outside of each item during installation.

1.33.3 Colour code, as specified herein, all exposed ducts, conduits, outlet boxes, and similar items by applying a 25mm wide band of paint around ducts and conduits adjacent to boxes described in above paragraph and on both sides of wall penetration.

1.33.4 Use following paint colour-code:

.1 Red: Fire Detection and Alarm System; Emergency Alarm System (panic, intrusion)

.2 Green: Communication System (voice, data, electronics)

.3 Orange: Security Communications Systems

.4 Yellow: Emergency Power System

.5 Black: Normal Power

1.33.5 Provide priming and finish painting of exposed unfinished raceways, fitting, outlet boxes, junction boxes, pull boxes and similar items.

1.33.6 Metal enclosure surfaces are to be finished by the application of rust resistant primer on both the inside and outside, with at least two coats of enamel.

1.33.7 Clean and touch up all surfaces of equipment scratched or marred during shipment or installation. Match the original paint.

1.33.8 Clean and prime exposed non-galvanized hangers, racks and fastenings to prevent rusting.

1.34 **Safety**

1.34.1 Protect exposed live equipment during construction for personnel safety.

1.34.2 Shield and mark all live parts “LIVE 120 VOLTS”, or with appropriate voltage in English.

1.34.3 Arrange for the installation of temporary doors for rooms containing electrical distribution equipment. Keep these doors locked except when under direct supervision of an electrician.

1.35 **Cutting and Patching**

1.35.1 Include for all cutting and patching for all electrical services.

1.35.2 All services and materials used for the cutting and patching shall be carried out by experienced workers.

1.35.3 Cut all openings no longer than is required for the services. Core drill for individual services.

1.35.4 Obtain approvals from the Consultant before cutting or core drilling any openings or holes.

1.35.5 Patch all openings after services have been installed to match the surrounding finishes.

1.35.6 In existing areas all cutting, except for core drilling for individual services or where specifically noted, is part of this Division work.

1.36 **Identification**

1.36.1 Identify electrical equipment with nameplates as follow:

.1 Lamacoid 3mm thick plastic engraved sheet, black or red face, white core, mechanically attached with self-tapping screws.

.2 White letters 20mm high for major switchboards, panelboards and power transformers.

.3 White letters 12mm high for terminal boxes, junction boxes, grid boxes, splitter boxes, disconnect switches starters and contactors.

.4 Allow for an average of twenty-five (25) letters per nameplate.

.5 Identification to be in English.

.6 Black nameplates for normal power.

1.36.2 Identify electrical equipment with labels as follow:

.1 Embossed plastic labels with 6mm high letters unless specified otherwise, for internal components, such as relays, fuses, terminal blocks.

.2 Wording on nameplates to be approved by the Consultant prior to manufacture.

.3 Identification to be in English.

.4 Nameplates for terminal cabinets, grid boxes pull boxes, and junction boxes are to indicate the system and/or voltage characteristics.

1.36.3 Identification to be permanently fastened to the respective equipment with rivets.

1.36.4 Wiring Identification:

.1 Identify wiring with permanent legible identifying markings, either numbered or coloured plastic tapes, on both ends of phase conductors of feeders and branch circuit wiring.

.2 Maintain phase sequence and colour coding throughout.

.3 Colour Code to CSA C22.1-1998.

.4 Use colour coded wires in communication cables and control wiring, matched throughout system.

1.36.5 Conduit and Cable Identification:

.1 Colour code conduits, boxes and metallic sheathed cables.

.2 Code with plastic tape or paint at points where conduit or cable enters wall, ceiling or floor, and at 15 metre intervals.

.3 Colours: 25mm wide prime colour and 20mm wide auxiliary colour.

1.36.6 Receptacle Identification:

.1 All receptacles are to be labelled with the respective circuit numbers with a printed label, similar to a Brady label, with 12mm characters. Circuit number to include full circuit number including panel board identification.

.2 Label to be placed on wall above cover plate or on cover plate. Location of label to be consistent throughout the Project.

1.36.7 Wiring Terminations: Lugs, terminals, screws used for termination of wiring to be suitable for either copper or aluminum conductors.

1.36.8 Fuse Size Labelling:

.1 Contractor to install a label on all equipment with fuses to identify the fuse sizes that are installed in the respective equipment.

.2 Contractor to also install a label on all equipment with fuses to identify the maximum allowable fuse size based on the size of respective feeders.

1.36.9 Warning Signs: Provide warning signs, as required to meet the requirement of the inspection.

2. **PRODUCTS** – Not Applicable

3. **EXECUTION** – Not Applicable

END OF SECTION

1. **GENERAL**

1.1 **General Requirements**

1.1.1 Conform to Section 01 00 00 – General Requirements and all documents referred to therein.

1.2 **References**

1.2.1 CSA C22.2 No.0.3, Test Methods for Electrical Wires and Cables
1.2.2 CSA C22.2 No.38, Thermoset-Insulated Wires and Cables
1.2.3 CSA C22.2 No.75, Thermoplastic-Insulated Wires and Cables
1.2.4 CSA-C22.2 No.51, Armoured Cables
1.2.5 CSA 2.2.1 – Canadian Electrical Code - Part 1
1.2.6 CAN/CSA C22.2 No.18 – Outlet Boxes, Conduit Boxes, and Fittings
1.2.7 CSA C22.2 No.56 – Flexible Metal Conduit and Liquid-Tight Flexible Metal Conduit
1.2.8 CSA C22.2 No.83 – Electrical Metallic Tubing

1.3 **Shop Drawings**

1.3 Unless otherwise noted, shop drawings need not be submitted for standard manufactured items and materials provided they are as specified.

1.4 **Submittals**

1.4.1 Submit the following to the Consultant for review:
- .1 A sample of each proposed type of access door, as well as a Sepia print and three blue line prints of reflected ceiling plan drawings showing proposed ceiling access door locations.
- .2 Location drawings for all required sleeves and formed openings in poured concrete construction.
- .3 Location drawings for all required openings. These locations must be reviewed and accepted by the Consultant prior to the Contractor drilling or core drilling.
- .4 A sample of lamacoid nameplates and list of proposed nameplate legends.
- .5 Samples of wiring devices and cover plates.

1.5 **Quality Assurance**

1.5.1 All components shall be CSA or ULC approved listed and labelled.

2. **PRODUCTS**

2.1 **Conduits and Raceways**

2.1.1 Conduits and Fittings:
- .1 EMT:
  - .1 CSA C22.2 Number 83-M.
  - .2 EMT galvanized cold rolled steel tubing.
- .2 Liquid Tight Flexible Steel Conduit Fittings:

.1 CSA 22.2 Number 56.
.2 Liquid-tight flexible steel conduit with PVC cover.
.3 Watertight connectors with nylon insulated throat.

.3 Liquid Tight Flexible Steel Conduit Fittings: Watertight connectors with nylon insulated throat.

.4 EMT Fittings:
.1 Compression type, steel.
.2 Gland compression connectors with insulated throats.
.3 Compression couplings.

.5 Set Screw Type:
.1 Steel, concrete-tight:
.2 Connectors with insulated throats
.3 Couplings
.4 Set-screw fittings for EMT may only be used above ceiling spaces where the fittings will not be exposed to sprinkler heads or moisture. EMT below ceiling spaces or exposed to sprinkler heads shall be provided with watertight couplings.

.6 Minimum size conduit shall be 21mm diameter.

.7 All conduit shall contain a ground conductor.

.8 All conduit must have adequate support systems complete with approved fittings, outlet boxes, junction boxes, sealing fittings and drains as indicated or as required. Provide hot dipped galvanized steel beam clamps, hot dipped galvanized steel channel type supports where required. Provide 6mm threaded galvanized steel rods to support suspended channels and provide all necessary galvanized steel spring loaded bolts, nuts, washers and lock washers. Support systems shall be Thomas and Betts Superstrut or approved equal.

.9 Provide all conduit, fittings and ducts necessary to complete the distribution of all power, lighting and control conductors to electrical equipment specified under the corresponding Section. Include that necessary for connecting to mechanical heating and ventilating equipment, also equipment specified under other Divisions.

.10 Fasten conduit with malleable PVC coated galvanized steel two-hole straps at intervals to suit code requirements and job conditions.

2.2 **Fastenings, Supports and Sleeves**

2.2.1 Galvanized steel, size and load rating to suit application.

2.2.2 One hole steel straps to secure surface mounted conduits or surface mounted cables 50mm diameter and smaller. Two hole steel straps for conduits and cables larger than 50mm.

2.2.3 Beam clamps to secure conduits to exposed steel work.

2.2.4 Channel type supports for two or more conduits.
2.2.5 6mm minimum diameter threaded rods to support suspended channels.
2.2.6 6mm mínimum diameter U-bolts.
2.2.7 Sleeves: Schedule-40 steel pipe minimum I.D. 13mm larger than O.D. of conduit or cable passing through.
2.2.8 Acceptable Manufacturers: Burndy, Electrovert, Unistrut or approved equivalent.

2.3 **Junction Boxes**
2.3.1 Code gauge (galvanized) sheet steel EEMAC Type-1 size as required by code for number and size of conduits, conductors and devices, complete with covers, corrosion resistant screws, terminals and mounting channels.
2.3.2 Screw-on sheet steel covers to match enclosure for surface mounting boxes.
2.3.3 Covers with 25mm minimum extension around for flush-mounted junction boxes.

2.4 **Conduit Boxes – General**
2.4.1 Size boxes in accordance with latest edition of Electrical Safety Authority (ESA) Electrical Safety Code.
2.4.2 Code gauge, galvanized pressed steel for EMT.
2.4.3 200mm square or larger outlet boxes as required for special devices.
2.4.4 Gang boxes where wiring devices are grouped except in classified hazardous areas.
2.4.5 Blank cover plates for boxes without wiring devices.
2.4.6 50mm x 100mm outlet boxes for devices, ganged for grouped devices, barriers where required by code.

2.5 **Pull Boxes**
2.5.1 Code gauge galvanized sheet steel welded construction, EEMAC Type-1.
2.5.2 Screw-on galvanized sheet steel covers for surface mounting boxes.
2.5.3 Covers with 25mm minimum extension around, for flush mounted pull boxes.

2.6 **Outlet Boxes – Sheet Steel**
2.6.1 Pressed steel single and multi-gang flush device boxes for flush installation, minimum size 100mm x 50mm x 38mm. 100mm square outlet boxes where more than one conduit enters one side, with extension rings as required.
2.6.2 100mm square or octagonal outlet boxes for lighting fixture outlets.

2.6.3 119mm square outlet boxes with extension and plaster rings as necessary for flush mounting devices in gypsum board, plaster or panelled walls.

2.7 **Masonry Boxes**

2.7.1 Pressed steel masonry single and multi-gang boxes for devices flush mounted in exposed masonry walls.

2.8 **Concrete Boxes**

2.8.1 Pressed steel concrete type boxes for flush mount in concrete with matching extension and plaster rings as required.

2.9 **Rigid Conduit Boxes**

2.9.1 Zinc electroplate and polymer enamelled cast, single cast-iron, ferroloy shallow (FS) boxes with factory-threaded hubs and mounting feet for surface mounted switches and receptacles, with gasketed coverplate for exterior work and wet areas.

2.10 **Outlet Boxes – Fittings**

2.10.1 Bushings and connectors with nylon insulated throats.
2.10.2 Knock-out fillers to prevent entry of foreign materials.
2.10.3 Conduit outlet bodies for conduit to maximum 32mm and pull boxes for larger conduits.
2.10.4 Double locknuts and insulated bushings for sheet steel metal boxes.

2.11 **Branch Circuit Conductors**

2.11.1 Conductors:
- .1 ASTM Class-B, soft drawn, electrolytic copper.
- .2 Stranded.

2.11.2 Insulation:
- .1 CSA Type RW90 XLPE (-40°C):
  - .1 Heat and moisture resistant.
  - .2 Low temperature, chemically cross-linked thermosetting polyethylene material.
  - .3 600V rated.
  - .4 For maximum 90°C conductor temperature.
  - .5 For installation at minimum -40°C temperature.
  - .6 CSA C22.2 Number 38.
- .2 CSA Type T90 NYLON (-10°C):
  - .1 Heat resistant.
  - .2 Flame retardant.
  - .3 Thermoplastic PVC material with extruded nylon cover.
  - .4 600V rated.
  - .5 For maximum 90°C conductor temperature dry and 75°C in wet locations.

.6 For installation at minimum -10°C.
.7 CSA C22.2 Number 75-M.

2.11.3 CSA Type AC90 XLPE (-40°C):
.1 Conductors:
.1 ASTM Class-B, soft drawn, electrolytic copper.
.2 Solid for sizes number 5.26mm² (10AWG) and smaller.
.3 Stranded for sizes number 8.37mm² (8AWG) and larger.
.2 Insulation:
.1 Heat and moisture resistant.
.2 Low temperature, chemically cross-linked thermosetting polyethylene material.
.3 600V rated for sizes number 5.26mm² (10AWG) and smaller.
.4 1000V rated for sizes number 8.37mm² (8AWG) and larger.
.5 For maximum 90°C conductor temperature.
.6 For installation at minimum -40°C temperature.
.7 CSA C22.2 Number 38.
.3 Construction:
.1 Two, three or four insulated conductors.
.2 Bare ground conductor.
.3 Overall interlocking aluminum armour.
.4 CSA C22.2 Number 51.

2.11.4 Branch circuit conductors to maximum and including number 3.31mm² (12AWG) shall be solid. Branch circuit conductors in sizes larger than number 3.31mm² (12AWG) shall be stranded. All branch circuit conductors shall be constructed of 90 per cent conductive copper, unless otherwise noted, and shall be approved for 600V.

2.11.5 Electric service, distribution and special conductors are specified in this Section or on the Contract Drawings.

2.11.6 Aluminum conductors shall not be used for any services on this Project. All cables/wiring shall be of copper only throughout this Project. No exceptions will be permitted.

2.12 **Wire and Cable Connectors**

2.12.1 Copper compression type wire and cable terminations for number 3.31mm² (12AWG) and larger conductors, colour keyed, sized to suit. Long barrel NEMA two hole lugs for sizes number 53.48mm2 (1/0 AWG) and larger.
.1 Acceptable Manufacturers: Thomas and Betts series 54000, Ideal Powr-Connect, Burndy Hylug.

2.12.2 Twist type splicing connectors shall not be used on this Project.

2.12.3 Conductor compression splice for number 5.26mm² (10AWG) or smaller.

.1 Acceptable Manufacturers: Thomas and Betts STA-Kon series, Ideal Splices, Burndy or approved equivalent.

2.13 **Heat Shrinkable Tubing Insulation, Heavy Wall**

2.13.1 Acceptable Manufacturers: Thomas and Betts, Shrink-Kon series, TS-46, 3M cable sleeve ITCSN or approved equivalent.

2.14 **Wiring Devices – Receptacles for General Service**

2.14.1 Receptacles: Specification grade suitable for back and side wiring, black colour complete with grounding terminal, colour as required for type of area for straight blade devices and black colour for twist lock devices.

2.14.2 Receptacles by one manufacturer on this Project.

2.14.3 Acceptable Manufacturers or approved equivalent

.1 15A, 125V, (5-15R) Duplex Straight Blade:
- .1 Arrow Hart 5262.
- .2 Leviton 5262.
- .3 Hubbell 5262.
- .4 Pass & Seymour 5262.

.2 20A, 125V, (5-20R) Duplex Straight Blade:
- .1 Arrow Hart 5392.
- .2 Leviton 5362.
- .3 Hubbell 5392.
- .4 Pass & Seymour 5362.

.3 15A, 125V, (5-15R) Duplex GFCI, Straight Blade:
- .1 Arrow Hart GF5242AH.
- .2 Leviton 6599-W.
- .3 Hubbell GF-5252.

2.15 **Wiring Devices – Cover Plates**

2.22.1 Stainless steel Type 302 alloy, vertically brushed, 0.8mm thick cover plates.

2.22.2 Nylon, smooth, high impact strength.

2.22.3 Pressed steel, galvanized.

2.22.4 Cast covers for cast boxes with gaskets.

2.22.5 Cover plates of same manufacture as devices.

2.22.6 Submit samples of each device and cover plate to the Consultant for approval.

2.16 **Escutcheon Plates**

2.16.1 One-piece chrome plated steel sized to completely cover sleeves and complete with set screws to secure the plates to the conduit. Split plates will not be acceptable.

2.17 **Inserts, Beam Clamps Fasteners, Equipment Hangers and Supports**

2.17.1 Inserts for concrete formwork shall be Crane Canada type, number 4-M Unistrut, or approved equal cast iron inserts, multiple type where required.

2.17.2 Beam clamps for hanging and support to structural steel shall be Crane Canada or equal.

2.18 **Access Doors**

2.18.1 Minimum number 2.78mm (12 gauge) prime coat painted bonderized steel flush access doors, each complete with a heavy frame and anchor, heavy duty rust-resistant concealed hinges, a positive locking screwdriver lock and mounting and finishing provisions to suit the particular construction in which it is installed. Access door sizes shall suit the concealed work for which they are supplied. Access doors in fire rated ceilings, walls, partitions, structures and suchlike, shall be ULC listed and labelled and of a rating to maintain the fire separation integrity.

2.18.2 Where access doors are located in surfaces where special finishes are required, they shall be of a recessed door type competent of accepting the finish in which they are to be installed so as to maintain the final building surface appearance throughout.

2.18.3 Access doors shall be, wherever possible, of a standard size, for all applications. Confirm exact dimensions with the Consultant, prior to ordering.

3. **EXECUTION**

3.1 **General Conduit and Conductor Installation Requirements**

3.1.1 Install conduit and conductors concealed in all finished areas (no exceptions), and concealed to the degree made possible by finishes in partially finished and unfinished areas. All conduits must be concealed in walls (no exceptions) in all areas; conduit may be exposed where run on unfinished ceilings (unless concealment is possible). Refer to and examine the Contract Drawings and room finish schedules to determine finished, partially finished and unfinished areas of the building.

3.1.2 Where conduits are exposed, arrange same to avoid interference with other work and parallel to the building lines, horizontal conduits can only be exposed where run on exposed ceilings and shall be installed as high as possible. Do not install conduit or conductors within 150mm of flue or heating pipes or equipment.

3.1.3 Install conduits to conserve headroom in exposed locations and cause minimum interference in spaces through which they pass.

3.1.4 All conduits must be concealed no exceptions. Conduits to have own support system and are to be supported independently of the ceiling grid or ceiling support system.

3.1.5 Use flexible metal conduit for connection to motors in dry areas, connection to recessed fixtures without a prewired outlet box, connection to surface or recessed fixtures and work in movable metal partitions.

3.1.6 Use liquid tight flexible metal conduit for connection to motors or vibrating equipment in damp, wet or corrosive locations. Use only liquid tight fittings when using liquid tight flexible metal conduit. Liquid tight flexible metal conduit to have a jacket with an FT-6 rating when used in plenums, otherwise provide an FT-4 rating inside the conduit.

3.1.7 Use explosion proof flexible connection for connection to explosion proof motors.

3.1.8 Install conduit sealing fittings in hazardous areas. Fill with compound.

3.1.9 Minimum conduit size for lighting and power circuits: 27mm.

3.1.10 Bend conduit cold. Replace conduit if kinked or flattened more than 1/10th of its original diameter.

3.1.11 Mechanically bend steel conduit over 21mm diameter.

3.1.12 Install fish cord in empty conduits.

3.1.13 Remove and replace blocked conduit sections. Do not use liquids to clean out conduits.

3.1.14 Dry conduits out before installing wire.

3.1.15 All cutting and patching of masonry/concrete floors, and walls for electrical services shall be by this Division. Obtain approval from the Consultant/Agency before cutting any structural walls or floors. Cutting and drilling shall only be at times allowed by the Consultant/Agency. Check and verify the location of mechanical and electrical services in walls and below the floor slab in all areas requiring core drilling and cutting. Protect all areas where core drilling occurs. Carefully chip top and bottom of slab to expose rebars to minimize cutting of rebars when core drilling. Provide x-ray study before drilling or cutting where required by the Consultant/Agency.

3.1.16 Provide sleeves for all conduit passing through floor and roof slabs, beams, concrete walls and slab to slab partitions, etc.

3.1.17 Where cables and conduits pass through partitions and through floors that are not fire rated, provide an air-tight seal around the cables and conduits.

3.1.18 Where cables and conduits pass through floors and fire rated walls, pack space between conduit (or cable) and sleeve with an approved fire stop as specified in Section 26 05 10 – General Instructions for Electrical Sections and Section 07 84 00 – Firestopping.

3.2 **Conduit – General**

3.2.1 Run parallel or perpendicular to building lines.

3.2.2 Group raceways wherever possible. Support on channels.

3.2.3 Install expansion joints as required.
3.2.4 Run raceways in web portion of structural steel columns and beams.
3.2.5 Do not drill structural members to pass through.
3.2.6 Locate raceways not less than 125mm clear where parallel to steam or hot water lines with a minimum of 75mm at crossovers.
3.2.7 All conduits shall contain insulated green ground wires.
3.2.8 Install 6mm diameter nylon pull cord in empty raceways.

3.3 **Conduit and Fittings**

3.3.1 Minimum Conduit Sizes:
.1 Surface installation and concealed behind walls 21mm trade size conduit.
.2 Embedded in concrete 27mm trade size conduit.
.3 Directly buried 53mm trade size conduit.

3.3.2 Conduit Application and Type:
.1 Concealed above suspended ceilings and inside walls in office areas, use EMT.

3.3.3 Set-screw connectors, fittings and couplings may only be used above ceiling spaces where the conduit is not exposed to sprinkler heads. Where EMT is installed below ceiling spaces or otherwise exposed to sprinkler heads, use watertight couplings.
3.3.4 Connection to motors and equipment subject to vibration use; liquid tight flexible steel conduit.
3.3.5 Use factory "ells" where 90 degree bends are required for 27mm trade size and larger conduits.
3.3.6 Bend conduit offsets cold. Do not install crushed or deformed conduits and avoid trapped runs in damp or wet locations. Prevent the entrance of water and lodging of concrete, plaster, dirt, or trash in conduit, boxes, fittings and equipment during course of construction.
3.3.7 Where conduit joints occur in damp or wet locations, make joints watertight by applying an approved compound on the entire thread area before assembling. Draw up all conduit joints as tightly as possible.
3.3.8 Cap empty conduits which do not terminate in outlets, panels, cabinets and suchlike, with standard galvanized plumber’s pipe caps.
3.3.9 Plug empty conduits which terminate flush with floors or walls with flush coupling and brass plug.
3.3.10 Install conduit sleeves for all conduits and cables passing through walls, ceilings or floors, and fill void between sleeve and conduit with caulking. If fire-rated caulking is required by code, use same class as walls, ceilings or floors.
3.3.11 Terminate conduit stubbed up through concrete floor for connection to free standing equipment with a coupling flush with

finish floor, and extend rigid conduit to equipment, except where required, use flexible conduit from a point 150mm above floor.

3.3.12 Install double locknuts and bushings on all rigid conduit terminations into threadless openings. Increase length of conduit threads at terminations sufficiently to permit bushing to be fully seated against end of conduit.

3.3.13 Mechanically bend steel conduit.

3.3.14 Install sealing condulets in conduits at hazardous area boundaries.

3.4 EMT and Fittings

3.4.1 Minimum EMT Size: 21mm (3/4") trade size conduit.

3.4.2 EMT Application:

.1 Exposed in unfinished areas, above truss level and for drops in column web to 3 metres above finished floor. Use rigid steel conduit below 3 metres.

.2 In block walls and stud partitions.

.3 Set-screw connectors, fittings and couplings may only be used above ceiling spaces where the conduit is not exposed to sprinkler heads. Where EMT is installed below ceiling spaces or otherwise exposed to sprinkler heads, use watertight couplings.

3.5 Junction Boxes

3.5.1 Install junction boxes in inconspicuous but accessible locations. Secure to structure.

3.5.2 Install terminal blocks on mounting rails, for termination of each wire and cable regardless of size.

3.5.3 Only one voltage source is permitted in a junction box.

3.5.4 Install barriers to separate different auxiliary systems.

3.6 Pull Boxes

3.6.1 Install pull boxes in inconspicuous but accessible locations. Secure to structure.

3.6.2 Install pull boxes so as not to exceed 30 metres of conduit run between pull boxes.

3.6.3 Only one voltage source is permitted in a pull box.

3.6.4 Install barriers to separate different auxiliary systems.

3.7 Outlet and Conduit Boxes

3.7.1 Install conduit outlet boxes for conduit to maximum 32mm and pull boxes for larger conduits.

3.7.2 Support boxes independently of connecting conduits.

3.7.3 Seal boxes during construction to prevent entry of debris, dust and dirt.

3.7.4 For flush installations mount plaster rings to box, flush with wall surface to permit wall finish to come within 6mm of opening.

3.7.5 Provide correct size of openings in boxes for conduit, armoured cable connections. Reducing washers will not be acceptable.

3.7.6 Install switches and other controls close to door lock or latch jambs and other openings, maintaining a minimum of 100mm from trims of doors (except where installed in door frames of metal partitions) check door swings.

3.7.7 Install 100mm square or octagonal outlet boxes for lighting fixture outlets.

3.8 **Masonry Boxes**

3.8.1 In block walls use deep boxes to provide clear space around knockout for AC90 cable entry.

3.9 **Installation of Branch Circuit Conductors**

3.9.1 Install wiring in raceways unless noted otherwise. All wiring to be copper, no exceptions.

3.9.2 Minimum Wire Sizes:

.1	Power and Lighting	Number 3.3mm² (12AWG)
.2	Control	Number 2.1mm² (14AWG)
.3	Fire Alarm	Number 0.82mm² (18AWG)

3.9.3 Wire and Cable Application and Type:

.1 Lighting branch circuit where connection to luminaire is AC90 cable use T90 nylon.

.2 Receptacle branch circuits use T90 nylon.

.3 Ceiling boxes to luminaires in suspended ceiling use T90 nylon or AC90 cable.

.4 Branch circuits other than those covered above use RW90.

.5 Equipment feeders and circuits use RW90.

.6 Type AC90 Cable Length Limitations:

.1 Ceiling box to luminaire: 1.2m maximum in non-accessible ceilings; 1.8m in accessible ceilings.

.2 Junction box to outlet: 3 metres maximum.

3.9.4 Use lubricant when pulling wires into conduit. Ensure that wires are kept straight and are not twisted or abraded.

3.9.5 Neatly secure exposed wire in apparatus enclosures with approved supports or ties.

3.9.6 All equipment to be grounded through ground wires.

3.9.7 Provide separate neutral conductor for each 120V circuit for all circuits feeding receptacles and power outlets.

3.9.8 All cable terminations to be compression type fittings for wire sizes greater than 8.36mm² (8AWG). All compression type fittings to be two-hole long barrel type. Where mechanical screw type lugs are allowed by the Consultant, they will be suitable for quantity of parallel runs of wire that are to be terminated under.

3.9.9 Armoured Cable Type AC90 (BX) may only be used for individual drops from slab mounted junction box to surface or recessed mounted light fixtures or where noted on the Contract Drawings

where wiring is required to be installed within an existing wall. The maximum allowable distance of armoured cable is 3 metres. Contractor to receive written approval from the Consultant to run armoured cable further than 3 metres. Wiring in conduit is to be brought to a junction box to allow for the transition to armoured cable. Armoured cable is not to be installed directly into electrical panels.

3.9.10 Wire Splicing:

.1 Splice up to and including 13.29mm² (6AWG) with nylon insulated expandable spring type connectors.

.2 Splice larger conductors using compression type connectors wrapped in PVC insulation rated at the respective voltage.

3.10 Connectors

3.10.1 Install compression terminations and splices in accordance with manufacturer's written instructions.

3.10.2 Make splices in junction boxes.

3.10.3 Make connections in lighting circuits with twist type splicing connectors.

3.10.4 Terminate and splice conductors Number-8 and larger at terminal blocks in junction boxes.

3.10.5 Seal terminations and splices exposed to moisture, corrosive conditions or mechanical abrasions with heavy wall heat shrinkable insulation.

3.10.6 Install fixture type connectors and tighten. Replace insulating cap.

3.11 Installation of Teck90 Cable, Variable Frequency Drive Cable

3.11.1 Group cables wherever possible on channels.

3.11.2 Terminate cables in accordance with manufacturer's instructions.

3.11.3 Fastenings:

.1 One hole steel straps to secure surface cables 50mm and smaller. Two hole steel straps for cables larger than 50mm.

.2 Channel type supports for two or more cables.

.3 Galvanized Threaded Rods: 6mm diameter minimum to support suspended channels.

3.11.4 Connectors: Watertight, approved for respective cables.

3.12 Installation of Fire Alarm Conductors

3.12.1 Provide all required fire alarm conductors, as specified unless otherwise noted.

3.12.2 Install all fire alarm wiring in conduit.

3.12.3 Any special requirements pertaining to fire alarm wiring will be specified hereinafter in this Division or on the Contract Drawings.

3.13 **Installation of Control Cables**

3.13.1 Install all control cables recessed in conduit.

3.13.2 Ground control cable shield.

3.14 **Wiring Devices – Receptacles**

3.14.1 Install receptacles vertically, use gang type outlet box where more than one receptacle is required in a location.

3.14.2 Where split receptacle has a portion switched, mount vertically and switch upper portion.

3.14.3 Coordinate with the Contract Drawings for final positioning and mounting heights of power and voice/data receptacles.

3.14.4 Maintain clearances between receptacle outlet boxes and millwork as indicated on the Contract Drawings.

3.14.5 Align and evenly space outlet boxes that are mounted as a group.

3.14.6 Install receptacle colours as follows:

	Area	Colour
.1	Gypsum board, plaster or panelled:	black
.2	Office:	black
.3	Factory, service, exterior:	black

3.15 **Wiring Devices – Switches**

3.15.1 Install single throw switches with handle in UP position when switch is closed.

3.15.2 Install switches in gang type outlet box when more than one switch is required in a location.

3.15.3 Mount toggle switches at height indicated on the Contract Drawings.

3.15.4 Install switch colours as follows:

	Area	Colour
.1	Gypsum board, plaster or panelled	:black
.2	Office:	black
.3	Factory, service:	black

3.16 **Wiring Devices – Cover Plates – Stainless Steel**

3.16.1 Protect stainless steel cover plate finish with paper or plastic film until painting and other work is finished.

3.16.2 Install suitable common cover plates where wiring devices are grouped.

3.16.3 Do not use cover plates designed for flush outlet boxes on surface-mounted boxes.

3.16.4 Provide plaster ring where necessary.

3.17 **Installation of Escutcheon Plates**

3.17.1 Provide escutcheon plates over all exposed conduit passing through walls, floors, ceilings, partitions, furrings and suchlike in finished areas.

3.18 **Installation of Inserts, Beam Clamps, Fasteners, Hangers and Supports**

3.18.1 Install all inserts, beam clamps, fasteners, and similar hardware required for conduit, duct, raceway, conductor and suchlike and equipment hanger or support materials to best suit structural details.

3.18.2 Accurately and properly set concrete inserts in the concrete framework.

3.18.3 For runs of three or more conduits, raceways, or conductors in concrete formwork, use multiple type inserts used for the smallest conduit in the group.

3.18.4 Where inserts are required in in concrete work where concrete inserts have not been installed, drill a neat hole of the proper diameter and depth in the concrete and insert an anchor to accept the hanger rod, bolt and suchlike or where concrete mass permits, use self-drilling concrete anchors.

3.18.5 Fasten hangers and support provisions to brick or masonry with expansion shields and machine bolts, or for light loads, use plugs and screws.

3.18.6 In cavity walls and ceilings use two wing toggles and for heavy loads, provide steel anchor plates with two or more toggles to spread the load.

3.18.7 Provide beam clamps for attaching, hanging or support provisions to the Consultant, weld the hanging and support provisions to the structural steel.

3.18.8 Explosive power actuated fasteners will not be permitted unless specific approval for their use has been obtained from the Consultant.

3.18.9 Securely mount plywood backboards to structure or use independent mounting channels, secured to floor.

3.19 **Installation of Access Doors**

3.19.1 Install access doors to give access to all junction boxes, pullboxes, conductor joints and other similar electrical work which may need maintenance or repair but which is concealed in inaccessible construction except as otherwise specified herein or on the Contract Drawings.

3.19.2 Before commencing installation of electrical work, prepare on a set of reflected ceiling plans with complete layouts of all ceiling access door which will be required. Submit these layouts to the Consultant for approval and show the exact sizes and locations of such ceiling access doors. Locate access doors in walls and partitions to the Consultant's approval, and arrange electrical work to suit.

3.19.3 Access doors will be installed by the Division responsible for the particular type of construction in which the access doors are

required. Supply the access doors to the Division installing same at the proper time.

3.19.4 Access doors shall be, wherever possible, of a standard size, for all applications. Confirm exact dimensions with the Consultant, prior to ordering.

3.19.5 Submit a sample of each proposed type of access door to the Consultant for approval.

3.20 **Painting and Finishes**

3.20.1 Provide all painting and patching as required.

3.20.2 All exposed electrical fittings, supports, hangers, frames conduit, racks, boxes, raceways and similar material and apparatus shall be galvanized or finished with corrosion resistant primer ready to accept paint. Take special care when priming work exposed to the elements or in wet areas to prevent rust or corrosion from damaging adjacent surfaces.

3.20.3 Touch up and repaint any factory finished equipment that has been scratched or otherwise damaged during installations.

3.20.4 Provide for all patching and painting for all removals and as required. Painting shall be completed to the approval of the Consultant and the Agency. Paint shall match adjacent surfaces and as per Section 09 91 00 – Painting. Include all costs.

3.20.5 Where cutting, patching, fire stopping and construction involves painted surfaces these must be painted to match the surrounding surfaces or as directed by Consultant and as per Section 09 91 00 – Painting.

3.21 **Standard Identification**

Identify electrical work as specified below:

3.21.1 For each piece of electrical equipment from the panelboard to maximum and including battery packs and for any other piece of equipment where specified in this Section, provide engraved lamacoid identification nameplates. Nameplates shall be lamacoid black with white letters and with bevelled edges, secured to apparatus with stainless steel screws. Warning signs, if and when required, shall be red with white lettering.

3.21.2 Exact nameplate wording and sizes must be approved by and confirmed by the Consultant prior to manufacture.

3.21.3 Clearly identify main pull or junction boxes (excluding obvious outlet boxes) by painting the outside of the covers. Paint colours shall be in accordance with the following schedule:

.1 Fire Alarm: Red

.2 Colour code conductors, throughout to identify phases, neutrals and grounds by means of self-laminating coloured tape, coloured conductor insulation, or properly secured coloured plastic discs. Colours shall be as follows:

.1 Phase A: Red

.2	Phase B:	Black
.3	Phase C:	Blue
.4	Ground:	Green
.5	Neutral:	White

3.22 **Tests**

3.22.1 Branch circuit balancing: Connect all branch power circuits to panel boards so as to balance the actual loads (wattage) within five (5) per cent. Connect loads to circuits as indicated on the Contract Drawings.

END OF SECTION

1. **GENERAL**

1.1 **General Requirements**

1.1.1 Conform to Section 01 00 00 – General Requirements and all documents referred to therein.

1.1.2 Conform to all applicable Sections of Division 26 (Electrical).

1.2 **References**

1.2.1 Provide system grounding to meet requirements of current Ontario Electrical Code and all applicable Codes.

1.3 **Product Data**

1.3.1 Provide cable grips to receive all grounding conductors. Identify all grounding conductors at the ground pad using lamacoid nameplates. Ground bus system to be provided in rooms as shown in Contract Documents.

1.3.2 Bond and ground all metallic water and waste systems in accordance with code requirements.

1.3.3 Install grounding connections to typical equipment included in, but not necessarily limited to, following list: frames of motors, starters, control panels, building steel work, distribution panels and outdoor lighting.

1.3.4 Contractor to commission a company approved by the Hydro Authority to perform a main system ground test and a copy of the report to be submitted to the Consultant.

2. **PRODUCTS**

2.1 **Grounding and Bonding Equipment**

2.1.1 Meet standard of CSA C22.2 No.41.

2.2 **Conductors**

Insulated, stranded, soft drawn annealed copper wire, for:

2.2.1 Ground connections;

3. **EXECUTION**

3.1 **Installation**

3.1.1 Install complete permanent, continuous, system and circuit, equipment, grounding systems including, conductors, connectors, accessories, as indicated in the Contract Documents, to conform to requirements local authority having jurisdiction over installation.

3.1.2 Install connectors in accordance with manufacturer's instructions.

3.1.3 Protect exposed grounding conductors from mechanical injury.

3.1.4 All grounding connections to be made with compression type fittings and lugs.

3.1.5 Install bonding wire for flexible conduit, connected at both ends to grounding bushing, solderless lug, clamp or cup washer and screw. Neatly cleat bonding wire to exterior of flexible conduit.

END OF SECTION

1. **GENERAL**

1.1 **General Requirements**

1.1.1 Conform to Section 01 00 00 – General Requirements and all documents referred to therein.

1.1.2 Conform to all applicable Sections of Division 26 (Electrical).

1.2 **Description of Work**

1.2.1 Provide labour, materials, products, equipment and services to install a complete system for the control of lighting and other equipment as indicated on the Contract Drawings, detailed in the manufacturer submittal and as further defined herein. Contractor is solely responsible to verify quantity, installation locations and wiring requirements for this Project.

1.3 **Submittals**

1.3.1 Submit dimensioned shop drawings of lighting control system and accessories.

1.3.2 Product Data: Submit for approval four (4) copies of manufacturer's data on the specific lighting control system and components.

1.3.3 One Line Diagram: Submit a one-line diagram of the system configuration.

1.4 **Quality Assurance**

1.4.1 Products shall be manufactured by manufacturers listed in this Section.

1.5 **System Description**

1.5.1 The lighting control system is a networked system that communicates via RS485. The system devices shall be able to communicate with each other using CAT6 cable.

2. **PRODUCTS**

2.1 **Material and Components**

2.1.1 Low Voltage Switches:

.1 The low voltage switch shall be capable of accepting CAT6 cable.

.2 The low voltage switch shall be provided complete with an on/off button to turn off all lights in all zones controlled by the switch.

.3 The low voltage switch shall be provided sufficient buttons dedicated for each zone for raising and lowering the dimming level in each zone.

.4 The low voltage switch shall be suitable for connection to multiple zones controlled by multiple dimming power packs. Provide CAT6 splitter modules in junction boxes for this purpose.

.5 Provide boxes for mounting dimming switches in walls. Co-ordinate finished installations with Architect. Co-ordinate faceplate and equipment finishes with architect.

.6 Low-voltage dimming switches shown with occupancy sensors shall be equipped with dual-technology passive infrared and ultrasonic occupancy sensors.

.7 The low voltage dimming switches shall be Acuity Controls Sensorswitch nPODM-2P-DX-WH or approved equivalent by Cooper Lighting, Legrand Wattstopper, Hubbell, Leviton or Lutron.

.8 The low voltage dimming switches with built-in occupancy sensors shall be Acuity Controls Sensorswitch nWSXA-PDT-LV-DX-WH or approved equivalent by Cooper Lighting, Legrand Wattstopper, Hubbell, Leviton or Lutron.

.9 All programming shall be done locally. Provide all equipment and software necessary for performing the programming.

.10 Each touch pad is to be identified as to function by an engraved label.

2.1.2 Low Voltage Occupancy Sensors:

.1 The occupancy sensor shall accept CAT6 cable.

.2 The occupancy sensors shall be dual technology type complete with passive infrared visual sensing and ultrasonic sound sensing.

.3 The occupancy sensors shall use passive infrared technology and a segmented Fresnel lens to detect occupancy. The lens shall divide the field of view into zones and whenever the zones are occupied, the lights shall be switched or remain on.

.4 The occupancy sensors shall be capable of detecting small hand movements to prevent nuisance turning off.

.5 The occupancy sensors shall be equipped with ultra-sonic sensors that deliver a high degree of motion sensitivity. The occupancy sensor dimming wall switches shall be capable of sensing Doppler shifts caused by motion in a space and prevent lighting fixtures from turning off even if the movement is outside of the visual sensor's field of view. The ultrasonic sensors shall be provided with enhanced filtering to prevent non-occupant noises from keeping lights on.

.6 The occupancy sensors be equipped with a delayed-off function to prevent the controlled lights from being switched off while the field of view is occupied. The occupancy sensors shall be equipped with an LED indicator that blinks each time activity is detected in the field of view. The occupancy sensors shall switch controlled lights off when the space monitored by the occupancy sensors is unoccupied for the length of time chosen as the delayed-off interval.

.7 The ambient light override shall be adjustable between 21.5 lux to 5381 lux and shall prevent controlled lights from automatically turning on during periods of ample natural light.

.8 The occupancy sensors shall be equipped with push buttons for programming, adjustment and time delay input.

.9 The occupancy sensors shall be Acuity Controls Sensorswitch nCM PDT -10-RJB Series or equivalent product by Cooper Lighting, Wattstopper, Hubbell, Leviton or Lutron.

2.1.3 Power Packs:

.1 Power packs shall accept and switch 120 or 347VAC, be plenum rated, and provide Class-2 power for up to 14 remote sensors.

.2 Power pack shall securely mount to junction location through a threaded 13mm chase nipple. Plastic clips into junction box shall not be accepted. All Class-1 wiring shall pass through chase nipple into adjacent junction box without any exposure of wire leads. Note: UL Listing under Energy Management or Industrial Control Equipment automatically meets this requirement, whereas Appliance Control Listing does not meet this safety requirement.

.3 When required by local code, power pack must install inside standard electrical enclosure and provide UL recognized support to junction box. All Class-1 wiring is to pass through chase nipple into adjacent junction box without any exposure of wire leads.

.4 Power pack shall incorporate a Class-1 relay and an AC electronic switching device. The AC electronic switching device shall make and break the load, while the relay shall carry the current in the on condition. This system shall provide full 20A switching of all load types and be rated for 400,000 cycles.

.5 Power packs shall be single circuit, or two circuits. Slave packs may be used to control additional circuits. When two circuit power packs, or slave packs are used, the power packs must be wired directly to circuit breaker. Otherwise, power packs may be wired on the line or load side of the local switch.

.6 The power packs shall be Acuity Controls Sensorswitch nPP16-DS-EFP series or equivalent product by Cooper Lighting, Legrand Wattstopper, Hubbell, Leviton or Lutron.

2.2 **Acceptable Manufacturers**

2.2.1 Acuity Brands Lighting Controls
2.2.2 Cooper Lighting Controls
2.2.3 Lutron
2.2.4 Hubbell Controls

2.2.5 Leviton
2.5.6 or approved equivalent.

3. **EXECUTION**

3.1 **General Design Arrangement And Sequence Of Operations**

3.1.1 Install the lighting control devices at locations shown on the drawings.

3.1.2 Provide the accessories necessary for installation of the devices at walls, ceilings and ceiling slabs or other locations shown on the Contract Drawings.

3.2 **Sequence Of Operations**

3.2.1 Lighting in the washroom shall be automatic-on when occupancy is detected. The occupancy sensors shall dim the luminaires to 50% illumination after a period of vacancy of 20 minutes. The ouccpancy sensors shall shut off the lights in the room after a further 20 minutes of vacancy or a time period selected by the Owner. The lights shall only be turned off if all of the occupancy sensors in the room detect no occupancy.

3.2.2 Dimming switches can be used to turn on, turn off and dim pot lights but follow the same sequence as occupancy sensors for dimming to 50% after 20 minutes and turning off after a further 20 minutes if the pot lights are on and occupancy is not detected in the room.

3.2.3 The shower and vanity dimmable lighting shall be provided with a separate power pack, occupancy sensor dimming switch so that the lighting can be controlled separately. The shower and vanity dimmable lighting shall be manual-on with same dimming and shutoff sequence as the rest of the room.

3.3 **Testing And Commissioning**

3.3.1 Inspection:

.1 Prior to installation and commissioning of the work of this Section, carefully inspect the installed work of all other trades and verify that all such work is complete to the point where this installation and commissioning may properly commence.

3.3.2 Programming and Calibration:

.1 Program the sensors and switches to achieve the specified sequences of operation.

.2 Calibrate occupancy sensors so there is no false turning on or off of lights due to nuisance motion or noises that should not cause the lights to turn on or off.

.3 Provide the locations of the power packs on the site as-built drawing mark-ups.

.4 Provide the details of the final device settings and program to the Owner in the Operations and Maintenance Manuals.

3.4 **Service Support and Training**

3.4.1 Start Up: Contractor shall contact manufacture to schedule commissioning of the system.

3.4.2 Once the system is commissioned and accepted by the Consultant, the Contractor will provide a two (2) hour on-site training session by a factory trained technician, which will cover system operation, maintenance, troubleshooting and tour of the system. Contractor will coordinate with the Agency to determine the date and time of training.

3.5 **Cleaning**

3.5.1 Clean sensor lens as recommended by manufacturer.

3.5.2 Clean all switch faceplates.

END OF SECTION

1. **GENERAL**

1.1 **General Requirements**

1.1.1 Conform to Section 01 00 00 – General Requirements and all documents referred to therein and Section 26 05 00 – General Instructions for Electrical.

1.2 **References**

1.2.1 CSA C22.2 Number 4 – Enclosed Switches
1.2.2 CSA C22.2 Number 5.1 – Moulded Case Circuit Breakers
1.2.3 CSA C22.2 No.29 – Panelboards and Enclosed Panelboards
1.2.4 CSA C22.2 Number 39 – Fuseholder Assemblies
1.2.5 NFPA 70E – Electrical Safety in the Workplace
1.2.6 ANSI Z535.4 – Product Safety Signs and Labels
1.2.7 CSA Z462 – Workplace Electrical Safety

1.3 **Scope of Work**

1.3.1 Supply all labour, tools, services and equipment and provide all materials and equipment required to complete service and electrical distribution work in accordance with this Section of the Specification and the Contract Drawings for electrical services at both the Facilities.

1.4 **Quality Assurance**

1.4.1 All low voltage distribution work shall be executed by skilled tradesmen fully experienced in the installation of electrical power systems.
1.4.2 All equipment shall be constructed to EEMAC standard and shall carry the CSA label. The Contractor shall obtain Electrical Safety Authority approval and pay the required fee.
1.4.3 All equipment shall be suitably noted for the system available fault and HRC (High Rupturing Capacity) fuses shall comply with CSA C22.2 Number 106.

1.5 **Submittals**

1.5.1 Submit shop drawings for the following:
.1 Circuit Breakers
.2 Any other items reasonably requested by the Consultant.

2. **PRODUCTS**

2.1 **Circuit Breakers Installed in Existing Distribution Panelboards**

2.1.1 The existing panelboards at both facilities are manufactured by Siemens.
2.1.2 In addition to CSA requirements, the circuit manufacturer's nameplate must show fault current that the panel including all breakers have been built to withstand.
2.1.3 Moulded Case Circuit Breakers:

.1 Bolt-on moulded case circuit breaker: Quick-make, quick-break type, for manual and automatic operation with temperature compensation for 40°C ambient. Plug-on breakers shall not be used for this project.

.2 Common-trip breakers with single handle for multi-pole applications.

.3 Moulded case circuit breaker to operate automatically by means of thermal and magnetic tripping devices to provide inverse time current tripping and instantaneous tripping for short circuit protection.

.4 Lock-on devices for 10 per cent of 15A to 30A breakers installed. Turn over unused lock-on devices to the Agency.

.5 Provide one breaker per designated breaker space. Multiple breakers contained in one-housing or twin breakers are not acceptable.

.6 Short circuit current rating for circuit breakers shall be 22kA rms at Rising Hill PRPS R5 to match existing distribution panels. Short circuit current rating for circuit breakers shall be 10kA rms at Tomken PRPS R1 to match existing distribution panels.

3. EXECUTION

3.1 General

3.1.1 Protect equipment from dust, debris, moisture, and physical damage, with sealed envelope of plastic or other impervious material until building is enclosed and cleaned and equipment is energized.

3.1.2 Protect from condensation by maintaining at suitable temperature above 0°C.

3.1.3 Finish equipment enclosures to ANSI 49 or ANSI 61, baked grey enamel.

3.2 Circuit Breakers at Panelboards

3.2.1 Identify load circuits on panel directory complete with name and location.

3.2.2 Install circuit breakers in panelboards.

3.2.3 Connect loads to circuits.

3.2.4 Connect neutral conductors to common neutral bus with respective neutral identified.

3.2.5 Measure current across phases of distribution panels and balance phases to the extent possible by adjust the branch circuit positions at which load wiring and circuit breakers provided under this project are installed.

END OF SECTION

1. **GENERAL**

1.1 **General Requirements**

1.1.1 Conform to Section 01 00 00 – General Requirements and all documents referred to therein.

1.2 **Related Sections**

1.2.1 Section 26 05 00 – General Instructions for Electrical

1.2.2 Section 26 05 10 – Electrical Basic Materials

1.3 **References**

1.3.1 All products must be CSA or CUL approved.

1.3.2 Lamps shall meet the standards of the Consortium of Energy Efficiency (CEE) guidelines.

1.4 **Codes and Standards**

1.4.1 All wiring to be in accordance with the Ontario Electrical Safety Code.

1.4.2 Provide only equipment bearing a label acceptable to the Electrical Safety Authority (ESA) to indicate that the equipment has been tested to applicable CSA standards.

1.4.3 Arrange for ESA inspections and submit report to the Consultant.

1.5 **Submittals**

1.5.1 Submit cut sheets for lamps indicating their mercury content, lumen output and lamp life.

1.5.2 Provide luminaires that have a mercury content of less than 70 pictograms per lumen-hour.

1.5.3 Luminaires containing no mercury may be counted towards plan compliance only if the lamp's lumen per watt is equal to or less than their mercury containing counterparts.

1.5.4 Luminaire submittals are to consist of a physical description, manufacturer's specification sheets, dimensioned drawings, and complete photometric data from an independent test laboratory in the form of IES computer files of the equipment being submitted and hard copy of the photometric report. Co-ordinate ceiling types to ensure proper supports and luminaire framing. Lamp submittals are to consist of manufacturer's technical data with respective luminaire shop drawing. Submittal to include operating wattage, rated life, colour temperature, base type, lamp shape, CRI and voltage.

1.5.5 LED luminaire submittals are to consist of manufacturer's technical data for diodes and drivers with respective luminaire shop drawing. Submittal to include operating wattage, voltage, maximum distance from drivers, wiring diagrams and lumen output at time of delivery.

1.5.6 Drive submittals are to consist of manufacturer's technical data with respective luminaire shop drawing. Submittal to include

operating wattage, input voltage, ballast efficiency, maximum distance for remote ballasts, power factor and operating temperature.

2. **PRODUCTS**

2.1 **LEDs, Drivers and Lighting Fixtures**

2.1.1 LEDs to be new, best quality type, compatible with lighting fixtures and driver, if applicable. Lamps shall be manufactured in compliance with Energy Efficiency Act (EEACT) regulations, as applicable:

.1 Light Emitting Diodes (LED): Colour temperature shall be as noted on luminaire schedule. LED shall be suitable for 50,000 hours service life. Lumen output to be maximum based on latest technology at time of delivery.

2.2 **Luminaires**

2.2.1 All luminaires shall be complete with mounting brackets, transformers, supports, trims, louvers, lenses and other accessories as required to make luminaire operational and allow it to be installed in the respective location.

2.2.2 Fixtures shall be suitable for environment in which they are installed.

2.2.3 Louvers, lenses and diffusers must be of suitable thickness to prevent sagging.

2.2.4 Interior LED Luminaires:

.1 Each luminaire shall consist of an assembly that utilizes LEDs as the light source. In addition, a complete luminaire shall consist of a housing, LED array, and electronic driver (power supply).

.2 Each luminaire shall be rated for a minimum operational life of 50,000 hours as defined by IES LM-80 and TM-21.

.3 Each luminaire shall be designed to operate at an average operating temperature of 25°C.

.4 The operating temperature range shall be -10°C to +25°C.

.5 Each luminaire shall meet all parameters of this specification throughout the minimum operational life when operated at the average operating temperature.

.6 The individual LEDs shall be connected such that a catastrophic loss or the failure of one LED will not result in the loss of the entire luminaire.

.7 Each luminaire shall be listed with a nationally recognized testing laboratory (including but not limited to UL, CSA, ETL) under UL 1598 and UL 8750, or an equivalent standard from a recognized testing laboratory.

.8 The luminaire shall operate from a 60Hz ±3Hz AC line over a voltage ranging from 110V to 347V as specified in the Lighting Fixture Schedule on the Contract Drawings. The

fluctuations of line voltage shall have no visible effect on the luminous output.

.9 The luminaire shall have a power factor of 0.90 per cent or greater at all standard operating voltages

.10 Total Harmonic Distortion (THD) (current and voltage) induced into an AC power line by a luminaire shall not exceed 20 per cent at any standard input voltage.

.11 The lumen output shall not decrease by more than 20 per cent over the minimum operational life. The lumen output shall not decrease by more than 20 per cent over the minimum operational life.

.12 Light Colour/Quality:

.1 Correlated Colour Temperature (CCT) range between 4,000°K and 4,100°K shall be correlated to chromaticity as defined by the absolute (X, Y) coordinates on the two-D CIE chromaticity chart.

.2 The Colour Rendition Index (CRI) shall be 80 or greater.

.13 The thermal management (of the heat generated by the LEDs) shall be of sufficient capacity to assure proper operation of the luminaire over the expected useful life.

.14 The luminaire shall be a single, self-contained device, not requiring on-site assembly for installation. The power supply for the luminaire shall be integral to the unit.

.15 The assembly and manufacturing process for the Solid-State Lighting luminaire shall be designed to assure all internal components are adequately supported to withstand mechanical shock and vibration.

.16 The optical assembly of the luminaire shall consist of a ribbed metal reflector system and extruded refracting optical lens with high-transmission internal diffusion film applied to the inside of the refracting lens. No individual LED images shall be visible to the occupant.

.17 The electronics/power supply enclosure shall be internal to the Solid-State Lighting luminaire and be accessible per UL requirements.

.18 All lighting fixtures shall be continuously dimmable using 0-10Vdc dimming and shall be provided with dimming leads necessary for the lighting fixtures to be dimmed.

.19 Electrical connections between power, driver and LED boards must be modular utilizing a snap fit connector. All electrical components must be easily accessible after installation from the room side and all electrical components must to be able to be replaced without removing the fixture from the ceiling.

.20 Housings shall be fabricated from post or pre-painted cold rolled steel.

.21 Polymeric materials (if used) of enclosures containing either the power supply or electronic components of the luminaire shall be made of UL94VO flame retardant materials. The lenses (lens) of the luminaire are excluded from this requirement.

.22 Each luminaire shall have the manufacturer's name, trademark, model number, serial number, date of manufacture (month-year), and lot number as identification permanently marked inside the each unit.

.23 The following operating characteristics shall be permanently marked inside each unit: Rated voltage and rated power in Watts and Volt-Ampere.

2.5 **Warranty**

2.5.1 Provide on-site warranty for two year for parts and labour from the date of Substantial Completion of the Project. Warranty shall include failed LEDs and drivers.

3. **EXECUTION**

3.1 **Installation – General**

3.1.1 Provide supports for luminaires. Support single units from luminaire studs in outlet boxes. For continuous row fluorescent type, provide support for each end plus at least one for each channel section, or additional as required. Swivel mount stems. Provide concrete inserts at points of luminaire support in unfinished areas where a concrete slab serves as ceiling. Provide support from concrete floor and roof steel above ceiling as applicable.

3.1.2 Align luminaires in rows, maintain required heights and install luminaires clear of other work.

3.1.3 Keep luminaires covered and protected from construction dust and debris until building is broom clean and free of suspended dust clouds.

3.1.4 Do not energize until ready for testing and use. Obtain Agency's approval before use.

3.1.5 When installation is complete, demonstrate operation to satisfaction of the Agency.

3.1.6 Standard octagonal boxes may be supplied where conduits feeding luminaires in finished areas are exposed on ceiling if hanger canopies entirely cover outlet boxes and are neatly notched for conduit. Otherwise, provide cast condulet outlet boxes with a diameter larger than canopies.

3.1.7 Do not mount luminaires above pipes, ducts or equipment. In event of unavoidable tight locations, provide hangers to clear obstructions. Check layouts of other trades on job and plan cooperatively. Luminaires in each room shall hang at one height.

Obtain approval from the Consultant before any changes are made to layouts shown.

3.1.8 Provide continuous 12mm x 38mm channel above ceiling, where luminaires are suspended or mounted on furred ceilings. Fasten luminaires to channel with two 6mm minimum diameter studs with minimum 1220mm on centre.

3.1.9 Verify catalogue number of luminaires with description prior to ordering, and check for final ceiling finish in areas where recessed luminaires are called for in order to provide ceiling trim, flanges and mounting brackets to suit particular construction used where luminaires are installed.

3.1.10 Support luminaires in an approved manner to comply with the Ontario Electrical Safety Code and the Ontario Building Code.

3.1.13 Provide steel luminaire studs, brackets and hangers. Where luminaires are hung on chain hangers, provide chain of closed link type competent of supporting ten times luminaire weight. Use U-bolts for chain ends; S-hooks are not acceptable.

3.2 **Installation – Ceilings**

3.2.1 Suspend luminaires mounted in a suspended T-bar ceiling directly from building structure, independent of the T-bar system, to ULC, Local Fire Marshal's Office, Ontario Building Code, Electrical Safety Authority (ESA), OBC seismic design requirements for accommodating building deflections and Consultant's approval.

3.2.2 The Seismic Hazard Index IeFaSa (0.2) = 0.59 for this project. All elements of structures, non-structural components and equipment as well as their connections shall be designed accordingly to meet all requirements of OBC 2006. Refer to section 4.1.8.17 for requirements for non-structural components and equipment.

3.2.3 In accessible ceilings wire with not more than 1800mm of AC90 or RW90 XLPE wire in flexible conduit to adjacent outlet boxes, locations as shown on the Contract Drawings.

3.2.4 Provide suitable trim for all luminaires installed in drywall ceilings or within lay-in or snap-in tiles.

END OF SECTION

1. **GENERAL**

1.1 **General Requirements**

1.1.1 Conform to Section 01 00 00 – General Requirements and all documents referred to therein.

1.1.2 Conform to Section 26 05 00– General Instructions for Electrical.

1.2 **References**

1.2.1 CAN/ULC S524 Installation of Fire Alarm Systems.

1.2.2 CAN/ULC-S525, Audible Signal Devices for Fire Alarm Systems, Including Accessories.

1.2.3 CAN/ULC-S526, Visible Signal Devices for Fire Alarm Systems, Including Accessories.

1.2.4 CAN/ULC-S527, Standard for Control Units for Fire Alarm Systems

1.2.5 CAN/ULC S536 Inspection and Testing of Fire Alarm Systems.

1.2.6 CAN/ULC S537 Verification of Fire Alarm Systems.

1.2.7 OBC – Ontario Building Code.

1.2.8 NBC – National Building Code of Canada.

1.3 **Description of System**

1.3.1 Provide labour, materials, products, equipment, testing, commissioning, verification and all other services to complete a fully, functional addressable fire alarm system.

1.3.2 All equipment and components shall be new, and the manufacturer's current model.

1.3.3 The exiting fire alarm system at Tomken PRPS R1 is Mircom FX-2000 and it is addressable.

1.3.4 The exiting fire alarm system at Rising Hill PRPS R5 is Mircom FX-2000 and it is addressable.

1.3.5 The system shall be complete with all necessary hardware, software and memory specifically tailored for this installation.

1.4 **Requirements of Regulatory Agencies**

1.4.1 System components shall be listed by ULC/CSA and comply with applicable provisions of the Ontario Building Code and meet requirements of local Authority Having Jurisdiction (AHJ).

1.5 **Shop Drawings**

1.5.1 Submit Shop Drawings to include:

.1 Details for devices.

.2 Details and performance specifications for control, annunciation and peripherals with item by item cross reference to specification for compliance.

.3 Any other items reasonably requested by the Consultant.

1.6 **Operation and Maintenance Data**

1.6.1 Provide operation and maintenance data for fire alarm system for incorporation into manual.

1.6.2 Include the following:

.1 Instructions for complete fire alarm system to permit effective operation and maintenance.

.2 Technical data - illustrated parts lists with parts catalogue numbers.

.3 Copy of approved shop drawings with corrections completed and marks removed except review stamps.

.4 List of recommended spare parts for system.

.5 Fire alarm inspection and verification report.

1.7 **Qualifications**

1.7.1 Installation personnel shall be supervised by persons who are qualified and experienced in the installation, inspection, and testing of fire alarm systems. Examples of qualified personnel shall include, but not be limited to, the following:

.1 Factory trained and certified personnel.

.2 Canadian Fire Alarm Association Fire Alarm Certified personnel.

.3 Personnel licensed or certified by state or local authority.

1.7.2 Provide the service of a competent, factory-trained engineer or technician authorized by the manufacturer of the fire alarm equipment to technically supervise and participate during all of the adjustments and tests for the system.

1.7.3 Arrange for testing and verification by the fire alarm system manufacturer or its representative firm and pay all fees and charges for the service. Obtain verification certificate and verification report showing each device checked, and that work has been carried out. Use verification forms similar to Canadian Fire Alarm Association (C.F.A.A.) forms.

2. **PRODUCTS**

2.1 **Materials**

2.1.1 All equipment used for the fire alarm system shall be ULC listed designed and supplied by a single manufacture to ensure uniformity of standards, compatibility in operation, parts availability, trained technical support and competent maintenance.

2.1.2 Audible Signal Devices to CAN/ULC-S525.

2.1.3 Visual Signal Devices to CAN/ULC-S526.

2.2 **Wiring**

2.2.1 Use new wiring in accordance with CAN/ULC-S524 and CAN/ULC-S537.

2.2.2 Twisted Copper Conductors: 300V CSA FAS minimum 105°C with FT-4 rating and in mechanical protection i.e. EMT or flex as specified under Division 26.
2.2.3 Initiating Circuits: 0.82mm² (18AWG) minimum, and in accordance with manufacturer's requirements.
2.2.4 To Signal Circuits: 1.31mm² (16AWG) minimum, and in accordance with manufacturer's requirements.
2.2.5 To Control Circuits: 2.08mm² (14AWG) minimum, and in accordance with manufacturer's requirements.
2.2.6 All initiating circuits are to be wired in a DCL-C configuration.
2.2.7 All output circuits are to be wired in a Class-B configuration.

2.3 **Audible Signal Devices**

2.3.1 Horns: 24VDC, indoor horn type with compression driver, surface mounted:
.1 Corrosion, vibration and vermin resistant.
.2 Taps: Multiple, adjustable with maximum tap output sound level of 100db at 3 metres.
.3 Frequency Response: 400Hz to 4000Hz.

2.4 **Visual Alarm Signal Devices**

2.4.1 Strobe Type: white flashing light, wall mount or ceiling mounted as per the Contract Drawings.
.1 Synchronized at one flash per second.
.2 Flash tube enclosure in clear LEXAN.
.3 "FIRE" installed red letters.
.4 Operating on 20-24VDC.
.5 Field-adjustable for 15cd/30cd/75cd/115cd unless specified otherwise.

2.5 **Combination Horn-Strobe Alarm Signal Devices**

2.5.1 Horn/Strobes shall meet the requirements of the UL Standard 1971, UL Standard 1638, NFPA 72 and be fully synchronized.
2.5.2 Strobe intensity shall be field-adjustable 15/75cd15cd/30cd/75cd/115cd unless specified otherwise.
2.5.3 Audible signal appliances forming part of the fire alarm system shall be installed so that alarm signals can be heard intelligibly throughout the floor area in which they are installed. The sound level shall be a minimum 75 dB throughout the facility and shall be to the satisfaction of the Consultant/Owner and the Authorities Having Jurisdiction.
2.5.4 Alarm signals shall be readily distinguishable from other signals which may sound in the building. Alarm signals shall be temporal pattern in accordance with ISO 8201 "acoustic-audible emergency evacuation signals" and the OBC requirements.
2.5.5 Horn and strobe power shall be provided on one pair of wires. It shall be possible to control the horn (on, off and coded)

independently from the strobe. The horn shall be selectable for continuous or synchronized temporal operation. The strobe shall be selectable for a continuous or temporal synchronized flash rate to match the horn and meet the intent of the National Building Code, Appendix Clause 3.2.4.20 (1). The horn shall provide an output of 94 dB peak using a low frequency tone for superior wall penetration.

2.5.6 Strobes utilizing a traditional specular reflector with uneven light distribution are not acceptable. The horn/strobe shall be an ultra low profile single gang design, finished in UV stable textured red and shall not protrude more than 1" from the wall. All mounting hardware shall be captive and there shall be no mounting screws visible after the device is installed.

2.5.7 Speaker/strobe assemblies shall be surface mounted and shall be installed to the satisfaction of the Owner.

2.5.8 All units shall be installed complete with red housing and 100mm x 100mm red service backbox with knockouts at top and bottom.

2.6 **End-of-Line Devices**

2.6.1 End-of-line devices to control supervisory current in alarm circuits and signaling circuits, sized to ensure correct supervisory current for each circuit. Open, short or ground fault in any circuit will alter supervisory current in that circuit, producing audible and visible alarm at main control panel and remotely as indicated in Contract Documents.

2.7 **Isolation Module**

2.7.1 Provide isolation modules in accordance with CAN-ULC-S524.

.1 Isolator modules shall be provided to automatically isolate wire-to-wire short circuits on a DCL-C branch. The isolator module shall limit the number of modules or detectors that may be rendered inoperative by a short circuit fault on the DCL segment branch.

.2 If a wire-to-wire short occurs, the isolator module shall automatically disconnect the DCL-C segment. When the short circuit condition is corrected, the isolator module shall automatically reconnect the isolated section.

.3 The isolation module will provide a single LED that flashes to indicate the isolation module is operating and illuminate steadily to indicate that a short circuit condition has been detected and isolated.

3. **EXECUTION**

3.1 **Installation**

3.1.1 Install systems in accordance with CAN/ULC-S524.

3.1.2 Install horns and visual signal devices and connect to signaling circuits.

3.1.3 Connect signaling circuits to main control panel.
3.1.4 Install end-of-line devices.
3.1.5 Install remote relay units to control door operators.
3.1.6 Sprinkler System: Verify operation of sprinkler system supervision devices with revision of sprinkler piping in renovated areas.
3.1.7 Splices are not permitted.
3.1.8 Provide necessary raceways, cable and wiring to make interconnections to terminal boxes, annunciator equipment and CCU, as required by equipment manufacturer.
3.1.9 Ensure that wiring is free of opens, shorts or grounds, before system testing and handing over.
3.1.10 Identify circuits and other related wiring at central control unit, annunciators and terminal boxes.
3.1.11 Install wiring for standard alarm initiating circuits in separate raceway system from alarm signal circuits.
3.1.12 Wire alarm signal appliances in accordance with requirements by manufacturer and operation. Install end of line device for signal circuit in suitable box adjacent to last signal of signal circuit. If circuit has only one device, end-of-line- device can be mounted in device.
3.1.13 Equip raceways with separate green ground-wire and connect to ground lug at each outlet box of device and connect ground wires directly to ground bus in control panel.
3.1.14 In general, no place in any room or space required to have a visual signal appliance shall be more than 50 ft (15m) from the signal (in horizontal plane). In large rooms and spaces exceeding 100 ft (30m) across, without obstructions 6 ft (2m) above finish floor, such as auditoriums, devices may be placed around the perimeter, spaced a maximum 100 ft (30m) apart, in lieu of suspending appliances from the ceiling.
3.1.15 No place in common corridors or hallways in which visual alarm signalling appliances are required shall be more than 50 ft (15m) from the signal.
3.1.16 System Wiring: Wire and cable shall be a type listed for its intended use by an approval agency acceptable to the Authority Having Jurisdiction (AHJ) and shall be installed in accordance with the appropriate articles from the current approved edition of the Canadian Electrical Code.
3.1.17 Contractor shall obtain from the Fire Alarm System Manufacturer written instructions regarding the appropriate wire/cable to be used for this installation. No deviation from the written instruction shall be made by the Contractor without the prior written approval of the Fire Alarm System Manufacturer.
3.1.18 Color Coding: Color-code fire alarm conductors differently from the normal building power wiring. Use one color code for alarm initiating device circuits wiring and a different color code for

supervisory circuits. Color-code notification appliance circuits differently from alarm-initiating circuits. Paint fire alarm system junction boxes and covers red.

3.1.19 Wiring within Enclosures: Install conductors parallel with or at right angles to the sides and back of the enclosure. Bundle, lace, and train the conductors to terminal points with no excess. Connect conductors that are terminated, spliced, or interrupted in any enclosure associated with the fire alarm system to terminal blocks. Mark each terminal according to the system's wiring diagrams. Make all connections with approved crimp-on terminal spade lugs, pressure-type terminal blocks, or plug connectors.

3.1.20 Cable Taps: Use numbered terminal strips in junction, pull or outlet boxes, cabinets, or equipment enclosures where circuit connections are made.

3.1.21 Color Coding: Color-code fire alarm red conductors differently from the normal building power wiring. Use one color code for alarm circuit wiring and a different color code for supervisory circuits. Color-code audible alarm-indicating circuits differently from alarm-initiating circuits. Use different colors for visual alarm-indicating devices. Paint fire alarm system junction and pull box covers red.

3.1.22 Identify fire alarm system conduits and cables with a 25mm red mark every 6000 mm, and at access locations.

3.1.23 Signal Circuits: Do not exceed 75% of circuit capacity

3.1.24 T-tapping of Class A circuits are NOT permitted.

3.1.25 T-tapping Class B circuits are permitted.

3.1.26 Grounding

.1 Ground cable shields and equipment according to system manufacturer's instructions to eliminate shock hazard and to minimize, to the greatest extent possible, ground loops, common mode returns, noise pickup and other impairments.

.2 Signal Ground Terminal: Locate at main equipment rack or cabinet. Isolate from power system and equipment grounding.

.3 Ground equipment and conductor and cable shields. Measure, record, and report ground resistance.

.4 A separate #14 AWG, RW90, grounding conductor in each conduit.

.5 All wiring to be free of ground faults except those circuits that are intentionally grounded to detect ground faults.

.6 Install one #6 AWG insulated grounding conductor in conduit from each control panel, nodes, and each surge/transient suppressor to building ground electrode.

3.2 **Field Quality Control**

3.2.1 Perform tests and verification in accordance with Section 26 05 00 – General Instructions for Electrical.

3.2.2 The Contractor is responsible for hiring and coordinating with the manufacturer to perform the following:

.1 Testing and inspection of system to CAN/ULC-S536 prior to performing verification complete with report.

.2 Provide verification of fire alarm system to CAN/ULC-S537 complete with report.

3.2.3 All fire alarm test and verification reports are to be submitted with a covering letter from the manufacturer clearly stating that there are no deficiencies with the installation provided under this project prior to Substantial Completion of the Project.

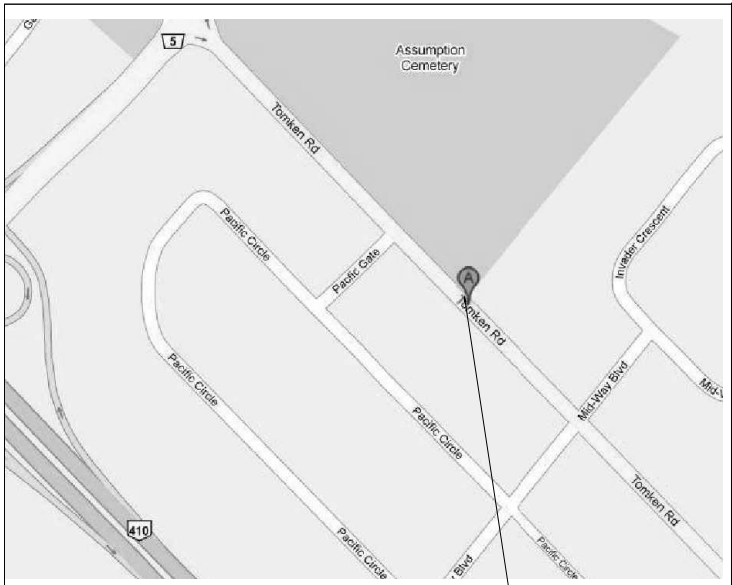
3.3 **Fire-Watch**

3.3.1 Provideand pay for fire-watch as/and when required during the period of construction for the duration of the Project until completion. Fire-watch will maintain a log on sites.

3.4 **Training**

3.4.1 Provide two (2) hours of on-site lectures and demonstration by fire alarm equipment manufacturer to train operational personnel of Agency on system operations and maintenance of fire alarm system. Contractor will coordinate with the Agency for scheduling of training.

END OF SECTION



1 A01 KEY PLAN
Scale: N.T.S

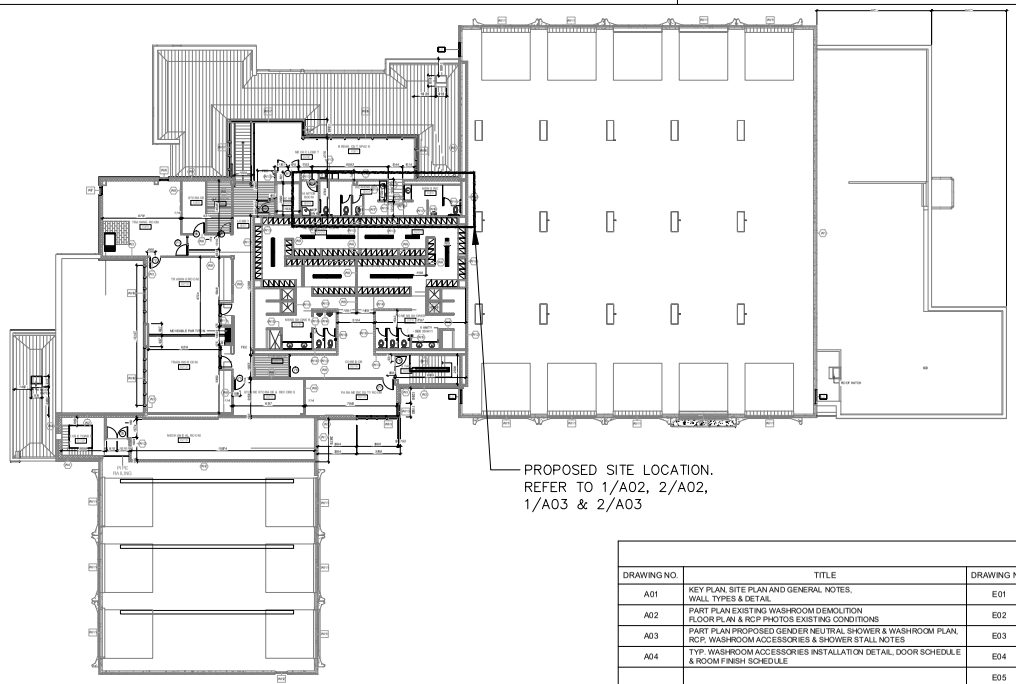
SITE LOCATION

GENERAL NOTES:

1. THE DRAWINGS AND SPECIFICATIONS SHALL BE READ IN CONJUNCTION WITH OTHER DRAWINGS, CONTRACT REQUIREMENTS, THE LEGEND AND SPECIFICATIONS. MAXIMUM CONDITIONS WILL GOVERN.
2. ACCURATE DIMENSIONS FOR THE WORK MUST BE OBTAINED FROM ACTUAL MEASUREMENT ON SITE.
3. VERIFY ALL CONDITIONS AND DIMENSIONS, INCLUDING LOCATIONS OF EXISTING CAPPED SERVICES, AND ALLOW FOR ANY REROUTING OF EXISTING AND/OR NEW SERVICES AND EQUIPMENT IN TENDER PRICE. FAILURE TO DO SO SHALL NOT RELIEVE THE CONTRACTOR FROM RESPONSIBILITY.
4. REPORT TO THE CONSULTANT ALL AMBIGUITIES (INCLUDING CONSTRUCTION STAGES), DISCREPANCIES, OMISSIONS, ERRORS, DEPARTURES FROM BUILDING BYLAWS AND/OR FROM GOOD PRACTICE PRIOR TO TENDER CLOSING.
5. PROVIDE ALL WORK IN ACCORDANCE WITH THE REQUIREMENTS OF ALL GOVERNING AUTHORITIES, AND LOCAL BY-LAWS.
6. APPLY FOR, OBTAIN AND PAY FOR ALL PERMITS, EXCEPT FOR BUILDING PERMIT, AND INSPECTIONS REQUIRED PRIOR TO COMMENCEMENT OF CONSTRUCTION INCLUDING PROVINCIAL AND FEDERAL SALES TAXES.
7. ALL WORK SHALL BE DONE IN ACCORDANCE WITH THE APPROVED SCHEDULE TO MEET THE PROJECT COMPLETION DATE AND ALL SPECIFIED INTERIM SCHEDULES AS PROVIDED BY THE OWNER.
8. COMPLY WITH OWNER'S OVERALL CONSTRUCTION SCHEDULE.
9. MAKE GOOD ALL DAMAGES OR AFFECTED AREA TO ADJACENT WORK. PROVIDE ALL CUTTING, PATCHING, FLASHING WORK AND CLEANUP OF FLOORS, WALLS, CEILINGS, WINDOWS, DOORS, ETC.
10. PROVIDE PROPER SHOP DRAWINGS OF ALL SPECIFIED PRODUCTS AND SUBMIT FOR APPROVAL TO THE CONSULTANT.
11. DURING PROGRESS OF WORK, SUBSTITUTE PRODUCTS WILL ONLY BE CONSIDERED WHEN TENDERED PRODUCTS BECOME UNOBTAINABLE AND WRITTEN PROOF IS SUBMITTED.
12. THE QUALITY AND PERFORMANCE CHARACTERISTICS OF SUBSTITUTE PRODUCTS SHALL BE EQUAL TO THE SPECIFIED PRODUCTS. IMPLEMENTATION OF SUBSTITUTE PRODUCTS IS SUBJECT TO THE REVIEW OF PROPERLY SUBMITTED SHOP DRAWINGS TO THE CONSULTANT.
13. ASSUME RESPONSIBILITY AND PAY FOR ANY ADDITIONAL INSTALLATION COSTS INCURRED BY ALL DIVISIONS RESULTING FROM THE ALTERNATES AND/OR SUBSTITUTIONS. MAKE REVISIONS TO RECORD DRAWINGS INCORPORATING ALL ALTERNATES AND/OR SUBSTITUTIONS AND ALL RELATED CHANGES.
14. CONFER WITH ALL TRADES INSTALLING EQUIPMENT WHICH MAY AFFECT THE CONSTRUCTION WORK AND ARRANGE THE WORK IN PROPER RELATION WITH EQUIPMENT INSTALLED UNDER ALL DIVISIONS OF THE CONTRACT.
15. INSTALL ALL MATERIAL IN THE BEST WORKMANLIKE MANNER AND IN ACCORDANCE WITH THE BEST PRACTICES OF THE TRADE.
16. REUSE EXISTING MATERIALS AND/OR EQUIPMENT ONLY WITH WRITTEN PERMISSION FROM THE CONSULTANT. ALL EQUIPMENT, MATERIALS AND ASSOCIATED CONTROLS NOT USED IN THIS CONTRACT SHALL BE PROPERLY DISPOSED OF OFF SITE AS DIRECTED BY OWNER OR CONSULTANT.
17. UNDER NO CIRCUMSTANCES SHALL THE CONSTRUCTION WORK INTERFERE WITH OWNER'S OPERATION SCHEDULE.
18. ALL THE EQUIPMENT/ITEMS TO BE USED ON THIS PROJECT SHALL BE NEW.

ABBREVIATION:

F.F.L	FINISHED FLOOR LEVEL
U/S	UNDER SIDE
B/F	BARRIER FREE
/W	WITH...
C/W	COMPLETE WITH...
CBW	CONCRETE BLOCK WALL
CMU	CONCRETE MASONRY UNIT
G.W.B.	GYPSUM BOARD
T/O	TOP OF...
N.I.C	NOT IN CONTRACT
R/O	ROUGH OPENING
H.M.	HOLLOW METAL
EX.	EXISTING
MTL	METAL
ALUM.	ALUMINUM
S.S.	STAINLESS STEEL
STL.	STEEL



PROPOSED SITE LOCATION.
REFER TO 1/A02, 2/A02,
1/A03 & 2/A03

2 A01 SITE PLAN - EXISTING 2ND FLOOR PLAN
Scale: 1:200

EXISTING WALL TYPE

EW1 140mm THK. CONC. MASONRY WALL
140mm CMU; (CONTRACTOR SHALL VERIFY ON SITE.)

EW2 90mm EXISTING INTERIOR CONC. MASONRY WALL
90mm CMU; (CONTRACTOR SHALL VERIFY ON SITE.)
ONE SIDE CERAMIC TILE.

EW3 190mm EXISTING CONC. MASONRY WALL
190mm CMU; (CONTRACTOR SHALL VERIFY ON SITE.)

EW4 140mm EXISTING INTERIOR CONC. MASONRY WALL
140mm CMU; (CONTRACTOR SHALL VERIFY ON SITE.)
ONE SIDE CERAMIC TILE. PROVIDE 100mm x 406mm FULL HEIGHT WALL TILE

EW5 140mm EXISTING INTERIOR CONC. MASONRY WALL
140mm CMU; (CONTRACTOR SHALL VERIFY ON SITE.)
BOTH SIDES CERAMIC TILE. PROVIDE 100mm x 406mm FULL HEIGHT WALL TILE

EW6 90mm EXISTING INTERIOR CONC. MASONRY WALL
90mm CMU; (CONTRACTOR SHALL VERIFY ON SITE.)

NEW WALL TYPE

W1 NEW 134mm THK. (3700mm HIGH) METAL STUD PARTITION
20 GAUGE, 102mm METAL STUD AT 400mm C/C, 16mm (5/8") TILE BACKER BOARD BOTH SIDES, WALL TILE FINISH BOTH SIDES. PROVIDE METAL STUDS ANCHORED TO EX. CONCRETE BLOCK WALL AND CONCRETE FLOOR. EXTEND NEW METAL STUD PARTITION TO THE U/S OF ABOVE ROOF DECK AND SECURELY FASTENED ON ROOF DECK. PROVIDE 19mm THK PLYWOOD BLOCKING BEHIND BACKER BOARD, BETWEEN EACH STUD FOR WASHROOM ACCESSORIES INSTALLATION. 100mm x 406mm FULL HEIGHT WALL TILE FOR PARTITION WALLS

3 A01 WALL TYPES
Scale: N.T.S

LIST OF DRAWINGS FOR TOMKEN

DRAWING NO.	TITLE	DRAWING NO.	TITLE	DRAWING NO.	TITLE
A01	KEY PLAN, SITE PLAN AND GENERAL NOTES, WALL TYPES & DETAIL	E01	ELECTRICAL KEY PLAN, SITE PLAN AND GENERAL NOTES, WALL TYPES & DETAILS	M01	KEY PLAN, SITE PLAN, GENERAL NOTES AND DEMOLITION PLAN
A02	PART PLAN EXISTING WASHROOM DEMOLITION FLOOR PLAN & RCP PHOTOS EXISTING CONDITIONS	E02	ELECTRICAL SCHEDULE AND DETAIL	M02	PLUMBING DEMOLITION AND PROPOSED
A03	PART PLAN PROPOSED GENDER NEUTRAL SHOWER & WASHROOM PLAN, RCP, WASHROOM ACCESSORIES & SHOWER STALL NOTES	E03	ELECTRICAL POWER AND COMMUNICATIONS DEMOLITION PLAN	M03	DRAINAGE AND HVAC PROPOSED
A04	TYP. WASHROOM ACCESSORIES INSTALLATION DETAIL, DOOR SCHEDULE & ROOM FINISH SCHEDULE	E04	ELECTRICAL LIGHTING DEMOLITION PLAN	M04	FIRE PROTECTION PLAN PROPOSED
		E05	ELECTRICAL POWER AND COMMUNICATIONS PLAN		
		E06	ELECTRICAL LIGHTING PLAN		

ONTARIO ASSOCIATION OF ARCHITECTS
LICENCE 5931
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PROJECT TITLE AND ADDRESS
GENDER NEUTRAL CHANGEROOM AT TOMKEN AND RISING HILL
6825 TOMKEN ROAD, MISSISSAUGA, ONTARIO

DRAWING TITLE
KEY PLAN, SITE PLAN AND GENERAL NOTES, WALL TYPES & DETAIL

TRUE NORTH | CONSTRUCTION NORTH

DRAWN BY: B.L.	CHECKED BY: C.M.
SCALE: AS SHOWN	DATE: 30/05/2022
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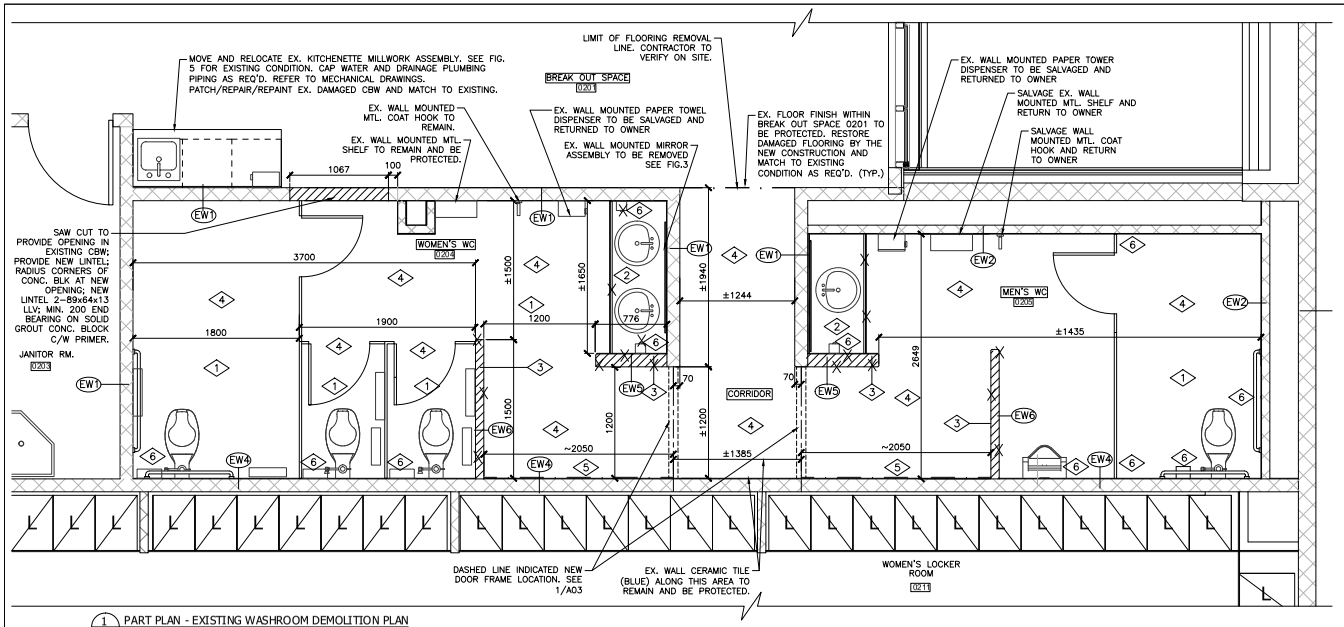
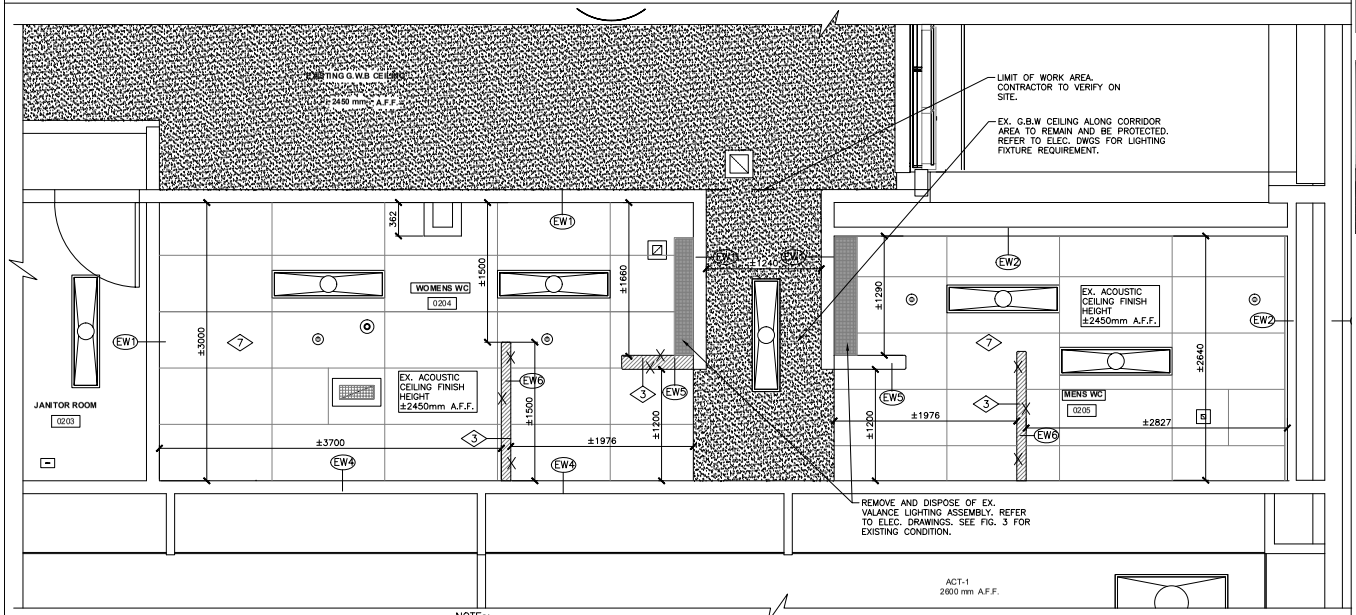
PURCHASING DOCUMENT NUMBER:	DRAWING NUMBER: A01



1 / A02 PART PLAN - EXISTING WASHROOM DEMOLITION PLAN
Scale: 1:25



2 / A02 PART PLAN - EXISTING WASHROOM RCP
Scale: 1:25

NOTES:

1. EX. FLOOR LEVEL TO UNDERSIDE OF ROOF DECK HEIGHT IS ±3700mm. CONTRACTOR TO CONFIRM ON SITE.
2. EX. ELEC. & MECH. EQUIPMENT MOUNTED ON EX. ACT CEILING IS NOT SHOWN PROPERLY AND DEMONSTRATION ONLY ON THIS DRAWINGS. CONTRACTOR TO CONFIRM ON SITE AND REFER TO TO ELEC. & MECH. DRAWINGS FOR THE REMOVAL REQUIREMENTS.

DEMOLITION NOTES:

1. REMOVE AND DISPOSE OF EXISTING WASHROOM PARTITIONS, TOILETS, URINAL, SANITARY BINS AND SANITARY NAPKIN DISPOSALS C/W ACCESSORIES WITHIN EXISTING MEN'S AND WOMEN'S WASHROOM. REMOVE EXISTING TOILET PAPER DISPENSERS, WALL MOUNTED S.S. (SEE FIG.1 & 2). SHUT OFF AND CAP EX. PLUMBING PIPING INCLUDING WATER SUPPLY AND DRAINAGE PIPING AS REQ'D. REFER TO MECHANICAL DRAWINGS.
2. REMOVE AND DISPOSE OF EXISTING COUNTERTOP & BACKSPLASH ASSEMBLY C/W SINKS, FAUCETS, WALL MOUNTED SOAP DISPENSER AND ACCESSORIES. EXISTING WALL MOUNTED MIRROR TO REMAIN AND BE PROTECTED. SHUT OFF AND CAP EX. PLUMBING PIPING INCLUDING WATER SUPPLY AND DRAINAGE PIPING AS REQ'D. REFER TO MECHANICAL DRAWINGS. SEE FIG. 3 FOR EXISTING CONDITION.
3. CUT TO REMOVE EXISTING CONC. BLOCK PARTITION WALL AS SHOWN.
4. DEMOLISH EX. FLOOR TILES C/W COVE BASE ALONG EX. MEN'S AND WOMEN'S WASHROOMS TO EXPOSE EXISTING CONC. SLAB FLOOR FINISH.
5. CUT TO REMOVE EXISTING WALL CERAMIC TILES (BLUE SECTION, SEE FIG. 4) TO BACKER BOARD SHOWN DASHDOT LINE AREA. CLEAN/PATCH/REPAIR/DAMAGED BACKER BOARD AND PREPARE SURFACE FOR NEW CERAMIC TILES INSTALLATION AS REQUIRED.
6. REMOVE EXISTING WALL TILES AND FINISHES. PATCH/REPAIR/FILL EXISTING SCREW HOLES AND DAMAGED WALL TILES SURFACES BY THE MOUNTING FIXTURES REMOVAL WORKS W/ TILEFIX TILEE AND STONE REPAIR KIT BY CALFLOR OR EQUAL. COLOUR TO MATCH EXISTING TILES. REFER TO MANUFACTURER'S INSTALLATION INSTRUCTIONS.
7. REMOVE AND DISPOSE OF EX. ACOUSTIC CEILING TILES, TRIMS, T-BARS, LIGHTING FIXTURES C/W ACCESSORIES. EXISTING CEILING HUNG BAR TO REMAIN AND SALVAGED. EXISTING FIRE SPRINKLER SYSTEM AND VENTILATION SYSTEM TO REMAIN. REFER TO ELEC. & MECHANICAL DRAWINGS FOR MORE INFORMATION.

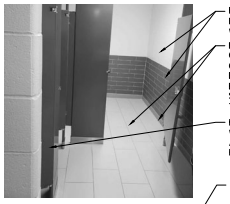


FIG. 1. TYP. EX. WASHROOM PARTITION

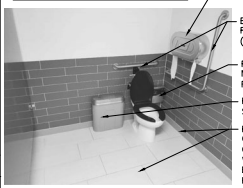


FIG. 2. TYP. EX. B/F WASHROOM

FIG. 3. TYP. EX. WASHROOM COUNTER-TOP

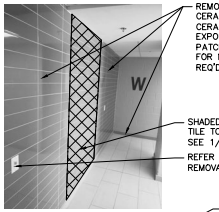


FIG. 4. EX. CORRIDOR WALL CERAMIC TILE

FIG. 5. EX. KITCHENETTE MILLWORK

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PROJECT TITLE AND ADDRESS
GENDER NEUTRAL CHANGEROOM AT TOMKEN AND RISING HILL
6825 TOMKEN ROAD, MISSISSAUGA, ONTARIO

DRAWING TITLE
PART PLAN - EXISTING WASHROOM DEMOLITION FLOOR PLAN & RCP, PHOTOS - EXISTING CONDITIONS

TRUE NORTH | CONSTRUCTION NORTH

DRAWN BY: B.L.	CHECKED BY: C.M.
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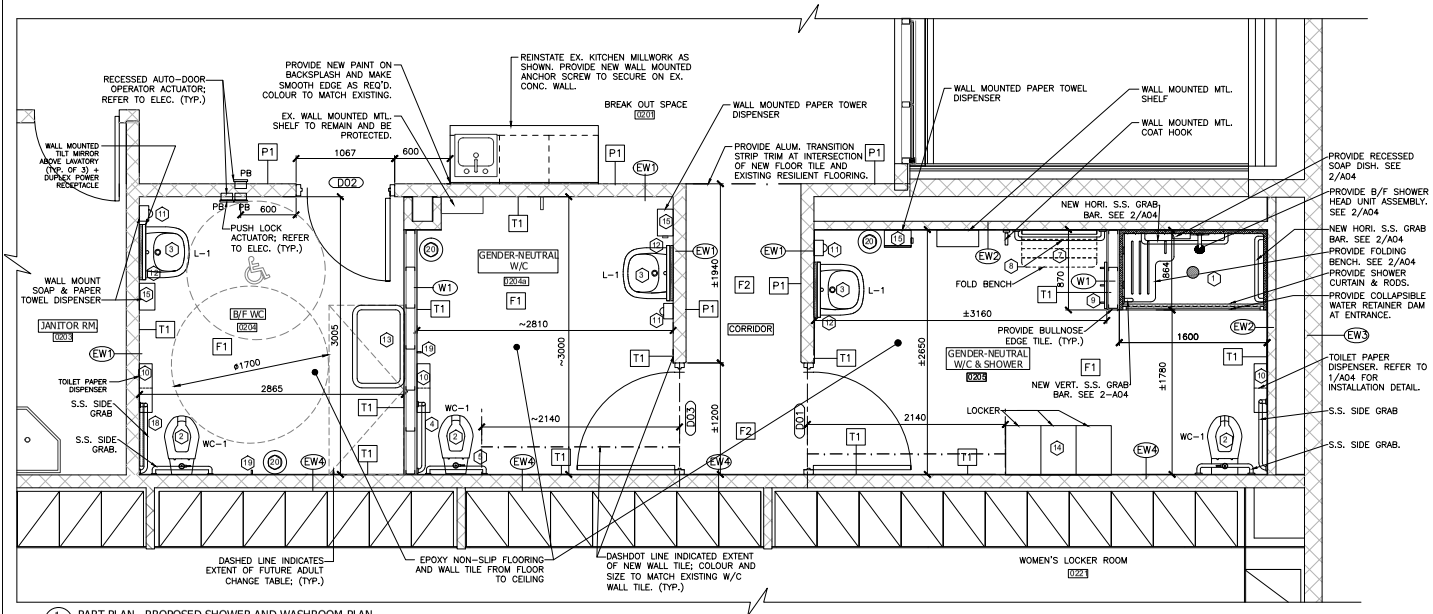
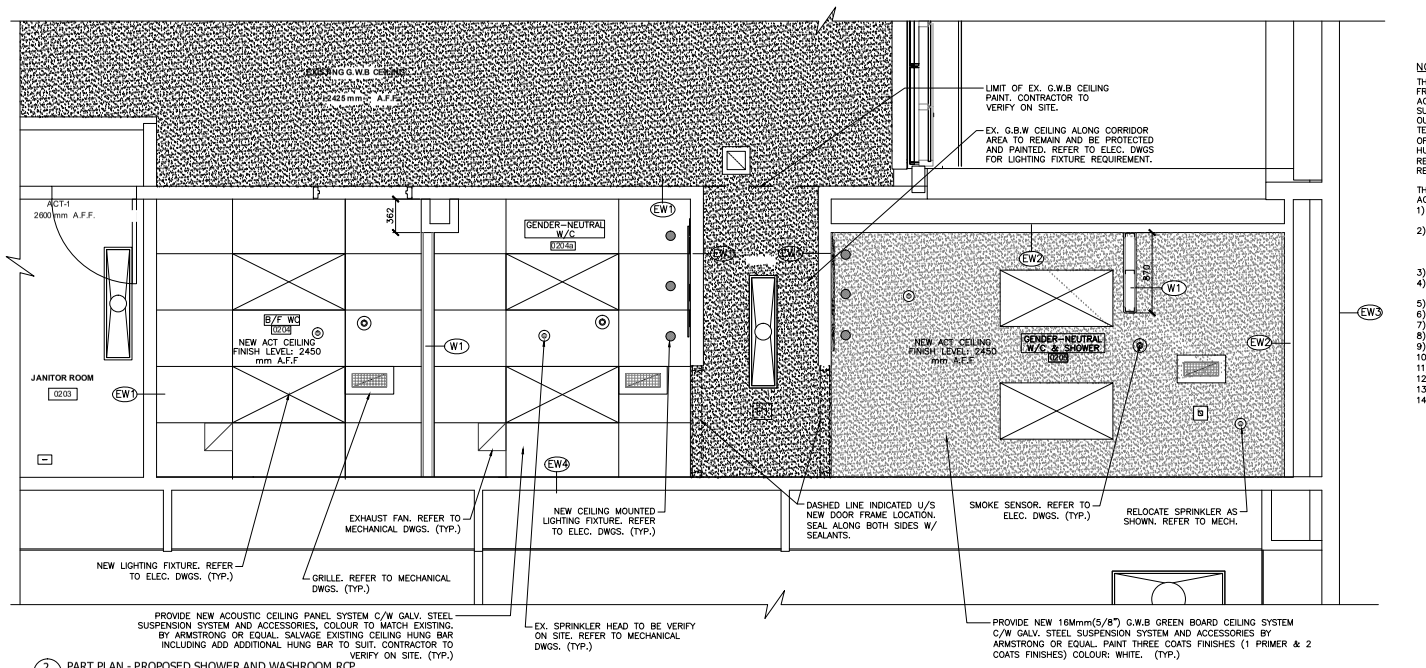


1 A03 PART PLAN - PROPOSED SHOWER AND WASHROOM PLAN
Scale: 1:25



2 A03 PART PLAN - PROPOSED SHOWER AND WASHROOM RCP
Scale: 1:25

NO.	DESCRIPTION
1	NEW B/F 63"x34" FREEDOM ADA ROLL IN SHOWER, LIFT. C/W ACCESSORIES. REFER TO NOTES BELOW AND SPECIFICATIONS.
2	NEW B/F TOILET, ELONGATED TYPE. REFER TO MECH. DWGS.
3	NEW B/F LAVATORY SINK C/W FAUCET; REFER TO MECH. DWGS.
4	30"x30"x1.5"ø 'L' SHAPE STAINLESS STEEL GRAB BAR C/W PEENED GRIP
5	24"x1.5"ø STAINLESS STEEL GRAB BAR C/W PEENED GRIP
6	NOT USED
7	FOLD BENCH: 813x343mm (32"x13-1/2") PHENOLIC FOLDING BENCH. REFER TO SPECIFICATIONS.
8	36"x1.5"ø STAINLESS STEEL GRAB BAR C/W PEENED GRIP.
9	FROST COLLASIBLE COAT HOOK STRIP-WHITE, S.S.; MFR# 1150-3.
10	TOILET PAPER DISPENSER: SURFACE-MOUNTED TWIN JUMBO-ROLL TOILET TISSUE DISPENSER. REFER TO SPECIFICATIONS.
11	SOAP DISPENSER: TOUCHLESS SOAP DISPENSER. REFER TO SPECIFICATIONS
12	WALL MOUNTED TILT MIRROR ABOVE LAVATORY.
13	NEW HORIZONTAL WALL MOUNTED ADULT CHANGING STATION. REFER TO SPECIFICATIONS
14	NEW SINGLE-TIERS METAL LOCKER, 15"(W)x21"(D)x72"(H) FOR EACH TIER LOCKER, HEAVY DUTY DOORS: 16 GAUGE OUTER PANEL/20 GAUGE INNER PANEL C/W PADLOCK PREPARATION. COLOUR BY OWNER, SUBMIT COLOUR CHART FOR OWNER SELECTION, BY HADRIAN OR APPROVED EQ.
15	NEW PAPER TOWEL DISPENSER. REFER TO SPECIFICATIONS
16	NOT USED
17	NEW PAPER TOWEL DISPENSER. REFER TO SPECIFICATIONS
18	NEW DADO SWITCH FOR EMERGENCY CALL SYSTEM. REFER TO SPECIFICATIONS, 1/A04 AND ELECTRICAL DRAWINGS.
19	FROST COLLAPSIBLE SAFETY COAT HOOK, S.S.; CODE 1150
20	WASTE RECEPTACLE. REFER TO SPECIFICATIONS.

NOTES FOR ROLL-IN SHOWER STALL

THE SHOWER ENCLOSURE SHALL BE MODEL APF 6333 BF LEFT BY FREEDOM SHOWERS. FINISHED SURFACE SHALL BE OF AN APPLIED ACRYLIC. THE BASE SHALL BE ATTACHED TO THE SUMP OF THE UNIT IN SUCH A MANNER TO FORM AN INTEGRAL PART WITH AN INNER AND OUTER COATING OF POLYESTER RESIN AND THE BASE SHALL BE TEXTURED NON-SLIP FLOOR. THE UNIT SHALL HAVE OUTSIDE DIMENSIONS OF 63" X 34" X 78 7/8". THE UNIT MEETS IAPMO Z124.1.2, CSA B45.5, HUD-UM73, ADA, ANSI A117.1, AND HOME INNOVATION RESEARCH LAB. REFER TO SUPPLIER'S INSTALLATION SPECIFICATION FOR MORE REQUIREMENTS.

THIS ENCLOSURE SHALL BE EQUIPPED WITH THE FOLLOWING INSTALLED ACCESSORIES:

1) ONE 36" X 1 1/2" DIAMETER STAINLESS STEEL HORIZONTAL GRAB BAR ON THE BACK WALL,
2) ONE 22" X 1 1/2" DIAMETER STAINLESS STEEL HORIZONTAL GRAB BAR OPPOSITE THE SEAT, BOTH WITH 1 1/2" STATUTE CLEARANCE, MOUNTED WITH STAINLESS STEEL BOLTS, AND SECURED FROM THE REAR WITH 3" X 3" X 11 GAUGE METAL MOUNTING PLATES,
3) 26" X 21" FRAMELESS WHITE HDPE FOLD UP SEAT,
4) ONE INCH DIAMETER STAINLESS STEEL CURTAIN ROD WITH RECEIVER CUPS,
5) MOLDED SOAP LEDGES,
6) TILE FINISH,
7) DIAMOND ACCENTS
8) FULL WALL REINFORCED BACKING ON ALL WALLS,
9) ARMOR CORE EASY BASE,
10) COLLAPSIBLE WATER RETAINER DAM..
11) VALVE PACKAGE,
12) RECESSED SOAP DISH,
13) VERTICAL GRAB BAR AS SHOWN ON PLAN,
14) GREEN ANTI-BACTERIAL SHOWER CURTAIN AND HOOKS.

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PROJECT TITLE AND ADDRESS
GENDER NEUTRAL CHANGEROOM AT TOMKEN AND RISING HILL
6825 TOMKEN ROAD, MISSISSAUGA, ONTARIO

DRAWING TITLE
PART PLAN - PROPOSED GENDER-NEUTRAL SHOWER & WASHROOM PLAN, RCP, WASHROOM ACCESSORIES & SHOWER STALL NOTES

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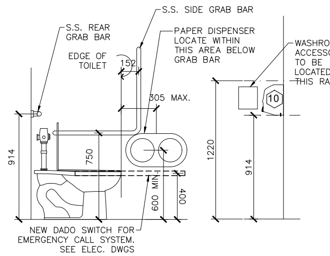
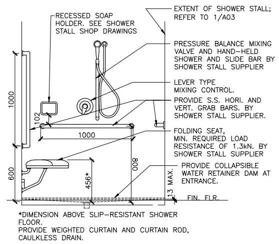


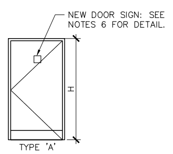
1 / A04 TYP. WASHROOM ACCESSORIES INSTALLATION DETAIL
Scale: 1:20



2 / A04 TYP. SHOWER ACCESSORIES INSTALLATION DETAIL
Scale: 1:20

DOOR SCHEDULE

TAG				DOOR														FRAME							HARDWARE					REMARKS
				SIZE						MATERIAL					FINISHES				MATERIAL			FINISH								
DOOR NUMBER	DOOR TO BE REPLACED	DOOR TO REMAIN	NEW DOOR	TYPE	DOOR WIDTH	DOOR HEIGHT	DOOR THICKNESS	SINGLE/PAIR	FIRE RATING (HOURS)	SOLID WOOD	GALVANIZED STEEL	HOLLOW METAL	THERMALLY INSULATED	LITE	GALVANIZED STEEL	PAINT	STAIN	ALUMINUM THRESHOLD	GALVANIZED STEEL	HOLLOW METAL	THERMALLY INSULATED	PAINT	STAIN	JAMB TYPE	PAIRS OF HINGES REQ'D	CLOSER & DOOR STOP	EXIT DEVICE	LOCKSET REQUIRED	DOOR OPENER REQUIRED	
D01			•	A	±1098	±2374	45	S				•				•				•		•		A	2	•		•		
D02			•	A	±965	±2134	45	S				•				•				•		•		A	2	•		•	•	PROVIDE REDUCER AT FLOORING TRANSITION
D03			•	A	±1098	±2374	45	S				•				•				•		•		A	2	•		•		



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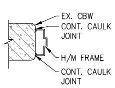

JAMB DETAIL 'A'

FIG. 6

FIG. 7

FIG. 8

DOOR NOTES:

1. PROVIDE NEW HARDWARE AND ACCESSORIES FOR DOOR D02, AS SPECIFIED. AUTO DOOR OPERATOR SYSTEM TO BE HORTON 4100 SERIES C/W IN SWING UNIT FOR B/F WASHROOM, PARALLEL ARM ASSEMBLY C/W POWER SUPPLY & CONTROLLER; ACTUATOR KIT – THOUGHTLESS 12/24 VDA SWITCHES; ELECTRIC STRIKE FAIL SECURE; DOOR CONTACT; CAMDEN VALUEWAVE #CM–221/A42 (RED/GREEN L.E.D) W/ ACCESSIBILITY SYMBOL (RECESSED BOXES, AS SHOWN ON PLAN) FOR 'LOCKED WHEN LIT' AND OCCUPIED WHEN LIT'; RECESSED DOOR LOCK PUSH LOCK PUSH BUTTON 'PUSH TO LOCK DOOR', RECESSED DADO EMERGENCY PUSH BUTTON DEVICE C/W AUDIO/VISUAL EMERGENCY INDICATOR AT EXTERIOR SIDE OF DOOR AT HEADER; WASHROOM RELAY KIT, SILENCES – GREY RUBBER. MORTISE LOCKS; PRIVACY SET, STAINLESS STEEL FINISH, HEAVY DUTY GRADE 1, SCHLAGE 'J' SERIES 'MARIN' STYLE LEVER OR EQ; DOOR STOP TO BE BALDWIN 4100 OR EQ. TH, LOW PROFILE, MILL ALUMINUM FINISH, PEMKO MODEL 270A.
2. PROVIDE NEW HARDWARE AND ACCESSORIES FOR DOOR D01 & D03, AS SPECIFIED. MORTISE LOCKS; PRIVACY SET, STAINLESS STEEL FINISH, HEAVY DUTY GRADE 1, SCHLAGE 'J' SERIES 'MARIN' STYLE LEVER OR EQ; DOOR STOP TO BE BALDWIN 4100 OR EQ. DOOR CLOSER: HEAVY DUTY; PARALLEL ARM (PULL SIDE) LCN MODEL 4040XP; PA SHOE–4040–62A.
3. NEW HOLLOW METAL DOOR AND FRAME TO BE 16 GA., FULL MORTISE HINGE: TWO (2) PAIR HEAVY DUTY BEARING HINGES; MCKINNEY MODEL T4 NRP, COMPLETE WITH NON–REMOVEABLE PIN, SATIN STAINLESS STEEL FINISH 630. CONTINUOUSLY WELDED EDGE, FINISHED WITH TWO COATS OF PAINT, COLOUR TO MATCH EXISTING BASE BUILDING SECOND FLOOR DOORS COLOUR OR BY THE OWNER.
4. DOOR PROTECTION PLATES: 200 X 850MM KICK PLATE, 1.27 MM THICK, SS#4 FINISH FOR DOORS D01 AND D03. 300 X 900MM KICK PLATE, 1.27 MM THICK, SS#4 FINISH FOR DOOR D02
5. DOOR LOCK/KEY/CYCLINDER HARDWARE SHOULD BE KEYED TO OWNER STANDARD (MEDECO). COORDINATE WITH OWNER AS REQ'D.
6. DOOR SIGNAGE: PROVIDE ALL GENDER RESTROOM SIGN ON DOOR D03 – ALUM. 6"X9"X1/8" BRAILLE SIGN "**ALL GENDER RESTROOM**" WITH GRAPHIC AND INTERNATIONAL ALL GENDER SYMBOL; REFER TO FIG. 6.
PROVIDE BARRIER FREE ALL–GENDER RESTROOM SIGN ON DOOR D02 – ALUM. 8"x8"x1/8" BRAILLE SIGN "**RESTROOM**" WITH GRAPHIC AND INTERNATIONAL ALL GENDER SYMBOL; REFER TO FIG. 7.
PROVIDE SIGNS ON DOOR D01 – 6"X9"X1/8" BRAILLE SIGN "ALL GENDER RESTROOM" WITH GRAPHIC AND INTERNATIONAL ALL GENDER SYMBOL; REFER TO FIG. 6 AND ALUM. 8"x8"x1/8" BRAILLE SIGN "SHOWER" WITH GRAPHIC AND INTERNATIONAL ALL GENDER SYMBOL; REFER TO FIG. 8.
7. THE DOORS DIMENSIONS SHOWN ON DRAWINGS & SCHEDULE ARE APPROXIMATE. CONTRACTOR TO BE CONFIRMED ALL DOOR DIMENSIONS ON SITE PRIOR TO ORDERING /INSTALLATION OF NEW DOOR.

INTERIOR ROOM FINISH SCHEDULE

DESCRIPTION		FINISH	COLOUR	COMMENTS
F1	FLOOR	NEW EPOXY NON-SLIP FLOORING.	SEE COMMENTS	PROVIDE 8" HIGH EPOXY COVE. REFER TO SPECIFICATIONS. SUBMIT COLOR SAMPLE FOR AGENCY REVIEW AND COMMENYT PRIOR TO CONSTRUCTION
F2	FLOOR	NEW 24"x12" CERAMIC FLOOR TILE	BEIGE, MATTE FINISH	PROVIDE 4" CERAMIC BASE
P1	WALLS & G.W.B CEILING	CONC BLOCK WALL & G.W.B CEILING. NEW PAINT: 1 COAT PRIMER & 2 COATS FINISH ACRYLIC PAINT.	TO MATCH EXISTING WALL TILE	ALL EXISTING CONCRETE WALL TO RECEIVE FULL HEIGHT (FLOOR TO CEILING) TILE CERAMIC (4"x16"). REFER TO SPECIFICATIONS.
T1	WALLS	NEW CERAMIC WALL TILE. SIZE AND COLOUR TO MATCH EXISTING (CT-1/CT-2/CT-3).	SEE COMMENTS	WALL TILE INSTALLATION FULL HEIGHT OF ROOM. SIZE AND COLOUR TO MATCH EXISTING MEN'S AND WOMEN'S WASHROOM WALL TILE FINISHES. PROVIDE COVE TILE TO MATCH. REFER TO SPECIFICATIONS FOR CT-1/CT-2/CT-3). SUBMIT PRODUCT DATA SHEET & COLOUR SAMPLE SHOP DRAWINGS FOR OWNER REVIEW AND APPROVED PRIOR TO ORDERING PRODUCT. SEE FIG.1, 2 & 3 FOR EXISTING CONDITION.
NEW B/F WASHROOM 0204	FLOOR	NEW EPOXY NON-LIP FLOORING.		MATCH 'F1' FLOORING.
	TOILET	INSTALL NEW TOILET, AND WASHROOM ACCESSORIES AS SHOWN	TO LATER SELECTION BY OWNER	NEW TOILET: REFER TO MECHANICAL. WASHROOM ACCESSORIES: REFER TO WASHROOM ACCESSORIES SCHEDULE.
	CEILING	NEW 24"x48" ACOUSTIC CEILING PANEL SYSTEM C/W GALV. STEEL SUSPENSION SYSTEM AND ACCESSORIES	WHITE	REFER TO DWGS. FOR REQUIREMENTS.
	WALLS	PROVIDE NEW CERAMIC WALL TILE AS SHOWN ON 1/A03. SIZE AND COLOUR TO MATCH EXISTING.	COLOUR & SIZE TO MATCH EXISTING	MATCH 'T1' WALL CERAMIC TILE FULL HEIGHT.
NEW GENDER -NEUTRAL W/C 0204a	FLOOR	NEW EPOXY NON-SLIP FLOORING.		MATCH TO 'F1' FLOORING.
	TOILET	PROVIDE NEW TOILET, AND WASHROOM ACCESSORIES AS SHOWN	TO LATER SELECTION BY OWNER	NEW TOILET: REFER TO MECHANICAL. WASHROOM ACCESSORIES: REFER TO WASHROOM ACCESSORIES SCHEDULE.
	SHOWER STALL	PROVIDE NEW B/F SHOWER STALL C/W SHOWER WASHROOM ACCESSORIES AS SHOWN	TO LATER SELECTION BY OWNER	NEW SHOWER STALL C/W ACCESSORIES: REFER TO A03.
	CEILING	NEW ACOUSTIC CEILING PANEL SYSTEM C/W GALV. STEEL SUSPENSION SYSTEM AND ACCESSORIES	WHITE	REFER TO DWGS. FOR REQUIREMENTS.
	WALLS	PROVIDE NEW PORCELAIN WALL TILE AS SHOWN ON 1/A03. SIZE AND COLOUR TO MATCH EXISTING.	COLOUR & SIZE TO MATCH EXISTING	MATCH 'T1' WALL CERAMIC TILE. FULL HEIGHT OF ROOM
CORRIDOR	FLOOR	NEW 24"X12" TILE.		MATCH TO 'F2' FLOORING.
	CEILING	PROVIDE NEW PAINT FOR EXISTING G.W.B CEILING.		MATCH 'P1' PAINT FINISH REQUIREMENT.
	WALLS	PROVIDE NEW PAINT FOR EXISTING CONC. BLOCK WALL SURFACES		MATCH 'P1' PAINT FINISH REQUIREMENT.
GENDER-NEUTRAL WASHROOM 0205	FLOOR	NEW FLOORING.		MATCH 'F1' EPOXY NON-SLIP FLOORING.
	TOILET	INSTALL NEW TOILET, AND WASHROOM ACCESSORIES AS SHOWN	TO LATER SELECTION BY OWNER	NEW TOILET: REFER TO MECHANICAL. WASHROOM ACCESSORIES: REFER TO SPECIFICATIONS.
	CEILING	NEW G.W.B GREEN BOARD CEILING SYSTEM C/W GALV. STEEL SUSPENSION SYSTEM AND ACCESSORIES	WHITE	REFER TO DWGS. FOR REQUIREMENTS.
	WALLS	PROVIDE NEW CERAMIC WALL TILE AS SHOWN ON 1/A03. SIZE AND COLOUR TO MATCH EXISTING.	COLOUR & SIZE TO MATCH EXISTING	MATCH 'T1' WALL CERAMIC TILE. FULL HEIGHT

ONTARIO ASSOCIATION OF ARCHITECTS
HONGLIN CUI
LICENCE
6531
July 21, 2023

ISSUES AND REVISIONS

No.	ISSUE OR REVISION TO DRAWING	DATE	BY
1	ISSUED FOR DESIGN REVIEW	30/05/2022	C.M.
2	REVISED PER CLIENT COMMENTS	29/06/2022	C.M.
3	REVISED PER CLIENT COMMENTS	03/08/2022	C.M.
4	REVISED PER CLIENT COMMENTS	14/09/2022	C.M.
5	ISSUED FOR 50% DESIGN REVIEW	13/04/2023	C.M.
6	ISSUED FOR 100% DESIGN REVIEW	02/05/2023	C.M.
7	ISSUED FOR TENDER	21/07/2023	C.M.

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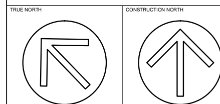
PROJECT TITLE AND ADDRESS
GENDER NEUTRAL CHANGEROOM AT TOMKEN AND RISING HILL
6825 TOMKEN ROAD, MISSISSAUGA, ONTARIO

DRAWING TITLE
TYP. WASHROOM ACCESSORIES INSTALLATION DETAIL, DOOR SCHEDULE & ROOM FINISH SCHEDULE

TRUE NORTH / CONSTRUCTION NORTH



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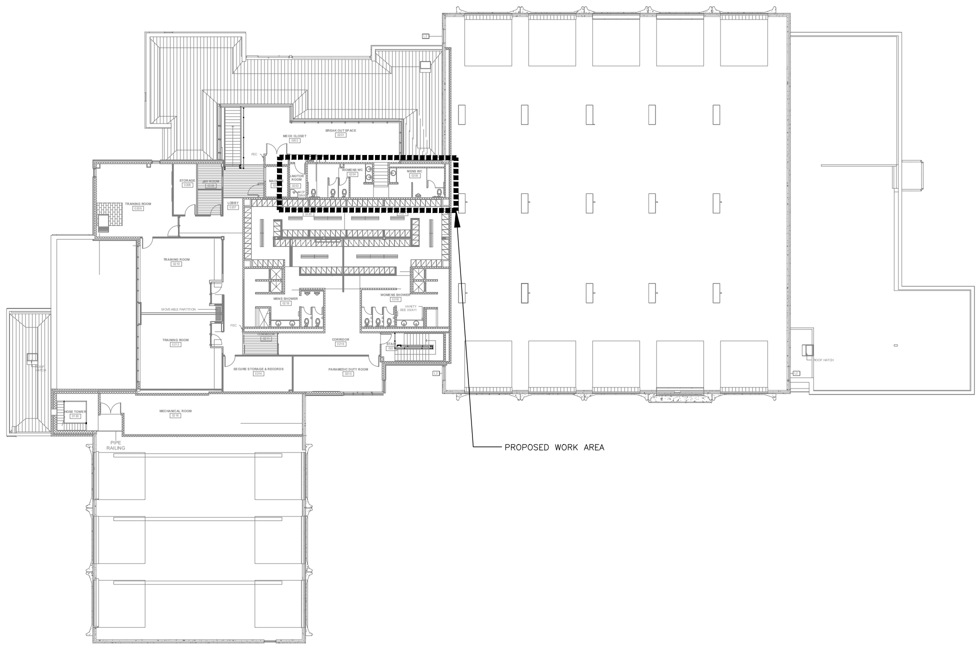

1 M01 KEY PLAN GROUND FLOOR
Scale: N.T.S

DRAWING LIST	
M01	KEY PLAN, GENERAL NOTES, SCHEDULE, LEGEND AND SYMBOLS
M02	PLUMBING DEMOLITION AND PROPOSED
M03	DRAINAGE AND HVAC PROPOSED
M04	FIRE PROTECTION PLAN PROPOSED

GRILLE SCHEDULE

TYPE NO.	TYPE	E.H.PRICE	FINISH	REMARKS
A	GRILLE	SERIES 80	ANODIZED ALUMINUM	FRAME TO SUIT CEILING TYPE

GENERAL NOTES:

1. THE DESIGN DOCUMENTS HAVE BEEN PREPARED ON THE BASIS OF INFORMATION OBTAINED FROM THE GENERAL SITE REVIEW AND FROM THE EXISTING DOCUMENTS. MAKE NECESSARY ADJUSTMENTS TO LOCATIONS OF EQUIPMENT, DUCTWORK, ETC. TO SUIT EXISTING SITE CONDITIONS. MAKE ALLOWANCES FOR ADDITIONAL ELBOWS, FITTINGS, SUPPORTS, ETC. REQUIRED TO PROVIDE OFFSETS IN THE PIPING, ETC. TO SUIT EXISTING SITE CONDITIONS. NO EXTRAS WILL BE ALLOWED FOR THE INTENDED SCOPE OF WORK SHOWN IN THE TENDER DOCUMENTS.
2. PRIOR TO COMMENCING OF WORK, THOROUGHLY REVIEW AND VERIFY AT SITE SIZES AND ROUTINGS OF THE EXISTING CONTROLS AND ELECTRICAL POWER SUPPLY, AND ENSURE THAT THE NEW EQUIPMENT/COMPONENTS CAN BE INSTALLED TO PROVIDE A FULLY FUNCTIONAL SYSTEM. OBTAIN APPROVALS FROM THE CONSULTANTS OF DEFICIENCIES AFFECTING INTENDED EXECUTION OF WORK.
3. ADEQUATELY SUPPORT ALL EQUIPMENT AND PIPING.
4. PROVIDE INSTALLATION VERIFICATION REPORT FROM MANUFACTURER/SUPPLIER.
5. ALLOW FOR ALL CUTTING/PATCHING/PAINTING AS REQUIRED TO FACILITATE THE WORK.
6. PRIOR TO DEMOLITION OF ANY ELECTRICALLY OPERATED MECHANICAL EQUIPMENT, DECOMMISSION THE EQUIPMENT BY REMOVING THE POWER SAFELY. SEE MORE ON ELECTRICAL DRAWINGS.
7. ALL EXISTING MECHANICAL EQUIPMENT SHALL REMAIN AT THEIR ORIGINAL LOCATION UNLESS NOTED OTHERWISE IN DRAWINGS/ SPECIFICATIONS.
8. CONTRACTOR SHALL VERIFY ALL SITE CONDITIONS PRIOR TO COMMENCEMENT OF WORK AND OUTLINE ANY DEFICIENCIES TO THE CONSULTANT.
9. DRAWINGS SHALL NOT BE SCALED.

PLUMBING NOTES:

1. MATERIALS AND WORK SHALL BE OF BEST QUALITY CONFORMING TO RULES AND REGULATIONS OF THE LATEST ONTARIO PLUMBING CODE REGULATION 815.
2. TYPE 'L' HARD COPPER PIPES ARE TO BE USED FOR HOT AND COLD WATER DISTRIBUTION ABOVE GROUND.
3. SUPPLY AND INSTALL 13MM ø DRAIN VALVE WITH HOSE CONNECTORS AT BASE OF ALL HOT AND COLD WATER RISERS, ALL LOW POINTS, ALL CONNECTIONS TO EQUIPMENT AND AS INDICATED ON DRAWINGS.
4. ALL DRAIN VALVES TO BE INSTALLED ARE MANUFACTURED BY 'WATTS', MODEL: B-6001 OR AS APPROVED EQUAL.
5. ALL VALVES SHALL BE SUITABLE FOR 200 PSI WATER WORKING PRESSURE AND UP TO INCLUDING 63MM SIZE, SHALL BE ALL BRASS.
6. ALL VALVES , PIPES AND FITTINGS SHALL BE OF BEST QUALITY CONFORMING TO RULES AND REGULATIONS OF CANADIAN STANDARDS ASSOCATION AND ANY OTHER BOARD, SERVICE COMPANY OR AUTHORITIES HAVING JURISDICTION.
7. SUPPLY AND INSTALL 13MM THICK INSULATION TO ALL HOT WATER PIPES ABOVE GRADE.
8. PVC OR ABS FITTINGS AND SOLVENT CEMENT USED ABOVE OR BELOW GRADE, INSIDE OR OUTSIDE OF BUILDING FOR SEWAGE DRAINAGE SYSTEM SHALL BE IN COMPLIANCE WITH THE LATEST ONTARIO PLUMBING CODE REGULATION.
9. ALL SOLDER/BRAZING: TO CONTAIN LESS THAN 0.2% LEAD AND TO SUIT APPLICATION.
10. PROVIDE 2% MINIMUM SLOPE ON ALL DRAINAGE PIPING BELOW GRADE.
11. BRANCH VENTS SHALL BE PVC OR ABS WITH STANDARD FITTINGS.
12. KEEP PLUMBING PIPES 1.00 M AWAY FROM ELECTRICAL PANEL.

LEGEND:

✕✕✕	EXISTING TO BE REMOVED
———	PROPOSED EQUIPMENT/PIPING
CTE	CONNECT TO EXISTING
C/W	COMPLETE WITH...
W/	WITH...
A/D	ACCESS DOOR
BD	BALANCING DAMPER
B/F	BARRIER FREE
DN	DOWN
EX.	EXISTING
FD	FLOOR DRAIN
LAV	LAVATORY
SH	SHOWER
WC	WATER CLOSET

ISSUES AND REVISIONS

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1	ISSUED FOR 100% DESIGN REVIEW	05/02/2023	M.L.
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PROJECT TITLE AND ADDRESS
GENDER NEUTRAL CHANGEROOM AT TOMKEN AND RISING HILL
6825 TOMKEN ROAD, MISSISSAUGA, ONTARIO

DRAWING TITLE
KEY PLAN, SITE PLAN, GENERAL NOTES AND DEMOLITION PLAN

TRUE NORTH | CONSTRUCTION NORTH

M. LIOHITE JULY 20 2023 6543

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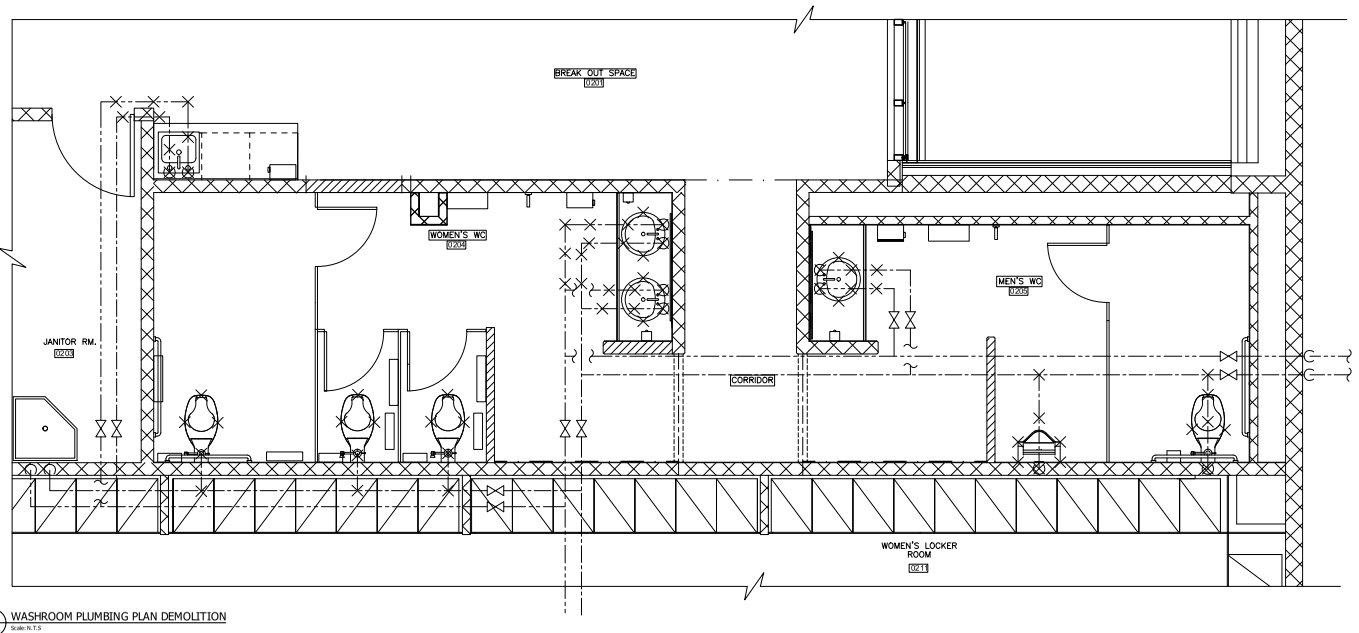
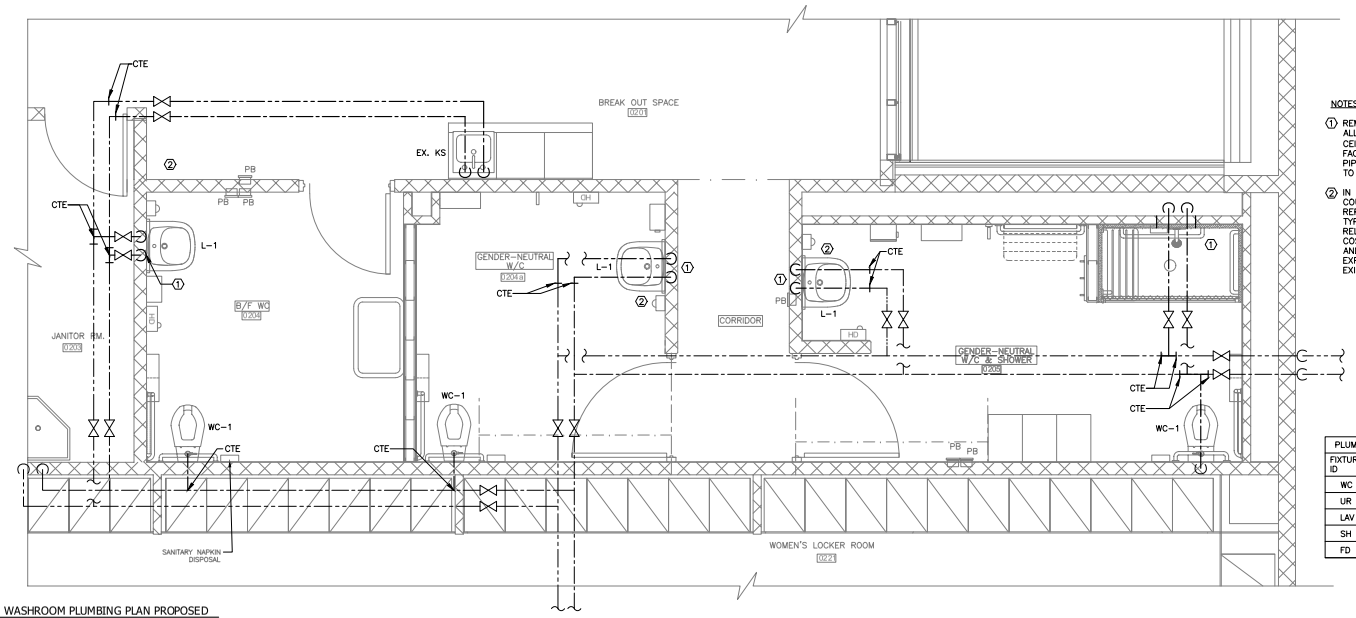


1 M02 WASHROOM PLUMBING PLAN DEMOLITION
Scale: N.T.S



2 M02 WASHROOM PLUMBING PLAN PROPOSED
Scale: N.T.S

NOTES:

1. REMOVE AND RE-INSTATE ALL EXISTING DRYWALL CEILING AND TILING/WALL TO FACILITATE INSTALLATION OF PIPING. MATCH NEW TILING TO EXISTING CONSTRUCTION.
2. IN ALL LOCATIONS WHERE A COUNTERTOP LAVATORY IS REPLACED WITH A WALL TYPE LAVATORY OR RELOCATED, INCLUDE ALL COSTS TO PROVIDE TILLING AND PAINTING FOR ALL EXPOSED WALLS TO MATCH EXISTING SITE CONDITIONS.

PLUMBING FIXTURE MIN PIPE SIZES

FIXTURE ID	MIN CW PIPE ø	MIN HW PIPE ø	MIN DRAIN PIPE ø
WC	25ø	–	50ø
UR	25ø	–	75ø
LAV	13ø	13ø	40ø
SH	20ø	20ø	75ø
FD	–	–	75ø

ISSUES AND REVISIONS

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PROJECT TITLE AND ADDRESS
GENDER NEUTRAL CHANGEROOM AT TOMKEN AND RISING HILL
6825 TOMKEN ROAD, MISSISSAUGA, ONTARIO

DRAWING TITLE
PLUMBING DEMOLITION AND PROPOSED

TRUE NORTH

STAMP
M. J. MOON
JULY 20 2023
90493

DRAWN BY	CHECKED BY
V.L.	M.L.
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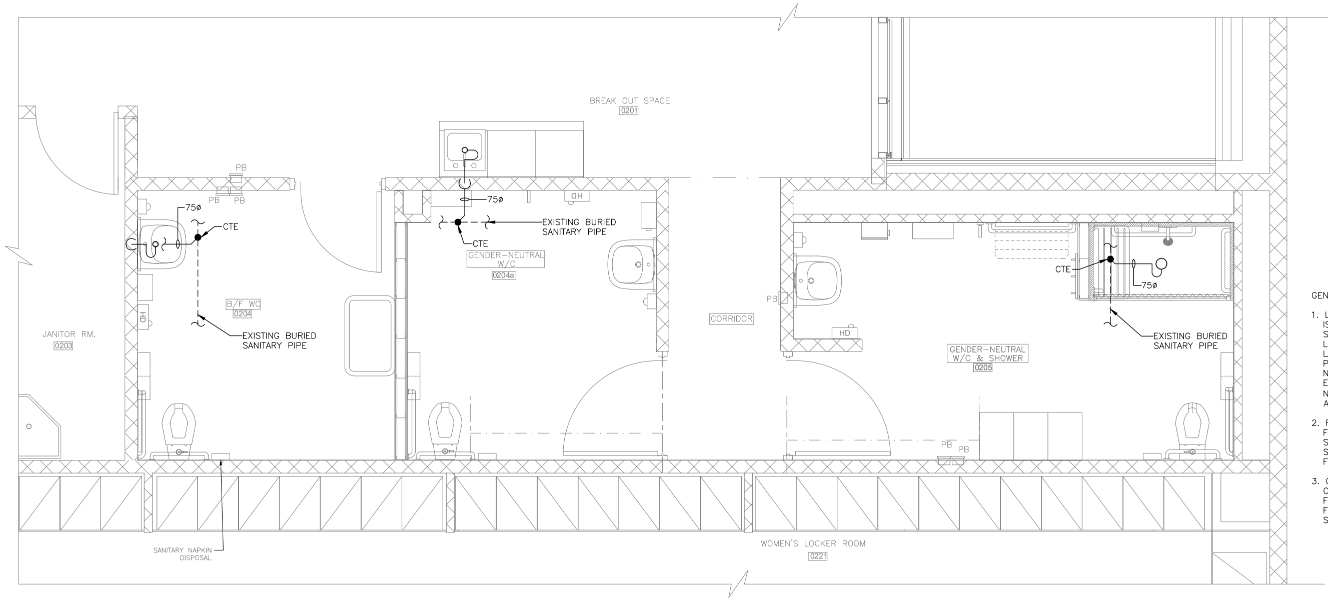
	M02

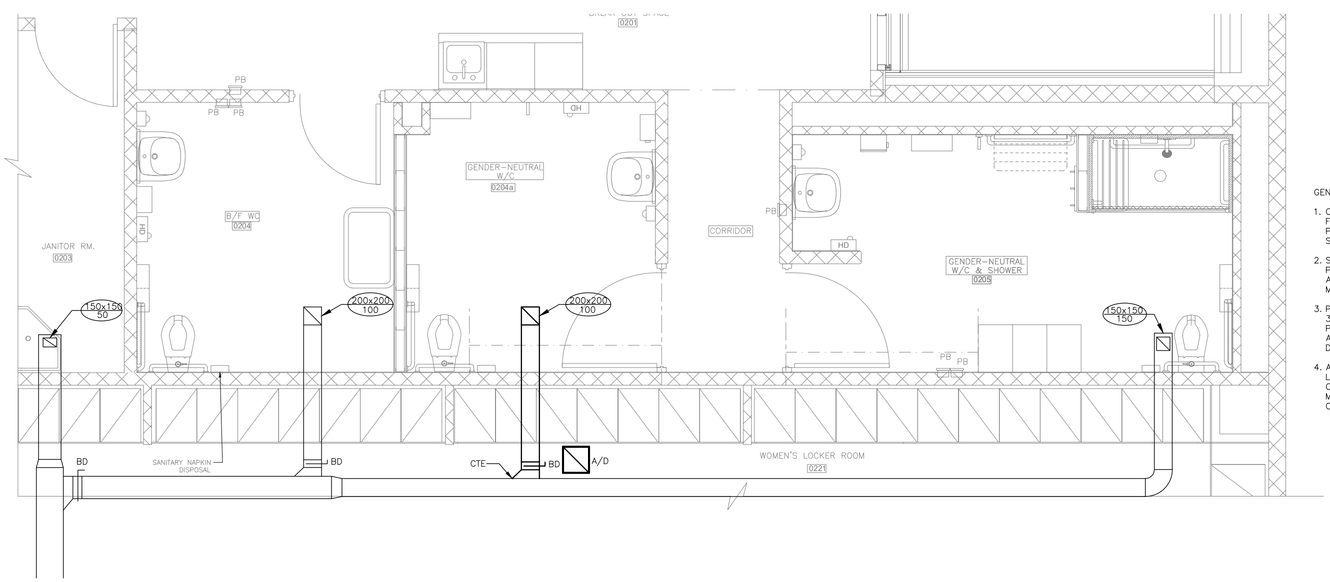


1 M03 WASHROOM DRAINAGE PLAN PROPOSED
Scale: N.T.S

PLUMBING FIXTURE MIN PIPE SIZES			
FIXTURE ID	MIN CW PIPE ø	MIN HW PIPE ø	MIN DRAIN PIPE ø
WC	25ø	–	50ø
UR	25ø	–	75ø
LAV	13ø	13ø	40ø
SH	20ø	20ø	75ø
FD	–	–	75ø

GENERAL NOTES

1. LOCATION OF BURIED PIPES IS ASSUMED. CONTRACTOR SHALL FIELD VERIFY EXACT LOCATION OF SANITARY LAYOUT VIA CCTV SCANNING PRIOR TO INSTALLATION OF NEW SANITARY PIPING. EXCAVATE FLOOR AS NECESSARY & PATCH/PAINT AS REQUIRED.
2. REFER TO PLUMBING FIXTURE SCHEDULE FOR SANITARY BRANCH SIZES SERVING PLUMBING FIXTURES.
3. CAP ALL UNUSED DRAINAGE CONNECTIONS BELOW THE FLOOR LEVEL AND FINISH FLOOR TO MATCH EXISTING SITE CONDITIONS.



2 M03 WASHROOM HVAC PLAN PROPOSED
Scale: N.T.S

GENERAL NOTES

1. CONTRACTOR SHALL ALLOW FOR AI BALANCING OF THE PROPOSED SYSTEM AS SHOWN.
2. SEAL ALL WALL PENETRATIONS AND PROVIDE APPROVED FIRE STOPPING MATERIALS.
3. PROVIDE ONE 300MM X 300MM ACCESS DOOR OF PAINTED STEEL MATERIALS AT EACH BALANCING DAMPER.
4. AT ALL CEILING GRILLE LOCATIONS, PROVIDE CEILINGS AND PAINTING TO MATCH EXISTING SITE CONDITIONS.

ISSUES AND REVISIONS

No.	ISSUE OR REVISION TO DRAWING	DATE	BY
1	ISSUED FOR 100% DESIGN REVIEW	05/02/2023	M.L.
2	ISSUED FOR TENDER	21/07/2023	M.L.

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PROJECT TITLE AND ADDRESS
GENDER NEUTRAL CHANGEROOM AT TOMKEN AND RISING HILL
6825 TOMKEN ROAD, MISSISSAUGA, ONTARIO

DRAWING TITLE
DRAINAGE AND HVAC PROPOSED

TRUE NORTH

STAMP
M. LIKHITE
JULY 20 2023
6543

DRAWN BY: V.L.	CHECKED BY: M.L.
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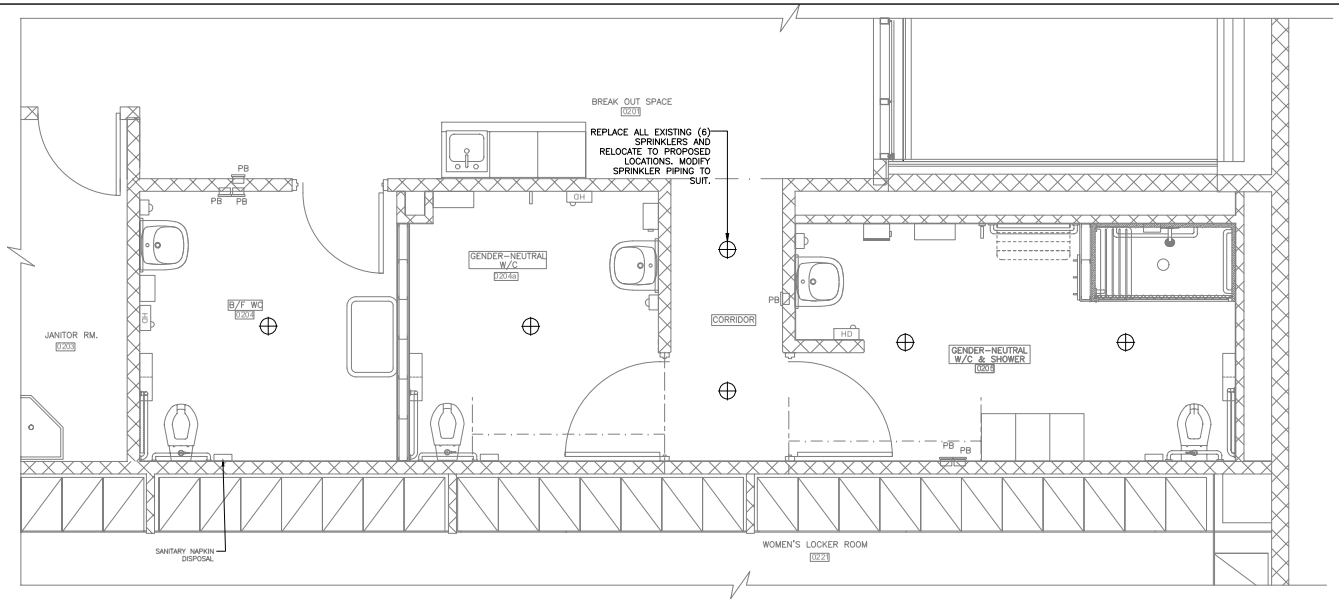
PURCHASING DOCUMENT NUMBER:	DRAWING NUMBER: M03



1 M04 WASHROOM FIRE PROTECTION PLAN PROPOSED
Scale: N.T.S

GENERAL NOTES

1. AT ALL SPRINKLER LOCATIONS PROVIDE CEILINGS AND PAINTING TO MATCH EXISTING SITE CONDITIONS.
2. REVIEW EXISTING SPRINKLER SYSTEM AND RELOCATE SPRINKLERS TO SUIT AS INDICATED. PROVIDE HYDRAULIC CALCULATIONS DULY STAMPED BY A PROFESSIONAL FIRE PROTECTION ENGINEER.

ISSUES AND REVISIONS

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PROJECT TITLE AND ADDRESS

GENDER NEUTRAL CHANGEROOM AT TOMKEN AND RISING HILL

6825 TOMKEN ROAD, MISSISSAUGA, ONTARIO

DRAWING TITLE

FIRE PROTECTION PLAN PROPOSED

TRUE NORTH	STAMP
	M. LIKHITE JULY 20 2023 6543

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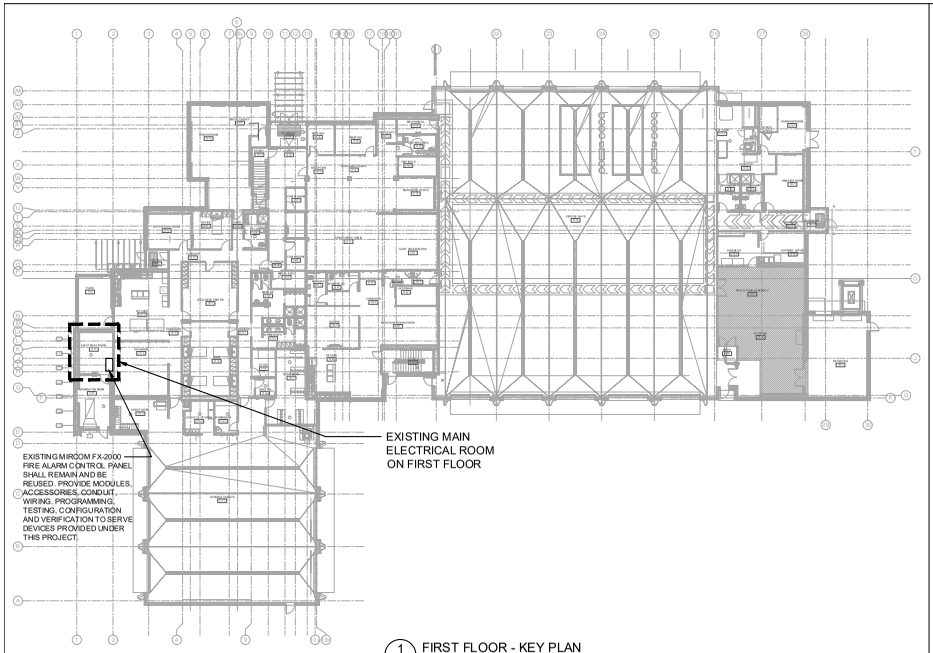
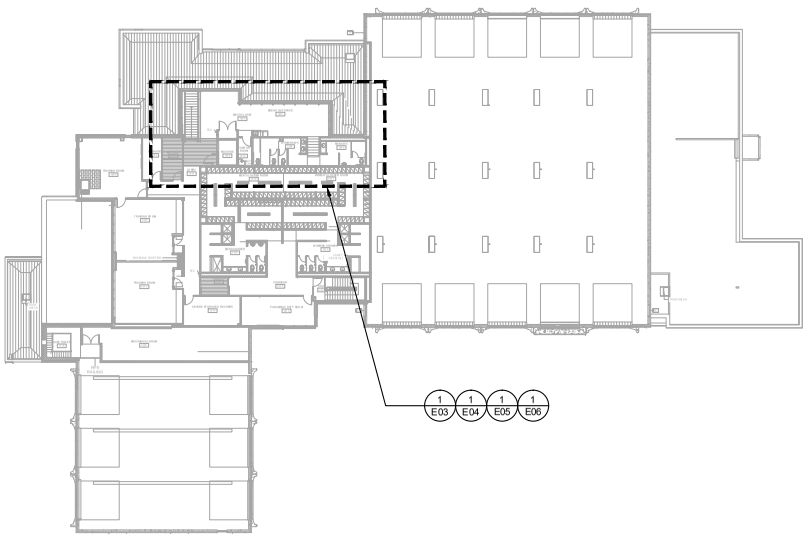


1 E01 FIRST FLOOR - KEY PLAN
SCALE: N.T.S.



2 E01 SECOND FLOOR - KEY PLAN
SCALE: N.T.S.

EX. PANEL " PP-C1"
TOTAL LOAD:
TOTAL CIRCUITS: 90
TYPE: 120/208V, 3Ø, 4W
MAINS: 250A
MAIN BRKR.:NONE
TYPE: SURFACE
LOCATION:

LOAD KW	SERV. REF.	WIRE	BRKR	CCT	L1 L2 L3 N	CCT	BRKR	WIRE	SERV. REF.	LOAD KW
				1		2				
				3		4				
				5		6				
				7		8			EXISTING CIRCUITS	
				9		10				
				11		12				
				13		14				
			15A-1P	15		16	15A-1P	2#10	KITCHEN, GFI	
				17		18			EXISTING CIRCUITS	
			15A-1P	19		20	15A-1P	2#12	PLUMBING FIXTURES	
			15A-1P	21		22	15A-1P	2#10	WASHROOM, GFI's	
				23		24				
				25		26				
				27		28				
				29		30				
				31		32				
				33		34				
				35		36				
				37		38				
				39		40				
				41		42				
				43		44			EXISTING CIRCUITS	
				45		46				
				47		48				
				49		50				
				51		52				
				53		54			EXISTING CIRCUITS	
				55		56				
				57		58				
				59		60				
				61		62				
				63		64				
				65		66				
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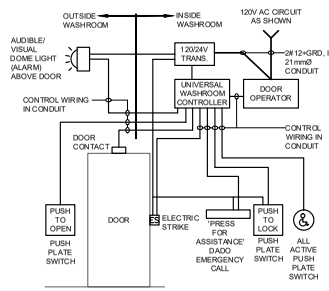
				75		76				
				77		78				
				79		80				
				81		82				
				83		84				
	SHOWER/WASHROOM GFI'S		15A-1P	85		86	15A-1P			
	LIGHTING	2#12	15A-1P	87		88	15A-1P	2#12	PLUMBING FIXTURES UNIV DOOR OPERATOR +LOCKS + CHANGE TABLE	
	SPARE		15A-1P	89		90	15A-1P		SPARE	

NOTE:
- ALL ESSENTIAL CIRCUITS TO BE LOCKED ON WITH LOCKING BARS.
- ALL BREAKERS TO BE 15A - 1P. UNLESS OTHERWISE SHOWN.
- ALL CIRCUITS TO BE 2 NO. 12 & GRD. UNLESS OTHERWISE SHOWN.



3 E01 UNIVERSAL WASHROOM BLOCK DIAGRAM
SCALE: N.T.S.

NOTES:

1. CO-ORDINATE WITH ARCHITECTURAL DRAWINGS.
2. ELECTRIC STRIKES SPECIFIED BY DOOR HARDWARE DIVISION. CO-ORDINATE WITH DOOR HARDWARE SUPPLIER, DOOR OPERATOR SUPPLIER, AODA UNIVERSAL WASHROOM SUPPLIER AND ARCHITECT.

LEGEND:

- 15A, 120V, 1Ø, 3W GROUNDED DUPLEX RECEPTACLE. UNLESS OTHERWISE INDICATED. 'GFI' DENOTES - CLASS 'A' GFI TYPE RECEPTACLE.
- JB — JUNCTION BOX
- EX — ELECTRICAL EQUIPMENT AS NOTED
- EXISTING FLUORESCENT LINEAR LIGHTING FIXTURE
- EXISTING POT LIGHT FIXTURE
- EX — EXISTING WALL-MOUNTED LIGHTING FIXTURE
- $ — WALL MOUNTED SWITCH C/W STAINLESS STEEL COVER
- CONDUIT TURNING UP.
- CONDUIT TURNING DOWN.
- ELECTRICAL EQUIPMENT AS INDICATED.
- 120V DIRECT CONNECTION C/W DISCONNECT SWITCH FOR USE AS NOTED.
- 208V, 1Ø DIRECT CONNECTION C/W DISCONNECT SWITCH FOR USE AS NOTED
- PB — PUSH BUTTON
- DOOR OPERATOR
- SMOKE DETECTOR
- HEAT DETECTOR
- H — FIRE ALARM SYSTEM HORN
- S — FIRE ALARM SYSTEM STROBE
- HS — FIRE ALARM SYSTEM HORN STROBE
- FIRE ALARM MANUAL PULL STATION
- SP — PUBLIC ADDRESS SPEAKER
- MANUAL MOTOR STARTER SWITCH
- EWH — ELECTRIC HOT WATER TANK
- OS — OCCUPANCY SENSOR
- OSD — OCCUPANCY SENSOR DIMMING SWITCH MOUNTED ON WALL
- PP — LIGHTING CONTROL POWER PACK
- HD — HAND DRYER
- T — THERMOSTAT
- EXIT SIGN
- EMERGENCY BATTERY PACK C/W LED REMOTE HEADS AS NOTED.
- SINGLE 6W, 24V, LED REMOTE HEAD
- TWO(2) 6W, 24V, LED REMOTE HEADS
- ACDA FLASHER DEVICE

ABBREVIATIONS

RGSEC	EPOXY COATED RIGID GALVANIZED STEEL CONDUIT.
RGS	RIGID GALVANIZED STEEL CONDUIT.
W/P	WEATHER PROOF C/W WEATHER-PROOF EXTRA DUTY-RATED IN-USE COVER.
C/W	COMPLETE WITH.
AFF	ABOVE FINISHED FLOOR.
TYP.	TYPICAL.
DIA.	DIAMETER.
Ø	PHASE
CCT	CIRCUIT
DO	DOOR OPERATOR
EX	EXISTING EQUIPMENT TO REMAIN UNDISTURBED, OPERATIONAL AND PROTECTED DURING CONSTRUCTION. PROVIDE ALL TEMPORARY AND PERMANENT WIRING, CONDUIT, SPLICING JUNCTION BOXES, PENETRATIONS AND REROUTING NECESSARY TO KEEP EQUIPMENT OPERATIONAL DURING CONSTRUCTION AND FOR A CLEAN, PERMANENT CONDUIT INSTALLATION WITH MINIMAL CONDUIT VISIBLE.
R	EXISTING EQUIPMENT TO BE REMOVED AND DISPOSED OF C/W CONDUIT AND WIRING BACK TO SOURCE. MAKE CIRCUIT SAFE.

CONSTRUCTION NOTES:

1. ALL EXISTING INFORMATION TO BE CONFIRMED. CONDITIONS SHOWN BASED ON AVAILABLE AS-BUILT INFORMATION ONLY CONTRACTOR SHALL CONFIRM ON SITE AS REQUIRED. INFORMATION IS PROVIDED AS A REFERENCE FOR DEMOLITION AND RE-FEEDING/RE-ROUTING REQUIREMENTS AS DESCRIBED WITHIN THE CONTRACT.
2. ALL DIMENSIONS AND INFORMATION SHALL BE CHECKED AND VERIFIED ON THE JOB AND ANY DISCREPANCIES MUST BE REPORTED BEFORE COMMENCING THE WORK.
3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING ALL EXISTING SERVICES AND UTILITIES IN WORKING AREA PRIOR TO CONSTRUCTION AND SHALL PROTECT THESE UTILITIES AND SERVICES TO THE SATISFACTION OF THE CONCERNED UTILITY COMPANIES AND OWNER. DAMAGES BY THE CONTRACTOR SHALL BE RESTORED TO THE SATISFACTION OF THE CONCERNED UTILITY COMPANY AT NO EXPENSE TO THE OWNER.
4. THE CONTRACT DRAWINGS DO NOT SHOW THE EXACT LOCATION OF EXISTING UNDERGROUND UTILITIES AND SERVICES. ANY INFORMATION SHOWN IS FOR REFERENCE ONLY. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO BECOME INFORMED OF THE EXACT LOCATION OF, AND ASSUME ALL LIABILITY FOR DAMAGE TO ALL UTILITIES, SERVICES, AND STRUCTURES WHETHER ABOVE GROUND OR BELOW GRADE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING ALL EXISTING SERVICES AND UTILITIES IN WORKING AREA PRIOR TO CONSTRUCTION AND SHALL PROTECT THESE SERVICES AND UTILITIES TO THE SATISFACTION OF THE CONCERNED UTILITY COMPANIES AND OWNER. EXPOSE UTILITIES AND SERVICES, MAINTAIN REQUIRED CLEARANCES, HAND DIGG AND STRUCTURALLY SUPPORT UTILITIES AND SERVICES. DAMAGES BY THE CONTRACTOR SHALL BE RESTORED TO THE OWNER AT NO EXPENSE TO THE OWNER.
5. VISIT THE SITE AND EXAMINE THE CONDITIONS AND MAKE ARRANGEMENTS FOR REMOVAL, REROUTING, RELOCATION AND RECONNECTION OF ELECTRICAL EQUIPMENT AND WIRING AS MAY BE NECESSARY FOR THE EXECUTION AND COMPLETION OF THE PROJECT. THIS WORK SHALL TAKE PLACE AFTER HOURS.
6. ALL MISCELLANEOUS ELECTRICAL EQUIPMENT BEING REMOVED SHALL REMAIN THE PROPERTY OF THE OWNER AND IF THE OWNER HAS NO USE FOR IT, IT SHALL BE DISPOSED OF OFFSITE. PROVIDE ALL STORAGE TRANSPORTATION AND DELIVERY REQUIRED.
7. WIRING LOCATED IN AREAS BEING ALTERED OR DEMOLISHED, BUT FEEDING LIGHTING, OUTLETS OR EQUIPMENT REQUIRED TO REMAIN IN SERVICE SHALL BE REROUTED AS REQUIRED TO MAINTAIN THE CONTINUITY OF THESE SERVICES. PROVIDE ALL CONDUIT, WIRING AND SERVICES TO ACHIEVE THIS TASK.
8. A 6.35mm POLYPROPYLENE ROPE SHALL BE LEFT IN ALL NEW AND UPDATED EXISTING CONDUITS.
9. FISH ALL CONDUIT AND PROVIDE POLY PULL ROPE. PROVIDE SPARE POLY PULL ROPE IN ALL NEW & EXISTING CONDUITS WHERE WIRING IS INSTALLED AND WHERE CONDUITS ARE BEING LEFT AS SPARES.
10. ALL PENETRATIONS IN WALLS AND CEILING FOR CONDUIT CROSSING SHALL BE SEALED WITH FIRE-STOPPING SEALANT. PROVIDE FIRE-STOPPING SEALANT TO SEAL OPENINGS.
11. ALL CONDUITS AND BOXES SHALL BE LABELED AS PER OWNER'S REQUIREMENTS.
12. MOUNT NEW EQUIPMENT AT LOCATIONS SUCH THAT THERE IS ROOM TO INSTALL THEM AND ADEQUATE CLEARANCE IN FRONT PER THE ONTARIO ELECTRICAL SAFETY CODE. THE DRAWINGS ARE DIAGRAMMATIC ONLY. PROVIDE CONDUIT AND WIRING AS REQUIRED TO MOUNT NEW EQUIPMENT.
13. MINIMUM CONDUIT SIZE SHALL BE 21mmØ.
14. POWER INTERRUPTIONS SHALL BE KEPT TO A MINIMUM AND SHALL OCCUR AFTER HOURS AT NIGHT SO FACILITY OPERATIONS ARE NOT DISTURBED. OBTAIN OWNER'S WRITTEN PERMISSION TWO(2) WEEKS PRIOR ANY SHUTDOWNS. WORK SHALL BE AFTER HOURS.
15. THE CONTRACTOR SHALL BECOME AWARE OF AND PROTECT ALL EXISTING SERVICES IN THE WORKING AREA PRIOR COMMENCEMENT OF WORK. THE CONTRACTOR SHALL PROTECT SERVICES TO THE SATISFACTION OF THE OWNER. THE CONTRACTOR SHALL TAKE ALL LIABILITY FOR AND PAY FOR ANY DAMAGES TO EXISTING SERVICES. THE EXISTING SERVICES ARE NOT NECESSARILY SHOWN ON THE DRAWINGS AND ACCURACY CANNOT BE GUARANTEED WHERE SHOWN.

LICENSED PROFESSIONAL ENGINEER
6543
T. BAHTA
21.07.23
PROVINCE OF ONTARIO

ISSUES AND REVISIONS

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PROJECT TITLE AND ADDRESS
GENDER NEUTRAL CHANGEROOM AT TOMKEN AND RISING HILL
6825 TOMKEN ROAD, MISSISSAUGA, ONTARIO

DRAWING TITLE
ELECTRICAL
KEY PLAN, SITE PLAN AND GENERAL NOTES, WALL TYPES & DETAIL

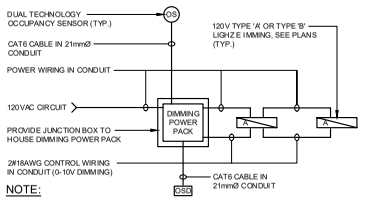
TRUE NORTH | CONSTRUCTION NORTH

DRAWN BY	CHECKED BY
R.V.G.	T.D.
SCALE	DATE
AS SHOWN	25/04/2023
CONSULTANT PROJECT NUMBER	REGION OF PEEL PROJECT NUMBER
6543	23602
PURCHASING DOCUMENT NUMBER	DRAWING NUMBER
	E01

LIGHTING FIXTURE SCHEDULE

TYPE	BASE MANUFACTURER	CATALOGUE NUMBER	CEILING TYPE			WALL TYPE			NO. OF LAMPS	LAMP WATTAGE	VOLTAGE			ACCEPTABLE ALTERNATE MANUFACTURERS	REMARKS
			SURFACE	RECESSED	SUSPENDED	SURFACE	RECESSED	BRACKET			120 V.	347 V.	24 V.		
A	LITHONIA LIGHTING (ACUITY BRANDS)	2GTL-4-30-L-GZ1-LP835		●					LEDs	24W	●			COOPER HUBBELL	2'x4' LIGHTING FIXTURE RECESSED IN T-BAR CEILING 2000 LUMENS, 3500K CCT, 80CRI, 0-10Vdc DIMMING.
A1	LITHONIA LIGHTING (ACUITY BRANDS)	2GTL-4-30L-GZ1-LP835-DGA24		●					LEDs	24W	●			COOPER HUBBELL	2'x4' LIGHTING FIXTURE RECESSED IN DRYWALL CEILING 2000 LUMENS, 3500K CCT, 80CRI, 0-10Vdc DIMMING.
B	LITHONIA LIGHTING (ACUITY BRANDS)	BTL4-RB-2GL-ADP-MVOLT-GZ1-LP835-DGA14		●					LEDs	16W	●			COOPER HUBBELL	1'x4' LIGHTING FIXTURE RECESSED IN DRYWALL CEILING C/W RIBBED DIFFUSER AND LENS, DRYWALL FRAMING KIT AND ACCESSORIES FOR MOUNTING IN DRYWALL CEILING 2000 LUMENS, 3500K CCT, 80CRI, 0-10Vdc DIMMING.
	GOTHAM LIGHTING (ACUITY BRANDS)	EVO6SH-35K-10-DFR-SQL-120-EZ1		●					LEDs	15W	●			COOPER HUBBELL	150mm DIAMETER RECESSED SHOWER DOWNLIGHT RATED FOR WET LOCATION. 3500K, 80 CRI 1000 LUMENS
	EMERGI-LITE (TnBABB)	EF150 - LMC				●			1 LED	6W			●	LUMACELL BEGHELLI	24 V, 6W SINGLE LED REMOTE HEAD
	EMERGI-LITE (TnBABB)	EF150 - D - LMC				●			1 LED	2-6W			●	LUMACELL BEGHELLI	TWO(2) 24V, 6W DUAL LED REMOTE HEADS
4X	EMERGI-LITE (TnBABB)	EF39-D-M-LM				●			1 LED	2-6W			●	LUMACELL BEGHELLI	TWO(2) 24V, 6W DUAL REMOTE HEADS C/W DIECAST ALUMINUM BACKPLATE NEMA-4X ENCLOSURE AND POLY CARBONATE AND IMPACT-RESISTANT LENS.

NOTES:
1. CO-ORDINATE VOLTAGE PRIOR TO SHOP DRAWING REVIEW.
2. ALL FIXTURES SHALL BE CONTINUOUSLY DIMMABLE.
3. THE LIGHTING DESIGN IS BASED ON THE BASE MANUFACTURER'S PRODUCTS. WHERE ALTERNATE MANUFACTURERS ARE USED, COMPLETE PHOTOMETRIC CALCULATIONS SHOWING A LAYOUT MEETING OR EXCEEDING THE LIGHTING DESIGN CRITERIA MUST BE SUBMITTED DURING SHOP DRAWING SUBMISSION FOR CONSULTANT'S REVIEW.
4. PRODUCTS OF ALTERNATE MANUFACTURERS ARE UNACCEPTABLE WHEN POWER CONSUMPTION IS INCREASED SIGNIFICANTLY ENOUGH TO AFFECT ELECTRICAL DESIGN.
5. CONFIRM FINISHES AND TRIMS WITH ARCHITECT PRIOR EQUIPMENT ORDER.



NOTE:

1. CAT6 CABLE SHOWN FOR CONNECTIONS OF CONTROL WIRING BUT CONTRACTOR SHALL CO-ORDINATE CABLE TYPE REQUIRED AT SITE WITH LIGHTING CONTROL DEVICES SUPPLIER PRIOR SHOP DRAWING REVIEW.

1 / E02 INDOOR LIGHTING CONTROL DETAIL
SCALE: N.T.S.

ISSUES AND REVISIONS

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PROJECT TITLE AND ADDRESS
GENDER NEUTRAL CHANGEROOM AT TOMKEN AND RISING HILL
6825 TOMKEN ROAD, MISSISSAUGA, ONTARIO

DRAWING TITLE
ELECTRICAL
SCHEDULE AND DETAIL

TRUE NORTH	CONSTRUCTION NORTH

DRAWN BY	CHECKED BY
R.V.G.	T.D.
SCALE	DATE
AS SHOWN	25/04/2023
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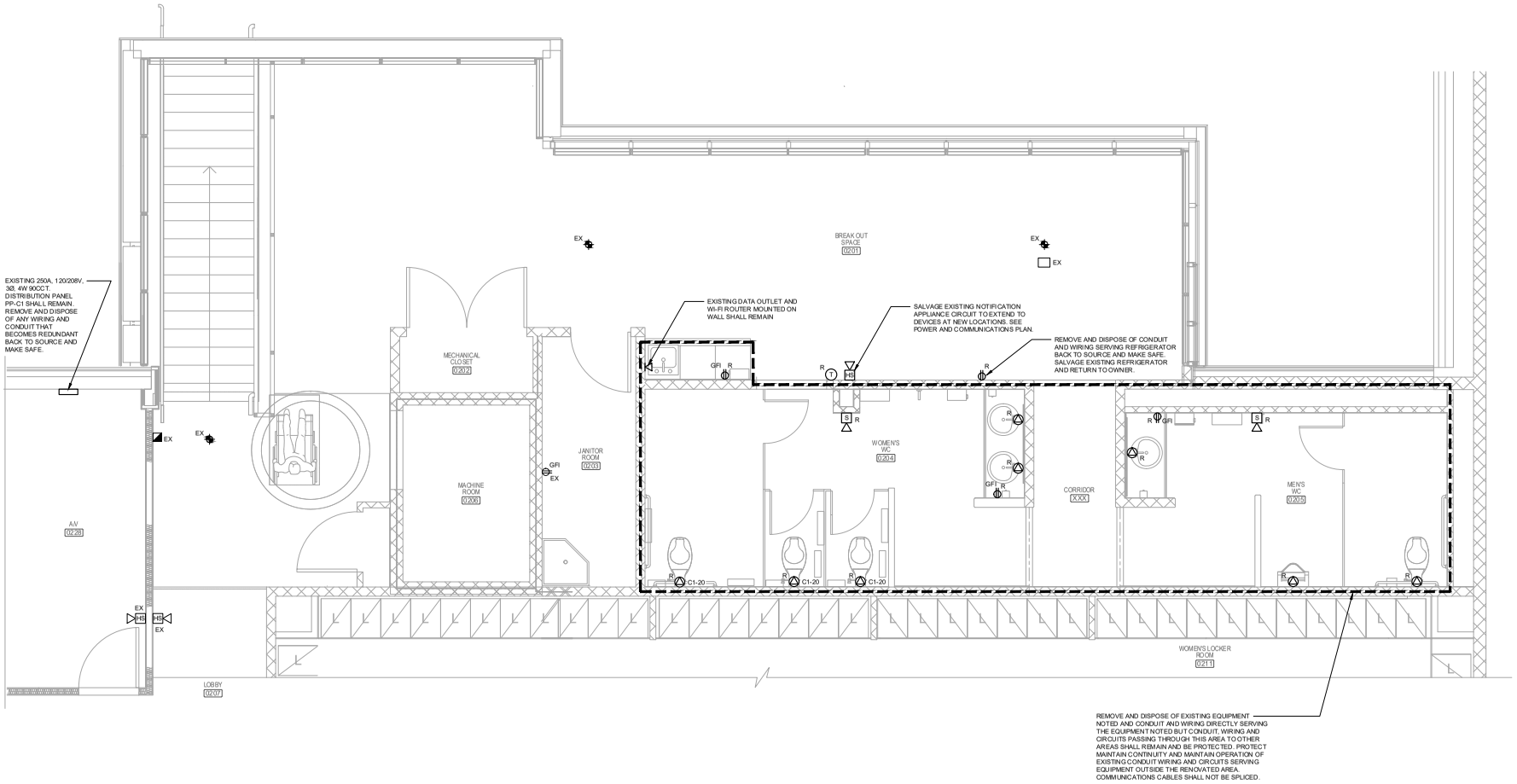
6543	23602
PURCHASING DOCUMENT NUMBER	DRAWING NUMBER
	E02



1 / E03 POWER AND COMMUNICATIONS - DEMOLITION PLAN
SCALE: 1:30

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DRAWING TITLE
ELECTRICAL
POWER AND COMMUNICATIONS DEMOLITION PLAN

TRUE NORTH | CONSTRUCTION NORTH

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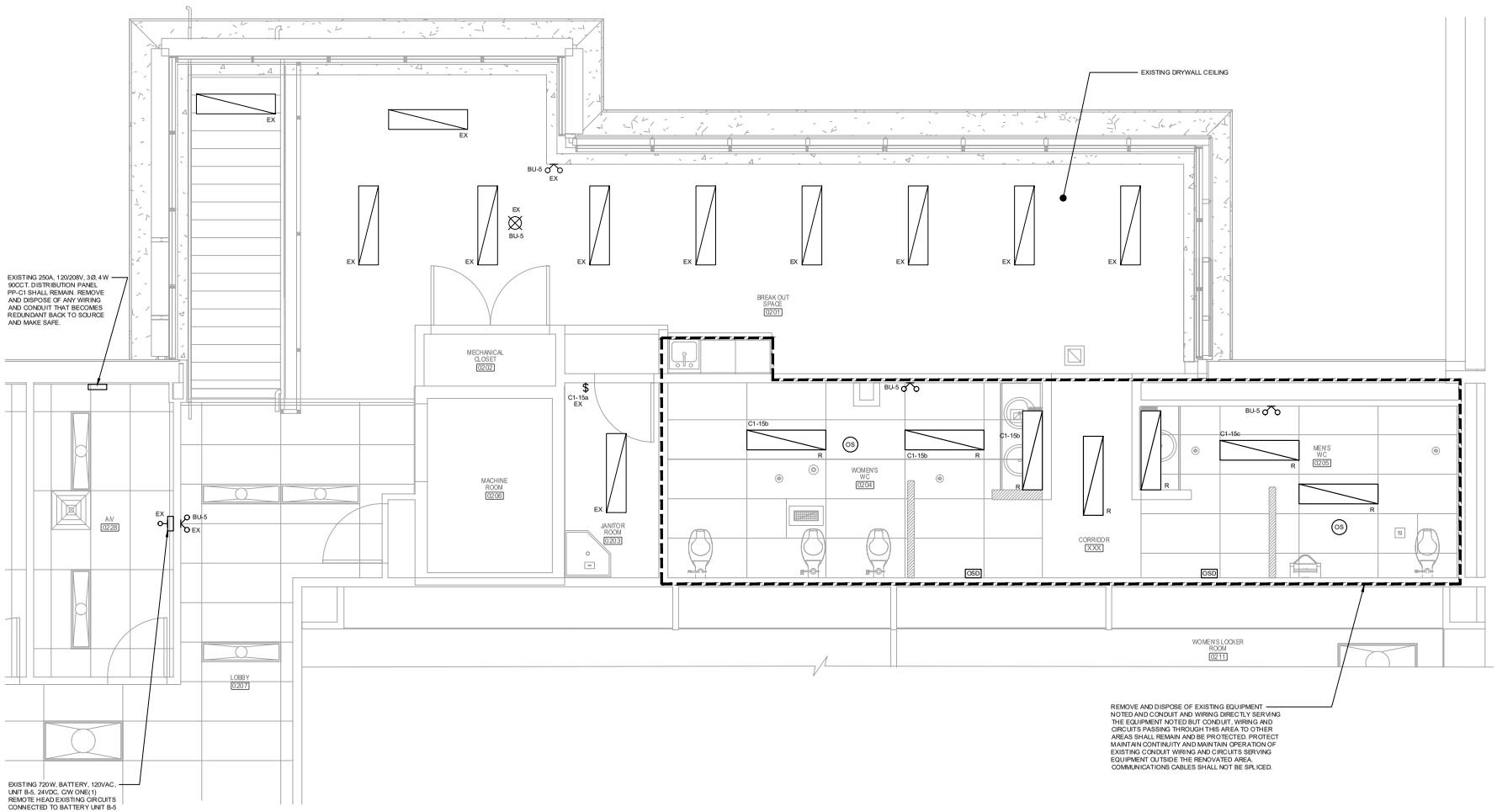
SCALE: 1:30	DATE: 25/04/2023
CONSULTANT PROJECT NUMBER: 6543	REGION OF PEEL PROJECT NUMBER: 23602
PURCHASING DOCUMENT NUMBER:	DRAWING NUMBER: E03



1 E04 LIGHTING - DEMOLITION PLAN
SCALE: 1:30

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IM30

6543
T. RAHIA
21.07.23
LICENSED PROFESSIONAL ENGINEER
PROVINCE OF ONTARIO

ISSUES AND REVISIONS

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GENDER NEUTRAL CHANGEROOM AT TOMKEN AND RISING HILL
6825 TOMKEN ROAD, MISSISSAUGA, ONTARIO

DRAWING TITLE
ELECTRICAL
LIGHTING
DEMOLITION PLAN

TRUE NORTH | CONSTRUCTION NORTH

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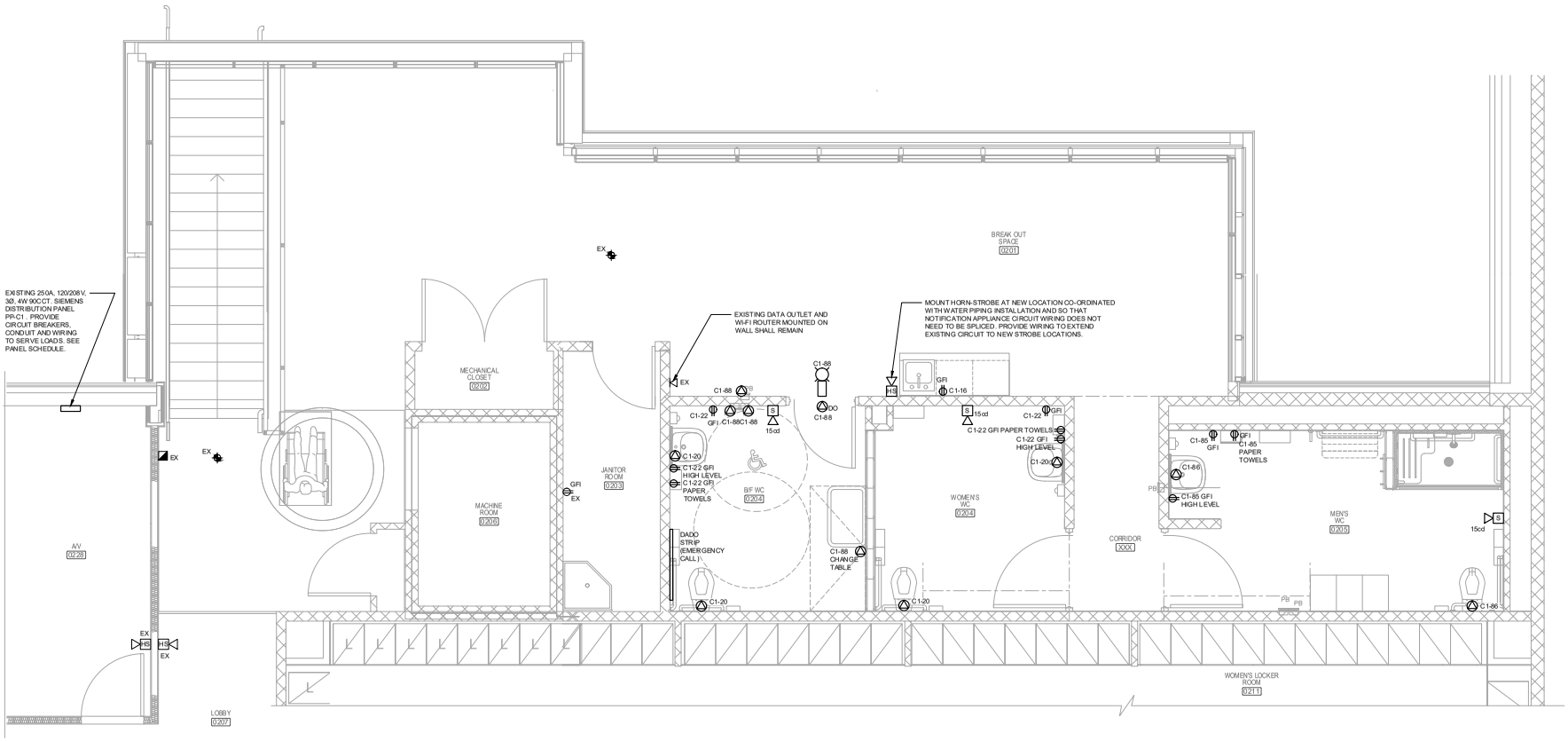
CONSULTANT PROJECT NUMBER: 6543	REGION OF PEEL PROJECT NUMBER: 23602
PURCHASING DOCUMENT NUMBER:	DRAWING NUMBER: E04



1 / E05 POWER AND COMMUNICATIONS - PLAN
SCALE: 1:30

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LICENSED PROFESSIONAL ENGINEER
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T. BAHIA
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DRAWING TITLE
ELECTRICAL
POWER AND COMMUNICATIONS PLAN

TRUE NORTH | CONSTRUCTION NORTH

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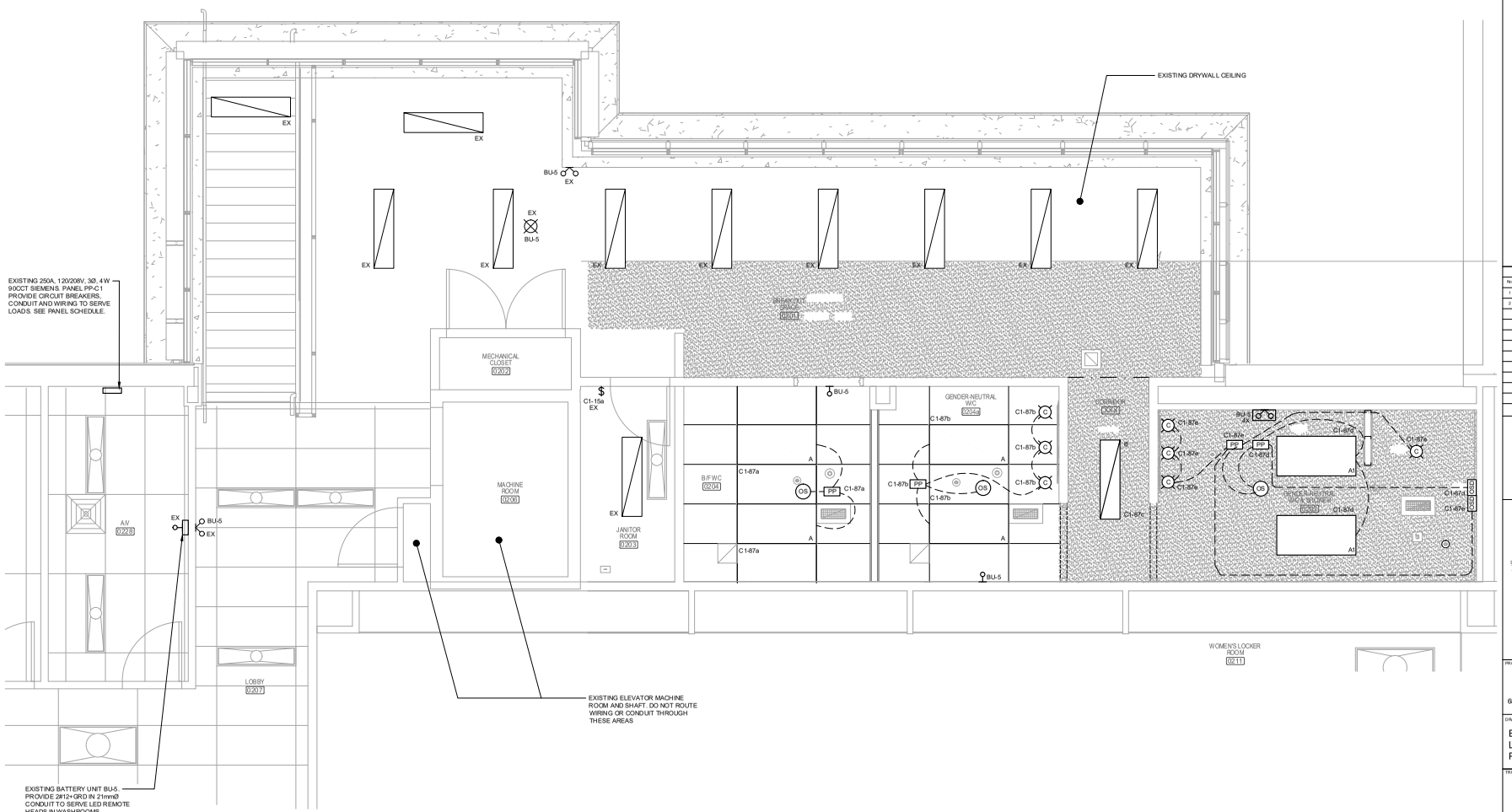

1 / E06 LIGHTING - PLAN
SCALE: 1:30

300m 0 600m 1200m
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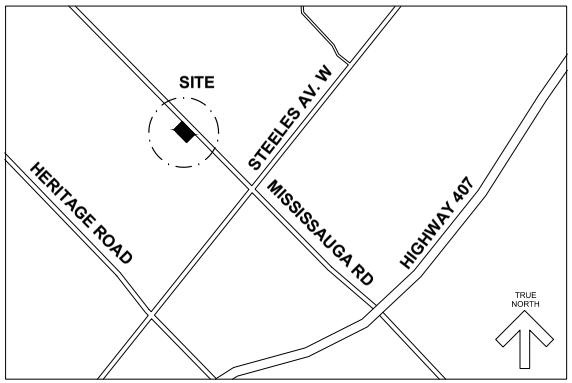

1 / A01 KEY PLAN
Scale: N.T.S

GENERAL NOTES:

1. THE DRAWINGS AND SPECIFICATIONS SHALL BE READ IN CONJUNCTION WITH OTHER DRAWINGS, CONTRACT REQUIREMENTS, THE LEGEND AND SPECIFICATIONS. MAXIMUM CONDITIONS WILL GOVERN.
2. ACCURATE DIMENSIONS FOR THE WORK MUST BE OBTAINED FROM ACTUAL MEASUREMENT ON SITE.
3. VERIFY ALL CONDITIONS AND DIMENSIONS, INCLUDING LOCATIONS OF EXISTING CAPPED SERVICES, AND ALLOW FOR ANY REROUTING OF EXISTING AND/OR NEW SERVICES AND EQUIPMENT IN TENDER PRICE. FAILURE TO DO SO SHALL NOT RELIEVE THE CONTRACTOR FROM RESPONSIBILITY.
4. REPORT TO THE CONSULTANT ALL AMBIGUITIES (INCLUDING CONSTRUCTION STAGES), DISCREPANCIES, OMISSIONS, ERRORS, DEPARTURES FROM BUILDING BYLAWS AND/OR FROM GOOD PRACTICE PRIOR TO TENDER CLOSING.
5. PROVIDE ALL WORK IN ACCORDANCE WITH THE REQUIREMENTS OF ALL GOVERNING AUTHORITIES, AND LOCAL BY-LAWS.
6. APPLY FOR, OBTAIN AND PAY FOR ALL PERMITS, EXCEPT FOR BUILDING PERMIT, AND INSPECTIONS REQUIRED PRIOR TO COMMENCEMENT OF CONSTRUCTION INCLUDING PROVINCIAL AND FEDERAL SALES TAXES.
7. ALL WORK SHALL BE DONE IN ACCORDANCE WITH THE APPROVED SCHEDULE TO MEET THE PROJECT COMPLETION DATE AND ALL SPECIFIED INTERIM SCHEDULES AS PROVIDED BY THE OWNER.
8. COMPLY WITH OWNER'S OVERALL CONSTRUCTION SCHEDULE.
9. MAKE GOOD ALL DAMAGES OR AFFECTED AREA TO ADJACENT WORK. PROVIDE ALL CUTTING, PATCHING, FLASHING WORK AND CLEANUP OF FLOORS, WALLS, CEILINGS, WINDOWS, DOORS, ETC.
10. PROVIDE PROPER SHOP DRAWINGS OF ALL SPECIFIED PRODUCTS AND SUBMIT FOR APPROVAL TO THE CONSULTANT.
11. DURING PROGRESS OF WORK, SUBSTITUTE PRODUCTS WILL ONLY BE CONSIDERED WHEN TENDERED PRODUCTS BECOME UNOBTAINABLE AND WRITTEN PROOF IS SUBMITTED.
12. THE QUALITY AND PERFORMANCE CHARACTERISTICS OF SUBSTITUTE PRODUCTS SHALL BE EQUAL TO THE SPECIFIED PRODUCTS. IMPLEMENTATION OF SUBSTITUTE PRODUCTS IS SUBJECT TO THE REVIEW OF PROPERLY SUBMITTED SHOP DRAWINGS TO THE CONSULTANT.
13. ASSUME RESPONSIBILITY AND PAY FOR ANY ADDITIONAL INSTALLATION COSTS INCURRED BY ALL DIVISIONS RESULTING FROM THE ALTERNATES AND/OR SUBSTITUTIONS. MAKE REVISIONS TO RECORD DRAWINGS INCORPORATING ALL ALTERNATES AND/OR SUBSTITUTIONS AND ALL RELATED CHANGES.
14. CONFER WITH ALL TRADES INSTALLING EQUIPMENT WHICH MAY AFFECT THE CONSTRUCTION WORK AND ARRANGE THE WORK IN PROPER RELATION WITH EQUIPMENT INSTALLED UNDER ALL DIVISIONS OF THE CONTRACT.
15. INSTALL ALL MATERIAL IN THE BEST WORKMANLIKE MANNER AND IN ACCORDANCE WITH THE BEST PRACTICES OF THE TRADE.
16. REUSE EXISTING MATERIALS AND/OR EQUIPMENT ONLY WITH WRITTEN PERMISSION FROM THE CONSULTANT. ALL EQUIPMENT, MATERIALS AND ASSOCIATED CONTROLS NOT USED IN THIS CONTRACT SHALL BE PROPERLY DISPOSED OF OFF SITE AS DIRECTED BY OWNER OR CONSULTANT.
17. UNDER NO CIRCUMSTANCES SHALL THE CONSTRUCTION WORK INTERFERE WITH OWNER'S OPERATION SCHEDULE.
18. ALL THE EQUIPMENT/ITEMS TO BE USED ON THIS PROJECT SHALL BE NEW.

ABBREVIATION:

F.F.L	FINISHED FLOOR LEVEL
U/S	UNDER SIDE
B/F	BARRIER FREE
/W	WITH...
C/W	COMPLETE WITH...
CBW	CONCRETE BLOCK WALL
CMU	CONCRETE MASONRY UNIT
G.W.B.	GYPSUM BOARD
T/O	TOP OF...
N.I.C	NOT IN CONTRACT
R/O	ROUGH OPENING
H.M.	HOLLOW METAL
EX.	EXISTING
MTL	METAL
ALUM.	ALUMINUM
S.S.	STAINLESS STEEL
STL.	STEEL

2 / A01 SITE PLAN - EXISTING 2ND FLOOR PLAN
Scale: 1:200

WALL TYPE

(EW1) 140mm EXISTING WALL W/ CONC. BLOCK

140mm CONCRETE MASONRY UNIT (CMU), PAINTED; (CONTRACTOR SHALL VERIFY ON SITE.)

(EP1) 184mm EXISTING INTERIOR DRYWALL

16mm GYPSUM BOARD TO TH U/S OF DECK, PAINTED
152mm STEEL STUD TO U/S OF DECK
16mm GYPSUM BOARD TO TH U/S OF DECK, PAINTED
(CONTRACTOR SHALL VERIFY ON SITE.)

(EP2) 168mm EXISTING INTERIOR DRYWALL

16mm GYPSUM BOARD TO TH U/S OF DECK, PAINTED
152mm STEEL STUD TO U/S OF DECK
(CONTRACTOR SHALL VERIFY ON SITE.)

(W1) FULL HIGH METAL STUD INSULATED PARTITION

20 GAUGE, 102mm METAL STUD AT 400mm C/C, 16mm G.W.B ON BOTH SIDES. C/W HEADER TRACK AND VERT. STUD FRAMES ON DOOR OPENING AS REQ'D. PROVIDE METAL STUDS ANCHORED TO EX. CONCRETE BLOCK WALL AND CONCRETE FLOOR. EXTEND NEW METAL STUD FRAME TO THE U/S OF ABOVE ROOF DECK AND SECURELY FASTENED ON ROOF DECK. PROVIDE 19mm THK PLYWOOD BLOCKING BEHIND BACKER BOARD, BETWEEN EACH STUD FOR WASHROOM ACCESSORIES INSTALLATION.

3 / A01 WALL TYPES
Scale: N.T.S

LIST OF DRAWINGS FOR RISING HILL RIDGE

DRAWING NO.	TITLE	DRAWING NO.	TITLE	DRAWING NO.	TITLE
A01	KEY PLAN, SITE PLAN AND GENERAL NOTES AND WALL TYPE	E01	ELECTRICAL KEY PLAN, SITE PLAN AND GENERAL NOTES, WALL TYPES & DETAIL	M01	KEY PLAN, SITE PLAN, GENERAL NOTES AND DEMOLITION PLAN
A02	DEMOLITION PART OF EXISTING FLOOR PLAN & RCP, NOTES & PHOTOS EXISTING CONDITION	E02	ELECTRICAL SECOND FLOOR POWER DISTRIBUTION PLAN, SCHEDULE AND DETAIL	M02	WASHROOM & SHOWER PLAN PLUMBING DEMOLITION PLAN AND PLUMBING PLAN
A03	WASHROOM & SHOWER PLAN, DETAILS AND ACCESSORIES	E03	ELECTRICAL LIGHTING, POWER AND COMMUNICATIONS DEMOLITION PLAN	M03	NEUTRAL WASHROOM & SHOWER PLAN DRAINAGE EXISTING PLAN AND DRAINAGE PLAN
A04	WASHROOM & SHOWER RCP, DOOR SCHEDULE ND ROOM FINISH SCHEDULE	E04	ELECTRICAL LIGHTING, POWER AND COMMUNICATIONS PLAN	M04	WASHROOM & SHOWER PLAN HVAC PLAN AND FIRE PROTECTION PLAN

ONTARIO ASSOCIATION OF ARCHITECTS
LICENCE 6531
July 21, 2023

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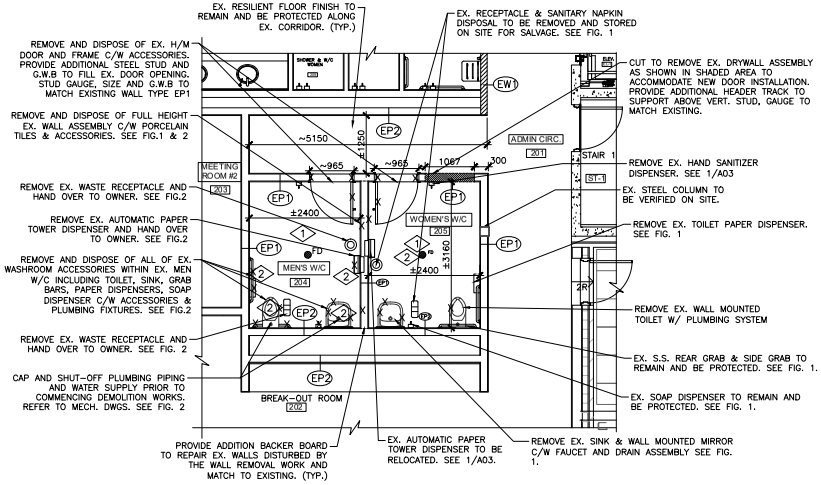
PROJECT TITLE AND ADDRESS
GENDER NEUTRAL CHANGEROOM AT TOMKEN AND RISING HILL
25 RISING HILL RIDGE, BRAMPTON, ONTARIO

DRAWING TITLE
KEY PLAN, SITE PLAN, GENERAL NOTES AND WALL TYPE

TRUE NORTH | CONSTRUCTION NORTH

DRAWN BY: B.L.	CHECKED BY: C.M.
SCALE: AS SHOWN	DATE: 30/05/2022
CONSULTANT PROJECT NUMBER: 6542	REGION OF PEEL PROJECT NUMBER: 23602
PURCHASING DOCUMENT NUMBER:	DRAWING NUMBER: A01

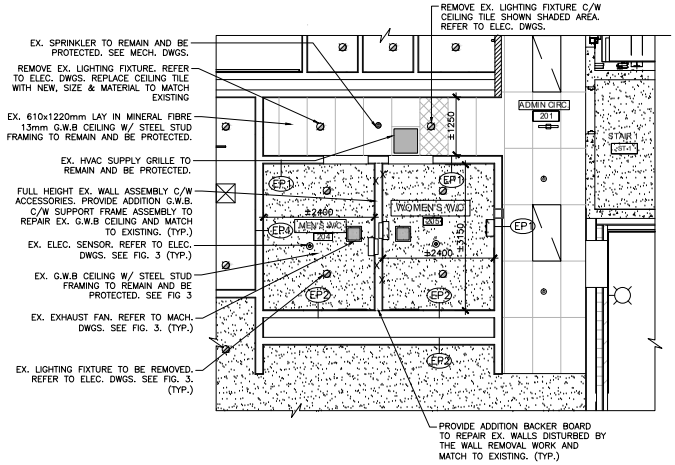


1 / A01 PART PLAN - EXISTING WASHROOM DEMOLITION PLAN
Scale: 1:25

DEMOLITION NOTES:

1. DEMOLISH EX. FLOOR TILES C/W COVE BASE & MORTAR BED ALONG EX. MEN'S AND WOMEN'S WASHROOMS TO EXPOSE EXISTING CONC. SLAB FLOOR FINISH. CLEAN/PATCH/REPAIR/DAMAGED EX. CONC. SLAB SURFACE TO PREPARE SURFACE OF EX. SLAB FOR NEW FLOOR PORCELAIN TILE INSTALLATIONS AS REQUIRED.

2. PATCH/REPAIR/FILL EXISTING SCREW HOLES AND DAMAGES IN WALL BY THE MOUNTING FIXTURES REMOVAL WORKS W/ TILEFIX TILEE AND STONE REPAIR KIT BY CALFLOR OR EQUAL. COLOUR TO MATCH EXISTING TILES. REFER TO MANUFACTURER'S INSTALLATION INSTRUCTIONS.



NOTE:

EX. CEILING FINISH HEIGHT ±2450mm A.F.F. CONTRACTOR TO CONFIRM ON SITE.

2 / A02 PART PLAN - EXISTING WASHROOM RCP DEMOLITION
Scale: 1:25

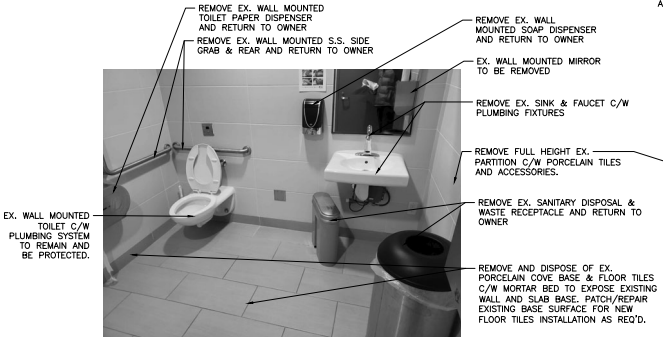


FIG. 1. EX. WOMEN'S W/C OUTLINE

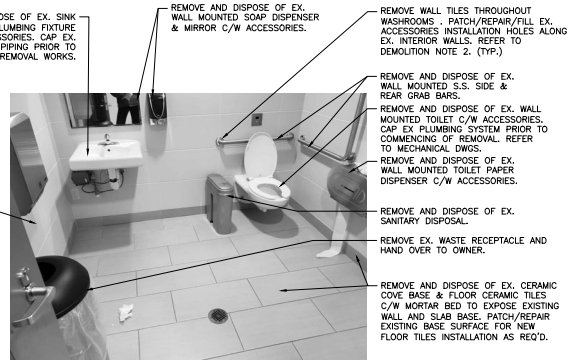


FIG. 2. EX. MEN'S W/C OUTLINE

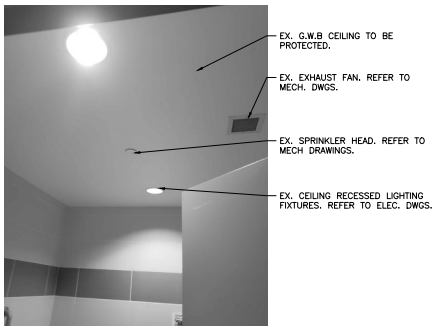


FIG. 3. EX. WOMEN'S W/C CEILING OUTLINE

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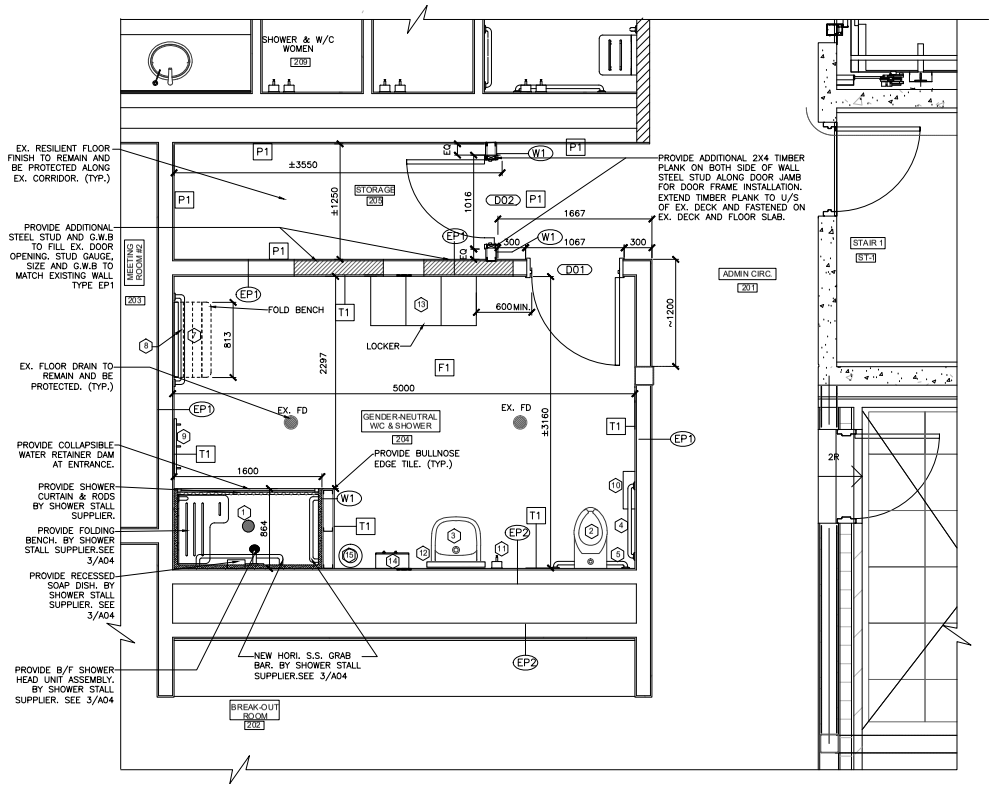
PROJECT TITLE AND ADDRESS
GENDER NEUTRAL CHANGEROOM AT TOMKEN AND RISING HILL
25 RISING HILL RIDGE, BRAMPTON, ONTARIO

DRAWING TITLE
DEMOLITION - PART OF EXISTING FLOOR PLAN & RCP, NOTES & PHOTOS - EXISTING CONDITION

TRUE NORTH | CONSTRUCTION NORTH

DRAWN BY	CHECKED BY
B.L.	C.M.
SCALE	DATE
AS SHOWN	30/05/2022
CONSULTANT PROJECT NUMBER	REGIONOFPEEL PROJECT NUMBER
6542	23602
PURCHASING DOCUMENT NUMBER	DRAWING NUMBER
	A02



1 / W1.A01 PART PLAN - GENDER-NEUTRAL W/C & SHOWER PLAN
Scale: 1:25

WASHROOM ACCESSORIES

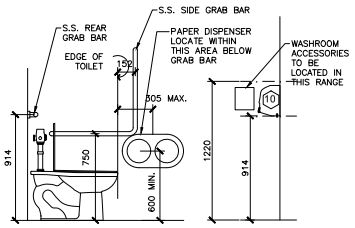
NO.	DESCRIPTION
1	NEW B/F 63"x34" FREEDOM ADA ROLL IN SHOWER, LIFT. C/W ACCESSORIES. REFER TO SPECIFICATIONS AND NOTES BELOW.
2	NEW B/F TOILET. REFER TO MECH. DRAWINGS.
3	SINK C/W FAUCET. REFER TO MECH. DRAWINGS.
4	STAINLESS STEEL GRAB BAR. REFER TO SPECIFICATIONS
5	STAINLESS STEEL GRAB BAR. REFER TO SPECIFICATIONS
6	NOT USED
7	FOLD BENCH: 813x343mm (32"x13-1/2") PHENOLIC FOLDING BENCH. REFER TO SPECIFICATIONS.
8	36"x1.5"ø STAINLESS STEEL GRAB BAR C/W PEENED GRIP.
9	FROST COLLASIBLE COAT HOOK STRIP-WHITE, S.S.; MFR# 1150-3.
10	TOILET PAPER DISPENSER: SURFACE-MOUNTED TWIN JUMBO-ROLL TOILET TISSUE DISPENSER. REFER TO SPECIFICATIONS.
11	SOAP DISPENSER: SURFACE MOUNTED SOAP DISPENSER. REFER TO SPECIFICATIONS.
12	WALL MOUNTED TILT MIRROR. REFER TO SPECIFICATIONS.
13	NEW SINGLE TIER METAL LOCKER, 15"(W)x21"(D)x72"(H) FOR EACH TIER LOCKER, HEAVY DUTY DOORS: 16 GAUGE OUTER PANEL/20 GAUGE INNER PANEL C/W PADLOCK PREPARATION. COLOUR BY OWNER, SUBMIT COLOUR CHART FOR OWNER SELECTION, BY HADRIAN OR APPROVED EQ.
14	PAPER TOWEL DISPENSER: REFER TO SPECIFICATIONS
15	WASTE BIN. REFER TO SPECIFICATIONS.

NOTES FOR ROLL-IN SHOWER STALL

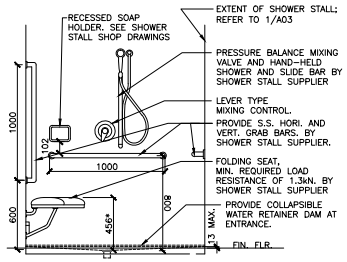
THE SHOWER ENCLOSURE SHALL BE MODEL APF 6333 BF RIGHT BY FREEDOM SHOWERS. FINISHED SURFACE SHALL BE OF AN APPLIED ACRYLIC. THE BASE SHALL BE ATTACHED TO THE SUMP OF THE UNIT IN SUCH A MANNER TO FORM AN INTEGRAL PART WITH AN INNER AND OUTER COATING OF POLYESTER RESIN AND THE BASE SHALL BE TEXTURED NON-SLIP FLOOR. THE UNIT SHALL HAVE OUTSIDE DIMENSIONS OF 63" X 34" X 78 7/8". THE UNIT MEETS IAPMO Z124.1.2, CSA B45.5, HUD-UM73, ADA, ANSI A117.1, AND HOME INNOVATION RESEARCH LAB. REFER TO SUPPLIER'S INSTALLATION SPECIFICATION FOR MORE REQUIREMENTS.

THIS ENCLOSURE SHALL BE EQUIPPED WITH THE FOLLOWING INSTALLED ACCESSORIES:

1) ONE 36" X 1 1/2" DIAMETER STAINLESS STEEL HORIZONTAL GRAB BAR ON THE BACK WALL,
2) ONE 22" X 1 1/2" DIAMETER STAINLESS STEEL HORIZONTAL GRAB BAR OPPOSITE THE SEAT, BOTH WITH 1 1/2" STATUTE CLEARANCE, MOUNTED WITH STAINLESS STEEL BOLTS, AND SECURED FROM THE REAR WITH 3" X 3" X 11 GAUGE METAL MOUNTING PLATES,
3) 26" X 21" FRAMELESS WHITE HDPE FOLD UP SEAT,
4) ONE INCH DIAMETER STAINLESS STEEL CURTAIN ROD WITH RECEIVER CUPS,
5) MOLDED SOAP LEDGES,
6) TILE FINISH,
7) DIAMOND ACCENTS
8) FULL WALL REINFORCED BACKING ON ALL WALLS,
9) ARMOR CORE EASY BASE,
10) COLLAPSIBLE WATER RETAINER DAM..
11) VALVE PACKAGE,
12) RECESSED SOAP DISH,
13) VERTICAL GRAB BAR AS SHOWN ON PLAN,
14) GREEN ANTI-BACTERIAL SHOWER CURTAIN AND HOOKS.



2 / A03 TYP. WASHROOM ACCESSORIES INSTALLATION DETAIL
Scale: 1:20



*DIMENSION ABOVE SLIP-RESISTANT SHOWER FLOOR.
PROVIDE WEIGHTED CURTAIN AND CURTAIN ROD, CAULKLESS DRAIN.

1 / A03 TYP. SHOWER ACCESSORIES INSTALLATION DETAIL
Scale: 1:20

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PROJECT TITLE AND ADDRESS
GENDER NEUTRAL CHANGEROOM AT TOMKEN AND RISING HILL
25 RISING HILL RIDGE, BRAMPTON, ONTARIO

DRAWING TITLE
WASHROOM & SHOWER PLAN, DETAILS AND ACCESSORIES

TRUE NORTH | CONSTRUCTION NORTH

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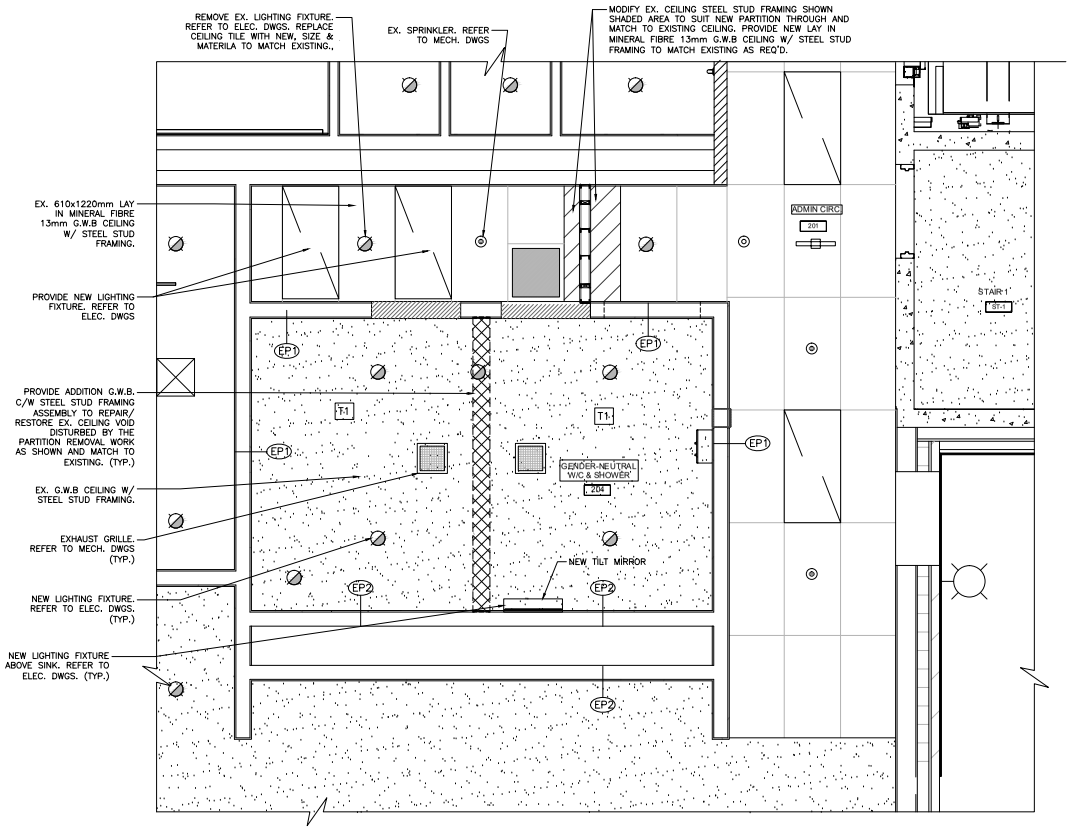
PURCHASING DOCUMENT NUMBER:	DRAWING NUMBER: A03



NOTE:

EX. CEILING FINISH HEIGHT ±2450mm A.F.F. CONTRACTOR TO CONFIRM ON SITE.

1 / A04 PART PLAN - GENDER-NEUTRAL W/C & SHOWER RCP
Scale: 1:25

INTERIOR ROOM FINISH SCHEDULE

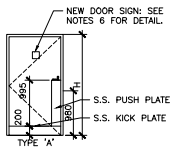
DESCRIPTION		FINISH	COLOUR	COMMENTS
F1	FLOOR	NEW EPOXY NON-SLIP FLOORING.	SEE COMMENTS	PROVIDE 8" HIGH EPOXY COVE. REFER TO SPECIFICATIONS. SUBMIT COLOR SAMPLE FOR AGENCY REVIEW AND COMMENYT PRIOR TO CONSTRUCTION
P1	WALLS & G.W.B CEILING	EX. G.W.B PARTITION & G.W.B CEILING. NEW PAINT: 1 COAT PRIMER & 2 COATS FINISH LATEX PAINT.	TO MATCH EXISTING WALL TILE	CLEAN/REPAIR/PATCH/CAULK EXISTING CONC. WALL & G.W.B CEILING SURFACES TO RECEIVE NEW PAINT. REFER TO SPECIFICATIONS.
T1	WALLS	NEW CERAMIC WALL TILE 4"x16". SIZE AND COLOUR TO MATCH EXISTING (CT-1/CT-2/CT-3).	SEE COMMENTS	4"x16" WALL TILE INSTALLATION FULL HEIGHT OF ROOM. THE SIZE AND COLOUR SHALL MATCH EXISTING MEN'S AND WOMEN'S WASHROOM WALL TILE FINISHES. PROVIDE COVE TILE TO MATCH. REFER TO SPECIFICATIONS FOR CT-1/CT-2/CT-3). SUBMIT PRODUCT DATA SHEET & COLOUR SAMPLE SHOP DRAWINGS FOR OWNER REVIEW AND APPROVAL PRIOR TO ORDERING PRODUCT. SEE FIG.1, 2 & 3 FOR EXISTING CONDITION.
STORAGE ROOM 205	FLOOR	NEW TILE FLOORING.		MATCH TO 'F1' TILE FLOORING.
	CEILING	EXISTING LAY IN MINERAL FIBRE G.W.B CEILING PANEL SYSTEM	TO MATCH EXISTING	MODIFY & REPLACE EXISTING G.W.B PANEL AS SHOWN ON 1/A04
	WALLS	PROVIDE NEW PAINT FOR EXISTING PARTITION WALL SURFACES		MATCH 'P1' PAINT FINISH REQUIREMENT.
GENDER-NEUTRAL WASHROOM 204	FLOOR	NEW FLOORING.	SEE SPECS	MATCH 'F1' FLOORING.
	TOILET	PROVIDE NEW WASHROOM ACCESSORIES AS SHOWN		WASHROOM ACCESSORIES: REFER TO SPECIFICATIONS
	CEILING	REPAIR / RESTORE EX. G.W.B CEILING SYSTEM. PROVIDE NEW PAINT.	WHITE	MATCH 'P1' PAINT FINISH & REFER TO DWGS. FOR REQUIREMENTS.
	WALLS	PROVIDE NEW CERAMIC WALL TILE.	COLOUR & TO MATCH EXISTING	MATCH T1 WALL CERAMIC TILE. FULL HEIGHT OF ROOM

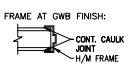
DOOR SCHEDULE

TAG	DOOR																		FRAME						HARDWARE					REMARKS
	SIZE						MATERIAL						FINISHES						MATERIAL			FINISH								
DOOR NUMBER	DOOR TO BE REPLACED	DOOR TO REMAIN	NEW DOOR	TYPE	DOOR WIDTH	DOOR HEIGHT	DOOR THICKNESS	SINGLE/PAIR	FIRE RATING (HOURS)	SOLID WOOD	GALVANIZED STEEL	HOLLOW METAL	THERMALLY INSULATED	LITE	GALVANIZED STEEL	PAINT	STAIN	ALUMINUM THRESHOLD	GALVANIZED STEEL	HOLLOW METAL	THERMALLY INSULATED	PAINT	STAIN	JAMB TYPE	PAIRS OF HINGES REQ'D	CLOSER & DOOR STOP	EXIT DEVICE	LOCKSET REQUIRED	DOOR OPENER REQUIRED	
D01			•	A	±1098	±2150	45	S				•				•				•		•		A	2	•		•		PROVIDE REDUCER AT FLOORING TRANSITION
D02			•	A	±914	±2150	45	S				•				•				•		•		A	2	•		•		

DOOR NOTES:

1. PROVIDE NEW HARDWARE AND ACCESSORIES FOR DOOR D01 & D02, AS SPECIFIED. MORTISE LOCKS; PRIVACY SET, STAINLESS STEEL FINISH, HEAVY DUTY GRADE 1, SCHLAGE 'J' SERIES 'MARIN' STYLE LEVER OR EQ; DOOR STOP TO BE BALDWIN 4100 OR EQ. DOOR CLOSER: HEAVY DUTY; PARALLEL ARM (FULL SIDE) LCN MODEL 4040XP; PA SHOE-4040-62A.
3. NEW HOLLOW METAL DOOR AND FRAME TO BE 16 GA., FULL MORTISE HINGE: TWO (2) PAIR HEAVY DUTY BEARING HINGES; MCKINNEY MODEL T4 NRP, COMPLETE WITH NON-REMOVEABLE PIN, SATIN STAINLESS STEEL FINISH 630, CONTINUOUSLY WELDED EDGE, FINISHED WITH TWO COATS OF PAINT, COLOUR TO MATCH EXISTING BASE BUILDING SECOND FLOOR DOORS COLOUR OR BY THE OWNER.
4. DOOR PROTECTION PLATES: 200 X 850 (KICK)mm + 200x995(PUSH)mm KICK PLATE, 1.27 MM THICK, SS#4 FINISH.
5. DOOR LOCK/KEY/CYCLINDER HARDWARE SHOULD BE KEYED TO OWNER STANDARD (MEDECO). COORDINATE WITH OWNER AS REQ'D.
6. DOOR SIGNAGE:
   PROVIDE SIGNS ON DOOR D01 – 6"X9"X1/8" BRAILLE SIGN "ALL GENDER RESTROOM" WITH GRAPHIC AND INTERNATIONAL ALL GENDER SYMBOL; REFER TO FIG. 4 AND ALUM. 8"x8"x1/8" BRAILLE SIGN "SHOWER" WITH GRAPHIC AND INTERNATIONAL ALL GENDER SYMBOL; REFER TO FIG. 5.
7. THE DOORS DIMENSIONS SHOWN ON DRAWINGS & SCHEDULE ARE APPROXIMATE. CONTRACTOR TO BE CONFIRMED ALL DOOR DIMENSIONS ON SITE PRIOR TO ORDERING / INSTALLATION OF NEW DOOR.





JAMB DETAIL 'A'

FIG. 4.

FIG. 5.

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25 RISING HILL RIDGE, BRAMPTON, ONTARIO

DRAWING TITLE
WASHROOM & SHOWER RCP, DOOR SCHEDULE AND ROOM FINISH SCHEDULE

TRUE NORTH | CONSTRUCTION NORTH

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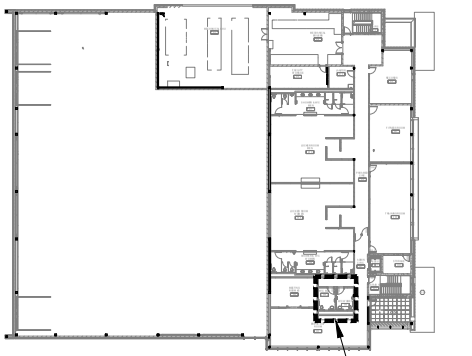
CONSULTANT PROJECT NUMBER: 6542	REGION OF PEEL PROJECT NUMBER: 23602
PURCHASING DOCUMENT NUMBER:	DRAWING NUMBER: A04



1 / M01 KEY PLAN GROUND FLOOR
Scale: N.T.S

DRAWING LIST	
M01	KEY PLAN, GENERAL NOTES, SCHEDULE, LEGEND AND SYMBOLS
M02	PLUMBING DEMOLITION PLAN AND PLUMBING PLAN
M03	DRAINAGE EXISTING PLAN AND DRAINAGE PLAN
M04	HVAC PLAN AND FIRE PROTECTION PLAN

GENERAL NOTES:

1. THE DESIGN DOCUMENTS HAVE BEEN PREPARED ON THE BASIS OF INFORMATION OBTAINED FROM THE GENERAL SITE REVIEW AND FROM THE EXISTING DOCUMENTS. MAKE NECESSARY ADJUSTMENTS TO LOCATIONS OF EQUIPMENT, DUCTWORK, ETC. TO SUIT EXISTING SITE CONDITIONS. MAKE ALLOWANCES FOR ADDITIONAL ELBOWS, FITTINGS, SUPPORTS, ETC. REQUIRED TO PROVIDE OFFSETS IN THE PIPING, ETC. TO SUIT EXISTING SITE CONDITIONS. NO EXTRAS WILL BE ALLOWED FOR THE INTENDED SCOPE OF WORK SHOWN IN THE TENDER DOCUMENTS.
2. PRIOR TO COMMENCING OF WORK, THOROUGHLY REVIEW AND VERIFY AT SITE SIZES AND ROUTINGS OF THE EXISTING CONTROLS AND ELECTRICAL POWER SUPPLY, AND ENSURE THAT THE NEW EQUIPMENT/COMPONENTS CAN BE INSTALLED TO PROVIDE A FULLY FUNCTIONAL SYSTEM. OBTAIN APPROVALS FROM THE CONSULTANTS OF DEFICIENCIES AFFECTING INTENDED EXECUTION OF WORK.
3. ADEQUATELY SUPPORT ALL EQUIPMENT AND PIPING.
4. PROVIDE INSTALLATION VERIFICATION REPORT FROM MANUFACTURER/SUPPLIER.
5. ALLOW FOR ALL CUTTING/PATCHING/PAINTING AS REQUIRED TO FACILITATE THE WORK.
6. PRIOR TO DEMOLITION OF ANY ELECTRICALLY OPERATED MECHANICAL EQUIPMENT, DECOMMISSION THE EQUIPMENT BY REMOVING THE POWER SAFELY. SEE MORE ON ELECTRICAL DRAWINGS.
7. ALL EXISTING MECHANICAL EQUIPMENT SHALL REMAIN AT THEIR ORIGINAL LOCATION UNLESS NOTED OTHERWISE IN DRAWINGS/ SPECIFICATIONS.
8. CONTRACTOR SHALL VERIFY ALL SITE CONDITIONS PRIOR TO COMMENCEMENT OF WORK AND OUTLINE ANY DEFICIENCIES TO THE CONSULTANT.
9. DRAWINGS SHALL NOT BE SCALED.

PLUMBING NOTES:

1. MATERIALS AND WORK SHALL BE OF BEST QUALITY CONFORMING TO RULES AND REGULATIONS OF THE LATEST ONTARIO PLUMBING CODE REGULATION 815.
2. TYPE 'L' HARD COPPER PIPES ARE TO BE USED FOR HOT AND COLD WATER DISTRIBUTION ABOVE GROUND.
3. SUPPLY AND INSTALL 13MM ø DRAIN VALVE WITH HOSE CONNECTORS AT BASE OF ALL HOT AND COLD WATER RISERS, ALL LOW POINTS, ALL CONNECTIONS TO EQUIPMENT AND AS INDICATED ON DRAWINGS.
4. ALL DRAIN VALVES TO BE INSTALLED ARE MANUFACTURED BY 'WATTS', MODEL: B-6001 OR AS APPROVED EQUAL.
5. ALL VALVES SHALL BE SUITABLE FOR 200 PSI WATER WORKING PRESSURE AND UP TO INCLUDING 63MM SIZE, SHALL BE ALL BRASS.
6. ALL VALVES , PIPES AND FITTINGS SHALL BE OF BEST QUALITY CONFORMING TO RULES AND REGULATIONS OF CANADIAN STANDARDS ASSOCIATION AND ANY OTHER BOARD, SERVICE COMPANY OR AUTHORITIES HAVING JURISDICTION.
7. SUPPLY AND INSTALL 13MM THICK INSULATION TO ALL HOT WATER PIPES ABOVE GRADE.
8. PVC OR ABS FITTINGS AND SOLVENT CEMENT USED ABOVE OR BELOW GRADE, INSIDE OR OUTSIDE OF BUILDING FOR SEWAGE DRAINAGE SYSTEM SHALL BE IN COMPLIANCE WITH THE LATEST ONTARIO PLUMBING CODE REGULATION.
9. ALL SOLDER/BRAZING: TO CONTAIN LESS THAN 0.2% LEAD AND TO SUIT APPLICATION.
10. PROVIDE 2% MINIMUM SLOPE ON ALL DRAINAGE PIPING BELOW GRADE.
11. BRANCH VENTS SHALL BE PVC OR ABS WITH STANDARD FITTINGS.
12. KEEP PLUMBING PIPES 1.00 M AWAY FROM ELECTRICAL PANEL.

LEGEND:

×××	EXISTING TO BE REMOVED
———	PROPOSED EQUIPMENT/PIPING
CTE	CONNECT TO EXISTING
C/W	COMPLETE WITH...
W/	WITH...
A/D	ACCESS DOOR
BD	BALANCING DAMPER
B/F	BARRIER FREE
CO	CLEAN OUT
DN	DOWN
EX.	EXISTING
FD	FLOOR DRAIN
LAV	LAVATORY
SH	SHOWER
WC	WATER CLOSET
◉	SPRINKLER HEAD

ISSUES AND REVISIONS

No.	ISSUE OR REVISION TO DRAWING	DATE	BY
1	ISSUED FOR 100% DESIGN REVIEW	01/DEC/2021	M.L.
2	ISSUED FOR TENDER	01/SEP/2022	M.L.

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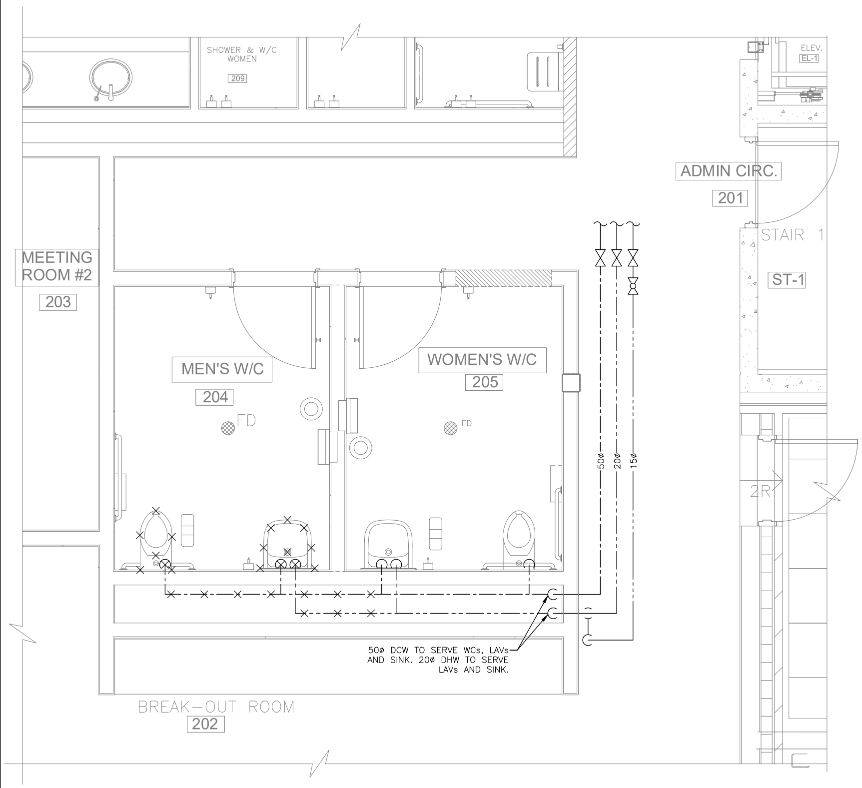
PROJECT TITLE AND ADDRESS
GENDER NEUTRAL CHANGEROOM AT TOMKEN AND RISING HILL
25 RISING HILL RIDGE, BRAMPTON ONTARIO

DRAWING TITLE
KEY PLAN, SITE PLAN, GENERAL NOTES AND DEMOLITION PLAN

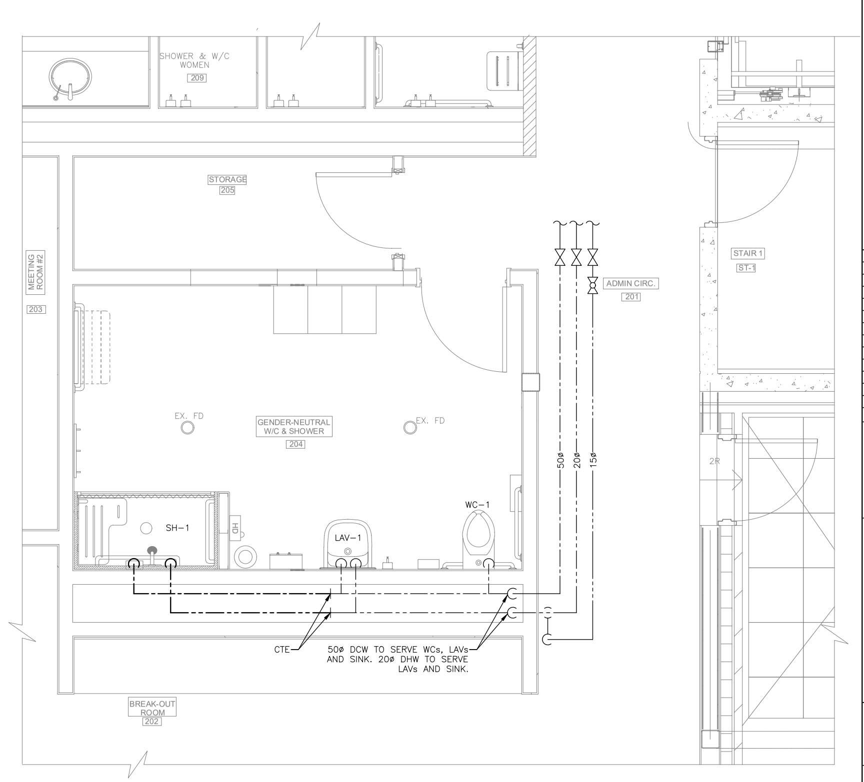
TRUE NORTH

STAMP
M. LIMBRY
JULY 20 2022
6543

DRAWN BY	CHECKED BY
V.L.	M.L.
SCALE	DATE
AS SHOWN	30/05/2022
CONSULTANT PROJECT NUMBER	REGION OF PEEL PROJECT NUMBER
6542	23602
PURCHASING DOCUMENT NUMBER	DRAWING NUMBER
	M01



1 M02 WASHROOM PLUMBING PLAN - DEMOLITION
Scale: N.T.S



PLUMBING FIXTURE MIN PIPE SIZES			
FIXTURE ID	MIN CW PIPE ø	MIN HW PIPE ø	MIN DRAIN PIPE ø
SH	20ø	20ø	75ø
FD	–	–	75ø

2 M02 WASHROOM PLUMBING PLAN - PROPOSED
Scale: N.T.S

ISSUES AND REVISIONS

No.	ISSUE OR REVISION TO DRAWING	DATE	BY
1	ISSUED FOR 100% DESIGN REVIEW	01/06/2023	M.L.
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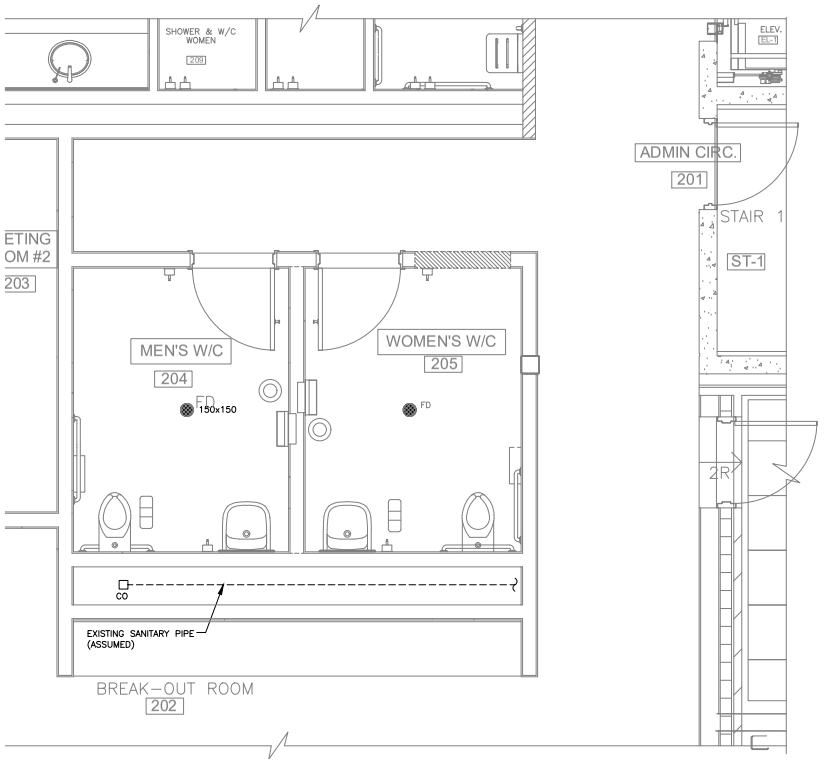
PROJECT TITLE AND ADDRESS
GENDER NEUTRAL CHANGEROOM AT TOMKEN AND RISING HILL
25 RISING HILL RIDGE, BRAMPTON ONTARIO

DRAWING TITLE
WASHROOM & SHOWER PLAN
PLUMBING DEMOLITION PLAN AND
PLUMBING PLAN

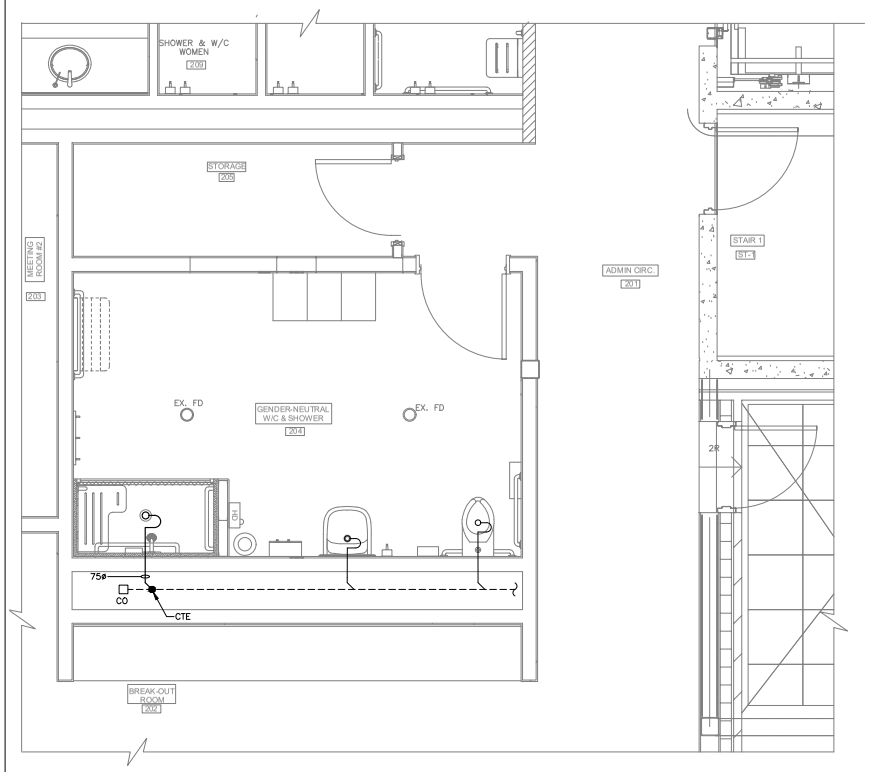
TRUE NORTH

STAMP

DRAWN BY: V.L.
CHECKED BY: M.L.
SCALE: AS SHOWN
DATE: 30/05/2022
CONSULTANT PROJECT NUMBER: 6542
REGION OF PEEL PROJECT NUMBER: 23602
PURCHASING DOCUMENT NUMBER:
DRAWING NUMBER: M02



1 M03 WASHROOM EXISTING DRAINAGE PLAN
Scale: 1:25



2 M03 WASHROOM DRAINAGE PLAN
Scale: 1:25

GENERAL NOTES

1. LOCATION OF BURIED PIPES IS ASSUMED. CONTRACTOR SHALL FIELD VERIFY EXACT LOCATION OF SANITARY LAYOUT VIA CCTV SCANNING PRIOR TO INSTALLATION OF NEW SANITARY PIPING. EXCAVATE FLOOR AS NECESSARY & PATCH/PAINT AS REQUIRED.
2. REFER TO PLUMBING FIXTURE SCHEDULE FOR SANITARY BRANCH SIZES SERVING PLUMBING FIXTURES.
3. PROVIDE NEW SANITARY PIPING FOR PROPOSED FIXTURE UP TO EXISTING MAIN PIPING.

PLUMBING FIXTURE MIN PIPE SIZES			
FIXTURE ID	MIN CW PIPE ø	MIN HW PIPE ø	MIN DRAIN PIPE ø
SH	20ø	20ø	75ø
FD	–	–	75ø

ISSUES AND REVISIONS

No.	ISSUE OR REVISION TO DRAWING	DATE	BY
1	ISSUED FOR 100% DESIGN REVIEW	01/08/2022	M.L.
2	ISSUED FOR TENDER	21/12/2022	M.L.

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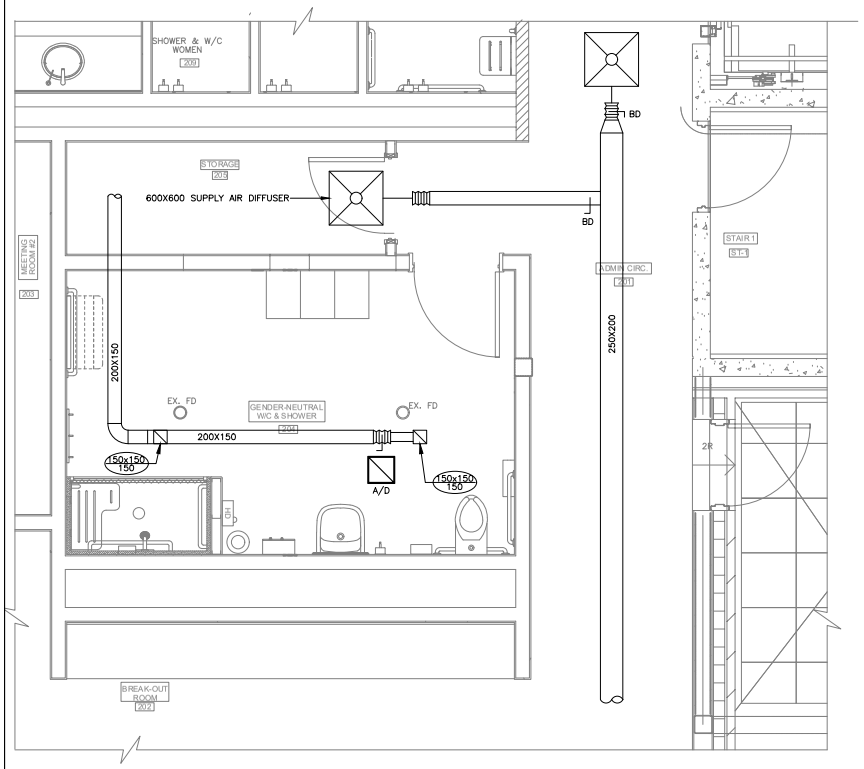
PROJECT TITLE AND ADDRESS
GENDER NEUTRAL CHANGEROOM AT TOMKEN AND RISING HILL
25 RISING HILL RIDGE, BRAMPTON ONTARIO

DRAWING TITLE
NEUTRAL WASHROOM & SHOWER PLAN
DRAINAGE EXISTING PLAN AND
DRAINAGE PLAN

TRUE NORTH

STAMP
M. LAKHANI
DEC 20 2022
6543

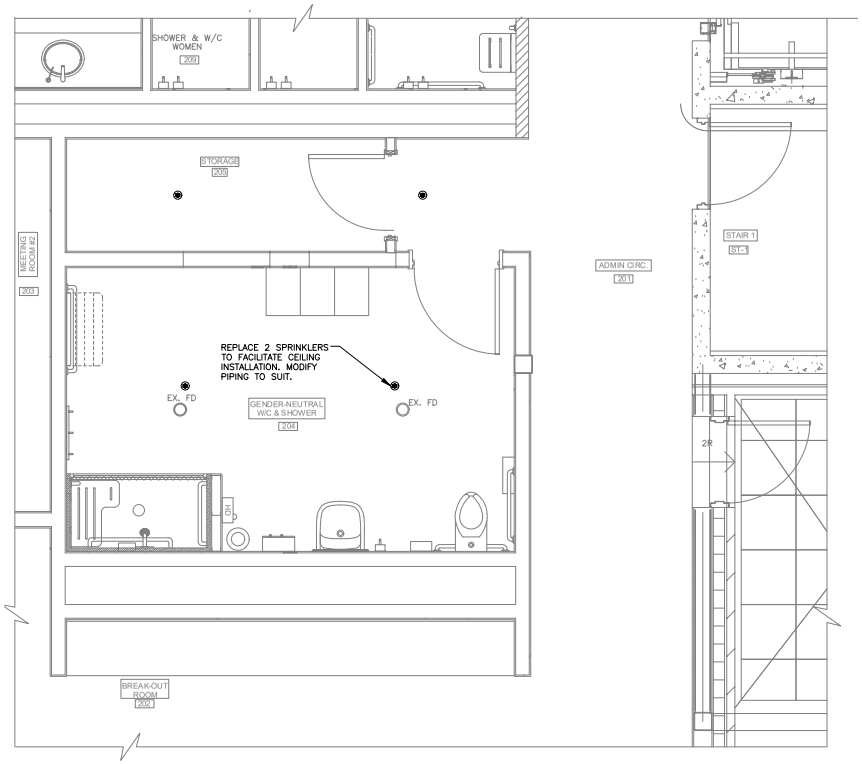
DRAWN BY	CHECKED BY
V.L.	M.L.
SCALE: AS SHOWN	DATE: 30/05/2022
CONSULTANT PROJECT NUMBER: 6542	REGION OF PEEL PROJECT NUMBER: 23602
PURCHASING DOCUMENT NUMBER:	DRAWING NUMBER: M03



GENERAL NOTES

1. CONTRACTOR SHALL ALLOW FOR AIR BALANCING OF THE PROPOSED SYSTEM AS SHOWN.
2. SEAL ALL WALL PENETRATIONS AND PROVIDE APPROVED FIRE STOPPING MATERIALS.
3. PROVIDE ON 300MM X 300MM ACCESS DOOR OF PAINTED STEEL MATERIALS AT EACH BALANCING DAMPER.
4. AT ALL CEILING GRILLE LOCATIONS, PROVIDE CEILINGS AND PAINTING TO MATCH EXISTING SITE CONDITIONS.

1 / M04 WASHROOM HVAC PLAN
Scale: 1:25



2 / M04 WASHROOM FIRE PROTECTION PLAN
Scale: 1:25

ISSUES AND REVISIONS

No.	ISSUE OR REVISION TO DRAWING	DATE	BY
1	ISSUED FOR 100% DESIGN REVIEW	01/OCT/2021	M.L.
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PROJECT TITLE AND ADDRESS
GENDER NEUTRAL CHANGEROOM AT TOMKEN AND RISING HILL
25 RISING HILL RIDGE, BRAMPTON ONTARIO

DRAWING TITLE
WASHROOM & SHOWER PLAN
HVAC PLAN AND
FIRE PROTECTION PLAN

TRUE NORTH

STAMP
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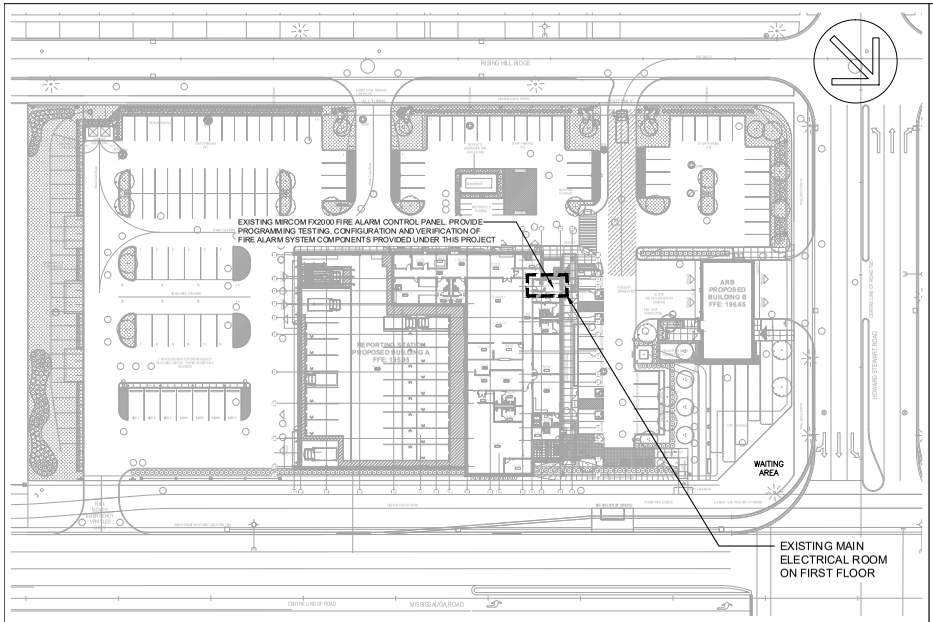
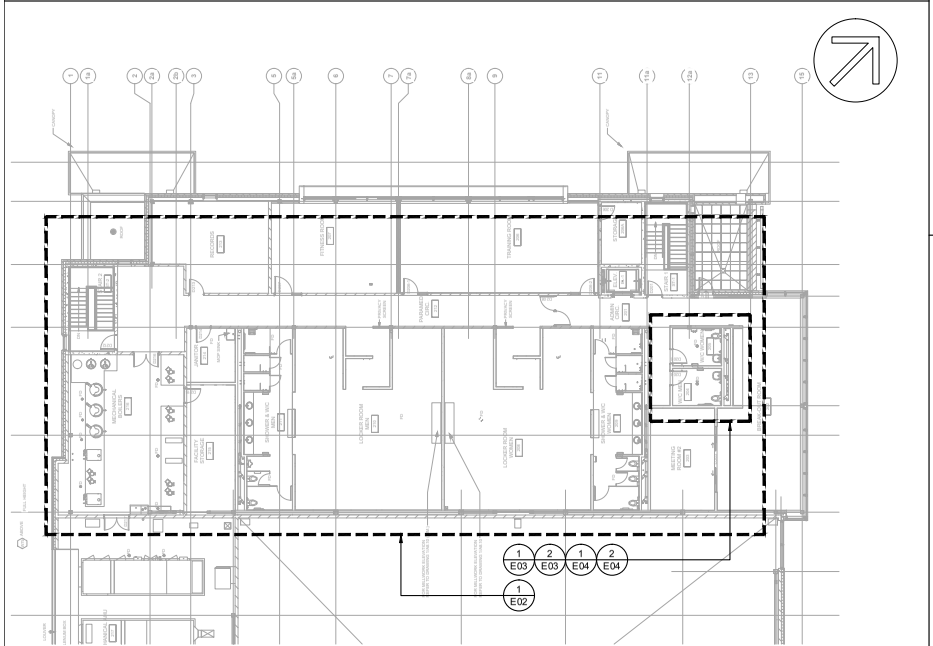
DRAWN BY	CHECKED BY
V.L.	M.L.
SCALE	DATE
AS SHOWN	30/05/2022
CONSULTANT PROJECT NUMBER	REGION OF PEEL PROJECT NUMBER
6542	23602
PURCHASING DOCUMENT NUMBER	DRAWING NUMBER
	M04



1 E01 FIRST FLOOR - SITE KEY PLAN
SCALE: 1:500

5m 0 10m 20m
#M500



2 E01 SECOND FLOOR - KEY PLAN
SCALE: 1:150

1.5m 0 3m 6m
#M150

TOTAL LOAD:
TOTAL CIRCUITS: 90

EX. PANEL " PP-C1"
TYPE: 120/208V, 3Ø, 4W
MAINS: 250A

MAIN BRKR.: NONE
TYPE: SURFACE
LOCATION:

LOAD KW	SERV. REF.	WIRE	BRKR	CCT	L1	N	L3	CCT	BRKR	WIRE	SERV. REF.	LOAD KW
				1				2				
				3				4				
				5				6				
				7				8			EXISTING CIRCUITS	
				9				10				
				11				12				
				13				14				
				15				16	15A-1P	2#10	KITCHEN, GFI	
				17				18			EXISTING CIRCUITS	
				19				20	15A-1P	2#12	PLUMBING FIXTURES	
				21				22	15A-1P	2#10	WASHROOM, GFI's	
				23				24				
				25				26				
				27				28				
				29				30				
				31				32				
				33				34				
				35				36				
				37				38				
				39				40				
				41				42				
				43				44			EXISTING CIRCUITS	
				45				46				
				47				48				
				49				50				
				51				52				
				53				54			EXISTING CIRCUITS	
				55				56				
				57				58				
				59				60				
				61				62				
				63				64				
				65				66				
				67				68				
				69				70				
				71				72				
				73				74				
				75				76				
				77				78				
				79				80				
				81				82				
	SPACE											
	W/R PLUMBING FIXTURES	2#12	15A-1P					83	84		SPACE	
	SPARE		15A-1P					85	86			
	W/R PLUMBING FIXTURES	2#12	15A-1P					87	88		EXISTING CIRCUITS	
	W/R GFI REC	2#8	15A-1P					89	90			

NOTE:
- ALL ESSENTIAL CIRCUITS TO BE LOCKED ON WITH LOCKING BARS.
- ALL BREAKERS TO BE 15A - 1P. UNLESS OTHERWISE SHOWN.
- ALL CIRCUITS TO BE 2 NO. 12 & GRD. UNLESS OTHERWISE SHOWN.

LEGEND:

- 15A, 120V, 1Ø, 3W GROUNDED DUPLEX RECEPTACLE, UNLESS OTHERWISE INDICATED. 'GFI' DENOTES - CLASS 'A' GFI TYPE RECEPTACLE.
- JB — JUNCTION BOX
- EX — ELECTRICAL EQUIPMENT AS NOTED
- EXISTING FLUORESCENT LINEAR LIGHTING FIXTURE
- EXISTING POT LIGHT FIXTURE
- EX — EXISTING WALL-MOUNTED LIGHTING FIXTURE
- $ — WALL MOUNTED SWITCH C/W STAINLESS STEEL COVER
- CONDUIT TURNING UP.
- CONDUIT TURNING DOWN.
- ELECTRICAL EQUIPMENT AS INDICATED.
- 120V DIRECT CONNECTION C/W DISCONNECT SWITCH FOR USE AS NOTED.
- 208V, 1Ø DIRECT CONNECTION C/W DISCONNECT SWITCH FOR USE AS NOTED
- PB — PUSH BUTTON
- DOOR OPERATOR
- SMOKE DETECTOR
- HEAT DETECTOR
- H — FIRE ALARM SYSTEM HORN
- FIRE ALARM MANUAL PULL STATION
- SP — PUBLIC ADDRESS SPEAKER
- MANUAL MOTOR STARTER SWITCH
- HW — ELECTRIC HOT WATER TANK
- OS — OCCUPANCY SENSOR
- OSD — OCCUPANCY SENSOR DIMMING SWITCH MOUNTED ON WALL
- PF — LIGHTING CONTROL POWER PACK
- HD — HAND DRYER
- T — THERMOSTAT
- EXIT SIGN
- EMERGENCY BATTERY PACK C/W LED REMOTE HEADS AS NOTED.
- SINGLE 6W, 24V, LED REMOTE HEAD
- TWO(2) 6W, 24V, LED REMOTE HEADS

ABBREVIATIONS

RGSEC	EPOXY COATED RIGID GALVANIZED STEEL CONDUIT.
RGS	RIGID GALVANIZED STEEL CONDUIT.
W/P	WEATHER PROOF C/W WEATHER-PROOF EXTRA DUTY-RATED IN-USE COVER.
C/W	COMPLETE WITH.
AFF	ABOVE FINISHED FLOOR.
TYP.	TYPICAL.
DIA.	DIAMETER.
Ø	PHASE
CCT	CIRCUIT
DO	DOOR OPERATOR
EX	EXISTING EQUIPMENT TO REMAIN UNDISTURBED, OPERATIONAL AND PROTECTED DURING CONSTRUCTION. PROVIDE ALL TEMPORARY AND PERMANENT WIRING, CONDUIT, SPLICING JUNCTION BOXES, PENETRATIONS AND REROUTING NECESSARY TO KEEP EQUIPMENT OPERATIONAL DURING CONSTRUCTION AND FOR A CLEAN, PERMANENT CONDUIT INSTALLATION WITH MINIMAL CONDUIT VISIBLE.
R	EXISTING EQUIPMENT TO BE REMOVED AND DISPOSED OF C/W CONDUIT AND WIRING BACK TO SOURCE. MAKE CIRCUIT SAFE.
RW	REMOVE AND DISPOSE OF EXISTING EQUIPMENT. SALVAGE POWER CIRCUIT WIRING FOR REUSE AND EXTEND TO SERVE NEW EQUIPMENT.

CONSTRUCTION NOTES:

1. ALL EXISTING INFORMATION TO BE CONFIRMED. CONDITIONS SHOWN BASED ON AVAILABLE AS-BUILT INFORMATION ONLY CONTRACTOR SHALL CONFIRM ON SITE AS REQUIRED. INFORMATION IS PROVIDED AS A REFERENCE FOR DEMOLITION AND RE-FEEDING/RE-ROUTING REQUIREMENTS AS DESCRIBED WITHIN THE CONTRACT.
2. ALL DIMENSIONS AND INFORMATION SHALL BE CHECKED AND VERIFIED ON THE JOB AND ANY DISCREPANCIES MUST BE REPORTED BEFORE COMMENCING THE WORK.
3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING ALL EXISTING SERVICES AND UTILITIES IN WORKING AREA PRIOR TO CONSTRUCTION AND SHALL PROTECT THESE UTILITIES AND SERVICES TO THE SATISFACTION OF THE CONCERNED UTILITY COMPANIES AND OWNER. DAMAGES BY THE CONTRACTOR SHALL BE RESTORED TO THE SATISFACTION OF THE CONCERNED UTILITY COMPANY AT NO EXPENSE TO THE OWNER.
4. THE CONTRACT DRAWINGS DO NOT SHOW THE EXACT LOCATION OF EXISTING UNDERGROUND UTILITIES AND SERVICES. ANY INFORMATION SHOWN IS FOR REFERENCE ONLY. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO BECOME INFORMED OF THE EXACT LOCATION OF, AND ASSUME ALL LIABILITY FOR DAMAGE TO ALL UTILITIES, SERVICES, AND STRUCTURES WHETHER ABOVE GROUND OR BELOW GRADE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING ALL EXISTING SERVICES AND UTILITIES IN WORKING AREA PRIOR TO CONSTRUCTION AND SHALL PROTECT THESE SERVICES AND UTILITIES TO THE SATISFACTION OF THE CONCERNED UTILITY COMPANIES AND OWNER. EXPOSE UTILITIES AND SERVICES, MAINTAIN REQUIRED CLEARANCES, HAND DIGG AND STRUCTURALLY SUPPORT UTILITIES AND SERVICES. DAMAGES BY THE CONTRACTOR SHALL BE RESTORED TO THE OWNER AT NO EXPENSE TO THE OWNER.
5. VISIT THE SITE AND EXAMINE THE CONDITIONS AND MAKE ARRANGEMENTS FOR REMOVAL, REROUTING, RELOCATION AND RECONNECTION OF ELECTRICAL EQUIPMENT AND WIRING AS MAY BE NECESSARY FOR THE EXECUTION AND COMPLETION OF THE PROJECT. THIS WORK SHALL TAKE PLACE AFTER HOURS.
6. ALL MISCELLANEOUS ELECTRICAL EQUIPMENT BEING REMOVED SHALL REMAIN THE PROPERTY OF THE OWNER AND IF THE OWNER HAS NO USE FOR IT, IT SHALL BE DISPOSED OF OFF SITE. PROVIDE ALL STORAGE TRANSPORTATION AND DELIVERY REQUIRED.
7. WIRING LOCATED IN AREAS BEING ALTERED OR DEMOLISHED, BUT FEEDING LIGHTING, OUTLETS OR EQUIPMENT REQUIRED TO REMAIN IN SERVICE SHALL BE REROUTED AS REQUIRED TO MAINTAIN THE CONTINUITY OF THESE SERVICES. PROVIDE ALL CONDUIT, WIRING AND SERVICES TO ACHIEVE THIS TASK.
8. A 6.35mm POLYPROPYLENE ROPE SHALL BE LEFT IN ALL NEW AND UPDATED EXISTING CONDUITS.
9. FISH ALL CONDUIT AND PROVIDE POLY PULL ROPE. PROVIDE SPARE POLY PULL ROPE IN ALL NEW & EXISTING CONDUITS WHERE WIRING IS INSTALLED AND WHERE CONDUITS ARE BEING LEFT AS SPARES.
10. ALL PENETRATIONS IN WALLS AND CEILING FOR CONDUIT CROSSING SHALL BE SEALED WITH FIRE-STOPPING SEALANT. PROVIDE FIRE-STOPPING SEALANT TO SEAL OPENINGS.
11. ALL CONDUITS AND BOXES SHALL BE LABELED AS PER OWNER'S REQUIREMENTS.
12. MOUNT NEW EQUIPMENT AT LOCATIONS SUCH THAT THERE IS ROOM TO INSTALL THEM AND ADEQUATE CLEARANCE IN FRONT PER THE ONTARIO ELECTRICAL SAFETY CODE. THE DRAWINGS ARE DIAGRAMMATIC ONLY. PROVIDE CONDUIT AND WIRING AS REQUIRED TO MOUNT NEW EQUIPMENT.
13. MINIMUM CONDUIT SIZE SHALL BE 21mmØ.
14. POWER INTERRUPTIONS SHALL BE KEPT TO A MINIMUM AND SHALL OCCUR AFTER HOURS AT NIGHT SO FACILITY OPERATIONS ARE NOT DISTURBED. OBTAIN OWNER'S WRITTEN PERMISSION TWO(2) WEEKS PRIOR ANY SHUTDOWNS. WORK SHALL BE AFTER HOURS.
15. THE CONTRACTOR SHALL BECOME AWARE OF AND PROTECT ALL EXISTING SERVICES IN THE WORKING AREA PRIOR COMMENCEMENT OF WORK. THE CONTRACTOR SHALL PROTECT SERVICES TO THE SATISFACTION OF THE OWNER. THE CONTRACTOR SHALL TAKE ALL LIABILITY FOR AND PAY FOR ANY DAMAGES TO EXISTING SERVICES. THE EXISTING SERVICES ARE NOT NECESSARILY SHOWN ON THE DRAWINGS AND ACCURACY CANNOT BE GUARANTEED WHERE SHOWN.

LICENSED PROFESSIONAL ENGINEER
6542
T. DMITA
21.07.23
PROVINCE OF ONTARIO

ISSUES AND REVISIONS

No.	ISSUE OR REVISION TO DRAWING	DATE	BY
1	ISSUED FOR 100% DESIGN REVIEW	01/06/2023	T.D.
2	ISSUED FOR TENDER	21/07/2023	T.D.

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PROJECT TITLE AND ADDRESS:
GENDER NEUTRAL CHANGEROOM AT TOMKEN AND RISING HILL
25 RISING HILL RIDGE, BRAMPTON, ONTARIO

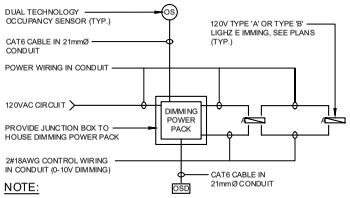
DRAWING TITLE:
ELECTRICAL
KEY PLAN, SITE PLAN AND GENERAL NOTES, WALL TYPES & DETAIL

TRUE NORTH	CONSTRUCTION NORTH
DRAWN BY: R.V.G.	CHECKED BY: T.D.
SCALE: AS SHOWN	DATE: 23/05/2023
CONSULTANT PROJECT NUMBER: 6542	REGION OF PEEL PROJECT NUMBER: 23602
PURCHASING DOCUMENT NUMBER:	DRAWING NUMBER: E01

LIGHTING FIXTURE SCHEDULE

TYPE	BASE MANUFACTURER	CATALOGUE NUMBER	CEILING TYPE			WALL TYPE			NO. OF LAMPS	LAMP WATTAGE	VOLTAGE			ACCEPTABLE ALTERNATE MANUFACTURERS	REMARKS
			SURFACE	RECESSED	SUSPENDED	SURFACE	RECESSED	BRACKET			120 V.	347 V.	24 V.		
A	LITHONIA LIGHTING (ACUITY BRANDS)	LDN6-35K-10-L06 -AR-LSS-TRW-MVOLT-EZ1		●					LEDs	11W	●			COOPER HUBBELL	150mm DIAMETER DOWNLIGHT RECESSED IN DRYWALL CEILING. PROVIDE ACCESSORIES FOR MOUNTING IN DRYWALL CEILING. 3500K, 80 CRI 1000 LUMENS
B	GOTHAM LIGHTING (ACUITY BRANDS)	EVO6SH-35K-10-DFR-SOL-120-EZ1		●					LEDs	15W	●			COOPER HUBBELL	150mm DIAMETER RECESSED SHOWER DOWNLIGHT RATED FOR WET LOCATION. PROVIDE ACCESSORIES FOR MOUNTING IN DRYWALL CEILING. 3500K, 80 CRI 1000 LUMENS. 0-10Vdc DIMMING
C	LUMINAIRE LED (ACUITY BRANDS)	LVP-524-2FT-MIN-1-20W -35K-1-20-CLP-WHT				●			LEDs	20W	●			COOPER HUBBELL	4'x4' LIGHTING FIXTURE MOUNTED ON SURFACE OF WALL C/W CLEAR PRISMATIC LENS, AND ACCESSORIES FOR MOUNTING IN DRYWALL. 3500K, 80CRI, 0-10Vdc DIMMING.
D	LITHONIA LIGHTING (ACUITY BRANDS)	BTL4-RB-20L-ADP-MVOLT-GZ1-LP835		●					LEDs	16W	●			COOPER HUBBELL	1'x4' LIGHTING FIXTURE RECESSED IN T-BAR CEILING C/W RIBBED DIFFUSER, LENS AND ACCESSORIES FOR MOUNTING IN T-BAR CEILING 2000 LUMENS, 3500K CCT, 80CRI, 0-10Vdc DIMMING.
	EMERGI-LITE (TnBABB)	EF150 - LMC					●		1 LED	6W			●	LUMACELL BEGHELLI	24V, 6W SINGLE LED REMOTE HEAD
	EMERGI-LITE (TnBABB)	EF150 - D - LMC					●		1 LED	2-6W			●	LUMACELL BEGHELLI	TWO(2) 24V, 6W DUAL LED REMOTE HEADS
4X	EMERGI-LITE (TnBABB)	EF39-D-M-LM					●		1 LED	2-6W			●	LUMACELL BEGHELLI	TWO(2) 24V, 6W DUAL REMOTE HEADS C/W DIECAST ALUMINUM BACKPLATE NEMA-4 X ENCLOSURE AND POLY CARBONATE AND IMPACT-RESISTANT LENS.

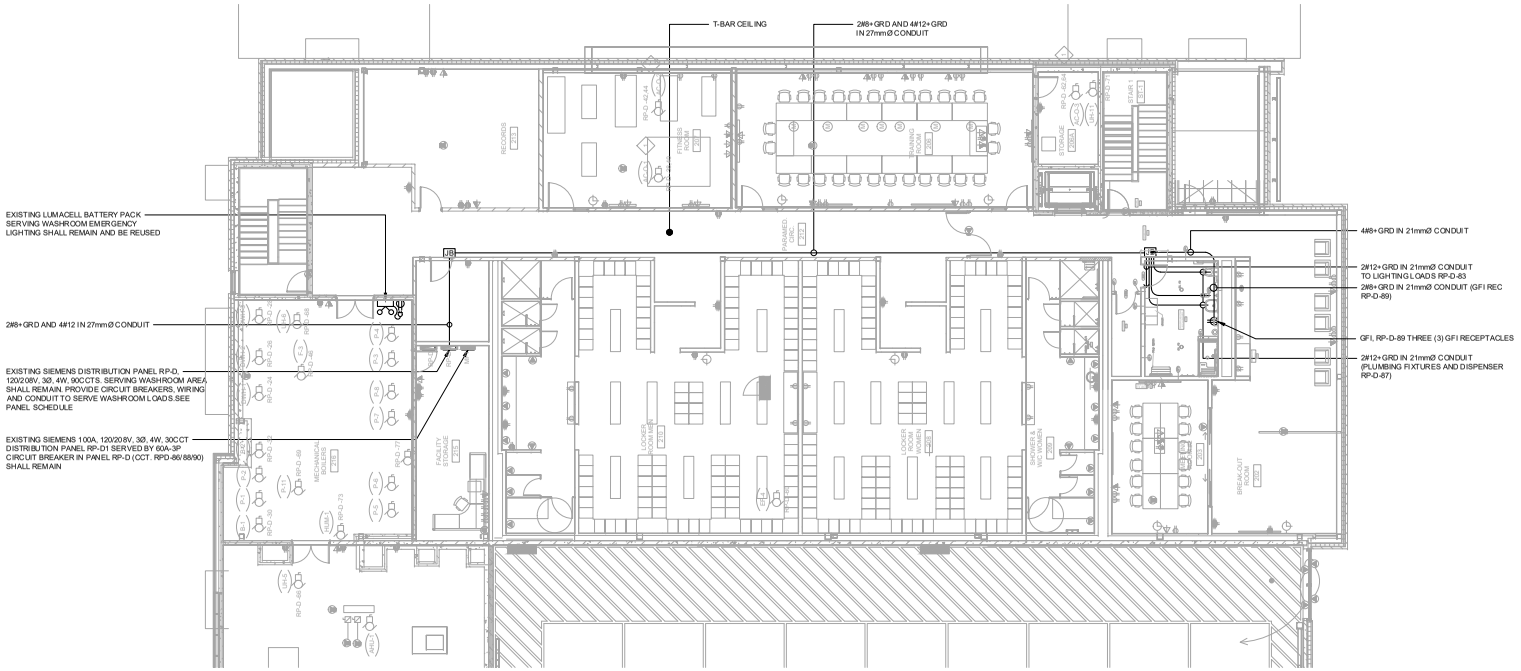
NOTES:
1. CO-ORDINATE VOLTAGE PRIOR TO SHOP DRAWING REVIEW.
2. ALL FIXTURES SHALL BE CONTINUOUSLY DIMMABLE.
3. THE LIGHTING DESIGN IS BASED ON THE BASE MANUFACTURER'S PRODUCTS. WHERE ALTERNATE MANUFACTURERS ARE USED, COMPLETE PHOTOMETRIC CALCULATIONS SHOWING A LAYOUT MEETING OR EXCEEDING THE LIGHTING DESIGN CRITERIA MUST BE SUBMITTED DURING SHOP DRAWING SUBMISSION FOR CONSULTANT'S REVIEW.
4. PRODUCTS OF ALTERNATE MANUFACTURERS ARE UNACCEPTABLE WHEN POWER CONSUMPTION IS INCREASED SIGNIFICANTLY ENOUGH TO AFFECT ELECTRICAL DESIGN.
5. CONFIRM FINISHES AND TRIMS WITH ARCHITECT PRIOR EQUIPMENT ORDER.



NOTE:

1. CAT6 CABLE SHOWN FOR CONNECTIONS OF CONTROL WIRING BUT CONTRACTOR SHALL CO-ORDINATE CABLE TYPE REQUIRED AT SITE WITH LIGHTING CONTROL DEVICES SUPPLIER PRIOR SHOP DRAWING REVIEW.

2 / E02 INDOOR LIGHTING CONTROL DETAIL
SCALE: N.T.S.



1 / E02 SECOND FLOOR - POWER DISTRIBUTION PLAN
SCALE: N.T.S.

LICENSED PROFESSIONAL ENGINEER
6542
T. DATTA
21.07.23
PROVINCE OF ONTARIO

ISSUES AND REVISIONS

No.	ISSUE OR REVISION TO DRAWING	DATE	BY
1	ISSUED FOR 100% DESIGN REVIEW	01/06/2023	T.D.
2	ISSUED FOR TENDER	21/07/2023	T.D.

Region of Peel
10 PEEL CENTRE DRIVE
BRAMPTON, ONTARIO
L6T 4B9
TEL: (905) 791-7800

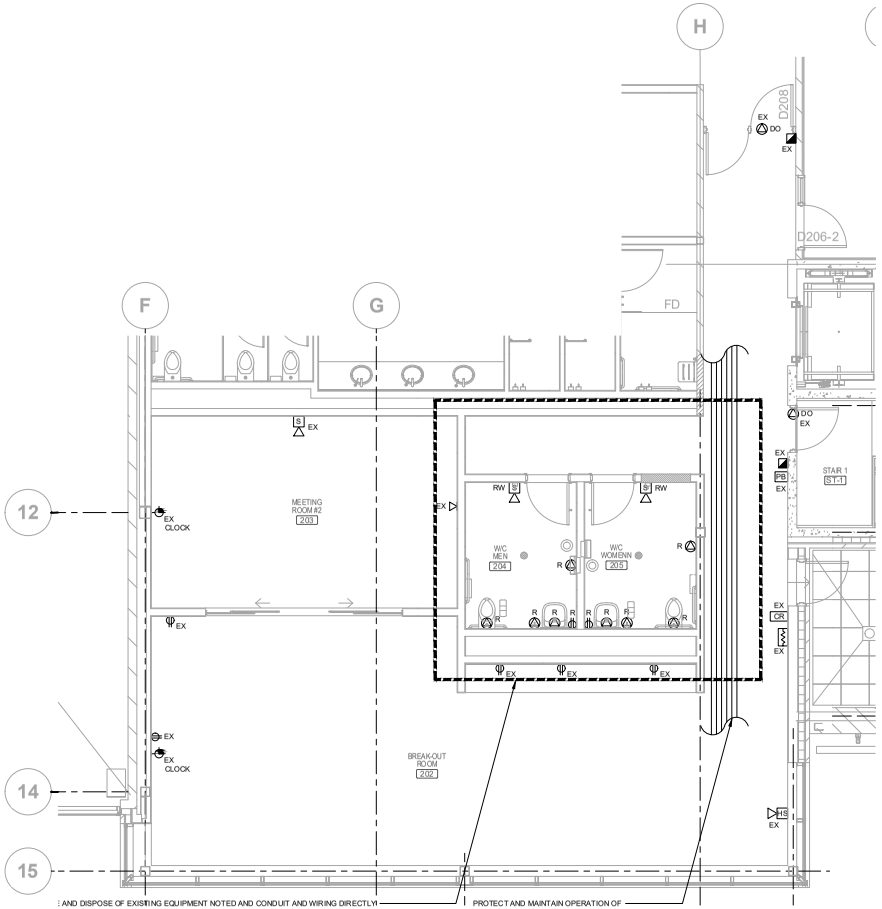
Moon-Matz Ltd.
Consulting Engineers
2902 SOUTH SHERIDAN WAY,
SUITE 300
OAKVILLE ON. L6J 7L6
TEL: (905)274-7556
FAX: (905)274-5382
E-mail: info@moon-matz.com

PROJECT TITLE AND ADDRESS
GENDER NEUTRAL CHANGEROOM AT TOMKEN AND RISING HILL
25 RISING HILL RIDGE, BRAMPTON, ONTARIO

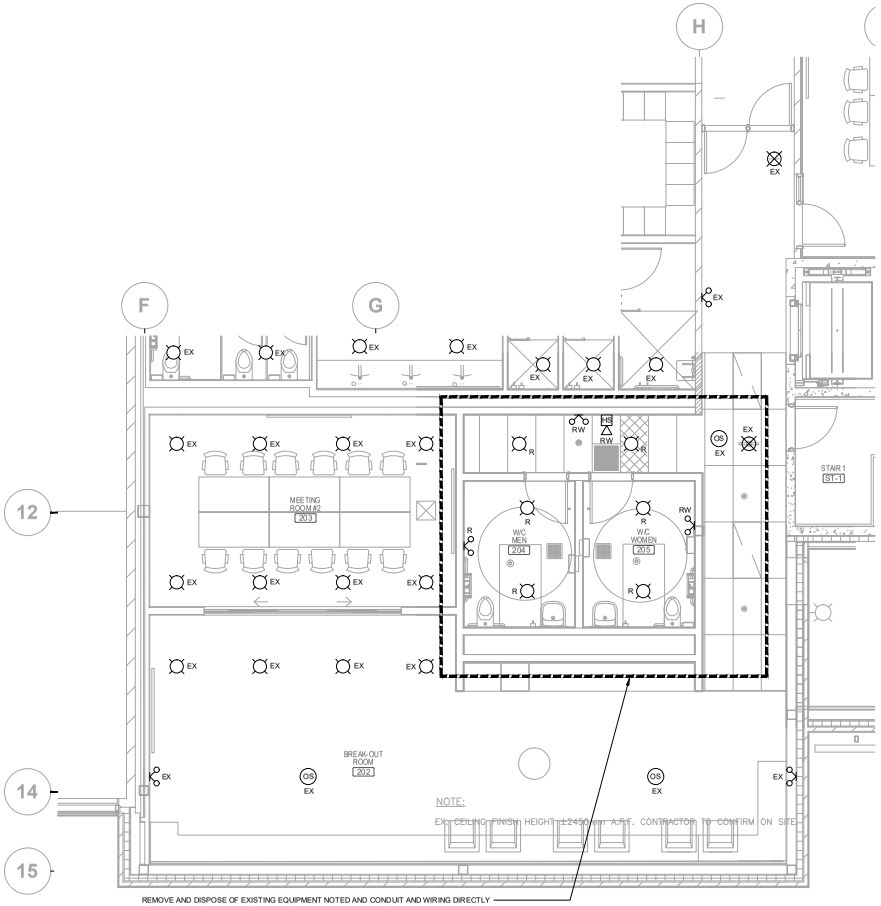
DRAWING TITLE
ELECTRICAL
SECOND FLOOR POWER DISTRIBUTION PLAN, SCHEDULE AND DETAIL

TRUE NORTH | CONSTRUCTION NORTH

DRAWN BY	CHECKED BY
R.V.G.	T.D.
SCALE: AS SHOWN	DATE: 23/05/2023
CONSULTANT PROJECT NUMBER: 6542	REGION OF PEEL PROJECT NUMBER: 23602
PURCHASING DOCUMENT NUMBER:	DRAWING NUMBER: E02



1 / E03 SECOND FLOOR - POWER AND COMMUNICATIONS DEMOLITION PLAN
SCALE: 1:50



2 / E03 SECOND FLOOR - LIGHTING DEMOLITION PLAN
SCALE: 1:50

LICENSED PROFESSIONAL ENGINEER
6542
T. DATTA
21.07.23
PROVINCE OF ONTARIO

ISSUES AND REVISIONS

No.	ISSUE OR REVISION TO DRAWING	DATE	BY
1	ISSUED FOR 100% DESIGN REVIEW	01/06/2023	T.D.
2	ISSUED FOR TENDER	21/07/2023	T.D.

Region of Peel
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BRAMPTON, ONTARIO
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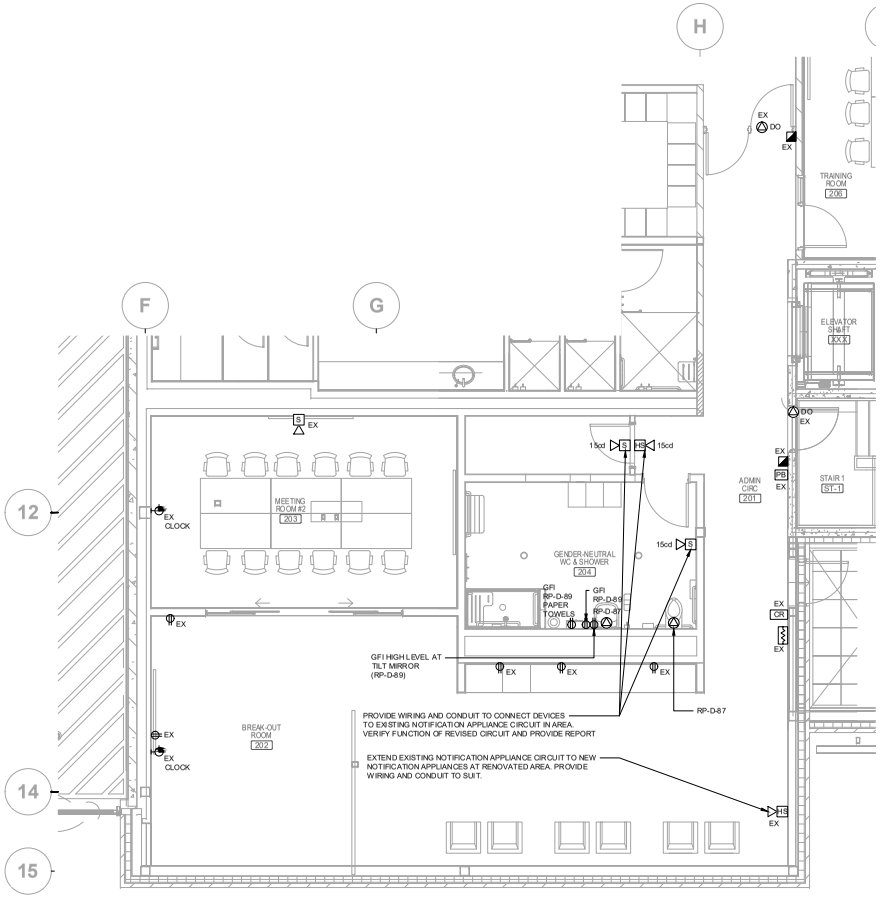
2902 SOUTH SHERIDAN WAY,
SUITE 300
OAKVILLE ON. L6J 7L6
TEL: (905)274-7556
FAX: (905)274-5382
E-mail: info@moon-matz.com

PROJECT TITLE AND ADDRESS
GENDER NEUTRAL CHANGEROOM AT TOMKEN AND RISING HILL
25 RISING HILL RIDGE, BRAMPTON, ONTARIO

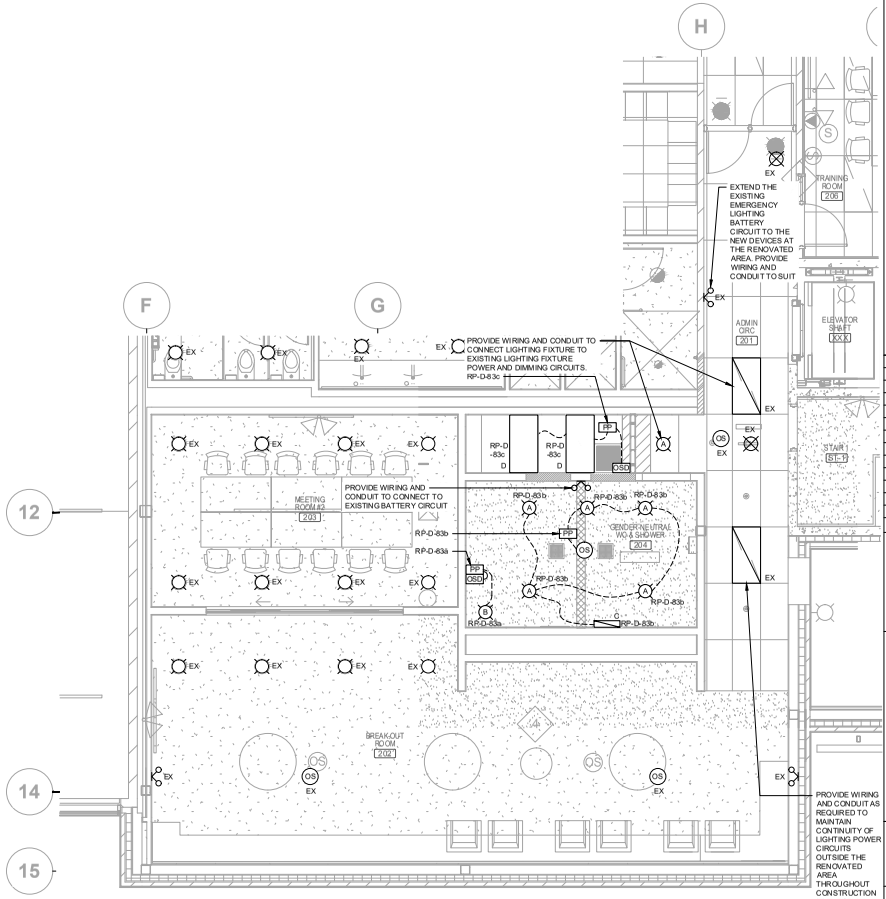
DRAWING TITLE
ELECTRICAL
LIGHTING, POWER AND COMMUNICATIONS DEMOLITION PLAN

TRUE NORTH | CONSTRUCTION NORTH

DRAWN BY: R.V.G.	CHECKED BY: T.D.
SCALE: 1:30	DATE: 23/05/2023
CONSULTANT PROJECT NUMBER: 6542	REGION OF PEEL PROJECT NUMBER: 23602
PURCHASING DOCUMENT NUMBER:	DRAWING NUMBER: E03



1 E04 SECOND FLOOR - POWER AND COMMUNICATIONS PLAN
SCALE: 1:50



2 E04 SECOND FLOOR - LIGHTING PLAN
SCALE: 1:50

LICENSED PROFESSIONAL ENGINEER
6542
T. DATTA
21.07.23
PROVINCE OF ONTARIO

ISSUES AND REVISIONS

No.	ISSUE OR REVISION TO DRAWING	DATE	BY
1	ISSUED FOR 100% DESIGN REVIEW	01/06/2023	T.D.
2	ISSUED FOR TENDER	21/07/2023	T.D.

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FAX: (905)274-5382
E-mail: info@moon-matz.com

PROJECT TITLE AND ADDRESS
GENDER NEUTRAL CHANGEROOM AT TOMKEN AND RISING HILL
25 RISING HILL RIDGE, BRAMPTON, ONTARIO

DRAWING TITLE
ELECTRICAL
LIGHTING, POWER AND COMMUNICATIONS PLAN

TRUE NORTH | CONSTRUCTION NORTH

DRAWN BY: R.V.G.	CHECKED BY: T.D.
SCALE: 1:30	DATE: 23/05/2023
CONSULTANT PROJECT NUMBER: 6542	REGION OF PEEL PROJECT NUMBER: 23602
PURCHASING DOCUMENT NUMBER:	DRAWING NUMBER: E04

Existing Washroom at Tomken
Project Number - 23602

Figure 1 – Corridor

Figure 2 – Corridor to Existing Men's Washroom Entrance

Figure 3 – Entrance to Existing Men's Washroom

Existing Washroom at Tomken
Project Number - 23602

Figure 4 – Figure 5 – Existing Washroom Floor, Lavatory Sinks, Waste Bin, Toilet Paper Dispenser

Figure 5 – Existing Washroom Floor and Stalls

Figure 5 – Existing Washroom Floor, Walls, Cloth Hook, Waste Bin, Shelf

Existing Washroom at Rising Hill
Project Number - 23602

Figure 1 – Existing Universal Washroom Doors

Figure 2 – Corridor to Existing Universal Washroom Doors

Figure 3 – Existing Universal Washroom Floor, Wall, Lavatory Sink, Toilet Paper Dispenser, Soap Dispenser, Tilted Mirror

Figure 4 – Existing Universal Washroom Floor, Wall, Lavatory Sink, Waste Receptacle, Soap Dispenser

DIGITAL BID BOND

Appendix 5.7

BOND NUMBER _____

KNOW ALL MEN BY THESE PRESENTS THAT _____
as Principal, hereinafter called the Principal, and

_____ a corporation created and existing under the laws of Ontario, and duly authorized to transact the business of Suretyship in Ontario as Surety, hereinafter called the Surety, are held and firmly bound unto The Regional Municipality of Peel as Obligee, hereinafter called the Obligee, in the amount of

_____ Dollars,

($_____) lawful money of Canada, for the payment of which sum, well and truly to be made, the Principal and the Surety bind themselves, their heirs, executors, administrators, successors and assigns, jointly and severally, firmly by these presents.

WHEREAS, the Principal has submitted a written Bid to the Obligee, dated the _____ day of

_____ 20____,

for: _____

DESCRIPTION OF WORK

NOW, THEREFORE, THE CONDITION OF THIS OBLIGATION is such that if the aforesaid Principal shall have the Bid accepted within ninety (90) days from the Closing Date and the said Principal will, within the time required, enter into a formal contract and give the specified security to secure the performance of the terms and conditions of the Contract, then this obligation shall be null and void; otherwise the Principal and the Surety will pay unto the Obligee the difference in money between the amount of the Bid of the said Principal and the amount for which the Obligee legally contracts with another party to perform the work if the latter amount be in excess of the former.

The Principal and the Surety shall not be liable for a greater sum than the specified penalty of this Bond.

Any suit under this Bond must be instituted before the expiration of seven months from the date of this Bond.

IN WITNESS WHEREOF, The Principal and the Surety have signed and sealed this Bond this _____

day of _____ 20_____.

SIGNED, SEALED AND DELIVERED

_____
SIGNATURE OF WITNESS
(if not signed under corporate seal)

By _____ (Seal)
SIGNATURE AND SEAL OF PRINCIPAL
I/We have the authority to bind the Corporation

_____
NAME OF WITNESS (PRINTED)

_____ (Seal)
SURETY

By _____
ATTORNEY-IN-FACT

_____
ADDRESS AND PHONE NUMBER OF SURETY

Date: _____
Owner: _____
Contractor: _____
Document Number: _____
Project: _____
Applicable Invoice: _____

Context

A. The Contractor identified above (the "Contractor") and the Regional Municipality of Peel entity, government, agency, or board identified above as the Owner (the "Owner") entered into a contract dated _____ (the "Contract") pursuant to the procurement document number identified above for the Contractor to provide certain work and services in respect of the project identified above (the "Project").

B. Capitalized terms used but not defined in this Release have the meanings given to them in the Agreement.

C. Pursuant to the Contract, the Contractor is providing this Release to the Owner in support of its application for payment of holdback upon Substantial Performance of the Work.

Release

1. Except for the claims set out in section 2, as of the date set out above, the Contractor on its own behalf and on behalf of its successors and assigns hereby irrevocably waives, releases, and forever discharges the Owner and its directors, officers, Region of Peel council members, representatives, employees, contractors, agents, and their respective successors and assigns (the "Released Group") from any and all claims, changes, disputes, complaints, liabilities, obligations, damages, actions, causes of action, proceedings, debts, demands, losses, and expenses whatsoever, at law and in equity, which it may have had, may now have, or may have arising out of or in connection with the Contract ("Claims").
2. The Contractor does not release the Released Group from the following Claims:
   a. Claims for any sums retained by the Owner for the Warranty Holdback;
   b. Claims arising from Work which remains to be completed by the Contractor on the Project as at the date of this Release;
   c. Claims which cannot be waived under the *Construction Act* (Ontario); and
   d. the following Claims (including any outstanding Claims about which the Contractor has previously notified the Owner and attach additional page if necessary):

   _____
   _____

   The Contractor acknowledges and agrees that if it leaves Section 2.d. blank or responds "none" in Section 2.d., the Contractor is deemed not to have reserved any Claims other than those in Sections 2.a., 2.b., and 2.c.
3. Except for the Claims set out in Section 2.d., Contractor's managerial or senior supervisory personnel do not know, or have reason to know based on good and prudent industry practices, of any potential or actual claims that are required to be notified to Owner according to the requirements of the Contract as of the date of this Release.
4. This Release is freely and voluntarily given and the Contractor acknowledges and represents that it has fully reviewed the terms and conditions of this Release and that it is fully informed with respect to the legal effect of this Release.

General

5. No provision of this Release which may be deemed unenforceable shall in any way invalidate any other provision hereof, all of which shall remain in full force and effect.
6. This Release shall be binding upon, and shall inure to the benefit of, the Contractor, the Owner, and their respective heirs, successors, legal representatives and assigns.
7. This Release and the Contract constitute the entire agreement between the parties with respect to the subject matter hereof and supersedes all prior and contemporaneous agreements. No change or waiver shall be valid unless in writing and signed by an authorized representative of the party against whom such change or waiver is sought to be enforced.
8. This Release may be executed and delivered electronically.
9. This Release is governed by the laws of Ontario and the federal laws of Canada applicable therein. Any dispute arising out of this Release shall be governed by the terms of the Contract.

[INSERT FULL CORPORATE NAME OF CONTRACTOR]
By: _____
Name: _____
Title: _____
I have authority to bind the corporation.

Region of Peel
working with you

Appendix 5.11

Owner's Staff/Other Contractors Project Constructor Coordination Form

This coordination document must be completed and signed by the General Contractor (GC) and the Region of Peel (ROP) Project Manager. The Owner's Staff/Other Contractors Project Constructor Coordination Form is intended to seek the GC's approval to allow Owner's Staff/Other Contractors to access a construction site while the GC maintains the overall responsibility of the project site as the Constructor on the project site. By signing below, the GC will maintain Constructor designation and site responsibility including the coordination of Owner's Staff/Other Contractors as approved to complete work on site.

PART A: To be completed by Region of Peel Project Manager or staff requesting access

Request to attend Construction Site to complete work:			
Location:	Description of work and site interaction:		
From date:	Time:	To Date:	Time:
Owner's Staff/Other Contractors to attend project site: (by signing below, Owner's Staff/Other Contractors agree to follow the GC/Constructors' established health and safety rules and instructions on the project site at all times, including following the identified sign-in process whenever attending the project site)			
Name:	Title:	Signature:	
Name:	Title:	Signature:	
Name:	Title:	Signature:	
Name:	Title:	Signature:	
Name:	Title:	Signature:	
Name:	Title:	Signature:	
Name:	Title:	Signature:	
Name:	Title:	Signature:	
Name:	Title:	Signature:	

Owner's Staff/Other Contractors Supervisor or Assistant (required whenever more than five staff are expected on site at a time):		
Name:	Title:	Signature:

Owner's Staff/Other Contractors will follow the GC/Constructors' established health and safety rules on the project site at all times, including following the identified sign-in process whenever attending the project site.

Region of Peel
working with you

Appendix 5.11

Owner's Staff/Other Contractors Project Constructor Coordination Form

PART B: To be completed by the General Contractor and Region of Peel Project Manager

Communication and Site Responsibility - This coordination document must be completed and signed by the GC and the ROP Project Manager. It is intended to assist everyone involved to understand who will be working on the project site on behalf of the Region of Peel, when the work will take place, and that the Constructor designation and site responsibility will be maintained by the GC identified within this document while this work is being completed.

By signing you acknowledge commitment to the roles and responsibilities as described in this coordination document.

Peel Region Project Manager:		
Name:	Title:	Signature:
		Date:
GC Representative:		
Representative Name:	Title:	Signature:
		Date:

PART C: To be completed by Site Constructor/General Contractor at the time of orientation

The general contractor/constructor will ensure that prior to entering the project site the following items have been reviewed with the Owner's Staff/Other Contractors:

Activity	Completed	Date	Activity	Completed	Date
Owner's Staff/Other Contractors have received orientation on project site and constructor emergency process has been reviewed.	☐		Hazard assessment of ROP work area on site has been conducted along with review of potential electrical hazards, physical hazards, chemical, etc.	☐	
Protective equipment has been provided to Owner's staff/ Other Contractors.	☐		Additional hazards or risks have been identified in site work area (list below).	☐	
Comments:					

Project Site Supervisor/Contact(s): *Identify Contractor Representative to supervise Owner's Staff/Other Contractors while on site to perform work.*		
GC Representative:	Title:	Signature:

Copies of the completed document must be provided to the construction project manager for distribution to the employee's direct supervisor. Original to be maintained by the general contractor at the construction site.

Owner's Staff/Other Contractors Anticipated to Attend Site for Contractor Coordination

Owner's staff/Other contractors' information (i.e. ISTS staff or XYZ Vendor)	Description of work	Anticipated stage of construction and duration of work

2023-518T - Gender Neutral Changeroom Upgrades at Tomken and Rising Hill Reporting Stations for Peel Regional Paramedic Services, City of Mississauga and Brampton, Project 23602

Date Issued: September 1, 2023 12:00 PM

Bid Number: 2023-518T

Schedule of Prices

*Denotes a "**MANDATORY"** field

Do not enter $0.00 dollars unless you are providing the line item at zero dollars to the Owner.

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.

Stipulated Contract Price for Gender Neutral Changeroom Upgrades at Tomken Reporting Station City of Mississauga, Project 23602

Prices are all inclusive of the cost of labour, materials and equipment required to complete the Work as specified in the Contract Documents, including but not limited to all applicable taxes, overheads, profits and all other associated Bidder expenses.

The Prices include fully for all increases, for whatever cause, in cost or price of labour, materials, products, equipment, or consumables. Escalation shall not apply for the duration of the Contract. The Prices below include the payment of permits as described in the Supplementary Conditions.

No allowances or extra consideration on behalf of the successful Vendor will be allowed by the Owner by reason of additional costs, damages or other difficulties incurred by the successful Vendor for failure to have fully investigated and determined conditions affecting the Work.

The Bidder shall complete the pricing table below in its entirety. The Total Stipulated Contract Price shall be the sum of all Total Item Prices. The Agency reserves the right to calculate all prices and adjust totals where there are errors or omissions in extensions, additions or computations in the Total Stipulated Contract Price.

Line Item	Description	Unit	Quantity	Unit Price *	Total
1	Insurance and Bonding	Lump Sum	1		
2	Shop drawings submission and approval.	Lump Sum	1		
3	Demolition and Removals	Lump Sum	1		
4	Walls, flooring, ceilings, drywall, painting, fire stopping, sealants etc.	Lump Sum	1		
5	Door and door hardware.	Lump Sum	1		
6	Washroom accessories	Lump Sum	1		
7	Plumbing and Mechanical Systems	Lump Sum	1		
8	Electrical, lighting, Fire alarm etc.	Lump Sum	1		
9	Demobilization & Final Cleaning	Lump Sum	1		
10	Project Close-Out documents including as-builts	Lump Sum	1		
11	All other items not included above	Lump Sum	1		
				Subtotal:	

Cash Allowance for Tomken Reporting Station, City of Mississauga

Cash Allowance work is to be approved in advance by the Agency. The Agency is not committed to any work under the Cash Allowance funds or for unapproved Cash Allowance work.

Line Item	Description	Unit of Measure	Unit Price	Total
1	Cash Allowance for Tomken	Lump Sum	$30,000.0000	$ 30,000.0000
			Subtotal:	$ 30,000.0000

Contingency Allowance for Tomken Reporting Station, City of Mississauga

Contingency Allowances included are for additional work which could not be fully identified or quantified during the bid period. The Bidder shall, when requested, provide to the Agency estimates to complete any additional work. The Bidder shall not proceed with any additional work unless pre-approved by the Agency. Contingency Allowances shall be expended only as directed and approved by the Agency for actual cost of additional work. The Contract Price shall be adjusted by Change Order to provide for any difference between the actual costs and each estimated cost where so authorized by the Agency. The non-expended portion of Contingency allowance will be deducted from the Contract Price.

Line Item	Description	Unit of Measure	Unit Price	Total
1	Contingency Allowance for Tomken	Lump Sum	$60,000.0000	$ 60,000.0000
			Subtotal:	$ 60,000.0000

Stipulated Contract Price for Gender Neutral Changeroom Upgrades at Rising Hill Reporting Station City of Brampton, Project 23602

Prices are all inclusive of the cost of labour, materials and equipment required to complete the Work as specified in the Contract Documents, including but not limited to all applicable taxes, overheads, profits and all other associated Bidder expenses.

The Prices include fully for all increases, for whatever cause, in cost or price of labour, materials, products, equipment, or consumables. Escalation shall not apply for the duration of the Contract. The Prices below include the payment of permits as described in the Supplementary Conditions.

No allowances or extra consideration on behalf of the successful Vendor will be allowed by the Owner by reason of additional costs, damages or other difficulties incurred by the successful Vendor for failure to have fully investigated and determined conditions affecting the Work.

The Bidder shall complete the pricing table below in its entirety. The Total Stipulated Contract Price shall be the sum of all Total Item Prices. The Agency reserves the right to calculate all prices and adjust totals where there are errors or omissions in extensions, additions or computations in the Total Stipulated Contract Price.

Line Item	Description	Unit	Quantity	Unit Price *	Total
1	Insurance and Bonding	Lump Sum	1		
2	Shop drawings submission and approval.	Lump Sum	1		
3	Demolition and Removals	Lump Sum	1		
4	Walls, flooring, ceilings, drywall, painting, fire stopping, sealants etc.	Lump Sum	1		
5	Door and door hardware.	Lump Sum	1		
6	Washroom accessories	Lump Sum	1		
7	Plumbing and Mechanical Systems	Lump Sum	1		
8	Electrical, lighting, Fire alarm etc.	Lump Sum	1		
9	Demobilization & Final Cleaning	Lump Sum	1		
10	Project Close-Out documents including as-builts	Lump Sum	1		
11	All other items not included above	Lump Sum	1		
				Subtotal:	

Cash Allowance for Rising Hill Reporting Station, City of Brampton

Cash Allowance work is to be approved in advance by the Agency. The Agency is not committed to any work under the Cash Allowance funds or for unapproved Cash Allowance work.

Line Item	Description	Unit of Measure	Unit Price	Total
1	Cash Allowance for Rising Hill	Lump Sum	$15,000.0000	$ 15,000.0000
			Subtotal:	$ 15,000.0000

Contingency Allowance for Rising Hill Reporting Station, City of Brampton

Contingency Allowances included are for additional work which could not be fully identified or quantified during the bid period. The Bidder shall, when requested, provide to the Agency estimates to complete any additional work. The Bidder shall not proceed with any additional work unless pre-approved by the Agency. Contingency Allowances shall be expended only as directed and approved by the Agency for actual cost of additional work. The Contract Price shall be adjusted by Change Order to provide for any difference between the actual costs and each estimated cost where so authorized by the Agency. The non-expended portion of Contingency allowance will be deducted from the Contract Price.

Line Item	Description	Unit of Measure	Unit Price	Total
1	Contingency Allowance for Rising Hill	Lump Sum	$30,000.0000	$ 30,000.0000
			Subtotal:	$ 30,000.0000

Summary Table

Bid Form	Amount
Stipulated Contract Price for Gender Neutral Changeroom Upgrades at Tomken Reporting Station City of Mississauga, Project 23602	
Cash Allowance for Tomken Reporting Station, City of Mississauga	$ 30,000.0000
Contingency Allowance for Tomken Reporting Station, City of Mississauga	$ 60,000.0000
Stipulated Contract Price for Gender Neutral Changeroom Upgrades at Rising Hill Reporting Station City of Brampton, Project 23602	
Cash Allowance for Rising Hill Reporting Station, City of Brampton	$ 15,000.0000
Contingency Allowance for Rising Hill Reporting Station, City of Brampton	$ 30,000.0000
Grand Total (exclusive of taxes):	

Bid Questions

Please provide in the space below your GST/HST Registration Number. Please note that all invoices provided to the Agency must show the GST/HST Registration Number and show this tax on a separate line.

Specifications

CONTACT INFORMATION

In the space provided please list the contact names and numbers during the times indicated below.

Line Item	Description	Regular Hours Service (7:00 a.m. - 5:00 p.m.) *	After Hours Service (5:00 p.m. - 7:00 a.m.) *	Saturdays, Sundays and Holidays *
1	Name			
2	Phone Number			
3	Cell Number			
4	Email Address			

STATEMENT OF EXPERIENCE

The Bidder agrees that the following is a statement of the Bidder's experience in carrying out comparable Work. The Agency may contact those named below to verify the Bidder's statement and to assess the Bidder's ability to carry out the Work.

Line Item	Description of Contract	For Whom Work Performed	$ Value	Year	
1					*
2					
3					
4					

REFERENCES

Please give the **names** of three clients, other than the Agency, who have similar projects and for whom you are performing or have performed similar Work.

Line Item	Company *	Phone *	Contact Person *	Estimated Contract Amount *	Year *	Project/Contract Number *
1						
2						
3						

Sub-Contractors

LIST OF SUPPLIERS AND MAJOR SUBCONTRACTORS

The Bidder must complete this table listing the names of each proposed subcontractor to be used whose Work is valued at **$50,000** or more. The Bidder must also list the part of the Work each subcontractor is to carry out and the value of each such part of the Work of which 50 per cent Performance and 50 per cent Labour and Material Payment Bonds are required by the Instruction to Bidders section of the Document.

☐ By clicking here I confirm that there are no Subcontractor(s) and the Bidder shall perform the project with their "**OWN FORCES**".

Line Item	Supplier and/or Subcontractor	Address	Trade	
1				*
2				
3				
4				
5				

Documents

It is your responsibility to make sure the uploaded file(s) is/are not defective or corrupted and are able to be opened and viewed by the Owner. If the attached file(s) cannot be opened or viewed, your Bid Call Document may be rejected.

BONDING UPLOAD SECTION

- Digital Bid Bond * (mandatory)
- Agreement to Bond * (mandatory)

Declarations & Addenda

This Bidder Submission is made entirely in accordance with the Document. By completing the information below and by submitting an online response to the Document, it is deemed that the Bidder has read and agreed to abide by all of the terms and conditions contained in the Document and that you have the authority to bind the Bidder and submit this Bidder Submission on behalf of the Bidder.

I acknowledge in my acceptance of the terms and conditions below the following requirements for Accessibility for Ontarians with Disabilities, Health & Safety Compliance Certificate & Appendix A and Code of Conduct:

Contracted employees, third party employees, agents and others who deal with members of the public on behalf of the Region of Peel or participate in the development of policies, practices and procedures governing the provision of goods or services to members of the public must meet the requirements of the Accessibility for Ontarians with Disabilities Act 2005 and its Regulations with regard to training and the provision of goods or services to persons with disabilities. A document describing the training policy, a summary of the contents of the training and details of training dates and attendees must be submitted to the Region of Peel upon request. If a training policy is not yet in place, complete the training module at the following website: accessforward.ca.

☐

I/WE agree to be bound by the terms and conditions in the Document and have authority to bind the Bidder and submit this Bidder Submission on behalf of the Bidder.

The bidder shall declare any potential conflict of interest as defined in the Standard Terms and Conditions that could arise from submitting a bidder submission for this document. Do you 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.		