

HALTON DISTRICT SCHOOL BOARD
2050 Guelph Line, Burlington, Ontario L7P 5A8
905-335-3663

Request for Quotation

RFQ 24-069

Washroom Renovation at Florence Meares Public School

Location Address: 2102 Berwick Dr, Burlington, ON L7M 4W6

Contact Name: Amanda Chatelain, CPPB

Contact Email: chatelaina@hdsb.ca

Contact Phone #: 905-335-3665 ext. 3232

Key Event Dates

Event	Date
Issuance of RFQ	April 16, 2024
Site Meeting	April 19, 2024
Question Deadline	April 24, 2024
Issuance of Final Addendum	April 26, 2024
Closing Date (on or before 2:00 p.m.)	May 3, 2024
Completion of Work	July 1, 2024 - August 31, 2024

General Instructions

1. Quotations must be returned **via email** to chatelaina@hdsb.ca on this form on or before 2:00 p.m. of the closing date.
2. There will be a Mandatory Site Meeting on April 19, 2024 at the main office of Florence Meares Public School located at 2102 Berwick Dr, Burlington, ON L7M 4W6. The Mandatory Site Meeting will start at 11:30 a.m.

Bidders must sign in upon their arrival. Bidders arriving after the specified start time will not be permitted to participate in the meeting, will be disqualified from the project, and asked to remove themselves from the site. Failure to be present and to sign in at all site visits will result in the disqualification of your submission.

Bidders shall follow Public Health and HDSB Covid-19 protocols while on site.

3. If the HDSB for any reason, determines that it is necessary to provide additional information relating to this RFQ, such information will be communicated to all Bidders by addendum in the same manner the RFQ was communicated. Each Addendum shall form an integral part of this RFQ. This RFQ may only be amended in accordance with this section.

All questions related to this Quotation must be submitted in writing via bids and tenders prior to 2 p.m. on April 24, 2024. Any addendum will be posted no later than April 26, 2024.

Any amendment or supplement to this RFQ made in any other manner will not be binding on the HDSB. All Addenda shall become an integral part of this RFQ and shall be incorporated into any content. Each Bidder shall be responsible for verifying before depositing its Proposal that it has received all Addenda that have been issued.

4. A submission will be irrevocable for a period of 90 days from the closing date.
5. Prices to be quoted in Canadian Funds, HST extra, FOB Destination.
6. A Purchase Order issued by HDSB gives rise to a Contract between HDSB and the successful Bidder in accordance with these terms and conditions.
7. E-mail invoices to Accounts Payable at ap@hdsb.ca or send by mail to the address listed above. Do not include invoices with shipment. Invoices submitted directly to project supervisors and/or schools will not be processed.
8. The General Contractor must select a subcontractor from the HDSB pre-qualified list of sub-contractors attached in Appendix A.

The Contractor agrees to preserve and protect the rights of the parties under the contract with respect to work performed under subcontract, and shall:

- enter into contracts or written agreements with their subcontractors to require them to perform their work in accordance with and subject to the terms and conditions of the contract. Further, the Contractor shall be fully responsible to the Owner for acts and omissions of their subcontractors and of any persons directly or indirectly employed by them as for acts and omissions of persons directly employed by them.
- therefore, agree that they will incorporate the terms and conditions of the Contract Documents into all Subcontractor Agreements they enter into with their subcontractors.

The HDSB reserves the right, at its discretion to waive the requirement to utilize the mandatory list of pre-qualified sub-trades at any time during the tendering process based on market conditions.

9. Bidders shall acknowledge their capacity to begin work July 1, 2024 and to complete all work by August 31, 2024 on the Form of Quotation.

Part B – Standard Terms and Conditions

9. Scope

Unless otherwise expressly stated these Standard Terms and Conditions form a part of this document and apply in like force to contracts for the purchase of commodities as stated in this document. All Bidders will be bound by the terms and conditions set forth, except as specifically qualified in Special Terms and Conditions issued in connection with this document or any Addenda issued relating to this document.

10. Definitions

As used herein as well as in all RFSQ, RFQ, RFP, RFI, Tender or contract documents issued by the Halton District School Board, the following definitions will apply.

Addenda/Addendum	an addition/change made to this document, subsequent to its printing or publication.
Applicable Law and Applicable Laws	means any common law requirement and all applicable and enforceable statutes, regulations, directives, policies, administrative interpretations, orders, by-laws, rules, guidelines, approvals and other legal requirements of any government and/or regulatory authority in effect from time to time.
Bid/Submission/Proposal	an offer from a Bidder in response to a Proposal/Tender which is subject to acceptance or rejection.
Proponent	a legal entity, being a company, partnership or individual who submits a Bid, Proposal, or Submission in response to a formal request for Bid, Proposal, or Submission.
Board/HDSB	means the Halton District School Board.
Contract	means the agreement, in writing, governing the performance of the Work and/or the purchase and sale of commodities and includes, without limitation, the document (including standard terms and conditions), Bidder Submission and the written document accepting the Bidder Submission (including any notice of acceptance or award).
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 HDSB.
Goods or Services	product and/or any and all labour, vehicles or equipment used by a Bidder in fulfilling a Contract.
HST	means Harmonized Sales Tax.
Intellectual Property	means any trademark, copyright, moral right, patent, industrial design, trade name, domain name, trade secret, know how, integrated circuit topography or other intellectual property, industrial property or proprietary right owned by, licensed to, or used by any third person.
Mandatory Requirement	a minimum requirement – where the words “mandatory”, “must”, “required”, “shall” and/or “will” are referenced in this document and such requirement is identified as a Mandatory Requirement. Failure to comply will deem the submission non-compliant and the bid/submission will be disqualified.
Proposal/RFP	a sealed written offer to supply Goods and/or Services of any value, acceptance of which may be subject to negotiation.
Quotation/RFQ	a written offer to supply Goods and/or Services with a value that is less than \$100,000.
Response	the package submitted by a Bidder in response to an RFP or RFT.
Specifications	those stated requirements for the Goods and/or Services set out in the document.
Subcontractor	a person, firm or corporation having a direct contract with the contractor to perform a part or parts of the Work, or to supply Goods worked to a special design according to the contract documents, but does not include one who merely supplies Goods not so worked.
Tender/RFT	a sealed written offer to supply Goods and/or Services with a value that is greater than \$100,000.

Bidder Submission	means the document as completed by the Bidder for the purpose of offering to sell to the HDSB the services and/or goods specified in the document, and includes but is not limited to Quotations, Tenders and Proposals.
Work	means the Work to be undertaken by the Bidder pursuant to the provisions of the Contract.

11. Reserved Rights of the HDSB

The HDSB reserves the right to:

- (a) make public the names of any or all Bidders;
- (b) request written clarification or the submission of supplementary written information in relation to the clarification request from any Bidder and incorporate a Bidder's response to that request for clarification into the Bidder's Submission;
- (c) assess a Bidder's Submission on the basis of:
 - (i) a financial analysis determining the actual cost of the Submission when considering factors including quality, service, price and transition costs arising from the replacement of existing goods, services, practices, methodologies and infrastructure (howsoever originally established);
 - (ii) information provided by references;
 - (iii) the Bidder's past performance on previous contracts awarded by the HDSB;
 - (iv) the information provided by a Bidder pursuant to the HDSB exercising its clarification rights under this RFQ process; or
 - (v) other relevant information that arises during this RFQ process;
- (d) waive formalities and accept Submissions that substantially comply with the requirements of this RFQ;
- (e) verify with any Bidder or with a third party any information set out in a Submission;
- (f) check references other than those provided by any Bidder;
- (g) disqualify any Bidder whose Submission contains misrepresentations or any other inaccurate or misleading information;

- (h) disqualify any Bidder or the Submission of any Bidder who has engaged in conduct prohibited by this RFQ;
- (i) disqualify a Bidder for any conduct, situation or circumstance that constitutes a Conflict of Interest, as solely determined by the HDSB and at any time.
- (j) make changes, including substantial changes, to this RFQ, provided that those changes are issued by way of addenda in the manner set out in this RFQ;
- (k) select any Bidder other than the Bidder whose bid reflects the lowest cost to the HDSB;
- (l) review all Bidders utilizing the HDSB Vendor Performance Management Administrative Procedure, which can include suspension of Bidders who fail to meet the HDSB's expectations or who are involved in litigation or threatened litigation against HDSB. The HDSB Vendor Performance Management Administrative Procedure is found at the attached link

(www.hdsb.ca/our-board/Policy/VendorPerformanceManagement.pdf)
- (m) award to one or more bidders according to their requirements;
- (n) cancel this RFQ process at any time and for any or no reason;
- (o) cancel this RFQ process at any stage and issue a new RFQ for the same or similar deliverables;
- (p) accept any Submission in whole or in part; or
- (q) award to multiple bidders if circumstances are warranted;
- (r) reject any or all Submissions;
- (s) to limit the number of pre-qualified Bidders eligible to submit proposals for any future projects. HDSB shall not be obligated to provide all pre-qualified Bidders with the same opportunity to bid on all future projects within each stated category. By participating in this RFQ, Bidders acknowledge that there is no guarantee that a Bidder will receive any assignments, work or projects and that there is no expectation that any specified number of projects will be made available during the pre-qualification term;

and these reserved rights are in addition to any other express rights or any other rights that may be implied in the circumstances.

In addition, the HDSB reserves the right at any time during normal business hours, and as often as the HDSB may deem necessary, to examine, the successful Bidder's records with respect to the successful Bidder's services under the Bidder's purchase

order and/or Submission and any Contract. The successful Bidder shall permit the HDSB to audit, examine, and make copies, excerpts or transcripts from such records, and to make audits of data relating to matters covered by a Submission, any purchase order and/or any Contract. The successful Bidder shall maintain and retain all records and other documents related to a Submission, any purchase order, and/or any Contract for a period of seven (7) years from the date of final payment, except in cases where unresolved audit questions require a longer period of time for resolution, as determined by the HDSB.

12. *Litigation with the HDSB*

The HDSB may, in its absolute discretion, reject a Submission submitted by a Bidder **prior to or after a Submission opening, if the Bidder:**

- (a) is or has in the past 10 years been a party to litigation with the HDSB; or
- (b) directly or indirectly, including by common ownership or control or otherwise, is related to a party currently in litigation with the HDSB or a party that has in the past 10 years been in litigation with the HDSB; or
- (c) intends to use a subcontractor in respect of a specific project who is, or has in the past 10 years been a party to litigation with the HDSB, or who is related to a party currently in litigation with the HDSB or a party that has in the past 10 years been in litigation with the HDSB.

For the purposes hereof, the phrase “litigation with the HDSB” includes cases in which the Bidder or prospective Bidder or any of the parties named above, has advised the HDSB in writing of their intention to commence litigation, or have commenced or have advised the HDSB of their intention to commence an arbitral proceeding against the HDSB (excepting only construction lien demands, notices or proceedings or arbitrations under O. Reg 444/98 of the Education Act).

In determining whether or not to exercise its discretion as set out herein, the HDSB will consider whether the litigation (past or current) is likely to affect a Bidder’s ability to work with the HDSB, its consultants and representatives, and whether the HDSB’s experience with the Bidder, the related party or subcontractor, as the case may be, in the matter giving rise to the litigation, indicates that the HDSB is likely to incur increased staff and legal costs in the administration of the Contract if it is awarded to the Bidder.

13. *Accessibility for Ontarians with Disabilities (AODA)*

The HDSB is committed to accessibility and preventing and removing barriers for persons with disabilities. Where practicable, the HDSB will incorporate accessibility features and criteria when procuring or acquiring goods, services and facilities, in which case, a Bidder must be capable of recommending and delivering same in an inclusive and accessible manner, consistent with the Ontario Human Rights Code (“OHRC”), the

Ontarians with Disabilities Act, 2005 (“AODA”) and its Regulations, in order to achieve accessibility for Ontarians with disabilities. If the HDSB determines that it is impractical to do so an explanation will be provided upon request.

In accordance with Ontario Regulation 429-07 made under the AODA, the HDSB has established policies, practices and procedures governing the provisions of its services to persons with disabilities, which may be found at:

<https://www.hdsb.ca/our-board/Pages/Accessibility.aspx>

14. Ability to Negotiate/Contract Negotiations

The HDSB reserves the right to enter into negotiations with any Bidder as it sees fit, or with another Bidder concurrently. The HDSB will not incur liability to any Bidder as a result of these negotiations.

The HDSB may, prior to and after Contract award, negotiate changes to the specifications, the type of materials or any conditions with the successful or preferred Bidder or one or more of the Bidders without having any duty or obligation to advise any other Bidder or to allow them to vary their bid prices as a result of such changes, and the HDSB shall have no liability to any other Bidder as a result of such negotiations or modifications.

15. Agree to Abide by the Established Process

It is vital to the HDSB that the process leading to the recommendation of a bidder(s) and the conclusion of an agreement for the provision of these services be, and be seen to be, open and fair and that each of the respondents is treated equally.

No respondent can be seen to be deriving, intentionally or otherwise, an advantage or information, which is not equally available to all other respondents. Nor is it acceptable that any advantage or information be sought or obtained from any unauthorized staff or representative of the HDSB, or any benefit derived from any special or personal relationships or contacts.

All communications, including requests for information, between respondents to this RFQ and the HDSB should be between only the representative(s) of the HDSB who has been authorized and designated for that particular purpose. Bidders must not rely on information from any other source.

16. Assignment

Unless otherwise stated in this document, it is mutually agreed and understood that the successful Bidder will not assign, transfer, convey, sublet or otherwise dispose of the Contract (in whole or in part) or the right, title or interest therein, or the Bidder’s power to execute such contract to any other person, firm, company or corporation without the

previous written consent of the HDSB. Any act in derogation of the foregoing shall be null and void. For the purposes hereof, the transfer or issuance of shares by a Bidder of more than fifty (50%) percent of the voting securities of a Bidder to any third party other than to an affiliate (as such term is defined in the Business Corporations Act (Ontario)) or the shareholder or shareholders of the Bidder as of the Closing Date, whether or not such transfer or issuance of voting securities takes place in one or more transactions, shall, for the purposes of this Agreement, be deemed to be an assignment of the Contract requiring the consent of the HDSB, unless such transfer or issuance of shares is made pursuant to an initial public offering of common shares under the Securities Act (Ontario).

17. Award

The final award will be based on (but not limited to) the best value for money and quality service delivery from a Bidder who complies with the provisions of this Submission solicitation, including specifications, contractual terms and conditions, who can reasonably be expected to provide satisfactory performance on the proposed Contract based on reputation, references, performance on previous contracts, and sufficiency of financial and other resources, and provides a solution that is a fit with the HDSB's requirements. The lowest price or bid shall not be the sole, determinative factor.

18. Breaking a Tie

In the event of a tie score, the HDSB will resolve same based on the earlier date/time stamp of when the bid was received by HDSB in accordance with this RFQ.

19. Change Orders

A change order results when unforeseen conditions are identified from the original scope of work (Contract or Purchase Order) and is inextricably tied to the original scope.

The following steps should occur prior to issuance of a change order that does not originate from HDSB senior management:

- appropriate HDSB approval must be acquired prior to modifying any Contract or Purchase Order
- appropriate written HDSB approval must be obtained prior to commencing the work.

All requests or recommendations for Change Orders shall include the impact to both price and schedule for the work to be performed. HDSB shall have the right to retain consultants or experts to help identify the need or to verify the impact of the change order on the project.

No change in the work shall proceed without the written approval of the Owner. Any change shall be initiated by Owners "WORK ORDERS" which shall bear the change cost and the Contractor's and Owner's representative's signatures as an instruction to proceed. All changes shall be restricted to five percent (5%) overhead and five percent (5%) profit applied to the labour and material cost.

20. Conflict of Interest

For the purposes hereof, "Conflict of Interest" includes:

- (a) in relation to the Submission process, the Bidder has an unfair advantage or engaged in conduct, directly or indirectly, that may give the Bidder an unfair advantage, including:
 - (i) having or having access to information in the preparation of the Submission that is confidential to the HDSB and not available to other Bidders;
 - (ii) communicating with any person with a view to influencing preferred treatment in the Submission process; or
 - (iii) engaging in conduct that compromises or could be seen to compromise the integrity of the open and competitive process and render that process non-competitive and unfair; or
- (b) in relation to the performance of the Work, services or contractual obligations, the Bidder's other commitments, relationships or financial interests:
 - (i) could or could be perceived to exercise an improper influence over the objective, unbiased and impartial exercise of the Bidder's independent judgments; or
 - (ii) could or could be perceived to compromise or impair or be incompatible with the effective performance of the Bidder's work, services or contractual obligations.

The Bidder shall:

- (a) avoid any Conflict of Interest in the Submission process and in the performance of its contractual obligations;
- (b) disclose to the HDSB without delay any actual or potential Conflict of Interest that arises during the Submission process or during the performance of its contractual obligations; and

- (c) comply with any requirements prescribed by the HDSB to resolve any Conflict of Interest.

In addition to all other contractual rights or rights available at law or in equity, the HDSB may immediately disqualify a Submission or terminate the Contract upon giving notice to the Bidder where:

- i. the Bidder fails to disclose an actual or potential Conflict of Interest;
- ii. the Bidder fails to comply with any requirements prescribed by the HDSB to resolve a Conflict of Interest; or
- iii. the Bidder's Conflict of Interest cannot be resolved.

This paragraph shall survive any termination or expiry of the Contract.

21. HDSB Confidential Information

For the purposes hereof, "HDSB Confidential Information" means all information of the HDSB that is of a confidential nature, including all confidential information in the custody or control of the HDSB, regardless of whether it is identified as confidential or not, and whether recorded or not, and however fixed, stored, expressed or embodied, which comes into the knowledge, possession or control of the Bidder in connection with the Contract. For greater certainty, HDSB Confidential Information shall:

- (a) include:
 - (i) all new information derived at any time from any such information whether created by the HDSB, the Bidder or any third party;
 - (ii) all information (including Personal Information) that the HDSB is obliged or has the discretion not to disclose under provincial or federal legislation or otherwise at law; but
- (b) not include information that:
 - (i) is or becomes generally available to the public without fault or breach on the part of the Bidder of any duty of confidentiality owed by the Bidder to the HDSB or to any third party;
 - (ii) the Bidder can demonstrate to have been rightfully obtained by Bidder without any obligation of confidence, from a third party who had the right to transfer or disclose it to the Bidder free of any obligation of confidence;

- (iii) the Bidder can demonstrate to have been rightfully known to or in the possession of the Bidder at the time of disclosure, free of any obligation of confidence when disclosed; or
- (iv) is independently developed by the Bidder;

but the exclusions in this subparagraph shall in no way limit the meaning of Personal Information or the obligations attaching thereto under the Contract or at law.

During and following the term of the Contract, the Bidder shall:

- (a) keep all HDSB Confidential Information confidential and secure;
- (b) limit the disclosure of HDSB Confidential Information to only those of its directors, officer, employees, agents, partners, affiliates, volunteers or subcontractors who have a need to know it for the purpose of carrying out its obligations under the Contract and who have been specifically authorized to have such disclosure;
- (c) not directly or indirectly disclose, destroy, exploit or use any HDSB Confidential Information (except for the purpose of carrying out its obligations under the Contract or except if required by order of a court or tribunal), without first obtaining:
 - (i) the written consent of the HDSB; and
 - (ii) in respect of any HDSB Confidential Information about any third party, the written consent of such third party;
- (d) provide HDSB Confidential Information to the HDSB on demand; and
- (e) return all HDSB Confidential Information to the HDSB before the end of the Term, with no copy or portion kept by the Bidder.

22. Criminal Background Checks

The Bidder acknowledges that the HDSB must be in compliance with Regulation 521/01 of the Education Act (Ontario) - Collection of Personal Information with respect to criminal background checks and offence declarations. The Bidder covenants and agrees to assist the HDSB in complying with same by providing the HDSB, or such other entity as the HDSB may designate, with a criminal background check covering offences under the Criminal Code, the Narcotics Control Act, and any other offences which would be revealed by a search of the automated Criminal Records Retrieval System maintained by the RCMP or, in instances where the Bidder will have access to or is responsible for minors or vulnerable persons, a Vulnerable Persons Clearance certificate in addition to the above ("Criminal Background Check"), together with an

Offence Declaration in HDSB approved form, for every individual or employee of the Bidder who may come into direct contact with students on a regular basis at a school site of the HDSB, or who may have access to student information.

For the purposes of this document, the HDSB shall determine in its sole and unfettered discretion whether an individual or employee of the Bidder may come into direct contact with students on a regular basis or may have access to student information. The Bidder agrees to indemnify and save harmless the HDSB from all claims, liabilities, expenses, and penalties to which it may be subjected on account of the Bidder's failure to provide a Criminal Background Check and an Offence Declaration, as aforesaid. This indemnity shall survive the expiration or sooner termination of the Contract. In addition, and notwithstanding anything else herein contained, if the Bidder fails to provide a Criminal Background Check and an Offence Declaration for an individual or employee of the Bidder who may come into direct contact with students on a regular basis at a school site of the HDSB or who may have access to student information, then the HDSB shall have the right to forthwith terminate the Contract without prejudice to any other rights which it may have in the Contract, in law or in equity.

23. Debrief

The HDSB, at the written request of a Bidder will conduct a debriefing. Bidders must submit their request within sixty (60) days of Contract award notification. The HDSB will only identify any weaknesses or strengths in the Bidder's submission. No information regarding other Bidders' submissions will be disclosed. The intent of the debriefing information session is to assist a Bidder in presenting a better Submission in subsequent procurement opportunities. Any debriefing provided is not for the purpose of providing any opportunity to challenge the procurement process.

24. Dispute Resolution

In the event that a Bidder wishes to review the decision of the HDSB in respect of any material aspect of the RFQ process, and subject to having attended a debriefing, the Bidder shall submit a protest in writing to the RFQ Authority within ten (10) days from such a debriefing.

Any request that is not received in a timely manner will not be considered, and the Bidder will be notified in writing.

A protest in writing shall include the following:

- (a) a specific identification of the provision and/or procurement procedure that is alleged to have been breached;
- (b) a specific description of each act alleged to have breached the procurement process;

- (c) a precise statement of the relevant facts;
- (d) an identification of the issues to be resolved; and
- (e) the Bidder's requested remedy.

For the purpose of a protest, the HDSB will review and address any protest in a timely and appropriate manner. HDSB's decision in this regard is final.

25. Environmental Statement

The HDSB, when practically and financially feasible, will consider the acquisition of goods and services that will reduce the environmental footprint of the HDSB.

26. Force Majeure

Delays in or failure of performance by either party under the Contract shall not constitute default thereunder or give rise to any claim for damages if caused by occurrences beyond the control of the party affected, including but not limited to, decrees of Governments, acts of God, fires, floods, riots, wars, rebellion, sabotage, and atomic or nuclear incidents. Lack of finances, strikes, lockouts or other concerted acts by workers shall not be deemed to be a cause beyond a party's control.

In the event that performance of the Contract in the reasonable opinion of either party is made impossible by an occurrence beyond the control of the party affected, then either party shall notify the other in writing. The HDSB shall either terminate the Contract forthwith and without any further payments being made, or authorize the Bidder to continue the performance of the Contract with such adjustments as may be required by the occurrence in question and agreed upon by both parties. In the event that the parties cannot agree upon the aforementioned adjustment, it is agreed by the parties that the Contract shall be terminated.

27. Guarantees and Warranties

All Work shall be done in a good and workmanship like manner. All materials, goods and services must meet the applicable specifications, either by the HDSB, its consultant on the project or the manufacturer. The Bidder warrants and guarantees that all materials, Goods; Services and workmanship will be free from defects and fit for the purpose intended by the HDSB. All Goods delivered by the Bidder must be new, in good working order and of the latest model possessing all accessories standard to the manufacturer's stock model. The Goods and/or Services must be covered by written guarantees and warranties acceptable to the HDSB.

28. Health & Safety / WHMIS

Bidders and/or contractors must comply with the Occupational Health and Safety Act and its regulations. All Bidder's contractors and subcontractors and their respective

employees will have received health and safety training appropriate to their trade, and will be able to provide proof thereof to the HDSB upon request. Contractors shall be held responsible for any subcontractors where such are permissible by the HDSB. The HDSB may request and suppliers/contractors/subcontractors will provide evidence of such training at any time.

Suppliers/contractors/sub-contractors shall comply with the HDSB policies, programs and procedures at all times while on site. All suppliers/contractors/sub-contractors are required to sign in upon arrival/exit at a HDSB location prior to beginning and at completion of Work.

Suppliers and/or contractors/sub-contractors shall be held responsible for all fines and/or contraventions of legislation which have been incurred by the HDSB.

As per Ontario regulation 278/05 section 10 (5) the HDSB will provide contractors/sub-contractors performing work in HDSB buildings access to the site-specific asbestos inventory. Site specific asbestos inventories are available at each HDSB site. Contractors/sub-contractors shall review the site-specific asbestos inventory in relation to the scope of work they are undertaking, prior to the commencement of work. The requirements of the HDSB's Asbestos Management Administrative Procedure are to be adhered to at all times. A copy of the HDSB's Asbestos Management Administrative Procedure can be found at:

<http://www.hdsb.ca/our-board/Policy/AsbestosManagementInFacilities.pdf>.

All Work is subject to prior approval by the appropriate HDSB department.

Contractors shall examine carefully the HDSB's Asbestos Register for the Work site, in addition to examining existing conditions for suspected Asbestos Containing Materials (ACM), on which completion of Work is dependent.

Upon discovery of unforeseen suspected ACM affecting completion of the Work, the Contractor shall cease any operations that may disturb said materials and notify the Owner immediately.

The Contractor shall arrange for removal of ACM affecting completion of Work through a HDSB-approved ACM abatement contractor, and arrange for coordination of testing through HDSB Facility Services, if required.

Contractors shall be responsible for any sub-contractors in their employ with respect to the aforementioned requirements.

29. Indemnification and Liability

The Bidder hereby agrees to indemnify and hold harmless the HDSB, its directors, officers, trustees, employees and agents from and against all liability, loss, costs, damages and expenses (including legal, expert and consultant fees), causes of actions,

actions, claims, demands, lawsuits or other proceedings, by whomever made, sustained, incurred, brought or prosecuted if:

- (a) resulting from the Bidder's failure to observe and conform to the standards established by law or by any other association which has established standards recognized by the Province of Ontario;
- (b) relating to labour and equipment furnished for the Work; and
- (c) involving inventions, copyrights, trademarks or patents, and rights thereto, used in doing the Work and in the subsequent use and operation of the Work or any part thereof upon completion.

30. Insurance and Liability

The successful bidder must indemnify the HDSB from any and all manner of damage or injury, risk, claims, demands, actions, penalties, causes of action, damages and any and all costs arising out of, or incurred by reason of provision of goods and/or services by the bidder. The cost of such insurance will be the responsibility of the Bidder.

The successful bidder(s) will obtain and provide current proof of insurance upon the award, that the successful Bidder will be covered by:

at least Two Million Canadian Dollars (C\$2,000,000.00) of comprehensive commercial general liability insurance for bodily injury, property damage, operations liability, contractual liability and tenant's legal liability, including umbrella liability insurance covering liability arising from premises, operations, independent contractors, products-completed operations, personal injury and liability assumed under the Contract;

at least One Million Canadian Dollars (C\$1,000,000.00) of business automobile liability insurance and, if necessary, umbrella liability insurance for owned, hired and non-owned vehicles covering bodily injury and property damage: and with an insurer licensed to carry on business in the Province of Ontario.

In the case of multi-year contracts, a copy of a valid certificate must be provided to the Halton District School HDSB annually thereafter, at least thirty (30) days prior to the anniversary date of the contract commencement date. At commencement of the Contract and throughout the Contract duration, certification shall be submitted on a Certificate of Insurance form with the above-mentioned coverage, thereby protecting the Halton District School Board against claims for property damage and bodily injuries, including accidental death, caused by the successful Bidder(s) or its employees and/or Subcontractors during the performance of its obligations under the Contract.

The Halton District School Board must be named as additional insured, and the policy must contain a cross liability clause, and thirty (30) day prior notice clause of any cancellation, non-renewal or product change in coverage, terms or conditions.

As a condition precedent to contract award, Certificates of all such insurance policies shall be filed with the HDSB by the successful Bidder and shall be subject to the HDSB's approval as to the adequacy of protection.

All the above-mentioned insurance shall be maintained until the HDSB certifies that the work is complete.

31. Invoicing/Payment/EFT

To ensure that payment is not deferred, the following information shall be on all invoices:

- Bidder's Name or Business Number, Address, Telephone Number and HST registration number
- Invoice Date
- Invoice Number
- Purchase Order Number, Name of Requester, Shipment Destination
- Name of Halton District School Board staff that issued this order
- Complete Good/Service Description (including hourly rates, service/delivery dates, service location)
- Attach Copy of Service Report/Work Order Completed
- Terms of payment
- Total of HST where applicable
- Total Amount Payable

The HDSB's method of payment is by Electronic Funds Transfer (EFT). If the Bidder is a new vendor or current vendor who has not previously utilized the EFT payment service or has banking information which has changed, then an "Application of Vendor Direct Deposit" form is required to be completed, which is available through the Purchasing contact for this document. This form along with a voided cheque or letter from the Bidder's bank should be sent to:

Halton District School Board
Attention: Accounts Payable Department
J.W. Singleton Centre,
PO Box 5005 Stn LCD 1,
Burlington ON L7R 3Z2 or

electronically to: apeft@hdsb.ca before any invoices are submitted to the HDSB for payment. Payment terms are Net 28. Early payment discounts may be considered.

32. Irrevocability

The Submission will be open for acceptance by the HDSB and irrevocable by the Bidder for a period of ninety (90) calendar days from the Closing Date.

33. Municipal Freedom of Information and Protection of Privacy Act ("MFIPPA")

- (a) The Bidder acknowledges and agrees that the HDSB is subject to MFIPPA. The Bidder further expressly acknowledges and agrees that, upon the acceptance of a successful Submission and conclusion of this process (including execution and delivery of the Contract between the HDSB and the successful Bidder), subject to subsection (b) below, the Submission shall not be considered confidential for the purposes of Section 10 of MFIPPA and, in the event of an access request or at the discretion of HDSB, shall be subject to release in its entirety without redaction.
- (b) Notwithstanding paragraph (a) above, the Bidder and the HDSB acknowledge and agree that the information listed below is considered to be supplied by the Bidder to the HDSB in confidence:
 - 1. For Services: Hourly rates/fees and information from which such rates/fees could be reasonably deduced.
 - 2. For Goods: Unit costs and information from which such unit costs could be reasonably deduced.
- (c) Notwithstanding the foregoing, the Bidder acknowledges and agrees that, because the HDSB is subject to MFIPPA, all or part of any Submission, including information supplied in confidence, may be subject to release in response to an access request submitted pursuant to MFIPPA. In the event that the HDSB receives a request for access to all or part of a Submission supplied in confidence, the HDSB shall deliver the relevant notice to the Bidder, who shall bare all costs, legal or otherwise, with respect to any objection the Bidder may have in respect of the release of any or all parts of the Submission pursuant to MFIPPA.

34. No Guarantee of Work or Exclusivity of Contract

The HDSB makes no guarantee of the value or quality of goods or services or volume of work to be assigned to the successful Bidder. Any Contract executed with a successful Bidder may not be an exclusive Contract for the provision of the requested Goods or Services. Quantity where specified more or less, are estimates of previous consumption and are furnished without liability to the HDSB.

35. Non-Performance/Termination of Contract

If the Bidder delivers substandard, unapproved or defective items, which are rejected by the HDSB, the Bidder agrees to replace these items at the Bidder's expense with items of a quality deemed acceptable to the HDSB within a 48-hour period of the mutual satisfactory agreement being reached. If the Bidder fails to replace the items within this 48-hour period, the parties agree that the HDSB may purchase substitutes for the rejected items in the open market at no additional cost or liability to the HDSB.

Where at any time the quality of the Goods or Service supplied by the successful Bidder is not of a satisfactory standard, the HDSB may issue a verbal warning outlining the deficiency in supply or other aspects of performance and requiring the successful Bidder to correct those deficiencies within such period of time as stated. If the deficiency is not corrected within the time specified, or having been corrected, there is a further instance of deficient performance, the HDSB may issue a written notice to the successful Bidder, identifying the deficiency in performance and setting a final date or time period for its correction, and advising that if corrective steps are not taken by that date or within that time, the HDSB may terminate the Contract and take corrective action itself.

Until the HDSB is satisfied that the unsatisfactory performance has been corrected, the HDSB may hold back from any payment an amount sufficient to rectify the unsatisfactory performance until its requirements have been met.

The HDSB reserves the right, in its absolute discretion, to terminate a Contract immediately without penalty, costs or damages of any kind whatsoever, where the Bidder has violated any laws or performed any of the following acts while performing work with the HDSB and further reserves the right to take that failure into account with respect to the award of any future contract.

- a) over-billing or duplicate billing;
- b) splitting of invoices;
- c) charging for items not supplied;
- d) charging for items not approved prior to invoicing;
- e) charging for items of one grade, while supplying items of an inferior grade;
- f) Misrepresentation as to the quality or origin of goods, their functionality or suitability for a purpose, or their performance characteristics;
- g) not responding to the HDSB or, failure to complete contract.

36. Ownership

The Submission, along with all correspondence, documentation and information provided to the HDSB by any Bidder in connection with or arising out of the Submission, once received by the HDSB, shall become the property of the HDSB and may be appended to any Contract and/or purchase order with the successful Bidder.

37. Permits, Licences and Approvals

Bidders shall obtain all permits, licences and approvals required in connection with the supply of the Goods and/or Services. The costs of obtaining such permits, licences and approvals shall be the responsibility of, and shall be paid for by the Bidder.

Where a Bidder is required by any Applicable Law to hold or obtain any such licence, permit, or approval to carry on an activity contemplated in its Submission or in the Contract, neither the acceptance of the Submission nor the execution of the Contract by the HDSB shall be considered an approval by the HDSB for the Bidder to carry on such activity without the requisite licence, permit, consent or authorization.

Without in any way limiting the generality of the foregoing, any electrical Goods being proposed for consideration pursuant to this RFQ must be authorized or approved in accordance with the Electrical Safety Code or by a certification organization accredited with the Standards Council of Canada Act (Canada), and shall bear the certification organization's mark identifying the Goods certified for use in Canada. Certification shall be to the standard that is appropriate for the intended use of the electrical Goods at any of the HDSB's schools or facilities.

38. Co-operative Purchasing Provisions

This document is being issued by the HDSB to meet the HDSB's requirements. The successful Bidder acknowledges that the Provincial Government encourages cooperative procurement initiatives by School HDSBs. Bidders shall indicate on the Form of Quotation if they are willing to extend pricing and submission terms to other District School Boards in the province of Ontario where the scope of work is deemed similar or the same and where both parties are in agreement, in which case they shall be deemed to have granted consent to the HDSB to share the Submission with such HDSBs, subject to such HDSBs agreeing to receive the Submission in confidence on the understanding that the Submission contains financial, commercial, technical and other sensitive information of the Bidder. The Bidder will not be penalized if it does not agree to this provision. The HDSB will not incur any financial responsibility in connection with any purchase by another School Board. Each School Board shall accept sole responsibility for its own contract management such as placing orders and making payments to the successful Bidder.

39. Proof of WSIB Coverage

If the Bidder is subject to the Workplace Safety and Insurance Act (“WSIA”) or the Workplace Safety and Insurance Amendment Act, 2008 (“WSIAA”), the Bidder shall submit a valid clearance certificate of Workplace Safety and Insurance Board (“WSIB”) coverage to the HDSB before commencing the performance of any work or services. In addition, the Bidder shall, from time to time during the term of the Contract and at the request of the HDSB, provide additional WSIB clearance certificates. The Bidder covenants and agrees to pay when due, and to ensure that each of its subcontractors pays when due, all amounts required to be paid by it or its subcontractors, from time to time during the term of the Contract, under the WSIA and/or the WSIAA, failing which the HDSB shall have the right, in addition to and not in substitution for any other right it may have pursuant to the Contract or otherwise at law or in equity, to pay to the WSIB any amount due pursuant to the WSIA or the WSIAA unpaid by the Bidder or its subcontractors and to deduct such amount from any amount due and owing from time to time to the Bidder pursuant to the Contract together with all costs incurred by the HDSB in connection therewith.

40. Right to Withdraw

Submissions may be withdrawn prior to the Closing Time. Following Closing, no Submission may be withdrawn. Any Bidder who attempts to do so may have a negative Performance Evaluation placed on record with the HDSB in accordance with the Vendor Performance Management Administrative Procedure

www.hdsb.ca/our-board/Policy/VendorPerformanceManagement.pdf

41. Smoking on HDSB Property

Smoking of any substance and in any manner is prohibited in all HDSB buildings and on all HDSB property. This includes, without limitation, tobacco, cannabis in any form and vaping.

42. Vehicle Operation on HDSB Property

The successful Bidder shall use due care and caution when motorized vehicles are in operation on school property while students are expected to enter or exit the school building and/or are visible outside the school building on school property or adjacent property, particularly during recess, lunch period and preceding and following the end of the school day. Vehicles operated in parking lot and driveway areas shall not be driven at a speed in excess of 8-kilometers/per hour.

Further, on school property drivers must turn off vehicles and remove the keys during any stop. At no time are vehicles to be left running while unattended. It is recommended that the vehicle be locked when left unsupervised. The HDSB will not be responsible for any theft of, or any theft from, vehicles operated by the successful Bidder.

Asphalt play areas around the exterior of the school building are not constructed to handle heavy vehicles. Bidders will be held responsible for any damage to HDSB property including but not limited to asphalt or natural surfaces as a result of using them for access of heavy vehicles. Making good of natural surfaces or asphalt areas that are damaged in the course of the work shall be to the original (new) condition irrespective of their condition prior to commencement of the work, or the condition of the adjacent unaffected areas. Vehicles are only permitted to access, stand or be parked in areas designated by administrative staff of HDSB, which for the purposes of this provision does not include principals of schools.

43. Bidder Conduct

When on HDSB property, the Bidder and its employees must:

- have proper identification (name badge, uniform with logo, photo I.D. etc.).
- be dressed appropriately (the following are not appropriate: clothing that fails to contain the anatomy when the person is carrying out normal duties; clothing with printed slogans, advertising or designs that are obscene or could have a double meaning).
- use appropriate language.
- refrain from wearing scented products or fragrances such as perfume, cologne, after shave, shampoos (as required).
- work with dignity, courtesy and respect for self and others.
- not make noise or move in corridors during morning announcements, and playing of the national anthem.
- observe procedures during fire evacuation and lockdowns, whether they are actual or test (drills).
- park in spots designated by the Principal.
- The Bidder must observe all HDSB policies and procedures including but not limited to: Smoke-Free Environment; Sexual, Racial and Ethno Cultural Harassment, etc.
- The Bidder will ensure that the education program is not interrupted and that the health and safety of the students and staff is not compromised.
- No person who is impaired by alcohol or drugs will enter and/or remain on HDSB property.
- The Bidder agrees that its employees and sub-contractors will observe and comply with all standards, procedures, policies, rules and regulations of the HDSB, including but not limited to privacy, use of facilities, equipment, building security and computer technology.

Form of Quotation

RFQ # 24-069

Washroom Renovation - Florence Meares Public School

Base Bid Amount (Excluding HST)	\$
Cash Allowance	\$ 2,000.00
Contingency Allowance	\$ 10,000.00
Total Bid (Excluding HST)	\$

Proposed Subcontractors

Electrical Subcontractor	
Mechanical Subcontractor	

I/We confirm that work will begin on July 1, 2024 as indicated in the RFT documents:

Yes **No**

By signing below, I/We acknowledge that I/We have read and accept the terms and conditions of this document and further that I/We have the authority to bind the organization.

I/We declare that to our knowledge no member of HDSB is, will be or has become financially interested, directly or indirectly, in any aspect of this contract other than in the appropriate discharge of his/her obligations as an employee/offer of HDSB.

I/We declare this submission is made without collusion, knowledge, and comparison of figures or arrangement with any other company, form or person submitting for the same service/supply.

I/We have carefully examined all of the Proposal Documents, and that we have thoroughly reviewed all proposal documentation and addenda number _____ to _____, and hereby accept and agree to same as forming part and parcel of the proposed Contract.

Signature: _____

Printed Name: _____

Company Name: _____

Address: _____

Phone: _____ **Fax:** _____

Email: _____ **Date:** _____

Email Address for POs (if different from above): _____

Appendix A - HDSB List of Prequalified Subcontractors

Electrical

Vendor Name	Contact Name	Email Address	Telephone Number
Arc Electrical	Susan K	susan.k@arcelectrical.ca	905-816-0234
Atlas Electric Corp.	Emre Ates	atlaselectricgta@gmail.com	289-386-3601
B-Safe Electric	Dan More	dan@b-safe.ca brian@b-safe.ca	905-872-7233
Best Electric	Gurmukh Sehmbi	gsehmbi@bestelectric.ca	416-677-3851
Black & McDonald Limited	Brian Mino	swatson@blackandmcdonald.com	905-560-3100
Brant Electric Limited	John Phelps	johnphelps@brantelectridimited.ca info@brantelectridimited.ca	905-634-5577
Cahill Electr Inc.	Chris Cahill	chris@cahillelectric.ca	905-388-0515
CEC Services Ltd.	Kyle Feinstein	estimating@beswickgroup.com	905-716-3711
Dorval Electric Inc.	Pat Folino	dorvalelectric@bellnet.ca	905-845-4341
EEL Line Corporation	Majeed Wraich	majeed@eeline.ca	416-540-8894
Electrobauer Systems Limited	Michael Bauer	michaelbauer@rogers.com	416-389-6804
Elite Electrical Solutions	Amar Taneja	estimate@eliteelectrical.ca	905-789-5511
Ellisdon Facilities Services Inc. (Formerly Current Technologies Ltd.)	Don Frederickson	dfrederickson@ellisdon.com	416-240-7691
Gremar Electric Ltd.	Gennaro Di Gregorio	gennaro@gremar.ca	905-652-2641
Halton Electric	Paul Woods	office@haltonelectri.com	905-335-2104
Indcon Inc.	Nitesh Patel	indcon74@gmail.com	416-677-3303
JD Electrical Services	Dave De Cianis Matthew De Cianis	dave@jdelectric.com	416-803-7689 416-896-6393
Kraun Electric Inc.	Kevin Krause	estimating@kraun.ca	905-684-6895
LJ Barton Mechanical Inc.	Mike Van den Heuvel	estimating@ljbarton.com	905-304-1976
Nadelec Contracting Inc.	John Nadalin	john.nadelec@gmail.com	905-875-5239
North Star Electric	Greg Harris	gharris@northstarelectric.ca	905-845-9063
Ozz Electric	Dave Burlo	estimating@ozzelectric.com	416-637-7237
PRL - Guite Electric Ltd.	Kyle Leaker	estimating@prlguite.ca	905-549-6711
R. A. Hillmer Electric Corp.	Robert Hillmer	rahillmerelectric@outlook.com	289-736-1000
Smith & Long	Vince Ambrico	vambrico@smithandlong.com	416-391-0443
Star Electrical Services Inc.	Harvinder Kahlon	info@starelectrical.ca	905-799-3883

Mechanical

Vendor Name	Contact Name	Email Address	Telephone Number
Ainsworth Inc.	Andre Lambert	BidPlatform@ainsworth.com	416.433.9678
Anvi Services Ltd.	Amit Bamba	amit@anviservices.com	905-660-6595
BAS Mechanical Inc.	Riaz Ahmad	estimator@basmechanical.ca	905-669-1126
Black & McDonald Limited	Jordan Anderson	swatson@blackandmcdonald.com	289-919-1166
Black Creek Mechanical Ltd.	Nelson Pedreira	estimating@blackcreekmechanical.ca	416-604-7558
Brenner Mechanical Inc.	Michael Brenner	mbrenner@brenner.ca	519-746-0439
Canadian Air Tech Systems Inc.	Joan Blakeley	mail@ctas.ca	416-291-1296
Canem Systems Ltd.	Scott Carnegie	scarnegie@canem.com	226-566-9652
CEC Mechanical Ltd.	Devin Brown	dbrown@beswickgroup.com	905-266-1500
Chamberlain Building Systems Inc.	Alex Skaljac	a.skaljca@chbs.ca	905-664-1914
CJ's Express Plumbing & Electrical Ltd.	Nelson Oliveira	noliveira@cjsexpress.ca	519-621-3111
Glenn Richardson Plumbing & Heating Ltd.	Kyle Richardson	kyle@glennrichardsonplumbing.com	905-335-2945
Kirk Mechanical Limited	Robert Kirk	kirkmech@bellnet.ca	905-681-0140
LJ Barton Mechanical Inc.	Bruce Hunter	estimating@ljbarton.com	905-304-1976
Mattina Mechanical Limited	Domenic Mattina	dmattina@mattina.ca	905-544-6380
Mechfield Canada Inc.	Kaleem Ahmad Bhatti	salman@mechfield.com	289-597-7555
Mekcon Ltd.	Inaam Cheema	info@mekcon.ca	905-918-1899
Modern Niagara Southwestern Ontario Inc.	Rachel McGowan	rmcgowan@modernniagara.com rfqswo@modernniagara.com	289-768-1951
SFB Plumbgin and Heating Inc.	Stan Bliszczuk	stan@sfbplumbing.com	289-527-1499
SE Canada Inc. o/a Service Experts Commerce	Saadia Ashraf	saadia.ashraf@serviceexperts.com	905-453-6700
Superior Boiler Works & Welding Ltd.	Domenic Settimi	info@sbww.com	(905) 643-6628
VCI Controls Inc.	Jeff Morneau	jmorneau@vcicontrols.ca	905-850-4464
Velocity Mechanical Inc.	Peter Linseman	quotes@velocitymechanical.com	519-896-1119

Scope of Work

The Halton District School Board, herein referred to as the HDSB, is seeking quotations from qualified vendors for the completion of a universal washroom renovation at Florence Meares Public School located at 2102 Berwick Drive, Burlington, ON L7M 4W6, as outlined herein.

General Contractor shall refer to BJC Architects Specifications and Drawings for Florence Meares PS Washroom Renovation.

General Contractor shall use HDSB pre-qualified subcontractors and list the Mechanical, Electrical sub contractors on bid form.

General Contractor shall complete work from July 1, 2024 to August 31, 2024.



SPECIFICATIONS

FLORENCE MEARES PUBLIC SCHOOL WASHROOM RENOVATIONS

2102 BERWICK DRIVE,
BURLINGTON, ONTARIO

BJC

architects + assoc. inc.

FLORENCE MEARES P.S.
WASHROOM RENOVATIONS

2102 BERWICK DRIVE,
BURLINGTON, ONTARIO

ISSUED FOR TENDER
PROJECT NO 23-038
APRIL 2024

SPECIFICATION

for

**UNIVERSAL WASHROOM RENOVATIONS AT
FLORENCE MEARES PUBLIC SCHOOL**

**2102 BERWICK DRIVE
BURLINGTON, ONTARIO**

for

**HALTON DISTRICT SCHOOL BOARD
2050 GUELPH LINE
BURLINGTON, ONTARIO
L7P 5A8**

PREPARED BY

**BJC architects + assocs. inc.
R.R. #2, 8016 HIGHWAY #7
GUELPH, ONTARIO
N1H 6H8**

PROJECT NO. 23-038

APRIL 2024

**UNIVERSAL WASHROOM RENOVATIONS AT
FLORENCE MEARES PUBLIC SCHOOL**

**2102 BERWICK DRIVE
BURLINGTON, ONTARIO**

PROJECT NO. **23-038**

OWNER:

Halton District School Board
2050 Guelph Line
Burlington, Ontario
L7P 5A8
Tel: 905-335-3665
Attn: Mr. Mike Wildfong

ARCHITECT:

BJC architects + assocs. inc.
R.R. #2, 8016 Highway #7
Guelph, Ontario
N1H 6H8
Tel: 519-822-7390
Fax: 519-822-5881
Email: Barry.Johnson@bjcarchitects.com
Attn: Mr. Barry R. Johnson

ENGINEERS:

MECHANICAL/ELECTRICAL:

SAB Engineering Inc.
588 Edward Avenue, Unit #25
Richmond Hill, Ontario
L4C 9Y6
Tel: 905-787-8771
Attn: Ms. Gabriela Stashun

DIVISION 00 - PROCUREMENT AND CONTRACTING REQUIREMENTS

00 01 10 (Table of Contents)
00 01 15 List of Drawing Sheets

DIVISION 01 - GENERAL REQUIREMENTS

Section 01 11 16 – Work By Owner
Section 01 21 00 - Allowances
Section 01 26 00 - Contract Modification Procedures
Section 01 31 00 - Project Management and Coordination
Section 01 32 16 – Construction Schedule
Section 01 33 00 - Submittals Procedures
Section 01 33 29 - Sustainability Requirements
Section 01 35 13 – Special Project Procedures
Section 01 35 29 - Health, Safety and Emergency Procedures
Section 01 41 00 - Regulatory Requirements
Section 01 45 00 - Quality Control
Section 01 50 00 - Temporary Facilities & Temporary Controls
Section 01 60 00 - Product Requirements
Section 01 74 00 - Cleaning and Waste Management
Section 01 78 00 - Project Record Documents
Section 01 78 36 - Warranties
Section 01 81 16 - Facility Environmental Requirements
Section 01 91 00 - Commissioning

DIVISION 02 – EXISTING CONDITIONS

Section 02 41 00 - Demolition

DIVISION 04 – MASONRY

Section 04 20 00 – Unit Masonry

DIVISION 06 – WOOD, PLASTICS AND COMPOSITES

Section 06 20 00 - Finish Carpentry

DIVISION 07 – THERMAL & MOISTURE PROTECTION

Section 07 84 00 – Fire Stopping
Section 07 90 00 – Joint Protection

DIVISION 08 – OPENINGS

Section 08 11 13 - Hollow Metal Doors & Frames
Section 08 71 00 - Door Hardware
Section 08 71 13 – Power Door Operators
Section 08 80 00 - Glazing

DIVISION 09 - FINISHES

Section 09 21 16 - Gypsum Board Assemblies
Section 09 30 00 - Tiling
Section 09 65 19 - Resilient Flooring - VCT
Section 09 91 00 - Painting

DIVISION 10 – SPECIALTIES

Section 10 20 00 – Exterior Specialties
Section 10 28 00 – Toilet, Bath & Laundry Accessories

DIVISION 20 – 23 – MECHANICAL

Section 01 23 33 – Shop Drawings and Project Documentation
Section 02 21 00 – Demolition
Section 22 05 11 – Common Work Results for Plumbing
Section 22 05 23 – Valves – Plumbing Systems
Section 22 05 53 – Identification Plumbing Systems
Section 22 07 11 – Insulation – Plumbing
Section 22 11 00 – Domestic Water Piping
Section 22 13 00 – Storm and Sanitary Piping
Section 22 13 19 – Plumbing Accessories

DIVISION 26 – 28 – ELECTRICAL

Section 26 05 11 – General Requirements – Electrical Installation

(Bidder) _____

(Owner) _____

Dated _____ and which is an integral part of the Bid Form.

BUILDING DRAWINGS

.1 ARCHITECTURAL

Drawing No.

Drawing Title

A-001

General Notes, Index and Door Schedule

A-002

Overall Plan, Code Matrix & Scope of Work

A-110

Partial Demolition and Renovation Plans

A-111

Partial Floor Finish and Reflected Ceiling Plan

A-220

Interior Elevations

.2 MECHANICAL

Drawing No.

Drawing Title

M-01

Key Plan, Symbols Lists & General Note

M-02

Universal W.R. 108A – Plumbing & Sanitary – Existing & Demolition Work

M-03

Universal W.R. 108A – Plumbing & Sanitary – New Work

M-04

Universal W.R. 108A – HVAC

.3 ELECTRICAL

Drawing No.

Drawing Title

E-01

Symbol Lists & General Note

E-02

Universal Washroom 108A – Power

DIVISION 01 - GENERAL REQUIREMENTS

PART 1 - GENERAL

1.0 CONTRACT DOCUMENTS

- .1 The Instructions to Bidders, the General Conditions of CCDC 2 - 2020, Supplementary Conditions and all Sections of Division 01 apply to and form part of this section of the specification.

2.0 GENERAL REQUIREMENTS

- .1 Contractor to supply and install all equipment and items not supplied and installed by Owner.
- .2 Contractor to provide all services ready for hook-up for all Owner supplied and installed equipment and items requiring mechanical and/or electrical services.
- .3 The Contractor will make final connections for all equipment indicated.
- .4 Reference to the Contractor (G.C) in this document is not meant to be trade specific, or to imply specific responsibility.

3.0 DESCRIPTION

- .1 The following is a general summary of the work and equipment to be provided by the Owner under Other Contracts related to the project as well as material provided by the Owner for installation by the Contractor. These Other Contracts may be referred to as Furniture, Fixtures and Equipment or F.F. & E. This work will be installed by the Owner with his own Contractors. This Contractor is to co-ordinate his work and his subcontractor's work, with the Owner's Contractors and provide construction and connections required for the proper installation of the Owner's work and equipment
- .2 The Contractor is required to co-ordinate, schedule and supervise the Owner's Contractors in order to ensure that the quality of the workmanship of the Owner's Contractors is of a high level and consistent with that of the rest of the Contract. The Contractor shall reject unacceptable work and request that it be redone.
- .3 Ensure that the fastenings, connections, access panels, supports and such other requirements as may be necessary for the installation of the Owner's work are installed in the proper locations and that the Owner's Contractors have a layout of the installations indicating service connections access panels, supports and fastenings.
- .4 If the Contractor does not make the Owner's Contractor aware of requirements for the work to be installed under the F.F. & E. contract, this Contractor shall assume responsibility for any additional work and costs.

3.0 **DESCRIPTION (CONT'D)**

- .5 **The Contractor is required to receive, store, log in binder and accept the delivery of Owner furnished items to the site, arrange for their storage and protection, and take responsibility for loss or damage until such items are taken over by Owner's Representatives. Contractor is to ensure that all invoices are received and recorded. Provide a duplicate copy to the Owner's Project Manager.**
- .6 The Contractor is to identify ALL equipment when received and label with the proper tags attached. The contractor is to use the Equipment location on drawings as a basis for identification and location.

4.0 **MATERIALS**

- .1 The following is a general list of items, which are supplied by the Owner, and installed by the Contractor. This list is not exclusive of any items which are shown or noted on the drawings.
 - 1. Soap Dispenser
 - 2. Paper Towel Dispenser
 - 3. Toilet Paper Dispenser
 - 4. Garbage Receptacle
 - 5. Washer and Dryer
 - 6. Sanitary Napkin Disposal

5.0 **PREPARATION AND INSTALLATION**

- .1 Provide Owner with a schedule of dates listing required delivery dates for installation of Owner items.
- .2 Co-ordinate, schedule and supervise the Owner's sub Contractors. Co-ordinate the location of work with Owner's Contractor.
- .3 Make arrangements to allow access to the work or for Owner's Contractor and for receiving and storing materials.
- .4 Protect work and property of Owner stored or installed on site.
- .5 Do not overload structure beyond its design capacity when storing Owner's materials.
- .6 Co-ordinate location for storing with Owner's Contractor.

5.0 PREPARATION AND INSTALLATION (CONT'D)

- .7 Schedule this finish work at the end of construction when interference from tradesmen is at a minimum.
- .8 Do not allow heavy or rough items to rest against finished surfaces. Do not store materials on finished carpeting.
- .9 Owner's Contractor will be responsible for protection of their finished surfaces, but care must be taken not to break these coverings.

END OF SECTION

DIVISION 01 - GENERAL REQUIREMENTS

PART 1 - GENERAL

1.0 CONTRACT DOCUMENTS

- .1 The Instructions to Bidders, the General Conditions of CCDC 2 - 2020, Supplementary Conditions and all Sections of Division 01 apply to and form part of this section of the specification.

2.0 CASH ALLOWANCES

- .1 Refer to GC 4.1.
- .2 Include in the Contract Price, cash allowances stated herein.
- .3 Cash Allowances, unless otherwise specified, cover the net cost to the Contractor, Subcontractor of services, products, construction machinery and equipment, freight, handling, unloading, storage, and other authorized expenses incurred in performing the Work.
- .4 The Contract Price will be adjusted by written order to provide for an excess or deficit to each cash allowance.
- .5 Where costs under a cash allowance exceed the aggregate amount of all allowances, the Contractor will be compensated for any excess incurred and substantiated, plus an allowance for overhead and profit as set out in the Contract Documents.
- .6 Progress payments on accounts of work authorized under cash allowance shall be included in the Architects monthly certificate for payment. The Contractor shall include copies of invoices with the progress billing.
- .7 A schedule shall be prepared jointly by the Architect and the Contractor to show when items called for under cash allowances must be authorized by the Architect for ordering purposes so that the progress of the work will not be delayed.
- .8 HST (Harmonized Sales tax) are not included in Cash Allowance.
- .9 Unexpended portions of the cash allowances will be credited to the Owner by written change order as Cash Allowance Reconciliation.
- .10 Any required Mechanical and Electrical allowances to be carried by the General Contractor. Allowances shown below shall be carried by the General Contractor.
- .11 Include all Cash Allowances in the total Bid Price.

2.0 CASH ALLOWANCES (CONT'D)

- .12 "Supply Only", Allowances shall include:
- .1 Net cost of Products.
 - .2 Delivery to Site.
 - .3 Applicable taxes and duties, excluding HST.
- .13 "Supply and Install", Allowances shall include:
- .1 Net cost of Products.
 - .2 Delivery to Site.
 - .3 Unloading, storing, handling of Products on Site.
 - .4 Installation, finishing and commissioning of Products.
 - .5 Applicable taxes and duties, excluding HST.
- .14 "Inspection and Testing", Allowances shall include:
- .1 Net cost of inspection and testing services.
 - .2 Applicable taxes and duties, excluding HST.
- .15 Other costs related to work covered by Cash Allowances are not covered by the allowance but shall be included in the Contract Amount.
- .16 Contractor to submit for review a minimum of 3 written competitive quotes for allowances as per the Supplemental Conditions.
- .13 Cash Allowances are as follows to be carried in Bid Amount by General Contractor:
- .1 Testing & Inspection \$ 2,000.00
 - .2 Contingency \$ 10,000.00
- .18 **Total Cash Allowances listed in items 17.1 to 17.2 are to be Included in Bid Amount.** **\$ 12,000.00**
- .19 In accordance with G.C.4.1.2 Cash Allowances will not be subject to any Contractor mark-up.

END OF SECTION

DIVISION 01 - GENERAL REQUIREMENTS

PART 1 - GENERAL

1.0 CONTRACT DOCUMENTS

- .1 The Instructions to Bidders, the General Conditions of CCDC 2 - 2020, Supplementary Conditions and all Sections of Division 01 apply to and form part of this section of the specification.

2.0 CLARIFICATIONS

- .1 Request written clarifications when the meaning or intent of the Contract Documents is unclear.
- .2 Do not proceed with the related parts of the work until clarification is received.
- .3 Failure to notify the consultant when the Contract Documents are unclear or inconsistent will result in the Contractor incurring the responsibility for resulting deficiencies and all additional costs.
- .4 Clarification to the Contract Documents will be issued by the Consultant through Supplemental Instruction (S.I).
- .5 Clarifications issued by the Consultant are deemed to supersede the relevant parts of the Contract Documents, regardless whether those documents are cited in the written clarification.

3.0 REQUESTS FOR INTERPRETATION

- .1 The Contractor may, after exercising due diligence to locate the required information, request from the Consultant, Clarification or Interpretation of the Contract Documents. Herein referred to as a Request For Interpretation (RFI).
- .2 Include a detailed description of the Contractors review of the Contract Documents leading up to the issuance of the RFI. Requests for Interpretation that fail to include a detailed review description, or whose description is insufficient in the opinion of the Consultant, may not be considered and may be rejected.
- .3 Maintain a log of RFI's sent to and responses received from the Consultant, complete with corresponding dates. Include an updated RFI log with each Project Meeting set of minutes.
- .4 Submit RFI's to Consultant sufficiently in advance of affected parts of the work so as not to cause delay in the Work. Additional costs incurred as a result of failure to submit an RFI in sufficient time will not be reimbursed by the Owner.

3.0 **REQUESTS FOR INTERPRETATION (CONT'D)**

- .5 RFI's will only be received from the Contractor. RFI's received directly from Subcontractors or Suppliers will not be considered.
- .6 Submit RFI's individually per submission, numbered consecutively, in a single sequence, in order submitted.
- .7 The Consultants response to the RFI will not be considered a Change Order or Change Directive, nor does it authorize changes in the Work, the Contract Price and the Contract Time.
- .8 If the information requested in an RFI is apparent from field observations, is contained in the Contract Documents or is reasonably inferable from them, the Contractor shall be responsible to the owner for reasonable costs charged by the Consultant for additional services required to prepare and issue such information.

4.0 **CHANGE ORDERS**

- .1 Refer to GC 6.2.
- .2 When a change in the work is contemplated the Consultant will issue a "Proposed Change (P.C.)".
- .3 Upon receipt of the change request, the Architect will initiate the change order process and determine if additional consultants will be required for comment.
- .4 General Contractor upon notification of the change order request, the GC will go out to the trades for pricing and complete their portion of the change order. Within five (5) of date of issue of a P.C., the General Contractor shall submit a detailed breakdown of the cost of the Proposed Change P.C. including a breakdown of materials, labour rates and costs for all parties, involved in the Change.
- .5 The valuation of changes in the work may include fees for overhead and profit as follows:
 - .1 Profit and overhead charges will be calculated on the net difference in the cost of the changes.
 - *.2 Over head charges and not the cost breakdown will include supervision, superintendent, project management, administrative and clerical costs.
 - .3 Increase to bonding and insurance is to be shown separate when applicable.
 - .4 Identify any affects to the Baseline Schedule.

4.0 **CHANGE ORDERS (CONT'D)**

- .5 Once the value of the Proposed Change is approved by the Consultants and Owner a Change Order signed by the Owner will be issued with the same corresponding number.
- .6 H.S.T. shall be shown separately.
- .7 For clarity, no mark up or other charges shall be permitted for overhead and profit where the change results in a net decrease (credit) to the contract price.

5.0 **CHANGE DIRECTIVES**

- .1 Refer to GC 6.3.
- .2 When a change in work is required to maintain an item or critical path of the construction schedule and timing does not permit the Owner to review pricing from the General Contractor before approving the work, a "Change Directive (C.D.)" will be issued.
- .3 The "Change Directive (C.D.)" will describe the work in short form and may include sketches or drawings to describe the work.
- .4 Within 10 days of date of issue of a C.D., submit a breakdown of the costs for the Change Directive, including breakdown of material, labour rates and costs for all parties involved in the change. The G.C. will provide all sufficient details and information necessary for the Consultants and Client to review and assess the costs.
- .5 The valuation of changes in the work may include fees for overhead and profit as follows:
 - .1 Profit and overhead charges will be calculated on the net difference in the cost of the changes.
 - *.2 Over head charges and not the cost breakdown will include supervision, superintendent, project management, administrative and clerical costs.
 - .3 Increase to bonding and insurance is to be shown separate when applicable.
 - .4 Identify any affects to the Baseline Schedule.
 - .5 Once the value of the Proposed Change is approved by the Consultants a Change Order signed by the Owner will be issued with the same corresponding number.
 - .6 H.S.T. shall be shown separately.

END OF SECTION

DIVISION 01 - GENERAL REQUIREMENTS

1.0 CONTRACT DOCUMENTS

- .1 The Instructions to Bidders, the General Conditions of CCDC 2 - 2020, Supplementary Conditions and all Sections of Division 01 apply to and form part of this section of the specification.

2.0 CODES AND STANDARDS

- .1 Execute Work in accordance with National Building Code of Canada (NBC) or relevant Provincial Code, wherever is applicable in the Place of the Work, all Provincial amendments and all codes and standards specified within the text of this specification.
- .2 Conform to the latest issue of codes and standards specified, as amended and revised on date for receipt of tenders.

3.0 GENERAL CONDITIONS

- .1 Coordination of the work of all Sections of the Specifications as required to complete the Project is the responsibility of the Contractor.
- .2 The Contractor will be deemed to possess the necessary technical skills to carefully evaluate all requirements of the Contract, and to have included in the Stipulated Price all project coordination and supervision for the proper implementation of these requirements.
- .3 Entry by the Owner's own forces and by Other Contractors shall not mean acceptance of the Work and shall not relieve the Contractor of their responsibility to complete the Contract.
- .4 Placing, installation, application and connection of work by the Owner's own forces or by the Other Contractors on and to the Contractor's Work shall not relieve the Contractor of his responsibility to provide and maintain the specified warranties.

4.0 CONTRACT SUBMISSIONS

- .1 At the commencement of the Contract submit the following:
 - .1 Performance and payment bonds.
 - .2 Public Liability and Property Damage Insurance Certificates.
 - .3 Fire Insurance Policy.
 - .4 List of Subcontractors by Firm name.

4.0 **CONTRACT SUBMISSIONS (CONT'D)**

- .5 Permits as required by the work.
- .6 Contract cost breakdown by subtrade, schedule of values and detailed breakdown.
- .7 Construction Schedule
- .8 Notice of Project (NOP)
- .9 Workplace Safety & Insurance Board (WSIB) Certificate

5.0 **SPECIFICATIONS**

- .1 Sections of the Specifications are numbered in conformance with the 2012 Master List of Section titles and Numbers, CSC Document 004E, published jointly by Construction Specifications Canada and the Construction Specifications Institute (USA). Sections are arranged in their Standard Master format Divisions 03 to 32.
- .2 Sections are written as units of the Work which have been assigned numbers in conformance with the CSC/CSI system. They are arranged in sequence for this Specification. Gaps in the order of numerical sequence do not indicate that a section is not required for completion of the Work, but rather the scope of work for particular section does not warrant a specification.
- .3 The Owner and his Consultants will not arbitrate on any dispute between the General Contractor and its subcontractors or suppliers as to the limits of their responsibilities.
- .4 The provisions of all Sections of Division 01 shall apply to each Section of Divisions 03 to 32, inclusive, which are included in the Specifications.
- .5 Division 01, General Requirements, of the Specifications generally specifies work and coordination that is the direct responsibility of the Contractor, but shall not be interpreted to define absolutely the limits of responsibility that must be established between the Contractor and his Subcontractors by their separate agreements.
- .6 Ensure that Subcontractors understand that the General Conditions of the Contract, Supplementary Conditions, and Division 01, General Requirements, apply to Sections of the Specifications governing their work.
- .7 It is intended that Work supplied under these Contract Documents shall be complete and fully operational in every detail for the purpose required. Including materials not herein mentioned, but which may be found necessary to complete or perfect any portion of Work in accordance with the Contract Documents.

5.0 **SPECIFICATIONS (CONT'D)**

- .8 Work in the Specifications is divided into descriptive Sections which are not intended to identify absolute contractual limits between Subcontractors, nor between the Contractor and his Subcontractors. The Contractor shall organize division of labour and supply of materials essential to complete the Project in all its parts and provide a total enclosure and protection from weather of interior spaces, as established in the General Conditions of the Contract.
- .9 Specifications, Schedules and Drawings are complementary, and items mentioned or indicated on one may not be mentioned or indicated on the others.
- .10 Mention in the specifications or indication on the 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.
- .11 Where the singular or masculine is used in the Contract Documents, it shall be read and construed as if the plural, feminine or neuter had been used when the context or the statement so requires and as required to complete the Work, and the rest of the sentence, clause, paragraph, or Article shall be construed as if all changes in grammar, gender or terminology thereby rendered necessary had been made.
- .12 Work designated as "N.I.C." is not included in this Contract.
- .13 Wherever the Contract Documents the word "include" is used in any form, the item of Work listed following shall be interpreted to be restricted to only those items that are listed.
- .14 Wherever in the Contract Documents the words "indicated" or "shown" are used they shall apply as meaning "indicated on Drawings" or "shown on Drawings" unless the context expresses another meaning.
- .15 Wherever the Specification is specified that work to which reference is made shall proceed or shall meet approval, direction, selection or request of jurisdictional authorities or others, such approval, direction, selection or request shall be in writing.
- .16 Wherever in the Specifications it is specified that work shall be repaired, make good or replaced, it shall be performed without any additional cost to the Owner.

6.0 **ERRORS AND OMISSION**

- .1 If errors or omissions are observed in the Contract Documents, immediately notify the Consultant in writing of all such errors or omissions. In the event no such notice is given, the contractor will be held responsible for the results of any such error or omission and the cost of rectifying the same.

7.0 **SUPPLEMENTARY DEFINITIONS**

- .1 In the Specification, reference such as "Shown on the Drawings", "Specified", "Scheduled", "Called for" and the like shall be deemed to include work required by any of the Contract Documents.
- .2 In the Specifications the expression Trade(s) is synonymous with Subcontractor(s) if the context permits. The expression "All Trades" shall be deemed to include the Contractor.
- .3 When the "Work Included", optional listing, is included in the Specification, the statement "Work Included" is not intended to "Scope" the section or to imply a trade responsibility. "Work Included" is merely a convenient listing of the significant items described within the section. "Work Included" must be read in conjunction with related work and the total specification in order to specify the item that could be referenced somewhere else in the specification. "Work Included" is not a critical portion of the specification and is intended only as a quick reference guide. The specification section integrity or completeness does not require its inclusion.
- .4 Wherever the word "building" occurs in the Contract Documents it shall be taken to mean all the buildings included in the Contract.
- .5 Wherever in the Contract Documents the words "approval" "approved", "direction", "directed", "selection", "selected", "request", "requested", "report", and similar requests and
- .6 Wherever in the Contract Documents the word "provide" is used in any form it shall mean that the Work concerned shall include both supply and installation of the products required for completion of that part of the Work.
- .7 Wherever in the Specification it is specified that Work is to proceed or to meet approval, direction, selection or request of jurisdictional authorities or others, such approval, direction, selection or request shall be in writing.
- .8 Wherever in the Contract Documents the word "G.C." is used, it means General Contractor.

8.0 **SATISFACTION/ APPROVAL**

- .1 The expression "to the satisfaction or approval of the Architect" shall be implied throughout the Specification in regard to all materials and workmanship.
- .2 "Submit for approval" means that the item in question is to be submitted to the Architect for approval and that a written acceptance of it and authorization for its use in the work shall be obtained before it is incorporated in the work. Trades shall submit items for approval to the Consultant via the Contractor.
- .3 An "approved method" means that which has the manufacturer's recommendation, or which is generally accepted as good trade practice. The Architect's approval is also required.

9.0 SITE REGULATIONS

- .1 All on site activities must be coordinated with Owner.
- .2 The General Contractor must conform to the Landlords "Building Regulations & Contractors Regulations "such as listed but not limited to the following:
 - Clean-up
 - Safety
 - Material handling & hoisting
 - Scheduling
 - Deliveries
 - Hours of work
 - Temporary Services
- .3 Pay all charges imposed by the Regulations or resulting from failure to comply with the regulations.
- .4 Provide the owner with copies of such non-compliance charges.

10.0 WORKING LIMITS / USE OF SITE

- .1 Accept full responsibility for assigned work areas from the time of Contract award until Total Completion of the Work.
- .2 The Contractor shall confine construction equipment, temporary work, storage of products, waste products & debris and operations of Employees and sub contractors to limits indicated by laws, ordinances, permits, or the Contract Documents and shall not unreasonably encumber the place of work.
- .3 Check means of access and egress, rights and interests which may be interfered with. Do not block lanes, roadways, entrances and exits. Direct construction traffic and locate access to site as directed by municipality.
- .4 Where encroachment beyond property limits is necessary make arrangements with respective property Owners.
- .5 Provide protection to existing underground services during construction period.

11.0 NO SMOKING POLICY

- .1 The Owner has a no smoking policy for its premises.
- .2 No smoking will be allowed on this property.
- .3 Offenders will be asked to leave the site.

12.0 SITE DELIVERIES

- .1 All deliveries to site must be scheduled due to the limited amount of space within the building and on the site.

12.0 **SITE DELIVERIES (CONT'D)**

- .2 The General Contractor shall provide all necessary security and protection for safe storage on site and within the building.

13.0 **SITE WORKS**

- .1 The General Contractor shall confine all equipment, debris, offices and storage to the defined work site.

14.0 **EXAMINATION**

- .1 Each Trade shall examine surfaces prepared by Other Trades which effect its work and shall ensure that defects are corrected. Commencement of work shall imply acceptance of prepared work.
- .2 All Trades shall check and verify with the Contractor all surfaces, dimensions and figures shown on drawings, (especially those pertaining to the work of more than just their trades) and notify the Owner of any discrepancies found herein so that they may be corrected as necessary. The General Contractor will be held responsible for any error resulting from his failure to exercise such precautions.
- .3 Any dimensions of existing works or structure are approximate and the General Contractor must take actual measurements before ordering materials, equipment and the like. Failure to comply with this requirement shall make the General Contractor fully responsible for replacing unsuitable material or equipment as necessary. All costs incurred therewith shall be borne by the General Contractor.
- .4 All details and measurements of any work which is to fit to, or conform with, work already installed by Other Trades, shall be taken at the job site by the Trades concerned, prior to shop drawings submission, fabrication and installation.

15.0 **EXISTING SERVICES**

- .1 The Owner will not be liable for any loss, damage, delay or claim whatsoever resulting or arising from the absence in whole or in part of services.
- .2 Without limiting the generality of the foregoing, this includes roads, water, storm and sanitary services, electricity, data, communication, satellite, fibre optics and condition of drainage from or to the site.
- .3 This Contractor is to maintain all existing services during the demolition & construction phases of this project. Location of existing underground utility lines indicated on drawings is schematic only. Prior to start of Work, locate and mark exact locations of underground services, which are within or adjacent to the construction area.
- .4 Supply and install all materials, labour & equipment as required to maintain these services during the phasing of the project.

15.0 EXISTING SERVICES (CONT'D)

- .5 Refer to proposed phasing in drawings and final approved submitted phasing schedule by G.C. to define scope.

16.0 BURIED SERVICES

- .1 Make all necessary enquiries and employ all necessary services to determine the location of any existing services such as hydro, telephone, data/communication, water, gas, sewer, etc. This applies to interior as well as exterior work, whether represented on the contract drawings or not, and within designated easements.

17.0 EMERGENCIES

- .1 Notify the Architect and Owner immediately should an emergency arise on the site, including personal injuries and accidents. Provide complete details on extent of emergency, cause and the action being taken. This notification shall be by telephone or telegram immediately after the occurrence.

18.0 FIELD MARKING

- .1 Do not use wick pens to mark face of products to be installed in the work. Such pen marks will show through applied paint or vinyl coatings in due course. The Contractor will be held responsible and required to remedy such defects, classified as "latent defects" regardless of when they occur.

19.0 TRADEMARKS AND LABELS

- .1 Trademarks and labels, including applied labels shall not be visible in the finished work. Such trademarks or labels shall be removed by grinding if necessary or painted out where the particular material has been painted.
- .2 The exception of this requirement shall be those essential to obtain identification of mechanical and electrical equipment and those required to be visible by Authorities having jurisdiction and those on plumbing fixtures and trims.

20.0 TEMPORARY WORK

- .1 All work damaged by temporary installation shall be repaired and made good at no expense to the Owner.

21.0 MECHANICAL AND ELECTRICAL WORK

- .1 Coordination of the installation of systems specified in Divisions 22, 23, 26 and 28, including the interrelating operation and functioning between components of a system and between systems, is the responsibility of those performing the work of Divisions 22, 23, 26 and 28 with final coordination the responsibility of the Contractor.

21.0 MECHANICAL AND ELECTRICAL WORK (CONT'D)

- .2 Ensure that service poles, pipes, conduit, wired, fill-pipes, vents, regulators, meters and similar Project service installations are located in inconspicuous locations. If not indicated on Drawings, verify location of service installations with Consultant before commencing installation.
- .3 Install and arrange ducts, piping, tubing, equipment and fixtures in such a way as to conserve headroom and space as much as possible, to provide minimum interference and to be neat, orderly and tidy. Unless otherwise noted, run pipes, duct, tubing and conduit, vertical, horizontal and square with building grid. Conceal pipes, ducts, tubing and conduit above ceiling, rooms and unfinished spaces, unless indicated or specified otherwise. Maximum ceiling heights must be maintained. Dimensions on drawings constitute minimum standards.
- .4 The general intent is that the Contractor shall include for all cutting and patching indicated on the Mechanical and Electrical Drawings and as required to meet the requirements and Specifications Division 20,21,22, 23, 26, 27 and 28 unless requirements are not given, in which case the Trades shall assume all costs.

22.0 CO-ORDINATION

- .1 Co-ordinate all Work in each area and Work on which subsequent Work depends to facilitate mutual progress, and to prevent conflict between parts of the Work.
- .2 Ensure that each Section makes known, for the information of the Contractor and other Sections, the environmental and surface conditions required for the execution of its Work; and that each Section makes known the sequence of others' Work required for installation of its Work.
- .3 Ensure that each Section before commencing Work, knows requirements for subsequent Work and that each Section is assisted in the execution of its preparatory Work by Sections whose Work depends upon it.
- .4 When work is to be installed above ceilings, adequate clearance must be maintained to allow for access, repairs, and removal of all devices without adjusting ceiling heights. Each Contractor shall be responsible for protecting his installation from being blocked off by others. Should this condition occur, he shall bring the matter to the attention of the other Contractor for correction.
- .5 Each Subcontractor shall be responsible for any layout associated with the performance of his work. Should a subcontractor's work be subsequent to the contingent upon layout by another, he shall check said layout prior to proceeding with his work, reporting any discrepancies to the General Contractor. Proceeding with the layout shall be considered as acceptance of the layout.

22.0 **CO-ORDINATION (CONT'D)**

- .6 Ensure that setting drawings, templates and all other information necessary for the location and installation of materials, holes, sleeves, inserts, anchors, accessories, fasteners, connections and access panels are provided by each Section whose Work requires co-operative location and installation by other Sections and that such information is communicated to the applicable installer.
- .7 Deliver materials supplied by one Section to be installed by another well before the installation begin.
- .8 Sections giving installations information in error, or too late to incorporate in the Work, shall be responsible for having Work done which was thereby additionally made necessary.
- .9 Remove Work installed in error which is unsatisfactory for subsequent Work.
- .10 Pay cost of extra work caused by and make up time lost as a result of failure to provide necessary co-operation, information or item to be fixed to or built-in, in adequate time.
- .11 Provide interference drawings for submission to consultants and for review if conflicts exist, prior to fabrication or installation.

23.0 **CUTTING AND PATCHING**

- .1 Before cutting, drilling, or sleeving structural load-bearing elements, obtain approval of location and methods.
 - .1 Submittals:
 - .1 Submit written request in advance of cutting or alteration which affects:
 - .1 Structural integrity of any element of Project.
 - .2 Integrity of weather-exposed or moisture-resistant elements.
 - .3 Efficiency, maintenance, or safety of any operational element.
 - .4 Visual qualities of sight-exposed elements.
 - .5 Work of Owner or separate contractor.
 - .2 Include in request:
 - .1 Identification of Project.
 - .2 Location and description of affected work.
 - .3 Statement on necessity for cutting or alteration.
 - .4 Description of proposed work, and products to be used.
 - .5 Alternatives to cutting and patching.
 - .6 Effect on work of Owner or separate contractor.
 - .7 Written permission of affected separate contractor.
 - .8 Date and time work will be executed.

23.0 CUTTING AND PATCHING (CONT'D)

- .2 Do not endanger Work or property by cutting, digging, or similar activities. No Section shall cut or alter the Work of another Section who has installed it unless approved by that Section.
- .3 Cut and drill with true smooth edges to minimum suitable tolerances.
- .4 Fit construction tightly to ducts, pipes and conduit to stop air movement completely. The Section performing Work that penetrates a fire, air, vapour, moisture, thermal or acoustic separation element of the building shall pack voids tightly with insulation; seal air, vapour and moisture barriers; and caulk joints as may be required to ensure that no air movement through the penetration is possible.
- .5 For Firestopping refer to Section 07 84 00.
- .6 Cutting, drilling and sleeving of Work shall be done only by the Section who has installed it. The Section requiring drilling and sleeving shall inform the Section performing the Work of the location and other requirements for drilling and sleeving. The Contractor shall directly supervise performance of cutting and patching.
- .7 Replace, and otherwise make good, damaged Work. Make the affected parts of the affected work come together properly.
- .8 This Section shall be responsible for all cutting and patching in addition to that specified for mechanical and electrical Work.
- .9 Patching or replacement of damaged Work shall be done by the Subcontractor under whose Work it was originally executed, and at the expense of the Subcontractor who caused damage.
- .10 Make patches invisible in final assessment.

24.0 LINTELS AND BRIDGING

- .1 The Contractor shall ensure correct formation and bridging of openings in masonry and structural walls required by the Trades. Conform with lintel requirements shown on Structural Drawings or Standard Details.

25.0 FASTENINGS

- .1 Use exposed metal fasteners and accessories of a permanent type that are of same texture, colour and finish as base metal on which they occur.
- .2 Keep exposed fasteners to a minimum, evenly spaced and neatly laid out. Show on Shop Drawings.

25.0

FASTENINGS (CONT'D)

- .3 Use metal fasteners of the same materials as the metal component they are anchoring or of a metal which will not set up an electrolytic action which would cause damage to the fastening or component.
- .4 Use fasteners of a type and size and install them in a manner to provide positive anchorage of the unit to be anchored in position. Install anchors at required spacing to provide required load bearing or shear capacity.
- .5 Fasteners which cause spalling or cracking of material to which anchorage is being made are not permitted.
- .6 Limitations for Use of Powder Actuated Tools:
 - .1 The use of powder actuated fasteners is prohibited.
 - .2 Where such authority is given, it will be for low velocity type powder actuated fasteners and for horizontal application only.
 - .3 Fasteners shall not be nearer than 63 mm (2 ½ inch) to the edge of any cast-in-place formed concrete member.
 - .4 The manufacturer of the equipment selected, Ramset, Hilti or equal, shall send a representative to the site to demonstrate the equipment prior to its use, and this representative shall make periodic inspections to ensure compliance with instructions issued by him and correct application of material. In all cases a shield shall be used where fasteners are to be applied to concrete. The use of fasteners in pre-cast concrete is to be avoided if possible as there is an increased tendency to shatter surfaces.
 - .5 Under no circumstances shall such fasteners be used on concrete members less than 75 mm (3 inch) in thickness.
 - .6 Such fasteners shall not be in areas where corrosion can take place, for instance due to high humidity or condensation.
- .7 Generally use support anchorage of cast-in-place type set into concrete forms prior to pouring concrete, or self-drilling type such as "Red Head" T-32 tie wire type. When drilling upwards, use jig to hold drill steady and plumb.
- .8 Provide pull-out tests on anchors, or otherwise test to ensure anchorage is sufficient for the particular application including a minimum safety factor of seven. Provide evidence of such tests if requested.
- .9 Submit samples of proposed anchoring or hanging devices with technical data and test data.

26.0 **FIRE SAFETY PLAN**

- .1 Submit a detailed Fire Safety Plan as required by the local Authorities Having Jurisdiction.
- .2 Post Fire Safety Plans on backboards complete with Lexan cover in all locations requested by local Authority.
- .3 Plans required to be posted on the exterior of the building are to be etched on aluminium and sufficient to hold up to weather conditions.
- .4 Provide lockable 'Fire Safety Boxes' located per local Authority.
- .5 Provide copies of plans and documents with As-Built submissions.
- .6 Provide letter of approval from local Authorities to Architect.

27.0 **PROGRESS PHOTOS**

- .1 The General Contractor shall submit a comprehensive, chronological collection of photos of the site, building interior, building exterior, roof, interior finishes, Mechanical & Electrical equipment, building foundations & structure, equipment, millwork and any Key Note events recording the work as it progresses.
- .2 A minimum of 12 Photos in colour, are to be taken weekly in a jpeg format and submitted by **E Mail**.
- .3 Additional photos may be requested by Owner and Consultant if required.
- .4 Identify all photos with project name, a description, date and time.

28.0 **SITE PROGRESS RECORDS**

- .1 Maintain at site a permanent written record of progress of the Work. Make the record available at all times with copies provided when requested. Include in record each day:
 - .1 Commencement and completion dates of the work of each trade in each area of Project.
 - .2 Attendance of Contractor's, Subcontractor's, Owners Sub trade work forces at Project and a record of the work they perform.
 - .3 Visits to site by Owner, Consultant, jurisdictional authorities, testing companies, Contractor Subcontractors, and supplies.
- .2 Maintain a progress chart in a format approved from sample submitted. Show on chart proposed construction schedule and the progress achieved by Contractor and each Subcontractor.

29.0

PRE-CONSTRUCTION CONFERENCE

- .1 Immediately prior to construction, upon notification attend a pre-construction conference, along with authorized representatives of certain sub-contractors as specifically indicated in conference notice. Purpose of conference is as follows:
 - .1 To resolve administrative procedures and responsibilities;
 - .2 To identify all critical points on construction schedule for positive action;
 - .3 Appoint/Identify official representatives of participants in the work, their responsibilities and lines of communications;
 - .4 Establish time and location.
 - .5 To identify any product availability problems.
 - .6 To establish schedule of time for submission of items required under all Sections of Specifications; **(2 Weeks)**.
 - .7 To establish Site arrangements and temporary facilities; and to review any points which, in Contractor's opinion require clarification.
 - .8 Review process of phase completion and progress draws.
 - .9 Review designated substances / hazardous materials audit report.
 - .10 Review Survey Certificate.
- .2 **PROPOSED AGENDA**
 - .1 Identification of participants.
 - .2 Identification of Contract Documents (Drawings & Specs) including addenda, agreed upon variations and changes negotiated into contract price.
 - .3 Schedule of all submissions: shop drawings/samples etc.
 - .4 Schedule of work, progress schedule submissions/phases.
 - .5 Hours of work and operations.
 - .6 Temporary facilities, signs, office, storage, utilities, fences, hoarding, access.
 - .7 Security.
 - .8 Deliveries.

29.0

PRE-CONSTRUCTION CONFERENCE (CONT'D)

- .9 Supplemental Instructions, Proposed Change, Change Orders, Progress Draws, Approvals, Inspections, Mark-Ups, Overtime.
- .10 Owner sub-trades/responsibilities.
- .11 Insurances, safety.
- .12 Inspection, testing services.

30.0

PROJECT MEETINGS

- .1 Administrative:

Schedule and administer project progress meetings throughout the progress of the work once every two weeks and weekly when the pace of construction warrants increased coordination and review between the consultants, owner and contractor.
- .2 Provide physical space and make arrangements for meetings.
- .3 Record the minutes. Include significant proceedings and decisions. Identify 'comment by', & 'action by' parties. Refer to sample in Schedule 'B'.
- .4 Provide an assigned stenographer to accurately keep all meeting minutes. Stenographer is not to be the Project Manager or Superintendent.
- .5 Reproduce and distribute copies of minutes within **(3) three days** after each meeting and transmit to meeting participants, affected parties not in attendance, the Consultants, the Owner and the Architect **by E-Mail**.
- .6 **PROPOSED AGENDA:**

Agenda to include the following:
 - .1 Review, approval of minutes of previous meeting
 - .2 Review of Work progress since previous meeting.
 - .3 Field observations, problems, conflicts
 - .4 Problems which impede construction schedule
 - .5 Review of off-site fabrication delivery schedules
 - .6 Corrective measures and procedures to regain project schedule
 - .7 Revision to construction schedule

30.0 **PROJECT MEETINGS (CONT'D)**

- .8 Progress, schedule, during succeeding work period
- .9 Review submittal schedule for shop drawings/samples expedite as required. Log to be included in meeting minutes.
- .10 Maintenance of quality standards
- .11 Cleaning- prior to fixturing/ finishing/ painting.
- .12 Pending changes and substitutions- PC's and CO's – Log in minutes
- .13 Review proposed changes for effect on construction schedule and on completion date.
- .14 Review of Owners supplied and received equipment, unloading, counts, storage location & receipt of delivery slips.
- .15 Identifying any equipment or material supplies shortages in shipping.
- .16 Monthly Progress Draws, Schedule, CD of Progress Photographs and **3 month Cash Flow Projection.**
- .17 New business

- .7 The Prime consultant may request additional project meetings as he may deem necessary during construction or within the guarantee period.

31.0 **SYSTEMS DEMONSTRATION**

- .1 Prior to final inspection, demonstrate operation of each system to Owner and his representative(s).
- .2 Instruct personnel in operation, adjustment, and maintenance of equipment and systems, using provided operation and maintenance data as basis for instruction.
- .3 Note: Operation and Maintenance Manuals are to be provided five (5) days after the Substantial Performance.

32.0 **WORK SITE HEALTH AND SAFETY REQUIREMENTS**

- .1 The Contractor will appoint a safety representative to attend Site meetings, conduct inspections, and to conduct periodic safety reviews.
- .2 The authorities having jurisdiction include but are not limited to the following:
 - .1 Workers Compensation Act and Policies.

32.0

WORK SITE HEALTH AND SAFETY REQUIREMENTS (CONT'D)

- .2 Occupational Health and Safety Act, Regulations and Code.
- .3 National Fire Code of Canada.
- .4 Public Health Act - Regional Health Authorities.
- .5 Workplace Hazardous Materials Information System (WHMIS) and Transportation of Dangerous Goods (TDG).
- .6 Owner Security.
- .7 Any other authority having jurisdiction.
- .3 Work Site Safety: The Contractor is "Constructor", "Prime Contractor", "Principal Contractor", "Contractor" or the equivalent local designation:
 - .1 The Contractor will for the purpose of the Occupational Health and Safety Act and for the duration of this Contract:
 - .1 Be the "Constructor", "Prime Contractor", "Principal Contractor", "Contractor" or the equivalent local designation for the identified "Work Site" and
 - .2 Shall comply with all of the requirements of the:
 - .1 Occupational Health and Safety Act, Regulation, and Code,
 - .2 The Workers Compensation Board for the jurisdiction in which work takes place,
 - .3 The Contract Documents,
 - .4 Any other applicable laws or legislation that govern the Work Site safety,
 - .4 The boundaries of the Work Site are as outlined on the construction drawings. The boundaries may be described by hours of operation within a specific area.
 - .5 Work Site Safety: Subcontractors, Other Contractors, Suppliers, Or Visitors:
 - .1 The Prime Contractor, Constructor, etc. will obtain a Notice of Project, where required by law and any other construction safety related permits. The Prime Contractor, Constructor, etc. will provide information to their subcontractors and suppliers regarding the presence and location of hazardous materials if applicable to the work site.
 - .2 The Contractor shall be responsible for all persons with respect to Work Site safety. The Contractor must fulfill the "Constructor", "Prime Contractor", "Principal Contractor", "Contractor" or the equivalent local designation responsibilities pursuant to the applicable Occupational Health & Safety (OH&S) Act, Regulation, and Code, regardless of:

32.0

WORK SITE HEALTH AND SAFETY REQUIREMENTS (CONT'D)

- .1 Whether or not any contractual relationship exists between the Contractor and any of these entities and
- .2 Whether or not such entities have been specified in this Contract.
- .3 The Workers location, with respect to the Work Site, as long as the Work is being done specifically for the Contractor. This will include such things as the unloading of materials in close proximity to the Work Site.
- .6 The Contractor will ensure that emergency procedures and response equipment including appropriate First Aid facilities, and First Aid personnel are in place at the Work Site at all times, for the duration of the Contract.

33.0

WORK SITE SAFETY IMPLEMENTATION

- .1 The Contractor is responsible for, but not limited to, the following:
 - .1 Maintain on Site sufficient quantities of personal protection equipment, including but not limited to: hearing protection, hard hats, safety glasses, and any other items of clothing or special equipment as necessary to ensure that visitors to the Site, the Consultant, and the Owner's representatives are adequately protected.
 - .2 The Contractor shall ensure that persons on Site meet clothing requirements of shirts with sleeves no shorter than midway between shoulder and elbow and full-length pants. Muscle shirts or sleeveless shirts, cut-offs or shorts will not be allowed on the Work Site.
 - .3 Notifying all Subcontractors, in writing about all safety requirements and documentation for the duration of the Project and ensuring compliance by the various trades and Subcontractors with all applicable safety requirements of the Specifications and related legislation.
 - .4 Ensure all aspects of the Contractors Health and Safety Program are in effect for the duration of the Project or Work.
 - .5 Conducting and participating in pre-construction safety orientation meetings prior to commencement of Work and for all personnel entering Site upon first visit.
 - .6 Conducting and participating in all weekly Site safety meetings and any other required safety meetings.
 - .7 Performing weekly inspections of Work area to monitor compliance with this policy and with the Occupational Health & Safety (OH&S) Act, Regulation.
 - .8 Providing adequate Site safety supervision for the duration of this Contract.

33.0

WORK SITE SAFETY IMPLEMENTATION (CONT'D)

- .9 Maintaining a Notice of Non-Compliance, and recording all cases of non-compliance.
- .10 Taking corrective action in cases of imminent danger and non-compliance with health and safety standards up to and including “stop Work” orders to ensure safety. Corrective action must be identified and implemented in a timely manner.
- .11 Seeking the assistance of specialists to review specific hazardous conditions (e.g. infection control practitioners, industrial hygienists, and asbestos abatement specialists).
- .12 Providing adequate personal protection equipment as necessary to ensure that visitors to the Site, the Consultant, and the Owner’s representatives are adequately protected.
- .13 Maintain controlled, secured access to the site at all times until the Owner assumes responsibility for security. Maintain a “sign in/sign out” system for site visitors.
- .14 Ensuring that all persons on Site are wearing and properly using the required personal protection equipment.
- .15 Providing all necessary precautions required to ensure the safety of the public.
- .16 Coordinating a mock emergency evacuation.
- .17 Providing First Aid trained personnel.
- .18 Providing and maintaining adequate First Aid and Fire Protection Response Equipment, for the duration of this Contract.
- .19 Maintaining emergency access to the Site at all times.
- .20 Inspecting and ensuring certification of all heavy equipment.
- .21 Working and complying with the security personnel and their procedures.
- .22 Compliance Monitoring: Provide the following information for assessing the effectiveness of health and safety program:
 - .1 Completed Hazard Assessment reports,
 - .2 Copies of weekly Health and Safety meeting minutes,
 - .3 Copies of Worker incident and injury reports and investigation finding as soon as practical following an incident or injury.

33.0

WORK SITE SAFETY IMPLEMENTATION (CONT'D)

- .4 Working and complying with the Facility security personnel and their procedures with respect to site access control,
 - .5 Copies of the MSDS for all controlled Products that will be brought onto the Work Site and an additional information of which the Contractor is or ought to be aware of concerning use, storage and handling of controlled Product,
 - .6 A copy of all other required safety documents, including but not limited to: safe Work permits, safety plans, fall protection plan, confined space entry.
- .2 Sub-Contractors and all of the various trades are responsible for the following:
- .1 Before commencing operations, demonstrating and providing the Contractor with the following:
 - .1 Evidence of appropriate insurance coverage,
 - .2 Provide adequate representation at the start-up meeting and orientation,
 - .3 Acknowledge and adhere to the safety requirements from the Contractor.
 - .4 Comply with and cooperate with the Contractor's health safety program, and all other applicable legislation,
 - .5 The appropriate Workers' Compensation Board Coverage.
 - .6 A hazard assessment process.
 - .2 Demonstrating they are striving to continually improve their health and safety program, for the duration of the Contract.
 - .3 Selecting and delegating a representative to attend the safety meetings called by the Contractor.
- .3 Cooperate with the Owner, the Consultants, and the Contractor in their Site visits.
- .4 Seek the assistance of specialists to identify and review specific hazardous conditions (e.g. infection control practitioners, industrial hygienists, and asbestos abatement specialists), and provide the Contractor with all necessary reports including assessing potential/actual exposures.
- .5 Refer to Section 01 35 29 for specific health and safety requirements.

34.0 **SCHEDULE OF VALUES**

- .1 The Contractor shall submit to the Architect a detailed schedule of values prior to application of the initial payment claim. This schedule shall coincide with values previously submitted in the supplementary tender information Section 00 41 00.
- .2 The degree of detail for the schedule of values shall be established by the Prime Consultant after contract award and shall be used to form the basis of authorization of payment.
- .3 The Architect may request on the schedule of values the breakdown of labour and material for certain elements of the work.
- .4 Refer to Schedule "C" in this Section for an example of progress draw.

35.0 **OWNER'S OCCUPANCY**

- .1 The owner reserves the right to occupy and use portions of the building, whether partially or entirely completed, or whether completed on schedule or not, provided such occupancy does not interfere with the contractor's continuing work.
- .2 Partial occupancy or installation by the owner of his equipment shall not imply acceptance of the building in whole or in part, nor shall it imply acknowledgement that the terms of the contract are fulfilled.

36.0 **PROJECT CLOSURE SUBMISSIONS**

- .1 All the Project Closure submissions must be 100% complete before the release of the Deficiency and Project Record Documents hold back (**1% of Contract value**).
- .2 There will not be any phased or partial releases.
- .3 Refer to Schedule "D" in this Section for comprehensive list.

37.0 **PRE-OCCUPANCY LIFE SAFETY REQUIREMENTS**

- .1 Refer to Schedule "D" in the Section for a comprehensive list of pre-occupancy items that must be in place and completed for early occupancy:
 - .1 Note that these systems need to be coordinated with the Owner issued opening notice through the Owner Project Manager.

38.0 **INSPECTION AND TAKE OVER PROCEDURES**

.1 General:

- .1 The General Contractor shall complete all outstanding construction deficiencies within (10) ten business days from the date of turnover. If such deficiencies are not completed to the satisfaction of the owner within the specified time frame, the owner may have such outstanding deficiencies completed by others. All costs, plus a **50%** administration **FEE** will be deducted from the General Contractors Contract and Hold Back monies. (Where circumstances dictate an extension to this deadline are warranted, with the Owner's approval).
- .2 The Owner has engaged the project consultants to do one (1) Substantial Performance Inspection and one (1) Final Completion Inspection.
- .3 Re-inspection for incomplete or deficient work will be at the contractors' expense and deducted from his contract.
- .4 All submissions and paperwork for extras, claims and credits must be submitted, resolved and finalized for completion of the contract to establish final contract amount, 30 days after completion and final opening. **SUBMISSIONS AFTER THIS DATE WILL NOT BE CONSIDERED BY THE OWNER."**

.2 Schedule, make arrangements for and administer final inspection and close out in the following stages:

- .1 Inspection by Contractor to determine Substantial Performance:
 - .1 Determination that Project meets requirements for Substantial Performance is the responsibility of the Contractor.
 - .2 The Contractor together with Subcontractors involved shall inspect the Work.
 - .3 The Contractor shall prepare a list of uncompleted and unsatisfactory Work from these inspections.
 - .4 Issue these lists to Subcontractors concerned, and the Owner's Project Manager.
- .2 Application for Certificate of Substantial Performance:
 - .1 Upon completion of the preceding stage, submit a written application for a Certificate of Substantial Performance from the Owner.

38.0

INSPECTION AND TAKE OVER PROCEDURES (CONT'D)

.2 Include in Application:

- .1 A statement from the General Contractor that the Work is Substantially Performed and the date upon which Total Performance is scheduled.
- .2 A statement from the General Contractor indicating the work yet to be completed and the detailed value of uncompleted Work.
- .3 All Maintenance Manuals and Operating Instructions requested in the individual sections.
- .4 Extra Stock: All Certificates and reports listed in the individual section.
- .5 All as-built documents requested.
- .6 All calculations of square footage requirements and location certificates.
- .7 Listing of all extended warranties and extension dates required by each.

.3 Certificate of Substantial Performance:

- .1 Within 10 days of receipt of the application, an inspection will then be undertaken with the Architect, Contractor and relevant Sub-Contractors.
- .2 Within five days of the inspection, the Architect shall notify the Contractor of his approval or reasons for disapproval of the application.
- .3 Upon approval, a Certificate of Substantial Performance will be issued by the Architect with a copy delivered to the Contractor.
 - .1 The Certificate of Substantial Performance will establish the date of the Architect's inspection as the date of Substantial Performance of the Contract and will commence the required **60-day** period before release of the holdback amount.
 - .2 The Contractor shall immediately deliver to the Architect specified submissions upon receipt of the Certificate of Substantial Performance.
 - .3 A list of remaining deficiencies to be rectified before Total Completion is achieved will be attached to the Substantial Completion Certificate. The Owner will arrange to withhold this amount.

38.0

INSPECTION AND TAKE OVER PROCEDURES (CONT'D)

- .4 During the **60**-day period, Work shall continue to complete the Work.
- .5 A copy of the substantial performance certificate is to be posted at the main entrance window of the project.
- .4 Establishment of Extended Warranties:
 - .1 Warranties shall commence at date of Substantial Performance of the Contract except for those items not completed on that date.
- .5 Certificate for Payment of Holdback Amount:
 - .1 The Contractor shall submit statement and supporting documents for application of Release of the **10% percent** - Holdback amount.
 - .2 Within five working days of receipt of application for Release of Holdback amount the Architect will prepare a Certificate for Payment of the holdback amount provided all documents are in order. This Certificate will be issued to the Contractor.
 - .3 The Owner will ensure that no liens related to the Contract are registered and that no notice of liens has been received at the end of the **60** day period.
 - .4 Should no liens exist; the holdback will be due and payable.
- .6 Total Performance:
 - .1 The Contractor shall inspect the Work to establish its completion in accordance with the Contract Documents and when satisfied of it's completion request of the Architect a final inspection.
 - .2 The final inspection shall be scheduled to take place within ten working days of receipt of the Contractor's request.
 - .3 Present at the final inspection will be: The Owner's Representatives, upon notification by the Contractor, the Architect, Contractor and such Subcontractors that he considers are required.
 - .4 The Contractor and Architect shall agree upon a final deficiency list at this inspection. The Owner will compile and issue to the Contractor.
 - .5 The Contractor shall correct final deficiencies before a date agreed upon by the Contractor and the Architect.

38.0

INSPECTION AND TAKE OVER PROCEDURES (CONT'D)

- .6 When the Contractor has satisfied himself that these corrections have been completed in a satisfactory manner by his inspection, he shall schedule a re-inspection by the Architect within five days of the Contractor's request.
- .7 Certificate of Final Payment:
 - .1 Upon completion of the Final Inspection, the Contractor shall submit to the Architect a claim for final release of monies owing.
 - .2 The Architect will issue to the contractor a certificate of final payment when he is satisfied the work has been completed.
 - .3 The certificate will be in an amount equal to the remaining money due the Contractor under the Contract and shall indicate the date of total Performance.
- .8 Deficiency & Project Record Documents Hold Back:
 - .1 Will only be released as 1 payment when all deficiencies are complete, and documents submitted and accepted.
- .9 Warranty Period:
 - .1 The Owner will advise the Contractor of defects observed during Warranty periods and request him to remedy the defects in accordance with the Contract Documents.
 - .2 Thirty days before expiration of Warranties the Owner's representatives, and the Contractor will inspect the Work as arranged by the Contractor noting defects of products and workmanship.
 - .3 The Contractor shall immediately remedy such noted defects.
 - .4 The owner will conduct a review prior to the lapse of warranty items. This review will be conducted with the General Contractor.
- .10 1 Year Warranty Holdback:
 - .1 **1%** (to be set) of Contract Value will be held for a period of one year for One Year Deficiency Holdback.
 - .2 This Holdback will only be released when all Deficiencies are completed to the satisfaction of the Client and Consultants.

39.0

REINSPECTION FEES

- .1 Should it become evident, at the time of inspection by the Consultant, that Substantial Performance has not been achieved, the Contractor will be responsible for all expenses incurred for a re- inspection and any subsequent inspections required due to lack of completeness of the project.
- .2 If the project is deemed to be NOT Complete – the General Contractor will bear the cost of the consultant's re-inspections of the site charged at \$ 750.00 per Consultant.

END OF SECTION

SCHEDULE "A"

CONSTRUCTION & DESIGN MANAGEMENT Pre-Construction Meeting Agenda

	Item	Issue	Action
1.0	Identification of participants	<ul style="list-style-type: none"> - Client. - General Contractor (G.C.) - Sub-trades - CV's of key personnel - Consultants - Architect (BJC) 	All
2.0	Point People	Identify "point people" from: <ul style="list-style-type: none"> - Owner - General Contractor - Consultants - Architect (BJC) 	BJC Owner G.C.
3.0	Identification of Contract Documents:	<ul style="list-style-type: none"> - Drawings - Specs - Schedules - Including addenda - Agreed upon variations - Changes negotiated into contract price - Itemized prices 	All
4.0	Protocol of Communication	<ul style="list-style-type: none"> - Paperwork (SI's, PC's, CO's, CD's, RFI's progress draws, approvals, inspections, markups) - Directions on site - Submission of all other paperwork (shop drawings, distribution) - Overtime - PC's, RFI, SI, CO, CD and shop drawings Log included in meeting minutes. 	G.C. BJC
5.0	Schedule of Work	<ul style="list-style-type: none"> - Progress schedule - Submission schedule - Phasing of work - Hoarding, access, weather protection 	G.C.
6.0	Schedule of Submissions:	<ul style="list-style-type: none"> - Require all shop drawings <u>submitted within 2 weeks of issuance of tender award in binder format</u> - \$ 10,000.00 hold back for full submission requirements - Shop drawings log attached to meeting minutes. 	G.C.

		<ul style="list-style-type: none"> - Insurance certificate - Progress Draws & 3 month Cash Flow Projection - Bonding - Sub-trade list - Construction schedule - Schedule of values - Fire insurance policy - WSIB Certificate - Notice of Project - Note: CV's for key personnel - Refer to Appendix "C" for Submission prior to starting Construction 	
7.0	Temporary Facilities	<ul style="list-style-type: none"> - Signs - Office - Storage - Utilities - Washrooms 	G.C.
8.0	Garbage	<ul style="list-style-type: none"> - no garbage bins out front – keep clear 	Owner G.C.
9.0	Cleaning	<ul style="list-style-type: none"> - Daily cleaning. 	G.C.
10.0	Security	<ul style="list-style-type: none"> - All times. - Review access in receiving. - Night work – coordinate with staff. 	G.C.
11.0	Deliveries	<ul style="list-style-type: none"> - G.C. to unload, receive, document counts and shortages. - Delivery / packing slips to the Owner - Designate a storage area (large enough) for delivered construction materials and equipment. - Check No. of pieces / quantities - Report any shortages - Identify any long-term delivery items. (i.e.: HVAC units, Elevator, Light Fixtures) 	G.C. Owner (rep.)
12.0	Protection: - Roof	<ul style="list-style-type: none"> - Safety and protection of roof membrane, prior to any work / construction. 	G.C.
13.0	Meetings	<ul style="list-style-type: none"> - Timing, dates, and attendance for project meetings. 	All
14.0	Superintendent	<ul style="list-style-type: none"> - Site superintendent to be on site all times. e-mail to owner & architect. 	G.C.
15.0	Instructions	<ul style="list-style-type: none"> - G.C. to take instructions from Owner's Project Manager, Architect or Consultants. 	G.C.

16.0	Meeting Minutes	<ul style="list-style-type: none">- General Contractor to follow attached example of meeting minutes, and <u>e-mail</u> minutes within 3 days of site meeting- Specific reference to attached Logs (SI's, PC's, CO's, CD's, RFI's Shop Drawings)- Weekly Progress photos.	G.C.
17.0	Project Close-Out	<ul style="list-style-type: none">- <u>timing</u>: 30 days to clean up all outstanding paper work, after which time consultants will access costs and issue revised holdback.- <u>timing</u>: 30 days after issuance of the final deficiency report for all deficiency to be completed. After which time the value to complete outstanding deficiencies will be accessed by consultants and will be deducted from contract.- 1% Contract Value holdback for completion of all Project Record Documents submissions.- 1% Contract Value Holdback for 1-year warranty deficiency completion.	G.C.

SCHEDULE 'B'

EXAMPLE OF MEETING MINUTES
SITE MEETING # *xx*
FLORENCE MEARES P.S. BURLINGTON, ONTARIO
Day, Month *xx*th, 2024 @ 10:30 a.m.

ATTENDANCE:

Owner = Halton District School Board

BJC = BJC architects inc.

Consultants= SAB

*G.C. = General Contractor

No.	Source	Item	Action
1.3	Owner	Xxxx	BJC
1.4	G.C.	Xxxx	BJC
3.2	G.C.	- xxxx	BJC
3.10	BJC	Xxxx	G.C.
3.12	G.C.	Xxxx	Owner
4.5	Owner	Xxxx	G.C.
4.7	G.C.	Xxxx	Owner
6.1	Owner	Xxxx	INFO
6.2	Owner	Xxxx	INFO
		NEW BUSINESS	
7.0	G.C.	RFIs During Construction	INFO
7.1	BJC	Something important	INFO
7.2		Review of PC'S & CO schedule	
7.3		Review of shop drawings log	
7.4	Owner	XXXXXX	XXX

NOTE:

"No." refers to previous items carried from previous meetings
Number consists of *meeting No. portion, period, item number*
i.e.: 3.12 (is item number 12 from meeting No. 3)

"Source" refers to person / company who raised this item.

"Action" refers to person / company who is to take action with this item.

SCHEDULE 'C'

WASHROOM RENOVATIONS AT FLORENCE MEARES P.S.
 EXAMPLE OF PROGRESS DRAW
 PROGRESS DRAW # xx

PROGRESS DRAW	<u>SCHEDULE OF VALUES AND WORK PERFORMED</u>	FILE NO.	PROJECT NO.	REPORT NO.
		DATE ISSUED		PAGE NO. 1 OF 1

**Application Draw
Number:**

Project Name:

Projected Location:

Contractor:

Please check if the following are up to date:

Statutory Declaration ..

Insurance ..

WSIB ..

Description of Work	Schedule Value (Contract Amount)	Completed to Date		Balance to Complete		Comments
		%Complete	\$Value	%Complete	\$Value	
A - CONTRACTS						
General Expenses						
Site Supervision						
Health & Safety						
Bonding						
1% Holdback of contract price for Project Record Documents						
1% one Year Warranty Holdback						
Shop Drawing Holdback	\$10,000.00					
Concrete Formwork						
Structural Steel						
Cast-In-Place Concrete						
Concrete Finishing						
Glazed Aluminum Railing Assemblies						
Structural Metal Framing						

Description of Work	Schedule Value (Contract Amount)	Completed to Date		Balance to Complete		Comments
		%Complete	\$Value	%Complete	\$Value	
A - CONTRACTS						
Metal Fabrications						
Glazed Aluminum Railings						
Rough Carpentry						
Finish Carpentry						
Waterproofing						
Bituminous Damproofing						
Building Insulation						
Air & Vapour Barriers						
SBS Roofing 2 Ply						
Flashings & Sheet Metal						
Fire Stopping						
Joint Protection						
Hollow Metal Doors & Frames						
Door Hardware						
Glazing						
Gypsum Board Assemblies						
Acoustic Ceilings						
Resilient Tile Flooring						
Painting						
Plumbing & HVAC:						
Mobilization & Shop Drawings (max \$2000.00)						
Plumbing Fixtures						
Specialty Piping						
Plumbing & HVAC:						
Above grade rough in plumbing & drainage						
Plumbing Fixtures						
Sprinkler System & Heads						
Expansion Fittings and Loops						
Thermometers & Pressure Gauges						
Bases, Hangers & Supports						
Seismic Restraint						
Vibration Control Measures						
Testing, Adjusting, Balancing						
Wet Pipe Fire Suppression						
Plumbing Piping Insulation						
Domestic Water Piping-Copper						
Domestic Water Piping-PEX						
Backflow & Cross Connection Measures						

Domestic Water Circulation Pump				
Potable Water Auxiliary Equipment				
Sanitary Drains				
Sanitary Waste & Vent Piping-Cast Iron & Copper				
Sanitary Waste & Vent Piping-Plastic				
Sanitary Sewage Pumps				
Storm Drainage Piping-Cast Iron & Copper				
Fuel-Fired Domestic Water Heaters				
Plumbing Auxiliary Equipment				
Duct Insulation				
HVAC Piping Insulation				
Facility Natural-Gas & Propane Piping				
Hydronic Accessories				
Hydronic Piping (Welding)				
Hydronic Piping (Rolled Grooved)				
Pumps Hydronic				
Refrigerant Piping & Specialties				
Water Treatment for Closed Loop Hydronic Systems				
Metal Ducts				
Duct Accessories				
Fire Dampers				
Smoke Control Dampers				
Operating Dampers				
Flexible Ducts				
Duct Liners				
Packaged Exhausters				
Diffusers, Registers & Grilles				
Louvres & Vents for Intake & Exhaust				
Stainless Steel Condensing Boilers				
Packaged Terminal Heating or Cooling Units				
Maintenance Manuals & As Built drawings (min. \$2,000.00)				
System commissioning & start up (min 3%).				
Mechanical Sub Total				

Electrical:				
Permits & Fees				
Mobilization (maximum 1%)				
Commissioning & Integrated Testing of Life Safety & Fire Protections				
Wires & Cables				
Splitters, Junction & Pull Boxes				
Outlet boxes, Conduit Boxes & Fittings				
Wire & Box Connectors				
Grounding Secondary				
Seismic Restraint for Electrical Systems				
Conduits, Conduit Fastenings & Conduit Fittings				
Installation of Cables in Trenches & Ducts				
Short Circuit/ Coordination Study				
Auxiliary Systems				
Electric Heating Systems				
Dry Type Transformers				
Service Entrance Board				
Panelboards				
Molded Case Circuit Breakers				
Wiring Devices				
Fuses – Low Voltage				
Disconnect Switches				
Starters & Contactors				
Power Generation-Natural Gas				
Lighting Equipment				
Digital Occupancy & Daylight Control Systems				
Fire Alarm Systems				
Commissioning (min 3%)				
Electrical Sub Total				
Totals				
B – CHANGE ORDERS				
CO - 1				
CO - 2				
Change Directive A				
Totals				
TOTALS A & B				

SCHEDULE 'D'	
GENERAL LIST OF	
PRE-OCCUPANCY LIFE SAFETY REQUIREMENTS &	
PROJECT RECORD DOCUMENTS	
	Item (As Applicable)
	Architectural Requirements
1.	All doors and hardware's, Automatic Door Operator & exit devices to be operable (energized)
2.	All stairs and elevator
3.	Flooring (Completed)
4.	Washrooms (Operational)
5.	Guard rails and handrails interior & exterior
6.	Clear path of travel to all required exits
7.	All fire rating/stopping in place
8.	Sidewalks/pads at entrances
	Mechanical & Electrical completion Requirements
1.	Emergency lighting & Exit signs
2.	General Lighting
3.	Exterior building and parking lot lighting
4.	Sprinkler system
5.	Stand pipe system
6.	Fire alarm system
7.	Annunciator panel
8.	Heating system
9.	Exhaust systems
10.	Back Flow Test Certificate
	Project Record Documents
1.	Final City Inspection and Occupancy Certificate
2.	NFPA 13 Contractors Material and Test Certificate
3.	Sprinkler Design Engineer's Letter
4.	Final Electrical Inspection Certificate
5.	TSSA Gas Pressure Test Tag (copy)
6.	Back flow test certificate
8.	Fire Alarm Engineers System/ Letter c/w hood suppression system and gas solenoid valve interlock to NFPA 96
9.	Commissioning of roof top units.
10.	TAB Reports
11.	Potable water test
12.	As Built Drawings in electronic and paper formats
13.	Maintenance Manuals 5 days after Substantial Performance
14.	Operating Instruction to Owners & Systems Demonstrations
15.	Contract Cost Summary from GC.
16.	Warranties, Guaranties, Spare Materials, As built Drawings
17.	Square footage Certificate (B.O.M.A. current standard)
18.	Final Utility Readings to Reconcile Energy Costs During Construction

DIVISION 01 - GENERAL REQUIREMENTS

1.0 CONTRACT DOCUMENTS

- .1 The Instructions to Bidders, the General Conditions of CCDC 2 - 2020, Supplementary Conditions and all Sections of Division 01 apply to and form part of this section of the specification.

2.0 CONSTRUCTION SCHEDULE AND GENERAL PROJECT PHASING

- .1 Prepare and submit to the Owner and the Consultant within 10 Working Days following the Owners request for their approval, a construction schedule indicating critical Milestone Dates and General Project Phasing for the Project. Such schedule shall provide sufficient detail of the critical events and their inter-relationship and shall form the baseline schedule (such baseline schedule as amended in accordance with this Agreement being the Baseline Schedule) indicating the Critical Path of the Project, demonstrating that the work will be performed in conformity with the Contract Time. Once accepted by the Owner and the Consultant, the Baseline Schedule submitted by the Contractor shall become the Baseline Schedule against which all future progress will be measured.
- .2 Provide the expertise and resources, including manpower and construction Equipment, as necessary to maintain progress under the Baseline Schedule or any successor or revised Schedule approved by the Owner with each progress claim.
- .3 Continuously monitor the progress of the Work and provide a monthly progress schedule covering all the Baseline activities and including actual start, actual finish and percentage of completion of those activities relative to the Baseline Schedule and/or any successor or revised Baseline Schedule approved by the Owner to replace the Baseline Schedule from time to time, and advise the Consultant and the Owner in writing of any deviation or slippage from the Baseline Schedule within two (2) Working Days of such deviation or slippage becoming apparent. Each month, the Contractor shall submit, for the Owner's approval, any changes made to the Baseline logic and activity durations.
- .4 Without limiting the forgoing, the Contractor shall not amend the Baseline Schedule without the prior written consent of the owner. In addition, at each Progress Meeting, the Contractor shall provide to the Owner and the Consultant a two (2) week look ahead schedule in MS Project format indicating the major activities to be undertaken or constructed in such two (2) week period. Project progress meetings shall be held monthly or as requested by the Owner.
- .5 If at any time it should appear to the Owner or the Consultant that the actual progress of the Work is behind the Baseline Schedule or is likely to become behind the Baseline Schedule, the Contractor shall take appropriate steps to cause the actual progress of the work to conform to the Baseline Schedule or minimize the resulting delay and shall produce and present to the Owner and the Consultant a recovery plan demonstrating how the Contractor will achieve the recovery of the Baseline Schedule.

2.0 CONSTRUCTION SCHEDULE (CONT'D)

- .6 The Contractor's construction Baseline Schedule will include, but shall not be limited to, the following Tasks:
- a. Shop Drawings – including allowance for preparation, review and resubmission.
 - b. Submittals.
 - c. Mockups (as required).
 - d. Fabrication and delivery.
 - e. Temporary works.
 - f. Construction activities.
 - g. Owner supplied equipment and/or materials.
 - h. Commissioning, testing, start-up and demonstrations.
 - i. Change Orders.
 - j. Critical path.
 - k. Critical Milestones.
- .7 The schedule software used by the Contractor shall be MS Project. The Contractor shall submit to the Consultant an electronic copy in MS Project format and PDF format. Monthly updates of the Contractor's Baseline Schedule shall similarly be submitted as an electronic copy prepared in MS Project format and PDF format.
- .8 The Contractor is required to update the Baseline Schedule and report to the Consultant on a monthly basis. The monthly update of the Contractor's Baseline Schedule shall identify the percentage of completion for every Task, including approved Changes to the Contract.
- .9 As part of each Proper Invoice the Contractor shall submit the actual percentage completed at the end of the invoice period by Subcontract and Contractor Itemized Work Element to the Consultant.

3.0 MATERIAL AVAILABILITY

- .1 Immediately upon signing the Contract the Contractor and its Trade Subcontractors and Suppliers shall review Product delivery requirements and anticipate foreseeable supply delays for Products. If delays in supply of Products are foreseeable, the Contractor shall notify the Consultant of such, in order that substitutions or other remedial action may be authorized in time to prevent delay in performance of the Work.

4.0 COMPLIANCE WITH THE BASELINE SCHEDULE

- .1 The Contractor is required to comply with the Baseline Schedule and is required to coordinate and direct its Trade Subcontractors and Suppliers in accordance with these requirements.
- .2 The Contractor shall provide sufficient number of skilled personnel to maintain the progress of the Work.

4.0

COMPLIANCE WITH THE BASELINE SCHEDULE (CONT'D)

- .3 If in the opinion of the Consultant, the Contractor is delaying the work of other Contractors then the Contractor will be responsible for costs to regain time lost, including but not necessarily limited to the premium costs for other Contractors to regain lost time.

- .4 If in the opinion of the Consultant the Contractor falls behind schedule, he must employ all necessary resources as required to make up the lost time. All associated costs will be at the Contractors expense. If the schedule delay is deemed the responsibility of the Owner, the Contractor will be entitled to fair compensation to maintain the Baseline Schedule.

END OF SECTION

DIVISION 01 - GENERAL REQUIREMENTS

PART 1 - GENERAL

1.0 CONTRACT DOCUMENTS

- .1 The Instructions to Bidders, the General Conditions of CCDC 2 - 2020, Supplementary Conditions and all Sections of Division 01 apply to and form part of this section of the specification.

2.0 CONTRACT SUBMISSIONS

- .1 At the commencement of the Contract submit the following:
 - .1 Supply Public Liability and Property Damage Insurance Certificates, also Builder's Risk and Boiler Insurance as required of the Contract.
 - .2 Supply Certificates of good standing from WSIB for the General Contractor and all Subcontractors.
 - .3 Supply a complete Contract Sum Breakdown of all subtrades or parts of work and general expense items for approval by all consultants. Include Mechanical and Electrical Breakdowns for review and acceptance by Consultants.
 - .4 Supply a competent detailed Construction Schedule that has been reviewed and approved by major subtrades. Identify critical milestone dates.
 - .5 Supply Schedule of Shop Drawing Submissions and comprehensive submission of Mechanical and Electrical Shop Drawings as required in specifications
 - .6 Apply for, post and supply a copy of Notice of Project.
 - .7 Supply a copy of Health & Safety policy as well as post at the job site.
 - .8 Supply interference drawings for all areas requested by the Consultant, Mechanical Engineer or Electrical Engineer.
 - .9 Supply any Shoring Designs or methods statements as required for the proposed execution of the work.

3.0 SCHEDULE

- .1 **ALL SHOP DRAWINGS, PRODUCT LITERATURE AND SAMPLES FOR ARCHITECTURAL, STRUCTURAL, MECHANICAL AND ELECTRICAL MUST BE SUBMITTED WITH IN 2 WEEKS AFTER THE AWARD OF TENDER.**

3.0 **SCHEDULE (CONT'D)**

- .2 Submit one reproducible print and five (5) copies of complete shop drawings and two (2) copies of other information required by the specifications or requested by the Consultant. Where submissions are straight forward and not complicated – PDF electronic submission is acceptable.
- .3 Allow a minimum of 10 working days for Architect to review each submission, exclusive of Architect and Contractor inter-office(s) transmission period and mail periods.
- .4 Shop Drawings for time sensitive deliveries can be expedited as required to meet schedule.
- .5 Refer to “Submittals Schedule ‘A’: “Sample Shop Drawings Data” submissions sheet included here in.
Note: this is a sample **generic list** which must be edited to reflect each specific project.
- .6 If shop drawings are reviewed and found acceptable, two (2) signed copies and the reproducible print will be returned to the Contractor and fabrication and installation of the work may begin.
- .7 Note: Fixed sum price of **\$10,000.00** / Building, for the submission of all required shop drawings & samples. This amount to be included in contract and identified separately on progress draw. The total amount will be released only once the shop drawings submissions are completed.

4.0 **INTERFERENCE & COORDINATION DRAWINGS**

- .1 Prepare interference drawings for all work in confined spaces, bulkheads and ceiling spaces whether concealed or not. Coordinate with all trades.
- .2 Submit as shop drawings in advance of fabrication or installation of components.
- .3 Site conditions requiring corrections, due to failure to provide interference drawings as required will be corrected at no additional cost to the owner.
- .4 Prepare drawings indicating the relationship of unforeseen conditions at congested areas prior to commencement of work in the area.
- .5 Prepare coordination drawings for efficient use of available space, for proper sequence of installation, and to resolve conflicts as required.
- .6 Identify any conflicts which would affect the **Design** of Ceiling and Bulkheads, Heights and Sizing.
- .7 Interference and coordination drawings are to be initialed by each subcontractor involved, then signed and submitted to the Architect for review and record purposes.

5.0 **SHORING DESIGN DRAWINGS**

- .1 If required as part of this project, it is the contractor's responsibility to provide in advance of any work requiring shoring, detailed Shoring design drawings bearing the seal of a Professional engineer registered in the Province of Ontario and also a Method Statement describing the work sequence.
- .2 Submit to the Consultants as shop drawings in advance of the work.

6.0 **GENERAL**

- .1 **Contract Drawings and Specifications take precedence over Shop Drawings.**
- .2 **Contractor to note that "Electronic Copies " of the Contract Documents described here-in **will not** be made available for the Contractors use.**
- .3 Submit to Architect, for review, Shop Drawing, Product Data and Samples specified.
- .4 Until submittal is reviewed, Work involving relevant product may not proceed.
- .5 Do not use for construction, Shop or Setting Drawings or diagrams which do not bear Architect's Shop Drawing stamp and signature.
- .6 Submission and subsequent review of Shop Drawings constitute a service and does not entitle the supplier or sub-contractor to the right to remuneration until the materials are supplied and installed on the site in accordance with the Contract.
- .7 Indicate in writing any deviations in submissions from contract documents.
- .8 Note - Facsimile submissions will not be accepted.
- .9 The Owner has engaged the project consultants for Shop Drawing Review. This service is for 1 initial review and 1 resubmission. The cost of resubmissions due to the Contractors failure in compliance with the Contract Documents will be at his expense and deducted from his Contract.
- .10 Shop Drawings which, in the opinion of the Consultant, require extensive corrections are in substantial disagreement with the intent of the contract documents will be rejected.
- .11 Refer to the attached Submittal List attached in Submittals Schedule 'A' for a list of shop drawings, product literature and samples required for submission.
- .12 The Shop Drawing, Product Data and samples submittal list is to be attached and enclosed with each project meeting minutes.

7.0 **SHOP DRAWINGS**

- .1 Drawings shall be copies of original drawings prepared by Contractor, sub-contractor, supplier or distributor, for the work of the Contract which illustrates appropriate portions of the Work, showing fabrication layout, setting or erection details, sections, details, interconnections, locations and type of anchorage/fastening, materials and finishes, requirements of other trades and structural loading; as specified in appropriate Sections. Provide Drawings on same size sheets as Contract Drawings generally.
- .2 Submit Shop Drawings with transmittal forms listing the name of the manufacturer, the job, the Drawing number, the number of copies and reference in the Specification to which the Shop Drawings refer.
- .3 Show on Shop Drawings clear and obvious notes of any proposed changes from Drawings and Specifications.
- .4 Submit Shop Drawings to authorities having jurisdiction and obtain approval.
- .5 On Shop Drawings for fire rated assemblies show required fire rated and ULC design numbers.
- .6 Submit a minimum of 3 white prints and One (1) Electronic Shop Drawings to the Architect. Provide one additional print for structural, mechanical and electrical items. After review, the Architect will retain one white print and return the other white prints to the Contractor. On completion of the revisions, one complete set of new white prints of Shop Drawings used for construction shall be supplied to the Architect, unless otherwise specified.
- .7 Shop drawings shall be submitted drawn in Imperial Units (SI) unless specifically requested otherwise by the Consultant. No exceptions.

8.0 **ENGINEERED SUBMITTALS**

- .1 Submittals required to be sealed by a Professional Engineer are to be prepared, sealed, signed and dated under the direct control and supervision of a qualified professional Engineer licenced to practice in the place or Work.
- .2 Include proof of professional liability insurance with a minimum limit of liability of \$1,000,000.00 per claim, identifying insurer, policy number and policy term on duly signed certificate of insurance.
- .3 The design is to include life safety, sizing of supports, anchors, framing, connections, spans and as additionally required to meet or exceed requirements of applicable codes, standards, regulations, authorities having jurisdiction and design requirements of the Contract Documents.

8.0 **ENGINEERED SUBMITTALS (CONT'D)**

- .4 Engineered Submittals are to include design calculations, complete with references to codes, and standards used in such calculations, supporting the proposed design represented in the submittal. Prepare calculations in a clear and comprehensive manner so that they can be properly reviewed.
- .5 The Submittal Engineer shall undertake periodic field review, including review of associated mock-ups when applicable. Such reviews will include review during fabrication at the point of manufacture and during installation at the Place of Work. Prepare and submit a field review report for each review undertaken.
- .6 Conduct field reviews at intervals appropriate to the progress of the parts of the Work relevant to the Engineered Submittal. Report on progress and quality of the affected parts of the Work. Determine if installation is in general conformity with the Contract Documents and in strict conformance with the accepted Engineered Submittal.
- .7 Upon completion of the parts of the Work affected by an Engineered Submittal, the Submittal Engineer shall prepare and submit a Letter of General Conformity to the Contractor, the Consultant, and the Authorities Having Jurisdiction. Certify that the parts of the work affected by the Engineered Submittal have been designed, fabricated and installed in accordance with the Contract Documents and Applicable Codes.
- .8 Include all costs of the Submittal Engineer's services in the Contract Price.

9.0 **ELECTRONICALLY SUBMITTED SHOP DWGS**

- .1 Electronically submitted shop drawings are acceptable when submission is in strict compliance with requirements noted here in.
- .2 Submissions must be clear, to scale, complete, specific and correctly transmitted.
- .3 Failure to comply with these requirements will result in their refusal.
- .4 Samples and colour submissions must be originals.
- .5 Note only one Marked up version will be returned (Electronically)

10.0 **PRODUCT DATA**

- .1 Certain Specification Sections specify that manufacturer's standard schematic drawings, catalogue sheets, diagrams, schedules, performance charts, illustrations and other standard descriptive data will be accepted in lieu of Shop Drawings.
- .2 The above will be accepted if they conform to the following:
 - .1 Delete information which is not applicable to project.

10.0 PRODUCT DATA (CONT'D)

- .2 Supplement standard information to provide additional information applicable to project.
- .3 Show dimensions and clearances required.
- .4 Show performance characteristics and capacities.
- .5 Show wiring diagrams and controls.
- .6 Add to standard sheet the Project identification data.
- .3 Submit 5 copies of each submission.

11.0 MATERIAL SAFETY DATA SHEETS

- .1 Submit all material safety data sheets for each controlled product that will be on/used on site.
- .2 Retain a copy for use on site.

12.0 SAMPLES

- .1 Submit samples in duplicate as called for by the Architect.
- .2 Samples shall be labelled with project name, manufacturer's name, contractor's name product name, pattern, texture, design, model number, colour code, etc. Such samples shall be submitted at no additional cost.
- .3 Construct field samples and mock-ups at locations acceptable to Architect.
- .4 Construct each sample or mock-up complete, including Work of all Trades required to finish Work. Ensure all materials used in samples or mock-up conform to materials specified.
- .5 Reviewed samples or mock-ups will become minimum standards of workmanship and material against which installed Work will be checked on Project.

13.0 CONTRACTOR'S RESPONSIBILITY

- .1 Check, certify and sign as correct Shop Drawing, Product Data, and Samples prior to submission.
- .2 Shop Drawings which require the approval of any legally constituted Authority Having Jurisdiction shall be processed to such Authority by the Contractor for approval.
- .3 Verify:

13.0 **CONTRACTOR'S RESPONSIBILITY (CONT'D)**

- .1 Field measurements.
- .2 Field construction criteria.
- .3 Catalogue numbers and similar data.
- .4 Co-ordinate each submittal with requirements of Work and Contract Documents.
- .5 Notify Architect, in writing at time of submission of any deviations in submittal from requirements of Contract Documents.
- .6 Indicate on each submission changes from the Contract Drawings & Specifications.
- .7 Stamp, initial or sign each Submission, certifying approval of submission, verification of field dimensions and measurements and compliance with contract Documents.
- .8 After Architect's review, distribute copies, as follow:
 - .1 Job Site file (2 copies).
 - .2 Record documents file.
 - .3 Subcontractors.
 - .4 Supplier.
 - .5 Fabricator.
 - .6 Authorities having jurisdiction, where required by Codes and/or By Laws, i.e. structural steel and sprinkler.
 - .7 Owner and Data Book where applicable.
- .9 Distribute samples as directed by the Architect.
- .10 Ensure that all samples are approved by authorities having jurisdiction, and other parties such as Owner in time to permit approval prior to ordering of quantity delivery to Site.
- .11 The Contractor shall advise all Trades, Subcontractors and suppliers of the limits of the Architect's responsibility with respect to Shop Drawings and other submittals as detailed under paragraph 14.2 below.

14.0 **ARCHITECT'S RESPONSIBILITY**

- .1 Within 10 working days of the receipt of Samples, Shop Drawings and all other Submissions, the Architect shall return to the Contractor indicating that, the items been:

14.0 **ARCHITECT'S RESPONSIBILITY (CONT'D)**

- .1 Reviewed (no re-submittal required).
 - .2 Reviewed as indicated (no re-submittal required).
 - .3 Revise and resubmit (re-submittal required).
 - .4 Reviewed by Consultant
- .2 Review by the Architect is for the sole purpose of ascertaining conformance with the general design concept. This review shall not mean that the Architect approves the detail design inherent in the shop drawings, responsibility for which shall remain with the Subcontractor, and such review shall not relieve the Subcontractor of his responsibility for errors / omissions in the shop drawings or of his Documents. The Contractor is responsible for dimensions to be confirmed and correlated at the job site, for information that pertains solely to the processes or techniques of construction and installation and for co-ordination of all sub-trades.
- .3 The Architect will not be responsible for non-compliance in meeting pre-determined Submission Schedules if initial Submissions by the Contractor are **LATE by the G.C.**

SUBMITTALS SCHEDULE 'A'

REQUIRED SUBMITTALS							
WASHROOM RENOVATIONS AT FLORENCE MEARES P.S. 2102 BERWICK DRIVE BURLINGTON, ONTARIO					Project No. 23-038	APRIL 2024	
Sect No.	Section Name	Shop Dwg.	Product Literature	Samples	Warranties	Maintenance Manuals & Materials	Misc. / Other comments
Division 04	Unit Masonry						
04 20 00	Masonry	Yes	Yes	N/A	1 years	N/A	Arch.
Division 06	Wood, Plastics & Composites						
06 20 00	Finish Carpentry	Yes	Yes	Yes	2 years	N/A	Arch.
Division 08	Openings						
08 11 13	HM Door and Frame	Yes	Yes	N/A	1 year	Yes	Arch.
08 71 00	Door Hardware	Yes	Yes	N/A	5 years	N/A	Arch.
08 71 13	Power Door Operators	Yes	Yes	N/A	1 year	Yes	Arch.
08 80 00	Glazing	Yes	Yes	N/A	5 years	N/A	Arch.
Division 09	Finishes						
09 21 16	Gypsum Board Assemblies Structural stud bulkhead	Yes	Yes	Yes	1 Year	N/A	Arch.
09 65 19	Resilient Tile Flooring	Yes	Yes	Yes	1 year	Materials > of 2% or 2 boxes	Arch.
09 91 00	Painting	Yes	Yes	Yes	1 year	Min. 4 litre can each colour	Arch.
Division 20-23	Mechanical						
20 05 31	Expansion Fittings & Loop	Yes					
20 05 32	Thermometers & Pressure Gauges	Yes					
20 05 34	Bases, Hangers & Supports	Yes					
20 05 48	Seismic Restraint	Yes					
20 05 49	Vibration Control Measures	Yes					
20 05 53	Identification of Mechanical Services	Yes					
20 06 11	Testing, Adjusting & Balancing-TAB	Yes					
22 07 19	Plumbing Insulation	Yes					
22 11 16	Domestic Water Piping-Copper	Yes					
22 11 18	Domestic Water Piping-PEX	Yes					
22 11 20	Backflow & Cross Connection Measures	Yes					
22 11 22	Domestic Water Circulation Pump	Yes					

Sect No.	Section Name	Shop Dwgs.	Product Literature	Samples	Warranties	Maintenance Manuals & Materials	Misc. / Other comments
22 11 31	Potable Water Auxiliary Equipment	Yes					
22 13 13	Sanitary Drains	Yes					
22 13 16	Sanitary Storm Waste Piping-Cast Iron and Copper	Yes					
22 13 17	Sanitary Waste & Vent Piping -Plastic	Yes					
22 13 29	Sanitary Sewage Pumps	Yes					
22 36 13	Plumbing Auxiliary Equipment	Yes					
22 44 13	Plumbing Fixtures Combined with Drawing Schedule	Yes					
23 07 13	Duct Insulation	Yes					
23 07 19	HVAC Piping Insulation	Yes					
23 11 23	Facility Natural-Gas & Propane Piping	Yes					
23 21 11	Hydronic Piping (Welded)	Yes					
23 21 14	Hydronic Piping (Rolled Groove)	Yes					
23 21 23	Pumps Hydronic	Yes					
23 23 13	Refrigerant Piping	Yes					
23 31 13	Metal Duct System	Yes					
22 33 13	Duct Accessories	Yes					
23 33 16	Fire Dampers	Yes					
23 33 17	Smoke Control Dampers	Yes					
23 33 18	Operating Dampers	Yes					
23 33 46	Flexible Ducts	Yes					
22 33 53	Duct Liners	Yes					
23 34 23	Packaged Exhausters	Yes					
23 37 13	Diffusers, Registers and Grilles	Yes					
23 37 23	Louvres & Vents for Intake & Exhaust	Yes					
25 40 14	DDC Controls	Yes					
Division 26	Electrical						
26 01 20	Commissioning & Integrated Testing of Life Safety & Fire Protections	Yes					
26 05 19	Wires and Cables	Yes					
26 05 20	Splitters, Junction & Pull Boxes	Yes					
26 05 21	Outlet Boxes, Conduit Boxes & Fittings	Yes					
26 05 22	Wire & Box Connectors	Yes					
26 05 26	Grounding Secondary	Yes					

Sect No.	Section Name	Shop Dwgs.	Product Literature	Samples	Warranties	Maintenance Manuals & Materials	Misc. / Other comments
26 05 33	Conduits, Conduit Fastenings	Yes					
26 05 43	Installation of Cables in Trenches & Ducts	Yes					
26 05 75	Auxiliary Systems	Yes					
26 05 76	Electric Heating Systems	Yes					
26 22 13	Dry Type Transformers	Yes					
26 24 16	Panelboards	Yes					
26 24 17	Moulded Case Circuit Breakers	Yes					
26 27 26	Wiring Devices	Yes					
26 28 13	Fuses – Low Voltage	Yes					
26 28 16	Disconnect Switches	Yes					
26 29 13	Starters & Contactors	Yes					
26 51 13	Lighting Equipment	Yes					
26 51 13	Lighting Equipment	Yes					
28 31 25	Fire Alarm System	Yes					

END OF SECTION

DIVISION 01 - GENERAL REQUIREMENTS

PART 1 - GENERAL

1.0 CONTRACT DOCUMENTS

- .1 The Instructions to Bidders, the General Conditions of CCDC 2 - 2020, Supplementary Conditions and all Sections of Division 01 apply to and form part of this section of the specification.

2.0 SUBMITTALS

- .1 Submit to Consultant environmental plan, Site waste management implementation plan and sketch showing areas proposed to be used for construction storage, areas for implementation of Site separation of construction waste, and including dimensions of such areas and location and size of trees within and adjacent to these areas.

3.0 INDOOR ENVIRONMENTAL QUALITY

- .1 Conform to requirements of CSA Z204, Guidelines for Managing Indoor Air Quality in Office Building (Occupational Health and Safety).
- .2 Reduce quantity of indoor air contaminants that are odorous or potentially irritating to provide installer and occupant health and comfort as indicated.
- .3 Avoid exposure of building occupants to potentially hazardous chemicals that adversely impact air quality.
- .4 Minimize cross-contamination of regularly occupied occupancy areas by chemical pollutants.
- .5 Comply with recommended measures in MSDS sheets to protect health and safety of personnel.
- .6 Take measures to prevent entry of dust into HVAC system throughout construction phase.
- .7 Take into consideration use of electrically powered equipment on Site in lieu of gas or propane to reduce possibility of carbon monoxide sickness and odours of gas or propane spreading throughout building.
- .8 Schedule sequence of installation of finishing materials to reduce harm to indoor air quality. Provide necessary ventilation during and after installation of 'wet' products such as paints, sealants, fireproofing materials, adhesives and of 'packaged dry' products.
- .9 Isolate substances producing hazardous emissions from circulating air. Locate outside air intakes away from potential sources of contaminations.

3.0 INDOOR ENVIRONMENTAL QUALITY (CONT'D)

- .10 Take measures to prevent moisture exposure to finished construction or existing construction. Mould growth on either hidden surfaces or visible surfaces is detrimental to indoor air quality and will be considered deficient and in need of rectification.

4.0 EROSION AND SEDIMENTATION CONTROL

- .1 Provide erosion and sediment plans, including standard details, prior to start of work as required by jurisdictional requirements.
- .2 Provide permanent and temporary measures to:
 - .1 Prevent loss of soil during construction by storm water runoff and / or wind erosion, including protecting topsoil by stockpiling for reuse.
 - .2 Prevent sedimentation of storm sewer or receiving streams.
 - .3 Prevent polluting the air with dust and particulate matter.
- .3 Limit initial earth disturbance to that necessary to install control measures.
- .4 Stabilization: Following initial soil disturbance or re-disturbance, permanent or temporary stabilization shall be completed within:
 - .1 Seven calendar days for the surface of all perimeter controls, and all perimeter slopes.
 - .2 Fourteen calendar days for all other disturbed or graded areas.
- .5 Use the permanent driveway or entrance location as a stabilized construction entrance. Top dress as necessary to prevent tracking of sediment onto public streets or rights-of-way.
- .6 Minimize stripping of topsoil and vegetation. Schedule Work to minimize exposure of subsoils to erosion.
- .7 Perform clearing and grading Work to minimize the effects of erosion on Site.
- .8 Grading shall not impair existing surface drainage, create an erosion hazard, or create a source of sediment to nay adjacent watercourse of property.
- .9 At any location where surface runoff from disturbed or graded areas flows off the property, install control measures to prevent sediment from being transported off-Site.
- .10 Swales or other areas that transport concentrated flow to be sodded.
- .11 Maintain permanent and temporary erosion and sediment control features installed under this Contract. Remove only when authorized by Consultant.
- .12 Remove control features when directed by the Consultant. Take care to avoid causing turbidity, and excessive re-suspension of particles when removing control features.

5.0 PLANT PROTECTION

- .1 Protect trees and plants on Site and adjacent properties not indicated for removal.
- .2 Wrap in burlap, trees and shrubs adjacent to construction Work, storage areas and trucking lanes, and encase with protective wood framework from grade level to height of 2 meters.
- .3 Protect roots of designated trees to drip line during excavation and Site grading to prevent disturbance or damage. Avoid unnecessary traffic, dumping and storage of materials over root zones.
- .4 Cleanly cut roots that need to be removed with sharp hand cutting tools. Cover roots exposed during construction and scheduled to remain with moist soil until permanent root cover is in place.

6.0 WORK ADJACENT TO WATERWAYS

- .1 Do not discharge waste waters derived from construction activities, such as concrete curing water, clean-up water, dewatering of ground water, disinfection water, hydrostatic test water, and water used in flushing of lines, directly into storm water system or adjacent waterways.
- .2 Do not discharge rinse water from concrete trucks or mixing drums on Site.
- .3 Do not operate Construction Equipment in waterways.
- .4 Do not use waterway beds for borrow material.
- .5 Do not dump excavated fill, waste material or debris in waterways.
- .6 Design and construct temporary crossings to minimize erosion to waterways.
- .7 Do not skid logs or construction materials across waterways.
- .8 Avoid indicated spawning beds when constructing temporary crossings of waterways.
- .9 Do not blast under water or within 100 meters of indicated spawning beds.

7.0 AIRBORNE POLLUTION AND PARTICULATE CONTROL

- .1 Control emissions from equipment and plant to local authority's emission requirements.
- .2 Prevent sandblasting and other extraneous materials from contaminating air beyond application area, by providing temporary enclosures.
- .3 Demolish to minimize dusting. Cover or wet down dry materials and rubbish to prevent blowing dust and debris.

7.0 AIRBORNE POLLUTION AND PARTICULATE CONTROL (CONT'D)

- .4 Provide dust control for temporary roads. Control dust by application of water, or calcium chloride after obtaining permission from the Consultant.
- .5 Keep paved surfaces clean, including public roadways.
- .6 Cover all Site materials and stockpiles with tarps at the end of each day.

8.0 SPILL CONTAINMENT

- .1 Take precautions to avoid contamination of the Site from fuel and other petroleum products, fertilizers, paints and coatings, and other hazardous fluids.
- .2 Monitor onsite vehicles for fluid leaks. Implement a preventative maintenance program to keep vehicles free from leaks.
- .3 Keep and maintain hydrocarbon containment and clean up materials on Site for the duration of construction activities.
- .4 Ensure personnel are trained in the proper use of containment and clean up materials.

END OF SECTION

DIVISION 01 - GENERAL REQUIREMENTS

PART 1- GENERAL

1.0 CONTRACT DOCUMENTS

- .1 The Instructions to Bidders, the General Conditions of CCDC 2 - 2020, Supplementary Conditions and all Sections of Division 01 apply to and form part of this section of the specification.

1.1 CONSTRUCTION & DEMOLITION PHASING

- .1 With-in 2 weeks of Project Award provide a Phasing Drawing complete with time frames, outlining all the works to be completed along the entrance main driveway, including removals, new services, temporary services, tie-ins, street connections, grading, curbing and asphaltting. Refer to Civil and Architectural Dwgs. for full scope.
- .2 Submit to Client and Consultants for review and approval before any works commence.

1.2 EXISTING FACILITIES & NEW CONSTRUCTION

- .1 [The existing buildings and parking areas will be in operation throughout duration of construction.](#) Comply with the M.O.L. standards for safety protocols.
- .2 Do not interrupt existing services and facilities, except for authorized and scheduled interruptions of services approved by the owner and Architect. Provide a minimum of 2 weeks prior notice.
- .3 All work which may in any way affect the daily operation of the facility is to be scheduled and approved by the Owner and Architect prior to its commencement.
- .4 Avoid blocking driveways, entrances and pedestrian access to the existing occupied areas of the site with any deliveries. Schedule deliveries between 7:00am and 5:00pm. Notify Architect & owners Project Manager if these hours need to be adjusted to suit special circumstances.
- .5 Provide 72 hour notice to owner prior to anticipated blockage of driveways and exit/entrances to Site and Buildings for Deliveries or Work.
- .6 Have a flag person to control all delivery traffic on the site to keep regular vehicular and pedestrian traffic safe.
- .7 [The main site entrance must remain clear and open at all times. At no time is the entrance to be closed or access hindered by the work of this contract.](#)

1.2 EXISTING FACILITIES & NEW CONSTRUCTION (CONT'D)

- .8 During the construction, maintain all the existing services to adjacent [Buildings on the site](#).
- .9 All portions of the site around the existing buildings is to be kept clean and clear of any debris during this project. Keep driveways broom swept and clear of any dirt.
- .10 At all times avoid the hoisting or handling of materials and equipment over pedestrians or vehicles.
- .11 When temporary services are required from the existing Building, the Contractor is to make a formal request through the Owners Project Manager. When this can be accommodated, the owner will coordinate and advise the existing Building. All costs for this service will be billed back to the Contractor.

1.3 DEMOLITION, RECONSTRUCTION, ALTERATIONS AND MAKING GOOD

- .1 Where the alterations interface with existing and where existing Work is altered execute all necessary cutting and fitting required to make satisfactory connections with existing Work under this Contract. Leave the entire Work in a finished workmanlike condition acceptable to Architect.
- .2 Make good all areas disturbed to buildings and exterior site due to the Work of this Contract.

END OF SECTION

DIVISION 01 - GENERAL REQUIREMENTS

PART 1 – GENERAL

1.0 CONTRACT DOCUMENTS

- .1 The Instructions to Bidders, the General Conditions of CCDC 2 - 2020, Supplementary Conditions and all Sections of Division 01 apply to and form part of this section of the specification.

2.0 GENERAL REQUIREMENTS

- .1 The G.C. is solely responsible for all safety on site. It is his responsibility to monitor, apply, reinforce, regulate, educate and report all aspects of site safety.
- .2 This specification section is to represent a guide for the G.C. as a minimum standard. In no way should it be considered an overriding authority to required standards.

3.0 CONSTRUCTION SAFETY MEASURES (REFERENCES)

- .1 Canada Labour Code, Part 2, Canada Occupational Safety and Health Regulations.
- .2 Hazardous Products Act, RSC 1985, c H-3 and Controlled Products Regulation.
- .3 Province of Ontario
 - .1 Observe and enforce construction safety measures required by Ontario Building Code 2012,
 - .2 Workplace Hazardous Materials Information System (WHMIS) Regulation, Reg 860,
 - .3 Canadian Construction Safety Code 1977,
 - .4 Occupational Health and Safety Act 1990, Revised Statutes of Ontario 1980 and Subsequent Revisions,
 - .5 Ontario Workplace Safety and Insurance Board – WSIB
 - .6 Municipal statutes and authorities.
- .4 In the event of conflict between provisions of above authorities the most stringent provision applies.
- .5 Where applicable the Contractor shall be designated the "Constructor" as defined by the Construction Lien Act of Ontario "Civil Code. Articles 2724-2732, 2952)."
- .6 Provide and maintain appropriate first aid equipment and supplies in accordance with First Aid Regulations. Obtain and implement recommendations from Occupational Health and Safety Division in province where work is performed specific to the project work site.

4.0 FILING OF NOTICE

- .1 File Notice of Project, and other construction related notices as required by law, with Provincial authorities prior to beginning of Work.

5.0 FIRE SAFETY REQUIREMENTS

- .1 Comply with the requirements of standard for Building Construction Operations FCC No. 301 - June 1982, (latest regulation) issued by the Fire Commissioner of Canada and local fire codes issued by the Office of the Fire Marshall.
- .2 Handle and dispose of gasoline, benzene or other flammable and combustible liquids in accordance with the requirements of the Gasoline Handling Act.
- .3 Place oily waste, rags and the like into suitable safety containers and remove from building at end of each working day.
- .4 When a fire occurs on Site or any extinguisher is used for any reason, submit full written report to Architect within 24 hours.

6.0 FIRE SAFETY PLAN

- .1 In accordance with the Ontario Building Code and the Ontario Fire Code prepare a fire safety plan identifying the following;
 - .1 Emergency procedures to be used in case of fire.
 - .2 Appointment of designated staff to carry out safety duties.
 - .3 Training of supervisory staff.
 - .4 Documents showing the type, location and operation of the buildings fire emergency systems.
 - .5 The holding of fire drills.
 - .6 The control of fire hazards in the building.
 - .7 The inspection and maintenance of the building facilities for fire fighting safety.

7.0 FALSE WORK

- .1 Design and construct false work in accordance with CSA S269.1.

8.0 SCAFFOLD

- .1 Design and construct scaffolding in accordance with CSA S269.2.

9.0 VISITORS

- .1 Provide new hard hats, safety glasses and vests for use by all visitors. Minimum of six (6).

10.0 FIRST AID FACILITIES

- .1 Provide on site, required first aid facilities in accordance with Occupational Health and Safety Act and first aid regulations 2005-130 and WHSCC first aid interpretation most recent issue.

11.0 OVERLOADING

- .1 Ensure no part of a project, including a temporary structure is subjected to load or procedure in excess of the load it is designed and constructed to bear, which will endanger its safety or the safety of project personnel.

12.0 HANDLING AND TRANSPORTATION OF DANGEROUS GOODS

- .1 Observe and enforce all measures required by the regulatory agencies including but not limited to Environment Canada, local authority having jurisdiction and Transport Canada.
- .2 Most current regulatory Guidelines and Acts will apply to the work.
- .3 In the case of any conflict, the more stringent requirements will apply.

13.0 POTENTIAL HAZARDS

- .1 Hazards include, but are not limited to, toxic, flammable and explosion hazards associated with cleaning solvents.
- .2 The Contractor shall become familiar with all potential hazards associated with the work, and shall take necessary measures to avoid injury or damage of any kind.

14.0 HEALTH AND SAFETY PLAN

- .1 Prior to commencement of the work, complete a Health and Safety Plan. Provide a copy to Owner and Architect if requested. The Health and Safety Plan shall comply with the provisions of this Section, and shall illustrate the Contractor's knowledge and understanding of health and safety aspects of the work, the Contractor's intention to maintain a high level of safety on-site, and shall include, but not be limited to:

- .1 General:
 - .1 Company policy statements
 - .2 Duties and Responsibilities
 - .3 Administration
 - .4 Emergency response plan

14.0

HEALTH AND SAFETY PLAN (CONT'D)

- .5 General policies
- .6 Hazard identification and control
- .7 Hazardous material policy
- .8 Orientation and training
- .9 Report forms
- .10 Safe work policies and procedures

- .2 Description of Work.

- .3 Description of site-specific hazards:
 - .1 Physical
 - .2 Chemical
 - .3 Environmental

- .4 Protective Equipment:
 - .1 Respiratory
 - .2 Contact

- .5 Decontamination Procedures:
 - .1 Personal protective equipment (PPE)
 - .2 Equipment

- .6 Medical Monitoring:
 - .1 Workers medical profile and suitability to work at the site

- .7 Air-Monitoring Procedures:
 - .1 Action levels
 - .2 Site Monitoring
 - .3 Perimeter Monitoring

- .8 Emergency Procedures:
 - .1 Emergency Equipment
 - .2 Contingency Plans:
 - .1 Spill Control
 - .2 Fire
 - .3 Ventilation
 - .4 Medical Emergency

14.0 **HEALTH AND SAFETY PLAN (CONT'D)**

.9 General Safety:

- .1 Designation of site-safety officer
- .2 Safety log
- .3 Trenching, digging, excavations
- .4 Storage of flammables, compressed gases
- .5 Safety Inspections

.10 Site Training

- .1 Initial hazard
- .2 Daily safety
- .3 MSDS & worker training

- .2 All workers shall be trained and be familiar with the health and Safety Plan and the use of personal protective equipment.

15.0 **TESTING AND MONITORING**

- .1 Test and monitor for hazardous conditions, as required to demonstrate compliance with provincial regulations.
- .2 If multiple locations are being worked simultaneously, provide monitoring at all locations where work is being carried out, including providing additional monitoring instruments.

16.0 **SITE SAFETY OFFICER**

- .1 Appoint a responsible member of the work force as Site Safety Officer (SSO). The selection of the SSO will be subject to the approval of the Consultant and the Owner, and changes shall be made as requested. The SSO shall be responsible for ensuring that all provisions of the Health and Safety Plan and relevant legislation are implemented. The SSO shall ensure that all monitoring and testing, as specified, are conducted. The SSO shall maintain records of all readings that are taken by the Contractor and copy any abnormal or dangerous situations to the Consultant, after having implemented emergency measures, as required, and work shall not continue or proceed until the situation has been rectified.
- .2 The SSO shall be authorized to act on behalf of the Contractor on all matters related to Health and Safety.
- .3 The SSO will meet weekly with the Project Manager and Owner during renovation projects (in cases of new construction, these meetings will commence during joint occupancy or as soon as personnel begin start up procedures) to discuss safety issues/concerns from Owner perspective and recommendation for improvement.

17.0 PERSONAL PROTECTIVE EQUIPMENT

- .1 Use personal protection equipment or devices as prescribed by any manufacturers, provincial acts or safety regulation.
- .2 Training of workers in the proper use, fitting inspections and storage of personal protective equipment shall be done prior to use of the equipment.

18.0 SANITATION / DECONTAMINATION PRACTICES

- .1 After each use, all disposable protective equipment shall be collected in a dedicated container for disposal.
- .2 All respiratory equipment shall be decontaminated daily after use.
- .3 All tools, pumps and equipment used during cleanup should be dedicated to the handling of contaminants and labelled as such and thoroughly decontaminated at the completion of the project.
- .4 Contaminated work clothing shall not be worn outside of regulated areas.
- .5 Workers shall wash their hands and exposed skin before eating, drinking, smoking or using toilet facilities during the work shift, and at the completion of a work shift.
- .6 Food, drink and tobacco products shall only be permitted in regulated areas.

19.0 WORK PRACTICES AND ENGINEERING CONTROLS

- .1 Regulated Areas:
 - .1 Access to work areas shall be regulated and limited to authorized persons. A daily roster shall be kept of persons entering such areas.
- .2 Handling Contaminants and General Work Practices:
 - .1 Transportation and handling of contaminants applicable local, provincial and federal regulations.
 - .2 Emergency respiratory equipment shall be located in readily accessible locations which will remain minimally contaminated with contaminants in an emergency.
 - .3 Containers and systems shall be handled and opened with care. Approved protective clothing shall be worn by all employees engaged in regulated areas.
 - .4 All wastes and residues containing contaminants shall be collected in appropriate containers.

19.0 **WORK PRACTICES AND ENGINEERING CONTROLS (CONT'D)**

.3 Confined or Enclosed Spaces:

- .1 Entry into confined or enclosed spaces, where there is limited egress, shall be controlled by a permit system. Permits shall be signed by an authorized representative of the employer and shall certify that appropriate measures have been taken to prevent adverse effects on the worker's health as a result of his or her entry into such space.
- .2 Confined or enclosed spaces which have contained contaminants shall be thoroughly ventilated to assure an adequate supply of oxygen, tested for contaminants, and inspected for compliance with these requirements prior to each entry. Adequate ventilation shall be maintained while workers are in such spaces. Each individual entering such confined or enclosed space shall be furnished with appropriate personal protective equipment and clothing and be connected by a lifeline harness to a standby workers stations outside of the space. The standby worker shall also be equipped for entry with approved personal protective equipment and clothing and have contact with a third person. The standby person shall maintain communication (visual, voice, signal line, telephone, radio, or other suitable means) with the employee inside the confined or enclosed space.
- .3 Workers entering confined spaces and standby workers shall be trained at a recognized confined space training program.
- .4 Ensure all safety guidelines re: safety fences at perimeter construction of this project.

20.0 **RECORD KEEPING**

- .1 All activities associated with Health and Safety shall be recorded daily in a bound notebook. Include as a minimum: activity date, time, location of occurrence, mitigation action taken and Results. Records shall be provided to the Owner and Consultant when requested.

21.0 **OPEN FLAMES, SPARKS, EXPLOSION PROTECTION**

- .1 Keep open flames and sparks to a minimum. When flames or sparks are required, follow proper procedure to prevent fire or explosion.

22.0 **VENTILATION OF WORKING AREAS**

- .1 There will be potential for accumulation of hazardous chemical agents in the working area. Vent to atmosphere, or otherwise control, in accordance with environmental regulations, the vapours in building to avoid nuisance, health, safety or other hazards to the satisfaction of provincial regulatory requirements.

- 22.0 **VENTILATION OF WORKING AREAS (CONT'D)**
- .2 The Contractor shall include in his Emergency Plan for ventilation and provisions of ventilation equipment. If requested, submit plan of ventilation to the Consultant for review and concurrence.
- 23.0 **SITE SAFETY MEETINGS**
- .1 An orientation meeting will be held with all workers at the start-up of the work, with the presence of the Owner's Project Manager to review the Health and Safety aspects of the work.
- .2 An orientation meeting will be held for each new worker on the site following the initial orientation meeting.
- 24.0 **SUSPENSION OF ACTIVITIES**
- .1 Exposure to contaminants shall be controlled so that no worker is exposed to contaminants at a concentration greater than the Time Weighted Average (TWA) concentration for the contaminant, for up to a 10-hour workday, 40 hour work week.
- .2 The Contractor will halt activities immediately during unsafe conditions. All costs relating to suspension of work for Contractor's failure to maintain Health and Safety procedures shall be borne by the Contractor.
- 25.0 **SITE SECURITY**
- .1 The Contractor must secure the site during all phases of the construction period. **The Contractor must use Construction Safety and Industrial Safety Regulations approved fences and barriers around perimeter of construction works at all times.**
- 26.0 **JOB CLEANINGS AND HOUSEKEEPING**
- .1 Comply with all daily cleaning requirements contained within the specification as they pertain to construction areas and occupied areas of the building during Construction.
- .2 Coordinate, monitor and enforce these procedures as they directly relate to the health and safety plan.
- .3 Review these procedures at weekly safety meeting with S.S.O., the Owner's Project Manager.
- 27.0 **3RD PARTY HEALTH AND SAFETY INSPECTIONS**
- .1 Provide 3rd party monthly inspections of site and building for Health & Safety.

27.0

3RD PARTY HEALTH AND SAFETY INSPECTIONS (CONT'D)

- .2 Inspections to be performed by a Certified Company qualified to perform these inspections and to the approval of the Owner.
- .3 Keep reports on site and available for review by Owner & Consultants.

END OF SECTION

DIVISION 01 - GENERAL REQUIREMENTS

PART 1 – GENERAL

1.0 CONTRACT DOCUMENTS

- .1 The Instructions to Bidders, the General Conditions of CCDC 2 - 2020, Supplementary Conditions and all Sections of Division 01 apply to and form part of this section of the specification.

2.0 REGULATORY REQUIREMENTS

- .1 Conform to the Ontario Building Code and Subsequent Revisions, Canadian Electrical Code (CEC), CSA B75-1977 and W59-1977 as applicable. Conform to The Occupational Health and Safety Act as applicable to the place of work and Subsequent Revisions and to the applicable Province Fire Code, and the [City of Burlington](#) and all other applicable Codes and building By-Laws, hereinafter referred to as Codes. Conform to the requirements of the authorities having jurisdiction, including public utilities. Where required under The Occupational Health and Safety Act, engage a Professional Engineer to design formwork and false work for concrete.
- .2 Nothing contained in the Drawings or Specifications shall be so construed as to be in conflict with any law, by-law or regulation of the municipal, provincial or other authorities having jurisdiction. Work shall be performed in conformity with all such laws, by-laws and regulations.
- .3 Contract forms, codes, specifications, standards, manuals, and installation, application and maintenance instructions, referred to in these specifications are to be the latest published editions at the date of signing the Contract.
- .4 Provide copies of Standards referred to in the Specification for joint use of Contractor and Architect on Site - when so requested by the Consultant.

3.0 FIRE SAFETY FEATURES

- .1 The Contractor shall ensure that all fire safety features called for in the Contract Documents are supplied and installed to meet fire safety standards established by the authorities having jurisdiction. The Contractor shall ensure that the Work of Subcontractors is properly co-ordinated to achieve the intent of the Specification.

4.0 FIRE PREVENTION AND SAFETY

- .1 Enforce fire protection methods, good housekeeping, and adherence to local and underwriter's fire regulations.
- .2 Fires will not be permitted on the site. Remove combustible and non-combustible waste at regular intervals and/or when directed. Precautions shall be taken to avoid fire by spontaneous combustion. Smoking shall be prohibited, post "No Smoking" signs.

4.0 **FIRE PREVENTION AND SAFETY (CONT'D)**

- .3 Provide ULC approved fire extinguishers, and other fire fighting services and equipment except where more explicit requirements are specified as the responsibility of individual Sections.
- .4 Provide and maintain in good working order at least one (1) or as many as required, 2A 10BC fire extinguishers which shall be prominently placed and on the job from commencement of work until completion.
- .5 Maintain clear emergency exit paths for personnel at all times.
- .6 Use only fire-resistant tarpaulins and similar protective covering on site.

5.0 **EXISTING FACILITIES**

- .1 The Contractor must maintain exit facilities and access to thoroughfares during the construction contract. Co-operate at all times with the inspection staff of the [City of Burlington](#) Building Department.

6.0 **PERMITS**

- .1 Where permits, licenses and inspection fees are required by either General Conditions or Local Authorities having jurisdiction for special trade functions, they shall be obtained and paid for by particular sub-trade responsible for that work.
- .2 Building Permit will be obtained and paid for by the Owner.
- .3 Determine detailed requirements of authorities having jurisdiction; give and post all notices and comply with laws, ordinances, rules and regulations bearing on conduct of work. If any work is performed with knowledge that it is contrary to such laws and ordinances, and without such notices to the Architect, bear costs arising out of this action.

7.0 **DAMAGE DEPOSIT**

- .1 The Contractor shall pay any required damage deposits to the municipality for damage to curbs, sidewalks, roads etc.
- .2 It will be the contractor's responsibility to submit a written request for the return of any unexpended amount of the deposit upon completion of the project.

8.0 **REFERENCE STANDARDS**

- .1 Where edition date is not specified, consider that references to manufacturer's and published codes, standards and specifications are made to the latest edition, revision approved by the issuing organization current the date of this Specification.

8.0 REFERENCE STANDARDS (CONT'D)

- .2 Reference standards and specifications are quoted in this Section to establish minimum standards. Work which in quality exceeds shall be considered to conform.
- .3 Should the Contract Documents conflict with specified reference standards or specifications the General Conditions of the Contract shall govern.
- .4 Where reference is made to manufacturer's directions, instructions or specifications they shall include full information on storing, handling, preparing, mixing, installing, erecting, applying or other matters concerning the materials pertinent to their use and their relationship to materials with which they are incorporated.
- .5 Have a copy of each code, standard and specification and manufacturer's directions, instructions and specifications to which reference is made in this Specification, always available at construction site.
- .6 Standards, specifications, associations and regulatory bodies are generally referred to throughout the specifications by their abbreviated designations. These are:

AA	The Aluminium Association
AABC	Associated Air Balance Council
AAMC	Architectural Aluminum Manufacturer's Association
ABPA	Acoustical and Board Products Association
ACI	American Concrete Institute
AHC	American Institute of Hardware Consultants
AISC	American Institute of Steel Construction
AISI	American Iron and Steel Institute
AMCA	Air Movement and Air Control Association
ANSI	American National Standards Institute
APEO	Association of Professional Engineers of Ontario
ARI	Air Conditioning & Refrigeration Institute
ASME	American Society of Mechanical Engineering
ASTM	American Society of Testing and Materials
ASHRAE	American Society of Heating, Refrigeration & Air Conditioning Engineers, Inc.
AWCC	Association of the Wall and Ceiling Contractors
AWI	Architectural Woodwork Institute
AWMAC	Architectural Woodwork Manufacturers Association of Canada
BHMA	Builders Hardware Manufacturing Association
CAN	National Standard of Canada
CCA	Canadian Construction Association
CEC	Canadian Electrical Code
CEMA	Canadian Electrical Manufacturer's Association
CGA	Canadian Gas Association
CGSB	Canadian General Standard Board
CISCA	Ceiling and Interior Systems Construction Association
CICS	Canadian Institute of Steel Construction
CLA	Canadian Lumber's Association

8.0 **REFERENCE STANDARDS (CONT'D)**

CPCA	Canadian Painting Contractor's Association
CPMA	Canadian Paint Manufacturers Association
CSA	Canadian Standards Association
CSSBI	Canadian Sheet Steel Building Institute
FM	Factory Mutual Engineering Corporation
HRAI	Heating, Refrigeration and Air Conditioning Institute of Canada
IAO	Insurers Advisory Organization
IEEE	Institute of Electrical and Electronic Engineers
IGMAC	Insulating Glass Manufactures Association of Canada
IPCEA	Insulating Power Cable Engineers Association
LIB	Lumber Inspection Bureau
MFMA	Maple Flooring Manufacturers Association
MIC	Masonry Institute of Canada
MPI	Master Painters Institute
NAAMM	The National Association of Architectural Metal Manufacturers
NBC	National Building Code
NEMA	National Electrical Manufacturers Association
NFCA	National Flooring Covering Association
NFPA	National Fire Protection Association
NLFA	National Lumber Grading Authority
NRC	National Research Council, Canada
OAA	Ontario Association of Architects
OBC	Ontario Building Code
RCAC	Roofing Contractors Association of Canada
SAE	Society of Automotive Engineers
SMACNA	Sheet Metal & Air Conditioning Contractors National Association
TTMAC	Terrazzo, Tile & Marble Association of Canada
ULC	Underwriters Laboratories of Canada
ULI	Underwriters Laboratories Incorporated
USAS	United States of America Standards

9.0 **FIRE RATINGS, ASSEMBLIES AND SEPARATIONS**

.1 Where a material, component, assembly, or separation is required to be fire rated, the fire rating shall be as determined or listed by one of the following testing authorities acceptable to the authorities having jurisdiction:

- .1 Underwriters' Laboratories of Canada
- .2 Underwriters' Laboratories Inc.
- .3 Factory Mutual Laboratories
- .4 The National Research Council of Canada
- .5 The National Board of Fire Underwriters
- .6 Intertek Testing Services.

9.0 **FIRE RATINGS, ASSEMBLIES AND SEPARATIONS (CONT'D)**

- .2 Where reference is made to only one testing authority an equivalent fire rating as determined or listed by another of the aforementioned testing authorities is acceptable if approved by Authorities Having Jurisdiction. Obtain and submit such approval of authorities, in writing when requesting acceptance of a proposed equivalent rating or test design.
- .3 Fire rated door assemblies shall include doors, frame, anchors, and hardware and shall bear label of fire rating authority showing opening classification and rating.
- .4 Material having a fire hazard classification shall be applied or installed in accordance with fire rating authorities printed instructions.
- .5 Fire rated assemblies shall be constructed in accordance with applicable fire test report information issued by fire rating authority. Deviation from fire test report will not be allowed.
- .6 Construct fire separations as continuous, uninterrupted elements except for permitted openings. Extend fire rated walls and partitions from floor to underside of structural deck above.
- .7 Fire separations may be pierced by openings for electrical and similar service outlets provided such boxes are non-combustible and are tightly fitted and sealed with a ULC approved sealant for the assembly being sealed.
- .8 Construction that abuts on or is supported by a non-combustible fire separation shall be constructed so that its collapse under fire conditions will not cause the collapse of the fire separation.
- .9 Do not use combustible members, fastenings, attachments and similar items to anchor electrical, mechanical or other fixtures to fire separations.
- .10 At penetrations through fire rated walls, ceilings or floors, completely seal voids with ULC approved fire stopping materials, full thickness of the construction element. In locations that require a smoke seal, provide appropriate ULC.

END OF SECTION

DIVISION 1 - GENERAL REQUIREMENTS

PART 1 – GENERAL

1.0 CONTRACT DOCUMENTS

- .1 The Instructions to Bidders, the General Conditions of CCDC 2 - 2020, Supplementary Conditions and all Sections of Division 01 apply to and form part of this section of the specification.

2.0 QUALITY CONTROL

- .1 Provide a system of quality control to ensure that the minimum standards specified herein are attained.
- .2 Bring to the attention of the Architect any defects in the work or departures from the Contract Documents which may occur during construction. The Consultant will decide upon corrective action and state his recommendations in writing.
- .3 The Architect's general review during construction and inspection by independent inspection and testing agencies reporting to the Consultant are both undertaken to inform the Owner of the Contractor's performance and shall in no way augment the Contractor's quality control or relieve him of contractual responsibility.

3.0 NOTIFICATION

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

4.0 DEFECTIVE MATERIALS AND WORKMANSHIP

- .1 Where factual evidence exists that defective workmanship has occurred or that work has been carried out incorporating defective materials, the Architect may have tests, concrete cores, inspections or surveys performed, analytical calculation of structural strength made and the like in order to help determine whether the work must be replaced. Test inspections or surveys carried out under these circumstances will be made at the Contractor's expense, regardless of their results, which may be such that, in the Architect's opinion, the work may be acceptable.
- .2 All testing shall be conducted in accordance with the requirements of the Ontario Building Code except where this would, in the Architect's opinion, cause undue delay or give results not representative of the rejected material in place. In this case, the tests shall be conducted in accordance with the standards given by the Architect.

4.0 DEFECTIVE MATERIALS AND WORKMANSHIP (CONT'D)

- .3 Materials and/or workmanship which fail to meet specified requirements or in the opinion of the Architect fail to meet an acceptable level within the standards in the construction industry may be rejected by the Architect whenever found at any time prior to final acceptance of the work regardless of previous inspection. If rejected, defective materials or work incorporating defective materials or workmanship shall be promptly removed and replaced or repaired to the satisfaction of the architect, at no expense to the Owner.

5.0 INSPECTION AND TESTING

- .1 The Owner will hire and pay for an independent inspection service; however, any additional inspection and testing due to non conformance to the Contract Documents shall be at the Contractors expense.
- .2 It is the contractor's responsibility to notify the inspection consultant and the Architect 48 hrs. before the work is to be inspected.
- .3 The contractor is to provide access for inspection and testing personnel to work in progress, provide samples of the materials to be tested in required quantities at locations testing is performed. Provide labour and facilities for assistance to facilitate inspections and tests, storing of concrete specimens at required temperature and free from vibration in conformance with the reference standards.
- .4 Inspection and testing performed by firms engaged for source and field quality control shall not relieve the contractor from his responsibility of performing his work in accordance with the Contract Drawings.
- .5 The following is a partial list of typical inspections and tests which would normally be performed; but may not specifically include all required inspection services for this project.
- .1 Backfilling/ Placement of footing, floor slabs
 - .2 Concrete strength in footings, retaining walls, foundation walls, piers, columns, slabs on grade, sidewalks, curbs.
 - .3 Mortar strength cube tests/ Masonry ties.
 - .4 Rebar sizing, spacing and placement.
 - .5 Membrane Waterproofing.
 - .6 Steel Framing, Lintels, Structural Steel, Connections & Welding.
 - .7 Joint Protection
 - .8 Finish Hardware/ installation/ Operation/ Automatic door openers.

5.0 INSPECTION AND TESTING (CONT'D)

- .9 Air and moisture barrier installation and tie-ins.
- .10 Structural steel stud installation.
- .11 Reinforced and grouted joints in Precast Panels

6.0 QUALIFICATIONS OF INSPECTION AND TESTING COMPANIES

- .1 Inspection and testing companies to be certified by the Standards Council of Canada.
- .2 Companies engaged for inspection and testing shall provide equipment, methods of recording and evaluations, and knowledgeable personnel to conduct tests precisely as specified in reference standards.
- .3 If requested, submit affidavits and copies of certificates of calibration made by an accredited calibrator to verify that testing equipment was calibrated, and its accuracy ensured within the previous twelve months.

7.0 RESPONSIBILITY OF INSPECTION AND TESTING COMPANIES

- .1 Determine from specifications and Drawings the extent of inspections and testing required for Work of the Contract. Subcontractors shall notify Consultant of any omissions or discrepancies in the work inspected and/or testing.
- .2 Perform applicable inspection and testing described in the Specifications and as may be additionally directed.
- .3 Provide competent inspection and testing personnel when notified by the Contractor that applicable work is proceeding. Inspection personnel shall cooperate with the Consultant and Contractor to expedite the Work.
- .4 Subcontractors shall notify the Consultant and Contractor of deficiencies and irregularities in the Work immediately when they are observed in the course of inspection and testing.
- .5 Inspection and testing companies shall not perform or supervise any of the Contractor's work, and shall not authorize:
 - .1 Performance of work that is not in strict accordance with the Contract Documents.
 - .2 Approval or acceptance of any part of the Work.

8.0 INSPECTION AND TESTING PROCEDURES

- .1 Perform specified inspection and testing only in accordance with specified reference standards, or as otherwise approved.

8.0 INSPECTION AND TESTING PROCEDURES (CONT'D)

- .2 Observe and report on compliance of the Work to requirements of Contract Documents.
- .3 Ensure that inspectors are on site or at fabricator's operations for full duration of critical operations, and as otherwise required to determine that the Work is being performed in accordance with the Contract Documents.
- .4 Identify samples and sources of materials.
- .5 Review and report on progress of the work. Report on count of units fabricated and inspected at fabricator's operations.
- .6 Observe and report on conditions of significance to work on progress at time of inspection or at fabricator's operations. Include where applicable and if critical to the work in progress:
 - .1 Time and date of inspection.
 - .2 Temperature of air, materials, and adjacent surfaces.
 - .3 Humidity of air, and moisture content of materials and adjacent materials.
 - .4 Presence of sunlight, wind, rain, snow and other weather conditions.
- .7 Include in reports all information critical to inspection and testing.
- .8 Ensure that only materials from the work and intended for use therein are tested.
- .9 Determine locations for work to be tested.

9.0 TOLERANCES FOR INSTALLATION OF WORK

- .1 Unless acceptable tolerances are otherwise specified in a Section or are otherwise required for proper functioning of equipment, site services, and mechanical and electrical systems:
 - .1 "Plumb and level" shall mean plumb or level within 1mm in 1m.
 - .2 "Square" shall mean not in excess of 10 seconds lesser or greater than 90 degrees.
 - .3 "Straight" shall mean within 1mm under a 1m long straightedge.
- .2 Allowable tolerances shall not be cumulative.

END OF SECTION

DIVISION 01 - GENERAL REQUIREMENTS

PART 1- GENERAL

1.0 CONTRACT DOCUMENTS

- .1 The Instructions to Bidders, the General Conditions of CCDC 2 - 2020, Supplementary Conditions and all Sections of Division 01 apply to and form part of this section of the specification.

2.0 RELATED WORK SPECIFIED ELSEWHERE

- .1 Special Project Procedures Section 01 35 13

3.0 GENERAL

- .1 Accept responsibilities for all temporary structures and comply with applicable rules and regulations. Pay all taxes.
- .2 The expression "provide" shall be deemed to include the provision, installation and finishing, maintenance, servicing and removal of the work described. All work damaged by temporary installations shall be repaired and made good at no extra cost to the Owner.
- .3 Keep site clean and orderly during construction to the satisfaction of the Architect.

4.0 TRAFFIC CONTROL AND SECURITY

- .1 Provide necessary traffic control and security personnel as required for the safe performance of the Contract and security of the premises and the site.
- .2 Conform to the requirements of the local authority.
- .3 Conform to requirements of insurance companies providing coverage for this contract.
- .4 Security must be maintained at all times during construction to the satisfaction of the Owners Project Manager. The Contractor must have security present when working during all "OFF HOURS" when the Facility is closed. Security may be outsourced Security guards. All costs to be at Contractor's expenses.

5.0 CONTRACTOR'S SITE OFFICE

- .1 General Contractor shall provide a site office trailer, heated and air conditioned to 70°C, lighted to 750 Lux, smoke free and wall ventilated to be of sufficient size and furnished to accommodate site meetings. Keep in clean condition.
- .2 Provide telephone and facsimile machine in Contractor's area. Pay telephone is not acceptable.

5.0 CONTRACTOR'S SITE OFFICE (CONT'D)

- .3 Maintain in contractors assigned area at all times, one bound set of Drawings and Specifications, all Addenda, Proposed Changes, Change Orders, Change Directives, Supplemental Instructions, Shop Drawings, Progress Reports, Meeting Diary, Hardware Schedule, Meeting Minutes, all applicable Standards & Regulations, etc.
- .4 Contractor to supply all necessary furniture and equipment for his project superintendent and manager to administer the job and safely store all contract documents.
- .5 Use only the area designated for Worker's Parking, as directed on site.

6.0 SANITARY FACILITIES

- .1 Provide adequate sanitary facilities for work force in accordance with the Municipal Regulations and Ordinances.
- .2 Post Notices and take precautions as required by local Health Authorities. Keep area and premises in sanitary condition. Have toilets maintained in sanitary conditions under contract. Clean and disinfect Site of the toilets on removal.
- .3 Do not permit construction personnel to use new or existing washroom and toilet facilities.

7.0 TEMPORARY ENCLOSURES

- .1 Provide temporary partitions and enclosures as required to protect the work and guard against burglary or malicious damage. See Barriers in item 1.11.
- .2 Provide heated, ventilated, weather tight enclosures complete with protective hoarding, gates and lighting to facilitate the demolition, construction and completion of all exterior building work as required to maintain temperature for working, surface and curing conditions required by all specified materials.

8.0 DEWATERING

- .1 Provide temporary drainage and pumping facilities to keep excavations and Site free from standing water.
- .2 Do not pump water containing suspended materials into waterways, sewer or drainage systems without prior removal of contaminants.

9.0 WATER SUPPLY

- .1 Provide continuous supply of potable water for construction use.
- .2 Arrange for connection with appropriate utility company and pay costs for installation, maintenance and removal.

9.0 **WATER SUPPLY (CONT'D)**

- .3 Pay for utility charges at prevailing rates.

10.0 **TEMPORARY SERVICES**

- .1 Provide, install, maintain and locate where directed the facilities for the Work and for all trades except where specified otherwise and remove them upon completion of the work. These facilities shall be considered minimal and shall be increased as necessary. Pay all charges and billings in connection therewith.
- .2 Install lighting for emergency evacuation, safety and security throughout the Project as required by jurisdictional authorities. Light to be evenly distributed, and at intensities to ensure that proper installations and applications are achieved.
- .3 Provide telephone service for Owner, Architect and Consultants use and all trades and pay all charges.
- .4 Provide water of potable quality for all construction purposes, at locations approved by the Architect.
- .5 Maintain all fire protection as required by the authorities having jurisdiction.
- .6 Include cost of all services used by Owner forces and equipment until Substantial Performance, in Contract price.
- .7 Ensure date of warranties for new heating and ventilation system do not commence until Substantial Performance.

11.0 **TEMPORARY HEATING**

- .1 Provide temporary heating required during construction period, including attendance, maintenance and fuel.
- .2 **Provide temporary heating fuel, if not already available on site, until such time as a permanent natural gas line is installed. All fuel costs shall be borne by the Contractor. The Contractor shall provide all connections and piping between the permanent fuel source and the heating appliance(s).**
- .3 Construction heaters used inside building must be vented to outside or be non-flameless type. Solid fuel salamanders not permitted.
- .4 Maintain temperatures of minimum:
 - .1 10 degrees C in areas where construction is in progress, until takeover by Owner. Contractor to ensure temporary enclosures remain sealed and penetrations are repaired or closed in a timely fashion.

11.0 **TEMPORARY HEATING (CONT'D)**

- .2 16 degrees C in areas where finishes are in progress.
- .3 16 degrees C in building once it is enclosed.
- .4 Refer to other Sections for intermittent heating requirements up to 21 degrees C.
- .5 Provide insulated tarp enclosures for openings as required to enclose the building after completion of main building shell components and roof.
- .5 The permanent heating system of the building, or portions thereof, may be used when available subject to the following conditions:
 - .1 Be responsible for damage to systems and equipment.
 - .2 Warranty period for equipment and systems put into use prior to date of substantial completion will commence from date of substantial completion as per certificate of substantial completion issued by Consultant.
 - .3 Where manufacturers equipment warranty periods are commenced prior to substantial completion, Contractor will provide extended warranty under same terms and conditions.
 - .4 Only with Approval from Owner.
- .6 On completion of work for which permanent heating system is used, replace filters, and clean.
- .7 Be responsible for damage to work due to failure in providing adequate heat and protection during construction.

12.0 **TEMPORARY POWER AND LIGHT**

- .1 Contractor will provide as sources for, and pay the costs of temporary power during construction for temporary lighting and operating of power systems until such time as permanent sources are available.
- .2 Provide at least one temporary panel on each floor with service capacity suitable for construction requirements and to authorities and utilities approval.
- .3 Provide and maintain temporary lighting throughout project. Level of illumination shall not be less than 15-foot candles, 162 Lx.
- .4 Supply electric power for all construction purposes. Make connections available to any part of the work within distance of 90'-0" extension. Provide power at temporary storage sheds and field office.

12.0 TEMPORARY POWER AND LIGHT (CONT'D)

- .5 Install lighting for emergency evacuation, safety and security throughout the Project as required by jurisdictional authorities. Light to be evenly distributed, and at intensities to ensure that proper installations and applications are achieved.

13.0 CONSTRUCTION EQUIPMENT

- .1 Select, operate and maintain hoisting equipment and cranes as may be required. Operate such equipment only by qualified hoist or crane operators. Make hoist available for Work of each Section.
- .2 Erect scaffolding, independent of walls. Use scaffolding so as to interfere as little as possible with the work. When not in use, move scaffolding as necessary to permit other work. Construct and maintain scaffolding in rigid, secure and safe manner. Remove scaffolding in rigid, secure and safe manner. Scaffolding shall permit convenient access to all levels for all workmen and inspection staff.

14.0 GENERAL PROTECTION

- .1 Without limiting the Contractor's responsibility to provide all necessary protection, the Contractor shall:
 - .1 Provide necessary methods, materials and construction to ensure that no damage or harm to work, materials, property and persons results from the work of this Contract.
 - .2 Remove snow and ice as may be required for the protection and/or execution of the Work. Do not use salt under any circumstances.
 - .3 Wet all areas to prevent dust rising and power hose daily to remove dirt. During cold weather, ensure that mud is scraped off areas outside hoarding as well as in.
 - .4 Provide as required to permit Work to continue without interruption, tarpaulins, polyethylene, plastic or wood coverings to close in building prior to installation of windows and doors.
 - .5 Protect materials and equipment delivered to the Site in the Owner's name for installation in the Work.
 - .6 Do not apply markings to surfaces exposed to view in finished state or that receive transparent finishes.
- .2 Any work damaged by failure to provide protection as required or damaged as a result of lack of adequate temporary heat shall be removed and replaced with new, at no additional cost to the Owner.

14.0 GENERAL PROTECTION (CONT'D)

- .3 Each Trade shall avoid damaging the Work of other Trades. Conduct the Work and provide protective covering as necessary to meet this requirement. Make good at own expense any damage resulting from failure to meet this requirement. Protective measures shall be to Consultant's approval.
- .4 If it is necessary to work on roof after installation of roof coverings, protect membrane with plywood sheets or similar materials.
- .5 Provide all necessary shoring and bracing as required for safety and execution of the Work.
- .6 Protection of Off-Site Public Property:
 - .1 Protect surrounding private and public property from damage during performance of work.
 - .2 Be responsible for damage incurred.
- .7 Protection of Building Finishes and Equipment
 - .1 Provide protection for finished and partially finished building finishes and equipment during performance of work.

15.0 SIGNS AND NOTICES

- .1 Construction Banners:
 - .1 Install construction banners where directed on site by the Owner.
 - .2 Banners will be supplied by the Owner.
- .2 Safety Sign:
 - .1 Erect signs relating to Safety of the Work, or mandatory regulation notices.
 - .2 Prior to commencement of Work wherein hazardous or volatile cements, coatings, or substances are used, barricade entire area and post adequate number of "NO SMOKING" signs, as directed by authorities having jurisdiction.
 - .3 Do not display any other signs, posters or advertising matter on Site without approval of Architect.
- .3 Site Project Sign:
 - .1 Supply and install "Site Project Sign" as detailed on Drawings.
 - .2 Obtain electronic images of Client and Consultants logos and artwork.

15.0 **SIGNS AND NOTICES (CONT'D)**

.4 Other Signs & Announcements:

- .1 No signs, public announcements or publications concerning any aspect of this project will be allowed without the prior approval of the Owner.

16.0 **BARRIERS**

.1 General:

- .1 Some phases of construction may be divided into sub-phases to accommodate time constraints with opening and maintenance of some existing and/or finished areas.
- .2 Barriers may need to be partially removed and/or temporarily relocated prior to opening up the entire area to accommodate; early opening of sub-phase areas, installation of finishes, and access to washrooms and exits, etc.
- .3 Coordinate these moves with the Owner's Project Manager.

.2 Provide barriers to the satisfaction of the Owner, Architect and local authorities for the protection of the Public, Project Workmen, including but not limited to:

- .1 Isolation of construction area.
- .2 Separation from excavated areas.
- .3 Protection from falling/flying debris.
- .4 Separation from pits, shafts, walls.
- .5 Protection from odours, noise and dust.

.3 Types of Barriers

- .1 Visual
 - Horizontal Obstruction
 - Solid – easily moved
 - Continuous
- .2 Semi Solid
 - Physical Obstruction
 - Resist day to day abuse
- .3 Solid Barrier
 - Resist heavy impact
 - Constructed of framing lumber and plywood to with stand expected forces.
 - Provided with hinged access complete with locking devices.

16.0 **BARRIERS (CONT'D)**

- .4 Marking on barriers shall be provided by way of signs, reflectors or flashing devices to indicate degree of hazard.
- .5 Protect existing landscaping adjacent to site work as required to avoid physical contact or disrupted of natural site conditions.
- .6 Barriers are to be painted white and maintained in a clean and neat manner.
- .7 When barriers are solid to an elevation of 8'-0" from the finished floor and required to extend to the underside of the roof deck, a continuous sheet of 6 mil. polyethylene is to be used to seal from the top of the barrier to the underside of the structure above. All joints and edges are to be secured in place and sealed. Pay specific attention when the poly membrane is penetrated with mechanical or electrical services. Infill the gap generated at the underside of the metal deck and top plate with batt insulation. Refer to details and sections on the drawings.
- .8 Solid barriers required in or adjacent to public corridors shall be adequately constructed with a painted gypsum board finish in strict compliance with the Owner's requirements.
 - .1 It is the contractor's responsibility to obtain & confirm all design requirements for this hoarding prior to installation.
- .9 When barriers are constructed to separate new construction from occupied areas, the hoarding is to be solid and full height.

END OF SECTION

DIVISION 1 - GENERAL REQUIREMENTS

PART 1- GENERAL

1.0 CONTRACT DOCUMENTS

- .1 The Instructions to Bidders, the General Conditions of CCDC 2 - 2020, Supplementary Conditions and all Sections of Division 01 apply to and form part of this section of the specification.

2.0 PRODUCT AND MATERIAL QUALITY

- .1 Products, materials, equipment and articles (referred to as Products throughout specifications) incorporated in Work shall be new, not damaged or defective, and of best quality (compatible with specifications) for purpose intended. If requested, furnish evidence as to type, source and quality of Products provided.
- .2 Defective Products will be rejected, regardless of previous inspections. Inspection does not relieve responsibility but is precaution against oversight or error. Remove and replace defective Products at own expenses caused by rejection.
- .3 Should any dispute arise as to quality of fitness of Products, decision rests strictly with the Architect based upon requirements of Contract Documents.

3.0 STORAGE, HANDLING AND PROTECTION

- .1 Handle and store products on site or in storage area in manner to prevent damage, adulteration, deterioration and soiling and in accordance with manufacturer's instructions when applicable.
- .2 Store products subject to damage from weather in weatherproof enclosures.
- .3 Store packaged materials in original undamaged containers with manufacturers label and seals intact.
- .4 Store steel, lumber, precast concrete, sand/masonry units and manufactured items off ground on approved supports and provide weatherproof covering. Stack to permit air circulation and prevent damage to units.

4.0 MANUFACTURER'S INSTRUCTIONS

- .1 Unless otherwise indicated in specifications, install or erect Products in accordance with manufacturer's instruction. Do not rely on labels or enclosures provided with Products. Obtain written instructions directly from manufacturers.
- .2 Notify Architect in writing, of conflicts between specifications and manufacturer's instruction, so that Architect may establish course of action.

4.0 MANUFACTURER'S INSTRUCTIONS (CONT'D)

- .3 Improper installation of erection of Products, due to failure in complying with these requirements, authorizes the Architect to require removal and reinstallation at no increase in Contract Price.
- .4 Unless otherwise indicated in the specifications, maintain uniformity of manufacture for any particular or like item throughout the building.
- .5 Permanent labels, trademarks and nameplates on Products are not acceptable in prominent locations, except where required for operating instructions, or when located in mechanical or electrical rooms.

5.0 WORKMANSHIP

- .1 Workmanship shall be best quality executed by workers experienced and skilled in respective duties for which they are employed. Immediately notify Architect if required Work is such as to make it impractical to produce required results.
- .2 Do not employ any unfit person or anyone unskilled in their required duties.
- .3 Decisions as to quality or fitness of workmanship in cases of dispute rest solely with the Architect whose decision is final.

6.0 CONCEALMENT

- .1 In finished areas, conceal pipes, ducts and wiring in floors, walls and ceilings, except where indicated otherwise.
- .2 Before installation, inform Architect if there is a contradictory situation. Install as directed by Architect.

END OF SECTION

DIVISION 01 - GENERAL REQUIREMENTS

PART 1 – GENERAL

1.0 CONTRACT DOCUMENTS

- .1 The Instructions to Bidders, the General Conditions of CCDC 2 - 2020, Supplementary Conditions and all Sections of Division 01 apply to and form part of this section of the specification.

2.0 GENERAL

- .1 Conduct cleaning and disposal operations to comply with local ordinances, anti-pollution laws, and recommendations of Construction Safety Association.
- .2 Store volatile wastes in covered metal containers and remove from premises daily.
- .3 Prevent accumulation of wastes which create hazardous conditions.
- .4 Provide adequate ventilation during use of volatile or noxious substances.
- .5 Provide instructions designating proper methods and materials to be used in final cleaning of Work.

3.0 MATERIALS

- .1 Use only cleaning materials recommended by manufacturer of surface to be cleaned, and as recommended by cleaning material manufacturer.

4.0 PROGRESSIVE CLEANING

- .1 Maintain project areas, public sidewalks and municipal roadways free from accumulations of waste materials and rubbish. Do not allow rubbish to accumulate in work under construction or on low roofs.
- .2 Schedule cleaning operations so that dust or other contaminants resulting from cleaning process will not fall on wet, newly painted surfaces.
- .3 Cleaning operations shall include those areas used for temporary site access or used on a temporary basis to facilitate the Work.
- .4 Ensure splatters, over applications, droppings, soil, labels and debris are removed from surfaces to receive new finishes, before they set-up. Leave work and adjacent finished work in new condition.
- .5 Maintain premises "Broom Clean" at all times. Vacuum clean interior areas immediately before finish painting commences.

4.0 **PROGRESSIVE CLEANING (CONT'D)**

- .6 The Contractor is to take every effort necessary to control the movement of dust from the construction area into the completed areas during ceiling spray painting, and construction.
- .7 The General Contractor will be responsible for all cleaning and garbage box rentals for use of all trades. Maintain a clean, orderly site, on a daily basis, to the satisfaction of the Owner. Garbage box location and its time allowed must be approved by the Landlord/ Owner.
- *.8 **All cleaning is to be done to the satisfaction of the Owner's Project Manager. If in the opinion of the Project Manager the contractor is failing to comply with these cleaning requirements, the Owner at their discretion will engage an independent third party cleaning company to complete this work. All associated costs to perform this work will be deducted from the General Contractors Contract Price.**

5.0 **FINAL CLEANING (AS APPLICABLE TO TRADE-SUBSECTIONS)**

- .1 In addition to the progressive removal of rubbish from the entire building and Site, and leaving the buildings broom clean, the Contractor shall perform the following work before final acceptance.
- .2 Clean and polish glass both sides, mirrors, wall tile and plastic laminate and replace broken glass.
- .3 Remove dust, stains, paint, soil, grease, spots, marks, accumulations of construction materials and dirt from decorated work, electrical and mechanical fixtures, millwork and the like. Remove protective materials.
- .4 Clean hardware, aluminium, stainless steel and the like.
- .5 Cleaning all the exterior windows. Peeling plastic covering from all stainless steel.
- .6 Remove paint spots and smears from all surfaces.
- .7 Vacuum clean all building interiors behind grilles, louvres and screens affected in construction operations.
- .8 Pressures wash all exterior asphalt areas and sidewalks to remove stains, fines and dust. Broom clean and scrub all areas unable to be cleaned with the pressure wash.
- .9 Broom clean and remove debris and materials from roof areas, gutters, areaways and sunken wells.
- .10 Replace heating, ventilating and air conditioning filters if units were operated during construction.

5.0 FINAL CLEANING (AS APPLICABLE TO TRADE-SUBSECTIONS) (CONT'D)

- .11 Leave premises ready for immediate occupation without further cleaning, all to the Architect's approval.
- .12 Wax, seal, shampoo, or prepare floor finishes as recommended by manufacturer. A complete strip wax of all floor area flooring is to be completed and covered with the installation of Five (5) additional coats of wax.
- .13 Inspect finishes, fitments and equipment, and ensure specified workmanship and operation.
- .14 Wash all exterior windows and frames (inside and out).
- .15 Remove temporary fasteners, dirt, construction graffiti and other disfigurements from exterior surfaces.
- .16 Lubricate operative equipment to manufacturer's requirements, using recommended SAE lubricants only. Drain and flush lubricant reservoirs.
- .17 Upon completion of final cleaning close rooms and areas to all but authorized persons.
- .18 Clean roof areas and drainage systems.

6.0 FINAL CLEANING

- .1 Include all labour and materials, tools, equipment, transport, taxes and insurances necessary to complete the FINAL CLEANING work, in accordance with drawings and specifications.

7.0 CLEAN-UP PRIOR TO APPLYING FOR SUBSTANTIAL PERFORMANCE

- .1 Before applying for Substantial Performance of the Work as provided in GC 5.4 – SUBSTANTIAL PERFORMANCE OF THE WORK AND PAYMENT OF HOLDBACK, the Contractor shall remove waste products and debris, other than that resulting from the work of the Owner, other Contractors or their employees, and shall leave the Place of Work clean and suitable for use or occupancy by the Owner. The Contractor shall remove products, tools, Construction Equipment, and Temporary Work not required for the performance of the remaining work.

8.0 CLEAN-UP PRIOR TO APPLYING FOR FINAL PAYMENT

- .1 Prior to application for Final Payment, the Contractor shall remove any remaining products, tools and Construction Equipment, Temporary Work, and waste products and debris, other than those resulting from the work of the Owner, other contractors or their employees.

END OF SECTION

DIVISION 01 - GENERAL REQUIREMENTS

PART 1- GENERAL

1.0 CONTRACT DOCUMENTS

- .1 The Instructions to Bidders, the General Conditions of CCDC 2 - 2020, Supplementary Conditions and all Sections of Division 01 apply to and form part of this section of the specification.

2.0 GENERAL REQUIREMENTS

- .1 **Note: 1% of Contract value will be held from final payment until all final Deficiencies & Close Out submissions have been complied with.**

3.0 MAINTENANCE MANUALS

- .1 Five (5) days after the Substantial Performance submit to Consultant Hardcopies and Electronic copies of Operations Data, Maintenance Data and Materials made up as follows:
 - .1 Provide two (2) hard copy of Operations Data and Maintenance Manuals and as-built drawings and one (1) electronic copy of coloured PDF format of all Operation and Maintenance Manuals, As-Built drawings (drawings to be scanned) on CD / DVD or USB Flash device.
 - .2 Provide individual folder by Division for Architectural, Civil, Landscape, Structural, Mechanical and Electrical.
 - .3 Bind data in vinyl hard covered, three "D" ring loose leaf binders of the same colour, for 8-1/2" x 11" size paper.
 - .4 Enclose title sheet, labelled "Operation Data and Maintenance Manual", project name, date, a list of contents, list of specification section and drawings.
 - .5 Organize contents into applicable sections of work to parallel project specifications breakdown. Mark each section by labelled tabs protected with celluloid covers fastened to hard paper dividing sheets.
- .2 **Sample Format (to be provided as directories on the close out drives and hardcopies):**
 - .1 Architectural Closeout:
 - .1 Shop Drawings
 - .2 Warranties
 - .3 Maintenance & Operation Manuals
 - .4 As-Built Drawings

3.0

MAINTENANCE MANUALS (CONT'D)

- .5 Designated substances / hazardous materials audit report.
- .6 Survey Certificate

- .2 Structural Closeout:
 - .1 Shop Drawings
 - .2 Warranties
 - .3 Maintenance & Operation Manuals
 - .4 As-Built Drawings

- .3 Mechanical Closeout:
 - .1 Shop Drawings
 - .2 Warranties
 - .3 Maintenance & Operation Manuals
 - .4 As-Built Drawings

- .4 Electrical Closeout:
 - .1 Shop Drawings
 - .2 Warranties
 - .3 Maintenance & Operation Manuals
 - .4 As-Built Drawings

- .5 Project Changes:
 - .1 Proposed Changes
 - .2 Site Instruction
 - .3 Change Directives
 - .4 Change Orders

- .6 Conformance & Permit:
 - .1 Items Required for Permit Sign Off
 - .2 Building Permit & Permit Drawings
 - .3 Building Inspection Reports

- .3 Include the following information plus data specified.
 - .1 Maintenance instruction for finished surface and materials.
 - .2 Copy of hardware and paint schedules.

3.0 **MAINTENANCE MANUALS (CONT'D)**

- .3 Description, start-up and shutdown procedures, operation service and maintenance instructions for equipment and system, including complete list of equipment and parts list. Indicate nameplate information such as make, model no., size, capacity, flow rates, belt size, type and lengths, serial number.
- .4 Names, addresses and phone numbers of Subcontractors and suppliers who can affect repair maintenance on equipment.
- .5 Guarantees, warranties and bonds showing:
 - .1 Name and address of Project.
 - .2 Guarantee commencement data (date of Certificate of Substantial Completion).
 - .3 Duration of warranty.
 - .4 Clear indication of what is being guaranteed and what remedial action will be taken under guarantee.
 - .5 Signature and seal of Contractor and Subcontractor.
- .6 Additional material used in project listed under various sections showing name of manufacturer and source of supply.
- .7 Neatly type lists and notes. Use clean drawings, diagrams or manufacturer's literature.
- .8 Include one complete set of final approved Shop Drawings (bound separately) indicating corrections and changes made during fabrication and installation.
- .9 Include a complete list of lubricants with lubricating instructions for all moving parts, recommended spare parts for operating equipment, cleaning, overhaul and adjustment schedules and similar maintenance information.

4.0 **MAINTENANCE MATERIALS**

- .1 Where supply of maintenance materials is specified, deliver to the Owner as follows:
 - .1 Materials in unbroken cartons, or if not supplied in cartons, they shall be strongly packaged.
 - .2 Clearly mark as to content.
 - .3 If applicable give colour, room number of area where material used.

4.0 **MAINTENANCE MATERIALS**

- .4 Provide written letter confirming quantities and location of materials left on site.
- .2 Where not specifically noted in each Specification Section: Supply 2% or minimum 2 cases of all materials.

5.0 **AS-BUILT DRAWINGS**

- .1 Provide Colour PDF Format As-Built Drawings. (Record Drawings).
- .2 Obtain 2 complete sets of Contract Documents from Architect and record all changes and revisions neatly and mechanically in red ink for all trades.
- .3 Submit to Architect at completion of the Contract for review and sign off.
- .4 Submit as-built drawings for Mechanical and Electrical trades as specified in their respective specification sections.
- .5 Submit as-built site and building drawing complete with building area calculations.
- .6 **Contractor to submit an electronic copy of all Operation and Maintenance manual, as-built drawings (drawings to be scanned) and the B.O.M.A survey (Certified measurement) in PDF format on CD or USB Flash device in one copy to Architect.**

6.0 **CLOSE OUT CERTIFICATES AND DOCUMENTS**

- .1 Required Close Out documents after the issuance of Certificate of Substantial Performance.
 - .1 Provide all necessary documents and certificates for Close Out procedure.
 - .2 Provide copy of B.O.M.A. survey for Owners use.
 - .3 Provide copy of all field reports issued by Consultants.
 - .4 Provide copy of all field inspection reports issued by Authorities Having Jurisdiction.
 - .5 Provide copy of the General Conformance letters including all reports and certificates submitted to the Consultants.
 - .6 Provide a copy of the Certificate of Substantial Performance as well as its publication.
 - .7 Refer to "Appendix D" in "Section 01 31 00 "Project Management and Coordination" for complete list of Project Close Out documents.

7.0 **SUBMISSIONS AND HOLD BACK RELEASE**

- .1 All final submissions are to be made in a timely manner.
- .2 All deficiencies are to be completed to the satisfaction of the Architect and Owner.
- .3 The release of Holdback Monies will be contingent on completing all submission requirements.

END OF SECTION

DIVISION 01 - GENERAL REQUIREMENTS

PART 1- GENERAL

1.0 CONTRACT DOCUMENTS

- .1 The Instructions to Bidders, the General Conditions of CCDC 2 - 2020, Supplementary Conditions and all Sections of Division 01 apply to and form part of this section of the specification.

2.0 GENERAL

- .1 All Warranties including standard one-year warranty, shall start at date of substantial Performance of the Total Contract, or when work of an area is substantially completed, accepted and taken over for use by the Owner. Ensure that all warranties comply with this stipulation prior to submission of same.
- .2 The Owner shall give prompt notice in writing to the Consultant of any defects noted during the warranty periods(s) and the Architect will notify the Contractor promptly requesting him to remedy such defects.
- .3 The Contractor shall correct promptly, at the Contractors expense, defects or deficiencies in the Work which appear prior to and during the one (1) year Warranty period.
- .4 The Contractor shall correct and pay for damages resulting from corrections made under the requirements of paragraph 2.3.
- .5 During the month prior to the end of the standard one-year warranty period, the Owner, the Architect and the Contractor, shall conduct an inspection of the project, the Contractor shall promptly remedy any defects due to faulty materials or workmanship.
- .6 Use of permanent heating system for temporary heat shall not affect requirement that all warranties start at date of issue of Architect's Certificate of Substantial Completion. However, if portions of the system are accepted and taken over of use by the Owner, then the warranty shall start at date of acceptance on those portions of the work.
- .7 At the expiry of the standard one-year warranty period the Contractor shall formally assign to the Owner all extended warranties given by Subcontractors for their work on the project and such Subcontractors for their work on the project and such Subcontractors shall be formally advised of the assignment.

3.0 LIST OF EXTENDED WARRANTIES

- .1 The following warranties specified elsewhere in the Specification are hereunder listed for convenience only. All warranties called for in the individual Specification Sections shall be supplied, whether so listed or not.

3.0 LIST OF EXTENDED WARRANTIES (CONT'D)

Section 04 20 00 – Unit Masonry	2 years
Section 06 20 00 - Finish Carpentry	2 years
Section 08 11 13 – Hollow Metal Doors & Frames	2 years
Section 08 71 00 - Door Hardware	5 years
Section 08 71 13 – Power Door Operators	3 years
Section 08 80 00 - Glazing	5 years

END OF SECTION

DIVISION 01 - GENERAL REQUIREMENTS

PART 1- GENERAL

1.0 CONTRACT DOCUMENTS

- .1 The Instructions to Bidders, the General Conditions of CCDC 2 - 2020, Supplementary Conditions and all Sections of Division 01 apply to and form part of this section of the specification.

2.0 PROTECTION OF WORK, PROPERTY AND PERSONS

- .1 Enforce fire prevention methods on site. Do not permit bonfires, open flame heating devices or accumulation of debris. Use flammable materials only if proper safety precautions are taken, both in use and storage.
- .2 Do not store flammable materials in the building. Take necessary measures to prevent spontaneous combustion. Place cloths and other disposable materials that are a fire hazard in closed metal containers and remove them from the building every night.
- .3 Where flammable materials are being applied, ensure that adequate ventilation is provided, spark-proof equipment is used, and smoking and open flames are prohibited.
- .4 Ensure that volatile fluid wastes are not disposed of in storm or sanitary sewers or in open drain courses.

3.0 FIRES

- .1 Fires and burning of rubbish on Site is **not** permitted.

4.0 DISPOSAL OF WASTES

- .1 Burying of rubbish and waste materials on Site is **not** permitted.
- .2 Disposal of waste or volatile materials, such as mineral spirits oil or paint thinner into storm or sanitary sewers is prohibited.
- .3 Provide on-site disposal service for rubbish accumulated by all trades work.

5.0 POLLUTION CONTROL

- .1 Prevent extraneous materials from contaminating air beyond application areas, by providing temporary enclosures.
- .2 Cover or wet down dry materials and rubbish to prevent blowing dust and debris.

6.0

DRAINAGE

- .1 Provide temporary drainage and pumping as necessary to keep excavations and Site free from water.
- .2 Dispose of water containing silt in suspension in accordance with local authority requirements.
- .3 Take full responsibility for maintenance of existing drainage, above ground and underground, adjacent to the Work or affected by the Work.
- .4 Before commencing any Work likely to affect the drainage of water from the existing building or Site, provide necessary alternative drainage systems to ensure that water will be conducted to alternative outlets. Do not block or impede any drain, roof outlet or rainwater leader such safety precautions have been made.

END OF SECTION

DIVISION 01 - GENERAL REQUIREMENTS

PART 1 - GENERAL

1.0 CONTRACT DOCUMENTS

- .1 The Instructions to Bidders, the General Conditions of CCDC 2 - 2020, Supplementary Conditions and all Sections of Division 01 apply to and form part of this section of the specification.

2.0 QUALITY ASSURANCE

- .1 Provide testing organization services under the provisions specified in Section 01 45 00 "Quality Control". and as required by the individual specification Sections.
- .2 Testing organization: current member in good standing of AABC, certified to perform specified services.
- .3 Comply with applicable procedures and standards of the certification sponsoring association.
- .4 Perform services under the direction of a supervisor qualified under the certification requirements of the sponsoring association.
- .5 The General Contractor is to hire one Commissioning agent who is to be responsible for the coordination, start up and verification of all systems under all Divisions. A final report to be issued confirming that all specification requirements for M&E have been met, balanced, set points, interlocks, timers etc. have been set, are functional and are coordinated with other systems. The cost of such agent is considered part of the contractors' general conditions and is not paid out of testing and inspection allowances.

3.0 REFERENCES

- .1 Associated Air Balance Council (AABC): National Standards For Field Measurements and Instrumentation, Total Systems Balance, Air Distribution-Hydronics Systems.

4.0 SUBMITTALS

- .1 Prior to start of Work, submit the name of the organization proposed to perform services. Designate who has managerial responsibilities for coordination of the entire testing, adjusting and balancing.
- .2 Submit documentation to confirm the organization's compliance with quality assurance provisions.
- .3 Submit 3 preliminary specimen copies of each of the report forms proposed for use.
- .4 Fifteen days prior to Substantial Performance, submit 3 copies of the final reports on the applicable forms.

4.0 SUBMITTALS (CONT'D)

- .5 Submit reports of testing, adjusting, and balancing postponed due to seasonal, climatic, occupancy, or other reasons beyond the Contractor's control, promptly after execution of those services.

5.0 PROCEDURES - GENERAL

- .1 Comply with the procedural standards of the certifying association under whose standard the services will be performed.
- .2 Notify the Consultant 3 days prior to beginning of operations.
- .3 Accurately record data for each step.
- .4 Report to the Consultant any deficiencies or defects noted during the performance of the services.

6.0 FINAL REPORTS

- .1 The Organization having managerial responsibility shall make the reports.
- .2 Ensure each form bears the signature of the recorder, and that of the supervisor of the reporting organization.
- .3 Identify each instrument used, and the latest date of calibration of each.

7.0 CONTRACTOR RESPONSIBILITIES

- .1 Prepare each system for testing and balancing.
- .2 Cooperate with the testing organization and provide access to equipment and systems.
- .3 Provide personnel and operate systems at designated times, and under conditions required for proper testing, adjusting, and balancing.
- .4 Notify the testing organization and Commissioning agent 7 days prior to the time the project will be ready for testing, adjusting, and balancing.

8.0 PREPARATION

- .1 Provide instruments required for testing, adjusting, and balancing operations.
- .2 Make instruments available to the Consultant to facilitate spot checks during testing.
- .3 Retain possession of the instruments and remove at the completion of services.
- .4 Verify that the systems installation is complete and in continuous operation.

8.0 **PREPARATION (CONT'D)**

.5 Verify that lighting is turned on when lighting is included in the cooling load.

.6 Verify equipment such as computers, laboratory and electronic equipment are in full operation.

9.0 **EXECUTION**

.1 Test equipment; balance distribution systems; and adjust devices for HVAC systems.

.2 Test hydronic systems adjust and record liquid flow at each piece of equipment.

10.0 **SCHEDULE OF SYSTEMS REQUIRING TESTING, ADJUSTING, AND BALANCING SERVICE**

.1 See the Mechanical and Electrical drawings for requirements

END OF SECTION

DIVISION 02 - EXISTING CONDITIONS

PART 1 - GENERAL

1.0 CONTRACT DOCUMENTS

- .1 The Instructions to Bidders, the General Conditions of CCDC 2 - 2020, Supplementary Conditions and all Sections of Division 01 apply to and form part of this section of the specification.

1.1 RELATED WORK SPECIFIED ELSEWHERE

- .1 Special Project Procedures Section 01 35 13
- .2 Health, Safety and Emergency Procedures Section 01 35 29
- .3 Temporary Facilities & Controls Section 01 50 00
- .4 Facility Performance Requirements Section 01 81 00

1.2 WORK INCLUDED

- .1 All Work of this Section shall be done in strict accordance with [Section 01 35 13](#) of the Specification, as shown on the Architectural Drawings and as noted in the Demolition Structural Assessment.
- .2 This Section includes the demolition, removal and disposal of components of the existing building. Include all labour, equipment and material required for a complete work.

1.3 QUALIFICATIONS

- .1 Work under this Section shall be performed by a Contractor specializing in this type of work. Furnish evidence of qualifications upon request of the Architect.
- .2 Use only skilled tradesman for Work under this Section.

1.4 MATERIALS FROM DEMOLITION

- .1 The owner will have first right of refusal for all materials and equipment scheduled for demolition or removal from the building.
- .2 All materials resulting from demolition work will become the property of the Contractor, with the exception of those materials shown on the Drawings to be relocated, removed, re-used or turned over to the Owner.

1.5 SUBMITTALS

- .1 Prior to the commencement of Work, submit a schedule and a summary of the methods of demolition and type of equipment intended to be used.
- .2 Submit detailed shop drawings of all shoring, underpinning and scaffolding to be used in the demolition and removal of beams, lintels, columns and masonry walls.
- .3 Submit in accordance to [Section 01 33 00](#).

1.6 PROTECTION

- .1 Provide, erect and maintain required hoarding, sidewalk sheds, catch platforms, lights and other protection around Site before commencing Work. Maintain such areas free of snow, ice, mud, water and debris. Lighting levels shall be equal to that prior to erection.
- .2 Protect existing areas against damage, dust, odours and noise which might occur from falling debris during demolition or other cause. Do not interfere with use of existing areas and maintain free, safe passage to and from same.
- .3 Provide flagmen where necessary or appropriate to provide effective and safe access to Site to vehicular traffic and protection to pedestrian traffic.
- .4 Protect adjacent structures and property against damage which might occur from falling debris or other causes. Repair or replace damage caused from Work of this Section to acceptance of Consultant.
- .5 Do not interfere with use of adjacent structures and Work areas. Maintain free, safe passage to and from adjacent structures and Work areas.
- .6 If movement or settlement occurs, install additional bracing and shoring as necessary and make good damage to acceptance of Consultant.
- .7 Hang tarpaulins where debris and other materials are lowered. Build in around openings with wood and plywood at locations used for removal of debris and materials.
- .8 Prevent debris from blocking surface drainage system, elevators, mechanical, and electrical systems which are required to remain in operation.
- .9 Pay particular attention to prevention of fire and elimination of fire hazards which would endanger Work or adjacent structures and premises.
- .10 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.

1.6 **PROTECTION (CONT'D)**

- .11 Precautions shall be taken to prevent movement of existing areas, settlement or damage of adjacent structures, services, walks and pavement. This Contractor shall be responsible for safety and support of existing areas and be liable for any movement, any damage or injury caused thereby, or resulting therefrom.
- .12 If at any time, during the course of Demolition Work, the safety of the existing areas appear to be endangered, cease operations and notify the Consultant; and do not proceed with Demolition Work until permission has been granted to do so.
- .13 If movement is caused by negligence or default of the Contractor, he shall be completely responsible to rectify the situation, at no extra cost to the Owner.
- .14 Provide special protection for sensitive finishes being retained, removed and re-installed.
- .15 Do not temporarily fasten hoarding or dust closures to the finished floor, ceiling and /or wall finishes.

PART 2 - PRODUCTS

- 2.1 Not Applicable.

PART 3 - EXECUTION

3.1 **PREPARATION**

- .1 All **Bidders** shall visit the Site and **thoroughly examine existing conditions** in order to familiarize themselves with the extent of demolition and removal work required to properly execute this portion of the Contract.
- .2 Disconnect electrical and telephone service lines entering areas to be demolished as per rules and regulations of authorities having jurisdiction. Post warning signs on electrical lines and equipment which must remain energized to serve other areas during demolition.
- .3 Disconnect and cap mechanical services in accordance with requirements of local authority having jurisdiction.
 - .1 Natural gas supply lines to be removed by gas company.
 - .2 Remove sewer and water lines and cap to prevent leakage.
 - .3 Remove and cap or dispose other existing underground services.
- .4 Do not disrupt active or energized utilities traversing premises.

3.2 DEMOLITION

- .1 Do not start demolition without the approval of the Architect.
- .2 Do not operate heavy equipment such as front end loader on the floor slab without the approval of the Architect.
- .3 The use of explosives will not be permitted.
- .4 The burning of materials on Site is not permitted.
- .5 In addition to following the requirements of the [Ontario](#) Building Code, carry out demolition in accordance with the requirements of local and Municipal Authorities and the Canadian Construction Safety Code.
- .6 Furnish all labour, materials, tools, plant, scaffolding, chutes and services required or incidental to the completion to the full extent of the Work and to the full intent of the Drawings and Specifications, for the execution of all demolition and protection work specified herein.
- .7 Remove existing equipment, services, and obstacles where required for refinishing or making good of existing surfaces and replace same as work progresses.
- .8 At end of each day's work, leave work in safe condition so that no part is in danger of toppling or falling. Protect interiors of parts not to be demolished from exterior elements at all times.
- .9 Demolish in a manner to minimize dusting. Keep dusty materials wetted.
- .10 Demolish masonry and concrete walls in small sections. Carefully remove and lower structural framing and other heavy or large objects.
- .11 Selling or burning materials on site is not permitted.
- .12 Remove contaminated or dangerous materials from site and dispose of in safe manner to minimize danger at site or at any time during disposal.
- .13 Removal of floor covering material includes adhesives, mortars and grout. Slab to be left ready for installation of new flooring. Grind floor smooth to remove as required. Remove floor covering where new finishes are called for.
- .14 Employ rodent and vermin exterminators to comply with health regulations.
- .15 Perform demolition with extreme care. Confine effects of demolition to those parts which are to be demolished.

3.2 DEMOLITION (CONT'D)

- .16 Perform Work and prevent inconvenience to persons outside those parts which are to be demolished.
- .17 Carry out demolition in accordance with the requirements of CSA S350-M.
- .18 Demolish parts of structure to permit remedial Work as indicated on drawings.
- .19 Do not overload floor or wall with accumulations of material or debris or by other loads.
- .20 At end of day's Work, leave Work in safe condition with no part in danger of toppling or falling.

3.3 REMOVALS

- .1 Carefully remove, store and protect all equipment and materials which are to be salvaged, relocated and re-used from the building using qualified tradesmen.

3.4 CLEANUP AND DISPOSAL

- .1 Clean up the work areas daily to the satisfaction of the Architect.
- .2 Dispose of concrete, steel masonry and debris and other unsalvageable materials off site except where noted otherwise.
- .3 Clear the entire site of all debris at completion of this Contract.

END OF SECTION

DIVISION 3 - CONCRETE

PART 1 – GENERAL

1.0 CONTRACT DOCUMENTS

- .1 The Instructions to Bidders, the General Conditions of CCDC 2 - 2020, Supplementary Conditions and all Sections of Division 01 apply to and form part of this section of the specification.

1.1 GENERAL REQUIREMENTS

- .1 In the event of any discrepancy between this section and the structural specifications as stated on Structural drawings, Construction Notes & Schedules” as prepared by the Structural Engineer and the structural specification will take precedence.

1.2 RELATED WORK SPECIFIED ELSEWHERE

- .1 Concrete Finishing Section 03 35 00

1.3 REFERENCE STANDARDS

- .1 Refer to general notes on structural drawings.
- .2 All codes, standard specifications and by-laws referred to in this Specification shall be current editions including all latest revisions and addenda.
- .3 Conform with the applicable regional Building Code standard.
- .4 Related Standards
 - .1 CAN/CSA A23.1/A23.2 – Concrete Materials and Methods of Concrete Construction / Methods of Test and Standard Practices for Concrete.
 - .2 CAN/CSA A23.3 Design of concrete structures
 - .3 CAN/CSA A3000 Cementitious Materials Compendium.
 - .4 CAN/CSA W186 Welding of Reinforcing Bars in Reinforced Concrete Construction.
 - .5 ASTM C494 – Standard Specification for Chemical Admixtures for Concrete
 - .6 ASTM C260 – Standard Specification for Air-Entraining Admixtures for Concrete

1.4 INSPECTION AND TESTING

- .1 Inspection and testing of concrete and concrete materials will be carried out by a Testing Laboratory designated by the Consultant.
- .2 Tests will be carried out under the appropriate CSA standards and as directed by the Consultant.
- .3 The Contractor shall supply all necessary samples to the Testing Laboratory for testing. Supply additional labour required to assist the Testing Laboratory in making such tests. The cost of this material and labour shall be borne by this section.
- .4 Inspection company reports of tests will be forwarded to the Consultant and to the Contractor with an opinion or reason for any abnormalities noted thereon.
- .5 Cooperate with and assist Inspection Company's personnel during inspection and tests.
- .6 Remove defective materials and completed work, which fail tests and replace as directed by Consultant, at no cost to Owner. The Contractor as a result of materials and work that failed original tests shall pay for further inspection and testing required.

1.5 SUBMITTALS

- .1 Submit manufacturers' product data, performance criteria and other documentation for each material specified in this section that is proposed for use including, but not limited to the following:
 - .1 Admixtures
 - .2 Curing Compounds
 - .3 Sealing Compounds
 - .4 Surface Hardeners
 - .5 Joint Filler
- .2 Submit Shop Drawings and product literature in accordance with Section 01 33 00.
- .3 Provide design mix for review.
- .4 Also submit the following:
 - .1 Proposed placement equipment.
 - .2 Schedule of events and casting plan regarding placement operations, and records of concrete pours.
 - .3 In addition to that specified above, provide submittals to the Consultant as defined in the referenced CSA standards, which are applicable to work of this Section.

1.5 **QUALITY ASSURANCE**

- .1 It is the intent of this Section to establish a single component source to be responsible for providing complete, durable concrete floors as specified herein. Including provisions of formwork, reinforcing, concrete and finishing complete as specified herein.

1.6 **DELIVERY, STORAGE AND HANDLING**

- .1 Store materials on Site in a manner to prevent damage. Protect materials from inclement weather, comply with CAN/CSA – A23.2.
- .2 Protect materials and work of this Section from damage. Protect other work from damage resulting from work of this section. Replace damaged work, which cannot be satisfactory repaired at no cost to the Owner.

1.8 **JOB CONDITIONS**

- .1 Environmental requirements: The minimum temperature of the sub grade at the time of placement of the concrete shall be 12 ° C when measured by a temperature embedded 25 mm (1") into the granular material.
- .2 During cold weather, provide temporary heating and enclosures as required. Mix, place and protect concrete in accordance with CAN/CSA-A23.1.
- .3 Winter heat (heated concrete) shall apply from November 1st to April 15th only.
- .4 **Provide the cost for heated concrete and winter heat as a separate line item in your bid submission.**

1.9 **UNIT PRICES**

- .1 Unit prices as requested as part of the Bid, shall include addition of super plasticizer where specified, reinforcing, placing, curing and finishing and providing control joints.
- .2 Provide a unit price per cubic meter for the supply of heated concrete.

1.10 **TOLERANCES**

- .1 Place concrete level and true to linear building lines.
- .2 Maximum variation of concrete slab shall not exceed 3 mm in 6 m x 6m (1/8" in x 20'-0" x 20'-0") area and shall be sufficiently even to make contact with a 3000 mm (10'-0") long straightedge with a tolerance of 3 mm (1/8").
- .3 A permitted variation in any part of the construction or in any Section of the Specification shall not be construed as permitting violation of more stringent requirements for any other part of the construction or any Specification Section.

PART 2 - PRODUCTS

2.1 MATERIALS

- .1 Portland Cement: to CAN/CSA-A3001 Type GU.
- .2 Water, fine aggregates, normal weight course aggregates: to CAN/CSA A-23.1.
- .3 Air entraining admixture: to ASTM C 260.
- .4 Chemical admixtures: to ASTM C 494.
- .5 Pozzolanic mineral admixtures: to CAN/CSA-A3001.
- .6 Ready-mixed concrete: to CAN/CSA A-23.1 and the requirements of these Specifications.
- .7 Non-shrink grout: pre-mixed compound consisting of metallic aggregate, cement, water reducing and plasticizing agents, capable of developing minimum compressive strength of 50 MPa at 28 days.
- .8 Joint filler for sawn control joints: Refer to section 03 35 00 (Concrete Finishing).
- .9 Super plasticizer by concrete supplier, to be added on site. To be used for the slab on grade only.

2.2 CONCRETE MIXES

- .1 All concrete exposed to foot traffic in its final condition shall have a cement content of not less than 290 kg/cu.m. without water-reducing admixtures or not less than 262 kg/cu.m. with water-reducing admixtures.
- .2 All concrete floors, stairs and platforms which will not be exposed to foot traffic in its final condition shall have a cement content of not less than 262 kg/cu.m without water-reducing admixtures or not less than 240 kg/cu.m. with water-reducing admixtures.
- .3 Size of course aggregate shall be not more than 20 mm and not less than 10 mm, except for concrete on steel deck where size of aggregates shall not be more than 10 mm.
- .4 Water/cement ratio shall not exceed the values indicated in Table 2 for Class C exposure of CAN/CSA A23.1. Water/cement ratio for exterior slabs on grade shall not exceed **0.55**.
- .5 Water/cement ratio for interior slabs on grade shall not exceed **0.45**.
- .6 Concrete shall be designed to prevent segregation and excessive bleeding. Submit mix designs for approval. Provide any necessary evidence that the mix designs will provide the desired properties.

2.2 CONCRETE MIXES (CONT'D)

- .7 Determine concrete strengths from standard cylinders, sampled, cured and tested at 28 days in accordance with CAN/CSA-A23.1.
- .8 Refer to drawings, structural general notes or elsewhere in the Specification for strength of concrete required for various locations, but in all cases, the minimum 28-day strength shall not be less than the following:
- | | |
|--|-----------|
| .1 Skim slab, concrete for backfilling purposes | 15 MPa |
| .2 Raft Slab | 35 MPa |
| .3 Foundations, Retaining walls, Pile caps and Piers | 25 MPa |
| .4 Interior slabs on grade, steel deck or insulation | 25 MPa |
| .5 All exterior concrete slabs and columns | 32-35 MPa |
| .6 All other concrete | 25 MPa |
- .9 Concrete is to have the following slumps at the point of placing:
- | | Maximum | Minimum |
|--|---------|---------|
| .1 Footings, Pile caps, Piers | 110 mm | 50 mm |
| .2 Foundation walls, reinforced concrete walls, beams & slabs (except as otherwise provided herein): | 110 mm | 50 mm |
| .3 Raft slabs, structural slabs, slabs on grade and deck after the addition of super plasticizer. | 110 mm | 50mm |
| .4 Toppings | 50 mm | 25 mm |
- .10 Obtain specified slumps with the aid of specified water reducing agent.
- .11 The use of slag or fly ash is **NOT ALLOWED IN THE MIX FOR SLABS ON GRADE.**
- .12 The interior slab on grade is **NOT TO HAVE AIR ENTRAINMENT,** and a maximum of 2% to 3% entrapped air.
- .13 The super plasticizer shall be provided for slabs on grade to ensure a workable product.

2.3 ADMIXTURES

- .1 Admixture will be permitted only to correct a definite deficiency in mixture or to make correct placement requirements as recommended by the Testing Laboratory and approved by the Consultant.

2.3 **ADMIXTURES (CONT'D)**

- .2 Approval for the use of the admixture will be withdrawn if during the course of the work, concrete performance appears unsatisfactory.
- .3 Accelerating admixtures may be used subject to approval in cold weather. If approved, the use of admixture will not relax the cold weather placement requirements of CAN/CSA A23.1-04. **The use of calcium chloride is not permitted.**
- .4 Set-retarding admixtures may be used subject to approval during hot weather to allow for proper finishing of concrete.
- .5 For all concrete exposed to weather provide 6% to 9% air entrainment as per the requirements of CAN/CSA A23.1, Tables 2 and 4.

PART 3 - EXECUTION

3.1 **PRE- CONCRETE SLAB POUR CONFERENCE**

- .1 At least fifteen (15) days prior to start of the concrete construction schedule, a pre-concrete conference **MUST** be held. The mix design shall be reviewed, and the required methods and procedures to achieve the required concrete shall be discussed. The Contractor shall send a pre concrete conference agenda to all the attendees' ten (10) days prior to scheduled date of the conference.
- .2 The contractor shall require responsible representatives of all parties concerned with the concrete work to attend the conference, including but not limited to the following: the contractor's super, a representative from the laboratory responsible for the concrete mix design, the laboratory responsible for field quality control, the concrete sub contractor, the ready mix concrete producer, the admixture manufacturer (s), the hardener supplier, and the concrete pumping contractor.
- .3 Minutes of meeting shall be recorded, typed and printed by the Contractor and distributed by him to all parties concerned within five (5) days of the meeting. One (1) copy of the minutes shall also be transmitted to the following for information purposes: the Owner's representatives, the Architect, and the Consultant engineer.
- .4 The Consultant engineer will be present at the conference. The Contractor shall notify the Consultant engineer at least ten (10) days prior to the schedule date of the conference.

3.2 **RECORDS**

- .1 Maintain accurate records of poured concrete items to indicate date, location of pour, quantity, air temperature and test samples taken.

3.3 PREPARATION FOR PLACING CONCRETE

- .1 Prior to pouring Concrete, Contractor to provide legal survey of the building location on the site. Survey to be taken to the concrete work for the foundation wall. Review the survey and architect approval must be received prior to pouring of concrete for the foundation wall.
- .2 Ensure that footing excavations and skim slabs are free of frost or water before placing concrete. If a sump is required for pumping water from the excavation, locate it outside the area for footings. Remove any wet or disturbed soil just prior to placing concrete.
- .3 Before placing concrete, check that all forms are rigid and structurally safe, and that all reinforcing steel, formwork, sleeves, anchor bolts and other items are installed in accordance with the Drawings and Specifications. Ensure that all trades have checked the security and location of all components required in the concrete by those trades.

3.4 SLABS-ON-GRADE

- .1 Install adjustable screed supports after reinforcing is placed.
- .2 Immediately prior to placing concrete, moisten base material to reduce absorption of moisture from the concrete.
- .3 Prior to slab pour place concrete around drains, cleanouts interceptors, trenches etc. by hand to allow an early set-up to ensure proper levels, alignment and setting.
- .4 Place concrete and screed level to indicated elevations.
- .5 Unless otherwise detailed, use building paper or polyethylene to separate slab-on-grade from vertical surfaces.
- .6 Provide saw-cut or formed control joints in slabs-on-grade inside the building at maximum spacing of 3.8M (12'-6"). Locate control joints in consultation with the Consultant. Construct joints in accordance with Clause 3.6 and 3.7.
- .7 Level of finished concrete floors under finished floor application shall be within 6 mm of established elevations in any 6 meter x 6 meter square area, and shall be sufficiently even to contact a 3 meter long straight- edge with a tolerance of 6 mm under ceramic/ VCT finish levels and shall not vary more than 1.5 mm in any running foot (Coordinate with structural engineer).
- .8 In case of any deviation from these noted. It will be the sole responsibility of the Contractor to repair the slab to the satisfaction of BJC architects ins. Using the "ADREX" self-levelling compound as specified below.

3.4 **SLABS-ON-GRADE (CONT'D)**

- .9 Provide "ADREX" compound for the entire space, where the concrete floor surface is not level with the allowable tolerance as indicated above, install a self-levelling Cementitious underlayment, high strength, non-shrink, self-levelling Cementitious underlayment having a minimum of 4,100 PSI 28 days compressive strength, "ADREX – K15" by ARDEX INC.

3.5 **CO-OPERATION WITH OTHER SECTIONS**

- .1 Set sleeves, ties, anchor bolts, pipe hangers and other inserts, openings and sleeves in concrete work, as required by other Sections. Sleeves, openings, etc., greater than 100 mm square in diameter not indicated on the structural drawings must be approved by the Consultant.
- .2 Ensure that all sleeves, insets, anchors and other fasteners required to be installed by other trades are installed before placing concrete.
- .3 Set all frames in concrete.

3.6 **CONTROL JOINTS**

- .1 In floors, form control joints as detailed. Where diamond- shaped or other isolation joints are shown to be constructed around columns or piers, place after the floor has been concreted and saw cuts have been made.
- .2 Saw-cut joints shall extend into the slab one-third of the slab thickness. Take care that control joints are sawn within 24 hours after finishing the concrete and ensure that the sawing will not tear or damage the concrete surface or use Soft cut method immediately after finishing.
- .3 Fill ALL control joints with joint filler in accordance with manufacturer's directions.
- .1 Remove dirt, debris, laitance and other foreign material from joint.
- .2 Fill joint full depth with Joint Filler. Refer to Section 03 35 00 (Concrete finishing).
- .3 Fill slightly crowned and shave flush within 3-12 hours or sooner if allowed.
- .4 Wait as long as possible to fill joints. If separation does occur in joints repair using a low viscosity epoxy or similar material as originally installed.

3.7 **CONSTRUCTION JOINTS**

- .1 Where construction joints are required in locations not shown on drawings, locate in consultation with the Consultant.

3.7 **CONSTRUCTION JOINTS (CONT'D)**

- .2 Provide shear keys in all construction joints, unless agreed otherwise for specific locations by the Consultant. Normally form keys from 50 mm x 100 mm material. Depth of keys shall total approximately 1/3 of the depth of the member. In deep members, use two or more keys.
- .3 Unless otherwise detailed on the structural drawings, provide reinforcement continuous along construction joints. Install (400 mm) 16" long, 10 M rebar's at 16" o.c. (400 mm) along entire length of joint with 1/2 the bar length in each slab.

3.8 **TEMPERATURE OF CONCRETE**

- .1 In cold weather, concrete shall be delivered to the work having a temperature of not less than 18 deg. C. and not more than 27 deg. C.
- .2 In hot weather, concrete shall be delivered to the work having a temperature of not less than 10 deg. C. and not more than 27 deg. C.
- .3 Hot and cold weather concreting shall comply with all requirements of CAN/CSA A-23-1 unless noted otherwise.

3.9 **SLUMP OF CONCRETE**

- .1 Slump tests shall be taken in conjunction with sampling of concrete for cylinder tests (see Article 3.16). If the inspector from the Testing Laboratory reports to the Contractor's representative that the slump is excessive, the Contractor shall remove the balance of the concrete from the site without further instructions. Refer to Notes on Structural Drawings.
- .2 If the Consultant suspects that the slump of concrete is excessive and so instructs the Contractor, the latter shall carry out additional slump tests in the presence of the Consultant. No further concrete shall be placed until the test is carried out. Concrete with excessive slump shall be removed from the site. Provide slump testing equipment on site, readily available for this testing.
- .3 Slump tests shall be carried out following the requirements of CSA Method of Test A23.2.5C.
- .4 It is not permitted to add water to concrete on site unless approved by the Consultant.

3.10 **DEPOSITING**

- .1 Notify the Consultant at least 24 hours before each day's operation of placing concrete.
- .2 Unless otherwise agreed by the Consultant, consolidate all concrete in place by means of internal vibrators. Use the largest vibrator consistent with the type and location of concrete being placed. Vibrators shall be in accordance with CSA A23.1, Clause 5.4 Table 19.

3.10 **DEPOSITING (CONT'D)**

- .3 Apply vibrators systematically and at such spacing that the zones of influence overlap. Do not over-vibrate.
- .4 Keep one spare vibrator for every three vibrators in use in case of breakdown.
- .5 Concrete and pump must be ordered through Contractor
- .6 It is the responsibility of the Subcontractor to obtain the location from Contractor of where concrete trucks shall enter to prevent damage to existing site conditions.
- .7 Truck clean-outs to be as per Contractor instructions.

3.11 **CURING**

- .1 Protect and cure concrete in accordance with CAN/CSA A23.1 Table 20 and Clause 7.4.1 in such a manner as to prevent evaporation of moisture from the concrete and damage to the surface.

3.12 **TREATMENT OF FORMED SURFACES**

- .1 Repair honeycomb areas of "as-formed" concrete not exposed in the finished work. No additional treatment is required. Do all work in accordance with CAN/CSA A23.1.

3.13 **DEFECTIVE CONCRETE**

- .1 Excessive honeycomb or embedded debris in any concrete shall deem it defective. Remove and replace defective concrete.
- .2 Patch, repair and make good concrete at rod holes or snap ties and sleeves, ready for damp proofing.

3.14 **PATCHING**

- .1 Unless instructed otherwise by the Architect, patch imperfections when concrete is green as follows:
 - .1 Chip down edges perpendicular to the surface.
 - .2 Wet the area and brush on 1:1 cement-sand grout.
 - .3 Patch with 1:2 cement-sand mortar with 10% hydrated lime.

3.15 GROUTING

- .1 Grout between column base plates and/or beam bearing plates and bearing surface of concrete piers and foundations and/or masonry walls. Use a premixed non-shrink grout in accordance with manufacturer's directions.

3.16 FLOOR SLOPES

- .1 In areas with drains provide positive slope to drain/trench such that there is no standing or ponded water remaining on the floor after a flood wash.
- .2 Perform a flood test in presence of the Owner's Project Manager to ensure compliance.
- .3 Failure to provide adequate slope to drain / trenches will require removal of slab area and replacement at contractors cost.

3.17 SLAB DEPRESSIONS

- .1 Depress concrete slabs for special floor finishes.
- .2 Refer to Drawings finish schedule for specified areas and confirm depth to suit.
- .3 Ensure edges are consistent in depth at perimeter and parallel to wall faces and fixtures.

3.18 OPENINGS IN SLAB

- .1 Provide formed openings and pits through concrete floor slabs to accommodate service risers, equipment, ductwork and the like, refer to details.

3.19 SIDEWALKS

- .1 Unless otherwise noted all sidewalks shall comply with the following:
 - .1 Minimum slab thickness 125mm (5").
 - .2 Surfaces shall be tamped, screened and wood floated.
 - .3 Finish edge with 1/4 round radius tool.
 - .4 Install saw cut control joints at 1.5m (5'-0") maximum intervals in both directions.
 - .5 Bond break joints are to be installed with 6 mil poly. Continuous abutting buildings, columns or other vertical obstructions (not at doorways).
 - .6 All sawcut control joints are to be sealed. (See specification Section 07 90 00)

3.19

SIDEWALKS (CONT'D)

- .7 All sidewalks to be on minimum 300mm (12") of compacted granular "A" base to 98% S.P.M.D.D. with suitable subbase as prescribed in soils report or by Soil consultant.
- .8 Sidewalk finish to be broomed in the direction of slope.
- .9 Slope sidewalks away from building @ 1% per foot unless otherwise noted.
- .10 Keep top of sidewalk 25mm (1") minimum below wall flashings at building perimeter, unless otherwise noted.
- .11 At the main entrance, the sidewalk is to be dowelled to the foundation wall and set on 100mm (4") of rigid SM HI-40 insulation by Dow Chemical, or Approved Alternate.
- .12 The slope of the sidewalk at the Main Entrance is to be no more than 0.5% away from the building and marry flush with the adjacent asphalt surface. Refer to wall sections and details.
- .13 Refer to drawings for locations where insulation is to be installed under sidewalks for standard details.
- .14 Install 15m 36" x 18" L re-bars at 16" o.c. embedded 18" into the foundation wall and extend into the sidewalk at all entrances. Refer to details on drawings.
- .15 Water test all sidewalks adjacent to the building to confirm proper drainage away from the building. Test in the presence of the Architect and Owners Representative.

END OF SECTION

DIVISION 03 - CONCRETE

PART 1 - GENERAL

1.0 CONTRACT DOCUMENTS

- .1 The Instructions to Bidders, the General Conditions of CCDC 2 - 2020, Supplementary Conditions and all Sections of Division 01 apply to and form part of this section of the specification.

1.2 RELATED WORK SPECIFIED ELSEWHERE

- .1 Cast-In-Place Concrete Section 03 30 00
- .2 Painting (Application of Paint, Urethane and Epoxy Floor Finishes) Section 09 91 00

1.3 QUALITY ASSURANCE

Requirements of Regulatory Agencies

- .1 Applicable Codes and Standards governing the work of this Section.
- .2 Related Standards:
 - .1 CAN/CSA A23.1 Concrete Materials and Methods of Concrete Construction.
 - .2 CAN/CSA A23.2 Methods of Tests for Concrete.
 - .3 ASTM C 260 Air Entraining Admixtures for Concrete.
 - .4 ASTM C 494 Chemical Admixtures for Concrete.
- .3 Except as otherwise specified, placing, finishing, curing, joint cutting, and forming and temperature control of concrete slabs on which surface hardeners are to be applied, shall be in accordance with 1.2.1. and 1.2.2. clauses-2.1 and 2.2.
- .4 Work shall be done by a Firm and by Mechanics with at least five years experience in this type of work and who are members of the Concrete Floor Construction Association.

1.4 SUBMITTALS

- .1 Submit manufacturers' product data, performance criteria and other documentation for each material specified in this section that is proposed for use including, but not limited to following:
 - .1 Admixtures
 - .2 Curing Compounds

- 1.4 **SUBMITTALS (CONT'D)**
- .3 Sealing Compounds
 - .4 Surface Hardeners
 - .5 Joint Filler

PART 2 - PRODUCTS

2.1 **MATERIALS**

- .1 General: use materials specified herein or approved equal as defined in General Requirements.
- .2 **Note:** Refer to Floor Finishes Plan and Schedules for locations of specific applications listed here in.
- .3 Non-Metallic Hardener Manufacturer (Natural Colour):
 - .1 "Sika Emericrete SH" by Sika Canada.
 - .2 Surfex by Euclid Canada.
 - .3 Mastercron FF by BASF.
- .4 Non-Metallic Hardener Manufacturer (Coloured Hardener):
 - .1 "Surflex" Colored by Euclid Canada.
 - .2 Mastercron Colored by Master Builders.
 - .3 Sika Colorplete by Sika Canada.
- .5 Curing, Sealing and Densifier Compound:
 - .1 "Diamond Clear 350" by Euclid Canada.
 - .2 "Kure-N-Seal 25" by BASF.
 - .3 "Sikafloor 3S" by Sika Canada.
- .6 Joint filler for sawn control joints (Interior Application):
 - .1 "Euco 700" or "Euco Quickjoint UVR" by Euclid Canada.
 - .2 "Load Flex" by Sika Canada.

2.1 MATERIALS (CONT'D)

- .3 Other approved manufacturer.
- .4 Colour of Joint filler to be grey or as selected by the Architect.
- .7 For Concrete Control & Expansion Joints (Exterior application):
 - .1 "Eucolastic 1SL (Self Levelling) by "Euclid Canada.
 - .2 "Eucolastic 2NS" for vertical application by "Euclid Canada".
- .8 Concrete densifier for New and Existing Concrete Floor:
 - .1 "Euco Diamond Hard" by "Euclid Canada".
 - .2 Liqui Hard Ultra" by WR Meadows.
- .9 For Heal and Seal concrete and penetrating shrinkage cracks:
 - .1 "Dural 50" by "Euclid Canada" or "Euco Quick Stitch".
- .10 For Transition Strip for floor (Ramp):
 - .1 "Duraflex Fastpatch", low modulus repair epoxy repair kit by "Euclid Canada".

PART 3 - EXECUTION

3.1 PREPARATION

- .1 Examination
 - .1 Before work commences ensure that all preceding work has been completed in accordance with the specifications. Report any deficiencies to the Architects before proceeding with the work.

3.2 INSTALLATIONS

.1 GENERAL

- .1 **Note:** Refer to Floor Finishes Plan and Schedules for locations of specific applications listed here in.
- .2 Follow manufacturer's instruction for surface preparation, direction for use and precautions/ limitations.

3.2 INSTALLATIONS (CONT'D)

- .3 Unless otherwise specified or directed, all floors concrete within the building shall be finished with a power float and power trowel to finish the surface to a smooth, even finish.
- .2 Floor Finishes: Coordinate compatibility of Concrete Sealer application with paint finishing of Paint, Urethane or Epoxy floor finishes.
- .3 Conform to the requirements of CAN/CSA A23.1&2 Finishing and/or as hereinafter specified.
- .4 Employ a minimum amount of hand trowelling to remove any machine marks after the power trowelling.
- .5 Provide a non-slip, spin trowel finish where directed.
- .6 Secure the Architects approval of finished surfaces before leaving any area.
- .7 Cure and protect the surface of finished floors and roofs in accordance with CAN/CSA A23.1.
- .8 Keep traffic, which would affect and/or otherwise disturb the curing procedures, off the finished surface for a period of seven (7) days minimum.
- .9 Protect exposed concrete finishes against damage until the building is accepted by the Architect.
- .10 Protect floors which are to receive an Architectural finish against contamination by oil, paint or other deleterious materials.
- .11 Floors in rooms with an exposed concrete floor finish noted to receive a non-metallic hardener and curing & sealing compound, shall be applied strictly in accordance with the manufacturer's directions at the rate of 3.9kg/m² - 5.0kg/m² (80 lbs. to 100 lbs. per 100 sq.ft) of surface.
- .12 The selected mineral aggregate for the dry shake shall be applied immediately before power floating begins. As soon as concrete is firm enough to support the weight of workmen and their equipment and NO surface water is present, apply the first shake of material. Treat areas adjacent to walls and columns first. Spread the material evenly by sprinkling at right angles in two passes close to floor level. Do NOT broadcast from the stationary position. Approximately two-thirds of the material shall be broadcast uniformly over the surface. Power floating shall begin immediately after application of the dry shake. Work wall, column and door areas first. After this material is adequately embedded or blended into the surface by power floating, the remaining one-third of the material shall be applied to the surface at right angles to the previous application. During the second application, care should be exercised to apply sufficient material to all areas to secure uniform coverage.

3.2 **INSTALLATIONS (CONT'D)**

- .13 For Non-Hardened concrete floors, cure finished concrete surfaces with curing and sealing compound which will leave the surface with a uniform appearance and with a minimum of discolouration after drying. Ensure that the curing compound will be compatible with the Architectural finishes, or adhesives for Architectural finishes to be applied later. Apply the compound in strict accordance with the manufacturer's instructions.
- .14 Protect surfaces which will be exposed to direct sunlight during the curing period, with a light coloured, laminated waterproof paper immediately after the curing and sealing compound has hardened sufficiently for the paper to be placed without damage to the sealed surface. Lap the paper a minimum of 4 inches and seal the laps. Leave the paper in place for at least seven (7) days.
- .15 Floors in all rooms with an exposed concrete floor finish that are noted to receive a clear urethane coating:
 - .1 Apply in a continuous film by a cold low-pressure sprayer only after slab has cured 28 days minimum.
 - .2 If slab is porous apply a second coat where first coating is inconsistent, with a light sanding between coats.
 - .3 Allow 3-4 hrs. minimum for drying between coats.
 - .4 Apply 2 finish coats "of topcoat" with a light sanding between coats.
 - .5 Allow final application to dry for 48 hrs. prior to the application of heavy traffic.
 - .6 Read and follow the product literature and application instructions.

3.3 **FINISHING OF FORMED CONCRETE SURFACE**

- .1 Conform to the requirements of Cast-In-Place Concrete: Section 03 30 00, except as hereinafter specified.

END OF SECTION

DIVISION 04 - MASONRY

PART 1 – GENERAL

1.0 CONTRACT DOCUMENTS

- .1 The Instructions to Bidders, the General Conditions of CCDC 2 - 2020, Supplementary Conditions and all Sections of Division 01 apply to and form part of this section of the specification.

1.1 REFERENCE STANDARDS

- .1 ASTM A123/A123M, Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products.
- .2 ASTM A580/A580M, Stainless Steel Wire.
- .3 ASTM A653/A653M, Steel Sheet, Zinc Coated (Galvanized) or Zinc Iron Alloy Coated (Galvannealed) by the Hot Dip Process.
- .4 ASTM D2240, Test Method for Rubber Property Durometer Hardness.
- .5 CAN/CSA A179, Mortar and Grout for Unit Masonry.
- .6 CAN/CSA A370, Connectors for Masonry.
- .7 CAN/CSA A371, Masonry Construction for Buildings.
- .8 CAN/CSA A3000, Cementitious Materials Compendium (Consists of A3001, A3002, A3003, A3004 and A3005).
- .9 CAN/CSA G30.3-M, Cold-Drawn Steel Wire for Concrete Reinforcement.
- .10 CAN/CSA G40.18-M, Billet-Steel Bars for Concrete Reinforcement.
- .11 CAN/CSA G40.20-04/G40.21, General Requirements for Rolled or Welded Structural Steel/Structural Quality Steel.
- .12 CAN/CSA S304.1, Design of Masonry Structures.
- .13 CAN/CSA-A165 SERIES-04 - CSA Standards on Concrete Masonry Units
- .14 CAN/CSA-A82-14 - Fired masonry brick made from clay or shale

1.2 RELATED WORK SPECIFIED ELSEWHERE

- .1 Installations of Hollow Metal Door and Window Frames. Section 06 10 00
- .2 Sealing of Control and Expansion Joints Section 07 90 00
- .3 Supply Only of Hollow Metal Door and Window Frames. Section 08 11 13

1.3 SUPERVISION

- .1 Work of this Section shall be executed under the continuous supervision and direction of a competent foreman for each class of work.
- .2 One thoroughly experienced, reliable and competent man shall be in charge of mortar mixing.

1.4 SHOP DRAWINGS

- .1 Consult the approved Shop Drawings to determine the exact location of items to be built into masonry.

1.5 SAMPLES & SUBMISSIONS

- .1 Submit for approval clearly labelled samples of masonry units, reinforcement and accessories to be used in the work. Submit for approval of samples of alternative materials if requested by the Architect.
- .2 All submittals to be in accordance to section 01 33 00.
- .3 Approved sample panel shall establish standard for acceptance or rejection of actual work.
- .4 Submit laboratory test reports certifying compliance of masonry units and mortar ingredients with specifications requirements.

1.6 JOB MOCK-UP

- .1 Construct mock-up panel where directed by Architect.
- .2 Construct mock-up panel of exterior masonry wall construction 4'-0" x 6'-0" min. in size, showing masonry colours, textures, pilasters, recesses, panelling, use of reinforcement, ties, through wall flashing, weep holes, ventilators, jointing, coursing, mortar, sills and workmanship.
- .3 Clean one half of mock-up wall in accordance with cleaning requirements here-in and leave remainder for comparison.
- .4 Receive acceptance of Mock-Up by Architect before proceeding with masonry installation.

1.6 **JOB MOCK-UP (CONT'D)**

- .5 Mock-up may remain as part of the work if acceptable to the Architect.
- .5 The approved mock-up panel shall establish the standard for acceptance or rejection of actual work.

1.7 **DEFECTS DEFINED**

- .1 In addition to non-compliance with specified requirements or other contract requirements, the following will be considered defect:
 - .1 Shrinkage in individual units and erected.
 - .2 Spalling.
 - .3 Poor colour or texture blending of units.
 - .4 Surface deterioration dusting.
 - .5 Discolouration, crumbling and similar deterioration of mortar.
 - .6 Failure of built in items to remain anchored.
 - .7 Excessive cracking of mortar joints on brick faces.
 - .8 Over cuts at service entries, boxes, etc..

1.8 **PRODUCT DELIVERY, STORAGE AND HANDLING**

- .1 Store cementitious material in accordance with CAN3.A5. Store aggregates in accordance with CAN A.23. Stack masonry units to avoid chipping. Manufacturers seals and labels shall be intact.
- .2 Protect concrete block from rain and inclement weather to ensure that blocks are dry when delivered to site, while stored on site and when used.

1.9 **FIRE SAFETY FEATURES**

- .1 Masonry units used in partitions designed to provide fire separation shall be of material specified and in the case of hollow units shall have the percentage of solid material necessary to provide the rating called for and or required by authorities having jurisdiction.
- .2 Concrete block and similar hollow units shall be identified as to percentage of solid material and tested for fire separation value in each thickness. Delivery slips shall state tested status of the units and the skids shall be marked to facilitate identification of the units at Site.

1.10 **WARRANTY/GUARANTEE**

- .1 Provide guarantee for 2-year period. Warranty to cover both labour and materials. Warranty shall start from the date of substantial performance.

PART 2 - PRODUCTS

2.1 **MATERIALS**

.1 **Concrete Block:**

- .1 Standard concrete masonry units Type 1: to CAN/CSA-A165 Series (CAN/CSA-A165.1).
 - .1 Classification: H/15/A/M. (Unless noted otherwise on Structural Dwgs. & Spec.)
 - .2 Size: metric modular.
 - .3 Curing: Autoclaving to CAN/CSA-A165 Series-M85 (CAN/CSA-A165.4) or bubble cure system, TCG Material Ltd or Boehmers.
 - .4 Use header and other special shape blocks for backups to blockwork forming piers, reveals, control and expansion joints and the like.
- .2 H/15/A/M, filled solid for top two courses of load bearing walls, for all locations where structural members bear on concrete block, and where shown on Drawings.
- .3 Strength of load bearing masonry units shall be: 7.5 MPa minimum for hollow units; 12.5 MPa minimum for 75% solid units based on gross area.
- .4 Provide special shales and sizes as shown or specified such as halves, jambs, lintels, solids, corners, bullnoses and double bullnoses, semi-solids and the like as shown.
- .5 Where concrete block walls are required to act as fire separations or barriers, they shall conform to Ontario Building Code with respect to equivalent thickness and type of concrete.
- .6 Exposed block shall be uniform in colour, shade and texture, and made by one manufacturer.

2.2 **MASONRY REINFORCEMENT FOR NON-CAVITY WALLS**

- .1 Approved manufacturer:
 - .1 DW 100 by Dur-O-Wal Ltd., (Hohman & Bernard)
 - .2 Ladur by Dur-O-Wal Ltd., (Hohman & Bernard)

2.3 **MASONRY REINFORCEMENT FOR NON-CAVITY WALLS (CONT'D)**

- .3 Blok-Lok or Blok-Truss by Blok-Lok Ltd.
- .2 3.8 mm diameter (No. 9 Steel ga) deformed wire for single block wythes, 4.8 mm diameter (3/16") for two or more wythes; mill galvanized for interior wall locations; for exterior wall locations, hot dipped galvanized after fabrication, ASTM A153, Class B-2, minimum of 457 g/m² (1.5 oz/sf) zinc coating; sized 50 mm (2") narrower than wall or partition.
- .3 Provide shop fabricated corners and intersections where required hot dipped galvanized for exterior walls and mill galvanized for interior walls. In curved configuration provide shop fabricated reinforcement fully galvanized as specified herein.

2.3 **ANCHORAGE AND REINFORCEMENT**

- .1 Steel Wire: CAN/CSA G30.3.
- .2 Steel Sections and Plates: CAN/CSA G40.20/G40.21, Grade 350W.
- .3 Stainless Steel Wire: ASTM A580, Type 304 or 316.
- .4 Conform to Ontario Building Code.

2.4 **FLASHINGS**

- .1 Flexible Membrane Flashing: 1.0 mm thick, self adhering SBS rubberized asphalt membrane with a cross laminated HPDE top surface, sheet width to suit application;
 - .1 Bakor Blueskin TWF by Henry Company Canada.

MORTAR AND GROUT

- .1 Cementitious Material: CAN/CSA A179.
- .2 Portland Cement: CAN/CSA A3001, Type GU, grey colour.
- .3 Mortar Aggregate: CAN/CSA A179, fine aggregate.
- .4 Grout Aggregate: CAN/CSA-A179, fine aggregate.
- .5 Hydrated Lime: ASTM C207-79; Type "N".
- .6 Aggregate: CAN/CSA A82.56, except that the maximum allowable percentage passing 600 um (No. 30) sieve shall be 80% and maximum passing 300 um (No. 50) sieve shall be 50%.

2.5 **MORTAR AND GROUT (CONT'D)**

- .7 Mortar Colouring Compounds: Pure, synthetic, inorganic pigments manufactured by Northern Pigment Company in proportions recommended by manufacturer, but not exceeding 10% of weight of cementitious material.
- .8 Proprietary Mortar Mixes (in lieu of above) St. Lawrence Cement Company, Canada Cement, St. Marys Cement or Lake Ontario Cement Ltd.; conforming to mix requirements specified.
- .9 Ready Mixed Lime Mortar: Redi-Mix Mortar Ltd.
- .10 Water: Clean and potable. Exempt of ice, oils, acid, alkalis, organic material, sediments or other harmful matter.
- .11 Colour: Refer to colour schedule on Drawings.

2.6 **JOINT FILLER**

- .1 Compressible Joint Filler - Rodofoam per type by Sternson Ltd.
- .2 Pre-moulded Joint Filler: For Fire Rated walls "Fire-Bloc" mineral fibre, as distributed by M.W. McGill & Associates Ltd., or other approved U.L.C. labelled materials.

2.7 **WATER PROOFING ADMIXTURES**

- .1 Add integral water proofing to mortar at exposed areas (except Mortar Mortars) acceptable types: Sterad 300 by Sternsons Ltd., or Rheo-mix 235 by Master Builders unless otherwise noted. Dry-Block by WR Grace.

2.8 **MORTAR MIXES**

- .1 Mortar for Above Grade:
 - .1 Load bearing Walls: CAN/CSA A179, Type S using the Proportion specifications.
 - .2 Non-Load bearing Walls: CAN/CSA A179, Type N using Proportion specifications
- .2 Stain Resistant Pointing Mortar: CAN/CSA-A179, non-staining masonry cement for cementitious portion of specified mortar type.
- .3 For all load bearing concrete block wall masonry units in exterior cavity walls, interior bearing walls and partitions. Use Type 'S' cement mortar having a 28 day strength min 8.5 MPa and max 120 MPa.

2.8 MORTAR MIXING

- .1 Mixing: Prepare and mix mortar materials under strict supervision, in an onsite batching plant. Use and mix proprietary mortar in strict accordance with manufacturer's instructions to produce the following mortar types, CAN/CSA A179-M1976. Do not use re-tempered mortars.
- .2 For Bedding Steel Bearing Plates, Lintels, for Laying Bearing Courses Under Concentrated Loads and for Laying Masonry Below Grade: Use Type 'M' cement mortar, having a compressive strength of 17.5 MPa (2,500 psi) minimum.
- .3 Except as provided in 2.2.2 for Laying; Brick or Brick Facing only of double withe walls whether backup is load bearing or otherwise: Use Type "N" masonry mortar, having a compressive strength of 5.0 MPa (750 psi) minimum.
Or proprietary or ready-mixed type "N" masonry mortar mixes specified, mixed in accordance with manufacturer's instructions.
- *.4 Use same manufactures product for the entire project to ensure uniformity of mix and coloration.

2.9 NON-SHRINK GROUT

- .1 "Masterflow 713" manufacturer by Master Builders Ltd. Or "M-Bed Standard" manufactured by Sika Canada Inc or 'CPD Non-Shrink Group' by CPD Construction Products.

2.13 PACKING INSULATION

- .1 Loose glass fibre insulation, 16kg/m2 (1lb/c.f.) density or mineral wool.

PART 3 - EXECUTION

3.1 INSTALLATION

- .1 General Workmanship
 - .1 Confirm required size of masonry openings for all doors, windows and equipment with supplier or manufacturer prior to installation of masonry units.
 - .2 Install Brick, Architectural Stone and architectural trim products in accordance with manufacturer's installation instructions.
 - .3 Architect is to be notified 36 hours in advance of laying first course of masonry to review installation of flashing, weep-vents, control joints and block positioning on wall. Failure to do so will result in removal for inspection.
 - .4 Employ properly qualified masons for laying up masonry units.

3.1 **INSTALLATION (CONT'D)**

- .5 Distribute exposed masonry units of varying colours, tones and textures evenly over wall surface to avoid patches and streaks and to produce a pleasing appearance.
- .6 Gaining to meet spandrels, etc., leaving courses uneven or with visibly thicker mortar joints is not acceptable. Any such work must be removed and rebuilt to approval of Architect.
- .7 Construct masonry evenly in maximum lifts of 5'-0" (1500mm) per working day. Rake back ends of unfinished walls; do not tooth and bond new masonry.
- .8 Maintain dimensions, lines and levels.
- .9 Keep exposed faces free from stains, chips and cracks. Keep tolerance in plane 3 mm (1/8") in 2,400 mm (8'-0"). Do not use chipped, cracked or deformed units in exposed work.
- .10 Buttering corners of units, throwing mortar droppings in joints, deep or excessive furrowing of bed joints will not be permitted. Do not shift or tap units after mortar has taken initial set. Where adjustment must be made after mortar has started to set, remove mortar and replace with fresh supply.
- .11 When mortar is "thumb-print" hard, tool joints slightly concave for exposed work, elsewhere, strike joints flush. Use sufficient force to press mortar tight against masonry units on both sides of joints. Remove excess material or burrs left after jointing. Use trowel or rub with burlap bag.
- .12 Lay all joints approximately 10 mm (3/8") thick unless otherwise specified or otherwise shown on Drawings. All joints shall be full of mortar except where specifically designated to be left open.
- .13 Build in all door frames, window frames, wood louvres, anchor bolts, sleeves, inserts, loose steel, etc.
- .14 Complete all door and windowsills, quoins, soldier courses, dovetail designs as per plans.
- .15 All outside 45-degree brick walls are to be completed with mitered corners.
- .16 "Load bearing" means supporting a load other than itself and any unit masonry wall which supports floor loads, roof loads, landing loads, staircase loads, or any other such loads whether directly or indirectly, or which is shown on Drawings as load bearing or which is shown on Structural Drawings, shall be considered to be a load bearing wall. Brick or stone veneer, whether cavity or otherwise, is not load bearing.

3.1 **INSTALLATION (CONT'D)**

- .17 "Exposed" means unpainted, painted and special plastic coated block that are exposed to view in completed work.
 - .18 Partition means a non load bearing interior wall.
 - .19 Construct masonry evenly in maximum lifts of 5' – 0" (1500 mm) per working day. Rake back ends of un-finished walls; do not tooth and bond new masonry.
 - .20 Chases must be built – not cut.
 - .21 Build-in hollow metal door frames previously set in place by Section 06 20 00 by building in lugs and fill voids with mortar. Refer to Section 08 10 00 for number of lugs per jamb. Keep frames free of mortar stains until planned.
 - .22 Use bullnose and double bullnose block at all external corners where block is left exposed including all door and window jambs.
- .2 Cold Weather Requirements
- .1 When laying masonry in ambient temperature below 4 degrees C, (40 degrees F), use heat and maintain temperature of masonry materials and protect completed work from freezing to Satisfaction of Architect. Heat and maintain temperature of masonry materials to at least 4 degrees C (40 degrees F) on both sides of masonry for a period of at least 72 hours.
 - .2 Do not use scorched sand. Do not use salts, admixtures or anti-freezes. Use approved smokeless heaters.
 - .3 In general conform to "Recommended and Guide Specifications for cold weather masonry construction" by O.M.C.A.
- .3 Hot Weather Requirements
- .1 Protect freshly laid masonry from drying too rapidly by means of waterproof, non-staining coverings.
 - .2 When the ambient air temperature exceeds 38°C, or 33°C with a wind velocity greater than 8 mph, execute the following:
 - .1 Store masonry units out of direct sunlight.
 - .2 Do not spread mortar beds more than 4' - 0" ahead of masonry.
 - .3 Set masonry units within one (1) minute of spreading mortar.

3.1 **INSTALLATION (CONT'D)**

.4 Blockwork:

- .1 Lay block to align plumb over each other with thick ends of webs up. Leave no cells open in exposed work. Reinforce all blockwork as hereinafter specified.
- .2 Minimize cutting block. Cut exposed block with power driven abrasive cutting disc or diamond cutting wheel where cutting is required and for flush mounted electrical outlets, grilles, pipes, conduit, leaving 3 mm (1/8") maximum clearance.
- .3 Do not wet concrete masonry before or during laying in wall.
- .4 Locate corners accurately.
- .5 Use full bed of mortar for first course. For remaining courses bed face shells and cross and end webs and vertical end joints fully in mortar. Compress end joint mortar.
- .6 Stagger end joints in every course. Align joints plumb over each other in every other course.
- .7 Do not break bond of corridor walls or other walls of exposed units where partitions intersect and if bonding will show through on exposed face of walls. Bond these partitions to walls that intersect with prefabricated intersection masonry reinforcement in each course.

.5 Partitions:

- .1 Carry the following partitions up through ceiling to structure above, unless shown or specified otherwise: corridor partitions, demising partitions, partitions in areas without suspended ceilings and other partitions so shown on Drawings. Terminate such partitions 19 mm (3/4") below structure and fill space between top of masonry and structure with compressed packing insulation.
- .2 Co-ordinate bracing to provide lateral support for tops of partitions required to extend to within 19 mm (3/4") of underside of structure where they occur under steel joists and beams, slabs and other structural elements with section 05 51 00, Metal Fabrication.
- .3 Where walls and partitions are pierced by structural members, ducts, pipes, fill voids with mortar to within 19 mm (3/4") of such items flush with wall finish.
- .4 Fill spaces between partitions and structure, ducts and pipes with compressed packing insulation completely from one side of wall to other.

.6 Load Bearing Walls:

- .1 Wedge and grout load bearing walls to underside of structure.

3.1 **INSTALLATION (CONT'D)**

.7 Protection

- .1 Protect laid masonry from damage by weather. At end of each day or shutdown period, cover exposed tops of masonry with canvas or strong waterproof membrane securely clamped down and overhanging on each side of wall at least 600 mm (2'-0"). Use wire spring clamps which extend 200 mm (8") down each side of wall, spaced 2,400 mm (8'-0") maximum or other approved method.
- .2 Protect masonry and other work from marking and other damage. Protect completed work from mortar droppings. Use non-staining coverings.
- .3 Subcontractor is responsible to protect glass, sliding patio doors and other building components (including concrete terraces) from mortar droppings, and will supply poly for same.
- .4 Protect and leave broom-clean all surfaces, where masonry work carried out over or above.
- .5 Wind bracing of all masonry walls during construction until the structure provides sufficient lateral support is a mandatory requirement.
- .6 Comply with the Occupational Health & Safety Act & Regulations For Construction Project.

.8 Reinforcement, Reinforcing Ties and Stud Shear Connectors

- .1 Install anchors and ties in accordance with CAN/CSA A370 and CAN/CSA A371.
- .2 Space wall ties in accordance with CAN/CSA A370. Increase wall ties where recommended by masonry unit manufacturer.
- .3 Reinforce all masonry walls with continuous masonry wall reinforcement in every second block or every 6th brick course. Reinforcing shall be continuous.
- .4 Adjustable masonry reinforcement not permitted to correct poorly laid masonry. Bending of masonry reinforcement or ties not permitted.
- .5 At openings provide extra masonry/cavity wall reinforcement, so that first and second courses above and below openings are reinforced. Extend extra reinforcement 600 mm (2'-0") beyond opening in each direction.
- .6 Do not bridge expansion or control joints.
- .7 Lap reinforcement 6" (150 mm) minimum.

3.1 **INSTALLATION (CONT'D)**

- .8 Where steel columns occur in masonry walls embed steel bar anchors fully with mortar, including bent ends.
 - .9 In areas where exterior signage is indicated on the drawings, spacing of masonry ties are to be increased to 16" o.c.
 - .10 Install Stud Shear connectors for brick veneer masonry in strict compliance with the manufacturer's instructions and the General notes on the Structural Drawings.
 - .11 Refer to the General Notes on the Structural Drawings that are applicable to and govern the work of this section, notwithstanding whatever may be specified herein to the contrary.
 - .12 Masonry Reinforcement for Earthquake: CAN/CSA 3-S304-M, refer to notes on Structural Engineers drawings.
- .9 Built-ins
- .1 Confirm all built in items are available before proceeding.
 - .2 Build in items occurring in masonry provided by other Sections including: steel door frames; anchor bolts; sleeves; inserts; loose steel lintels; shelf angles; access panels; masonry flashings not in direct connection with roofing and other such items. Build in items to present a neat, rigid, true and plumb installation. Leave wall openings required for ducts, grilles, pipes and other items.
 - .3 Brace/plumb/square all built ins and maintain same until rigidly set.
 - .4 Fill voids between masonry and metal frames with masonry mortar or insulation, as shown.
- .10 Damp Course and Membrane Flashing
- .1 Install damp courses and flashings in accordance with the Manufacturers written Instructions and as shown on Drawings. If not fully shown on drawings, install in locations as follows and as specified hereafter.
 - .1 Over exterior lintels and shelf angles.
 - .2 Below first masonry course of inner wythe at floors on grade. Extend damp course through full thickness of inner wythe.
 - .3 Below second exterior block masonry course and the fourth exterior brick course above new grade line.

3.1 **INSTALLATION (CONT'D)**

- .4 Jointed masonry under windowsills.
- .5 Wherever roofs or other exterior, horizontal surfaces intersect masonry walls, immediately above roof flashing or horizontal surface flashing and seal to roof or other flashing or vapour barrier.
- .2 Apply primer to all substrate areas where dampproof course/thru-wall flashings are to be applied. Apply primer using lamb's wool roller at rate 100 sq.ft to 300 sq.ft/gallon depending on porosity of substrates. Allow primer to 'tack-up' for approximately 30 minutes prior to application of dampproof course/thru-wall flashings. Primed surfaces not covered within 24 hours shall be completely re-primed.
- .3 In non-cavity wall install flashing through full thickness of wall as shown. Lap joints at least 150 mm (6") and seal with sealant recommended by flashing manufacturer or heat weld P.V.C.
- .4 Install all flashings and damp proofing courses to provide continuous waterproofing flashing in wall except where such courses occur over openings in walls extend them past opening a minimum of 200 mm (8") and turn up minimum 150 mm (6") at each end to create a waterproof dam to prevent water draining into cavity.
- .5 Install membrane flashings onto Bent metal drip flashings and behind vertical wall air barrier membrane with primer. Keep membrane flashing back ½" from outer edge of masonry. Refer to Blow up Details in drawings.
- .6 Inspect flashings for punctures, tears, misaligned seams and the like, apply additional layer of flashing membrane, extending minimum of 6" around damaged area in all directions.
- .11 Lintels
 - .1 Bridge openings not exceeding 1'-6" in width with 1/4" mild galvanized steel plate lintels bearing 100 mm on each side of opening. Width of plate shall be wall thickness less 1".
 - .2 Set loose lintels for bridging openings in masonry.
 - .3 Bearing surface for lintels shall be full width of wall or partition extending 8" (200 mm) each side of opening for openings up to 5'-0" (1500 mm) in width with 1/2" (13 mm) increments each side for each additional 1'-0" (300 mm) of span or part thereof.

3.1 **INSTALLATION (CONT'D)**

.12 Lateral Supports

- .1 Lateral Supports - Where non load bearing unit masonry partitions meet structural elements at top of partitions, provide lateral supports as required by National Building Code. In areas where ceilings are scheduled, use (6") 150 mm lengths of steel angle located each side of partition at 1200 mm and staggered. Where no ceilings are scheduled, use continuous length of steel angle on each side of partition. Use angle of sufficient size to accommodate where required due to fire rated walls.

.13 Reglets

- .1 Provide reglets in masonry as required by the roofing and sheet metal trade, for installation of flashings. Reglets shall be full height of the joint and 1" deep.

.14 Control Joints for masonry

- .1 Provide continuous vertical control joints at the following locations and maximum at every 20'-0" on centre for clay masonry and 25'-0" for concrete masonry.
 - .1 Interior and exterior of masonry panels.
 - .2 In line with the end of all lintels over doors, windows and other openings.
 - .3 Changes in wall directions.
 - .4 Changes in building wall height.
 - .5 Major changes in wall thickness.
 - .6 Abutting of new structure to existing structure.
 - .7 4'-0" from exterior corners. (one side)
 - .8 At movement joints in foundations, floors and roof.
- .2 Control Joints are to extend full height of the wall and be free of mortar.
- .3 All locations to be reviewed on site with the Architect and the Project Manager prior to placement.
- .4 Install control joints as detailed on the drawings.

.15 Scaffolding:

- .1 Supply, erect and dismantle scaffolding that may be required.
- .2 Scaffolding must meet Ministry of Labour standards.

3.1 **INSTALLATION (CONT'D)**

.16 Repointing or Tuckpointing:

- .1 Repoint defective joints as follows: cut back joints ½", taking care not to damage units. Remove dust and loose materials by brushing or by water jet. If water jet is used, allow excess water to drain before repointing. Repoint with same mix as original. Pack mortar tightly in these layers, and tool joints or strike flush as required.

3.2 **CLEANING**

- .1 Obtain and follow masonry manufacturer's written instructions for cleaning. Test sample area, 10 square metres (100 sq ft), to judge effectiveness of cleaning procedures and obtain Architect's approval.
- .2 Keep wall clean and free of mortar stains during laying. Allow mortar droppings which adhere to wall to dry out but not to set. Then rub with small piece of masonry followed by brushing to remove all traces. On completion of masonry, after mortar is thoroughly set and cured, clean masonry thoroughly.
- .3 Remove all mortar fins, stains, discolouration and efflorescence to satisfaction of Architect.
- .4 Remove mortar with wood paddles and scrapers before wetting. Saturate masonry with clean water and flush off loose mortar and dirt. Clean brickwork using water, scrubbing brushes and wood paddles only.
- .5 Clean masonry to be left exposed, using procedures as outlined herein and, where this is inadequate, try following recommendations outlined in Technical Notes on Brick and Tile No. 20, revised May 1964, published by the Canadian-Structural Clay Association. Should these methods prove inadequate consult masonry manufacturer before undertaking unusual cleaning procedures and obtain Architect's prior consent.
- .6 Repoint all defective joints.
- .7 Masonry work to be cleaned at the end of each working day and immediately after removal of scaffolding.

END OF SECTION

DIVISION 06 - WOOD, PLASTICS AND COMPOSITES

PART 1 - GENERAL

1.0 CONTRACT DOCUMENTS

- .1 The Instructions to Bidders, the General Conditions of CCDC 2 - 2020, Supplementary Conditions and all Sections of Division 01 apply to and form part of this section of the specification.

1.1 DESCRIPTION

- .1 Work included:

To complete all carpentry required as shown or specified and which is not specifically called for in "work included" portions of other specifications divisions.

- .2 Work installed but furnished by other sections:

- .1 Door hardware Section 08 71 00

- .3 Related work specified in other sections:

- .1 Glass & Glazing Section 08 80 00

- .2 Back Priming & Finish Painting Section 09 91 00

1.2 REFERENCES

- .1 Architectural Woodwork Manufacturers Association of Canada (AWMAC).
- .2 CAN/CSA B111, Wire Nails, Spikes and Staples.
- .3 CAN/CSA O115, Hardwood and Decorative Plywood.
- .4 CAN/CSA O151-M, Canadian Softwood Plywood.
- .5 CAN/CSA O153-M, Poplar Plywood.
- .6 CAN/CSA O141, Softwood Lumber.
- .7 CAN/CSA O153, Canadian Softwood Plywood.
- .8 National Lumber Grades Authority (NLGA), Standard Grading Rules for Canadian Lumber.

1.3 QUALITY ASSURANCE

- .1 Requirements of regulatory agencies:
 - .1 Mark each piece of wood that is pressure treated to meet fire retardant requirements of jurisdictional authorities, or underwriters, or both, with ULC Fire Hazard Classification label.
- .2 Reference standards:
 - .1 Conform to CAN/CSA Standard 0141 for dressed dimensions of wood members.
 - .2 Fabricate the listed Work to Custom Quality Standard of: AWMAC Specification, Quality Standards of the Architectural Woodwork Manufacturers Association of Canada.

1.4 QUALIFICATION

- .1 Contractor to have 5 years of experience in the Work of this Section.
- *.2 Subcontractor to submit a list of 5 previous jobs where he has performed similar work in scale and scope for review by the Consultant and Owner, and to be representative of his workmanship.
- *.3 Sub-contractor to provide documentation that he has required manpower for the scale of this job, to meet the construction schedule.

1.5 SUBMITTALS

- .1 Samples:
 - .1 Submit 1-12"x12" sample of each specified finish wood species, and in each cut. As per Section 01 33 00 "Submittals Procedures".
- .2 Shop Drawings:
 - .1 Submit shop drawings for manufactured items to Section 01 33 00 "Submittals Procedures".

1.6 PRODUCT DELIVERY, STORAGE AND HANDLING

- .1 Environmental Requirements:
 - .1 Ensure that relative humidity in areas where Work is stored and installed does not exceed 55%.

1.6 **PRODUCT DELIVERY, STORAGE AND HANDLING (CONT'D)**

.2 Protection:

- .1 Ensure that Work of this Section is protected from damaged and deterioration during installation, and otherwise until Project completion.
- .2 Take particular care that wood made fire retardant by pressure treatment is exposed to no dampness.

1.7 **WARRANTY**

- .1 Warrant work of this Section against de-lamination of plastic laminate work and warpage of millwork for a period of 2 years from date Work is certified as substantially performed in accordance with General Conditions of the Contract and as amended by Supplementary General conditions. Promptly make good defects and deficiencies which become apparent within warranty period including making good any work damaged by this work, satisfactory to the architect and at no expense to Owner.

PART 2 - PRODUCTS

2.1 **MATERIALS**

.1 Miscellaneous Hardware

- .1 Drawers slides, locks, hinges, pulls, chains, stops, adjustable legs, magnetic latches, shelving standards, brackets, corner guards, rubber bumpers, piano hinges, castors, brackets. Standard of quality to be for heavy duty use to suit use and finish to match Hardware as listed and described in the Colour, Material & Finish Schedules on the drawings.

.2 Hollow wall anchors

- .1 Star Wall grip; Rawplug Rawlys; or Red Head WA series.

.3 Provide all rough or builders hardware such as nails, spikes, ground, bolts, iron works, washers, anchors, etc., herein specified or as may be required for proper completion of the work.

.4 Fastenings for exterior use to have a rust-inhibitive coating; screws for securing of galvanized anchors, etc., to be galvanized.

.5 Dimensional Lumber: To Section 06 10 00; sanded to remove grade marks, selected for knot-free appearance.

PART 3 - EXECUTION

3.1 EXAMINATION

- .1 Before commencing installation, ensure that grounds, strapping, and other constructions and surfaces to which Work is installed are satisfactory for fitting and adequate for securing of Work.

3.2 INSTALLATION

- .1 Take site measurements of construction to which Work of this Section must conform, and through which access must be made, before Work is delivered to site, to ensure that adaptation is not required which would result in construction delay.

.2 Installation of Doors:

- .1 Install wood doors supplied under Work of Section 08 14 00 & 08 16 73 after finishing of walls.
- .2 Fit wood doors with 24 mm (3/32") clearance at jambs and heads and 3/8" over finished flooring.
- .3 Trim hinge side of wood doors to fit, and bevel latch edges as required.
- .4 Ensure that top and bottom edges of wood doors are primed under Work of Section 09 91 00 after they are cut to fit.
- .5 Install grilles in wood doors, supplied as specified in other Sections.
- .6 Undercut (non-fire rated)wood doors where indicated on Door Schedule.

.3 Installation of Washroom Accessories:

- .1 Install all washroom accessories supplied under work of Section 10 28 00 and supplied by Owner.

.4 Installation of Finishing Hardware:

- .1 Accept delivery of all finishing hardware, and be responsible for safe storage, issuing and ultimate installation under this or other Sections.
- .2 Make cuts in wood doors neatly.
- .3 Accurately located and adjust hardware to meet manufacturer's instructions. Use special tools and jigs as recommended.

3.2 INSTALLATION (CONT'D)

- .4 Install hardware in wood doors at same locations as for hollow metalwork installed in Project.
- .5 Locate top hinges with top 5" below door top, bottom hinges with bottom 10" from floor, and intermediate hinges equidistant between top and bottom hinges.
- .6 Locate door stops to contact doors 3" from latch edge.
- .7 Install hardware and trim square and plumb to doors.
- .8 Replace missing hardware to ensure specified installation at time of building completion.
- .9 Safeguard keys to keep them out of unauthorized hands, tag them with opening number, and deliver them to person designated by Architect at building completion.

3.3 ADJUSTMENT AND CLEANING

- .1 Adjust hinged doors to swing freely and easily, to remain stationary at any point of swing, to close evenly and tightly against stops without binding, and to latch positively when doors are closed with moderate force. Adjust sliding doors to operate smoothly without binding, and to close evenly and tightly against jambs.
- .2 Adjust hardware so that latches and locks operate smoothly and without binding, and closers act positively with the least possible resistance in use. Lubricate hardware if required by supplier's instructions.
- .3 Clean hardware after installation in accordance with supplier's instructions.
- .4 Sand and clean woodwork to leave free from finish defects in any exposed part.

END OF SECTION

DIVISION 07 - OPENINGS

PART 1 – GENERAL

1.0 CONTRACT DOCUMENTS

- .1 The Instructions to Bidders, the General Conditions of CCDC 2 - 2020, Supplementary Conditions and all Sections of Division 01 apply to and form part of this section of the specification.

1.1 SUMMARY OF WORK

- .1 Work Included: The work of this Section includes the provision of all labour, materials, equipment and services required to install firestopping and smoke seal materials, as indicated on the drawings, as specified herein and as required for a complete project.

1.2 RELATED WORK SPECIFIED ELSEWHERE

- .1 Rough Carpentry. Section 06 10 00
- .2 Gypsum Board Assemblies. Section 09 21 16
- .3 Fire stopping and smoke seals within mechanical assemblies (i.e. inside ducts, dampers) and electrical assemblies (i.e. inside cable trays) Division 21 and 26 respectively.

1.3 REFERENCE STANDARDS

- .1 Underwriters' Laboratories Canada (ULC):
 - .1 CAN/ULC-S115-11, Standard Method of Fire Tests of Firestop Systems.

1.4 REGULATORY REQUIREMENTS

- .1 The work of this Section shall conform to the requirements of the applicable building code, to ULC design requirements for each assembly and to all other applicable codes and regulations, to the satisfaction of the authorities having jurisdiction.

1.5 SUBMITTALS

- .1 General: Submit each item in this Article according to the Conditions of the Contract and the applicable Division 01 Specification Sections.

1.6 SUBMITTALS

- .2 Test Reports: Submit test reports certifying that materials have been tested and approved as part of a firestop system by Underwriters Laboratories of Canada (ULC) or Underwriters Laboratories (UL) or Factory Mutual (FM).
- .3 Product Data:
 - .1 Include installation instructions for each material.
 - .2 Include manufacturer's material safety data sheets for the safe handling of the specified materials and products, in accordance with Workplace Hazardous Materials Information Service (WHMIS) requirements.

1.7 DELIVERY, STORAGE & HANDLING

- .1 Deliver products in original unopened packaging with legible manufacturer's identification.
- .2 Store materials in strict accordance with the manufacturer's recommendations, off the ground, under cover and away from moisture.

1.8 ENVIRONMENTAL REQUIREMENTS

- .1 Maintain minimum ambient temperature above 15°C. for 24 hours before, during, and 72 hours after application.
- .2 Maintain relative humidity within manufacturer's recommended limits to allow proper drying.
- .3 Maintain adequate ventilation in areas of application during and for 24 hours after completion.

PART 2- PRODUCTS

2.1 MANUFACTURERS

- .1 Acceptable Manufacturers:
 - .1 3M Company Canada
 - .2 AD Fire Protection
 - .3 Hilti Canada
 - .4 Tremco

2.2 MATERIALS

- .1 Use products by only one manufacturer throughout Work of this Section.
- .2 Fire stopping and smoke seal systems: in accordance with CAN/ULC-S115, asbestos-free materials and systems capable of maintaining an effective barrier against flame, smoke and gases in compliance with requirements of CAN/ULC-S115 and not to exceed opening sizes for which they are intended.
- .3 Service penetration assemblies: certified by ULC in accordance with CAN/ULC-S115 and listed in ULC Guide No. 40 U19.
- .4 Service penetration firestop components: certified by ULC in accordance with CAN/ULC-S115 and listed in ULC Guide No. 40 U19.13 and ULC Guide No. 40 U19.15 under the Label Service of ULC.
- .5 Firestop Sealant: non-slump, one-part silicone type; capable of stopping travel of heat and ignition of combustible materials.
- .6 Firestop Insulation: Mineral/ceramic fibre type to ULC Guide No. 40 U18.7.
- .7 Firestop Mortar: Self-levelling, self-curing, cementitious matrix. Density as recommended by manufacturer to suit application and fire resistance rating.
- .8 Fire- resistance rating of installed fire stopping assembly shall not be less than the fire-resistance rating of the surrounding floor and wall assembly.
- .9 Fire stopping and smoke seals at openings intended for ease of re-entry such as cables: elastomeric seal.
- .10 Fire stopping and smoke seals at openings around penetrations for pipes, ductwork and other mechanical items requiring sound and vibration control: elastomeric seal.
- .11 Primers: to manufacturer's recommendation for specific material, substrate, and end use.
- .12 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.
- .13 Sealants for vertical joints: non-sagging.

PART 3 - EXECUTION

3.1 EXAMINATION

- .1 Examine areas and conditions under which work is to be performed and notify the Consultant in writing of conditions detrimental to the proper and timely completion of the work.

3.1 **EXAMINATION (CONT'D)**

- .2 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 Do not proceed with the work until unsatisfactory conditions have been corrected to the satisfaction of the installer.
- .4 Commencement of the installation will be construed as acceptance of the site conditions and, thereafter, the Contractor shall be fully responsible for satisfactory work as specified herein.

3.2 **PREPARATION**

- .1 Prepare surfaces in contact with fire stopping materials and smoke seals to manufacturer's instructions.
- .2 Ensure all surfaces are dry and clean before beginning application of firestop materials.
- .3 Clean bonding surfaces of dust, rust, oil, grease and other foreign materials that may impair application and adhesion.
- .4 Do not apply firestop materials to surfaces that have been painted or treated with other coatings, unless tests have been performed to ensure compatibility of materials. Remove paint and other coatings as required.
- .5 Prepare and prime surfaces as recommended by firestop material manufacturer.
- .6 Mask adjacent surfaces as required to protect from damage due to application of firestop materials.
- .7 Maintain insulation around pipes and ducts penetrating fire separation without interruption to vapour barrier.

3.3 **INSTALLATION**

- .1 Install fire stopping and smoke seals at service penetrations through fire resistive construction and at all locations where the continuity of fire resistive construction is interrupted, as indicated on the drawings, as specified herein and as required for a complete project.
- .2 Install fire stopping and smoke seal material and components in accordance with ULC certification and manufacturer's instructions.
- .3 Seal holes or voids made by through penetrations, poke-through termination devices, and unpenetrated openings or joints to ensure continuity and integrity of fire separation are maintained.

3.3 INSTALLATION (CONT'D)

- .4 Provide temporary forming as required and remove forming only after materials have gained sufficient strength and after initial curing.
- .5 Tool or trowel exposed surfaces to a neat finish. Remove excess compound promptly as work progresses and upon completion.

3.4 REVIEW

- .1 Notify the Consultant when ready for review and prior to concealing or enclosing fire stopping materials and service penetration assemblies.

3.5 SCHEDULE

- .1 Unless specified otherwise apply the following:
 - .1 Firestop mortar where surrounding surfaces are concrete or masonry.
 - .2 Sealant and insulation where surrounding surfaces are gypsum board.
- .2 Apply firestop materials to the following locations:
 - .1 Around pipes, conduits, ductwork and other mechanical or electrical components that penetrate through fire rated walls, ceilings and other assemblies.
 - .2 Along tops of fire rated walls and assemblies that extend to underside of floor and roof construction. Use firestop sealant and insulation, apply sealant to both sides of walls.
 - .3 Around supporting steel structures that penetrate fire rated walls and assemblies. Use firestop sealant and insulation, apply sealant to both sides of walls.
 - .4 Along tops of fire rated walls that extend to gypsum board assemblies applied around supporting steel structures. Use firestop sealant and insulation, apply sealant to both sides of walls.
 - .5 Around pipes conduits, ductwork and other mechanical or electrical components that penetrate through fire rated floor assemblies.

3.6 CLEANING

- .1 As work progresses, remove excess materials and clean adjacent surfaces immediately after application.
- .2 Remove temporary dams after initial set of fire stopping and smoke seal materials.
- .3 Upon completion of the work of this Section:

3.6 **CLEANING (CONT'D)**

- .1 Remove masking and temporary protection from adjacent surfaces.
- .2 Remove stains on adjacent surfaces and make good damage to adjacent surfaces caused by the work of this Section.
- .3 Remove from the premises all surplus material, dirt and debris caused by the work of this Section and leave the installation clean.
- .4 Remove temporary dams after initial set of fire stopping and smoke seals.

END OF SECTION

DIVISION 07 - THERMAL & MOISTURE PROTECTION

PART 1 – GENERAL

1.0 CONTRACT DOCUMENTS

- .1 The Instructions to Bidders, the General Conditions of CCDC 2 - 2020, Supplementary Conditions and all Sections of Division 01 apply to and form part of this section of the specification.

1.1 INTENT

- .1 To provide all sealing not specified under other Sections but required to make building tightly sealed from exterior and interior to withstand the action of the elements and to complete the building vapour barrier.

1.2 REFERENCES

- .1 American Society for Testing and materials (ASTM)
 - .1 ASTM C661- Standard Test Method for Indentation Hardness of Elastomeric Type Sealants by Means of Durometer.
 - .2 ASTM C679- Standard Test Method for Tack-Free Time of Elastomeric Sealants.
 - .3 ASTM C719- Standard Test Method for Adhesion and Cohesion of Elastomeric Joint Sealants Under Cyclic Movement (Hockman Cycle).
 - .4 ASTM C920, Specification for Elastomeric Joint Sealants.
 - .5 ASTM C1135 Standard Test Method for Determining Tensile Adhesion Properties of Structural Sealants.
 - .6 ASTM C1248 - Standard Test Method for Staining Porous Substrate by Joint Sealants.
 - .7 ASTM C1330 - Cylindrical Sealant backing for Use with Cold Liquid Applied Sealants.
 - .8 ASTM D412 - Standard Test Method for Vulcanized Rubber and thermoplastic Rubbers and thermoplastic Elastomers – tension.
 - .9 ASTM D 2202 - Standard Test Method for Slump of Sealants.
 - .10 ASTM E119 9UL 263) – Standard Test Method for Fire Tests of Building Construction and Materials.

1.3 **SUBMITTALS**

- .1 Provide in accordance with Section 01 33 00 "Submittal Procedures":
 - .1 Product data for silicon sealant, primer, joint backing, and other accessories. Include material and safety data sheets (MSDSs) and certifications showing compliance with specified standards.
 - .2 Shop drawings detailing sealant joints and indicating joint dimensions, materials, sealant profile, and size limitations.
 - .3 Manufacturer's colour chart for selection by Architect, or custom colour where noted.
 - .4 Manufacturer's instructions for installation and field quality control testing.
 - .5 Copy of warranties specified in paragraph 1.8 for review by Architect.

1.4 **PROJECT CONDITIONS**

- .1 Do not install silicone sealant during inclement or windy weather when such conditions are expected. Allow wet surfaces to dry.
- .2 Do not install sealant when temperature is less than 5 degrees Fahrenheit (3° C) below dew point. Silicones approved for -29C.

1.5 **QUALIFICATIONS**

- .1 Perform the Work by recognized established sealant contractor having a minimum of five (5) years experience and skilled mechanics thoroughly trained and competent in the use of sealant equipment and specified materials.

1.6 **FIELD QUALITY CONTROL**

- .1 Arrange with sealant manufacturer for a technical representative to visit the work prior to beginning sealant installation to discuss procedures to be adopted, analyze site conditions, inspect surfaces to be sealed and make recommendations should adverse conditions exist.
- .2 The following items should be discussed:
 - .1 Weather conditions under which work to be done.
 - .2 Anticipated frequency and extent of joint movement.
 - .3 Joint Design.
 - .4 Suitability of durometer hardness and other properties of material in relation to Items 1 and 3 above.
 - .5 Primers to be used.

1.7 **WARRANTY**

- .1 Provide under provision of Section 01 78 00 – Closeout Submittals.
 - .1 Installer's (5) five years workmanship warranty.

1.8 **WARRANTY (CONT'D)**

- .2 Manufacturer's 20- year material warranty for properly installed silicon sealant.

PART 2 - PRODUCTS

2.1 **ACCEPTABLE MANUFACTURERS**

- .1 Dow Corning Corporation. P.O. Box 994, Midland, MI 486886- 0994; (800) 248-2481; www.dowcorning.com/construction.
- .2 Approved Alternate: Tremco Commercial Sealants.
- .3 Requests to use equivalent products of other manufacturers shall be submitted in accordance with Section 00 21 00, article 2.6 Specified Manufacturer.

2.2 **SEALANT**

- .1 Type: One-component, ultra-low modulus, neutral-cure silicone rubber sealant; Dow Corning® 790 Silicone Building Sealant, as manufactured by Dow Corning Corporation.
- .2 Compliance: Sealant shall meet or exceed requirements of these standards:
 - .1 ASTM C920, Type S, Grade NS, Class 100/50, Use T, NT, G, M, A, and O.
 - .2 GSA CID A-A-272A.
 - .3 GSA CID A-A-1556.
- .3 Colour: Refer to Manufacturer's standard colours. Custom colour as noted by Architect on Drawings.
- .4 Shelf life: 12 months.
- .5 Application temperature range: Minus 20 to plus 120 degrees F. (Minus 29 to plus 50 degrees C.)
- .6 Tack-free time: 1 hour at 50 percent relative humidity, tested in accordance with ASTM C679.
- .7 Working time: 10 to 20 minutes.
- .8 Curing time at 3/8-inch (10-mm) depth: 7 to 14 days at 77 degrees F. (25 degrees C) and 50 percent relative humidity.
- .9 Flow, sag, or slump in [3 inches] [76 mm] wide joint: None, when tested in accordance with ASTM D2202.
- .10 Volatile organic compound (VOC) content: 43 grams/liter maximum.

2.2 **SEALANT (CONT'D)**

- .11 Cured sealant properties after 21 days at [77 degrees F] [25 degrees C] and 50 percent relative humidity:
 - .1 Joint movement capability: Plus, 100 percent extension and 50 percent compression, tested in accordance with ASTM C719.
 - .2 Hardness: 15-durometer hardness, Shore A, tested in accordance with ASTM C661.
 - .3 Properties tested in accordance with ASTM D412.
 - .4 Minimum peel strength: [15 ppi] [2.67 kg/cm], tested in accordance with ASTM C794.
 - .5 Properties tested in accordance with ASTM C1135.
 - .6 Weathering after 22,400 hours, tested in accordance with ASTM C1135 using QUV Weatherometer.
 - .7 Staining after 14 days at 50 percent compression, 158 degrees F (70 degrees C): None on concrete, granite, limestone, and brick, when tested in accordance with ASTM C1248.
- .12 Low Dirt Pick-up, Non-Staining, Medium-modulus, one-component, pre-pigmented, neutral-cure elastomeric silicone sealant; Compliance: Sealant shall meet or exceed requirements of ASTM C920, Type S, Grade NS, Class 50, Use NT, G, M, A, and O. *Dow Corning® 756 SMS Silicone Building Sealant*, as manufactured by Dow Corning Corporation.
- .13 **Exterior Concrete Sidewalk Sealants:** One part silicone – Dow Corning Parking Structure SL or Dow Corning Contractors Concrete Sealant or approved Alternate.
- .14 **Interior Building Sealants:** Acrylic emulsion compound fast setting, low odour and paintable equal to professional grade acrylic latex caulk by Tremco. Note: Use sealants from Item 7 where mildew resistance is required.
- .15 Joint Backing: Round, closed cell foamed polyethylene; closed cell urethane foam; rubber; rubber tubing; non-migrating plasticised vinyl having Shore 'A' hardness of 20 and tensile strength of 20 - 30 psi, type of which is compatible with sealant type, and as recommended by manufacturer.
- .16 Joint Filler - white non-absorbent closed cell foam polyethylene rope "Ethafoam", Dow Chemical of Canada Limited or approved alternative.
- .17 **Exterior Building Sealants:** One-part silicone Construction sealants series 790, 795, and 888 SL and mildew resistant where specified, by Dow Corning to Canadian Standard CAN2-19-13 or ASTM C920.

2.3 **ACCESSORIES**

- .1 Substrate primer: As recommended for project conditions and provided by silicone sealant manufacturer.
- .2 Sealant backing: Provide backing complying with ASTM C1330 (Type B non-absorbent, bi-cellular material with surface skin.) (Type O open-cell polyurethane.), as recommended by sealant manufacturer.
 - 1. Size: Greater than joint opening by 25 percent minimum.
- .3 Bond breaker tape: Provide tape to prevent adhesion to joint fillers or joint surfaces at back of joint and allow sealant movement.
 - 1. Type: Polyethylene or other plastic tape recommended by sealant manufacturer.
- .4 Masking tape: Non-staining, non-absorbent type compatible with silicone sealant and adjacent surfaces.

PART 3 - EXECUTION

3.1 **GENERAL**

- .1 Prepare substrates and apply silicone sealant in accordance with manufacturer's instructions.
- .2 Handle, store, and apply materials in compliance with applicable regulations and material safety data sheets (MSDSs).
- .3 Do not use silicone sealant for:
 - .1 Below-grade applications.
 - .2 Surfaces to be immersed in water for prolonged time.
 - .3 Brass and copper surfaces.
 - .4 Materials bleeding oils, plasticizers, and solvents.
 - .5 Structural glazing and adhesive.
 - .6 Surfaces to be painted.
 - .7 Surfaces in direct contact with food.
 - .8 Medical and pharmaceutical applications.
- .4 Do not apply in totally confined spaces without ventilation for curing.

3.2 **PREPARATION**

- .1 Inspect new substrates to receive silicon sealant. Ensure surfaces are clean, dry, and free of frost, dust, dirt, grease, oil, curing compounds, form release agents, laitance, efflorescence, mildew, and previous films and coatings.
- .2 Clean substrates to receive silicone sealant.
 - .1 Porous surfaces: Abrasive-clean followed by blasting with oil-free compressed air.
 - .2 Nonporous surfaces: Use two-cloth solvent wipe in accordance with ASTM C1193.
 - .3 High-pressure water cleaning: Exercise care that water does not enter through failed joints.
- .3 Aluminum and other nonporous surfaces except glass require use of primer. Concrete, stone, masonry, and other nonporous surfaces typically do not require primer. Comply with Manufacturer's primer recommendations.
- .4 Adhesion test: Apply silicone sealant to small area and perform adhesion test in accordance with ASTM C1193, Method A, to determine if primer is required to achieve adequate adhesion. If necessary, apply primer at rate and in accordance with manufacturer's instructions. Allow primer to dry.
- .5 Masking: Apply masking tape as required to protect adjacent surfaces and to ensure straight bead line and facilitate cleaning.
- .6 Clean joints and spaces which are to be sealed and ensure that they are dry and free of dust, loose mortar, oil, grease and other foreign materials, which may damage or destroy bond of sealant. Thoroughly clean sides of joints and spaces to establish good bond between sealant and adjacent materials.
- .7 Clean ferrous metals free of all rust, mill scale and foreign materials by wire brush, grinding or sandblasting.
- .8 Do not install materials when ambient air temperature is less than 5⁰ C, when recesses are wet or damp, or to manufacturer's recommendations.
- .9 Do not install materials on Building Exterior if windy conditions exist and present possibility of wind-borne dust adhering to sealant materials.
- .10 Wipe all metal surfaces to be sealed, except painted metal, with cellulose sponges or clean rags soaked with ethyl alcohol, xylol and wipe dry with clean cloth. Clean painted metal with solutions or compounds which will not injure paint, and which are compatible with the primer and sealant.

3.2 **PREPARATION (CONT'D)**

- .11 Where joints are 12 mm or deeper, insert backing material in continuous 30% compression with set-back from finished face of adjoining materials equal to required depth of caulking (width/depth ratio) as recommended by manufacturer of sealant, but not less than a distance which leaves minimum 6 mm thickness of sealant.
- .12 On horizontal traffic surfaces, support joint filler against vertical movement which might result from loads, including foot traffic.
- .13 Prime surfaces of joints with primer to which adhesion is required, unless otherwise instructed by manufacturer.
- .14 Seal joints in surfaces to be painted before surfaces are painted. Where surfaces to be sealed are primed in shop before sealing, check to make sure prime paint and sealant are compatible. If they are incompatible inform Architect and change sealant to compatible type approved by Architect.
- .15 Prime sides of joints with primer where required. In any case, prime all metal surfaces to be sealed, including pre-coated metals.

3.3 **APPLICATION**

- .1 Sealant backing: Install without gaps, twisting, stretching, or puncturing backing material. Use gage to ensure uniform depth to achieve correct profile, coverage, and performance.
- .2 Bond breaker: Install on backside of joint where backing is not feasible.
- .3 Sealant:
 - .1 Use sealant-dispensing equipment to push sealant bead into opening. Fill joint opening to full and proper configuration. Apply in continuous operation.
 - .2 Before skinning or curing begins, tool sealant with metal spatula. Provide concave, smooth, uniform, sealant finish. Eliminate air pockets and ensure complete contact on both sides of joint opening. Tool joints in one continuous stroke.
- .4 Complete horizontal joints prior to vertical joints. Lap vertical sealant over horizontal joints.
- .5 Cleaning: Remove masking tape and excess sealant.
- .6 Apply joint filler to proper, uniform depth to give sealant bead of optimum size and shape for joint condition and expected movement condition.
- .7 Apply sealant using guns fitted with suitable nozzles and equipment approved by sealant manufacturer. Apply in strict accordance with manufacturer's directions and recommendations.

3.3 **APPLICATION (CONT'D)**

- .8 Apply sealants under pressure in such manner as to assure good adhesion to sides and to completely fill all voids in the joint.
- .9 Form surfaces of sealant smooth, concave, free from ridges, wrinkles, sags, air pockets and embedded foreign matter.
- .10 Apply fire stop sealants in strict conformance with manufactures directions to ensure compliance with U.L.C. rating of fire stop systems.
- .11 Upon completion, remove masking tape and sealant smears and droppings from adjacent and other surfaces.
- .12 Tool all joints smooth, minimum thickness of sealant over backing (1/4").
- .13 Ensure all wood shims and projections are cut back to ensure a full continuous bead of sealant.
- .14 All Exterior Precast Panel Joints are a three stage joint system, Exterior, Mid Panel & Interior. (except horizontal bearing joints). Mid joint is to vent/drain through to exterior. Horizontal bearing joint is a dual stage joint system within a 2" raked mortar joint. Refer to blow up details on drawings.
- .15 Around Curtain Wall System and components note: **Seal inside and outside of frame**, not at exterior location of pressure cap plate. A third line of sealant may be required behind the pressure plate to prevent water entry to the cavity wall if the curtain wall framing sits on a knee wall. Refer to Details on Drawings.

3.4 **LOCATIONS (AS APPLICABLE)**

- .1 Seal the junction of the following **Interior Materials**:
 - .1 Joint between full height masonry partitions and structure above.
 - .2 Hollow Metal Frames with adjacent materials - both sides.
 - .3 Provide silicone sealant at splash juncture of vanity and wall and at juncture of mirror and wall and at juncture of other counters and walls.
 - .4 All chair rails and wall tiles
 - .5 At base of toilets and floor.
 - .6 At perimeter of shower and tub enclosure and wall finish.
 - .7 Concrete floor slab control joints.
 - .8 Around all window frames.

3.4 LOCATIONS (CONT'D)

- .9 All wall/floor penetrations fire stopped where required.
- .10 Joints between pre-cast concrete slabs and perimeter.
- .2 Seal the junction of the following **Exterior Materials**:
 - .1 Exterior pressed steel frames with adjacent materials.
 - .2 Seal all junctures between structural members and adjacent materials where space is less than 1" (25 mm).
 - .3 Sidewalk control joints.
 - .4 Masonry control joints.
 - .5 All doors, windows, patio door frames and sills.
 - .6 Under thresholds.
 - .7 All wall penetrations.
 - .8 Saw cut control joints in exterior concrete slabs.
 - .9 At junction of concrete slabs/walks to building foundation.
 - .10 Roof flashings, penetrations and joints.
 - .11 Where wood (including capped framing) and brick meet.
 - .12 Where wood (including capped framing) and concrete meet.
 - .13 Where aluminum and brick meet.
 - .14 Recessed mortar joint in stone sills (one joint when window over 1.2 m wide).
 - .15 To underside of balcony slab where concrete meets masonry wall.
 - .16 Perimeter of all mechanical vents and louvers, electrical outlets, fixtures, hose bibs and exterior wall penetrations (including all PTAC sleeves).
 - .17 All Exterior Precast Panel Joints. **Note:** Application is a three stage joint system, Exterior, Mid Panel & Interior and a two stage joint system for grouted panel bearing joints.

3.4 **LOCATIONS (CONT'D)**

.18 Around Curtain Wall System and components note: **Seal inside and outside of frame**, not at exterior location of pressure cap plate. A third line of sealant may be required behind the pressure plate to prevent water entry to the cavity wall if the curtain wall framing sits on a knee wall. Refer to Details on Drawings.

.3 Provide sealant elsewhere as noted in drawings as caulking and/or sealant and not specifically noted to be provided by other Sections.

3.5 **TESTING AND CLEANUP**

.1 Test all exterior joints with hose in presence of Architect if so requested. Clean adjacent and affected surfaces.

END OF SECTION

DIVISION 08 - OPENINGS

PART 1 – GENERAL

1.0 CONTRACT DOCUMENTS

- .1 The Instructions to Bidders, the General Conditions of CCDC 2 - 2020, Supplementary Conditions and all Sections of Division 01 apply to and form part of this section of the specification.

1.1 GENERAL REQUIREMENTS

- .1 Conform to Canadian Manufacturing Specifications for Steel Doors and Frames published by Canadian Steel Door and Frame Manufacturers Association, except as specified therein.

1.2 RELATED WORK SPECIFIED ELSEWHERE

- .1 Installation of Hollow Metal Doors Section 06 10 00
- .2 Door Hardware Section 08 71 00
- .3 Power Door Operators Section 08 71 13
- .4 Glass and Glazing Section 08 80 00
- .5 Gypsum Board Assemblies Section 09 21 16
- .6 Painting Section 09 91 00

1.3 SUBMITTALS

- .1 Submit Shop Drawings in accordance with Section 01 33 00 "Submittals Procedures".
- .2 Clearly indicate each type of door, frame, material, gauge, mortises, reinforcements and anchors.
- .3 Do not fabricate until Shop Drawings have been reviewed by the Consultant.

1.4 MEASUREMENTS

- .1 Where work is to be built into existing openings, measurements shall be taken on site at the actual location of the work. Fabricate the work to job measurements.

PART 2 - PRODUCTS

2.1 MATERIALS

- .1 Steel Sheet - Commercial grade hot rolled steel to ASTM-A526-71 with "wiped coated" zinc finish to ASTM-A525-71, 0.25 oz. per sq.ft.
- .2 Reinforcing Steel - To CAN/CSA-G40.21 Type 33W hot dip galvanized with minimum zinc coating G90 to CAN/CSA G.164.
- .3 Insulation - Loose fibreglass, minimum density 1.5 lbs./cu.ft. (24 kg per cu. m.).
- .4 Door Bumpers - black neoprene.
- .5 Primer - Zinc rich to CGSB-1-GP.
- .6 Core Material - Resin impregnated, rot resistant kraft honeycomb for interior doors, rigid polyurethane board stock foam insulation for exterior doors to CGSB-41-GP-14a. Fire rated doors to conform to U.L.C. requirements.
- .7 Fabricate doors, frames and all internal reinforcements of hot dip galvanized steel to ASTN - 97, minimum coating designation ZF 75 (A25).

2.2 METAL THICKNESS

.1	Building Doors	Gauge	Inches	mm
.1	Frames and Framing	16	.060	1.5
.2	Doors			
	§ Surface Sheets	18	.048	1.2
	§ Top and Bottom end channels	18	.048	1.2
.3	Accessories			
	§ Lock and strike reinforcement	16	.060	1.5
	§ Hinge reinforcement	10	.135	3.4
	§ Flush bolt reinforcement	16	.060	1.5
	§ Reinforcement for surface applied hardware	12	.105	2.7
	§ Mortar guard boxes	22	.030	0.76
	§ Jamb floor anchors	16	.060	1.5
	§ Jamb spreaders	18	.048	1.2

2.2 METAL THICKNESS (CONT'D)

.4	Anchors			
	§ "T" - Strap Type	16	.060	1.5
	§ "L" - Strap Type	18	.048	1.2
	§ Stud Type	18	.048	1.2
.5	Glazing Stops	20	.040	1.0

PART 3 - EXECUTION

3.1 FABRICATION OF WELDED FRAMES

- .1 Construct framing in accordance with details and reviewed shop drawings.
- .2 Mortise, reinforce, drill and tap frames and reinforcement to receive hardware using templates provided.
- .3 Install 3 bumpers on strike jamb of frame for each single door and two bumpers at head of double door frames.
- .4 Protect strike, hinge and overhead concealed door closer reinforcement completely by guard boxes welded to frame.
- .5 Weld in 2 channel spreaders per frame, to ensure proper frame alignment.
- .6 Where frames terminate at finished floor, provide floor plates for anchorage to structural slab.
- .7 Cut mitre accurately and weld continuously on inside of frame profile.
- .8 Grind welded corners to a flat plane, fill with metallic paste filler and sand to a uniform smooth finish.

NOTE: Neatly mitred and reinforced corners may be accepted subject to Architect's approval of sample prior to installation.
- .9 Fill surface depressions and butted joints with metallic paste and sand to a uniform smooth finish.
- .10 Provide 3 T strap adjustable jamb anchors per jamb for frames up to 2133 mm (7'-0") high to be installed in masonry walls. Provide additional anchor for each 600 mm (24") over 2133 mm (7'-0") high.

3.1 **FABRICATION OF WELDED FRAMES (CONT'D)**

- .11 Provide steel anchors of suitable design for frames to be installed in stud partitions and for frames adjacent to pre-cast concrete. Securely wedge or weld anchor inside each jamb as follows:
 - .1 Frames up to 2133 mm (7'-0") high - 4 anchors per jamb.
- .12 Exterior Hollow Metal Framers for Door (Thermal Broken Frame) to be 1.5 mm (16 ga) heavy galvanized, secured together by an extruded poly vinyl chloride thermal break without the use of any fastening devices by S.W Fleming or approved equal. Thermal frame shall be complete with anchors and accessories as specified for frames and framing members. Exterior hollow metal frames to be packed with injected foam insulation. Fabricate frames with sufficient rigidity to effectively receive the forced entry. Provide minimum 2.7 mm (12 ga) continuous hinge reinforcement.
- .13 Insulate frames for exterior doors with fibreglass for full height and depth.
- .14 All exterior window and door frames are to be thermally broken.
- .15 Guard box to accept 25 mm (1") throw or deadbolt.

3.3 **FABRICATION OF DOORS**

- .1 Construct doors in accordance with details and approved shop drawings, fully welded construction with no visible seams or joints on faces or vertical edges.
- .2 Assemble doors with full sheets laminated under pressure to honeycomb core.
- .3 Reinforce and frame openings required for glazing. Provide glazing stops with countersunk flat head screws.
- .4 Mortise, reinforce, tap and drill doors and reinforcement to receive hardware using templates provided by hardware supplier. Refer to Finishing Hardware Schedule for mounting heights.
- .5 Interior Hollow Metal Doors: D20 Series. Each face formed from one sheet 0.9mm (20 ga) steel. Lock seam and seal longitudinal joints. Core to be honeycomb laminated under pressure to face sheets and to fill core space completely. Close top and bottom with 1.2 mm (18 ga) channels, spot welded.
- .6 Exterior Hollow Metal Doors: D18 Series. Each face formed from one sheet 1.2 mm (18 ga) steel. Lock seam and seal longitudinal joints, tack weld lock seams 15 mm o.c., fill flush, grind smooth. Core to be polyisocyanurate RSI 2.1 (R12) board, laminated under pressure to face sheets and to fill core space completely. Provide minimum 2.7 mm (12 ga) continuous hinge reinforcement. Close top and bottom with 1.2 mm (18 ga) channels, spot welded. Close top of out swing doors with sealed watertight cap.

3.3 FABRICATION OF DOORS (CONT'D)

- .7 Provide sound deadening and thermal insulation material to fill all voids in doors.
- .8 Assemble components by means of spot or arc welding.
- .9 Fit exterior doors and all interior stair doors with flush steel channel caps at top of door and seal against moisture penetration.
- .10 Provide condensate weep holes at bottom of exterior doors.

3.4 SHOP PAINTING

- .1 Wipe coated steel frame: touch up areas where wipe coating has been removed using zinc rich paint.
- .2 Wipe coated steel doors: touch up areas where wipe coating has been removed, using zinc rich paint, and apply one full coat of rust inhibitive primer to CGSB-1-GP-105M.
- .3 Uncoated Steel - Apply one rust inhibitive primer conforming to GCSB-1-GP-105M.

3.5 INSTALLATION

- .1 Supply hollow metal frames to masonry or drywall Trades in good time for building in so that building program is not delayed.
- .2 Co-operate with all Trades as required for the execution of the complete work.

3.6 FIRE DOORS AND FRAMES

- .1 Supply fire doors and frames assemblies to meet fire resistance time rating called for and carry the appropriate U.L.C. Label.
- .2 Fire doors and frames shall be installed as tested and as approved by a nationally recognized agency having a factory inspection service.
- .3 Locate label on frame on jamb midway between top hinge and head of door frame. Provide labels on door edge, hinge side.
- .4 Provide label on hanging edge of door near frame.

END OF SECTION

DIVISION 08 - OPENINGS

PART 1 – GENERAL

1.0 CONTRACT DOCUMENTS

- .1 The Instructions to Bidders, the General Conditions of CCDC 2 - 2020, Supplementary Conditions and all Sections of Division 01 apply to and form part of this section of the specification.

1.1 RELATED WORK SPECIFIED ELSEWHERE

- .1 Allowances Section 01 21 00
- .2 Rough Carpentry Section 06 10 00
- .3 Hollow Metal Doors and Frames Section 08 11 13
- .4 Wood Doors Section 08 14 00

1.2 WORK INCLUDED

- .1 This section includes the supply of finishing hardware including but not limited to the following:
 - .1 Interior door hardware, Electronic key Fobs, privacy, dummy, passage sets, lock sets, exit devices, stops, closers, kick plates, dead bolts, cane bolts, push, pull plates, hinges etc. (Labelled where required).
 - .2 All other General Building hardware including kick plates and thresholds, weather stripping, stops, electric strikes, Electronic Key Fobs, lockset, exit devices, electromagnetic locks, hinges and closers (labelled where required).

1.3 PRODUCT DELIVERY, STORAGE AND HANDLING

- .1 Delivery - supply hardware as and when required for each opening. Package hardware separately for each opening in a package which contains all the hardware for that opening and bears the number of the opening. Supply hardware to those who are to install it, complete with keys, templates and installation instructions together with all required screws, expansion shields, anchors and other related accessories for satisfactory attaching/installing hardware.

1.4 SUBMITTALS

- .1 Submit product data, shop drawings and samples in compliance with Section 01 33 00.

1.5 GENERAL REQUIREMENTS

- .1 Comply with all applicable ANSI/BHMA standards and requirements of Authorities.

1.5 **GENERAL REQUIREMENTS (CONT'D)**

- .2 Grade of hardware to be; "Commercial Grade Standard Duty".
- .3 All door closers shall have back checking features and shall be of proper size to operate door efficiently.
- .4 Confirm all kick plate and threshold sizes before ordering them.
- .5 Use no wall mounted door stops on drywall.
- .6 Exposed screws for installing hardware shall have Phillips or Robertson heads.
- .7 Rim panic device strikes shall be mortise type application. Equip panic devices with sex bolts.
- .8 Confirm degree of swing for door holders, closers, etc.
- .9 All locksets and passage sets to be lever handles.
- .10 A hardware schedule is to be provided by a certified Hardware Consultant for submission and review.
- .11 *Refer to Hardware Schedule contained in the Schedules on Drawings. This schedule is to be used as a guide to represent the minimum standard and quantity of hardware required. It is in no way to represent the exclusion of any required hardware as part of the contract.

1.6 **KEYING**

- .1 All locks to be keyed using blanks.
- .2 All locks shall be keyed as required to Master Key system as later described by the Owner, for all doors.
- .3 Quantity of keys per keying group to be determined later by Owner.

1.7 **FIELD QUALITY CONTROL**

- .1 Check all hardware when it has been installed and notify Architect of any cases where it has been improperly installed, is defective or is not specified.
- .2 The door closer supplier shall review installation and operation of all door closers on site and issue a written report to the Architect.

1.8 **WARRANTY**

- .1 All hardware is to be guaranteed for an extended period of five (5) years.

PART 2 - PRODUCTS

2.1 **MANUFACTURERS**

.1 Manufacturers

Item:

Hinges
Locksets
Suite Keyless Entrance
Electronic Locks
Cylinders
Exit Devices
Closers
Automatic Operators
Push/Kick Plates
Door Stops
Door Viewer
Flush Bolts
Sliding Bifold Hardware
Threshold & Gasketing
Weatherstripping

Manufacturer:

Stanley
Stanley Commercial Hardware

Multilock, Sultos or Alfred
BEST
Stanley Commercial Hardware
LCN OR Stanley Commercial Hardware
By Section 08 71 13
Gallery Specialty Hardware
Gallery Specialty Hardware
Hager
Gallery Specialty Hardware
K.N. Crowder
K.N. Crowder
K.N. Crowder

.2 Or approved Alternates.

.3 For all cylinders use ASSA. (Owner's Keyway)

PART 3 - EXECUTION

3.1

.1 This section is for supply only.

END OF SECTION

DIVISION 08 - OPENINGS

PART 1 – GENERAL

1.0 CONTRACT DOCUMENTS

- .1 The Instructions to Bidders, the General Conditions of CCDC 2 - 2020, Supplementary Conditions and all Sections of Division 01 apply to and form part of this section of the specification.

1.1 RELATED DOCUMENTS

- .1 Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

- .1 This Section includes the following types of power door operators:
 - 1. Exterior and interior, power door operators, low energy, with visible mounting. Refer to Plans and schedules
 - 2. Automatic door operators shall be configured for doors as follows:
 - 1. Simultaneous pairs, out swing, in swing, or double egress.
 - 2. Simultaneous pairs, with single operator, out swing or in swing.
 - 3. Single doors, out swing or in swing.

1.3 RELATED WORK SPECIFIED ELSEWHERE

- .1 Door Hardware Section 08 71 00
- .2 Electrical Specification: electrical connections including conduit and wiring for power door operators & push button controls Division 26

1.4 REFERENCES

- .1 General: Standards listed by reference, including revisions by issuing authority, form a part of this specification section to extent indicated. Standards listed are identified by issuing authority, authority abbreviation, designation number, title or other designation established by issuing authority. Standards subsequently referenced herein are referred to by issuing authority abbreviation and standard designation.
- .2 UL 325 – Standard for Door, Drapery, Gate, Louver, and Window Operators and Systems.
- .3 ANSI/BHMA A156.19: Standard for Power Assist and Low Energy Power Operated Doors.

1.4 REFERENCES (CONT'D)

- .4 ASTM B221 - Standard Specification for Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes.
- .5 ASTM B209 - Standard Specification for Aluminum and Aluminum-Alloy Sheet and Plate
- .6 BHMA A156.10 - Standard for Power Operated Pedestrian Doors.
- .7 NFPA 101 – Life Safety Code.
- .8 NFPA 70 – National Electric Code.
- .9 UBC: Uniform Building Code
- .10 ISO 9001 - Standard for Manufacturing Quality Management Systems
- .11 Metal Finishes Manual for Architectural and Metal Products.
- .12 AAMA 607.1 - Clear Anodic Finishes for Architectural Aluminum.
- .13 AAMA 611 Voluntary Specification for Anodized Architectural Aluminum.
- .14 CSA approved in compliance with the O.B.C.

1.5 DEFINITIONS

- .1 Activation Device: Device that, when actuated, sends an electrical signal to the door operator to open the door.

1.6 PERFORMANCE REQUIREMENTS

- .1 Provide power door operators capable of withstanding structural loads and thermal movements based on testing manufacturer's standard units in assemblies similar to those indicated for this Project.
- .2 Operating Range: Minus 30 deg F (29 deg C) to 130 deg F (54 deg C).
- .3 Opening-Force Requirements for Egress Doors: In the event power failure to the operator, swinging automatic entrance doors shall open with a manual force, not to exceed 30 lbf (133 N) applied at 1" (25 mm) from the latch edge of the door.
- .4 Break Away Requirements: Power door operators provided with a breakaway device shall require no more than 50 lbf (222 N) applied at 1" (25 mm) from the latch edge of the door.
- .5 Door Energy: The kinetic energy of a door in motion shall not exceed 1.25 lbd-ft (1.69 Nm).

1.6 PERFORMANCE REQUIREMENTS (CONT'D)

- .6 Closing Time:
 - .1 Doors shall be field adjusted to close from 90 degrees to 10 degrees in 3 seconds or longer.
 - .2 Doors shall be field adjusted to close from 10 degrees to fully close in not less than 1.5 seconds.

1.7 SUBMITTALS

- .1 Submit listed submittals in accordance with Section 01 33 00 submittal procedures.
- .2 Shop Drawings: Include plans, elevations, sections, details, hardware mounting heights, and attachments to other work. Indicate wiring for electrical supply.
- .3 Color Samples for selection of factory-applied color finishes.
- .4 Closeout Submittals: Provide the following with project close-out documents.
 - .1 Owner's Manual.
 - .2 Warranties.

1.8 QUALITY ASSURANCE

- .1 Installer Qualifications: Manufacturer's authorized representative who is trained for installation and maintenance of units required for this Project.
- .2 Manufacturer Qualifications: A qualified manufacturer with a manufacturing facility certified under ISO 9001 and with company certificate issued by AAADM.
- .3 Certifications: Power door operators shall be certified by the manufacturer to meet performance design criteria in accordance with the following standards:
 - .1 ANSI A156.10.
 - .2 NFPA 101.
 - .3 UL 325 Listed (Fire Door Operator).
 - .4 ICBO (UBC Standard 10-1).
 - .5 CSA approved in compliance with the O.B.C.
- .4 Source Limitations: Obtain power door operators through one source from a single manufacturer.

1.8 **QUALITY ASSURANCE (CONT'D)**

- .5 Product Options: Drawings indicate sizes, profiles, and dimensional requirements of automatic entrance door assemblies and are based on the specific system indicated. Refer to Division 1 Section "Product Requirements."
- .6 Power Operated Door Standard: ANSI/BHMA A156.19.
- .7 Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, Article 100, by a testing agency acceptable to authorities having jurisdiction, and marked for intended use.
- .8 Emergency-Exit Door Requirements: Comply with requirements of authorities having jurisdiction for swinging automatic entrance doors serving as a required means of egress.

1.9 **PROJECT CONDITIONS**

- .1 Field Measurements: General Contractor shall verify openings to receive power door operators by field measurements before fabrication and indicate measurements on Shop Drawings.
- .2 Mounting Surfaces: General Contractor shall verify all surfaces to be plumb, straight and secure; substrates to be of proper dimension and material.
- .3 Other trades: General Contractor Advise of any inadequate conditions or equipment.

1.10 **COORDINATION**

- .1 Templates: Check Shop Drawings of other work to confirm that adequate provisions are made for locating and installing power door operators to comply with indicated requirements.
- .2 Electrical System Roughing-in: Coordinate layout and installation of power door operators with connections to power supplies.
- .3 System Integration: Integrate power door operators with other systems as required for a complete working installation.
 - .1 Provide electrical interface control capability for card reader or keypad operation of power door operators on doors with electric locking.
 - .2 Where required for proper operation, provide a time delay relay to signal power door operator to activate only after electric lock system is released.

1.11 WARRANTY

- .1 Power door operators shall be free of defects in material and workmanship for a period of three (3) years from the date of Substantial Performance.
- .2 During the warranty period the Owner shall engage a factory-trained technician to perform service and affect repairs. A safety inspection shall be performed after each adjustment or repair and a completed inspection form shall be submitted to the Owner.
- .3 During the warranty period all warranty work, including but not limited to emergency service, shall be performed during normal working hours.

PART 2 - PRODUCTS

2.1 POWER DOOR OPERATORS

- .1 Manufacturer:
 - .1 Stanley Access Technologies; Heavy Duty, Stanley M-Force Series power door operator.
 - .2 SW100 By "Besam", ASSA ABLOY.
 - .3 Approved Alternate.

2.2 MATERIALS

- .1 Aluminum: Alloy and temper recommended by manufacturer for type of use and finish indicated. Colour to match door frame.
 - .1 Headers: 6063-T6.
 - .2 Extruded Bars, Rods, Profiles, and Tubes: ASTM B 221.
 - .3 Sheet and Plate: ASTM B 209.
- .2 Sealants and Joint Fillers: Refer to Division 07 Section "Joint Sealants".

2.2 COMPONENTS

- .1 Header Case: Header case shall not exceed 6-1/8 inch x 4 inch (156 mm x 102 mm) in rectangular section and shall be fabricated from extruded aluminum with structurally integrated end caps, designed to conceal door operators and controls. The operator shall be sealed against dust, dirt, and corrosion within the header case. Access to the operator and electronic control box shall be provided by a full-length removable cover, edge rabbeted to the header to ensure a flush fit. Removable cover shall be secured to prevent unauthorized access.

2.2 **COMPONENTS (CONT'D)**

- .2 Door Arms and Linkage Assembly: A combination of door arms and linkage shall provide positive control of door through entire swing; units shall permit use of butt hung, center pivot, and offset pivot-hung doors.
- .3 Fasteners and Accessories: Manufacturer's standard corrosion-resistant, non-staining, non-bleeding fasteners and accessories compatible with adjacent materials.
- .4 Signage: Provide signage in accordance with ANSI/BHMA A156.19.

2.3 **SWINGING DOOR OPERATORS**

- .1 Provide door operators of size recommended by manufacturer for door size, weight, and movement; for condition of exposure; and for long-term, maintenance-free operation under normal traffic load for type of occupancy indicated.
- .2 Operators: Self-contained units powered by a minimum fractional horsepower, permanent-magnet AC or DC motors.
- .3 Electro-mechanical Operator: Transmit power from operator to door through reduction gear train, splined spindle, door arm, and linkage assembly. Drive train shall have positive constant engagement.
 - .1 Operation: Power opening and spring closing.
 - .2 Mounting: Visible
- .4 Features:
 - .1 Adjustable opening, open check, and closing speeds.
 - .2 Adjustable opening force.
 - .3 Adjustable hold-open time between 0 and 30 seconds.
 - .4 Reverse on obstruction.
- .5 Closing Operation: The operator shall close the door by spring energy employing the motor, as a dynamic brake to provide closing speed control. The closing spring shall be adjustable for positive closing action at a low material stress level for long spring life.
- .6 Manual Use: The operator shall function as a manual door closer in the direction of swing with or without electrical power. The operator shall deliver an even, consistent open force across the entire transition from door fully closed to door fully open.
- .7 Electrical service to door operators shall be provided under Division 16 Electrical. Minimum service to be 120 VAC, 10 amps for doors with operators in pairs, 5 amps for single doors.

2.4 **ELECTRICAL CONTROLS**

- .1 Electrical Control System: Electrical control system shall include a solid-state controller with quick connect plugs.
- .2 Controller Protection: The controller shall incorporate the following features to ensure trouble free operation:
 - .1 Fuse Protection.
 - .2 Electronic Surge Protection.
 - .3 Internal Power Supply Protection.
- .3 Program Dip Switches: The controller shall have program dip switches to allow selection or change at the following parameters: carpet or timer logic, single or dual door, and activation options.

2.5 **ACTIVATION DEVICES**

- .1 Push Plates: Provide 5 7/8" (150 mm) round SPDT push plates with UL listed switch. Face plates and mounting studs shall be stainless steel. Face plates shall be engraved with the international symbol for accessibility and "Push To Open":
 - .1 Push Buttons to be installed, so the centre located 1000-1100 mm (39- 3/8" – 43 1/4') from the floor;
 - .2 Incorporate controls that are clearly visible which are at least 150 mm (5-7/8") in diameter;
 - .3 Incorporate the International symbol of Access for Persons with Disabilities.
- .2 Interior and exterior push plates shall be wall mounted in single or double gang electrical boxes and hardwired to door operator controls.

2.6 **ALUMINUM FINISHES**

- .1 Comply with NAAMM Metal Finishes Manual for Architectural and Metal Products for recommendations for applying and designing finishes. Finish designations prefixed by AA comply with system established by Aluminum Association for designing finishes.
- .2 Class II, Clear Anodic Finish: AA-M10C22A31 Mechanical Finish: as fabricated; Chemical Finish: etched, medium matte; Anodic Coating: Architectural Class II, clear coating 0.40 mils minimum complying with AAMA 611, and the following:
 - .1 AAMA 607.1

2.6 **ALUMINUM FINISHES (CONT'D)**

- .2 Applicator must be fully compliant with all applicable environmental regulations and permits, including wastewater and heavy metal discharge.

PART 3 - EXECUTION

3.1 **INSPECTION**

- .1 Examine conditions, with Installer present, for compliance with requirements for installation tolerances, header support, and other conditions affecting performance of swinging automatic entrance doors. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 **INSTALLATION**

- .1 Do not install damaged components. Fit joints to produce hairline joints free of burrs and distortion. Rigidly secure non-movement joints.
- .2 Mounting: Install power door operators/headers plumb and true in alignment with established lines and grades. Anchor securely in place.
 - .1 Install surface-mounted hardware using concealed fasteners to greatest extent possible.
 - .2 Set headers, arms and linkages level and true to location with anchorage for permanent support.
- .3 Door Operators: Connect door operators to electrical power distribution system as specified in Division 16 Sections.
- .4 Sealants: Comply with requirements specified in Division 7 Section "Joint Sealants" to provide weather tight installation.

3.3 **FIELD QUALITY CONTROL**

- .1 Testing Services: Factory Trained Installer shall test and inspect each swinging automatic entrance door to determine compliance of installed systems with applicable ANSI standards.

3.4 **ADJUSTING**

- .1 Adjust door operators, controls, and hardware for smooth and safe operation, for weather-tight closure, and complying with requirements in ANSI A156 by AAADM Certified Technician.

3.5 CLEANING AND PROTECTION

- .1 Clean surfaces promptly after installation. Remove excess sealant compounds, dirt, and other substances. Repair damaged finish to match original finish.

END OF SECTION

DIVISION 08 - OPENINGS

PART 1 - GENERAL

1.0 CONTRACT DOCUMENTS

- .1 The Instructions to Bidders, the General Conditions of CCDC 2 - 2020, Supplementary Conditions and all Sections of Division 01 apply to and form part of this section of the specification.

1.1 GENERAL REQUIREMENTS

- .1 The Instructions to Bidders and all Sections of Division 01 apply to and form part of this section of the specification.

1.2 RELATED WORK SPECIFIED ELSEWHERE

- .1 Glass and Glazing of:
 - .1 Hollow Metal Doors and Frames Section 08 11 13

1.3 REFERENCES

- .1 GANA, Glazing Manual and Glazing Sealing Systems Manual.
- .2 CAN/CGSB 12.1, Tempered or Laminated Safety Glass.
- .3 CAN/CGSB-12.3, Flat, Clear Float Glass.
- .4 CAN/CGSB-12.6, Transparent (One-Way) Mirrors.
- .5 CAN/CGSB 12.8, Insulating Glass Units.
- .6 CAN/CGSB-12.9, Glass, Spandrel.

1.4 SUBMISSIONS SAMPLES

- .1 Submit duplicate 300 x 300 mm (12"x 12") size samples of types of glazing and sealant material.
- .2 Submit samples as per Section 01 33 00 "Submittals Procedures".
- .3 Submit 600 mm x 1200 mm (24" x 48") printed film sample for approval.

1.5 WARRANTY

- .1 Warrant work under this Section against defects and deficiencies for a period of 5 years from date work is certified as Substantially Complete in accordance with the General Conditions of the Contract as amended by the Supplementary Conditions.
- .2 Promptly correct defects and deficiencies which become apparent within warranty period, including make good of work damaged by this work satisfactory to the Architect and at no expense to the Owner.
- .3 Defects shall include but shall not be limited to failure to seal of enclosed air space and deposits on inner faces of glass units, and delamination, discolouring or deposits on inner surfaces of laminated safety glass.

PART 2 - PRODUCTS

2.1 GLASS MATERIALS

- .1 Where thickness of glazing is not specified, conform to requirements of Ontario Building Code.
- .2 Polished Plate or Float Glass: to CAN/ CGSB-12.3, 6 mm minimum thickness. Clear or tinted as indicated. Heat strengthened as required. As manufactured by Pittsburgh Plate Glass Co. (PPG)
- .3 Tempered (Laminated) Safety Glass: to CAN/ CGSB-12.1, 6 mm thick unless otherwise noted. 12 mm thick where vertical butt joints are used without mullion/frame. "Herculite" as manufactured by Pittsburgh Glass Co.
- .4 Low E Glass: CAN/CGSB 2, heat strengthened. ES72N by AFGD or approved alternate with manufacturer's 10 year warranty on the coating. Glass to meet minimum 2013 ANSI/ASHRAE 90.1 and Chapter 2 of the O.B.C.
- .5 Insulated Glass Unit (Sealed Unit): Total thickness 25 mm (1"): with warm edge spacer bar.
 - .1 Outer Pane: Clear float 6 mm (1/4") thick, Low-E coated on surface #2.
 - .2 Inner Pane: Clear float 6 mm (1/4") thick.
 - .3 Interpane Space: 13 mm (1/2") air space, Argon filled gas. Min.90%.
 - .4 Glass to meet minimum 2013 ANSI/Ashrae 90.1 and Chapter 2 of OBC requirements.
- .6 Insulated Glass Unit (Sealed Unit): Type "Tempered" Total thickness 25 mm (1"): with warm edge spacer bar.
 - .1 Outer Pane: Clear Tempered Glass 6 mm (1/4") thick, Low-E coated on surface #2.
 - .2 Inner Pane: Clear Tempered Glass 6 mm (1/4") thick.

2.1 **GLASS MATERIALS (CONT'D)**

- .3 Interpane Space: 13 mm (½") air space, Argon filled gas. Mi. 90%.
- .4 Glass to meet minimum 2013 ANSI/Ashrae 90.1 and Chapter 2 of OBC requirements.
- .7 Insulated Tempered Glass: Provide insulated tempered glass in vestibule, doors and adjacent to doors.
- .8 Spandrel glass: CAN/CGSB-12.9, 6 mm thick unless otherwise indicated, with water-based silicone emulsion coating applied to backside, 'Opaci-Coat 300' by ICD High Performance or approved alternative. Colour: Later selection by Consultant in a Light to Medium Grey range.
- .9 Fire Rated Glazing to be 5 mm (min.) thick "FireLite® NT" safety impact grade glass, conforming to CAN/CGSB – 12.11, ASTM E2010, CAN 4 S-104 and CAN 4 S-106 and thickness required by Manufacturer for fire rating required in the assembly in which the glazing is installed.
- .10 Where edges of glass are exposed, they shall be ground and polished.
- .11 For locations of glazing refer to Drawings and door frame schedule.

2.2 **GLAZING AND SEALING COMPOUND MATERIALS**

- .1 Only compounds listed on the CGSB Qualified Products List are acceptable for use on this project.
- .2 Glazing compound: oil type, to CGSB 19-GP-2 type 1, to selected colour.
- .3 Sealant compound: multi-component, chemical curing to CAN/ CGSB -19.24 type 2, class A, of selected colour.
- .4 Non-shrink Grout: M-Bed by Sternson Ltd., or V-3 Pre-Mixed Construction Grout by W.R. Meadows of Canada, Ltd. or Masterflow 713 by Master Builders Co. Ltd., or Tartan No-Iron Grout by Webster & Sons Ltd., or Set Non-Shrink Grout by Set Products (Canada) Ltd., or In-Pakt by C.C. Chemicals Ltd.
- .5 Glazing tape: preformed butyl tape, 10-15 durometer hardness, paper released as manufactured by Tremco Manufacturing Co (Canada) Ltd., or 3 M ribbon sealer butyl tape manufactured by Minnesota Mining and Manufacturing Co. Ltd.
- .6 Setting blocks: neoprene, Shore "A" durometer hardness 80-90, 100 mm long, wide enough to extend from stop to opposite glass face, of thickness suitable to provide adequate glazing "bite".
- .7 Spacer shims: neoprene, Shore "A" durometer hardness 80-90, 75 mm long x 2.4 mm thick x 9 mm high, or as indicated.

2.2 **GLAZING AND SEALING COMPOUND MATERIALS (CONT'D)**

- .8 Glazing splines: neoprene manufacturer's standard dry glazing splines to suite aluminum extrusions, to selected colour.
- .9 Lock-strip gaskets: black neoprene to ASTM C542-76, type and style as recommended by frame manufacturer.
- .10 Primer-sealers and cleaners: to glass manufacturer's standard.
- .11 Provide decals, as shown, 100 mm (4") in diameter, vinyl, and with Applicable Building Code symbol showing both sides.

PART 3 - EXECUTION

3.1 **PREPARATION**

- .1 Openings shall be free from moisture, frost, rust, dirt and foreign matter.
- .2 Clean surfaces to receive sealant with a clean cloth dampened with xylol or a 50-50 mixture of acetone and xylol. Wipe dry with a clean, dry cloth.

3.2 **INSTALLATION**

- .1 Conform to the recommendation of the Glazing Manual, Float Glass Marketing Association, revised Edition. Insulating Glass Manual Association of Canada.
- .2 Glaze hollow metal doors, interior windows and screens and wood doors scheduled to be glazed.
- .3 Protect glass edges from damage during handling and installation. Remove damaged glass Products from Place of Work and dispose of in accordance with the authorities having jurisdiction. Damaged glass is defined as glass with edge damage or other imperfections that, when installed, could weaken the glass and impair performance and appearance.
- .4 Place setting blocks, to manufacturer's instructions.
- .5 Install glass, rest on setting blocks, ensure full contact and adhesion at perimeter.
- .6 Insert spacer shims to centre glass in space. Place shims at 600 mm (24") o.c. and keep 6 mm (1/4") below sightline.
- .7 Provide edge blocking necessary to prevent glass lites from moving sideways in glazing channel, in accordance with GANA Glazing Manual.

3.2 **INSTALLATION (CONT'D)**

- .8 Tape Glazing: Position tapes on fixed stops so that, when compressed by glass their exposed edges are flush with or protrude slightly above sight line of stops. Install tapes continuously, but not necessarily in on continuous length. Do not stretch tapes to make them fit the opening.
 - .1 Cover the vertical framing joints by applying tapes first to heads and sills, and then to jambs.
 - .2 Cover horizontal framing joints by applying tapes first to jambs, and then to heads and sills.
 - .3 Place joints in tapes at corners of opening with adjoining lengths butted together, not lapped. Seal joints in tapes with compatible sealant.
 - .4 Center glass lites in openings on sitting blocks and press firmly against tape by inserting dense compression gaskets, formed and installed to lock in place against faces of removable stops. Start gasket applications at corners and work towards center of openings.
- .9 Gasket Glazing: Fabricate compression gaskets in lengths recommended by gasket manufacturer to fit openings exactly, with allowance for stretch during installation.
 - .1 Insert soft compression gasket between glass and frame of fixed stop such that it is securely in place, with joints mitre cut and bonded together at corners.
 - .2 Center glass lites in openings on setting blocks and press firmly against soft compression gasket by inserting dense compression gaskets, formed and installed to lock in place against faces of removable stops. Start gasket applications at corners and work towards center of openings.
 - .3 Install gaskets so protrude evenly past face of glazing stops.
 - .4 Compress gaskets to produce weather tight seal without developing bending stress in glass.
 - .5 Seal gasket joints with compatible sealant.
- .10 Install removable stops, without displacing tape or sealant, and tightened all screws.
- .11 Provide edge clearance of 3 mm (1/8") minimum.
- .12 Apply sealant to uniform and level line, both sides of glass, flush with sightline and tooled or wiped with solvent to smooth appearance, or trim tape flush with sightline.
- .13 Do not cut or abrade tempered, heat treated, or coated glass.

3.3 **FINISHING AND CLEANING**

- .1 Immediately remove sealant and compound droppings from finished surfaces.
- .2 Remove labels after work are completed.
- .3 As work progresses clean all glass, including mirrors and fittings. Remove all setting and glazing compounds from adjacent surfaces. Remove all finger and handprints and other soil. Use mild domestic detergent in warm water, apply with soft clean wiping cloths.
- .4 Apply decals, using permanent adhesives.

END OF SECTION

DIVISION 09 - FINISHES

PART 1 - GENERAL

1.0 CONTRACT DOCUMENTS

- .1 The Instructions to Bidders, the General Conditions of CCDC 2 - 2020, Supplementary Conditions and all Sections of Division 01 apply to and form part of this section of the specification.

1.1 GENERAL REQUIREMENTS

- .1 The Instructions to Bidders and all Sections of Division 01 apply to and form part of this section of the specification.
- .2 Conform to CAN/CSA A-82.27, and CAN/CSA A-82.31 including appendixes.
- .3 Ensure strict compliance with Manufactures Literature.
- .4 ASTM C754 – Standard Specification for Installation of Steel Framing Members to Receive Screw-Attached Gypsum Panel Products.
- .5 Ontario Building Code Section 9.24 Sheet Steel Stud Wall Framing.
- .6 Canadian Sheet Steel Building Institute Technical Bulletins and Manuals.

1.2 RELATED WORK SPECIFIED ELSEWHERE

- .1 Painting Section 09 91 00

1.3 QUALITY ASSURANCE

- .1 Requirements of Regulatory Agencies:
Install fire separations and fire protection exactly as specified in Underwriters' Laboratories test design specification that validates the specified rating.
- .2 Allowable Tolerances:
Install Work within 1/8" of dimensioned location unless approved otherwise, and flat to a tolerance of 1/8" maximum in 10'-0" and 1/16" maximum in any running 12".

1.4 DELIVERY AND STORAGE

- .1 Handle and store materials carefully to prevent damage.
- .2 Store gypsum board flat in piles with protected edges.
- .3 Obtain approval of proposed locations for stockpiling material.

1.4 **DELIVERY AND STORAGE (CONT'D)**

- .4 Do not install damaged or deteriorated material but remove from site immediately.
- .5 Provide any necessary temporary covers, skids and the like.
- .6 Materials as delivered shall bear manufacturer's name, brand name of material and where applicable, CSA classification.

1.5 **ENVIRONMENTAL REQUIREMENTS**

- .1 Do not apply gypsum board or joint filler to surfaces that are damp or contain frost.
- .2 In cold weather and during gypsum panel application and joint finishing, temperatures within work areas shall be within the range of 12 deg. C to 25 deg. C. for 7 days prior to application of joint compound and until cement and adhesives have cured.
- .3 Provide adequate ventilation to carry off excess moisture.

1.6 **RELATIONS WITH OTHER TRADES**

- .1 Co-ordinate with Mechanical and Electrical Trades to ensure that all services are installed prior to application of wall board.
- .2 Give directions to Section 06 10 00 for supplementary blocking.

1.7 **QUALIFICATIONS**

- .1 Sub-contractor to submit a list of 5 previous jobs where he has performed similar work in scale and scope, for review by the Consultant and Owner, and representative of his workmanship, prior to starting any work on site or submissions.
- .2 Sub-contractor to provide documentation that he has the required man power for the scale of his job, to meet the construction schedule.

PART 2 - PRODUCTS

2.1 **MATERIALS**

- .1 All materials to conform to CAN/CSA A82.27 unless specified otherwise.
- .2 Gypsum Board Types:
 - 1. Gypsum Board- Paper Faced (GB-PF): To ASTM C1396/C1396M, tapered edges, ivory paper faced, thickness as indicated on the drawings.

2.1 MATERIALS (CONT'D)

2. Gypsum Board- Fire-Rated (GB-FR): To ASTM C1396/C1396M, Type C, tapered edges, ivory paper faced, ULC labelled, thickness as indicated on the drawings.
 3. Gypsum Board- Shaft-Liner (GB-SL): To ASTM C1658/C1658M, Type X, 25mm thick double bevelled edges, silicone treated gypsum core, with coated glass matt facers both sides.
 4. Gypsum Board- Backing Board (GB-BB): To ASTM C1396/C1396M, 12.7mm thick paper faced, square edges.
 5. Gypsum Board- Ceiling Board (GB-CLG): To ASTM C1396/C1396M, 12.7mm thick, paper faced, eased edges, maximum 6.5kg/m² weight.
 6. Gypsum Board- Tile Backer (GB-TB): To ASTM C1178/C1178M, 12.7mm thick, Coated glass mat-faced gypsum panels, with silicone treated core, glass fibre mesh facers both sides and a co-polymer waterproof coating on the tile-face side, square edges.
- .3 Partition Systems:
- .1 Steel Studs: 20 ga. min. steel, wiped coated, having knurled flanges 1-1/4" wide with edges doubled back at least 3/16", with girts as required, and with service access holes in webs at 18" o.c..
 - .2 Partition Runner Tracks: As specified for studs, Min. 25 ga. electro zinc coated sheet steel with flanges minimum of 1 3/16" high, and to suit width of studs. Oversized to accommodate structural deflection and floor toppings. 2 1/2" "Slotted Deflection" track and 2 1/2" "Deep Track" to accommodate the installation of cementitious skim coat topping.
 - .3 Bracing Channels: 18 ga. 1-1/2" x 3/4" cold rolled steel, wiped coated.
 - .4 Steel Sheet Metal Blocking: 18 ga. 16" wide mtd. to face of studs for mounting of devices, accessories and millwork. Refer to details for mounting heights.
- .4 Corner Bead and Trims: 18 ga. galvanized steel with perforated flanges; one piece per location. Dur-A-Bead 1 1/4" x 1 1/4" metal bead for corners; "J" trim and "L" trim by "CGC" or approved alternate, fill type only. Paper or plastic beads are not acceptable.
- .5 Control Joint: C.G.C. No. 093.
- .6 Thermal Break: Permanent adhesive faced rubberized cork, 1/8" thick by width required.
- .7 Fastenings and Ties:

2.1 MATERIALS (CONT'D)

- .1 Screws: For metal furring. Self-drilling, self-tapping, case-hardened, Phillips head, drywall screws, with corrosion resistant finish. For wood furring: similar wood screws #6 x 1" for single thickness board fastening and #7 x 1-5/8" for double thickness board fastening.
- .2 Tie Wire: 16 ga. galvanized soft annealed steel wire.
- .3 Furring System: 16 ga. cold rolled steel, prime painted.
 - .1 1-1/2" x 1/2" where supported at centres of 3'-0" maximum.
 - .2 1-1/2" x 3/4" where supported at centres of 4'-0" maximum.
- .4 Furring Channels: 25 ga. cold rolled steel, wiped coated, nominal size of 3/4" deep x 1-1/4" face, hat type with knurled face.
- .8 Joint Treatment Material: (Joint compound, taping compound laminating compound). To ASTM C474 and C475. Use material recommended by board manufacturer for the proposed use.
- .9 Resilient Sponge Tape: self sticking adhesive on one side, closed cell neoprene sponge tape Permastik 122X by Jacobs and Thompson Ltd. Or approved alternate.
- .10 Adhesive: type acceptable to insulation manufacturers to provide vapour barrier of 1/8" thickness.
- .11 Reinforcing Tape: Perf-A-Tape by C.G.C. or approved alternate.
- .12 Ceiling Hanger System:
 - .1 Hanger Anchoring Devices:
 - .1 Phillips Red Head by Phillips Drill Company of Canada Limited.
 - .2 T32, self-drilling for use in concrete deck.
 - .3 WS-3822 wedge anchor with tie wire insert for use in composite concrete and steel deck.
 - .4 SDI-3822 for use in steel deck, with screw eye bolts to suit inserts or as otherwise approved.
 - .5 All anchors to be fastened to lower flute of deck
 - .2 Hangers:

2.1 MATERIALS (CONT'D)

- .1 Zinc coated annealed steel wire; 12 ga. to support a maximum weight of 150 pounds per hanger.
- .2 9 ga. to support a maximum weight of 310 pounds per hanger and zinc coated annealed steel rod.
- .3 3/16" dia. to support a maximum weight of 500 pounds per hanger.
- .3 Sound Isolation Hangers: spring hangers of weight capacity required by Vibro Coustics Ltd. or approved alternate.
- .13 Tile Backer Board accessories: 2" wide 10 x 10 coated glass mesh tape, rust resistant fasteners. Mold resistant Drywall Type: Certain Teed Fiba Tape Mold-X10 Mold Resistant Drywall type with M2 Tech or approved alternate.

PART 3 - EXECUTION

3.1 EXAMINATION

- .1 Before application of drywall commences, ensure that services have been installed, tested, and approved; that conduits, pipes, cables, and outlets are plugged, capped, or covered; and that fastenings and supports installed by others are in place.

3.2 INSTALLATION

- .1 General
 - .1 Coordinate the Work of this Section with that of other Sections.
 - .2 Install framing for support and incorporation of flush mounted and recessed components. Ensure adequacy of supports by consultation and verification of methods with those performing the Work of Divisions 22 to 28.
 - .3 **Do not use through-the-roof deck flange hangers.**
 - .4 Do not install metal framing, trim, casings, or accessories which have been bent, dented, or otherwise deformed.
 - .5 Framing and furring shown on Drawings is indicative but do not regard it as exact or complete.
 - .6 Provide for movement at intersections with structural members to avoid transference of loads to this Work.
 - .7 Make allowances for thermal movements in drywall systems of 1/2" min.

3.2 **INSTALLATION (CONT'D)**

- .8 Do not support the Work of this Section from, nor make attachment to, ducts, pipes, conduit, or the support framing of the Work of other Sections.
 - .9 Do not apply drywall in close proximity to hot pipes or heating ducts.
 - .10 Install materials with the minimum of joints. Tightly butt joints, without force, and neatly align them.
 - .11 Splice, framing members only where continuous lengths are not available from manufacturer.
 - .12 Frame openings on every side with suitable sections. Provide clearances required at mechanical and electrical services, such as grilles, diffusers, access panels, and lighting fixtures only after verification of requirements in each case.
 - .13 Coordinate Work with Section 06 10 00 to ensure that proper wood blocking for support of items secured to Work of this Section is installed and anchored adequately to prevent damage to Work of this Section.
 - .14 Attach to framing adequate steel reinforcing members to support the load of, and to withstand the withdrawal and shear forces imposed by, items installed upon the Work of this Section.
 - .15 Install each grab rail anchorage to withstand a force of 9500 pounds in all directions.
 - .16 Include in Work; fire stopping bulkheads over doors, frames, screens, and changes in ceiling levels; stair soffits; furred beams; and pipe spaces; all as indicated on Drawings and required by the Ontario Building Code.
- .2 Suspended Ceiling Framing and Furring:
- 1. Screw apply hanger anchoring devices to metal deck.
 - 2. Space hangers for runner channels to suit structure, to support ceiling load, at a max. distance of 4'-0" o.c., and at no greater distance than 6" from ends of runner channel.
 - 3. Install runner channels at 3'-0" o.c., generally, and at no greater distance than 6" from terminations of supported cross furring members. Bend rod hangers sharply under bottom flange or runners, and wire securely in place with saddle ties.
 - 4. Splice runner channels by lapping at least 12" with interlocking flanges and wired at each end with two loops. Do not bunch or line up splices.

3.2 **INSTALLATION (CONT'D)**

5. Install cross furring at 16" o.c., generally, and at no greater distance than 6" from walls, openings, breaks in continuity of ceiling, and changes of direction. Space furring in all cases to suit incorporated services, and so as to avoid contact with perimeter walls. Span hat-type furring no greater than 4'-0". Use metal studs for greater spans 1-5/8" deep spanning to 5'-0", 2-1/2" deep to 6'-0", and 3-5/8" deep to 8'-0".
6. Secure cross furring to supports with double wire ties or approved equivalent attachment. Splice by nesting and tying together with 8" overlap.
7. Erect entire hanger and suspension system to adequately support the ceiling assembly, including incorporated services, with a maximum deflection of 1/360 in the span of each component member, and free from horizontal movement.

.3 Metal Stud Partition Framing:

- .1 Secure ceiling and floor runner tracks at floor and tops of partitions for their full length, at 24" o.c. with concrete nails, square cut nails, toggle bolts, or sheet metal screws as suitable for base material. Install runner tracks also at heads and sills of openings. Secure runner tracks at openings by cutting flanges, turning up webs, and screwing to studs.
- .2 Install top runner deflection tracks with slotted oversized flanges at top of non-load bearing partitions to compensate for deflection of structure.
- .3 Install base runner tracks with oversized flanges to compensate for installation of poured in place cementitious floor toppings (min.1" deep).
- .4 Butt, not mitre, runners at wall intersections and corners. At ceilings, lap and screw channels together.
- .5 Space studs at 16" O.C., generally; and at no greater distance than 2" from abutting walls, partitions and corners.
- .6 Secure studs to runners by screws, crimping, or welding, as required by stud type, and in accordance with manufacturer's design specification.
- .7 Install studs of depth indicated on Drawings: but in no case span studs 1-5/8" deep more than 9'-0" between supports; 2-1/2" deep, 12'-0"; and 3-5/8" deep, 16'-0".
- .8 Extend double studs on each side of all openings from floor to ceiling or structure above, whichever is indicated.
- .9 Erect three studs at corner and intermediate intersections of partitions.

3.2 **INSTALLATION (CONT'D)**

- .10 Install bracing channels in partitions, spaced equally in partition height, at no more than 3'-0" O.C. where not otherwise specified; over doors in partitions of greater height than 10'-0", spaced as preceding; and above and below window-type openings, spaced not more than 6" from the top and bottom of the opening. Install two lines of bracing in partitions up to 8'-0" high and three lines in partitions up to 12'-0" high. Install bracing channels in stud cut-outs, wire tied or welded to each stud, and extending horizontally across entire length of each braced partition and across two full stud spaces at each side of door and window openings.
 - .11 Splice studs by nesting, with 8" minimum lap, and fastened with one screw in each flange.
 - .12 Coordinate Work with others installing horizontal runs of service lines so that Work of all is done simultaneously.
 - .13 Screw, or weld, frame anchor clips, of frames supplied under the Work of Section 08 11 13 "Hollow Metal Doors and Frames", to jamb studs, and head and sill runners. Ensure adequate fastening to prevent movement of the frame within the partition. Remove spreaders at floor after frames are anchored.
 - .14 Unless shown otherwise on Drawings, partitions, together with wall board facings, shall extend above ceiling to underside of structure above or be laterally braced.
 - .15 Ensure strict compliance with the limiting height tables for stud size, gauge and allowable deflection, and when used for alternate board products with different weights and performance.
 - .16 Metal studs in walls required to have a fire resistance rating shall be installed so that there is a 1/2" clearance between the top of the stud and the top of the runner to allow for expansion in the event of fire.
- .4 Accessories
- .1 At external corners install corner beads secured to framing at 6" o.c. on alternate flanges.
 - .2 At board edges secure casing beads at 12' o.c. at edges exposed to view, where board butts against other materials with no trim to conceal junction, at control joints, at perimeter of ceiling surfaces, at tops of partitions where otherwise indicated on Drawings.
 - .3 Install control joints in walls, partitions and ceilings at no greater spacing than 25'-0" in each direction, at perimeters of ceilings where they abut walls and other vertical surfaces, or as otherwise indicated. Line up control joints in other construction or with centre lines of mullions, columns, piers, or similar building elements.

3.2 **INSTALLATION (CONT'D)**

.4 Install casings and thermal breaks at junctions of drywall with exterior door, window or screen frames. Apply self-sticking resilient sponge tape where gypsum board abuts, same, to casing bead.

.5 Application of Board

.1 Extend board into door, window, and other opening reveals, and on metal stud partitions to structure above, unless noted otherwise on Drawings.

.2 Apply board with long dimension perpendicular to supports except at stud partitions where they shall be parallel to studs for Fire Rated Assemblies.

.3 Board is to be cut to fit tight into deck flutes, around building structure and other members to maintain Acoustic & Fire Separations and Thermal Barriers to provide a completed finish.

.4 Back all joints with a framing member. Locate joints on opposite sides of partitions on different studs, and at least 12" from opening jambs.

.5 Install board in maximum lengths and widths to minimize joints, and in lengths of 6'-0" minimum. Stagger end joints where they are unavoidable.

.6 Form neat joints at mill ends and at job cut edges of board panels. Cut paper on face with knife. Smooth by sanding and rubbing edges together.

.7 Fasten wallboard to metal support members by sheet metal drywall screws 3/8" minimum and 1/2" maximum from centre of joints. Space screws:

.1 At ceilings of fire rated board at 8" o.c. at edges and in field.

.2 At walls of fire rated board at 8" o.c. at edges and 12" o.c. in field.

.3 Locate screws opposite one another in adjacent panels.

.4 At walls and ceilings where non-fire rated board is used at 12" o.c. at edges and in field.

.5 To both double jamb studs for all openings @ 8" o.c.

.8 Start application on walls at corners of rooms, and on ceilings from centre line of spaces. Do not force adjacent boards into place; allow moderate contact. Install extension clips where required. Drive screws to form a slight depression, but not so paper cover is broken.

.9 Nail board to wood furring as specified in CSA Standard A82.31.

3.2 **INSTALLATION (CONT'D)**

- .10 Ensure gypsum board sits tight to floor surface to provide full support for wall bases.
- .6 Control Joints for Gypsum Board partitions
 - .1 Control joints should be employed in long expanses of partitions at 25-foot intervals, from floor to ceiling. Control joints are recommended at doorjamb, extending from door head to ceiling. Where doorjamb extends from floor to ceiling and are spaced less than 25 feet apart, no control joints are required.
 - .2 Control joints are required in ceilings to limit areas to 2,500 square feet. Additionally, control joints should be installed in ceilings to limit dimensions in either direction to 50 feet. Control joints should be installed where ceiling framing or furring changes direction.
- .7 Finishing of Joints and Depressions:
 - .1 Fill joints, casing beads, corner beads, holes at board fasteners and depressions on board surfaces exposed to view to ensure smooth seamless surfaces and square neat corners. Use jointing compounds and reinforcing tapes in conformance with manufacturer's specification. Ensure that board is tight against framing members, fasteners are properly depressed, and adhesives have sufficiently cured.
 - .2 For joints not exposed to view but are part of an acoustic wall with insulation fill, an STC Rating or a Fire Rating, these are to be fully taped and mudded full height.
 - .3 Fill joints by three-coat method:
 - .1 Embed reinforcing tape in a cover coat of joint filler.
 - .2 Apply skim coat of topping cement when level coat has dried.
 - .3 Feather edges of compounds into surfaces of wallboards. After skim coat has dried for at least 24 hours sand to leave smooth. Do not sandpaper face of wallboard.
 - .4 At bevelled joints: Apply cover coat 7" wide, level coat 10" wide, and skim coat 12" wide.
 - .5 At end joints and butt joints formed at cut edges of wallboard. Apply cover coat 14" wide, level coat 20" wide, and skim coat 24" wide. Camber treatment over end joints to 1/32" thick at most.

3.2 **INSTALLATION (CONT'D)**

- .6 At Internal Corners: First fill gaps between boards with joint filler. Embed creased reinforcing tape in a thin coat of joint filler applied 2" wide at each side of corner. Apply cover coat as specified for bevelled joints) to just one side of joint, and when dry, apply skim coat to other side.
- .7 At External Corners: Fill to nose of corner bead with joint filler and topping cement as specified for bevelled joints.
- .8 At casing beads: As specified for bevelled joints.
- .9 At Board Fasteners: Fill holes and depressions with a two coat application of joint filler.

.8 Caulking

- .1 Caulk between casing beads and other construction where junctions are exposed to view.
- .2 Caulk junctions between drywall fire separations and projections, and other construction to ensure that integrity of fire rating is maintained. Ensure that caulked joints provide a continuous seal and that they are caulked before other Work encloses them.
- .3 Clean joints, prime and install sealants in accordance with the requirements of Section "07 90 00 Joint Protection".

.9 Bracing:

- .1 Non-Full Height walls require lateral bracing every 6'-0" to 8'-0".
- .2 Corner braces and/or angle braces up to roof / floor structure on both sides of walls are required.
- .3 Securing top track only to the underside of an acoustic tile T-bar ceiling is not permitted. Lateral bracing is still required for walls as noted above, however, connection of top track to the framing for a suspended drywall ceiling is permitted.

.10 Openings:

- .1 All openings in fire separations require double studs on both sides.
- .2 Refer to the fire damper installation documents for framing requirements around dampers.

3.2 **INSTALLATION (CONT'D)**

- .3 In non-fire separations, for all openings, provide double studs on both sides.
- .4 Openings up to 4 feet - Track only lintel is acceptable, except in a fire separation use a double track lintel.

3.3 **CONSTRUCTION OF SOUND ATTENUATED PARTITIONS**

- .1 Execute as follows for all gypsum board wall construction:
 - .1 Install sound attenuation batts.
 - .2 A 1/8" continuous bead of acoustical sealant around perimeter of wall at web of top and bottom tracks and end studs. Lay gypsum board into position forcing caulking bead to fill space between gypsum board and structure.
 - .3 Seal full perimeter for cut-outs around electrical boxes, pipes and ducts and perimeter convactor pipes with acoustical sealant.

3.4 **CONSTRUCTION OF FIRE RATED PARTITIONS AND CEILINGS**

- .1 Construct all gypsum board partitions and ceilings identified to require a fire resistance rating in strict conformance with U.L.C. Designs or approved alternate.
- .2 Fit assemblies tightly to enclosing constructions to maintain integrity of the separations.

3.5 **TILE BACKER BOARD APPLICATIONS**

- .1 Studs and retaining t's are to be spaced at 16" o.c. max. deflection = 1/360 of span.
- .2 Install 1/2" tile backer board in all areas and washrooms to receive ceramic tiling. Install board with the grey face out away from framing. Boards can be set parallel or perpendicular to the wall framing.
- .3 To extend 6'-0" F.F.L. continuous around perimeter in Washrooms, full height in Showers.
- .4 Fasten at 150mm (6") o.c. and a min. of 12.7mm (1/2") from edges. Drive fasteners flush to coated surface of board.
- .5 Joint Treatment: Butt ends and edges snugly and fit tight around all cut-outs and adjacent surfaces. Reinforce all joints with a 50mm (2") wide 10 x 10 coated glass mesh tape embedded in the adhesive to be used by the tile installer.
- .6 Follow the manufacturers literature and instructions to ensure compliance with the limited warranty. If any part of these instructions are in conflict with the contract documents request clarification from the architect.

3.6 **JANITOR ROOM CONSTRUCTION**

- .1 Wrap waterproof membrane under stud and track and up wall to protect steel from corrosion from incidental water exposure.
- .2 Install 1200 mm (48") high cement board base around perimeter of room. Remainder of wall to be constructed of water-resistant gypsum board.

3.7 **ADJUSTMENT & CLEANING**

- .1 Remove droppings and excess of joint compound from Work of others, and from Work of this Section, before it sets.
- .2 Make good to cut-outs for services and other Work, fill in defective joints, holes and other depressions with joint compound.
- .3 Make good defective work, and ensure that surfaces are smooth, evenly textured and within specified tolerances to receive finish treatment.
- .4 Clean off beads, casings and other metal trim, and leave all surfaces ready for specified finishes.

END OF SECTION

DIVISION 09 - FINISHES

PART 1 - GENERAL

1.1 CONTRACT DOCUMENTS

- .1 The Instructions to Bidders, the General Conditions of CCDC 2 - 2020, Supplementary Conditions and all Sections of Division 01 apply to and form part of this section of the specification.

1.2 RELATED WORK SPECIFIED ELSEWHERE

- .1 Gypsum Board Assemblies Section 09 21 16

1.3 REFERENCE STANDARDS

- .1 Do tile work in accordance with Installation Manual 200 Ceramic Tile, produced by the Terrazzo, Tile and Marble Association of Canada (T.T.M.A.C.).

1.4 SUBMITTALS

- .1 Submit 2 random samples of each colour of ceramic tile used on this project; clearly identify with manufacturer's name, colour number and project number. Do not proceed with work until samples have been approved by Consultant.
- .2 Mount tile on ½" plywood 12" x 12" complete with grout colour to represent project installation.

1.5 PROTECTION

- .1 Protect Work of this Section against damage by other trades for minimum 72 hours after application by prohibiting passage of traffic over tile.
- .2 To prevent soiling or damage to finish flooring where pedestrian traffic occurs after the flooring has been installed, install and maintain 0.152mm polyethylene membrane or reinforced kraft paper temporary protection, secured in place and with joints sealed by reinforced pressure sensitive tape.
- .3 Install plywood panels of minimum 6mm thickness over completed finish flooring materials on which further construction work is performed or delivery of products is made, or both. Seal joints between panels with reinforced pressure sensitive tape.

1.6 QUALIFICATION

- .1 Contractor to require membership in good standing with the TTMAC and must have 10 years experience in the Work of this Section.

1.6 QUALIFICATION (CONT'D)

- * .2 Subcontractor to submit a list of 5 previous jobs where he has performed similar work in scale and scope for review by the Consultant and Owner, representative of his workmanship.
- * .3 Subcontractor to provide documentation that he has required manpower for the scale of this job, to meet the construction schedule.

PART 2 - PRODUCTS

2.1 MATERIALS

- .1 Ceramic Floor Tile and Base: Lea Stone Series, Unglazed Porcelain tile, 12" x 24", Dark Grey Matte, Code:HV.LS.DGR.1224.MT by Olympia Tile. (CT-1)
- .2 Ceramic Floor Tile and Base: Quebec Series, Porcelain mosaic tile, 2" x 2", White Granite, Code: OD.QC.WHG.0202.FS by Olympia. (CT-2)
- .3 Ceramic Wall Tile: Colour and Dimension Series, Glazed wall tile, 4" x 16", Arctic White Bright, Code: QT.CD.ARW.0416.BR by Olympia. (CT-3)
- .4 Waterproofing Mortar : "Mapelastic 315" .
- .5 Cement: to CAN/CSA-A5-M77, colour to Consultant's selection.
- .6 Sand: to CAN/CSA A82.56-M1976.
- .7 Lime: to CAN/CSA A82.43-1950 (R1971).
- .8 Latex: formulated for use in cement mortar.
- .9 Water: potable and free of minerals which may discolour mortar.
- .10 Dry Set Mortar: to ANSI A118.1-1976 - Kerabond by Mapei.
- .11 Grouts:
 - .1 Keracolor S Grout by Mapei: For all floor tiles;
 - .2 Keracolor U Grout by Mapei: For all wall tiles
 - .3 All grouts to be sealed through.
- .12 Epoxy Mortar: "Flextile 100 Epoxy mortar or approved alternate.
- .13 Epoxy Grout: Kerapoxy or Kerapoxy CQ Grout by Mapei, or LATICRETE® SPECTRALOCK® PRO Premium Grout

2.1 MATERIALS (CONT'D)

- .14 Level Cure - LCB as manufactured by Master Builders Ltd.
- .15 Sealants - conform to Section 07 90 00.
NOTE: Colour selection for acid resistant grout shall match tile colour.
- .16 Sealers - as recommended by the Mortar Manufacturer. Wax for protection after sealer as recommended by the Mortar Manufacturer to meet pre-requirements of T.T.MAC #3000 series.
- .17 Special Tile Shapes - bullnosed, dado cap and coved bases.
- .18 Metal Edge and Transition Strips: Extruded aluminum edge strips, 3mm wide at top edge, with integral perforated anchoring leg for setting the strip into the setting material, height as required to suit tile, Brushed nickel anodized finish, as manufactured by Schluter Systems.
- .19 Decorative Edge Trim: Extruded aluminum decorative edge trim with integral perforated anchoring leg for setting the strip into the setting material, complete with pre-formed corners, Brushed nickel anodized finish, "Jolly Edge" as manufactured by Schluter Systems.
- .20 Expansion and Control Joints for Thin Set Applications: Extruded aluminum profiles joined by a soft CPE movement joint material, with integral perforated anchoring legs for setting the joint into the setting bed, height as required to suit the application, insert colour as selected by the Consultant, Brushed nickel anodized finish, by Schluter Systems.
- .21 Scratch & Levelling Coat: (by volume): One part Portland cement, 4 parts sand and latex additive where required by TTMAC Details. Premixed mortar may be used per manufacturers instructions. Adjust water volume depending on moisture content of sand to obtain the required consistency and workability.

PART 3 - EXECUTION

3.1 EXAMINATION

- .1 Examine surfaces prepared to receive installation of tiling. If discrepancies exist, report to Architect. Installation of any part of the Work will be construed as acceptance of such surfaces as being satisfactory.
- .2 Ensure compatibility of abrasives and fillers supplied under this Section and which will bear contact with substrate materials.

3.2 **INSTALLATION**

- .1 **Prior to installation of floor finishes, the General Contractor is to verify and confirm that there is Positive Drainage to all floor and trench drains without ponding. Failure to comply with this requirement will result in the removal and replacement of the floor slab at his cost.**
- .2 Do not install any floor finishes until the requirement in 3.2.1 has been met.
- .3 Regard recommendations, installation methods specified and illustrated in Terrazzo, Tile and marble Association Manual No. 22 - 1979, and applicable manufacturer's instructions as minimum acceptable standard, except as varied by this Specification.
- .4 Use tile setting method specified hereinafter.
- .5 Obtain Architect's approval of surfaces over which tile is to be installed before commencing tiling.
- .6 Place tile snugly around piping, fixtures and other items built in or passing through tile work. Form external angles with round edge tile extending over edge of square edge adjacent tile. Internal angles shall be formed square, carrying 1 flat tile past edge of other.
- .7 Drill holes for fixing accessories of other trades.
- .8 Finish surfaces flat and level or sloped and graded as required.
- .9 Provide strings, caps, coves, corners, angles and other moulded pieces to suit requirements of job. Ensure that striping and joints are in alignment.
- .10 Lay out borders and defined lines, wherever they occur, prior to setting of adjacent tiles. Keep inner edges of borders against fields or wall panels straight.
- .11 Cut tiles to conform to irregularities in wall lines and vertical planes along outer edges. Smooth cut edges with carborundum block or by other means to provide clean straight edges.
- .12 Make joints of tiles 3 mm (1/8") in width. Point joints with specified mortar or grout. Remove strings and wedges used for jointing and bracing prior to mortar or grouting.
- .13 Re-point joints after cleaning to eliminate imperfections. Avoid scratching tile surfaces.
- .14 Finished tile to be clean and free of tiles which are pitted, chipped, cracked or scratched.
- .15 Apply by steel trowel level cure where required to build up existing concrete floors to elevations as noted on the Drawings or as directed by the Consultant or Owner.
- .16 Install expansion joints at maximum 20'-0" o.c. in both directions.

3.2 **INSTALLATION (CONT'D)**

- .17 All floor and wall tiles to be installed with acid resistant grout and waterproof mortar.
- .18 All grouts are to match colours in Schedules on Specification. All grouts to be sealed through.
- .19 Tile setting accessory installation
 - 1. Install solid metal edge strips at unprotected exposed edges of flooring and wall tiles.
 - 2. Install in continuous lengths, to level straight lines by pressing the perforated anchoring leg of the accessory solidly into the tile setting adhesive.
 - 3. Butt ends of units tightly together with hairline joints.
 - 4. Trowel an additional layer of tile setting material over the anchored leg of the accessory prior to placement of tiles.
 - 5. Set tile flush with top of setting accessory.
 - 6. Leave a 3mm joint between tile and tile setting accessory for the filling of grout.
 - 7. Install preformed corners, endcaps, and trim at changes in direction and at terminations.
 - 8. Mitred joints are not acceptable and will be rejected.
- .20 **Layout tile pattern on walls and floors such that pieces at either end are no smaller than 1/3 of a full tile.**

3.3 **MOVEMENT JOINTS**

- .1 Install expansion and control joints in strict compliance with the TTMAC detail 301 MJ.
- .2 Keep expansion and control joints free of setting materials.
- .3 In addition to the guidelines outlined in the TTMAC Specification Guide 09 30 00, provide movement joints over cold joints, saw cuts, at columns and at wall plane changes.

3.4 **CLEANING**

- .1 Clean tile work progressively as work proceeds. Do not allow mortar to stain absorbent tile.
- .2 Do not use acids for cleaning unless specifically recommended by the manufacturer.
- .3 Clean tile in accordance to tile manufacturer's recommendations by procedures and products certified with the T.T.M.A.C. "Maintenance Guide".

3.4 CLEANING (CONT'D)

- .4 Machine scrub unglazed tile.
- .5 Remove and replace defective, damaged, loose and unbonded tile, and point defective joints.

3.5 SEALING

- .1 Seal tiles subject to discolouration from grouts prior to grouting.
- .2 Seal tiles where recommended by manufacturer using procedures and products certified with the T.T.M.A.C.
- .3 Apply 2 coats of #3000 series sealer to unglazed floor tile after being cleaned and dried.

3.6 MAINTENANCE MATERIALS

- .1 Supply to owner min 4 boxes of each tile colour, pattern and type of material, labelled by colour and area of use.
- .2 Submit as per Specification Section 01 33 00.

DIVISION 09 - FINISHES

PART 1 - GENERAL

1.0 CONTRACT DOCUMENTS

- .1 The Instructions to Bidders, the General Conditions of CCDC 2 - 2020, Supplementary Conditions and all Sections of Division 01 apply to and form part of this section of the specification.

1.2 RELATED WORK SPECIFIED ELSEWHERE

- .1 Finish Carpentry Section 06 20 00

1.3 SUBMITTALS

- .1 Submit samples of all materials, colours, terms and adhesives.
- .2 Submit samples as per Section 01 33 00.

PART 2 - PRODUCT

2.1 MATERIALS

- .1 Primers and Adhesives - those recommended by tile and base manufacturer's and which will produce good and permanent waterproof bond between sub-floor and tile, and between wall surfaces and cove base. Adhesive when set must not leave ridges under the tile that will telegraph through the tile when subject to heavy loads. Adhesive to be **S 288** for general purpose dry areas or **S230 Epoxy** that must be used in Areas with exposure to frequent surface moisture and/or cooler temperatures, by Armstrong, or approved Alternate.
- .2 Luxury Vinyl Plank (L.V.P.) flooring.
 - .1 LVP – Expona Commercial Natural Brushed Oak, 4031, by Polyflor.
 - .2 Size: (2.5mm x 203mm x 1219mm)
 - .3 Finish: Non-fading extremely tough 0.30 mm wear layer with a UV topcoat
 - .4 Warranty: 10 Year Residential
 - .5 Adhesive: Armstrong S-288
 - .6 Base: To be later selected by Architect from standard colour range.
- .3 Rubber base: Tarkett / Johnsonite, 4" Traditional Rubber Wall Base, Cove (with Toe). To be Selected later by Architect.

2.1 MATERIALS (CONT'D)

- .4 Sealer - type approved by flooring manufacturer.
- .5 Wax - type approved by flooring manufacture. VCT/LVT to receive Min. five to seven coats of wax with the final coat to be burnished (As per Manufacturer's recommendation). Strip and wax for final cleaning.
- .6 Resilient Edge Transition Strips: Homogeneous vinyl or rubber composition, Tapered edge, by Johnsonite. Colour as selected later by the Architect.

PART 3 - EXECUTION

3.1 INSPECTION

- .1 Review all floor surfaces with Superintendent to ensure they are smooth and flat with a maximum variation of 3 mm in 3 m and are ready to receive work.
- .2 Check and if necessary, pay for testing of floor surfaces for evidence of carbonation, dusting, excessive moisture or other defects affecting bond of adhesive. Ascertain nature of curing and/or sealing compound use on concrete and its compatibility with flooring adhesive. Take all required remedial measures. Remove compounds if necessary, to ensure that adhesive bonds to concrete.
- .3 General Contractor to perform the RH (Relative Humidity) testing in accordance with the current ASTM standard (ASTM F2170-11), to confirm the floor slab is acceptable for installation of the VCT/LVT tile.
- .4 Beginning of installation means acceptance of existing substrate and site conditions.

3.2 INSTALLATION

- .1 General
 - .1 Do not start installation of resilient flooring until all other trades have completed their work and just prior to completion of building.
 - .2 Maintain temperature of 70 Deg F. for 48 hours before installation and 48 hours after.
 - .3 Arrange for controlled ventilation during this period to avoid high humidity and cold drafts.
- .2 Preparation
 - .1 On concrete floors, level depressions and cracks with non-shrinking latex joint filler. Report large cracks to Architect. Do not proceed until remedied. Prime surface with approved primer.

3.2 **INSTALLATION (CONT'D)**

.3 Application

- .1 Apply adhesive uniformly with an approved notch-tooth spreader at the recommended rate. Do not spread more adhesive than can be covered before initial set takes place.
- .2 Lay out tiles so that joints parallel to axis of room are continuous.
- .3 Lay out each area to be tiled symmetrically from its axis. Adjust starting line so width of border tile shall be at least one half tile. Distribute tiles having varying tones or texture evenly over entire floor area to avoid patches or streaks, and to produce homogeneous blend. Reject tiles having undue variations in colour, shade and texture. Make tile joints flush, uniform, in straight lines and as inconspicuous as possible. Lay tile so that directional patterns of tiles are parallel to each other, in a **staggered offset**.
- .4 Cut tile around excessively heavy or fixed objects.
- .5 Roll tile with 150 lbs. roller immediately after laying.
- .6 Lay tile so that it is flush with adjacent floor surfaces.
- .7 Install a full tile "Soldier Course" trim where V.C.T. abuts ceramic/quarry tile finishes - seal joint.
- .8 Where tile abuts a raised finished floor surface, provide a feathered ramp to marry two levels to produce an imperceptible level change (min 5'-0" for ½" difference).
- .9 Transition Epoxy Strip Ramp: "Ardex SD-F Feather Finish, self drying Cement Based Finishing Underlayment; "930 Two- Part Epoxy Compound" by "Johnsonite" or approved alternate.

.4 Application of Cove Bases

- .1 Fill cracks and level irregularities of surfaces to which base is to be applied with filler approved by adhesive manufacturer so as to provide solid backing over entire area behind base. Cement cove base to vertical surfaces so that gaps do not occur behind base, so that front lip of base cove bears firmly and uniformly on floor surface and so that good and permanent bond is produced between base and surface to which it is applied. For right angled external corners use preformed matching cove corner units. Make end joints flush with gap.
- .2 At wall ends and openings where ends of preformed corners come close together or touch or overlap, cut each corner unit equally so that a neat, inconspicuous joint is formed in middle of wall end or opening. A filled gap, if necessary, is not less than 1-1/2" wide and located in middle of wall or end of opening.
- .3 Use as long a piece as possible. Numerous short pieces will not be accepted.

3.2 INSTALLATION (CONT'D)

- .5 **Prior to installation of floor finishes, the General Contractor is to verify and confirm that there is Positive Drainage to all floor and trench drains without ponding. Failure to comply with this requirement will result in the removal and replacement of the floor slab at his cost.**

3.3 PROTECTION

- .1 To prevent soiling or damage to finish flooring where pedestrian traffic occurs after the flooring has been installed, install and maintain 0.152mm polyethylene membrane or reinforced kraft paper temporary protection, secured in place and with joints sealed by reinforced pressure sensitive tape.
- .2 Install plywood panels of minimum 6mm thickness over completed finish flooring materials on which further construction work is performed or delivery of products is made, or both. Seal joints between panels with reinforced pressure sensitive tape.

3.4 ADJUST AND CLEAN

- .1 Remove surplus adhesive from face of tiles as work progresses. Upon completion of work remove all marking and heel scuffs.
- .2 Clean, seal, wax and polish immediately after installation, in accordance with the manufacturer's recommendations.
- .3 Clean and wax again, the day prior to turnover to Owner.

3.5 MAINTENANCE MATERIALS

- .1 Supply to owner min 4 boxes of each colour, pattern and type of flooring material labelled by colour and area of use.
- .2 Submit as per Specification Section 01 33 00.

3.6 GUARANTEE

- .1 Provide the Owner with a written Guarantee covering all work in this section. Guarantee shall state that any defects in materials or workmanship which occur within a period of one (1) year from the date of acceptance of the building will be corrected/ replaced at Owner's discretion and at no additional cost.

END OF SECTION

DIVISION 09 - FINISHES

PART 1 – GENERAL

1.0 CONTRACT DOCUMENTS

- .1 The Instructions to Bidders, the General Conditions of CCDC 2 - 2020, Supplementary Conditions and all Sections of Division 01 apply to and form part of this section of the specification.

1.1 RELATED WORK SPECIFIED ELSEWHERE

- .1 Hollow Metal Doors and Frames Section 08 11 13
- .2 Gypsum Board Assemblies Section 09 21 16
- .3 Shop Priming Specified in Various Sections of the Specification
- .4 Factory Applied Paint Coatings Unless otherwise Specified
- .5 Mechanical Division 23 00 00
- .6 Electrical Division 26 00 00

1.2 SCOPE OF WORK

- .1 With exceptions specified above or specifically called for in other Sections of the Specification, all paintwork is included in the scope of this Section of the Specification. Colours will be specified at a later date by the Owner, allow for accent walls of primary colour to some areas, **maximum 12 colours.** Refer to Finish Plans & Details, Room Finish Schedule on Drawings &/or in Specification.
- .2 In locations where Drawings do not call for paint or similar finish on walls and/or ceilings, the intent of this Specification is that all wood and metal surfaces normally painted or similarly finished shall be so treated.
- .3 Paint exposed drywall and the like in locations where finish is not otherwise specified or noted. Do not paint such surfaces in mechanical shafts, unless specifically noted.
- .4 In locations where Drawings do not call for paint or similar finish on walls and/or ceilings, the intent of this Specification is that items such as new work or patched work, including miscellaneous metal work, shall be painted.
- .5 Patched work on walls or ceilings shall require a complete surface to be painted, back to a proper cut off point, i.e. corner or change in direction from floor to ceiling for walls and wall to wall for ceilings.

1.2 SCOPE OF WORK (CONT'D)

- .6 Paint all perimeter and interior walls floor to ceiling prior to the installation of equipment, millwork or other devices.
- .7 Paint new pipes, conduit, ducts and related thermal insulation and all prime painted mechanical and electrical equipment and supports located in mechanical and electrical storage and maintenance rooms in all locations where Drawings call for paint or similar finish on walls and/or ceilings.
- .8 Do not paint pipe, conduit, ducts, insulation and the like where concealed above ceilings or in service shafts.
- .9 Items exposed on the roof shall be shop painted. Refinish all new and existing H.V.A.C. units to selected colours where noted on Elevation, Plans and Schedules.
- .10 Make good paint finish on shop coated work where damaged.
- .11 Paint edges and all faces of doors where primed for paint supplied.
- .12 Paint all exposed suspension rods and hanging devices located in an exposed ceiling being painted.
- .13 Interior of ducts and diffusers visible from exterior on room side.
- .14 Repaint existing surfaces after approved preparation, includes all previously painted surfaces, i.e. walls, doors, frames, handrails, closets, etc.
- .15 Paint all exposed roof deck, steel joists, beams, conduits, sprinklers and plumbing lines and all other items in ceiling area where left exposed.

NOTE: Care is to be taken NOT to paint sensitive services/devices.

- .16 Finish all wood where exposed to view.
- .17 Paint electrical baseboard heaters/force flow units.
- .18 Paint all exposed steel columns and R.W.L./piping where not concealed.
- .19 Prepare, prime & paint concrete floors.
- .20 Prepare, prime and paint all exterior steel, concrete & masonry where shown on the Exterior Building Elevations. Refer to specific Preparation procedures noted by the Paint Companies Instructions.

1.3 REFERENCE STANDARDS

- .1 Do painting and finishing to CGSB-85-GP series standards including Appendix A and to material manufacturer's instructions and/or to Canadian Painting Contractor's Association except where specifically specified otherwise.

1.4 ENVIRONMENT

- .1 Do not commence interior painting in temperatures below 15 deg. C or when adequately controlled ventilation is not available. Do not paint exterior surfaces during cold, windy, rainy, dusty, foggy or frosty weather when temperature is likely to drop below 5 deg. C.
- .2 Test for moisture content in each location immediately before commencing application of paint. Do not apply paint on surfaces where moisture content exceeds 14%. Promptly notify Architect if such conditions are encountered.
- .3 Provide approved equipment for testing moisture content of surfaces to receive paint finishes and have available on Site at all times during Work of this Section.

1.5 SUBMITTALS

- .1 Submit triplicate samples 12" x 8" (300 mm x 200 mm) panels of each type of paint finish specified. Panels shall be of same material as that on which sample coatings are to be applied in the field where possible. Identify each sample as to job, name of paint manufacturer, finish, colour, name and number, sheen and gloss units and name of Contractor.
- .2 Submit in accordance to Section 01 33 00.

1.6 MAINTENANCE MATERIALS

- .1 Provide one sealed can, 4 litre capacity, of each product in each colour used in the Work for Owner's use in maintenance Work.
- .2 Container to be new fully labelled with manufacturer's name, type of paint, and colour.

1.7 STORAGE

- .1 Store paint and painter's materials in locations approved by the Architect.
- .2 Provide CO2 fire extinguisher minimum 20 lbs. (9 kg.) capacity in paint storage area.

1.8 SIGNS

- .1 Provide legible signs throughout the Work reading "WET PAINT" in prominent positions during painting and while paint is drying.
- .2 Use 75 mm (3 inch) high letters on white card or board.

1.9 TEMPORARY COVERS AND PROTECTION

- .1 Protect floors and other surfaces with temporary covers such as dust sheets, polyethylene film or tarpaulins. All to Architect's approval.
- .2 Mask identification plates occurring on equipment, switch boxes, and fire rating labels, etc. which require painting.
- .3 Protect, remove and replace hardware, accessories, lighting fixtures, and similar items as required except primed for paint door closures which shall be painted. Light switches and electrical communication outlet plates to be removed and reinstalled on completion of paint application.
- .4 Keep oily rags, waste and other similar combustible materials in closed metal containers; take every precaution to avoid spontaneous combustion, remove waste and combustible materials daily.
- .5 Clean surfaces soiled by spillage of paint, paint spattering and the like. If such cleaning operations damage the surface, repair and replace damaged work at no cost to the Owner.

1.10 RETOUCHING

- .1 Do all retouching, etc. to ensure that the building may be handed over to the Owner in perfect condition, free of spatter, fingerprints, rust, watermarks, scratches, blemishes of other disfiguration.
- .2 After fully decorating and retouching a room or other area, notify Architect. After inspection and final approval by Architect post sign 'DECORATING COMPLETE - NO ADMITTANCE WITHOUT PERMISSION'.

1.11 TEST AREA

- .1 A room or area in the building will be designated by the Architect as a test area to establish standard of workmanship, texture, gloss and coverage.
- .2 Prior to any painting being started, request a meeting between Architect, Contractor, Subcontractor and Material Manufacturer's Representative to review conditions, surfaces, anticipated problems and to clarify quality of workmanship acceptable to Architect.
- .3 Apply finishes to each type of surface within room with correct material, coats, colour, texture and degree of gloss in sample area and have same approved prior to providing Work of this Section.
- .4 Retain test area until after completion of Work. Test area to be minimum standard for the Work.

1.11 TEST AREA (CONT'D)

- .5 Failure to comply with the above will be cause for Architect to request all Work previously painted to be repainted.

PART 2 - PRODUCTS

2.1 MATERIALS

- .1 Paint and finishing materials - highest grade, Acrylic Latex, stain resistance, easy to clean, first line quality provided by manufacturer who agrees to provide supervision service during painting operations. The following manufacturers are acceptable:

- .1 Benjamin Moore Company
- .2 Glidden Company, Division of S.C.C. (Canada) Ltd.
- .3 Para Paints Ltd.
- .4 Pratt & Lambert Inc.
- .5 Pittsburgh Paint
- .6 Sherwin Williams
- .7 Dulux

Or other approved manufacturer providing inspection service and proving same prior to bidding.

- .2 Paint Gloss Rating Description: Paint gloss shall be defined as the sheen rating of applied paint, in accordance with the following gloss level categories, as defined in the MPI Architectural Specification Manual:

- .1 Gloss Level G1: Matte or Flat Finish.
- .2 Gloss Level G2: Velvet Finish.
- .3 Gloss Level G3: Eggshell Finish.
- .4 Gloss Level G4: Satin Finish.
- .5 Gloss Level G5: Sem-Gloss Finish.
- .6 Gloss Level G6: Gloss Finish.
- .7 Gloss Level G7: High Gloss Finish.

2.1 **MATERIALS (CONT'D)**

- .3 Paints, enamels, fillers, primers, varnishes and stains- ready mixed products of one of the manufacturers listed herein. Substitutes will not be allowed.
- .4 Thinners, cleaners - type and brand recommended by the paint manufacturer.
- .5 Only products manufactured by paint manufacturer stated at time of submission of samples will be allowed on Site unless other materials specifically specified herein. No painting to be performed until paint manufacturer identified and acceptance received from the Architect.
- .6 Deliver materials to Site in original unbroken containers bearing brand and maker's name. The presence of any unauthorized material or containers for such, on Site shall be of sufficient cause for rejection of ALL paint materials on Site at that time.

PART 3 - EXECUTION

3.1 **GENERAL PREPARATION OF SURFACES**

NOTE: ALL NOTED SURFACES MAY NOT BE APPLICABLE TO THIS PROJECT.

- .1 Prepare surfaces in accordance with the following standards unless otherwise specified:
 - .1 Prepare wood surfaces to MPI Architectural Paint Specification Manual and Approved Product List as standards of reference for vinyl sealer over knots and resinous areas, wood paste filler for nail holes. Tint filler to match for stained woodwork.
 - .2 Touch up damaged spots of shop paint primer on steel MPI # 79 Primer, Alkyd Anti-Corrosion and MPI Architectural Paint Specification Manual Surface Preparation.
 - .3 Prepare galvanized steel and zinc coated surfaces to CGSB 85-GP-16. This includes wiped coated steel surfaces. Use top finish coat manufacturers recommended products and procedures for preparation.
 - .4 Prepare masonry and concrete surfaces to CGSB 85-GP-31. Refer to MPI Architectural Paint Specification Manual Surface Preparation and the Paint Manufacturers Recommended Instructions.
 - .5 Prepare wallboard surfaces to CGSB 85-GP-33. Fill minor cracks with plaster patching compound. Refer to MPI Architectural Paint Specification Manual Surface Preparation.
 - .6 Prepare concrete floors to CGSB 85-GP-32. Refer to MPI Architectural Paint Specification Manual Surface Preparation.

3.1 PREPARATION OF SURFACES (CONT'D)

- .7 Prepare copper piping and accessories to CGSB 85-GP-20. Refer to MPI Architectural Paint Specification Manual Surface Preparation.
- .8 Apply prime coat on wood scheduled for paint finish before installation.
- .9 Back prime wood scheduled for transparent finish. Do not prime surfaces scheduled for transparent finish.
- .10 The basic standards for preparing metal substrates and cleaning shall be to the Society for Protective Coatings (SSPC) and the National Association of Corrosion Engineers International (NACE) Standards SP1 to SP14, and as per the Manufacturers recommendations.

3.2 APPLICATION

- .1 In accordance with manufacturer's printed instructions and manufacturers Site representative.
- .2 With suitable, clean equipment in good condition.
- .3 Clean all structure, services, ducts, diffusers, destratification fans, prior to painting. Do not paint any dirty surface.
- .4 In dust-free suitable conditions on the surfaces free from machine, tool or sandpaper marks, insects, grease, or any other condition liable to impair finished work to prevent production or good results.
- .5 Even, uniform in sheen, colour and texture, free from brush or roller marks, well brushed or rolled in and free of crawls, runs, join marks or other defects.
- .6 Painting coats are intended to cover surfaces perfectly; if in painter's opinion, formula specified is inadequate to provide a first class finished surface, report to the Architect before commencing work. Surfaces imperfectly covered shall receive additional coats at no additional cost.
- .7 Use paint unadulterated. Use same brand of paint for primer, intermediate and finish coats. Factory mix all paints.
- .8 Paint finish shall be applied by roller except in the case of wood trim, door frames, base board and similar work of small surface area which shall be painted by brush. Do not use roller for applying finish other than paint.

3.2 APPLICATION (CONT'D)

- .9 Spray painting will not be permitted unless specifically approved in writing by the Architect in each instance. Architect may withdraw approval at any time and prohibit spray painting for reasons such as carelessness, poor masking or protection measures drifting paint fog, disturbance to other Trades or failure to obtain a dense, even, opaque finish. Spray painting shall be full double coat, i.e. at least two passes for each coat. Do not use spray or roller on wood or metal surfaces, brush only unless approved in writing by Architect.
- .10 Finish edges of doors with paint or stain treatment as required to match face of door. Seal hidden edges of wood doors with one coat of shellac and one coat gloss varnish or two coats paint. Repaint tops and edges of wood doors after fitting.
- .11 Even up stained woodwork in colour as required by nature of wood and as directed by Architect. Apply same finish on trim, fitments, cupboards and other protecting ledges as on surrounding work, disregard sight lines.
- .12 Carefully hand smooth and sandpaper wood between coats (including priming). Apply one coat sealer before applying first coat print filler to knots or sap blemishes on wood surfaces to receive paint or stain finish.
- .13 Remove rust, oil, grease and loose shop paint from metal work by brushing or with wire brushes and make good shop coat before proceeding with final finish. Feather out edges to make touch up patches inconspicuous.
- .14 After first coat, fill nail holes, splits and scratches, using putty coloured to match finish.
- .15 Clean castings with wire brush before application of first paint coat.
- .16 Clean galvanized metal surfaces thoroughly with xylol. Do not etch galvanized metal. Use zinc rich primer. This includes metal door frames and the like with wiped zinc coating.
- .17 Remove form oil or parting compounds from concrete surfaces. Use Xylol or approved compound.
- .18 Paint interior of pipe spaces, ducts, etc. visible through grilles or through linear metal ceilings in black matt finish.
- .19 Conform with Architect's colour schedule and exactly match approved samples.
- .20 Mechanical and Electrical Pipes, Ducts and Conduits:
 - .1 Commence Work when piping installation complete in the area concerned.
 - .2 Do not paint plated or other pre-finished surfaces, unless otherwise noted.
 - .3 Paint conduit in same colour as background paint.

3.2 APPLICATION (CONT'D)

- .4 Apply formula specified even though surface prime painted at shop prior to delivery. Touch up shop priming where damaged.
- .5 Use heat resistant epoxy paint on pipes and surfaces where operating surface temperature exceeds 65 degrees C.
- .6 Paint exposed pipes and ducts and their supports and related items in colours to suit colour coding adopted by Owner, to Architect's later instructions. Refer to Mechanical Division 20 for further instructions.
- .21 During the application of paint to the underside of exposed steel deck, structure and mechanical and electrical components this contractor is to ensure the provision of adequate lighting to enable a consistent, even and thorough coating.

3.3 REPAIRS

- .1 Cracks occurring in walls or ceilings requiring patching during "Warranty Period" shall be repainted in such a way that the patch is not visible at a distance of 3'-0".
- .2 If patch painting is not acceptable, repaint entire wall, or ceiling.
- .3 Patch and make good existing damaged masonry surfaces: Provide smooth, brush grade patching compound for cracks in masonry. Spot Prime: WL700GLSB - Masonry Patch And Seal Brush-Grade, Smooth.

3.4 FORMULAE

- .1 The finish called for is eggshell, semi-gloss or gloss may be ordered for specific applications at no additional charge. On drywall eggshell shall be mixed with flat to provide low sheen to hide imperfections to Architect's approval or method agreed between Architect and material manufacturer's representative.

.2 INTERIOR WORK

Drywall	1	Coat Latex primer
	2	Coats Latex paint (where paint noted). Gloss Level 2 (Velvet) Gloss Level 3 (Eggshell) Gloss Level 5 (Semi-Gloss)

Prime all walls whether paint scheduled at this time or not.

3.4 FORMULAE (CONT'D)

Concrete Block	1	Coat block filler. Apply at maximum coverage of 80 sq.ft. per gallon
	2	Coats Latex paint. Gloss Level 2 (Velvet) Gloss Level 3 (Eggshell) Gloss Level 5 (Semi-Gloss)
Cast-In-Place Concrete (not floors)	1	Coat alkali resistant primer.
	2	Coats Latex paint Gloss Level 2 (Velvet) Gloss Level 3 (Eggshell) Gloss Level 5 (Semi-Gloss)
Concrete Floors (Epoxy Finish)	1	Abrade surface to grit 60 roughness
	1	Coat application Amerlock-2 high performance epoxy coating
Concrete Floors (Enamel Paint Finish)	2	Coat application
Woodwork (Opaque Finish)	1	Coat wood primer
	2	Coats Latex trim enamel Gloss Level 5 (Semi-Gloss)
Woodwork (Natural Finish)	1	Coat paste-filler
	3	Coats varnish
	2	Coats varnish satin finish
Ferrous Metal	1	Coat metal primer
	2	Coats enamel
Shop Primed Ferrous Metal		Touch-up prime coat where damaged
	2	Coats enamel

3.4 **FORMULAE (CONT'D)**

Galvanized Metal	1	Coat zinc rich primer to touch up galvanized only
	1	Coat galvanized iron primer
	2	Coats enamel

Insulation on Pipes & Ducts	1	Coat standard latex primer/ sealer – reference
	2	Coat enamel

Mechanical Equipment	1	Coat alkyd enamel undercoat
	1	Coat enamel

Piping, conduit & ductwork (uncoated)	1	Coat metal primer
	1	Coat enamel, gloss

PVC primer for pipes	1	Primer: .09403429 - UMA BRAND WH 3.78L
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Surfaces behind grilles	2	Coats vinyl latex matt within 12" of grille black
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NOTE: Use heat resistant paint where required.

.3 **EXTERIOR WORK**

Concrete Block	1	Coat block filler. Apply at maximum coverage of 80 sq.ft. per gallon.
	2	Coats Latex paint. Latex - Gloss Level 1 (Flat) Gloss Level 3/4 (Low Sheen) Gloss Level 5 (Semi-Gloss)

Galvanized Steel	1	Coat zinc rich primer to touch up zinc coat only
	1	Coat Galvanized iron primer

DIVISION 10 - SPECIALITIES

PART 1 - GENERAL

1.0 CONTRACT DOCUMENTS

- .1 The Instructions to Bidders, the General Conditions of CCDC 2 - 2020, Supplementary Conditions and all Sections of Division 01 apply to and form part of this section of the specification.

1.1 DESCRIPTION

- .1 Work Included: To complete special items as shown or specified and summarized but not restricted to:

- .1 Maxi Sky 2 series Ceiling Lifter**

1.2 RELATED WORK SPECIFIED ELSEWHERE

- .1 Rough Carpentry Section 06 10 00
- .2 Gypsum Board Section 09 21 16
- .3 Painting - Finish painting Section 09 91 00

1.3 QUALITY ASSURANCE

- .1 Reference Standards: Reference standards quoted in this Section refer to:
 - .1 ASTM A525-75, Specification for Steel Sheet, Zinc-Coated (Galvanized) by the Hot-Dip Process, General Requirements.
 - .2 CGSB Specification 1-GP-109998C, Paint, Acid and Alkali Resistant Black.
 - .3 CGSB Specification 1-GP-121M, Coating, Vinyl, Pretreatment, for Metals (Vinyl Wash Primer).
 - .4 CSA Standard G164-9165, Hot Dip Galvanizing of Irregularly Shaped Articles.

1.4 SUBMITTALS

- .1 Submit shop drawings, samples and maintenance instructions for Work of this Section as specified for each specialty product.
- .2 Submit in accordance with specification Section 01 33 00.

1.5 **PRODUCT DELIVERY, STORAGE AND HANDLING**

- .1 Package or crate, and brace products to prevent distortion in shipment and handling. Label packages and crates and protect finish surfaces by sturdy wrappings.
- .2 Deliver products to location at building site designated by Contractor.

PART 2 - PRODUCTS

2.1 **SPECIALTY PRODUCTS**

- .1 Provide reinforcing, fastenings and anchorage required for building in of products.
- .2 Insulate between dissimilar metals, and metal and masonry materials to prevent electrolysis, with bituminous paint.
- .3 Prime Paint on Steel:

For finishing under Work of other Sections shall meet specifications 1-GP-40M for oil alkyd type structural steel primer, 1-GP-48 for steel marine primer, 1-GP-121 for vinyl wash primer, or 1-GP-132 for zinc chromate primer as applicable for specified finish treatments.
- .4 Specified materials are minimum acceptable quality. Manufacturer's standards exceeding specified quality will be accepted.

2.2 **LIST AND DESCRIPTION OF PRODUCTS**

.1 Maxi Sky 2 series Ceiling Lifter and Track

- .1 Maxi Sky2 Basic manufactured by Arjo Canada inc.
- .2 Refer to drawings for layout.
- .3 Provide drawings of mounting brackets and connections for support rails to walls, engineered by a certified Professional Engineer registered in Ontario.
- .4 Lifting capacity of 440 lbs.
- .5 Ceiling tracking system for permanent installation using the KWIKtrak system, c/w wall mounting brackets.

PART 3 – EXECUTION

3.1 PREPARATION

- .1 Verify substrate surfaces are solid, free from surface water, dust, oil, grease, projections and other foreign matter detrimental to performance.
- .2 Items to be built-in: Provide information and templates required for installation of work of this Section, and assist or supervise, or both, the setting of anchorage devices, and construction of other work incorporated with products specified in this Section in order that they function as intended.
- .3 Verify there is adequate supports and/or blocking in gypsum wall assemblies prior to installation of wall mounting items.

3.2 INSTALLATION: GENERAL

- .1 Install miscellaneous specialties level and securely and rigidly anchored to substrate in accordance with authorities having jurisdiction, reviewed shop drawings, and manufacturer's written instructions.
- .2 Isolate dissimilar metals and metal to concrete or masonry with 2 coats of bituminous paint.
- .3 After installation, adjust miscellaneous specialties in accordance with manufacturer's written instructions.
- .4 Install items plumb, straight and level to a tolerance of 1:500.
- .5 Securely fix items in place with concealed fasteners.

3.3 ADJUSTMENT AND CLEANING

- .1 Verify under Work of this Section that installed products function properly and adjust them accordingly to ensure satisfactory operation.
- .2 Refinish damaged or defective Work so that no variation in surface appearance is discernible. Refinish work at site only if approved.

END OF SECTION

DIVISION 10 - SPECIALITIES

PART 1 - GENERAL

1.0 CONTRACT DOCUMENTS

- .1 The Instructions to Bidders, the General Conditions of CCDC 2 - 2020, Supplementary Conditions and all Sections of Division 01 apply to and form part of this section of the specification.

1.1 WORK INCLUDED

- .1 Toilet and washroom accessories.
- .2 Attachment hardware.

1.2 WORK FURNISHED BUT INSTALLED UNDER OTHER SECTIONS

- .1 Furnish backing plate reinforcement to Section 06 10 00 wood blocking for installation.

1.3 RELATED WORK SPECIFIED ELSEWHERE

- .1 Wood: In wall framing for support of accessories. Section 06 10 00
- .2 Glazing (Mirrors) Section 08 80 00
- .3 Gypsum Board System: Section 09 21 16
- .4 Mechanical Division 21- 23
- .5 Electrical Division 25- 28

1.4 REFERENCES

- .1 ASTM A366 - Steel, Carbon, Sheet, Commercial Quality.
- .2 ASTM A167 - Stainless and Heat-Resisting Chromium-Nickel Steel Plate, Sheet and Strip.
- .3 ASTM A269 - Seamless and Welded Austenitic Stainless Steel Tubing for General Service.
- .4 ASTM B456 - Electro-deposited Coatings of Nickel/Chromium.
- .5 CSA G164M - Hot Dip Galvanizing of Irregularly Shaped Articles.

1.5 REGULATORY REQUIREMENTS

- .1 Conform to [Ontario Building Code](#) for installation work in conformance with Barrier Free Access.

1.7 PRODUCT DATA

- .1 Submit product data to requirements of [Section 01 33 00](#).
- .2 Provide product data on accessories describing size, finish, details of function, attachment methods.

1.8 **INSTALLATION INSTRUCTIONS**

- .1 Submit manufacturer's installation instructions to requirements of [Section 01 33 00](#).

1.9 **CO-ORDINATION**

- .1 Co-ordinate work of this Section with the placement of internal wall reinforcement and reinforcement of toilet partitions to receive anchor attachments.

PART 2 - PRODUCTS

2.1 **ACCEPTABLE MANUFACTURER'S**

- .1 Frost
- .2 Watrous
- .3 Bobrick
- .4 Or Approved Alternate

2.2 **MATERIALS**

- .1 Sheet Steel: ASTM A366.
- .2 Stainless Steel Sheet: ASTM A167, Type 304.
- .3 Tubing: ASTM A269, stainless steel.
- .4 Fasteners, Screws, and Bolts: Hot dip galvanized tamper-proof, security type.
- .5 Expansion Shields: Fibre, lead, or rubber as recommended by accessory manufacturer for component and substrate.

2.3 **FABRICATION**

- .1 Weld and grind smooth, joints of fabricated components.
- .2 Form exposed surfaces from single sheet of stock, free of joints.
- .3 Form surfaces flat without distortion. Maintain flat surfaces without scratches or dents.
- .4 Back paint components where contact is made with building finishes to prevent electrolysis.
- .5 Shop assemble components and package complete with anchor components for installation.
- .6 Provide steel anchor plates, adapters, and anchor components for installation.
- .7 Hot dip galvanize exposed and painted ferrous metal and fastening devices.

2.4 **FINISHES**

- .1 Galvanizing: CSA G164 to 380 g/sq m.
- .2 Shop Primed Ferrous Metals: Pre-treat and clean, spray apply one coat primer and bake.

2.4 **FINISHES (CONT'D)**

- .3 Enamel: Pre-treat to clean condition, apply one coat primer and minimum two coats epoxy electrostatic baked enamel.
- .4 Chrome/Nickel Plating: ASTM B456, Type SC2 Satin finish.
- .5 Stainless Steel: No. 4 satin lustre finish.

PART 3 - EXECUTION

3.1 **INSPECTION**

- .1 Verify the site conditions are ready to receive work and dimensions are as indicated on shop drawings instructed by the manufacturer.
- .2 Beginning of installation means acceptance of existing conditions substrate.

3.2 **PREPARATION**

- .1 Verify the site conditions are ready to receive work and dimensions are as indicated on shop drawings instructed by the manufacturer.
- .2 Deliver inserts and rough-in frames to site at appropriate time for building-in.
- .3 Provide templates and rough-in measurements as required.

3.3 **INSTALLATION**

- * .1 Verify exact location of accessories before installation.
- .2 Install fixtures, accessories and items in accordance with manufacturers' instruction.
- .3 Install plumb and level, securely and rigidly anchored to substrate.

3.4 **SCHEDULE**

- .1 Universal Washroom Accessories - All accessories will be stainless steel finish.
 - .1 Grab bars. Equal to:
 - .1 24" horizontal Grab Bars: Bobrick B-5806x24.99 (peened finish).
 - .2 30" Horizontal Grab Bars: Bobrick B-5806x30.99 (peened finish).
 - .3 Fold down Grab bar: Bobrick B-4998.99.
 - .4 30"x30" 'L' Shaped Grab Bars: Bobrick B-5898.99 (peened finish).
 - .2 Soap Dispenser – Flexo Products Ltd Vista Hygienic Push Soap Dispenser SD9352 or Flexo Products Ltd All Purpose Soap Dispenser R0710A.
 - .3 Paper Towel Dispenser – Flexo Products Ltd – Vista hygienic push paddle towel dispenser GP54338
 - .4 Toilet Paper Dispenser – Flexo Products Ltd. Jumbo Single Bathroom Tissue Dispenser RO166.

3.4 SCHEDULE (CONT'D)

- .5 Washroom signage will be supplied by the School Board and installed by the General Contractor.
- .6 Stainless Steel framed Mirror (Tilt Mirrors for B.F. Washroom). 1 per basin 18" x 36", equal to Bobrick B-293-1836 & B290-1836.
- .7 Stainless Steel, Surface Mounted Waste Receptacle: Model B9279 by Bobrick.
- .8 Sanitary Napkin Disposal Unit Equal to Bobrick B270.
- .9 Wall mounted vandal resistant hook: Bobrick B-983
- .10 Stainless Steel Shelf: Bobrick B-295 x 16".
- .11 Emergency call station. Refer to Electrical Drawings.
- .12 Emergency Sign:
 - .1 Emergency Sign: sign to contain the words "In the event of an emergency push emergency button and audible and visual signal will activate" in a Letters At Least 25 Mm High With 5 Mm Stroke. To Be Posted Above the Emergency Button.
 - .2 Refer to door schedule as this is part of the Camden Control Kit.
- .13 Electric Hand Dryer: Refer to Electrical Drawings for Details.

END OF SECTION

ARCHITECTURAL

- A-001 GENERAL NOTES, INDEX AND DOOR SCHEDULE
- A-002 OVERALL PLAN, CODE MATRIX & SCOPE OF WORK
- A-110 PARTIAL DEMOLITION AND RENOVATION PLANS
- A-111 PARTIAL FLOOR FINISH AND REFLECTIVE CEILING PLANS
- A-220 INTERIOR ELEVATIONS

STRUCTURAL

- S-100 STRUCTURAL NOTES & DETAILS

MECHANICAL

- M-01 KEY PLAN, SYMBOL LISTS & GENERAL NOTE
- M-02 UNIVERSAL W.R 101A - PLUMBING & SANITARY - EXISTING & DEMOLITION WORK
- M-03 UNIVERSAL W.R 101A - PLUMBING & SANITARY - NEW WORK
- M-04 UNIVERSAL W.R 101A LAYOUT - EXISTING & NEW WORK

ELECTRICAL

- E-01 SYMBOL LISTS & GENERAL NOTE
- E-02 UNIVERSAL WASHROOM 101A - POWER



ISSUED FOR TENDER

FLORENCE MEARES PUBLIC SCHOOL WASHROOM RENOVATIONS

2102 BERWICK DRIVE,
BURLINGTON, ONTARIO



ISSUED FOR TENDER

FLORENCE MEARES P.S.
WASHROOM RENOVATIONS

PROJECT NO. 23-038

APRIL 2024

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04	ISSUED FOR TENDER	2024.04.11
03	RE-ISSUED FOR PERMIT	2024.04.04
02	RE-ISSUED FOR PERMIT	2024.02.02
01	ISSUED FOR PERMIT TENDER	2023.07.27
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	print date	2024.04.04
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project
UNIVERSAL WASHROOM UPGRADES AT FLORENCE MEARES PUBLIC SCHOOL
2102 BERWICK DRIVE BURLINGTON ONTARIO

drawing title
GENERAL NOTES, INDEX AND DOOR SCHEDULE

reference
project no. 23-038 client reference number
sheet no.

A - 001 04

PROJECT TEAM

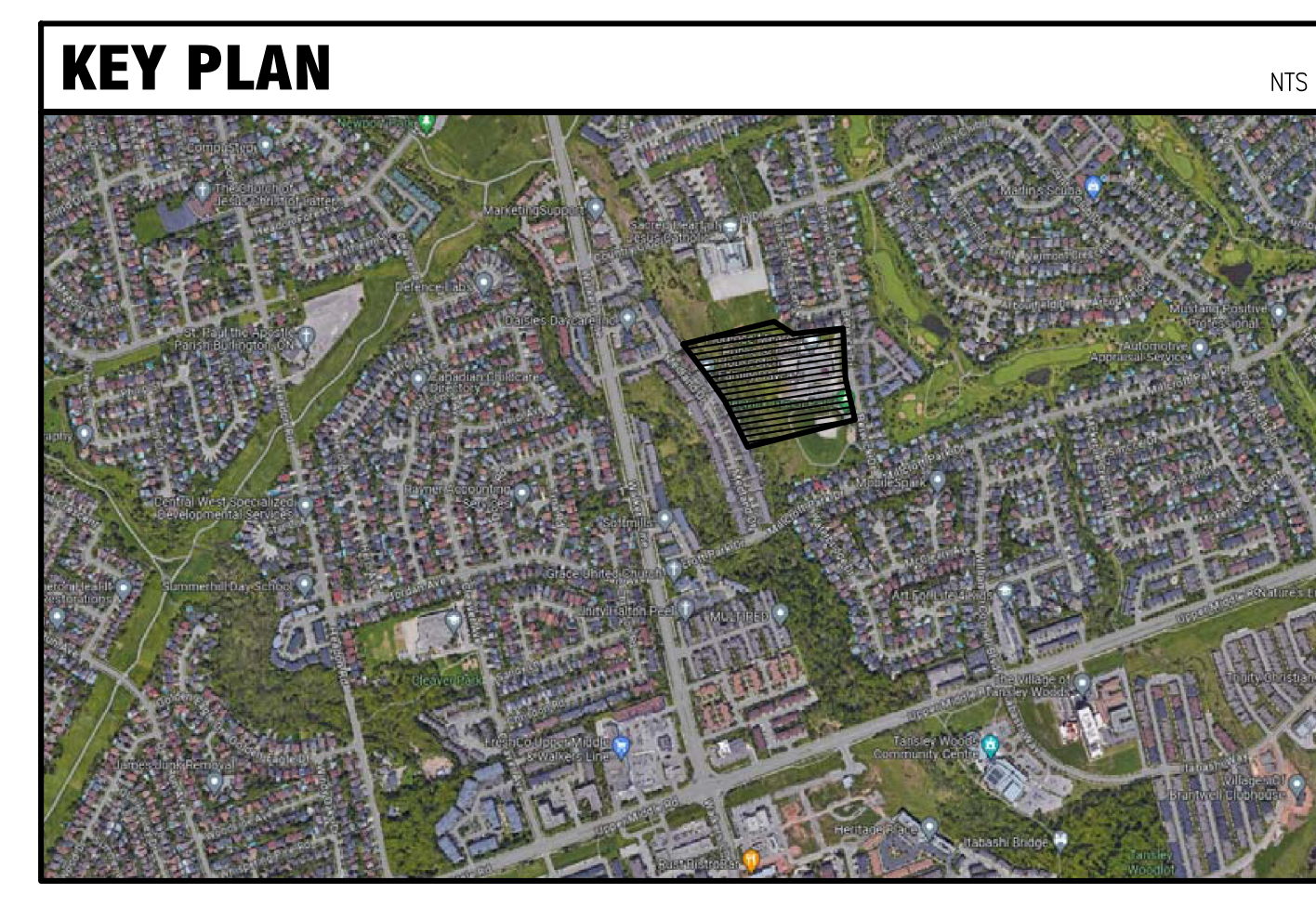
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ABBREVIATIONS

A/C TILE -	ACOUSTIC TILE	G.C. -	GENERAL CONTRACTOR	PLYWD. -	PLYWOOD
ADJ. -	ADJUSTABLE	GLAZ. -	GLAZING	PREFIN. -	PRE-FINISHED
A.H.J. -	AUTHORITY HAVING JURISDICTION	OSB. -	OSYUM WALL BOARD	RD. -	ROOF DRAIN
B.L.K. -	BARRIER FREE	GA. -	GAGE	REQ'D. -	REQUIRED
BLK. -	BLOCK	H.M. -	HOLLOW METAL	REINF. -	REINFORCED
BD. -	BOARD	HD/SLR -	HARDENER & SEALER	SIM. -	SIMILAR
BLDG. -	BUILDING	HORIZ. -	HORIZONTAL, HORIZONTALLY	SS. -	STAINLESS STEEL
CLG. -	CEILING	HT. -	HEIGHT	STL. -	STEEL
CT. -	CERAMIC TILE	INCL. -	INCLUDING	STRUCT'L. -	STRUCTURAL
c/w -	COMPLETE WITH	JT. -	JOINT	SUSP. -	SUSPENDED
COORD. -	COORDINATE	MAX. -	MAXIMUM	T.O.S. -	TOP OF SLAB
DEMO. -	DEMOLISH, DEMOLITION	MECH. -	MECHANICAL	TYP. -	TYPICAL
DN. -	DOWN	MIN. -	MINIMUM	u/s -	UNDERSIDE
DWG. -	DRAWING	MTD. -	MOUNTED	UN.O. -	UNLESS NOTED OTHERWISE
EA. -	EACH	MTG. -	MOUNTING	V.B. -	VAPOUR BARRIER
ELECT. -	ELECTRICAL	MTL. -	METAL	V.C.T. -	VINYL COMPOSITION TILE
EQ. -	EQUIVALENT, OR EQUAL	MEZZ. -	MEZZANINE	VERT. -	VERTICAL, VERTICALLY
EQUIPM. -	EQUIPMENT	N/A -	NOT APPLICABLE	W.W.F. -	WELDED WIRE FABRIC
EXIST. -	EXISTING	N.L.C. -	NOT IN CONTRACT	w/ -	WITH
E.J. -	EXPANSION JOINT	N.R. -	NOT REQUIRED	WD. -	WOOD
F.D. -	FLOOR DRAIN	O.C. -	ON CENTRE		
FFE. -	FINISHED FLOOR ELEVATION	O.D. -	OUTSIDE DIAMETER		
FIN. -	FINISHED	PTD. -	PARTIAL		
FLR. -	FLOOR	PART. -	PARTIAL		
GALV. -	GALVANIZED	P. LAM. -	PLASTIC LAMINATE		

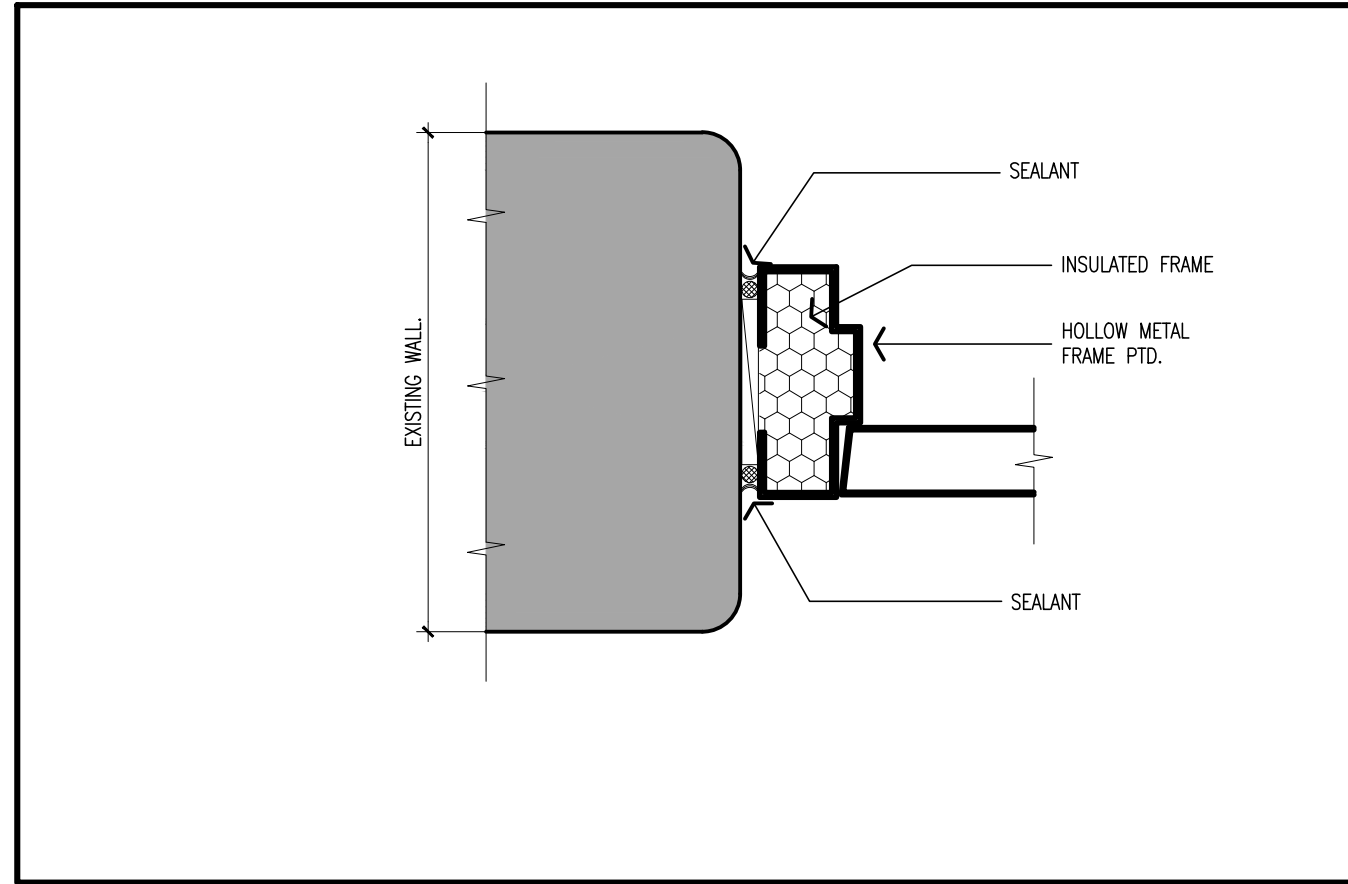


TYPICAL GRAPHIC SYMBOLS

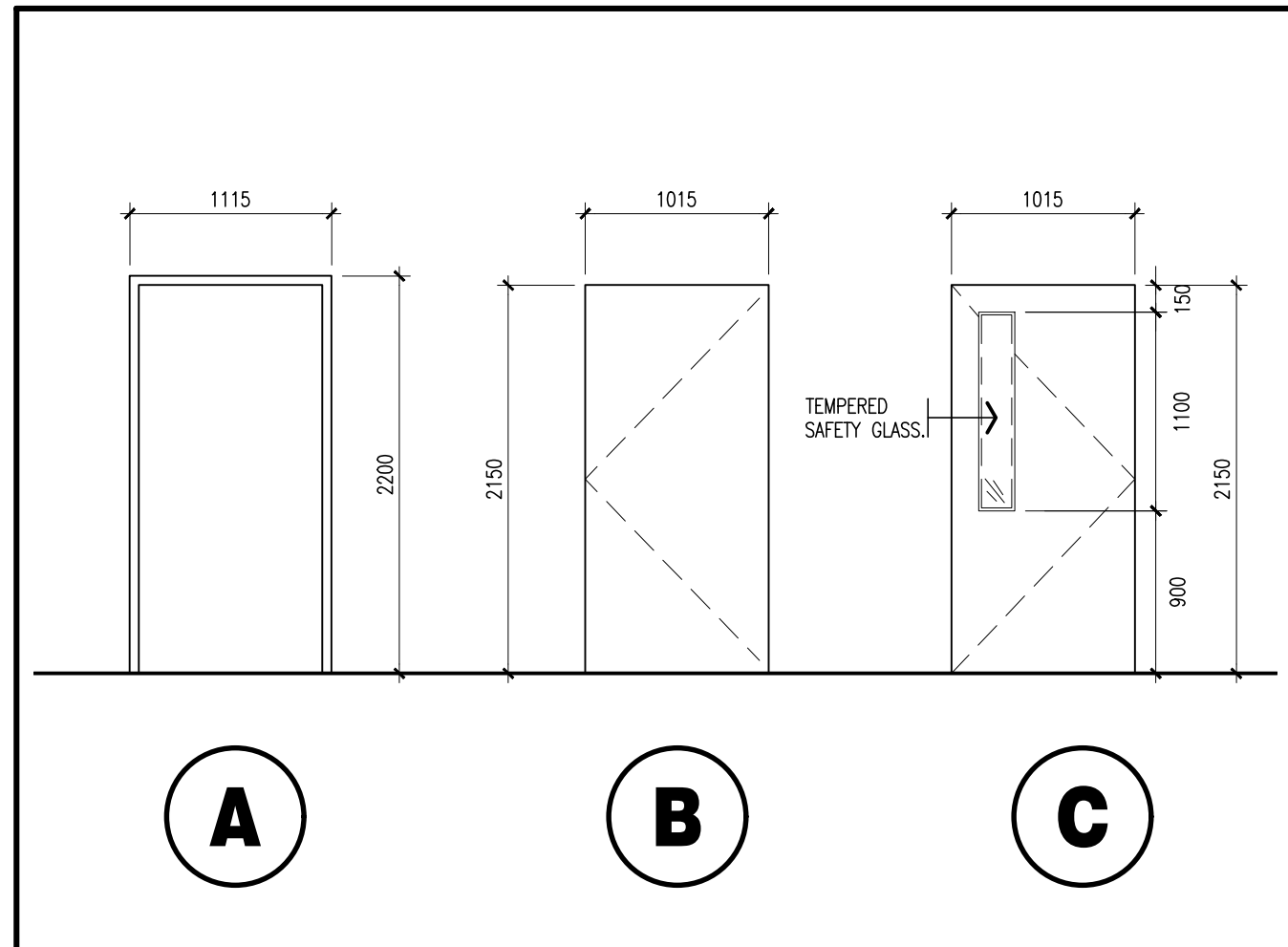
	SECTION REFERENCE		FIRE HOSE CABINET
	ELECTRICAL PANEL		FLOOR DRAIN or ROOF DRAIN
	BUILDING CROSS SECTION REFERENCE		RADIUS DIMENSION
	ANGLE DIMENSION		ELEVATION REFERENCE
	DETAIL NUMBER		ELEVATION DIRECTION
	DETAIL NUMBER		DETAIL REFERENCE BUBBLE
	DETAIL NUMBER		ELEVATION INDICATOR
	DETAIL NUMBER		CEILING ELEVATION INDICATOR FROM FINISH FLOOR LEVEL
	DETAIL NUMBER		ELEVATION NOTE TAG
	DETAIL NUMBER		GRID LINE BUBBLE
	DETAIL NUMBER		GRID LINE DIMENSION
	DETAIL NUMBER		DIMENSION LINE
	DETAIL NUMBER		REVISION CLOUD
	DETAIL NUMBER		REVISION NUMBER
	DETAIL NUMBER		DOOR & FRAME REFERENCE
	DETAIL NUMBER		DOOR NUMBER
	DETAIL NUMBER		ELEVATION NOTE TAG
	DETAIL NUMBER		SPOT ELEVATION
	DETAIL NUMBER		PLUMBING STACK
	DETAIL NUMBER		WINDOW NUMBER - REFER TO WINDOW SCHEDULE
	DETAIL NUMBER		SCREEN NUMBER - REFER TO SCREEN SCHEDULE
	DETAIL NUMBER		OVERHEAD ELEMENT
	DETAIL NUMBER		VAPOUR BARRIER
	DETAIL NUMBER		AIR BARRIER

- GENERAL NOTES**
- CONTRACTOR MUST VERIFY ALL DIMENSIONS AND BE RESPONSIBLE FOR SAME. REPORT ANY ERRORS OR OMISSIONS TO THE ARCHITECT IN WRITING PRIOR TO COMMENCING WORK. PRINTS ARE NOT TO BE SCALED.
 - THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL OTHER ARCHITECTURAL, MECHANICAL & ELECTRICAL DRAWINGS FOR A COMPLETE SCOPE OF WORK.
 - ALL PARTITIONS WHICH SHALL SUPPORT FIXTURES, MILLWORK ACCESSORIES & EQUIPMENT ARE TO BE REINFORCED WITH PLYWOOD BLOCKING AS REQUIRED TO PROVIDE RIGID & ADEQUATE SUPPORT. COORDINATE ALL LOCATIONS w/ OWNER AND O.B.C.
 - ALL WALLS ARE TO BE FRAMED FULL HEIGHT TO u/s OF EXISTING DECK, UNLESS SPECIFICALLY IDENTIFIED.
 - INFORMATION SHOWN HERE IN ARE BASED ON PREVIOUS RECORDS & DRAWINGS. THE ACCURACY OF THIS DATA HAS BEEN MODERATELY VERIFIED WITH FRAGMENTARY DIMENSIONS WHERE POSSIBLE.
 - THE GENERAL CONTRACTOR IS TO KEEP THE SITE CLEAN & FREE OF DEBRIS. ERECT DUST SCREENS AS REQUIRED. CLEAN SITE UPON COMPLETION OF WORK.
 - PATTERNS OF HATCHING ARE GRAPHIC REPRESENTATIONS ONLY. THEY DO NOT REPRESENT TILE PLACEMENT OR COURSING.
 - PRIOR TO INSTALLATION OF FLOOR FINISHES, THE GENERAL CONTRACTOR IS TO VERIFY & CONFIRM THAT THERE IS A POSITIVE DRAINAGE TO THE FLOOR DRAINS. FAILURE TO COMPLY WITH THIS REQUIREMENT WILL RESULT IN THE REMOVAL & REPLACEMENT OF FLOOR SLAB AT THE GENERAL CONTRACTOR'S COST.
 - IN AREAS WHERE CERAMIC WALL TILE IS TO BE INSTALLED ON A DRYWALL PARTITION WALL, INSTALL DENSHELD BACKER BOARD BEHIND ALL WALL TILES.
 - CONTRACTOR IS TO INFILL WITH GROUT AROUND ALL WALL PENETRATIONS FOR SERVICES ETC. IN CERAMIC TILE OR WITH COMPOUND IN GYPSUM BOARD.
 - GENERAL CONTRACTOR IS RESPONSIBLE FOR PROVIDING FLOORING PROTECTION UNTIL HANDED OVER TO SCHOOL BOARD. ALL FLOORING DAMAGED AS A RESULT OF PROTECTION NOT BEING PROVIDED WILL BE THE RESPONSIBILITY OF THE GENERAL CONTRACTOR TO REPAIR AND OR REPLACE AT THE GENERAL CONTRACTOR'S EXPENSE.

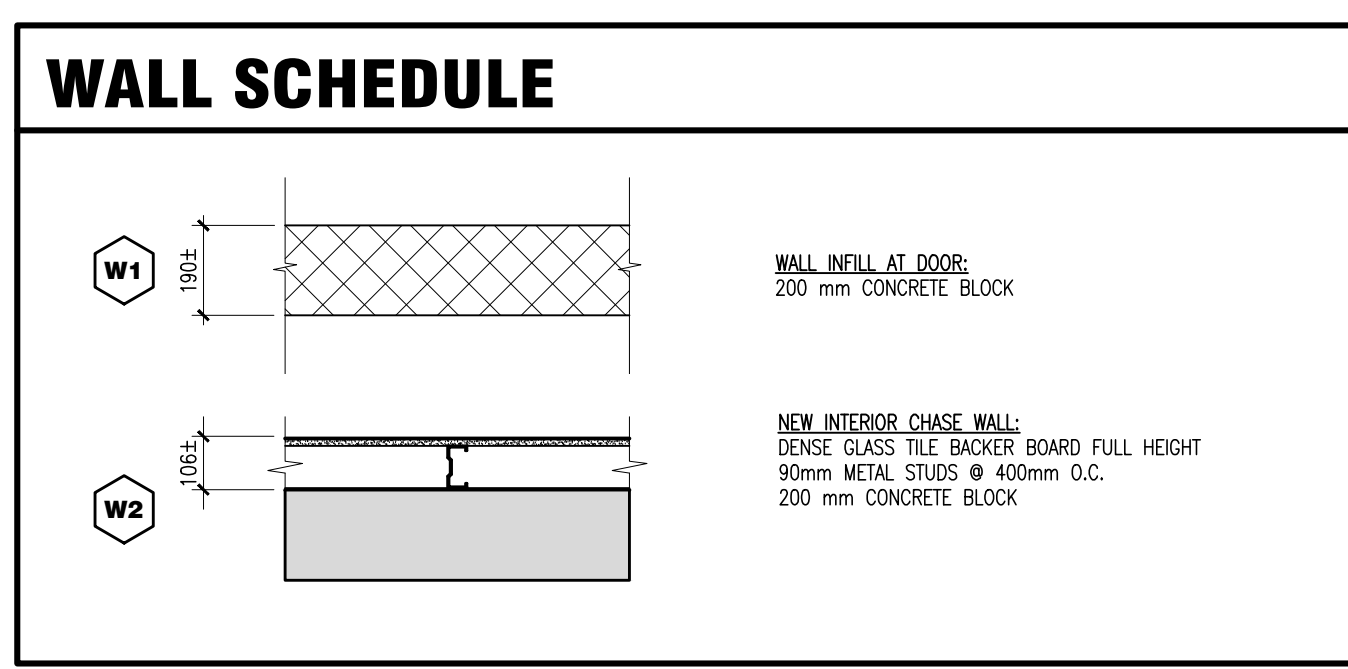
- DEMOLITION NOTES**
- PLANS ARE TO BE READ IN CONJUNCTION WITH ALL ARCHITECTURAL, MECHANICAL & ELECTRICAL DRAWINGS FOR A COMPLETE SCOPE OF WORK. IT IS THE GENERAL CONTRACTOR'S RESPONSIBILITY TO ENSURE ALL DEMOLITION REQUIRED BY OTHER TRADES IS PRICED & COORDINATED ACCORDINGLY.
 - ALL CONSTRUCTION MATERIALS TO BE REMOVED WILL BE THE RESPONSIBILITY OF THE GENERAL CONTRACTOR TO DISPOSE OF AT AN APPROVED DISPOSAL FACILITY, UNLESS OTHERWISE NOTED.
 - WHERE EXISTING SURFACES ARE DISTURBED DUE TO DEMOLITION OR ALTERATIONS WORK, SUCH SURFACES SHALL BE MADE GOOD TO MATCH EXISTING ADJACENT MATERIALS.
 - ANY ACOUSTIC CEILING TILES REMOVED DURING THE COURSE OF CONSTRUCTION TO ACCOMMODATE THE INSTALLATION OF NEW SERVICES OR DEMOLITION WORK SHALL BE SALVAGED, STORED, & REINSTALLED. IT IS THE GENERAL CONTRACTOR'S RESPONSIBILITY TO REPLACE ALL DAMAGED CEILING TILES WITH NEW, UNLESS OTHERWISE NOTED.
 - ALL MECHANICAL & ELECTRICAL SERVICES RELATED TO EQUIPMENT, MILLWORK, REMOVALS, RELOCATIONS & DEMOLITIONS SHALL BE DISCONNECTED & CAPPED BENEATH THE FINISHED FLOOR LEVEL. MAKE GOOD ALL SLAB OPENINGS AS REQUIRED & MAKE READY TO ACCEPT NEW FINISHES. REFER TO MECHANICAL AND ELECTRICAL DRAWINGS FOR A COMPLETE SCOPE OF WORK.
 - IT IS THE GENERAL CONTRACTORS RESPONSIBILITY TO REMOVE, STORE & RELOCATE / REINSTALL ALL FIXED IN PLACE MILLWORK, EQUIPMENT ETC. IN AREAS OF WORK. THE GENERAL CONTRACTOR WILL PATCH, REPAIR OR REPLACE ANY DAMAGED ITEMS, UNDER HIS RESPONSIBILITY AS A CONSEQUENCE OF IMPROPER STORAGE OR HANDLING, AT HIS OWN EXPENSE. THE GENERAL CONTRACTOR SHALL CO-ORDINATE WITH THE SCHOOL BOARD WHEN THE ITEMS, UNDER HIS RESPONSIBILITY, SHALL BE REINSTALLED AT WHICH TIME AN INSPECTION FOR DAMAGE SHALL BE CONDUCTED BY THE SCHOOL BOARD.
 - CRACKING IN FLOORING NOT RELATED TO TRANSITIONS OR SAWCUTS ARE TO BE CLEANED OUT, INFILLED & LEVELLED SMOOTH. GRIND SMOOTH, INFILL AND PATCH LOCATIONS OF SAWCUTS OR TRANSITION JOINTS & COLUMNS ISOLATION JOINTS TO MAKE TRANSITION IMPERCEPTIBLE IN PREPARATION OF INSTALLATION OF ALL NEW FLOORING. GENERAL CONTRACTOR TO SITE CONFIRM LOCATIONS.
 - LEVEL SLAB AREAS AFTER ANY REMOVALS WHICH MAY HAVE DIFFERENT ELEVATIONS.
 - WHERE FLOORING IS BEING REMOVED, GRIND SMOOTH EXISTING CONCRETE FLOOR SLAB TO REMOVE ANY REMNANT ADHESIVE, MORTAR ETC. & MAKE READY TO RECEIVE NEW FLOOR FINISHES.
 - ADJUST AS REQUIRED ALL DRAINS AND CLEAN-OUTS TO SUIT NEW FLOORING ELEVATION; NEATLY CUT FLOORING AROUND CLEAN-OUTS.
 - UPON REQUEST, THE FOLLOWING ITEMS ARE TO BE SALVAGED AND HANDED OVER TO THE SCHOOL BOARD: BLINDS, WALL COVERINGS, CHALKBOARDS, TACKBOARDS, SMARTBOARDS, APPLIANCES, COAT RACK SYSTEMS & DOOR HARDWARE. THE SCHOOL BOARD RESERVES THE RIGHT TO ADD TO THIS LIST ANY FURTHER ITEMS IT DEEMS NECESSARY, PRIOR TO AND DURING CONSTRUCTION ACTIVITIES.
 - "MAKE GOOD" SHALL BE DEFINED AS: WHEN THE WORK IS COMPLETED ALL FINISHES, MATERIALS & SURFACES ARE TO RESEMBLE A NEW INSTALLATION, THIS WILL INCLUDE INFILLING, PATCHING & SANDING. THIS WILL BE APPLIED TO ALL AREAS WHERE DEMOLITION OR REMOVAL OCCURS & TO ANY SURFACES DAMAGED THROUGH THE COURSE OF CONSTRUCTION. PATCHING IS THE REPAIRING OF ALL MATERIALS, SURFACES & FINISHES WHICH SHALL MATCH THE ADJACENT FINISHES & COLOURS UNLESS OTHERWISE NOTED. WHERE RE-PAINING IS REQUIRED, THE ENTIRE SURFACE PLAN SHALL ALSO BE PAINTED.
 - ALL PATCHING & REPAIRS OF SURFACES ARE NOT NECESSARILY SHOWN. PATCH & REPAIR ALL EXISTING SURFACES SCHEDULED TO RECEIVE NEW FINISHES SO THAT ALL SURFACES COMPLETELY RESEMBLE A NEW INSTALLATION.



1 DOOR JAMB DETAILS
scale: 1:5



2 DOOR AND FRAME ELEVATIONS
scale: 1:40



DOOR & HARDWARE SCHEDULE

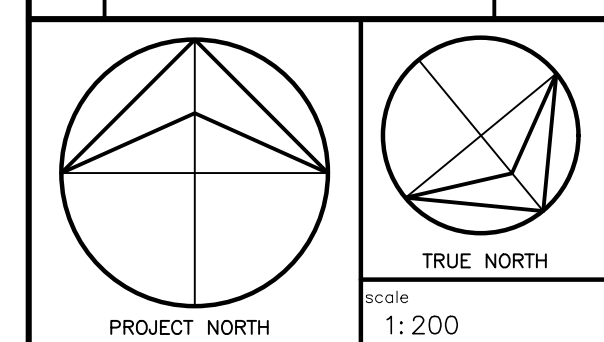
DOOR No.	ROOM No. (FROM/TO)	ROOM NAME (FROM/TO)	DOOR				FRAME										COMMENTS											
			QUANTITY	WIDTH	HEIGHT	THICKNESS	TYPE	MATERIALS	FINISH	GLAZING & GRILLES	TYPE	MATERIALS	FINISH	FIRE RATING DOOR & FRAME														
01	108/ 108A.	CLASSROOM 108/ UNIVERSAL WASHROOM.	SINGLE	1015mm	2150mm	45mm	B	ALUMINUM	SOLID CORE WOOD	POWDER COATED	PAINTED	OTHER	OTHER	CLEAR TEMPERED	ALUMINUM	INSULATED HOLLOW METAL	WOOD	ANODIZED	POWDER COATED	PAINTED	STAINED	OTHER	20 MINUTE RATING	45 MINUTE RATING	1.5 HOUR RATING	3 HOUR RATING		
02	102/ 130.	FOYER/ SERVERY.	SINGLE	1015mm	2150mm	45mm	C	ALUMINUM	HOLLOW METAL	POWDER COATED	PAINTED	OTHER	OTHER	CLEAR TEMPERED THERMAL CLEAR TEMPERED THERMAL GEORGIAN WIRE GLASS PLED-GLASS/ACRILIC ALUMINUM GRILLE	ALUMINUM	INSULATED HOLLOW METAL	HOLLOW METAL	WOOD	ANODIZED	POWDER COATED	PAINTED	STAINED	OTHER	20 MINUTE RATING	45 MINUTE RATING	1.5 HOUR RATING	3 HOUR RATING	FIRE LITE GLASS

- NOTES**
- SITE VERIFY ALL DIMENSIONS PRIOR TO MANUFACTURE.
 - VERIFY WITH FRAME SUPPLIER FOR ADDITIONAL SPACE REQUIRED FOR SHIMS & HARDWARE FOR INSTALLATIONS
 - GENERAL CONTRACTOR IS TO PROVIDE A HARDWARE SCHEDULE & CUT-SHEETS OF ALL HARDWARE TO ARCHITECT FOR APPROVAL PRIOR TO INSTALLATION ON SITE.

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No.	REVISIONS	date



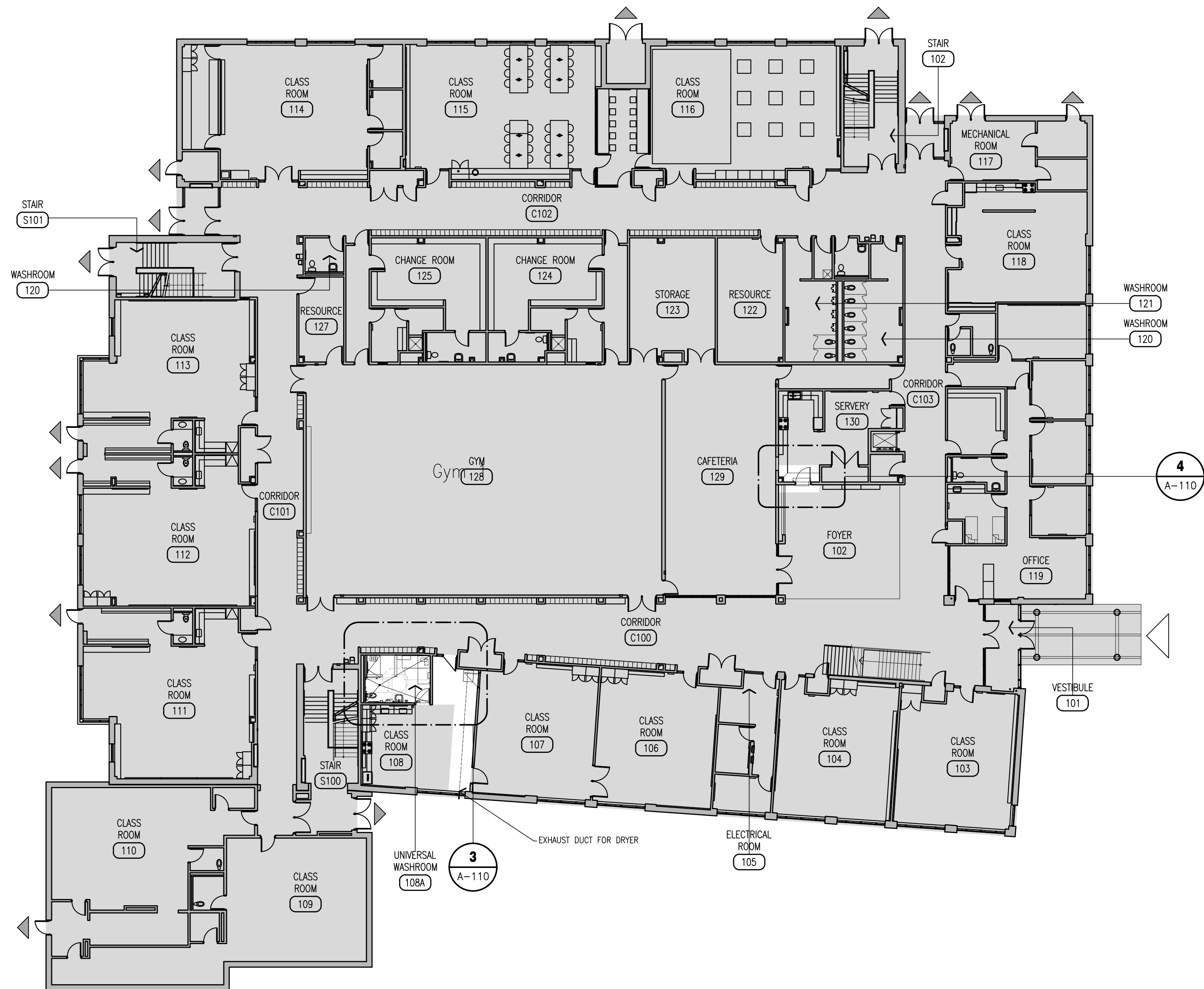
	drawn	CMO
	last worked on by	24.04.04 CMO
	checked	B.R.J.
	print date	2024.04.04



client
HALTON DISTRICT SCHOOL BOARD
2050 GUELPH AVE. BURLINGTON ONTARIO
project
UNIVERSAL WASHROOM UPGRADES AT FLORENCE MEARES PUBLIC SCHOOL
2102 BERWICK DRIVE BURLINGTON ONTARIO

drawing title
OVERALL PLAN, CODE MATRIX & SCOPE OF WORK

reference	project no. 23-038	client reference number
sheet no.	A - 002 04	



LEGEND

	AREA OF WORK NOT IN CONTRACT SCOPE.		MAIN ENTRANCE
	APPROXIMATE AREA OF WORK IN CONTRACT SCOPE.		EXIT

1 OVERALL FLOOR PLAN
scale: 1:200

ONTARIO BUILDING CODE SUMMARY

NAME OF PRACTICE: BJC architects + associates inc.	NAME OF PROJECT: RENOVATIONS TO FLORENCE MEARES PUBLIC SCHOOL	LOCATION: 2102 BERWICK DR., BURLINGTON, ONTARIO
ITEM	2012 ONTARIO BUILDING CODE	O.B.C. REFERENCE
1.0 PROJECT DESCRIPTION:	<input type="checkbox"/> NEW <input type="checkbox"/> ADDITION <input checked="" type="checkbox"/> ALTERATION <input type="checkbox"/> PART 3 <input type="checkbox"/> PART 9 <input checked="" type="checkbox"/> PART 11	
2.0 MAJOR OCCUPANCY:	GROUP A2 - ASSEMBLY OCCUPANCY	3.1.2.1.(1), & Table 3.1.2.1.
3.0 BUILDING AREA:	6,082 S.M. (65,470 S.F.)	1.4.1.2[A]
4.0 MEZZANINE(S):	NO MEZZANINES	3.2.1.6.
5.0 GROSS AREA:	3,461.45 S.M. (37,259.9 S.F.) 2,620.75 S.M. (28,210.4 S.F.) 6,082.20 S.M. (65,470.3 S.F.) - TOTAL	1.4.1.2[A]
6.0 No. OF STOREYS:	ABOVE GRADE - 2 STOREY(S). BELOW GRADE - 0 STOREY(S).	3.2.1.1. & 1.4.1.2.
12.0 SPRINKLER SYSTEM:	<input checked="" type="checkbox"/> ENTIRE BUILDING <input type="checkbox"/> IN LIEU OF ROOF RATING <input type="checkbox"/> ADDITION ONLY <input type="checkbox"/> NOT REQUIRED <input type="checkbox"/> BASEMENT ONLY	3.2.2.27. & 3.2.5.13

PART 11 - A2 OCCUPANCY

11.2 EXISTING BUILDING CLASSIFICATION:	DESCRIBE EXISTING USE: CONSTRUCTION INDEX: HAZARD INDEX:	A2 SCHOOL N/A - NO CHANGE IN MAJOR N/A - NO CHANGE IN MAJOR	11.2.1. Table 11.2.1.1. A-N
11.3 ALTERATIONS TO EXISTING BUILDING IS:	BASIC RENOVATION EXISTING RENOVATION	<input type="checkbox"/> <input type="checkbox"/>	11.3.3.1. 11.3.3.2.
11.4 REDUCTION IN PERFORMANCE LEVEL:	STRUCTURAL: BY INCREASE IN OCCUPANT LOAD: BY CHANGE OF MAJOR OCCUPANCY: PLUMBING: SEWAGE-SYSTEM:	<input checked="" type="checkbox"/> NO <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO <input type="checkbox"/> YES	11.4.2. 11.4.2.1. 11.4.2.2. 11.4.2.3. 11.4.2.4. 11.4.2.5.
11.5 COMPENSATING CONSTRUCTION:	STRUCTURAL: INCREASE IN OCCUPANT LOAD: CHANGE OF MAJOR OCCUPANCY: PLUMBING: SEWAGE-SYSTEM:	<input checked="" type="checkbox"/> NO <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO <input type="checkbox"/> YES	11.4.3. 11.4.3.2. 11.4.3.3. 11.4.3.4. 11.4.3.5. 11.4.3.6.
11.6 COMPLIANCE ALTERNATIVES PROPOSED:	NO YES	<input type="checkbox"/> <input type="checkbox"/>	11.5.1.
11.7 ALTERNATIVE MEASURES PROPOSED:	NO YES	<input type="checkbox"/> <input type="checkbox"/>	11.5.2.

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01	ISSUED FOR PERMIT TENDER	2023.07.27

No.	REVISIONS	date

PROJECT NORTH

TRUE NORTH

SCALE AS NOTED

ARCHITECTS ASSOCIATION OF ONTARIO

drawn by CMO

last worked on by 24.04.04 CMO

checked by B.R.J.

print date 2024.04.04



client
HALTON DISTRICT SCHOOL BOARD
2050 GUELPH AVE. BURLINGTON ONTARIO

project
UNIVERSAL WASHROOM UPGRADES AT FLORENCE MEARES PUBLIC SCHOOL
2102 BERWICK DRIVE BURLINGTON ONTARIO

drawing title
PARTIAL DEMOLITION AND RENOVATION PLANS

reference
project no. 23-038 client reference number
sheet no.

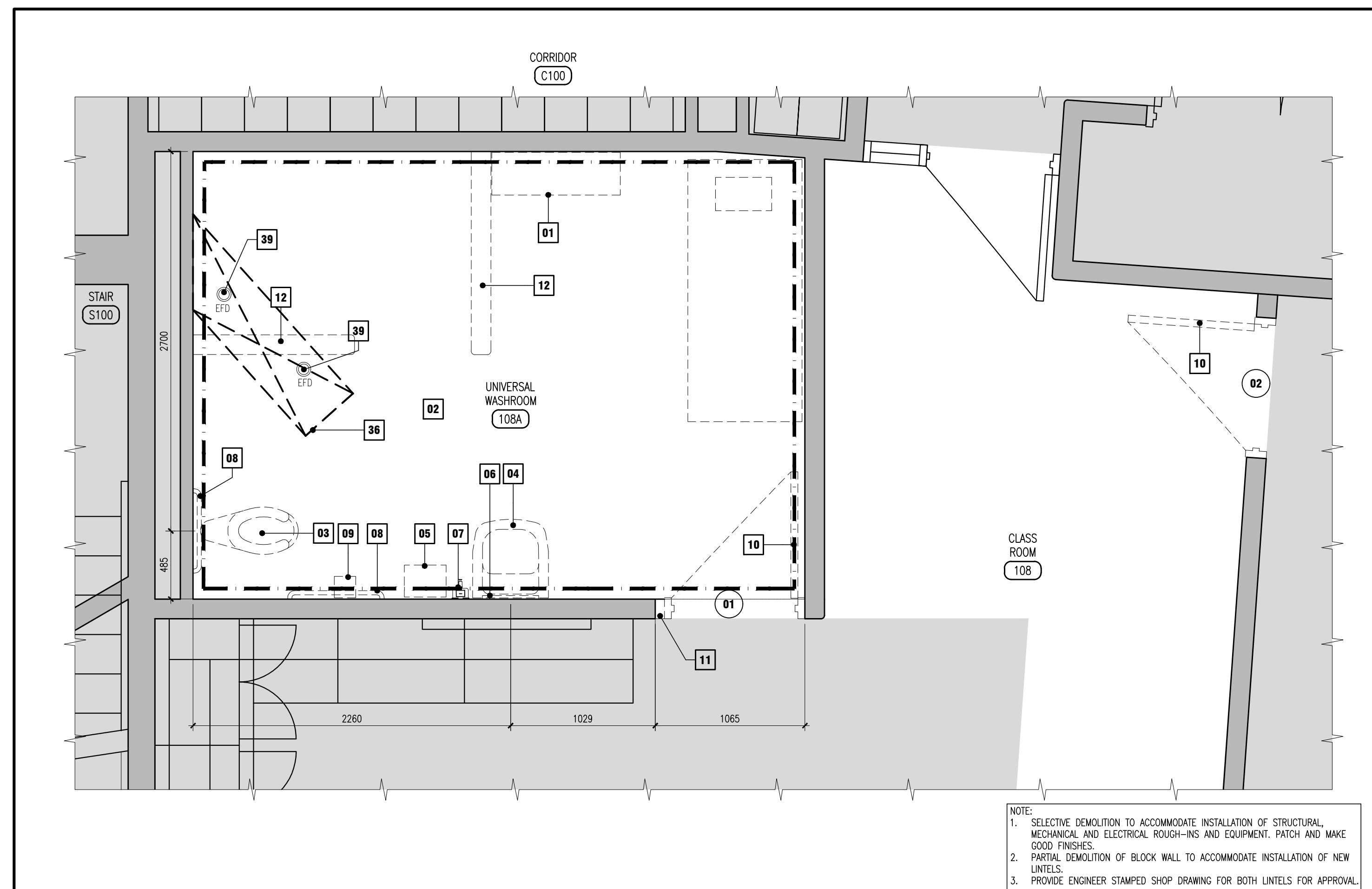
A-11004

DRAWING NOTES

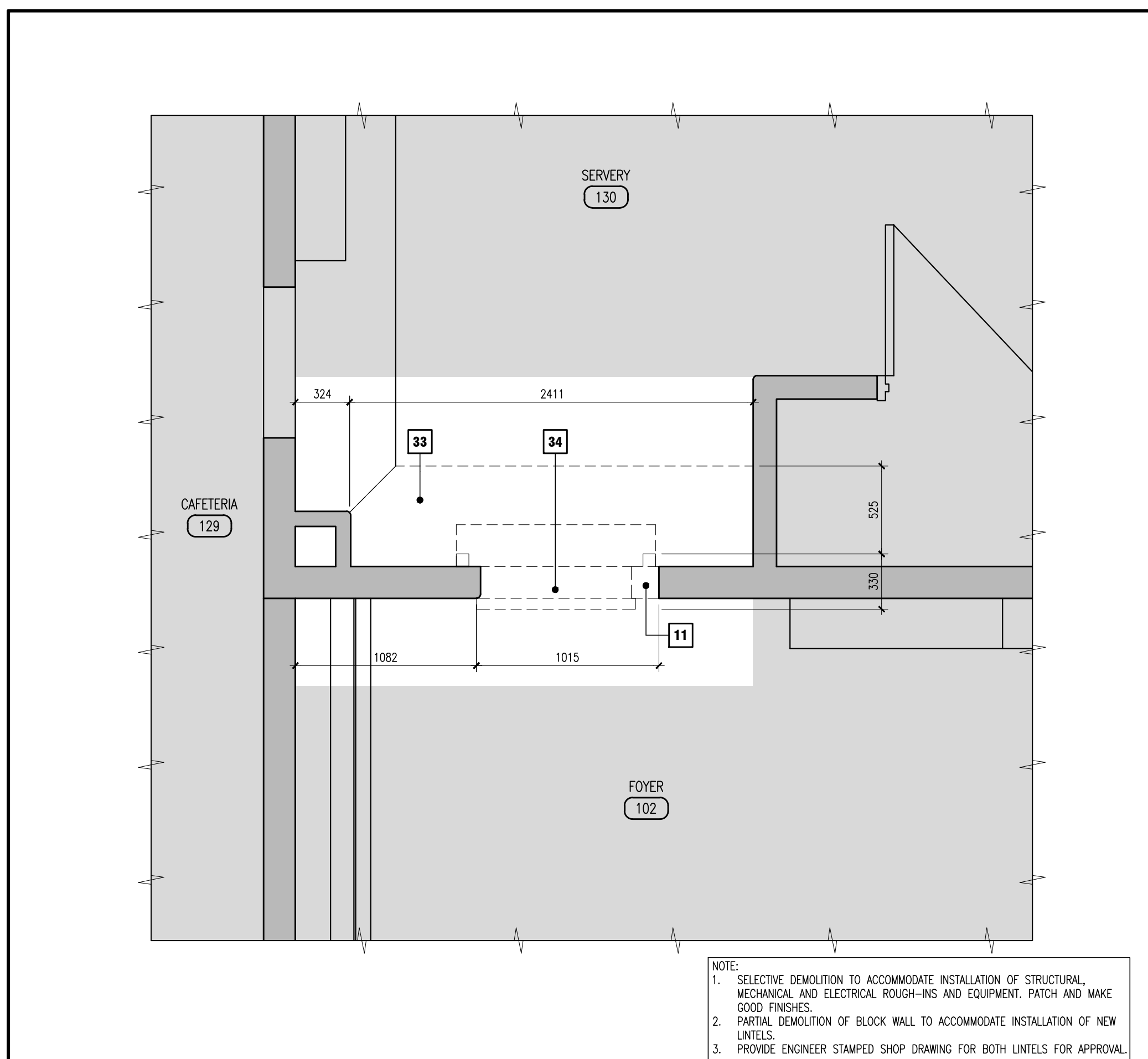
- 01 EXISTING WALL MOUNTED UPPER CABINET TO BE REMOVED AND TURNED OVER TO SCHOOL BOARD.
- 02 EXISTING CERAMIC TILE FLOORING AND WALL FINISH TO BE REMOVED.
- 03 EXISTING TOILET FIXTURE TO BE REMOVED.
- 04 EXISTING WALL MOUNTED SINK TO BE REMOVED.
- 05 EXISTING PAPER TOWEL DISPENSER TO BE REMOVED.
- 06 EXISTING WALL MOUNTED MIRROR TO BE REMOVED.
- 07 EXISTING SOAP DISPENSER TO BE REMOVED.
- 08 EXISTING GRAB BAR TO BE REMOVED.
- 09 EXISTING TOILET PAPER DISPENSER TO BE REMOVED.
- 10 EXISTING HOLLOW METAL DOOR & FRAME TO BE REMOVED.
- 11 BREAK OUT OPENING IN EXISTING WALL TO SUIT NEW DOOR & FRAME c/w NEW STEEL LINTEL.
- 12 EXISTING CONCRETE BLOCK PARTITION TO BE REMOVED, COMPLETE, PATCH AND REPAIR FLOOR WHERE WALL WAS REMOVED. REFER TO TYPICAL SLAB REPAIR DETAIL.
- 13 NEW PAINTED HOLLOW METAL DOOR & FRAME C/W STEEL LINTEL.
- 14 INFILL OPENING WHERE DOOR IS REMOVED WITH NEW CONCRETE BLOCK.
- 15 NEW BARRIER FREE SHOWER CONTROLS.
- 16 NEW WALL MOUNTED FOLD DOWN SHOWER BENCH.
- 17 NEW BARRIER FREE TOILET. REFER TO MECHANICAL DRAWINGS.
- 18 NEW GRAB BARS.
- 19 NEW TILTED WALL MOUNTED SINK. REFER TO MECHANICAL DRAWINGS.
- 20 NEW TILTED WALL MOUNTED MIRROR SUPPLIED & INSTALLED BY G.C.
- 21 NEW HAND DRYER. REFER TO ELECTRICAL DRAWINGS.
- 22 APPROX LOCATION OF FUTURE ADULT SIZE CHANGE TABLE C/W CLEAR TRANSFER SPACE
- 23 NEW HEAVY DUTY WALL MOUNTED SHELF SUPPLIED & INSTALLED BY G.C.
- 24 NEW HEAVY DUTY COAT HOOKS SUPPLIED & INSTALLED BY G.C.
- 25 NEW BARRIER FREE DOOR OPERATOR & PUSH BUTTONS. REFER TO ELECTRICAL.
- 26 NEW TOILET PAPER DISPENSER. SUPPLIED BY OWNER. INSTALLED BY G.C.
- 27 NEW SOAP DISPENSER. SUPPLIED BY OWNER. INSTALLED BY G.C.
- 28 NEW PUSH TO LOCK BUTTON. SEE ELECTRICAL DRAWINGS.
- 29 NEW PUSH TO UNLOCK BUTTON. SEE ELECTRICAL DRAWINGS.
- 30 NEW CERAMIC TILE FLOOR AND WALL FINISH.
- 31 NEW STACKED WASHER/ DRYER (N.I.C.). REFER TO MECHANICAL & ELECTRICAL DRAWINGS.
- 32 RESERVED.
- 33 EXISTING COUNTERTOP AND CABINETS TO BE REMOVED.
- 34 EXISTING FIRE SHUTTER AND PASS THROUGH DOOR TO BE REMOVED COMPLETELY.
- 35 NEW MELAMINE CLOSER PANEL AT CABINET AND PLASTIC LAMINATED FINISHED EDGE TRIM AT EDGE OF COUNTERTOP.
- 36 EXISTING FLOOR SLAB TO BE REMOVED AND REPLACED AS REQUIRED FOR INSTALLATION OF PIPING.
- 37 NEW EMERGENCY CALL BUTTON. REFER TO ELECTRICAL DRAWINGS.
- 38 RESERVED.
- 39 EXISTING FLOOR DRAIN TO BE REMOVED.
- 40 NEW 2-80mm x 80mm x 6.4mm STEEL ANGLE LINTEL W/ BACK TO BACK LEGS c/w MIN 200mm BEARING ON EACH SIDE OF OPENING. REFER TO TYPICAL STEEL LINTEL DETAIL.
- 41 NEW LIFT ASSIST AND TRACK

LEGEND

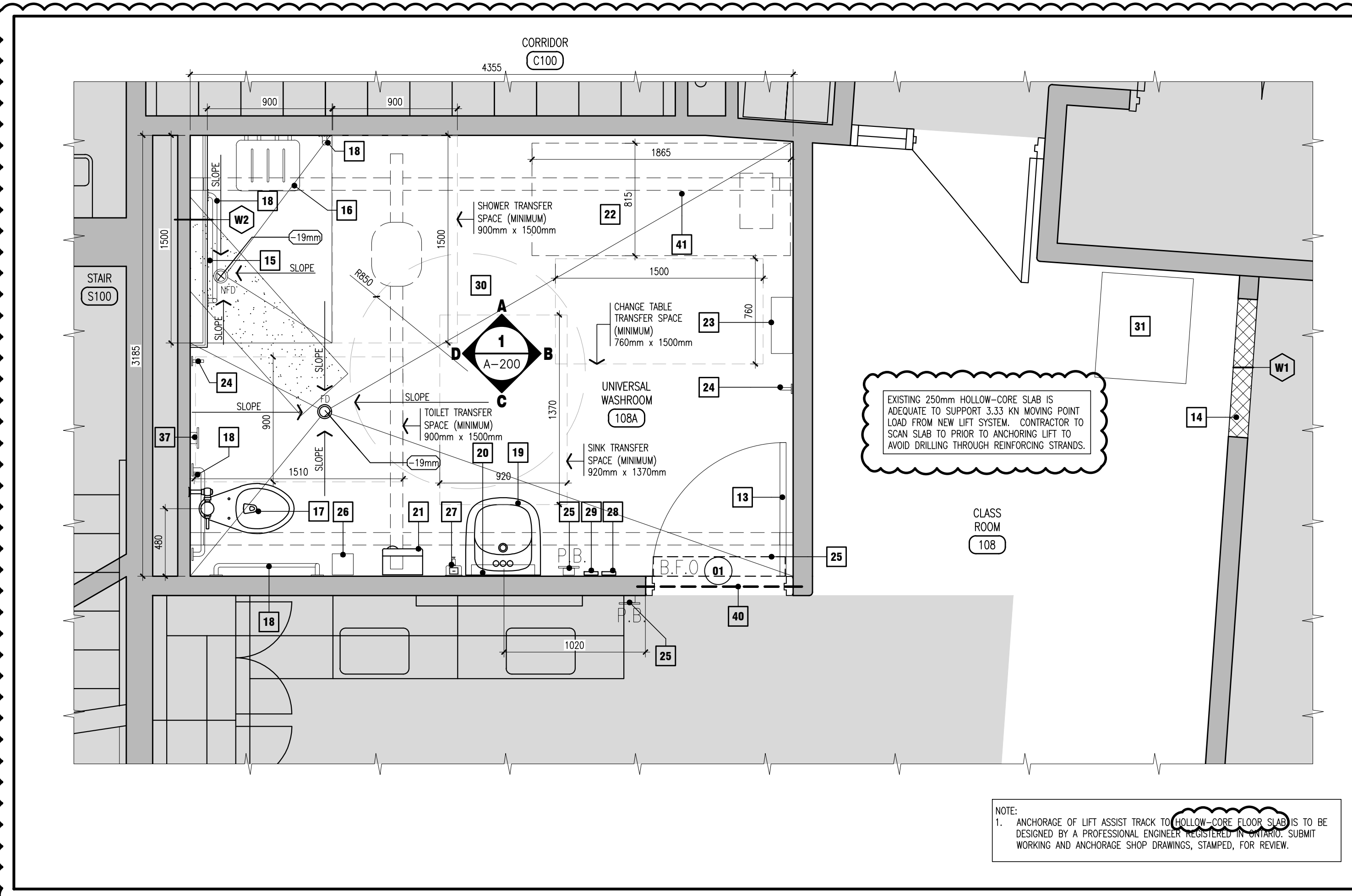
- EXISTING WALLS.
- NEW WALL.
- EQUIPMENT/MILLWORK TO BE REMOVED.
- EQUIPMENT/MILLWORK TO BE REMOVED.
- NEW CONCRETE SLAB TO FACILITATE NEW DRAIN.
- APPROX AREA OF CONCRETE SLAB TO BE REMOVED & REPLACED TO FACILITATE INSTALLATION OF NEW DRAIN.
- EXISTING DOOR & FRAME.
- NEW DOOR & FRAME.
- EXISTING FLOOR DRAIN.
- NEW FLOOR DRAIN.
- APPROXIMATE AREA OF BUILDING NOT IN CONTRACT.
- AREA OF EXISTING WALL TILE TO BE REMOVED.



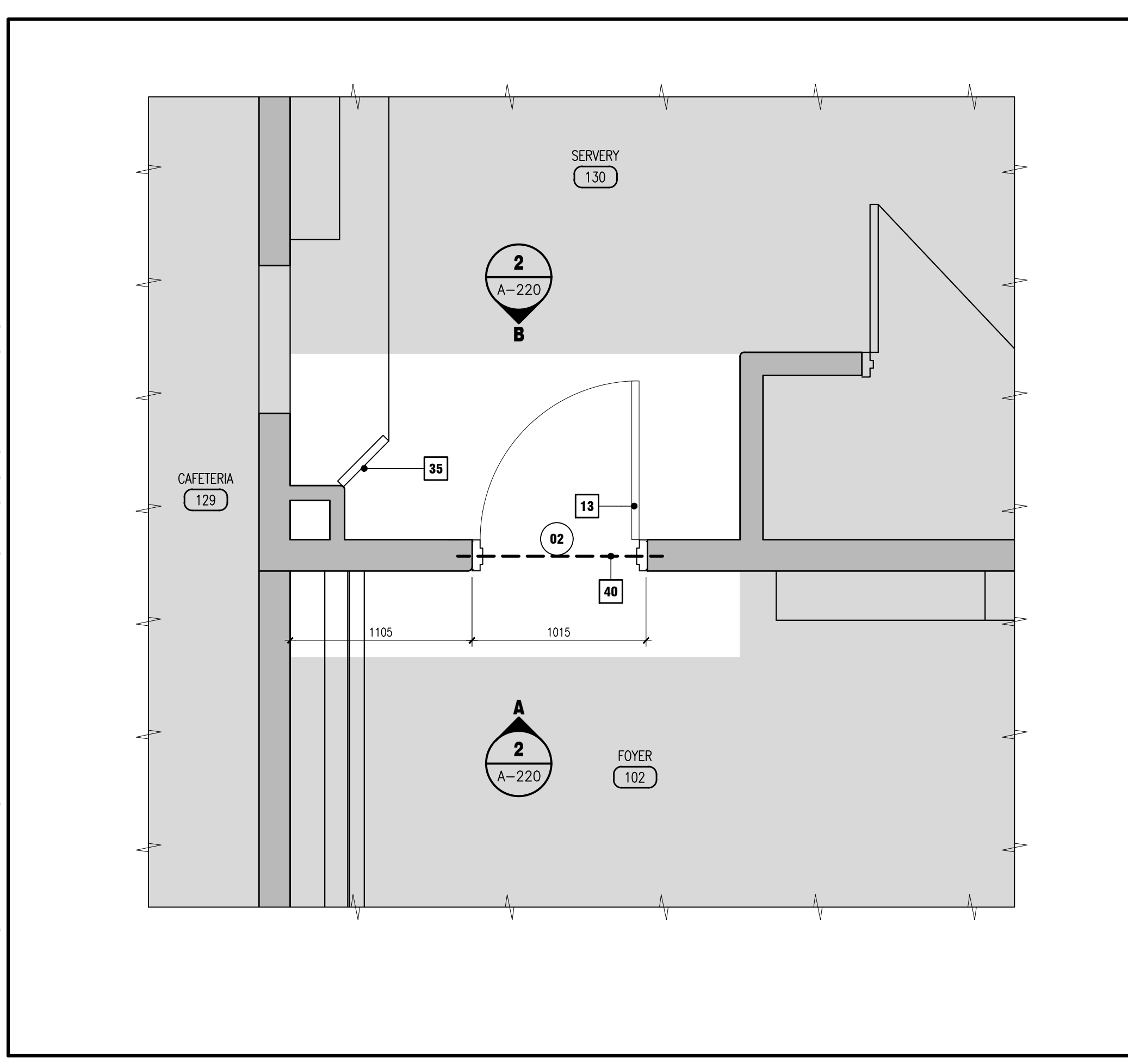
1 PARTIAL FLOOR PLAN - UNIVERSAL WASHROOM DEMOLITION scale: 1:25



2 PARTIAL FLOOR PLAN - SERVERY DEMOLITION scale: 1:25



3 PARTIAL FLOOR PLAN - UNIVERSAL WASHROOM RENOVATION scale: 1:25



4 PARTIAL FLOOR PLAN - SERVERY RENOVATION scale: 1:25

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	Drawn	CMO
	Last worked on by	24.04.04 TG
	Checked	B.R.J.
	print date	2024.04.04



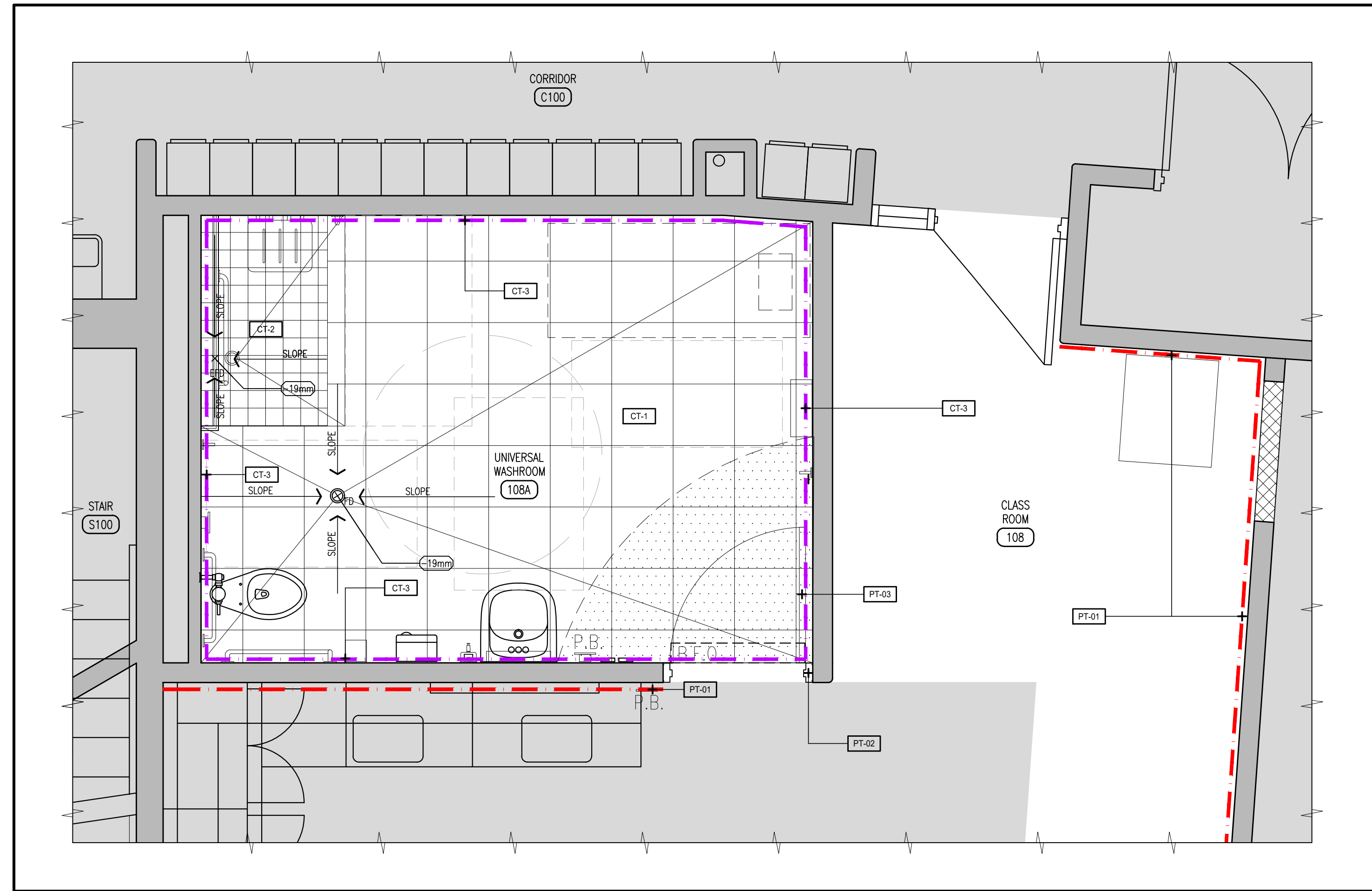
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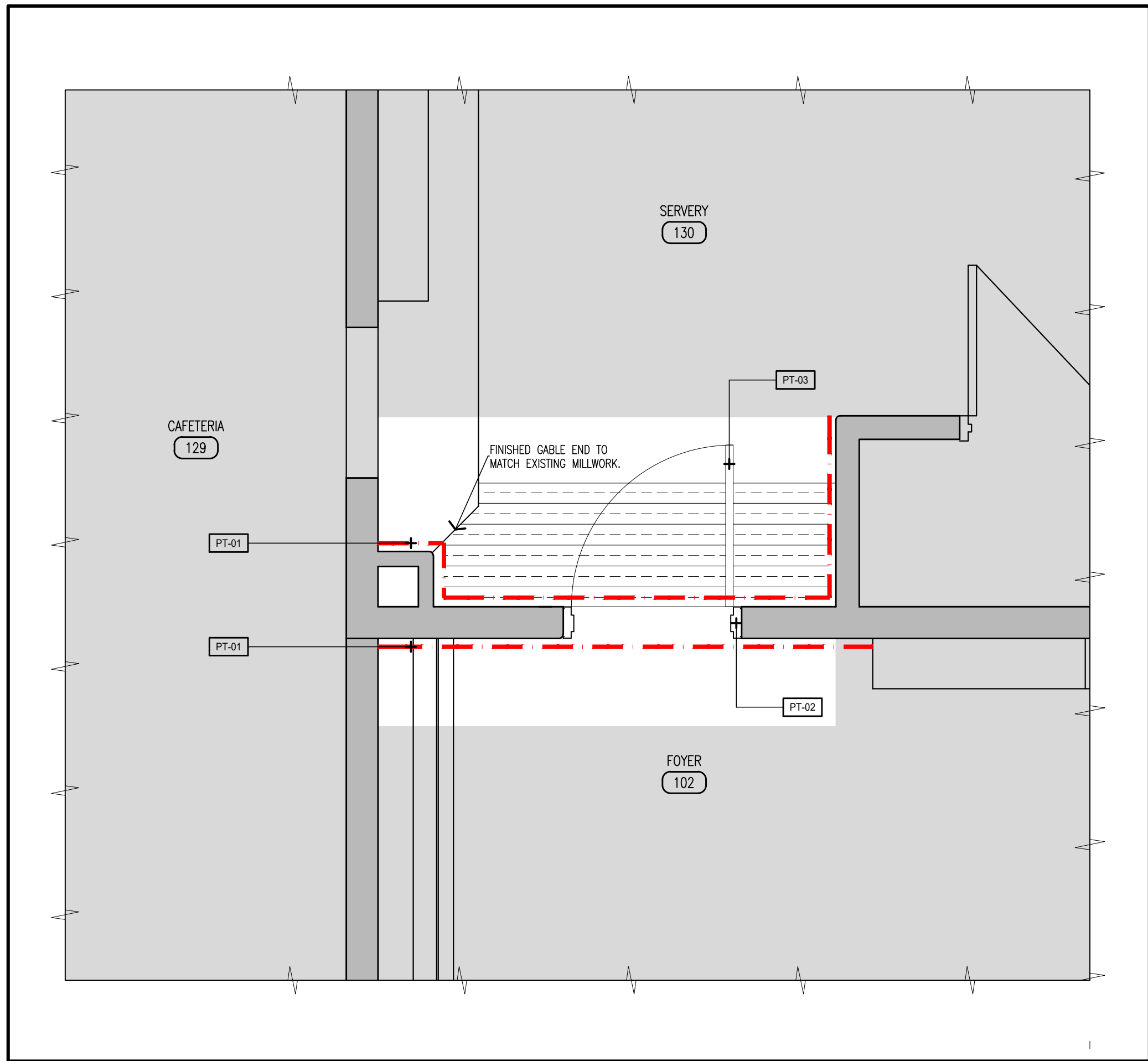
drawing title
PARTIAL FLOOR FINISH AND REFLECTIVE CEILING PLANS

reference	
project no.	23-038
client reference number	
sheet no.	

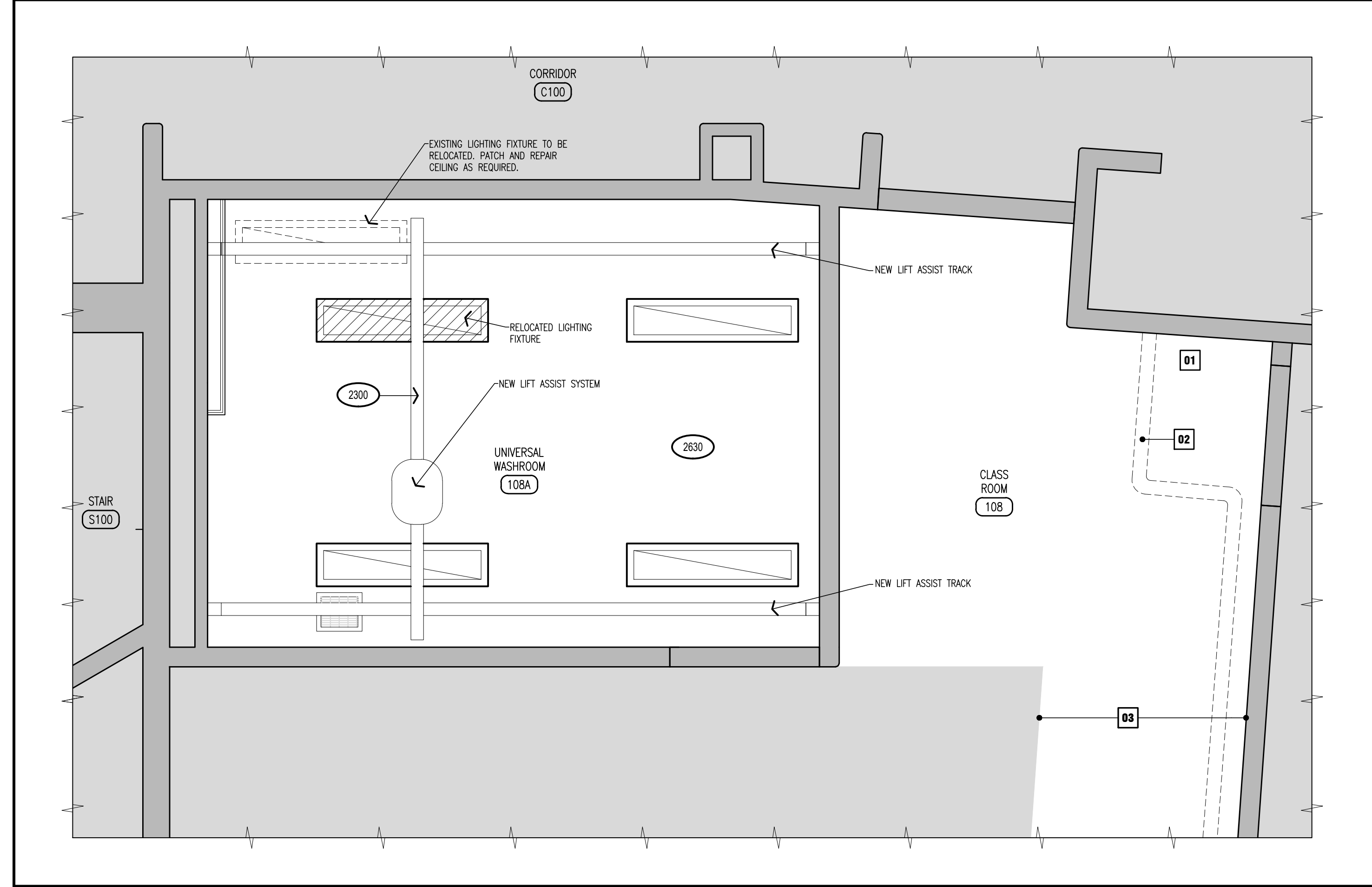
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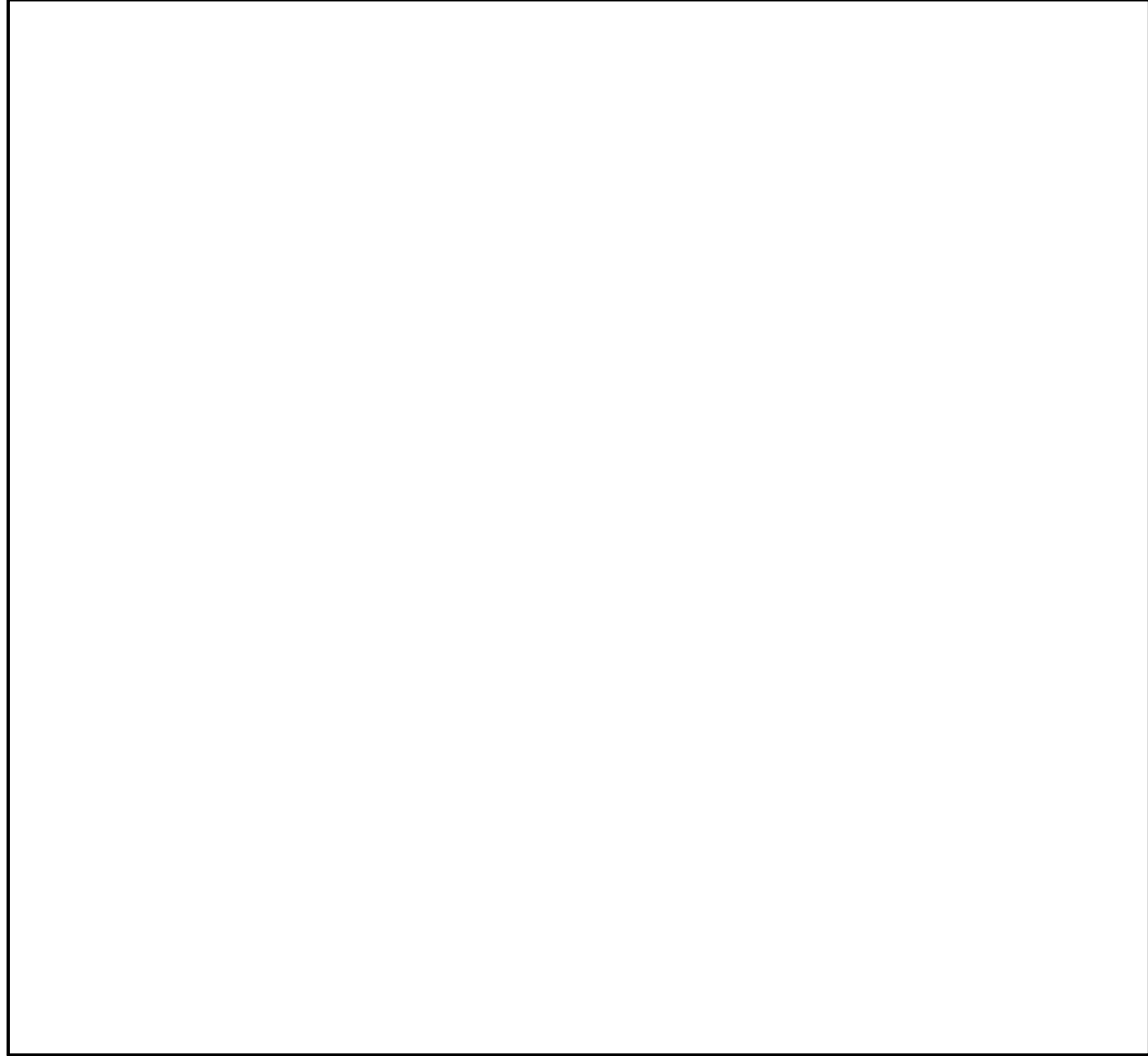
1 PARTIAL FINISHES PLAN
UNIVERSAL WASHROOM
scale: 1:25



2 PARTIAL FINISHES PLAN
SERVERY
scale: 1:25



3 PARTIAL REFLECTED CEILING PLAN
UNIVERSAL WASHROOM
scale: 1:25



4 RESERVED

GENERAL NOTES

- SELECTIVE DEMOLITION TO ACCOMMODATE INSTALLATION OF STRUCTURAL, MECHANICAL AND ELECTRICAL ROUGH-INS AND EQUIPMENT. PATCH AND MAKE GOOD FINISHES.
- PARTIAL DEMOLITION OF BLOCK WALL TO ACCOMMODATE INSTALLATION OF NEW LINTELS.
- PROVIDE ENGINEER STAMPED SHOP DRAWING FOR BOTH LINTELS FOR APPROVAL.
- HATCH PATTERNS ARE FOR GRAPHIC REPRESENTATION ONLY AND NOT REPRESENTATIVE OF TRUE SIZE OR COLOURING OF TILE.
- ANCHORAGE OF LIFT ASSIST TRACK TO PERIMETER WALLS IS TO BE DESIGNED BY A PROFESSIONAL ENGINEER REGISTERED IN ONTARIO. SUBMIT MOUNTING AND ANCHORAGE SHOP DRAWINGS, STAMPED, FOR REVIEW.

DRAWING NOTES

- GENERAL CONTRACTOR TO PATCH AND REPAIR CEILING AS NEEDED TO ACCOMMODATE WATER LINES FOR WASHER/ DRYER.
- NEW DRYER EXHAUST. TERMINATE WITH WALL BOX AT EXTERIOR WALL. EXACT ROUTING TO BE DETERMINED.
- REMOVE AND REPLACE EXISTING CEILING AS REQUIRED FOR INSTALLATION OF MECHANICAL.

LEGEND

	EXISTING WALLS.
	CT-1 - CERAMIC TILE FLOORING OLYMPIA TILE - LEA STONE SERIES, DARK GREY MATTE (300 X 600mm).
	CT-2 - CERAMIC TILE OLYMPIA TILE - QUEBEC SERIES WHITE GRANITE FS (50 X 50mm).
	AREA OF EXISTING SLAB TO BE GROUND DOWN AND FEATHERED TO ACCOMMODATE CERAMIC TILE.
	NEW VCT FLOORING TO MATCH EXISTING.
	EXISTING DOOR & FRAME.
	NEW DOOR & FRAME.
	EXISTING FLOOR DRAIN.
	NEW FLOOR DRAIN.
	CERAMIC WALL TILE. OLYMPIA TILE - COLOUR + DIMENSION SERIES, ARCTIC WHITE BRIGHT (100 X 400mm).
	PAINT FINISH. COLOUR TO BE CONFIRMED BY OWNER.
	TYPICAL LIGHT FIXTURE (REFER TO ELECTRICAL DRAWINGS).
	305 mm X 1220 mm LED LIGHT FIXTURES.

GENERAL NOTES

1. SELECTIVE DEMOLITION TO ACCOMMODATE INSTALLATION OF STRUCTURAL, MECHANICAL AND ELECTRICAL ROUGH-INS AND EQUIPMENT. PATCH AND MAKE GOOD FINISHES.
2. PARTIAL DEMOLITION OF BLOCK WALL TO ACCOMMODATE INSTALLATION OF NEW UNTELS.
3. PROVIDE ENGINEER STAMPED SHOP DRAWING FOR BOTH UNTELS FOR APPROVAL.
4. HATCH PATTERNS ARE FOR GRAPHIC REPRESENTATION ONLY AND NOT REPRESENTATIVE OF TRUE SIZE OF TILE.
5. WALL BASE TO MATCH FLOOR TILE. REFER TO FLOOR FINISH PLAN A-111 AND DETAILS IN SPECIFICATION.

DRAWING NOTES

- 01 NEW PAINTED HOLLOW METAL DOOR & FRAME.
- 02 NEW BARRIER FREE SHOWER CONTROLS.
- 03 NEW WALL MOUNTED FOLD DOWN SHOWER BENCH.
- 04 NEW BARRIER FREE TOILET. REFER TO MECHANICAL DRAWINGS.
- 05 NEW GRAB BARS.
- 06 NEW BARRIER FREE WALL MOUNTED SINK. REFER TO MECHANICAL DRAWINGS.
- 07 NEW TILTED WALL MOUNTED MIRROR SUPPLIED & INSTALLED BY G.C.
- 08 NEW HAND DRYER. REFER TO ELECTRICAL DRAWINGS.
- 09 APPROX LOCATION OF FUTURE ADULT SIZE CHANGE TABLE C/W CLEAR TRANSFER SPACE.
- 10 NEW HEAVY DUTY WALL MOUNTED SHELF SUPPLIED & INSTALLED BY GC.
- 11 NEW HEAVY DUTY WALL MOUNTED COAT HOOKS SUPPLIED & INSTALLED BY GC.
- 12 NEW BARRIER FREE DOOR OPERATOR & PUSH BUTTONS. REFER TO ELECTRICAL.
- 13 NEW TOILET PAPER DISPENSER. SUPPLY BY OWNER, INSTALLED BY CONTRACTOR.
- 14 NEW SOAP DISPENSER. SUPPLY BY OWNER, INSTALLED BY CONTRACTOR.
- 15 NEW PUSH TO LOCK BUTTON. SEE ELECTRICAL DRAWINGS.
- 16 NEW PUSH TO UNLOCK BUTTON. SEE ELECTRICAL DRAWINGS.
- 17 NEW CERAMIC TILE WALL FINISH WITH 100mm HIGH CERAMIC TILE WALL BASE.
- 18 EXISTING COUNTERTOP AND CABINETS TO BE REMOVED. SHOWN DASHED.
- 19 EXISTING FIRE SHUTTER AND PASS THROUGH DOOR TO BE REMOVED. SHOWN DASHED.
- 20 NEW CLOSER PANEL AND PLASTIC LAMINATED FINISHED EDGE.
- 21 NEW LIFT ASSIST TRACK.

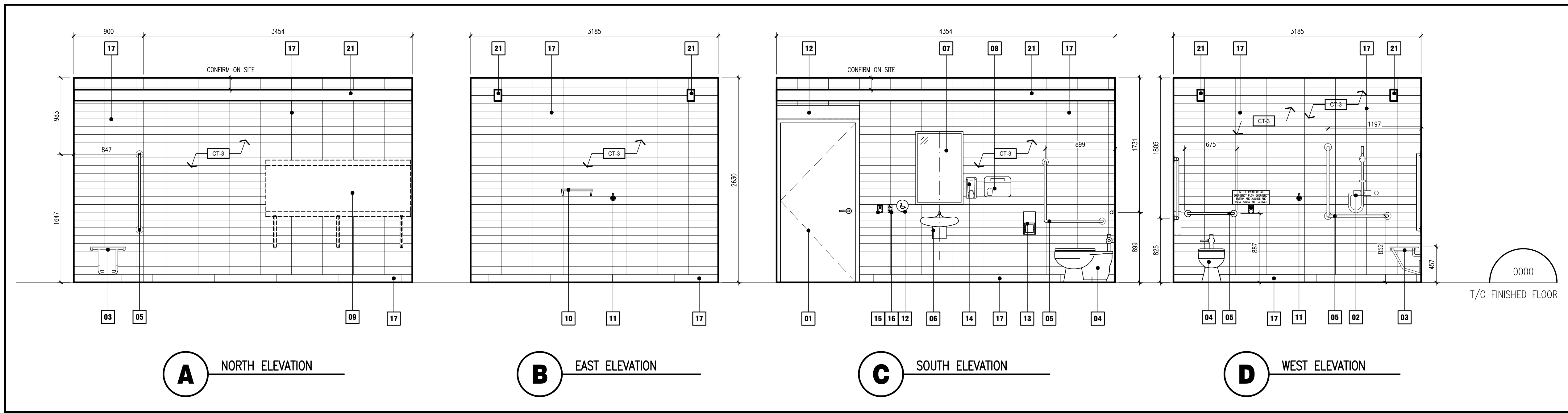
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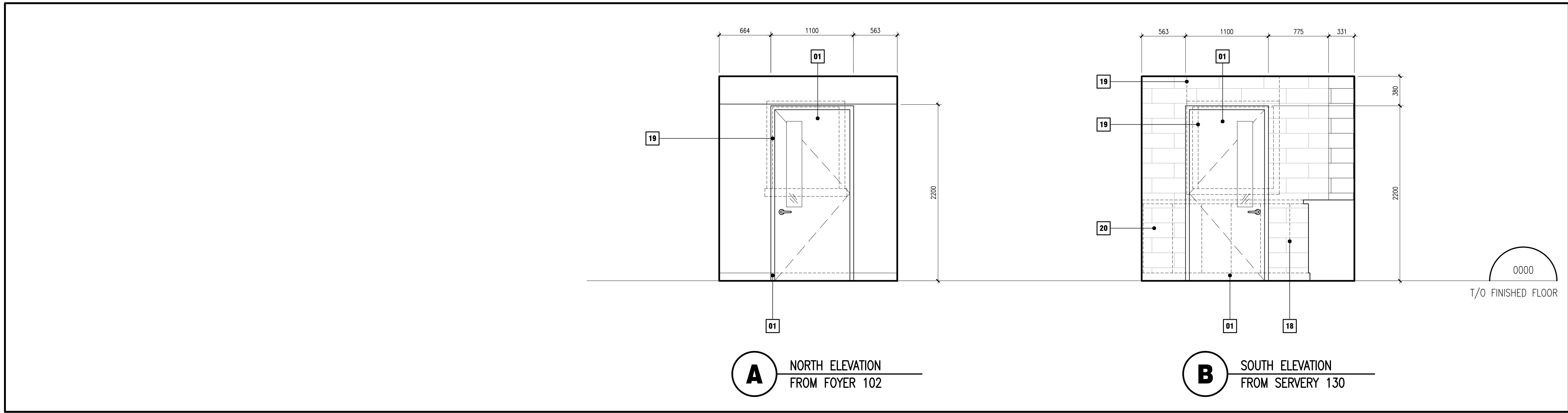
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02	RE-ISSUED FOR PERMIT	2024.02.02
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No.	REVISIONS	date
scale: AS NOTED		

client
HALTON DISTRICT SCHOOL BOARD
 2050 GUELPH AVE. BURLINGTON ONTARIO
 project
UNIVERSAL WASHROOM UPGRADES AT FLORENCE MEARES PUBLIC SCHOOL
 2102 BERWICK DRIVE BURLINGTON ONTARIO

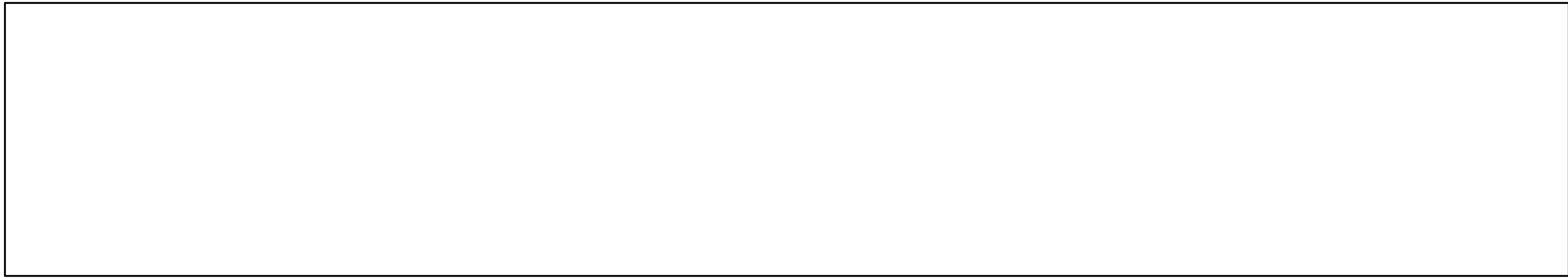
drawing title
INTERIOR ELEVATIONS
 reference
 project no. 23-038 client reference number
 sheet no.
A - 220 04



1 UNIVERSAL WASHROOM INTERIOR ELEVATIONS scale: 1:30



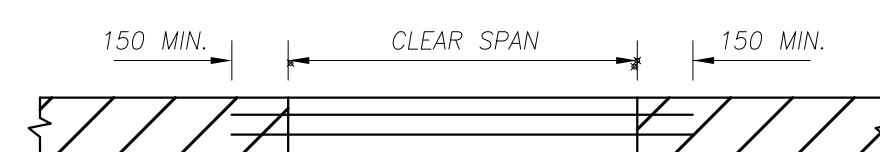
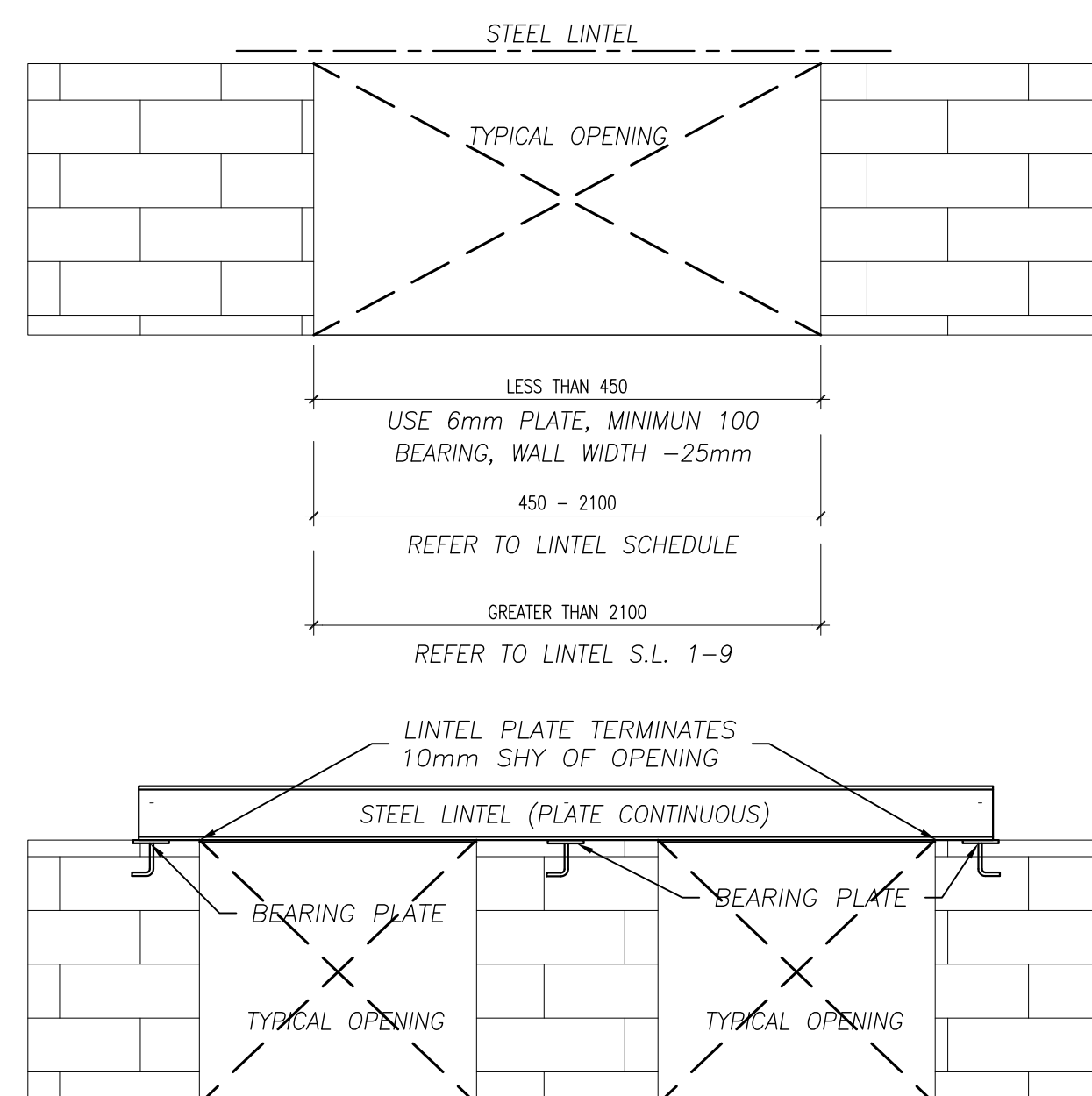
2 SERVERY INTERIOR ELEVATIONS scale: 1:30



3 RESERVED

LEGEND

- CT-3 - CERAMIC WALL TILE: OLYMPIA TILE - COLOUR AND DIMENSION SERIES, ARCTIC BRIGHT WHITE, GLAZED (100mm X 400mm).



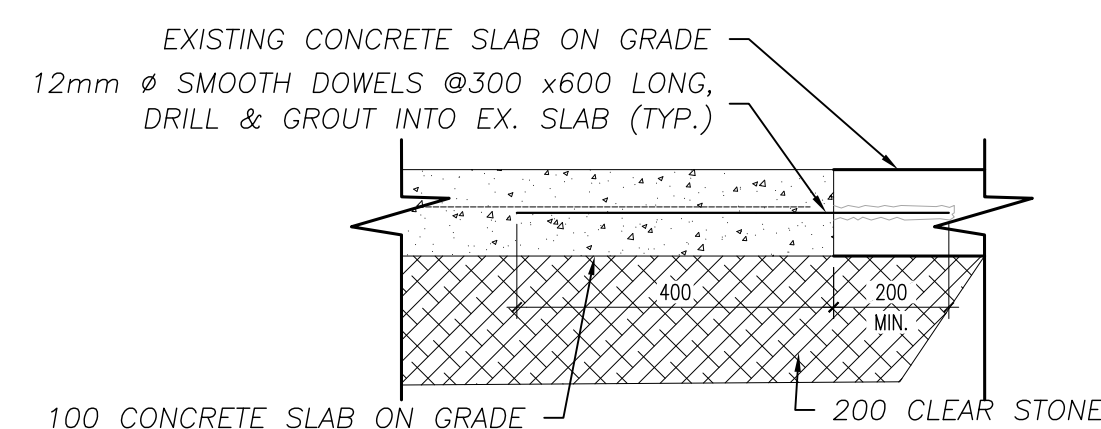
CLEAR SPAN	140 WALL	190 WALL
UP to 1200	2Ls 75x65x8	2Ls 90x90x8
1200 to 1800	2Ls 90x65x8	2Ls 125x90x8
1800 to 2100	2Ls 90x65x10	2Ls 150x90x8

CLEAR SPAN	240 WALL	290 WALL
UP to 1200	2Ls 100x100x8	3Ls 90x90x8
1200 to 1800	2Ls 150x100x8	3Ls 125x90x8
1800 to 2100	2Ls 150x100x8	3Ls 150x90x8

FOR LINTELS IN 90 VENEER, USE 1 ANGLE OF THAT NOTED FOR 190 WALL ON SIMILAR SPAN.

DOUBLE ANGLES TO BE STITCH WELDED BACK TO BACK.

TYPICAL STEEL LINTEL DETAIL
NOT TO SCALE



TYP. SLAB CONNECTION DETAIL
SCALE N.T.S.

GENERAL NOTES

1. THE DESIGN LIVE LOADS ARE INDICATED ON THE DRAWINGS. CONSTRUCTION LOADS SHALL NOT EXCEED THE DESIGN LOADS.
2. THE COMPLETED STRUCTURE IS SHOWN ON THE DRAWINGS. THE CONTRACTOR SHALL PROVIDE ALL TEMPORARY BRACING, SHORING AND ANY OTHER TEMPORARY OR PERMANENT MEASURES AS REQUIRED DURING CONSTRUCTION. THE CONTRACTOR SHALL PROVIDE ALL TEMPORARY SUPPORT OF EXISTING OR ADJACENT STRUCTURES AS REQUIRED. ALL BRACING AND SHORING IS THE RESPONSIBILITY OF THE CONTRACTOR.
3. CONSTRUCTION FEATURES NOT FULLY SHOWN ARE COMPARABLE TO SIMILAR CONDITION DETAILS.
4. ALL CONSTRUCTION SHALL BE IN CONFORMANCE WITH THE LATEST ONTARIO BUILDING CODE, LATEST APPLICABLE REGULATIONS, AND GOOD CONSTRUCTION PRACTICES.
5. CLARIFY ANY QUERIES WITH THE ENGINEER REGARDING THE INTERPRETATION OF THE DRAWINGS, PRIOR TO THE COMMENCEMENT OF ANY WORK.

CONCRETE NOTES

1. ALL STRUCTURAL CONCRETE ELEMENTS HAVE BEEN DESIGNED IN ACCORDANCE WITH CSA STANDARD CAN/CSA A23.3. ALL CONCRETE CONSTRUCTION SHALL BE IN ACCORDANCE WITH CSA STANDARD CAN/CSA A23.1.
2. MINIMUM CONCRETE STRENGTH AT 28 DAYS SHALL BE:
 - SLAB ON GRADE (INTERIOR) 25 MPa TYPE N
 - SLUMP SHALL BE 75mm ± 25mm.
 - AGGREGATE SHALL BE 20mm MAXIMUM.
 - AIR ENTRAINMENT TO BE 6% ± 1% WHEN EXPOSED TO EXTERIOR. CONTRACTOR TO SUBMIT CONCRETE MIX DESIGN FOR REVIEW.
3. THE DEFORMED REINFORCING STEEL SHALL CONFORM TO CSA STANDARD G30.18M GRADE 300R FOR STIRRUPS AND TIES AND GRADE 400R FOR ALL OTHER REINFORCING. UNLESS OTHERWISE NOTED THE REINFORCING LAP LENGTH SHALL BE "CLASS B" IN SPLICES. ALL REINFORCING HOOKS AND BENDS SHALL BE IN ACCORDANCE WITH A23.1.
4. WELDED WIRE FABRIC SHALL BE IN ACCORDANCE WITH CSA G30.5. ALL MESH SHALL BE CHAIRED PRIOR TO THE CONCRETE POUR. LIFTING OF THE MESH DURING THE CONCRETE POUR WILL NOT BE PERMITTED. ALL SPLICES SHALL BE A MINIMUM OF TWO CROSS WIRE SPACINGS PLUS 50mm.
5. THE REINFORCING COVER FOR CONCRETE SHALL BE:
 - 75mm FOR CONCRETE AGAINST EARTH
 - 40mm FOR FORMED CONCRETE EXPOSED TO EARTH OR WEATHER WHERE THE REINFORCING BAR IS 15M OR SMALLER
 - 50mm FOR FORMED CONCRETE EXPOSED TO EARTH OR WEATHER WHERE THE REINFORCING BAR IS 20M OR LARGER
 - 25mm FOR INTERIOR CONCRETE. ALL CHAIRS, BOLSTERS, SPACERS AND BAR SUPPORTS SHALL BE IN ACCORDANCE WITH A23.1.
6. ALL ADHESIVE ANCHORS SHALL BE INSTALLED IN ACCORDANCE WITH THE HILTI HIT-HY200 (OR APPROVED EQUAL) PROCEDURES.

DESIGN STANDARDS

- ONTARIO BUILDING CODE, 2012, PART 4: STRUCTURAL DESIGN
- CAN/CSA-A23.3-14, DESIGN OF CONCRETE STRUCTURES
- CAN/CSA-S304.1-14, MASONRY DESIGN FOR BUILDINGS
- CAN/CSA-S16-14, LIMIT STATES DESIGN OF STEEL STRUCTURES

STRUCTURAL STEEL NOTES

1. ALL STRUCTURAL STEEL ELEMENTS, INCLUDING DESIGN OF ELEMENTS AND CONNECTIONS SHALL BE IN ACCORDANCE WITH CAN/CSA S16.
2. ALL STRUCTURAL STEEL SHALL CONFORM TO CSA G40.21 (300W) EXCEPT W SECTIONS AND PLATES G40.21 (350W), HSS MEMBERS G40.21 (350W) CLASS C OR ASTM A500 GRADE C, ANCHOR BOLTS ASTM A307, COLD FORMED SECTIONS ASTM A570M GRADE 350W. UNLESS OTHERWISE NOTED, ALL SECTIONS SHALL BE PRIME PAINTED WITH THE SURFACE PREPARATION AND PAINTING PROCEDURES IN ACCORDANCE WITH CAN/CGSB 85.10.
3. ALL WELDING SHALL BE CARRIED OUT IN ACCORDANCE WITH CAN/CSA W59. THE STEEL FABRICATOR SHALL BE FULLY QUALIFIED UNDER THE REQUIREMENTS BY THE CANADIAN WELDING BUREAU IN CONFORMANCE WITH CAN/CSA W47.1.
4. PROVIDE MINIMUM BEARING LENGTH OF STEEL MEMBERS AS FOLLOWS:
 - ON MASONRY - 150mm
 - ON STEEL - 90mm
5. ALL BOLTS SHALL BE TIGHTENED WITH A SUITABLE TORQUE WRENCH IN ACCORDANCE WITH CSA S16.
6. ERECT STRUCTURAL STEEL IN ACCORDANCE WITH CSA S16 AND IN CONFORMANCE WITH THE APPROVED SHOP DRAWINGS.

MASONRY NOTES

1. ALL STRUCTURAL ELEMENTS HAVE BEEN DESIGNED IN ACCORDANCE WITH CSA STANDARD S304.1. ALL MASONRY CONSTRUCTION SHALL BE IN ACCORDANCE WITH CSA STANDARD A371. ALL MASONRY CONNECTORS, REINFORCING AND TYING SHALL BE IN ACCORDANCE WITH CSA A370. ALL MORTAR AND GROUT SHALL BE IN ACCORDANCE WITH A179.
2. ALL CONCRETE BLOCKS SHALL BE NORMAL WEIGHT TYPE H/15/A/M UNLESS OTHERWISE NOTED. MORTAR SHALL BE TYPE S FOR LOADBEARING AND TYPE N FOR NON-LOADBEARING.
3. TRIM ALL OPENINGS WITH 2-15M BARS.
4. GROUT SHALL CONSIST OF ON ONE PART PORTLAND CEMENT, THREE PARTS SAND (MAXIMUM AGGREGATE SIZE SHALL BE 10mm) WITH WATER TO PROVIDE A MINIMUM 10MPa COMPRESSIVE STRENGTH AT 28 DAYS. SLUMP SHALL BE 200mm TO 250mm.
5. ALL CELLS CONTAINING REINFORCING SHALL BE GROUTED SOLID. TWO BLOCK COURSES BELOW BEARING PLATES SHALL BE GROUTED SOLID.
6. THE MASONRY SHALL BE CONSTRUCTED EVENLY WITH MAXIMUM LIFTS OF 1200 PER DAY. DO NOT TOOTH AND BOND OR STACK BOND MASONRY. RAKE BACK ENDS OF UNFINISHED WALLS.
7. ALL MORTAR JOINTS SHALL BE TOOLED (CONCAVE). A MINIMUM BED JOINT OF 6mm IS REQUIRED FOR THE STARTING COURSE TO A MAXIMUM OF 20mm. THE BED JOINTS SHALL BE 10mm.
8. PROVIDE VERTICAL AND HORIZONTAL REINFORCING AS FOLLOWS UNLESS NOTED OTHERWISE ON THE DRAWINGS.
 - 140 CONCRETE BLOCK - 10M VERTICAL AT 600 O.C. & HEAVY DUTY TRUSS TYPE HORIZONTAL REINFORCING EVERY SECOND COURSE.
 - 190 CONCRETE BLOCK - 15M VERTICAL AT 800 O.C. & HEAVY DUTY TRUSS TYPE HORIZONTAL REINFORCING EVERY SECOND COURSE.
9. PROVIDE A STEEL LINTEL OVER ALL OPENINGS OR RECESSES INCLUDING OPENINGS FOR MECHANICAL AND ELECTRICAL COMPONENTS. ALL EXTERIOR LINTELS TO BE HOT DIP GALVANIZED.
10. BUILD THE MASONRY SOLID AROUND ALL BEAM, LINTEL AND JOIST POCKETS. INSTALL BEARING PLATES AT THE SPECIFIED ELEVATION AND GROUT THE PLATE INTO THE WALL A MINIMUM OF 400mm.
11. PROVIDE TEMPORARY BRACING AS REQUIRED TO SUPPORT THE MASONRY WALLS IN CONSTRUCTION. PROTECT THE MASONRY WALLS FROM THE ELEMENTS AT ALL TIMES EXCEPT DURING CONSTRUCTION PROGRESS.

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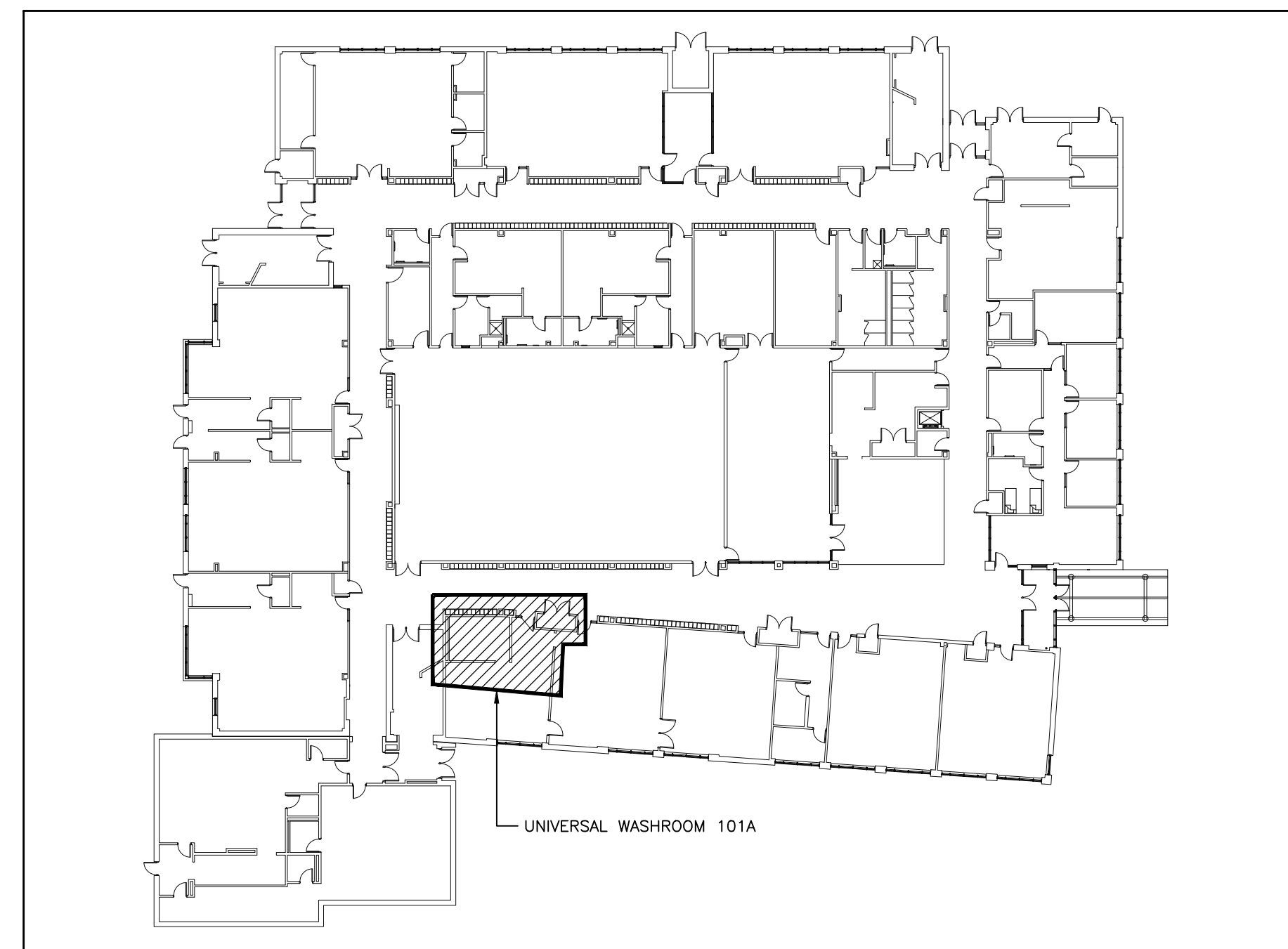
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		AS NOTED

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last worked on by: 2024.04.04 TG
checked: B.R.J.
print date: 2024.02.02

client
HALTON DISTRICT SCHOOL BOARD
2050 GUELPH AVE. BURLINGTON ONTARIO
project
UNIVERSAL WASHROOM UPGRADES AT FLORENCE MEARES PUBLIC SCHOOL
2102 BERWICK DRIVE BURLINGTON ONTARIO

drawing title
STRUCTURAL NOTES & DETAILS
reference
project no. 23-038 client reference number
sheet no.
S - 100 02

PLUMBING FIXTURE SERVICES SCHEDULE							
REF.	FIXTURE NAME	TYPE	LOCATION	HOT	COLD	DRAIN	VENT
WC-1	WATER CLOSET	FLOOR MOUNTED, FLUSH VALVE TYPE, BARRIER FREE	NEW UNIVERSAL WASHROOM 101A	-	25	75	50
L-1	LAVATORY	WALL MOUNTED & BARRIER FREE	NEW UNIVERSAL WASHROOM 101A	25	25	50	50
W	CLOTHES WASHER		LIFE SKILLS 101	25	25	50	50



SCHOOL KEY PLAN
NTS

MECHANICAL SYMBOLS	
—SAN—	EXPOSED SANITARY DRAIN
—SAN—	BURIED SANITARY DRAIN
—STM—	EXPOSED STORM DRAIN
—STM—	BURIED STORM DRAIN
—V—	SANITARY VENT
—D—	DOMESTIC COLD WATER SUPPLY
—H—	DOMESTIC HOT WATER SUPPLY
—T—	PLUMBING TRAP
—D—	PIPE TURNING DOWN
—U—	PIPE TURNING UP
○VTR	VENT THROUGH ROOF
○FD	FLOOR DRAIN
—D CO	CLEANOUT IN FLOOR
—H CO	CLEANOUT IN CEILING SPACE
WC-1	DENOTES PLUMBING FIXTURE AS PER SPECIFICATION
—X—X—X—	DENOTES: EQUIPMENT OR PIPING TO BE REMOVED
—V—	AUTOMATIC CONTROL VALVE – TWO WAY
—V—	MIXING OR DIVERTER VALVE (3-WAY)
—V—	VALVE
—HWS—	HEATING WATER SUPPLY
○	ROOM THERMOSTAT
◆	SEMI-RECESSED SPRINKLER
—G—	EXHAUST OR RECIRC. GRILLE
—S—	SUPPLY AIR CEILING DIFFUSER
—F—	FLEXIBLE DUCT
CTE	DENOTES: CONNECT TO EXISTING
CUT	DENOTES: CUT POINT OF EXISTING SERVICE
EX	EXISTING ELECTRICAL EQUIPMENT/DEVICE TO REMAIN.
ER	EXISTING ELECTRICAL EQUIPMENT/DEVICE TO BE RELOCATED.
RE	EXISTING ELECTRICAL EQUIPMENT/DEVICE IN RELOCATED POSITION.
R	EXISTING ELECTRICAL EQUIPMENT/DEVICE TO BE REMOVED.
N	NEW ELECTRICAL EQUIPMENT/DEVICE

GENERAL NOTES

COORDINATE WITH ALL OTHER TRADES BEFORE FINAL LOCATIONS OF DUCTS, PIPES, DIFFUSERS, SPRINKLERS, EQUIPMENT ETC. ARE FINALIZED.

COORDINATE LOCATIONS OF ALL GRILLES/DIFFUSERS WITH LIGHTS, SPRINKLERS, ETC. AND REFLECTED CEILING PLAN.

PATCH/REPAIR ALL OPENINGS THROUGH THE BUILDING ELEMENTS TO MATCH EXISTING.

CONTRACTOR TO VERIFY EXACT LOCATION OF EXISTING DUCTWORK AND EQUIPMENT. LOCATIONS SHOWN ARE BASED ON SITE MEASUREMENTS. INFORM THE CONSULTANT OF ANY INTERFERENCES AND DISCREPANCIES.

CONTRACTOR TO VERIFY ALL DIMENSIONS AND ENSURE ADEQUATE SPACE FOR PROPER INSTALLATION.

MAINTAIN SAFETY AT ALL TIMES.

MAKE GOOD ALL SURFACES AFFECTED BY THE WORK OF THIS CONTRACT.

ALL REMOVED MATERIAL (EXCEPT AS INDICATED BY THE OWNER) TO BECOME THE PROPERTY OF THE CONTRACTOR AND TO BE DISPOSED OFF SITE.

THE CONTRACTOR TO MAINTAIN DUST CONTROL AT ALL TIMES AND PROVIDE SAFETY FENCING AROUND THE WORK ZONES.

GENERAL NOTES:

COORDINATE INSTALLATION OF THE LIGHTS AND OTHER CEILING MOUNTED EQUIPMENT WITH THE TYPE OF REFLECTIVE CEILING AND LOCATION OF GRILLES & DIFFUSERS & SPRINKLER HEADS.

ALL LIGHT FIXTURES TO BE SUPPORTED FROM THE SLAB ABOVE.



NOTE:
CONTRACTORS SHALL VERIFY AND BE RESPONSIBLE FOR ALL DIMENSIONS AND CONDITIONS ON THE JOB AND THE ENGINEER SHALL BE INFORMED OF ANY VARIATIONS FROM THE DIMENSIONS AND CONDITIONS SHOWN ON THE DRAWINGS. DO NOT SCALE DRAWINGS. SHOP DRAWINGS SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL BEFORE PROCEEDING WITH FABRICATION. THIS DRAWING IS THE PROPERTY OF SAB ENGINEERING INC. AND SHALL NOT BE REPRODUCED WITHOUT THEIR PERMISSION AND UNLESS THE REPRODUCTION CARRIES THEIR NAME. ALL INFORMATION SHOWN ON THIS DRAWING IS FOR USE ON THE SPECIFIED PROJECT ONLY AND SHALL NOT BE USED OTHERWISE WITHOUT WRITTEN PERMISSION OF SAB ENGINEERING INC.

PRELIMINARY

01	ISSUED FOR CLIENT REVIEW	JUN/01/23
No.	REVISIONS	date
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	drawn	E.T.
	last worked on by	
	checked	G.S.
	print date	2023.06.01

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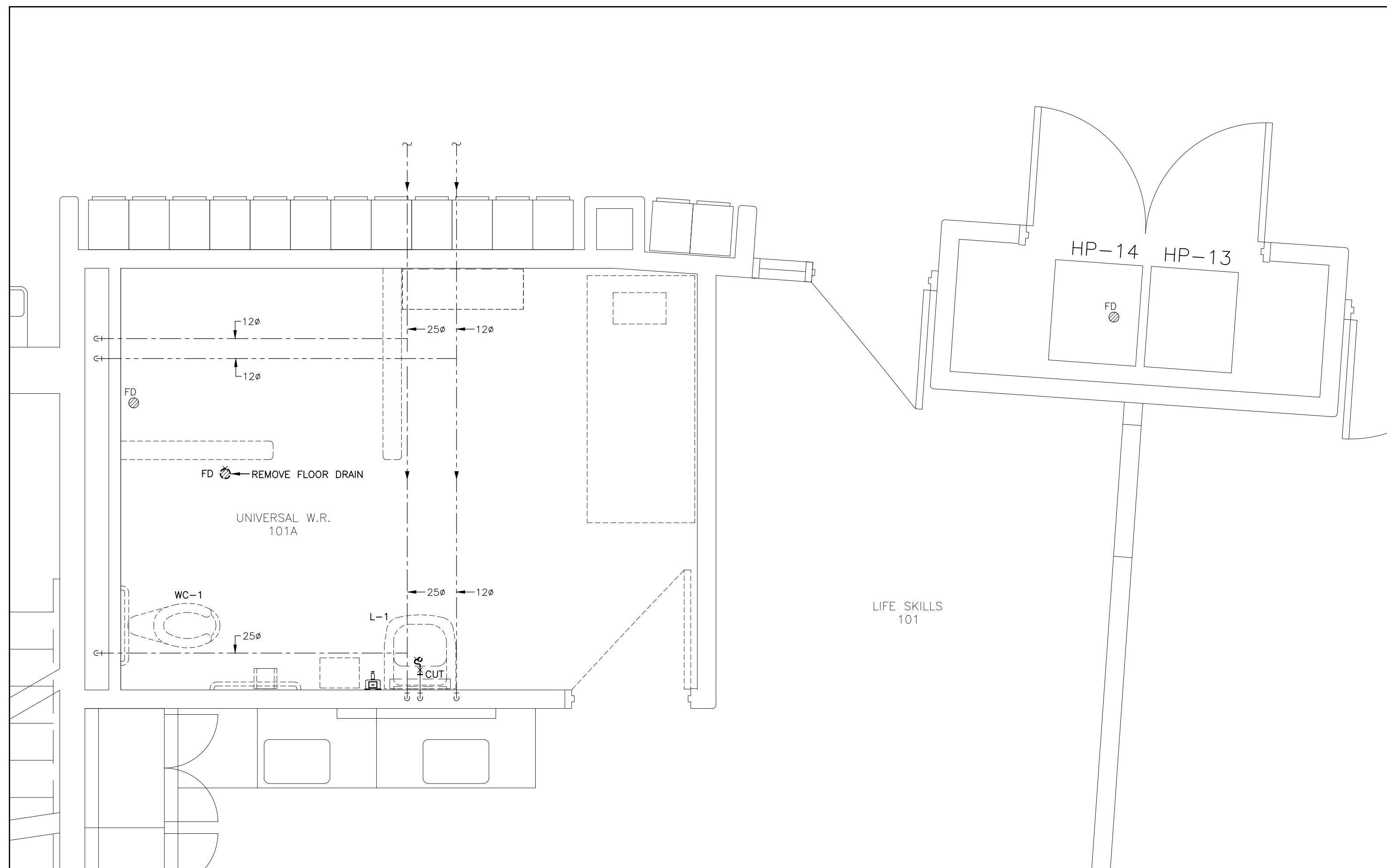
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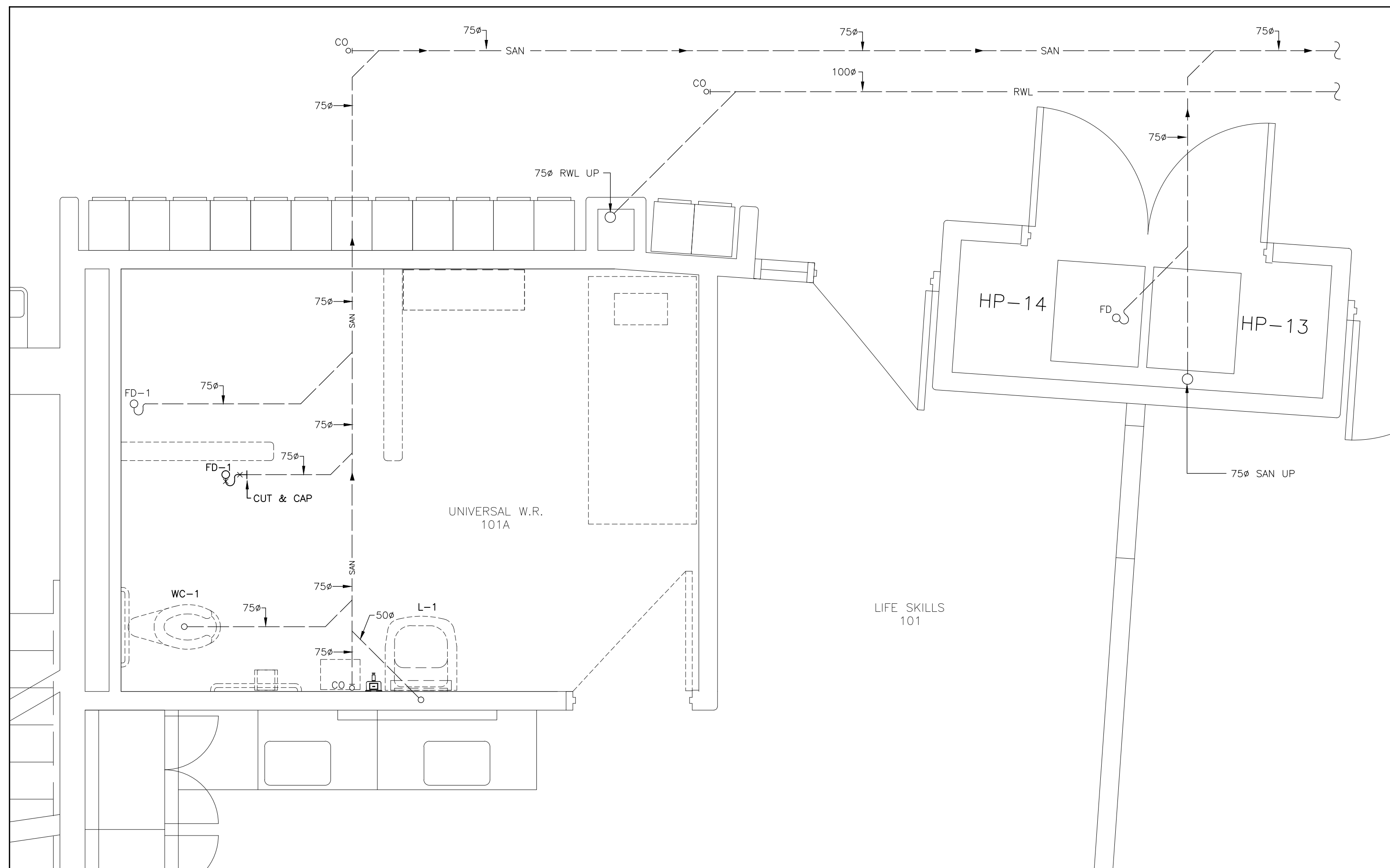
drawing title
KEY PLAN, SYMBOL LISTS, & GENERAL NOTE – MECHANICAL

reference	
project no.	client reference number
23-038	
sheet no.	

M - 0101



UNIVERSAL WASHROOM 101A -- PLUMBING -- EXISTING & DEMOLITION WORK
SCALE: 1:25



UNIVERSAL WASHROOM 101A -- SANITARY -- EXISTING & DEMOLITION WORK
SCALE: 1:25

DEMOLITION NOTES:

PRIOR TO COMMENCING THE DEMOLITION WORK, EXAMINE CAREFULLY THE ELEMENTS OF THE EXISTING SYSTEMS TO BE REMOVED. FOR REASONS OF CLARITY, THE DRAWINGS DO NOT SHOW ALL BUILDING SERVICES LOCATED IN THE ROOM OR ALL STRUCTURAL ELEMENTS. ALL BUILDING SERVICES AND OTHER UTILITIES NOT AFFECTED BY THIS WORK SHALL REMAIN OPERATIONAL. ANY DAMAGE TO BUILDING SERVICES AND UTILITIES NOT AFFECTED BY THE WORK SHALL BE PROMPTLY REPAIRED BY THE CONTRACTOR, AT NO COST TO THE BOARD.

THE SIZES INDICATED ON THE DRAWINGS WERE SITE MEASURED. MAKE ANY CHANGES REQUIRED TO SUIT THE ACTUAL SITE CONDITIONS AT NO COST TO THE BOARD.

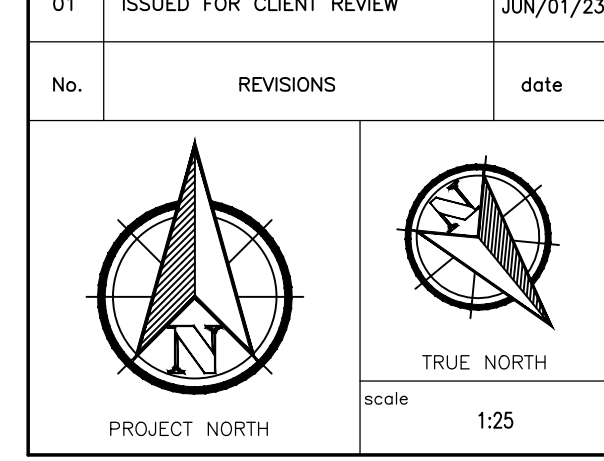
PROVIDE ALL NECESSARY SHORING AND SUPPORT FOR EXISTING PIPING AND EQUIPMENT DURING DEMOLITION.

THIS DRAWING HAS BEEN PREPARED TO SHOW THE GENERAL INTENT AND AREAS OF DEMOLITION WORK. IT DOES NOT REPRESENT THE FULL EXTENT OF ALL DEMOLITION AND REMOVAL WORK AND SHOULD BE READ IN CONJUNCTION WITH ALL TENDER DRAWINGS AND SPECIFICATIONS.

NOTE:
CONTRACTORS SHALL VERIFY AND BE RESPONSIBLE FOR ALL DIMENSIONS AND CONDITIONS ON THE JOB AND THE ENGINEER SHALL BE INFORMED OF ANY VARIATIONS FROM THE DIMENSIONS AND CONDITIONS SHOWN ON THE DRAWINGS. DO NOT SCALE DRAWINGS. SHOP DRAWINGS SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL BEFORE PROCEEDING WITH FABRICATION. THIS DRAWING IS THE PROPERTY OF SAB ENGINEERING INC. AND SHALL NOT BE REPRODUCED WITHOUT THEIR PERMISSION AND UNLESS THE REPRODUCTION CARRIES THEIR NAME. ALL INFORMATION SHOWN ON THIS DRAWING IS FOR USE ON THE SPECIFIED PROJECT ONLY AND SHALL NOT BE USED OTHERWISE WITHOUT WRITTEN PERMISSION OF SAB ENGINEERING INC.

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	drawn	E.T.
	last worked on by	
	checked	G.S.
	print date	2023.06.01

SAB ENGINEERING Inc.

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client
HALTON DISTRICT SCHOOL BOARD

2050 GUELPH AVE. BURLINGTON ONTARIO

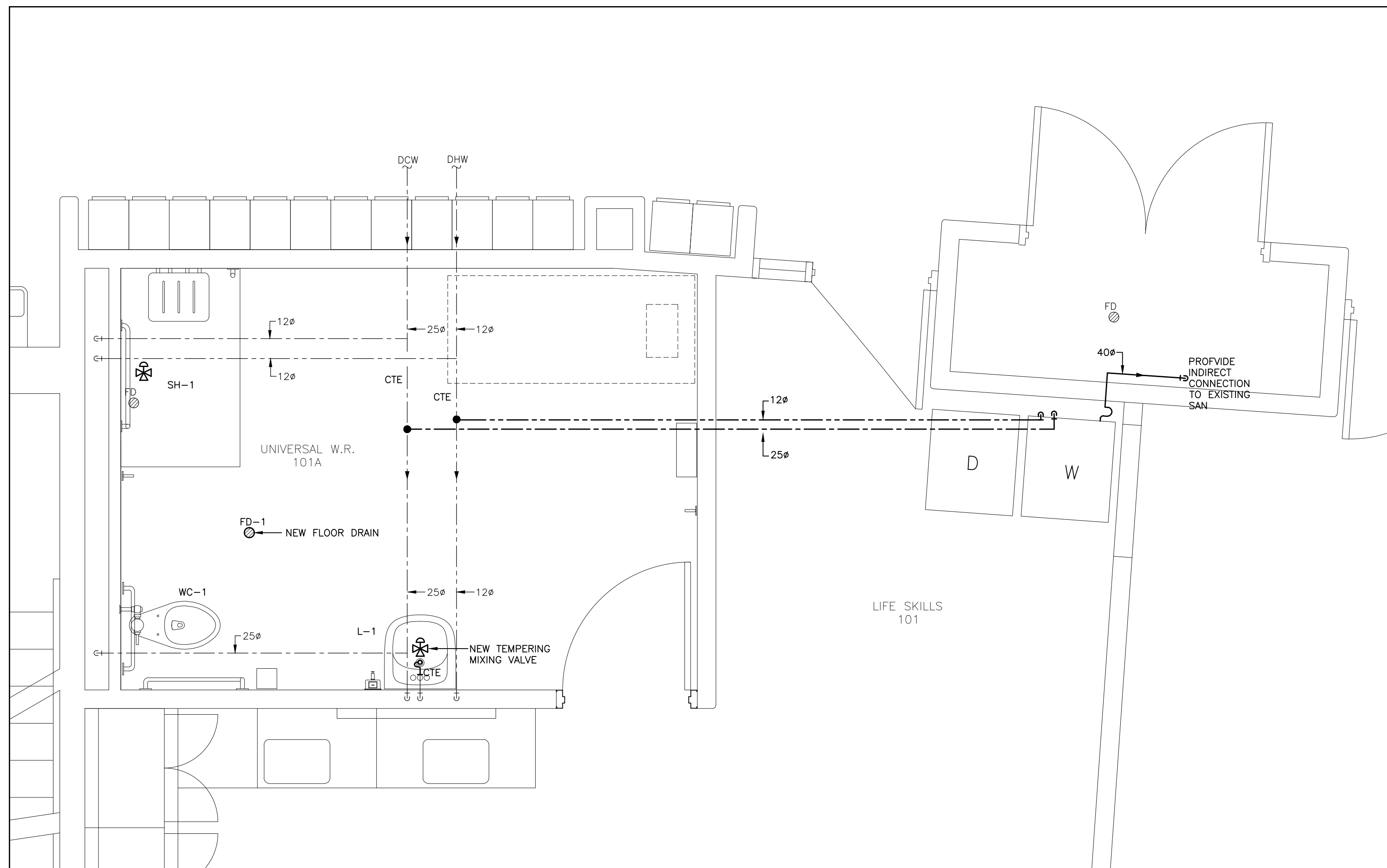
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UNIVERSAL WASHROOM UPGRADES AT FLORENCE MEARES PUBLIC SCHOOL

2102 BERWICK DRIVE BURLINGTON ONTARIO

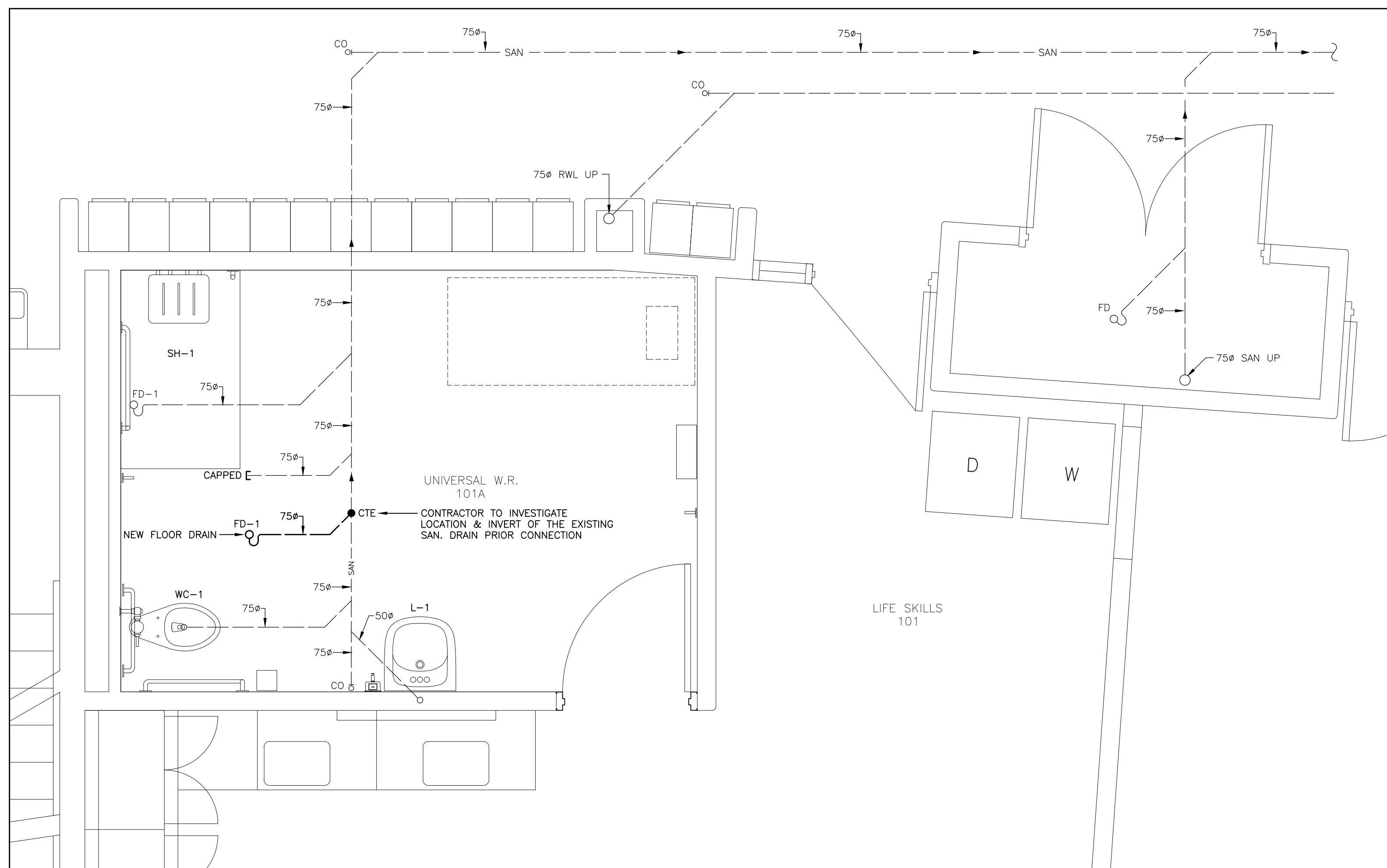
drawing title
UNIVERSAL W.R. 101A - PLUMBING & SANITARY - EXISTING & DEMOLITION WORK - MECHANICAL

reference	
project no.	client reference number
23-038	
sheet no.	

M - 0201



UNIVERSAL WASHROOM 101A -- PLUMBING -- NEW WORK
SCALE: 1:25



UNIVERSAL WASHROOM 101A -- SANITARY -- NEW WORK
SCALE: 1:25

NEW MECHANICAL WORK NOTES:

PROVIDE NEW TOILET AND CONNECT TO EXISTING WATER AND SANITARY SERVICES. CONTRACTOR TO CUT THE FLOOR AND ADJUST THE LOCATION OF THE EXISTING FLOOR FLANGE AS REQUIRED TO MATCH THE NEW WATER CLOSET. PROVIDE ISOLATION VALVES FOR ALL PLUMBING FIXTURES.

PROVIDE NEW LAVATORY C/W DHW TEMPERING VALVE. MODIFY EXISTING PIPING AS REQUIRED. PROVIDE KNEE PROTECTION FOR THE EXISTING SINK.

PROVIDE NEW SHOWER VALVE C/W TEMPERING VALVE, AND BARRIER FREE SHOWER.

ALL U/G AND ABOVE GROUND SERVICES ARE LOCATED BASED ON EXISTING DRAWINGS. CONTRACTOR TO INVESTIGATE AND LOCATE THE SYSTEMS PRIOR TO CONNECTION. PROVIDE A VIDEO INVESTIGATION FOR THE U/G SAN IF REQUIRED TO LOCATE.

NOTE:
CONTRACTORS SHALL VERIFY AND BE RESPONSIBLE FOR ALL DIMENSIONS AND CONDITIONS ON THE JOB AND THE ENGINEER SHALL BE INFORMED OF ANY VARIATIONS FROM THE DIMENSIONS AND CONDITIONS SHOWN ON THE DRAWINGS. DO NOT SCALE DRAWINGS. SHOP DRAWINGS SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL BEFORE PROCEEDING WITH FABRICATION. THIS DRAWING IS THE PROPERTY OF SAB ENGINEERING INC. AND SHALL NOT BE REPRODUCED WITHOUT THEIR PERMISSION AND UNLESS THE REPRODUCTION CARRIES THEIR NAME. ALL INFORMATION SHOWN ON THIS DRAWING IS FOR USE ON THE SPECIFIED PROJECT ONLY AND SHALL NOT BE USED OTHERWISE WITHOUT WRITTEN PERMISSION OF SAB ENGINEERING INC.

PRELIMINARY

01	ISSUED FOR CLIENT REVIEW	JUN/01/23
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No.	REVISIONS	date

PROJECT NORTH

TRUE NORTH

scale 1:25

	drawn	E.T.
	last worked on by	
	checked	G.S.
	print date	2023.06.01

SAB ENGINEERING Inc.

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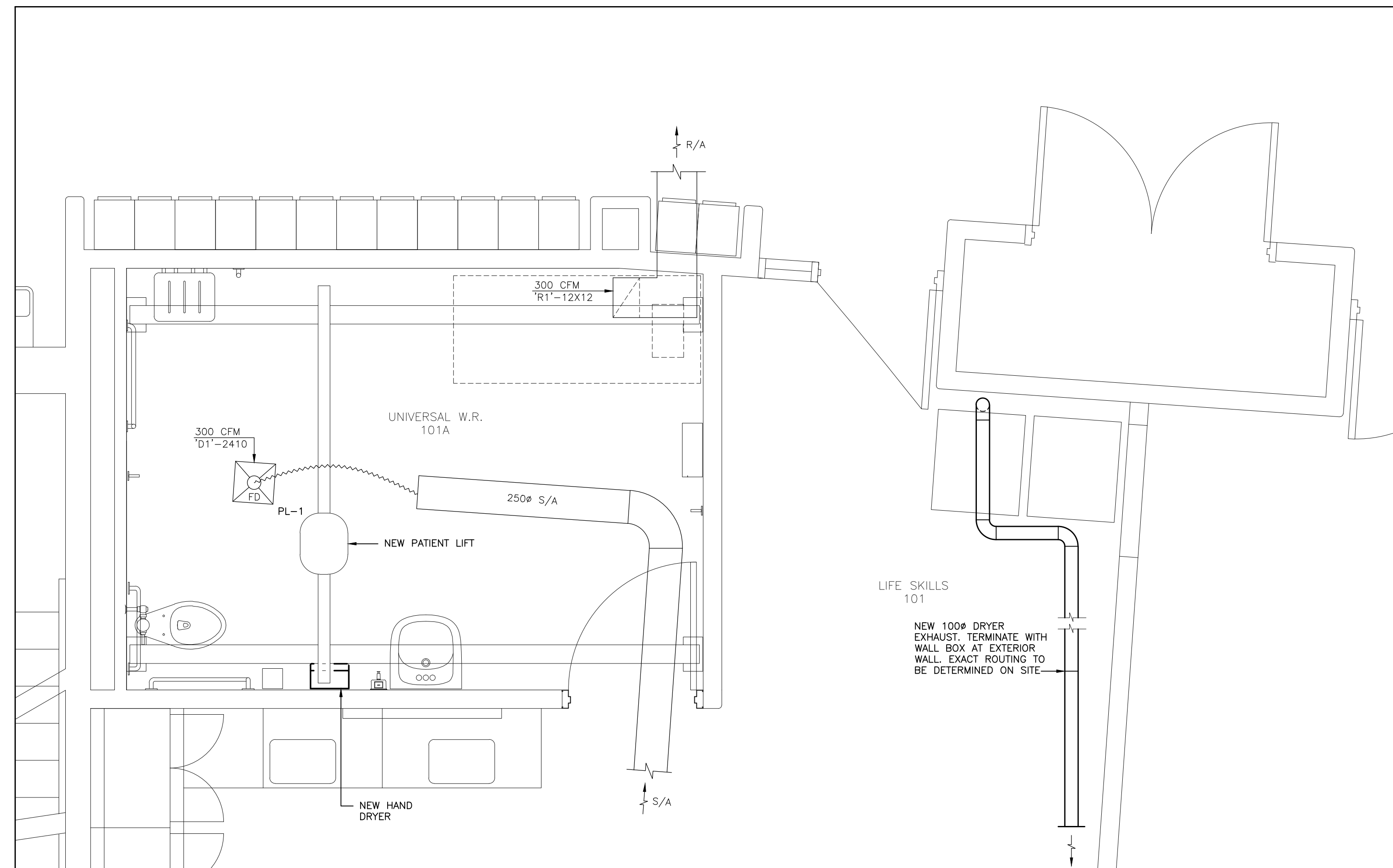
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UNIVERSAL WASHROOM UPGRADES AT FLORENCE MEARES PUBLIC SCHOOL

2102 BERWICK DRIVE BURLINGTON ONTARIO

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UNIVERSAL WASHROOM 101A LAYOUT - EXISTING & NEW WORK HVAC
SCALE: 1:25

NEW MECHANICAL WORK NOTES:

- EXISTING SUPPLY SUPPLY AND EXHAUST SYSTEMS FOR THE WASHROOM TO REMAIN.
- PROVIDE NEW EXHAUST DUCT FOR THE DRYER AND TERMINATE AT THE OUTSIDE WALL WITH WALL BOX MANUFACTURED BY REVERSOMATIC.

NOTE:
CONTRACTORS SHALL VERIFY AND BE RESPONSIBLE FOR ALL DIMENSIONS AND CONDITIONS ON THE JOB AND THE ENGINEER SHALL BE INFORMED OF ANY VARIATIONS FROM THE DIMENSIONS AND CONDITIONS SHOWN ON THE DRAWINGS. DO NOT SCALE DRAWINGS. SHOP DRAWINGS SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL BEFORE PROCEEDING WITH FABRICATION. THIS DRAWING IS THE PROPERTY OF SAB ENGINEERING INC. AND SHALL NOT BE REPRODUCED WITHOUT THEIR PERMISSION AND UNLESS THE REPRODUCTION CARRIES THEIR NAME. ALL INFORMATION SHOWN ON THIS DRAWING IS FOR USE ON THE SPECIFIED PROJECT ONLY AND SHALL NOT BE USED OTHERWISE WITHOUT WRITTEN PERMISSION OF SAB ENGINEERING INC.

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ELECTRICAL GENERAL NOTES

GENERAL

EXAMINE ARCHITECTURAL, STRUCTURAL AND MECHANICAL CONDITIONS AND AVAILABLE DRAWINGS BEFORE PROCEEDING WITH THE WORK. ANY DISCREPANCIES BETWEEN DRAWINGS AND/OR SPECIFICATIONS MUST BE REFERRED TO THE PRIME CONSULTANT BEFORE ANY AFFECTED WORK IS COMMENCED.

ALL MATERIALS USED THROUGHOUT SHALL BE NEW, OF BEST QUALITY CSA APPROVED AND OF ONE MANUFACTURER.

OBTAIN AND PAY FOR APPROVALS AND PERMITS FROM AUTHORITIES HAVING JURISDICTION.

PROVIDE ALL CONDUIT, WIRING, BOXES, SWITCHES, OUTLETS, DEVICES, ETC, AS REQUIRED. MAKE UP TO THE LAST 3 FT OF FINAL CONNECTIONS TO ROTATING EQUIPMENT WITH LIQUID TIGHT FLEXIBLE CONDUIT.

CONTRACTORS SHALL NOTE THAT THIS CONTRACT IS AN ALTERATION TO AN EXISTING BUILDING AND SHALL THOROUGHLY INVESTIGATE THE EXISTING ELECTRICAL INSTALLATION AND CONDITIONS. DEMOLITION. REMOVE POWER CONNECTIONS AS SHOWN ON DRAWINGS C/W CONDUIT AND WIRING TO SOURCE.

CONDUCTORS AND CABLES

CONDUCTORS AND CABLES SHALL BE IN ACCORDANCE WITH NEMA WC-70 AND AS SPECIFIED HEREIN.

CONDUCTORS SHALL BE ANNEALED COPPER, STRANDED FOR SIZES NO. 8 AWG AND LARGER, SOLID FOR SIZES NO. 10 AWG AND SMALLER. CONDUCTORS SHALL BE MINIMUM SIZE NO. 12 AWG, EXCEPT WHERE SMALLER SIZES ARE SPECIFICALLY SHOWN ON THE DRAWINGS. MINIMUM SIZE WIRING FOR DC WIRING SHALL BE #10 GAUGE.

ALL WIRING SHALL BE 600 VOLT TYPE RW90 AND RUN IN METALLIC CONDUIT EXCEPT WHERE ALLOWED IN FLEXIBLE LIQUID-TIGHT FLEXIBLE ENCLOSURE (SEE SECTION 15241). MAXIMUM VOLTAGE DROP SHALL NOT EXCEED 2%. PROVIDE GROUND WIRES WITH ALL FEEDERS AND BRANCH CIRCUITS IN ACCORDANCE WITH APPLICABLE CODES AND ONTARIO ELECTRICAL SAFETY CODE REQUIREMENTS. PROVIDE MAIN GROUND TO ESA APPROVAL.

INSULATION:

THHN-THWN SHALL BE IN ACCORDANCE WITH NEMA WC-70, UL 44, AND UL 83.

CONDUITS

ALL CONDUIT SHALL BE RIGID ALUMINUM (OUTDOORS) OR EMT THINWALL (INDOORS) WITH STEEL SET SCREW COUPLINGS AND CONNECTORS WITH INSULATED THROATS UNLESS OTHERWISE NOTED. RUN CONDUITS PARALLEL TO BUILDING LINES AND CONCENTRIC RIGHT ANGLE BENDS ONLY SHALL BE USED.

SEAL ALL PENETRATIONS THROUGH FLOOR SLABS WITH AN APPROVED NON-SHRINK, WATERPROOF AND FIREPROOF SEALANT.

NEW CONDUIT HANGERS SHALL BE SUPPORTED FROM BUILDING STRUCTURE AND INDEPENDENTLY FROM OTHER EXISTING ELEMENTS SUCH AS DUCTWORK, CONDUITS, PIPING ETC.

POWER DISTRIBUTION SYSTEM

THE POWER DISTRIBUTION SYSTEM SHALL BE MODIFIED AS SHOWN ON THE PLANS AND AS HEREINAFTER SPECIFIED. BREAKERS RATING SHALL MATCH EXISTING EQUIPMENT TO WHICH THEY ARE INSTALLED.

SPLICES AND JOINTS

IN ACCORDANCE WITH UL 486A, C, D, E, AND NEC.

CONNECTORS: SOLDERLESS, SCREW ON, REUSABLE PRESSURE CABLE TYPE, RATED 600 V, 220° F [105° C], WITH INTEGRAL INSULATION, APPROVED FOR COPPER CONDUCTORS. THE INTEGRAL INSULATOR SHALL HAVE A SKIRT TO COMPLETELY COVER THE STRIPPED WIRES. THE NUMBER, SIZE, AND COMBINATION OF CONDUCTORS, AS LISTED ON THE MANUFACTURER'S PACKAGING, SHALL BE STRICTLY FOLLOWED.

CONNECTORS SHALL BE INDENT, HEX SCREW, OR BOLT CLAMP TYPE OF HIGH CONDUCTIVITY AND CORROSION RESISTANT MATERIAL. LISTED FOR USE WITH COPPER AND ALUMINUM CONDUCTORS. FIELD-INSTALLED COMPRESSION CONNECTORS FOR CABLE SIZES 250 MCM AND LARGER SHALL HAVE NOT FEWER THAN TWO CLAMPING ELEMENTS OR COMPRESSION INDENTS PER WIRE.

INSULATE SPLICES AND JOINTS WITH MATERIALS APPROVED FOR THE PARTICULAR USE, LOCATION, VOLTAGE, AND TEMPERATURE. SPLICE AND JOINT INSULATION LEVEL SHALL BE NOT LESS THAN THE INSULATION LEVEL OF THE CONDUCTORS BEING JOINED. PLASTIC ELECTRICAL INSULATING TAPE: PER ASTM D2304, FLAME-RETARDANT, COLD AND WEATHER RESISTANT.

LOW VOLTAGE FUSED AND NON-FUSED DISCONNECT SWITCHES RATED 600 AMPERES AND LESS

IN ACCORDANCE WITH UL 98, NEMA KS1, AND NEC. SHALL HAVE NEMA CLASSIFICATION GENERAL DUTY (GD) FOR 240 V SWITCHES AND NEMA CLASSIFICATION HEAVY DUTY (HD) FOR 600 V SWITCHES. SHALL BE HP RATED.

LOCATE IN THE PROXIMITY OF THE EQUIPMENT SERVED, IN ACCORDANCE WITH NEC REQUIREMENTS.

SHALL HAVE THE FOLLOWING FEATURES:

- SWITCH MECHANISM SHALL BE THE QUICK-MAKE, QUICK-BREAK TYPE.
- COPPER BLADES, VISIBLE IN THE OFF POSITION.
- AN ARC CHUTE FOR EACH POLE.
- EXTERNAL OPERATING HANDLE SHALL INDICATE ON AND OFF POSITION AND HAVE LOCK OPEN PADLOCKING PROVISIONS.
- MECHANICAL INTERLOCK SHALL PERMIT OPENING OF THE DOOR ONLY WHEN THE SWITCH IS IN THE OFF POSITION, DEFEATABLE TO PERMIT INSPECTION.
- FUSE HOLDERS FOR THE SIZES AND TYPES OF FUSES SPECIFIED (WHERE APPLICABLE).
- WHERE APPLICABLE, FUSIBLE DISCONNECT SWITCHES SHALL BE FURNISHED COMPLETE WITH FUSES. ARRANGE FUSES SUCH THAT RATING INFORMATION IS READABLE WITHOUT REMOVING THE FUSE.
- SOLID NEUTRAL FOR EACH SWITCH BEING INSTALLED IN A CIRCUIT WHICH INCLUDES A NEUTRAL CONDUCTOR.
- GROUND LUGS FOR EACH GROUND CONDUCTOR.

ENCLOSURES:

SHALL BE THE NEMA TYPES SHOWN ON THE DRAWINGS FOR THE SWITCHES. WHERE THE TYPES OF SWITCH ENCLOSURES ARE NOT SHOWN, THEY SHALL BE THE NEMA TYPES MOST SUITABLE FOR THE AMBIENT ENVIRONMENTAL CONDITIONS. UNLESS OTHERWISE INDICATED ON THE PLANS, ALL OUTDOOR SWITCHES SHALL BE NEMA 3R. SHALL BE FINISHED WITH MANUFACTURER'S STANDARD GRAY BAKED ENAMEL PAINT OVER PRE-TREATED STEEL (FOR THE TYPE OF ENCLOSURE REQUIRED).

ELECTRICAL GENERAL NOTES

1. OBTAIN ALL APPROVALS FROM PUBLIC AUTHORITIES HAVING JURISDICTION, BEFORE COMMENCING WORK AND PAY ALL ASSOCIATED INSPECTION FEES AND ALL PERMITS.
2. EXAMINE ARCHITECTURAL, STRUCTURAL AND MECHANICAL CONDITIONS AND AVAILABLE DRAWINGS BEFORE PROCEEDING WITH THE WORK. ANY DISCREPANCIES BETWEEN DRAWINGS AND/OR SPECIFICATIONS MUST BE REFERRED TO THE CONSULTANT BEFORE ANY AFFECTED WORK IS COMMENCED.
3. ALL CUTTING AND PATCHING REQUIRED FOR THE ELECTRICAL WORK SHALL BE INCLUDED. NO CHASING BLOCKWORK WILL BE ALLOWED. PROVIDE FIRE-STOPPING TO SUIT FT RATING OF THE FLOOR OR WALL PENETRATION TO SUIT. MAKE GOOD ALL BUILDING ELEMENTS AFFECTED BY THIS WORK TO THEIR ORIGINAL CONDITION OR BETTER.
4. ALL MATERIAL USED THROUGHOUT SHALL BE NEW, OF BEST QUALITY CSA APPROVED AND OF ONE MANUFACTURE.
5. PROVIDE ALL CONDUIT, WIRING, BOXES, SWITCHES, OUTLETS, DEVICES, ETC., AS REQUIRED. MAKE FINAL CONNECTIONS TO VIBRATING EQUIPMENT WITH LIQUID TIGHT FLEXIBLE CONDUIT. ALSO REFER TO SECTION 15241.
6. PROVIDE ALL HANGERS, INSERTS AND SUPPORTS OF APPROVED TYPES REQUIRED FOR THE ELECTRICAL WORK. PROVIDE CONDUIT FOR ALL SERVICES PENETRATING THE FLOOR SLAB. SEAL ALL PENETRATIONS THROUGH FLOOR SLABS WITH AN APPROVED NON-SHRINK, WATERPROOF AND FIREPROOF SEALANT.
7. ALL CONDUIT SHALL BE EMT THINWALL WITH STEEL SET SCREW COUPLINGS AND CONNECTORS WITH INSULATED THROATS UNLESS OTHERWISE NOTED. PAINT CONDUIT TO MATCH EXISTING SURFACE THEY ARE INSTALLED ON. IN FINISHED AREA, RUN PARALLEL TO BUILDING WALLS AND CONCENTRIC RIGHT ANGLE BENDS ONLY SHALL BE USED.
8. ALL WIRING SHALL BE MINIMUM #12 GAUGE COPPER, EXCEPT AS OTHERWISE NOTED. ALL WIRING SHALL BE 600 VOLT TYPE RW90 AND RUN IN CONDUITS. MINIMUM SIZE WIRING FOR DC WIRING SHALL BE #10 GAUGE. MAXIMUM VOLTAGE DROP NOT EXCEED 2 PERCENT. PROVIDE GROUND WIRES WITH ALL FEEDERS AND BRANCH CIRCUITS IN ACCORDANCE WITH APPLICABLE CODES AND ONTARIO ELECTRICAL SAFETY CODE REQUIREMENTS. PROVIDE MAIN GROUND TO ESA APPROVAL.
9. PROVIDE ALL CONDUIT, WIRING, SPLITTERS, OUTLET BOXES AND DISCONNECT SWITCHES AS SHOWN AND AS REQUIRED TO MAKE THE EQUIPMENT FULLY OPERATIONAL. SUPPLY AND INSTALL ALL STARTERS AND WIRE COMPLETE. COORDINATE THE FINAL LOCATION OF DISCONNECT SWITCHES AND VFD DEVICES SUCH AS TO MAINTAIN THE PRESCRIBED CLEARANCES AND AVOID INTERFERENCE WITH OTHER EQUIPMENT.
10. CONTRACTORS SHALL NOTE THAT THIS CONTRACT IS AN ALTERATION TO AN EXISTING BUILDING AND SHALL THOROUGHLY INVESTIGATE THE EXISTING ELECTRICAL INSTALLATION AND CONDITIONS.
11. DEMOLITION OF EXISTING SERVICES: REMOVE POWER CONNECTIONS AS SHOWN ON DRAWINGS C/W CONDUIT AND WIRING TO SOURCE.
12. ALL WORK SHALL BE DONE WITH MINIMUM POSSIBLE INTERRUPTION TO EXISTING BUILDING SYSTEMS AND IN THE TIME SCHEDULE PERMITTED BY THE PROJECT MANAGER. INCLUDE FOR AFTER HOURS/WEEKEND WORK FOR POWER SHUTDOWN & CONNECTION WORK.
13. PROVIDE LAMACOID LABEL AT EACH EQUIPMENT DISCONNECT SWITCH STATING PANEL SOURCE, OVER-CURRENT PROTECTION AND BRANCH WIRING SIZE.

GENERAL NOTES

1. IT IS MANDATORY FOR THE ELECTRICAL CONTRACTOR (AND ALL SUB-CONTRACTORS) TO VISIT THE SITE PRIOR TO BIDDING AND REVIEW EXISTING CONDITIONS AND DEMOLITION SCOPE OF WORK TO SUIT EXISTING ARCHITECTURAL, STRUCTURAL AND MECHANICAL SITE CONDITIONS, DRAWINGS, SPECIFICATIONS AND ALL CONTRACT DOCUMENTS. NO EXTRA WILL SUBSEQUENTLY BE ALLOWED TO COVER ANY SUCH ERROR, OMISSION AND/OR OVERSIGHT FOR NOT HAVING MADE A THOROUGH INSPECTION OF THE GROUNDS, EXISTING CONDITIONS, DRAWINGS, SPECIFICATION AND DESIGN INTENT. THE ELECTRICAL CONTRACTOR SHALL NOTE THAT THE EXISTING BUILDING WILL REMAIN IN OPERATION THROUGHOUT DEMOLITION/CONSTRUCTION. ALLOW FOR ANY WORK REQUIRED TO BE DONE WHICH MAY AFFECT POWER SUPPLY AND OPERATION OF THE BUILDING TO BE CARRIED OUT AFTER HOURS OR AT A TIME CONVENIENT TO THE BUILDING MANAGEMENT. PROVIDE TEMPORARY SERVICES AS REQUIRED TO ENSURE CONTINUED OPERATION AT ALL TIMES.
2. CAREFULLY EXAMINE OTHER EXISTING UTILITY LINES SUCH AS GAS, WATER ETC. PRIOR TO START THE ELECTRICAL CONSTRUCTION WORKS AND COORDINATE WITH OTHER TRADES AND REPORT OF ANY DISCREPANCY PRIOR TO PROCEEDING.
3. THESE DRAWINGS SHALL BE READ AND PRICED IN CONJUNCTION WITH ARCHITECTURAL, MECHANICAL, AND STRUCTURAL DRAWINGS AND SPECIFICATIONS AS WELL AS ALL OTHER DOCUMENTS FORMING THIS BID. INCLUDE FOR THE SUPPLY AND INSTALLATION OF POWER, SYSTEMS, AND LIGHTING AS PER THE COMPLETE CONSTRUCTION DOCUMENTS. NO EXTRA COST WILL BE ACCEPTED IN FAILURE TO OBTAINING AND/OR REVIEW OF SUCH DOCUMENTS. REFER TO ARCHITECTURAL, ELECTRICAL, STRUCTURAL AND MECHANICAL LAYOUTS IN CONJUNCTION FOR EXACT LOCATION OF ALL EQUIPMENT. REPORT ANY DISCREPANCIES TO THE ELECTRICAL ENGINEER PRIOR TO COMMENCING WORK. NO EXTRA WILL BE PROVIDED AS A RESULT OF A FAILURE TO DO SO.
4. IT IS MANDATORY THAT ELECTRICAL WORK CONFORM TO ALL APPLICABLE CODES (INCLUDING THE ONTARIO BUILDING, FIRE, AND ONTARIO ELECTRICAL SAFETY CODE), BASE BUILDING (BOARD) STANDARDS, AND THE STANDARDS SET BY ANY AND ALL LOCAL AUTHORITIES HAVING JURISDICTION.
5. LOCATIONS OF ALL NEW DISCONNECT SWITCHES AND STARTERS SHALL BE CONFIRMED WITH DIVISION 23 PRIOR TO INSTALLATION. STARTERS FOR EXHAUST FANS SHALL BE SUPPLIED AND INSTALLED BY DIV. 26.
6. ALL ELECTRICAL WORK SHALL BE INSPECTED BY THE ELECTRICAL SAFETY AUTHORITY (ESA). ARRANGE AND PAY FOR ALL INSPECTIONS REQUIRED FOR THE DURATION OF THE PROJECT.
7. THE ELECTRICAL CONTRACTOR IS RESPONSIBLE FOR HIRING A FIRE WATCH AS REQUIRED BY CODE, LOCAL AUTHORITIES HAVING JURISDICTION, AND DURING ANY ALTERATION OR DOWNTIME OF THE FIRE ALARM SYSTEM. FIRE WATCH SHALL BE PRESENT THROUGHOUT THE DOWNTIME DURATION.
8. DURING CONSTRUCTION, IT IS CRITICAL THAT THE ELECTRICAL CONTRACTOR COORDINATES ITS WORK WITH ALL OTHER TRADES. THE ELECTRICAL CONTRACTOR IS RESPONSIBLE FOR REVIEWING THE SCOPE OF WORK OF OTHER TRADES (INCLUDING, BUT NOT LIMITED TO, ARCHITECTURAL, MECHANICAL, STRUCTURAL, MILLWORK, ETC.) IN CONJUNCTION WITH THE PROPOSED ELECTRICAL SCOPE OF WORK. THE ELECTRICAL CONTRACTOR SHALL ESPECIALLY REVIEW MECHANICAL CONVECTOR AND NEW MILLWORK LOCATIONS AND IDENTIFY ANY POSSIBLE INTERFERENCES WITH THE PROPOSED ELECTRICAL WORK PRIOR TO ROUGH-IN (I.E. RECEPTACLE LOCATIONS SHALL BE SHIFTED FROM THE PROPOSED LOCATION TO ANOTHER LOCATION SHOULD THE CONTRACTOR FIND OUT DURING COORDINATION THAT MECHANICAL CONVECTORS ARE BEING INSTALLED IN A CERTAIN LOCATION. SIMILARLY, RECEPTACLE HEIGHTS SHALL BE ADJUSTED IN THE EVENT THAT NEW, PROPOSED MILLWORK MIGHT BLOCK PROPOSED RECEPTABLES. NO EXTRA WILL BE PERMITTED OF AN ERROR RELATED TO A LACK OF COORDINATION ON SITE.
9. THE ELECTRICAL CONTRACTOR SHALL LABEL ALL NEW AND EXISTING LIGHT SWITCHES, RECEPTABLES AND JUNCTION BOXES COVERPLATES WITH THE PANEL NAME AND BREAKER IT IS FED FROM. ALL LABELING OF ELECTRICAL DEVICES SHALL BE DONE SO WITH A LABELMAKER ONLY. NO HAND WRITTEN LABELS WILL BE PERMITTED.
10. WHERE NEW PARTITIONS ARE BEING CONSTRUCTED, ALL WIRING AND RACEWAYS SHALL BE EMBEDDED IN THE CONSTRUCTION OF THE NEW WALLS AND ALL BACKBOXES SHALL BE RECESSED. WHERE NEW DEVICES/SYSTEMS ARE PROPOSED ON EXISTING BLOCK WALLS, UTILIZE WIREMOLD 500/700 SERIES AS RACEWAY FOR ALL NEW WIRING. PROVIDE WIREMOLD BACKBOXES FOR SURFACE MOUNTED, INTERIOR APPLICATIONS. THE USE OF SHEET METAL BOXES WILL NOT BE PERMITTED.
11. IN THE EVENT OF ANY DISCREPANCY BETWEEN THE ELECTRICAL DRAWINGS AND SPECIFICATIONS, ALLOW FOR THE HIGHEST-PRICED OPTION IN THE TENDER PRICE.
12. ALL WIRING USED ON THIS PROJECT SHALL BE RUN IN RACEWAYS. NO USE OF ARMORED (BX) CABLE WILL BE PERMITTED WITH THE EXCEPTION OF RUNS NOT TO EXCEED 5' BETWEEN A LIGHT FIXTURE AND THE RESPECTIVE JUNCTION BOX.
13. ALL WORK DONE BY DIVISION 16 OR BY A SUBCONTRACTOR OF DIVISION 16 SHALL BE FIRESTOPPED BY A SPECIALIST HIRED BY DIVISION 16, THE COSTS OF WHOM SHALL BE INCLUDED FOR IN THE TENDER PRICE. PROVIDE A LETTER, IF REQUESTED, CERTIFYING ACCEPTANCE OF ALL FIRESTOPPING BY A PROFESSIONAL AUTHORIZED TO REVIEW THE FIRESTOPPING WORK.
14. NEW WORK SHALL NOT COMMENCE PRIOR TO COMPLETION OF DEMOLITION BY ALL TRADES. THE INSTALLATION OF NEW SYSTEMS (INCLUDING CONDUIT) SHALL TAKE PLACE IN STRICT COORDINATION WITH OTHER DISCIPLINES TO AVOID CONFLICTS. ANY WORK REQUIRING REMOVAL AND REINSTATEMENT SHALL BE DONE AT NO COST TO THE OWNER WHEN SUCH CHANGES ARE REQUIRED AS A RESULT OF SITE COORDINATION ISSUES.

ELECTRICAL LEGEND

	OUTLET FOR USE AS NOTED INCLUDING FINAL CONNECTION.
	SINGLE POLE TOGGLE SWITCHES WITH ONE, TWO OR THREE GANG RESPECTIVELY.
	15A, 120V U-GROUND DUPLEX RECEPTACLE.
	15A, 120V U-GROUND DUPLEX RECEPTACLE MOUNTED AT HIGH LEVEL OR ABOVE COUNTER.
	15A, 120V U-GROUND GROUND FAULT INTERRUPTER TYPE DUPLEX RECEPTACLE
	30A, 208V DRYER RECEPTACLE
	50A, 208V STOVE RECEPTACLE
	ROOM CONTROL PANEL WITH DEVICES AS SHOWN. SUPPLIED & INSTALLED BY ELECTRICAL DIVISION. REFER TO SPECIFICATIONS FOR DETAILS.
	ELECTRICAL PANEL, SURFACE OR FLUSH RESPECTIVELY.
	VOICE (TELEPHONE) OUTLET C/W 3/4" C WITH 90° BEND AT TOP AND PVC END BUSHING TO ACCESSIBLE CEILING SPACE.
	SURFACE MOUNTED RACEWAY MOUNTED HORIZONTALLY WITH DEVICES AS SHOWN ON THE PLANS AND VERTICAL SECTION UP TO ACCESSIBLE CEILING. WIREMOLD #G4000 SERIES OR APPROVED EQUAL.
EX	EXISTING ELECTRICAL EQUIPMENT/DEVICE TO REMAIN.
ER	EXISTING ELECTRICAL EQUIPMENT/DEVICE TO BE RELOCATED.
RE	EXISTING ELECTRICAL EQUIPMENT/DEVICE IN RELOCATED POSITION.
R	EXISTING ELECTRICAL EQUIPMENT/DEVICE TO BE REMOVED.
N	NEW ELECTRICAL EQUIPMENT/DEVICE
	FLUORESCENT LIGHTING FIXTURE
	ELECTRIC STRIKE
	DOOR OPERATOR PUSH BUTTON C/W CONDUIT, WIRING AND INSTALLATION.
	PUSH-TO-LOCK BUTTON TIED TO THE DOOR OPERATOR SYSTEM
	PUSH-TO-UNLOCK BUTTON TIED TO THE DOOR OPERATOR SYSTEM
	FIRE ALARM STROBE LIGHT. "XCD" - WHERE X DENOTES CANDELA RATING OTHER THAN MINIMUM 15cd.
	EMERGENCY CALL-FOR ASSISTANCE SYSTEM PUSH BUTTON WITH VISUAL INDICATOR MOUNTED ADJACENT THE WATER CLOSET
	EMERGENCY CALL-FOR ASSISTANCE SYSTEM AUDIBLE/VISUAL INDICATOR MOUNTED ABOVE THE WASHROOM DOOR
	'OCCUPIED WHEN LIT' LED ANNUNCIATOR TIED TO DOOR OPERATOR SYSTEM
	CEILING MOUNTED DUAL TECHNOLOGY (INFRARED AND ULTRASONIC) OCCUPANCY SENSOR ACUITY SENSORSWITCH, WV PDT 16 R KIT, 120V, NO PHOTOCCELL OPTION, OR APPROVED EQUAL
	FIRE ALARM HORN
	EMERGENCY LIGHTING: BEGHELLI NV/2 SERIES # NV12-100/2SR LONG LIFE SEALED BATTERY COMPLETE WITH MICRO SIZE HEADS. SURFACE MOUNT.

LIGHTING FIXTURES SCHEDULE

TYPE	MANUFACTURER	CATALOGUE	DESCRIPTION
A	SIGNIFY	1EV45L850-4-D-UNV-IAO	1X4 RECESSED LED LIGHT FIXTURE, LIGHT HOUSING IN CEILING SPACE TO BE FIRE INSULATE BY CONTRACTOR

GENERAL NOTES:

IT IS MANDATORY FOR THE ELECTRICAL CONTRACTOR TO VISIT SITE AND REVIEW EXISTING CONDITIONS AND DEMOLITION SCOPE OF WORK TO SUIT EXISTING ARCHITECTURAL AND STRUCTURAL CONDITIONS AND MECHANICAL DRAWINGS.

CAREFULLY EXAMINE OTHER EXISTING UTILITY LINES SUCH AS GAS, WATER ETC. PRIOR TO START THE ELECTRICAL CONSTRUCTION WORKS AND COORDINATE WITH OTHER TRADES AND REPORT OF ANY DISCREPANCY PRIOR TO PROCEEDING.

REFER TO ELECTRICAL AND MECHANICAL LAYOUTS FOR EXACT LOCATION OF ALL EQUIPMENT.

LOCATIONS OF ALL NEW DISCONNECT SWITCHES, VFDs AND STARTERS SHALL BE CONFIRMED WITH DIVISION 15 PRIOR TO INSTALLATION.

GENERAL NOTES:

COORDINATE WITH ALL OTHER TRADES BEFORE FINAL LOCATIONS OF DUCTS, PIPES, DIFFUSERS, SPRINKLERS, EQUIPMENT ETC. ARE FINALIZED.

COORDINATE LOCATIONS OF ALL GRILLES/DIFFUSERS WITH LIGHTS, SPRINKLERS, ETC. AND REFLECTED CEILING PLAN.

PATCH/REPAIR ALL OPENINGS THROUGH THE BUILDING ELEMENTS TO MATCH EXISTING.

CONTRACTOR TO VERIFY EXACT LOCATION OF EXISTING DUCTWORK AND EQUIPMENT. LOCATIONS SHOWN ARE BASED ON SITE MEASUREMENTS. INFORM THE CONSULTANT OF ANY INTERFERENCES AND DISCREPANCIES.

CONTRACTOR TO VERIFY ALL DIMENSIONS AND ENSURE ADEQUATE SPACE FOR PROPER INSTALLATION.

MAINTAIN SAFETY AT ALL TIMES.

MAKE GOOD ALL SURFACES AFFECTED BY THE WORK OF THIS CONTRACT.

ALL REMOVED MATERIAL (EXCEPT AS INDICATED BY THE OWNER) TO BECOME THE PROPERTY OF THE CONTRACTOR AND TO BE DISPOSED OFF SITE.

THE CONTRACTOR TO MAINTAIN DUST CONTROL AT ALL TIMES AND PROVIDE SAFETY FENCING AROUND THE WORK ZONES.



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UNIVERSAL WASHROOM UPGRADES AT FLORENCE MEARES PUBLIC SCHOOL

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drawing title
SYMBOL LISTS & GENERAL NOTE - ELECTRICAL

reference

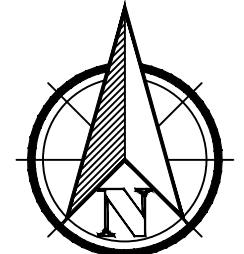
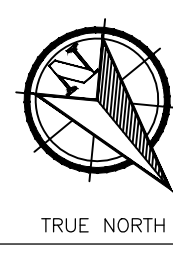
project no. 23-038 client reference number

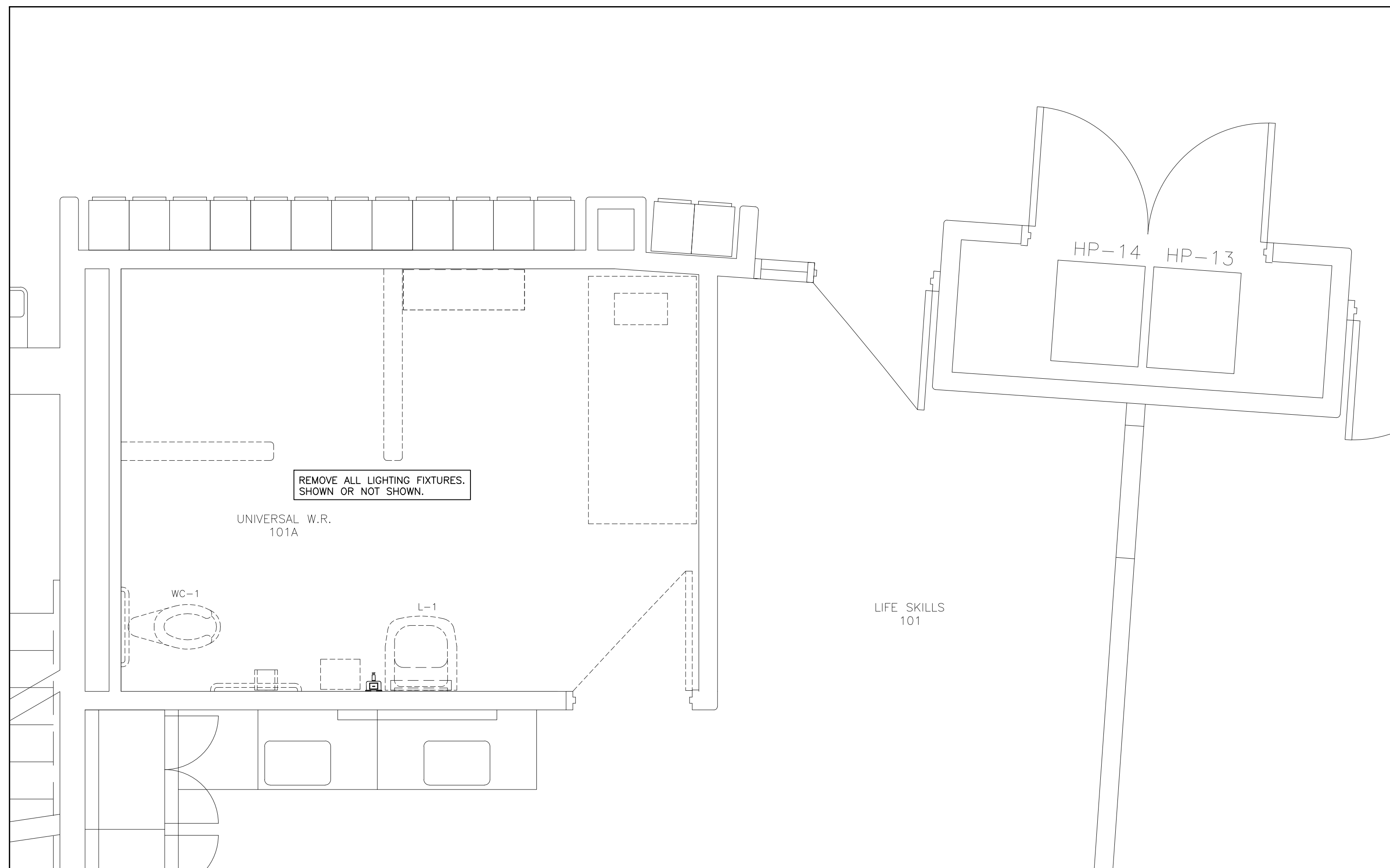
sheet no.

E - 0101

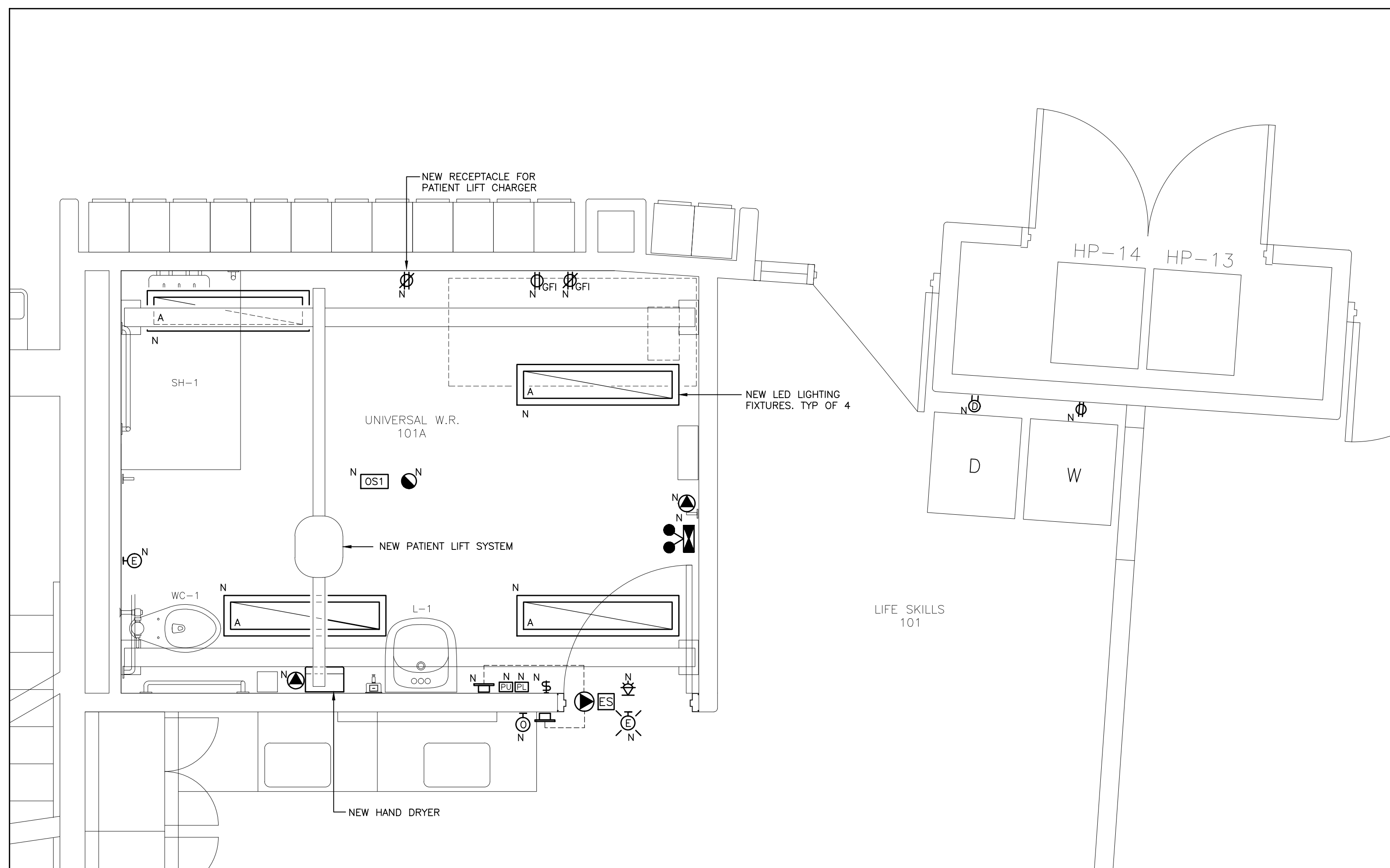
NOTE:
 CONTRACTORS SHALL VERIFY AND BE RESPONSIBLE FOR ALL DIMENSIONS AND CONDITIONS ON THE JOB AND THE ENGINEER SHALL BE INFORMED OF ANY VARIATIONS FROM THE DIMENSIONS AND CONDITIONS SHOWN ON THE DRAWINGS. DO NOT SCALE DRAWINGS. SHOP DRAWINGS SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL BEFORE PROCEEDING WITH FABRICATION. THIS DRAWING IS THE PROPERTY OF SAB ENGINEERING INC. AND SHALL NOT BE REPRODUCED WITHOUT THEIR PERMISSION AND UNLESS THE REPRODUCTION CARRIES THEIR NAME. ALL INFORMATION SHOWN ON THIS DRAWING IS FOR USE ON THE SPECIFIED PROJECT ONLY AND SHALL NOT BE USED OTHERWISE WITHOUT WRITTEN PERMISSION OF SAB ENGINEERING INC.

PRELIMINARY

01	ISSUED FOR CLIENT REVIEW	JUN/01/23
No.	REVISIONS	date
 		
		scale 1:25



UNIVERSAL WASHROOM 101A -- POWER -- EXISTING & DEMOLITION WORK
 SCALE: 1:25



UNIVERSAL WASHROOM 101A -- POWER -- NEW WORK
 SCALE: 1:25

NEW ELECTRICAL WORK NOTES:

- ALL DEVICES/EQUIPMENT/POWER CONNECTIONS SHOWN ARE NEW UNLESS OTHERWISE STATED.
- PROVIDE 120V POWER CONNECTIONS (C/W WIRING AND RACEWAYS), BACKBOXES, LOW VOLTAGE WIRING AND CONDUIT REQUIRED FOR THE DOOR OPERATOR SYSTEM (C/W TWO PUSH BUTTONS, PUSH-TO-LOCK BUTTON, ELECTRIC STRIKE AND AUTO OPERATOR) FOR A FULLY OPERATIONAL SYSTEM. ELECTRIC STRIKE, POWER SUPPLY, AUTO OPERATOR, ACTUATORS, PUSH-TO-LOCK BUTTON, LED PLATE, RELAY, AND TRANSFORMER ARE TO BE SUPPLIED UNDER ARCHITECTURAL DIVISION. INSTALLATION OF ALL COMPONENTS SHALL BE BY DIVISION 16. SUPPLY OF ALL WIRING, RACEWAYS AND BACKBOXES SHALL BE BY DIV.16. COORDINATE INSTALLATION WITH OTHER TRADES DURING CONSTRUCTION.
- PROVIDE AN EMERGENCY CALL SYSTEM IN THE NEW UNIVERSAL WASHROOM C/W AUDIBLE/VISUAL INDICATOR OUTSIDE OF THE WASHROOM DOOR, VISUAL INDICATOR INSIDE THE WASHROOM, AUDIBLE/VISUAL INDICATOR IN THE MAIN OFFICE, MUSHROOM PUSH BUTTON BESIDE THE WATER CLOSET AND SIGNAGE AS PER O.B.C. PROVIDE 120V POWER CONNECTIONS (C/W WIRING AND RACEWAYS), BACKBOXES, LOW VOLTAGE WIRING, AND CONDUIT REQUIRED FOR A FULL OPERATIONAL SYSTEM. DIVISION 16 SHALL SUPPLY AND INSTALL CAMDEN CX-WEC10 OR APPROVED EQUAL EMERGENCY CALL SYSTEM C/W ALL ADDITIONAL DEVICES REQUIRED. MOUNTING HEIGHT OF THE PUSH BUTTON SHALL BE AS PER ARCHITECTURAL DRAWINGS OR INSTRUCTION.
- PROVIDE TWO (2) DUPLEX RECEPTACLES FOR THE AUTOMATIC CHANGE TABLE AND LIFT CHARGING SYSTEM. VERIFY MOUNTING HEIGHT WITH THE ARCHITECT PRIOR TO ROUGH-IN.
- REFER TO ARCHITECTURAL DRAWINGS FOR DEVICE/EQUIPMENT HEIGHT AND LOCATION PRIOR TO ROUGH-IN. ROUGH-IN ACCORDINGLY.
- PROVIDE A DUPLEX RECEPTACLES FOR THE PATIENT LIFT WALL MOUNTED CHARGING STATION. REFER TO MANUFACTURER SPECIFICATIONS AND VERIFY WITH THE ARCHITECT PRIOR TO ROUGH-IN.
- PROVIDE NEW 30A/208V BREAKER FOR THE NEW DRYER. CONNECT TO PANEL "A" OR "B" BASED ON AVAILABILITY. PROVIDE ALL WIRING AND CONDUITS TO CONNECT THE UNIT.
- PROVIDE NEW 15A/120V BREAKER FOR THE NEW WASHER AT PANEL "A" OR "B". PROVIDE ALL REQUIRED WIRING AND CONDUITS.
- CONTRACTOR TO INVESTIGATE AND DETERMINE THE EXACT POWER CONNECTION FOR THE HAND DRYER AND NEW RECEPTABLES AND DOOR OPERATOR. PROVIDE ALL REQUIRED BREAKERS, WIRING AND CONDUITS.
- NEW LIGHTS TO BE OPERATED BY SWITCH AND MOTION SENSOR.
- CONNECT ANY NEW DEVICES TO EXISTING FIRE ALARM. PROVIDE FIRE ALARM VERIFICATION AS REQUIRED.
- COORDINATE LOCATION OF THE NEW LIGHT WITH THE NEW LIFT. FINAL LOCATION TO BE DETERMINED ON SITE.
- HAND DRYER TO BE DYSON AIRBLADE V QUIET LOW VOLTAGE - WHITE - #307173-0

drawn
E.T.
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 checked
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 print date
2023.06.01

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 2102 BERWICK DRIVE BURLINGTON ONTARIO

drawing title
UNIVERSAL WASHROOM 101A -- POWER -- ELECTRICAL

reference
 project no. 23-038 client reference number
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